Choosing Pension Fund Investment Consultants*

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Abstract

Pension funds rely on consultants for asset allocation, manager selection, and benchmarking decisions. More recently, pension funds have expanded their consultant base by hiring more specialized consultants in alternative assets. We examine the rationale behind the selection and termination of investment consultants. General consultants are mainly replaced because of poor prior performance. Their replacement is followed by asset allocation changes but these changes do not translate into performance improvements. Specialized consultants enable pension funds to scale up the number of investments in private markets as pension funds are more likely to invest in private funds from the consultants' networks. However, specialized consultants do not provide access to rationed private funds, and relying on their services also does not improve performance. The growing concentration of consultants and their influence on asset manager selection by their clients may increase pension fund flow correlations.

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1 Introduction

Financial advisors and consultants are important intermediaries in the asset management industry, connecting investors to investment products and portfolio managers. Individual investors as well as institutional investors rely on their advice when making investment decisions and evaluating financial products (Inderst and Ottaviani, 2012; Gennaioli, Shleifer, and Vishny, 2015; Spatt, 2020). Collectively, investment consultants advised almost $19 trillion of retirement assets in 2022 (Pensions & Investments Data Center). Most pension funds seek advice from investment consultants on their asset allocation policy, selection of asset managers, and performance monitoring. Consultants' recommendations affect the selection of asset managers by pension funds but have little effect on pension funds' future performance (e.g., Goyal and Wahal, 2008; Jenkinson, Jones, and Martinez, 2016; Goyal, Wahal, and Yavuz, 2023). Notwithstanding this evidence, pension funds have continuously increased the number of consultants over time, particularly in alternative assets, such as real assets, private equity, and hedge funds.

Despite the increased interaction between pension funds and consultants, relatively little is known about how pension funds establish or terminate these consulting relationships. Prior research has focused on the impact existing consultants have on allocation policy and performance once hired, at the intensive margin (Jenkinson, Jones, and Martinez, 2016; Jones and Martinez, 2017; Andonov and Rauh, 2022; Begenau, Liang, and Siriwardane, 2023). Our research identifies factors that drive hiring of consultants, discusses a disciplining mechanism for under-performing consultants, and studies the impact of employing consultants on pension fund asset allocation, managerial choices and performance, at the extensive margin. Our goal is to investigate whether this layer of intermediation introduces inefficiencies that propagate into sub-optimal portfolio choices.

Pension funds rely on investment consultants for several potential reasons. First, investment consultants are specialized financial intermediaries that could possess higher expertise and informational advantages (Allen, 2001; Gârleanu and Pedersen, 2018). In contrast, pension funds are governed

by boards with limited expertise in asset management (Andonov, Hochberg, and Rauh, 2018) and face significant compensation constraints in attracting talented internal investment managers (Dyck, Manoel, and Morse, 2022; Lu, Mullally, and Ray, 2023). Thus, investment consultants could help pension funds make better allocation decisions, select trustworthy managers, or negotiate favorable fee structures (Gennaioli, Shleifer, and Vishny, 2015; Begenau and Siriwardane, 2022).

Second, investment consultants can serve as gatekeepers to certain investment products and asset managers. Networks and connections in the asset management industry are known to create value for the clients (e.g., Cohen, Frazzini, and Malloy, 2008, Hochberg, Ljungqvist, and Lu, 2010, Rossi et al., 2018) and pension funds may hire consultants to gain access to their network of relationships with asset managers. The rationed access to top-performing managers is particularly relevant in alternative assets, such as buyout and venture capital funds (Lerner, Schoar, and Wongsunwai, 2007; Sensoy, Wang, and Weisbach, 2014; Goyal, Wahal, and Yavuz, 2022).

Third, pension funds may hire investment consultants strategically, in an attempt to shift responsibility in the event of poor performance, given the anticipated high public scrutiny (Lakonishok, Shleifer, and Vishny, 1992; Gennaioli, Shleifer, and Vishny, 2015). This "headline risk" is especially relevant for public pension funds governed by political board members (Goyal and Wahal, 2008; Andonov, Hochberg, and Rauh, 2018). These concerns may incentivize pension funds to hire investment consultants as a shield against public criticism and legal consequences, for reasons beyond their expertise or access to a network, and despite their failure to add value to participants and their conflicting interests (e.g., Binsbergen, Brandt, and Koijen, 2008; Jaiswal, 2017).

We examine the role of investment consultants using a sample of U.S. public pension funds.[1] According to the U.S. Financial Accounts, public pension funds are among the largest institutional investors, reaching $5.2 trillion in assets under management in December 2022. Pension funds use general and specialized investment consultants. General consultants make recommendations on

[1]In addition to public pension funds, investment consultants also provide services to sovereign wealth funds, university endowments, private pension funds, foundations, and other institutional investors.

asset allocation policy, return expectations, managerial selection, and performance benchmarking. Specialized consultants advise in alternative asset classes, such as real assets, private equity, and hedge funds, and their responsibilities focus primarily on managerial selection. The number of pension fund consultants has increased over time, from an average of 1.5 consultants per fund in 2001 to 2.3 consultants in 2020, largely due to hiring more specialized consultants in alternative assets. Even though new specialized consultants entered the sample, the number of unique consultants declined and the provision of consulting services became highly concentrated. The top 10 general consultants advising almost 90% of the pension fund assets in 2020. We use this sample to examine four aspects of the relationships between pension funds and investment consultants.

First, we analyze the characteristics of pension funds that rely more on consultants. Larger pension funds with higher allocations to alternative assets employ more consultants. To distinguish between the lack of expertise and limited access as two potential reasons to use consultants, we focus on the pension fund decisions to hire specialized consultants for the first time. Based on the lack of expertise hypothesis, we should observe a negative relation between actual allocations in alternative assets and the hiring of specialized consultants. However, we find that pension funds hiring a specialized consultant for the first time already have prior investments in alternative assets. This finding suggests that the lack of experience is not the main driver for hiring consultants and that limited access or capacity are relatively more important considerations in hiring decisions. This conjecture is also supported by the fact that pension funds with higher target asset allocations relative to their actual asset allocations are more likely to hire specialized consultants for the first time. These pension funds require specialized consultancy services to access a sufficiently large number of asset managers necessary to implement the high target asset allocation.

Pension fund board composition also influences the decision to hire consultants. Pension funds with more political trustees, which are typically more sensitive to public scrutiny, hire significantly more consultants, in line with a shifting responsibility argument. However, we find no evidence

that pension funds governed by elected participants, who have lower skills in asset management (Andonov, Hochberg, and Rauh, 2018), hire more consultants.

Second, we study why pension funds replace investment consultants. For this test, we use the sample of general consultants as most pension funds already have a general consultant at the beginning of our sample and almost all hiring and firing events during this period are a replacement of an existing general consultant. Past performance is the most important driver of the replacement of general consultants, while differences in asset allocation policy are less important. Pension funds are 5.67 percentage points more likely to replace a general consultant when 3-year performance decreases by one standard deviation. Focusing on performance ranking in the cross-section of pension funds, we find that if the relative 5-year ranking of a pension fund decreases from the 75^{th} to 25^{th} percentile, the probability that this pension fund hires a new general investment consultant increases by 3.4 percentage points. This increase is economically large as the baseline unconditional probability of hiring a new general consultant in a given year is 5.9%. This relationship is not linear as pension funds are more likely to replace existing consultants in response to extremely low performance, consistent with a shifting responsibility argument.

Third, we examine whether consultants make active changes to investments following their employment. The main responsibility of investment consultants is to provide recommendations on the asset allocation policy and in the selection of asset managers. Our results suggest that new general consultants make active recommendations regarding the asset allocation policy. One year after hiring a new general consultant, pension funds implement significant changes in their asset allocation in absolute terms, although the direction of these recommendations differs across pension funds. We also find that pension funds' performance slightly improves following the hiring of a new consultant, as funds move closer to their median peers in terms of performance ranking.

To test the role of consultants in selecting asset managers, we extract data from Preqin on more than 20,000 investments by public pension funds in private funds. Commitments to private funds have a clear investment date (vintage year), so we can attribute the selection decision to the

consultant who advised the pension fund in that specific year. We examine whether new investments in private funds are more likely to emerge from the consultant's network. To this end, each year, we expand our data to include all potential private funds from which the pension fund can choose, and then flag the private funds based on their connection with the investment consultants of the pension fund. We find, across several definitions of consultant networks, that a private fund is two to four times more likely to become an investment for the pension fund if it has a prior connection with the consultant, when compared with the unconditional probability. These results are robust to including private fund fixed effects. In our setup, the same private fund will show up on several pension funds' investment schedules (or rosters) during the same year and sometimes it will be connected with the pension plan consultant and sometimes not. This allows us to directly isolate the impact of the consultant connection on the probability of investment into the private fund.

Fourth, we examine the role of consultants in accessing and scaling up private investments. Public pension funds substantially increased their target allocations to private markets, which prompted an increased demand for private equity managers. We find that specialized consultants enable pension funds to scale up the number of investments in private markets. A pension fund makes 3 more investments after hiring a specialized private equity consultant, and this effect is substantial relative to the baseline of 8 investments in private funds per year. However, scalability does not necessarily imply superior access. The rationed access hypothesis argues that pension funds employ consultants due to their role as gatekeepers who oversee access to specific investments and asset managers. We use three characteristics to capture private funds that may limit access: (a) later-stage funds raised by general partners with a prior track record; (b) funds with a higher final size relative to the initial target size; and (c) funds that are co-investment vehicles or separately managed accounts. Specialized consultants do not provide superior access to highly sought-after later-stage funds, co-investment vehicles, and separate accounts. Consultants only marginally improve access to oversubscribed private funds. These results hold both in the cross-section of pension funds as well as within individual pension funds.

Even though consultants provide only modest improvement in the access of their clients, they could still add value by directing their capital commitments to better-performing private funds. Private funds are opaque and difficult to evaluate, provide limited disclosure, and have large performance spreads, so the potential ability to identify top-performing general partners can substantially influence overall pension fund performance. Using three measures of performance in private funds, the public market equivalent, internal rate of return, and multiple of invested capital, our analysis shows that specialized consultants do not possess any discernible selection or access abilities. We find no differences in performance between pension funds that use specialized consultants and pension funds that do not use specialized consultants, in both the cross-section of pension funds and within individual pension funds.

Overall, we document that the choice of investment consultants significantly influences the pension fund asset allocation policy and selection of private funds. These results, combined with the evidence of a growing number of employed consultants and increasing concentration in the consultancy industry, may have consequences for pension fund expenditures and flow correlations. Looking at consulting fees, we document that the average consultant receives $0.51 million per year for the advisory services. The fees paid to investment consultants are significantly lower than the compensation paid to external asset managers, but it is still double the total compensation paid to pension fund CIOs (Lu, Mullally, and Ray, 2023). We find that hiring specialized consultants does not seem to be a cost-efficient decision as the number of specialized consultants does not reduce the fees paid to the general consultant. Pension funds do not substitute the general consultant services by hiring specialized consultants, but rather extend the range of contracted consulting services and increase the total amount of paid consulting fees.

To investigate the selection of general consultants among the pool of potential candidates, we collect additional information on consultants from the SEC ADV filings. Pension funds prefer to hire larger consultants that combine advisory and asset management services, despite their potentially conflicting interests and biased recommendations. Pension funds also are more likely to select

consultants advising plans of similar size or in a close geographical location. These findings suggest that pension funds tend to pool towards similar consultant types, contributing to the observed high concentration in this industry and suggesting potentially larger correlations between pension fund flows and performance in recent years.

This paper contributes to several streams of literature. First, prior research on institutional investment examines the value added of existent pension-fund-consultant relations by focusing on consultants' recommendations on managerial selection (e.g., Goyal and Wahal, 2008; Stoughton, Wu, and Zechner, 2011; Jenkinson, Jones, and Martinez, 2016; Rossi et al., 2018; Goyal, Wahal, and Yavuz, 2023). We contribute to this literature by introducing a disciplining mechanism for underperforming consultants and by effectively controlling for pension funds' demand for investments in a constrained environment, where pension funds need to achieve certain investment allocation targets, expected investment returns, and face different governance structures.

Second, our paper relates to the literature on institutional investors' asset allocation. Institutional investors, such as pension funds, university endowments, and sovereign wealth funds, have significantly increased their allocation to alternative assets (e.g., Ivashina and Lerner, 2018; Andonov and Rauh, 2022; Andonov, 2023; Begenau, Liang, and Siriwardane, 2023). We show that the shift to alternative assets is accompanied by an increased reliance on specialized investment consultants. We show that this additional layer of intermediation increases overall investment costs and may expose pension funds to more agency conflicts.

Third, our paper relates to the literature on investment advisors. Prior research has examined primarily the role and conflicts of interest among financial advisors hired by individual investors. Households rely on the services of financial advisors for portfolio management and retirement planning (e.g., Foerster, Linnainmaa, Melzer, and Previtero, 2017; Da, Larrain, Sialm, and Tessada, 2018; Gurun, Stoffman, and Yonker, 2018; Egan, Matvos, and Seru, 2019; Chalmers and Reuter, 2020). We show that institutional investors extensively rely on the services of investment consultants and that consultants also influence portfolio choices in this setting.

2 Institutional Background and Data

Our analysis focuses on the investment consultants and asset management decisions of U.S. public pension funds. The unit of observation in our analysis is the pension fund. One pension fund (retirement system) can pool together and manage the assets of multiple pension plans. For example, the Washington State Investment Board is responsible for the asset allocation and management of the Washington PERS 1/2/3, LEOFF 1/2, School Employees 2/3, and Teachers 1/2/3 pension plans. Therefore, we aggregate the asset allocation and performance data for all pension plans that are managed jointly at the pension fund level.

Online Appendix Table A.1 shows that our total sample covers 173 unique pension funds, corresponding to 3,133 pension-fund-year observations, from 2001 to 2020. Collectively, these pension funds managed around $4.2 trillion of retirement assets in 2020. We collect this sample of pension funds from two sources. First, the majority of observations (138 pension funds with 2,619 annual observations) comes from the Public Plans Database (PPD), published by the Center for Retirement Research at Boston College. Second, we extend the sample coverage by collecting data on 35 unique pension funds (514 annual observations). This additional sample covers primarily local county and city pension funds that are not part of the PPD dataset.

Table 1 Panel A shows summary statistics at the pension fund level. The average pension fund has $19 billion in assets, although the distribution is skewed to the right by several large funds. In terms of performance, the PPD dataset provides annual returns in percentage points, but it does not distinguish between gross and net returns. We follow Andonov and Rauh (2022) and calculate the net return as the ratio between the net investment income and the total assets at the beginning of the year. Pension funds disclose the net investment income in the Financial Statements of their annual reports. Net income includes changes in the value of assets (capital gains), dividends, interest payments, investment expenses in all asset classes, and security lending income and fees. Based on our measure, the average annual return of pension funds is 6.5% per year.

We manually verify and adjust the PPD data on asset allocation. We make adjustments for these cases: misclassified asset classes, missing allocation data, mismatches between target and actual asset allocation categories, and not categorizing leverage as a negative allocation to cash. Online Appendix A.1 provides detailed information on our adjustments to the PPD data. The average pension fund has a target asset allocation of 51% to public equity, 26% to fixed income, 9% to real assets, 6% to private equity, and 5% to hedge funds. The remaining part is allocated to cash or other risky assets. Other risky assets include undifferentiated broad portfolios of alternative assets and other assets. Figure 1 Panel A shows that pension funds have decreased the target allocation to public equity and fixed income assets from approximately 90% to 70% and increased the target allocation to alternative assets from 10% to 30% from 2001 to 2020.

We hand-collect the list of pension fund investment consultants from the pension fund Comprehensive Annual Financial Reports (CAFRs) and funds' websites, as well as newswire articles on the Pensions & Investments website. We classify pension fund investment consultants into general or specialized consultants, based on their role. General consultants make recommendations on the asset allocation policy, formulating return expectations, selecting asset managers, benchmarking of performance, asset-liability management, risk control policies (including use of derivatives, security lending, etc.), reporting, and education services (Jenkinson, Jones, and Martinez, 2016; Andonov and Rauh, 2022). Specialized consultants are typically hired in alternative asset classes, such as real assets, private equity, and hedge funds, and have a narrow set of responsibilities, focusing primarily on the selection of asset managers and performance evaluation. Since our analysis focuses on investment consultants, we exclude other types of consultants that have a non-investment role, such as firms providing actuarial services, audit reports, headhunter searches, and organizational services. We also exclude firms hired to provide only proxy-voting advisory services.[2]

[2]Our analysis focuses on investment consultants who remain employed by the fund for longer than one year. We remove consultants hired to support the general consultant on specific short-term projects for less than one year.

Table 1 Panel B shows that pension funds on average employ two investment consultants per year. Almost all funds have a general consultant with broader responsibilities. Only 13 pension funds did not have a general consultant during our sample period, and mostly in the early part of our sample. Panel B of Figure 1 shows that 92% of pension funds had a general consultant in 2001, 96% had a general consultant in 2008, but the percentage remained stable afterward.

Most specialized investment consultants are hired to provide advice on alternative asset investments. On average, 37% of the pension fund-year observations have a real assets consultant, 37% report a private equity consultant, and 12% report a hedge funds consultant. *Other consultants* variable captures investment consultants hired for specialized responsibilities in other assets, such as emerging equity markets or high-yield credit, but they only account for a small part of specialized consultants. Pension funds typically do not rely on specialized investment consultants in traditional asset classes, such as public equity and fixed income.

Panel B of Figure 1 shows that the average number of specialized consultants in alternative assets per pension fund has increased over time. The average number of private equity consultants per pension fund has increased from 0.20 to 0.57 from 2001 to 2020. Similarly, the average number of hedge fund consultants increased from zero to 0.20 in 2020. The increase is generally due to pension funds hiring specialized consultants for the first time and to a smaller extent to the increase of consultants in pension funds that already had one.[3] Figure 1 shows that the increased reliance on specialized consultants closely follows the increased target allocation to alternative assets.

In addition to consultants, we incorporate data on governance and internal investment mandates to capture other aspects of how pension funds organize the investment process. We identify pension funds that have an internal asset management division using the Thomson-Reuters 13F data, which reports direct equity holdings (Bradley, Pantzalis, and Yuan, 2016). Panel C of Table 1 shows that most pension funds delegate all asset management decisions to external managers and do not report

[3]For instance, the Teacher Retirement System of Texas had one specialized consultant for domestic private equity investments and another specialized consultant for international private equity investments from 2005 to 2010.

any direct holdings in the 13F dataset. Only 30 pension funds, which represent 17% of our sample, choose to manage a certain percentage of their public equity assets using internal resources and report direct public equity holdings in the 13F sample.

The pension fund board composition data is based on Andonov, Hochberg, and Rauh (2018). *%State Political* captures the percentage of appointed or ex officio pension fund board members who are state officials, such as state treasurer, controller, personnel director, senators, representatives, elected officials of local government, and school board representatives. On average, appointed and ex officio politicians represent around 27% of the board members. *%Participant-Elected* captures the percentage of board members who are elected by plan participants. The elected participants account for 34% of the board members. *Investment Board* is an indicator equal to one if a pension fund has an investment board in charge of asset allocation and investment decisions and a separate board that is responsible for other administrative retirement tasks. In our sample, only 12% of the pension fund-year observations have a separate investment board.

Table 2 reports summary statistics on an investment consultant level. Panel A shows that pension funds employ 129 unique investment consultants. There are 52 unique general consultants, but the top 10 consultants based on the number of clients provide advice for the vast majority of the pension funds. Panel A of Figure 2 shows that the concentration of consultants has continuously increased over our sample period. The percentage of pension funds advised by one of the top 10 general consultants has increased from 68% to 88% from 2001 to 2020. Moreover, the number of unique general investment consultants decreased from 32 in 2001 to 19 in 2020. Panel B of Figure 2 examines the concentration based on the asset under advisory and reveals that the top ten general consultants advised $3.9 trillion of public pension fund assets in 2020.

We document a similar trend in the provision of specialized consultant services. Public pension funds rely on the services of 35 real assets, 40 private equity, and 16 hedge fund unique consultants. While many pension funds do not employ specialized consultants, those pension funds that hire a specialized consultant usually choose one from the few dominant companies. Online Appendix

Figure A.1 shows that the top 10 specialized consultants in real assets, private equity, and hedge funds account for almost all relationships and assets under advisory. There are very few specialized consultants beyond the top 10 in alternative asset classes.

Panel B of Table 2 provides information on the fees paid by pension funds to investment consultants. We manually collect the compensation data from the pension fund annual reports for 32% of the pension-fund-consultant relationships. The average consultant receives \$0.51 million per year for the advisory services. Specialized consultants in private equity charge the highest fee of \$0.88 million per year. The fees paid to investment consultants are significantly lower than the compensation paid to external asset managers, especially in alternative assets (French, 2008; Phalippou, 2009; Metrick and Yasuda, 2010; Andonov, 2023). However, the fees paid to consultants are substantially higher than the compensation paid to internal staff members working for the pension fund. For instance, Lu, Mullally, and Ray (2023) document that the total compensation of pension fund CIO on average equals \$0.26 million, which is only half of the amount paid to one consulting firm.

Panel C of Table 2 presents additional information on the consultant characteristics using data from the SEC ADV form over the 2010–2020 period. This form contains detailed information on investment consultants, such as location, assets under management, and clients.[4] The average consultant advises 862 clients. Most consultants combine advisory services with other asset management responsibilities, with 58% of assets coming from discretionary mandates. Zero or low values of this variable correspond to pure consultancy firms that are not involved in asset management. On average, 30% of the consultants in the sample are specialized in pension funds, as more than 51% of their clients are pension funds. Based on Item 11 Part 1 of the ADV form, we identify which consultants face legal charges such as felonies, misdemeanors, false statements, or violations of investment-related regulations. Consultants facing legal issues account for 19% of the observations.

[4]The structure of the AVD form has changed several times (2011, 2012, 2014, and 2018) and new questions have been added to the form each time. To construct our variables, we start from the list of questions available in 2020 and we match them with the corresponding questions in earlier reports.

3 Establishing Consulting Relationships

Pension funds hire investment consultants for three potential reasons: lack of investment expertise, limited access to asset managers, and responsibility shifting. In this section, we ask which pension funds have more consultants and why pension funds replace or hire them. We run this analysis at the pension fund level, controlling for plan governance, prior allocations, and consultant characteristics.

3.1 Which Pension Funds Have More Consultants?

The first question we ask is which pension funds are more likely to rely on investment consultants. Therefore, we start by examining whether the total number of general and specialized consultants correlates with certain pension fund characteristics, such as size, target asset allocation, governance, and organization of asset management decisions.

The size of the pension fund may affect the number of hired consultants in several ways. Large pension funds have more assets under management, allowing them to spread the fixed part of consultants' compensation across a broader portfolio of assets and thus hire more consultants. At the same time, large pension funds can also afford to attract more qualified internal personnel by offering higher compensation packages. If larger pension funds have more internal expertise, we expect however less reliance on external investment consultants. Asset allocations into alternative assets may also be associated with a larger number of consultants, as more specialized expertise or access to these asset classes is needed. In terms of governance, we expect that pension funds with more political board members hire more consultants to shift responsibility and for protection against headline risk, while elected participants serving as trustees hire more consultants due to their lack of skills.

We present our results in Table 3, noting that this analysis here is at the pension fund-year level. Columns (1) and (2) show the results of an OLS regression where the dependent variable is the total number of general or the total number of specialized consultants. Columns (3) to (6) show

the marginal effects of a logit specification, where we model the probability that a pension fund employs a general or a specialized consultant in real assets, private equity, and hedge funds. All specifications include year-by-reporting-month fixed effects because pension funds have different fiscal-year ending dates and double-clustered standard errors by pension fund and year.

Columns (1) and (2) of Table 3 show that larger pension funds hire more investment consultants, particularly more consultants specialized in alternative assets. Column (1) shows that a one-unit increase in the natural logarithm of pension fund assets under management is associated with a 0.54 increase in the number of consultants employed by the pension fund. Focusing on Columns (3) to (6), which examine the probability of having a general or specialized consultant, we find similar results on pension fund size. Based on Column (4), a one-unit increase in the natural logarithm of pension fund size increases the probability of having a specialized consultant in real assets by 22.2 percentage points.

Figure 1 suggests that target asset allocations to alternative assets are positively correlated with the number or the type of consultants. We confirm this intuition in columns (4) to (6) of Table 3. For instance, based on Column (5), a pension fund targeting 10 percentage points higher allocation to private equity has a 25.73 percentage points (=0.1 $\times$ 2.573) higher probability of employing a specialized private equity consultant. While the shift to alternative assets is accompanied by increased usage of specialized investment consulting services, it is not necessarily clear whether these specialized consultants push pension funds into alternative assets.

Pension funds with an internal investment mandate seem to be less likely to rely on specialized consultants in real assets, which suggests that some of these services may now be offered in-house. Based on Column (4), pension funds reporting 10 percentage points higher internally managed U.S. equity holdings have a 7.23 percentage points lower probability of employing a real asset consultant.

Finally, pension fund governance plays a role in explaining the number and type hired consultants. Pension funds governed by boards with more politicians rely on more consultants, while pension

funds governed by boards with more elected participants have no impact. Based on Column (1), a standard deviation higher share of politicians on the board translates into 0.26 more consultants (=0.223 $\times$ 1.161). The reliance of politicians on investment consultants is consistent with prior evidence which suggests that boards dominated by politicians are more sensitive to headline risk and therefore may want to reduce their responsibility by hiring more consultants (Goyal and Wahal, 2008; Andonov, Hochberg, and Rauh, 2018). At the same time, this evidence is inconsistent with the hypothesis that the board's lack of skills may incentivize pension funds to hire more consultants as politicians acting as trustees have a solid financial education and expertise as compared to other trustees, while elected participants often lack these skills (Andonov, Hochberg, and Rauh, 2018; Dyck, Manoel, and Morse, 2022).

Overall, pension fund characteristics, such as governance, organization, and asset allocation policy, are related to the number of established relationships with investment consultants. Pension funds use more consultants when they are larger, have more investments in alternative assets, and have more politicians on their boards.

3.2 Why Do Pension Funds Hire General Consultants?

This section discusses the initiation and termination of contracts between pension funds and general investment consultants. We identify hiring events based on the first year of employment of new general consultants. Overall, our sample contains 187 hiring events of new general consultants, which we summarize in Figure 3 Panel A and Online Appendix Table A.2. The vast majority of pension funds already had a general consultant before our sample period, so 181 out of 187 events involved hiring a new consultant to replace the dismissed general consultant. There are only 6 hiring events where the pension fund hires a general consultant for the first time. In our analysis, we do not distinguish between hiring for the first time and hiring as a replacement since the sample of first-time general consultant hiring events is small.

We identify termination events based on the last year of employment of old general consultants and the hiring and firing decisions of general consultants are almost a mirror image of each other.[5] We observe 187 firing events and in 185 cases a pension fund hires a new general consultant as a replacement in the subsequent year. Online Appendix Table A.2 shows that there are only 2 firing events where a pension fund stops using general investment consultant services. Figure 3 Panels A and B show that the hiring and firing events are distributed over the entire sample period, but there is higher turnover from 2008 to 2010 period, in the aftermath of the global financial crisis. In our analyses, we use time fixed effects to remove the impact of time-specific events that may have affected the turnover of consultants.

We model the probability of hiring a general consultant as a function of pension fund characteristics in a logit framework, paying particular attention to the measurement of prior performance. The dependent variable equals one in the first year when a new general consultant starts advising the pension fund. We focus on pension fund performance over the previous 3 or 5 years, which is the typical length of a standard contract for general consultants. While pension fund boards pay close attention to absolute returns as they are concerned about closing underfunding gaps, evaluating fund performance relative to other pension funds within the same year may be equally important (Lakonishok, Shleifer, and Vishny, 1992; Sirri and Tufano, 1998). Therefore, we use two different performance measures: (1) the geometric average of pension fund returns; and (2) the relative performance ranking. To construct the relative performance ranking, we sort pension funds within every year-reporting-month based on their geometric average return over the previous three years. We then standardize the percentile ranking variable by the total number of pension funds within each year-reporting-month group, so that this variable is bounded between zero and one, where one corresponds to the pension fund with the best past performance.

[5]Since the firing events are defined one year before hiring events, the data contains a marginal difference in the total number of events each year.

All specifications include year-reporting-month fixed effects as pension funds often have different fiscal-year ending dates. The year-reporting-month fixed effects also absorb any time-series variation in market returns. This fixed effects structure enables us to study the role of cross-sectional differences in past performance and interpret the coefficients on past performance as peer-adjusted returns. In this analysis, we exclude 9 pension funds (145 annual observations) with fiscal year ending dates in March, August, and September as in these months there are not enough observations for a meaningful relative performance ranking. The pension funds that remain in the sample have a fiscal year ending in June or December.

In the specifications, we also include controls for pension fund characteristics, governance, and organization. We control for the lagged target allocation to equity, real assets, private equity, hedge funds, and other risky assets as differences in asset allocation policy may stimulate pension funds to look for new advisory services. Substantial gaps between the lagged actual and target allocations may also signal sub-optimal consultant advisory services and the need for a new consultant that could help the pension fund implement the target asset allocation.

Table 4 presents the results of this analysis and shows that hiring a new general investment consultant follows several years of poor performance. Focusing on Column (1), one standard deviation lower three years pension fund performance increases the probability of hiring a new general consultant by 5.67 percentage points ($= -0.053 \times -1.067$). This is an economically substantial increase as the baseline unconditional probability to hire a general consultant is 5.92%. Columns (3) and (4) confirm that pension funds care about ranked performance and their relative standing against other pension funds. Looking at Column (4), a drop in the 5-year performance ranking from the 75^{th} to 25^{th} percentile leads to a 3.4 percentage points ($= -0.5 \times -0.068$) higher probability of hiring a new general investment consultant.

We further explore the relationship between hiring decisions and past performance by examining whether pension funds show a different sensitivity to performance across the performance spectrum, focusing in particular on extremely bad performance. Therefore, we create two performance segments,

for below-median and above-median ranks, and evaluate the pension fund's response to performance separately, in a piece-wise linear manner. We define these variables in Equations (1) and (2).

$$Low\ 3Y\ Rank_{i,t} = min(3Y\ Rank_{i,t}, 0.5) \tag{1}$$

$$High\ 3Y\ Rank_{i,t} = max(3Y\ Rank_{i,t} - 0.5, 0) \tag{2}$$

The coefficient on *Low 3Y Rank* and *High 3Y Rank* capture the sensitivity of consultant hiring to performance percentile ranking below and above the median. The results in Columns (5) and (6) of Table 4, show that pension funds are very sensitive to bad relative performance and that good performance does not lead to a consultant replacement. A decrease in the 3-year performance ranking of a pension fund from the 50^{th} to 25^{th} percentile leads to a 3.28 percentage points (= -0.25 $\times$ -0.131) higher probability of hiring a new general consultant. However, a similar decrease in the 3-year performance ranking of a pension fund from the 100^{th} to 75^{th} percentile, does not have any impact on hiring.

In addition to past performance, we find that larger pension funds change their general consultants more frequently. While we control for target allocations and also for the distance between actual and target allocations, they do not appear to affect general consultants hiring decisions. In Online Appendix Table A.4, we also include the GASB Funded Ratio, calculated as the ratio between actuarial assets and actuarial liabilities, to all the specifications. Results are qualitatively unchanged, and if anything, the performance component becomes stronger. Moreover, we document a negative relation between the funded status and consultant turnover. A 10 percentage points lower GASB Funded Ratio increases the probability of hiring a general investment consultant by around 0.8 percentage points.

Table A.3 of the Online Appendix presents a robustness test of this analysis by focusing on the probability that a pension fund fires a general consultant instead of the probability that a pension fund hires a general consultant. The dependent variable equals one in the last year when the old general consultant stopped advising the pension fund. There are only two firing events

without a replacement of the general consultant, so the vast majority of events overlap in both analyses. The number of observations in the robustness firing specifications is slightly lower than in the baseline hiring specifications as we exclude from the analysis pension funds that do not have a general consultant because they cannot fire a consultant. Mirroring the results on hiring, we find that past performance relative to the other pension funds is the main driver of general consultant dismissals. For instance, a decrease in the 3-year performance ranking of a pension fund from the 50^{th} to 25^{th} percentile leads to a 3.13 percentage points ($= -0.25 \times -0.125$) higher probability of firing the general consultant.

3.3 Why Do Pension Funds Hire Specialized Consultants?

Next, we examine which pension fund characteristics relate to the decision to hire specialized investment consultants. As shown in Figure 1 Panel B, the percentage of pension funds having a specialized consultant in real assets, private equity, and hedge funds has increased over time.

We distinguish between four different types of specialized investment consultants hiring events: first-time hiring, immediate replacement hiring, additional hiring, and later replacement hiring. Panel B of Figure 3 and Online Appendix Table A.2 show the distribution of these events over time. We observe 148 first-time hiring events of specialized consultants (41 in hedge funds, 61 in private equity, and 46 in real assets). We also observe 121 replacement events (10 in hedge funds, 66 in private equity, and 45 in real assets). Pension funds are not limited to having only one specialized consultant per asset class and could hire additional new specialized consultants.[6] These additional hiring events are relatively rare (5 in hedge funds, 24 in private equity, and 20 in real assets). Finally, we observe 13 events in which specialized investment consultants are replaced only after a longer period of two or more years. Based on Figure 3 Panel B, the hirings of specialized consultants are relatively equally distributed over time with some peaks in the 2010–2013 period. In Figure 3 Panel D we report the terminations of specialized consultants. While most terminations are followed by a

[6] These additional hiring events of specialized consultants often cover specific mandates within a certain asset class, such as domestic private equity and international private equity.

replacement and hiring of a new specialized consultant (121 out of 236 cases), about 81 terminations are without a replacement.

In our analysis, examining pension fund decisions to hire specialized consultants for the first time allows us to eliminate the possibility that investment consultants are driving investments into alternative assets allocations, and to isolate two potential drivers of specialized consultant hiring: pension funds' lack of expertise and limited access to alternative managers. If limited expertise prevents pension funds from investing in alternative asset classes, we should observe a negative relationship between actual allocations in these asset classes and the hiring of specialized investment consultants. If instead, pension funds hire specialized consultants because they have limited access to asset managers, this relationship should reverse. As target asset allocations to alternative classes increased over time, limited access to general partners in private assets may have prompted the addition of specialized consultants. Under the limited access hypothesis, pension funds with higher target asset allocations relative to their actual asset allocations will also be more likely to require specialized consultancy services to access a sufficiently large number of asset managers necessary to implement the high target asset allocation.

Table 5 reports the marginal effects of our logit specifications for first-time hiring events. The sample includes pension funds that do not have a specialized consultant and could hire a specialized consultant for the first time in each alternative asset class. We model the probability of hiring a specialized consultant for the first time as a function of pension fund characteristics and fund policy in a logit framework, similar to our analysis of general consultants' hiring events. However, we note that the unit of observation is at the pension-fund-asset-class-consultant-year level. The dependent variable equals one if a pension fund hires for the first time a specialized investment consultant in real assets, private equity, or hedge funds. Thus, every pension fund can appear three times in the sample every year and the dependent variable captures whether pension fund i hired a specialized consultant for the first time in asset class j in year t. Given that pension funds have a different baseline probability to hire consultants in the three alternative asset classes, we include indicators

for specialized consultants in private equity and hedge funds. The omitted category is the real assets class.

Our evidence from first-time hiring of specialized consultants suggests that pension funds generally have an allocation to alternative asset classes before the consultants are hired. Table 5 shows that if a pension fund had a 10 percentage points higher actual allocation to alternative asset class j in the previous year, this pension fund has around 0.40 percentage points higher probability to hire a specialized consultant for the first time in asset class j. In Column (3), we replace the lagged actual allocation with lagged target allocation to alternative asset class j and confirm that pension funds increase their allocation to alternative asset classes before hiring a specialized consultant. These results suggest that pension funds hiring specialized consultants for the first time already have prior experience in alternative asset classes.

Large gaps between actual and target allocations significantly increase the probability of first-time consultant hiring, consistent with the limited access hypothesis. For example, focusing on Table 5 Column (2), the coefficient on the difference between target and actual asset allocation indicates that if a pension fund has 10 percentage points higher lagged target allocation than lagged actual allocation in alternative class j, this pension fund has a 1.8 percentage points higher probability to hire a specialized consultant in asset class j in year t. Our results are thus consistent with pension funds starting to invest in alternative assets without any interference from specialized consultants, but later requiring specialized advisory services to expand and meet their allocation targets. Within this framework, we find no evidence that pension funds' lack of expertise plays a role in specialized consultant hiring. In line with our results, Begenau, Liang, and Siriwardane (2023) also document that general consultants explain the differences in pension fund asset allocation, which confirms that specialized consultants do not seem to be involved in the design of target asset allocation.

In Columns (4) to (6) of Table 5, we incorporate an additional control for the geometric average pension fund returns over the previous 3 years. Nevertheless, asset class specific returns are not available reliably and comparably across pension funds and we are limited to a subset

of observations.[7] We find no statistically significant relation between pension fund total past performance and the probability of hiring a specialized consultant for the first time.

Similar to the results on the overall number of consultants, we also note that larger pension funds are more likely to hire specialized consultants for the first time. While the baseline probability of having specialized investment consultants differs across alternative asset classes, we find that pension funds are more likely to recruit new private equity and less likely to hire hedge fund consultants compared to real assets.[8]

Overall, our analysis documents that pension funds have increased the number of consultants over time, but most of this increase is due to increased reliance on specialized consultants in alternative assets. Most pension funds work only with one general consultant over the entire sample period. Specialized consultants are hired as a result of already established target asset allocations to alternative assets, rather than causing this trend. Further, we provide preliminary evidence that pension funds hire specialized consultants to access asset managers in private markets.

4 General Consultants: Post-hiring Allocations and Performance

The previous section shows that the decision to replace a general consultant is sensitive to past performance, particularly when past performance is poor. In this section, we examine whether pension funds can improve performance following the replacement of the general investment consultant.

General investment consultants could add value to the pension fund through two different channels.[9] First, general investment consultants could provide valuable advice on the optimal asset allocation policy. New general consultants could also provide access to well-performing asset

[7] The lack of performance data at the asset class level prevents us from running similar analyses on specialized consultants' terminations and replacements, similar to those on general consultants.

[8] In Online Appendix Table A.5, we extend the analysis by focusing on all hiring events of specialized consultants instead of just focusing on first-time hiring events. This analysis aggregates four different types of specialized investment consultants hiring events: first-time hiring, immediate replacement hiring, additional hiring, and later replacement hiring. In this analysis, we observe that the gap between the target and actual asset allocation is the main variable that explains the decisions to hire new specialized consultants.

[9] Augustin, Binfarè, and Fermand (2023) also find that general consultants face labor market incentives to change benchmarks to attract additional clients.

managers that rationed access to clients advised by the previous consultants, although the rationed access channel is more relevant in alternative asset classes (Sensoy, Wang, and Weisbach, 2014). Second, consultants could add value by recommending better asset managers. The new consultants could be more skilled in selecting and recommending better asset managers, though there is no prior evidence on their selection ability (Jenkinson, Jones, and Martinez, 2016).

4.1 Allocation changes following the consultant turnover

In this section, we focus on the first channel and examine changes in target asset allocation following the general consultant hiring. We present these results graphically in Figure 4. The variable of interest is the deviation in absolute changes in the target allocation to an asset class of a pension fund hiring a general investment consultant and the average pension fund in the same year. Figure 4 shows that pension funds hiring a pension fund make significantly larger ($\sim$1%) changes to their target allocation in both equity and alternative asset classes in the year in which a new investment consultant is hired (*t=0*) and in the subsequent year *t=1*. This finding indicates that general investment consultants turnover is positively correlated with larger-than-average changes (in absolute value) in target allocation. The direction of the change is pension fund dependent. For example, there is not a clear path indicating pension funds increasing (decreasing) their allocation to a specific asset class following the replacement of a general investment consultant.

In the Online Appendix Table A.6, we extend this univariate analysis by performing a pooled OLS regression where the the dependent variable captures the absolute changes in target asset allocation weights. We find that one year after hiring a new general investment consultant pension funds implement larger changes in their allocation weights in absolute terms. This finding is consistent with Begenau, Liang, and Siriwardane (2023) who also find that consultants' beliefs have an impact on client portfolio composition. Based on Column (2), which includes pension fund fixed effects, pension funds change their target allocation to equity by 0.8 percentage points one year after hiring a new general investment consultant.

Overall, we conclude that general investment consultants turnover does have an effect on strategic investment decisions. New general consultants seem to recommend changes in the pension fund asset allocation policy but the direction of these recommendations differs across clients.

4.2 Plan performance following consultant turnover

Table 6 shows the performance of pension funds before and after consultant hiring, using two measures for returns and several return windows. We remove market-wide events by calculating relative returns as the fund net-of-fee return minus the average performance of all pension funds reporting in the same month. Consistent with the results presented in previous sections, new consultants are hired when pension funds perform poorly relative to their peers. The relative return in the three (two) years preceding the turnover is -103 (-52) bps and is statistically significant. The differences in relative performance between the pre and post-periods are positive but generally insignificant, except for the three-year relative return, which is 123 basis points higher than the relative return in the three years prior to the hiring event.

Next, to control for any potential skewness of returns across pension funds, we alternatively use rank returns, defined as the percentile ranking of pension funds across several windows. The results of this analysis reveal that pension funds undergoing consultant changes generally rank below the median fund in years prior to the hiring event. In the subsequent years, these pension funds improve the relative ranking and obtain returns close to the median ranking. Thus, the overall change in rankings is positive over the two and three years following the event.

Overall, our results suggest that consultants make active choices by changing asset allocations and that plan performance improves only marginally after hiring. In fact, pension funds that performed below average pre-hiring go back to average performance after hiring.

5 Specialized Consultants: Post-hiring Access and Performance

Few U.S. public pension funds have sufficient resources and human capital to make direct investments in private markets (Dyck, Manoel, and Morse, 2022; Lerner, Mao, Schoar, and Zhang, 2022). As a result, pension funds typically invest through legally separate funds raised by general partners. Given that alternative asset markets are generally opaque and sometimes difficult to enter (Sensoy, Wang, and Weisbach, 2014; Lerner, Schoar, and Wongsunwai, 2007), the specialized expertise of investment consultants and their network of connections is particularly valuable.[10] In this section, we examine whether specialized investment consultants enable pension funds to scale up investments in private markets and to access highly sought general partners. We then ask whether their fund recommendations also translate into better performance. Commitments to private funds provide a suitable framework for this analysis. They have a clear investment date, identified by the fund's vintage year, which allows us to directly attribute each pension fund investment decision to a given specialized investment consultant.

5.1 Pension Funds Investments in Private Funds

For this analysis, we expand our dataset and include all pension fund capital commitments to individual private funds from Preqin. We present summary statistics of our sample of pension funds matched with Preqin, from 2001 to 2020, in Table A.7 of the Online Appendix. Our final sample includes 164 pension funds and their private funds investments.[11]

Overall, we examine a total of 22,744 individual investments in 6,504 private funds, managed by 1,943 unique general partners. Among these, 49% of the pension fund investments are in buyout, 11% in venture capital, 22% in real estate, 4% in infrastructure, 4% in natural resources, and 10% in

[10] Binfarè, Brown, Harris, and Lundblad (2023) show, in the context of university endowments, that professional networks of board members are important, they help overcome restrictions or barriers to investing in funds that might otherwise be difficult or impossible to access.

[11] In our previous analyses we included 173 pension funds. However, 9 pension funds do not have allocations to alternative assets (e.g., Georgia Teachers' Retirement System, Oklahoma Public Employees' Retirement System, etc) and do not invest in private funds.

private debt funds. Given that the investment universe includes private equity and real assets funds, we separately analyze the role of specialized private equity and real assets investment consultants. Table A.7 in the Online Appendix shows that 67% of the investments are made by pension funds that employed a specialized private equity consultant, and 62% of the investments are made by pension funds that had a specialized real assets consultant. The percentage of investments made with the advice of specialized consultants is higher than the percentage of pension funds employing a specialized consultant as large pension funds are more likely to hire a specialized consultant (see Table 3) and have more investments in private funds.

5.2 The Role of Consultants in Selecting Private Funds

Pension funds adjust their asset allocation policy after hiring new general consultants and Begenau, Liang, and Siriwardane (2023) show that consultants explain a substantial part of the cross-sectional variation in pension fund allocation to alternative assets. In this section, we examine whether consultants are important intermediaries that influence the selection of private funds by pension funds. We show that pension funds using the same consultants not only implement similar target asset allocation policies but are also more likely to invest in the same private funds. The growing concentration of consultants and their influence on the private funds' selection may therefore expose their clients to correlated shocks, such as the Hamilton Lane and Abraaj funds case.[12]

To test the role of consultants in selecting private funds, we generate an opportunity set that includes all potential private funds the pension fund can choose from in a given vintage year (similar to Goyal, Wahal, and Yavuz, 2022). We examine whether the probability of choosing any particular private fund is higher if the fund is part of the consultant's network during that year. We restrict

[12]Pensions & Investments April 29, 2019: "Abraaj Investment Management Ltd. is in liquidation and its founders have been indicted, while institutional investors in its funds and their consultant, Hamilton Lane Inc., are left to deal with the fallout. ... What remains to be determined is whether the debacle will lead to investors taking a harder look at the due diligence conducted by their advisers in general and Hamilton Lane in particular. All institutional investors in Abraaj funds reviewed by Pensions & Investments had Hamilton Lane as the private equity consultant."

the opportunity set to private equity or real assets broad fund types, under the assumption that pension funds search for investments primarily within a mandate style.[13]

We identify each private fund in the opportunity set that belongs to the pension fund consultants' networks. Consultants' networks can be defined on different levels. For a given pension fund in any given year, we can define the network based on all pension fund consultants' connections with other funds, or we can narrow it down to a general consultant's network or a specialized consultant's network. To provide a simple example, pension fund PF_1 chooses to invest in the private equity fund PE_1 out of all PE funds available for investment during the same year (the opportunity set), some of which may be connected with PE_1 through the same general consultant (GC network). Controlling for pension fund characteristics, vintage year, and private fund characteristics, we then ask whether pension funds that are using the same consultant are more likely to invest in the same private funds.

Table 7 presents the results for private equity funds and Table 8 presents the results for real assets funds. The dependent variable is one if the private fund is selected as an investment by the pension fund, and zero otherwise. The variable of interest, *SameConsultant* is an indicator variable equal to one if the private fund is in the pension fund consultant's network. It is important to note that the same private fund will appear in different pension fund rosters, sometimes it will be selected as an investment and sometimes not, and sometimes it will be connected with the pension fund consultant and sometimes not.[14] In Columns (1) and (2) we include in the network fund connections with all consultants, in Columns (3) and (4) we include only general consultants connections, while in Columns (5) and (6) we include only specialized PE consultants connections. We control for PE and pension fund size as well as for other pension fund characteristics including target allocations and governance. The specifications include pension fund fixed effects in columns (2), (4), and (6)

[13]The private equity category includes investments in buyout, venture capital, and private debt fund types, while the real assets category includes investments in real estate, natural resources, and infrastructure fund types.

[14]If a pension fund invests in multiple private funds in a given vintage year, these private funds will be excluded from the opportunity set of private funds of each other.

and PE fund fixed effects in columns (1), (3), and (5). Pension fund fixed effects allow us to control for time-invariant pension fund characteristics, while PE fund fixed effects allow us to test if the very same private fund is more likely to be selected as an investment based on its connection to the consultant. Given the opacity of private funds characteristics, the later test allows us to directly isolate the impact of the consultant connection on the probability of investment.

Across all specifications, we find that a pension fund is more likely to invest in a private fund when other pension funds using the same consultant also invest in this private fund. Thus, pension funds using the same consultant are more likely to invest in the same private funds. Based on Column (6) of Table 7, a pension fund has a 2.1 percentage points higher probability of investing in a private equity fund if another pension fund using the same specialized PE consultant also invests in the private fund. Table 8 shows that using the same RA consultants increases the probability of investing in the same RA private fund by 3.1 percentage points. These coefficients suggested that consultant networks have substantial influence on the selection of private funds. A private fund is two to four times more likely to be selected by the pension fund if it has a prior connection with the consultant when compared with the unconditional probability.

General consultant's connections are almost as important as the specialized consultant's connections, as many pension funds do not have specialized consultants in alternative assets and rely on the recommendations of general consultants when making the selection. In addition, even among pension funds that employ specialized consultants, general consultants attend the pension fund board meetings and could influence the selection of private funds.

The selection of private funds is also influenced by the private fund characteristics and pension fund governance. For instance, larger private funds raise more capital and are more likely to be selected by more pension funds. Pension funds with more political board members are less likely to invest in a given private fund after controlling for the same consultant network and PE fund size. This result is consistent with Andonov, Hochberg, and Rauh (2018) as pension funds with political board members are more likely to invest in small funds that have few other investors.

We provide alternative specifications of these results and expand the definition of consultants networks in Table A.8 and Table A.8 in the Online Appendix. In these tables we expand the connections of the consultant to include all the funds raised by the GPs the consultants have a connection with. The results are similar, slightly smaller in magnitude as the connections with some private funds are weaker.

Overall, these results suggest that consultant connections are important in explaining the selection of private funds in alternative assets by pension funds. These results are also consistent with Begenau, Liang, and Siriwardane (2023), who show that consultants explain the cross-sectional differences in pension fund allocation to alternative asset classes. Similarly, Foerster, Linnainmaa, Melzer, and Previtero (2017) document that financial advisors explain the variation in risk-taking and home bias in the asset allocation of individual investors.[15]

5.3 The Role of Consultants in Accessing and Scaling Up Private Investments

Our previous analysis in Table 5 shows that pension funds that hire specialized consultants have already experience in alternative assets, but their target allocation is significantly higher than their actual allocation. These results suggest that limited expertise is not the main driver, while limited access to general partners seems to be the more important reason why pension funds employ consultants. Specialized consultants can provide better access to private funds in two ways. The first channel is that specialized consultants can enable their clients to select more investments and scale-up the number of investments and overall portfolio allocation. The second channel is that consultants can serve as powerful gatekeepers and provide access to highly-sought general partners and private funds.

We test the first channel by examining whether the number of investments in private funds increases following the consultant's employment. To this end, we create a balanced panel of observations on a pension-fund-vintage-year level and analyze the number of investments in private

[15]Looking at private equity managerial searches by various asset owners, Martinez and Qian (2023) find that asset owners having the same search consultant also make similar investments.

funds made by pension funds per year.[16] We present these results in Columns (1) and (2) of Table 9. The dependent variable is the total number of investments in private funds made by a pension fund in a given year. Overall, we find that pension funds using specialized private equity and real assets consultants invest in more private funds per year and are able to scale up their portfolio exposure to alternative assets. Based on Column (2), which includes pension fund fixed effects, a pension fund makes around 3.0 more investments after hiring a specialized private equity consultant and 1.7 more investments after hiring a specialized real assets consultant. These effects are substantial relative to the baseline average of around 8 investments in private funds per year.

We use the same data to test the second rationed access hypothesis, which states that investment consultants allow access to certain investment products and asset managers that are otherwise very difficult to access. The literature has shown that networks and connections in the asset management industry create value for clients (e.g., Cohen, Frazzini, and Malloy, 2008; Hochberg, Ljungqvist, and Lu, 2010; Rossi, Blake, Timmermann, Tonks, and Wermers, 2018). It is plausible then to assume that pension funds may hire consultants to gain access to highly-sought private funds. The rationed access to top-performing managers is particularly relevant in private markets. These funds are more likely to face capacity constraints within their chosen strategy, and they may also value the confidentiality of their investment decisions (Lerner, Schoar, and Wongsunwai, 2007; Abuzov, Gornall, and Strebulaev, 2023). If specialized consultants alleviate access constraints, we expect to see pension funds with specialized private equity and real assets consultants investing more in highly-sought private funds.

We identify the private funds that are more likely to ration access to limited partners based on three dimensions. First, we create an indicator equal to one if the fund is the first fund ever raised

[16] While the balanced panel reflects better the spectrum of all investment decisions pension funds can make, one potential concern is that it mechanically assigns zero investments in private markets to pension funds that do not invest in alternatives and do not need a specialized consultant. In Online Appendix Table A.10, we analyze an unbalanced panel where pension funds are included in the sample only if they make at least one investment in a private fund in a given year. Our results are robust to this alternative definition of the dependent variable and remain economically and statistically significant.

by the general partner.[17] These first-time funds do not have a prior track record and compete for capital commitments with established general partners so they are less likely to restrict access to limited partners (Sensoy, Wang, and Weisbach, 2014; Goyal, Wahal, and Yavuz, 2022). Second, we identify whether a private fund is oversubscribed based on the ratio of the final fund size to its intended target size. Oversubscribed funds are more likely to reject capital commitments from some limited partners. Third, we identify investments by pension funds in co-investment vehicles and separately managed accounts which could provide an opportunity to participate in individual deals alongside managers and lower the investment costs (Fang, Ivashina, and Lerner, 2015; Lerner, Mao, Schoar, and Zhang, 2022). Overall, if specialized investment consultants provide better access, we expect pension funds under their advisory services to invest less in first-time private funds and under-subscribed funds as well as to have more co-investment opportunities.

We show the results of this analysis in Columns (3) to (8) of Table 9. The estimations include interacted fixed effects of private fund type indicators with vintage year indicators, which enable us to examine whether pension funds with specialized investment consultants have better access to private funds of the same type and raised in the same vintage year. In Columns (3), (5), and (7), we do not include pension fund fixed effects and essentially compare whether pension funds with specialized consultants have better access than pension funds without specialized consultants. In Columns (4), (6), and (8), we include pension fund fixed effects and examine whether pension funds have different access to private funds before and after hiring a specialized consultant.[18]

We find that specialized consultants provide only marginal improvement in the ability to access highly sought private funds. Based on Columns (3) and (4), pension funds with specialized consultants do not invest more in later-stage funds and avoid first-time private funds. Specialized private equity consultants seem to enable their pension fund clients to access private funds with a

[17] In Online Appendix Table A.10, we use an alternative indicator that identifies private funds that are the first funds raised with a specific series of funds (e.g., infrastructure, buyout, private debt) by the general partner as one general partner can have multiple series of funds but different levels of experience across fund types.

[18] In the specifications with pension fund fixed effects, we do not include the controls for pension fund governance and organization of asset management decisions because these variables have a very limited variation over time within individual pension funds.

higher ratio of final fund size to target size. Based on Column (6), pension funds invest in funds with a 0.022 higher size ratio after hiring a specialized private equity consultant, which suggests that they reduce their allocation to undersubscribed private funds and can better access funds sought by more limited partners. In Columns (7) and (8), we do not observe differences in the probability of investing in co-investment funds or separately managed accounts between pension funds with and without specialized consultants.

When examining the role of the other control variables on pension fund governance and asset management organization, we observe that larger pension funds are more likely to gain access to co-investment vehicles and separate account mandates. General partners are more likely to invite these pension funds to co-invest as they can provide either a large amount of capital or a higher degree of expertise to jointly manage the co-investment deals. In line with Andonov, Hochberg, and Rauh (2018), we document that pension funds with a higher proportion of political board members are more likely to invest in first-time private funds.

In Online Appendix Table A.11, we present robustness tests by including a less saturated set of fixed effects. Instead of including interacted fixed effects of fund types times vintage years, we include either only vintage year fixed effects or not interacted fund type and vintage year fixed effects. In these robustness specifications, specialized consultants can potentially provide better access by overweighting certain fund types (e.g., fund types with fewer first-time funds) or by better timing the exposure across fund types. However, we do not observe that specialized consultants substantially improve pension fund access to private funds in the cross-section.

5.4 Specialized Consultants and the Performance of Private Funds

Even though specialized consultants provide only modest improvement in the access of their clients to highly sought-after private funds, they could still add value by directing the capital commitments of their pension fund clients to better-performing private funds. We show that pension funds using the same consultant are four times more likely to invest in the same private funds so it is highly

relevant whether these recommendations are beneficial for the pension funds. In Table 10, we test the hypothesis that investment consultants possess higher expertise and informational advantage by examining whether pension funds with specialized consultants select better-performing private funds than pension funds without specialized consultants.

For all private funds, we use three performance measures: public market equivalent, internal rate of return, and multiple of invested capital (total value to paid-in capital). The public market equivalent measure is estimated using the S&P 500 equity index as a benchmark (Kaplan and Schoar, 2005). In the performance analysis, we limit our attention to private funds raised in vintages before 2017, to ensure that they have a track record of more than 5 years and finished allocating the capital (the reporting date of our performance measures and cash flow data is at the end of 2022). Online Appendix Table A.7 presents summary statistics on the performance measures.

In Table 10, we find that pension funds with specialized private equity and real assets consultants do not invest in private funds with higher performance. The coefficients on *PE Consultant* and *RA Consultant* indicator variables are economically and statistically insignificant in the cross-section of pension funds as well as within individual pension funds.

Among the control variables for pension fund governance and asset management organization, we document that pension funds with a separate investment board select private funds with higher performance. Based on Column (2), pension funds with a separate investment board invest in private funds with a 0.068 higher public market equivalent measure. Pension funds governed by more political board members invest in underperforming private funds (Andonov, Hochberg, and Rauh, 2018). Based on Column (5), a 10 percentage point increase in the proportion of the board that consists of state-political members is associated with a 0.38 percentage point decrease in the annual internal rate of return.

One potential concern is that the performance differences are insignificant because specialized consultants implement better valuation standards and pension funds without specialized consultants

may report performance measures on recent funds driven by inflated accounting valuations (Phalippou and Gottschalg, 2009). The robustness test in Online Appendix Table A.12 focuses on the subsample of pension fund investments in private funds over 2001–2010 vintages. Private funds started in this period are more than 12 years old and most of them are liquidated or distributed at the end of our performance reporting date. We still find that pension funds with specialized private equity and real assets consultants do not invest in private equity funds with higher performance and this result goes against the hypothesis that investment consultants possess higher expertise and informational advantage.

Overall, we document that specialized consultants help pension funds scale up the number of investments in private funds per year so they can reach faster their higher target allocation weights. The specialized consultants do not seem to provide substantially better access to highly sought-after funds as they only increase the probability of investing in oversubscribed private funds but do not enable their clients to invest more in later-stage funds, co-investment funds, or separate accounts. This marginally better access does not materialize in a selection of better-performing private funds. We do not find any evidence that specialized investment consultants add value to pension funds through a better selection of private funds. These results are economically and statistically significant within individual pension funds as well as in the cross-section of pension funds.

6 Implications for Expenditures and Flows

Our paper documents two important trends in pension consulting. First, pension funds increasingly rely on consultants over time even though we find no evidence that investment consultants possess higher expertise. Second, the concentration of consultants has increased over time. Combined with our evidence that consultants influence the asset manager selection for their clients, these two trends have important consequences on pension fund expenditures and flow correlations.

6.1 Consulting Fees

Pension funds could use newly hired specialized consultants as substitutes for services provided by the general consultant, in a more efficient manner, that leads to lower contracting costs. This substitution hypothesis implies that fees paid to individual consultants will be lower when there are more contracted consultants and the total amount of consulting fees will remain the same.

In Table 11, we examine whether the fees paid to general consultants depend on the number of consultants, the types of consultants, past performance, and allocations. Column (1) shows that the total number of consultants employed by the pension fund does not affect the fees paid to the general consultant. The number of specialized consultants in real assets, private equity, and hedge funds also does not influence the fees paid to the general consultant. Pension funds do not seem to substitute the general consultant services by hiring specialized consultants, but rather extend the range of contracted consulting services.

We document three other results on the compensation of investment consultants. First, general consultants receive higher compensation when a pension fund invests more in alternative asset classes. Based on Column (1) of Table 11, if a pension fund increases the allocation to private equity by 10 percentage points, the compensation of the general consultant will increase by \$0.157 million or 38% relative to the baseline compensation of \$0.411 million. General consultants advising clients with a higher allocation to alternatives are not necessarily more profitable as these services could be more costly and labor-intensive, but we can say that they are collecting higher revenue. This pay sensitivity to the allocation to alternative assets can also potentially explain the incentives of general consultants to promote and support the shift of pension fund asset allocation towards alternative assets (Begenau, Liang, and Siriwardane, 2023).

Second, even though pension funds replace general consultants in response to relative underperformance, the compensation of general consultants does not depend on the past three-year performance or the relative performance ranking. Columns (5) to (8) examine the fees paid to all

types of consultants and show that the compensation of specialized consultants is also not related to past performance.

Third, all consultant types receive a similar fee for their services except private equity consultants. Based on Column (5), private equity consultants receive on average a $0.344 million higher compensation per year. The indicator for private equity consultants is significant when controlling for asset allocation policy and past performance. The significantly higher compensation of private equity consultants could explain why this specialized business does not experience rising concentration as much as the general consultants business. Overall, pension funds are spending more on consulting services over time as the number of pension fund consultants has increased, there is no substitution in the fees across consultants, and specialized consultants are either equally or even more costly than general consultants.

6.2 Selection of General Consultants

In Figure 2, we show that the number of unique general investment consultants decreased from 32 in 2001 to 19 in 2020. This trend motivates our analysis of the consultant characteristics that pension funds look for when choosing general consultants . We start by examining the selection of specific consultants from a pool of available candidates. Our set of potential candidates includes all general investment consultants that were employed by at least one pension fund during the sample period. This opportunity set differs across years as we take into account mergers of consultants, closure of existing consultants, and establishment of new consultancy firms.

We collect information on consultants' characteristics from the ADV filings and focus on the number of clients, the percentage of assets managed by the consultant under discretionary mandates, the relative importance of pension fund clients relative to other clients, and an indicator for consultants facing legal charges. In addition to the ADV information, we construct two additional variables that capture the size and geographical spread of potential candidates. First, we split all pension funds in our sample into four quartiles based on assets under management. Then we

calculate *%PF Clients Same Size* as the percentage of pension funds served by the consultant that belong to the same size quartile as the pension fund making the hiring decision. *%PF Clients Same State* focuses on the geographical network of pension fund-consultant relations and measures the percentage of pension funds, served by the consultant, that are located in the same state as the pension fund making the hiring decision.

In Table 12, we model the probability of hiring a particular pension consultant in a logit framework where the dependent variable equals one for the general investment consultant that was actually hired. Our analysis is limited to 97 hiring events of general investment consultants as the ADV information is only available from 2010 to 2020. Over this period, each pension fund can choose from a set of 48 unique general consultants.[19] The baseline unconditional probability of hiring one consultant equals 2.39%.

We find that pension funds prefer to hire larger investment consultants. Based on Column (1), a one unit increase in the natural logarithm of the number of consultant's clients is associated with a 0.2 percentage point increase in the probability of hiring that consultant. Pension funds also prefer using consultants that offer advisory and asset management services. For instance, Column (1) shows that a consultant that holds 50 percent of the assets in discretionary investment mandates has a 0.6 percentage points higher probability of being hired as compared to a consultant that has no assets in discretionary mandates. In our sample, very few pension funds bundle the procurement of asset management and consultancy services and rely on discretionary mandates with the consultancy firms, but they could use the size of the discretionary investment business as a proxy for the consultant's human capital, information access, and expertise.

Pension funds also seem more likely to hire consultants that service pension funds of similar size and located in the same state. Based on Column (4), a pension fund has a 1.2 percentage points higher probability of hiring a consultant that advises 50% similarly sized pension funds than

[19]The number of consultants in the opportunity set of general consultants is 48 and not 52 as in Table 2 because four consultants either do not exist after 2010 or cannot be merged with the SEC ADV data.

a consultant that does not advise any similarly sized pension funds. If 50% of the pension funds advised by a consultant are located in the same state as the pension fund under consideration, this consultant has a 2 percentage points higher probability of being hired than a consultant that does not advise any pension funds in the same state. We find that pension funds prefer hiring investment consultants that advise primarily pension funds rather than other institutional investors. Column (6) shows that the probability of being selected is significantly higher for consultants whose pension fund clients account for 26-75% of their total amount of assets under advisory.

The selection of investment consultants is not significantly affected by legal charges against the consultancy firm. However, one limitation of our measure is that it does not take into account the severity of legal issues. Almost one-third of the general consultants in our opportunity set face a legal issue, but we cannot distinguish between mild and severe legal cases as the ADV form includes only an indicator for legal issues. Based on Column (7), our results are robust to including all variables that capture different investment consultant characteristics in the same specification.

Overall, pension funds prefer to select larger consultancy firms that are engaged also in discretionary asset management. Pension funds also seem to segment across consultants with experience in the pension industry based on size and geographical location. These findings suggest that pension funds tend to pool towards similar consultant types, contributing to the observed high concentration in this industry.

7 Conclusion

Investment consultants are important intermediaries that advise pension funds. Pension funds have increased the number of investment consultants from 1.6 consultants per fund in 2001 to 2.3 consultants in 2020, particularly by hiring specialized consultants in alternative assets. We examine the factors that determine the selection and termination of investment consultants, and the impact that these decisions have on pension fund asset allocation, managerial selection, and performance. This paper differs from the prior literature which mostly focuses on existing relations between pension

funds and consultants. We go one step further in this literature by analyzing how the relations between pension funds and consultants are established, introducing a disciplining mechanism for underperforming consultants, and controlling for pension funds' demand for investments in a constrained environment, where pension funds need to achieve certain asset allocation targets, meet the expected rate of return, and face different regulatory and governance structures.

Almost all pension funds have one main general consultant, but they terminate and replace 6% of these relations every year. Past performance is the main determinant of the termination decisions, and pension funds are 5.67 percentage points more likely to replace a general consultant when their 3-year performance decreases by one standard deviation. The turnover has implications for portfolio choice as already one year after hiring a new consultant pension funds implemented significant changes in the target asset allocation. Pension funds using the same consultant are also two to four times more likely to invest in the same asset managers in private markets.

Pension funds hiring a specialized consultant for the first time already have prior investments in alternative assets, so the lack of experience is not the main driver for hiring specialized consultants. Limited access is the main explanation as pension funds require specialized consultancy services to access more asset managers in order to implement the high target allocation to alternative asset classes. Specialized consultants enable pension funds to scale up the number of investments, but they do not provide access to highly sought-after private funds. Pension funds with specialized consultants also do not invest in private funds with higher performance.

The growing number of employed consultants and the increasing concentration in the consultancy industry, combined with our results on the asset allocation and selection of private funds, have consequences for pension fund investment costs and flow correlations. Pension funds do not replace general consultant services with specialized consultant services, so the total amount of paid consulting fees increases with the number of relations. Pension funds also are more likely to select consultants advising funds of similar size or located in the same state, and this segmentation of pension funds across a small number of consultants could result in increased clustering and correlation of flows.

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Figure 1: Target Asset Allocation and the Number of Consultants

Panel A presents the average target asset allocation of pension funds. Panel B shows the average number of investment consultants per pension fund, differentiated by duties: general consultants or specialized consultants in real assets, private equity, or hedge funds. Pension funds have only one general consultant, but they can hire multiple specialized consultants in each asset class.

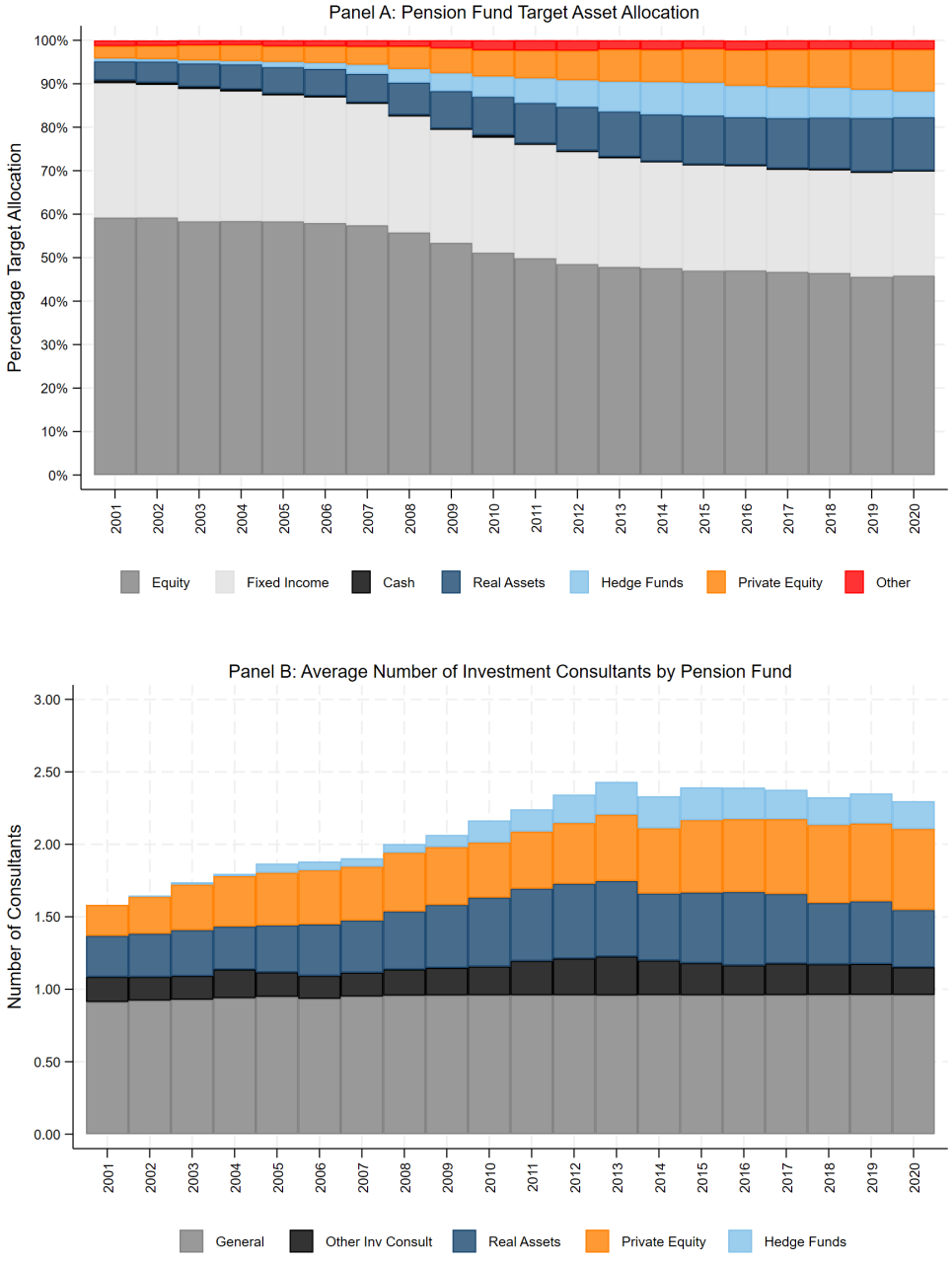


Figure 2: Concentration of General Consultants

This figure presents the concentration of pension funds by general consultants over the 2001–2020 period. In Panel A, we rank the general consultants based on the number of pension funds they advise. This panel presents the percentage of pension funds that are advised by the 10 largest general consultants and all the other general consultants. In Panel B, we rank the general consultants based on the aggregate amount of assets under management of their pension fund clients. This panel presents the pension fund assets under advisory in $ trillion by the 10 largest general consultants and all the other general consultants. The second axis in both panels presents the number of unique general consultants by year.

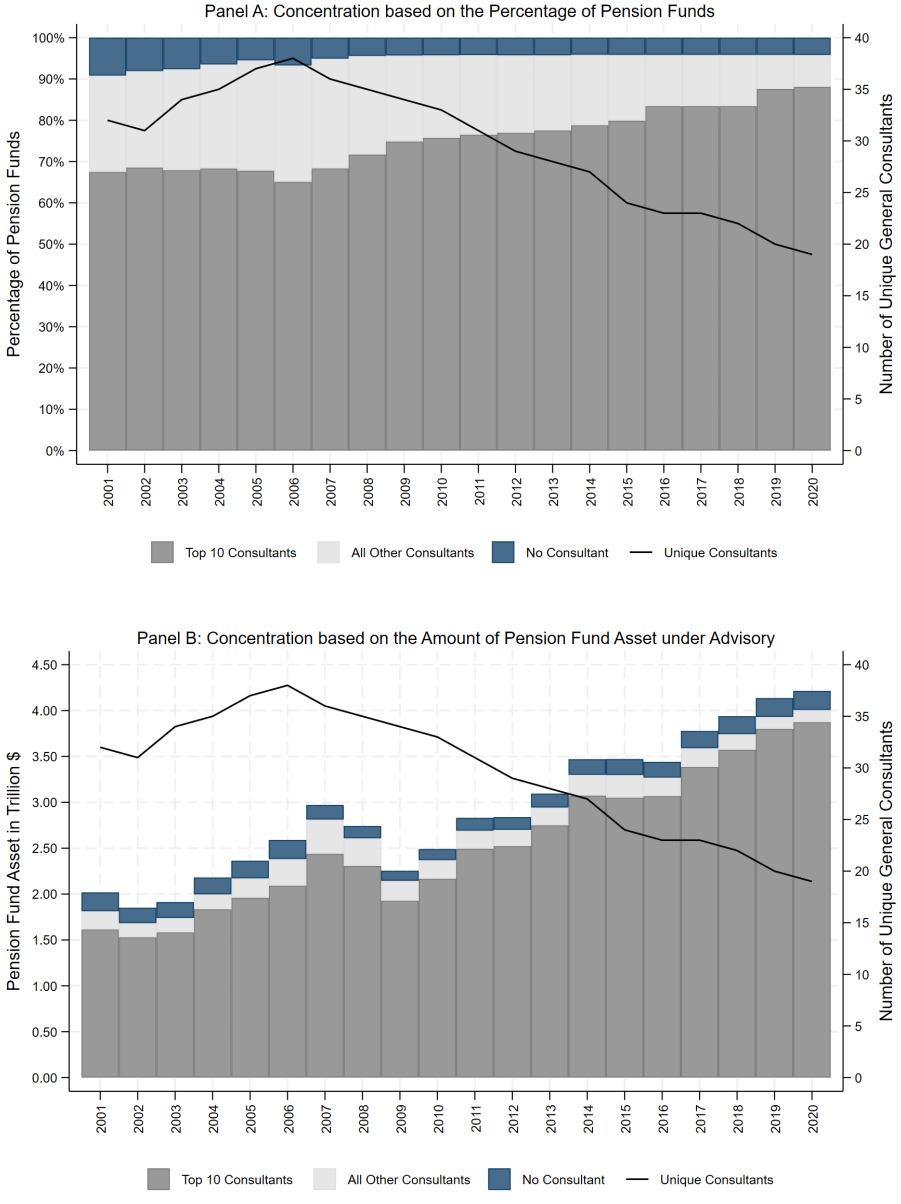


Figure 3: Turnover of Consultants over Time

Panels A and B show the hiring events for general and specialized consultants. A replacement is hiring a new consultant within one year of the termination of the incumbent consultant. If there are two years or more between the firing and hiring events, this action is categorized as a long replacement. Long replacements are not shown in this figure. Panels C and D show the firing events. In order to show the round trips of consultants, we plot the lagged value of the firing with replacement.

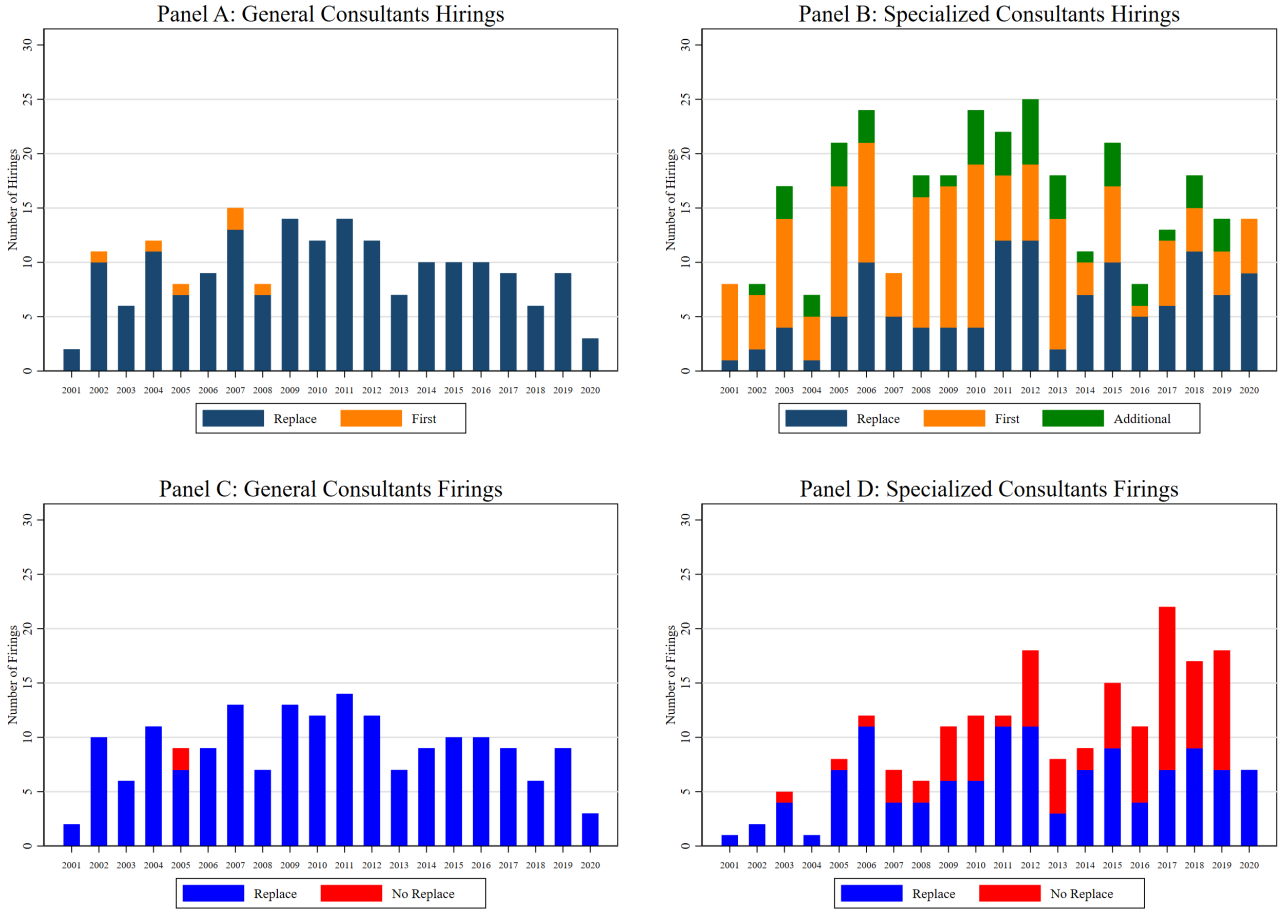


Figure 4: Average Deviation in Absolute Changes in the Target Asset Allocation

This figure shows the average deviation in absolute changes in the target allocations to different asset classes of pension funds in the three years before and following the replacement of a general investment consultant. Year *t=0* corresponds to the first year when the new general consultant is employed. The deviation is computed for each pension fund i by taking the difference between the absolute value of the change in allocation to an asset class of i (allocation in t minus allocation in *t-1*) and the absolute value of the average change in allocation to the same asset class of all other pension funds in the sample. We report the average deviation in allocation across all pension funds replacing general investment consultants in the three years before and following the hiring event.

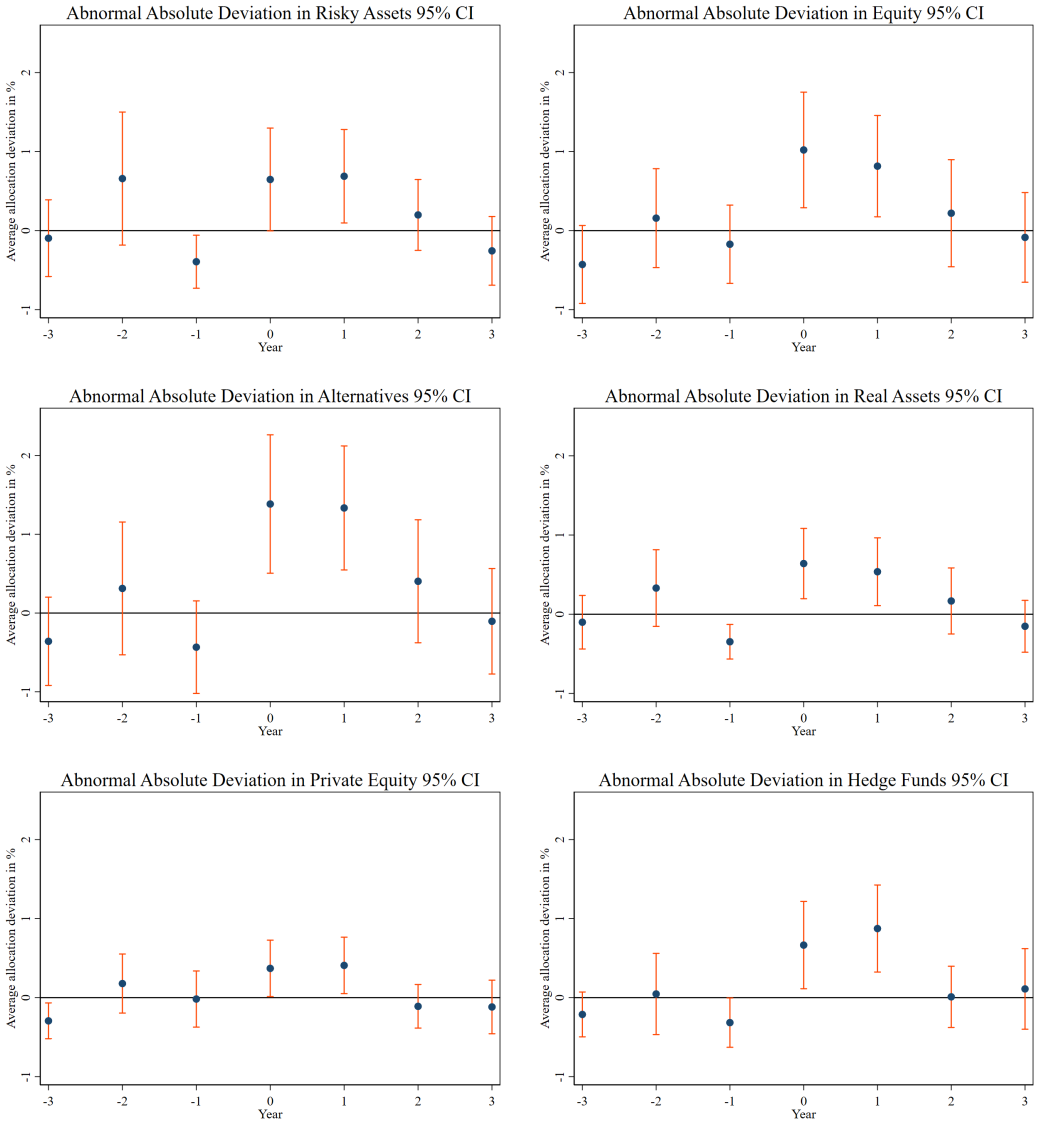


Table 1: Summary Statistics: Pension Fund Level

This table summarizes the characteristics of our sample of 173 public pension funds from 2001 to 2020. Panel A shows statistics on pension fund characteristics. *Assets* is the total pension fund assets under management in $bln. *Return* is the pension fund's annual return calculated as net investment income divided by the total assets at the beginning of the year. *3Y Return* is the geometric average pension fund returns over the previous 3 years. *%Equity*, *%Fixed Income* *%Real Assets*, *%Private Equity*, *%Hedge Funds*, *%Other Alternatives*, and *%Cash* measure the lagged target asset allocation. Panel B presents information on the number of pension fund-consultants relations by a pension fund. *#Consultants* reports the statistics for the total number of consultants by the pension fund. We also report the statistics for general, real assets, private equity, hedge funds, and other investment consultants. Panel C presents information on pension fund board composition and internal investing capabilities. *Internal Mandate* shows the 13F internally managed equity holdings as a percentage of assets under management. *State Political* captures the percentage of appointed or ex officio board members who are state officials. *Participants Elected* captures the percentage of board members elected by plan participants. *Investment Board* is an indicator for pension funds with a separate investment board.

	Obs	Mean	Median	StDev
Panel A: Pension Fund Characteristics				
Assets ($ bil)	3,138	18.674	6.181	34.190
Return	3,138	0.064	0.081	0.103
3Y Return	2,660	0.065	0.076	0.053
%Equity	2,852	0.514	0.520	0.105
%Fixed Income	2,852	0.262	0.260	0.072
%Real Assets	2,852	0.091	0.095	0.061
%Private Equity	2,852	0.062	0.055	0.055
%Hedge Funds	2,852	0.048	0.000	0.067
%Other Alternatives	2,852	0.019	0.000	0.055
%Cash	2,852	0.004	0.000	0.023
Panel B: Investment Consultants				
#Consultants	3,138	1.939	1.000	1.465
#General Consultants	3,138	0.950	1.000	0.218
#Real Assets Consultants	3,138	0.370	0.000	0.587
#Private Equity Consultants	3,138	0.366	0.000	0.590
#Hedge Fund Consultants	3,138	0.123	0.000	0.342
#Other Consultants	3,138	0.129	0.000	0.494
Panel C: Governance and Internal Investing				
Internal Mandate	3,138	0.034	0.000	0.104
%State Political	3,073	0.267	0.222	0.223
%Participant-Elected	3,073	0.335	0.429	0.259
Investment Board	3,079	0.118	0.000	0.323

Table 2: Summary Statistics: Investment Consultant Level

This table summarizes the data at the investment consultant level. Panel A reports the number of unique consultants by type and the number of pension fund-consultant-year observations with a consultant. Panel B presents statistics on the fees paid to consultants in $ million. Panel C reports statistics on investment consultant observations merged with the SEC ADV Form over the 2010–2020 period. We report the mean of the following characteristics. *#Clients* is the total number of clients served by the consultant. *%Discretionary AUM* measures the percentage of assets managed by the consultant under discretionary mandates. *Legal Issue* is an indicator for consultants reporting legal issues in the ADV annual form. *PF Clients 11-25%*, *PF Clients 26-50%*, *PF Clients 51-75%*, *PF Clients >75%* are indicators for consultants whose pension fund clients account for 0-10%, 11-25%, 26-50%, 51-75% or >75% of the total amount of assets under advisory.

	All	General	Real Assets	Private Equity	Hedge Funds	Other Consult.
Panel A: Pension-Fund-Consultant Relations						
#Unique Consultants	129	52	35	40	16	35
Observations	6,085	2,981	1,162	1,150	386	406
Panel B: Consulting Fees ($ Million)						
Obs.	1,966	1,005	334	394	142	91
Mean	0.512	0.411	0.382	0.867	0.522	0.553
Median	0.350	0.307	0.250	0.586	0.413	0.250
StDev	0.643	0.379	0.684	0.786	0.389	1.425
Panel C: Consultants Characteristics (Mean Values)						
Obs.	3,767	1,755	736	779	328	169
#Clients	862	1,454	146	147	129	2,546
%Discretionary AUM	0.580	0.696	0.584	0.423	0.287	0.661
Legal Issues	0.192	0.290	0.132	0.055	0.043	0.367
PF Clients 0-10%	0.165	0.107	0.118	0.330	0.149	0.243
PF Clients 11-25%	0.223	0.172	0.306	0.142	0.537	0.160
PF Clients 26-50%	0.308	0.386	0.201	0.259	0.216	0.373
PF Clients 51-75%	0.215	0.271	0.152	0.204	0.098	0.195
PF Clients >75%	0.083	0.064	0.217	0.044	0.000	0.030

Table 3: Which Pension Funds Have More Consultants

This table examines which factors determine the number of hired consultants and the probability of hiring a general or a specialized consultant. The observations are at the pension fund-year level. In Column (1), the dependent variable is the total number of investment consultants hired by a pension fund. In Column (2), the dependent variable is the total number of specialized consultants, which excludes general and other investment consultants. Columns (3) to (6) present the results of logit specifications where the dependent variable equals one if a pension fund has a general consultant or specialized consultant in real assets, private equity, and hedge funds. We report the marginal effects at the means of the independent variables. *Fund Size* is the natural logarithm of total pension fund assets under management. *Internal Mandate* shows the 13F internally managed equity holdings as a percentage of assets under management. *%Equity*, *%Real Assets*, *%Private Equity*, *%Hedge Funds*, and *%Other Alternatives* measure the target asset allocation. *State Political* captures the percentage of appointed or ex officio board members who are state officials. *Participant-elected* captures the percentage of board members elected by plan participants. We also control for percentage representation by the other types of trustees: state-elected, participant-exofficio, public-exofficio, and public-elected. *Investment Board* is an indicator for pension funds with a separate investment board. The specifications include year-reporting-month fixed effects. We double cluster standard errors by pension fund and year, and report standard errors in brackets. $^{*}p < .10$; $^{**}p < .05$; $^{***}p < .01$.

	OLS Specifications		**Logistic Probability Specifications**			
	#Total Consult. (1)	# Special. Consult. (2)	General (3)	Real Assets (4)	Private Equity (5)	Hedge Funds (6)
Fund Size	0.524***	0.460***	0.001	0.218***	0.208***	0.052***
	[0.067]	[0.059]	[0.005]	[0.030]	[0.030]	[0.013]
Internal Mandate	0.045	-0.533	-0.048	-0.697**	-0.352	-0.205
	[0.851]	[0.705]	[0.045]	[0.277]	[0.234]	[0.168]
State-political	1.130**	0.925**	0.093*	0.222	0.293	0.095
	[0.467]	[0.427]	[0.048]	[0.170]	[0.208]	[0.078]
Participant-elected	0.227	0.274	0.032	0.067	0.195	-0.009
	[0.355]	[0.268]	[0.032]	[0.139]	[0.164]	[0.064]
Investment Board	-0.086	-0.283	-0.013	-0.035	-0.113	-0.028
	[0.339]	[0.221]	[0.038]	[0.087]	[0.076]	[0.037]
%Equity	-0.502	-0.493	0.087			
	[0.969]	[0.750]	[0.104]			
%Real Assets	4.545***	3.664***	0.211	3.038***		
	[1.278]	[0.904]	[0.204]	[0.547]		
%Private Equity	4.404*	3.039**	0.030		2.569***	
	[2.117]	[1.145]	[0.099]		[0.687]	
%Hedge Funds	0.273	0.852	0.030			0.687***
	[1.183]	[0.905]	[0.099]			[0.195]
%Other Alternatives	1.274	0.609	0.107	-0.869	0.638	-0.010
	[1.186]	[1.036]	[0.157]	[0.821]	[0.703]	[0.280]
Other Board Members	Yes	Yes	Yes	Yes	Yes	Yes
Year × Reporting Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,815	2,815	2,687	2,765	2,769	2,212
Adjusted R-squared	0.484	0.484				

Table 4: Hiring General Investment Consultants

In this table, observations are at the pension fund-year level. We present the results of logit specifications where the dependent variable equals one if a pension fund hires a general investment consultant. We report the marginal effects at the means of the independent variables. *3Y Return* and *5Y Return* are the geometric average pension fund returns over the previous 3 or 5 years. *3Y Rank* and *5Y Rank* measure the percentile ranking of pension funds based on the average performance over the past 3 or 5 years. We include a two-segment piecewise linear specification where *Low 3Y Rank* and *Low 5Y Rank* capture the percentile ranking of pension funds with below median average return over the past 3 or 5 years and *High 3Y Rank* and *High 5Y Rank* capture the percentile ranking of pension funds with above median average return over the past 3 or 5 years. The specifications include controls for pension fund assets under management, internal asset management divisions, and governance. We also control for the lagged target allocation as well as the difference between the lagged target and actual allocation in each risky asset class. The specifications include year-reporting-month fixed effects. We double cluster standard errors by pension fund and year, and report standard errors in brackets. $p < .10$; $^{**}p < .05$; $^{***}p < .01$.

	(1)	(2)	(3)	(4)	(5)	(6)
	Mean Dependent Variable = 0.059					
3Y Return	-1.066***					
	[0.336]					
5Y Return		-1.503***				
		[0.294]				
3Y Rank			-0.064***			
			[0.021]			
5Y Rank				-0.068***		
				[0.017]		
Low 3Y Rank					-0.131***	
					[0.034]	
High 3Y Rank					0.012	
					[0.038]	
Low 5Y Rank						-0.114***
						[0.039]
High 5Y Rank						-0.013
						[0.042]
Fund Size	0.009**	0.010**	0.010**	0.010**	0.010**	0.011**
	[0.004]	[0.005]	[0.004]	[0.004]	[0.004]	[0.004]
Internal Mandate	-0.086*	-0.087	-0.083	-0.082	-0.085	-0.080
	[0.052]	[0.062]	[0.053]	[0.063]	[0.052]	[0.062]
State-political	-0.002	0.029	-0.005	0.025	-0.006	0.024
	[0.032]	[0.031]	[0.031]	[0.030]	[0.032]	[0.031]
Participant-elected	0.022	0.045	0.021	0.042	0.021	0.040
	[0.034]	[0.032]	[0.034]	[0.031]	[0.033]	[0.031]
Investment Board	0.003	0.002	0.003	0.002	0.002	0.001
	[0.016]	[0.014]	[0.014]	[0.014]	[0.014]	[0.014]
Other Board Members	Yes	Yes	Yes	Yes	Yes	Yes
Lagged Target Allocation	Yes	Yes	Yes	Yes	Yes	Yes
Lagged Gap Allocation	Yes	Yes	Yes	Yes	Yes	Yes
Year × Reporting Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,306	2,058	2,306	2,058	2,306	2,058

Table 5: Hiring Specialized Investment Consultants for the First Time

In this table, observations are at the pension fund-year level. The sample covers pension funds that do not have a specialized consultant and could hire a specialized consultant for the first time in each alternative asset class. The dependent variable equals one if a pension fund hires for the first time a specialized investment consultant in real assets, private equity, or hedge funds. We present the results of logit specifications and report the marginal effects at the means of the independent variables. *%Target* and *%Actual* measure the lagged target and actual allocation in each alternative asset class. We also include a variable that measures the difference between the lagged target and actual allocation. *3Y Return* is the geometric average pension fund returns over the previous 3 years. *PE Consultant* and *HF Consultant* are indicators for specialized consultants in private equity and hedge funds (the omitted category is real assets). We also control for pension fund assets under management, internal asset management divisions, and pension fund board composition. The specifications include year-reporting-month fixed effects. We double cluster standard errors by pension fund and year, and report standard errors in brackets. $p < .10$; $^{**}p < .05$; $^{***}p < .01$.

	(1)	(2)	(3)	(4)	(5)	(6)
	Mean Dependent Variable = 0.022					
$\%\text{Target}_{t-1} - \%\text{Actual}_{t-1}$	0.170***	0.178***	0.138***	0.172***	0.180***	0.140**
	[0.050]	[0.045]	[0.053]	[0.057]	[0.053]	[0.061]
%Actual_$t-1$		0.040*			0.039*	
		[0.021]			[0.021]	
%Target_$t-1$			0.040*			0.039*
			[0.021]			[0.021]
3Y Return				-0.139	-0.129	-0.129
				[0.090]	[0.084]	[0.084]
Fund Size	0.010***	0.010***	0.010***	0.011***	0.011***	0.011***
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
Internal Mandate	-0.024	-0.025	-0.025	-0.036*	-0.037*	-0.037*
	[0.017]	[0.017]	[0.017]	[0.020]	[0.020]	[0.020]
State-political	0.021***	0.021***	0.021***	0.024***	0.024***	0.024***
	[0.008]	[0.008]	[0.008]	[0.008]	[0.008]	[0.008]
Participant-elected	0.005	0.004	0.004	0.007	0.007	0.007
	[0.007]	[0.007]	[0.007]	[0.008]	[0.008]	[0.008]
Investment Board	-0.008***	-0.008***	-0.008***	-0.009***	-0.009***	-0.009***
	[0.003]	[0.002]	[0.002]	[0.003]	[0.003]	[0.003]
HF consultant	-0.009***	-0.008**	-0.008**	-0.009**	-0.008*	-0.008*
	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]
PE consultant	0.004	0.004	0.004	0.005	0.006	0.006
	[0.004]	[0.004]	[0.004]	[0.004]	[0.005]	[0.005]
Other Board Members	Yes	Yes	Yes	Yes	Yes	Yes
Year × Reporting Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,815	4,815	4,815	4,259	4,259	4,259

Table 6: Changes in Performance and Consultants Turnover

In this table, observations are at the pension-fund-hiring-event level. The analysis focuses on the general investment consultants hired as a replacement for terminated general consultants. The replacement event is in year *t=0* when the new consultant starts advising. We report performance statistics for the three years before the replacement event and three years after the replacement event. *Relative Return* is the difference between the cumulative return of the pension fund making the hiring decision and the average cumulative return of all other pension funds reporting performance in the same month. *Rank* is the percentile ranking of pension fund based on the average performance. *Difference* compares the performance statistics before and after the hiring event. We report standard errors in brackets. $p < .10$; $^{**}p < .05$; $^{***}p < .01$.

	Pre-Hiring Period				**Post-Hiring Period**		
	-3 to 0	-2 to 0	-1 to 0	0	0 to 1	0 to 2	0 to 3
Relative Return	-1.034**	-0.522*	0.087	-0.016	-0.077	0.085	0.097
	[0.438]	[0.301]	[0.208]	[0.170]	[0.218]	[0.290]	[0.312]
Difference					-0.164	0.607	1.131**
					[0.290]	[0.372]	[0.525]
Rank	0.422	0.452	0.499	0.513	0.517	0.512	0.509
	[0.025]	[0.024]	[0.023]	[0.022]	[0.022]	[0.023]	[0.023]
Difference					0.019	0.060**	0.088***
					[0.030]	[0.030]	[0.033]
Observations	137	148	166	171	166	148	137

Table 7: Private Equity Funds and Consultant Networks

The table reports the OLS coefficient estimates from a linear probability specification where the dependent variable is an indicator variable that takes the value of one if the PE fund is added to the pension fund roster during the year, and zero otherwise. The dataset includes pension-fund-investment level observations from 2001 to 2020 and it is expanded to include all potential private funds the pension fund can choose from in any given year. *SameConsultant* is equal to 1 if the fund is in the same consultant network. In columns (1) to (2) the consultant network includes all the private equity funds that any consultant of the pension plan included in the investment roster in any of the public funds in our sample. In columns (3) to (4) the consultant network includes all the private equity funds that any general consultant of the pension plan included in the investment roster in any of the public pension funds in our sample. In columns (5) to (6) the consultant network includes all the private equity funds that any private equity consultant of the pension plan included in the investment roster in any of the public pension funds in our sample. We also control for private fund size, pension fund assets under management, internal asset management divisions, board composition, and target allocation to equity, real assets, private equity, hedge funds, and other risky assets. The specifications include target asset allocations, and pension fund or private equity fund fixed effects. We double cluster standard errors by pension fund and vintage year, and report standard errors in brackets. $p < .10$; $^{**}p < .05$; $^{***}p < .01$.

	All Consultants		**General Consultant**		**PE Consultants**	
	(1)	(2)	(3)	(4)	(5)	(6)
Mean Dep.Variable	0.004	0.004	0.004	0.004	0.005	0.005
Same consultant	0.008***	0.008***	0.014***	0.015***	0.020***	0.021***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
PE Fund Size	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Pension Fund Size	-0.000***	0.001	-0.000*	-0.000	-0.000	-0.002
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.004)
Internal Mandate	0.001		-0.002*		-0.001	
	(0.001)		(0.001)		(0.004)	
Investment Board	-0.000**		-0.002**		-0.001	
	(0.000)		(0.001)		(0.001)	
State-political	-0.002**		-0.002**		0.001	
	(0.001)		(0.001)		(0.002)	
Participant-elected	-0.001		-0.001		0.001	
	(0.001)		(0.001)		(0.002)	
Target Asset Allocation	Yes	Yes	Yes	Yes	Yes	Yes
Other Board Members	Yes	Yes	Yes	Yes	Yes	Yes
Vintage-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
PE-Fund FE	Yes		Yes		Yes	
Pension-Fund FE		Yes		Yes		Yes
Observations	3,359,651	3,359,651	3,299,868	3,299,868	1,820,739	1,820,739
R-squared	0.006	0.006	0.012	0.012	0.018	0.018

Table 8: Real Assets Funds and Consultant Networks

The table reports the OLS coefficient estimates from a linear probability specification where the dependent variable is an indicator variable that takes the value of one if the RA fund is added to the pension fund roster during the year, and zero otherwise. The dataset includes pension-fund-investment level observations from 2001 to 2020 and it is expanded to include all potential private funds the pension fund can choose from in any given year. *SameConsultant* is equal to 1 if the fund is in the same consultant network. In columns (1) to (2) the consultant network includes all the RA funds that any consultant of the pension plan included in the investment roster in any of the public funds in our sample. In columns (3) to (4) the consultant network includes all the RA funds that any general consultant of the pension plan included in the investment roster in any of the public pension funds in our sample. In columns (5) to (6) the consultant network includes all RA funds that any RA consultant of the pension plan included in the investment roster in any of the public pension funds in our sample. We also control for private fund size, pension fund assets under management, internal asset management divisions, board composition, and target allocation to equity, real assets, private equity, hedge funds, and other risky assets. The specifications include target asset allocations, and pension fund or private equity fund fixed effects. We double cluster standard errors by pension fund and vintage year, and report standard errors in brackets. $p < .10$; $^{**}p < .05$; $^{***}p < .01$.

	All Consultants		**General Consultant**		**RA Consultants**	
	(1)	(2)	(3)	(4)	(5)	(6)
Mean Dep.Variable	0.008	0.008	0.008	0.008	0.011	0.011
Same Consultant	0.015***	0.016***	0.030***	0.031***	0.030***	0.031***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.003)	(0.003)
RA Fund Size	0.004***	0.004***	0.003***	0.003***	0.004***	0.004***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)
Pension Fund Size	-0.001***	0.001	-0.001*	0.000	-0.000	0.001
	(0.000)	(0.001)	(0.000)	(0.002)	(0.001)	(0.004)
Internal Mandate	0.002		-0.006**		0.013**	
	(0.002)		(0.003)		(0.006)	
Investment Board	-0.000		-0.003**		0.001	
	(0.001)		(0.001)		(0.001)	
State-political	-0.003*		-0.005***		0.001	
	(0.001)		(0.002)		(0.003)	
Participant-elected	-0.002		-0.004**		0.004	
	(0.001)		(0.002)		(0.003)	
Target Asset Allocation	Yes	Yes	Yes	Yes	Yes	Yes
Other Board Members	Yes	Yes	Yes	Yes	Yes	Yes
Vintage-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
PE-Fund FE	Yes		Yes		Yes	
Pension-Fund FE		Yes		Yes		Yes
Observations	765,417	765,417	744,173	744,173	368,508	368,508
R-squared	0.011	0.011	0.025	0.025	0.022	0.023

Table 9: Specialized Consultants and Access to Private Funds

In Columns (1) and (2), observations are at the pension fund-year level over the 2001–2020 period. The dependent variable is the total number of investments in private funds made by a pension fund in a given year. The sample is a balanced panel of pension fund-year observations and if a pension fund did not make any investments in private funds in a given year, the dependent variable equals zero. These specifications include vintage-year fixed effects and pension fund fixed effects. In Columns (3) to (8), observations are at the pension fund-investment level over the 2001–2020 period. Columns (3) and (4) present the results of logit specifications where the dependent variable equals one if a private fund is the first fund raised by the general partner based on all funds raised by this general partner. Columns (5) and (6) present results of regressions in which the dependent variable captures the ratio of the final private fund size relative to the target fund size. We winsorize the size ratio at the 1.00% level. Columns (7) and (8) present the results of logit specifications where the dependent variable equals one if a private fund is a co-investment fund or a separate account mandate. For the logit specifications, we report the marginal effects at the means of the independent variables. These specifications include interacted vintage year and private fund type fixed effects (buyout, venture capital, real estate, infrastructure, natural resources, and private debt), and pension fund fixed effects. *PE Consultant* and *RA Consultant* are indicators for pension funds that have a specialized consultant in private equity and real assets. We also control for pension fund assets under management, internal asset management divisions, board composition, and target allocation to equity, real assets, private equity, hedge funds, and other risky assets. We double cluster standard errors by pension fund and year and report standard errors in brackets. $p < .10$; $^{**}p < .05$; $^{***}p < .01$.

	#Investments in Private Funds		**Overall First Time Fund**		**Private Fund Size / Target Size**		**Coinvestment Funds & Separate Accounts**	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mean Dependent Variable	8.091	8.091	0.082	0.082	1.131	1.131	0.050	0.050
PE Consultant	3.690***	2.987***	0.003	-0.001	0.018**	0.022**	-0.006	-0.022
	[0.813]	[0.895]	[0.010]	[0.013]	[0.007]	[0.010]	[0.010]	[0.013]
RA Consultant	1.628*	1.860**	0.004	-0.021*	0.001	0.010	-0.002	-0.003
	[0.804]	[0.872]	[0.009]	[0.012]	[0.006]	[0.008]	[0.008]	[0.011]
Pension Fund Size	3.065***	4.684***	0.001	0.026	0.003	-0.002	0.017***	0.031
	[0.426]	[1.477]	[0.006]	[0.024]	[0.002]	[0.022]	[0.005]	[0.021]
Internal Mandate	5.995		0.031		-0.038*		0.005	
	[4.346]		[0.029]		[0.021]		[0.024]	
Investment Board	-0.464		-0.012		0.004		-0.010	
	[1.019]		[0.010]		[0.007]		[0.009]	
State-political	2.775		0.046**		-0.013		0.018	
	[2.898]		[0.019]		[0.015]		[0.019]	
Participant-elected	-0.583		0.020		0.005		-0.015	
	[1.941]		[0.023]		[0.012]		[0.017]	
Target Asset Allocation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other Board Members	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vintage-Year FE	Yes	Yes						
Fund-Type × Vintage-Year FE			Yes	Yes	Yes	Yes	Yes	Yes
Pension-Fund FE		Yes		Yes		Yes		Yes
Observations	2,811	2,852	21,556	21,179	18,674	18,729	19,410	18,431
Adjusted R-squared	0.540	0.694			0.098	0.107		

Table 10: Specialized Consultants and Performance in Alternative Assets

In this table, observations are at the pension fund-investment level over the 2001–2016 period. In columns (1) to (3) performance is measured using the public market equivalent based on the S&P500 index as a benchmark. In columns (4) to (6) performance is measured using the net internal rate of return (IRR), and in columns (7) to (9) performance is measured using the multiple of the total value to paid-in capital (TVPI). *PE Consultant* and *RA Consultant* are indicators for pension funds that have a specialized consultant in private equity and real assets. We also control for pension fund assets under management, internal asset management divisions, board composition, and target allocation to equity, real assets, private equity, hedge funds, and other risky assets. The specifications include interacted vintage year and private fund type fixed effects (buyout, venture capital, real estate, infrastructure, natural resources, and private debt), and pension fund fixed effects. We double cluster standard errors by pension fund and vintage year and report standard errors in brackets. $p < .10$; $^{**}p < .05$; $^{***}p < .01$.

	Public Market Equivalent			**Internal Rate of Return**			**Multiple (TVPI)**		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Mean Dep. Var. = 1.041			Mean Dep. Var. = 12.515			Mean Dep. Var. = 1.731		
PE Consultant	0.004	0.006	0.021	0.350	0.489	0.562	0.014	0.020	0.059
	[0.014]	[0.015]	[0.022]	[0.468]	[0.455]	[0.827]	[0.021]	[0.023]	[0.039]
RA Consultant	0.007	0.006	0.001	0.361	0.279	0.192	-0.027	-0.027	0.001
	[0.013]	[0.013]	[0.018]	[0.298]	[0.303]	[0.446]	[0.017]	[0.019]	[0.023]
Pension Fund Size	-0.003	-0.003	-0.071	-0.140	-0.144	-1.987	-0.008	-0.009	-0.135**
	[0.006]	[0.006]	[0.061]	[0.186]	[0.165]	[1.255]	[0.010]	[0.009]	[0.047]
Internal Mandate	-0.036	-0.027		-0.606	-0.583		-0.134**	-0.102	
	[0.043]	[0.040]		[1.265]	[1.253]		[0.057]	[0.065]	
Investment Board	0.066**	0.068**		1.710**	1.718***		0.123**	0.118**	
	[0.026]	[0.024]		[0.622]	[0.572]		[0.048]	[0.042]	
State-political	-0.141***	-0.124***		-4.145***	-3.834***		-0.174***	-0.149***	
	[0.028]	[0.025]		[0.917]	[0.856]		[0.054]	[0.046]	
Participant-elected	-0.034	-0.022		-1.798*	-1.626*		-0.045	-0.047	
	[0.031]	[0.028]		[0.918]	[0.850]		[0.051]	[0.042]	
Target Asset Allocation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other Board Members	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vintage Year FE	Yes			Yes			Yes		
Fund Type FE	Yes			Yes			Yes		
Fund-Type × Vintage-Year FE		Yes	Yes		Yes	Yes		Yes	Yes
Pension-Fund FE			Yes			Yes			Yes
Observations	12,836	12,836	12,890	14,922	14,921	14,987	15,296	15,295	15,365
Adjusted R-squared	0.129	0.199	0.201	0.145	0.207	0.210	0.141	0.213	0.214

Table 11: Consulting Fees

In columns (1) to (4), observations are at the pension-fund-consultant-year level and the dependent variable is the fee paid to general consultants in $ million. Columns (5) to (8) examine the fees paid to all investment consultants. *#All Consultants*, *#RA Consultants*, *#PE Consultants*, and *#HF Consultant* capture the total number, real assets, private equity, and hedge funds consultants hired by a pension fund. *RA Consultant*, *PE Consultant*, and *HF Consultant* are indicators for specialized consultants in real assets, private equity, and hedge funds (the omitted categories are general and other consultants). *Fund Size* is the natural logarithm of pension fund assets under management. *%Equity*, *%Real Assets*, *%Private Equity*, *%Hedge Funds*, and *%Other Alternatives* measure the target asset allocation. *3Y Return* is the geometric average pension fund returns over the previous 3 years. *3Y Rank* measures the percentile ranking of pension funds based on the average performance over the past 3 years. The specifications include pension fund and year-reporting-month fixed effects. We double cluster standard errors by pension fund and year, and report standard errors in brackets. $^*p < .10$; $^{**}p < .05$; $^{***}p < .01$.

	General Consultant				**All Consultants**			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Mean Dep. Var. = 0.411				Mean Dep. Var. = 0.512			
#All Consultants	0.009							
	[0.023]							
#RA Consultants		0.059	0.060	0.059				
		[0.046]	[0.043]	[0.042]				
#PE Consultants		-0.065	-0.071	-0.071				
		[0.045]	[0.049]	[0.048]				
#HF Consultants		-0.017	-0.033	-0.033				
		[0.041]	[0.033]	[0.033]				
RA Consultant						-0.162	-0.158	-0.158
						[0.104]	[0.111]	[0.110]
PE Consultant						0.344**	0.360**	0.361**
						[0.121]	[0.131]	[0.131]
HF Consultant						-0.119	-0.121	-0.121
						[0.120]	[0.127]	[0.128]
Fund Size	0.346*	0.332*	0.206	0.205	0.304	0.362*	0.185	0.164
	[0.186]	[0.186]	[0.138]	[0.135]	[0.192]	[0.188]	[0.161]	[0.162]
%Equity	0.821	0.795	0.661	0.661	0.355	0.404	0.403	0.407
	[0.582]	[0.572]	[0.476]	[0.474]	[0.547]	[0.573]	[0.532]	[0.521]
%Real Assets	0.837**	0.814**	0.622*	0.626*	0.401	0.483	0.194	0.215
	[0.377]	[0.348]	[0.318]	[0.314]	[0.612]	[0.641]	[0.632]	[0.615]
%Private Equity	1.565**	1.636**	1.300**	1.294**	1.846***	1.529**	1.504**	1.506***
	[0.709]	[0.724]	[0.573]	[0.562]	[0.619]	[0.623]	[0.530]	[0.511]
%Hedge Funds	2.129*	2.122*	1.533*	1.547*	1.345	1.407*	0.998	1.047
	[1.042]	[1.034]	[0.740]	[0.763]	[0.829]	[0.802]	[0.620]	[0.627]
%Other Alternatives	1.342**	1.362**	1.180**	1.183**	1.082*	1.063*	1.013**	1.058**
	[0.571]	[0.580]	[0.466]	[0.467]	[0.553]	[0.514]	[0.443]	[0.427]
3Y Return			-0.613				-0.186	
			[1.072]				[1.127]	
3Y Rank				-0.017				0.033
				[0.038]				[0.062]
Pension Fund FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year × Reporting Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	965	965	864	864	1,913	1,913	1,748	1,748
Adjusted R-squared	0.798	0.801	0.853	0.853	0.215	0.279	0.279	0.279

Table 12: Selection of General Consultants

In this table, observations are at the consultant-year level and the sample period is 2010–2020. Our analysis is based on 97 hiring events of general investment consultants by 79 pension funds. For every hiring event, we construct an opportunity set of general investment consultants that could have been hired. The opportunity set includes all 48 general investment consultants who were employed by at least one pension fund during the sample period. We present the results of logit specifications where the dependent variable equals one for the general investment consultant who was hired. We report the marginal effects at the means of the independent variables. *LogClients* is the natural logarithm of the total number of clients served by the investment consultant. *%Discretionary AUM* measures the percentage of assets managed by the consultant under discretionary mandates. *%PF Clients Same Size* is the percentage of pension funds served by the consultant that belong to the same size quartile as the pension fund making the hiring decision. *%PF Clients Same State* is the percentage of pension funds served by the consultant that is located in the same state as the pension fund making the hiring decision. *Legal Issue* is an indicator for investment consultants reporting legal issues in the ADV annual form. *PF Clients 11-25%*, *PF Clients 26-50%*, *PF Clients 51-75%*, *PF Clients >75%* are indicators for investment consultants whose pension fund clients account for 11-25%, 26-50%, 51-75% or >75% of the total amount of assets under advisory (the omitted category is 0-10%). The specifications include pension fund and year-reporting-month fixed effects. We double cluster standard errors by pension fund and year, and report standard errors in brackets. $p < .10$; $^{**}p < .05$; $^{***}p < .01$.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Mean Dependent Variable = 0.024						
Log Clients	0.002***	0.003***	0.002***	0.003***	0.003***	0.003***	0.003***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Discretionary AUM	0.012**	0.009*	0.009**	0.007*	0.012**	0.007*	0.005
	[0.005]	[0.005]	[0.005]	[0.004]	[0.005]	[0.004]	[0.003]
%PF Clients Same Size		0.028***		0.024***			0.018***
		[0.003]		[0.003]			[0.004]
%PF Clients Same State			0.047***	0.039***			0.034***
			[0.007]	[0.007]			[0.007]
Legal Issues					-0.008		0.000
					[0.008]		[0.007]
PF Clients 11-25%						0.007	0.005
						[0.010]	[0.008]
PF Clients 26-50%						0.019**	0.015**
						[0.009]	[0.007]
PF Clients 51-75%						0.028***	0.022***
						[0.008]	[0.006]
PF Clients >75%						0.001	0.002
						[0.008]	[0.007]
Pension Fund FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year × Reporting Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,061	4,061	4,061	4,061	4,061	4,061	4,061

Online Appendix

Choosing Pension Fund Investment Consultants

A.1 Pension Fund and Investment Consultants Data

The unit of observation in our analysis is a pension fund and one pension fund (retirement system) can manage the assets of multiple pension plans. We collect information on the pension fund's total assets under management, actual and target asset allocations, and performance from their Comprehensive Annual Financial Reports (CAFRs). Online Appendix Table A.1 shows that our total sample covers 172 unique pension funds over the 2001–2020 period, corresponding to 3,117 pension-fund-year observations, and we construct this sample of pension funds from two sources. First, the majority of observations (138 pension funds with 2,619 annual observations) comes from the Public Plans Database (PPD), published by the Center for Retirement Research at Boston College. Second, we extend the sample coverage by collecting data on 34 unique pension funds (498 annual observations). This additional sample covers primarily local county and city pension funds that are not part of the PPD dataset.

In our analysis, we classify pension fund investment consultants into general or specialized consultants. General investment consultants make recommendations on the asset allocation policy, formulating return expectations, selection of asset managers, benchmarking of performance, asset-liability management, risk control policies, reporting, and education services. Specialized investment consultants are typically hired in alternative asset classes, such as real assets, private equity, and hedge funds, and have a narrow set of responsibilities, focusing primarily on the selection of asset managers and performance evaluation.

In the paper, we show that the industry of pension fund investment consultants is highly concentrated. Figure 2 shows that the concentration of consultants has continuously increased over our sample period based on the number of relations as well as based on the amount of assets under advisory. In this appendix, we show a similar degree of concentration in the provision of specialized consultant services. Figure A.1 shows that the top 10 specialized consultants account for the vast majority of pension-fund-consultant relationships in real assets, private equity, and hedge funds. The other non-10 specialized consultants account for less than 5% of the relations and in the earlier years of our sample there are even more than 10 unique specialized consultants in all alternative assets classes. Thus, the degree of concentration among specialized consultants is even higher than for general consultants. Still, there is a substantial share of pension funds that operate without having a specialized consultant.

Figure A.1: Concentration of Specialized Consultants in Alternative Assets

We replicate the analysis from Figure 2 for specialized consultants instead of general consultants. If a pension fund has more than one specialized consultant in an alternative asset class, we split the mandate and assets under advisory by the number of specialized consultants. In the left panels, we rank the specialized consultants based on the number of pension funds that they advise. In the right panels, we rank the specialized consultants based on the aggregate amount of assets under management of their pension fund clients. The second axis in all panels presents the number of unique general consultants by year.

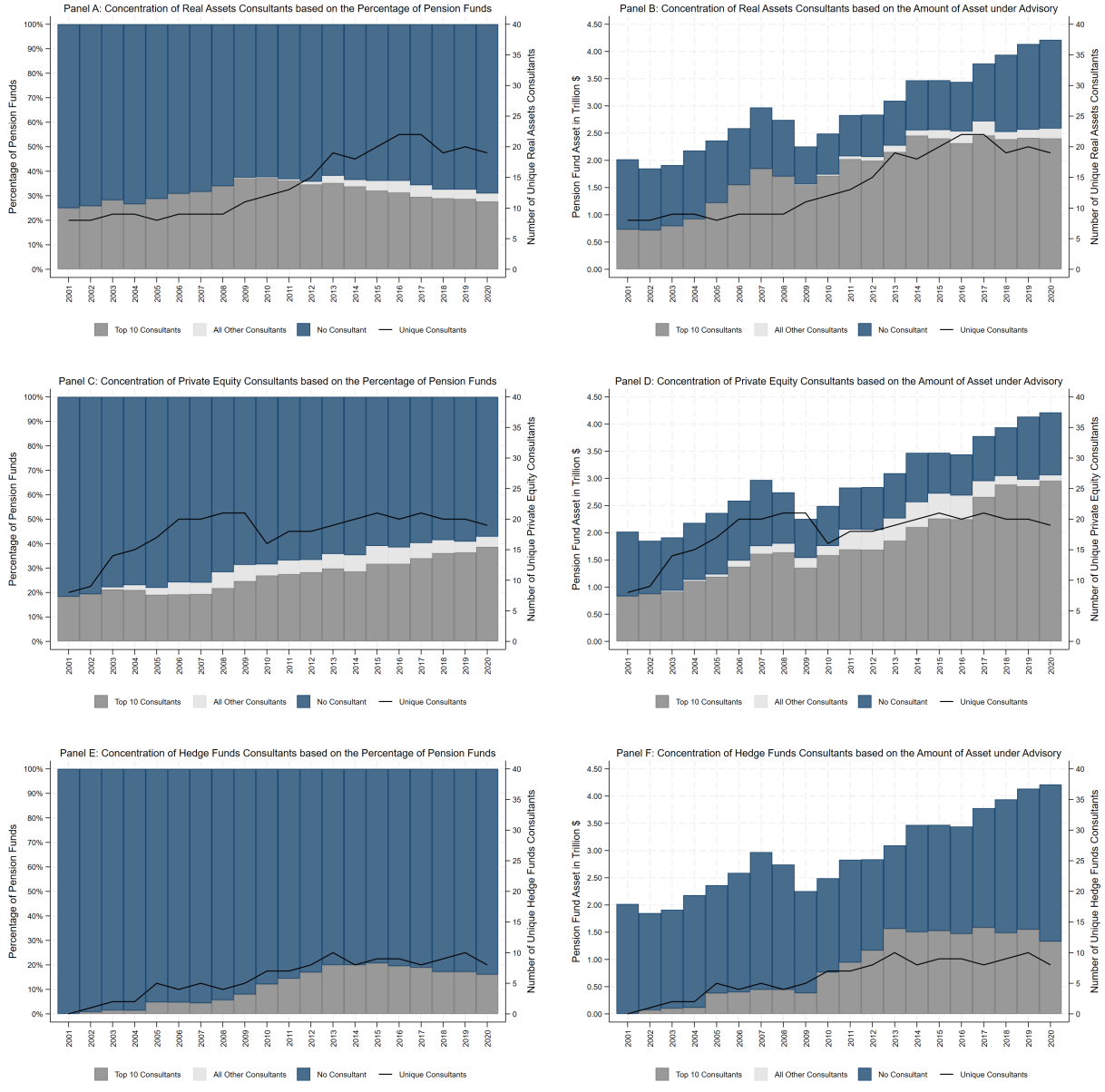


Table A.1: Pension Fund Observations with Consultants Data

This table presents the number of observations of pension funds with investment consultants data over the 2001–2020 period. We collect data on 173 unique pension funds which corresponds to 3,133 annual observations. The PPD dataset provides information on the asset allocation and performance of 138 unique pension funds (2,619 annual observations). In addition, we collect asset allocation and performance data for 34 unique pension funds (498 annual observations). This additional sample covers local city or county pension funds that are not part of the CRR PPD data coverage.

Year	PPD Sample	Local Sample	Total Sample
2001	114	7	121
2002	117	7	124
2003	122	11	133
2004	127	13	140
2005	130	17	147
2006	131	18	149
2007	133	25	158
2008	134	25	159
2009	136	27	163
2010	136	29	165
2011	136	30	166
2012	135	30	165
2013	135	30	165
2014	135	35	170
2015	134	35	169
2016	134	35	169
2017	134	35	169
2018	134	35	169
2019	134	35	169
2020	133	35	168
Total	2,624	514	3,138

A.2 Establishing Consulting Relationships

Our analysis focuses on the initiation and termination of contracts between pension funds and investment consultants. We identify hiring events based on the first year of employment of new general consultants and distinguish four different types of hiring events: first-time hiring, immediate replacement hiring, additional hiring, and later replacement hiring. Online Appendix Table A.2 shows the distribution of these events over time. We observe 8 first-time hiring events of general consultants and 154 first-time hiring events of specialized consultants (43 in hedge funds, 62 in private equity, and 49 in real assets). We also observe 185 immediate replacements of general consultants and 131 replacement events of specialized consultants (11 in hedge funds, 66 in private equity, and 54 in real assets). Pension funds are not limited to having only one specialized consultant per asset class and could hire additional new specialized consultants. These additional hiring events of specialized consultants often follow specific mandates within a certain asset class, such as domestic private equity and international private equity. These additional hiring events are relatively rare (5 in hedge funds, 26 in private equity, and 24 in real assets). Finally, we observe 17 events in which investment consultants are replaced only after a longer period of two or more years.

Online Appendix Table A.2 shows also the distribution of termination events which we identify based on the last year of employment of old consultants. Most terminations are followed by a replacement and hiring of a new consultant. For instance, 183 out of 187 terminations of general consultants and 130 out of 228 terminations of specialized consultants are followed by the immediate hiring of a new consultant. However, for specialized consultants, we still observe about 88 terminations without a replacement.

In Online Appendix Table A.3 we present, as a robustness check, the results of a logit estimation modeling the probability that a pension fund fires a general consultant instead of the probability of hiring a new general consultant. The dependent variable equals one in the last year when the old general consultant stopped advising the pension fund. Most of the firing decisions are followed by the immediate hiring of a new general consultant, and there are only two firing events without a replacement of the general consultant. In line with the results on hiring, we find that past performance relative to the other pension funds is the main driver of general consultant dismissals.

In the main analysis of specialized consultants, we focus on the subsample of first-time hiring events. The results do not support the limited expertise hypothesis as pension funds with a higher actual allocation in asset class j are more likely to hire a specialized consultant in this asset class for the first time. We find supporting evidence for the limited access hypothesis as pension funds

with a larger difference between the lagged target and actual asset allocations are more likely to hire a specialized consultant in this asset class for the first time.

In Online Appendix Table A.5, we extend the analysis by focusing on all hiring events of specialized consultants instead of just focusing on first-time hiring events. This analysis aggregates four different types of specialized investment consultants hiring events: first-time hiring, immediate replacement hiring, additional hiring, and later replacement hiring. When we analyze all hiring events of specialized consultants, we observe that the variables measuring asset allocation policy become less statistically significant. This reduced significance is in line with our conjecture that hiring specialized consultants to replace existing consultants is not necessarily related to the pension fund's asset allocation policy.

Table A.2: Number of consultants hired and fired by type

The table shows the number of consultants hired and fired by type, from 2001 to 2020. *Hire First* refers to the first time hiring of a general or specialized consultant by a pension fund. *Hire Addition* refers to the hiring of an additional specialized consultant in one asset class for which at least one consultant was already employed in the previous year(s). *Hire Replace* refers to the hiring of a consultant after the firing of one consultant in the same asset class, or replacement of the general consultant. An event is categorized as *Hire Replace* if the replacement occurs in the year after the incumbent consultant was dismissed. *Hire Long Replacement* refers to the hiring as replacement of a consultant in the same asset class or replacement of a general consultant where the position of the incumbent consultant remains vacant for more than two years before the actual replacement occurs. *Firing with replacement* refers to a consultant being discontinued in a given year and then replaced in the next year(s). *Firing with no replacement* refers to a discontinuation of a consultant without hiring of a new one for that specific asset class.

	Hire					**Fire**			
	First	Addition	Replace	Long Replace	Total	Replace	Long Replace	No Replace	Total
General	6		181		187	186		2	188
Hedge Funds	41	5	10	1	57	10	1	17	29
Private Equity	62	23	65	3	153	68	3	19	92
Real Assets	47	19	42	8	116	43	6	41	100
Total	156	47	298	12	513	307	10	79	409

Table A.3: Firing General Investment Consultants

Robustness test of Table 4: The dependent variable measures firing events instead of hiring events of general consultants. The number of observations is slightly reduced as we exclude from the analysis pension funds that do not have a general consultant because they cannot fire a consultant.

In this table, observations are at the pension fund-year level. We present the results of logit specifications where the dependent variable equals one if a pension fund fires a general investment consultant. We report the marginal effects at the means of the independent variables. *3Y Return* and *5Y Return* are the geometric average pension fund returns over the previous 3 or 5 years. *3Y Rank* and *5Y Rank* measure the percentile ranking of pension funds based on the average performance over the past 3 or 5 years. *Low 3Y Rank* and *Low 5Y Rank* capture the percentile ranking of pension funds with below median average return over the past 3 or 5 years. *High 3Y Rank* and *High 5Y Rank* capture the percentile ranking of pension funds with above median average return over the past 3 or 5 years. The specifications include controls for pension fund assets under management, internal asset management divisions, and governance. We also control for the lagged target allocation as well as the difference between the lagged target and actual allocation in each risky asset class. The specifications include year-reporting-month fixed effects. We double cluster standard errors by pension fund and year, and report standard errors in brackets. $p < .10$; $^{**}p < .05$; $^{***}p < .01$.

	(1)	(2)	(3)	(4)	(5)	(6)
3Y Return	-0.892**					
	[0.362]					
5Y Return		-1.193***				
		[0.358]				
3Y Rank			-0.058**			
			[0.023]			
5Y Rank				-0.062***		
				[0.019]		
Low 3Y Rank					-0.125***	
					[0.034]	
High 3Y Rank					0.017	
					[0.040]	
Low 5Y Rank						-0.108***
						[0.040]
High 5Y Rank						-0.009
						[0.045]
Fund Size	0.008*	0.008*	0.009*	0.009*	0.009*	0.009*
	[0.005]	[0.005]	[0.005]	[0.005]	[0.005]	[0.005]
Internal Mandate	-0.080	-0.083	-0.077	-0.078	-0.079	-0.075
	[0.052]	[0.062]	[0.052]	[0.062]	[0.051]	[0.061]
State-political	-0.020	0.011	-0.022	0.007	-0.023	0.006
	[0.039]	[0.039]	[0.037]	[0.038]	[0.037]	[0.039]
Participant-elected	0.021	0.044	0.020	0.041	0.020	0.040
	[0.035]	[0.034]	[0.035]	[0.033]	[0.034]	[0.034]
Investment Board	0.002	0.003	0.002	0.003	0.001	0.002
	[0.017]	[0.016]	[0.015]	[0.016]	[0.015]	[0.016]
Other Board Variables	Yes	Yes	Yes	Yes	Yes	Yes
Target Asset Allocation	Yes	Yes	Yes	Yes	Yes	Yes
Gap Asset Allocation	Yes	Yes	Yes	Yes	Yes	Yes
Year × Reporting Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,211	1,971	2,211	1,971	2,211	1,971

Table A.4: Hiring General Investment Consultants with Funded Ratio

Robustness test of Table 4: The dependent variable measures also hiring events of general consultants. We add one additional control variable: *GASB Funded Ratio* that measures the funding status of a pension fund under traditional GASB 25 standards. The (GASB 25) funded ratio equals the actuarial assets divided by the actuarial liability. The number of observations is reduced due to missing funded ratio data for local pension funds.

In this table, observations are at the pension fund-year level. We present the results of logit specifications where the dependent variable equals one if a pension fund fires a general investment consultant. We report the marginal effects at the means of the independent variables. *3Y Return* and *5Y Return* are the geometric average pension fund returns over the previous 3 or 5 years. *3Y Rank* and *5Y Rank* measure the percentile ranking of pension funds based on the average performance over the past 3 or 5 years. *Low 3Y Rank* and *Low 5Y Rank* capture the percentile ranking of pension funds with below median average return over the past 3 or 5 years. *High 3Y Rank* and *High 5Y Rank* capture the percentile ranking of pension funds with above median average return over the past 3 or 5 years. The specifications include controls for pension fund assets under management, internal asset management divisions, and governance. We also control for the lagged target allocation as well as the difference between the lagged target and actual allocation in each risky asset class. The specifications include year-reporting-month fixed effects. We double cluster standard errors by pension fund and year, and report standard errors in brackets. $p < .10$; $^{**}p < .05$; $^{***}p < .01$.

	(1)	(2)	(3)	(4)	(5)	(6)
3Y Return	-1.106***					
	[0.397]					
5Y Return		-1.448***				
		[0.344]				
3Y Rank			-0.070***			
			[0.026]			
5Y Rank				-0.066***		
				[0.019]		
Low 3Y Rank					-0.165***	
					[0.040]	
High 3Y Rank					0.036	
					[0.044]	
Low 5Y Rank						-0.128***
						[0.043]
High 5Y Rank						0.004
						[0.042]
Fund Size	0.011**	0.011**	0.011**	0.011***	0.012***	0.012***
	[0.005]	[0.004]	[0.005]	[0.004]	[0.005]	[0.004]
GASB Funded Ratio	-0.089***	-0.087***	-0.083**	-0.085***	-0.082**	-0.086***
	[0.033]	[0.027]	[0.033]	[0.028]	[0.033]	[0.029]
Internal Mandate	-0.088	-0.080	-0.084	-0.075	-0.090	-0.076
	[0.056]	[0.063]	[0.057]	[0.064]	[0.055]	[0.063]
State-political	0.006	0.036	0.003	0.031	0.002	0.030
	[0.032]	[0.033]	[0.031]	[0.032]	[0.031]	[0.032]
Participant-elected	0.025	0.047	0.024	0.044	0.026	0.044
	[0.038]	[0.035]	[0.037]	[0.034]	[0.037]	[0.034]
Investment Board	0.001	-0.000	0.001	-0.000	-0.000	-0.002
	[0.015]	[0.015]	[0.014]	[0.014]	[0.013]	[0.015]
Other Board Variables	Yes	Yes	Yes	Yes	Yes	Yes
Target Asset Allocation	Yes	Yes	Yes	Yes	Yes	Yes
Gap Asset Allocation	Yes	Yes	Yes	Yes	Yes	Yes
Year × Reporting Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,872	1,689	1,872	1,689	1,872	1,689

Table A.5: Hiring Specialized Investment Consultants

Robustness test of Table 5: The dependent variable measures all hiring events of specialized consultants instead of limiting attention to the subsample of pension fund decisions to hire a specialized consultant for the first time.

In this table, observations are at the pension fund-year level. The dependent variable equals one if a pension fund hires a specialized investment consultant in real assets, private equity, or hedge funds. We present the results of logit specifications and report the marginal effects at the means of the independent variables. *%Target* and *%Actual* measure the lagged target and actual allocation in each alternative asset class. We also include a variable that measures the difference between the lagged target and actual allocation. *3Y Return* is the geometric average pension fund returns over the previous 3 years. *PE Consultant* and *HF Consultant* are indicators for specialized consultants in private equity and hedge funds (the omitted category is real assets). We also control for pension fund assets under management, internal asset management divisions, and pension fund board composition. The specifications include year-reporting-month fixed effects. We double cluster standard errors by pension fund and year, and report standard errors in brackets. $p < .10$; $^{**}p < .05$; $^{***}p < .01$.

	(1)	(2)	(3)	(4)	(5)	(6)
$\%\text{Target}_{t-1} - \%\text{Actual}_{t-1}$	0.197***	0.205***	0.175**	0.187**	0.194***	0.167**
	[0.068]	[0.068]	[0.077]	[0.077]	[0.075]	[0.085]
$\%\text{Actual_}t-1$		0.030			0.027	
		[0.042]			[0.046]	
$\%\text{Target_}t-1$			0.030			0.027
			[0.042]			[0.046]
3Y Return				-0.107	-0.103	-0.103
				[0.077]	[0.078]	[0.078]
Fund Size	0.011***	0.011***	0.011***	0.012***	0.012***	0.012***
	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]
Internal Mandate	-0.012	-0.011	-0.011	-0.035	-0.035	-0.035
	[0.026]	[0.026]	[0.026]	[0.030]	[0.029]	[0.029]
State-political	0.010	0.010	0.010	0.010	0.011	0.011
	[0.013]	[0.013]	[0.013]	[0.013]	[0.013]	[0.013]
Participant-elected	-0.001	-0.001	-0.001	0.002	0.002	0.002
	[0.010]	[0.010]	[0.010]	[0.011]	[0.011]	[0.011]
Investment Board	-0.001	-0.001	-0.001	0.000	-0.000	-0.000
	[0.006]	[0.006]	[0.006]	[0.007]	[0.007]	[0.007]
HF consultant	-0.014***	-0.013***	-0.013***	-0.014***	-0.013***	-0.013***
	[0.004]	[0.004]	[0.004]	[0.004]	[0.005]	[0.005]
PE consultant	0.008**	0.009**	0.009**	0.008*	0.008*	0.008*
	[0.004]	[0.004]	[0.004]	[0.004]	[0.005]	[0.005]
Other Board Variables	Yes	Yes	Yes	Yes	Yes	Yes
Year × Reporting Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,406	7,406	7,406	6,742	6,742	6,742

Table A.6: Changes in Target Asset Allocation and Consultants Turnover

In this table, observations are at the pension fund-year level. The dependent variable is the absolute change in the target allocation between t and *t-1* in each asset class. *Consultant Hiring Event* is an indicator equal to one if a pension fund hired a new general investment consultant in year *t-1*. The specifications include lagged controls for pension fund assets under management, internal asset management divisions, and governance. All specifications include year-reporting-month fixed effects. In Columns (2), (4), (6), and (8), we also include pension fund fixed effects. We double cluster standard errors by pension fund and year, and report standard errors in brackets. $p < .10$; $^{**}p < .05$; $^{***}p < .01$.

	Equity		**Real Assets**		**Private Equity**		**Hedge Funds**	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Consultant Hiring Event	0.009**	0.008	0.006**	0.005*	0.004**	0.004	0.009**	0.008**
	[0.004]	[0.005]	[0.002]	[0.003]	[0.002]	[0.002]	[0.003]	[0.004]
Fund Size	-0.000	0.000	-0.001	0.001	-0.001	0.001	0.000	0.004
	[0.001]	[0.005]	[0.001]	[0.004]	[0.000]	[0.003]	[0.001]	[0.004]
Internal Mandate	-0.004		-0.005		0.005		-0.007	
	[0.006]		[0.004]		[0.006]		[0.005]	
State-political	0.007		0.000		-0.000		0.002	
	[0.006]		[0.003]		[0.004]		[0.006]	
Participant-elected	-0.000		0.000		-0.002		-0.001	
	[0.004]		[0.002]		[0.003]		[0.005]	
Investment Board	-0.005*		-0.002		-0.002		-0.002	
	[0.003]		[0.001]		[0.002]		[0.003]	
Other Board Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year × Reporting Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pension Fund FE		Yes		Yes		Yes		Yes
Observations	2,636	2,672	2,636	2,672	2,636	2,672	2,636	2,672
Adjusted R-squared	0.011	0.042	-0.004	0.032	-0.003	0.019	0.005	0.099

A.3 Pension Fund Investments in Alternative Assets

We use the Preqin dataset to obtain information on the commitments by pension funds to private funds in alternative asset classes. Online Appendix Table A.7 shows summary statistics of our sample of 164 pension funds that report investments in private funds in the Preqin dataset over the 2001–2020 period. Overall, we analyze 22,744 pension fund investments in 6,504 private funds, managed by 1,943 unique general partners. Panel A presents summary statistics of pension fund characteristics. Preqin covers investments in various types of private funds, and we analyze the role of both specialized private equity and real assets investment consultants. We document that 67% of the investments in private funds are made by pension funds that employed a specialized private equity consultant, and 62% of the investments are made by pension funds that had a specialized real assets consultant. The percentage of investments made with the advice of specialized consultants is higher than the percentage of pension funds employing a specialized consultant as large pension funds are more likely to hire a specialized consultant (see Table 3) and have more investments in private funds.

Panel B of Online Appendix Table A.7 reports summary statistics of private funds. We use four fund characteristics as proxies to test the rationed access hypothesis: (a) an indicator equal to one if the fund is the first fund ever raised by the general partner; (b) an indicator variable equal to one if a private fund is the first fund raised by the general partner within the specific series of funds raised by this general partner; (c) the ratio of the final private fund size relative to the target fund size; (d) an indicator equal to one if a private fund is a co-investment fund or a separate account mandate. Preqin covers investments in several types of private funds: 49% of the pension fund investments are in buyout funds, 11% in venture capital funds, 22% in real estate funds, 4% in infrastructure funds, 4% in natural resources funds, and 10% in private debt funds.

Online Appendix Table A.7 Panel C presents summary statistics on the performance measures. We use three performance measures on private funds: public market equivalent, internal rate of return, and multiple of invested capital (total value to paid-in capital). The public market equivalent measure is estimated using the S&P 500 equity index as a benchmark.

Tables 7 and 8 show that the probability that a pension fund commits capital to any particular private fund is higher if the private fund is part of the consultant's network during that year. Pension funds using the same consultant are more likely to invest in the same private funds. In the main analysis, we define the network based on all pension fund consultants' connections with other private funds. The specifications in Online Appendix Tables A.8 and A.9 use an alternative definition of the consultants' network. This alternative definition expands the connections of the

consultant to include all private funds raised by the general partner that is connected with the consultant. These robustness results are similar as pension funds using the same consultant are more likely to invest in the same private equity and real assets funds. The economic magnitudes of the coefficients are slightly smaller as the connections with some private funds are weaker when the network is defined based on the general partner rather than the exact private fund.

Table 9 shows that pension funds using specialized private equity and real assets consultants invest in more private funds per year and can scale up their portfolio exposure to alternative assets. We examine whether specialized consultants provide scalability by creating a balanced panel of observations on a pension-fund-vintage-year level and analyzing the number of investments in private funds made by pension funds per year. The balanced panel reflects the spectrum of all investment decisions a pension fund can make, but it mechanically assigns zero investments in private markets to pension funds that do not invest in alternatives and do not need a specialized consultant. In Online Appendix Table A.10, we analyze an unbalanced panel where pension funds are included in the sample only if they make at least one investment in a private fund in a given year. We still find that specialized consultants enable pension funds to scale up the number of investments in private funds per year. Based on Column (2), which includes pension fund fixed effects, a pension fund makes around 2.4 more investments after hiring a specialized private equity consultant and 1.8 more investments after hiring a specialized real assets consultant. Thus, our results are robust to using this alternative definition of the dependent variable and an unbalanced panel of pension-fund-vintage-year observations.

To examine the access hypothesis, Table 9 studies the relation between the specialized consultants and the probability of investing in first-time private funds. In Online Appendix Table A.10, we use an alternative indicator that identifies private funds that are the first funds raised with a specific series of funds (e.g., infrastructure, buyout, private debt) by the general partner as one general partner can have multiple series of funds but different levels of experience across fund types. This robustness test confirms that pension funds with specialized consultants do not invest more in later-stage funds and avoid first-time private funds.

In Table 9, we document that specialized consultants seem to help pension funds access oversubscribed private funds, but they do not provide more access to later-stage funds or to co-investment vehicles. In Online Appendix Table A.11, we present a robustness test by including a less saturated set of fixed effects. Instead of including interacted fixed effects of fund types times vintage years, we include either only vintage year fixed effects or not interacted fund type and vintage year fixed effects. In these specifications, specialized consultants can potentially provide better access by overweighting certain fund types (e.g., fund types with fewer first-time funds) or by better timing

the exposure across fund types. However, we still do not observe that specialized consultants substantially improve pension fund access to private funds in the cross-section.

In Table 10, we find that pension funds with specialized private equity and real assets consultants do not invest in private funds with higher performance. One potential concern is that the performance differences are insignificant because specialized consultants implement better valuation standards and pension funds without specialized consultants may report performance measures on recent funds driven by inflated accounting valuations. The robustness test in Online Appendix Table A.12 focuses on the subsample of pension fund investments in private funds over the 2001–2010 vintages. Private funds started in this period are more than 12 years old and most of them are liquidated or distributed at the end of our performance reporting date. We still find that pension funds with specialized private equity and real assets consultants do not invest in private equity funds with higher performance. Specialized investment consultants do not add value to pension funds through a better selection of private funds.

Table A.7: Summary Statistics: Pension Funds Investments in Private Funds

In this table, observations are at the pension-fund-investment level. We match the investment consultants' data for 164 pension funds to 22,744 investments in private funds during the 2001–2020 period. Panel A presents summary statistics of pension fund characteristics. *PE Consultant* and *RA Consultant* are indicators for pension funds that have a specialized consultant in private equity and real assets. *Assets* is the total pension fund assets under management in $bln. Panel B presents summary statistics of the characteristics of private funds. *Overall First Time Fund* is an indicator equal to one if a private fund is the first fund raised by the general partner based on all funds raised by this general partner. *Series First Time Fund* is an indicator equal to one if a private fund is the first fund raised by the general partner within the specific series of funds raised by this general partner. We also present the final size, target size, and ratio of final to target size for the private funds. We winsorize the size ratio at the 1.00% level. *Coinvestments and Separate Accounts* is an indicator equal to one if a private fund is a co-investment fund or a separate account mandate. We classify private funds into six types: buyout, venture capital, real estate, infrastructure, natural resources, and private debt. Panel C presents summary statistics of the performance of private funds raised during 2001-2016 vintages. We present statistics on the public market equivalent (PME) performance measure based on the S&P500 index as a benchmark, internal rate of return (IRR), and multiple of the total value to paid in capital (TVPI).

	PFs	Observations	Mean	Median	StDev
Panel A: Pension Fund Characteristics (2001–2020 Vintage Years)					
PE Consultant	164	22,744	0.666		0.472
RA Consultant	164	22,744	0.621		0.485
Assets ($ bil)	164	22,744	49.592	26.079	60.593
Internal Mandate	164	22,744	0.081	0.000	0.139
State-political	164	22,744	0.298	0.222	0.284
Participant-elected	164	22,744	0.266	0.250	0.259
Investment Board	164	22,744	0.171		0.377
Panel B: Pension Fund Investments in Private Funds (2001–2020 Vintages)					
Overall First Time Fund	164	21,605	0.082		0.274
Series First Time Fund	164	21,604	0.137		0.344
PE Fund Final Size ($ bil)	164	22,160	2.909	1.200	4.144
PE Fund Target Size ($ bil)	164	18,889	2.843	1.250	3.864
Ratio PE Fund Final Size / Target Size	164	18,675	1.131	1.111	0.251
Coinvestments and Separate Accounts	164	22,744	0.050	0.000	0.219
Buyout	164	22,744	0.494		0.500
Venture Capital	164	22,744	0.107		0.309
Real Estate	164	22,744	0.217		0.412
Infrastructure	164	22,744	0.043		0.204
Natural Resources	164	22,744	0.040		0.196
Private Debt	164	22,744	0.098		0.298
Panel C: Pension Fund Performance of Private Funds (2001–2016 Vintages)					
Public Market Equivalent (PME)	160	12,836	1.041	1.011	0.481
Internal Rate of Return (IRR)	163	14,922	12.515	11.860	15.732
Multiple (TVPI)	163	15,296	1.731	1.600	0.964

Table A.8: Private Equity General Partners and Consultant Networks

Robustness test of Table 7: The specifications use alternative definitions of the dependent variables. We expand the connections of the consultant to include all real assets funds raised by the general partners the consultants have a connection with.

The table reports the OLS coefficient estimates from a linear probability specification where the dependent variable is an indicator variable that takes the value of one if the PE fund is added to the pension fund roster during the year, and zero otherwise. The dataset includes pension fund investment level observations and covers the period from 2001 to 2020. *SameConsultant* is equal to 1 if the fund is in the same consultant-general-partner (GP) network. In columns (1) to (2) the consultant-GP network includes all the PE funds included by any public pension fund roster during that vintage year. In columns (3) to (4) the consultant-GP network includes all the PE funds included by any public pension fund roster during that vintage year, conditioned on having a GC. In columns (5) to (6) the consultant-PE network includes all the PE funds included by any public pension fund roster during that vintage year, conditioned on having a PE consultant. We also control for private fund size, pension fund assets under management, internal asset management divisions, board composition, and target allocation to equity, real assets, private equity, hedge funds, and other risky assets. The specifications include target asset allocations, and pension fund or private equity fund fixed effects. We double cluster standard errors by pension fund and vintage year and report standard errors in brackets. $p < .10$; $^{**}p < .05$; $^{***}p < .01$.

	All Consultants		**General Consultant**		**PE Consultants**	
	(1)	(2)	(3)	(4)	(5)	(6)
Mean Dep.Variable	0.004	0.004	0.004	0.004	0.005	0.005
Same Consultant	0.007***	0.007***	0.012***	0.013***	0.018***	0.019***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
PE Fund Size	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Pension Fund Size	-0.000***	0.001	-0.000*	-0.000	-0.000	-0.001
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.003)
Internal Mandate	0.001		-0.002*		-0.001	
	(0.001)		(0.001)		(0.003)	
Investment Board	-0.000**		-0.001**		-0.001	
	(0.000)		(0.000)		(0.001)	
State-political	-0.001**		-0.002**		0.001	
	(0.001)		(0.001)		(0.002)	
Participant-elected	-0.001		-0.001		0.001	
	(0.000)		(0.001)		(0.002)	
Target Asset Allocation	Yes	Yes	Yes	Yes	Yes	Yes
Other Board Members	Yes	Yes	Yes	Yes	Yes	Yes
Vintage-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
PE-Fund FE	Yes		Yes		Yes	
Pension-Fund FE		Yes		Yes		Yes
Observations	3,359,651	3,359,651	3,299,868	3,299,868	1,820,739	1,820,739
R-squared	0.006	0.006	0.012	0.012	0.018	0.018

Table A.9: Real Assets General Partners and Consultant Networks

Robustness test of Table 8: The specifications use alternative definitions of the dependent variables. We expand the connections of the consultant to include all real assets funds raised by the general partners the consultants have a connection with.

The table reports the OLS coefficient estimates from a linear probability specification where the dependent variable is an indicator variable that takes the value of one if the RA fund is added to the pension fund roster during the year, and zero otherwise. The dataset includes pension fund investment level observations and covers the period from 2001 to 2020. *SameConsultant* is equal to 1 if the fund is in the same consultant-general-partner (GP) network. In columns (1) to (2) the consultant-GP network includes all the RA funds included by any public pension fund roster during that vintage year. In columns (3) to (4) the consultant-GP network includes all the RA funds included by any public pension fund roster during that vintage year, conditioned on having a GC. In columns (5) to (6) the consultant-GP network includes all the RA funds included by any public pension fund roster during that vintage year, conditioned on having an RA consultant. We also control for private fund size, pension fund assets under management, internal asset management divisions, board composition, and target allocation to equity, real assets, private equity, hedge funds, and other risky assets. The specifications include target asset allocations, and pension fund or private equity fund fixed effects. We double cluster standard errors by pension fund and vintage year and report standard errors in brackets. $p < .10$; $^{**}p < .05$; $^{***}p < .01$.

	All Consultants		**General Consultant**		**RA consultants**	
	(1)	(2)	(3)	(4)	(5)	(6)
Mean Dep.Variable	0.008	0.008	0.008	0.008	0.011	0.011
Same Consultant	0.014***	0.015***	0.026***	0.026***	0.027***	0.028***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
RA Fund size	0.004***	0.004***	0.003***	0.003***	0.004***	0.004***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)
Pension Fund Size	-0.001***	0.001	-0.001*	0.000	-0.000	0.001
	(0.000)	(0.001)	(0.000)	(0.002)	(0.001)	(0.003)
Internal Mandate	0.002		-0.006**		0.012**	
	(0.002)		(0.002)		(0.005)	
Investment Board	-0.000		-0.003**		0.001	
	(0.000)		(0.001)		(0.001)	
State-political	-0.002**		-0.005***		0.001	
	(0.001)		(0.002)		(0.003)	
Participant-elected	-0.002		-0.004**		0.003	
	(0.001)		(0.001)		(0.003)	
Target Asset Allocation	Yes	Yes	Yes	Yes	Yes	Yes
Other Board Members	Yes	Yes	Yes	Yes	Yes	Yes
Vintage-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
PE-Fund FE	Yes		Yes		Yes	
Pension-Fund FE		Yes		Yes		Yes
Observations	765,417	765,417	744,173	744,173	368,508	368,508
R-squared	0.010	0.010	0.021	0.021	0.020	0.020

Table A.10: Specialized Consultants and Access to Private Funds

Robustness test of Table 9: The specifications use alternative definitions of the dependent variables. Columns (1) and (2) analyze the total number of investments in private funds using an unbalanced panel of pension funds, while Columns (3) and (4) focus on the first fund raised within the specific series of funds instead of the first fund overall raised by the general partner.

In Columns (1) and (2), observations are at the pension fund-year level over the 2001–2020 period. The dependent variable is the total number of investments in private funds made by a pension fund in a given year. The sample is an unbalanced panel of pension fund-year observations and if a pension fund did not make any investments in private funds in a given year, the dependent variable is missing. These specifications include vintage-year fixed effects and pension fund fixed effects. In Columns (3) and (4), observations are at the pension fund-investment level over the 2001–2020 period. Columns (3) and (4) present the results of logit specifications where the dependent variable equals one if a private fund is the first fund raised by the general partner within the specific series of funds raised by this general partner. For the logit specifications, we report the marginal effects at the means of the independent variables. These specifications include interacted vintage year and private fund type fixed effects (buyout, venture capital, real estate, infrastructure, natural resources, and private debt), and pension fund fixed effects. *PE Consultant* and *RA Consultant* are indicators for pension funds that have a specialized consultant in private equity and real assets. We also control for pension fund assets under management, internal asset management divisions, board composition, and target allocation to equity, real assets, private equity, hedge funds, and other risky assets. We double cluster standard errors by pension fund and vintage year and report standard errors in brackets. $p < .10$; $^{**}p < .05$; $^{***}p < .01$.

	#Investments in Private Funds		**Series First Time Fund**	
	(1)	(2)	(3)	(4)
Mean Dependent Variable	10.082	10.082	0.137	0.137
PE Consultant	2.860***	2.427**	-0.004	0.003
	[0.765]	[1.049]	[0.013]	[0.015]
RA Consultant	1.439*	1.756**	0.000	-0.027*
	[0.765]	[0.761]	[0.014]	[0.016]
Pension Fund Size	3.559***	4.980**	0.006	0.019
	[0.437]	[1.948]	[0.007]	[0.031]
Internal Mandate	5.336		0.038	
	[4.286]		[0.035]	
Investment Board	-1.264		-0.022*	
	[1.134]		[0.012]	
State-political	1.478		0.067**	
	[2.873]		[0.027]	
Participant-elected	-2.177		0.016	
	[2.095]		[0.028]	
Target Asset Allocation	Yes	Yes	Yes	Yes
Vintage-Year FE	Yes	Yes		
Fund-Type × Vintage-Year FE			Yes	Yes
Pension-Fund FE		Yes		Yes
Observations	2,256	2,282	21,594	21,497
Adjusted R-squared	0.510	0.657		

Table A.11: Specialized Consultants and Access to Private Funds

Robustness test of Table 9: The specifications include a less saturated set of fixed effects so specialized consultants can potentially provide better access by overweighting certain fund types or better timing the exposure across fund types.

In this table, observations are at the pension fund-investment level over the 2001–2020 period. Columns (1) and (2) present the results of logit specifications where the dependent variable equals one if a private fund is the first fund raised by the general partner based on all funds raised by this general partner. Columns (3) and (4) present results of regressions in which the dependent variable captures the ratio of the final private fund size relative to the target fund size. We winsorize the size ratio at the 1.00% level. Columns (5) and (6) present the results of logit specifications where the dependent variable equals one if a private fund is a co-investment fund or a separate account mandate. For the logit specifications, we report the marginal effects at the means of the independent variables. *PE Consultant* and *RA Consultant* are indicators for pension funds that have a specialized consultant in private equity and real assets. We also control for pension fund assets under management, internal asset management divisions, board composition, and target allocation to equity, real assets, private equity, hedge funds, and other risky assets. The specifications include vintage-year fixed effects and private fund type fixed effects (buyout, venture capital, real estate, infrastructure, natural resources, and private debt). We double cluster standard errors by pension fund and year and report standard errors in brackets. $p < .10$; $^{**}p < .05$; $^{***}p < .01$.

	Overall First Time Fund		**Private Fund Size / Target Size**		**Coinvestment Funds & Separate Accounts**	
	(1)	(2)	(3)	(4)	(5)	(6)
Mean Dependent Variable	0.082	0.082	1.131	1.131	0.050	0.050
PE Consultant	0.001	0.001	0.020**	0.018**	-0.003	-0.005
	[0.009]	[0.009]	[0.008]	[0.007]	[0.008]	[0.008]
RA Consultant	0.008	0.008	-0.001	0.000	-0.002	-0.001
	[0.008]	[0.008]	[0.007]	[0.007]	[0.006]	[0.006]
Pension Fund Size	-0.001	0.001	0.002	0.003	0.015***	0.015***
	[0.006]	[0.006]	[0.003]	[0.003]	[0.004]	[0.004]
Internal Mandate	0.034	0.033	-0.029	-0.036	0.011	0.006
	[0.028]	[0.027]	[0.022]	[0.021]	[0.020]	[0.019]
Investment Board	-0.013	-0.011	0.006	0.005	-0.007	-0.008
	[0.009]	[0.009]	[0.007]	[0.007]	[0.008]	[0.008]
State-political	0.055***	0.048***	-0.008	-0.014	0.013	0.014
	[0.018]	[0.017]	[0.015]	[0.015]	[0.015]	[0.015]
Participant-elected	0.024	0.021	0.007	0.007	-0.013	-0.013
	[0.022]	[0.022]	[0.012]	[0.012]	[0.014]	[0.013]
Target Asset Allocation	Yes	Yes	Yes	Yes	Yes	Yes
Other Board Members	Yes	Yes	Yes	Yes	Yes	Yes
Vintage Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Fund Type FE		Yes		Yes		Yes
Observations	21,605	21,605	18,675	18,675	22,744	22,744
Adjusted R-squared			0.041	0.056		

Table A.12: Specialized Consultants and Performance in Alternative Assets

Robustness test of Table 10: We limit attention to the subsample of private funds raised in vintages 2001–2010 so they have existed for more than 12 years and most of them are liquidated or distributed. Thus, returns on these private funds are not driven by accounting valuations of assets.

In this table, observations are at the pension fund-investment level over the 2001–2010 period. In columns (1) to (3) performance is measured using the public market equivalent based on the S&P500 index as a benchmark. In columns (4) to (6) performance is measured using the net internal rate of return (IRR), and in columns (7) to (9) performance is measured using the multiple of the total value to paid-in capital (TVPI). *PE Consultant* and *RA Consultant* are indicators for pension funds that have a specialized consultant in private equity and real assets. We also control for pension fund assets under management, internal asset management divisions, board composition, and target allocation to equity, real assets, private equity, hedge funds, and other risky assets. The specifications include interacted vintage year and private fund type fixed effects (buyout, venture capital, real estate, infrastructure, natural resources, and private debt), and pension fund fixed effects. We double cluster standard errors by pension fund and vintage year and report standard errors in brackets. $p < .10$; $^{**}p < .05$; $^{***}p < .01$.

	Public Market Equivalent			**Internal Rate of Return**			**Multiple (TVPI)**		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Mean Dep. Var. = 1.041			Mean Dep. Var. = 12.515			Mean Dep. Var. = 1.731		
PE Consultant	-0.012	-0.008	0.051	-0.178	0.017	1.830	-0.013	-0.005	0.080
	[0.021]	[0.021]	[0.043]	[0.461]	[0.469]	[1.073]	[0.023]	[0.027]	[0.059]
RA Consultant	-0.007	-0.011	-0.031	0.128	-0.040	-0.105	-0.022	-0.025	0.008
	[0.018]	[0.016]	[0.026]	[0.283]	[0.313]	[0.601]	[0.026]	[0.027]	[0.041]
Pension Fund Size	0.006	0.005	-0.125	0.078	0.050	-2.787	-0.004	-0.005	-0.176**
	[0.008]	[0.009]	[0.087]	[0.241]	[0.205]	[2.194]	[0.009]	[0.009]	[0.070]
Internal Mandate	0.012	0.013		0.557	0.491		-0.095	-0.080	
	[0.054]	[0.048]		[1.864]	[1.575]		[0.072]	[0.074]	
Investment Board	0.072*	0.079*		1.163	1.152		0.091*	0.093*	
	[0.037]	[0.038]		[0.654]	[0.671]		[0.048]	[0.048]	
State-political	-0.123***	-0.135***		-3.234***	-3.429***		-0.112**	-0.124*	
	[0.031]	[0.027]		[0.937]	[0.999]		[0.041]	[0.055]	
Participant-elected	-0.075**	-0.068**		-2.811***	-2.846***		-0.085*	-0.091**	
	[0.033]	[0.030]		[0.711]	[0.695]		[0.039]	[0.039]	
Target Asset Allocation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vintage Year FE	Yes			Yes			Yes		
Fund Type FE	Yes			Yes			Yes		
Fund-Type × Vintage-Year FE		Yes	Yes		Yes	Yes		Yes	Yes
Pension-Fund FE			Yes			Yes			Yes
Observations	6,636	6,636	6,668	7,969	7,968	8,022	8,261	8,260	8,313
Adjusted R-squared	0.139	0.187	0.189	0.123	0.185	0.185	0.103	0.144	0.149