

DIVERSITY

IN THE MANAGEMENT OF INVESTMENTS

2018 ANNUAL PROGRESS REPORT

CALSTRS[®]
HOW WILL YOU SPEND YOUR FUTURE?



TABLE OF CONTENTS

Diversity in the Management of Investments

2018 Annual Progress Report

- 4 CalSTRS Mission, Vision and Core Values
- 5 Investments Branch Core Values
- 6 Introduction
- 7 Consistency of Philosophy and Action
- 8 2017 Strategic Goals
- 10 **A Investment Staff**
 - Exhibit 1:**
A Gender Diverse Workforce (page 13)
 - Exhibit 2:**
An Ethnically Diverse Workforce (page 14)
 - Exhibit 3:**
An Age Diverse Workforce (page 15)
- 18 **B Engagement**
 - Why Diversity Matters (page 18)
 - Delivering Through Diversity (page 20)
 - Portfolio Companies (page 28)
 - Advocacy in Action (page 32)
- 40 **C External Managers**
- 48 Investment Operations
- 49 **Appendix 1:** CalSTRS Emerging Manager Definitions
- 51 **Appendix 2:** Process for Considering Investments With Emerging Managers

MISSION

Securing the financial future and sustaining the trust of California's educators

VISION

Your Reward – A Secure Retirement

Our Reward – Getting You There

CORE VALUES

The CalSTRS core values are a set of attitudes, beliefs and behaviors that define CalSTRS and its employees.



Customer Service – We never compromise on quality as we strive to meet or exceed the expectations of our customers.



Accountability – We operate with transparency and accept responsibility for our actions.



Leadership – We model best practices in our industry and innovate to achieve higher standards.



Strength – We ensure the strength of our system by embracing a diversity of ideas and people.



Trust – We conduct ourselves with integrity, acting ethically in every endeavor.



Respect – We respect the needs of our members, co-workers, and others, treating everyone with fairness, honesty, and courtesy.



Stewardship – We recognize our fiduciary responsibility as the foundation for all decision-making.

INVESTMENTS BRANCH CORE VALUES

The CalSTRS Investments Branch core values align with the organization's and serve to further unify our team in pursuit of our mission.



Respect – We strive to not only treat others as we would like to be treated, but to go the extra mile and treat others as they would like to be treated.



Personal Development – We support an individual's career and personal goals.



Balance – We encourage employees to balance a strong work ethic with interests outside of the office.



Worth – We strive to recognize everyone's efforts and contributions to the organization.



Challenge – We are honored to accept the challenges placed upon us and strive to create an innovative work environment.



Purpose – We work toward a common goal, thereby making a difference for others and ourselves.



Honesty – We are truthful to ourselves, to peers, to supervisors, to the board, and to the organization; our word is our bond.

INTRODUCTION

The *Diversity in the Management of Investments* annual progress report is submitted as requested by the Investment Committee of the Teachers' Retirement Board. In addition, Senate Bill 294 (Chapter 701, Statutes of 2011), authored by Senator Curren D. Price, Jr., required the board to define the term "emerging investment manager," provide a five-year strategic plan for emerging investment manager participation across all asset classes, and submit an annual report to the Legislature regarding the progress of the strategic plan. This mandated report illustrates CalSTRS' progress toward achieving the goals of the plan.

Throughout 2017, CalSTRS maintained committed capital to emerging managers in all portfolios. Internal investment staff also continued to reflect a diverse population, both in gender and ethnicity. Additionally, staff supported diversity in the investment management industry by directly engaging with external managers and portfolio companies, and attending and speaking at conferences.

The CalSTRS Diversity in the Management of Investments team, representing every asset class and program, worked together preparing this report to capture the efforts and results of all Investments Branch programs in 2017.



CONSISTENCY OF PHILOSOPHY AND ACTION

CalSTRS seeks to honor the philosophy of diversity and inclusion, long practiced by California educators, while maintaining a financially sound retirement system. Diversity in the management of investments is interwoven throughout the investment business goals and is consistent with the objective to invest in strategies that enhance returns at a prudent level of risk. It is also in accordance with CalSTRS' investments policies as well as the California Constitution and the California Education Code.

To ensure diversity in the management of investments, CalSTRS must obtain exposure to a wide spectrum of investment opportunities and talent. Appropriate exposure must be accessed in a comprehensive, strategic manner under the leadership of the chief investment officer and consistent with the direction given by the Teachers' Retirement Board based on our core values. Specifically, diversity in the management of investments operates under the CalSTRS core value of:



STRENGTH

We ensure the strength of our system by **embracing a diversity of ideas and people.**

Diversity in the management of investments is accomplished with an investment staff of 151 individuals who are multiethnic, multicultural and possess myriad worldviews and investment perspectives. Part of this strategy includes our involvement in communities of color through strategic partners. The accomplishments of the Investments Branch in this area reflect a teamwork approach and the support of the entire leadership and staff who all share the highest dedication and commitment to meeting the retirement needs of more than 933,000 California educators and their beneficiaries.

2017 STRATEGIC GOALS

The CalSTRS Investments Branch worked **to increase awareness and advance understanding of diversity and inclusion internally and externally** among staff, external managers, portfolio companies and service providers through ongoing education, relationship building, networking and direct engagement.

A INVESTMENT STAFF

Increase understanding and improve staff recruitment strategy.

B ENGAGEMENT

Carry out focused engagement with affinity groups, external managers and portfolio companies.

C EXTERNAL MANAGERS

Restructure emerging manager programs.



INVESTMENT STAFF

The background is a complex financial visualization. It features a candlestick chart with white and light blue bars, a bar chart with vertical bars of varying heights, and a network diagram with nodes and connecting lines. The overall color palette is a gradient from dark blue at the top to light blue and purple at the bottom. The text 'INVESTMENT STAFF' is centered in a bold, white, sans-serif font.

A

INVESTMENT STAFF

Diversity within the CalSTRS organization is increased by continuing to educate staff, implement recruitment strategies, including the **Student Intern Program**, and further develop the **Mentor Program**.

These nine talented interns spent their summer shadowing investments staff at CalSTRS and getting to know each asset class. We see a bright future ahead for each of them.

Top row (left to right): Zuriel Sanders, CIO Christopher J. Ailman, Emilio Navarrete.

Middle row (left to right): Keoni Mark, Peggy Lin, Elisha Reyes, Wanyu Liao.

Bottom row (left to right): Yan-Ling Lu, Emily Yang, Jasmine Alzanon.

STUDENT INTERN PROGRAM

Since 2004, the CalSTRS Investments Branch has mentored students from many diverse backgrounds, making certain to include ethnically and gender diverse students. In 2017, CalSTRS continued to build on the success of our Student Intern Program. Through a collaborative partnership with Human Resources and Investments staff, outreach was initiated with hundreds of students at colleges and universities at all levels of higher education—post graduate, undergraduate and community college. The majority of the students involved in the program are from diverse groups, which tend to be underrepresented on Wall Street.

In 2017, out of 134 total applicants, 24 were interviewed and nine finalists (two community college students, two international graduate students and five undergraduate students) were hired as part of the Investments Branch Student Intern Program. These students were ethnically and gender diverse, and represented a variety of experience levels, backgrounds and unique skill sets.

One of the undergraduate students was an intern from the nonprofit organization Girls Who Invest. Girls Who Invest was founded in 2015 and is dedicated to increasing the number of women in portfolio management and executive leadership in the asset management industry.

The students were organized in two cohorts: one for the California State University and California Community College systems, and one for the University of California system. Chief Investment Officer Christopher J. Ailman had two students shadow him for four weeks: Emilio Navarrete and Jasmine Alzanon from the CSU/community college group. Additionally, each student was able to work with a director, portfolio manager or investment officer from each asset class. Most importantly, eight of the nine students completed the 500 hours of work experience required for them to take the Investment Officer I exam upon graduation from college.

Due to the success of this partnership between Human Resources and the Investments Branch staff, CalSTRS will continue to expand these outreach efforts.



Photo by Clarissa Resultan, CalSTRS

A powerful success story comes directly from one of the 2017 student interns, **Emilio Navarrete**, who now works in the Real Estate asset class.



Emilio Navarrete
Photo by Clarissa Resultan, CalSTRS

“I first learned about the investment intern program at CalSTRS from a friend in a finance class who knew that I was interested in investments and wanted to pursue a career in that field. I applied and unfortunately did not get picked the first time around, but when I saw that they offered a second program the following summer, I made sure to pull out all the stops to get picked.

“I was fortunate to be selected for this student intern program as it was an eye-opening experience into the world of investments. I did not expect how much the program would expose us to the different asset classes or how welcoming and helpful everyone was. I learned about each asset class from the directors and portfolio managers themselves and was encouraged to sit in as many meetings as possible. I was able to shadow Chris Ailman, which was astonishing to be given such an opportunity to follow around the chief investment officer of the largest teachers’ pension fund. I learned so much from this program about the field of investments.

“The CalSTRS culture is welcoming, enthusiastic and upbeat. I am very happy to have found CalSTRS as a place that I can grow. During my time with this program I was given a project with Real Estate and found that this is the group that I want to be with. I applied and am thankful to now be a part of the Real Estate team and CalSTRS Investments as a whole.”

INVESTMENTS BRANCH STAFF DIVERSITY

Exhibits 1, 2 and 3 highlight the diverse characteristics of CalSTRS internal investment staff as of December 31, 2017.

EXHIBIT 1 2017 Demographic Information for Investments: A Gender Diverse Workforce

Source: CalSTRS personnel data as of December 31, 2017

Notes on classification titles:

The Investment Director category consists of the following:

- » Chief Investment Officer, Deputy Chief Investment Officer, Investment Director, Investment Operations Director (unless otherwise noted).

The Administrative Support category consists of the following:

- » Staff Services Manager II, Staff Services Manager I, Associate Governmental Program Analyst, Staff Services Analyst.
- » Executive Assistant, Administrative Assistant II, Administrative Assistant I.

Investment Director



Portfolio Manager



Investment Officer III



Investment Officer II



Investment Officer I



Administrative Support



Investment Staff Total (Non-Admin)

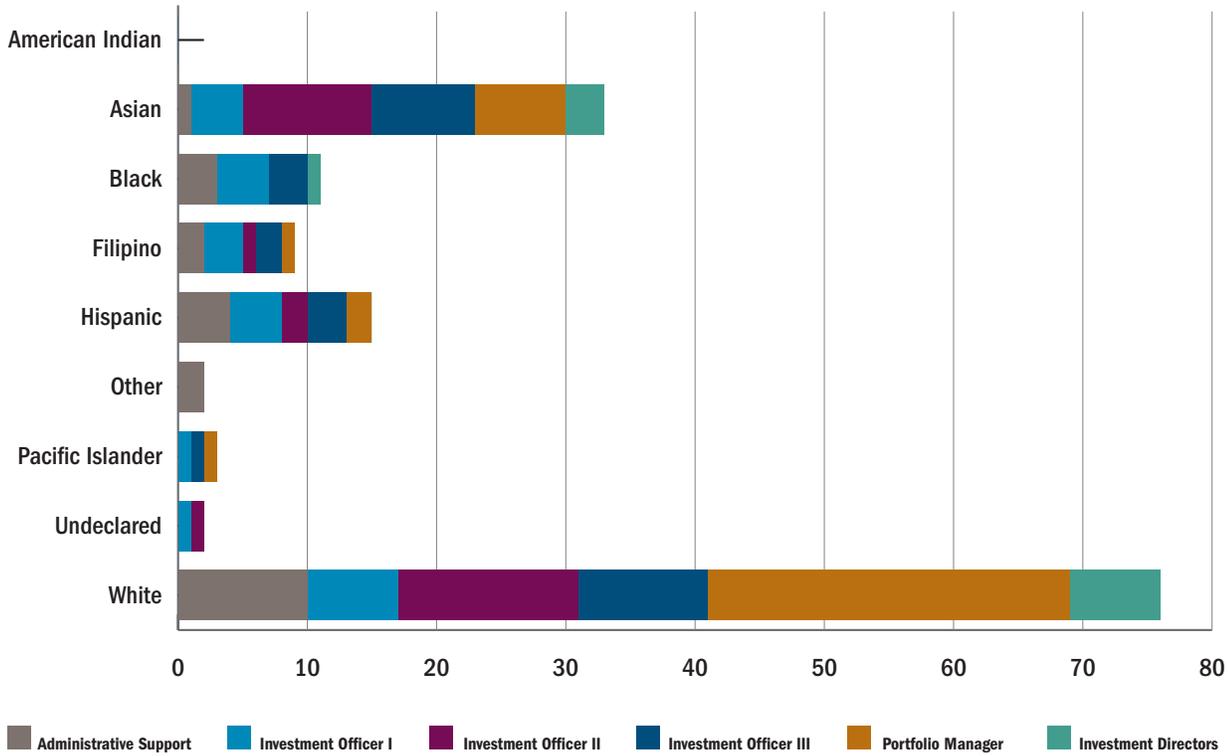


Investments Branch Total (Including Admin)



EXHIBIT 2

2017 Demographic Information for Investments: An Ethnically Diverse Workforce



Ethnicity Breakdown of Investments Branch Staff at CalSTRS										
	American Indian	Asian	Black	Filipino	Hispanic	Other	Pacific Islander	Undeclared	White	Totals
Administrative Support	0	1	3	2	4	2	0	0	10	22
Investment Officer I	0	4	4	3	4	0	1	1	7	24
Investment Officer II	0	10	0	1	2	0	0	1	14	28
Investment Officer III	0	8	3	2	3	0	1	0	10	27
Portfolio Manager	0	7	0	1	2	0	1	0	28	39
Investment Directors	0	3	1	0	0	0	0	0	7	11
Investment Staff Totals (Non-Admin)	0	32	8	7	11	0	3	2	66	129
Investments Branch Totals (Including Admin)	0	33	11	9	15	2	3	2	76	151

Source: CalSTRS personnel data as of December 31, 2017

Notes on classification titles:

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The Administrative Support category consists of the following:

- » Staff Services Manager II, Staff Services Manager I, Associate Governmental Program Analyst, Staff Services Analyst.
- » Executive Assistant, Administrative Assistant II, Administrative Assistant I.

EXHIBIT 3

2017 Demographic Information for Investments: An Age Diverse Workforce

Staff Count, State Service and Age Breakdown of Investments Branch Staff at CalSTRS					
Class Title	Number of Staff	Average Years State Service	Average Age	Average Age Female	Average Age Male
Administrative Support	22	8.2	38.9	*	*
Investment Officer I	24	4.9	37.2	35.5	38.6
Investment Officer II	28	6.9	37.4	37.7	37.2
Investment Officer III	27	11.6	43.0	50.2	39.3
Portfolio Manager	39	15.4	49.4	49.1	49.6
Investment Directors**	9	20.9	54.1	52.4	56.3
Chief Investment Officer	1	*	*	*	*
Deputy CIO	1	*	*	*	*
Investments Staff Totals (Non-Admin)	129	11.9	44.2	45.0	44.2
Investments Branch (Including Admin)	151	11.3	43.3	45.0	44.2

* Information withheld for privacy.

** Information in Investment Directors row does not include Chief Investment Officer or Deputy CIO.

Source: CalSTRS personnel data as of December 31, 2017

Notes on classification titles:

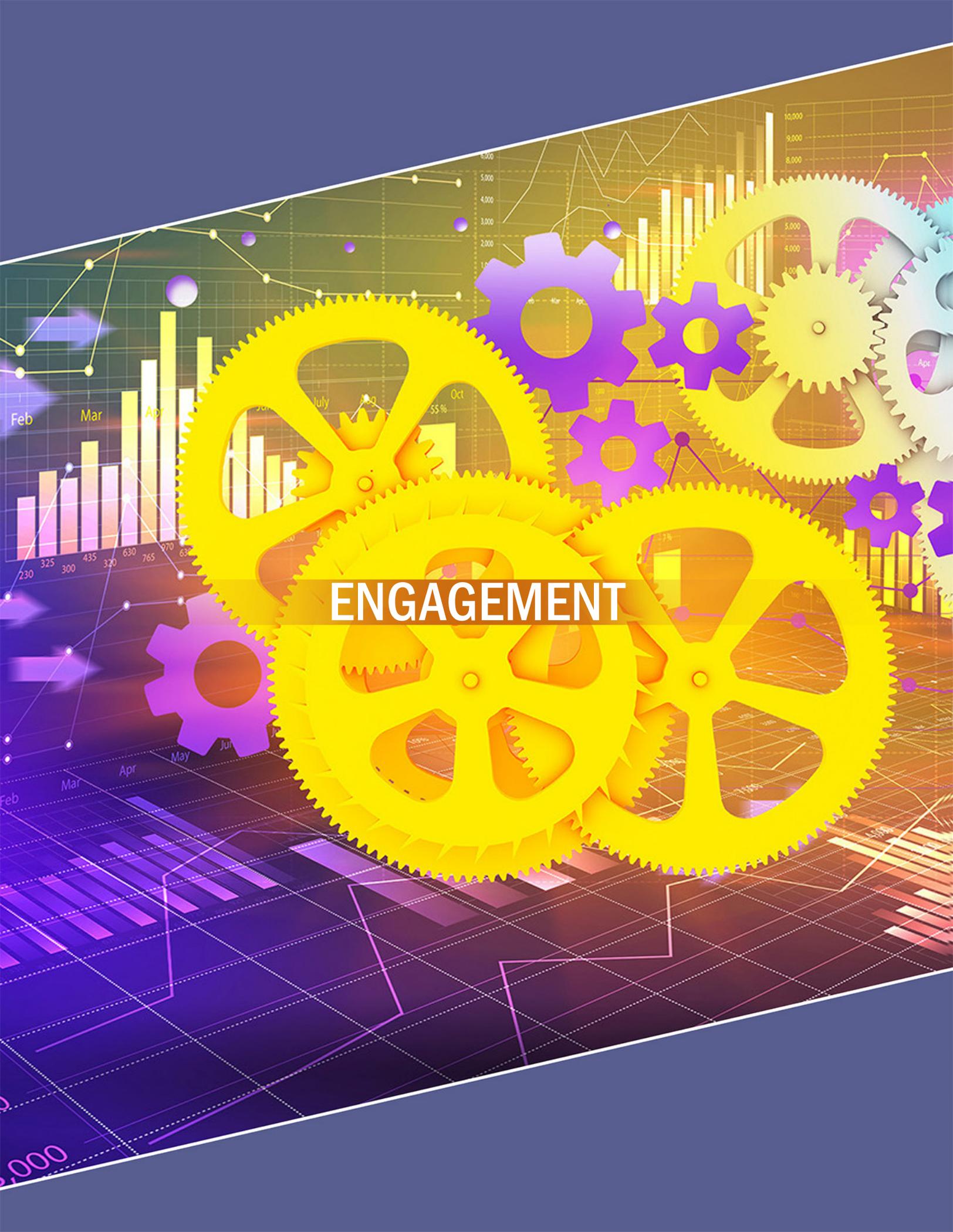
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- » Executive Assistant, Administrative Assistant II, Administrative Assistant I.





ENGAGEMENT

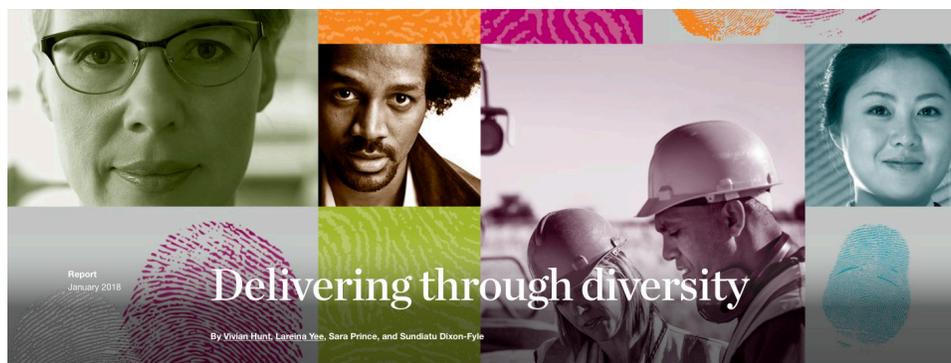
B

ENGAGEMENT: Why Diversity Matters

Diversity is good for business— not just from the ethical standpoint but from the perspective of a company’s bottom line, according to McKinsey & Company.

Corporate leaders are increasingly recognizing the strong business case for board and company diversity. Diversity is good for business and, specifically, good for CalSTRS’ investments. The business case for diversity is evident in the rapidly changing demographic profile of the United States as well as the continuing rise in purchasing power of women and various ethnic and racial groups. Diversity offers companies asymmetric protection—superior upside in growth markets and allows companies to make better decisions about strategy and managing risk.

Diversity is good for business, not just from the ethical standpoint but from the perspective of a company’s bottom line, according to McKinsey & Company. As a follow-up to its *Why Diversity Matters* study in 2015, with continued research in 2016 and 2017, McKinsey analyzed more than 1,000 companies across 12 countries looking at their respective profits and value creation. This report, ***Delivering Through Diversity, January 2018***, “reinforces the link between diversity and company financial performance—and suggests how organizations can craft better inclusion strategies for a competitive edge.”



CalSTRS supports board and staff diversity as an important business goal that can be properly addressed in the marketplace and, more specifically, at the company level within CalSTRS’ portfolio company investments. The **CalSTRS Corporate Governance Principles** outlines the importance of board diversity: “Company boards should prioritize diversity within the nominating committee. CalSTRS believes the director nomination process and policy should consider a diverse mix of skills, background, experience, age, gender, sexual orientation and identification, and cultural and ethnic composition that are most appropriate to the company’s long-term business needs and strategy. The board should disclose the policies or procedures used to ensure board diversity. Diversity goals should include cultural diversity in addition to gender and/or race diversity.”



New to the CalSTRS Corporate Governance Principles, which were approved in November 2017 by the Teachers' Retirement Board, is language to allow staff to take a stronger stance in proxy voting at boards that lack diversity: "CalSTRS will hold members of the board's nominating and corporate governance committee and, if necessary, the entire board accountable if, after engagement about the lack of board diversity, sufficient progress has not been made in this regard."

In today's global economy, it is vital that boards and companies include diversity of thought and perspectives to continue to avoid being affected by groupthink. Companies need to ensure there is depth and breadth of experience, skills, knowledge, backgrounds, age, gender, sexual orientation and identification, cultural and ethnic composition, personal qualities and historically underrepresented groups that are most appropriate to the company's long-term business needs and strategy.

Groupthink occurs when the pressure to conform within a group interferes with that group's analysis of a problem and causes poor group **decision-making**. Individual creativity, uniqueness and independent thinking are lost in the pursuit of group cohesiveness, as are the advantages that can sometimes be obtained by making a decision as a group—bringing different sources of ideas, knowledge and experience together to solve a problem.

The importance of a company's strategic framework was recently highlighted in a letter written by BlackRock CEO Larry Fink on January 12, 2018. "Companies must articulate your company's strategic framework for long-term value creation and explicitly affirm that it has been reviewed by your board of directors. This demonstrates to investors that your board is engaged with the strategic direction of the company. When we meet with directors, we also expect them to describe the board process for overseeing your strategy. The statement of long-term strategy is essential to understanding a company's actions and policies, its preparation for potential challenges, and the context of its shorter-term decisions. Your company's strategy must articulate a path to achieve financial performance. To sustain that performance, however, you must also understand the societal impact of your business as well as the ways that broad, structural trends—from slow wage growth to rising automation to climate change—affect your potential for growth."

In addition, Mr. Fink made diversity a non-negotiable line in the sand: "We will also continue to emphasize the importance of a diverse board. Boards with a diverse mix of genders, ethnicities, career experiences and ways of thinking have, as a result, a more diverse and aware mindset. They're less likely to succumb to groupthink or miss new threats to a company's business model. And they are better able to identify opportunities to promote long-term growth."

B

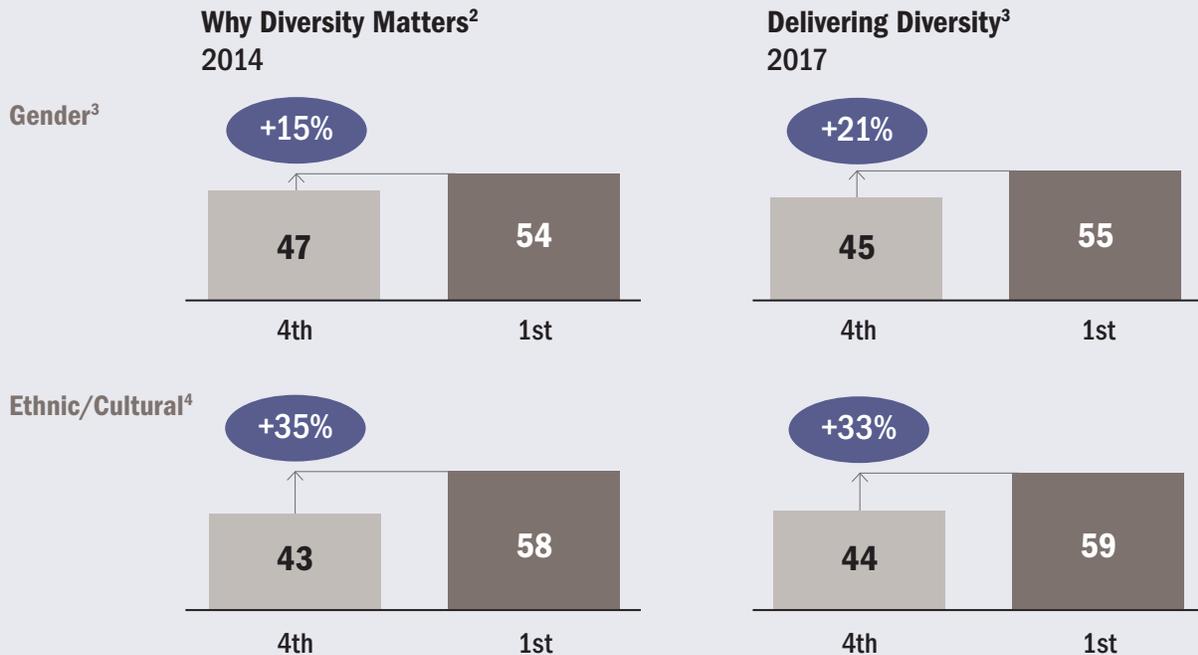
ENGAGEMENT:
Delivering
Through
Diversity

McKinsey & Company’s latest research reinforces the link between diversity and company financial performance. It also reaffirms the global relevance of the link between diversity—defined as a greater proportion of women and a more mixed ethnic and cultural composition.

Companies in the top quartile for gender diversity on their executive teams were **21 percent** more likely to have above-average profitability than companies in the fourth quartile. For ethnic and cultural diversity, top quartile companies were **33 percent** more likely to outperform on profitability.

THE CORRELATIONS BETWEEN DIVERSITY AND PERFORMANCE STILL HOLD

Likelihood of financial performance¹ above national industry median by diversity quartile



Source: McKinsey Diversity Matters database

¹ Average EBIT margin, 2010-13 in Why Diversity Matters and 2011-15 in Delivering Through Diversity

² 2014 results are statistically significant at p-value <0.1; 2017 results are statistically significant at p-value <0.05

³ Gender executive data: for 2014, N = 383; for 2017, N= 991

⁴ Ethnic/culture executive data: for 2014, N = 364; for 2017, N= 589



Gender diversity on corporate boards is not a new issue. An MSCI report issued in December 2017 updated its annual research on the state of women's representation on corporate boards of directors. The report, **Women on Boards, Progress Report 2017**, found "overall progress has been slow, even lagging the business-as-usual rate of increase we anticipated in 2015." The report projects that it will be at least 2028, rather than 2027, before 30 percent of MSCI All Country World Index¹ company board seats are filled by women if the current rate of increase remains unchanged.

Key findings included:

- Women held 17.3 percent of all directorships at MSCI ACWI Index companies as of October 16, 2017, up from 15.8 percent last year. Among Developed Market MSCI World Index companies, women held 20.4 percent of all directorships (up from 19.1 percent), with women at U.S. companies holding 21.7 percent of directorships (up from 20.3 percent). Women held 10.2 percent of board seats at MSCI Emerging Markets Index companies (up from 9 percent).
- Over one-fifth of the 2,451 MSCI ACWI Index companies still had all-male boards and nearly all still had majority-male boards. Seven companies had boards that were majority female, with another 21 divided exactly 50-50.
- The majority of companies whose boards had at least three female directors were based in developed Western markets. The majority of those with all-male boards were based in Japan, South Korea, Taiwan, Hong Kong and China. In several European countries there were no longer any MSCI ACWI Index companies with all-male boards.
- Among sectors, information technology lagged with 28.5 percent of companies having no women on their boards and only 18 percent had at least three, while over 40 percent of utilities and financials firms had at least three female directors.
- Inroads into the CEO's office continue to be slow but there has been more progress in the CFO position with a few unexpected bright spots, including Thailand, Malaysia, Singapore and China. Of the 96 firms with a female CEO, 30 were American, with Taiwan and the U.K. accounting for another nine each. Companies with a female CEO were more than twice as likely to have at least three women on the board as companies with a male CEO.

¹The MSCI ACWI is a market capitalization weighted index designed to provide a broad measure of equity-market performance throughout the world. See [msci.com/documents/1296102/1362201/MIS-ACWI-brochure-2017.pdf/e23b68bf-5d62-4ac0-8f5b-4ba783789aa5](https://www.msci.com/documents/1296102/1362201/MIS-ACWI-brochure-2017.pdf/e23b68bf-5d62-4ac0-8f5b-4ba783789aa5) for more information.

The report states that as of October 2017, all French, Italian and Norwegian companies on the MSCI ACWI Index had at least three female directors on their boards. These countries were closely followed by Sweden, Belgium, Germany and other European firms. These, not surprisingly, are largely markets that have instituted mandatory minimum representation requirements.

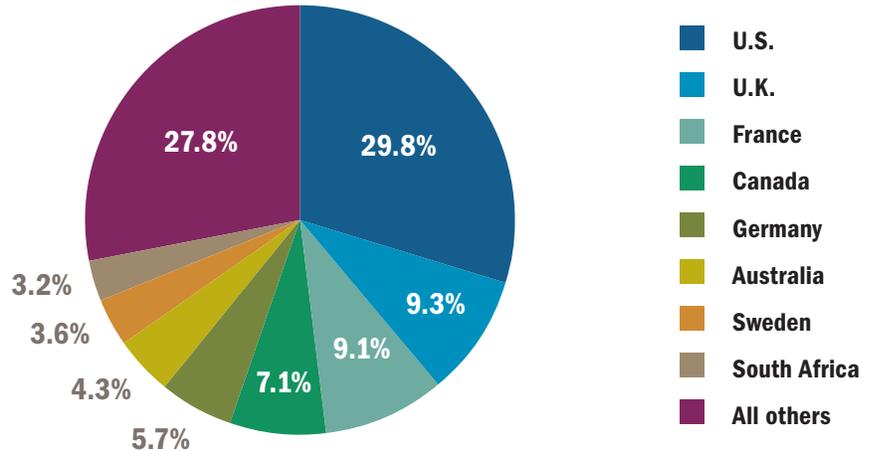
Top Ten Countries by Percent of MSCI ACWI Constituents With Three or More Women on the Board as of October 16, 2017

France	70	100.0%
Italy	18	100.0%
Norway	9	100.0%
Sweden	29	96.6%
Belgium	10	80.0%
Germany	55	80.0%
Finland	12	75.0%
Spain	23	65.2%
Denmark	17	64.7%
United Kingdom	112	64.3%



Encouragingly, some markets without mandates also accounted for high absolute numbers of companies that have hit the three-member tipping point. Looking at all MSCI ACWI Index companies with at least three women on the board, the U.S., U.K., France and Canada together accounted for more than half of the total number. These are companies within the MSCI ACWI without mandates that now have at least three women on their board.

EXHIBIT 4 Geographic Distribution of Companies With Three or More Women on the Board

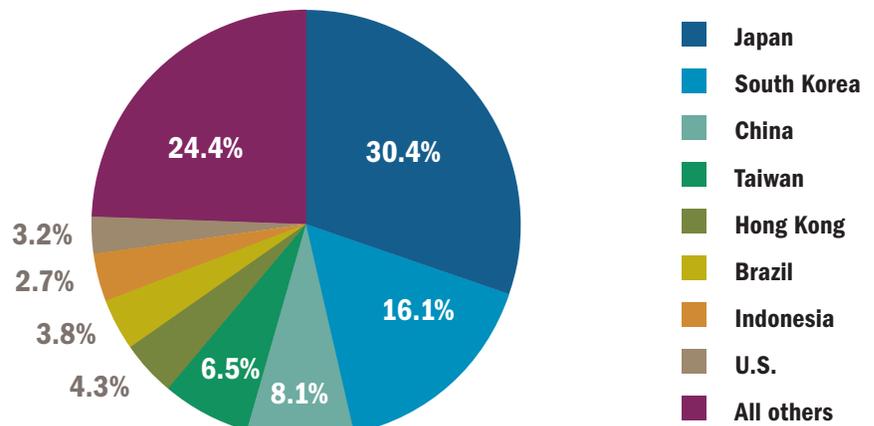


Source: MSCI ESG Research

This chart shows the geographic distribution of MSCI ACWI index companies that had three or more women on the board as of October 16, 2017.

As pointed out in the findings, over one-fifth of MSCI ACWI Index companies still had all-male boards as of October 2017. These were largely concentrated in Asian countries, with Japan, South Korea, China, Taiwan and Hong Kong accounting for the majority.

EXHIBIT 5 Geographic Distribution of Companies With All Males on the Board

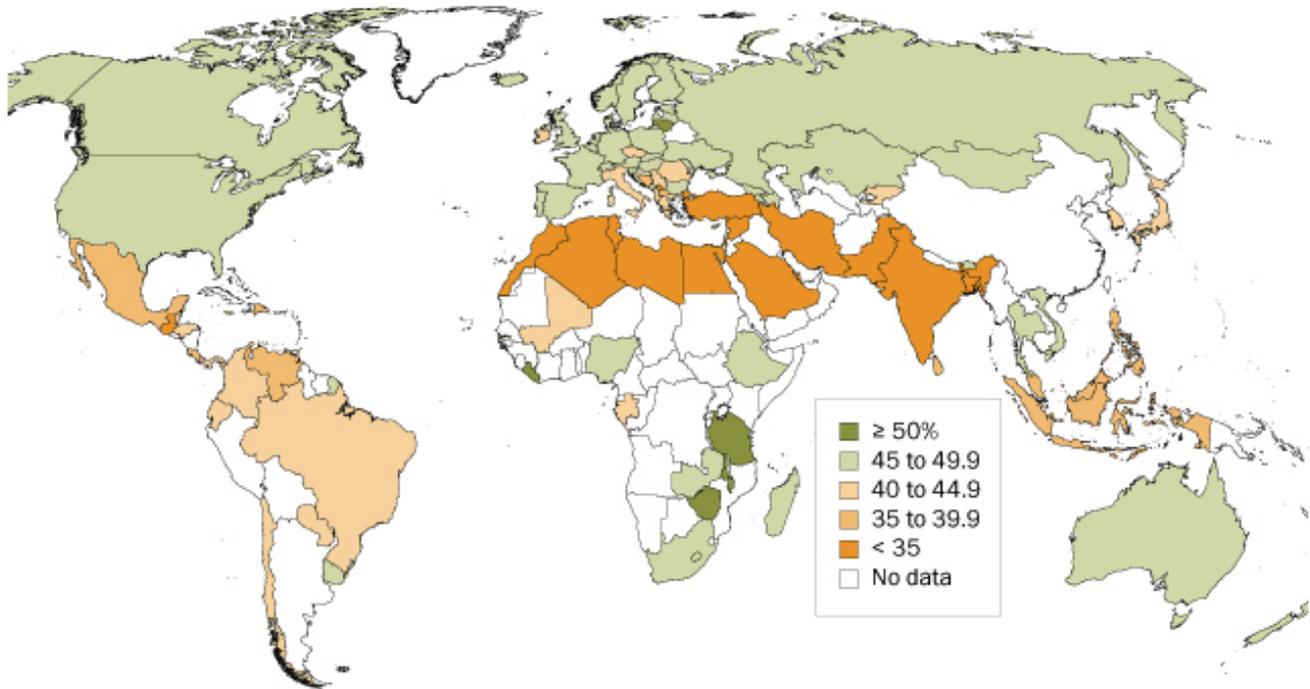


Source: MSCI ESG Research

This chart shows the geographic distribution of MSCI ACWI index companies that had all-male boards as of October 16, 2017.

Women account for more than 40% of the labor force in many countries, but share is lower in the Middle East, North Africa and India

Female share of the labor force (%)



Note: Data are reported for all countries with available national labor force statistics from 2010 to 2016. China does not publish data on women in the workforce and is not included.

Source: Pew Research Center analysis of national labor force survey data aggregated by the International Labor Organization, accessed March 1, 2017.

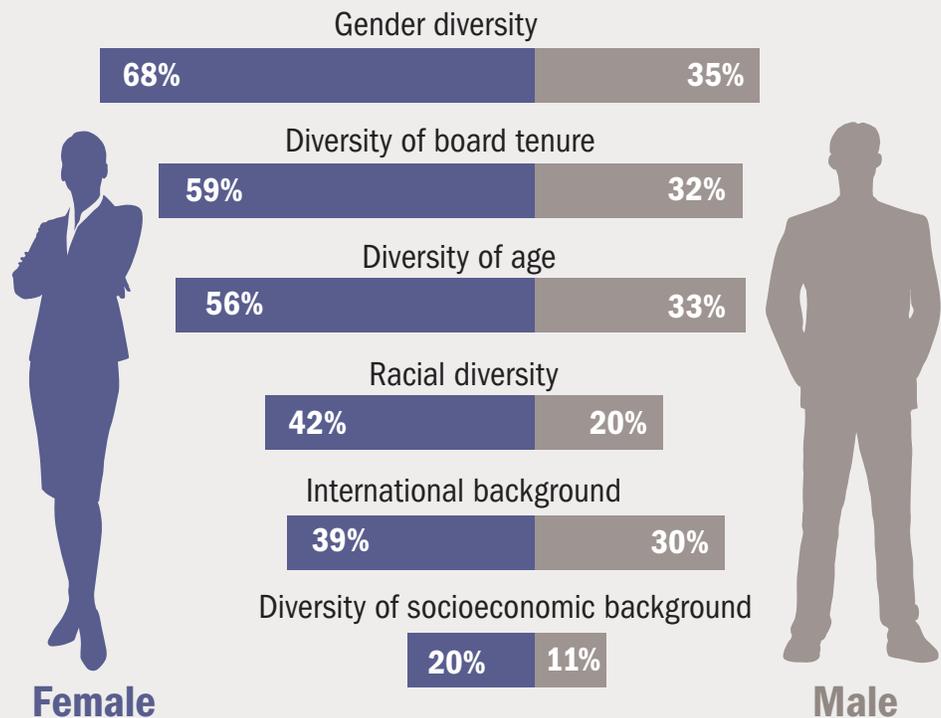
Despite women accounting for more than 40 percent of the labor force in many countries, with women earning 57.3 percent of bachelor's degrees, 58.3 percent of master's degrees and 52.2 percent of doctorates and with one-third more women than men graduating from college since 2000, board representation and representation of women and people of color at the board and C-suite level continue to lag.

The PricewaterhouseCoopers 2017 Annual Corporate Directors Survey showed that more than half of directors (55 percent) say their boards need gender diversity, or more gender diversity. However, female directors were more likely to state certain attributes were important to achieve diversity.

BEHIND THE NUMBERS: Women Give Greater Value to Diversity of Thought Factors

Female directors were notably more likely than male directors to say that certain attributes are very important to achieving diversity.

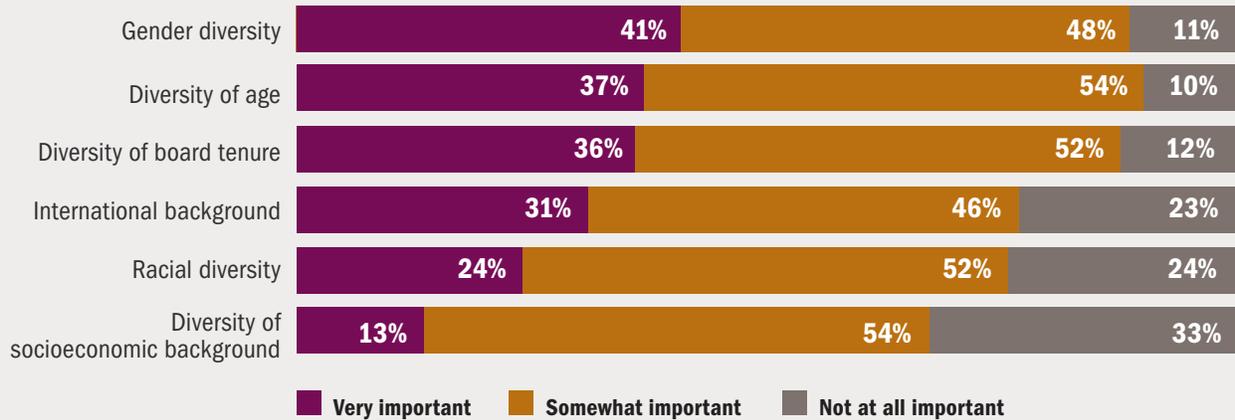
Directors who say the following factors are very important:



Q6: How important are the following factors in achieving diversity of thought in the boardroom?
 Base: 692-696 (Male); 133-135 (Female)
 Source: PwC 2017 Annual Corporate Directors Survey, October 2017

Approximately **41%** of directors surveyed stated gender diversity was very important.

WHAT BRINGS DIVERSITY OF THOUGHT?



Q6: How important are the following factors in achieving diversity of thought in the boardroom?

Base: 878-884

Source: PwC 2017 Annual Corporate Directors, October 2017

Diversity has been a priority for the CalSTRS Corporate Governance Unit for a number of years. CalSTRS continues our efforts to be active owners, and to engage our portfolio companies to mitigate risk and create opportunities for improved performance. We accomplish this through multiple avenues, including our proxy votes, company engagements both at the staff level and through our external activist and sustainability managers, and collaboration with other like-minded investors as outlined in this report.

CalSTRS has long focused on corporate accountability and improving long-term returns in our portfolio. Corroborative and auxiliary research studies highlight that diverse human capital serving on corporate boards and in corporate leadership positions can significantly increase profitability at publicly listed companies. This may provide a higher risk-adjusted rate of return to CalSTRS as we continually uphold our promise to fulfill our mission in securing the financial future of California's educators.

CalSTRS believes a multipronged approach through collaboration with like-minded institutional investors, company engagements, shareholder proposals, and advocacy through involvement as speakers and panelists is moving the needle in improving board and corporate leadership diversity. In addition, we are actively involved with affinity groups taking a leadership/board role in a number of organizations as well as encouraging different avenues to source diverse candidates for corporate boards.



The following section outlines Corporate Governance's role, initiatives and accomplishments over the last year in improving diversity in the management of investments within our portfolio companies. CalSTRS believes this multifaceted approach is the most effective method to transform the market, including:

- **California Initiative**—Engaging CalSTRS' portfolio companies headquartered in California that have no women on their board.
- **Thirty Percent Coalition**—CalSTRS, along with 24 other institutional investors with more than \$3.2 trillion assets under management, continue to engage companies on board diversity.
- **Cross-Border Coalition of 4**—A global coalition of institutional investors composed of CalSTRS, the Ohio Public Employees Retirement System, Legal & General Investment Management, and APG Asset Management continues to engage companies on board diversity, refreshment and effectiveness.
- **Enhanced Diversity Initiative**—In 2016, the Teachers' Retirement Board directed staff to develop an enhanced diversity initiative to engage companies on pipeline diversity of staff and C-suite executives, thus increasing the potential pipeline of diverse candidates who will be able to serve on corporate boards, specifically in the financial and information technology sectors.
- **Human Capital Management**—The HCM Coalition, led by the UAW Retiree Medical Benefits Trust, is a group of 27 institutional investors with over \$2.9 trillion in assets under management working together to elevate human capital management as a critical component in company performance and improve management of human capital to improve shareholder returns. The HCM Coalition is a natural extension of our Enhanced Diversity Initiative as CalSTRS, along with these other institutional investors, filed a petition with the SEC on better reporting, including financial reporting of human capital management.
- **Diverse Director DataSource-3D**—The 3D database of diverse board-ready candidates with more than 400 candidates is currently housed within Equilar's BoardEdge.
- **Company Engagements**—Staff regularly engages companies on a number of corporate governance issues and always recommends companies include better board diversity disclosures in their annual proxy materials, either as an informational matrix or in pictorial form. We also ask for greater disclosure around annual board evaluations to ensure board members continue to have the necessary board composition and skill sets required based on a company's long-term strategy and business plan. We encourage disclosures to include each board member's gender, race and ethnicity, as well as the skills and experiences each board member contributes to the company's long-term strategy and business plan.

B

ENGAGEMENT: Portfolio Companies

Thirty Percent Coalition

In 2017, the coalition engaged 81 companies, with 24 companies appointing a woman to their board.



CalSTRS' Advocacy Through Partnerships



Thirty Percent Coalition

CalSTRS staff, along with 24 other large institutional investors, are actively engaging portfolio companies on board diversity. Through the Thirty Percent Coalition, CalSTRS and others have engaged a total of 250 companies since 2011, of which 150 have appointed at least one woman to their boards.

In 2017, the coalition engaged 81 companies, with 24 companies appointing a woman to their board. Additionally, to foster greater board diversity, the coalition requested companies to:

- Strengthen nominating and corporate governance policies and charters by embedding a commitment to diversity inclusive of gender, race and ethnicity.
- Commit to include women and underrepresented minority candidates in every pool from which board nominees are chosen (known as the Rooney Rule)².
- Expand board director searches to include nominees from both corporate positions beyond the executive suite and nontraditional environments, including government, academia and nonprofit organizations, and report on progress and any challenges experienced along the way.

For 2018, we anticipate engaging 128 companies with either no women or only one woman on their boards. These engagements include discussions on board evaluation, refreshment and board effectiveness.

CalSTRS' Director of Corporate Governance Anne Sheehan is a board member and co-chair of the Investors Subcommittee of the Thirty Percent Coalition. This year, coalition members filed a number of shareholder proposals with companies on the topic of greater board diversity.

Additionally on a quarterly basis, CalSTRS staff participates in the board call of the Thirty Percent Coalition Summit, bringing together members to update the strategic plan and discuss activities of the various subcommittees for the upcoming year.

²The Rooney Rule is named after Dan Rooney (died in 2017) who was the owner of the Pittsburgh Steelers football team and former U.S. ambassador to Ireland, which put in place a mechanism for diversifying workplaces. The Rooney Rule requires National Football League teams to interview at least one minority candidate when filling head coaching vacancies. First employed in 2003, it was devised as a way of hiring more minority coaches in a profession where almost 70 percent of the workforce is African American with just 6 percent minority head coaches at the time.

CalSTRS
is a
universal
owner
investing in
more than
8,000
global
securities.



California Initiative

A natural engagement initiative is CalSTRS' engagement of companies headquartered in California with no women on their board. In previous years, CalSTRS used the University of California-Davis Graduate School of Management study on women business leaders and directors in California. This year, CalSTRS used research by Annalisa Barret of Board Governance Research³ identifying 112 companies as of July 2017 with no women on the company's board of directors.

From this list, CalSTRS is currently partnering with the University of California's Board of Regents to engage 50 companies headquartered in California not previously engaged on board diversity. Staff is also following up with 27 companies from the 2016-17 California Initiative in which CalSTRS staff, in conjunction with the California Public Employees' Retirement System, sent letters focused on improving board diversity to 87 companies. As a result of last year's engagement, 22 companies nominated 25 women to their boards and/or amended their company's corporate governance policies or charter committing to diversity of gender, race and ethnicity, as well as expanding their search and nominating processes to include women and underrepresented minority candidates.

CalSTRS has filed 47 diversity shareholder proposals since 2009. In 2016-17, CalSTRS filed a board diversity proposal at Hudson Pacific Properties, with the proposal passing with more than 84 percent of votes cast. HPP recently announced the appointment of Andrea Wong to its board.

Coalition of Four-Cross Border Initiative

CalSTRS, along with two international institutional investors, APG and Legal & General Investment Management, and the Ohio Public Employees Retirement System, a U.S.-based pension fund, collectively representing assets under management of more than \$2.5 trillion, previously wrote letters to 60 companies to gain a better understanding of their various practices to ensure maximum board effectiveness and promote diversity. The 60 S&P 500 companies either had no women on their board or only one woman, while also having a significant proportion of their directors serving on the board for lengthy periods of time. The companies with no women on their boards are outliers in the S&P 500 where more women are being appointed to boards on a regular basis.

³ Annalisa Barrett is the founder and CEO of Board Governance Research, LLC, which provides independent research on corporate governance practices, board composition and director demographics. Ms. Barrett is also a full-time clinical professor of finance at the University of San Diego's School of Business.



The coalition emphasized that each board appointment is also an opportunity for boards to evaluate any skill set gaps tied to the company's long-term strategy and business plan. The breadth and depth of the discussions contributed enormously to the Coalition of Four's understanding of each company's desire to improve board diversity with its perspective of barriers or challenges it faces.

The coalition is currently working on a white paper to share outcomes and next steps. The cross-border coalition will expand to include another global asset manager to continue our efforts on board diversity, refreshment and board effectiveness.

Enhanced Diversity Initiative

In 2016, the Investment Committee approved the Corporate Governance Enhanced Diversity Initiative. The goal is for CalSTRS staff to have in-depth discussions with a select number of companies to understand their diversity programs and overall impact in developing diverse senior executive staff, as well as increasing the pipeline of diverse candidates to serve on their boards. Staff continues to compile information and engage companies on a regular basis. In fact, staff showcased some of the companies currently in the SSGA Gender Diversity Index for modeling diversity initiatives as best practice examples for other organizations. Staff continues to work on our enhanced diversity initiative.

Human Capital Management

CalSTRS, along with other HCM Coalition members, filed a petition through the HCM Coalition with the SEC in July 2017 asking for better disclosures on human capital management. This initiative is an essential extension of the CalSTRS Enhanced Diversity Initiative asking companies to provide better disclosures on metrics used to track their most important asset—human capital management. We believe better disclosure and metrics will provide a better understanding of a company's pipeline diversity at the staff and executive levels.

Additional Regulatory Efforts

In December 2017, CalSTRS sent a letter to SEC Chairman Jay Clayton reiterating our support for greater disclosure of diversity on corporate boards and highlighting our previously filed petition⁴ asking that the SEC require board member disclosures to evaluate the nominees' gender, racial and ethnic diversity, as well as their mix of skills, experiences and attributes needed to fulfill the corporation's mission in a matrix format.

⁴Filed an SEC petition for rulemaking in March 2015, along with other public fund fiduciaries (representing \$1.12 trillion in assets which included New York City, New York State Common Retirement Fund and others) to require board member disclosures to evaluate the nominees' gender, racial and ethnic diversity, as well as their mix of skills, experiences and attributes needed to fulfill the corporation's mission. A group of institutional investors representing \$1.12 trillion in assets filed a petition for rulemaking with the SEC asking for better board composition disclosures through some type of matrix information. For more information, visit sec.gov/rules/petitions/2015/petn4-682.pdf.

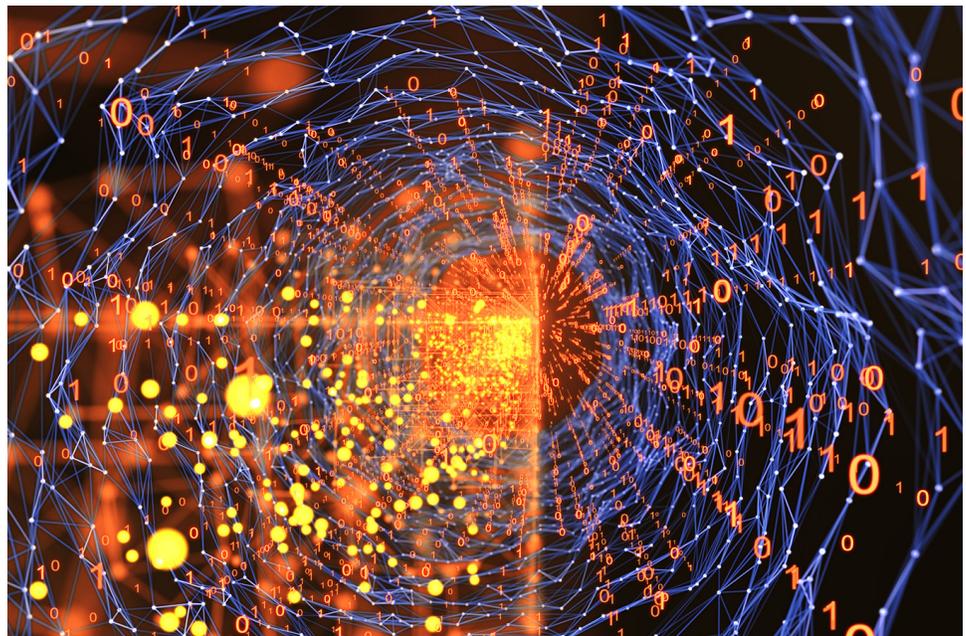


Diverse Director DataSource–3D

In 2011, CalSTRS and CalPERS worked with leading corporate governance experts to develop a new digital resource devoted to finding untapped diverse talent to serve on corporate boards. The Diverse Director DataSource, known as 3D, offers shareholders, companies and other organizations a resource from which to locate and recruit diverse individuals whose experience, skills and knowledge qualify them to be a candidate for a director's seat.

In 2016, CalSTRS and CalPERS announced that 3D will now be available through Equilar's BoardEdge. Launching 3D on Equilar's BoardEdge showcases the depth and availability of qualified, diverse directors. Equilar's BoardEdge is designed to connect candidates from various diversity organizations with corporate boards. Equilar now houses more than 20 diversity databases that boards can use to source board candidates.

Staff shares the search avenue of BoardEdge in our company engagements and encourages individuals that are board-ready to include their profile within 3D.





B

ENGAGEMENT: Advocacy In Action

CalSTRS staff continues our board-directed efforts on diversity and has seen extensive progress with mainstream investors regarding how they view the necessity of diversity and inclusion on boards. Large investment managers like BlackRock and State Street Global Advisors are taking substantive steps to advance board diversity through their campaigns by engaging and voting against directors on nondiverse boards. For example, Vanguard, known for its passive investing, is becoming more active as it engages companies on board diversity. Additionally, BlackRock plans to write to approximately 300 companies in the Russell 1000 that have fewer than two women on the board and ask them to disclose their approach to boardroom and employee diversity. The firm plans to ask the companies to set a time frame in which they will improve their diversity. In 2017, State Street also pressed its portfolio companies to improve their boardroom diversity.

Both Glass Lewis and ISS, the major proxy advisory firms, recently announced their 2018 proxy voting guidelines, with both recognizing the growing importance of board diversity among shareholders. Glass Lewis plans to continue to review the composition of boards and will note concerns where the board lacks representation of diverse director candidates, and in 2019, it will recommend voting against the nominating committee chair of a board that has no female members. ISS also plans to more closely scrutinize boards that lack diversity, and in 2019, will recommend voting against the chair of the nominating committee at companies that lack board diversity.

Additionally in 2017, the Teachers' Retirement Board approved amending our Corporate Governance Principles to allow staff to vote against nominating Corporate Governance Committee members—and, if necessary, the entire board—if after engagement about the lack of board diversity, sufficient progress has not been made in this regard. Staff is currently engaging companies where a vote against may develop in the 2018 proxy season.

Through collective partnerships and actions to date, staff consistently engages companies on board refreshments, which include pressing boards to annually evaluate their current board composition against their long-term strategy and business plan and assess whether gaps exist and to include diversity, skills and experience, board tenure and age. These engagements include the recommendation that companies include an informational matrix or pictorial representation of board diversity and skill sets in their annual proxy disclosures.

Key to staff's multipronged approach is advocating and sharing research to advance diversity across portfolio companies and in the investment management industry. Throughout 2017, CalSTRS Investments Branch executives, directors and staff continued to engage with and offer expertise to a variety of professional organizations, all of which work to attract, collaborate on, and encourage diversity initiatives through the following events:



Allianz Global Investors Center for Behavioral Finance was founded in June 2010 with the goal of empowering individuals to make better financial decisions and achieve better financial outcomes. To accomplish this, the center transforms academic research into actionable ideas and practical tools for financial professionals and plan sponsors to use with their clients and employees. Behavioral finance is a relatively new field that seeks to combine behavioral and cognitive psychological theory with conventional economics and finance to provide explanations for why people make irrational financial decisions. This field deals with cognitive biases and diversity issues.



Ascend Pan-Asian Leaders is the largest nonprofit Pan-Asian organization for business professionals in North America. Ascend has grown to serve professionals and corporations across multiple industries, offering robust career development programs designed to cultivate Pan-Asian talent.



The Association of Asian American Investment Managers is dedicated to elevating and increasing the visibility of Asian American investment professionals to institutional funds. In 2017, Director of Corporate Governance Anne Sheehan spoke on CalSTRS' diversity initiatives at the AAAIM event in New York City. Global Equity Director June Kim, Fixed Income Director Glen Hosokawa, Fixed Income Investment Officer Deb Ng and Innovation and Risk Director Steven Tong attended the 10th annual AAAIM Conference in Boston.



BNY MELLON

BNY Mellon and Win—In April 2017, BNY Mellon and Win celebrated International Women's Day in San Francisco. Risk Mitigating Strategies Portfolio Manager Carrie Lo and Investment Officer Michel Paniagua represented CalSTRS at the event.

TheCorporateCounsel.net

Corporate Counsel—In June 2017, Portfolio Manager Aeisha Mastagni shared an investor's perspective on corporate governance and diversity topics at the Women's 100 Conference in Palo Alto, CA. Investment Officer Mary Morris attended.



Equilar Diversity Network—

In November 2017, Investment Officer Travis Antoniono attended a mix of panel sessions and interactive peer-driven discussion to allow for candid insights related to strategy, board refreshment, executive compensation, shareholder engagement and board oversight expectations held in New York City.

Hispanic Heritage FOUNDATION

Hispanic Heritage Foundation's Leaders On Fast Track—CalSTRS is a partner with LOFT. Its main objective is to ensure that every young Latino interested in working in the financial services industry has at least one Latino to speak to about their relevant area of interest. In addition, LOFT hosts finance boot camps, leadership trainings, and facilitates internships and jobs in the industry for interested Latinos. LOFT also has an online community where active members can connect.



Latino Corporate Directors

Association—Founded in 2012, this organization of Hispanic corporate directors united to increase Hispanic participation in boardrooms across the U.S. In November 2017, Investment Officer Travis Antoniono spoke at the second annual Board Leaders Convening event in New York City.



National Association of Investment Companies Private Equity and Hedge Fund

Conference—Private Equity Director Margot Wirth spoke at this conference at Georgetown University in Washington, D.C. The conference is a platform by which advocacy, business opportunities and investment strategies are explored. NAIC hosts events where emerging domestic market managers, limited partners, investment officers and other industry professionals come together for networking and insight into industry trends.



The National Association of Securities Professionals

is a professional organization whose mission is to serve as a resource for the minority community at large and share information about securities and investments, including a data repository on current trends, facilitate education seminars, and provide extensive networking opportunities.

In January 2017, Global Equity Director June Kim and Portfolio Manager Geraldine Jimenez attended the Emerging Manager Forum in Baltimore.

In March 2017, CIO Christopher J. Ailman, Private Equity Director Margot Wirth, Inflation Sensitive Director Paul Shantic and Investment Officer Rona Johnson attended the Day of Education in Private Equity event in Southern California.

In June 2017, CIO Christopher J. Ailman and Chief Operating Investment Officer Debra Smith spoke at the Annual Pension and Financial Services Conference in Los Angeles.



New America Alliance is dedicated to advancing economic development of the American Latino Community. The NAA is organized on the principle that American Latino business leaders have a special responsibility to lead the process of building various forms of capital most crucial to Latino progress, including economic capital, political capital, human capital and various philanthropic efforts. On an annual basis, CalSTRS hosts a meeting with NAA CEO Maria del Pilar Avila and a group of NAA members to discuss the state of both organizations, projects for the year and ways in which collaboration can be increased. The September 2017 meeting was held in Los Angeles with CalSTRS Investment Officers Kristian Altier, Travis Antoniono, Helena Posner and Edgar Ramirez in attendance.

RG+associates *creating connections*

RG & Associates—In January 2017, RG+A's signature event, Consortium WEST, was held in Los Angeles and was attended by Real Estate Investment Director Mike Dire and Global Equity Portfolio Manager Candace Ronan.



Robert Toigo Foundation—CalSTRS has been associated with the Toigo Foundation since its beginning. Its mission is to foster the career advancement and increased leadership of underrepresented talent by creating mechanisms for greater inclusion from the classroom to the boardroom. Inflation Sensitive Director Paul Shantic and Investment Officer Josh Kawaii-Bogue attended its annual event.



Skytop Strategies ESG2 Summit—Skytop Strategies provides a platform for market-moving dialogue by connecting decision-makers through actionable exchange, revolutionizing the way 21st century companies create value. The Thirty Percent Coalition was the lead strategic partner for this conference. Investment Officer Mary Morris spoke on a panel regarding board diversity and its importance to investors.



SRI Conference on Sustainable, Responsible, Impact Investing

was held in November 2107 in San Diego. Investment Officer Mary Morris participated on a panel regarding the value of board diversity.

Stanford

**Michelle R. Clayman Institute
for Gender Research**

Stanford University Michelle R. Clayman Institute for Gender Research—Founded in 1974, the Michelle R. Clayman Institute for Gender Research at Stanford University creates knowledge and seeks to implement change to promote gender equality. In March 2017, Fixed Income Investment Director Glen Hosokawa attended the Beyond Bias Summit at the Stanford Graduate School of Business. In October 2017, Investment Officer Mary Morris, Diversity Officer Teejdeep Kochlar and Administrative Assistant Cariza Rapolla attended the Fall Corporate Program at Stanford.

STATE STREET GLOBAL ADVISORS



State Street Global Advisors and CalSTRS: Beyond Talk, Gender Diversity—In March 2017, State Street Global Advisors and CalSTRS hosted the Beyond Talk,

Gender Diversity forum in Los Angeles. CalSTRS participants included Chief Operating Officer Cassandra Lichnock, CIO Christopher J. Ailman, Deputy Chief Investment Officer Michelle Cunningham, COIO Debra Smith, Director of Corporate Governance Anne Sheehan, Global Equity Director June Kim, Investment Operations Director April Wilcox, Real Estate Investment Director Mike Dire and Portfolio Manager Geraldine Jimenez.



State Street Global Advisor, Silicon Valley Bank Capital and CalSTRS hosted Beyond Talk in November 2017. CIO Christopher J. Ailman spoke and DCIO Michelle Cunningham, COIO Debra Smith, Private Equity Director Margot Wirth and Investment Officer Sarah Maile attended.



Thirty Percent Coalition—The coalition holds meetings on improving gender diversity on company boards. Investment Officer Mary Morris attended the April 2017 mid-year meeting in New York City as a member of the Institutional Investors Committee. Ms. Morris is now the co-chair of this committee. She was joined by Director of Corporate Governance Anne Sheehan at the October 2017 summit meeting in New York City.



UAW Human Management Coalition—The Human Capital Management Coalition is a cooperative effort among a diverse group of influential institutional investors to further elevate human capital management as a critical component in company performance. The coalition engages companies to understand and improve how human capital management contributes to the creation of long-term shareholder value. In July 2017, the HCM Coalition filed a petition for rulemaking with the SEC asking for better disclosures of human capital management metrics.



Women in Commercial Finance Association is a community comprising industry leaders who provide the capital that fuels thousands of businesses and creates and sustains millions of jobs in the U.S. and around the world. In September 2017, Investment Officer Mary Morris was a panelist on “Board Diversity: Why Is it Important and Where Does it Stand Today?” in New York City.



Women's Forum of New York—In November 2017, Director of Corporate Governance Anne Sheehan attended the Breakfast of Corporate Champions forum.

Women in Governance Week was held in London in 2017. This conference brought together women executives from many institutional investors to advocate for more women in the investment field and on corporate boards. Portfolio Manager Aeisha Mastagni and other event participants came away with an action plan to improve board accountability and board diversity.



Women in Finance

100 Women in Finance—The focus of the 4th Annual West Coast Senior Practitioner Women's 100 Women in Hedge Funds Conference was to capitalize on diversity and connect with fellow top-tier institutional investors, allocators and consultants with women-led and women-owned hedge funds and asset managers. Representing CalSTRS were Risk Mitigating Strategies Portfolio Manager Carrie Lo and Investment Officer Michel Paniagua.

CalSTRS CHARTERED EVENTS



CalSTRS, in partnership with CalPERS, hosted the 2017 Diversity Forum in Sacramento which brought together investment and corporate executives to discuss how to better capitalize on the abilities of the diverse modern workforce. The forum featured experts from McKinsey & Company, the 30% Club, Microsoft, Harvard University, University of California-Merced, Mellon Capital, Blackstone, State Street Corporation, Morgan Stanley and more.

Over 350 professionals attended the event to learn from the speakers and network with others who share the same goal of furthering diversity and inclusion within the workplace. Due to the success of the event, we plan to partner with CalPERS to host another Diversity Forum.

Diversity & Inclusion THE POWER OF DIFFERENCE

At CalSTRS, diversity and inclusion is supported in our core value of strength: “We ensure the strength of our system by embracing a diversity of ideas and people.” Based on staff feedback, CalSTRS created a learning workshop for staff to interact with one another by providing insight and ideas for what diversity and inclusion means for each individual. In 2017, the all-day, interactive workshop titled Diversity and Inclusion: The Power of Difference was introduced and all employees are expected to participate.



Emerging Manager Reception

In October 2017, more than 100 emerging manager firms attended CalSTRS’ second Emerging Manager Reception where managers learned more about CalSTRS’ asset classes from key personnel. The event was supported by all asset classes: Global Equity–Candace Ronan, June Kim, Helena Posner; Private Equity–Margot Wirth, Nick Chladek, Rob Ross; Real Estate–Mike DiRe; RMS, Innovation & Risk–Steven Tong, Carrie Lo; Inflation Sensitive–John-Charles Gish; Corporate Governance–Aeisha Mastagni; Fixed Income–Debra Ng, Geetha Arani; Operations–Pedro De Morais, Mami Wong, Michael Lawrence; Administrative Unit–Alex Kinanahan; student interns–Ari Friedman, Jessica Padolina; and Executive Unit–Sarah Maile, Geraldine Jimenez.

A glowing yellow lightbulb is the central focus, set against a background of interlocking gears in shades of blue and yellow. The lightbulb is illuminated from within, casting a warm glow. The gears are arranged in a circular pattern, creating a sense of motion and mechanical complexity. The overall composition is dynamic and modern, with a color palette of blues, yellows, and greys.

EXTERNAL MANAGERS

C

EXTERNAL MANAGERS

CalSTRS Investment Philosophies

- Long-Term Patient Capital—buy long term with net cash flow and capital gain potential at a reasonable price.
- Heighten the diversification of the CalSTRS Total Investment Portfolio—enhance and achieve our risk-adjusted total return to fulfill our fiduciary responsibility in paying out benefits to California’s educators and beneficiaries.



CORPORATE GOVERNANCE

ASSETS UNDER MANAGEMENT

\$5.9 BILLION

PERCENT OF TOTAL FUND:



Source: AUM and percent of total fund from MyStateStreet as of December 31, 2017

Corporate Governance



As part of our Corporate Governance activist strategy, we encourage our managers to consider diversity of corporate boards within their engagements. Specifically, one of our external managers, Cartica, was founded in 2008 by a team of emerging markets and corporate governance experts and is majority women-owned. Headquartered in Washington, D.C., the firm had \$3.3 billion of assets under management as of December 31, 2017.

FIXED INCOME

ASSETS UNDER MANAGEMENT

\$29.2 BILLION
MARKET VALUE

PERCENT OF TOTAL FUND:



EMERGING MANAGERS

Assets Under Management:

\$491 MILLION
MARKET VALUE

Represents approximately **11%** of the total externally managed Fixed Income Portfolio.

Source: AUM and percent of total fund from MyStateStreet as of November 30, 2017

Fixed Income

More than 80 percent of the CalSTRS Fixed Income assets are managed internally. With respect to diversity, CalSTRS has a long-standing open door policy of using a diverse group of broker/dealers to execute trades and, as a result, currently does business with approximately 15 emerging firms. All trades are done in a competitive environment. Since the financial crisis in 2008, the trading environment has gone through many changes. With the added risks and increased regulations, broker/dealers in general are not making markets like they did. Liquidity is hard to find as broker/dealers have moved from principal trading to agency trading. This change has impacted smaller firms by making it more difficult to compete.

One area of success has been in primary market/new issuance where deals are released at a set price. Last year, the liquidity portfolio traded \$4 billion, or 7.3 percent of trades, with emerging broker/dealers.

The CalSTRS Fixed Income External Manager Program is composed of five managers and one emerging manager. Fixed Income does not have a dedicated emerging manager program; however, the selection process has evolved over time to facilitate the consideration of a broad universe of managers regardless of assets under management, based on quantitative and qualitative factors that are indicative of a successful asset management business partner.

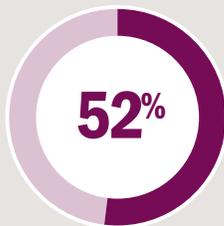
Based on the CalSTRS belief that investment opportunities can appear in large, small and start-up firms, Fixed Income established a process and a team of investment professionals to review all new investment opportunities. Each opportunity is reviewed for strategic fit, risk and alpha opportunity. All opportunities, incorporating several different strategies, are reviewed and logged into the Opportunities database. Since inception, this database has grown to capture over 410 investment opportunities. This process was designed not only to facilitate manager access to CalSTRS, but also to serve as a way for CalSTRS to assess opportunities and market conditions.

GLOBAL EQUITY

ASSETS UNDER MANAGEMENT

\$117.5 BILLION
MARKET VALUE

PERCENT OF TOTAL FUND:



DEVELOPING MANAGER PROGRAM

\$2.1 BILLION
MARKET VALUE

Represents approximately **4%** of the total **\$50.3 billion** Active Equity Portfolio.

Source: AUM and percent of total fund from MyStateStreet as of December 31, 2017

Global Equity

Within the CalSTRS Global Equity Portfolio, diversification is a key consideration, not only in terms of achieving returns and mitigating risk, but also in terms of benefits that different backgrounds, experiences and ideas bring to the overall performance of the portfolio.

CalSTRS invests with developing managers to capture alpha potential, to provide more opportunities for newer, smaller firms, and to access new talent and future manager capacity. In addition to incorporating developing managers into our Global Equity Portfolio, CalSTRS' ultimate goal is to allow managers who have performed well in terms of the investments and overall business operations to move to direct relationships with CalSTRS when there is a need for a specific sub-asset class or investment style in the portfolio.

The Developing Manager Portfolio is dynamic, changing to meet ongoing demands of the overarching Global Equity Portfolio. In 2017, CalSTRS Investments staff completed the implementation of the 2015 Asset Allocation Policy, which proposed a modest reallocation of capital to better diversify the portfolio and preserve capital. Decisions made as a result of the board's asset allocation study were to reduce equity exposure by about 8 percent of the total fund, or around \$14 billion, and reduce U.S. equity exposure, while increasing holdings in non-U.S. equities. As a part of this asset allocation change, the Global Equity Developing Manager Portfolio was restructured to better position it for success by shifting investment dollars from U.S. equities to non-U.S. equities, which are less efficient markets and have more opportunity for performance growth.

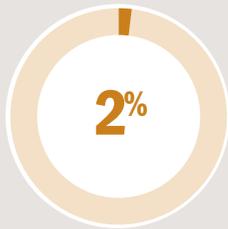
To complement internal resources and optimize staff's efforts to meet CalSTRS' investment goals, staff now works with four managers-of-managers who design manager portfolios to fulfill U.S. small cap mandates and non-U.S. developed markets mandates. All of these firms are minority and/or women-owned and have underlying relationships with approximately 24 developing managers—seven of which are minority-owned firms and five of which are women-owned firms. Of the \$2.1 billion invested with developing managers, 39 percent is invested in minority-owned firms and 26 percent in women-owned firms.

INFLATION SENSITIVE

ASSETS UNDER MANAGEMENT

\$3.6 BILLION
MARKET VALUE

PERCENT OF TOTAL FUND:



Agriculture

\$27 MILLION
MARKET VALUE

Commodities

\$365 MILLION
MARKET VALUE

Infrastructure

\$2.4 BILLION
MARKET VALUE

Timber

\$184 MILLION
MARKET VALUE

U.S. TIPS

\$590 MILLION
MARKET VALUE

EMERGING MANAGERS

\$610 MILLION
TOTAL MARKET VALUE

Represents approximately **17%** of the Inflation Sensitive Portfolio.

Source: AUM and percent of total fund from MyStateStreet as of December 31, 2017

Inflation Sensitive

The CalSTRS Inflation Sensitive asset class provides improved diversification to the total fund and invests in strategies that are intended to protect against inflation while taking reasonable and prudent risk.

In mid-2017, the Global Linkers Portfolio was transitioned and re-established as a U.S. TIPS portfolio to better capture U.S. domestic inflation. The portfolio, like its predecessor, will continue to be managed internally by the CalSTRS Fixed Income Unit. The portfolio uses a risk-controlled strategy with minimal tracking error. This strategy represents a relatively efficient, cost-effective way to provide market-like returns over time. The performance objective for the portfolio is to exceed the benchmark over a full market cycle, generally lasting three to five years.

The Infrastructure Investment Policy was established by the board in 2008, a dedicated investment team was put in place in 2010, and the first investment was made in 2011. The Infrastructure Portfolio consists of investments that generally include a relatively stable return stream, have a higher correlation to inflation than equity or fixed income investments, and provide a hedge against long-term liabilities and inflation. In 2017, approximately \$1.2 billion in new infrastructure commitments were made. Further diversifying the Inflation Sensitive Portfolio, inaugural commitments were made to the agriculture, commodities and timber portfolio in the amounts of \$100 million, \$350 million and \$250 million, respectively.

The Inflation Sensitive asset class seeks to construct a portfolio with fund managers from diverse backgrounds and continues to meet with new managers. Although the Infrastructure program has committed to managers of diverse nationalities, it often has difficulty identifying funds owned or operated by women and ethnic minorities that meet the program's requirements.

Though certain issues related to identifying these managers are unique to the infrastructure sector, others apply more broadly to timber, commodities, agriculture and other areas of the asset management industry. Infrastructure is a relatively new asset class and there are a limited number of asset management companies with meaningful track records. As seen throughout the asset management industry, only a few of these management companies are owned or operated by women or ethnic minorities. The Inflation Sensitive asset class is further constrained by scale. Because of resource limitations and the program's size, CalSTRS must target larger funds in order to make investment commitments of sufficient scale to efficiently deploy capital.

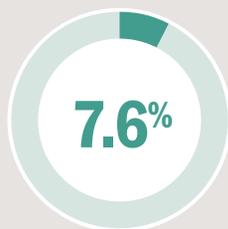
The need for investments in assets with strong linkages to inflation is a global phenomenon and draws investment managers on a worldwide scale. Investment demand from private capital sources remains strong, and as the Inflation Sensitive Portfolio expands, staff expects it will attract and include exceptional managers with diverse teams.

PRIVATE EQUITY

ASSETS UNDER MANAGEMENT

\$16.8 BILLION
MARKET VALUE

PERCENT OF TOTAL FUND:



EMERGING MANAGERS

Assets Under Management:

\$1 BILLION
MARKET VALUE

Represents approximately **6.3%** of the total Private Equity Portfolio's assets under management.

Source: AUM and percent of total fund from Alternative Investment Solutions, a unit of StateStreet, as of November 30, 2017

Private Equity

The CalSTRS Private Equity Portfolio's current components include limited partnership commitments, side-by-side co-investments and secondary transactions. It is a global portfolio with approximately 80 percent in U.S.-based funds. The portfolio is concentrated with 133 active manager relationships. Selection is biased toward partnerships with experienced and stable management teams, strong track records, appropriately sized funds and high levels of side-by-side general partner commitments. Strong alignment of interests and utmost integrity are requisite.

All investment proposals are evaluated in the same manner. The funnel is widened with facilitated access in order to increase diversity; however, once an investment proposal is in the pipeline for consideration, a standard, rigorous evaluation process is followed. All firms are treated the same, and all investment decisions are made by the same committee, based solely on the needs of the portfolio and the merits of the proposal. Part of the Private Equity Portfolio's strategy focuses on investing with new and emerging managers, investing in underserved markets, and investing in niche or specialty emerging managers. For first, second or third-time institutional private equity funds, CalSTRS developed a feeder program in cooperation with Invesco Private Capital.

As of January, Invesco has committed \$381.2 million into groups that represent diversity in the senior partnership team with roughly 60 percent of total capital commitments to diverse groups. Furthermore, CalSTRS committed \$250 million to Invesco in early 2017 to continue the strategy of investing in first, second or third-time institutional managers, of which Invesco anticipates several will represent the diversity of the state of California.

For private equity funds specializing in reaching inner U.S. cities or other underserved markets, CalSTRS developed a feeder program, the first HarbourVest Horizon Fund, in cooperation with HarbourVest Partners, LLC. HarbourVest invested \$585 million in 55 funds and \$489 million in 44 diverse-led funds. Out of these 55 funds, 80 percent of these are led by at least one diverse partner and 33 percent are led by at least one woman. Additionally in December 2017, CalSTRS committed \$250 million to HarbourVest Horizon Fund VI.

CalSTRS also invested in Muller & Monroe Asset Management, LLC's, commingled fund, which focuses on emerging and niche firms focused on the lower middle market where women and minority-owned funds are actively considered. The commingled fund is now fully committed as Muller & Monroe invested \$124 million in 11 funds where 50 percent of the fund managers have partners that are women or ethnically diverse. Muller & Monroe anticipates making another commitment in 2018 to continue the effort to reach these lower middle-market managers.

REAL ESTATE

ASSETS UNDER MANAGEMENT

\$26.6 BILLION
MARKET VALUE

PERCENT OF TOTAL FUND:



EMERGING MANAGERS

Assets Under Management:

\$7.2 BILLION
MARKET VALUE

Represents approximately **35%** of the total **\$26.6 billion** U.S.-only Real Estate Portfolio.

Source: AUM and percent of total fund from Alternative Investment Solutions, a unit, StateStreet, as of September 30, 2017, adjusted for actual cash flows through December 31, 2017

Real Estate

CalSTRS has been investing with emerging real estate managers since 2001. Approximately 35 percent of the current U.S.-only Real Estate Portfolio is invested with 26 emerging managers and six are diverse-owned.

Believing there is no single correct method for investing with emerging managers, Real Estate staff uses a multifaceted approach to invest with emerging managers: direct joint venture relationships, manager-of-manager ventures and funds of funds to provide the widest exposure. CalSTRS continues to review and reassess how we invest with emerging real estate managers. In 2017, CalSTRS made continued progress on our Real Estate Emerging Manager Implementation Plan by increasing exposure to diverse real estate managers.

Additionally, staff continued to grow and nurture existing manager relationships but also executed a new direct investment with Jair Lynch Real Estate Partners. Specializing in Washington D.C., the firm was founded in 1998 by Jair Lynch with the mission of redeveloping urban markets. The firm has since developed over 4.2 million square feet of real estate projects valued at over \$1 billion. CalSTRS was first introduced to Jair Lynch through the MacFarlane Emerging Manager Fund in 2006. Under MacFarlane's oversight, the success of the Jair Lynch investment opened the window in 2017 for CalSTRS to make a new \$200 million commitment directly with an emerged manager.



RMS, INNOVATIVE STRATEGIES AND RISK

ASSETS UNDER MANAGEMENT

\$19 BILLION
MARKET VALUE

PERCENT OF TOTAL FUND:



RISK MITIGATING STRATEGIES

\$17.5 BILLION

INNOVATIVE STRATEGIES

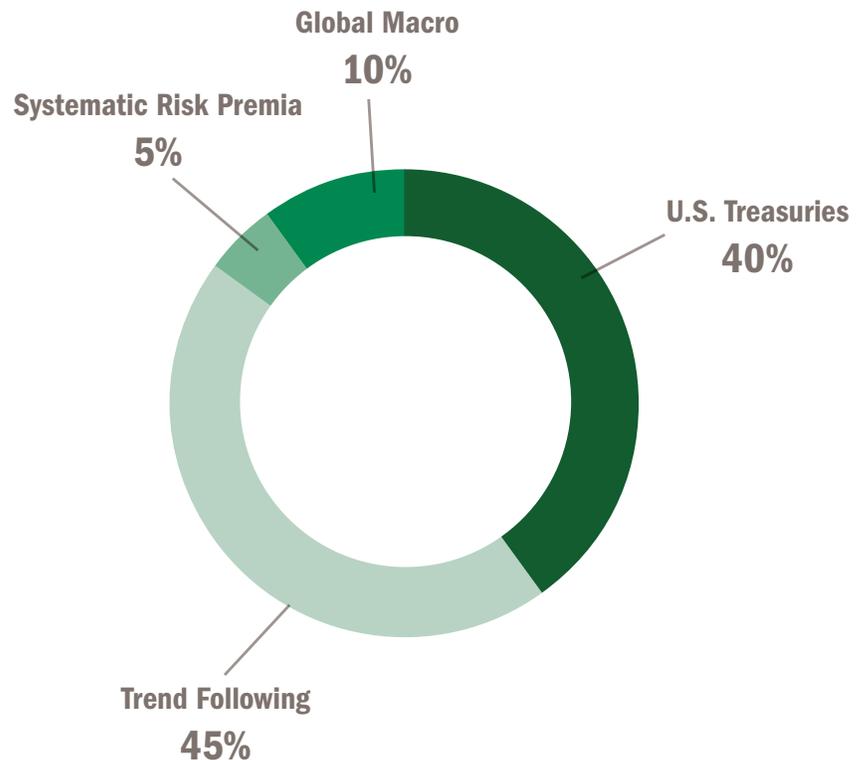
\$1.5 BILLION

Source: AUM and percent of total fund from MyStateStreet as of December 31, 2017

RMS, Innovative Strategies and Risk

The RMS, Innovative Strategies and Risk Unit (formerly known as Innovation and Risk) was established in 2009. The Risk Mitigating Strategies team invests in strategies with potential to provide capital protection during equity market downturns. The Innovative Strategies team researches and incubates strategies that are new to CalSTRS and are expected to improve the overall risk and return characteristics of the total fund. The Risk Mitigating Strategies team monitors and manages risk across asset classes as well as discusses how best to allocate funds going forward.

Risk Mitigating Strategies has a long-term target allocation of 9 percent of the total fund and will consist of allocations to four strategies: long-duration U.S. Treasuries (40 percent), trend following (45 percent), global macro (10 percent) and systematic risk premia (5 percent). The allocation to long-duration U.S. Treasuries will be managed internally by CalSTRS staff while the remaining allocations will be managed externally. As of June 30, 2017, \$5 billion had been allocated across six trend following managers and \$1.5 billion had been invested across six global macro managers. The manager selection process for systematic risk premia began in the second half of 2017.



Up to 2.5 percent of the total fund may be invested in Innovative Strategies, and each strategy may account for up to 0.5 percent of the total fund. A strategy that is determined to be potentially beneficial is incubated for up to three years with a small allocation of capital and a few managers. After the three-year period, staff and the Investment Committee will discuss whether a strategy should become a larger part of the portfolio, studied further or discontinued.

During the 2016–17 fiscal year, for example, the lone opportunistic strategy was transferred to another asset class after a successful incubation period. As of June 30, 2017, approximately \$0.4 billion remained invested in three risk-based allocation strategies with approximately \$0.3 billion committed to private debt strategies. The Innovative Strategies team also oversees about \$0.9 billion in covered call and low volatility equity strategies currently included in the CalSTRS Global Equity team’s total assets.

Both RMS and Innovative Strategies base their investment decisions on a number of qualitative and quantitative factors, including performance during equity or fixed income drawdowns and volatile periods, correlations to traditional market indices and liquidity.

Managers are evaluated based on the quality of the team and organization, track record, willingness to share market information and role in the portfolio, among other considerations. Environmental, social and governance concerns are also taken into account.

Staff consistently seeks to identify the most competitive and experienced partners to achieve each program’s goals. At present, the RMS Portfolio does not have a dedicated emerging manager program; however, the growth of the asset class is expected to provide opportunities to increase diversity over the next several years. Similarly, the Innovative Strategies Portfolio does not currently have a dedicated emerging manager program due to its small allocations, potentially brief investment period and early stage of the portfolio.





INVESTMENT OPERATIONS

Investment Operations is an integral part of the Investments Branch. Its primary function is to provide middle office support for internal and external portfolio activities by performing pre-settlement and post-trade portfolio controls, trade management and cash flow analysis.

Investment Operations' strength stems from a diverse group of people and perspectives. They collaborate with a diverse range of external business partners to manage the operations of the CalSTRS Investment Policy and Management Plan and to protect investment assets. Their recruiting methods are designed to capture a broad range of academic, gender and ethnic backgrounds. They participate in the Student Intern Program and the Investment Mentor Program, and contribute to diversity research, reporting and events throughout the year. Investment Operations has two active members on the CalSTRS Diversity Committee.

Investment Operations partners with all asset classes to align operational services for the successful implementation of the CalSTRS Investment Policy and Management Plan. Staff plays a major role within the branch by working in conjunction with the custodian to protect investment assets, which enables investment management to concentrate on generating alpha.

Core Responsibilities of Investment Operations:

- Trade Processing/Security Settlement
- Cash Management and Forecasting
- Portfolio/Account Set Up
- Collateral Margin Movement
- Portfolio Reconciliation
- Market Opening for Investment Activity
- Corporate Action Processing

APPENDIX 1

CalSTRS Emerging Manager Definitions

Asset Class	Emerging Definition	Minimum Qualifications
Global Equity Investment Managers	At initial funding, firm must have no more than \$5 billion in total assets under management and no more than \$2 billion managed in the specific strategy.	Firm must be a legally structured entity with a Corporate Tax Identification Number. Firm must be a registered investment advisor, or must qualify for exemption from registration.
Private Equity Funds	Firm must be a first, second or third-time private equity institutional fund, and raising a fund under \$1 billion. Firm must have a maximum of 55 percent nonemployee ownership.	Firm must be a legally structured entity with a Corporate Tax Identification Number. Firm must have a private placement memorandum in place.
Fund of Private Equity Funds	Firm must have \$3 billion or less in assets under management. In addition, the firm must: <ul style="list-style-type: none"> • Have a maximum of 55 percent nonemployee ownership, or • Be specifically focused on emerging private equity funds. 	Firm must be a legally structured entity with a Corporate Tax Identification Number. Firm must have a private placement memorandum in place or a similar proposal, in the event of a separate account relationship.
Real Estate Partnerships	Firm must have \$1 billion or less in assets under management. Firm must have a maximum of 67 percent nonemployee ownership.	Firm must be a legally structured entity with a Corporate Tax Identification Number. Firm must have a private placement memorandum in place, or have a similar proposal in the event of a separate account relationship.

Asset Class	Emerging Definition	Minimum Qualifications
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**REITs
(Real Estate
Investment
Trusts)**

Firm must have \$500 million or less in assets under management. Firm must have a maximum of 55 percent nonemployee ownership.

Firm must be a legally structured entity with a Corporate Tax Identification Number. Firm must be an RIA or must qualify for exemption from registration.

Infrastructure

Firm must have no more than \$3 billion in total assets under management and be raising a first, second or third-time vehicle which is no larger than \$1.5 billion. Nonemployee ownership of the firm cannot exceed 55 percent.

Firm must be a legally structured entity with a Corporate Tax Identification Number. Firm must be headquartered in the U.S. and have a private placement memorandum in place for the investment vehicle being raised. Firm partners must have a demonstrable track record with managing investments on behalf of institutional investors.

**Risk
Mitigating
Strategies**

Firm must have \$1 billion or less in assets under management or have up to one existing institutional investor. Firm must have a maximum of 55 percent nonemployee-owned ownership.

Firm must be a legally structured entity with a Corporate Tax Identification Number.

Broker-Dealers

Firm must have \$25 million or less in annual commissions. Firm must have \$50 million or less in net equity capital as defined by the NASD. Firm must have a maximum of 55 percent nonemployee ownership.

Firm must be a legally structured entity with a Corporate Tax Identification Number. Firm must be a NASD registered firm.

APPENDIX 2

Process for Considering Investments With Emerging Managers

Fixed Income

Based on CalSTRS' belief that investment opportunities can appear in large, small and start-up firms, Fixed Income has established a process and a team of investment professionals to review all new investment opportunities. Each opportunity is reviewed for strategic fit, risk and alpha performance potential. All opportunities, incorporating several different strategies, are reviewed and logged into the opportunities database. Since inception, this database has grown to capture over 410 potential investments. This process was designed not only to facilitate manager access to CalSTRS, but also to serve as a way for us to assess future opportunities and market conditions.

Global Equity

After identifying a business need for a specific type of product in the portfolio, CalSTRS posts an advertisement of a solicitation on **CalSTRS.com**.

- Potential managers are given approximately two weeks to enter or update information in a specified database.
- Staff then screens for qualified managers in the defined database universe based on qualifications specified in the solicitation advertisement. The initial screen is finalized by selecting the top candidates based on CalSTRS-defined criteria.
- Those managers who are identified at this stage are invited to submit proposals to CalSTRS. Staff reviews the submitted proposals and verifies the accuracy of the information.
- Staff then scores all of the submitted proposals, and finalists are selected and invited for an interview at CalSTRS. The top scoring managers after the finalist interviews are subject to due diligence on-site inspections and negotiation of contract terms. Managers who are not selected for an initial funding are placed in the pool and may be funded at a future date based on portfolio needs.

Inflation Sensitive

The CalSTRS Inflation Sensitive Program seeks to employ and retain experienced investment managers that possess superior selection and management ability with respect to the targeted investment category. Investment managers are evaluated for selection based on criteria which include the:

- Suitability of the organization's investment strategy with respect to CalSTRS' Inflation Sensitive policy, investment guidelines and objectives, and portfolio needs.
- Quality, stability, integrity and experience of the management team.
- Ability and willingness of the firm to dedicate sufficient resources and personnel to optimally manage CalSTRS' investments.
- Reasonableness of investment terms and conditions, including provisions to align interests of management and CalSTRS.
- Appropriateness of management controls and reporting systems.
- Manager's commitment to responsible contracting policies and their consideration of environmental, social and governance issues.
- Financial strength of the investment manager.
- Scope and quality of services provided.

The Inflation Sensitive Unit is open to meeting with managers of infrastructure assets and reviewing potential opportunities that are suitable and meet the needs of the portfolio. Investment managers specializing in infrastructure assets can request a meeting and submit proposals to **Infra-Investments@CalSTRS.com**.

Private Equity

CalSTRS requires that two independent due diligence tracks and approvals be reached before a direct commitment is made to any fund. One track is by our advisors and the other is by CalSTRS staff. Both must agree or the deal does not get done. Thus, we highly encourage funds to begin with our advisors first as this process is fashioned to be effective and efficient, targeted and make the best use of time. The following is a list of the advisors to CalSTRS' Private Equity:

- U.S. underserved space mandate—HarbourVest Partners. Managers may send their private placement memorandum to Edward Powers at **edward.powers@harbourvest.com**.
- U.S. new and next generation managers (first, second or third-time funds) —Invesco Private Capital. Managers may send their PPM to Amit Tiwari at **amit_tiwari@invesco.com**.

- U.S., Latin American and/or Asian offerings—Cambridge Associates, LLC. Managers may send their PPM to **CalSTRSteam@cambridgeassociates.com**.
- European and Middle Eastern offerings—Pavilion Alternatives Group. Managers may send their PPM to **funds@pavilioncorp.com**.

CalSTRS is also an investor in one of Muller & Monroe's commingled fund-of-funds vehicle which invests in both emerging managers and niche or specialty private equity managers nationally. Managers may send their PPM to Rendel Solomon at **rendel.solomon@m2am.com** for further information about this vehicle.

Real Estate

Upon determination that an opportunity may be suitable for CalSTRS' investment objectives, staff will decide whether it's appropriate to pursue a direct commitment to the opportunity or to refer the opportunity to an existing partner funded with CalSTRS equity.

- If an emerging manager has a successful track record and a strong prior background of investing institutional capital, CalSTRS staff may consider a direct investment with that manager. If, however, the emerging manager has yet to garner significant institutional investment experience, staff may refer the firm to one or more of several existing CalSTRS partners, with the aim of funding the emerging manager through the existing partner until sufficient institutional experience is acquired to merit a direct relationship with CalSTRS.
- CalSTRS Real Estate investment staff has also invested in certain funds of funds and managers of managers which specifically seek to direct CalSTRS capital to emerging managers. Staff will continue to seek out such managers going forward.
- Emerging managers selected by CalSTRS Real Estate investment staff and their partners are expected to reflect the rich diversity found within the United States as such diversity should bring not only varied skills and investment approaches but also broader perspectives into the investment process.
- The goal of the Real Estate Portfolio is to invest in and with small emerging managers who need capital and infrastructure to grow their businesses to an institutional level. CalSTRS intends to provide a link between institutional capital and local, emerging managers, including minority and woman-owned firms to create a diversified, risk-controlled, multi-manager investment portfolio.

CALSTRS[®]
HOW WILL YOU SPEND YOUR FUTURE?