Do Financial Investment Decisions Affect Individuals' Non-Financial Decisions?*

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Abstract

This study examines whether individuals' equity investment decisions affect their non-financial decisions. We overcome data challenges that presumably hindered prior literature from addressing this question by utilizing a setting in which we observe politicians' investments and their non-financial decisions. Using three different sets of tests, we provide evidence consistent with politicians learning from their equity investments and changing their voting behavior on votes that have no direct effect on their wealth. Our results suggest that individuals' investment decisions affect their non-financial decisions because individuals can learn from their investments.

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1 Introduction

There is extant evidence that individuals' non-financial behavior, such as where they live or the products they consume, can affect their equity investment decisions [e.g., Frieder and Subrahmanyam, 2005; Huberman, 2001]. There is little evidence, if any, that individuals' equity investment decisions can affect their deliberate non-financial decisions (where non-financial decisions are defined as decisions that have no direct effect on individuals' wealth). For example, does investing in tobacco manufacturers cause the investor to practice and promote healthier lifestyle choices such as alcohol avoidance or exercise? The lack of evidence on this issue is even more striking considering its implications for our understanding on how individuals make deliberate non-financial decisions, the link between capital markets and individual behavior, and the types of information investors gain from screening and monitoring their investments. Nevertheless, the lack of evidence is not surprising, as addressing this issue requires data on individuals' investments as well as their non-financial decisions. In this study we overcome this data challenge and provide initial evidence on this subject.

Investors collect information when they screen investments before they purchase shares and when they monitor their investments at later dates while holding them, until they sell or increase their investments (the investment cycle). Yet, there is little theory or evidence that suggests that the incremental information that investors learn in the investment cycle is relevant, on average, to affect their non-financial actions (in this study we define learning broadly as any update to individuals' information set). Moreover, rational choice theory specifies that individuals are aware of their alternatives and the information relevant for their decisions, form expectations about any unknowns, have clear preferences, and choose their actions deliberately after optimization [Osborne and Rubinstein, 2011]. Under this framework, an equity investment should not affect investors' future non-financial decision making because choosing and monitoring equity investments in public markets is based on information that is publicly and readily available. This information is therefore available for individuals to make investment decisions, but also, if relevant, to make non-financial decisions. On the other hand, individuals may be rationally bounded in the sense that they experience limits in formulating and solving complex problems and processing (receiving, storing, retrieving, and transmitting) information [e.g., Simon, 1957]. Thus, the information investors gather during the investment cycle may affect their future non-financial decision making.

Providing evidence on this open empirical question can enhance our understanding on what investors learn during the investment cycle. In classical investment theories, such as CAPM,

the model parameters are statistically driven and leave little room for actual learning about the underlying business. Other theories, such as value investing, focus on the underlying business but it is unclear whether under those theories investors should spend resources on learning issues other than predicting future cash flows (or earnings) and the cost of capital. In addition, it is unclear whether the information content in equity investments is even relevant or incrementally important enough to affect non-financial decisions. Are individuals rationally bounded to the extent that even incidental learning through their investment processes can affect decisions they make? Better evidence on the answer to this question also helps to understand the spillover between the information gathered in capital markets and the information used in non-financial decision making.

As mentioned above, answering the question on whether individuals' equity investment decisions can affect their non-financial decisions is difficult as it requires data on both individuals' investments and their non-financial decisions. In this study we use information on US Congress members who are required to disclose their equity investments and whose voting decisions are publicly recorded. Using these data to address our research question has several limitations. For example, politicians who invest in firms may vote in a way that favors the firms in which they are invested to strengthen quid pro quo relations or pursue personal wealth interests [Tahoun, 2014; Tahoun and van Lent, 2019]. Another example is that politicians' decisions can be affected by their ideology, voter preferences, and party affiliation [e.g., Levitt, 1996]; or that politicians can resort to their substantial staff resources to support their decision making.[1] Nevertheless, we believe that carefully using the data and constructing our tests allows us to uncover empirical evidence that is not likely to be possible otherwise. For example, we overcome the potential effect of quid pro quo behavior on politician decisions by constructing our samples and tests in a way in which quid pro quo behavior is unlikely. We also construct the samples and tests in a way in which politicians' ideology, voter preferences, and party affiliation are unlikely to affect our inferences.

We obtain the data on politicians' equity investments and voting decisions from two sources. The Center for Responsive Politics (CRP) collects investments, which politicians are required to disclose annually under the Ethics in Government Act of 1978, and makes them available for the years 2004–2014. Voteview collects roll-call votes in the Senate and House, classifications of these votes, and the votes cast by individual politicians. For the analysis, we aggregate the data from these two sources to the level of the politician and calendar year. The resulting sample

[1]For instance, in 2000, the average Representative hired 14 staff members and the average Senator 34 (see: https://web.archive.org/web/20150617104805/https:/legacy.c-span.org/questions/weekly35.asp).

covers the years 2004–2014 and encompasses a universe of 944 politicians with available data on voting in either the Senate or House; 724 politicians thereof disclose at least once investments in equity securities. The samples used in our analyses are subsamples of this universe depending on our choice of investment behavior and vote category.

We choose deviations from the party line as the dependent variable to capture informed decision making of politicians. Deviations from the party line appear to be consequential as they are not common (on average, between 10% and 19% of all votes per year in our samples) and deliberate as they serve as signals for party leadership and local constituents [e.g., Arceneaux, Johnson, Lindstädt and Vander Wielen, 2016; Carson, Koger, Lebo and Young, 2010]. Hence, we expect politicians to thoroughly consider whether to deviate or not before they cast their votes.

We study vote deviations in three different sets of tests. In our first set of tests, we create a subsample of politicians who start investing in publicly listed firms. Politicians who start investing in publicly listed firms may learn about the relative efficiency of the US corporate sector, its innovation potential, or its governance mechanisms such as independent boards, auditors, or pay practices. Since these insights can be relevant for the structure and activities of government, we limit our voting data to votes on government operations. Votes on government operations relate to the organization of government agencies, including rules on underlying procedures and governance structures. They are plausibly affected by learning from investments in publicly listed firms but, at the same time, unlikely to benefit the firms in which politicians are invested. In this sample, we test how deviations from the party line change around first-time investments, with a research design that is similar to a staggered difference-in-differences design with two control groups. In particular, we compare the change in deviation behavior of politicians who start investing to the change in deviation behavior of politicians who also start investing but in different years as well as the change in deviation behavior of politicians who do not invest in publicly listed firms in any of the sample years. Using these tests, we find that politicians significantly increase their deviations from the party line after they start investing in public corporations, compared to both control groups.

To illustrate the above findings, Brad Miller can serve as an example. Brad Miller is a Democrat from North Carolina who was a member of the House from 2003 to 2013 and started investing in public equities in 2007 by purchasing shares of several public corporations, among them Cisco, Pepsico, and General Electric. Although Mr. Miller did not vote against the party line in votes on government operations in the sample years before his investments, after investing, he did so on numerous occasions. For example, he voted 'yea' against his party for

the Inspector General Reform Act of 2008 (H.R. 928). One of the provisions of the act was to require Inspectors General for designated federal entities to be appointed without regard to political affiliation and solely based on integrity and demonstrated ability in accounting, auditing, financial analysis, law, management analysis, public administration, or investigations. The requirements of the act resemble the requirements for an internal auditor or a member of an audit committee in public corporations. While anecdotal, this example provides an intuition for how investors, in this case politicians, can learn from their investments and change their non-financial decisions, in this case voting behavior.

In the second set of tests, we examine whether politicians with investments in firms hit by natural disasters deviate more often from the party line after disaster occurrence. In these tests, we analyze vote deviations for votes on housing and community development since votes in this category may change after learning about natural disasters. Extant literature investigates the consequences of natural disasters in terms of housing recovery and public policy related to housing in general [e.g., Comerio, 1997; Hayles, 2010; Zhang and Peacock, 2009]. Hence, we expect that politicians that invest in firms hit by natural disasters learn about housing and community development issues by monitoring their investments and, therefore, deviate more often from the party line. At the same time, vote deviations in this category are unlikely to benefit the average firm in which politicians are invested because firms hit by natural disasters are a heterogeneous group, e.g., with respect to their industry affiliation. In line with our expectations, we find that politicians with investments in firms hit by natural disasters deviate more often in votes relating to housing and community development, compared to control groups of politicians. To ensure that our analysis captures learning from natural disasters, we also undertake a placebo analysis where we randomly assign the year in which natural disasters hit politicians' equity portfolios and find no evidence of a significant effect of the placebo treatment. Importantly, the events we study in these tests, i.e., natural disasters, are quasi-exogenous events which are unexpected and to which politicians unlikely choose to be deliberately exposed. In this respect, these tests mitigate the possibility that self-selection bias, where politicians choose to invest in firms with specific characteristics, drives our results.

In the third set of tests, we study learning from investments in specific industries. When politicians invest in pharmaceutical firms, they may learn about health-related issues such as cancer and diabetes. This in turn may change their voting behavior on agriculture and food bills. As in the case of government operations above, we choose to focus on votes on agriculture and food as these votes are plausibly affected by learning from investing in pharmaceutical firms, but vote outcomes are unlikely to directly affect the pharmaceutical firms in which politicians

are invested. We find that investments in pharmaceutical firms are associated with higher deviations from the party line in votes on agriculture and food. Similarly, investments in the tobacco industry can shift politicians' attention to illegal trade in tobacco products and efforts by tobacco firms and enforcement agencies to limit this trade, and can thus increase politicians' awareness on issues related to votes on crime and law enforcement. We find that investments in tobacco firms are associated with higher deviations from the party line in votes on crime and law enforcement. Finally, we conduct a placebo analysis with investments in industries from the financial sector for which we do not expect to observe learning. We do not find that these investments are associated with higher deviations from the party line, neither in votes on agriculture and food nor in votes on crime and law enforcement.

Taken together, our findings provide initial evidence on the role of learning from public equity markets for non-financial decision making, and contribute to the literature in several ways. First, we contribute to the literature on learning from capital markets [e.g., Gertner, Powers and Scharfstein, 2002; Pastor and Veronesi, 2009] by showing that, throughout the investment cycle, investors acquire information that is not only specific to their investments but also incremental to other decisions. Second, we contribute to the literature on the relation between equity investment and non-investment decisions. Aspara and Tikkanen [2008] develop a theoretical model in which investors are changing their attitude toward company products when they also invest in the company's equity. In a similar vein, Schoenbachler, Gordon and Aurand [2004], using survey data, show that brand loyalty is increasing with equity investments. Although these papers deal with the effect of investments on financial decisions (such as purchasing products), they do suggest a channel through which investment decisions can affect other decisions (through brand attitudes). We depart from this literature and provide evidence on learning that occurs during the investment cycle and affects non-financial decisions. Third, we contribute to the literature on the determinants of politicians' votes [e.g., Levitt, 1996; Tahoun and van Lent, 2019]. We provide evidence that when politicians invest in public corporations, they learn from their investments in a way that significantly changes their voting behavior. Lastly, we contribute to the literature on the determinants of individuals' decision making in the face of bounded rationality [Mahoney, 2004]. Our paper provides evidence that individuals do not take into account all information that is readily available to them, such as information in equity markets, when they are making deliberate non-financial decisions.

2 Data

2.1 Investments

The Ethics in Government Act of 1978 mandates that members of Congress and candidates to become members of Congress annually disclose their assets, asset transactions, liabilities, and related details. They are expected to report on the preceding calendar year and file the disclosures by May 15. The Center for Responsive Politics (CRP) collects this information from the Senate Office of Public Records and the Office of the Clerk of the House, and makes it available in downloadable form on its website for the years 2004–2014.[2]

To identify politicians' equity investments, we use the asset disclosures and extract information on asset type, asset value, asset owner, and asset industry. We select holdings with the asset type 'stock,' i.e., shares of publicly listed firms, and a positive value. Non-positive values correspond to, for instance, incorrect data entries or values below disclosure thresholds, which require disclosure only of assets that have a value greater than $1,000 at the end of the calendar year or generate income greater than $200 throughout the calendar year. Since we do not observe the specific reason for a non-positive value, we limit the sample to holdings with a positive value; extending the sample to all holdings does not affect the results.

We use this dataset to classify members of Congress into different investor categories for the analysis of first-time equity and industry-specific investments. For the analysis of investments in firms hit by natural disasters, we add information from the Federal Emergency Management Agency (FEMA). FEMA collects information on natural events, such as severe storms, hurricanes, floods, or earthquakes, that are declared as natural disasters by the US president. A disaster declaration implies that the event caused substantial damage and releases federal assistance to support state and local governments in their recovery efforts. We work with the Disaster Declarations Summary data and extract information on declaration type, incident type, the year in which the disaster began, as well as state(s) and county(ies) in which the disaster occurred.[3] We restrict disasters to 'major disasters' (and in this way exclude fire management and special emergency declarations) and obtain information on 699 disasters for the years 2004–2014. Most of these disasters are severe storms (67%), followed by hurricanes (10%) and floods (10%).

We match natural disasters to politicians' holdings based on the headquarter location of the

[2]CRP's website can be accessed at: https://www.opensecrets.org.
[3]FEMA's data can be accessed at: https://www.fema.gov/about/openfema/data-sets.

companies in the politicians' stock portfolios. As CRP has incomplete geographical information, we first match CRP holdings to CRSP/Compustat. Specifically, we standardize firm names from CRP and apply a fuzzy matching algorithm in combination with manual checks to link standardized firm names from CRP to firm names from CRSP/Compustat. We succeed in matching 70% of CRP holdings to CRSP/Compustat and retrieve historical information on headquarter location, i.e., state and county, from CRSP/Compustat Merged (CCM) for this subset of holdings.[4] [5] In the final step, we classify holding years as disaster years if the holding is associated with a company headquartered in a county affected by a natural disaster in the same year.

2.2 Votes and Other Characteristics

We obtain politicians' votes from Voteview [Boche, Lewis, Rudkin and Sonnet, 2018].[6] The Voteview data comprise information on all roll-call votes in the Senate and House, classifications of these votes, and the votes cast by individual politicians, i.e., whether politicians vote 'yea,' 'nay,' 'present,' or abstain. We drop abstentions and 'present' votes from our dataset because both represent forms of non-voting and do not unambiguously signal (dis)agreement with a particular position. We drop votes of Independents because they are too small in number to reasonably measure a party position. We drop near-unanimous votes, i.e., votes with a percentage of 'yea' votes above 97.5% or below 2.5%, because we expect these votes to reflect largely uncontroversial issues on which politicians spend little time. Finally, for each of our analyses, we select votes from specific vote categories that we define in line with the vote classification of Congressional Research Service.

We obtain information on characteristics of politicians and votes from several sources. From Voteview, we use outcomes of votes as well as age and ideology of politicians. For ideology, we resort to the first dimension of DW-NOMINATE scores, capturing the degree of conservatism based on politicians' voting history [Poole and Rosenthal, 2007]. From CRP, we use information on committee membership, and leadership positions in committees (e.g., chairman or ranking member) and congressional chambers (e.g., majority leader or whip). We manually verify and complete the records for leadership positions in congressional chambers since CRP provides information only for terms of Congress (two-year periods) and the party leader vote is central

[4] We match on several combinations of (historical) firm name, year, and/or firm location where available. Our matching success rate is slightly lower than the rate of Aiken, Ellis and Kang [2020] (86%), who follow a similar matching procedure.

[5] CCM collects historical header information on company location, headquarter state and county, from Compustat.

[6] Access to the database is provided by: Lewis, J. B., Poole, K., Rosenthal, H., Boche, A., Rudkin, A., and Sonnet, L. (2020). Voteview: Congressional Roll-Call Votes Database. https://voteview.com/.

to the definition of our dependent variable. We gather seniority, i.e., the number of terms served in Congress, from the Center for Effective Lawmaking, and key votes, the allegedly most controversial and salient votes [Shull and Vanderleeuw, 1987], from CQ Almanac.[7] [8]

To be consistent with the measurement of investments, we aggregate information on voting to the level of the politician and calendar year. For example, we derive the percentage of votes for which a politician deviates from the vote of the party leader in a given year. To ensure that percentages are comparable, we eliminate from our sample politician-years for party leaders, i.e., majority and minority leaders in Senate and House, and for politicians that switch chambers during a year. The resulting sample covers the years 2004–2014 and encompasses 944 politicians with available data on voting in either the Senate or House; 724 politicians thereof disclose at least once investments in equity securities. The samples in the analyses are subsamples of these 944 politicians depending on our choice of vote category and investment behavior.

3 Research Design and Expectations

3.1 First-Time Equity Investments

We test whether politicians learn from investing in publicly listed firms with the following model:

$$pc\_dev_{it} = \beta\, invest_{it}\, [+\gamma\, CONTROLS_{it}] + \alpha_i + \delta_t + \epsilon_{it} \tag{1}$$

where i denotes politician and t year. pc_dev_{it} is the percentage of votes for which politicians deviate from the party line, i.e., politicians vote 'yea' ('nay') but the party leader votes 'nay' ('yea'). $invest_{it}$ is an indicator variable equal to one in all years including and following the year of first-time investment. We set $invest_{it}$ equal to zero if politicians report equity investments in their first year in our sample period. $CONTROLS_{it}$ is a set of control variables described below, and α_i and δ_t are politician and year fixed effects, respectively. Standard errors are clustered by politician. A positive β indicates that, relative to the control group, first-time investors vote more often against their party after they start investing, and is in line with the notion that politicians learn from investing in publicly listed firms.

We choose deviations from the party line as the dependent variable to capture informed decision making of politicians. Politicians often have incomplete information when asked to submit a vote since they operate in an environment of uncertainty and asymmetric information [e.g., Ainsworth, 1993; Gilligan and Krehbiel, 1989]. We expect them to acquire new information

[7] The website of the Center for Effective Lawmaking can be accessed at: https://thelawmakers.org.
[8] CQ Almanac's website can be accessed at: https://library.cqpress.com/cqalmanac/.

from screening and monitoring investments or, in other words, to learn from their investments, and to apply this new information in subsequent voting decisions. In particular, we expect them to more frequently disagree with the prevailing party position in subsequent votes and thus to deviate from the party line.[9] An implicit assumption of this expectation is that politicians vote the party line if they do not have enough information to make an informed voting decision, which seems plausible in many situations given the evidence on the importance of party influence on politicians' voting behavior and the repercussions of not following the party line [e.g., Ansolabehere, Snyder and Stewart, 2001; Cox and Poole, 2002; King and Zeckhauser, 2003].

Although the role of information and expertise in voting decisions is not completely neglected in prior research [Wimmel, 2013], it is scarcely discussed [Esterling, 2004]. Instead, prior work argues that politicians trade-off reelection and career incentives with their own ideology in reaching a decision to vote with or against their party [e.g., Arceneaux et al., 2016; Carson et al., 2010; Lindstädt and Vander Wielen, 2014]. We believe that we can rule out these potentially confounding factors to a large extent through our choice of setting and empirical model.

In using the setting of politicians, we study associations between decisions that individuals make in their private life (investment decisions) and their professional capacity (voting decisions). If reelection and career incentives were confounding factors, they would have to affect investment decisions, which appears unlikely. Investment decisions are private information at the time of the vote and disclosed to the public only with a delay of at least four and up to 16 months.[10] Constituents, who decide about reelection, are on average not well-informed about individual politicians and access public information mostly in the run-up to an election [e.g., Bartels, 1996; Kalt and Zupan, 1990]. Party leadership, who can offer career opportunities, should care mostly about compliance with (in)formal agreements originating in the professional context, e.g., support in close votes [e.g., Froman and Ripley, 1965; King and Zeckhauser, 2003]. Ideology, on the other hand, can have an impact on investment decisions [e.g., Hong and Kostovetsky, 2012; Kaustia and Torstila, 2011], which we address in our empirical model.

In our empirical model, we include year and politician fixed effects. Politician fixed effects absorb time-invariant characteristics of individual politicians, such as a general propensity to invest or ideological views that do not change over the sample period. Year fixed effects absorb characteristics of annual sessions, such as politicians' tendency to be more sensitive to con-

[9] We acknowledge that our proxy captures only a subset of learning. Learning can equally lead to the confirmation of existing knowledge, which would not change the level of (dis)agreement with the party position.

[10] This is not true in the final three years of our sample period. Starting in 2012, politicians were required to disclose asset transactions within 45 days. We take these disclosure requirements into account in our sensitivity analyses in Section 5.3.

stituent preferences in their voting behavior closer to elections [Lindstädt and Vander Wielen, 2014]. We also present an extended empirical model with control variables for time-varying characteristics of politicians and votes ($CONTROLS_{it}$). Precisely, we control for the relative ideological position within the party or ideological 'extremity' [e.g., Canes-Wrone, Brady and Cogan, 2002; Erickson, 1971]. $dev\_ideology_{it}$ is the absolute value of the difference between politicians' ideology and the median ideology of all members of their party in their chamber; we measure ideology with time-invariant DW-NOMINATE scores and obtain a time-varying proxy reflecting changes in party composition over time. We control for positions in Congress that signal proximity to party leadership and hence a lower likelihood of vote deviations. $chairman_{it}$ is an indicator variable equal to one if politicians are chairman, vice chairman, or ranking member of a committee; $powercom_{it}$ is an indicator variable equal to one if politicians serve on a power committee; and $leader_{it}$ is an indicator variable equal to one if politicians are Speaker, majority whip, or minority whip. We control for politicians' professional experience in and out of Congress and, in this manner, for one possible characteristic of 'safe' members who face fewer repercussions from voting with their party [e.g., Collier and Munger, 1994; Wolfinger and Heifetz, 1965]. $ln(seniority)_{it}$ is the natural logarithm of politicians' seniority in Congress; and $ln(age)_{it}$ is the natural logarithm of politicians' age. Lastly, we control for vote characteristics that provide an indication of the salience of votes and the time politicians might spend on reaching a voting decision. pc_passed_{it} is the percentage of votes in which politicians participate and which are successful; and $pc\_key\_vote_{it}$ is the percentage of votes in which politicians participate and which are classified as key votes by QC Almanac. Appendix A.1 lists all variable definitions.

While we are relatively confident that our results are not unduly affected by the omission of alternative determinants of vote deviations, we are aware of more direct links between investment and voting decisions that represent potentially confounding associations. Tahoun [2014] suggests that politicians use equity investments to strengthen quid pro quo relations with firms and that they align their behavior with the interests of these firms. Tahoun and van Lent [2019] suggest that politicians adjust their voting behavior to increase returns from personal equity investments. We believe that we can largely rule out personal wealth interests and quid pro quo relations through our sample selection strategy. Specifically, we limit our sample to votes from the category 'government operations and politics.' Votes in this category (votes on government operations hereafter) touch on, for example, administrative issues surrounding the legislative

process or rights and obligations of politicians in their professional role.[11] Notably, votes on government operations do not have, in principle, direct consequences for (publicly listed) firms and are therefore unlikely to represent personal investment benefits or favors to firms. At the same time, votes on government operations can plausibly change if politicians learn from their investments about efficiency considerations or governance mechanisms of publicly listed firms and apply this knowledge to the governmental sector.

We use our sample selection strategy, in addition, to address selection concerns. In essence, our research design is similar to a staggered difference-in-differences analysis, with the crucial distinction that investment decisions are made by politicians and not assigned randomly. To account for some potentially confounding effects, we limit our sample to specific subsets of politicians. We first focus exclusively on politicians that start to invest in publicly listed firms at one point during our sample period (first-time investors hereafter).[12] These politicians should share similarities in their tendency to invest and are thus plausibly drawn from the same distribution, but they vary in the time period in which they start investing. In subsequent tests, we add another control group, politicians that do not invest at any point during our sample period (never investors hereafter). These politicians should resemble first-time investors in their general attitude toward investing as both groups start from the same investment level, but similarities are likely fewer.

3.2 Investments in Firms Hit by Natural Disasters

We test whether politicians learn from investments in firms that are hit by natural disasters with the following model:

$$pc\_dev_{it} = \beta\, invest\_dis_{it}\, [+\gamma\, CONTROLS_{it}] + \alpha_i + \delta_t + \epsilon_{it} \tag{2}$$

where $invest\_dis_{it}$ is an indicator variable equal to one in all years including and following the first year in our sample period in which at least one holding is hit by a natural disaster. We set $invest\_dis_{it}$ equal to zero if holdings are hit by a natural disaster in the initial investment year. All other variables are defined as above. A positive β indicates that, relative to the control

[11] The full definition states: "Primary focus of measure is government administration, including agency organization, contracting, facilities and property, information management and services; rulemaking and administrative law; elections and political activities; government employees and officials; Presidents; ethics and public participation; postal service. Measures concerning agency appropriations and the budget process may fall under Economics and Public Finance policy area." It can be accessed at: https://www.congress.gov/help/field-values/policy-area.

[12] We are interested in first-time investments in equity securities. Consequently, we exclude from this sample politicians who, apart from starting to invest in equity securities, start to invest in mutual fund shares (24 politicians).

group, politicians with holdings in firms headquartered in disaster areas vote more often against their party after their investments are hit by natural disasters.

In this analysis, we use plausibly exogenous variation in determining the treatment and control group. Our independent variable of interest identifies politicians who are through their investments exposed to natural disasters and hence to events outside of their control. The variable of interest also ensures that the year in which a natural disaster occurs does not correspond to the initial investment year and hence alleviates concerns that we merely study politicians with an investment strategy tilted toward natural disasters. Instead, we study politicians who should not, on average, display an interest in natural disasters, but are likely to acquire new information on the effects of natural disasters because their investment returns are affected by these events. Accordingly, we treat the occurrence of natural disasters as if assigned randomly. In doing so, we follow previous studies that use natural disasters as exogenous shocks in other settings [e.g., Barrot and Sauvagnat, 2016; Cortés and Strahan, 2017; Imberman, Kugler and Sacerdote, 2012].

As in our analysis of first-time equity investments, we examine votes from a specific vote category that we expect to be associated with the investments of interest. Precisely, we examine votes from the category 'housing and community development.' Votes in this category deal with the planning and provision of housing for different regions and socio-economic classes, such as the vote on the Neighborhood Stabilization Act (H.R. 5818), which promotes housing stimulus activities in areas of need and was passed by the House in 2008.[13] We expect votes in this category to be associated with investments in firms hit by natural disasters as natural disasters are usually followed by recovery efforts and public programs on disaster relief that comprise housing and infrastructure restoration [e.g., Comerio, 1997; Hayles, 2010; Zhang and Peacock, 2009]. At the same time, we do not expect votes in this category to benefit the average firm in which politicians are invested as firms hit by natural disasters are a heterogeneous group in terms of, e.g., their industry affiliation.

We estimate Equation 2 for the subset of politicians who report at least one equity investment in their first year of Congress in our sample period and who are invested in firms that are hit by natural disasters (disaster investors hereafter). We then extend the sample to all politicians who report at least one equity investment in their first year of Congress in our sample period (investors hereafter). Both samples restrict the analysis to politicians who should resemble each

[13]For information on the bill, see: https://www.congress.gov/bill/110th-congress/house-bill/5818?q=%7B%22-search%22%3A%5B%22hr5818%22%5D%7D&s=8&r=1.

other in their general propensity to invest.

Moreover, we test whether politicians learn about natural disasters with the following model:

$$pc\_dev_{it} = \beta\, invest\_dis\_c_{it}\, [+\gamma\, CONTROLS_{it}] + \alpha_i + \delta_t + \epsilon_{it} \tag{3}$$

where the only difference to Equation 2 is the independent variable of interest; we replace $invest\_dis_{it}$ with $invest\_dis\_c_{it}$, which is an indicator variable equal to one in all years in which politicians report at least one holding in a firm that is hit by a natural disaster. A positive β indicates that politicians vote more often against their party when their investments are hit by natural disasters. We expect a positive β since we expect learning about natural disasters to be most pronounced in the year in which the information on natural disasters is new and therefore more salient than in later years.

3.3 Industry-Specific Investments

We test whether politicians learn from investing in specific industries with the following model:

$$pc\_dev_{it} = \beta\, invest\_ind\_c_{it} + \zeta\, benefit\_ind_{it}\, [+\gamma\, CONTROLS_{it}] + \alpha_i + \delta_t + \epsilon_{it} \tag{4}$$

where $invest\_ind\_c_{it}$ is an indicator variable equal to one in all years in which politicians report at least one industry-specific holding. $benefit\_ind_{it}$ is an indicator variable equal to one in all years in which politicians report at least one holding in industries directly related to the vote category. All other variables are defined as above. A positive β indicates that politicians vote more often against their party while they are invested in a specific industry. In this analysis, we adopt an approach similar to Equation 3 and measure the contemporaneous correlation between investments and voting outcomes. We expect this correlation to be positive, i.e., we expect a positive β, since we expect industry-specific learning to be most pronounced when the industry holdings are part of the portfolio.

For this analysis, we select both an industry, from which politicians can learn, and votes, for which politicians plausibly resort to their industry-specific knowledge. Crucially, we select industry-vote combinations such that the specific industry is unlikely to be affected by the voting outcomes in order to minimize the impact of personal wealth interests and incentives from quid pro quo relations.[14] We present results for two combinations: investments in the

[14] To select these industry-vote combinations, we begin with a list of the 30 industries with most holdings in our raw data; in this manner, we have more than 300 holdings (the minimum number of holdings is 319) and more than 70 politicians (the minimum number of politicians is 76) in every industry. From this list, we drop industries whose composition is very heterogeneous; for instance, we drop 'misc manufacturing & distributing,'

pharmaceutical industry and votes on agriculture and food; and investments in the tobacco industry and votes on crime and law enforcement.

The pharmaceutical industry primarily develops and sells drugs to cure diseases. Investments in the pharmaceutical industry can direct politicians' attention to topics on the prevention of diseases. For example, an investment in Abbott Laboratories, one of the pharmaceutical firms in our sample, exposes politicians to Abbott's idea of an overall healthy lifestyle and its business segment 'nutrition,' which provides supplements for recovery from illness and the general improvement of health.[15] Investments in pharmaceutical firms can also prompt politicians to acquire expertise on industry-wide trends. Throughout our sample period, the media reported on the risks of obesity and the pharmaceutical industry's efforts to develop treatments in the form of drugs or alternative weight-reduction measures.[16] Thus, these investments can increase politicians' awareness of a healthy diet and nutritional products, the subject of votes on agriculture and food.[17] For example, in 2006, the House voted on the National Uniformity for Food Act (H.R. 4167), standardizing food labeling across the US to protect consumers from unwanted health consequences.[18] Similarly, in 2010, the Senate voted on the FDA Food Safety Modernization Act (S. 510), raising standards for safe and transparent food processing for producers.[19]

The tobacco industry primarily produces and sells tobacco products. Investments in the tobacco industry can shift politicians' attention to illegal activities, including the trade and distribution of counterfeit cigarettes. Tobacco firms and enforcement agencies attempt to limit these activities through independent and joint initiatives, which are described in disclosures of individual firms and media articles on the whole industry. For instance, Philip Morris International, one of the tobacco firms in our sample, states in its 2014 annual report: "We remain committed to combatting illicit trade through our dedicated organization, our renewed agree-

comprising 31 subcategories and ranging from 'toiletries & cosmetics' to 'aluminum mining/processing.' For the remaining industries, we identify vote categories for which learning is plausible and a direct impact of voting outcomes on the industry unlikely. To reduce subjectivity in this assessment, each of the authors first identifies vote categories independently. We then discuss differences and verify our selection with other sources.

[15] For an overview of Abbott, see: https://www.abbott.com/about-abbott.html.

[16] Examples include the following articles: https://blogs.wsj.com/pharmalot/2014/09/10/fat-chance-novo-hopes-to-sell-its-injectable-diabetes-med-as-a-diet-drug/?mod=searchresults&page=1&pos=17, https://www.wsj.com/articles/merck-launches-weightmanagementinterventions-business-1387551719?mod=searchresults&page=2&pos=19&tesla=y, or https://www.wsj.com/articles/SB10969339979003601 8?mod=searchresults&page=1&pos=7.

[17] The formal definition of the vote category 'agriculture and food' states: "Primary focus of measure is agricultural practices; agricultural prices and marketing; agricultural education; food assistance or nutrition programs; food industry, supply, and safety; aquaculture; horticulture and plants. Measures concerning international trade in agricultural products may fall under Foreign Trade and International Finance policy area." It can be accessed at: https://www.congress.gov/help/field-values/policy-area.

[18] For information on the bill, see: https://www.congress.gov/bill/109th-congress/house-bill/4167?q=%7B%22search%22%3A%5B%22hr4167%22%5D%7D&r=1&s=10.

[19] For information on the bill, see: https://www.congress.gov/bill/111th-congress/senate-bill/510.

ment with Interpol and increased collaboration with authorities around the world."[20] Likewise, the Wall Street Journal explains the workings of firm-internal laboratories and regulatory interventions to prevent illegal practices.[21] Therefore, investments in the tobacco industry can increase politicians' awareness of the boundaries for what should be right and wrong, the subject of votes on crime and law enforcement.[22] For instance, in 2005, the House voted on the Gang Deterrence and Community Protection Act (H.R. 1279), increasing penalties for criminal activities of street gangs.[23] In 2009, the Senate voted on the Fraud Enforcement and Recovery Act (S. 386), allocating more resources to fraud detection in the financial sector.[24]

Although we select these industry-vote combinations to minimize direct links, we cannot be sure that we fully eliminate wealth effects from politicians' voting decisions. As the example of Abbott Laboratories illustrates, the pharmaceutical industry sells nutritional supplements and, in this way, might have a vested interest in votes relating to food labeling provisions. As the example of illegal trade in counterfeit cigarettes illustrates, tobacco firms have a vested interest in effective enforcement to protect themselves against losses. However, we believe that these interests are secondary compared to the main industry interests; the funding and provision of health services and drugs in the case of the pharmaceutical industry, and taxes and restrictions on tobacco products in the case of the tobacco industry.

While we argue that links between the selected votes and industries are weak, we are aware of other industries with more direct links. These direct links can strengthen incentives to vote in order to increase personal returns or cater favors to firms. If the motive to invest in these industries is associated with the decision to invest in the industry that we selected, then we have an omitted variable problem. To address this problem, in Equation 4, we control for the most obvious direct links with the indicator variable $benefit\_ind_{it}$. For votes on agriculture and food, $benefit\_ind_{it}$ is equal to one if politicians have holdings in the industries 'agricultural services/products' or 'food processing & sales.' For votes on crime and law enforcement, $benefit\_ind_{it}$ is equal to one if politicians have holdings in the industries 'lawyers/law firms,'

[20] The annual report can be accessed at: http://media.corporate-ir.net/media_files/IROL/14/146476/PM_AR_-2014/index.html.

[21] The article can be accessed at: https://www.wsj.com/articles/tobacco-firms-step-up-fight-against-cigarette-smuggling-1395717204?mod=searchresults&page=1&pos=7&tesla=y.

[22] The formal definition of the vote category 'crime and law enforcement' states: "Primary focus of measure is criminal offenses, investigation and prosecution, procedure and sentencing; corrections and imprisonment; juvenile crime; law enforcement administration. Measures concerning terrorism may fall under Emergency Management or International Affairs policy areas." It can be accessed at: https://www.congress.gov/help/field-values/policy-area.

[23] For information on the bill, see: https://www.congress.gov/bill/109th-congress/house-bill/1279?q=%7B%22-search%22%3A%5B%22hr1279%22%5D%7D&s=2&r=1.

[24] For information on the bill, see: %7B%22search%22%3A%5B%22s386%22%5D%7D&s=4&r=1.

defense aerospace,' 'defense electronics,' or 'misc defense.' We do not have an expectation for the coefficient of $benefit\_ind_{it}$, as personal wealth interests and incentives from quid pro relations usually lead to the (dis)approval of bills but not deviations from the party line.

As in our analysis of investments hit by natural disasters, we restrict the sample to politicians who are already investors when they enter our sample to account for their propensity to invest.

4 Results

4.1 Descriptives

4.1.1 First-Time Equity Investments

Panel A of Table 1 shows summary statistics for the analysis of first-time investments in equity securities; for the combined sample of first-time and never investors (line 1), and for first-time investors (FT, line 2) and never investors (N, line 3) separately.

The distribution of the percentage of deviations from the party line (pc_dev_{it}) is similar for first-time and never investors and demonstrates that deviations are infrequent events. On average, first-time and never investors (first-time investors) [never investors] deviate from the party line for 9.5% (9.2%) [9.7%] of votes per year; all three samples have a median of 0% and positive values for around 45% of the observations.

The distributions of the control variables, on the other hand, point at differences between first-time and never investors. First-time investors are ideologically less extreme than other members of their party ($dev\_ideology_{it}$), they have more often leadership positions in committees ($chairman_{it}$), they sit more often on power committees ($powercom_{it}$), and they have more experience, both in Congress ($seniority_{it}$) and in general (age_{it}). First-time investors also differ in characteristics that are mostly absorbed by our fixed effects structure; they are more often members of the Democratic Party ($republican_{it}$) and the Senate ($house_{it}$). Finally, the two subsamples do not differ with respect to vote characteristics (pc_passed_{it} and $pc\_key\_vote_{it}$), as the underlying votes are the same but vary by politician because politicians do not always submit a 'yea' or 'nay' vote.

The variable of interest, $invest_{it}$, indicates that 63% of the observations for first-time investors refer to the post-investment period. In the sample of first-time investors, we have 81 politicians who start to invest in the years 2005–2013. Most of these politicians (29) start to invest in 2012, a lower but still high number of politicians (20) start to invest in 2005, and low and comparable numbers of politicians (3–6) start to invest in the other years of our sample

period. We address the high number of first-time investors in 2012 in a sensitivity analysis in Section 5.3.[25]

4.1.2 Investments in Firms Hit by Natural Disasters

Panel B of Table 1 shows summary statistics for the analysis of investments in firms hit by natural disasters. We report summary statistics only for the combined sample of disaster and other investors since we are less concerned about selection in this analysis. Univariate t-tests (untabulated) reveal that differences between disaster and other investors are lower in number and, if they remain, not necessarily consistent across variables. For instance, disaster investors have less often leadership positions in committees ($chairman_{it}$) but sit more often on power committees ($powercom_{it}$), which speaks neither for nor against proximity to party leadership.

For both disaster and other investors, we have observations only for the years 2005 and 2007–2011, which is a consequence of our sample criteria and the low number of votes in some years. Specifically, the vote category 'housing and community development' contains one vote in each of the years 2004, 2012, and 2013, and three votes in 2006 (and no vote in 2014). All of these votes drop out as soon as we exclude near-unanimous votes from the sample. The number of votes in the remaining years is substantially higher. Specifically, the vote category contains 10 (8), 48 (45), 20 (18), 25 (21), 13 (5), and 19 (19) votes in the years 2005, 2007, 2008, 2009, 2010, and 2011 before (after) excluding near-unanimous votes.

Across the available years, we have 53 politicians who are invested in firms that are hit by natural disasters at one point during the sample period ($invest\_dis_{it}$), and a subset of 47 politicians with observations in the year in which the disaster occurs ($invest\_dis\_c_{it}$). For the definition of $invest\_dis_{it}$, we use 64 disasters, whose types follow a distribution that is similar to the population of disasters. In the population of disasters, we have with the highest frequencies severe storms (67%), hurricanes (10%), and floods (10%) [see Section 2.1]. In our final sample, we have severe storms (69%), hurricanes (11%), snow (9%), floods (8%), as well as one earthquake and one fire (2% each). In addition, in our final sample, firms hit by natural disasters are distributed across a variety of industries, which considerably alleviates concerns that personal wealth interests or incentives from quid pro quo relations could drive our findings. In particular, affected firms are distributed across 37 different industries, led by

[25] We have no first-time investors in 2004 because we require one year of not reporting equity securities to classify a politician as first-time investor. However, we also have no first-time investors in 2014, without an apparent reason. Our sensitivity analysis in Section 5.3 excludes observations for 2014 and, in this manner, accounts for potential inconsistencies in 2014.

'misc manufacturing & distributing' (14%), a heterogeneous category in itself (see Footnote 14), 'pharmaceuticals/health products' (9%), and 'electronics mfg & equip' (8%).

For the full sample of disaster and other investors, summary statistics illustrate differences among the investor types that we study. Whereas the sample in the previous section comprises first-time and never investors, the sample in this section explicitly excludes first-time and never investors and instead includes investors. Put differently, the sample for this analysis consists exclusively of politicians who made the decision to start investing before entering our sample. Comparing Panel B with Panel A suggests that these politicians have more leadership positions in committees ($chairman_{it}$) or their chamber ($leader_{it}$), they sit more often on power committees ($powercom_{it}$), and they have more experience in Congress ($seniority_{it}$) relative to first-time and never investors.

4.1.3 Industry-Specific Investments

Panel C of Table 1 shows summary statistics for the analysis of industry-specific investments; for investments in the pharmaceutical industry and votes on agriculture and food (P & AF) at the top of the panel, and investments in the tobacco industry and votes on crime and law enforcement (T & CL) at the bottom of the panel.

The distribution of pc_dev_{it} illustrates differences among the vote categories that we study. The mean of pc_dev_{it} is 0.189 in the P & AF sample and 0.146 in the T & CL sample; and it is 0.103 in the sample based on votes on housing and community development (Panel B), and 0.095 in the sample based on votes on government operations (Panel A). The differences in vote deviations likely stem from differences in content covered by the vote categories, as has been documented in prior research [e.g., Lee, 2005; Snyder and Groseclose, 2000]. For example, Lee [2005] argues for distinct voting patterns for votes with ideological and non-ideological content (ideology referring to the liberal-conservative spectrum). Among our vote categories, government operations broadly qualify as votes with non-ideological content, which could therefore help in explaining the lower percentage of vote deviations.

The variable of interest, $invest\_ind\_c_{it}$, is equal to one for 30.1% (6.5%) of the observations and 245 (66) investors out of 515 (520) investors overall in the P & AF (T & CL) sample. That is, 245 (66) investors are invested in the industry of interest, i.e., the pharmaceutical (tobacco) industry, in at least one year during the sample period. The control variable for investments in directly affected industries, $benefit\_ind_{it}$, is equal to one for 16.3% (11.5%) of the observations and 150 (128) investors. 127 (47) investors are invested in the industry of interest as well as directly affected industries in the same year.

4.2 First-Time Equity Investments

Table 2 displays the results for the estimation of Equation 1, in column 1 and 2 (3 and 4) for the sample of first-time (first-time and never) investors and in column 1 and 3 (2 and 4) without (with) control variables.

In line with our expectations, the coefficient of the variable of interest, $invest_{it}$, is positive and significant in all four columns. It is 0.055 (column 1) and 0.043 (column 3) in the specification without control variables and declines modestly to 0.054 (column 2) and 0.041 (column 4) once control variables are included. In terms of magnitude, it translates into an increase in the percentage of deviations from the party line by 5.5, 5.4, 4.3, and 4.1 percentage points in column 1, 2, 3, and 4, respectively. This increase might appear large given the mean of pc_dev_{it} of 9.2% (8.4%) in the sample of first-time investors (in the pre-investment period, untabulated), yet it is consistent with actual voting patterns. Politicians commonly vote with their party and only rarely deviate from the party line. For instance, we have 25 politicians in our sample of first-time investors who do not deviate at all in the pre-investment period; 23 of these 25 politicians start to deviate in the post-investment period, which results in a large average effect.

The control variables add marginally to the explanatory power of the model. The adjusted R^2 increases from 0.380 to 0.394 in the sample of first-time investors and from 0.403 to 0.410 in the sample of first-time and never investors, which corroborates our choice of fixed effects. Politician fixed effects likely capture part of the unobservable factors that drive observable politician characteristics, and year fixed effects likely capture much of the annual variation in vote deviations due to, e.g., election cycles. In the sample of first-time investors, the control variable for leadership positions in Congress, $leader_{it}$, drops out because none of the first-time investors assumes the role of Speaker, majority whip, or minority whip during the sample period. Among the remaining control variables, having a leadership position in committees ($chairman_{it}$) and serving on power committees ($powercom_{it}$) are negatively associated with the percentage of vote deviations. In the sample of first-time and never investors, serving on power committees and having a leadership position in Congress ($leader_{it}$) are negatively associated with vote deviations. These associations support the notion that politicians who are in powerful positions in Congress are close to party leadership and thus less inclined to vote against it.

Figure 1 highlights how learning occurs over time. It depicts the regression coefficients for the subperiods around first-time investment and their 95% confidence intervals. Specifically, we replace the indicator variable $invest_{it}$ in Equation 1 with separate indicator variables for the two years before ($time = -2$ and $time = -1$), the year of ($time = 0$), the year following ($time = 1$),

and all remaining years following first-time investment ($time > 1$). We omit indicator variables for the years preceding the two years before first-time investment so that these years serve as reference category. The figure presents the regression coefficients for the model with control variables estimated in the sample of first-time investors.

In Figure 1, the vertical black line marks the approximate point in time when first-time investors start investing in equity securities. Although they start to invest in time period 0, they might not incorporate information from their investments into all of their votes in time period 0. Politicians cast votes throughout the whole year but report investments as of the end of the year. Some politicians invest early in the year and can learn from these investments for subsequent votes; others invest at the end of the year and only have some information from screening potential investments for their voting decisions throughout the year. To emphasize that the full impact of investing should materialize not before time period 1, we draw the vertical line at time period 0.5.

Regression coefficients for time period -2, -1, 0, 1, and > 1 are 0.036, 0.051, 0.084, 0.108, and 0.095, respectively. In line with the results for the estimation of Equation 1 (Column 2 in Table 2), coefficients are positive and significant for the time periods including and following first-time investment. In line with the full impact materializing in the time period subsequent to first-time investment, the coefficient for time period 0 reflects an increase over the previous periods but the coefficient for time period 1 has the highest value.

Taken together, the findings in this section indicate that politicians who start investing in publicly listed firms deviate more from the party line. Our interpretation of these findings is that investments prompt politicians to acquire and process information on governance mechanisms and efficiency considerations in publicly listed firms, and that this information changes their assessment of appropriate governance mechanisms for the efficient operation of government.

4.3 Investments in Firms Hit by Natural Disasters

Table 3 shows the results for the estimation of Equation 2, in column 1 and 2 (3 and 4) for the sample of disaster (disaster and other) investors and in column 1 and 3 (2 and 4) without (with) control variables.

The coefficient of the variable of interest, $invest\_dis_{it}$, is positive and significant throughout. In the specification without control variables the coefficient is 0.085 (column 1) and 0.058 (column 3) and in the specification with control variables the coefficient is 0.085 (column 2) and 0.052 (column 4). Hence, the percentage of deviations from the party line increases by 8.5, 8.5, 5.8, and 5.2 percentage points in column 1, 2, 3, and 4, respectively.

Inferences from the control variables support the earlier findings. Serving on power committees ($powercom_{it}$) and having a leadership position in Congress ($leader_{it}$) are negatively associated with vote deviations in either sample; and having a leadership position in committees ($chairman_{it}$) is negatively associated with vote deviations in the sample of disaster and other investors. Moreover, an ideologically extreme position within the party ($dev\_ideology_{it}$) is positively associated with deviating from the vote of the party leader, consistent with the party leader representing on average most party members.

Column 1 and 2 of Table 4 display the results for the estimation of Equation 3 in the sample of disaster and other investors, in column 1 without and in column 2 with control variables. The coefficient of the variable of interest, $invest\_dis\_c_{it}$, is significantly positive and amounts to 0.062 in column 1 and 0.056 in column 2. In terms of magnitude, it exceeds the corresponding coefficient estimates in Table 3 (0.058 and 0.052), and therefore suggests that learning is most pronounced in the year in which disasters occur and information on natural disasters should be of greater salience.

Column 3 and 4 of Table 4 display the results for a placebo analysis. We randomly reassign disaster years, i.e., years in which natural disasters hit one or more holdings of a politician, among disaster investors, and reestimate Equation 3 with this modified definition of $invest\_dis\_c_{it}$. If the original definition of $invest\_dis\_c_{it}$ captures learning from natural disasters, the placebo analysis should not produce significant coefficient estimates. Table 4 shows that coefficient estimates from the placebo analysis are statistically insignificant and very close to zero.[26]

In untabulated tests, we repeat the estimation of Equation 3 in a broader sample of disaster and other investors. For ease of comparison, the sample in Table 4 is identical to the sample of the difference-in-differences analysis in column 3 and 4 of Table 3. For the difference-in-differences analysis, we require disaster investors to have observations both before and after the occurrence of the first natural disaster. Relaxing this requirement and estimating Equation 3 for all investors with observations in disaster years and other investors yields results similar to those reported in column 1 and 2 of Table 4. We follow this broader sample selection approach in the analysis of industry-specific investments.

In sum, the findings in this section underline that politicians who invest in shares of publicly listed firms do not only learn about firm structures and operations in general but also about

[26] Results are consistent with the results displayed in Table 4 if we randomly reassign disaster years 1,000 times. In these 1,000 samples, the coefficient estimate of $invest\_dis\_c_{it}$ has a mean (median) of 0.000 (-0.001) and a standard deviation of 0.021, both in the specification without and with control variables [untabulated].

specific events affecting these firms. Crucially, the events that we study occur in an unexpected manner, which mitigates the possibility that politicians self-select their learning.

4.4 Industry-Specific Investments

Table 5 shows the results for the estimation of Equation 4, in column 1 and 2 for the pharmaceutical industry and votes on agriculture and food (P & AF) and in column 5 and 6 for the tobacco industry and votes on crime and law enforcement (T & CL); in column 1 and 5 (2 and 6) without (with) control variables.

As expected, the coefficient of $invest\_ind\_c_{it}$ is positive and significant in all four columns. It is 0.028 (column 1) and 0.062 (column 5) in the specification without control variables and 0.030 (column 2) and 0.059 (column 6) once control variables are included. Its magnitude implies that investors in the T & CL sample deviate more often than investors in the P & AF sample, both in absolute terms and relative to the respective sample mean of vote deviations.

The coefficient of our proxy for investments in directly related industries, $benefit\_ind_{it}$, is statistically insignificant in all columns. It is -0.002 (column 1) and -0.017 (column 5) in the specification without control variables and -0.002 (column 2) and -0.016 (column 6) once control variables are included. We caution against putting too much emphasis on these coefficients since $benefit\_ind_{it}$ only imperfectly captures investments in directly related industries. Nevertheless, the coefficient is in line with our expectation; investments in directly related industries can create incentives to increase personal returns or cater favors to firms, neither of which clearly predicts whether politicians should deviate from the party line.

Inferences from the control variables support and extend earlier findings. Having a leadership position in committees [$chairman_{it}$] is negatively associated with vote deviations in either sample; serving on power committees [$powercom_{it}$] and having a leadership position in Congress [$leader_{it}$] are negatively, and having an ideologically extreme position within the party [$dev\_ideology_{it}$] is positively associated with vote deviations in the T & CL sample. Furthermore, voting on salient matters [$pc\_key\_vote_{it}$] is positively associated with vote deviations in either sample, consistent with politicians spending more time on voting decisions that are of general interest and public debate. Having more experience in [$ln(seniority)_{it}$] and out of Congress [$ln(age)_{it}$] is positively associated with vote deviations in the T & CL sample, consistent with more senior politicians representing their own or their electorate's opinion rather than the party line on votes in this vote category.

Further, we undertake a placebo analysis where we vary the industry in our selected industry-vote combinations. If it is industry-specific knowledge that induces politicians to change their

voting behavior, we should not find associations between vote deviations and investments in industries whose operations are, on the whole, unrelated to the vote categories of interest, agriculture and food as well as crime and law enforcement. We do not see any obvious link between agriculture and food as well as crime and law enforcement and the financial sector and hence analyze the industry from the financial sector with most holdings in our raw data, commercial banks.[27] Column 3 and 4 and column 7 and 8 of Table 5 show the results for this placebo analysis. Specifically, these columns show the results for the estimation of Equation 4 when we code the indicator variable $invest\_ind\_c_{it}$ one for all years in which politicians report at least one investment in commercial banks. The coefficient of $invest\_ind\_c_{it}$ is close to zero in all four columns. It is -0.006 (-0.003) for votes on agriculture and food and -0.018 (-0.016) for votes on crime and law enforcement in the specification without (with) control variables.

Taken together, the findings in Table 5 suggest that politicians who invest in shares of publicly listed firms learn about specific characteristics of these firms, such as their products or business transactions, which reinforces the notion that investments in equity securities prompt politicians to actively acquire and process information on these investments.

5 Sensitivity

5.1 Spousal and Dependent Holdings

In this section, we concentrate on a particular subset of politicians' investments for which we expect learning to be most intense. In our main analyses, we include all holdings from politicians' asset disclosures, which comprise investments held individually, jointly, by a spouse, and by dependents. We proceed in this fashion because we expect politicians to be involved in investment decisions of family members and thus to be exposed to information from these investments. Nevertheless, we also expect politicians to acquire and process more information on investments that they themselves initiate. In this section, we therefore limit holdings to investments held individually or jointly and repeat our main analyses for the subset of politicians that still meet our investor definitions (e.g., politicians that still qualify as first-time investors when considering solely their own holdings).

Table 6 presents the results; for first-time equity investments in the upper part, investments in firms hit by natural disasters in the middle part, and industry-specific investments in the lower

[27] We also have a substantial number of holdings in the industry 'securities & investment.' In untabulated tests, we examine these holdings instead of holdings in the industry 'commercial banks'; results resemble the results for holdings in commercial banks.

part. For simplicity, we report only the coefficients of interest; underlying models are identical to the specifications described in Section 3. Across all specifications, coefficients are very similar to our main results. Statistically, they display the same or higher levels of significance, implying that our main results are indeed driven by this subset of holdings. Economically, they vary in their magnitude in some specifications but imply similar relations throughout. For example, the coefficient of $invest_{it}$ is 0.046 (0.041) in the sample of first-time and never investors in column 4 of Table 6 (Table 2) and the coefficient of $invest\_dis_{it}$ is 0.041 (0.052) in the sample of disaster and other investors in column 4 of Table 6 (Table 3), for similar levels of the dependent variable in the respective samples.[28]

5.2 First-Time Equity and First-Time Mutual Fund Investments

We next contrast our results for investors who start to invest in equity securities with results from a corresponding analysis of investors who start to invest in mutual funds. Although the decision to start investing in mutual funds is certainly a deliberate decision, we do not expect first-time mutual fund investors to actively acquire and process information on publicly listed firms. Mutual funds invest in diversified portfolios of firms and, importantly, make investment decisions on behalf of their investors.[29] Investors have neither investment discretion nor an apparent interest in the specific securities forming part of the fund portfolio. Consequently, we do not expect to observe an association with vote deviations for politicians who start to invest in mutual fund shares.

Table 7 shows the results for the estimation of Equation 1 in the sample of first-time equity investors (column 1 and 4) and first-time mutual fund investors (column 2 and 5), and the difference in coefficients between first-time equity and first-time mutual fund investors (column 3 and 6). As expected, the coefficient of $invest_{it}$ is statistically not different from zero for first-time mutual fund investors. As in Section 4.2, it is positive for first-time equity investors and, relative to mutual fund investors, larger. The difference in coefficients amounts to 0.087 for the specification without control variables (column 3) and to 0.072 for the specification with control variables (column 6).

The results in Table 7 rely on a different sample period than our main results. For our main

[28] Precisely, the mean of pc_dev_{it} is 0.081 (0.084) for first-time investors in the years before they start investing in Table 6 (Table 2) and 0.125 (0.118) for disaster investors in the years before their investments are hit by natural disasters in Table 6 (Table 3).

[29] Despite most mutual funds holding diversified portfolios, there are funds with an investment focus in specific industries. To ensure that these industry-specific funds are excluded from our analysis, we work with the asset type 'F' (mutual fund) and ignore the asset type 'FI' (mutual fund, sector focused) in the CRP dataset on politicians' holdings.

results, we examine all years with available data, the years 2004–2014. If we compare first-time equity and first-time mutual fund investments over this sample period, coefficients are similar but their difference is smaller in magnitude and insignificant. For the results in Table 7, we rely on the years 2004–2011 and in this way eliminate potential changes in disclosure practices induced by the Stop Trading on Congressional Knowledge (STOCK) Act. We explain the nature of the STOCK Act below.

5.3 Other Sensitivity Analyses

In untabulated tests, we conduct further sensitivity analyses. We first vary the sample period and eliminate the year of and the years following the introduction of the STOCK Act in 2012. The STOCK Act increased financial disclosure requirements for politicians by mandating, among other provisions, a higher reporting frequency for asset transactions as well as online access to the annual disclosures via the respective Senate and House websites. Disclosure requirements for the data that we use, asset holdings as of calendar year end, did not change, yet politicians might have changed their disclosure practices. The STOCK Act was intended to (more) explicitly prohibit insider trading of members of Congress after a period of heightened public debate [Eggers and Hainmueller, 2013]. Politicians might have responded to this public debate by improving compliance with existing asset disclosure rules or by voluntarily disclosing additional assets, which are included in the data from CRP. Accordingly, we reestimate Equation 1 and 4 with data for the years 2004–2011. Results are weaker in terms of statistical significance but overall consistent with the main results. We do not reestimate Equation 2 and 3 since the main analysis of investments in firms hit by natural disasters rests on data only for years until 2011.

Second, we repeat our main analyses with vote proxies based on all roll-call votes, i.e., we do not exclude near-unanimous votes. While the exclusion of near-unanimous votes is common [e.g., Clinton, 2006; Cox and Poole, 2002; Snyder and Groseclose, 2000], it may lead to the exclusion of votes that are affected by learning. At the same time, we do not expect politicians to spend much time considering their vote on uncontroversial issues. In line with near-unanimous votes largely reflecting uncontroversial issues, results are slightly weaker. Across all specifications, coefficients have the same or a slightly lower significance level. Coefficients are also smaller in magnitude, but this is in part a mechanical effect of including observations with lower percentages of vote deviations.

Finally, we repeat our main analyses with alternative definitions of the dependent variable to account for some of several theoretically valid definitions of vote deviations from the party

line [Krehbiel, 2000]. In our main analyses, we operationalize the notion of party line with the vote of the party leader; in sensitivity analyses, we use the vote submitted by the majority of party members [e.g., Arceneaux et al., 2016; Carson et al., 2010; Lebo, McGlynn and Koger, 2007] and the vote of the party leader and whip [e.g., Cox and McCubbins, 1991, 2007]. In measuring the party line with the vote of the party leader and whip, we require either politician to submit a 'yea' or 'nay' vote and to agree in their vote. In addition, we drop from our samples politician-years for party whips, i.e., majority and minority whips in Senate and House. Both of the preceding steps reduce the number of observations for some samples. Across all specifications, results are slightly weaker but consistent for deviations from the vote of the party leader and whip. For deviations from the vote of the majority of party members, results are slightly weaker but very similar for first-time equity investments and investments in firms hit by natural disasters, and insignificant for industry-specific investments.

6 Conclusion

There is limited evidence that individuals' equity investment decisions can affect their non-financial decisions. This lack of evidence is striking considering its implications for our understanding of how individuals make consequential non-financial decisions, the link between capital markets and individual behavior, and the types of information investors gain from screening and monitoring their investments. Nevertheless, the lack of evidence is not surprising, as addressing this issue requires data on both individuals' investments and their non-financial decisions.

To overcome this data challenge, we utilize the setting of US politicians in which we observe both politicians' investments and one particular type of non-financial decisions, voting decisions. Our sample covers the years 2004–2014 and encompasses a universe of 944 politicians with available data on voting; 724 politicians thereof disclose at least once investments in equity securities. To understand whether politicians can learn from these investments for subsequent voting decisions, we study a likely consequential voting decision of politicians, deviations from the party line, in three different sets of tests.

In our first set of tests, we create a subsample of politicians who start investing in publicly listed firms. Politicians who start investing in publicly listed firms may learn about the relative efficiency of the US corporate sector and its governance mechanisms such as independent boards, auditors, or pay practices. Knowledge on efficient operations and effective governance structures may help politicians, in turn, to make more informed decisions on votes on government operations. Analyzing votes on government operations, we find that politicians significantly increase their deviations from the party line after they start investing, relative to control groups

of politicians. These findings suggest that individuals who invest in equity securities learn from their investments and change their consequential non-financial decisions as a result.

In the second set of tests, we examine whether politicians learn from specific events affecting their investments. Specifically, we examine the occurrence of natural disasters that hit some firms in the equity porfolios of politicians and whether these politicians, subsequently, change their voting behavior in votes on housing and community development. We focus on votes on housing and community development because the restoration of housing and infrastructure typically follows disaster occurrence and is thus frequently discussed in the context of natural disasters. In the analysis, we expect and find that politicians with investments in firms affected by natural disasters deviate more often from the party line, relative to control groups of politicians. Notably, this analysis constitutes a particularly powerful test since it relies on plausibly exogenous variation, provided by natural disasters, and hence mitigates the possibility that our results are driven by self-selection bias.

In the third set of tests, we focus on learning from investments in specific industries. When politicians invest in pharmaceutical companies they may learn about health-related issues such as cancer and diabetes. In turn, this may change their voting behavior on agriculture and food bills. We find that investments in pharmaceutical companies are associated with higher deviations from the party line in votes on agriculture and food. Similarly, investments in the tobacco industry can shift politicians' attention to illegal trade in tobacco products and efforts by tobacco firms and enforcement agencies to limit this trade, and can thus increase politicians' awareness on issues related to votes on crime and law enforcement. We find that investments in tobacco companies are associated with higher deviations from the party line in votes on crime and law enforcement. Taken together, our findings provide initial evidence on the role of learning from public equity markets on non-financial decision making.

A Appendix

Table A.1 **Variable Definitions**

Variable	Description
pc_dev_{it}	Percentage of votes for which politicians deviate from the party line, i.e., politicians vote 'yea' ('nay') but the party leader votes 'nay' ('yea').
$invest_{it}$	Indicator variable equal to one in all years including and following the year of first-time investment.
$invest\_dis_{it}$	Indicator variable equal to one in all years including and following the year in which at least one holding is hit by a natural disaster.
$invest\_dis\_c_{it}$	Indicator variable equal to one in all years in which politicians report at least one holding in a firm that is hit by a natural disaster.
$invest\_ind\_c_{it}$	Indicator variable equal to one in all years in which politicians report at least one industry-specific holding.
$benefit\_ind_{it}$	Indicator variable equal to one in all years in which politicians report at least one holding in industries directly related to the vote category.
$CONTROLS_{it}$	
$dev\_ideology_{it}$	Absolute value of the difference between politicians' ideology and the median ideology of all members of their party in their chamber. We measure ideology with the first dimension of DW-NOMINATE scores.
$chairman_{it}$	Indicator variable equal to one if politicians are chairman, vice chairman, or ranking member of a congressional committee.
$powercom_{it}$	Indicator variable equal to one if politicians serve on a power committee: Appropriations, Energy and Commerce, Rules, and Ways and Means in the House; and Appropriations, Commerce, Science, and Transportation, and Finance in the Senate.
$leader_{it}$	Indicator variable equal to one if politicians are Speaker, majority whip, or minority whip.
$ln(seniority)_{it}$	Natural logarithm of politicians' seniority, i.e., the number of terms served including the current term.
$ln(age)_{it}$	Natural logarithm of politicians' age.
pc_passed_{it}	Percentage of votes in which politicians participate and which are successful (e.g., bill passes, motion is agreed to).

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Variable	**Description**
$pc\_key\_vote_{it}$	Percentage of votes in which politicians participate and which are classified as key votes by QC Almanac.
$republican_{it}$	Indicator variable equal to one (zero) if politicians are members of the Republican (Democratic) Party.
$house_{it}$	Indicator variable equal to one (zero) if politicians are members of the House (Senate).

Notes: i denotes politician and t year.

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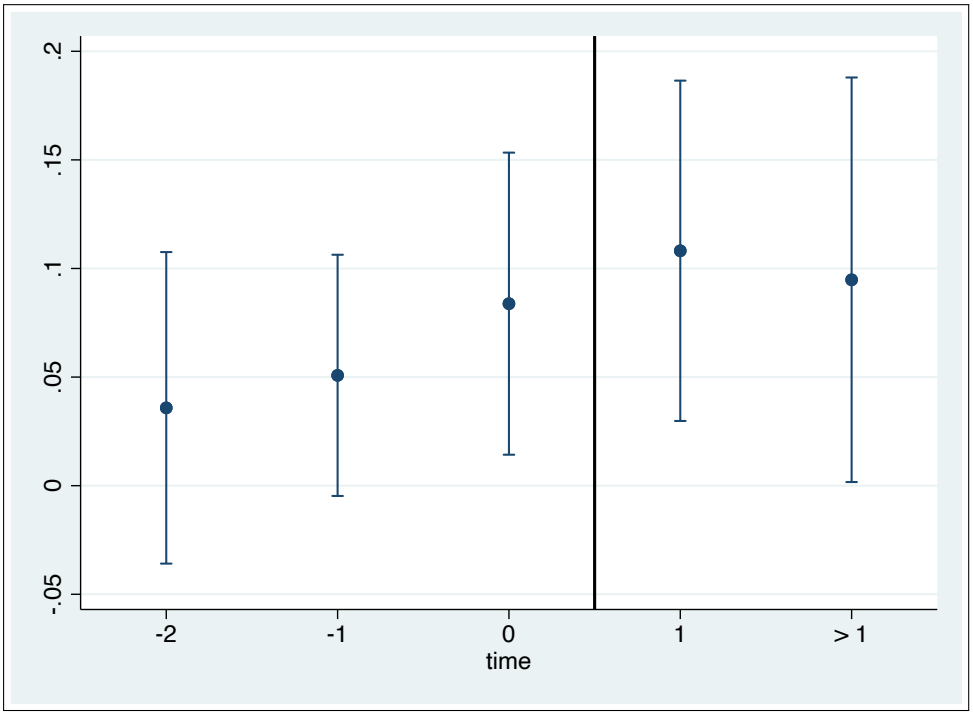
Figures

Figure 1: **Changes in Voting Behavior Around First-Time Equity Investments**

Regression Coefficients



Notes: The figure displays regression coefficients for the subperiods around the year of first-time equity investment. We estimate the model in Column 2 of Table 2 but replace the indicator variable $invest_{it}$ with separate indicator variables for five subperiods: the two years before first-time investment (time $= -2$ and time $= -1$), the year of first-time investment (time $= 0$), the year following first-time investment (time $= 1$), and all remaining years following first-time investment (time > 1). We omit indicator variables for all years preceding the two years before first-time investment; these years thus serve as reference category. The figure shows the coefficient estimates and their 95% confidence intervals.

Tables

Table 1: **Summary Statistics**

Panel A: **First-Time Equity Investments**

	mean	***sd***	***min***	***med***	***max***		***mean***	***sd***	***min***	***med***	***max***
pc_dev_{it}	0.095	0.152	0.000	0.000	1.000	$invest_{it}$	0.257				
FT	0.092	0.151	0.000	0.000	1.000	FT	0.630				
N	0.097	0.152	0.000	0.000	1.000	N	0.000				
$dev\_ideology_{it}$	0.118	0.085	0.000	0.105	0.464	$chairman_{it}$	0.038				
FT	0.114	0.085	0.000	0.102	0.464	FT	0.050				
N	0.120	0.084	0.001	0.108	0.368	N	0.030				
$powercom_{it}$	0.297					$leader_{it}$	0.001				
FT	0.354					FT	0.000				
N	0.257					N	0.002				
$seniority_{it}$	5.515	4.559	1.000	4.000	25.000	age_{it}	56.400	10.967	28.000	57.000	88.000
FT	5.846	4.312	1.000	5.000	17.000	FT	58.078	10.379	28.000	58.000	88.000
N	5.286	4.710	1.000	4.000	25.000	N	55.239	11.216	31.000	55.000	85.000
$ln(seniority)_{it}$	1.347	0.891	0.000	1.386	3.219	$ln(age)_{it}$	4.013	0.202	3.332	4.043	4.477
pc_passed_{it}	0.482	0.197	0.000	0.500	1.000	$pc\_key\_vote_{it}$	0.026	0.061	0.000	0.000	1.000
FT	0.481	0.200	0.000	0.500	1.000	FT	0.026	0.062	0.000	0.000	0.500
N	0.482	0.196	0.000	0.500	1.000	N	0.026	0.060	0.000	0.000	1.000
$republican_{it}$	0.499					$house_{it}$	0.963				
FT	0.457					FT	0.937				
N	0.529					N	0.982				

Panel B: **Investments in Firms Hit by Natural Disasters**

	mean	***sd***	***min***	***med***	***max***		***mean***	***sd***	***min***	***med***	***max***
pc_dev_{it}	0.103	0.150	0.000	0.053	1.000	$invest\_dis_{it}$	0.187				
						$invest\_dis\_c_{it}$	0.099				
$dev\_ideology_{it}$	0.116	0.089	0.000	0.098	0.487	$chairman_{it}$	0.057				
$powercom_{it}$	0.398					$leader_{it}$	0.011				
$seniority_{it}$	6.150	4.232	1.000	6.000	21.000	age_{it}	57.012	9.915	30.000	57.000	88.000
$ln(seniority)_{it}$	1.546	0.794	0.000	1.792	3.045	$ln(age)_{it}$	4.028	0.179	3.401	4.043	4.477
pc_passed_{it}	0.414	0.160	0.000	0.375	1.000	$pc\_key\_vote_{it}$	0.019	0.033	0.000	0.000	0.167
$republican_{it}$	0.423					$house_{it}$	0.997				

Panel C: **Industry-Specific Investments**

	mean	***sd***	***min***	***med***	***max***		***mean***	***sd***	***min***	***med***	***max***
P & AF											
pc_dev_{it}	0.189	0.243	0.000	0.111	1.000	$invest\_ind\_c_{it}$	0.301				
$benefit\_ind_{it}$	0.163										
$dev\_ideology_{it}$	0.108	0.083	0.000	0.093	0.487	$chairman_{it}$	0.091				
$powercom_{it}$	0.473					$leader_{it}$	0.012				
$seniority_{it}$	6.385	4.602	1.000	6.000	30.000	age_{it}	59.392	9.978	30.000	60.000	91.000
$ln(seniority)_{it}$	1.559	0.829	0.000	1.792	3.401	$ln(age)_{it}$	4.069	0.174	3.401	4.094	4.511
pc_passed_{it}	0.547	0.235	0.000	0.500	1.000	$pc\_key\_vote_{it}$	0.095	0.258	0.000	0.000	1.000
$republican_{it}$	0.504					$house_{it}$	0.782				
T & CL											
pc_dev_{it}	0.146	0.221	0.000	0.000	1.000	$invest\_ind\_c_{it}$	0.065				
$benefit\_ind_{it}$	0.115										
$dev\_ideology_{it}$	0.109	0.083	0.000	0.093	0.487	$chairman_{it}$	0.084				
$powercom_{it}$	0.456					$leader_{it}$	0.010				
$seniority_{it}$	6.275	4.536	1.000	5.000	30.000	age_{it}	58.926	9.917	30.000	59.000	91.000
$ln(seniority)_{it}$	1.541	0.828	0.000	1.609	3.401	$ln(age)_{it}$	4.061	0.174	3.401	4.078	4.511
pc_passed_{it}	0.700	0.268	0.000	0.739	1.000	$pc\_key\_vote_{it}$	0.105	0.252	0.000	0.000	1.000
$republican_{it}$	0.514					$house_{it}$	0.834				

Notes: The table displays summary statistics for the analysis of first-time equity investments in Panel A, investments in firms hit by natural disasters in Panel B, and industry-specific investments in Panel C. Panel A depicts summary statistics for the entire sample ($N = 1,472$), first-time investors (FT, $N = 602$), and politicians that never invest (N, $N = 870$). For the samples in Panel A, we limit votes to the category 'government operations and politics' as defined by Congressional Research Service. Panel B depicts summary statistics for politicians who report at least one equity investment in their first of Congress in our sample period (investors, $N = 931$), including politicians with holdings in firms hit by natural disasters ($N = 264$). For the sample in Panel B, we limit votes to the category 'housing and community development' as defined by Congressional Research Service. Panel C depicts summary statistics for the relation between investments in the pharmaceutical industry and votes on agriculture and food (P & AF, $N = 2,978$), and investments in the tobacco industry and votes on crime and law enforcement (T & CL, $N = 3,431$). For the samples in Panel C, we limit politicians to investors. For the variable $benefit\_ind_{it}$, we select industries directly related to the vote category; 'agricultural services/products' and 'food processing & sales' for P & AF, and 'defense aerospace,' 'defense electronics,' 'misc defense,' and 'lawyers/law firms' for T & CL. All samples cover the years 2004–2014; for the sample in Panel B, we have available observations for 2005 and 2007–2011. i denotes politician and t year. Appendix A.1 lists variable definitions.

Table 2: **First-Time Equity Investments**

Main Model

	pc_dev_{it}			
Control group	*first-time investors*		*first-time and never investors*	
	FT		*FT & N*	
$invest_{it}$	0.055**	0.054**	0.043***	0.041***
	(0.022)	(0.022)	(0.014)	(0.014)
$dev\_ideology_{it}$		−0.569		−0.124
		(0.383)		(0.231)
$chairman_{it}$		−0.046***		−0.024
		(0.017)		(0.015)
$powercom_{it}$		−0.090*		−0.087***
		(0.054)		(0.031)
$leader_{it}$				−0.289**
				(0.118)
$ln(seniority)_{it}$		−0.013		0.009
		(0.026)		(0.016)
$ln(age)_{it}$		1.470		0.343
		(1.292)		(0.687)
pc_passed_{it}		0.019		0.018
		(0.110)		(0.075)
$pc\_key\_vote_{it}$		−0.045		0.091
		(0.445)		(0.225)
Fixed effects				
Year	yes	yes	yes	yes
Politician	yes	yes	yes	yes
adj. R^2	0.380	0.394	0.403	0.410
N	602	602	1,472	1,472

Notes: The table displays the regression results for the analysis of first-time equity investments and votes on government operations. In column 1 and 2, the sample includes only politicians with first-time investments in equity securities; in column 3 and 4, the sample includes in addition politicians that never invest in equity securities. The sample period covers the years 2004–2014. We limit votes to the category 'government operations and politics' as defined by Congressional Research Service. i denotes politician and t year. pc_dev_{it} is the percentage of votes for which politicians deviate from the party line, i.e., politicians vote 'yea' ('nay') but the party leader votes 'nay' ('yea'). $invest_{it}$ is an indicator variable equal to one in all years including and following the year of first-time investment. The remaining variables are control variables defined in Appendix A.1. Standard errors are clustered by politician and denoted below the coefficients in parentheses. *, **, and *** indicate significance at the 0.1, 0.05, and 0.01 level, respectively.

Table 3: **Investments in Firms Hit by Natural Disasters**

Main Model

	pc_dev_{it}			
Control group	*disaster investors*		*disaster and other investors*	
	DI		*DI & I*	
$invest\_dis_{it}$	0.085**	0.085**	0.058**	0.052**
	(0.037)	(0.033)	(0.023)	(0.021)
$dev\_ideology_{it}$		1.499***		0.917***
		(0.523)		(0.237)
$chairman_{it}$		−0.032		−0.070***
		(0.021)		(0.025)
$powercom_{it}$		−0.108**		−0.053**
		(0.046)		(0.021)
$leader_{it}$		−0.222***		−0.152***
		(0.048)		(0.054)
$ln(seniority)_{it}$		0.003		0.013
		(0.030)		(0.020)
$ln(age)_{it}$		2.041		−0.089
		(1.273)		(0.694)
pc_passed_{it}		0.027		−0.174**
		(0.104)		(0.083)
$pc\_key\_vote_{it}$		0.780		0.073
		(1.587)		(0.621)
Fixed effects				
Year	yes	yes	yes	yes
Politician	yes	yes	yes	yes
adj. R^2	0.283	0.327	0.257	0.281
N	264	264	931	931

Notes: The table displays the regression results for the analysis of investments in firms hit by natural disasters and votes on housing and community development. In column 1 and 2, the sample includes only investors with investments in firms that are hit by natural disasters; in column 3 and 4, the sample includes in addition other investors, i.e., politicians who report at least one equity investment in their first year of Congress in our sample period. The sample period covers the years 2004–2014 with available observations for the years 2005 and 2007–2011. We limit votes to the category 'housing and community development' as defined by Congressional Research Service. i denotes politician and t year. pc_dev_{it} is the percentage of votes for which politicians deviate from the party line, i.e., politicians vote 'yea' ('nay') but the party leader votes 'nay' ('yea'). $invest\_dis_{it}$ is an indicator variable equal to one in all years including and following the year in which at least one holding is hit by a natural disaster. The remaining variables are control variables defined in Appendix A.1. Standard errors are clustered by politician and denoted below the coefficients in parentheses. *, **, and *** indicate significance at the 0.1, 0.05, and 0.01 level, respectively.

Table 4: **Investments in Firms Hit by Natural Disasters**

Correlations

	pc_dev_{it}			
	disaster years		*placebo years*	
$invest\_dis\_c_{it}$	0.062***	0.056***	0.003	0.002
	(0.021)	(0.019)	(0.019)	(0.018)
$dev\_ideology_{it}$		0.949***		0.942***
		(0.237)		(0.238)
$chairman_{it}$		−0.070***		−0.071***
		(0.025)		(0.025)
$powercom_{it}$		−0.051**		−0.054***
		(0.021)		(0.021)
$leader_{it}$		−0.138***		−0.158***
		(0.045)		(0.055)
$ln(seniority)_{it}$		0.017		0.018
		(0.020)		(0.021)
$ln(age)_{it}$		−0.206		−0.083
		(0.678)		(0.712)
pc_passed_{it}		−0.177**		−0.179**
		(0.081)		(0.080)
$pc\_key\_vote_{it}$		0.101		0.185
		(0.619)		(0.653)
Fixed effects				
Year	yes	yes	yes	yes
Politician	yes	yes	yes	yes
adj. R^2	0.260	0.283	0.249	0.275
N	931	931	931	931

Notes: The table displays the regression results for the correlation analysis of investments in firms hit by natural disasters and votes on housing and community development. The sample period covers the years 2004–2014 with available observations for the years 2005 and 2007–2011, and the sample corresponds to the sample of disaster and other investors from column 3 and 4 of Table 3. i denotes politician and t year. pc_dev_{it} is the percentage of votes for which politicians deviate from the party line, i.e., politicians vote 'yea' ('nay') but the party leader votes 'nay' ('yea'). In column 1 and 2, $invest\_dis\_c_{it}$ is an indicator variable equal to one in all years in which politicians report at least one holding in a firm that is hit by a natural disaster. In column 3 and 4, we randomly reassign disaster years among investors with at least one investment in a firm hit by a natural disasters in the sample period. The remaining variables are control variables defined in Appendix A.1. Standard errors are clustered by politician and denoted below the coefficients in parentheses. *, **, and *** indicate significance at the 0.1, 0.05, and 0.01 level, respectively.

Table 5: **Industry-Specific Investments**

Correlations

	pc_dev_{it}							
Vote category	*agriculture and food*				*crime and law enforcement*			
Industry	*pharmaceuticals*		*commercial banks*		*tobacco*		*commercial banks*	
	P & AF		*placebo*		*T & CL*		*placebo*	
$invest\_ind\_c_{it}$	0.028*	0.030*	−0.006	−0.003	0.062**	0.059**	−0.018	−0.016
	(0.017)	(0.017)	(0.016)	(0.016)	(0.026)	(0.025)	(0.013)	(0.013)
$benefit\_ind_{it}$	−0.002	−0.002	0.009	0.008	−0.017	−0.016	−0.003	−0.003
	(0.023)	(0.023)	(0.023)	(0.023)	(0.017)	(0.016)	(0.016)	(0.016)
$dev\_ideology_{it}$		0.003		−0.019		0.567***		0.565***
		(0.206)		(0.207)		(0.181)		(0.180)
$chairman_{it}$		−0.065***		−0.064***		−0.093***		−0.094***
		(0.018)		(0.018)		(0.019)		(0.019)
$powercom_{it}$		−0.026		−0.026		−0.092***		−0.091***
		(0.020)		(0.020)		(0.017)		(0.018)
$leader_{it}$		−0.026		−0.021		−0.085**		−0.085**
		(0.073)		(0.073)		(0.039)		(0.040)
$ln(seniority)_{it}$		0.007		0.008		0.030**		0.029**
		(0.017)		(0.017)		(0.014)		(0.014)
$ln(age)_{it}$		0.024		0.046		1.138**		1.147**
		(0.702)		(0.707)		(0.495)		(0.490)
pc_passed_{it}		−0.053		−0.052		−0.036		−0.036
		(0.040)		(0.040)		(0.024)		(0.024)
$pc\_key\_vote_{it}$		0.205***		0.205***		0.112***		0.113***
		(0.055)		(0.055)		(0.032)		(0.032)
Fixed effects								
Year	yes	yes	yes	yes	yes	yes	yes	yes
Politician	yes	yes	yes	yes	yes	yes	yes	yes
adj. R^2	0.167	0.183	0.166	0.182	0.064	0.099	0.063	0.098
N	2,978	2,978	2,978	2,978	3,431	3,431	3,431	3,431

Notes: The table displays the regression results for the correlation analysis of industry-specific investments. We limit votes to the category 'agriculture and food' in columns 1–4 and to 'crime and law enforcement' in columns 5–8. We study investments in the industry 'pharmaceuticals/health products' in columns 1–2 , 'tobacco' in columns 5–6, and 'commercial banks' in columns 3–4 and 7–8. We limit politicians to those who report at least one equity investment in their first year of Congress in our sample period. The sample period covers the years 2004–2014. i denotes politician and t year. pc_dev_{it} is the percentage of votes for which politicians deviate from the party line, i.e., politicians vote 'yea' ('nay') but the party leader votes 'nay' ('yea'). $invest\_ind\_c_{it}$ is an indicator variable equal to one in all years in which politicians report at least one industry-specific holding. $benefit\_ind_{it}$ is an indicator variable equal to one in all years in which politicians report at least one holding in industries directly related to the vote category; 'agricultural services/products' and 'food processing & sales' in columns 1–4, and 'defense aerospace,' 'defense electronics,' 'misc defense,' and 'lawyers/law firms' in columns 5–8. The remaining variables are control variables defined in Appendix A.1. Standard errors are clustered by politician and denoted below the coefficients in parentheses. *, **, and *** indicate significance at the 0.1, 0.05, and 0.01 level, respectively.

Table 6: **Sensitivity**

Spousal and Dependent Holdings

	pc_dev_{it}			
First-Time Equity Investments: Main Model				
Control group	*first-time investors*		*first-time and never investors*	
$invest_{it}$	0.060**	0.056**	0.049***	0.046***
	(0.025)	(0.025)	(0.016)	(0.015)
$CONTROLS_{it}$	no	yes	no	yes
N	519	519	1,389	1,389
Investments in Firms Hit by Natural Disasters: Main Model				
Control group	*disaster investors*		*disaster and other investors*	
$invest\_dis_{it}$	0.065**	0.064**	0.046**	0.041**
	(0.029)	(0.026)	(0.020)	(0.019)
$CONTROLS_{it}$	no	yes	no	yes
N	196	196	799	799
Investments in Firms Hit by Natural Disasters: Correlations				
	disaster years			
$invest\_dis\_c_{it}$	0.058***	0.057***		
	(0.018)	(0.017)		
$CONTROLS_{it}$	no	yes		
N	799	799		
Industry-Specific Investments: Correlations				
	P & AF		*T & CL*	
$invest\_ind\_c_{it}$	0.038**	0.042**	0.056**	0.053**
	(0.017)	(0.017)	(0.028)	(0.026)
$benefit\_ind_{it}$	−0.012	−0.012	−0.020	−0.021
	(0.024)	(0.023)	(0.017)	(0.017)
$CONTROLS_{it}$	no	yes	no	yes
N	2,662	2,662	3,069	3,069

Notes: The table displays the regression results for the sensitivity analysis that excludes holdings of spouses and dependents; for first-time equity investments (Table 2), investments in firms hit by natural disasters (main model in Table 3 and correlation analysis in Table 4), investments in the pharmaceutical industry and votes on agriculture and food (*P & AF*, Table 5), and investments in the tobacco industry and votes on crime and law enforcement (*T & CL*, Table 5). i denotes politician and t year. pc_dev_{it} is the percentage of votes for which politicians deviate from the party line, i.e., politicians vote 'yea' ('nay') but the party leader votes 'nay' ('yea'). $invest_{it}$ is an indicator variable equal to one in all years including and following the year of first-time investment. $invest\_dis_{it}$ is an indicator variable equal to one in all years including and following the year in which at least one holding is hit by a natural disaster. $invest\_dis\_c_{it}$ is an indicator variable equal to one in all years in which politicians report at least one holding in a firm that is hit by a natural disaster. $invest\_ind\_c_{it}$ is an indicator variable equal to one in all years in which politicians report at least one industry-specific holding. $benefit\_ind_{it}$ is an indicator variable equal to one in all years in which politicians report at least one holding in industries directly related to the vote category; 'agricultural services/products' and 'food processing & sales' in columns 1–2, and 'defense aerospace,' 'defense electronics,' 'misc defense,' and 'lawyers/law firms' in columns 3–4. $CONTROLS_{it}$ denotes the set of control variables defined in Appendix A.1. All models include fixed effects for politicians and years. Standard errors are clustered by politician and denoted below the coefficients in parentheses. *, **, and *** indicate significance at the 0.1, 0.05, and 0.01 level, respectively.

Table 7: **Sensitivity**

First-Time Equity and First-Time Mutual Fund Investments

	pc_dev_{it}					
Investment	*equity*	*mutual funds*	Δ	*equity*	*mutual funds*	Δ
$invest_{it}$	0.055*	−0.032	0.087**	0.045	−0.028	0.072*
	(0.031)	(0.029)	(0.042)	(0.028)	(0.029)	(0.040)
$dev\_ideology_{it}$				−0.629	0.732*	−1.361**
				(0.473)	(0.376)	(0.602)
$chairman_{it}$				−0.042**	0.040	−0.082
				(0.019)	(0.060)	(0.062)
$powercom_{it}$				0.002	−0.010	0.012
				(0.039)	(0.031)	(0.050)
$ln(seniority)_{it}$				−0.036	−0.031	−0.005
				(0.042)	(0.030)	(0.051)
$ln(age)_{it}$				2.504**	−0.820	3.324**
				(1.224)	(0.784)	(1.449)
pc_passed_{it}				0.146***	0.261**	−0.114
				(0.042)	(0.108)	(0.115)
$pc\_key\_vote_{it}$				0.784***	0.520	0.264
				(0.178)	(0.370)	(0.409)
Fixed effects						
Year	yes	yes		yes	yes	
Politician	yes	yes		yes	yes	
adj. R^2	0.415	0.303		0.441	0.337	
N	297	296		297	296	

Notes: The table displays the regression results for the sensitivity analysis of first-time equity investments and votes on government operations with an alternative control group: first-time mutual fund investors. In column 1 and 4, the sample includes politicians with first-time investments in equity securities; in column 2 and 5, the sample includes politicians with first-time investments in mutual fund shares. Column 3 (6) shows the difference in coefficients for column 1 and 2 (column 4 and 5). For equity (mutual fund) investments, the sample excludes politicians who start to invest in mutual fund shares (equity securities). We limit the sample period to the years 2004–2011 and votes to the category 'government operations and politics' as defined by Congressional Research Service. i denotes politician and t year. pc_dev_{it} is the percentage of votes for which politicians deviate from the party line, i.e., politicians vote 'yea' ('nay') but the party leader votes 'nay' ('yea'). $invest_{it}$ is an indicator variable equal to one in all years including and following the year of first-time investment. The remaining variables are control variables defined in Appendix A.1. Standard errors are clustered by politician and denoted below the coefficients in parentheses. *, **, and *** indicate significance at the 0.1, 0.05, and 0.01 level, respectively.