The Invisible Handshake:
State Pensions and Corporate Political Contributions

Jun Tu [a], Jingshu Wen [b*], Fan Zhang [c], Haofei Zhang [d]

[a] *Shanghai Jiao Tong University, Singapore Management University*

[b*] *University of Oxford*

[c] *Bentley University*

[d] *Nankai University*

Abstract

We investigate whether US politicians exchange favors with corporations by influencing public pension fund investments, as anecdotal evidence suggests that U.S. politicians may influence public pension fund investments to obtain more corporate campaign contributions. We find that listed firms with higher state pension ownership donate significantly more to politicians and committees from the state. Using news articles from Reuters, we find that politicians' names tend to co-occur with both pension and campaign donations, especially those from states with high levels of corruption. Contrary to politicians' alleged concern for pension performance and funding shortfalls, we find that political influence hurts both state pension and portfolio firm performance. These effects are stronger for states with higher corruption index values, for firms with worse corporate governance, for donations to super PACs, and after the Supreme Court loosened soft money restrictions in 2010. Exploiting state-level variation on soft money restrictions, our difference-in-differences tests show that campaign finance freedom increases the campaign donations that politicians receive from state pension portfolio firms. The results suggest a new mechanism for political rent-seeking, which may exacerbate U.S. public pension funds' underperformance and unfunded liabilities.

Keywords: Campaign finance regulation; Corruption; Pension; Political donation; Political rent-seeking

JEL Classification: D72; D73; H75; P37

***Corresponding author**: Jingshu Wen. Email: Jingshu.Wen.DPHIL@said.oxford.edu.

Address: Said Business School, Park End St, Oxford, OX1 1HP, UK.

1. Introduction

Public pension funds have faced disinvestment pressure from activists on issues ranging from apartheid in South Africa in the 1980s to tobacco consumption in the 1990s to climate change recently. However, many public pension funds are reluctant to sacrifice financial returns for social objectives, such as California state pension CalPERS opposing pressure to divest from high-emissions oil and gas companies.[1] Despite politicians' alleged concerns about pension performance and funding shortfalls, studies show that politicians on U.S. public pension boards are associated with underperformance (Andonov et al., 2017, 2018).

Do U.S. politicians use their discretionary power over public pension funds to improve performance or extract political rents? What is the mechanism via which politicians influence public pensions to achieve their goals? Anecdotal evidence suggests that politically affiliated board members of California state pension CalPERS solicit campaign donations from companies with which CalPERS has business dealings.[2] One mechanism is that politicians pressure state pension funds to invest in their campaign donors or solicit contributions from state pension portfolio firms. In recent years, the quid pro quo between politicians and corporations may increase due to the loosening of campaign finance regulations. The U.S. Supreme Court ruling on Citizens United v. FEC in 2010 relaxed soft money restrictions and enabled corporations to donate unlimited amounts to independent political committees. After 2010, politicians may give corporations more economic resources from state pensions because they can expect more donations in return, which can further their political influence.

To investigate the motive and mechanism of political influence on public pension funds, we use a sample of U.S.-listed firms from 2000 to 2022. State officials are less likely to invest state pensions in listed firms to boost local employment than private firms and real estate, as documented by Andonov et al. (2018). Using Public Plans Data (PPD) and data from the Federal Election Commission (FEC) and FactSet, we find that firms with the highest political contributions are in the finance, healthcare, and industrial goods industry, consistent with previous studies.

We provide four main findings for the exchange of favors between state officials and state pension portfolio firms. First, we show that state pension portfolio firms tend to donate more to

[1] https://www.eenews.net/articles/pension-funds-in-liberal-states-are-conservative-on-climate-change/

[2] For example, CalPERS board member Sean Harrigan openly solicited $300,000 campaign donations from investment companies that received-lucrative business deals from CalPERS (Malanga, 2013).

state officials than non-portfolio firms. Some firms have high pension ownership from a state and significant contributions to politicians and political committees from the state.[3] Our regression analysis shows that firms with higher state pension ownership are significantly more likely to make political campaign contributions, and the pattern persists after we link the states of each firm's pension owners to the states of the politicians or political committees that receive the firm's donations. After controlling for confounding effects, we show that a one percentage point increase in state pension ownership is associated with a 25.37 percentage point increase in corporate donations to state officials and committees. The pattern remains robust after adjusting for firm and pension size.

Second, as additional evidence on political influence, we test whether news articles are likely to mention our sample politician names with both pension funds and campaign donations. Using Reuters Historical News Archives, we count the frequency of these keyword combinations in news articles: politician names with "pension" and politician names with "campaign" or "donation." The two series have a significantly positive correlation. The number of articles that link politicians to pension funds has strong explanatory power for the number of articles that link them to campaign donations, both before and after controlling for macroeconomic effects as well as politician and state characteristics. Politicians may influence state policies and public sentiment to affect both state pension funds and their campaign donations.

Third, we show the welfare effects of state pension ownership in campaign donors. If politicians aim to increase their chance of re-election success for selecting more competent managers or for fighting activist pressure, their influence can improve pension performance. If politicians influence pension investments for rent-seeking, they may prioritize managers' willingness to make campaign donations over managers' performance, which hurts pension performance. We find that state pension ownership in campaign donors is associated with deteriorating pension funding ratios and returns. In addition, firms with high pension ownership and significant political contributions have deteriorating performance as measured by ROA and stock returns in the coming election cycles. Politically affiliated trustees on pension boards may pressure investment managers to tilt pension portfolios toward their campaign donors, or solicit

[3] For example, in 2016, Centene Corp, whose 2.75 million shares outstanding are owned by New York government pension funds, gave $ 32,000 to political candidates from New York.

donations from existing state pension portfolio firms.

Fourth, we conduct channel tests to understand the motives of politicians and managers. Using aggregate index measures, we find that firms owned by pensions from more corrupt or politically extreme states are significantly more likely to contribute to politicians and parties from the states of their pension owners. In addition, the co-occurrence of politician names and "pension" and "campaign" is more likely for politicians from states with higher levels of corruption. States with high levels of corruption tend to have weaker legal institutions, which may induce politicians to abuse their power over state pensions. The concentration of the quid pro quo in states with high levels of corruption supports our political rent-seeking hypothesis and dispels the concern that state officials influence state pensions to invest in their campaign donors due to familiarity bias.

As state pension portfolio firms do not benefit from the campaign donations, we test whether these firms are poorly governed, whose managers may obtain private benefits in return for making political donations. We use different corporate governance measures and find a stronger pattern of the quid pro quo in firms with poorer corporate governance, including those with high managerial compensation and controversial investments. The results suggest corporate agency issues in state pension portfolio firms. Like Bortolotti, Fotak, and Megginson (2015), we show the negative effects of political influence on listed firms' financial performance. However, donations may strengthen political connections that generally benefit firms, as shown by Acemoglu et al. (2016), Amore and Bennedsen (2013), Bertrand et al. (2014), Cooper et al. (2010), Faccio (2006), Ferguson et al. (2008), Fisman (2001), Goldman et al. (2009), Jayachandran (2006), and Vidal et al. (2012).

After showing the mechanism for political rent-seeking, we test whether the quid pro quo increases after the loosening of campaign finance regulation in 2010. The Supreme Court decision on Citizens United v. FEC limits the ability of Congress and states to regulate soft money and invalidates previous state-level restrictions on independent expenditures. The primary vehicle for soft money is super PACs, independent expenditure-only committees created in 2010. We find that corporate contributions to PACs more than double from 2008 to 2018, mainly driven by those to super PACs since 2010. Our subsample regressions show a stronger pattern of the quid pro quo after 2010. The correlation between pension ownership and corporate donations to candidates increases by sevenfold, and that between pension ownership and corporate contributions to super

PACs increases by twelvefold from the pre-2010 to post-2010 period, whose statistical significance changes from 5% to 1%. In addition, the negative correlation between state pensions' funding ratios and portfolio political contributions is significant only after 2010, and that between firm performance and pension ownership is significant only after 2010.

To strengthen the causality, we use a difference-in-differences (DID) approach that exploits state-level variation in soft money restrictions before 2010. As of January 2010, 23 states have restrictions on corporate independent campaign expenditures (Akey et al., 2022; Klumpp et al., 2016; Slattery et al., 2023), where Citizens United v. FEC leads to an increase in politicians' ability to receive soft money, while politicians in the 28 states without previous restrictions do not experience such a change. We use states with previous restrictions as the treatment group and states without previous restrictions as the control group. Our DID tests show that firms' total political contributions to the treatment group increase by 3 percentage points relative to those to the control group after 2010. Firms' performance also relatively deteriorates after 2010 if their pension owners are from the treatment group. Overall, our results suggest that some politicians use their discretionary power over public pensions to extract rents, rather than serve taxpayers' interests, and that their rent extraction increases with more campaign finance freedom.

We show a new mechanism for political rent-seeking and corruption.[4] Exchanges of favors between politicians and the private sector are widely documented, such as that between government and media (Szeidl and Szucs, 2021), government and buyout funds (Faccio and Hsu, 2017), municipal bond underwriters and state politicians (Butler et al., 2009), as well as provincial officials and central officials' family firms (Chen and Kung, 2018). Political decision-making via pork barrel spending leads to excessive public spending (Maskin and Tirole, 2019), reduces public goods provision, and distorts public policy efficiency (Battaglini and Coate, 2007, 2008). Unlike pork barrel spending that benefits politicians' constituents at the expense of taxpayers, the quid pro quo we document does not benefit shareholders or taxpayers, and it may exacerbate U.S. public pension funds' underperformance and funding shortfalls.[5]

[4] Unlike pork barrel politics that benefit politicians' constituents at the expense of taxpayers, the exchange of favors between politicians and corporations we document hurts pension holders and taxpayers. Also, unlike the vote-buying arrangements in clientelism (Anderson, Francois and Kotwal, 2015), the quid pro quo in our study is between politicians and campaign donors via public pension investments.

[5] The increasingly large funding shortfall for U.S. public pensions has reached $1.57 trillion at the end of

Our findings imply that soft money regulation can reduce corruption and improve social welfare, contributing to the debate on campaign finance regulation. Although campaign finance freedom is based on free political speech, it can increase political rents by reducing political checks and balances. Without sufficient checks and balances, politicians may use their information and power to extract rents (Persson et al., 1997). Because campaign advertising provides information to voters (Prat, 2002), unrestricted campaign contributions hinder election information provision (Coate, 2004), cause policy biases that hurt the median voter (Prat, 2002), and reduce political competition (Avis et al., 2022).

Our findings indicate loopholes in public pension fund governance. The accounting regime of U.S. public pension funds rewards risk-taking (Andonov et al., 2017). Their governance loopholes may allow state pensions to overweight underperforming local investments (Hochberg and Rauh, 2013) and to have more politically appointed board members (Andonov et al., 2018). Andonov et al. (2018) show that political contributions from the financial industry are associated with worse state pension performance, while our goal is to understand the mechanism for political rent-seeking via state pensions.

The remainder of this paper is organized as follows. Section 2 presents the background and our main hypotheses. Section 3 describes the data and our methods, and Section 4 presents the results and discussion for our main tests. Section 5 presents our economic channel tests, and Section 6 reports our additional tests. Section 7 concludes the paper.

2. Background and Hypotheses

The Supreme Court rulings on Citizens United v. FEC in 2010 were mainly based on freedom of speech in the First Amendment to the United States Constitution, and on the assumption that independent expenditures are not used for quid pro quo corruption. Campaign spending surged after the Supreme Court relaxed the restrictions on corporate soft money donations. According to OpenSecrets, in 2020, about $1 billion was spent on campaign advertising by dark money groups, where the identity of the actual donors is hidden behind non-profit organizations and shell

2022 (Equable Institute, 2023). Underfunded public pensions may increase taxpayers' burden and trigger municipal bankruptcy (Dippel, 2022). For example, most of California's $6 billion tax increase in 2012 went into its underfunded teacher pension system (Wall Street Journal, 2015).

companies.[6] The dark money groups donate to super PACs, influencing election outcomes via advertising.[7]

The 2010 Supreme Court decision increases politicians' freedom to receive campaign donations, which may increase corruption. There is a tradeoff between political rent-seeking and regulatory burdens. Some studies suggest that more political freedom can improve efficiency. Bandiera et al. (2009) find that bureaucratic inefficiency outweighs corruption in their sample of generic goods procurement in the Italian public sector. Gratton et al. (2021) also argue that too many laws passed due to political instability may turn the economy into dysfunctional inefficiency. Other studies document the costs of political discretion. Curto-Grau and Zudenkova (2018) show that legislators' party discipline increases discretionary spending, which is more significant when the party's and constituents' preferences are misaligned. Mehmood (2022) shows that presidential discretion in appointing judges impedes the rule of law. Politicians can use discretion in selecting public employees to hire connected but incompetent individuals (Colonnelli et al., 2020). Regulations allow well-coordinated elite groups to extract rents from citizens in the private-interest theory of regulation (Becker, 1983; Stigler, 1971) while improving social welfare by correcting market failures in the public-interest theory of regulation, which assumes that the government is benevolent and accountable to the citizens such as Barro (1979). Kroszner and Strahan (1999) find that the private interest theory can better explain state-level banking deregulation since the 1970s.

Campaign money decides election outcomes, as money affects information that citizens receive from news and TV advertising. Campaign donations and independent expenditures affect the information that citizens receive, which affect their beliefs about candidates' valence and ideology (Kendall et al., 2015). When political campaign contributions are unrestricted, lobbyists can influence regulations for their private rather than socially optimal outcomes and corruption may become more prevalent (Che and Gale, 1998). As politicians are not inherently benevolent, political competition and voter information are necessary to limit political rents (Becker, 1983; Svaleryd and Vlachos, 2009). Information provision to citizens can reduce politicians' rent extraction by increasing citizens' bargaining power via their ability to protest (Banerjee et al., 2018), by increasing their local mobilization against violence (Armand et al., 2020), and by

[6] https://www.opensecrets.org/news/2021/03/one-billion-dark-money-2020-electioncycle/

[7] After Citizens United v. Federal Election Commission (FEC) in January 2010, another case SpeechNow.org v. FEC resulted in the establishment of Super PACs.

reducing their partisan loyalty based on ethnicity (Casey, 2015). As an extreme form, informational autocracy results when the political elites can manipulate citizens' perception of their competence and benevolence by controlling information (Guriev and Treisman, 2020).

To increase their campaign money and advertising, politicians could influence state pensions' portfolio firms to obtain more campaign contributions and advertising sponsored by corporations, which is a type of favor exchange. Exchanges of favors between politicians and the private sector are widely documented, such as that between the government and media in Hungary (Szeidl and Szucs, 2021) and that between provincial officials and central officials' family firms in China (Chen and Kung, 2018). Underwriters can make political campaign contributions to state politicians to win municipal bond underwriting businesses, increasing the costs of bond issuance to the municipalities (Butler et al., 2009). Politically connected buyout funds may boost employment during election years so that their target firms receive government contracts and grants (Faccio and Hsu, 2017). Tahoun (2014) shows U.S. politicians' personal stock ownership in firms for enforcing their quid pro quo relationship. Political decision-making via pork barrel spending leads to excessive public spending (Maskin and Tirole, 2019), reduces public goods' provision, and distorts public policy efficiency (Battaglini and Coate, 2007 and 2008).

However, the exchange of favors between politicians and firms may also benefit public pension funds if the politicians aim to win elections to fight activist pressure or to select more competent managers. This is a relevant channel, as many U.S. cities have billions of public pension funding shortfalls that will increase future taxpayers' burden and may trigger bankruptcy. Most public pensions are defined benefit plans, for which it is easier for board members to use their discretion to pursue their political agenda than for defined contribution plans, as defined benefit holders do not observe the plan asset fluctuations in their individual accounts while the governments, and eventually taxpayers, guarantee their retirement payments.

Based on the analysis above, we have the two opposing hypotheses below.

Political rent-seeking hypothesis: US politicians influence state pension funds to increase their campaign donations from corporations, so that they can obtain more political power and extract more rent from taxpayers.

Public interest hypothesis: US politicians influence state pension funds to increase their campaign donations from corporations, so that they can win elections to select more competent

managers or to fight activist pressure, which alleviates taxpayers' burden of unfunded pension liabilities.

3. Data and Method

3.1. Data

Our sample firms are those in the CRSP-Compustat universe. Although firms may offer political support in different ways, such as campaign contributions or donations to philanthropic foundations, as Bertrand et al. (2020) documented, we focus on corporate contributions to political candidates and committees. We use the data on federal elections and corporate campaign contributions to candidates for 2000-2016 from Babenko et al. (2022), and we extend the data to the 2022 election cycle. We collect and clean data on corporate contributions to PACs from the Federal Election Commission (FEC) and OpenSecret.[8] The election data from FEC is biennial, compiled for even-numbered years. We aggregate the donations to all candidates and PACs from each state. For all House and Senate candidates who have received campaign contributions, we use the state of their office location in the election year. For presidential candidates, we use their previous office locations. If their previous office locations are unavailable, we use their hometown states. For example, we use New York as the state of Donald Trump's office location. For contributions to the PACs, we use the PACs' location state. We obtain company financial data from Compustat and stock returns from CRSP. We obtain the headquarters information from EDGAR 10-X forms on the Notre Dame Software Repository for Accounting and Finance (SRAF) website.[9]

Besides hard money, i.e., contributions made to specific politicians, our political donation data also includes soft money, which is the contributions made to parties or committees and is not used directly for specific candidates' campaigns. The 2010 Supreme Court rulings on Citizens United v. FEC and SpeechNow.org v. FEC allowed corporations to make unlimited donations to politicians via soft money and led to the creation of super PACs, or independent expenditure-only committees. Besides super PACs, leadership PACs are also legally unconnected with campaign

[8] We use a fuzzy name matching algorithm to match the PACs with public traded firms by checking the top five google search results.

[9] See https://sraf.nd.edu/data/

candidates and are increasingly used as vehicles for soft money.[10] For corporate contributions to PACs, we match leadership and non-leadership PACs to their source states, and we match the disclosed donors to firms using the organization names. Because super PACs may receive "dark money" through non-profit organizations, the publicly available data likely underestimates the actual amount of campaign money.

We obtain pension fund holdings from the FactSet institutional ownership (13F) database and manually match the pension funds with Public Plans Data (PPD) that is jointly provided by the Center for Retirement Research at Boston College, the MissionSquare Research Institute, the National Association of State Retirement Administrators, and the Government Finance Officers Association. The PPD includes fund characteristics and performance. Our news articles for textual analysis come from Reuters Historical News Archives. We obtain state-level pension data from the Board of Governors of the Federal Reserve System, which obtains plan asset data from the Census Bureau's Annual Survey of Public Pensions and pension liability data from the Bureau of Economic Analysis (BEA)'s supplemental estimates. State-level GDP, income, employment, and population data are from the BEA.[11]

3.3. Main Tests

3.3.1. Baseline Regressions

As the first step of testing our hypotheses, we investigate the relationship between pension ownership and corporate campaign contributions. First, we use Equation (1) below to test home state quid pro quo, or whether U.S. firms are more likely to donate to political parties and politicians from their own state when a higher percentage of their shares are owned by public pensions from their own state.

$$\text{Home-State Political Contributions}_{i,t} = \alpha + \beta \cdot \text{Home} - \text{State Pension Ownership}_{i,t-2} + \gamma \cdot \text{Controls}_{i,t} + \delta_t + \eta_i + \varepsilon_{i,t} \quad (1)$$

[10] The FEC website lists the types of unconnected PACs: https://www.fec.gov/help-candidates-and-committees/registering-pac/types-nonconnected-pacs/. However, OpenSecret only classifies PACs into leadership and non-leadership PACs.
See the article on the Washington Post discussing leadership PACs as a conduit for soft money: https://www.washingtonpost.com/wp-srv/politics/campaigns/keyraces2000/stories/leaders051699.htm

[11] Public Plans Data (PPD) is from https://publicplansdata.org/; state level pension data is from https://www.federalreserve.gov/releases/z1/dataviz/pension/; BEA website is https://www.bea.gov/.

In Equation (1), $\text{Home} - \text{State Pension Ownership}_{i,t-2}$ is the percentage of firm i's shares outstanding held by pensions from the same state as the firm's headquarter, and $\text{Home-State Political Contributions}_{i,t}$ is firm i's contributions to all the politicians and PACs in its headquarter state. We specify three types of political contributions: those made to specific candidates, those made to PACs, and total contributions to candidates and PACs. We estimate Equation (1) at the firm-election cycle level. To address reverse causality concerns, we lag the key explanatory variable $\text{Home} - \text{State Pension Ownership}_{i,t-2}$ by two years, as elections are at biennial frequency. Following Babenko et al. (2020), we control for factors that may affect firms' political contributions, including firm size, capital expenditures, R&D expenditures, Tobin's Q, and ROA. We include firm and election cycle fixed effects, and cluster standard errors at the firm level.

As the exchange of favors may happen among public pensions and firms from different states, we release the own-state restriction and construct a sample for firm-state-election regression. We estimate Equation (2) below on this sample to investigate potential across-state or home-state quid pro quo.

$$\text{Political Contributions}_{i,j,t} = \alpha + \beta \cdot \text{Pension Ownership}_{i,j,t-2} + \gamma \cdot \text{Controls}_{i,t} + \text{Fixed Effects} + \varepsilon_{i,t} \quad (2)$$

$\text{Political Contributions}_{i,j,t}$ is firm i's political campaign contributions to all the politicians and PACs from state j in year t, and $\text{Pension Ownership}_{i,j,t-2}$ is the percentage of firm i's shares outstanding held by pension funds from state j in year t-2, lagged by one election cycle. We first estimate Equation (2) using firm and election cycle fixed effects to account for time trend and firm level time invariant characteristics. Then we include state-election cycle and firm-election cycle fixed effects to account for time-varying state and firm characteristics. Standard errors are clustered at the firm level.

3.3.2. Textual Evidence of Political Influence

Anecdotal evidence suggests that the directors of California state pension CalPERS openly solicit campaign donations, push for broader plan participation, younger retirement age and higher investment risks, and block reforms that change the board composition. Politicians with motives

to exchange favors with firms are more likely to influence firms to make political donations, rather than simply select the generous donors. In addition, politicians may increase local pension size by encouraging residents to save and invest in local pensions. In this section, we conduct additional tests involving textual analysis to show the political influence mechanism. To indirectly test for political influence, we tally annual counts of news articles in which any of our sample politician names appear with any of these terms: pension, campaign, or donat*, where * is a wildcard so "donat*" include "donation", "donate", and "donator". The bag-of-words approach allows for keyword matching regardless of word order. For example, this approach enables us to match "campaign donat" with "donate to my campaign". Our news database, Reuters Historical News Archives, includes all Reuters news articles from the American region during our sample period. We identify news articles that mention our base keywords in their titles and main bodies, and then construct a sub-sample of articles for each keyword and year. Then, we search for the exact names of the politicians within each sub-sample. An article is flagged as relevant if it includes both the first and last names of the politician along with the base keyword. Finally, we count the number of relevant articles for each keyword combination and year.

We test for the correlation between the number of news articles that mention politicians and campaign or donations and the number of articles that mention politicians and pensions, as in Equation (3) below.

$$\text{Mention of politician and campaign}_{kt} = a + b(\text{Mention of politician and pension}_{kt}) + \delta_t + \eta_k + \varepsilon_{kt} \quad (3)$$

In Equation (3), k denotes each politician and t denotes each year. We include state and election cycle fixed effects, and cluster standard errors at the politician level. We also switch the dependent and independent variable in Equation (3) for alternative regressions.

3.3.3. Welfare Effects

If the above regressions support the quid pro quo between state officials and firms, we test its welfare impact on pension holders and local taxpayers, as well as firm shareholders. More specifically, we test the impact of political contributions on pension fund performance in the fund-election cycle level regression specified by Equation (4) below. To understand how the quid pro quo through pension investments affect investors, we estimate the effect of pension ownership on

firm performance, as specified in Equation (4a). Moreover, we interact political contributions with pension ownership as our explanatory variable in Equation (5b).

$$\text{Pension Performance}_{f,t} = \alpha + \beta \cdot \text{Portfolio Political Contributions}_{f,t-2} + \gamma \cdot \text{Controls}_{f,t} + \text{Fixed effects} + \varepsilon_{f,t} \quad (4)$$

$$\text{Firm Performance}_{i,t} = \alpha + \beta \cdot \text{Pension Ownership}_{i,t-2} + \gamma \cdot \text{Controls}_{i,t} + \delta_t + \eta_i + \varepsilon_{i,t} \quad (5a)$$

$$\text{Firm Performance}_{i,t} = \alpha + \beta_1 \cdot \text{Pension Ownership}_{i,t-2} \cdot \text{Political Contribution}_{i,t} + \beta_2 \cdot \text{Pension Ownership}_{i,j,t-2} + \beta_3 \cdot \text{Political Contribution}_{i,t} + \gamma \cdot \text{Controls}_{i,t} + \delta_t + \eta_i + \varepsilon_{i,t} \quad (5b)$$

In Equation (4), the subscript f denotes each pension fund. We measure Pension Performance $_{f,t}$ as the percentage of funding ratio for fund f in election cycle t. Portfolio Political Contributions $_{f,t-2}$ are the average political campaign contributions made by pension fund f's portfolio firms in the previous election cycle, which are either equal weighted or value weighted across portfolio firms. We included state and election cycle fixed effects, and cluster standard errors at the fund level.

In Equation (5a) and (5b), Firm Performance $_{i,t}$ includes ROA, ROE, and 12-month average stock returns for firm i in election cycle t. Equation (5a) estimates the effect of pension ownership on firms' performances. Equation (5b) tests the effect of joint occurrence of pension ownership and political contributions by estimating the interaction of these two terms. Control variables include firm size, Tobin's Q, Capital expenditures and R&D expenditures. We include firm and election cycle fixed effects to account for time-invariant firm characteristics and time trend. Standard errors are clustered at the firm level in both estimations.

4. Empirical Results and Discussions

4.1. Summary Statistics

Our final sample consists of 49 pension funds and 9,852 unique firms, 4,144 of which contribute positive amounts to candidates or political committees during the election cycles of 2000-2020. For our analysis, we treat Washington, D.C., or DC for short, as a separate state. Over our sample period, the state with highest pension asset is California, followed by New York and

Texas, and the order for pension liability is California, New York and Illinois, while the states with the lowest values are Vermont, North Dakota and New Hampshire for pension assets, and Vermont, North Dakota and DC for pension liabilities. For pension funding status, the top-performing states are DC, Vermont, and South Dakota, and the worst performers are California, Illinois and New York.

The state that receives the highest campaign donations is DC, followed by New York and Virginia. The state that receives the lowest political contributions Idaho, followed by Wyoming and Hawaii. Table 1 reports the summary statistics for our sample. The average pension ownership is 1.0% for our sample firms. The average corporate total contributions are $13,552, where the average contributions to candidates are $8,741, and the average contributions to PACs are $4,812. Because less than 10% of our firm-election cycle observations include positive political contributions, the median of the corporate political contributions is zero. As the variable is highly skewed, we use the logarithm of political contributions in our estimations.

[Insert Table 1 here]

In Figure 1, we plot the year-by-year distribution of the average state pension assets (in millions) from 2002 to 2020. The U.S. public pension asset under management (AUM) has almost doubled between 2010 and 2020, though experiencing a temporary dip during the financial crisis years.

[Insert Figure 1 here]

As the 2010 Supreme Court ruling relaxes the restrictions on soft money, we plot the year-by-year trend of political contributions received by state PACs in Figure 2. There is overall tremendous growth in corporate donations to PACs after 2010, consistent with the regulatory change due to Citizens United vs. FEC.

[Insert Figure 2 here]

The growth in political donations is not uniform across states. We split the U.S. states into subsamples according to their pension assets, liabilities, and funding status. The states with high pension assets, liabilities and large pension funding shortfall receive relatively high political contributions from corporations, as shown in Figure 3, which suggests a potential positive relationship between the pension size and political contributions across states.

[Insert Figure 3 here]

Figure 4 shows the distribution of our sample firms' political contributions by industry. We use the two-digits Global Industry Classification Standard (GICS) as our industry definitions. We find that the firms that make the most political contributions are those in the financial and healthcare sector, likely due to the highly regulated nature of the two sectors. Firms in the industrial sector also make large political contributions. Real estate, materials, and energy sectors make the lowest corporate political contributions.

[Insert Figure 4 here]

We test the differences in means of the political contributions received by states with different pension characteristics using t-tests. The comparison results are reported in Table 2. Candidates from states with high pension assets are significantly more likely to receive campaign contributions than candidates from states with low pension assets. A similar relationship holds for pension liabilities. In addition, candidates from states with poor pension funding status are significantly more likely to receive campaign contributions than candidates from states with good pension funding status. The t-tests results are not significant for PAC contributions, likely due to lack of observations.

[Insert Table 2 here]

We change the t tests to univariate regressions at the state level, and report qualitatively similar results in Table 3. The dependent variable is the total political contributions received by a state, and the independent variables are dummies that equal one when pension assets, liabilities or funding status is high and zero otherwise. The coefficients estimated are positive and significant for pension assets and liabilities, indicating that politicians and committees from states with larger pensions tend to receive more corporate political donations. The coefficients estimated are negative and significant for pension status, suggesting that states with poor funding status tend to receive significantly more corporate political donations.

[Insert Table 3 here]

To show the firm level correlation, we split the sample firms using the median of pension ownership and report the t-test results in Table 4. Firms with high pension ownership contribute

significantly higher amounts of political contributions to candidates and PACs compared with firms with low pension ownership.

[Insert Table 4 here]

4.2. Baseline Regressions for Quid Pro Quo

We first test the home-state quid pro quo by estimating Equation (1), and report the results in Table 5. Firms' home-state pension ownership is positively correlated with their political contributions to state candidates, negatively correlated with their contributions to PACs, and positively correlated with their total contributions to their home states. However, none of these coefficients are statistically significant. Because pension funds can invest in firms located in other states and firms can also donate to politicians in different states, it is likely that quid pro quo is not limited to home states.

[Insert Table 5 here]

Then we release the restriction of home state connection and include all the donations to politicians and parties located in the state of each firm's pension owner, as the firms may be in different states from the pension funds. Table 6 reports the regression results based on Equation (2). Coefficients estimated in columns (1)-(3) indicate a strong positive relationship between the pension ownership from a state and the political contributions to the state. A one-standard-deviation increase in pension ownership from a state predicts a 15.12% increase in contributions to state candidates, a 5.71% increase in those to PACs, and a 14.43% increase in total contributions. The coefficients estimated are economically and statistically significant. To account for unobservable characteristics that confound the results, we further include firm-election cycle and state-election cycle fixed effects in columns (4)-(6). The stronger fixed effects subsume firm level and state level time-varying variables, while the coefficient on pension ownership is still positive and statistically significant. The economic magnitude decreases slightly but remains sizable. A one-standard-deviation increase in pension ownership from a state is associated with 8.17% increase in contributions to candidates, 3.82% increase in contributions to PACs, and 7.87% increase in total contributions, relative to the sample mean. The coefficients estimated are significant at 5% level.

[Insert Table 6 here]

Overall, we find evidence supporting the quid pro quo between state officials and corporate managers, and the evidence is robust across different specifications. Firms are much more likely to donate to politicians from a state if a larger percentage of their shares are owned by pensions from the state, but the exchange of favors is not limited to the firms' home states. This is consistent with the example mentioned at the beginning of our paper, where Centene Corp, a firm headquartered in St. Louis, Missouri, is owned by New York pensions and donates to New York politicians generously. However, the correlation between pension ownership and political campaign contributions is not sufficient for proving the rent-seeking motive. In the next section, we report the results for the test on pension and firm performance, so that we can see whether the firms and pension investors benefit from forming or strengthening the political connection through campaign contributions.

4.3. Textual Evidence of Political Influence

In Figure 5, we plot the number of news articles that mention politician name with "campaign" and the number of articles that mention politician name with "pension" in each year. Politician name is more likely to co-occur with "pension" than "campaign", but the two series have a strong positive correlation. Years of high frequency of politician and pension mentions are also years of frequent mentions of politicians and campaign.

[Insert Figure 5 here]

Table 7 reports the regression results based on Equation (3). After controlling for state, politician and election cycle fixed effects, the series of politician and pension mentions is strongly positively correlated with the series of politician and campaign mentions, which is significant at the 1% level. The results are similar after switching the dependent and independent variable. It is possible that politicians actively influence reforms or policies related to state pension funds for more donations to their political campaigns.

[Insert Table 7 here]

4.4. Pension and Firm Performance

To complete the welfare analysis, we investigate whether the exchange of favors decreases pension returns and increases taxpayers' burden for pension liabilities, and whether shareholders of listed companies benefit from the quid pro quo.

To evaluate the implication of quid pro quo on pension fund performance, we estimate Equation (4) and report the results in Table 8. The univariate regressions yield negative but insignificant coefficients, which become statistically significant after we add control variables that include the logarithm of state employment, income, and the fund size. We find that a one percentage increase in portfolio political contributions is associated with a 0.7% to 2.8% decrease in pension funding ratio (columns 3-4 in Table 8), depending on whether portfolio contributions are equal- or value- weighted. The negative association between fund ratio and portfolio political contributions is robust to using the dollar amounts and logarithm of amounts. The deterioration in pension funding ratio is significant at the 5% level. The results show that pension funds' performance is negatively correlated with its portfolio political contributions, which suggest that rent-seeking motives could explain state pensions' investment in a firm and state officials' campaign money from a firm.

[Insert Table 8 here]

To evaluate the implication of quid pro quo on firm performance, we estimate Equation (5a) and (5b) and report the results in Table 9. In Panel A of Table 9, higher pension ownership in the previous election cycle is correlated with significantly lower ROA, ROE, and stock returns in the current year. In Panel B of Table 9, the interaction term of pension ownership and political contributions is also negatively correlated with ROA, ROE, and the 12-month average stock returns. The negative relationship is significant for ROA. When the joint magnitude of pension ownership and political contributions is larger, firm performance is worse. As shown in the previous tests, pension ownership is significantly positively correlated with political contributions, so the interaction term can be a proxy for the quid pro quo, which is negatively correlated with firm performance. On average, the managers of U.S. listed firms engage in a form of quid pro quo with state officials that do not benefit shareholders, which may be due to agency issues.

[Insert Table 9 here]

Rather than benefiting investors, the political connections increase pension funding shortfall

and is associated with worse firm performance. These results suggest that the quid pro quo between corporate management and state officials does not benefit pension holders or shareholders, which support political rent-seeking and corporate agency issues. As politicians who spend the most in campaigns usually win the elections, this form of favor exchange is an abuse of public resources for political purposes without the knowledge of most pension investors.[12]

5. Economic Channel Tests

5.1. Political and Managerial Incentives

In this section, we explore the economic channels for the quid pro quo. To understand why the quid pro quo happens, we analyze the incentives of politicians and corporate management. State officials are incentivized to run for positions in the Senate and House due to the financial and nonpecuniary payoffs (Diermeier et al., 2005), and more campaign contributions or favorable advertising can increase their chance of winning. Because pork barrel politics is a form of corruption, politicians will only take the career risks if they expect high rewards from the quid pro quo. The rewards of abusing public money are higher relative to the costs of punishment when the state officials can use the pension money to significantly improve their chance of being elected to federal positions and when the chance of being caught and punished is relatively low.

By increasing their campaign donations via state pensions and other means, politicians with corruption motives can increase their chance of election success and control of more government resources for future rent-seeking. If this is true, the quid pro quo is more likely to happen between firms and states with higher levels of corruption. There are several reasons for across-state variation in the level of corruption. Political institutions affect the level of corruption (Persson et al., 1997). Campante and Do (2014) document that US states with isolated capital cities are more corrupt and that their elections have greater role for campaign contributions than other states, which lowers politicians' accountability. State officials are less likely to be caught and punished for abusing public resources when they are from a state with relatively weak legal institutions and more corruption, so we can test whether the quid pro quo is more likely to happen for pension from states with a high level of corruption.

[12] According to OpenSecrets, the top spending candidates win 71.43%-97.54% of each election for seats in the House or Senate during 2000-2022. See https://www.opensecrets.org/elections-overview/winning-vs-spending

Corruption is also more likely in politically extreme states, which tend to have less checks and balances. For presidential candidates, they may also conduct the quid pro quo due to election pressure. Because politicians generally use their home connections to obtain political support (Bai et al., 2023), their policies tend to align with the financial interests and ideologies of their home states, which increases the difficulty for candidates from politically extreme states to appeal to median voters in national elections and may incentivize them to use public pensions to increase their campaign money. The level of political polarization in the United States has increased drastically in recent years (McCoy and Press, 2021), which may reduce the diversity of voter interests and information represented in the political system (Bednar, 2021; Iyengar et al., 2019). More political polarization also increases the number of politically extreme states and the divergence from median voters' interests. Compared with politicians from moderate states who can appeal to both home state electorate and median voters, politicians from extreme states cannot capture the majority votes for presidential or congressional elections by altering their policies or using their home state connections. Campaign contributions and corporate sponsored advertising can significantly increase the chances of being elected to federal positions for politicians from relatively politically extreme states, which can incentivize them to abuse their power over public resources to increase their campaign support. In addition, groups whose interests differ more from the median voters' are more likely to make campaign contributions (Prat, 2002), and the home state residents and interest groups have more to gain from increased influence on laws and regulations if they are from more politically extreme states, so the politicians from these states may be incentivized to use pensions to indirectly increase their campaign contributions to cater to their supporters' demands. Therefore, we also test whether the quid pro quo is more likely to happen between firms and pensions from more politically extreme states.

For corporate managers and board members, their decisions may benefit or hurt firms depending on whether they are accountable to shareholders. Within corporations, strong corporate governance constrains managers from expropriating shareholders, and weak corporate governance leads to agency issues. By supporting candidates who win elections, firms can obtain benefits such as favorable regulations and policies (Akey, 2015), government bailouts in case of trouble (Duchin and Sosyura, 2012; Faccio et al., 2006), or more government contracts (Goldman et al., 2013; Schoenherr, 2019). Although connections with politicians can benefit the firms, shareholders only

benefit when corporate governance is strong enough. Otherwise, managers and board directors may exchange favors with politicians to increase their firms' market capitalization and thus resources under their control, which they can tunnel via bonuses and wasteful projects. We test whether the quid pro quo concentrates in firms with poor corporate governance in the following section.

5.2. State and Firm Characteristics

We obtain the state year level corruption indexes from the Institute for Corruption Studies, which are the Corruption Convictions Index, the Corruption Perceptions Index and the Corruption Reflections index.[13] The Corruption Perceptions Index is based on the 2018 Corruption in America Survey, the Corruption Convictions Index is based on corruption charges listed in the Department of Justice's Report to Congress on the Activities and Operations of the Public Integrity Section, and the Corruption Reflections Index is based on corruption coverage in Associated Press. The per capita corruption conviction rate from the U.S. Department of Justice's Public Integrity Section is an ex post corruption proxy used by Butler et al. (2009). We define a state as corrupt if at least two of its corruption indexes exceed the median, and uncorrupt otherwise.

Besides corruption indexes, we also measure state-level political institutions using political extremism, as politically extreme states tend to have more concentrated power and less checks and balances. The large growth in pension assets and liability occur mainly in U.S. states with a high degree of political extremism, such as California, rather than politically moderate states such as Pennsylvania, as shown in Figure 6 below. Despite their similar GDP per capita, California scores high in all four dimensions of political extremism, while Pennsylvania is moderate in terms of carbon, taxation, and immigration laws. California state pensions also have worse funding status than Pennsylvania state pensions, and the gap between the two states has been widening since 2010.

[Insert Figure 6 here]

Because political extremism is multi-dimensional and there are no definitive measures, we classify each state's political extremism in terms of its policies on controversial issues including

[13] The website of the Institute for Corruption Studies is https://greasethewheels.org/.

carbon emissions, abortion, taxation and immigration. We manually gather these policies from the official websites of the states as well as third-party websites, and then we rank them based on their degree of extremism, which are assigned values of 1 to 4 from the least to the most extreme. For carbon policies, we classify a state as moderate if it has announced emissions reduction goals but has not adopted cap-and-trade policies yet, and we classify a state as extreme if it has a cap-and-trade program or has neither a cap-and-trade program nor emissions reduction goals. By the end of 2022, 12 states have cap-and-trade programs, 14 states (including DC) have announced emissions reduction goals but not joined any cap-and-trade initiatives yet, and 25 states have neither emissions reduction goals nor cap-and-trade programs. For abortion law, we define a state to be extreme if abortion is illegal, legal through less than 20 weeks, legal through above 27 weeks, or legal at any stage, and a state is moderate if abortion is legal through 20-27 weeks. 23 out of 50 states (DC missing) are classified as extreme. Based on data from the Immigrant Legal Resource Center (ILRC), state is moderate if it has no law for or against immigrants and extreme if it has either anti-immigrant or immigrant-protection laws.[14] In terms of immigration policy, 26 states are extreme, and 25 states are moderate. Using data from the Tax Foundation, we define a state as moderate if its tax rate is ranked between 13 and 40 among the 51 states, and extreme if its tax rate is either the highest 12 or the lowest 11 among all states.[15]

After assigning political extremism values in terms of state level policies on carbon emissions, abortion, immigration, and taxation, we aggregate them to a single dimension by defining a state as politically extreme if it scores more than 2 in at least two dimensions, and politically moderate otherwise. From Figure 7 below, the difference between the average pension AUM of politically extreme states and that of politically moderate states begin widening after 2010. This divergence is less salient for the classification based on carbon, perhaps because the spotlight on climate change is relatively new compared with other issues associated with polarization in U.S. politics. We also find a large increase in the pension funding shortfall of politically extreme states relative to that of politically moderate states after 2010. State officials' election motives can explain why politically extreme states increase their pension scale more aggressively than politically moderate states, as well as their pension underperformance.

[14] See https://www.ilrc.org/state-map-immigration-enforcement.
[15] See https://taxfoundation.org/

[Insert Figure 7 here]

We use the corporate governance measures from the Kinder, Lydenberg, Domini Research & Analytics (KLD) ratings on ESG, which are indicators of strength or concerns. According to their definition, a firm has low compensation to its top management or board members if it pays less than $500,000 per year for a CEO or $30,000 per year for outside directors, and high managerial compensation if it pays more than $10 million per year for a CEO or $100,000 per year for outside directors. Extravagant managerial compensation is generally a sign of corporate governance loopholes. Besides managerial compensation, we also measure firms' corporate governance in terms of their controversial investments and business ethics. Finally, we use an aggregate corporate governance measure, which is the number of governance strengths minus the number of governance concerns. The definition of our corporate governance measures is in Table A1 of the Appendix. The summary statistics for these additional state and firm variables are in Table A2 of the Appendix, including state level political extremism and corruption, as well as corporate governance.

5.3. Economic Channel of Political Rent-seeking

We interact pension ownership with proxies for rent-seeking motives in Equation (6a) and (6b) to test whether firms with higher pension holdings from more politically extreme or corrupt states are more likely to make campaign contributions to politicians from these states. Similarly, we test whether the quid pro quo is more likely to happen in firms with poor corporate governance in Equation (7). We control for firm characteristics, election-cycle and firm fixed effects.

$$\begin{aligned}\text{Political Contributions}_{i,j,t} = {} & \alpha + \beta_1 \cdot \text{Pension Ownership}_{i,j,t-2} \cdot \text{Political Extremism}_{j,t-2} \\ & + \beta_2 \cdot \text{Pension Ownership}_{i,j,t-2} + \beta_3 \cdot \text{Political Extremism}_{j,t-2} \\ & + \gamma \cdot \text{Controls}_{i,t} + \delta_t + \eta_i + \varepsilon_{i,t} \qquad (6a)\end{aligned}$$

$$\begin{aligned}\text{Political Contributions}_{i,j,t} = {} & \alpha + \beta_1 \cdot \text{Pension Ownership}_{i,j,t-2} \cdot \text{Corruption}_{j,t-2} \\ & + \beta_2 \cdot \text{Pension Ownership}_{i,j,t-2} + \beta_3 \cdot \text{Corruption}_{j,t-2} \\ & + \gamma \cdot \text{Controls}_{i,t} + \delta_t + \eta_i + \varepsilon_{i,t} \qquad (6b)\end{aligned}$$

$$\text{Political Contributions}_{i,j,t} = \alpha + \beta_1 \cdot \text{Pension Ownership}_{i,j,t-2} \cdot \text{Corporate Governance}_{i,t-2} + \beta_2 \cdot \text{Pension Ownership}_{i,j,t-2} + \beta_3 \cdot \text{Corporate Governance}_{i,t-2} + \gamma \cdot \text{Controls}_{i,t} + \delta_t + \eta_i + \varepsilon_{i,t} \quad (7)$$

Table 10 reports the regression results for Equation (6a) and (6b). We find evidence consistent with both the corruption channel: pension ownership from a state with higher levels of extremism and corruption is significantly associated with more corporate donations to politicians and committees in the state. The results are significant at the 5% level for state political extremism across specifications of donation types, though less significant for corruption and PAC donations. Politicians from politically extreme or corrupt states are significantly more likely to abuse their power over public money and aggressively increase their campaign contributions than politicians from politically moderate or uncorrupt states due to higher competition pressure or weaker legal institutions. The U.S. political system is becoming more polarized over the past decades, which increases the number of politically extreme states. Azzimonti (2011) shows that political polarization results in myopic government policies and negatively affects investment and economic growth. Our results suggest that political polarization may increase politicians' incentives to use public resources for political purposes and hinder democracy and broad political representation.

[Insert Table 10 here]

We also interact corruption indexes with the number of articles that mention pension or campaign keywords, and report the results in Table 11. Politicians from states with higher levels of corruption are more likely to appear in news articles with both "pension" and "campaign" keywords. The textual evidence suggests that political influence on pension funds and campaign donations are likely for political rent-seeking.

[Insert Table 11 here]

We report the estimation results for Equation (7) in Table 12. The quid pro quo is more salient for poorly governed firms. The interaction term of limited managerial compensation and pension ownership is significantly negatively correlated with corporate political contributions while the pattern is reversed for high managerial compensation. It is possible that managers and directors use their power over firms to exchange favors with politicians to increase the assets under their

control and pay themselves high salaries. The positive correlation between pension ownership and political contributions is also stronger for firms with controversial investments and business ethics issues, which include bribery, insider trading and accounting fraud. We find the interaction term of pension ownership and corporate governance strength to be significantly negatively correlated with corporate political contributions. The results support political rent extraction and corporate agency issues, so the pension investments hurt taxpayers and the political contributions hurt shareholders. The pork barrel politics serve the political and corporate elites' personal interests.

[Insert Table 12 here]

The quid pro quo tends to occur in poorly governed firms, possibly due to sorting among politicians and corporate management. As there is positive assortative matching based on social preference (Lazear et al., 2012), political views and affiliation (Colonnelli, Neto and Teso, 2022), and income level (Greenwood et al., 2014), it is quite likely that the agents with rent extraction motives tend to exchange favors at principals' expense.

5.4. The Effects of Citizens United v. FEC

First, we re-estimate Equation (2) on the subsample of observations before and after 2010 and report the results in Table 13. The coefficients on lagged pension ownership are all statistically significant for the subsamples, with p values less than 5% or 1%. From the pre-2010 to the post-2010 subsample, the economic significance of the coefficients on lagged pension ownership increases by 7 times for corporate donations to candidates and by 12.5 times for corporate donations to PACs. Because the campaign finance regulatory change in 2010 directly affects the ability for politicians to solicit and receive donations and is unlikely to be correlated with other factors that affect pension ownership or political donations, the contrast between the pre and post-2010 subsamples suggests that the larger increase for quid pro quo via soft money is consistent with the campaign finance regulatory change in 2010 that mainly affects contributions to political committees and independent expenditures.

[Insert Table 13 here]

Then, we also re-estimate Equation (4) and (5a) on the pre-2010 and post-2010 subsamples. The loosening of campaign finance regulation in 2010 is an exogenous event that increases

politicians' ability to receive campaign donations. If quid pro quo, rather other confounding effects, explains the relationship between pension fund ownership and corporate political contribution, it is expected to become stronger after the legislative change in 2010. We report the results in Table 14 and 15, respectively. In Table 14, the association between portfolio political contributions and pension funding ratio is positive and insignificant before 2010, but significantly negative after 2010. In Table 15, the effect of pension ownership on firms' ROA and ROE is insignificant before 2010, but significantly negative after 2010. This result suggests that the negative effects of the quid pro quo on pension and firm performance are mainly driven by the post-2010 period. The effects are insignificant for stock returns, but estimation results in post-2010 exhibit larger economic and statistical significance compared with pre-2010 period.

[Insert Table 14 here]

[Insert Table 15 here]

6. Additional tests

6.1. Difference-in-differences Tests

Omitted variables may confound both the interpretation of intentional exchange of favors and its negative impact on pension and firm performance. To further alleviate the endogeneity concern, we conduct difference-in-differences (DID) tests based on the exogenous shock of the 2010 Supreme Court ruling. Bradley et al. (2016) show that the enforcement of the Bipartisan Campaign Reform Act (BCRA) on November 6, 2002 reduced state pension funds' overweighting on politically active local firms. The 2010 Supreme Court ruling overturned corporate political spending bans in 23 states and increase politicians' ability to receive campaign contributions via super PACs. In states with previous restrictions, there is an increase in politicians' ability to solicit campaign contributions as well as firms' ability to contribute to super PACs after 2010. Slattery et al. (2023) study its effect on corporate tax policy. Akey et al. (2022) study the effect on labor and capital.

We exploit the geographical variation in state level restrictions on independent expenditures and the Supreme Court's ruling in 2010 to create exogenous variation in politicians' incentives to obtain more political contributions. As of January, 2010, 23 states had restrictions on corporate and labor unions' independent expenditures (Klumpp et al., 2016). Thus in 2010, politicians from

the 23 states with soft money restrictions experienced an exogenous increase in their ability to obtain more campaign contributions relative to politicians from the remaining 28 states that did not have restrictions on independent expenditures.

We estimate the following Equation (8) to investigate how the Supreme Court ruling in 2010 affect the pension ownership and performance of firms whose pension owners are from states with independent expenditure restrictions relative to those from states without such restrictions.

$$\text{Political Contributions}_{i,j,t} = \alpha + \beta_1 \cdot \text{Restriction}_j \cdot \text{Post}_t + \beta_2 \cdot \text{Restriction}_j + \beta_3 \cdot \text{Post}_t + \text{Fixed effects} + \varepsilon_{i,t} \quad (8)$$

Political Contribution $_{i,j,t}$ is firm i's contribution to state j at election cycle t. Post $_t$ is a dummy variable that equals one for two election cycles after 2010, when the U.S. Supreme Court ruling releases firms from soft money restrictions, and zero for two election cycles before (and including) 2010. Restriction_j is a dummy that equals one for states that have restrictions on independent expenditures before 2010 and zero otherwise. In Equation (8), each firm is linked to the state(s) of the firm's pension owner(s), so the subscript j refers to the source state of each firm's pension owner, rather than the state of the firm's headquarter. Because the state-level campaign finance regulations apply to the politicians or political parties located in the states, rather than the firms headquartered in the states, we classify observations into the treatment group or control group depending on the state of the firms' pension owners. We do not include control variables to avoid the biased estimation of the coefficients (Gormley and Matsa 2011). We first estimate Equation (8) by including firm and cycle fixed effects. We then estimate the same equation by including the cycle-firm and state fixed effects to account for firm-level time-varying characteristics and state-level unobservable variables.

Figure 7 displays the U.S. state level restrictions on political contributions before 2010, and Table 16 reports the estimation results for Equation (8). The exogenous change in 2010 increases the quid pro quo, as seen in the positive coefficient on $\text{Restriction}_j \cdot \text{Post}_t$. This positive impact is significant and robust for contributions to candidates and total contributions for different specifications. In the two election cycles post 2010, compared with states without previous restrictions, states with previous restrictions experience a 3-percentage increase in political contributions from the firms held by the state pension fund. The coefficients estimated for contributions to candidates and total contributions are statistically significant. The results remain

consistent after controlling for cycle-firm and state fixed effects when accounting for unobservable confounding variables.

The DID estimations show that the exogenous increase in politicians' ability to receive more corporate donations leads to more political contributions from state pension portfolio firms. However, our DID design assumes that the politicians in states with and without previous restrictions are similar. In fact, the states in the control group (states without previous restrictions, for example, CA, IL, NY.) have stronger rent-extraction motivations such as more extreme political policies and corruption. Therefore, our tests may underestimate the effect of the 2010 Supreme Court ruling.

[Insert Figure 7 here]

[Insert Table 16 here]

In summary, the exchange of favors via public pensions increases significantly after 2010, when the Supreme Court released restrictions on corporate soft money. Our falsification and DID tests support the causal interpretation that the increased ability of politicians to receive campaign funding increases their abuse of power over public pensions and leads to welfare losses for pension holders and future taxpayers. The results also support that the agency issues between corporate management and shareholders lead to their quid pro quo with politicians that control public pensions.

6.2. Tests for Alternative Hypothesis

Besides rent-seeking, the quid pro quo between politicians and corporate management could serve the political goal of increasing local employment. To explain the negative influence of politicians on pension performance, Andonov et al. (2018) show that state pension funds with more state officials on their board invest more in PE and VC funds that may benefit local economy, consistent with state officials' political goals. To dispel the alternative hypothesis, we estimate the effect of political contributions and the interaction of total political contributions with state pension assets on state employment. The summary statistics for state-level employment, political extremism, corruption, and firm level corporate governance are presented in Table A2, and the regression results are in Table A3. The regression results are insignificant, suggesting that state

employment is not improved by the favor exchange. In addition, we present the DID estimation result for state employment and report it in Table A4. The DID tests the effect of exogenous increase of rent-extraction motivations following the Supreme Court rulings on state employment following Equation (9) below. Consistent with the notion that this form of favor exchange does not benefit local economy, the coefficients estimated for $\text{Restriction}_j \cdot \text{Post}_t$ are insignificant.

$$\text{State employment}_{j,t} = \alpha + \beta_1 \cdot \text{Restriction}_j \cdot \text{Post}_t + \beta_2 \cdot \text{Restriction}_j + \beta_3 \cdot \text{Post}_t + \text{Controls}_{j,t} + \delta_t + \zeta_j + \varepsilon_{j,t} \quad (9)$$

We also regress state employment on the interaction term of total political contributions with political extremism or corruption, which show insignificantly negative coefficients. In addition, we regress state employment on state political extremism and corruption levels for the subsample of observations before and after 2010, and the results are insignificant in both time periods. We do not display these tables for brevity. These results suggest that the quid pro quo via state pension investments is not for increasing local employment.

Then we test the impact of the quid pro quo on firm level employment, which is reported in Table A5. The number of employees at a firm is insignificantly negatively correlated with home-state pension ownership. However, firm employment is positively correlated with the interaction term of home-state pension ownership and political contributions, which is significant at the 10% level. We find that the correlation between firm employment and home-state pension ownership is not more significant for the period after 2010, for politically extreme or corrupt states, or for firms with weak corporate governance. Although there is some weak evidence that the quid pro quo may increase local firm employment, most results suggest that employment is not the main explanation for the quid pro quo.

In summary, we do not find that state officials on pension boards focus their investment on local firms that benefit local economy and employment, so the alternative hypothesis of boosting local employment is unlikely to hold for the quid pro quo via state pensions.

6.3. Robustness Checks

In Equation (10), we adjust for pension and portfolio firm size.

$$\text{Excess Portfolio Weight}_{i,f,t} = \alpha + \beta \cdot \text{Political Contribution}_{i,j,t-2} + \text{Controls}_{i,t} + \text{Fixed effects} + \varepsilon_{f,t} \quad (10)$$

The key explanatory variable Political Contribution $_{i,j,t-2}$ is lagged for one election cycle. In addition to the firm characteristics in our main tests, we also control for whether a firm is in the Russell 3000 Index, as pension funds may prefer investing in index components. In further specifications, we add firm-election cycle and fund-election-cycle fixed effects, which subsume the time-varying firm and fund characteristics. Standard errors are clustered at the fund level.

Table 17 reports the estimation results for Equation (10). Political contributions are significantly positively correlated with pension portfolio excess weights in all specifications, and the effect is significant for all measures of corporate political contributions. However, the selection of portfolio firms does not survive the DID test, as shown in Table A7 in the Appendix. Table A7 estimates Equation (8) using the same DID specifications using the Supreme Court ruling in 2010, and the coefficients estimated for Restrict*Post becomes negative and insignificant.

[Insert Table 17 here]

We conduct robustness tests for across-state quid pro quo of Equation (2) and report the results in Table A6. In Panel A of Table A6, we use the amount, instead of the logarithm, of the political contributions as dependent variables. Although the significance of the coefficient for contributions to PACs is lower, the effect remains strong for total contributions. In Panel B of Table A6, we use a dummy variable for high pension ownership as independent variable and re-estimate Equation (2). The high pension ownership dummy equals to one for firms with above median pension ownership and zero otherwise. Compared with low pension ownership firms, firms with high pension ownership from a state exhibit a 15.8% increase in their political contributions to politicians and committees from the state, and the increase is 8.5% after controlling for more fixed effects. All estimation results are significant at the 1% level.

Our results are also robust to various variable specifications. In across-state quid pro quo estimations, besides lagging pension holdings by one election cycle, we also calculate the average of the variable, (Pension holdings $_{i,j,t-2}$ + Pension holdings $_{i,j,t}$)/2, as another specification and observe consistent results. We omit the table for the sake of brevity.

7. Conclusions

News articles and academic studies suggest that politicians may influence on U.S. public pension funds for more campaign donations from corporations. However, it is unclear how

politicians use their discretionary power over public pension funds to increase their election success and whether they aim to improve pension performance or to extract political rents. To investigate the motive and mechanism of political influence on public pension funds, we study the pattern of pension ownership and corporate political contributions, and show textual evidence that politicians' names tend to co-occur with pensions and campaign donations. Contrary to politicians' alleged concern for pension performance and mention of fiduciary duty, we find that political influence hurts both state pension and portfolio firm performance. In addition, the pattern of quid pro quo is more salient in states with higher levels of corruption or political extremism, and after legislative change that loosened the restrictions on political campaign finance in 2010. Our findings suggest a covert form of quid pro quo between politicians and corporations, where U.S. state officials influence public pensions' portfolio firms to receive more campaign contributions. Rather than promoting political and economic competition, our findings suggest that the loosening of campaign finance regulation increases rent extraction by political and corporate elites, which hurts both shareholders and taxpayers.

Our findings imply that reducing politicians' discretionary power over public resources may improve social welfare. Political discretion increases bureaucratic efficiency but also the agency issue between politicians and citizens (Bandiera et al., 2009). It is optimal to reduce agents' discretion when it is difficult to monitor their performance and agents' and principals' preferences are misaligned (Alonso and Matouschek, 2008; Holmstrom and Milgrom, 1991). When political checks and balances are weak, limiting politicians' discretion to reduce rent-seeking is efficient. Like the tradeoff between political accountability and policy distortions for elected officials' term limits (Schultz, 2008), there is a tradeoff between political agency issues and efficiency for campaign finance regulation. Future studies can analyze the optimal level of campaign finance regulation by comparing the burden of regulation and politicians' rent extraction tendency.

One limitation of this study is that our sample only covers U.S.-listed firms. The quid pro quo between politicians and corporate management is more likely to benefit private firms than public firms, as the former has milder agency issues. Although we show that listed firms' performance suffers after donating to politicians or parties from the state of their pension owners, we cannot disentangle the impact of the quid pro quo on portfolio firms from managers' tunneling and other value-destroying activities. Hochberg and Rauh (2013) show that states with more self-

dealing tend to invest more in local private firms with low returns. We have not found home-state bias for the quid pro quo among listed firms, but it may exist in home-state private firms, which may seek benefits from the relationship with the local government.

In addition, our study only investigates the quid pro quo via campaign contributions. Besides soft money regulation, the Supreme Court rulings in 2010 also loosened the restrictions on electioneering communication, so firms could exchange favors with politicians by sponsoring advertisements that support them or criticize their opponents. This could be another important channel, as political advertising can significantly influence candidates' vote share and election outcomes (Da Silveira and De Mello, 2011; Enikolopov et al., 2011; Spenkuch and Toniatti, 2018).

References

Acemoglu, D., Johnson, S., Kermani, A., Kwak, J., Mitton, T., 2016. The Value of Connections in Turbulent Times: Evidence from the United States. Journal of Financial Economics 121, 368–391.

Akey, P., 2015. Valuing Changes in Political Networks: Evidence from Campaign Contributions to Close Congressional Elections. Review of Financial Studies 28, 3188–3223.

Akey, Pat, Tania Babina, Greg Buchak, and Ana-Maria Tenekedjieva. "The Impact of Money in Politics on Labor and Capital: Evidence from Citizens United v. FEC." *FEC (July 11, 2022)* (2022).

Alonso, R., Matouschek, N., 2008. Optimal Delegation. Review of Economic Studies 75, 259–293.

Amore, M. D., Bennedsen, M., 2013. The Value of Local Political Connections in a Low-Corruption Environment. Journal of Financial Economics 110, 387–402.

Anderson, S., Francois, P., Kotwal, A., 2015. Clientelism in Indian Villages. American Economic Review 105, 1780–1816.

Andonov, A., Bauer, R. M., Cremers, K. M., 2017. Pension Fund Asset Allocation and Liability Discount Rates. Review of Financial Studies 30, 2555–2595.

Andonov, A., Hochberg, Y. V., Rauh, J. D., 2018. Political Representation and Governance: Evidence from the Investment Decisions of Public Pension Funds. Journal of Finance 73, 2041–2086.

Armand, A., Coutts, A., Vicente, P. C., Vilela, I., 2020. Does Information Break the Political Resource Curse? Experimental Evidence from Mozambique. American Economic Review 110, 3431–53.

Avis, E., Ferraz, C., Finan, F., Varjao, C., 2022. Money and Politics: The Effects of Campaign Spending Limits on Political Entry and Competition. American Economic Journal: Applied Economics 14, 167–99.

Azzimonti, M., 2011. Barriers to Investment in Polarized Societies. American Economic Review 101, 2182–2204.

Babenko, I., Fedaseyeu, V., Zhang, S., 2020. Do CEOs Affect Employees' Political Choices? Review of Financial Studies 33, 1781– 1817.

Babenko, I., Fedaseyeu, V., Zhang, S., 2022. Executives in Politics. Management Science pp. 1–20.

Bai, Y., Jia, R., Yang, J., 2022. Web of Power: How Elite Networks Shaped War and Politics in

China. Quarterly Journal of Economics 138, 1067–1108.

Bandiera, O., Prat, A., Valletti, T., 2009. Active and Passive Waste in Government Spending: Evidence from a Policy Experiment. American Economic Review 99, 1278–1308.

Banerjee, A., Hanna, R., Kyle, J., Olken, B. A., Sumarto, S., 2018. Tangible Information and Citizen Empowerment: Identification Cards and Food Subsidy Programs in Indonesia. Journal of Political Economy 126, 451–491.

Barro, R. J., 1979. On the Determination of the Public Debt. Journal of Political Economy 87, 940–971.

Battaglini, M., Coate, S., 2007. Inefficiency in Legislative Policymaking: A Dynamic Analysis. American Economic Review 97, 118–149.

Battaglini, M., Coate, S., 2008. A Dynamic Theory of Public Spending, Taxation, and Debt. American Economic Review 98, 201–36.

Becker, G. S., 1983. A Theory of Competition Among Pressure Groups for Political Influence. Quarterly Journal of Economics 98, 371–400.

Bednar, J., 2021. Polarization, Diversity, and Democratic Robustness. Proceedings of the National Academy of Sciences 118, e2113843118.

Bertrand, M., Bombardini, M., Fisman, R., Trebbi, F., 2020. Tax-Exempt Lobbying: Corporate Philanthropy as a Tool for Political Influence. American Economic Review 110, 2065–2102.

Bertrand, M., Bombardini, M., Trebbi, F., 2014. Is It Whom You Know or What You Know? An Empirical Assessment of the Lobbying Process. American Economic Review 104, 3885–3920.

Bortolotti, B., Fotak, V., Megginson, W. L., 2015. The Sovereign Wealth Fund Discount: Evidence from Public Equity Investments. Review of Financial Studies 28, 2993–3035.

Bradley, D., Pantzalis, C., Yuan, X., 2016. The Influence of Political Bias in State Pension Funds. Journal of Financial Economics 119, 69–91.

Butler, A., Fauver, L., Mortal, S., 2009. Corruption, Political Connections, and Municipal Finance. Review of Financial Studies 22, 2673–2705.

Campante, F. R., Do, Q.-A., 2014. Isolated Capital Cities, Accountability, and Corruption: Evidence from US States. American Economic Review 104, 2456–81.

Casey, K., 2015. Crossing Party Lines: The Effects of Information on Redistributive Politics. American Economic Review 105, 2410–48.

Che, Y.-K., Gale, I. L., 1998. Caps on Political Lobbying. American Economic Review 88, 643–651.

Chen, T., Kung, J. K., 2019. Busting the “Princelings”: The Campaign Against Corruption in

China's Primary Land Market. Quarterly Journal of Economics 134, 185–226.

Coate, S., 2004. Pareto-Improving Campaign Finance Policy. American Economic Review 94, 628–655.

Colonnelli, E., Pinho Neto, V., Teso, E., 2022. Politics At Work. Working Paper 30182, National Bureau of Economic Research.

Colonnelli, E., Prem, M., Teso, E., 2020. Patronage and Selection in Public Sector Organizations. American Economic Review 110, 3071–99.

Cooper, M. J., Gulen, H., Ovtchinnikov, A., 2010. Corporate Political Contributions and Stock Returns. Journal of Finance 65, 687–724.

Curto-Grau, M., Zudenkova, G., 2018. Party Discipline and Government Spending: Theory and Evidence. Journal of Public Economics 164, 139–152.

Da Silveira, B. S., De Mello, J. M. P., 2011. Campaign Advertising and Election Outcomes: Quasi-natural Experiment Evidence from Gubernatorial Elections in Brazil. Review of Economic Studies 78, 590–612.

Diermeier, D., Keane, M., Merlo, A., 2005. A Political Economy Model of Congressional Careers. American Economic Review 95, 347–373.

Dippel, C., 2022. Political Parties Do Matter in US Cities . . . for Their Unfunded Pensions. American Economic Journal: Economic Policy 14, 33–54.

Duchin, R., Sosyura, D., 2012. The Politics of Government Investment. Journal of Financial Economics 106, 24–48.

Enikolopov, R., Petrova, M., Zhuravskaya, E., 2011. Media and Political Persuasion: Evidence from Russia. American Economic Review 101, 3253–85.

Equable Institute. 2023. State of Pensions 2023 Report. Retrieved from https://equable.org/state-of-pensions-2023/.

Faccio, M., 2006. Politically Connected Firms. American Economic Review 96, 369–386.

Faccio, M., Hsu, H.-C., 2017. Politically Connected Private Equity and Employment. Journal of Finance 72, 539–574.

Faccio, M., Masulis, R., John, J. M., 2006. Political Connections and Corporate Bailouts. Journal of Finance 61, 2597–2635.

Ferguson, T., Voth, H. J., 2008. Betting on Hitler—the Value of Political Connections in Nazi Germany. Quarterly Journal of Economics 123, 101– 137.

Fisman, R., 2001. Estimating the Value of Political Connections. American Economic Review 91, 1095– 1102.

Glaeser, E. L., Ponzetto, G. A., 2014. Shrouded Costs of Government: The Political Economy of State and Local Public Pensions. Journal of Public Economics 116, 89– 105.

Goldman, E., Rocholl, J., So, J., 2009. Do Politically Connected Boards Affect Firm Value? Review of Financial Studies 22, 2331–2360.

Goldman, E., Rocholl, J., So, J., 2013. Politically Connected Boards of Directors and The Allocation of Procurement Contracts. Review of Finance 17, 1617– 1648.

Gormley, Todd A., and David A. Matsa. "Growing out of trouble? Corporate responses to liability risk." *The Review of Financial Studies* 24, no. 8 (2011): 2781-2821.

Gratton, G., Guiso, L., Michelacci, C., Morelli, M., 2021. From Weber to Kafka: Political Instability and the Overproduction of Laws. American Economic Review 111, 2964–3003.

Greenwood, J., Guner, N., Kocharkov, G., Santos, C., 2014. Marry Your Like: Assortative Mating and Income Inequality. American Economic Review 104, 348–53.

Guriev, S., Treisman, D., 2020. A Theory of Informational Autocracy. Journal of Public Economics 186, 104158.

Hassan, T., Hollander, S., van Lent, L., Tahoun, A., 2019. Firm-level Political Risk: Measurement and Effects. Quarterly Journal of Economics 134, 2135–2202.

Hochberg, Y. V., Rauh, J. D., 2012. Local Overweighting and Underperformance: Evidence from Limited Partner Private Equity Investments. Review of Financial Studies 26, 403–451.

Holmstrom, B., Milgrom, P., 1991. Multitask Principal–Agent Analyses: Incentive Contracts, Asset Ownership, and Job Design. Journal of Law, Economics, and Organization 7, 24–52.

Iyengar, S., Lelkes, Y., Levendusky, M., Malhotra, N., Westwood, S. J., 2019. The Origins and Consequences of Affective Polarization in the United States. Annual Review of Political Science 22, 129–146.

Jayachandran, S., 2006. The Jeffords Effect. Journal of Law and Economics 49, 397–425.

Kendall, C., Nannicini, T., Trebbi, F., 2015. How Do Voters Respond to Information? Evidence from a Randomized Campaign. American Economic Review 105, 322–53.

Klumpp, T., Mialon, H. M., Williams, M. A., 2016. The Business of American Democracy: Citizens United, Independent Spending, and Elections. Journal of Law and Economics 59, 1–43.

Kroszner, R. S., Strahan, P. E., 1999. What Drives Deregulation? Economics and Politics of the Relaxation of Bank Branching Restrictions. Quarterly Journal of Economics 114, 1437–1467.

Lazear, E. P., Malmendier, U., Weber, R. A., 2012. Sorting in Experiments with Application to Social Preferences. American Economic Journal: Applied Economics 4,136-63.

Malanga, S., 2013. The pension fund that ate California. City Journal, 23. Retrieved from

https://www.city-journal.org/article.

Maskin, E., Tirole, J., 2019. Pandering and Pork-Barrel Politics. Journal of Public Economics 176, 79–93.

McCoy, J., Press, B., 2021. What Happens When Democracies Become Perniciously Polarized? Retrieved from https://carnegieendowment.org/2022/01/18/what-happens-when-democracies-become-perniciously-polarized-pub-86190.

Mehmood, S., 2022. The Impact of Presidential Appointment of Judges: Montesquieu or the Federalists? American Economic Journal: Applied Economics 14, 411–45.

Persson, T., Roland, G., Tabellini, G., 1997. Separation of Powers and Political Accountability. Quarterly Journal of Economics 112, 1163–1202.

Prat, A., 2002. Campaign Advertising and Voter Welfare. Review of Economic Studies 69, 999–1017.

Schoenherr, D., 2019. Political Connections and Allocative Distortions. Journal of Finance, 74, 543–586.

Schultz, C., 2008. Information, Polarization and Term Length in Democracy. Journal of Public Economics 92, 1078–1091.

Slattery, Cailin, Alisa Tazhitdinova, and Sarah Robinson. "Corporate political spending and state tax policy: Evidence from Citizens United." *Journal of Public Economics* 221 (2023): 104859.

Spenkuch, J. L., Toniatti, D., 2018. Political Advertising and Election Results. Quarterly Journal of Economics 133, 1981–2036.

Stigler, G. J., 2021. The Theory of Economic Regulation. In: The Political Economy: Readings in the Politics and Economics of American Public Policy, Routledge, pp. 67–81.

Svaleryd, H., Vlachos, J., 2009. Political Rents in a Non-Corrupt Democracy. Journal of Public Economics 93, 355–372.

Szeidl, A., Szucs, F., 2021. Media Capture Through Favor Exchange. Econometrica 89, 281–310.

Tahoun, A., 2014. The Role of Stock Ownership by US Members of Congress on the Market for Political Favors. Journal of Financial Economics 111, 86–110.

Vidal, J. B., Draca, M., Fons-Rosen, C., 2012. Revolving Door Lobbyists. American Economic Review 102, 3731–3748.

Wall Street Journal, 2015. The Pension Sink Is Gulping Billions in Tax Raises. Retrieved from https://www.wsj.com/articles/steve-malanga-the-pension-sink-is-gulping-billions-in-tax-raises-1421106634.

Figure 1. Year Trend of U.S. State Public Pension Assets

Figure 1 plots the average of 51 states pension assets (in $millions) during the years from 2002 to 2020. The U.S. state pension asset information is sourced from the Board of Governors of the Federal Reserve System. The data provides state-level funding status of state and local government employee defined benefit (DB) retirement plans.

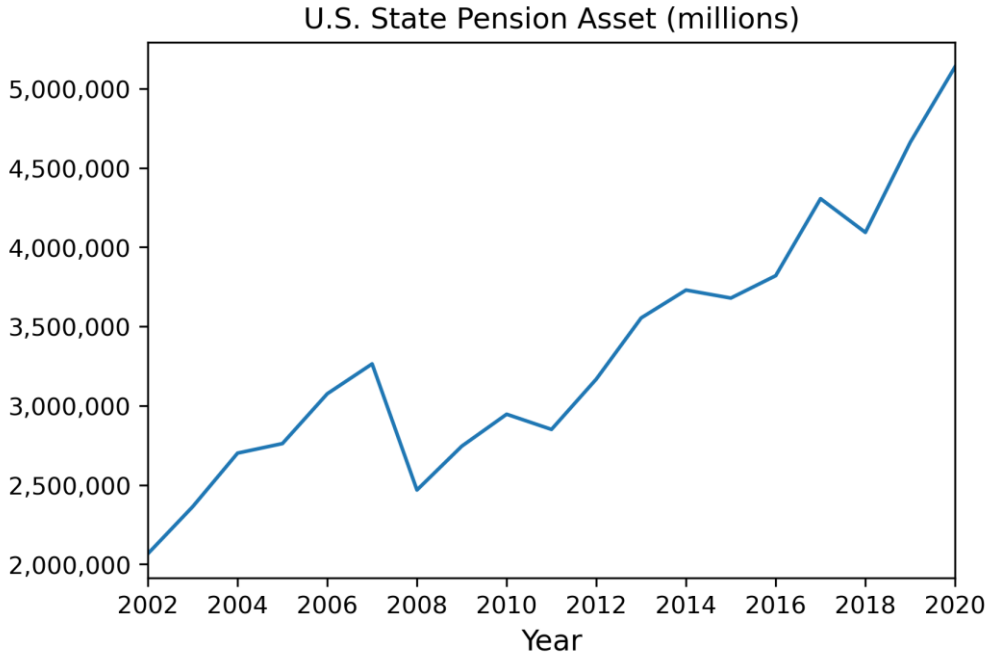

Figure 2. Year Trend of U.S. State Political Contribution

Figure 2 plots the average amount during the election cycles from 2002 to 2022. The political contributions received by state Political Action Committees (PACs) are calculated using data from Federal Election Commission (FEC) and Open Secrets.

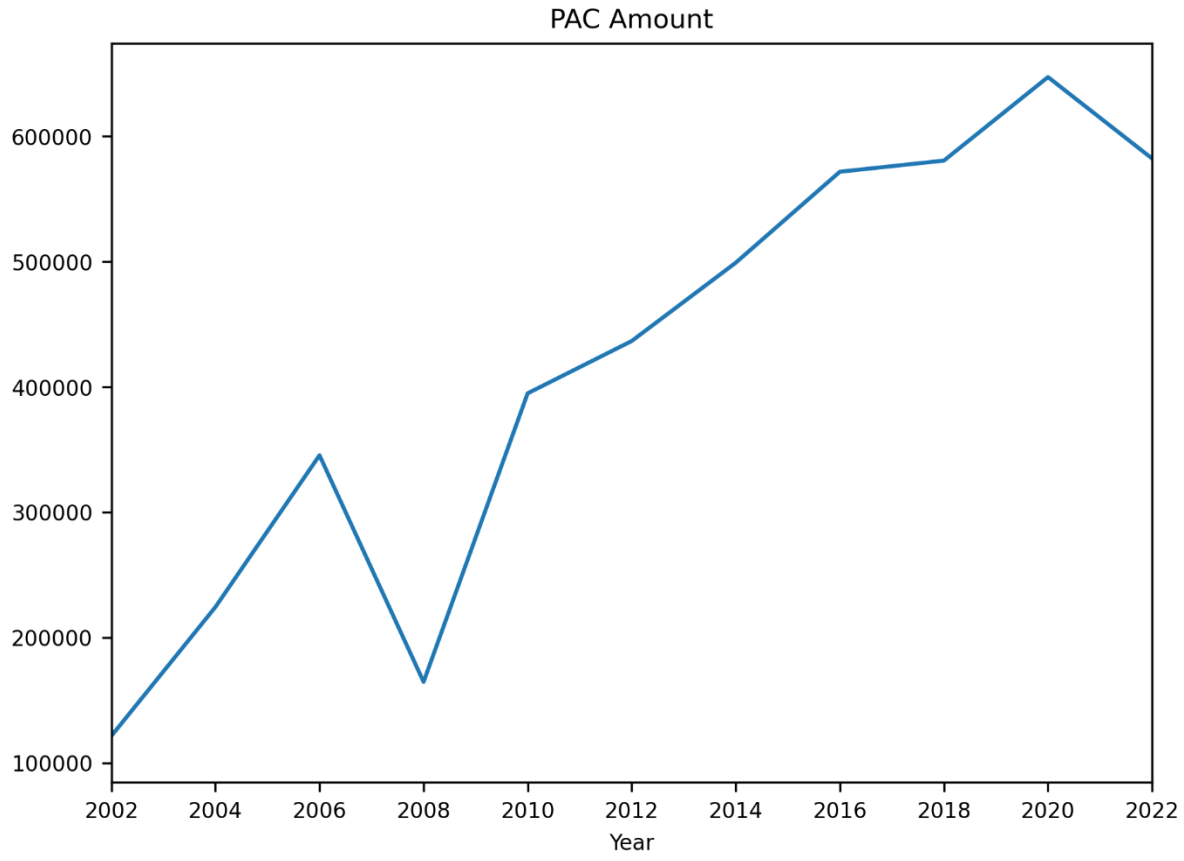

Figure 3. State Pension Status and Political Contributions

Figure 3 reports the year-by-year distribution of political contributions received by states for different pension status. The political contributions are calculated using data from FEC and Open Secrets. The U.S. state pension information is obtained from Board of Governors of the Federal Reserve System. The political contributions are the total amount received by the candidates and state PACs. The plots are made separately for states with high vs. low pension assets, liabilities, and pension status. Pension status equals assets minus liabilities.

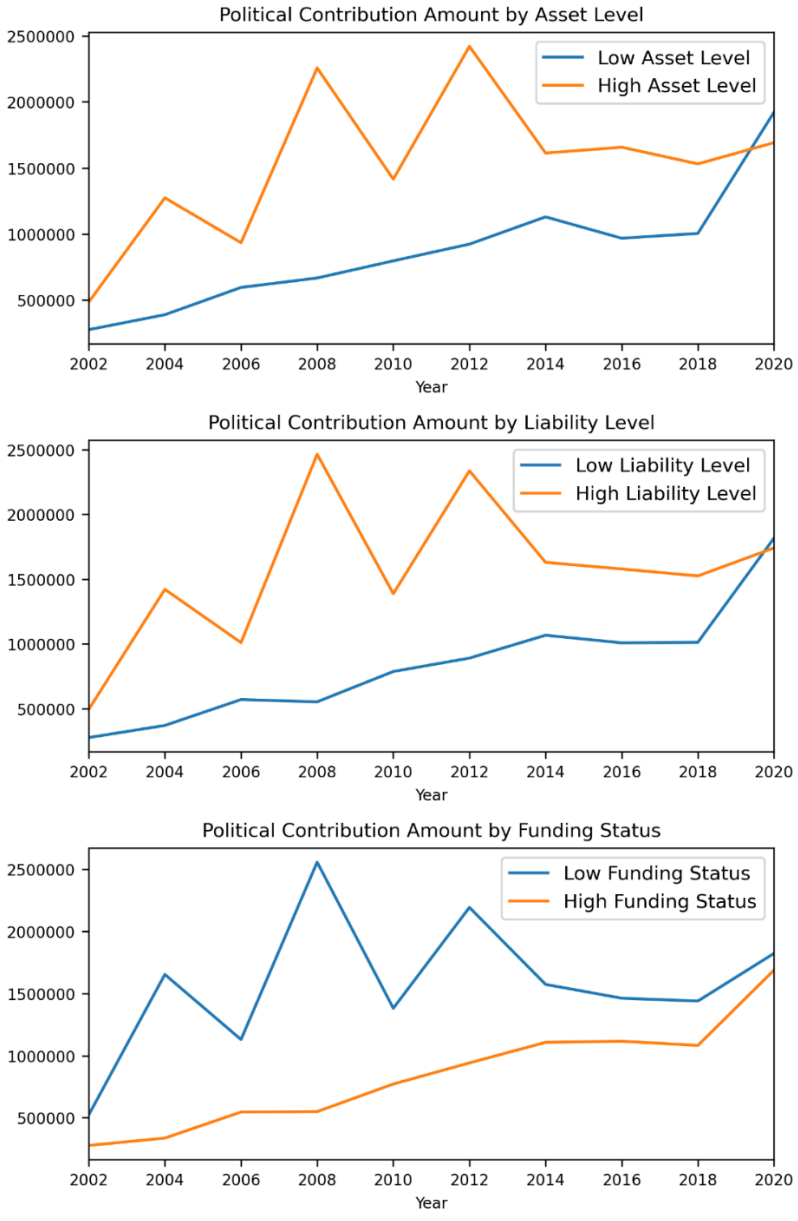

Figure 4. Corporate Political Contributions by Industries

Figure 4 plots the average contribution amount for each industry. Industries are defined using two-digits Global Industry Classification Standard (GICS). Corporate political contributions are calculated using data from FEC and Open Secrets. The plots are made for contributions to political candidates, state PACs, and the total contributions.

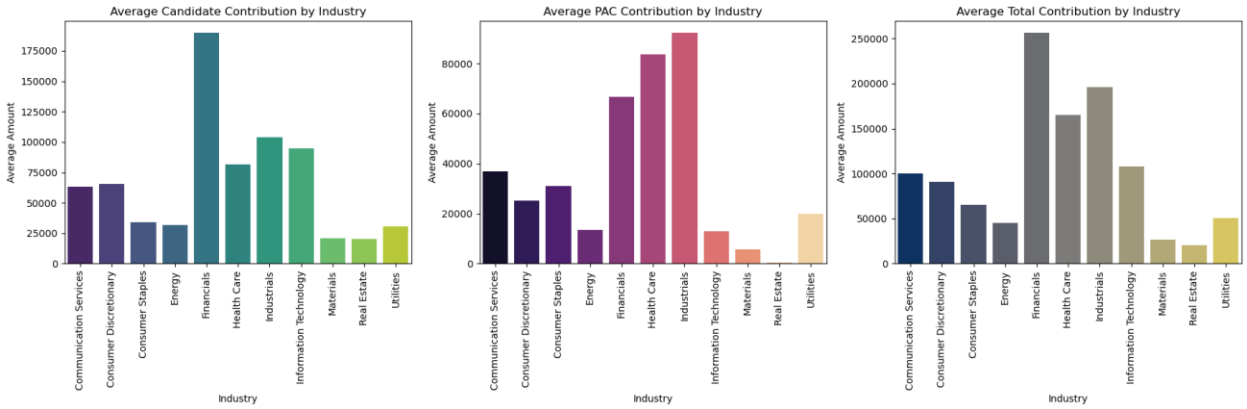

Figure 5. The Co-occurrence of Politician Name with "Campaign" and "Pension" in News Articles from Reuters

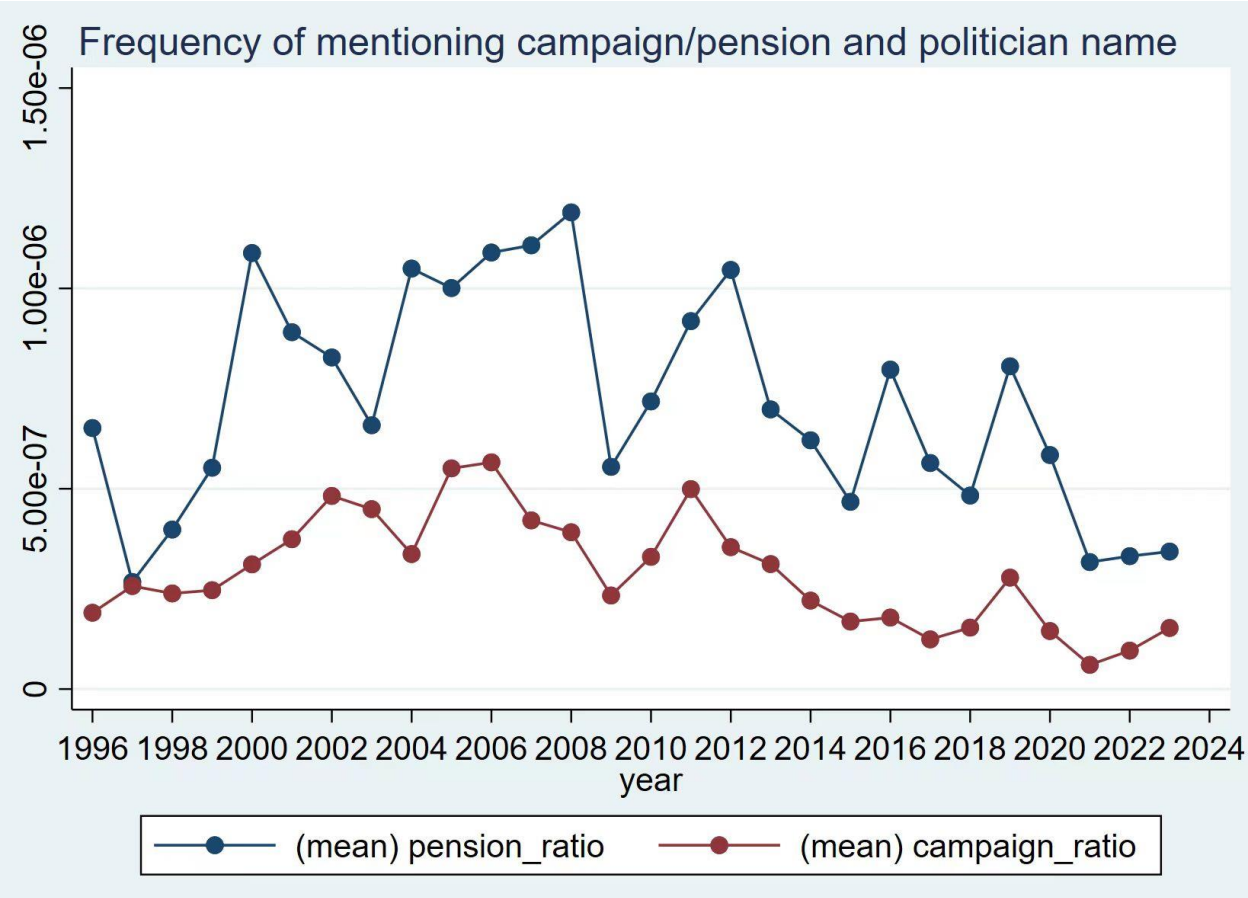

Figure 6. State Pension Status for Pennsylvania and California

Figure 6 plots the public pension assets, liabilities, and status for Pennsylvania and California. The state pension information is sourced from Board of Governors of the Federal Reserve System. We classify U.S. states as political extreme and moderate using multiple state characteristics. California and Pennsylvania are examples of political extreme and moderate states. Both states have similar GDP per capita.

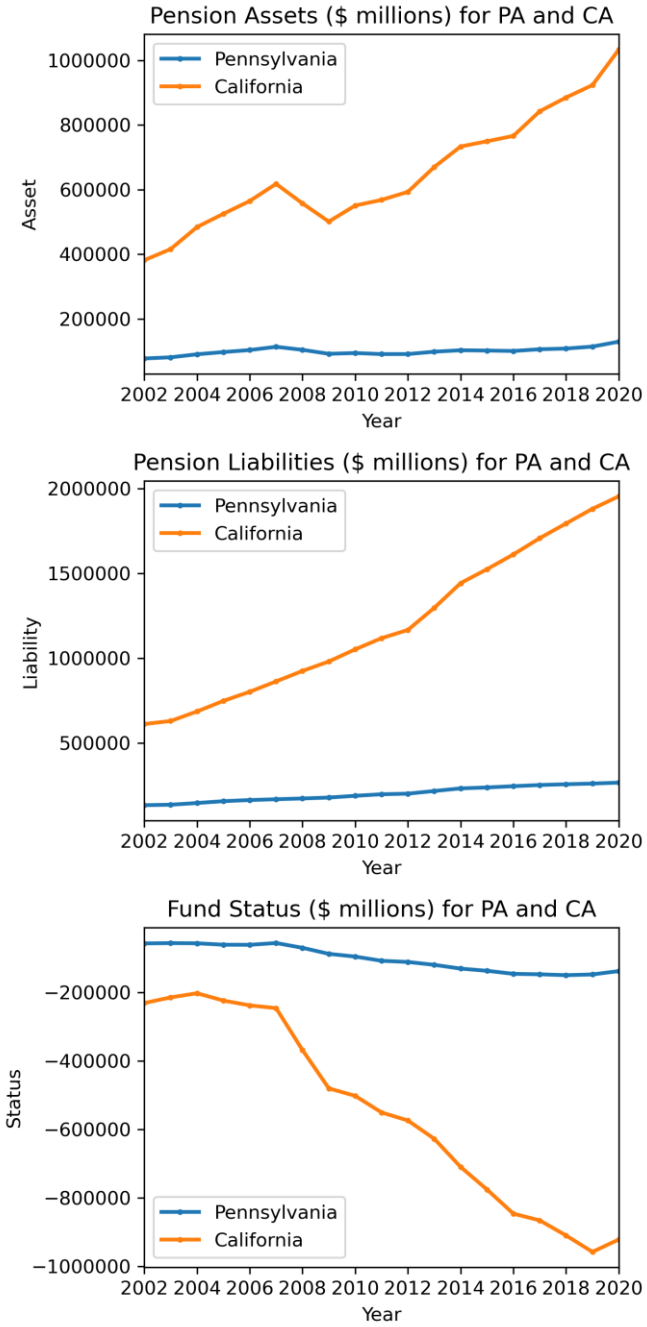

Figure 7. State Pension Status and Political Extremism

Figure 7 plots the average state pension assets for political extreme and moderate states from 2002 to 2020. The pension assets, liabilities, and status are sourced from Board of Governors of the Federal Reserve System. State political extremism is calculated based on four state characteristics, including carbon policy, immigration law, state tax burden, and the strictness of abortion law. The overall extremism is defined to be 1 if more than two of these dimensions are extreme. Pension assets are shown in the unit of million U.S. dollars.

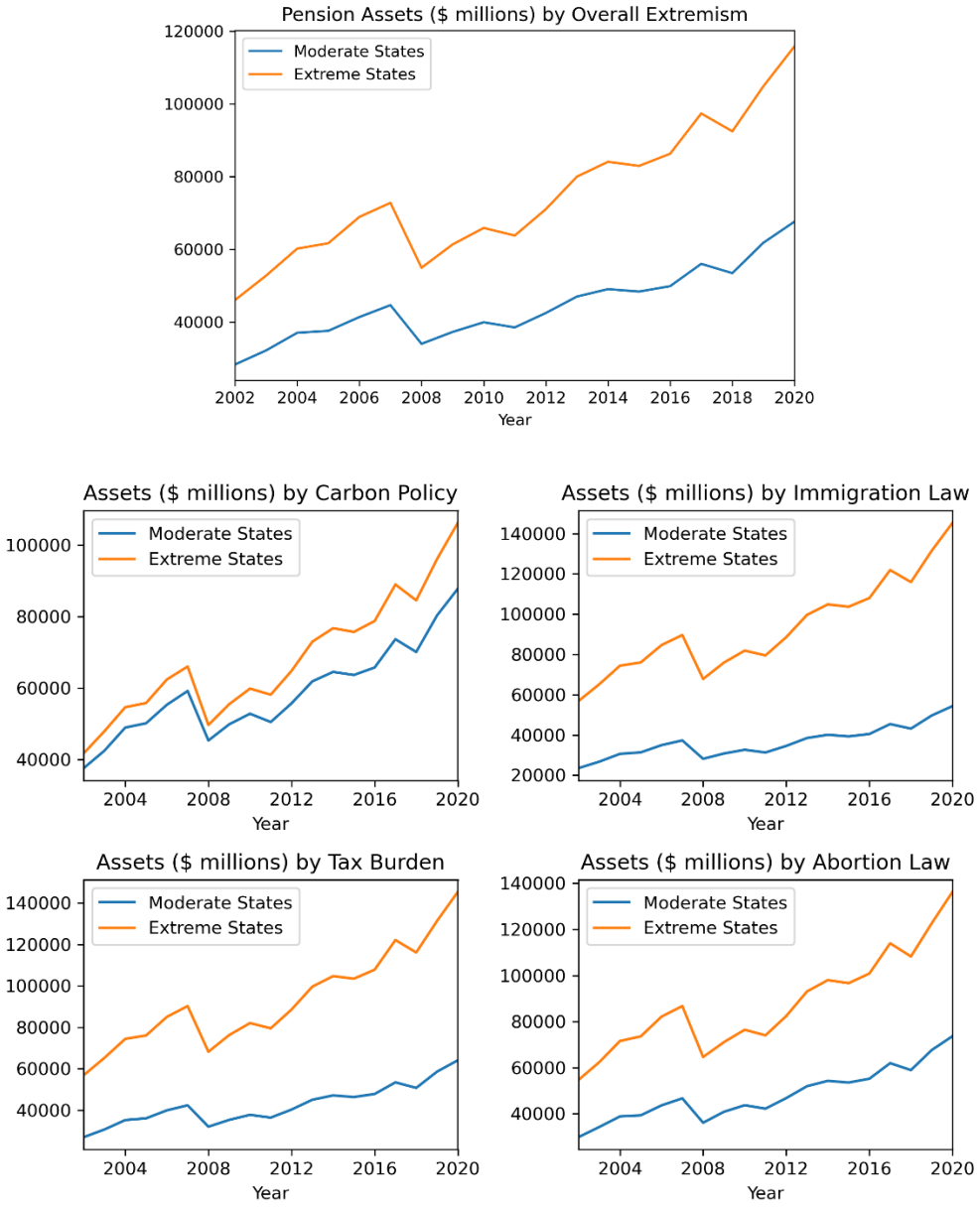

Figure 8. State Restrictions on Independent Political Expenditures by Corporations and Labor Unions

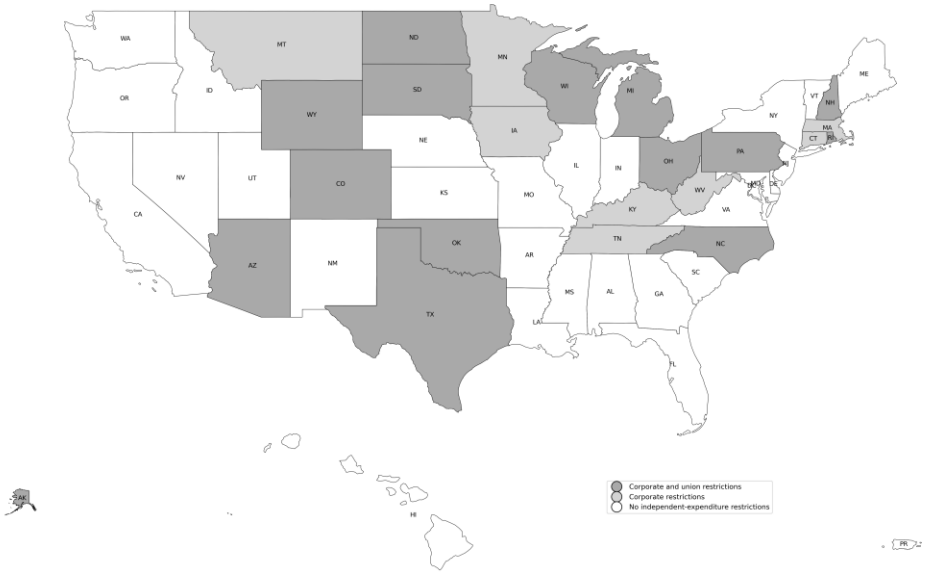

Table 1. Descriptive Statistics

This table presents the descriptive statistics for states, firms, and pension funds characteristics. The variables are defined in Appendix Table A1. The samples consist of 9,852 firms, 4,144 of them have made positive political contributions during 2000-2022 election cycles. In Panel A, we report the firm level variables. In Panel B, we document the state-firm level variables for across-state quid pro quo tests. In Panel C, we present the fund level variables for fund performance tests. In Panel D, we show the firm-fund level variables for portfolio tilting tests.

Panel A: Firm level variables.

	N	Mean	Std	Min	P50	Max
Pension Ownership						
Pension Ownership (t-2)	46,907	0.00997	0.0173	0	0.00139	1
Home-state Pension Ownership (t-2)	46,907	0.000758	0.00316	0	0	0.214
Political Contributions						
Political Contributions to Candidates	46,907	2.922	4.199	0	0	14.67
Political Contributions to PACs	46,907	0.448	2.120	0	0	14.83
Total Political Contributions	46,907	3.041	4.307	0	0	14.87
Home-state Political Contributions to Candidates	46,907	1.631	3.324	0	0	13.27
Home-state Contributions to PACs	46,907	0.161	1.194	0	0	12.81
Total Home-state Contributions	46,907	1.680	3.379	0	0	13.28
Firm Characteristics						
Capital Expenditures	46,907	0.0407	0.0592	-0.186	0.0225	1.781
Tobin's Q	46,907	1.525	2.171	0.00103	1.021	131.3
Firm Size	46,907	6.752	2.322	-1.952	6.741	15.11
R&D Expenditures	46,907	2.946	89.36	0	0	12,522
ROA	46,907	0.0330	0.339	-15.54	0.0803	6.475
ROE	33,246	-0.0335	0.522	-17.41	0.0722	10.61
Average Stock Return	37,838	0.0114	0.0379	-0.712	0.0110	0.719

Panel B: State-firm level variables.

	N	Mean	Std	Min	P50	Max
State Pension Ownership						
Pension Ownership from State (t-2)	2,392,512	0.000204	0.00214	0	0	1
Political Contributions						
Political Contributions to State Candidates	2,392,512	0.275	1.412	0	0	13.41
Political Contributions to State PACs	2,392,512	0.0462	0.641	0	0	13.93
Total Political Contributions to State	2,392,512	0.308	1.511	0	0	13.93

Panel C: Fund level variables.

	N	Mean	Std	Min	P50	Max
Fund Performance						
Fund Ratio (%)	772	78.02	17.75	23.71	78	125
Portfolio Political Contributions						
Equal Weighted	772	0.247	0.761	0	0	5.667
Value Weighted	772	1.148	3.609	0	0	27.85
Control Variables						
Log Income	772	6.807	5.957	0.402	4.849	24.08
Log Employment	772	43.27	9.907	25.25	42.25	71.74
Fund Size	772	22.91	40.29	0.0858	8.937	372.6

Panel D: Firm-fund level variables.

	N	Mean	Std	Min	P50	Max
Portfolio Weight						
Portfolio Weight	164,724	5.149	11.91	0.0118	1.303	81.09
Excess Portfolio Weight	164,724	3.247	7.879	-2.225	0.721	53.87
Political Contributions						
Political Contributions to State Candidates (t-2)	164,724	0.816	2.372	0	0	9.687
Political Contributions to State PACs (t-2)	164,724	0.139	1.103	0	0	12.64
Total Political Contributions to State (t-2)	164,724	0.897	2.523	0	0	13.28

Table 2. State Level Political Contributions and States Pension

This table reports the summary statistics for state-level political contributions for a sample of US states, split by pension status. Pension status include pension assets, pension liabilities, and pension funding status (assets minus liabilities). The table shows that states with high pension assets, high pension liabilities, and low pension status receive significantly higher total political contributions and contributions to candidates than states with other pension statuses. The disparity of contributions for state PACs is not significant.

	Low Pension Asset (N=485)	*High Pension Asset (N=484)*	*High minus Low*	
	Mean	*Mean*	*Mean*	*p-value*
Total Political Contributions (thousand)	838.90	1603.73	764.31	<0.0001
Political Contributions to Candidates (thousand)	346.33	1270.47	924.14	<0.0001
Political Contributions to PAC (thousand)	492.57	333.26	-159.31	0.133

	Low Pension Liability (N=485)	*High Pension Liability (N=484)*	*High minus Low*	
	Mean	*Mean*	*Mean*	*p-value*
Total Political Contributions (thousand)	798.14	1644.57	846.43	<0.0001
Political Contributions to Candidate (thousand)	308.08	1308.80	1000.72	<0.0001
Political Contributions to PAC (thousand)	490.07	335.77	-154.29	0.145

	Low Pension Status (N=485)	*High Pension Status (N=484)*	*High minus Low*	
	Mean	*Mean*	*Mean*	*p-value*
Total Political Contributions (thousand)	1649.85	791.10	-858.75	<0.0001
Political Contributions to Candidate (thousand)	1312.14	302.66	-1009.49	<0.0001
Political Contributions to PAC (thousand)	337.71	488.45	150.74	0.155

Table 3. State Level Regression: Political Contributions and Pension Status

This table estimates the relation between state level political contributions and pension status. The dependent variable is the total political contributions received by the state. The independent variable in columns (1)-(2) is the value of pension assets (in million). The independent variable in columns (3)-(4) is the value of pension liabilities (in million). The independent variable in columns (5)-(6) is the value of pension status (in million). Columns (2), (4), (6) include year fixed effect. Standard errors are clustered at the state level. T-stats are reported in parenthesis; ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable(s):	*Total Political Contributions*					
Pension Assets (million)	**5.38****	**5.16****				
	(2.621)	**(2.479)**				
Pension Liabilities (million)			**2.96****	**2.80****		
			(2.512)	**(2.347)**		
Pension Status(million)					**-5.90****	**-5.56****
					(-2.638)	**(-2.405)**
Observations	969	969	969	969	969	969
R-squared	0.076	0.098	0.098	0.098	0.092	0.092
Year FE		Yes		Yes		Yes

Table 4. Firm Level Comparison of Political Contributions for States Pension: T-Tests

This table reports the summary statistics of firm-level political contributions for the firms with high pension ownership (above median) and low pension ownership (below median). Pension ownership is defined in Appendix Table A1.

	Low Pension Ownership (N=23,453)	*High Pension Ownership (N=23,454)*	*High minus Low*	
	Mean	*Mean*	*Mean*	*p-value*
Total Political Contributions (thousand)	6.62	20.48	13.86	<0.0001
Political Contributions to Candidate (thousand)	5.08	12.41	7.33	<0.0001
Political Contributions to PAC (thousand)	1.55	8.08	6.53	<0.0001

Table 5. Home-state Pension Ownership and Corporate Political Contributions

This table presents the estimation results for home-state quid pro quo. Dependent variables are the logarithm of political contributions to the state of firms' headquarters, including contributions to candidate, state PACs, and total amount. The independent variable is firms' pension ownership held by the funds of the headquarter states. Firm controls, firm and election cycle fixed effects are included. Standard errors are clustered at the firm level. T-stats are reported in parenthesis; ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)
	Political Contributions to Home-state		
Dependent Variable(s):	*Candidates*	*PACs*	*Total*
Home-state Pension Ownership (t-2)	**4.48**	**-2.54**	**4.04**
	(0.489)	**(-0.712)**	**(0.462)**
ROA	0.01	-0.02	0.02
	(0.222)	(-1.052)	(0.352)
Tobin's Q	0.02***	-0.00	0.02***
	(2.600)	(-0.133)	(2.603)
Capital Expenditures	-0.48	0.08	-0.39
	(-1.496)	(0.662)	(-1.203)
R&D Expenditures	-0.00	-0.00	-0.00
	(-1.140)	(-0.126)	(-1.123)
Firm Size	0.30***	0.03**	0.30***
	(8.644)	(2.241)	(8.539)
Observations	46,907	46,907	46,907
R-squared	0.650	0.515	0.660
Firm FE	Yes	Yes	Yes
Cycle FE	Yes	Yes	Yes

Table 6. Across-state Pension Ownership and Corporate Political Contributions

This table presents the estimation results for cross-state quid pro quo. Dependent variables are the logarithm of political contributions to the state. Columns (1), (4) report results for contributions to candidates. Columns (2), (5) report results for state PACs. Columns (3), (6) report results for total contributions. The independent variable is the pension ownership held by the funds from the state in the previous election cycle. Columns (1)-(3) include control variables, firm and election cycle fixed effects. Columns (4)-(6) include firm-election cycle and state-election cycle fixed effects. Standard errors are clustered at the firm level. T-stats are reported in parenthesis; ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Political Contributions to State					
Dependent Variable(s):	*Candidates*	*PACs*	*Total*	*Candidates*	*PACs*	*Total*
Pension Ownership from State (t-2)	**25.55*** **	**1.48** **	**25.37*** **	**13.88** **	**0.99** **	**13.83** **
	(2.591)	**(2.446)**	**(2.593)**	**(2.472)**	**(2.301)**	**(2.475)**
ROA	-0.01	-0.00	-0.02			
	(-1.344)	(-1.022)	(-1.517)			
Tobin's Q	0.01***	0.00	0.01***			
	(3.959)	(0.108)	(3.826)			
Capital Expenditures	0.02	0.03	0.04			
	(0.432)	(1.077)	(0.795)			
R&D Expenditures	-0.00	0.00	-0.00			
	(-1.526)	(0.230)	(-1.436)			
Firm Size	0.08***	0.01*	0.08***			
	(8.851)	(1.803)	(8.729)			
Observations	2,392,512	2,392,512	2,392,512	2,392,512	2,392,512	2,392,512
R-squared	0.198	0.195	0.226	0.316	0.331	0.340
Cycle FE	Yes	Yes	Yes			
Firm FE	Yes	Yes	Yes			
Cycle-Firm FE				Yes	Yes	Yes
Cycle-State FE				Yes	Yes	Yes

Table 7. Co-occurrence of Pension and Campaign with Politician Names in News Articles

This table estimates the correlation between the pension mentions and campaign mentions together with each politician. Panel A presents the regression results where the dependent variable is the frequency of pension mention together with politician names. The independent variable in columns 1-2 is the frequency of pension and politician name in news articles, and the independent variable in columns 3-4 is a dummy variable that equals to 1 if the number of politician name and campaign mentions together with politician names is positive. Panel B presents the regression results where the dependent variable is the frequency of campaign and politician names in news articles. The independent variable in columns 1-2 is the number of co-occurrences of politician name and pension, and the independent variable in columns 3-4 is a dummy variable that equals to 1 if the number of co-occurrences of politician name and pension is positive. Because the dependent variables are counts, we use the Poisson regression in our analysis. Columns 1 and 3 include state and election-cycle fixed effects. Columns 2 and 4 include the state-cycle fixed effect to account for time-varying state level variables (e.g. state GDP, population, total number of news, etc.) and politician fixed effect to account for politician characteristics (e.g. gender). Standard errors are clustered at the politician level. T-stats are reported in parenthesis; ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

Panel A:

	(1)	(2)	(3)	(4)
Dependent Variable(s):	*Pension Mention*			
Campaign Mention	0.009***	0.003***		
	(3.323)	(10.480)		
Campaign Mention Dummy			4.418***	0.999***
			(22.346)	(10.582)
Observations	27,832	11,396	27,832	11,396
Poisson Reg	Yes	Yes	Yes	Yes
Cycle FE	Yes		Yes	
State FE	Yes		Yes	
Cycle-Year FE		Yes		Yes
Politician FE		Yes		Yes
Cluster by Politician	Yes	Yes	Yes	Yes

Panel B:

	(1)	(2)	(3)	(4)
Dependent Variable(s):		*Campaign Mention*		
Pension Mention	0.003***	0.001***		
	(2.593)	(6.175)		
Pension Mention Dummy			4.818***	1.359***
			(19.059)	(9.112)
Observations	27,692	9,828	27,692	9,828
Poisson Reg	Yes	Yes	Yes	Yes
Cycle FE	Yes		Yes	
State FE	Yes		Yes	
Cluster by Politician	Yes	Yes	Yes	Yes
Cycle-Year FE		Yes		Yes
Politician FE		Yes		Yes

Table 8. State Pension Portfolio Political Contributions and Pension Fund Performance

The table presents estimation results for pension fund performance. The dependent variable is the percentage of fund ratio. The independent variables in columns (1)-(2) are portfolio firms' political contribution amounts in thousands from the previous election cycle. The independent variables in columns (3)-(4) are the logarithm of the portfolio political contribution amounts. Control variables include employment, income, and the fund size. State and election cycle fixed effects are included in all columns. Standard errors are clustered at the fund level. T-stats are reported in parenthesis; ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)
Dependent Variable(s):		*Fund Ratio (%)*		
Portfolio Political Contributions (equal weighted t-2)	**-1.496***			
	(-1.771)			
Portfolio Political Contributions (value weighted t-2)		**-0.373****		
		(-2.328)		
Portfolio Political Contributions (log equal weighted)			**-0.721****	
			(-2.023)	
Portfolio Political Contributions (log value weighted)				**-0.609****
				(-2.051)
Employment (million)	0.761	0.786	0.672	0.686
	(0.791)	(0.813)	(0.697)	(0.712)
Income (thousand)	-0.265	-0.247	-0.335	-0.339
	(-0.630)	(-0.579)	(-0.831)	(-0.834)
Fund Size (million)	0.056**	0.061**	0.070**	0.072**
	(2.228)	(2.514)	(2.528)	(2.578)
Observations	772	772	772	772
R-squared	0.613	0.614	0.617	0.617
Cycle FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes

Table 9. Pension Ownership and Firm Performance

This table presents the estimation results for firm performance. Panel A reports the relation between firms' pension ownership and firm performance: ROA, ROE, and 12-month average stock returns. Panel B estimates the effect of joint occurrence of pension ownership and political contribution. Control variables, firm and election cycle fixed effects are included. Standard errors are clustered at the firm level. T-stats are reported in parenthesis; ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

Panel A: Pension ownership and firm performance.

	(1)	(2)	(3)
Dependent Variable(s):	*ROA*	*ROE*	*Average Stock Return*
Pension Ownership (t-2)	**-0.35****	**-0.85*****	**-0.09*****
	(-1.974)	**(-3.658)**	**(-3.968)**
Tobin's Q	-0.02*	0.02***	0.01***
	(-1.669)	(3.539)	(7.696)
Capital Expenditures	0.01	0.25*	0.01
	(0.101)	(1.740)	(0.383)
R&D Expenditures	-0.00**	-0.00	-0.00
	(-2.477)	(-1.330)	(-0.928)
Firm Size	0.08***	0.12***	-0.00
	(11.851)	(10.715)	(-0.993)
Observations	46,907	33,246	37,838
R-squared	0.771	0.628	0.478
Firm FE	Yes	Yes	Yes
Cycle FE	Yes	Yes	Yes

Panel B: Joint occurrence of pension ownership and political contributions.

Dependent Variable(s):	(1) *ROA*	(2) *ROE*	(3) *Average Stock Return*
Pension Ownership (t-2)	-0.22	-0.67**	-0.08***
	(-1.473)	(-2.448)	(-3.002)
Total Political Contributions	0.00**	0.00	0.00
	(2.359)	(0.264)	(0.311)
Pension Ownership (t-2) * Total Political Contributions	**-0.08*** **	**-0.05**	**-0.00**
	(-3.975)	**(-1.244)**	**(-0.593)**
Tobin's Q	-0.02*	0.02***	0.01***
	(-1.674)	(3.531)	(7.691)
Capital Expenditures	0.01	0.25*	0.01
	(0.095)	(1.741)	(0.383)
R&D Expenditures	-0.00**	-0.00	-0.00
	(-2.473)	(-1.330)	(-0.926)
Firm Size	0.08***	0.12***	-0.00
	(11.817)	(10.662)	(-0.979)
Observations	46,907	33,246	37,838
R-squared	0.755	0.613	0.463
Firm FE	Yes	Yes	Yes
Cycle FE	Yes	Yes	Yes

Table 10. Channel Tests for Politicians' Motives: Pension Ownership and Corporate Political Donations

This table presents cross-section estimations for the across-state quid pro quo. The dependent variables are the logarithm of the political contributions to the state. Columns (1)-(3) estimate the coefficients of the interaction terms between state pension ownership (t-2) and political extremism. Columns (4)-(6) estimate the coefficients of the interaction terms between state pension ownership (t-2) and state corruption. All columns include firm and election cycle fixed effects. Standard errors are clustered at the firm level. T-stats are reported in parenthesis; ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Political Contributions to State					
Dependent Variable(s):	*Candidates*	*PACs*	*Total*	*Candidates*	*PACs*	*Total*
Pension Ownership from State (t-2)	1.70**	0.40**	1.93***	4.18***	0.53***	4.27***
	(2.571)	(2.544)	(2.606)	(4.635)	(2.737)	(4.726)
Extremism	0.03***	0.01***	0.03***			
	(6.557)	(4.753)	(7.623)			
Pension Ownership from State (t-2) * Extremism	**43.62*** **	**1.95** **	**42.82*** **			
	(2.618)	**(2.349)**	**(2.619)**			
Corruption				0.03***	0.02***	0.04***
				(7.109)	(13.140)	(10.655)
Pension Ownership from State (t-2) * Corruption				**23.35** **	**0.91**	**22.93** **
				(2.017)	**(1.433)**	**(2.006)**
ROA	-0.01	-0.00	-0.02	-0.01	-0.00	-0.02
	(-1.309)	(-1.019)	(-1.486)	(-1.344)	(-1.023)	(-1.517)
Tobin's Q	0.01***	0.00	0.01***	0.01***	0.00	0.01***
	(3.969)	(0.111)	(3.837)	(3.955)	(0.107)	(3.822)
Capital Expenditures	0.02	0.03	0.04	0.02	0.03	0.04
	(0.465)	(1.080)	(0.825)	(0.434)	(1.077)	(0.797)
R&D Expenditures	-0.00	0.00	-0.00	-0.00	0.00	-0.00
	(-1.520)	(0.233)	(-1.430)	(-1.526)	(0.229)	(-1.437)
Firm Size	0.08***	0.01*	0.08***	0.08***	0.01*	0.08***
	(8.808)	(1.800)	(8.691)	(8.842)	(1.803)	(8.721)
Observations	2,392,512	2,392,512	2,392,512	2,392,512	2,392,512	2,392,512
R-squared	0.199	0.195	0.227	0.198	0.195	0.227
Cycle FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 11. Co-occurrence of Pension and Campaign with Politician Names in News Articles: Interaction with State Corruption Index

This table reports the heterogeneous effect of pension and campaign mention together with politician names across state corruption metrics. The dependent variable in columns 1-3 is the frequency of co-occurrence of campaign and politician name in news articles, and the dependent variable in columns 4-6 is the frequency of co-occurrence of pension and politician name in news articles. We use three corruption measures: Corruption Perceptions Index (CPI), Corruption Reflection Index (CRI), and Corruption Convictions Index (CCI). We use the Poisson regression in our analysis and include state and election-cycle fixed effects. Standard errors are clustered at the politician level. T-stats are reported in parenthesis; ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable(s):	*Campaign Mention*			*Pension Mention*		
Pension Mention * CPI	0.000					
	(1.377)					
Pension Mention * CCI		0.001**				
		(2.018)				
Pension Mention * CRI			0.019*			
			(1.893)			
Campaign Mention * CPI				0.002**		
				(2.166)		
Campaign Mention * CCI					0.009***	
					(3.878)	
Campaign Mention * CRI						0.021
						(0.994)
Campaign Mention				-0.018	-0.008	0.005
				(-1.450)	(-1.616)	(0.922)
Pension Mention	-0.001	0.000	-0.001			
	(-0.247)	(0.004)	(-0.413)			
Observations	27,692	27,692	27,692	27,832	27,832	27,832
Poisson Reg	Yes	Yes	Yes	Yes	Yes	Yes
Cycle FE	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Cluster by Politician	Yes	Yes	Yes	Yes	Yes	Yes

Table 12. Channel Tests for Managerial Motives

This table presents the cross-section tests for the across-state quid pro quo. The dependent variables are the logarithm of the political contributions to the states. We estimate the coefficients of interaction terms between state pension ownership (t-2) and corporate governance measures. Column (1) uses the dummy variable of limited compensation (strength indicator). Column (2) uses the dummy variable of high compensation (concern indicator). Column (3) uses the dummy variable of controversial investment (concern indicator). Column (4) uses the dummy variable of business ethics (concern indicator). Column (5) shows the interaction of state pension ownership (t-2) with the number of corporate governance strengths minus the concerns. Firm and election cycle fixed effects are included in all columns. Standard errors are clustered at the fund level. T-stats are reported in parenthesis; ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)
Dependent Variable(s):	*Total Political Contributions to State*				
Pension Ownership from State (t-2)	87.43***	51.42***	184.38***	169.88***	69.58***
	(16.101)	(11.917)	(19.844)	(19.289)	(16.393)
Limited Compensation	0.07**				
	(2.470)				
Pension Ownership from State (t-2) * Limited Compensation	**-57.23*** **				
	(-6.340)				
High Compensation		-0.10***			
		(-4.460)			
Pension Ownership from State (t-2) * High Compensation		**75.37*** **			
		(5.763)			
Controversial Investments			0.20		
			(0.477)		
Pension Ownership from State (t-2) * Controversial Investments			**772.27*** **		
			(5.985)		
Business Ethics				-0.27**	
				(-2.074)	
Pension Ownership from State (t-2) * Business Ethics				**354.58*** **	
				(6.897)	
Strength Net Concern					0.07***
					(5.696)
Pension Ownership from State (t-2) * Strength Net Concern					**-43.90*** **
					(-7.941)
ROA	0.09	0.08	-0.09	-0.08	-0.01
	(1.100)	(1.018)	(-0.709)	(-0.689)	(-0.214)
Tobin's Q	-0.01	-0.01	0.04***	0.04***	-0.00
	(-0.571)	(-0.534)	(2.854)	(2.823)	(-0.058)

Capital Expenditures	0.41**	0.41**	0.36	0.37	0.45***
	(2.293)	(2.291)	(1.053)	(1.080)	(2.737)
R&D Expenditures	0.00*	0.00*	-0.00	-0.00	0.00
	(1.708)	(1.867)	(-1.190)	(-1.180)	(1.225)
Firm Size	0.17***	0.17***	0.18***	0.18***	0.14***
	(5.809)	(5.806)	(4.360)	(4.422)	(5.535)
Observations	316,710	316,710	361,794	361,794	498,117
R-squared	0.192	0.193	0.281	0.282	0.216
Cycle FE	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes

Table 13. Pension Ownership and Corporate Political Contributions: Before and after 2010

This table presents across-state quid pro quo tests for pre-2010 and post-2010 period. The dependent variables are the logarithm of firms' political contributions to the state, including contributions to candidates, PACs and total amount. The independent variable is the pension ownership held by the state. Control variables include ROA, Tobin's Q, capital expenditures, R&D expenditures and firm size. Columns (1)-(3) estimate the sample for pre-2010 period. Columns (4)-(6) estimate the sample for post-2010 period. All columns include firm and election cycle fixed effects. Standard errors are clustered at the firm level. T-stats are reported in parenthesis; ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Political Contributions to State					
Dependent Variable(s):	*Candidates*	*PACs*	*Total*	*Candidates*	*PACs*	*Total*
	Pre-2010			*Post-2010*		
Pension Ownership from State (t-2)	**13.11****	**0.58****	**13.10****	**97.54*****	**7.26*****	**96.72*****
	(2.188)	**(1.982)**	**(2.188)**	**(17.605)**	**(5.993)**	**(17.630)**
ROA	0.01	-0.00	0.00	-0.02	-0.01	-0.03*
	(0.965)	(-1.106)	(0.575)	(-1.621)	(-0.934)	(-1.816)
Tobin's Q	0.00	-0.00	0.00	0.01***	-0.00	0.01***
	(0.611)	(-0.706)	(0.291)	(3.248)	(-0.070)	(3.191)
Capital Expenditures	0.02	-0.01	0.02	0.02	0.06	0.06
	(0.532)	(-0.511)	(0.477)	(0.381)	(1.640)	(0.826)
R&D Expenditures	-0.00	0.00	-0.00	-0.00*	0.00	-0.00*
	(-1.449)	(0.470)	(-1.374)	(-1.904)	(0.692)	(-1.870)
Firm Size	0.02***	0.01*	0.03***	0.10***	0.01	0.10***
	(3.705)	(1.814)	(4.008)	(8.709)	(1.451)	(8.415)
Observations	972,825	972,825	972,825	1,419,687	1,419,687	1,419,687
R-squared	0.144	0.137	0.165	0.230	0.255	0.265
Cycle FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 14. State Pension Portfolio Political Contributions and Pension Performance: Before and After 2010

This table presents estimation of the pension performance for pre-2010 and post-2010 periods. The dependent variable is the percentage of fund ratio. Independent variables are the portfolio firms' political contribution amounts in thousands. All columns include state and election cycle fixed effects. Standard errors are clustered at the fund level. T-stats are reported in parenthesis; ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)
Dependent Variable(s):	*Fund Ratio (%)*			
	Pre-2010		*Post-2010*	
Portfolio Political Contributions (equal weighted t-2)	**0.134**		**-1.822*** **	
	(0.078)		**(-2.981)**	
Portfolio Political Contributions (value weighted t-2)		**-0.060**		**-0.482*** **
		(-0.178)		**(-4.356)**
	0.453	0.560	-1.288	-1.190
State Employment (million)	0.453	0.560	-1.288	-1.190
	(0.204)	(0.253)	(-1.305)	(-1.200)
State Income (thousand)	-0.570	-0.574	-0.191	-0.195
	(-0.672)	(-0.677)	(-0.560)	(-0.564)
Fund Size	0.080**	0.082**	0.046*	0.053**
	(2.402)	(2.414)	(1.956)	(2.521)
Observations	319	319	453	453
R-squared	0.511	0.511	0.642	0.646
Cycle FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes

Table 15. Pension Ownership and Firm Performance: Before and After 2010

This table presents the relation between the pension ownership and firm performance for pre-2010 and post-2010 sample periods. The dependent variables are firms' ROA, ROE and 12-month average stock returns. Columns (1)-(3) report the pre-2010 period, and columns (4)-(6) report the post-2010 period. Control variables include firm size, Tobin's Q, capital expenditures and R&D expenditures. Firm and election cycle fixed effects are included in all columns. Standard errors are clustered at the fund level. T-stats are reported in parenthesis; ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable(s):	*ROA*	*ROE*	*Average Stock Return*	*ROA*	*ROE*	*Average Stock Return*
	Pre-2010			*Post-2010*		
Pension Ownership (t-2)	**-0.19**	**-0.02**	**0.02**	**-0.83*** **	**-1.34*** **	**-0.07**
	(-1.411)	**(-0.067)**	**(0.479)**	**(-4.114)**	**(-2.916)**	**(-1.514)**
Tobin's Q	-0.03	0.03***	0.01***	-0.00	0.02*	0.01***
	(-0.963)	(2.748)	(3.667)	(-0.353)	(1.952)	(6.020)
Capital Expenditures	-0.09	-0.03	-0.00	-0.08	0.40	0.01
	(-1.003)	(-0.256)	(-0.130)	(-0.586)	(1.191)	(0.369)
R&D Expenditures	-0.00	-0.00	-0.00	-0.00**	-0.00	-0.00
	(-1.044)	(-0.671)	(-0.911)	(-2.474)	(-0.988)	(-0.409)
Firm Size	0.10***	0.15***	0.00**	0.08***	0.16***	0.00**
	(4.146)	(8.507)	(2.084)	(8.314)	(8.007)	(2.186)
Observations	19,071	15,157	16,021	27,836	18,089	21,817
R-squared	0.842	0.735	0.594	0.798	0.663	0.477
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Cycle FE	Yes	Yes	Yes	Yes	Yes	Yes

Table 16. State-level Heterogeneity and Campaign Finance Regulatory Change: DID Tests

This table presents the DID tests for across-state quid pro quo. Post is a dummy that equals to 1 if the sample period is two election cycles after 2010. Post equals to 0 if sample period is two election cycles before 2010. Restrict is a dummy that equals to one if the fund state has limitation on contributions before 2010. Dependent variables are the logarithm of political contributions to state. Columns (1), (4) report results for contribution to candidates. Columns (2), (5) report results for contribution to state PACs. Columns (3), (6) report results for total contributions. Columns (1)-(3) include firm and election cycle fixed effects. Columns (4)-(6) include firm-election cycle and state fixed effects. Standard errors are clustered at the firm level. T-stats are reported in parenthesis; ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Political Contributions to State					
Dependent Variable(s):	*Candidates*	*PACs*	*Total*	*Candidates*	*PACs*	*Total*
Restrict * Post	**0.03*** **	**0.00**	**0.03*** **	**0.03*** **	**0.00**	**0.03*** **
	(7.071)	**(1.128)**	**(7.209)**	**(7.233)**	**(1.132)**	**(7.233)**
Restrict	-0.00	-0.01***	-0.01**			
	(-0.548)	(-6.988)	(-2.559)			
Post	-0.08***	0.03***	-0.06***			
	(-12.360)	(5.010)	(-8.512)			
Observations	828,350	828,350	828,350	828,350	828,350	828,350
R-squared	0.225	0.282	0.251	0.290	0.333	0.290
Cycle FE	Yes	Yes	Yes			
Firm FE	Yes	Yes	Yes			
Cycle-Firm FE				Yes	Yes	Yes
State FE				Yes	Yes	Yes

Table 17. Excess Portfolio Weight and Political Contributions

This table presents the results of portfolio holding on political contributions. The dependent variable is the excess portfolio weight. The independent variable is the logarithm of firms' total political contributions to the state of the pension fund. Control variables include ROA, Tobin's Q, capital expenditures, R&D expenditures, firm size, and a dummy of Russell 3000 Index. Columns (1)-(3) include firm and fund-election cycle fixed effects. Columns 4-6 include firm-election cycle and fund-election cycle fixed effects. Standard errors are clustered at the fund level. T-stats are reported in parenthesis; ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable(s):	*Excess Portfolio Weight*					
Political Contributions to State Candidates (t-2)	**0.10*** **			**0.05** **		
	(5.335)			**(2.411)**		
Political Contributions to State PACs (t-2)		**0.05**			**0.13***	
		(1.023)			**(1.898)**	
Total Political Contributions to State (t-2)			**0.10*** **			**0.05** **
			(5.201)			**(2.472)**
ROA	1.59***	1.60***	1.58***			
	(3.824)	(3.906)	(3.796)			
Tobin's Q	0.34***	0.34***	0.34***			
	(8.532)	(8.472)	(8.516)			
Capital Expenditures	6.54***	6.50***	6.53***			
	(9.395)	(9.123)	(9.364)			
R&D Expenditures	0.75***	0.76***	0.74***			
	(6.305)	(6.340)	(6.277)			
Firm Size	2.16***	2.18***	2.16***			
	(11.301)	(11.460)	(11.233)			
Russell 3000 Index	-0.61***	-0.64***	-0.61***			
	(-6.621)	(-6.778)	(-6.520)			
Observations	164,724	164,724	164,724	164,724	164,724	164,724
R-squared	0.676	0.676	0.676	0.761	0.761	0.761
Firm FE	Yes	Yes	Yes			
Fund-Cycle FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm-Cycle FE				Yes	Yes	Yes

Appendix

Table A.1. Variable Definitions

Variable Name	Definition
Firm level variables	
Pension Ownership	Pension fund ownership of a firm. It is the number of shares held by pension funds scaled by the total shares outstanding.
Home-state Pension Ownership	A firm's pension fund ownership held by the state of headquarter.
Political Contributions to Home-state Candidates	Logarithm of political contributions to candidates of the headquarter state.
Political Contributions to Home-state PACs	Logarithm of total contributions to PACs in the headquarters state.
Total Political Contributions to Home-state	Logarithm of contributions to candidates plus contributions to PACs in the headquarter state.
Political Contributions to Candidates	Logarithm of total contributions to political candidates.
Political Contributions to PACs	Logarithm of total contributions to PACs.
Total Political Contributions	Logarithm of contributions to candidates plus contributions to PACs.
Capital Expenditures	Capital expenditures scaled by total assets.
Tobin's Q	Market value of equity plus debt minus deferred taxes and investment tax credit scaled by total assets.
Firm Size	Logarithm of total assets.
R&D Expenditures	R&D expenditures scaled by total assets.
ROA	Firms' net income scaled by total assets.
ROE	Firms' net income scaled by shareholder's equity.
Average Stock Return	The average of firms' monthly stock return for the past 12 months.
Limited Compensation	Whether the company has recently awarded notably low levels of compensation to its top management or its board members. The limit for a rating is total compensation of less than $500,000 per year for a CEO or $30,000 per year for outside directors. A measure of strength.
High Compensation	Whether the company has recently awarded notably high levels of compensation to its top management or its board members. The limit for a rating is total compensation of more than $10 million per year for a CEO or $100,000 per year for outside directors. A measure of concern.
Controversial Investments	The severity of controversies related to the social and environmental impact of a firm's lending, underwriting, and financing activities. A measure of concern.
Business Ethics	The severity of controversies related to a firm's business ethics practices. Factors affecting this evaluation include, but are not limited to, a history of involvement in

	widespread or egregious instances of bribery, tax evasion, insider trading, accounting irregularities, resistance to improved practices, and criticism by NGOs and/or other third-party observers. A measure of concern.
Strength Net Concern	Number of corporate governance strength minus the number of concerns.
Russell 3000 Index	A dummy variable that equals to one if the firm is in Russell 3000 index.
Firm-state level variables	
Pension Ownership from State	A firm's ownership held by the state pension funds.
Political Contributions to State Candidates	Logarithm of total contributions to political candidates in the state.
Political Contributions to State PACs	Logarithm of total contributions to PACs in the state.
Total Political Contributions to State	Logarithm of contributions to candidates plus contributions to PACs in the state.
Pension fund variables	
Fund Ratio (%)	Funded ratio under GASB standards. The fund ratio is the actuarial assets divided by the actuarial liability.
Fund Size	Net market value of assets of the fund (in million).
Portfolio Political Contributions	Equal/value weighted of portfolio firms' total political contribution.
Fund holding variables	
Portfolio Weight	Holding firm value scaled by the total value of the portfolio (×10,000)
Excess Portfolio Weight	Portfolio weight minus the benchmark ratio. The benchmark ratio is calculated as the value of a firm's market capitalization scaled by the total market capitalization.
State variables	
Employment	State employment (in million).
Income	State income (in thousand).
Extremism	A dummy variable whether more than two of extremism measures are extreme.
Corruption	A dummy variable whether more than two of the corruption indices are above median.

Table A.2. Additional Descriptive Statistics

This table presents additional descriptive statistics for firm and state characteristics. Panel A reports the firm level corporate governance variables. Panel B reports state level variables including political extremism, state corruption, and state employment.

Panel A: Firm level variables.

	N	Mean	Std	Min	P50	Max
Corporate Governance						
Limited Compensation	6,210	0.166	0.372	0	0	1
High Compensation	6,210	0.340	0.474	0	0	1
Controversial Investments	7,092	0.00127	0.0356	0	0	1
Business Ethics	7,092	0.0541	0.226	0	0	1
Strength Net Concern	9,767	-0.161	0.705	-4	0	2

Panel B: State level variables.

	N	Mean	Std	Min	P50	Max
Employment (in million)	969	35.65	39.25	3.341	23.75	242.3
Extremism						
Extremism (Carbon Policy)	969	0.706	0.456	0	1	1
Extremism (Abortion)	950	0.460	0.499	0	0	1
Extremism (Immigration)	969	0.510	0.500	0	1	1
Extremism (Tax Burden)	969	0.451	0.498	0	0	1
Total Extremism	950	2.16	1.008	0	2	4
Corruption						
Corruption Perceptions Index	950	15.24	3.480	8	15.31	23.50
Corruption Reflections Index	969	0.312	0.119	0.121	0.308	0.731
Corruption Convictions Index	950	3.360	1.815	0.826	2.931	8.589

Table A.3. State Employment and Political Contributions

This table presents the estimation results of state employment and political contributions received by the state. The dependent variable is the state employment (in million). Column (1) reports univariate estimation. Column (2) estimates the interaction of political contributions and a dummy variable of high pension asset. Year fixed effect is included in both columns. Standard errors are clustered at the state level. T-stats are reported in parenthesis; ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)
Dependent Variable(s):	*Employment (in million)*	
Total Political Contributions	**0.53**	0.27
	(1.360)	(1.289)
High Pension Assets		40.03***
		(10.408)
Total Political Contributions (million) * High Pension Assets		**-0.00*** **
		(-3.125)
Observations	969	969
R-squared	0.089	0.841
Year FE	Yes	Yes

Table A.4. State Employment DID

This table presents the DID results for state employment. The dependent variable is the state employment (in million). Post is a dummy variable that equals to one in two election cycles after 2010. It equals to zero in two election cycles before 2010. Restrict is a dummy variable of whether the state has restrictions on political expenditures by 2010. Column (2) includes year fixed effect. Standard errors are clustered at the state level. T-stats are reported in parenthesis; ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)
Dependent Variable(s):	*Employment (in million)*	
Post	-5.07	-5.07
	(-0.487)	(-0.483)
Restrict	0.85***	
	(2.714)	
Post * Restrict	**0.13**	**0.13**
	(0.225)	**(0.223)**
Observations	400	400
R-squared	0.004	0.005
Year FE		Yes

Table A.5. Firm Level Employment and the Quid Pro Quo

This table presents the results of firms' own-state pension ownership and employees. The dependent variable is the firms' employees (in thousand). Panel A reports the results of home-state ownership alone, interacting with political ownership, and interacting with post. Panel B reports the results of interacting home-state ownership with state political extremism, corruption, and corporate governance. Firm controls, election cycle and firm fixed effects are included. Standard errors are clustered at the firm level. T-stats are reported in parenthesis; ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

Panel A: Firms employees and home-state pension ownership.

Dependent Variable(s):		*Employees*	
Home-state Pension Ownership (t-2)	**-50.87**	-124.19	-28.70
	(-0.548)	(-1.097)	(-0.250)
Total Political Contributions		-0.03	
		(-0.450)	
Home-state Pension Ownership (t-2) * Total Political Contributions		**27.01***	
		(1.925)	
Post			-0.79
			(-0.816)
Post * Home-state Pension Ownership (t-2)			**-79.83**
			(-0.657)
Tobin's Q	0.03	0.03	0.03
	(0.305)	(0.317)	(0.309)
Capital Expenditures	-0.07	-0.06	-0.05
	(-0.012)	(-0.012)	(-0.010)
R&D Expenditures	-0.00	-0.00	-0.00
	(-0.751)	(-0.727)	(-0.749)
Firm Size	5.38***	5.37***	5.38***
	(6.290)	(6.229)	(6.283)
Observations	46,043	46,043	46,043
R-squared	0.883	0.883	0.883
Firm FE	Yes	Yes	Yes
Cycle FE	Yes	Yes	Yes

Panel B: Firms employees and home-state pension ownership: cross-section tests.

	(1)	(2)	(3)
Dependent Variable(s):		*Employees*	
Home-state Pension Ownership (t-2)	-23.80	-177.75*	104.03*
	(-0.895)	(-1.681)	(1.732)
Extremism	1.37		
	(0.981)		
Home-state Pension Ownership (t-2) * Extremism	**-45.91**		
	(-0.311)		
Corruption		0.20	
		(0.483)	
Home-state Pension Ownership (t-2) * Corruption		**133.70**	
		(1.239)	
Strength Net Concern			0.71**
			(1.962)
Home-state Pension Ownership (t-2) * Strength Net Concern			**-133.96**
			(-1.357)
Tobin's Q	0.03	0.03	-0.10
	(0.309)	(0.307)	(-0.372)
Capital Expenditures	-0.07	-0.03	-12.02
	(-0.014)	(-0.006)	(-1.384)
R&D Expenditures	-0.00	-0.00	0.01
	(-0.763)	(-0.753)	(1.383)
Firm Size	5.38***	5.38***	7.13***
	(6.284)	(6.290)	(7.471)
Observations	46,043	46,043	9,706
R-squared	0.883	0.883	0.977
Firm FE	Yes	Yes	Yes
Cycle FE	Yes	Yes	Yes

Table A.6. Robustness Tests of Across-state Quid Pro Quo

This table presents the robustness tests for cross-state quid pro quo. In Panel A, dependent variables are the amounts of political contributions to state. In Panel B, the independent variable is the indicator variables of high pension ownership (above median). Control variables and fixed effects are identical to Table 6. Standard errors are clustered at the firm level. T-stats are reported in parenthesis; ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

Panel A: Contribution amount.

	Political Contribution to State (Amount)					
Dependent Variable(s):	*Candidates*	*PACs*	*Total*	*Candidates*	*PACs*	*Total*
Pension Ownership from State (t-2)	**25,675.55****	**-2,035.81****	**23,639.74****	**13,544.43****	**-851.55***	**12,692.88****
	(2.505)	**(-2.037)**	**(2.498)**	**(2.348)**	**(-1.662)**	**(2.331)**
ROA	-17.01*	-8.31	-25.31			
	(-1.809)	(-0.673)	(-1.498)			
Tobin's Q	4.08**	0.39	4.47*			
	(2.001)	(0.237)	(1.657)			
Capital Expenditures	-26.20	117.30	91.10			
	(-0.432)	(1.543)	(0.912)			
R&D Expenditures	-0.02***	0.00	-0.02**			
	(-4.088)	(0.100)	(-2.120)			
Firm Size	60.90***	15.20	76.10***			
	(5.439)	(1.258)	(4.308)			
Observations	2,392,512	2,392,512	2,392,512	2,392,512	2,392,512	2,392,512
R-squared	0.088	0.041	0.075	0.134	0.086	0.121
Cycle FE	Yes	Yes	Yes			
Firm FE	Yes	Yes	Yes			
Cycle-Firm FE				Yes	Yes	Yes
Cycle-State FE				Yes	Yes	Yes

Panel B: High pension dummies.

	Political Contributions to State					
Dependent Variable(s):	*Candidates*	*PACs*	*Total*	*Candidates*	*PACs*	*Total*
High Pension Ownership (t-2)	**0.47*** **	**0.04*** **	**0.48*** **	**0.26*** **	**0.03*** **	**0.26*** **
	(33.685)	**(7.865)**	**(33.851)**	**(20.290)**	**(6.062)**	**(20.370)**
ROA	-0.01	-0.00	-0.01			
	(-0.791)	(-0.898)	(-1.017)			
Tobin's Q	0.01***	0.00	0.01***			
	(3.970)	(0.072)	(3.832)			
Capital Expenditures	0.04	0.03	0.06			
	(0.783)	(1.141)	(1.125)			
R&D Expenditures	-0.00	0.00	-0.00			
	(-1.596)	(0.327)	(-1.496)			
Firm Size	0.07***	0.01	0.07***			
	(7.862)	(1.593)	(7.807)			
Observations	2,392,512	2,392,512	2,392,512	2,392,512	2,392,512	2,392,512
R-squared	0.204	0.195	0.232	0.317	0.331	0.341
Cycle FE	Yes	Yes	Yes			
Firm FE	Yes	Yes	Yes			
Cycle-Firm FE				Yes	Yes	Yes
Cycle-State FE				Yes	Yes	Yes

Table A.7. Fund Holding DID

This table presents the DID results for fund holdings. The dependent variable is the excess portfolio weight Post is a dummy variable that equals to one in two election cycles after 2010. It equals to zero in two election cycles before 2010. Restrict is a dummy variable of whether the fund state has restrictions on political expenditures by 2010. Column (2) includes year fixed effect. Standard errors are clustered at the state level. T-stats are reported in parenthesis; ***, **, and * denote significance at 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)
Dependent Variable(s):		*Excess Portfolio Weight*	
Restrict * Post	**-0.17**	**-0.19**	**-0.18**
	(-0.698)	**(-0.763)**	**(-0.724)**
ROA		1.11**	
		(2.258)	
Tobin's Q		0.12***	
		(3.274)	
Capital Expenditure		4.50***	
		(6.073)	
R&D Expenditure		0.26**	
		(2.119)	
Firm Size		1.49***	
		(7.710)	
Russell 3000 Index		-0.42***	
		(-4.721)	
Observations	53,460	53,460	53,460
R-squared	0.790	0.791	0.829
Firm FE	Yes	Yes	
Fund-Cycle FE	Yes	Yes	Yes
Firm-Cycle FE			Yes