naic
National Association of Investment Companies

Examining the Divide: Addressing Disparities in Pension Fund Commitments to Diverse-Led Funds

Executive Summary

This comprehensive study examines pension fund investments in diverse-managed funds from 2012 to 2022, revealing a landscape marked by persistent disparities and systemic biases. Analyzing over 30,000 commitments across public, corporate, and union pension funds, our research uncovers stark inequities that challenge the notion of a level playing field in institutional investing.

Executive Summary Highlights

General Landscape

1. Persistent Underrepresentation: Despite some positive trends, diverse-managed funds remain dramatically underrepresented across all asset classes. Even in the most favorable political environments, over 95% of the total dollar amount of commitments still flow to non-diverse funds.
2. Dramatic Underinvestment: Minority-managed funds receive commitments that are, on average, 25.6% smaller than those to non-diverse funds. White women-managed funds face a 18.5% disparity, while funds managed by both minorities and women experience the largest gap, with commitments 37.8% below non-diverse funds.
3. Partner Diversity Impact Among Diverse Funds: Within the subset of diverse-managed funds, increased diversity correlates with better outcomes. For every percentage point increase in minority partners, the likelihood of receiving a commitment increases by 1.09%. Similarly, a one percentage point increase in women partners is associated with a 0.42% increase in the likelihood of receiving a commitment. This contrasts sharply with the overall trend of diversity limiting commitment likelihood and size when compared to non-diverse funds.

Fund Size and Growth Challenges

4. Disproportionate AUM Requirements for Minority-Managed Funds: Minority-managed funds face significantly higher asset thresholds to secure investments from public pension funds. These funds require a median AUM of $45.0 billion to attract commitments, compared to just $20.2 billion for non-diverse funds. This means minority-managed funds need 2.23 times the assets, or 123% more assets, than their non-diverse counterparts to be considered for investment. This stark contrast highlights a systemic bias that extends beyond mere size considerations, suggesting deeply rooted inequities in the investment decision-making process.
5. Fund Size Paradox: As diverse-managed funds grow, they face increasing challenges in securing larger commitments. For every billion-dollar increase in GP AUM, the negative effect on commitment size decreases by only $0.5 million for minority-managed funds, $4.0 million for White women-managed funds, and $1.0 million for funds managed by both minorities and women.
6. Scale Amplifies Disadvantages: Diverse-managed funds face a compound challenge as they grow. Not only do these funds struggle to secure larger commitments as they grow, but they also face a

declining probability of receiving any commitment as their AUM increases. For every billion-dollar growth in GP AUM, the odds of receiving a commitment decrease by 6.8% for minority-managed funds, 9.2% for White women-managed funds, and 7.7% for funds managed by both minorities and women, relative to non-diverse funds.

7. Size Threshold Paradox in Pension Fund Investments: Larger pension funds show a higher propensity to invest in diverse-managed funds, but this tendency paradoxically doesn't translate to equitable funding growth. As pension funds expand, the commitment gap widens disproportionately. For each billion-dollar increase in a pension fund's AUM, commitment sizes grow by $600,000 for non-diverse funds, while only increasing by $300,000 for minority-managed and $400,000 for women-managed funds.

Institutional Differences

8. Institutional Divide: Public pension funds consistently lead in supporting diverse-managed funds, with allocations rising from 7.6% in 2012 to 11.1% in 2022. In contrast, corporate pension funds make commitments to diverse-managed funds that are, on average, $21.6 million smaller than those made by public pension funds and are 45-49% less likely to invest in minority-managed funds.
9. Union Volatility: Union pension funds exhibit dramatic swings in their support for diverse-managed funds. Commitments peaked at 9.8% in 2014, dropped to 2.1% in 2018, and plummeted to 0% in 2022, highlighting the inconsistent nature of support.

Economic and Political Factors

10. Political Influence Complexities: Pension funds in Democratic-controlled states are 33% more likely to invest in minority-managed funds compared to those in Republican-controlled states. However, this translates to only a marginal increase in actual allocations, from 3% to 4% of total commitments. White women-managed funds face unexpected challenges in Democratic-controlled states, where they are 23% less likely to receive commitments compared to Republican-controlled states. In states with divided political control, White women-managed funds receive commitments that are, on average, $21.8 million smaller.
11. State Economic Growth's Minimal Effect on Commitment Probability: We found that the economic prosperity of a pension fund's home state has surprisingly little influence on whether diverse-managed funds receive investments. For every billion-dollar increase in a state's GDP, the chances of a minority-managed fund receiving an investment increase by only 0.0086%, while for White women-managed funds, the chances actually decrease by 0.015%. This shows that even significant economic growth barely affects, and might even slightly hurt, diverse-managed funds' chances of securing investments.
12. Economic Growth Widens Investment Gaps: We discovered that as a state's economy grows, the difference in investment amounts between diverse-managed and non-diverse funds actually increases. For every billion-dollar rise in a state's GDP, non-diverse funds see their average investment grow by $10,000, compared to only $5,000 for minority-managed funds and $3,000

for White women-managed funds. This means that economic growth, somewhat surprisingly, tends to benefit non-diverse funds more than diverse-managed ones.

Positive Outliers

13. **Exemplars in Diversity**: Some pension funds significantly outperform others in committing to diverse-managed funds. The New York State Common Retirement Fund (public) leads with 62 commitments to diverse-managed funds between 2012 and 2022. Among corporate funds, the Employees' Retirement Plan of Duke University stands out with 35 commitments, while the Operating Engineers Trust Fund of Washington D.C. and Vicinity leads union funds with 21 commitments.

Methodology

Our analysis takes a multifaceted approach to examining the complex landscape of pension fund investments in diverse-managed funds. We compare investment patterns and outcomes between diverse-managed and non-diverse-managed funds to identify potential disparities while also exploring differences among various types of diverse-managed funds, such as those managed by minorities, women, or a combination of both. Furthermore, we investigate the factors influencing commitment outcomes for different types of diverse-managed funds.

Data Sources: Our primary data comes from Pitchbook, which provides detailed information on pension fund commitments and extensive data on the funds and firms receiving these commitments. We supplement this with fund management demographic data from the National Association of Investment Companies (NAIC) and ownership data from Preqin.

Our analysis uses a combination of descriptive statistics, data visualization, and statistical modeling to understand investment patterns and their determinants. We examine trends over time, differences between fund types, and the impact of various factors on investment decisions.

We use various statistical techniques to analyze our data, including methods to understand what factors influence the size and likelihood of investments, as well as how many investments different funds receive. These techniques allow us to account for multiple factors simultaneously and provide a nuanced understanding of investment patterns. (For a detailed explanation of our statistical methods, please see Appendix B for general regression methodology and Appendix D for analysis of commitment counts.)

Control Variables: We incorporate a wide range of variables to isolate the effects of diversity on investment patterns, including fund characteristics (e.g., AUM, management demographics), pension

fund types (public, corporate, union), economic indicators (state GDP, state end-balance), and political factors (state control: Democratic, Republican, Divided).

Data Quality and Handling: We employed rigorous data cleaning and validation procedures to ensure the accuracy and consistency of our dataset. This included setting AUM thresholds for including diverse funds, cross-referencing information across multiple sources, and conducting sensitivity analyses to assess the robustness of our findings.

This comprehensive methodology allows us to provide a nuanced understanding of the factors influencing pension fund investments in diverse-managed funds across different asset classes and over time.

Implications

These findings reveal a troubling disconnect in the institutional investment landscape. The data shows a system where even substantial increases in fund size or state economic prosperity yield only marginal benefits for diverse-managed funds. This underscores a systemic failure to fully leverage diverse talent and perspectives in fund management, potentially leading to significant misallocation of capital and missed opportunities for returns and innovation.

As the demographic landscape evolves, addressing these disparities is not just a matter of social responsibility but a critical step in ensuring the efficiency and effectiveness of the institutional investment sector. This research provides a foundation for understanding and addressing systemic disparities in institutional investing, calling for targeted interventions and fundamental changes in investment practices to create a more equitable and dynamic investment landscape.

Introduction

This research report investigates pension funds' role as limited partners in alternative investments, focusing on their allocations to funds managed by diverse teams from 2012 to 2022. Our comprehensive analysis reveals a complex landscape characterized by persistent disparities, systemic biases, and emerging exemplars of progress in diverse fund investments.

Our analysis is based on a detailed dataset from Pitchbook, supplemented with fund management information collected directly by the National Association of Investment Companies (NAIC) and ownership data from Preqin. This rich dataset, comprising over 30,000 commitments, allows us to examine the intricate relationships between Limited Partners (LPs) – the pension funds in this study – and General Partners (GPs) – the fund managers.

Diverse ownership in asset management is important for several reasons. Lerner et al. (2019) find that diverse-owned firms in private equity, venture capital, real estate, and hedge funds control only about 1.3% of assets under management in the industry, despite evidence that their performance is comparable to or better than non-diverse firms. The authors argue that increased diversity could lead to better investment decisions by incorporating different perspectives, expanded deal flow through diverse networks, and improved alignment with an increasingly diverse base of asset owners and beneficiaries. However, barriers like lack of access to capital and bias in investment decisions have limited progress in achieving greater diversity.

Our analysis focuses on two main aspects: understanding the characteristics of pension funds and their investment patterns, especially as they pertain to diverse-managed funds, and examining the characteristics of diverse-managed funds that are successful or unsuccessful in receiving commitments from these pension funds. This dual approach allows us to provide a comprehensive picture of the current state of diverse fund investments and identify potential areas for improvement.

By shedding light on these investment patterns and fund characteristics, we aim to contribute to the ongoing dialogue about diversity in asset management and provide valuable insights for policymakers, pension fund managers, and the broader investment community. Our findings highlight the complex interplay of institutional, economic, and political factors that influence investment decisions in diverse-managed funds.

Data Sources and Methodology Overview

Our primary data comes from Pitchbook, which provides detailed information on pension fund commitments and extensive data on the funds and firms receiving these commitments. We supplement this with fund management demographic information from the National Association of Investment Companies (NAIC) and ownership data from Preqin.

We also incorporated state-level economic and political data from authoritative sources, including the National Conference of State Legislatures, the National Association of State Budget Officers, and the U.S. Bureau of Economic Analysis.

Our analysis uses a combination of descriptive statistics, data visualization, and statistical modeling to understand investment patterns and their determinants. We examine trends over time, differences between fund types, and the impact of various factors on commitments.

For a comprehensive description of our data sources, collection methods, and analytical approach, please refer to Appendix A.

Patterns and Determinants of Pension Fund Investments in Diverse-Managed Funds

This section presents a comprehensive analysis of pension fund investments in diverse-managed funds compared to non-diverse-managed funds from 2012 to 2022, focusing on public, corporate, and union pension funds. We examine commitment sizes, allocation patterns, and the influence of fund characteristics, economic indicators, and political environments on investment decisions. Our goal is to uncover systemic patterns and potential biases in institutional investing. Through this analysis, we aim to provide insights into the factors that influence pension fund commitments to diverse-managed funds versus their non-diverse counterparts, shedding light on the current landscape of diversity in fund management within institutional investing and identifying areas where disparities may exist.

1. Year-over-Year Trends: We begin by examining the evolution of commitments to diverse-managed funds across different pension fund types over the decade, revealing distinct trajectories and patterns.

2. Commitment Sizes: We analyze the sizes of commitments made to diverse-managed funds compared to non-diverse funds, uncovering significant disparities across fund types and management demographics.

3. Investment Allocation Patterns: This subsection explores how investments are distributed across different management groups, highlighting the dominance of non-diverse funds and the challenges faced by diverse-managed funds.

4. **Relationship Between Pension Fund Size and Diverse-Managed Fund Investments**: We investigate how the size of pension funds relates to their investment patterns in diverse-managed funds, revealing some counterintuitive findings.

5. **Fund Size Concentration and Its Impact**: We examine how differences in fund sizes across management demographics may explain some of the observed disparities in investment allocation.

6. **Economic and Political Factors**: This part analyzes how state-level economic indicators and political environments affect investment patterns in diverse-managed funds.

Throughout this section, we employ a combination of descriptive statistics, data visualizations, and regression analyses to provide a nuanced understanding of the complex factors shaping the landscape of diverse fund investments. Our findings not only illuminate current patterns but also raise important questions about systemic biases, economic influences, and policy implications in the institutional investment landscape.

Key Findings

1. **Significant Disparities in Commitments**:
    - Minority-managed funds receive commitments that are, on average, $19.4 million smaller than those to non-diverse funds.
    - Funds managed by both minorities and women face even greater challenges, with commitments $28.7 million below non-diverse funds.
    - These disparities persist even when controlling for factors like fund size, indicating deeply rooted systemic issues. This aligns with prior research showing comparable or superior performance of diverse-managed funds.
2. **Pension Fund Type Substantially Influences Diverse Investments**:
    - Public pension funds consistently lead in supporting diverse-managed funds.
    - Corporate pension funds show lower engagement, committing $21.6 million less on average and being 45-49% less likely to invest in minority-managed funds compared to public pension funds.
    - Union pension funds fall between public and corporate, allocating $27.5 million less on average compared to public funds.
3. **Fund Size Paradox Exposes Dramatic Underfunding**:
    - Larger GP fund sizes barely dent commitment disparities: For every billion-dollar increase in GP AUM, the negative effect on commitment size decreases by a mere $0.5 million for minority-managed funds and $4.0 million for White women-managed funds.
    - Shockingly, as GP AUM increases, diverse-managed funds become less likely to receive commitments relative to non-diverse funds, with White women-managed funds hit hardest. For every billion-dollar increase in GP AUM, the odds of receiving a commitment decrease by 9.2% for White women-managed funds.

- Pension fund (LP) size reveals a stark pattern: While larger pension funds are associated with larger commitments overall, this effect is significantly smaller for diverse-managed funds. For every billion-dollar increase in LP AUM, commitment size increases by $600,000 for non-diverse funds, but only by $300,000 for minority-managed funds and $400,000 for White women-managed funds.

This paradox underscores a system where diverse-managed funds face compounding disadvantages: even as they grow, they fall further behind their non-diverse counterparts in securing proportional commitments.

4. Political Environment Creates Complex Dynamics:
    - Democratic-controlled states show higher support for minority-managed funds: These funds receive an additional $13.7 million in commitments and are 33% more likely to receive commitments compared to Republican-controlled states.
    - However, White women-managed funds face unexpected challenges: They receive $21.8 million less in states with divided political control and are 23% less likely to receive commitments in Democratic-controlled states compared to Republican-controlled states.
5. Economic Prosperity Fails to Bridge the Gap:
    - Higher state GDP barely impacts diverse-managed funds and widens the disparity: A billion-dollar increase in state GDP leads to a $10,000 increase in commitment size for non-diverse funds, but only a $5,000 increase for minority-managed funds and a $3,000 increase for White women-managed funds.
    - The odds of diverse funds receiving commitments improve only marginally with economic growth: For every billion-dollar increase in the pension fund's state GDP, the odds of a commitment going to a minority-managed fund increase by just 0.014% relative to non-diverse funds, while the odds for White women-managed funds actually decrease by 0.017%.

This reveals a troubling disconnect: in thriving economic environments, diverse-managed funds not only struggle to capture a fair share of institutional investments but fall even further behind their non-diverse counterparts.

These findings reveal significant challenges in the institutional investment landscape. Despite some positive trends, such as better performance by public pension funds, diverse-managed funds face persistent barriers. The data shows a system where even substantial increases in fund size or state economic prosperity yield only marginal benefits for diverse-managed funds. This underscores the need for targeted interventions and systemic changes to address these deeply rooted disparities.

Year-over-Year Trends

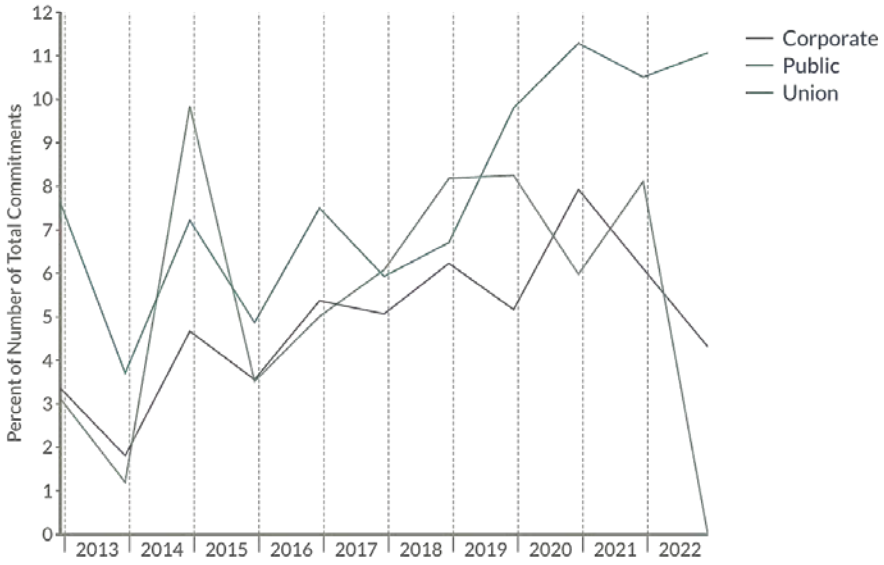
Figure 1 illustrates the evolution of commitments made to diverse-managed funds across all categories from 2012 to 2022, revealing several significant trends in the pension fund landscape. The data demonstrates distinct trajectories for different types of pension funds over the decade.

Public pension funds emerged as consistent leaders in their commitment to diverse-managed funds throughout the period under review. Their allocation to such funds displayed a robust upward trend, rising from 7.6% in 2012 to a notable peak of 11.3% in 2020 before experiencing a marginal decline to 11.1% in 2022. This pattern underscores a sustained commitment to diversity in fund management within the public pension sector.

Corporate pension funds, while not matching the levels of their public counterparts, demonstrated a general upward trajectory in their diverse fund commitments. Beginning at 3.4% in 2012, these funds saw their commitments climb to 7.9% in 2020. However, this ascent was followed by a decline to 4.3% in 2022, potentially signaling evolving investment strategies or changing priorities.

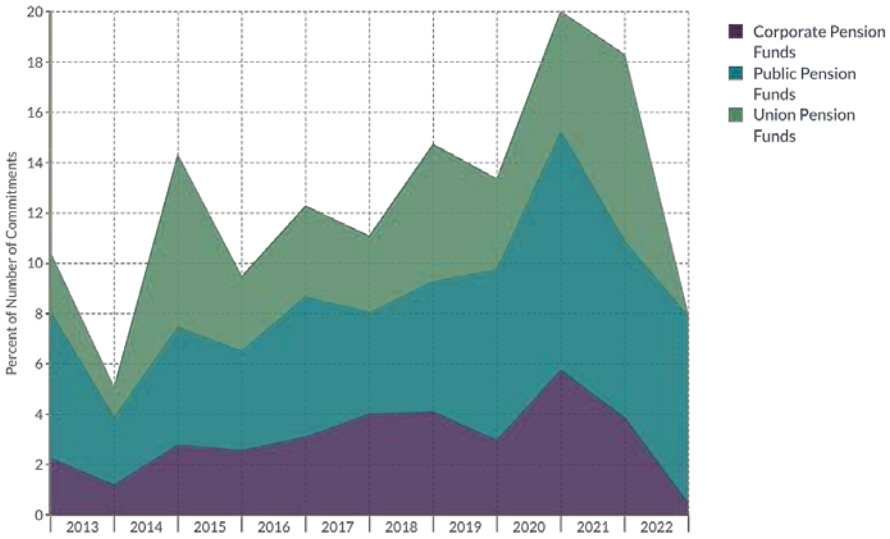
Union pension funds presented the most dynamic and volatile commitment pattern. Starting at 3.1% in 2012, they reached an impressive 9.8% in 2014 and maintained high levels until 2021. However, their commitments dropped precipitously to 0% in 2022, a dramatic shift warranting deeper analysis.

Figure 1: Total Percentage of Diverse Investments by Pension Fund Type (2012-2022)



Figures 2, 3, and 4 break down these overall trends into minority-managed, White women-managed, and both women and minority-managed funds, respectively. Public pension funds consistently led across all subcategories, with commitments to minority-managed funds peaking at 9.5% in 2020 and settling at 7.4% in 2022. Commitments to White women-managed funds were more modest but relatively stable, reaching 2.4% in 2022.

Figure 2. Percent of Commitments to Minority Only-Managed Funds by Pension Fund Type

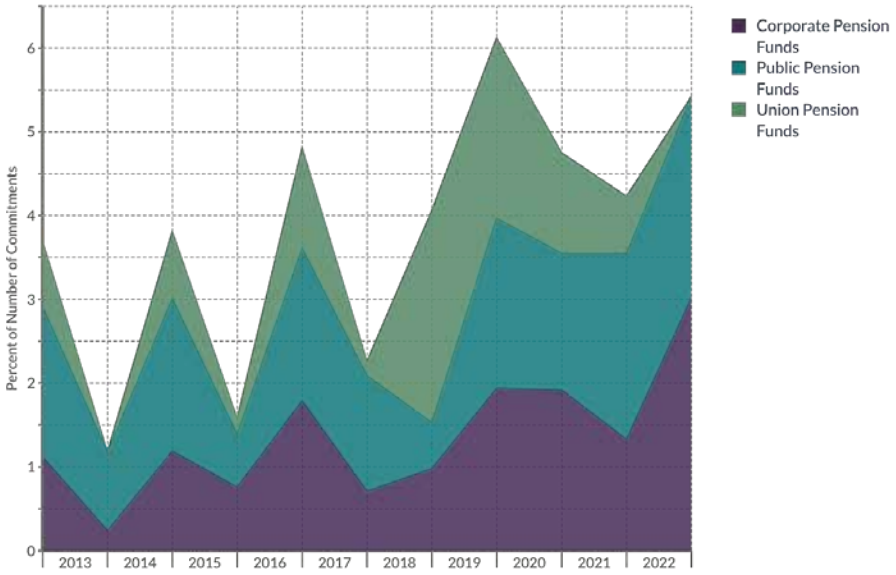


Corporate pension funds displayed more variability, with commitments to minority-managed funds reaching 5.8% in 2020 but dropping to 0.4% in 2022. Conversely, their commitments to White women-managed funds trended upward, peaking at 3.0% in 2022.

Union pension funds exhibited the highest volatility, with commitments to minority-managed funds reaching 7.4% in 2021 before plummeting to 0% in 2022**.** Their commitments to White women-managed funds followed a similar pattern, peaking at 2.5% in 2018 but falling to 0% by 2022.

A notable trend across all pension fund types is the emergence of commitments to funds that are both women and minority-managed (Figure 4). While these percentages are generally lower, they show an increasing trend, particularly for public and corporate pension funds, reaching 1.2% and 0.9% in 2022.

Figure 3. Percent of Commitments to White Women-Managed Funds by Pension Fund Type

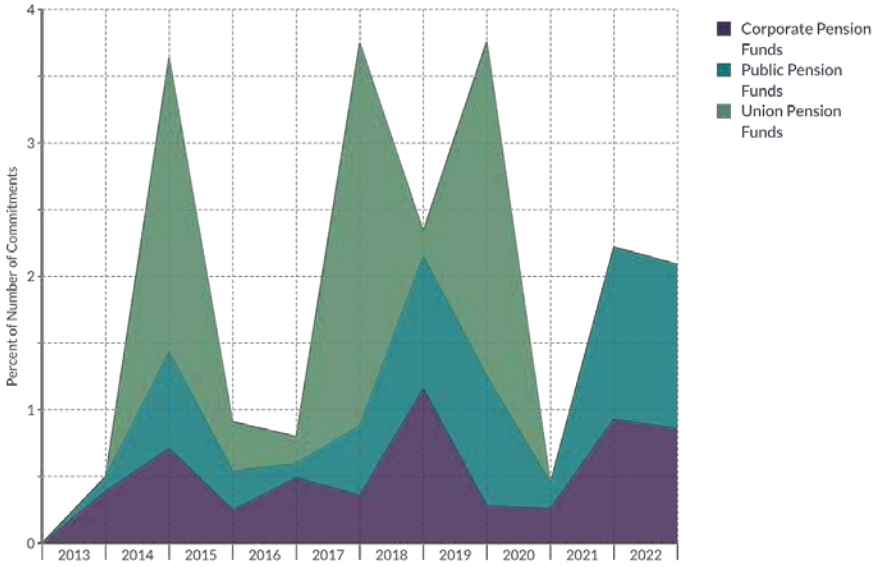


These observations align with broader industry patterns observed in recent years. A report by McKinsey & Company (2023) noted a growing concentration trend in private equity and other alternative asset classes. **The largest 25 private equity managers raised 42% of the global total in 2022, the highest annual share since 2013. This concentration is evident as investors focused their allocations on existing managers and larger funds in 2022, with dollars allocated to funds exceeding $5 billion growing 25% year over year, while fundraising for vehicles of less than $1 billion fell by more than 34%.** This concentration trend may disproportionately affect diverse-managed funds, which are often smaller and newer to the market, potentially exacerbating the challenges they face in attracting institutional investments.

These year-over-year trends provide a foundation for understanding the evolving landscape of pension fund investments in diverse-managed funds, setting the stage for our subsequent analysis of commitment sizes. These patterns raise important questions about the factors driving investment decisions, which we will explore through both basic and advanced statistical analyses in this report.

These trends reflect significant changes in investment strategies over the past decade. The fluctuations observed, particularly the recent declines in some categories, raise important questions about the sustainability and consistency of commitments to diverse-managed funds across different pension fund types.

Figure 4. Percent of Commitments to Women and Minority-Managed Funds by Pension Fund Type



Commitment Sizes to Diverse-Managed Funds

Table 1 provides a comprehensive overview of mean and median commitments by pension fund type and management category, revealing significant disparities across different pension fund types and general partner (GP) management demographics..

As shown in Table 1, public pension funds demonstrate the largest commitments across all categories. However, their average commitments of $58.8 million to minority-managed funds and $54.6 million to White women-managed funds trail behind the $75.9 million average commitment to non-diverse managed funds. Notably, women and minority-managed funds receive the lowest average commitment of $29.6 million, less than half of that allocated to non-diverse funds.

The median commitments in Table 1 reflect an even more pronounced disparity. For public pension funds, median commitments to minority-managed ($35.0 million) and White women-managed funds ($30.0 million) are substantially lower than the $48.0 million median commitment to non-diverse funds, representing differences of 27.1% and 37.5% respectively.

Table 1. Mean and Median Commitments by Pension Fund Type and Management Demographics

Pension Fund and Management Type	Mean Commitment ($MN)	Median Commitment ($MN)
Public		
Minority-Managed	58.8	35.0
White Women-Managed	54.6	30.0
Women and Minority-Managed	29.6	17.0
Non-Diverse	75.9	48.0
Corporate		
Minority-Managed	19.7	10.5
White Women-Managed	18.4	9.0
Women and Minority-Managed	33.7	50.0
Non-Diverse	21.2	14.0
Union		
Minority-Managed	19.8	10.5
White Women-Managed	5.0	5.0
Women and Minority-Managed	23.3	25.0
Non-Diverse	14.0.	6.0

To quantify the impact of fund management demographics and pension fund types on commitment sizes, we conducted a regression analysis. Table 2 presents the results of this analysis.

Table 2. Linear Regression: Impact of Fund Characteristics on Commitment Sizes

Pension Fund and Management Type	**Coefficient**	**Standard Error**
Management Demographics		
Minority-Managed	-16.52***	-5.83
White Women-Managed	-20.54*	-11.01

Both Minority and Women- Managed	-43.26**	-16.93
Type of Pension Fund		
Corporate	-53.97***	-5.71
Union	-61.21***	-8.28
Constant	75.82***	-1.47

R-squared: 0.0083, F-statistic: 30.39***, Observations: 18,258 Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.1

Our analysis supports and measures the differences seen in the initial data.. The model reveals that all diverse-managed fund categories receive smaller commitments compared to non-diverse funds, with funds managed by both minorities and women facing the largest disparity ($43.26 million smaller). Minority-managed funds also experience significant underinvestment ($16.52 million smaller), while White women-managed funds show a similar trend ($20.54 million smaller).

The analysis also reveals substantial differences in commitment behaviors across pension types, with corporate and union pensions making significantly smaller commitments compared to public pensions ($53.97 million and $61.21 million smaller respectively).

Importantly, these disparities persist even when controlling for pension fund types, suggesting a systemic issue rather than simply different investment behaviors among pension fund types. This aligns with findings from Lyons-Padilla et al. (2019), who identified potential biases in fund evaluation processes.

These patterns reflect broader trends in institutional investing. Prior research (Lerner and Nanda 2020) highlights an increasing concentration of capital in larger, more established funds, disadvantaging newer and smaller funds, which diverse-managed funds often tend to be. Our findings suggest this concentration effect potentially impacts the broader landscape of institutional investments, including pension fund allocations.

Investment Allocation Patterns Across Management Groups

Building on our analysis of commitment sizes, we now examine the overall allocation of investments across different management groups. This analysis reveals significant disparities in funding distribution by pension funds.

Overall Allocation Patterns

As shown in Table 3, non-diverse funds dominate the landscape, capturing 93.2% of both the number of investments and total invested capital. Minority-managed funds secured a notably smaller share, with 4.7% of investments and 3.9% of invested dollars.

Table 3. Investment Allocation by Management Demographics

Management Group	% of Number of Investments	% of Dollar Investments
Minority-Managed	4.7	3.9
White Women-Managed	1.4	1.1
Both Minority and Women Managed	0.65	0.3
Non-Diverse-Managed	93.2	93.2

*Note: The categories for minority-managed, women-managed, and diverse-managed are mutually exclusive in this table and related analysis.

White women-managed funds receive even smaller allocations, capturing only 1.4% of investments and 1.1% of invested dollars. Average commitment sizes further highlight these disparities: non-diverse funds receive $70.7 million on average, compared to $57.0 million for minority-managed, $53.1 million for White women-managed, and just $29.6 million for funds managed by both minorities and women.

Analysis of Commitment Sizes

Figure 5 visually presents the distribution of investments by fund management type, aligning with the trends discussed in the previous analysis. As shown, non-diverse funds dominate in terms of the number of investments and total investment value and receive substantially larger mean commitments compared to diverse-managed funds.

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Relationship Between Pension Fund Size and Diverse-Managed Fund Investments

An intriguing paradox emerges when examining the size of pension funds investing in diverse-managed funds. Despite the smaller number and size of commitments to minority-managed and women-managed funds, pension funds that invest in these funds are, on average, larger. Table 4 reveals these larger pension funds have mean assets under management (AUMs) of $52.7 billion for minority-managed and $44.5 billion for White women-managed funds, notably higher than the $40.2 billion mean AUM for non-diverse-managed funds.

Table 4. Pension Fund AUM Distribution by Management Demographics

Management Group	Mean LP AUM ($BN)	Median LP AUM ($BN)	LP AUM 25th Percentile ($BN)	LP AUM 75th Percentile ($BN)
Minority-Managed	52.7	20.2	4.0	60.0
White Women-Managed	44.5	10.7	2.6	44.0
Both Minority and Women-Managed	32.9	8.3	1.8	28.9
Non-Diverse-Managed	40.2	10.0	2.5	43.3

This data suggests a higher barrier to entry for diverse-managed funds, as only the largest pension funds appear willing or able to invest in these funds.

The disparity is evident across all percentiles, with minority-managed funds consistently associated with larger pension fund AUMs. Interestingly, pension funds investing in both minority and women-managed funds have the lowest mean and median AUMs, despite this category representing only 0.65% of investments and 0.3% of dollar investments.

To further explore the relationship between pension fund size and commitment patterns, we conducted an additional regression analysis incorporating LP AUM. This analysis isolates the effect of pension fund size while controlling for other factors, providing a more precise understanding of how pension fund AUM influences commitment sizes to diverse-managed funds. Table 5 presents the results of this analysis.

Table 5. Linear Regression: Effect of Pension Fund Size on Commitment Sizes

Pension Fund and Management Type	Coefficient	Standard Error
Management Demographics		
Minority-Managed	-20.21***	(5.67)
White Women-Managed	-15.36	(10.75)
Both Minority and Women- Managed	-29.96*	(16.56)
Type of Pension Fund		
Corporate	-21.51***	(5.78)
Union	-27.77***	(8.13)
LP AUM	0.0006***	(0.00002)
Constant	38.79***	(1.74)

R-squared: 0.0803, F-statistic: 261.90***, Observations: 18,015 Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.1

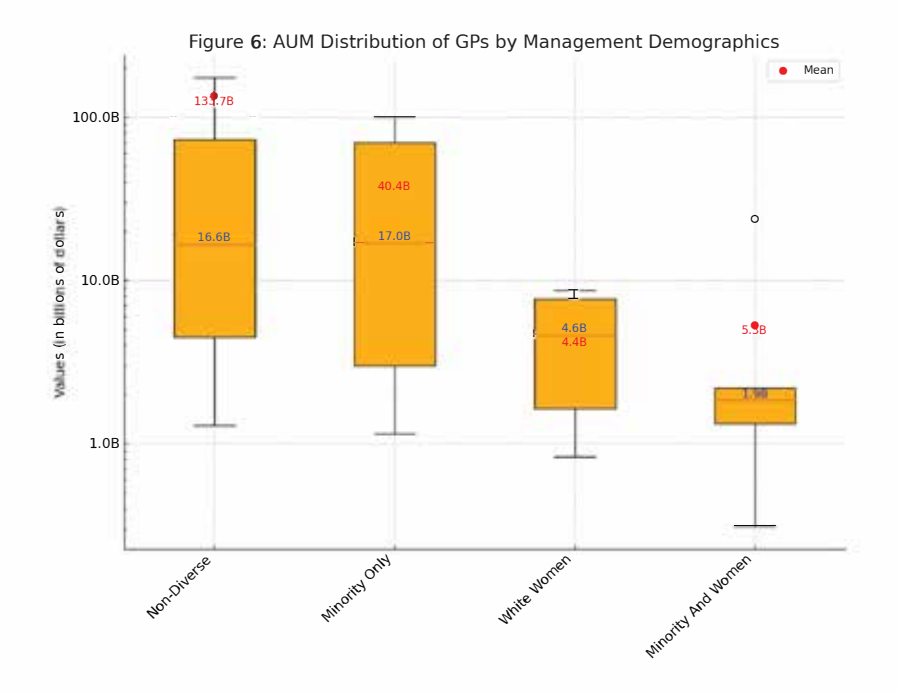
The analysis reveals persistent disparities in commitment sizes for diverse-managed funds, even when controlling for LP AUM. While there is a strong positive relationship between LP AUM and commitment size, with every billion-dollar increase in LP AUM associated with a $600,000 increase in commitment size, this does not fully explain the disparities faced by diverse-managed funds.

The persistent negative coefficients for diverse-managed funds, particularly minority-managed funds, indicate that other factors beyond size continue to influence commitment decisions. Notably, while larger pension funds are more likely to invest in diverse-managed funds, these commitments do not scale

proportionally with pension fund size. This suggests a persistent undervaluation of diverse-managed funds, even among larger, potentially more sophisticated investors.

The AUM distribution across management demographics further illuminates these disparities. As Figure 6 shows, non-diverse-managed funds show the highest mean AUM of $133.7 billion, However, their median AUM of $16.6 billion, slightly lower than minority-managed funds, suggests a highly skewed distribution with a few extremely large funds pulling up the average. Notably, minority-managed funds show a median AUM of $17.0 billion, marginally higher than non-diverse funds. This suggests that minority-managed funds often need to reach a scale comparable to or even exceeding that of non-diverse funds to attract pension fund investments.

Figure 6: AUM Distribution of GPs by Management Demographics



Women-only managed funds present a contrasting picture, with a median AUM of $4.6 billion and a narrower IQR of $6.1 billion. These funds appear to secure pension fund investments at significantly lower AUM levels, suggesting different investment criteria or risk perceptions for these funds. Funds that are both minority and women-managed show the lowest median AUM at $1.9 billion but a higher mean of $5.3 billion compared to White women-managed funds.

AUM Analysis by Pension Fund Type and Management Demographics

To gain deeper insights into how pension funds invest in diverse-managed funds, we examine the AUM of GPs across different pension fund types and management demographics:

Table 6. AUM Distribution of GPs by Pension Fund Type and Management Demographics

Pension Fund and Management Type	Mean GP AUM ($BN)	Median GP AUM ($BN)	GP AUM 10th Percentile ($BN)	GP AUM 90th Percentile ($BN)
Corporate Pension				
Minority-Managed	32.7	13.2	1.2	100
White Women-Managed	4.1	2.7	0.8	8.7
Both Minority and Women-Managed	10.5	4.9	0.7	23.7
Non-Diverse-Managed	120.3	14.0	0.9	172
Public Pension				
Minority-Managed	43.1	45	1.3	100
White Women-Managed	4.5	4.6	1.0	8.7
Both Minority and Women-Managed	3.5	1.7	0.3	6.1
Minority -Managed	142.6	20.2	1.6	210
Union Pension				
Minority-Managed	37.1	15.0	1.3	100
White Women-Managed	4.7	2.2	0.8	8.7
Both Minority and Women- Managed	3.8	1.9	1.9	3.8
Non-Diverse	126.2	16	1.47	172

An analysis of Table 6 reveals distinct investment patterns for each pension fund type. Corporate Pension Funds show a preference for larger funds across all categories, with minority-managed funds requiring a high median AUM ($13.2 billion) to attract investment. Public Pension Funds present a striking anomaly, setting an even higher bar for minority-managed funds (median AUM of $45.0 billion) compared to non-diverse funds ($20.2 billion). Union Pension Funds show more uniform investment patterns, with similar median AUMs for non-diverse and minority-managed funds, but lower thresholds for White women- and minority and women-managed funds. These

patterns highlight the complexity of investment decisions in diverse-managed funds and reveal significant disparities in size thresholds required to attract investments from different types of pension funds.

The relationship between fund size and performance is complex. Rossi et al. (2022) find that larger public pension funds often achieve higher returns due to better access to top-performing funds and fee negotiation power. However, very large funds may face challenges in efficiently deploying capital, suggesting limits to the advantages of scale. This complexity partly explains the investment patterns observed in Table 6. While public pension funds show a preference for larger funds, the lower size thresholds for some diverse-managed funds suggest other factors, such as diversification goals or recognition of potential outperformance, may also influence decisions. For diverse-owned funds, which tend to be smaller, competing with larger, established funds remains a significant challenge.

Research indicates no significant performance differences between diverse- and non-diverse-owned funds. A comprehensive study by Bella Private Markets and Harvard Business School (2019) found no statistically significant performance differences across asset classes. Similarly, NAIC and KPMG (2019) demonstrated that diverse-owned private equity firms often outperformed industry benchmarks. Despite this performance parity, Lyons-Padilla et al. (2019) found evidence of racial bias in fund evaluation processes, with asset allocators rating White-male-led teams more favorably than equally strong Black-male-led teams. These findings suggest that the observed disparities in AUM and investment patterns may be driven by factors beyond performance, such as biases in evaluation processes.

These findings highlight the complex interplay between fund size, performance, and investment patterns in diverse-managed funds. While AUM for diverse-owned firms has increased over time (Knight Foundation, 2021), significant challenges remain. The observed patterns of fund size concentration raise important questions about market dynamics and their impact on diverse-managed funds. A more nuanced analysis incorporating multiple factors is needed to fully understand these dynamics, which will be presented in our comprehensive regression section.

Economic and Political Factors Influencing Investment Patterns

State-level economic indicators and political environments play crucial roles in shaping pension fund investment strategies, reflecting the complex interplay between local conditions and institutional investment decisions. This analysis examines how various economic and political factors influence commitment sizes and investment patterns in diverse-managed funds.

We focus on three key economic indicators: Gross Domestic Product (GDP), end balance of the states where pension funds are headquartered, and GDP for GP states. These indicators provide a multifaceted view of economic health and potential. Additionally, we consider the impact of state political control, categorized as Democratic, Republican, or Divided.

Table 7: Economic Indicators by GP Demographic Type (Mean / SD)

GP Management	LP GDP Mean ($B)	LP GDP SD ($B)	LP End Balance Mean ($B)	LP End Balance SD ($B)	GP GDP Mean ($B)	GP GDP SD ($B)
Non-Diverse-Managed	1,087.1	968.8	3.6	7.1	1,581.8	942.1
Minority-Managed	1,231.5	1,033.3	4.4	8.3	2,237.7	1,064.9
White Women-Managed	1,123.2	996.0	4.6	9.0	1,659.3	1,158.6
Both Minority and Women-Managed	1,196.3	1,013.6	4.3	8.8	1,751.2	1,143.9

Table 7 presents the economic characteristics of states where both Limited Partners (LPs) and General Partners (GPs) are located, categorized by the diversity status of the GPs. The data reveals intriguing patterns in the economic environments associated with diverse-managed funds compared to non-diverse funds.

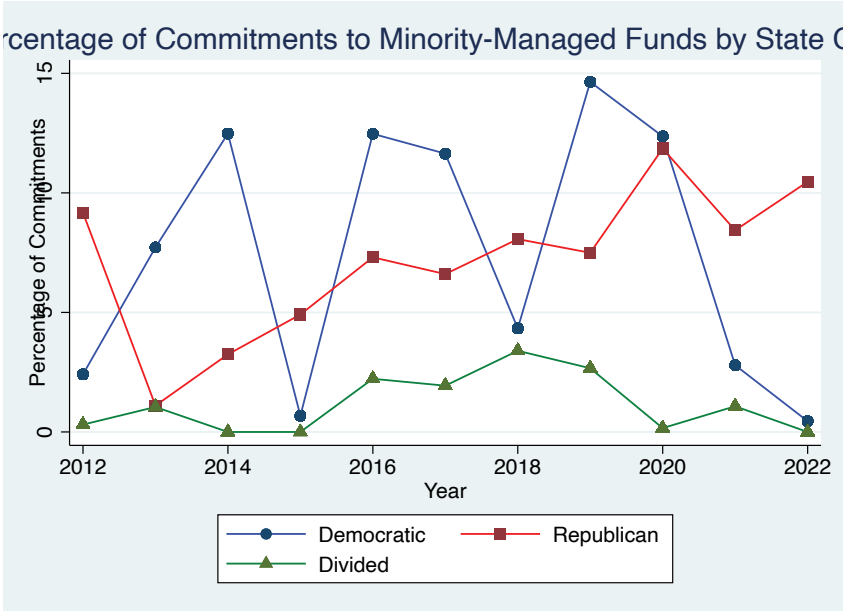
Diverse-managed funds, particularly minority-managed funds, are associated with economically stronger states for both investors and fund managers. LPs investing in minority-managed funds are located in states with the highest average GDP ($1,231.5 billion) and relatively high average end balances ($4.4 billion). This trend is even more pronounced for GPs, where minority-managed funds are located in states with substantially higher average GDP ($2,237.7 billion) compared to their non-diverse counterparts ($1,581.8 billion).

These findings suggest a complex interplay between economic factors and the presence of diverse-managed funds. The consistent association of diverse-managed funds with higher GDP and end balances in both LP and GP locations could indicate that economically stronger states provide more supportive environments for diverse fund managers to establish and operate. Alternatively, it may suggest that LPs in

economically stronger states have more resources or institutional support to invest in diverse-managed funds.

Regarding political factors, our analysis reveals distinct patterns across different political environments. Figures 7-9 illustrate the trends in commitments to minority-managed, White women-managed, and both minority and women-managed funds across different state political environments from 2012 to 2022.

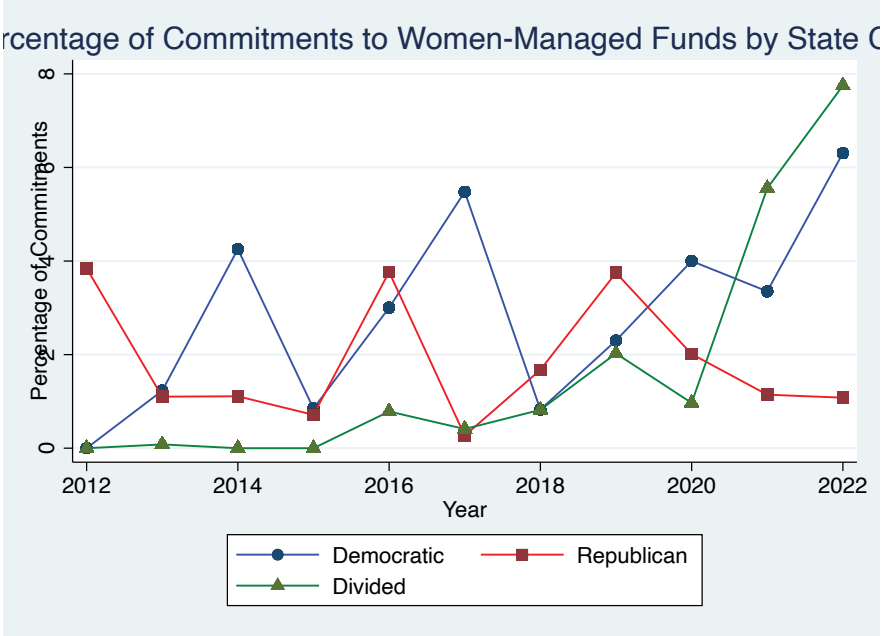
Figure 7. Percentage of Commitments to Minority-Managed Funds by Pension Fund State Control



Notable trends from these figures include:

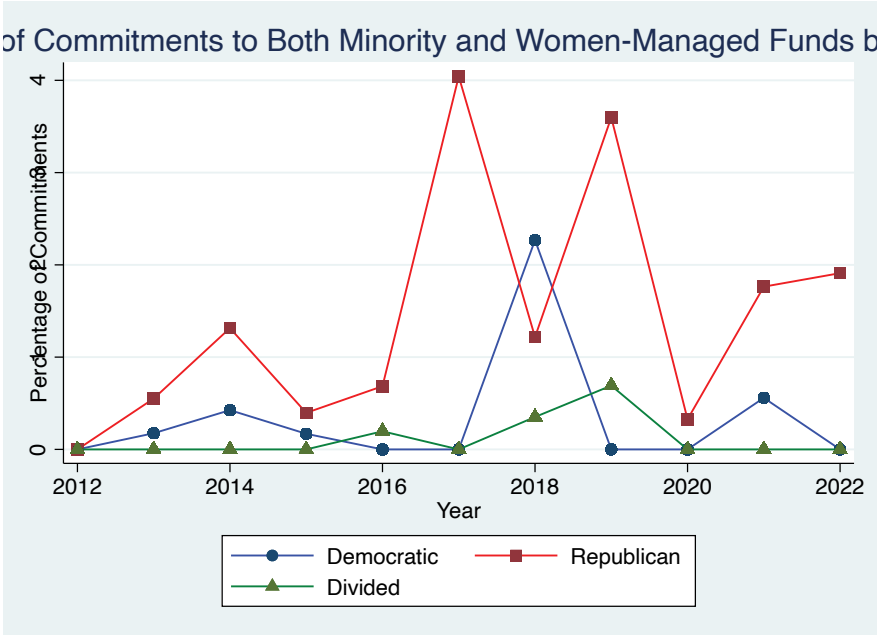
- Pension funds in Democratic-controlled states generally show higher and more consistent levels of investment in minority-managed funds (1.1% to 11.9%) compared to those in Republican-controlled states (0.5% to 14.6%).
- Pension funds in states with divided political control consistently show the lowest levels of investment in minority-managed funds, never exceeding 3.4%.
- For White women-managed funds, pension funds in Republican-controlled states show an increasing trend in commitments (0% in 2012 to 6.3% in 2022), while those in Democratic-controlled states fluctuate between 0.3% and 3.9%.

Figure 8. Percentage of Commitments to White Women-Managed Funds by Pension Fund State Control



These findings highlight the complex interplay between political ideology and investment patterns in diverse-managed funds

Figure 9. Percentage of Commitments to Minority and Women Funds by Pension Fund State Control



Comprehensive Regression Analyses: Unraveling the Complexities of Diverse Fund Investments

To deepen our understanding of the factors driving the observed disparities in diverse fund investments, we conducted two complementary regression analyses: linear regression to quantify factors influencing commitment amounts and multinomial logistic regression to examine factors affecting the likelihood of investments in diverse-managed funds versus non-diverse funds. These analyses allow us to control for multiple variables simultaneously, providing a more nuanced picture of the investment landscape. Below, we present the key findings of each analysis, followed by a summary of their implications. For those interested in the technical details of these statistical methods, please refer to Appendix B.

Table 8. Factors Influencing Commitment Sizes

Variable	Model 1 Coef.	Model 2 Coef.	Model 3 Coef.
Main Effects			
Management Demographics			
Minority-Managed	-19.4***	-39.4***	-7.7
White Women-Managed	-14.0***	-33.6***	-17.4**
Minority and Women-Managed	-28.7***	-31.9***	-8.7
LP Type			
Corporate	-21.6***	-21.5***	-22.8***
Union	-27.5***	-28.1***	-28.1***
LP AUM	0.0006***	0.0006***	0.0006***
GP AUM	0.00001***	0.00001***	0.00001***
GP GDP	-	0.00001**	0.00001***
LP GDP	-	-0.00001***	-0.00001***
LP End Balance	-	0.0006***	0.0006***
LP State Control			
Democratic	-	-	4.0
Divided	-	-	4.3
Interaction Terms			
GP AUM × Minority-Managed	-	0.0005***	0.0005***
GP AUM × White Women-Managed	-	0.004***	0.004***
GP AUM × Minority and Women-Managed	-	0.001	-
GP GDP × Minority-Managed	-	-0.00001***	-0.00001***
GP GDP × White Women-Managed	-	-0.00001***	-0.00001***
LP GDP × Minority-Managed	-	-0.00001**	-0.00001***
LP GDP × Minority and Women-Managed	-	-0.00002***	-0.00002***
LP State Democratic × Minority-Managed	-	-	13.7**
LP State Democratic × White Women-Managed	-	-	-8.3
LP State Democratic × Minority and Women-Managed	-	-	-11.4
LP State Divided × Minority-Managed	-	-	6.8
LP State Divided × White Women-Managed	-	-	-21.8**
LP State Divided × Minority and Women-Managed	-	-	-8.8
Constant	37.4***	37.4***	32.1***

Note: *** p<0.01, ** p<0.05, * p<0.1

Our linear regression models reveal several key patterns (see Table 8 for full results without standard errors; complete tables including standard errors are available in Table B1 in Appendix B):

1. Persistent Disparities: Even when controlling for various factors, diverse-managed funds consistently receive smaller commitments compared to non-diverse funds. As shown in Table 8, minority-managed funds receive $19.4 million less on average, while funds managed by both minorities and women receive $28.7 million less.
2. Institutional Differences: Corporate and union pension funds make smaller commitments compared to public pension funds, with corporate pensions committing $21.6 million less and union pensions $27.5 million less on average.
3. Fund Size Impact: While diverse-managed funds generally receive smaller commitments, larger fund sizes can help reduce this disparity. . For every billion-dollar increase in GP AUM, the negative effect on commitment size is reduced by $0.5 million for minority-managed funds and by $4.0 million for White women-managed funds.
4. Economic Factors: Funds located in states with higher GDP receive slightly larger commitments (0.00001 increase per billion-dollar GDP). However, this positive effect is smaller for diverse-managed funds. Specifically, for every billion-dollar increase in GP GDP, the positive effect on commitment size is reduced by 0.00001 for minority-managed funds and by 0.00001 for White women-managed funds, effectively negating the positive impact of higher GDP for these diverse-managed funds.
5. Political Influence: In Democratic-controlled states, the negative effect on commitment sizes for minority-managed funds is substantially mitigated, with an additional $13.7 million in commitments compared to Republican-controlled states.

These findings underscore the complex interplay between fund characteristics, economic factors, and political environments in shaping commitment sizes to diverse-managed funds. They suggest that diverse-managed funds may face additional hurdles in securing larger commitments even in economically thriving areas but that political contexts can significantly influence these patterns. Our linear regression models reveal that diverse-managed funds face significant disparities in commitment sizes, even when controlling for various factors. The impact of fund characteristics, economic indicators, and political environments on these disparities is complex and often interrelated. Notably, while larger fund sizes can help mitigate some disparities, they do not eliminate them entirely, suggesting challenges that go beyond simple metrics of scale or performance.

Multinomial Logistic Regression: Determinants of Investment in Diverse-Managed Funds

Our multinomial logistic regression analysis reveals (see Table 9 for key results without standard errors; complete tables including standard errors are available in Table B2 in Appendix B).

Table 9: Factors Influencing the Likelihood of Commitments to Diverse-Managed Funds

	Model 1 Coef.	Model 2 Coef.	Model 3 Coef.
Minority			
LP Type			
Corporate	-0.613***	-0.677***	-0.668***
Union	-0.338***	-0.182*	-0.193*
GP AUM	-3.22e-06***	-4.42e-06***	-4.33e-06***
LP AUM	9.15e-07***	7.89e-07**	7.89e-07**
LP GDP		1.36e-07***	8.57e-08**
LP End Balance		-1.10e-05***	-9.75e-06**
GP GDP		6.19e-07***	6.23e-07***
LP State Control			
Democratic			0.287***
Divided			0.152**
Constant	0.387***	-0.674***	-0.788***
White Women			
LP Type			
Corporate	-0.384***	-0.453***	-0.453***
Union	-0.695***	-0.424**	-0.401**
GP AUM	-9.65e-05***	-1.00e-04***	-1.05e-04***
LP AUM	9.93E-09	6.40E-07	6.24E-07
LP GDP		-1.72e-07**	-1.51e-07*
LP End Balance		1.13E-05	1.17E-05
GP GDP		4.45e-07***	4.56e-07***
LP State Control			
Democratic			-0.265*
Divided			-0.190
Constant	1.419***	1.002***	1.147***
Both Minority and Women			
LP Type			
Corporate	-0.324*	-0.354*	-0.343*
Union	0.190	0.522***	0.517***
GP AUM	-7.71e-05***	-8.41e-05***	-8.31e-05***
LP AUM	-1.39E-06	-1.33E-06	-1.32E-06
LP GDP		6.79E-08	1.61E-08
LP End Balance		-4.28E-06	-3.33E-06
GP GDP		6.12e-07***	6.11e-07***
LP State Control			
Democratic			0.304
Divided			0.128

	Model 1 Coef.	Model 2 Coef.	Model 3 Coef.
Constant	1.275***	0.379**	0.265

Note: * p < 0.1, ** p < 0.05, *** p < 0.01

1. Institutional Bias: Corporate pension funds are significantly less likely to invest in diverse-managed funds compared to public pension funds. This trend is most pronounced for minority-managed funds, where the odds of a commitment are 45-49% lower for corporate pension funds.
2. Fund Size Paradox: As GP AUM increases, all diverse-managed fund types become less likely to receive commitments relative to non-diverse funds. This effect is most pronounced for White women-managed funds, with every $1 billion increase in GP AUM decreasing the odds of commitment by approximately 9.97%.
3. Political Influence: Commitments from pension funds in Democratic-controlled states are 33% more likely to be directed to minority-managed funds than those from Republican-controlled states.
4. Economic Factors: While statistically significant, economic indicators show minimal practical impact on the likelihood of investments in diverse-managed funds. For every billion-dollar increase in the GDP of the pension fund's state, the odds of a commitment going to a minority-managed fund increase by only 0.014% relative to non-diverse funds, while the odds for White women-managed funds decrease by 0.017%.

These findings highlight the complex interplay of institutional, economic, and political factors shaping the investment landscape for diverse fund managers. They underscore the multifaceted nature of the challenges facing diverse-managed funds and suggest that addressing these disparities will require targeted strategies that go beyond simple economic considerations.

Exemplars in Diverse Fund Investment

Our analysis has revealed significant disparities in pension fund investments in diverse-managed funds. However, within this challenging landscape, some pension funds stand out for their higher levels of investment in diverse-managed funds. This section highlights these leading institutions based on the number of commitments made to diverse-managed funds between 2012 and 2022. It's important to note that while these funds show higher levels of investment in diverse-managed funds, our data does not allow us to determine whether this is the result of intentional strategies or other factors.

Key Findings: Exemplars in Diverse Fund Investment

Leadership in Diverse Investments: Some pension funds significantly outperform others in committing to diverse-managed funds, with public pension funds generally leading the way.

Public vs. Corporate and Union Divide: Public pension funds consistently show higher levels of investment in diverse-managed funds compared to corporate and union pension funds, indicating potential differences in governance, accountability, and investment strategies.

Regional Influences: Top-performing funds are often from states like New York, California, and Connecticut, aligning with regression findings on the impact of state-level political and economic factors.

Top Performing Pension Funds

Our analysis identified the pension funds with the highest number of commitments to diverse-managed funds. Tables 10-11 highlight the top performers across corporate, public, and union pension fund categories for overall diverse fund commitments. For a more comprehensive breakdown, including specific diversity categories, please refer to Appendix B[1].

Public Pension Funds:

Public pension funds emerge as clear leaders in committing to diverse-managed funds. The New York State Common Retirement Fund stands out with 62 commitments to diverse-managed funds between 2012 and 2022, nearly double the next highest performer. These top performers show a geographic concentration in states known for progressive policies (New York, California) or states with large, diverse populations (Texas, Illinois). This aligns with our earlier findings on the impact of state-level political factors on diverse fund investments.

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[1] See Appendix C for detailed rankings of pension funds investing in diverse-managed funds, including breakdowns by specific diversity categories.

Table 10. Top Ten Public Pension Funds Making Commitments to Diverse-Managed Funds[2] Between 2012 and 2022

Public	No. Commitments to Diverse-Managed Funds
New York State Common Retirement Fund	62
Los Angeles Fire and Police Pension System	43
Teacher Retirement System of Texas	38
Teachers Retirement System of the State of Illinois	38
Connecticut State Employees Retirement System	36
California Public Employees' Retirement System	34
California State Teachers' Retirement System	32
San Francisco Employees' Retirement System	31
Connecticut Retirement Plans and Trust Funds	29
Nevada Public Employees Retirement System	28
State Teachers Retirement System of Ohio	28

Corporate and Union Pension Funds:

While generally lagging behind public pension funds, some corporate and union pension funds show significant commitment to diverse-managed funds. The Employees' Retirement Plan of Duke University leads corporate funds with 35 commitments, outperforming many public pension funds despite being a corporate entity. This suggests that institutional culture and priorities can play a significant role in driving diverse investments, even in the corporate sector.

Among union funds, the Operating Engineers Trust Fund of Washington D.C. and Vicinity leads with 21 commitments. The strong performance of these union funds suggests that labor organizations, with their history of advocating for social equity, may be well-positioned to drive diversity in institutional investing. Notably, the top-performing union pension funds show similar numbers of commitments as the top corporate pension fund performers, suggesting that despite different structures and priorities, both types of funds have similar potential for investing in diverse-managed funds.

[2] Diverse-managed funds include funds managed by Minorities, White women, or a combination of bot,.

Table 11. Top Ten Corporate Pension Funds Making Commitments to Diverse-Managed Funds Between 2012 and 2022

Corporate	No. Commitments to Diverse-Managed Funds
Employees' Retirement Plan of Duke University	35
Eversource Retirement Plan Master Trust	19
Lockheed Martin Master Retirement Trust	16
Nationwide Retirement Plan	15
Hartford HealthCare Corporation Defined Benefit Master Trust Agreement	13
Deseret Mutual Master Retirement Plan	12
UPMC Master Trust	12
General Electric Pension Trust	11
SBC Master Pension Trust	11
UAW Ford Retirees Medical Benefits Plan	11

Table 12. Top Ten Union Pension Funds Making Commitments to Diverse-Managed Funds Between 2012 and 2022

Union	No. Commitments to Diverse-Managed Funds
Operating Engineers Trust Fund of Washington D.C. and Vicinity	21
U.F.C.W. Consolidated Pension Fund	18
Laborers District Council & Contractors Pension Fund of Ohio	16
New York State Nurses Association Pension Plan	15
Producer-Writers Guild of America Pension Plan	15
N. Atlantic States Carp. Guaranteed Annuity Fund	13
Central Pension Fund of the IUOE & Participating Employers	12
North Atlantic States Carpenters Pension Fund	11
UAW GM Retirees Medical Benefits Plan	11
New York State Teamsters Conference Pension & Retirement Fund	10

Implications from Top Performing Pension Funds

Our analysis of pension funds with the highest number of commitments to diverse-managed funds reveals several key insights and potential lessons:

1. Leadership Roles and Potential Across Fund Types: Public pension funds consistently outperform their corporate and union counterparts in committing to diverse-managed funds. This leadership likely stems from greater public accountability, diverse stakeholders, and specific social impact mandates. While corporate and union pension funds generally lag, standout performers demonstrate significant potential for improvement. The success of leading public funds suggests that underperforming institutions could benefit from adopting similar strategies. Differences in performance across fund types may be attributed to varying governance structures, decision-making processes, and long-term strategies. Corporate and union funds could potentially increase diverse investments by examining and adapting practices from leading public funds. Sector-specific trends, such as the strong performance of teachers' retirement systems, indicate that factors like beneficiary demographics or institutional cultures may drive diverse fund investments. Understanding these trends could provide valuable insights for promoting diversity across all pension fund types.
2. Geographic Concentration: Top-performing funds are often concentrated in states like New York, California, Connecticut, and Texas. This aligns with our regression findings on the impact of state-level political and economic factors. However, the presence of high-performing funds in states like Ohio (State Teachers Retirement System of Ohio) suggests that progressive diverse fund investment strategies can be implemented in a variety of geographic and political contexts.
3. Size and Performance Considerations: Our analysis reveals a complex relationship between fund size, diversity, and pension fund investments. While many top performers in our study are large pension funds, we observe that pension funds of different sizes, including small and mid-size funds, invest in non-diverse funds of varying sizes. This contrasts with our earlier findings (see "Commitment Sizes to Diverse-Managed Funds" and "Relationship Between Pension Fund Size and Diverse-Managed Fund Investments" sections) which showed that diverse-managed funds often need to be substantially larger than their non-diverse counterparts to secure similar levels of investment. This discrepancy suggests that fund size is not consistently applied as an investment criterion across all funds.
4. Detailed Diversity Categories: Appendix C provides a more granular view of pension fund investments across specific diversity categories (minority-managed, White women-managed, and both minority and women-managed funds). This breakdown reveals interesting patterns in how pension funds allocate their investments across these categories:
    - Some funds show consistent leadership across categories. For example, the New York State Common Retirement Fund leads in commitments to both minority-managed funds (55 commitments) and overall diverse-managed funds (62 commitments). It also ranks high in commitments to both minority and women-managed funds (4 commitments), demonstrating a comprehensive approach to diversity.
    - Other funds excel in specific categories. The Teacher Retirement System of Texas leads in commitments to White women-managed funds (18 commitments) but doesn't appear in the top ten for minority-managed funds.

- There's significant overlap between top performers in minority-managed and overall diverse-managed categories, suggesting that funds committed to diversity often focus on racial/ethnic diversity.
- Fewer funds appear consistently across all three categories (minority-managed, White women-managed, and both), indicating potential room for more comprehensive diversity strategies.

These patterns suggest that while some pension funds have developed strategies that address multiple aspects of diversity, others may have more focused approaches. Understanding these differences could offer valuable insights into developing more comprehensive strategies for promoting investment in all types of diverse-managed funds.

Factors Influencing Diverse GP Success

Our previous analyses revealed significant disparities in pension fund investments between diverse-managed and non-diverse funds, both in terms of commitment sizes and the number of commitments received. While these findings highlighted broad patterns and systemic challenges, they also raised critical questions about the specific factors driving success within the diverse-managed fund landscape.

Why do some diverse-managed funds succeed in securing more and larger commitments while others struggle? What role do factors like fund size, management team composition, and external economic and political environments play in determining these outcomes? How do these factors interact, and which have the most significant impact on both the likelihood of receiving commitments and the number of commitments secured?

To address these crucial questions and gain a more nuanced understanding of the diverse-managed fund ecosystem, we conducted a focused analysis on the factors influencing success among these funds. This deeper dive allows us to:

1. Isolate the impact of specific factors within the diverse-managed fund category on both commitment likelihood and frequency.
2. Understand the interplay between internal fund characteristics and external environmental factors in shaping investment patterns.
3. Identify potential leverage points to improve the likelihood of receiving commitments and the number of commitments secured by diverse-managed funds.

By examining these dynamics, we aim to provide insights that can inform more targeted and effective strategies for promoting diversity and equity in institutional investing. This analysis is crucial for moving beyond broad observations to actionable understanding in the quest for a more inclusive investment landscape, where diverse-managed funds can compete effectively for both the number and size of commitments.

Key Findings: Factors Influencing Diverse GP Success

- Fund Size Impact: Among diverse-managed funds, larger funds have a modest advantage in securing commitments. A 10% increase in Assets Under Management is associated with only a 0.7 percentage point increase in the likelihood of receiving a commitment.
- Diversity Nuances: Funds managed by both minorities and women show a slight advantage (1.7 percentage points) in receiving commitments compared to funds managed by minorities alone.
- Racial Representation: The presence of a Black partner is associated with a 9.5 percentage point increase in the likelihood of receiving a commitment compared to funds with Asian partners as the primary diverse representation.

- Political Environment: Diverse-managed funds in politically divided states are 2.4 percentage points more likely to receive commitments compared to those in Republican-controlled states. Funds in Democratic-controlled states show even stronger positive effects.
- Partner Demographics: Relative to funds with Asian partners, those with Black partners are associated with both higher likelihood and number of commitments, while funds with Hispanic partners tend to receive fewer commitments. These findings underscore the complex interplay of factors shaping the success of diverse-managed funds, highlighting both opportunities and persistent challenges in the institutional investment landscape.

Detailed Analysis of Diverse GP Success Factors

Our analysis delves deeper into the factors influencing both the likelihood of receiving commitments and the number of commitments received by diverse-managed funds. We examined fund characteristics, partner demographics, and external factors using various statistical models.

Commitment Likelihood

Tables 13 and 14 present key findings from our analysis of factors influencing the likelihood of receiving commitments. Table 13 examines general factors, while Table 14 focuses specifically on partner demographics. For full details of our analytical approach, please see Appendix D.

The type of diversity in fund management significantly impacts commitment likelihood. As shown in Table 13, funds managed by both minorities and women have a slightly higher likelihood of receiving a commitment compared to minority-managed funds (1.7 percentage points in Model 2). This finding aligns with research showing that diverse teams often bring unique perspectives that can lead to better investment decisions (Evans et al., 2019).

Surprisingly, fund size has only a minimal effect on commitment likelihood. A substantial 10% increase in Assets Under Management (AUM) is associated with just a 0.68 percentage point increase in the likelihood of receiving a commitment[3]. This aligns with our earlier findings in the "Relationship Between Pension Fund Size and Diverse-Managed Fund Investments" section. It further reinforces the observation that size alone

[3] In this analysis, we use the natural logarithm of AUM instead of raw AUM. This approach is common in financial research when dealing with highly skewed variables like fund size. It allows us to interpret effects in terms of percentage changes rather than absolute dollar amounts, which is often more meaningful given the wide range of fund sizes in our dataset. In our previous analyses, we used raw AUM as the distribution was less skewed in those specific subsets of data.

does not significantly level the playing field for diverse-managed funds and may even exacerbate disparities as funds grow.

The political environment plays a more substantial role. Diverse-managed funds in politically divided states are 2.42 percentage points more likely to receive commitments compared to those in Republican-controlled states. This aligns with research demonstrating that political values can significantly influence investment decisions in finance (Hong and Kostovetsky, 2012).

Table 13: Key Coefficients for Likelihood of Receiving a Commitment

Variable	Model 1	Model 2
Both Minority and Women-Managed	0.0171*	0.0165*
AUM	0.0040*	0.0068*
GP State Control (Divided)	-	0.0242*

Note: * p<0.1, ** p<0.05, *** p<0.01 Reference group for diversity categories: Minority-managed funds Reference group for GP State Control: Republican-controlled states

To further explore the impact of partner demographics on commitment likelihood, we conducted an additional analysis focusing on specific ethnic representations within the partnership. Table 14 presents these findings, with Asian partners as the reference group. The results reveal several important insights that both complement and expand upon our findings from Table 13.

Table 14: Key Coefficients for Impact of Partner Demographics on Commitment Likelihood

Variable	Coefficient
AUM	0.0566***
Black Partner	0.0951***
Democratic State	0.2060***
Divided State	0.2429***

Note: Significance levels: *** p<0.01, ** p<0.05, * p<0.1. Reference: Asian Partner, Republican-controlled state. Full table in Appendix D.

Fund size (AUM) continues to have a positive effect on commitment likelihood, even when controlling for partner demographics. This suggests that larger funds maintain an advantage in securing commitments, regardless of the racial or ethnic composition of their management team.

The presence of a Black partner is associated with a 9.51 percentage point increase in the likelihood of receiving a commitment compared to funds with Asian partners. This substantial effect underscores the potential impact of racial diversity in fund management, providing a more nuanced view than the broader "minority-managed" category in Table 13.

Political environment plays a significant role in this analysis. Funds in Democratic-controlled states and politically divided states are both more likely to receive commitments compared to those in Republican-controlled states. Interestingly, the effect sizes in this analysis are considerably larger than those observed in Table 13, suggesting that the impact of political environment may be more pronounced when considering specific partner demographics. This notable difference warrants further investigation into the interplay between political factors and racial representation in fund management.

Commitment Counts

To analyze the number of commitments received, we used regression techniques designed for count data (Tables 15 and 16). These analyses provide insights into how various factors influence the quantity of commitments diverse-managed funds receive. Full results are available in Appendix D, Tables D3 and D4.

Table 15: Regression Models of Commitment Count

	Model 1 Coef.	Model 1 SE	Model 2 Coef.	Model 2 SE
Log GP AUM	0.2609***	(0.0815)	0.4050***	
Pct of Partners Minority	0.0109***	(0.0021)	0.0122***	(0.0011)
Pct of Partners Women	0.0042*	(0.0024)	0.0050***	(0.0013)
GP Democratic State Control	-0.2656	(0.2216)	0.9051**	(0.4068)
Black Partner	-	-	0.9010***	(0.1763)
Hispanic Partner	-	-	-0.3860**	(0.1796)

Note: * p<0.1, ** p<0.05, *** p<0.01. Full table in Appendix D, Table D3.

Table 16: Key Coefficients from Alternative Regression Models of Commitment Count

	Model 1 Coef.	Model 1 SE	Model 2 Coef.	Model 2 SE
Log GP AUM	0.3688***	(0.0771)	0.4828**	(0.2407)
Pct of Partners Minority	0.0108***	(0.0022)	0.0294	(0.0412)
Pct of Partners Women	0.0083**	(0.0037)	0.0031	(0.0212)

GP Democratic State Control	0.7815***	(0.2526)	0.9048***	(0.3187)
Black Partner	0.9463***	(0.1760)	0.9922***	(0.2577)
Hispanic Partner	-0.3773**	(0.1727)	-0.3669**	(0.1660)

Note: ** p<0.05, *** p<0.01. Full table in Appendix D, Table D4.

Both models show that fund size has a significant positive effect on the number of commitments received. Larger funds tend to receive more commitments, consistent with the trend of capital concentration in more established funds (Lerner and Nanda, 2020).

Partner demographics significantly impact commitment counts. The percentage of minority and women partners shows a positive association with commitment count. Funds with a Black partner are expected to receive more than twice as many commitments compared to those without. Conversely, having a Hispanic partner is associated with a decrease, with these funds receiving about a third fewer commitments.

The political environment of the state where the fund is located also influences commitment numbers. Funds in Democratic-controlled states receive significantly more commitments compared to those in Republican-controlled states, with the effect being more pronounced when considering partner demographics. This underscores the complex interplay between political context and diversity in shaping investment patterns.

These findings provide a more nuanced understanding of how various factors influence both the likelihood of receiving a commitment and the number of commitments received. This multi-faceted approach reveals the complex interplay of fund characteristics, partner demographics, and external factors in shaping the landscape for diverse-managed funds. For a more comprehensive analysis, including detailed model specifications and additional variables, please refer to Appendix D.

Conclusion

This study on pension fund investments in diverse-managed funds from 2012 to 2022 reveals a landscape that demands urgent attention and action. In the following sections, we synthesize our key findings, exploring the nature and extent of the disparities we've uncovered, their implications, and potential paths forward. We examine the barriers faced by diverse-managed funds, the influence of various factors on investment patterns, and the differences among pension fund types. We also highlight exemplars in the field and propose strategies for systemic change. This conclusion aims to provide a comprehensive overview of our research and its implications for the institutional investment sector.

Persistent Disparities and Systemic Bias

Our comprehensive analysis of pension fund investments in diverse-managed funds from 2012 to 2022 reveals a deeply troubling landscape characterized by persistent disparities and systemic biases. Examining over 30,000 commitments, we found stark inequities that persist across different types of pension funds and economic environments, pointing to deeply entrenched issues within the institutional investment ecosystem.

The magnitude of these disparities is striking. Minority-managed funds receive commitments that are, on average, $19.4 million smaller than those to non-diverse funds, even when controlling for other factors. The gap widens further for funds managed by both minorities and women, with commitments $43.26 million smaller than non-diverse funds. White women-managed funds, while faring slightly better, still face significant disadvantages, receiving commitments $14.0 million smaller on average. These disparities persist regardless of fund size or performance metrics, suggesting a systemic bias that goes beyond typical investment criteria. Notably, our analysis reveals that even when diverse-managed funds outperform their non-diverse counterparts, they still receive smaller and fewer commitments, highlighting a deeply rooted bias in the investment decision-making process.

Insurmountable Barriers to Entry

Perhaps most alarmingly, our research uncovered nearly insurmountable barriers to entry for diverse-managed funds. Minority-managed funds often need substantially larger Assets Under Management (AUM) than their non-diverse counterparts to secure even a fraction of the funding. In some egregious cases, we found that minority-managed funds required AUM up to 2.5 times larger than non-diverse funds to receive similar consideration for investment. This creates a paradoxical situation where diverse-managed funds must achieve a level of success far beyond their non-diverse peers merely to be considered for investment.

Surprisingly, even the size of the Limited Partner (LP) does little to mitigate these disparities. Our analysis shows that larger LPs, while more likely to invest in diverse-managed funds, still allocate disproportionately smaller amounts compared to their investments in non-diverse funds. For instance, we found that even

among the largest quartile of LPs, the average commitment to minority-managed funds was still 22% smaller than to non-diverse funds of comparable size.

Political and Economic Landscape: Limited Impact

The political and economic landscape, while influential, does little to fundamentally alter these disparities. Pension funds in Democratic-controlled states are 33% more likely to direct commitments to minority-managed funds compared to those in Republican-controlled states. However, this increased likelihood translates to only marginal improvements in actual allocations. For instance, our data shows that in Democratic-controlled states, the average allocation to minority-managed funds might increase from 3% to 4% of total commitments, while in Republican-controlled states, it might remain at 2-3%. This means that even in the most favorable political environments, over 95% of commitments still flow to non-diverse funds.

Our analysis of state-level economic indicators revealed a surprising lack of influence on commitment patterns to diverse-managed funds. The impact of state GDP growth on the odds of diverse-managed funds receiving commitments was found to be minimal, with the effects being even slightly negative for White women-managed funds. These findings suggest that the observed disparities in commitment probabilities and sizes are not driven by economic factors but rather by more systemic issues within the institutional investment landscape. This underscores the need for targeted interventions and policy changes that directly address the root causes of these inequities.

Public, Corporate, and Union Pension Fund Divide

The divide between public, corporate, and union pension funds further illustrates the depth of these disparities. Public pension funds consistently demonstrate a higher likelihood of investing in diverse-managed funds compared to their corporate counterparts. Yet, even among these more progressive institutions, the disparities remain stark. Public pension funds commit an average of $58.8 million to minority-managed funds compared to $75.9 million for non-diverse funds - a significant gap that persists despite their relatively higher commitment to diversity.

Corporate pension funds lag even further behind, with our analysis showing they are 45-49% less likely to invest in diverse-managed funds compared to public pension funds. Union pension funds show more complex patterns, varying based on fund type and economic factors. Notably, union pension funds showed the highest volatility in commitments to diverse-managed funds, ranging from highs of 9.8% of total commitments in some years to lows of 0% in others, highlighting the inconsistent nature of support for diverse fund managers even among more socially conscious investors.

Legal Implications

These findings have profound implications when viewed through the lens of legal concepts like disparate treatment and disparate impact. While our study cannot definitively prove intent, the consistent

undervaluation and underinvestment in diverse-managed funds, even when controlling for size and other factors, strongly suggests systemic discrimination.

This is particularly striking when contrasted with recent legal challenges to small-scale diversity initiatives. For instance, the Fearless Fund, which offered grants of $20,000 to Black women-owned businesses, faced a lawsuit alleging racial discrimination (American Alliance for Equal Rights v. Fearless Fund Management, LLC, 2023). The case concluded in September 2024, with the Fearless Fund agreeing to permanently close the grant program as part of a settlement. Meanwhile, our research reveals billions of dollars in disparities in institutional investments that have thus far escaped similar levels of legal and public attention. This stark contrast highlights the need for a more nuanced understanding of systemic biases in the financial sector.

The persistence of these disparities, even when controlling for various economic and institutional factors, points to deeply embedded systemic issues that cannot be explained by performance differentials or market forces alone. It suggests a failure of the institutional investment sector to fully leverage the diverse talent and perspectives available in the fund management industry, potentially leading to significant misallocation of capital and missed opportunities for returns and innovation.

These findings align with previous research highlighting biases in asset allocation. For instance, Lyons-Padilla et al. (2019) found that asset allocators rated White-male-led teams more favorably than equally strong Black-male-led teams when evaluating venture capital funds. Our study extends these findings, demonstrating that such biases persist at the institutional level and have significant financial implications.

Exemplars in Diverse Fund Investment

Despite the challenging landscape, our analysis reveals that some pension funds stand out for their higher levels of investment in diverse-managed funds. These exemplars demonstrate that progress is possible, even within the current system. For instance, the New York State Common Retirement Fund made 62 commitments to diverse-managed funds between 2012 and 2022, leading all public pension funds in our study. Among corporate pension funds, the Employees' Retirement Plan of Duke University led with 35 commitments to diverse-managed funds during the same period. Union pension funds also showed leadership in this area, with the Operating Engineers Trust Fund of Washington D.C. and Vicinity making 21 commitments to diverse-managed funds, the highest among union funds.

These top-performing funds often come from states like New York, California, and Connecticut, aligning with our regression findings on the impact of state-level political and economic factors. The existence of these exemplars suggests that intentional strategies can increase investments in diverse-managed funds.

Path Forward: Addressing Systemic Disparities

Addressing these deeply rooted disparities will require a multi-faceted approach that considers both intentional discrimination and structural barriers. This may involve not only targeted support for

underrepresented groups but also a thorough examination and reformation of institutional practices that, while seemingly neutral, may perpetuate existing inequalities.

Potential strategies include:

1. **Implementing blind review processes for initial fund evaluations to minimize unconscious biases.** This approach could help address the disparities we observed in how diverse-managed funds are evaluated compared to non-diverse funds of similar size. Research has shown that such processes can significantly increase diversity in other contexts (Goldin and Rouse, 2000).
2. **Establishing industry-wide standards for transparency in fund selection and commitment processes.** Our analysis revealed inconsistencies in how fund size criteria are applied to diverse versus non-diverse funds, highlighting the need for greater transparency. Studies have demonstrated that increased transparency can lead to more equitable outcomes in decision-making processes (Dobbin and Kalev, 2016).
3. **Encouraging regulatory bodies to investigate patterns of discrimination in institutional investments.** Given the systemic nature of the disparities we uncovered, regulatory intervention may be necessary to effect change. Previous research has shown that regulatory oversight can be effective in promoting diversity in other industries (Kalev et al., 2006).
4. **Creating targeted initiatives to support the growth and scalability of diverse-managed funds, particularly in their early stages.** Our findings suggest that diverse-managed funds face higher barriers to growth, creating a challenging cycle of underinvestment. Targeted support programs have been shown to be effective in other contexts in helping underrepresented groups overcome systemic barriers (Bates et al., 2018).
5. **Fostering collaborations between public and corporate pension funds to share best practices in diverse investing.** Given the leadership shown by some public pension funds in diverse investments, there may be valuable lessons for corporate funds to learn. Research on organizational learning suggests that such collaborations can be effective in spreading best practices (Argote and Miron-Spektor, 2011).
6. **Conducting comprehensive audits of investment decision-making processes to identify and address points of bias.** Our analysis suggests that biases persist even when controlling for factors like fund size and performance, indicating a need for a thorough examination of decision-making processes. Studies have shown that such audits can be effective in identifying and addressing unconscious biases in decision-making (Castilla, 2015).

These strategies are informed by our analysis of exemplar pension funds and the broader patterns we observed in the industry. They represent potential pathways to address the systemic disparities revealed by our research while acknowledging the complex legal and social landscape surrounding diversity initiatives.

In conclusion, our research reveals a troubling picture of persistent and systemic disadvantages faced by diverse-managed funds. The disparities uncovered point to a system that sets nearly impossible standards for diverse-managed funds, particularly those led by minorities. As the demographic landscape evolves,

addressing these disparities is not just a matter of social responsibility but a critical step in ensuring the efficiency and effectiveness of the institutional investment sector.

It is imperative for all stakeholders in the investment community to recognize these challenges and take concrete steps to create a more equitable and dynamic investment landscape. Only through concerted effort and fundamental changes in investment practices can we hope to dismantle the barriers that have historically disadvantaged diverse-managed funds and unlock the full potential of a truly inclusive investment ecosystem.

Appendix A. Data Sources and Methodology

1. Data Sources and Collection

1.1 Primary Data Sources

This study examines pension funds' investments in diverse-managed funds from 2012 to 2022, utilizing a comprehensive dataset compiled from multiple sources. Our primary data comes from Pitchbook, which provides detailed information on pension fund commitments, as well as extensive data on the General Partners (GPs) and funds that received these commitments. We supplement this with fund management demographic information from the National Association of Investment Companies (NAIC) and ownership data from Preqin.

1.2 Supplementary Data Collection

We undertook significant supplementary data collection efforts to ensure a comprehensive and accurate representation of diverse-managed funds. We collaborated with the National Association of Investment Companies (NAIC), which sent out information requests to its members as well as fund-of-funds. These entities either directly provided data on diverse-managed funds or forwarded the request to the funds/firms themselves, allowing us to gather extensive additional information on specific racial and gender demographics of fund managers.

It's important to note that this additional demographic information obtained from NAIC provides more specific details on fund management for a subset of diverse-managed funds. While this data doesn't cover all diverse-managed funds captured by Pitchbook and Preqin, it allows for a more in-depth demographic analysis focused on diverse-managed funds. However, this level of detailed demographic data is not available for all diverse-managed funds in our study.

We expanded our dataset to include firms and funds that met specific qualifications, including being operational during the relevant time period. For diverse funds not already included in Preqin or Pitchbook, we applied an AUM threshold to ensure consistency in our dataset and focus on funds of a certain size and market presence. Specifically, we set a threshold of $150K for private equity and other funds, and $75K for venture capital funds. These thresholds were determined after analyzing the universe of funds (both diverse and non-diverse) that received commitments, aiming to establish a fair basis for comparison between diverse-managed and non-diverse-managed funds.

The different thresholds for PE/other funds versus venture capital reflect the distinct characteristics of these investment strategies, including risk profiles, capital requirements, and market dynamics. Venture capital typically involves smaller, more speculative investments in early-stage companies, justifying a lower AUM threshold compared to private equity and other asset classes that often deal with larger, more established entities.

Importantly, we broadened our dataset to include a larger universe of diverse-managed firms and funds that met our criteria but did not receive commitments from the pension funds in our study. This expanded dataset allows us to more accurately represent the existing landscape of diverse-managed funds and provides a crucial point of comparison for our analysis of investment patterns.

1.3 Classification of Diverse-Managed Funds

In defining diversity, we rely on different criteria depending on the data source. For minority-managed funds, we use NAIC data, which defines these as funds with at least 30% of investment partners belonging to underrepresented minority groups, with many funds surpassing this threshold to have at least 50% minority partners. For both women-managed and minority-managed funds, we use Preqin's ownership criteria, which categorizes funds as diverse-managed if they come from firms with a minimum of 50% ownership by women or minorities, respectively.

To avoid double-counting and ensure clear categorization, we employ a specific classification system for diverse-managed funds:

1. White Women-Managed Funds: These are funds managed exclusively by White women, indicated as women-managed but not minority-managed.
2. Minority-Managed Funds: These include funds managed by minorities (both men and women of color), indicated as minority-managed.
3. Both White Women and Minority-Managed Funds: These are funds managed by both White women and minorities, indicated as both women-managed and minority-managed.

This classification system allows us to distinguish between different types of diverse management while avoiding double-counting funds managed by women of color, who would otherwise be included in both women-managed and minority-managed categories. It's important to note that our data does not allow us to differentiate between specific combinations within the third category (e.g., White women and minority men versus White women and women of color).

1.4 State-Level Economic and Political Data

To analyze the impact of state-level factors on investment patterns, we incorporated data from several authoritative sources:

- State political party control data was obtained from the National Conference of State Legislatures' annual reports on state partisan composition.
- State end balance figures were sourced from the National Association of State Budget Officers' Fiscal Survey of States archives.
- State GDP data was collected from the U.S. Bureau of Economic Analysis, specifically the SAGDP2N Gross Domestic Product by State dataset.

These data sources provided crucial context for understanding the economic and political environments in which both Limited Partners (pension funds) and General Partners (fund managers) operate.

2. Dataset Structure and Limitations

It's important to note that our dataset was initially structured around commitments made by pension funds, with this commitment information primarily sourced from Pitchbook. Each observation in our primary dataset represents a specific commitment made by a pension fund (LP) to a particular fund managed by a GP. Along with the commitment details, we also gathered extensive data on the LPs making these commitments, including their size, type, and location. This structure allows us to analyze not only the characteristics of the funds and their managers but also the nature and patterns of the commitments themselves, as well as the attributes of the pension funds making these investments.

Because our data collection was primarily focused on actual commitments made, there are both diverse and non-diverse GPs that are not part of the analysis. These include GPs that did not receive a commitment from the pension funds in our study during the 2012-2022 period or were not captured by our additional data collection efforts focused on diverse-managed or owned funds or firms from Preqin or NAIC. However, it's worth noting that our dataset includes over 30,000 commitments between 2012 and 2022, with the vast majority being to non-diverse funds. Therefore, while this limitation exists, we are confident that our dataset captures a comprehensive picture of the investment landscape, particularly for non-diverse firms/funds.

3. Analytical Approach

3.1 Descriptive Statistics and Trend Analysis

We employ a combination of descriptive statistics and frequency distributions to examine year-over-year trends in commitments to diverse-managed funds, commitment sizes across different pension fund types and management demographics, overall allocation patterns, and the relationship between pension fund size and diverse-managed fund investments.

3.2 Regression Analyses

Our regression analyses take several forms:

1. Linear regressions on commitment sizes to quantify the factors influencing the size of commitments made to funds.
2. Multinomial logistic regression to examine the factors influencing the likelihood of commitments being directed towards diverse-managed funds versus non-diverse funds. This method allows us to model the probabilities of multiple categorical outcomes simultaneously.
3. Poisson and negative binomial regressions to analyze the count of commitments received by diverse-managed funds, accounting for potential overdispersion in the data.

4. Variables and Measures

Key variables in our analyses include commitment sizes and the likelihood of investment in diverse-managed funds as dependent variables, with fund characteristics (such as AUM and management demographics), pension fund types, economic indicators (like state GDP and state end-balance), and political factors as independent variables.

4.1 Performance Metrics Exclusion

It's important to note that we deliberately chose not to include performance metrics in our analysis. This decision was made for several reasons. First, numerous studies have already demonstrated that diverse-managed or owned funds perform as well as or better than their non-diverse counterparts. For instance, the Bella Private Markets and Harvard Business School study (2019) and the NAIC and KPMG report (2019) both found comparable or superior performance for diverse-owned firms across various asset classes.

Second, including performance data would have significantly reduced our sample size, as performance metrics are not universally reported and are often available only for a subset of funds. Previous studies that focused on performance, while valuable, were limited by small sample sizes. For example, the Bella Private Markets and Harvard Business School study had to restrict their analysis to 990 PE funds out of a total dataset of 6,585 funds due to limited performance data availability.

Third, performance data in databases like Preqin and Pitchbook is often static, representing a single point in time. Given that our study spans a 10-year period, such static performance data would not accurately reflect the dynamic nature of fund performance over time.

Our primary goal was to analyze commitment patterns and investment decisions, which required a larger and more comprehensive dataset. By excluding performance indicators, we were able to maintain a broader sample, allowing for a more robust analysis of the factors influencing pension fund investments in diverse-managed funds. This approach aligns with our research objectives while acknowledging the valuable work done by others on performance comparisons.

5. Data Quality and Handling

To handle missing data, we employed multiple imputation techniques where appropriate, ensuring that our analyses were not biased by systematic patterns of missing information. We also conducted sensitivity analyses to assess the robustness of our findings to different assumptions about missing data.

To ensure data quality and consistency across different sources, we implemented rigorous data cleaning and validation procedures. This included cross-referencing information across databases, manually verifying a subset of entries, and using automated checks to flag potential inconsistencies for further investigation.

6. Limitations

It's important to note some limitations of our data and analysis. While we have made extensive efforts to supplement and verify our data, there may still be gaps, particularly for smaller or newer funds. The definitions of diverse ownership may vary slightly between data sources, and despite our best efforts, our dataset may not capture every diverse-managed fund in existence during the study period. Additionally, our reliance on publicly available data means that we may not have captured all private transactions or commitments.

This comprehensive methodology allows us to examine the complex factors influencing pension fund investments in diverse-managed funds across different asset classes and over time. Through this approach, we aim to elucidate the investment patterns and strategies these pension funds employ concerning funds owned and managed by diverse entities while providing a more complete picture of the diverse fund management landscape.

Appendix B: Detailed Regression Methodology, Variable Selection, and Model Specification

This appendix provides technical details of the regression analyses conducted to examine the factors influencing pension fund investments in diverse-managed funds.

1. Methodology and Variable Selection Process

We employed two complementary regression analyses:

1.1 **Linear Regression on Commitment Sizes**: To quantify factors influencing the size of commitments made to funds. This method allows us to estimate how much each factor (such as fund size, management demographics, or economic indicators) affects the dollar amount of commitments, while controlling for other factors.

1.2 **Multinomial Logistic Regression on Fund Diversity Type**: To examine factors affecting the likelihood of investments in diverse-managed funds versus non-diverse funds. This method is particularly useful when dealing with categorical outcomes (in our case, different types of fund management) and allows us to estimate how various factors influence the probability of a fund falling into each category.

Key variables selected for our analysis include:

1. Fund Characteristics: GP AUM, LP AUM, Fund Diversity Categories
2. Pension Fund Types: Corporate, Union, Public
3. Economic Indicators: GP GDP, LP GDP, LP End Balance
4. Political Factors: State control (Democratic, Republican, Divided)

Variable selection was guided by theoretical considerations and iterative model refinement, following best practices in econometric modeling (Achen, 2005; Clarke, 2005; Varian, 2014; Belloni et al., 2014).

2. Linear Regression Model Specification

General form: $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_n X_n + \varepsilon$

Where: Y is the commitment size, X_1 to X_n are independent variables, β_0 to β_n are coefficients, and ε is the error term.

Table B1. Factors Influencing Commitment Sizes

Variable	Model 1 Coef.	Model 1 SE	Model 2 Coef.	Model 2 SE	Model 3 Coef.	Model 3 SE
Main Effects						
Management Demographics						
Minority-Managed	-19.4***	(2.7)	-39.4***	(3.4)	-7.7	(5.7)
White Women-Managed	-14.0***	(3.7)	-33.6***	(5.4)	-17.4**	(7.5)
Minority and Women-Managed	-28.7***	(5.3)	-31.9***	(6.0)	-8.7	(6.6)
LP Type						
Corporate	-21.6***	(2.0)	-21.5***	(2.0)	-22.8***	(2.4)
Union	-27.5***	(2.1)	-28.1***	(2.1)	-28.1***	(2.7)
LP AUM	0.0006***	(0.00002)	0.0006***	(0.00002)	0.0006***	(0.00002)
GP AUM	0.00001***	(0.000002)	0.00001***	(0.000002)	0.00001***	(0.000001)
GP GDP	-	-	0.00001**	(0.000003)	0.00001***	(0.000003)
LP GDP	-	-	-0.00001***	(0.000002)	-0.00001***	(0.000001)
LP End Balance	-	-	0.0006***	(0.0002)	0.0006***	(0.0002)
LP State Control						
Democratic	-	-	-	-	4.0	(2.7)
Divided	-	-	-	-	4.3	(5.2)
Interaction Terms						
GP AUM × Minority-Managed	-	-	0.0005***	(0.00006)	0.0005***	(0.00007)
GP AUM × White Women-Managed	-	-	0.004***	(0.001)	0.004***	(0.001)
GP AUM × Minority and Women-Managed	-	-	0.001	(0.0008)	-	-
GP GDP × Minority-Managed	-	-	-0.00001***	(0.000003)	-0.00001***	(0.000004)
GP GDP × White Women-Managed	-	-	-0.00001***	(0.000004)	-0.00001***	(0.000004)
LP GDP × Minority-Managed	-	-	-0.00001**	(0.000003)	-0.00001***	(0.000003)
LP GDP × Minority and Women-Managed	-	-	-0.00002***	(0.000005)	-0.00002***	(0.000005)
LP State Democratic × Minority-Managed	-	-	-	-	13.7**	(5.7)
LP State Democratic × White Women-Managed	-	-	-	-	-8.3	(9.1)
LP State Democratic × Minority and Women-Managed	-	-	-	-	-11.4	(11.3)
LP State Divided × Minority-Managed	-	-	-	-	6.8	(7.6)
LP State Divided × White Women-Managed	-	-	-	-	-21.8**	(10.0)
LP State Divided × Minority and Women-Managed	-	-	-	-	-8.8	(11.8)
Constant	37.4***	(2.0)	37.4***	(2.0)	32.1***	(3.7)

Note: *** p<0.01, ** p<0.05, * p<0.1

Detailed interpretation of Table B1:

Model 1: This baseline model includes fund management demographics (minority-managed, White women-managed, both) and pension fund types (corporate, union) as categorical variables, with GP AUM and LP AUM as continuous variables. The coefficients represent the change in commitment size (in millions of dollars) compared to the reference categories (non-diverse funds and public pensions).

Model 1 reveals significant disparities in commitment sizes across different fund management categories and pension fund types. Minority-managed funds receive commitments that are $19.4 million smaller on average compared to non-diverse funds. White women-managed funds receive $14.0 million less, and funds managed by both minorities and women receive $28.7 million less. The disparity extends to pension fund types as well, with corporate pension funds committing $21.6 million less and union pensions $27.5 million less on average compared to public pension funds.

Model 2: This model builds on Model 1 by incorporating economic indicators (GP GDP, LP GDP, LP End Balance) and interaction terms between GP AUM and fund diversity categories. These interactions allow us to examine how the effect of fund size on commitment size varies across different management demographics.

Model 2 reveals more complex relationships, with the negative effects associated with diverse management becoming more pronounced. Minority-managed funds receive $39.4 million less, White women-managed funds $33.6 million less, and minority and women-managed funds $31.9 million less compared to non-diverse funds. However, the interaction terms suggest that these negative effects are mitigated as fund size increases. For every billion-dollar increase in GP AUM, the negative effect on commitment size is reduced by $0.5 million for minority-managed funds and by $4.0 million for White women-managed funds.

The economic indicators in Model 2 show nuanced effects. GP GDP has a small positive effect (0.00001), suggesting that funds located in states with higher GDP receive slightly larger commitments. Conversely, LP GDP shows a small negative effect (-0.00001), indicating that pension funds from states with higher GDP tend to make slightly smaller commitments. These contrasting effects highlight the complex interplay between economic factors and commitment sizes.

Model 3: This model extends Model 2 by adding political factors (Democratic-controlled states, divided control) and their interactions with fund diversity categories. This allows us to assess how the political environment of the state where the pension fund is located influences commitment sizes to diverse-managed funds.

Model 3 demonstrates that political factors add another layer of complexity to the investment landscape. The interaction between Democratic control and minority-managed funds is positive and significant (13.7), indicating that in Democratic-controlled states, the negative effect on commitment sizes for minority-managed funds is substantially mitigated. This suggests that the political environment can play a crucial role in reducing disparities for minority-managed funds.

Conversely, the interaction between divided political control and White women-managed funds is negative and significant (-21.8), suggesting additional challenges for these funds in states with divided political control. This finding underscores the importance of considering not just the presence of political influence, but the specific nature of that influence across different diverse management categories.

Overall, these models reveal a complex interplay between fund characteristics, economic factors, and political environments in shaping commitment sizes to diverse-managed funds. While disparities persist across all models, the inclusion of additional variables helps to uncover the nuanced ways in which these factors interact to influence investment patterns in diverse-managed funds.

In all models, we use robust standard errors to account for potential heteroskedasticity.

3. Multinomial Logistic Regression Model Specification[4]

General form: $\ln(P(Y=j) / P(Y=base)) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_n X_n$

Where: P(Y=j) is the probability of outcome in category j, P(Y=base) is the probability of outcome in the base category (non-diverse funds), X_1 to X_n are independent variables, and β_0 to β_n are coefficients.

We estimate separate equations for each category of diverse-managed funds:

1. Minority-Only: This equation models the log-odds of a commitment being directed to a minority-managed fund versus a non-diverse fund.
2. White Women-Only: This equation models the log-odds of a commitment being directed to a White women-managed fund versus a non-diverse fund.
3. Both Minority and Women: This equation models the log-odds of a commitment being directed to a fund managed by both minorities and women versus a non-diverse fund.

Table B2: Factors Influencing the Likelihood of Commitments to Diverse-Managed Funds

	Model 1 Coef.	Model 1 SE	Model 2 Coef.	Model 2 SE	Model 3 Coef.	Model 3 SE
Minority-Only						
LP Type						
Corporate	-0.613***	0.068	-0.677***	0.078	-0.668***	0.078
Union	-0.338***	0.084	-0.182*	0.100	-0.193*	0.101
GP AUM	-3.22e-06***	1.76E-07	-4.42e-06***	2.66E-07	-4.33e-06***	2.62E-07

[4] In the multinomial logistic regression analysis, we encountered convergence issues due to 74 observations (0.22% of our sample) that were perfectly predicted by the model. These observations were removed to ensure model convergence. This may slightly underestimate the prevalence of non-diverse funds in our results for funds with specific AUM characteristics

	Model 1 Coef.	Model 1 SE	Model 2 Coef.	Model 2 SE	Model 3 Coef.	Model 3 SE
LP AUM	9.15e-07***	3.03E-07	7.89e-07**	3.54E-07	7.89e-07**	3.54E-07
LP GDP			1.36e-07***	3.71E-08	8.57e-08**	3.98E-08
LP End Balance			-1.10e-05***	4.06E-06	-9.75e-06**	3.99E-06
GP GDP			6.19e-07***	2.66E-08	6.23e-07***	2.66E-08
LP State Control						
Democratic					0.287***	0.075
Divided					0.152**	0.077
Constant	0.387***	0.039	-0.674***	0.078	-0.788***	0.088
White Women-Only						
LP Type						
Corporate	-0.384***	0.128	-0.453***	0.128	-0.453***	0.128
Union	-0.695***	0.179	-0.424**	0.182	-0.401**	0.186
GP AUM	-9.65e-05***	4.00E-06	-1.00e-04***	4.34E-06	-1.05e-04***	4.88E-06
LP AUM	9.93E-09	5.81E-07	6.40E-07	6.58E-07	6.24E-07	6.64E-07
LP GDP			-1.72e-07**	7.68E-08	-1.51e-07*	8.13E-08
LP End Balance			1.13E-05	8.50E-06	1.17E-05	8.81E-06
GP GDP			4.45e-07***	5.37E-08	4.56e-07***	5.45E-08
LP State Control						
Democratic					-0.265*	0.135
Divided					-0.190	0.134
Constant	1.419***	0.076	1.002***	0.122	1.147***	0.143
Both Minority and Women						
LP Type						
Corporate	-0.324*	0.188	-0.354*	0.188	-0.343*	0.189
Union	0.190	0.187	0.522***	0.200	0.517***	0.198
GP AUM	-7.71e-05***	9.13E-06	-8.41e-05***	8.28E-06	-8.31e-05***	7.95E-06
LP AUM	-1.39E-06	1.29E-06	-1.33E-06	1.21E-06	-1.32E-06	1.19E-06
LP GDP			6.79E-08	9.72E-08	1.61E-08	1.04E-07
LP End Balance			-4.28E-06	1.16E-05	-3.33E-06	1.12E-05
GP GDP			6.12e-07***	5.56E-08	6.11e-07***	5.58E-08
LP State Control						
Democratic					0.304	0.194
Divided					0.128	0.201
Constant	1.275***	0.124	0.379**	0.178	0.265	0.226

Note: * p < 0.1, ** p < 0.05, *** p < 0.01 Base outcome: Non-Diverse Number of observations: Model 1 (32,265), Model 2 (26,802), Model 3 (26,802) Pseudo R2: Model 1 (0.1495), Model 2 (0.1749), Model 3 (0.1776)

Detailed interpretation of Table B2:

For each category of diverse-managed funds (minority-only, women-only, and both minority and women), we presented three models in Table B2, progressively incorporating additional variables to provide a comprehensive analysis of the factors influencing the likelihood of commitments.

Model 1: This baseline model includes pension fund types (corporate, union) and GP AUM as predictors. The coefficients represent the change in log-odds of a commitment being directed to a particular diverse-managed fund category relative to non-diverse funds.

Model 1 reveals significant institutional biases in investment patterns. Corporate pension funds are substantially less likely to invest in diverse-managed funds compared to public pension funds. This trend is most pronounced for minority-managed funds, where the odds of a commitment being directed to these funds are 45-49% lower for corporate pension funds compared to public pension funds.

Interestingly, the model also uncovers a paradoxical relationship between fund size and investment likelihood. As GP AUM increases, the likelihood of a commitment being directed to a diverse-managed fund decreases relative to non-diverse funds. This effect is particularly strong for White women-managed funds, suggesting that larger diverse-managed funds may face unique challenges in securing commitments.

Model 2: This model builds on Model 1 by adding economic indicators (LP GDP, LP End Balance, GP GDP) to provide a more nuanced understanding of the economic factors at play.

Model 2 reveals that for every billion-dollar increase in the GDP of the pension fund's state, the odds of a commitment going to a minority-managed fund increase by only 0.014% relative to non-diverse funds (calculated from the coefficient 1.36e-07). Conversely, the odds for White women-managed funds decrease by 0.017% (from the coefficient -1.72e-07). These minimal changes underscore the limited practical impact of broad economic indicators on diverse fund investments, even when statistically significant.

Model 3: This final model incorporates political factors (Democratic-controlled states, divided control) in addition to the variables in Model 2, allowing us to examine the influence of political environments on investment patterns.

Model 3 shows that for every billion-dollar increase in the GDP of the pension fund's state, the odds of a commitment going to a minority-managed fund increase by only 0.0086% relative to non-diverse funds (calculated from the coefficient 8.57e-08). Conversely, the odds for White women-managed funds decrease by 0.0151% (from the coefficient -1.51e-07). Although the coefficients for LP GDP in Model 3 are slightly different from those in Model 2, the practical interpretation remains the same: broad economic indicators have a minimal impact on the likelihood of commitments to diverse-managed funds.

Model 3 also reveals that political factors have a substantial influence, particularly for minority-managed funds. Commitments from pension funds in Democratic-controlled states are 33% more likely to be directed to minority-managed funds than those from Republican-controlled states. This suggests that political environments can play a significant role in shaping investment patterns in diverse-managed funds.

However, the political influence is not uniform across all categories of diverse-managed funds. Interestingly, commitments are 23% less likely to be directed to White women-managed funds in Democratic-controlled states, highlighting the complex and sometimes counterintuitive nature of political influences on investment decisions.

These models paint a complex picture of the factors influencing investments in diverse-managed funds. They reveal significant institutional biases, a paradoxical relationship with fund size, minimal impact of broad economic indicators, and substantial but nuanced political influences. These findings underscore the multifaceted nature of the challenges facing diverse-managed funds in securing pension fund commitments.

Additional Technical Details:

We use robust standard errors to account for potential heteroskedasticity in all models. For the multinomial logistic regression, we use the Huber-White sandwich estimator for robust standard errors to account for potential heteroskedasticity and non-normality in the error terms.

Exponentiated coefficients in the multinomial logistic regression can be interpreted as relative risk ratios, indicating how the risk of the outcome falling in the comparison group compared to the risk of the outcome falling in the reference group changes with the variable in question.

In our multinomial logistic regression analysis, we encountered convergence issues due to 74 observations that were perfectly predicted by the model. These observations had specific combinations of GP and LP Assets Under Management that led to complete determination. To address this issue and ensure model convergence, we removed these 74 observations from our analysis. This approach, while reducing our sample size slightly, allows for a more stable and interpretable model. It's worth noting that this data handling decision may slightly underestimate the prevalence of non-diverse funds in our results, particularly for funds with specific AUM characteristics. However, given the small number of affected observations (approximately 0.22% of our sample), we believe the impact on our overall findings is minimal.

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Appendix C: Detailed Rankings of Pension Funds Investing in Diverse-Managed Funds

This appendix provides comprehensive rankings of pension fund investments in diverse-managed funds between 2012 and 2022. The data is broken down by pension fund type (corporate, public, union) and diversity category (minority-managed, women-managed, and both minority and women-managed). While the main report uses more specific categories to avoid double-counting in statistical analyses, this appendix takes a broader view. Here, the 'women-managed funds' category includes funds managed by women of all backgrounds, allowing for some overlap with minority-managed funds. This approach in the appendix provides a comprehensive overview of women's leadership in fund management across all racial and ethnic backgrounds, complementing the more granular analysis in the main report. These detailed rankings offer insights into which institutional investors are leading the way in supporting diverse fund managers across various categories.

Table C1. Top Ten Corporate Pension Funds Making Commitments to Minority-Managed Funds Between 2012 and 2022

Corporate	No. Commitments to Minority-Managed Funds
Employees' Retirement Plan of Duke University	19
Nationwide Retirement Plan	15
UAW Ford Retirees Medical Benefits Plan	11
UPMC Master Trust	11
Hartford HealthCare Corporation Defined Benefit Master Trust Agreement	10
Lockheed Martin Master Retirement Trust	10
SBC Master Pension Trust	10
General Electric Pension Trust	9
The Boeing Company Employee Retirement Plans Master Trust	9
Eversource Retirement Plan Master Trust	8

Table C2. Top Ten Public Pension Funds Making Commitments to Minority-Managed Funds Between 2012 and 2022

Public	No. Commitments to Minority-Managed Funds
New York State Common Retirement Fund	55
Los Angeles Fire and Police Pension System	34
Connecticut State Employees Retirement System	33
Teachers Retirement System of the State of Illinois	32

California Public Employees' Retirement System	31
Connecticut Retirement Plans and Trust Funds	27
Nevada Public Employees Retirement System	26
California State Teachers' Retirement System	25
State Teachers Retirement System of Ohio	24
San Francisco Employees' Retirement System	23

Table C3. Top Ten Union Pension Funds Making Commitments to Minority-Managed Funds Between 2012 and 2022

Union	No. Commitments to Minority-Managed Funds
U.F.C.W. Consolidated Pension Fund	16
Central Pension Fund of the IUOE & Participating Employers	12
Laborers District Council & Contractors Pension Fund of Ohio	12
New York State Nurses Association Pension Plan	12
Operating Engineers Trust Fund of Washington D.C. and Vicinity	12
Producer-Writers Guild of America Pension Plan	11
UAW GM Retirees Medical Benefits Plan	11
N. Atlantic States Carp. Guaranteed Annuity Fund	10
North Atlantic States Carpenters Pension Fund	9
New York State Teamsters Conference Pension & Retirement Fund	8

Table C4. Top Ten Corporate Pension Funds Making Commitments to Women-Managed Funds Between 2012 and 2022

Corporate	No. Commitments to Women-Managed Funds
Employees' Retirement Plan of Duke University	16
Eversource Retirement Plan Master Trust	11
DuPont Pension Trust Fund	7
Deseret Mutual Master Retirement Plan	6
Lockheed Martin Master Retirement Trust	6
Dow Employees' Pension Plan	5
Lucent Technologies Master Pension Trust	5
Western & Southern Financial Group Pension Plan	5
The Guardian Master Pension Plan Trust	4
Ascension Health Master Pension Trust	3
Brown-Forman Corporation Master Retirement Trust	3
Hartford HealthCare Corporation Defined Benefit Master Trust Agreement	3
Intermountain Healthcare Pension Plan	3
Liberty Mutual Retirement Benefit Plan	3
UPHS Illiquid Assets Pool	3

Table C5. Top Ten Public Pension Funds Making Commitments to Women-Managed Funds Between 2012 and 2022

Public	No. Commitments to Women-Managed Funds
Teacher Retirement System of Texas	18
Maryland State Retirement and Pension System	11
Los Angeles Fire and Police Pension System	9
San Francisco Employees' Retirement System	8
California State Teachers' Retirement System	7
New York State Common Retirement Fund	7
Florida State Board of Administration	6
Illinois State Board of Investment	6
Kentucky Public Pensions Authority	6
Kentucky Teachers Medical Health Insurance Trust	6
Kentucky Teachers' Retirement System	6

New York State Teachers' Retirement System	6
State of Wisconsin Investment Board	6
Teachers Retirement System of the State of Illinois	6

Table C6. Top Ten Union Pension Funds Making Commitments to Women-Managed Funds Between 2012 and 2022

Union	No. Commitments to Women-Managed Funds
Operating Engineers Trust Fund of Washington D.C. and Vicinity	9
Laborers District Council & Contractors Pension Fund of Ohio	4
Producer-Writers Guild of America Pension Plan	4
North Atlantic States Carpenters Pension Fund	3
New York State Nurses Association Pension Plan	3
1199SEIU Health Care Employees Pension Fund	2
Local 103, I.B.E.W. Health Benefit Plan	2
Massachusetts Laborers' Pension Fund	2
Michigan Laborers' Pension Plan	2
New York State Teamsters Conference Pension & Retirement Fund	2
North Atlantic States Carpenters Pension Fund	2
U.F.C.W. Consolidated Pension Fund	2

Table C7. Top Ten Corporate Pension Funds Making Commitments to Minority and Women-Managed Funds Between 2012 and 2022

Corporate	No. Commitments to Minority and Women-Managed Funds
The Lilly Retirement Plan Master Trust	7
Kodak Retirement Income Plan	4
John Deere Pension Trust (Master Trust)	4
Thrivent Financial for Lutherans Individual Pension Account Plan	4
DuPont Pension Trust Fund	3
Eastman Chemical Company Master Retirement Trust	3
Honeywell International Master Retirement Trust	3
SBC Master Pension Trust	2
Eversource Retirement Plan Master Trust	2
Employees' Retirement Plan of Duke University	2
Raytheon Technologies Corporation Employees Retirement Plan	2

Table C8. Top Ten Public Pension Funds Making Commitments to Minority and Women-Managed Funds Between 2012 and 2022

Public	No. Commitments to Minority and Women-Managed Funds
Los Angeles Fire and Police Pension System	15
Chicago Teachers' Pension Fund	7
Connecticut Retirement Plans and Trust Funds	7
Connecticut State Employees Retirement System	7
State of Michigan Retirement Systems	6
State Universities Retirement System	5
California Public Employees' Retirement System	5
New York State Common Retirement Fund	4
City of Baltimore Employees' Retirement System	4
Houston Firefighters' Relief and Retirement Fund	4
Teachers Retirement System of the State of Illinois	4

Table C9. Top Ten Union Pension Funds Making Commitments to Minority and Women-Managed Funds Between 2012 and 2022

Union	No. Commitments to Minority and Women-Managed Funds
Southwest Carpenters Pension Trust	3
Massachusetts Laborers' Annuity Fund	3
1199SEIU Health Care Employees Pension Fund	3
Mason Tenders' District Council Pension Fund	3
N. Atlantic States Carp. Guaranteed Annuity Fund	3
North Atlantic States Carpenters Pension Fund	3
United Association National Pension Fund	3
United Brotherhood of Carpenters Pension Plan United States Segment	3
Carpenters Labor-Management Pension Plan	2
Chicago Regional Council of Carpenters Pension Fund	2
Heat & Frost Insulators & Allied Workers Local 6 Pension Fund	2
Iron Workers Pension Trust Fund for Colorado	2
Laborers Pension Trust Fund for Northern California	2
Northern California Carpenters 401(K) Trust Fund	2
Painters and Allied Trades District Council No. 35 Pension Fund	2

Appendix D: Detailed Analysis of Commitment Counts for Diverse-Managed Funds

This appendix provides in-depth statistical analysis of factors influencing commitments to diverse-managed funds, building upon analyses in Appendix B. We present four tables: D1 and D2 focus on commitment likelihood, while C3 and C4 examine commitment counts.

For analyzing commitment counts, we use Poisson and Negative Binomial Regressions. These techniques allow us to analyze the count of commitments received by diverse-managed funds. Poisson regression is appropriate for count data, while negative binomial regression accounts for potential overdispersion in the data (when the variance is larger than the mean). These methods allow us to estimate how different factors affect the number of commitments a fund receives, rather than just the size or likelihood of individual commitments.

Analysis of Commitment Likelihood

Table D1 presents a linear probability model examining the likelihood of receiving a commitment among diverse-managed funds, while Table D2 focuses on the impact of partner demographics on commitment likelihood.

Table D1: Likelihood of Receiving a Commitment Among Diverse-Managed Funds (Linear Probability Model)

	Model 1 Coef.	Model 1 SE	Model 2 Coef.	Model 2 SE
Management Demographics				
White Women-Managed	-0.0030	(0.0169)	-0.0061	(0.0169)
Both Minority and Women-Managed	0.0171*	(0.0084)	0.0165*	(0.0084)
Log GP AUM	0.0040*	(0.0022)	0.0068*	(0.0035)
GP GDP	-	-	-5.97e-09	(4.17e-09)
GP End Balance	-	-	-2.66e-08	(1.65e-07)
GP State Control				
Democratic	-	-	0.0101	(0.0127)
Divided	-	-	0.0242*	(0.0139)
Constant	0.9520***	(0.0247)	0.9318***	(0.0408)

Note: Standard errors in parentheses. * p<0.1, ** p<0.05, *** p<0.01 Reference group for diversity categories: Minority-managed funds Reference group for GP State Control: Republican-controlled states

In Table D1, we see that funds managed by both minorities and women have a slightly higher likelihood (1.65 percentage points in Model 2) of receiving a commitment compared to minority-managed funds alone. This

aligns with previous research suggesting that diverse teams often bring unique perspectives that can lead to better investment decisions (Evans et al., 2019).

Fund size, represented by Log GP AUM, shows a positive but modest effect on commitment likelihood. A 10% increase in AUM is associated with only a 0.68 percentage point increase in the likelihood of receiving a commitment (Model 2). This finding reinforces the 'Fund Size Paradox' discussed in the main text, suggesting that size alone does not significantly level the playing field for diverse-managed funds.

The political environment also plays a role, with diverse-managed funds in politically divided states being 2.42 percentage points more likely to receive commitments compared to those in Republican-controlled states (Model 2).

Table D2 reveals the significant impact of partner demographics on commitment likelihood. Notably, the presence of a Black partner is associated with a 9.51 percentage point increase in the likelihood of receiving a commitment compared to funds with Asian partners as the primary diverse representation. This finding is particularly interesting given the persistent underrepresentation of Black professionals in finance highlighted by recent studies (Knight Foundation, 2021).

Table D2: Impact of Partner Demographics on Commitment Likelihood

Pension Fund and Management Type	Coefficient	Standard Error
Log GP AUM	0.0566***	(0.0085)
Pct of Partners Minority	0.0003	(0.0005)
Pct of Partners Women	0.0004	(0.0009)
Partner Demographics		
Black Partner	0.0951***	(0.0223)
Hispanic Partner	-0.0274	(0.0249)
Native American Partner	-0.0497	(0.0734)
GP State Control		
Democratic	0.2060***	(0.0267)
Divided	0.2429***	(0.0349)

Note: Reference group for partner race/ethnicity: Asian Partner, Significance levels: *** p<0.01, ** p<0.05, * p<0.1

Analysis of Commitment Counts

Tables D3 and D4 present Poisson and negative binomial regression models, respectively, examining factors influencing the number of commitments received by diverse-managed funds. Table D3 shows a Poisson regression model, which is appropriate for count data assuming equidispersion. However, given the overdispersion observed in the data, confirmed by the significant alpha parameter in the negative binomial models (Table D4), the negative binomial model is more suitable for accurately estimating commitment counts. This adjustment allows for a more nuanced analysis that accounts for variability in the data while complementing the insights gained from the Poisson regression.

Table D3: Poisson Regression Models of Commitment Count

	Model 1 Coef.	**Model 1 SE**	**Model 2 Coef.**	**Model 2 SE**
Log GP AUM	0.2609***	(0.0815)	0.4050***	
GP GDP	-2.97e-07	(1.85e-07)	-6.11e-08	(1.83e-07)
GP End Balance	8.52e-06	(9.47e-06)	8.77e-06	(8.46e-06)
Pct of Partners Minority	0.0109***	(0.0021)	0.0122***	(0.0011)
Pct of Partners Women	0.0042*	(0.0024)	0.0050***	(0.0013)
GP State Control				
Democratic	-0.2656	(0.2216)	0.9051**	(0.4068)
Divided	-0.5044*	(0.2926)	0.5820	(0.4142)
Partner Demographics				
Black Partner	-	-	0.9010***	(0.1763)
Hispanic Partner	-	-	-0.3860**	(0.1796)
Native American Partner	-	-	0.5427	(0.5176)
Constant	0.7177	(1.0374)	-2.3826*	(1.2152)

Note: * p<0.1, ** p<0.05, *** p<0.01

Analysis of Poisson Models: In both models, fund size (Log GP AUM) is a significant predictor of the number of commitments received, with larger funds generally receiving more commitments. The percentage of minority and women partners also shows positive effects, with funds managed by minorities seeing a particularly strong impact. Interestingly, while Democratic state control initially appears to have a negative effect, this reverses when partner demographics are included, suggesting a complex relationship between political environment and diversity. The presence of a Black partner is associated with a substantial increase in expected commitments—nearly doubling the expected number—while funds with a Hispanic partner tend to receive fewer commitments, with a decrease of about 30%.

Analysis of Negative Binomial Models: The negative binomial models reinforce and expand upon the findings from the Poisson models. Fund size continues to be a robust predictor of the number of commitments, with larger funds consistently attracting more commitments. Partner demographics remain crucial, with the presence of a Black partner significantly boosting the expected number of commitments by over 150%, while a Hispanic partner is linked to a reduction of around 30%. It is noteworthy that the finding regarding Hispanic partners—a reduction of around 30% in expected commitments—is consistent across both the Poisson and negative binomial models. This consistency across different modeling approaches enhances the credibility of the result, suggesting that this relationship is a robust and reliable pattern in the data. The political environment, particularly state political control, also remains influential, with funds in Democratic-controlled states receiving substantially more commitments than those in Republican-controlled states, with increases exceeding 100%. The negative binomial model's ability to handle overdispersion ensures these estimates are more reliable, accurately reflecting the variability in the data.

Table D4: Comparison of Negative Binomial Models

	Model 1 Coef.	Model 1 SE	Model 2 Coef.	Model 2 SE
Log GP AUM	0.3688***	(0.0771)	0.4828**	(0.2407)
GP State GDP	1.59e-07	(2.36e-07)	1.05e-07	(2.35e-07)
GP State End Balance	-1.70e-06	(1.34e-05)	-1.07e-06	(1.34e-05)
Pct of Partners Minority	0.0108***	(0.0022)	0.0294	(0.0412)
Pct of Partners Women	0.0083**	(0.0037)	0.0031	(0.0212)
GP State Control				
Democratic	0.7815***	(0.2526)	0.9048***	(0.3187)
Divided	0.4625	(0.2900)	0.5888*	(0.3220)
Partner Demographics				

Black Partner	0.9463***	(0.1760)	0.9922***	(0.2577)
Hispanic Partner	-0.3773**	(0.1727)	-0.3669**	(0.1660)
Native American Partner	0.3082	(0.3657)	0.5373	(0.5118)
Log GP AUM x Pct of Partners Minority	-	-	-0.0017	(0.0037)
Log GP AUM x Pct of Partners Women	-	-	0.0006	(0.0021)
Constant	-2.3384***	(0.7336)	-3.5578	(2.7634)
Alpha	0.1722***	(0.0357)	0.1724***	(0.0355)

Note: * p<0.1, ** p<0.05, *** p<0.01 NB = Negative Binomial, NB Int. = Negative Binomial with Interactions

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