



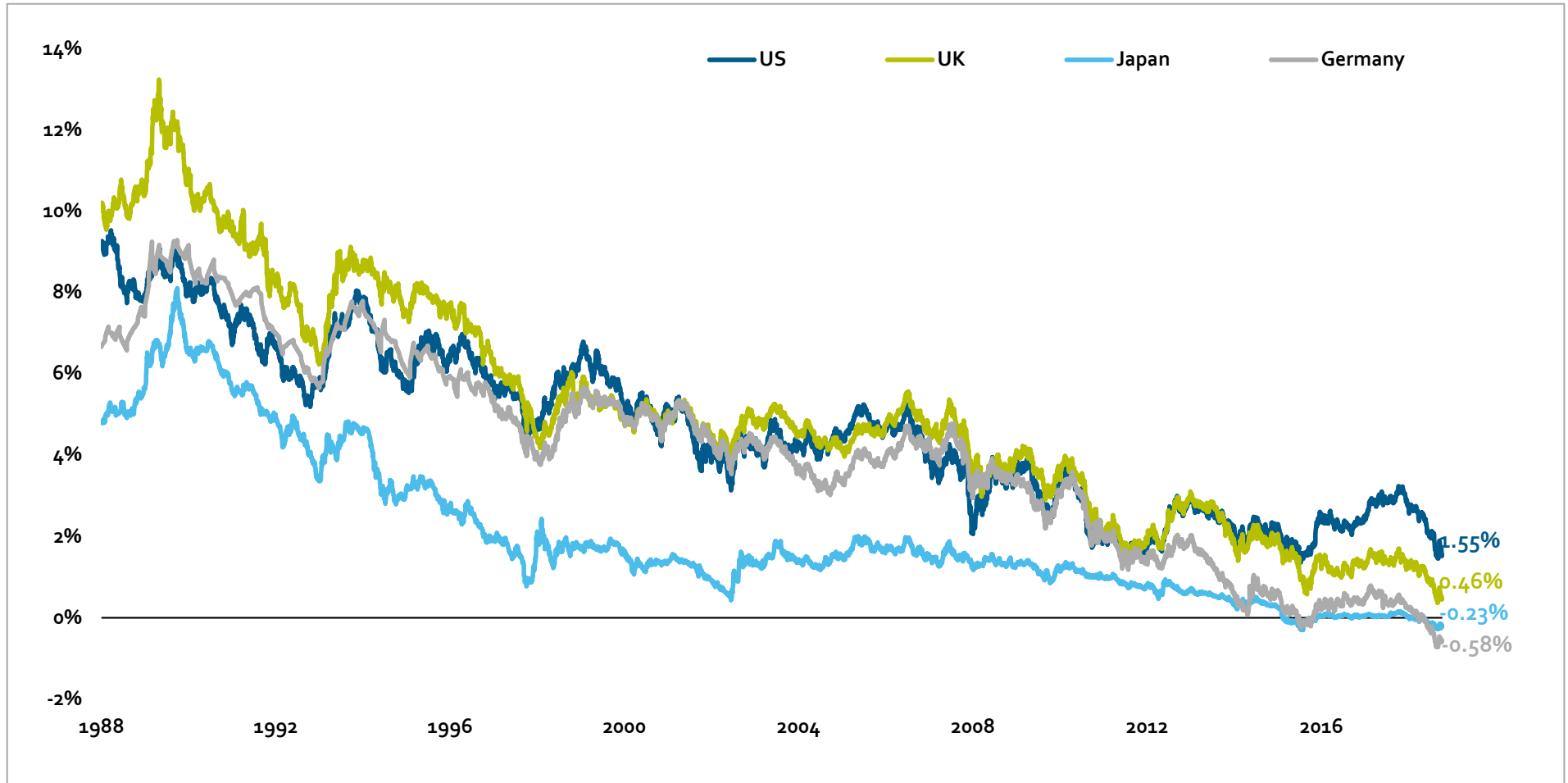
**San Jose Federated City Employees' Retirement System
San Jose Police & Fire Department Retirement Plan**

San Jose City Retirement Working Group
November 12, 2019

Global Sovereign Rates

10-Year Sovereign Bond Yields

Daily Data as of October 08, 2019



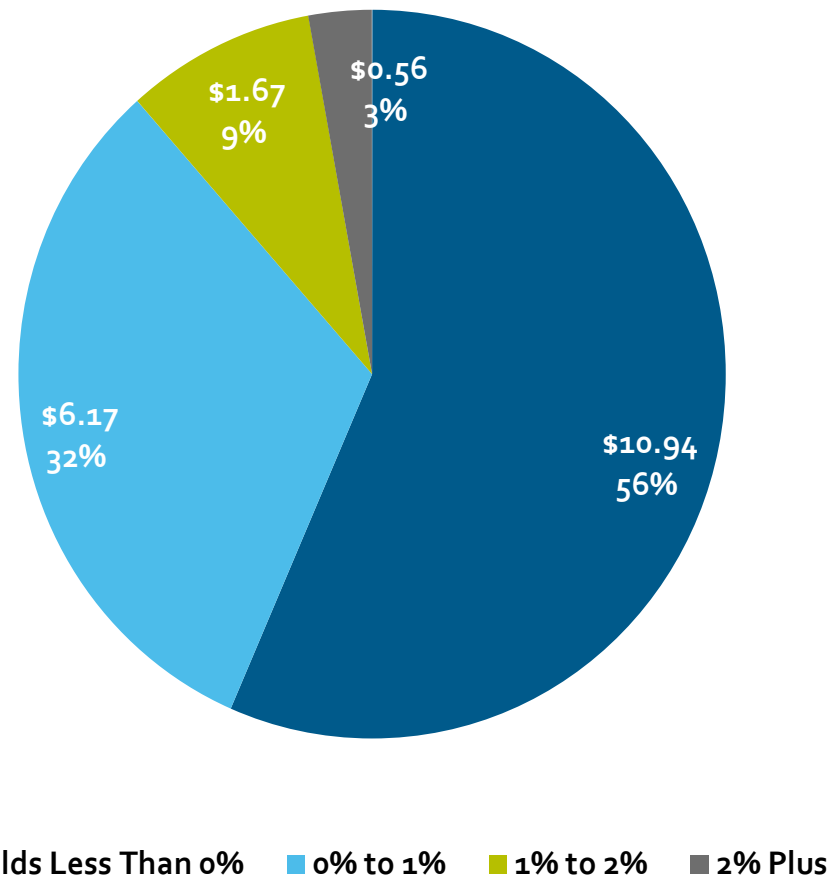
Source: FactSet, Morgan Stanley Wealth Management GIC

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Global Treasury Yields

% of Sovereigns Trading at Negative Yields¹ (Showing Trillions of USD)

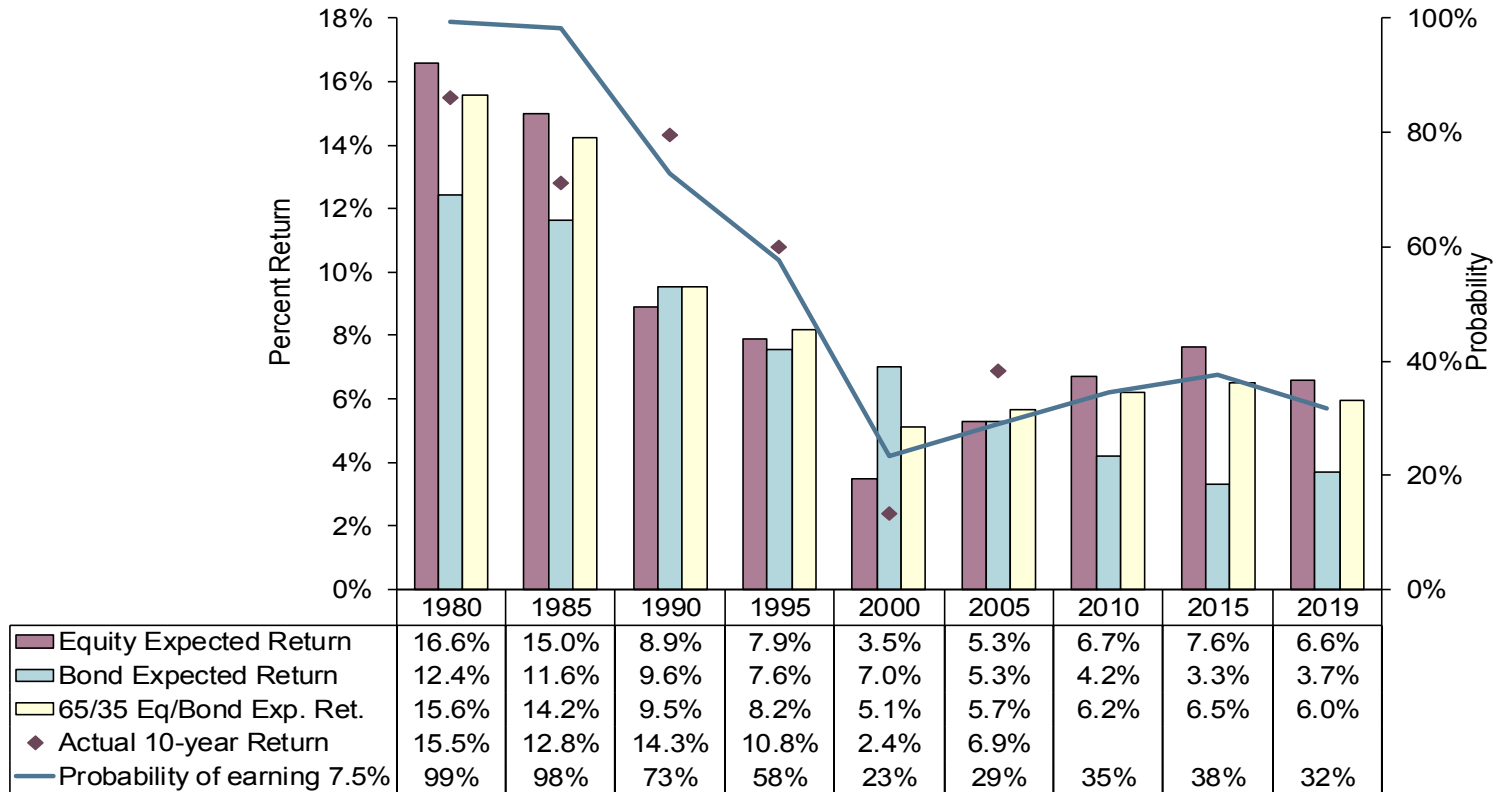
Data as of October 08, 2019



Source: Bloomberg, Morgan Stanley Wealth Management GIC. (1) Percentage of Sovereigns trading at negative yields uses Bloomberg Global Treasury ex US Index as a proxy for the global developed bond market.

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There Has Been a Decline in Available Investment Returns¹



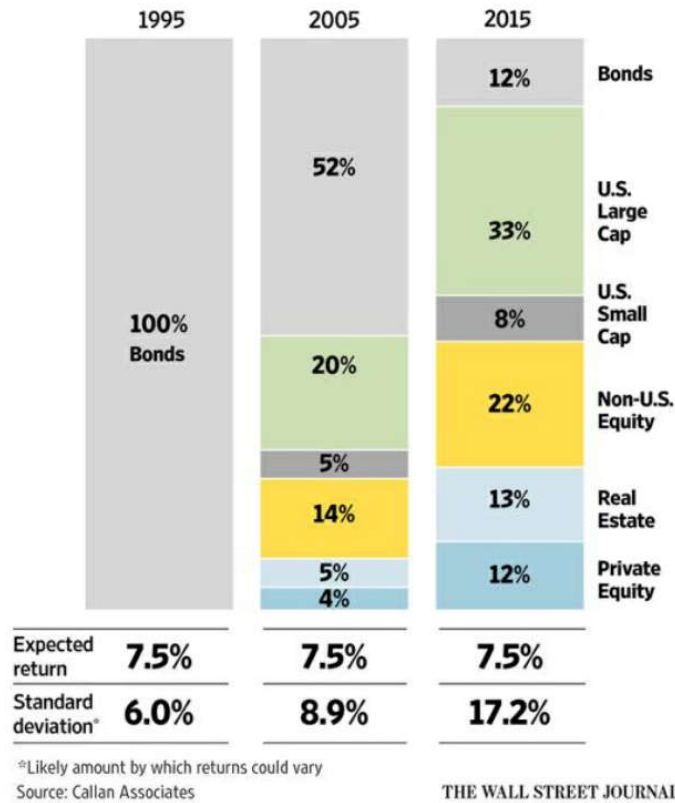
- The chart above illustrates that a portfolio comprising of 65% domestic stocks and 35% investment grade bonds has produced diminishing expected returns, as well as actual returns, over the past 30 years.

¹ Expected return assumptions for 1) Bonds equals the yield of the ten-year Treasury plus 100 basis points, and 2) Equities equals the dividend yield plus the earnings yield of the S&P 500 index (using the inflation-adjusted trailing 10-year earnings). Probability calculation is for the subsequent ten years.



Investors Must Now Take More Risk to Achieve the Same Return as in the Past

Estimates of what was needed to earn 7.5% over time



Return Expectations for Investment Firms are Lower Than in Past Decades

Expected Return	BlackRock ¹ 5 Yr (%)	Goldman Sachs ¹ 5yr (%)	Morgan Stanley ² 5 Yr (%)	GMO ^{1,3} 7 Yr (%)	Verus ⁴ 10 Yr (%)	Meketa 10 yr (%)	Meketa 20 Yr (%)
Global Equity	9.6	4.0	7.0	2.9	6.8	7.8	8.6
U.S. Equity	6.9	3.0	5.5	-0.1	5.6	6.3	8.1
Emerging Markets Equity	9.4	4.0	8.3	6.8	8.6	10.5	10.4
Private Equity	12.5	N/A	11.2	N/A	8.8	8.8	10.1
U.S. Fixed Income	3.3	3.0	4.4	2.2	3.3	3.3	3.9
Emerging Markets Debt	4.8	4.0	7.3	4.7	6.8	5.1	5.3
TIPS	3.3	N/A	3.8	2.2	3.0	3.2	3.6
Real Estate	6.1	N/A	8.6	1.1	6.1	6.4	7.0
Hedge Funds	6.2	4.0	6.4	N/A	4.4	4.5	5.4
Commodities	N/A	N/A	3.3	N/A	4.2	5.8	5.0

- The table above compares recently released capital markets assumptions (expected returns per year) from a variety of investment firms. Unsurprisingly, the short-term return expectations for most asset classes tend to be lower than the long-term expectations.

¹ Source: Long Term Expected Returns from Global Multi-Asset Team presentation dated December 2018.

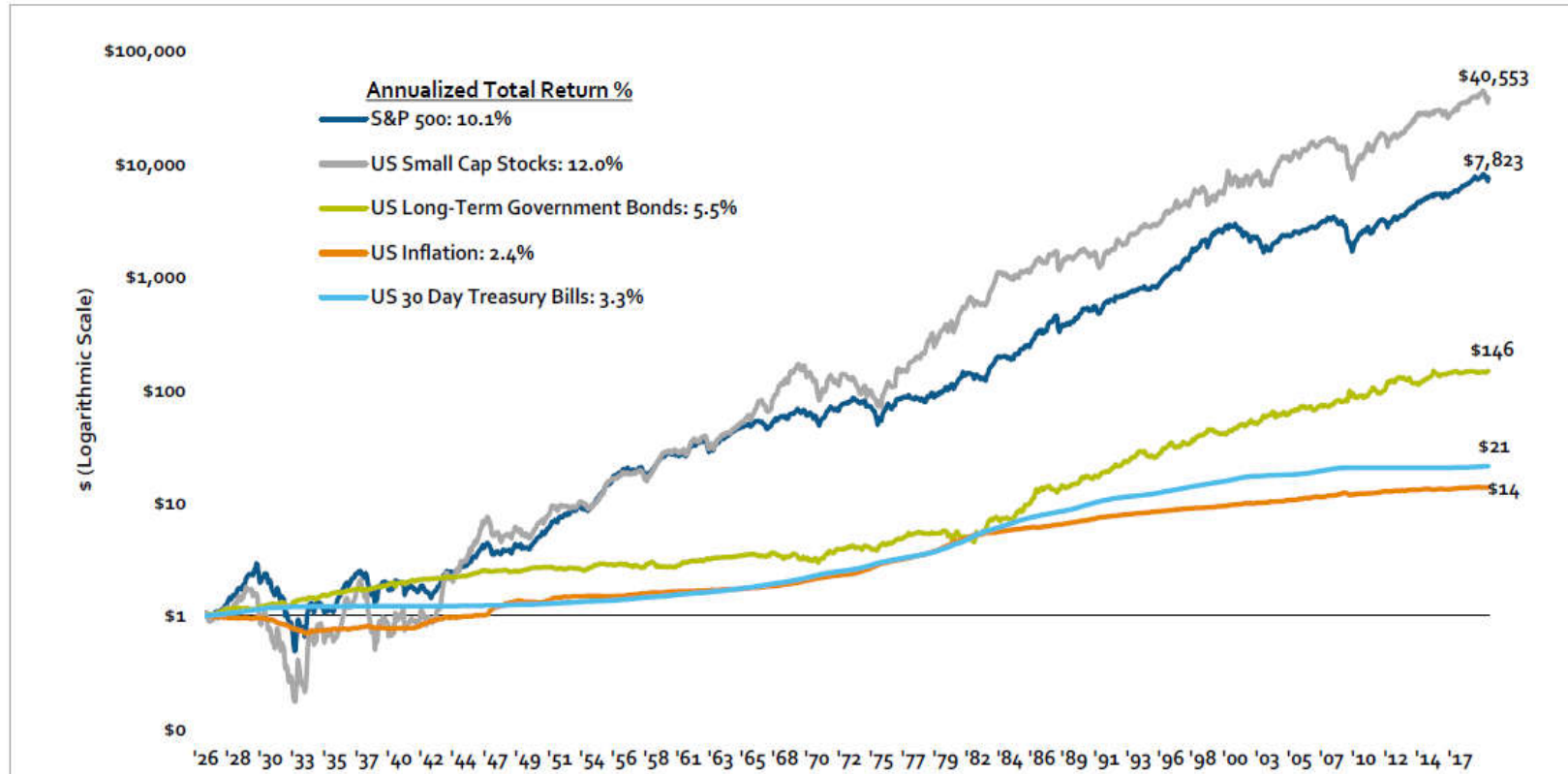
² Source: Capital market assumptions posted for the December 2018 San Jose Joint Investment Committee Meeting.

³ Inflation estimate has been added to real return expectation assumptions.

⁴ Source: Verus' 2019 10-year capital markets assumptions.

Why Not Simply Invest in the S&P 500 Index?

Monthly Cumulative Total Return of \$1 January 31, 1926 – February 28, 2019



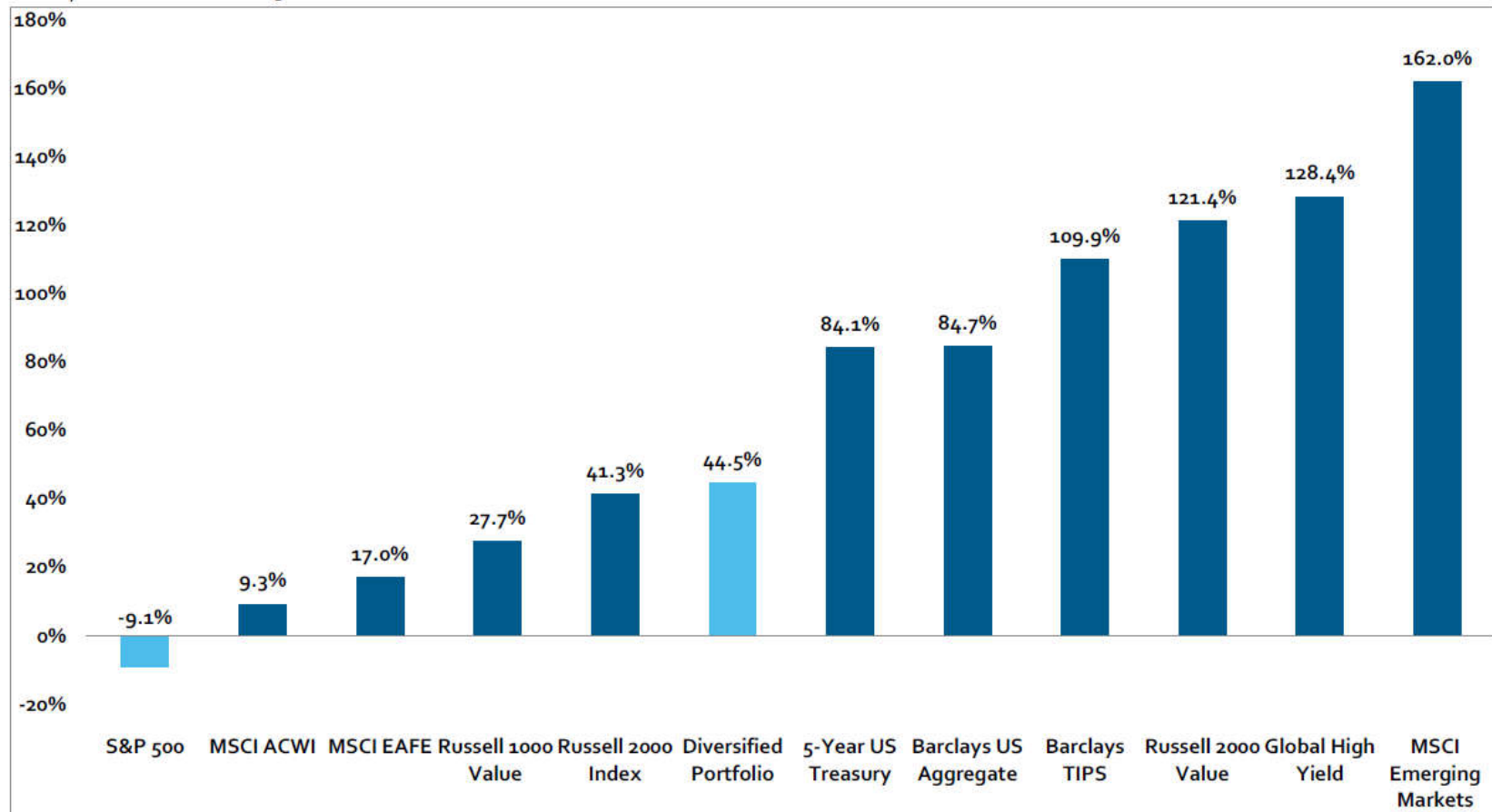
Source: Calculated by Morgan Stanley Wealth Management GIC using data provided by Morningstar. (c) 2019 Morningstar, Inc. All rights reserved. Used with permission. This information contained herein: (i) is proprietary to Morningstar and/or its content providers; (ii) may not be copied or distributed; and (iii) is not warranted to be accurate, complete or timely. Neither Morningstar nor its content providers are responsible for any damages or losses arising from any use of this information. Aside from the S&P 500, all indices shown above are Ibbotson indices. The hypothetical \$1 investment is for illustrative purposes only. It does not represent the performance of any specific investment. For more information about the risks to hypothetical performance please refer to the Risk Considerations section at the end of this material. Inflation data is reported with a one month lag, so current value is a repeat of last month's value. Past performance is no guarantee of future results. Estimates of future performance are based on assumptions that may not be realized. This material is not a solicitation of any offer to buy or sell any security or other financial instrument or to participate in any trading strategy. Please refer to important information, disclosures and qualifications at the end of this material.



The Lost Decade 2000-2010

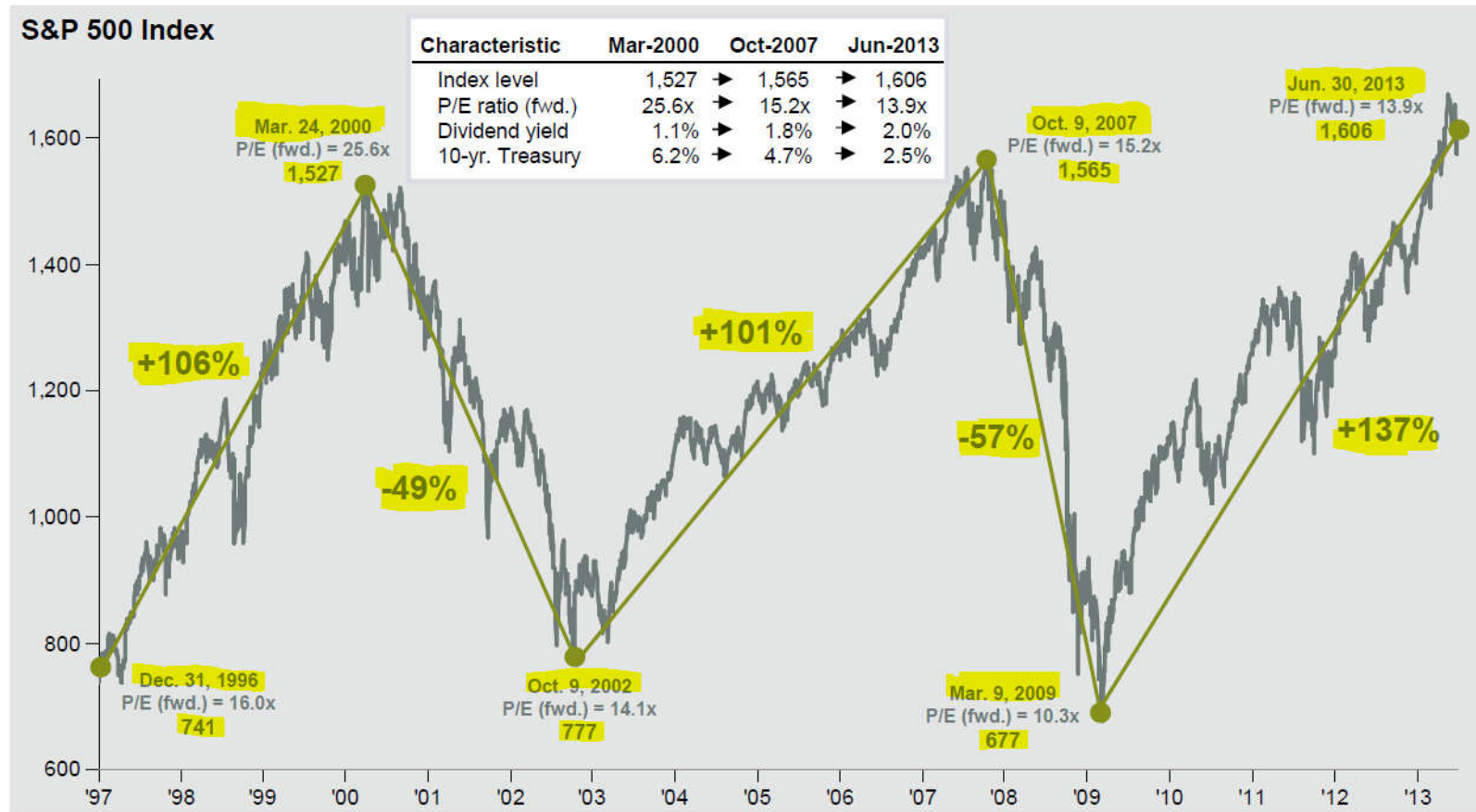
Total Returns

January 2000 - December 2009



Source: FactSet, Bloomberg, Morgan Stanley Wealth Management GIC, The Yield Book® Software and Services. © 2018 FTSE Index LLC. All rights reserved. Note: Diversified Portfolio is comprised of 50% MSCI All Country World Index/45% Bloomberg Barclays US Aggregate Bond Index/5% FTSE 3-Month T-Bill Index.
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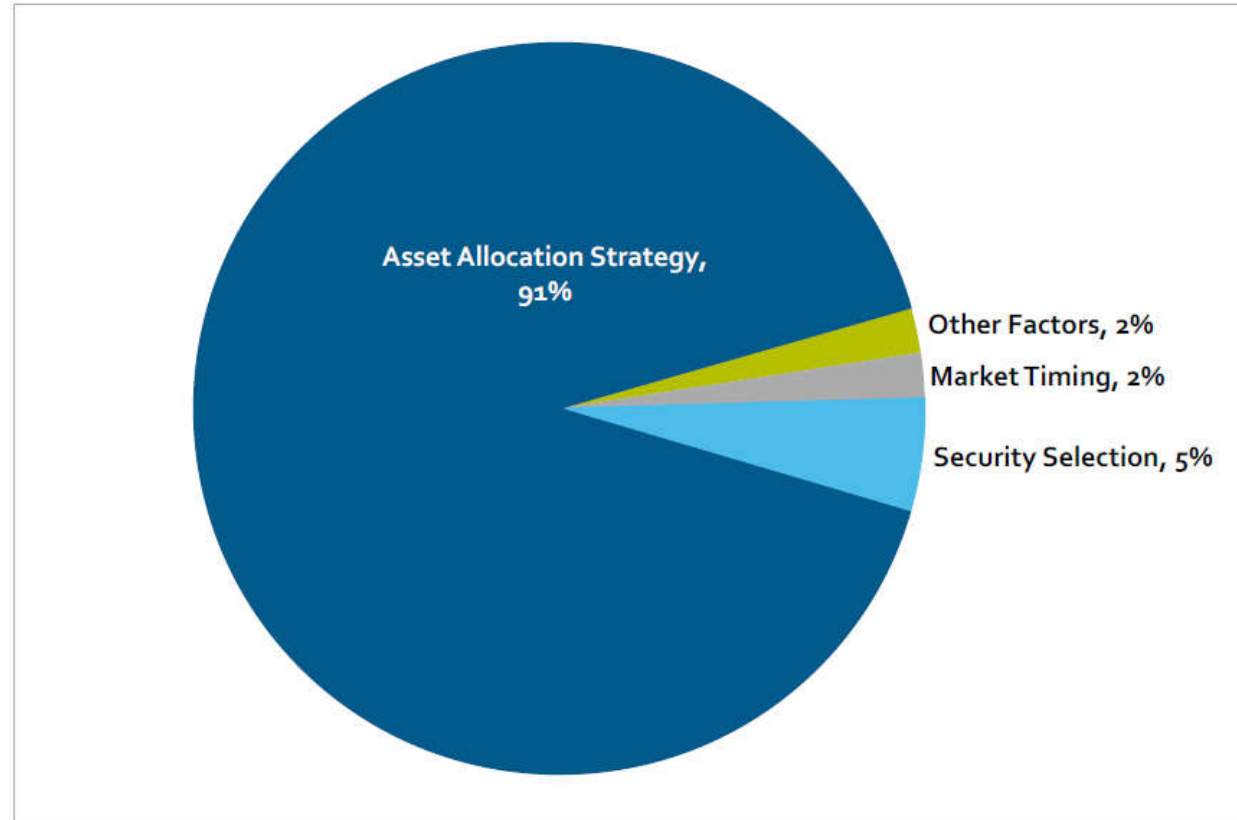
S&P 500 What Would You Have Done in 2013?



Source: Standard & Poor's, First Call, Compustat, FactSet, J.P. Morgan Asset Management.

Asset Allocation—The Most Important Determinant of Return

Sources of Return Variation



Source: Roger G. Ibbotson. *Does Asset Allocation Policy Explain 10, 90 or 100 Percent of Performance?* Financial Analyst Journal, January/February 2000; Brinson, Singer and Beebower. *Determination of Performance II: An Update*, Financial Analyst Journal, May/June 1991. Based on US pension-fund data from 1977 to 1987. The asset allocation strategy includes broad market exposure.

Current Asset Allocation vs. Global 60/40 Portfolio

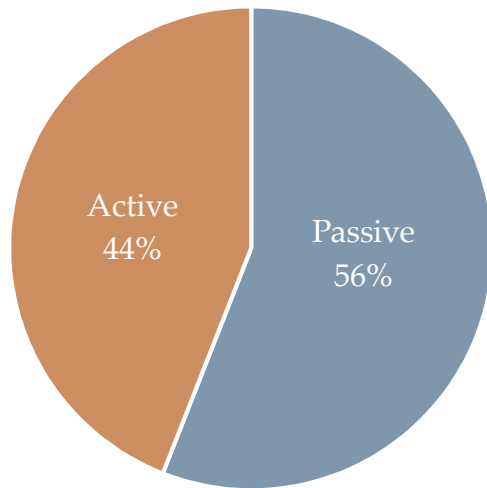
	Fed Policy ¹ (%)	P&F Policy (%)	Global 60/40 (%)
Growth	61	64	60
Public Equity	35	39	60
Private Markets	23	22	0
Private Equity	8	8	0
Venture/Growth Capital	5	4	0
Private Debt	4	4	0
Growth Real Estate	3	3	0
Private Real Assets	3	3	0
Emerging Markets Bonds	3	3	0
Zero Beta	27	24	0
Immunized Cash Flows	5	5	0
Short-Term Investment-Grade Bonds	15	14	0
Hedge Funds	7	5	0
Other	12	12	40
Core Real Estate	5	5	0
Sovereign Bonds ex-U.S.	0	3	0
Commodities	2	2	0
TIPS	2	2	0
Investment Grade Bonds	3	0	40
<i>10-Year Expected Return</i>	7.5	7.5	6.4
<i>20-Year Expected Return</i>	8.0	8.0	7.1
<i>Standard Deviation</i>	12.0	12.5	10.4

¹ Fed Policy asset allocation approved at October 17, 2019 Board Meeting.

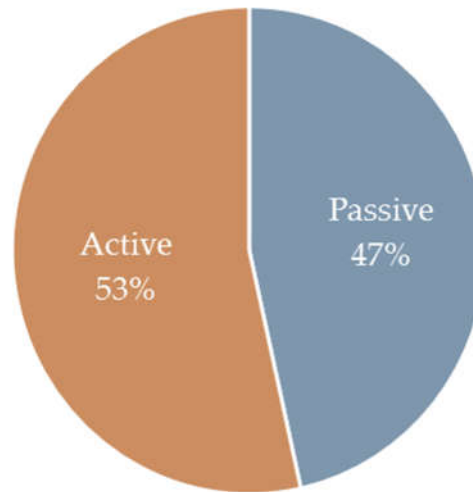


Active vs. Passive Allocations as of 12/31/2018

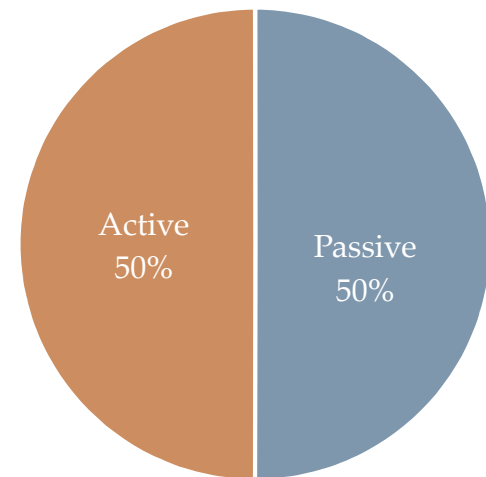
Fed Pension



P&F Pension



Combined



Historical Performance Comparison

- The table below shows a comparison of pension plan universe returns and a 60/40 index blend. The index blend is gross of fees (though passive fees would be quite low).

	10 years ending 6/30/2019 (%)	10 years ending 6/30/18 (%)	10 years ending 12/31/07 (%)	1/31/94 – 12/31/18 (%)
San Jose Federated City Employees' Retirement System	6.5	4.1	8.3	6.4
<i>Federated Policy Benchmark</i>	7.2	5.0	7.7	6.7
<i>Federated Investable Benchmark Portfolio</i>	6.3	4.1	--	--
San Jose Police & Fire Department Retirement Plan	7.2	4.6	9.0	6.8
<i>Police & Fire Policy Benchmark</i>	7.7	4.9	9.0	---
<i>Police & Fire Investable Benchmark Portfolio</i>	7.3	4.8	9.0	---
DB Plans > \$1 Billion Net Peer Universe	9.0	6.1	7.4	6.9
<i>Number of Plans</i>	65	45	64	34
60% MSCI ACWI/40% BBg Barclays Global Aggregate	7.4	4.1	7.0	4.4

What Are Alternatives?



Three Types of Private Investments

Private
Equity



Equity investments in
privately held
companies

Private
Credit



Privately held loans to
both public and private
companies

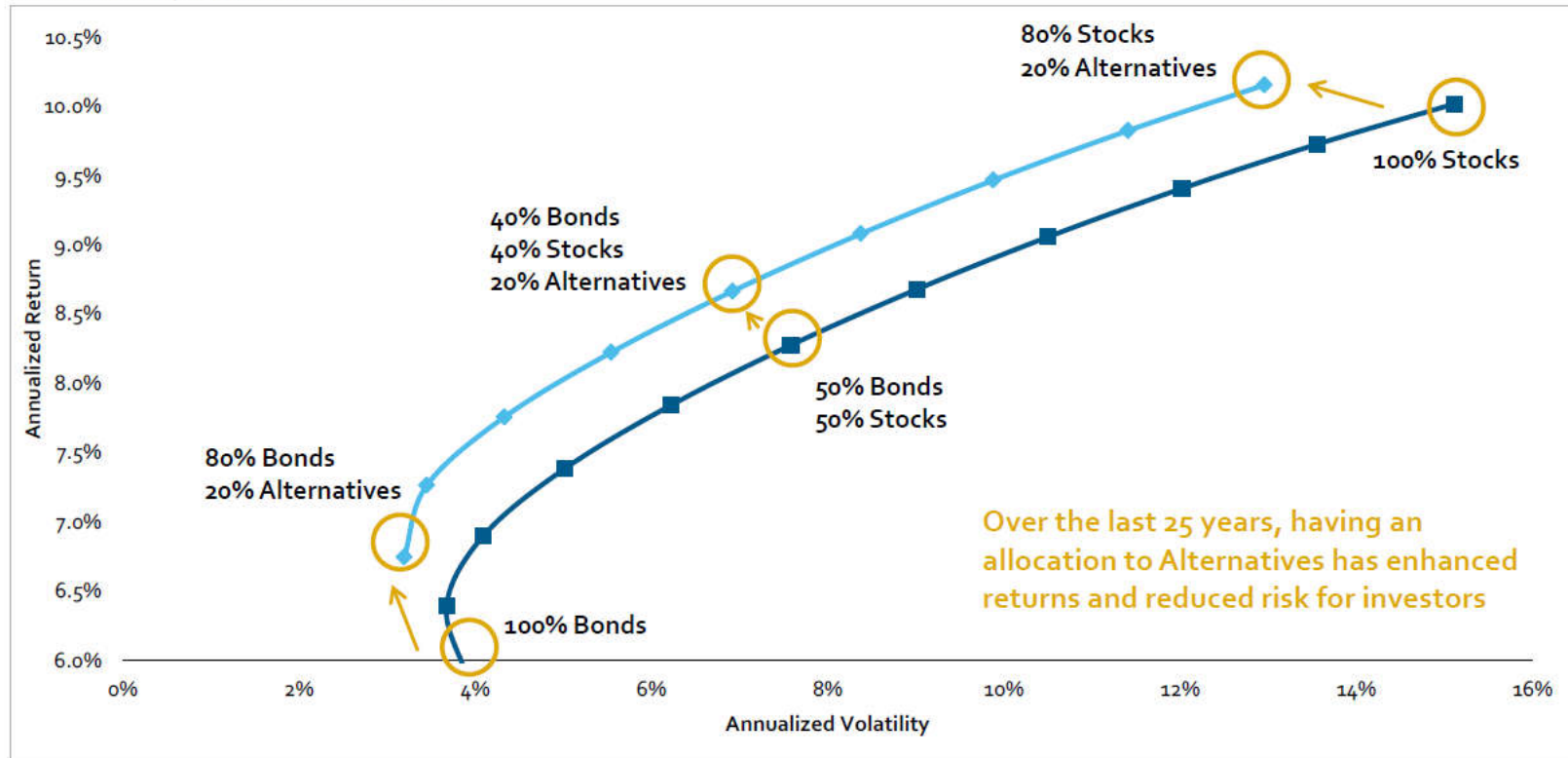
Private Real
Estate



Equity investments and
loans to privately held
real estate

Alternatives and the Risk – Return Trade-Off

Data as of January 1, 1990 to December 31, 2018

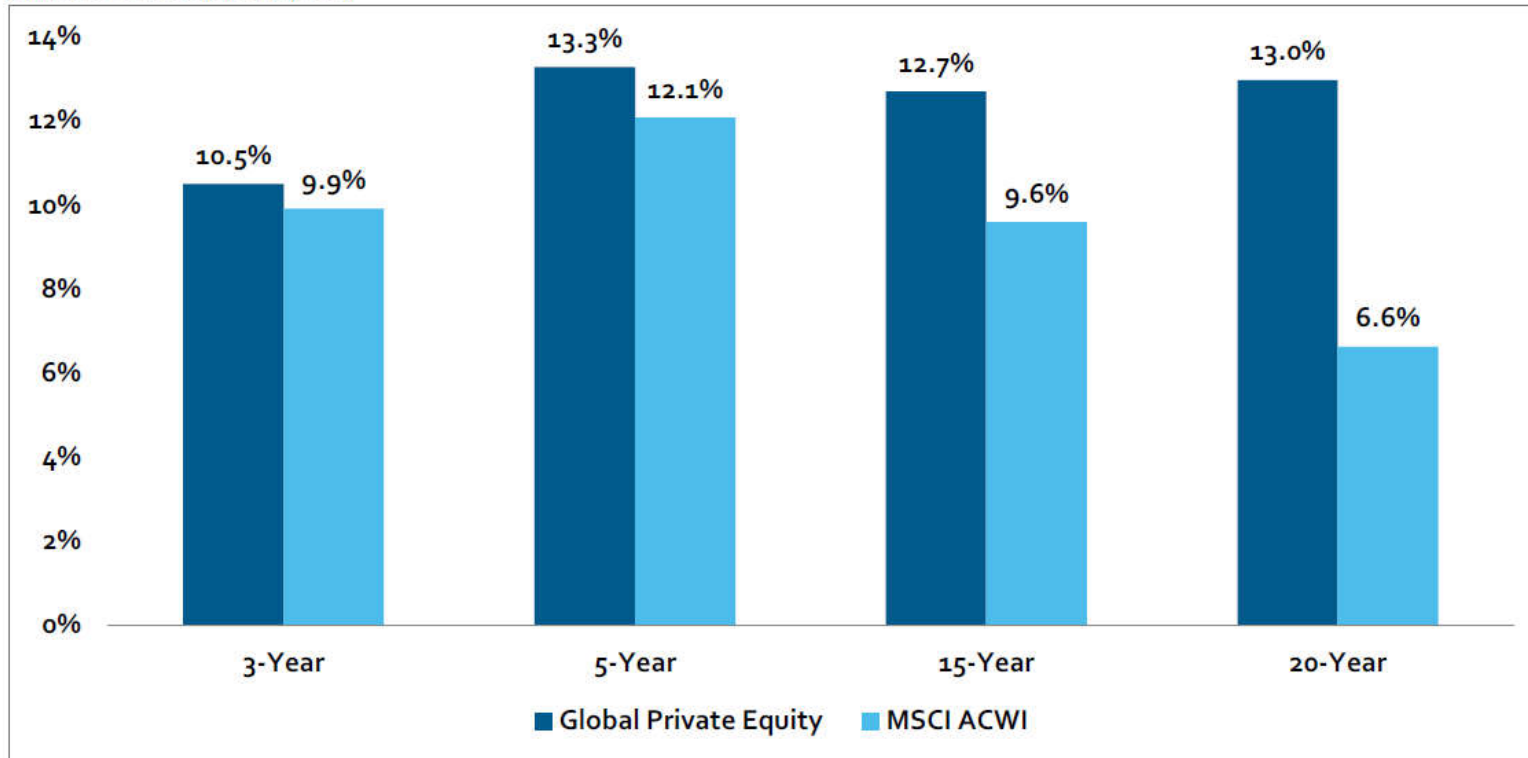


Source: Bloomberg, Morgan Stanley Wealth Management GIC, Thomson ONE. Private equity index data sourced from Thomson ONE's Cambridge Associates benchmarking database and is represented by Buyout, Distressed, Growth Equity, Mezzanine, Private Equity Energy, Upstream Energy & Royalties and Venture Capital. Private Equity data subject to 5-month lag; therefore, all asset classes are depicted as of 2Q 2018 for consistency. Private equity returns are net to limited partners. Stocks are represented by the S&P 500 Total Return Index. Bonds are represented by Barclays US Aggregate. Alternatives Investment are composed of 16.6% Equity Hedge (HFRI Equity Hedge Index), 16.6% Equity Neutral (HFRI Equity Market Neutral Index), 33% Private Equity, and 33% Real Estate (National Council of Real Estate Investment Fiduciaries Property Index –NCREIF). Alternatives investments are not suitable for all investors.

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The Illiquidity Premium

Global Private vs. Public Equity
Annual as of December 31, 2017



Source: Thomson ONE, Bloomberg

Alternatives Have Added Value Relative to Global Public Equity

Actual Performance as of June 30, 2019	1 year (%)	3 years (%)	5 years (%)	10 years (%)
San Jose Police & Fire Department Retirement Plan Private Equity ex Russell 3000 (net of fees)	14.1	12.8	10.4	11.6
San Jose Police & Fire Department Retirement Plan Private Real Estate (net of fees)	8.8	10.5	NA	NA
San Jose Police & Fire Department Retirement Plan Private Real Assets (net of fees)	7.8	5.7	NA	NA
San Jose Police & Fire Department Retirement Plan Absolute Return Hedge Funds (net of fees)	7.1	4.2	3.0	NA
<i>Global Public Equity Index (MSCI ACWI IMI Net)</i>	4.6	11.4	6.0	
San Jose Federated City Employees' Retirement System Private Equity ex Russell 3000 (net of fees)	15.0	11.4	9.9	11.8
San Jose Federated City Employees' Retirement System Private Real Estate (net of fees)	15.6	17.5	NA	NA
San Jose Federated City Employees' Retirement System Private Real Assets (net of fees)	12.3	10.8	NA	NA
San Jose Federated City Employees' Retirement System Absolute Return Hedge Funds (net of fees)	7.7	4.6	3.7	NA
<i>Global Public Equity Index (MSCI ACWI IMI Net)</i>	4.6	11.4	6.0	

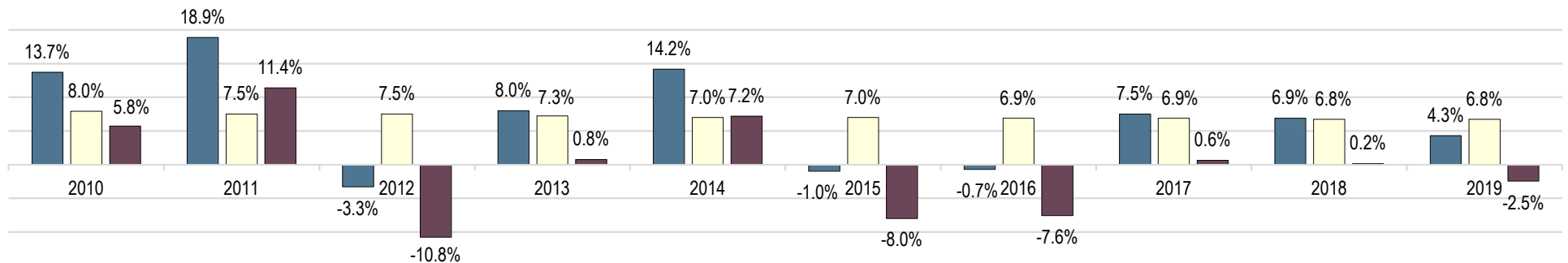
Appendix

Federated Discount Rate History

Years	Fiscal Year	10 Year US Treasury Rate (%)	Discount Rate (%)	Fiscal Year Return ¹ (%)	Excess Performance to Discount Rate (%)
	1997	6.51	8.25		
1	2010	2.97	7.95	13.7	5.8
2	2011	3.18	7.50	18.9	11.4
3	2012	1.67	7.50	-3.3	-10.8
4	2013	2.52	7.25	8.0	0.8
5	2014	2.53	7.00	14.2	7.2
6	2015	2.35	7.00	-1.0	-8.0
7	2016	1.49	6.875	-0.7	-7.6
8	2017	2.31	6.875	7.5	0.6
9	2018	2.85	6.75	5.9	-0.9
10	2019	2.00	6.75	4.3	-2.5

Plan Return versus Discount Rate

■ Fiscal Return □ Discount Rate ■ Excess Return



Source: ORS, Meketa.

- In 5 of the last 10 years, Federated System returns have been above the discount rate. Financial optimizers typically project a 50% probability of meeting the expected returns each year, so we would expect that half of the time, investments will outperform the expected return, and half the time, investments will lag the projected return.

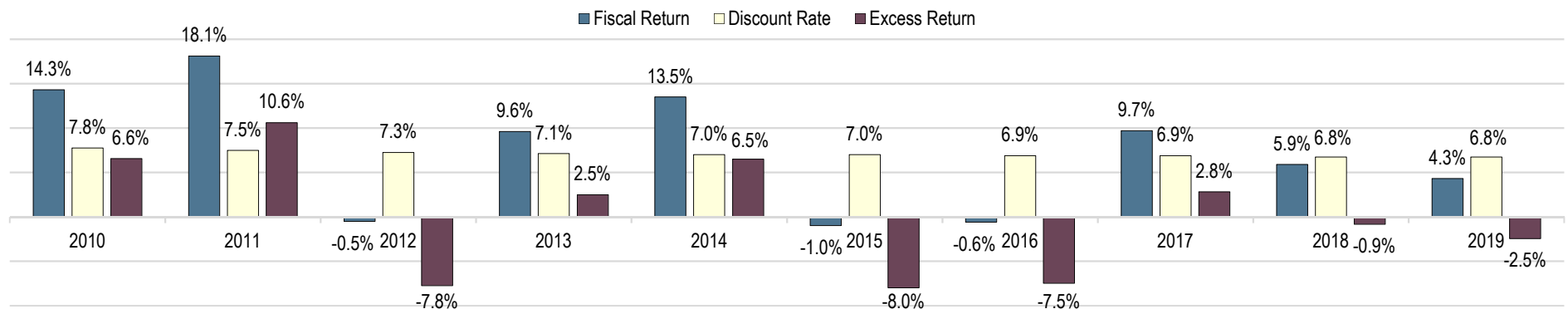
¹ Fiscal Year Ends 6/30. Returns are net of fund management fees.



Police & Fire Discount Rate History

Years	Fiscal Year	10 Year US Treasury Rate (%)	Discount Rate (%)	Fiscal Year Return ¹ (%)	Excess Performance to Discount Rate (%)
	1997	6.51	8.00		
1	2010	2.97	7.75	14.3	6.6
2	2011	3.18	7.50	18.1	10.6
3	2012	1.67	7.25	-0.5	-7.8
4	2013	2.52	7.125	9.6	2.5
5	2014	2.53	7.00	13.5	6.5
6	2015	2.35	7.00	-1.0	-8.0
7	2016	1.49	6.875	-0.6	-7.5
8	2017	2.31	6.875	9.7	2.8
9	2018	2.85	6.75	6.9	0.2
10	2019	2.00	6.75	4.3	-2.5

Plan Return versus Discount Rate



Source: ORS, Meketa.

- In 6 of the last 10 years, Police & Fire Plan returns have been above the discount rate. Financial optimizers typically project a 50% probability of meeting the expected returns each year, so we would expect that half of the time, investments will outperform the expected return, and half the time, investments will lag the projected return.

¹ Fiscal Year Ends 6/30. Returns are net of fund management fees.

