

# ASRS Investment Objectives/Performance

Note: All of the data shown on the following pages is as of December 31, 2013 and reflects the deduction of investment manager fees, unless otherwise noted.



Macro

- Objective #1: Achieve a twenty-year rolling annual total fund net rate of return equal to or greater than the actuarial assumed interest rate.
- Objective #2: Achieve one- and three-year rolling annual total fund net rates of return equal to or greater than the return of the ASRS Strategic Asset Allocation Policy (SAAP) Benchmark.
- Objective #3: Achieve one- and three-year rolling annual net rates of return for ASRS strategic asset classes that are equal to or greater than their respective strategic asset class benchmarks.
- Objective #4: Ensure sufficient monies are available to meet pension benefits, health insurance, member refunds, administrative payments, and other cash flow requirements.

Micro

Source: ASRS Strategic Plan, March 2013

- Objective #1: Achieve a twenty-year rolling annual total fund net rate of return equal to or greater than the actuarial assumed interest rate.

	<u>20 Year Annualized Return</u>
<b>Total Fund</b>	<b>8.3%</b>
<b>Constant 8%</b>	<u><b>8.0%</b></u>
<b>Excess Return</b>	<b>0.3%</b>

**Goal Met: Yes**

- Objective #2: Achieve one- and three-year rolling annual total fund net rates of return equal to or greater than the return of the ASRS Strategic Asset Allocation Policy (SAAP) Benchmark.

	Quarter	1 Year	3 Years	5 Years	10 Years	Since Inception (6/30/75)
<b>Total Fund</b>	5.5%	<b>17.9%</b>	<b>10.5%</b>	13.5%	7.1%	10.0%
<b>Interim SAA Policy<sup>1</sup></b>	5.5%	<b>16.9%</b>	<b>10.2%</b>	13.2%	6.9%	9.8%
<b>Excess Return</b>	0.0%	<b>1.0%</b>	<b>0.3%</b>	0.3%	0.2%	0.2%

**1 Year Goal Met: Yes**  
**3 Year Goal Met: Yes**

<sup>1</sup>Composition of SAA Policy can be found in the appendix.

Arizona State Retirement System  
**Total Fund Attribution Analysis**

<b>Total Plan</b>	<b>1 Year</b>	<b>3 Years</b>	<b>5 Years</b>
Allocation Effect <sup>1</sup>	1.74%	0.45%	-0.39%
Manager Selection Effect <sup>2</sup>	-0.94%	-0.24%	0.71%
Residual <sup>3</sup>	0.16%	0.05%	0.01%
<b>Excess Return</b>	<b>0.96%</b>	<b>0.26%</b>	<b>0.33%</b>

Source: State Street Investment Analytics

<sup>1</sup>Contribution due to over/underweights relative to Interim\* Strategic Asset Allocation Policy (SAAP) Benchmark.

<sup>2</sup>Contribution due to manager selection (net) and interaction effect.

<sup>3</sup>Contribution due to activities not captured in allocation and manager selection effects.

\*Pro-rates unfunded Private Equity, Private Debt and Real Estate allocations.

## Total Fund Attribution Detail

### 1 Year Excess Return: +1.0%

- Allocation Effect: +1.74%
  - Public Markets Fixed Income tactical underweight (+1.59%)
  - Commodities tactical underweight (+0.22%)
  - International Equity tactical underweight (-0.05%)
- Manager Effect: -0.94%
  - Real Estate outperformed due to various managers (+0.12%)
  - Private Debt outperformed due to various managers (+0.09%)
  - Private Equity underperformed due to various managers (-0.72%)
  - International Equity underperformed due to various managers (-0.22%)
  - Opportunistic Debt underperformed due to various managers (-0.21%)
- Residual: 0.16%

### 3 Years Excess Return: +0.3%

- Allocation Effect: +0.45%
  - Public Markets Fixed Income tactical underweight (+0.49%)
  - Commodities tactical underweight (+0.15%)
  - International Equity tactical underweight (-0.11%)
- Manager Effect: -0.24%
  - GTAA outperformed due to Bridgewater (+0.11%)
  - Commodities outperformed due to Gresham (+0.07%)
  - Private Equity underperformed due to various managers (-0.18%)
  - International Equity underperformed due to various managers (-0.09%)
  - U.S. Equity underperformed due to various managers (-0.06%)
- Residual: 0.05%

### 5 Years Excess Return: +0.3%

- Allocation Effect: -0.39%
  - Public Markets Fixed Income tactical underweight (+0.43%)
  - International Equity tactical underweight (-0.35%)
  - U.S. Large Cap Equity tactical underweight (-0.28%)
  - GTAA underweight (-0.09%)
- Manager Effect: +0.71%
  - Public Markets Fixed Income outperformed due to various managers (+0.80%)
  - GTAA outperformed due to Bridgewater (+0.21%)
  - International Equity underperformed due to various managers (-0.24%)
- Residual Effect: 0.01%

Source: State Street Investment Analytics

Note: Explanatory details of each effect represent the most notable contributions and may not sum to the total effect.



**Asset Class Performance vs. Benchmark – Public Markets**

- Objective #3: Achieve one- and three-year rolling annual net rates of return for ASRS strategic asset classes that are equal to or greater than their respective strategic asset class benchmarks.

	1 Year Return	3 Year Return
ASRS Total Domestic and Int'l Equity <sup>1</sup>	27.0%	12.8%
ASRS Custom Total Equity Benchmark	26.7%	13.0%
Excess Return	0.3%	-0.2%
ASRS Domestic Equity	34.0%	16.3%
ASRS Custom Domestic Equity Benchmark	33.9%	16.5%
Excess Return	0.1%	-0.2%
ASRS International Equity	15.7%	5.8%
ASRS Custom Int'l Equity Benchmark	16.9%	6.3%
Excess Return	-1.2%	-0.5%
ASRS Public Markets Fixed Income	-1.7%	4.0%
ASRS Custom Fixed Income Benchmark	-1.2%	3.8%
Excess Return	-0.5%	0.2%
ASRS Inflation-Linked	-7.3%	-5.1%
ASRS Custom Inflation-Linked Benchmark	-9.5%	-7.9%
Excess Return	2.2%	2.8%
ASRS GTAA	17.9%	11.6%
ASRS Custom GTAA Benchmark	18.0%	10.5%
Excess Return	-0.1%	1.1%

<sup>1</sup>Performance of ASRS Total Domestic and Int'l Equity includes the performance of the ASRS Domestic Equity and ASRS International Equity asset classes and the Equity Risk Factor Portfolio with an inception date of 6/1/2013.

Note: Composition of ASRS Custom Asset Class Benchmarks can be found in the appendix.

**Goal Met:  
Partially**

Asset Class Performance vs. Benchmark – Private Markets<sup>1</sup>

- Objective #3: Achieve one- and three-year rolling annual net rates of return for ASRS strategic asset classes that are equal to or greater than their respective strategic asset class benchmarks.

	1 Year Return	3 Year Return	IRR Since Inception	Inception Date
ASRS Private Equity	14.5%	15.5%	11.9%	Oct-07
Russell 2000	30.1%	18.3%	15.8%	
Excess Return	-15.6%	-2.8%	-3.9%	
ASRS Opportunistic Equity <sup>2</sup>	19.0%	--	21.9%	Apr-11
ASRS Private Debt	16.7%	--	17.1%	Jul-12
S&P/LSTA Levered Loan Index + 250 bps	7.5%	--	8.0%	
Excess Return	9.2%	--	9.1%	
ASRS Opportunistic Debt <sup>2</sup>	9.1%	9.3%	12.3%	Jan-08
ASRS Real Estate	14.5%	14.0%	5.0%	Oct-05
NFI - ODCE Index	13.0%	14.3%	5.4%	
Excess Return	1.5%	-0.3%	-0.4%	
ASRS Farmland and Timber	--	--	-3.2%	Jul-13
CPI ex-Food and Energy	--	--	3.5%	
Excess Return	--	--	-6.7%	

<sup>1</sup>Performance of private markets portfolios and corresponding benchmarks is reported on a one quarter lag. Performance shown as of September 30, 2013.

<sup>2</sup>Net absolute rate of return expectations range from 10-14% per annum.

Note: Time-weighted performance of private markets portfolios shown for the one- and three-year periods to reconcile Total Fund performance as it is reported on a time-weighted basis. Due to the drawdown nature of private markets portfolios in which the investment managers call capital over time, dollar-weighted performance, or internal rate of return (IRR) is a more appropriate measure of the performance of ASRS private markets portfolios.

**Goal Met:  
Partially**

- Objective #4: Ensure sufficient monies are available to meet pension benefits, health insurance, member refunds, administrative payments, and other cash flow requirements.

Month	Cash In	Cash Out	Balance as of 1st Business Day
Jan-13	\$440,341,987	(\$180,438,071)	\$259,722,610
Feb-13	\$270,343,225	(\$180,786,807)	\$99,165,260
Mar-13	\$275,847,455	(\$181,236,080)	\$89,033,161
Apr-13	\$223,752,576	(\$182,003,067)	\$65,075,125
May-13	\$466,869,533	(\$182,469,344)	\$285,187,177
Jun-13	\$357,254,932	(\$182,835,622)	\$212,223,877
Jul-13	\$490,407,958	(\$185,679,872)	\$307,287,872
Aug-13	\$364,853,179	(\$188,310,189)	\$205,962,942
Sep-13	\$303,470,007	(\$189,505,809)	\$95,194,585
Oct-13	\$404,897,845	(\$190,046,089)	\$200,202,122
Nov-13	\$213,012,636	(\$190,661,495)	\$126,730,318
Dec-13	\$560,544,992	(\$190,590,864)	\$317,630,570

**All Pension Obligations, Capital Calls and Other Requirements Met with Available Cash**

**Goal Met: Yes**

Note:

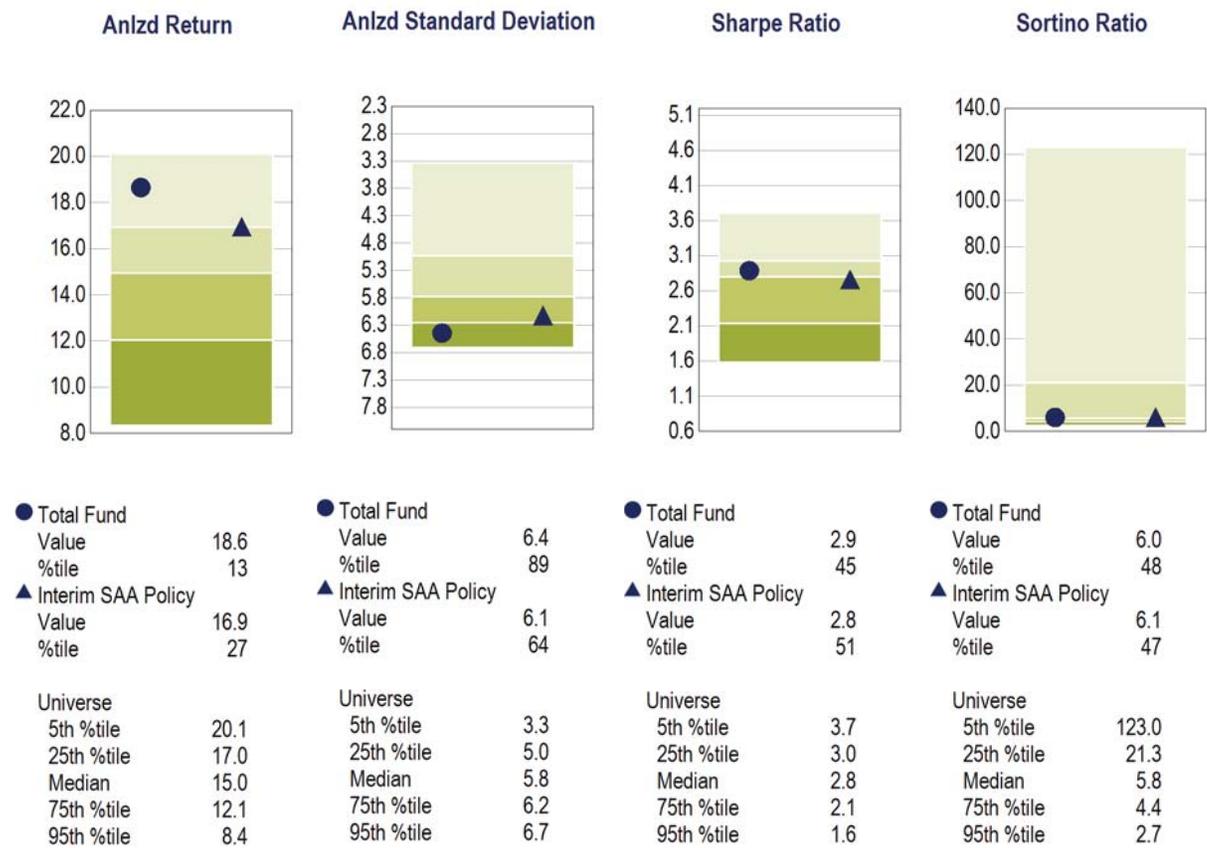
Cash In - The balance as of the business day prior to the monthly pension run payment, comprised of month-to-date contributions and excess cash held to fund manager(s) or as a tactical allocation.

Cash Out - The monthly pension run payment.

Total Fund Risk Statistics vs. Peer Universe

Total Fund vs. IFx Public DB > \$1B Gross(USD)(peer)

1 Year



Note: The information contained herein is for comparison purposes only and is not a Total Fund benchmark. Peer universe comparisons are subject to several limitations, including: peer groups are not comprehensive; several funds are included in multiple peer groups; peer groups are constructed using gross of fee returns; and survivorship bias in that poorly performing funds may no longer report results.

Universes are constructed using gross of fee returns; therefore, ASRS rank is based on gross of fee returns.

Rankings are from highest (1) to lowest (100) in the InvestorForce Public Funds > \$1 Billion Universe.

The InvestorForce Public Funds > \$1 Billion Universe contains 57 observations for the one-year period ending December 31, 2013, with total assets of \$675.3 billion.

Composition of Interim SAA Policy can be found in the appendix.

Total Fund Risk Statistics vs. Peer Universe

Total Fund vs. IFx Public DB > \$1B Gross(USD)(peer)

3 Year



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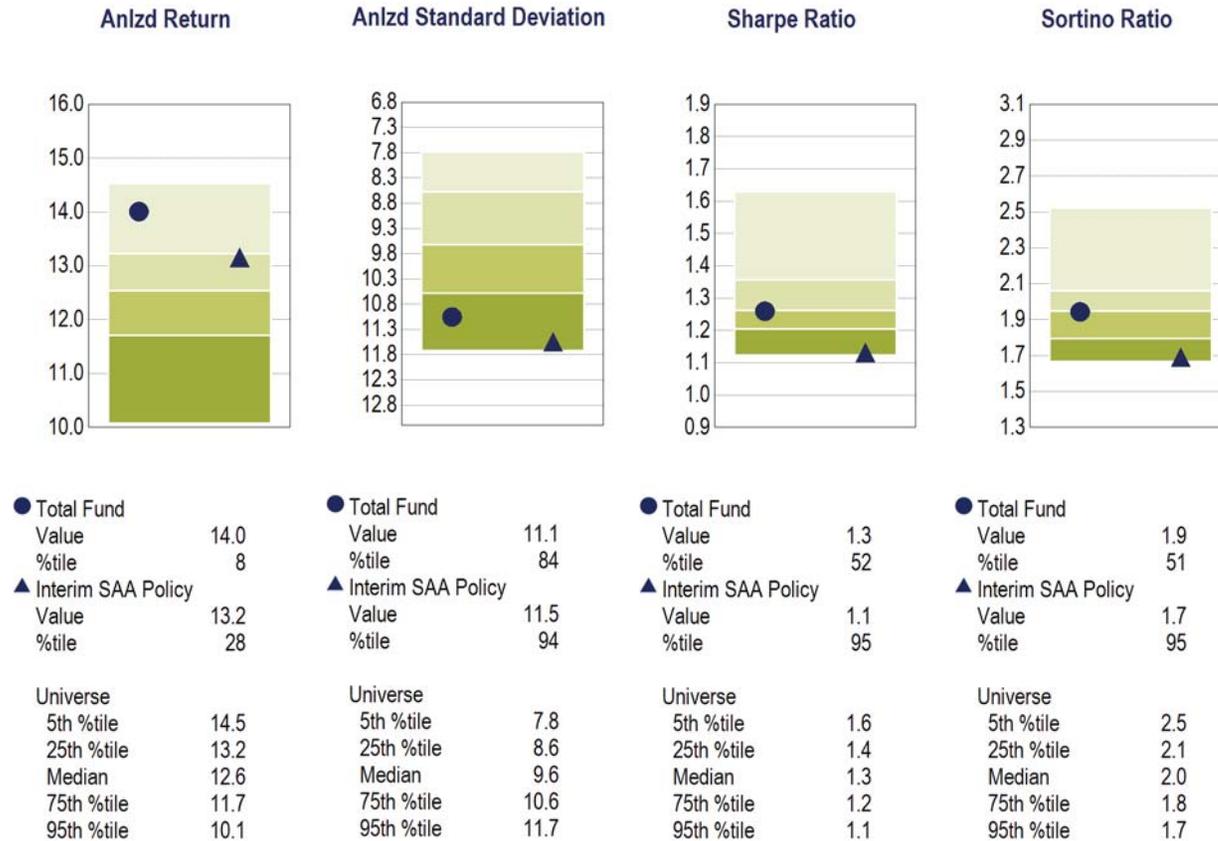
The InvestorForce Public Funds > \$1 Billion Universe contains 57 observations for the three-year period ending December 31, 2013, with total assets of \$675.3 billion.

Composition of Interim SAA Policy can be found in the appendix.

Total Fund Risk Statistics vs. Peer Universe

Total Fund vs. IFx Public DB > \$1B Gross(USD)(peer)

5 Year



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Universes are constructed using gross of fee returns; therefore, ASRS rank is based on gross of fee returns.

Rankings are from highest (1) to lowest (100) in the InvestorForce Public Funds > \$1 Billion Universe.

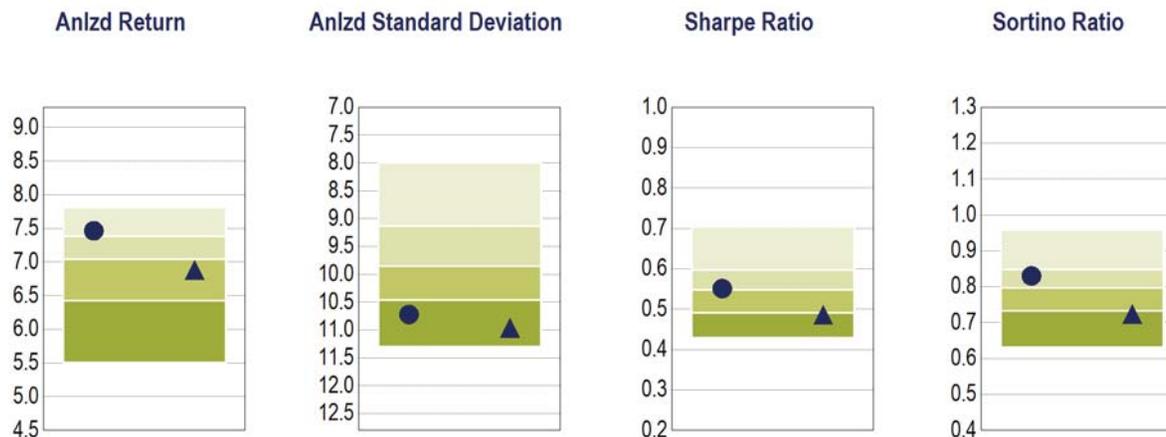
The InvestorForce Public Funds > \$1 Billion Universe contains 57 observations for the five-year period ending December 31, 2013, with total assets of \$675.3 billion.

Composition of Interim SAA Policy can be found in the appendix.

Total Fund Risk Statistics vs. Peer Universe

Total Fund vs. IFx Public DB > \$1B Gross(USD)(peer)

10 Year



● Total Fund

Value 7.5  
%tile 13

▲ Interim SAA Policy

Value 6.9  
%tile 57

Universe

5th %tile 7.8  
25th %tile 7.4  
Median 7.0  
75th %tile 6.4  
95th %tile 5.5

● Total Fund

Value 10.7  
%tile 84

▲ Interim SAA Policy

Value 11.0  
%tile 88

Universe

5th %tile 8.0  
25th %tile 9.1  
Median 9.8  
75th %tile 10.5  
95th %tile 11.3

● Total Fund

Value 0.6  
%tile 50

▲ Interim SAA Policy

Value 0.5  
%tile 80

Universe

5th %tile 0.7  
25th %tile 0.6  
Median 0.5  
75th %tile 0.5  
95th %tile 0.4

● Total Fund

Value 0.8  
%tile 36

▲ Interim SAA Policy

Value 0.7  
%tile 78

Universe

5th %tile 1.0  
25th %tile 0.9  
Median 0.8  
75th %tile 0.7  
95th %tile 0.6

Note: The information contained herein is for comparison purposes only and is not a Total Fund benchmark. Peer universe comparisons are subject to several limitations, including: peer groups are not comprehensive; several funds are included in multiple peer groups; peer groups are constructed using gross of fee returns; and survivorship bias in that poorly performing funds may no longer report results.

Universes are constructed using gross of fee returns; therefore, ASRS rank is based on gross of fee returns.

Rankings are from highest (1) to lowest (100) in the InvestorForce Public Funds > \$1 Billion Universe.

The InvestorForce Public Funds > \$1 Billion Universe contains 53 observations for the ten-year period ending December 31, 2013, with total assets of \$675.3 billion.

Composition of Interim SAA Policy can be found in the appendix.