



Monthly Risk-Return Report

As of December 31, 2018

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Based on actual BNY Mellon data through November 2018 and preliminary data for December 2018.

Private asset valuations and returns are presented with a quarterly lag per industry standard.



Asset Allocation and Policy Guidelines

As of December 31, 2018

Asset Class	Assets and Allocation		Policy Target	Minimum Target	Maximum Target	Difference	
	\$ (MM)	%				From Policy Target	Within Target?
Public Markets Equity	5,257	43.7%	45.0%	40.0%	50.0%	-1.3%	Yes
Global Equity	351	2.9%	3.0%	0.0%	10.0%	-0.1%	Yes
US Equity	2,315	19.3%	20.0%	15.0%	25.0%	-0.7%	Yes
Non-US Equity Developed	1,661	13.8%	15.0%	11.0%	19.0%	-1.2%	Yes
Non-US Equity Emerging	931	7.7%	7.0%	3.0%	11.0%	0.7%	Yes
Fixed Income and Cash	3,193	26.6%					
Risk-Reducing Fixed Income	2,435	20.3%	18.0%	13.0%	24.0%	2.3%	Yes
Return-Seeking Fixed Income	758	6.3%	6.0%	0.0%	12.0%	0.3%	Yes
Opportunistic	879	7.3%	8.0%	0.0%	15.0%	-0.7%	Yes
Private Assets	2,694	22.4%	23.0%	10.0%		-0.6%	Yes
Real Estate	1,094	9.1%	9.0%	5.0%	12.0%	0.1%	Yes
Private Equity	809	6.7%	8.0%	3.0%	10.0%	-1.3%	Yes
Private Real Assets	791	6.6%	6.0%	3.0%	8.0%	0.6%	Yes
Total Invested	12,023	100.0%					



Portfolio and Benchmark Returns

As of December 31, 2018

	MTD	QTD	FYTD	CYTD	1 Year	3 Years	5 Years
SDCERA Total Trust Fund	-3.0%	-6.0%	-4.0%	-3.9%	-3.9%	6.0%	5.1%
SDCERA Policy Benchmark	-4.6%	-8.6%	-6.0%	-6.0%	-6.0%	5.4%	4.5%
Balanced Benchmark	-4.6%	-8.9%	-6.4%	-6.7%	-6.7%	5.3%	3.8%

SDCERA Public Markets	-3.9%	-8.1%	-6.0%	-7.2%	-7.2%	5.6%	3.6%
Balanced Benchmark	-4.6%	-8.9%	-6.4%	-6.7%	-6.7%	5.3%	3.8%
Total Public Markets Equity	-6.8%	-12.9%	-9.7%	-10.7%	-10.7%	6.6%	3.1%
MSCI ACWI IMI	-7.2%	-13.3%	-9.9%	-10.1%	-10.1%	6.5%	4.2%
Total Fixed Income and Cash	0.4%	0.0%	0.6%	0.1%	0.1%	3.1%	1.8%
Bloomberg Barclays US Intermediate Aggregate	1.5%	1.8%	1.9%	0.9%	0.9%	1.7%	2.1%

Opportunistic							
Opportunistic	-1.4%	-6.0%	-6.0%	-10.4%	-10.4%	0.2%	4.3%
Balanced Benchmark	-4.6%	-8.9%	-6.4%	-6.7%	-6.7%	5.3%	3.8%

Private Assets							
	<i>The industry standard is to present private asset returns with a quarterly lag</i>						
Real Estate	-0.7%	1.3%	3.1%	7.8%	7.8%	9.2%	11.0%
NCREIF ODCE	0.6%	1.9%	3.8%	7.7%	7.7%	7.4%	9.5%
Private Equity	0.5%	3.0%	6.8%	15.6%	15.6%	14.3%	12.2%
MSCI ACWI IMI	-7.2%	-13.3%	-9.9%	-10.1%	-10.1%	6.5%	4.2%
Private Real Assets	0.7%	2.3%	1.4%	3.7%	3.7%	6.7%	6.0%
MSCI ACWI IMI	-7.2%	-13.3%	-9.9%	-10.1%	-10.1%	6.5%	4.2%

Equities by Sub-Asset Class							
Global Equity	-6.4%	-12.7%	-9.2%	-10.5%	-10.5%	6.7%	4.7%
MSCI ACWI IMI	-7.2%	-13.3%	-9.9%	-10.1%	-10.1%	6.5%	4.2%
US Equity	-9.6%	-14.8%	-8.7%	-5.8%	-5.8%	8.4%	6.9%
MSCI USA IMI	-9.3%	-14.5%	-8.5%	-5.7%	-5.7%	8.4%	7.3%
Non-US Equity Developed	-5.2%	-13.2%	-11.9%	-14.4%	-14.4%	2.8%	
MSCI EAFE IMI	-5.1%	-13.1%	-12.2%	-14.4%	-14.4%	3.0%	
Non-US Emerging	-2.7%	-7.6%	-8.5%	-14.6%	-14.6%	9.4%	1.6%
MSCI Emerging Markets	-2.7%	-7.5%	-8.5%	-14.6%	-14.6%	9.3%	1.7%

Fixed Income by Sub-Asset Class							
Risk-Reducing Fixed Income	1.3%	1.6%	1.8%	1.2%	1.2%	2.2%	
Bloomberg Barclays US Intermediate Aggregate	1.5%	1.8%	1.9%	0.9%	0.9%	1.7%	
Return-Seeking Fixed Income	-2.4%	-5.1%	-3.2%	-3.3%	-3.3%	6.2%	
ICE BofA Merrill Lynch US High Yield	-2.2%	-4.7%	-2.3%	-2.3%	-2.3%	7.3%	

Please note: The Non-US Equity Developed and MSCI EAFE IMI 5 yr returns are blank because the current composite returns calculated by BNY Mellon do not cover these time periods. The Risk-Reducing Fixed Income, Return-Seeking Fixed Income and ICE BofA Merrill Lynch US High Yield 5 yr returns are blank because the current composite returns calculated by BNY Mellon do not cover these time periods. SDCERA Benchmark returns are before fees.



Portfolio Risk and Tracking Error

As of December 31, 2018	10/31/18 Trailing three years		11/30/18 Trailing three years		12/31/18 Trailing three years	
Total Trust Fund	Volatility	Tracking Error	Volatility	Tracking Error	Volatility	Tracking Error
SDCERA Total Trust Fund Assets	5.3%	N/A	5.2%	N/A	5.5%	N/A
SDCERA Policy Benchmark	6.3%	1.6%	6.3%	1.5%	6.9%	1.8%

	Forecasted		Forecasted		Forecasted	
Total Trust Fund	Volatility	Tracking Error	Volatility	Tracking Error	Volatility	Tracking Error
SDCERA Total Trust Fund Assets	5.9%	N/A	5.9%	N/A	6.1%	N/A
SDCERA Policy Benchmark	7.4%	1.9%	7.4%	1.9%	7.8%	2.1%
Balanced Benchmark	7.2%	1.9%	7.2%	1.9%	7.6%	2.0%
SDCERA Public-Only Assets	6.7%	N/A	6.7%	N/A	6.9%	N/A
SDCERA Public Benchmark	7.2%	0.7%	7.2%	0.7%	7.5%	0.8%

Equities						
Global Equity	10.1%	N/A	10.0%	N/A	10.6%	N/A
MSCI ACWI IMI	10.3%	2.1%	10.3%	2.1%	10.9%	1.8%
US Equity	10.3%	N/A	10.3%	N/A	11.2%	N/A
MSCI USA IMI	10.3%	0.4%	10.2%	0.4%	11.2%	0.4%
Non-US Equity Developed	11.7%	N/A	11.7%	N/A	11.9%	N/A
MSCI EAFE IMI	11.5%	0.8%	11.5%	0.7%	11.7%	0.7%
Non-US Emerging	15.0%	N/A	15.0%	N/A	15.1%	N/A
MSCI Emerging Markets	15.1%	0.8%	15.2%	0.8%	15.2%	0.8%

Fixed Income						
Risk-Reducing Fixed Income	1.6%	N/A	1.6%	N/A	1.8%	N/A
Bloomberg Barclays US Intermediate Aggregate	2.0%	0.3%	2.0%	0.3%	2.0%	0.3%
Return-Seeking Fixed Income	4.2%	N/A	4.3%	N/A	4.1%	N/A
ICE BofA Merrill Lynch US High Yield	5.0%	1.1%	5.0%	1.0%	5.1%	1.1%

Opportunistic						
Opportunistic	6.2%	N/A	6.2%	N/A	6.2%	N/A
Balanced Benchmark	7.2%	4.8%	7.2%	4.8%	7.6%	5.1%

Private Assets						
Real Estate	10.4%	N/A	10.5%	N/A	10.5%	N/A
NCREIF ODCE	8.2%	10.6%	8.2%	10.6%	9.6%	11.5%
Private Equity	7.8%	N/A	7.8%	N/A	8.3%	N/A
MSCI ACWI IMI	10.3%	4.5%	10.3%	4.5%	10.9%	4.6%
Private Real Assets	12.1%	N/A	12.1%	N/A	12.4%	N/A
MSCI ACWI IMI	10.3%	13.5%	10.3%	13.6%	10.9%	13.6%



Public Markets Portfolio Changes in December 2018

Allocation Changes (millions)

Increase: Allianz Loan Portfolio \$50
 Decrease: Operational Cash \$50
 Increase: BlackRock ACWI IMI Index Fund \$50
 Decrease: BlackRock US Int Agg Bond Fund \$50

Portfolio %		Portfolio \$ millions		Summary Comments
Begin	End	Begin	End	
0.5%	0.9%	\$59	\$107	Add to loan portfolio at attractive yields created by year end illiquidity Fund loan portfolio increase Rebalance toward policy benchmark Rebalance toward policy benchmark
1.4%	0.9%	\$177	\$105	
0.0%	0.4%	\$0	\$51	
11.0%	11.2%	\$1,375	\$1,345	

Private Markets Portfolio Changes in December 2018

Portfolio %		Portfolio \$ millions		Summary Comments
Begin	End	Begin	End	

Benchmarks

- The actuarial rate of return represents the long-term return assumption adopted by the Board of Retirement based on the analysis provided by SDCERA's actuary. SDCERA's actuarial rate of return is 7.25 percent.
- The SDCERA Policy benchmark is composed as follows: 45% MSCI ACWI Investable Market Index (IMI), 18% Bloomberg Barclays US Intermediate Aggregate Index, 6% ICE BofA Merrill Lynch U. S. High Yield Index, 8% Balanced Benchmark, 23% SDCERA Private Asset Benchmark.
- The SDCERA Balanced Benchmark is composed of 70% MSCI ACWI IMI and 30% Bloomberg Barclays U.S. Intermediate Aggregate Index.
- The Total Public Markets Equity Benchmark is the MSCI ACWI IMI.
- The Global Equity Benchmark is the MSCI ACWI IMI.
- The US Equity Benchmark is the MSCI USA IMI.
- The Non-US Equity (Developed) Benchmark is the MSCI EAFE IMI.
- The Non-US Equity Emerging Markets Benchmark is the MSCI Emerging Markets Index.
- The Risk-Reducing Fixed Income Benchmark is the Bloomberg Barclays U.S. Intermediate Aggregate Index.
- The Return-Seeking Fixed Income Benchmark is the ICE BofA Merrill Lynch U.S. High Yield Index.
- The Opportunistic Benchmark is 70% MSCI ACWI IMI and 30% Bloomberg Barclays U.S. Intermediate Aggregate Index.
- The Total Private Assets Benchmark is composed of 1/3 NCREIF and 2/3 MSCI ACWI IMI.
- The Real Estate Benchmark is the NCREIF ODCE Index.
- The Private Equity Benchmark is the MSCI ACWI IMI.
- The Private Real Assets Benchmark is the MSCI ACWI IMI.
- The MSCI ACWI IMI captures large, mid and small cap representation across 23 Developed Markets (DM) and 24 Emerging Markets (EM) countries.
- The SDCERA Public Markets Risk Benchmark is an aggregate of 3.9% MSCI ACWI IMI, 26.0% MSCI USA IMI, 19.5% MSCI EAFE IMI, 9.1% MSCI Emerging Markets Index, 23.4% Bloomberg Barclays U.S. Intermediate Aggregate Index, 7.8% ICE BofA Merrill Lynch US High Yield Index, and 10.3% Balanced Benchmark.

Glossary

MSCI ACWI IMI: Morgan Stanley Capital International All Country World - Investable Market Index. A capitalization-weighted stock index that captures large, mid and small cap representation across 23 Developed Markets (DM) and 24 Emerging Markets (EM) countries. The index is comprised of 8,725 equity securities that cover approximately 99% of the global equity investment opportunity set as of December 31, 2018.

Bloomberg Barclays U.S. Intermediate Aggregate: A market value-weighted index consisting of U.S. Treasury securities, corporate bonds and mortgage-related and asset-backed securities with one to ten years to maturity and an outstanding par value of \$250 million or greater.

NCREIF ODCE: National Council of Real Estate Investment Fiduciaries – Open End Diversified Core Equity Index. A capitalization weighted index comprised of open-end, Core funds investing in commercial real estate properties. The funds that constitute the index are subject to certain geographic and property type diversification requirements as well as leverage restrictions. The index returns reflect the property-level leverage contained within each underlying fund. The returns shown in this report are net of management fees of the respective funds included in the index.

MSCI USA IMI: Morgan Stanley Capital International USA - Investable Market Index. A capitalization-weighted stock index designed to measure the performance of the large, mid and small cap segments of the U.S. market. The index is comprised of 2,441 equity securities that cover approximately 99% of the free float-adjusted market capitalization in the U.S. as of December 31, 2018.

MSCI EAFE IMI: Morgan Stanley Capital International Europe Australasia and Far East - Investable Market Index A capitalization-weighted index of stocks that captures large, mid and small cap representation across Developed Markets countries around the world, excluding the U.S. and Canada. The index is comprised of 3,268 equity securities that cover approximately 99% of the free float-adjusted market capitalization in each country as of December 31, 2018.

MSCI Emerging Markets Index: A capitalization-weighted index of stocks that captures large and mid-cap representation across 24 Emerging Markets (EM) countries. The Index is comprised of 1,125 equity securities that cover approximately 85% of the free float-adjusted market capitalization in each country as of December 31, 2018.

ICE BofAML U.S. High Yield Index: Intercontinental Exchange Bank of America Merrill Lynch. A market capitalization-weighted index that tracks the performance of U.S. dollar-denominated below investment grade corporate debt publicly issued in the U.S. domestic market.