OFFICE OF THE

# ARIZONA STATE TREASURER

## EILEEN I. KLEIN

TREASURER

# SEPTEMBER 2018

**Presented To:**

## Arizona State Board of Investment

**October 30, 2018**

**STATE BOARD OF INVESTMENT**

# A G E N D A

**October 30, 2018**

1. Call to Order; Opening Remarks ……Eileen I. Klein, Chair
2. Approval of Minutes of September 26, 2018 BOI Meeting
3. Investment Outlook and Summary Review of Treasurer's Monthly Reports
   A. State Agency Earnings Distributions ……... Dennis Stevenson, CIO
      State Agency Operating Average Invested Balances
      State Agency Investments and Performance Reports
   B. LGIP Yield Analysis …… Jake Richardson, Portfolio Manager
      LGIP Pools Investments and Performance Reports
   C. Endowment Earnings Distributions …….Tim White, Director of Endowments
      Land Sales Monthly Proceeds Endowment Funds
      Endowment Investments and Performance Reports
      Broker Activity Report
4. General Business
   A. Review of Short-Term Fixed Income Benchmarks…Eric Stivers, Investment Analyst
   B. Update on Review of Assets and Asset Performance……Dennis Stevenson, CIO
   C. Approval of U.S. Bancorp Asset Management Ext. Manager...Dennis Stevenson, CIO
5. Approval of September 2018 Report
6. Treasurer's Report ……. Eileen I. Klein, Chair
7. Market Outlook.....Harry Papp, Board Member
8. Call to the Public
9. Notice of Next Meeting
10. Adjournment

**REPORT OF THE STATE TREASURER**

**FOR**

**October 30, 2018**

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**Minutes of**
**BOARD OF INVESTMENT MEETING**

The regular meeting of the State Board of Investment was held on September 26, 2018 in the Office of the State Treasurer, 1700 West Washington, State Capitol, West Wing, Treasurer's Conference Room, Phoenix, Arizona. Treasurer Klein called the meeting to order at approximately 1:30 p.m.

**Members Present:**

Eileen I. Klein, Chair, State Treasurer
Harry A. Papp, CFA & Managing Partner, L. Roy Papp & Associate – Via Teleconference
Beth Ford, Treasurer, Pima County, Via-Teleconference
Robert Charlton, Superintendent, Department of Financial Institutions
Gilbert Davidson, Interim Director, Arizona Department of Administration

1. **Call to Order; Opening Remarks:**
   Treasurer Klein called the September 26, 2018 BOI meeting to order at approximately 1:30 p.m.

2. **Approval of Minutes:**
   Mr. Davidson made a motion to approve the August 30, 2018 minutes. Mr. Papp seconded the motion. Motion carried.

3. **Investment Outlook and Summary Review of Treasurer's Monthly Reports:**

   A. **State Agency Earnings Distributions, Operating Average Invested Balances, Investments and Performance Reports**
   Chief Investment Officer, Dennis Stevenson, distributed his outlook and highlighted the results of the State Agency performance for the month of August 2018. See memo.

   B. **LGIP Yield Analysis, Pools Investments and Performance Reports**
   Portfolio Manager, Jake Richardson, distributed his outlook and highlighted the results for the Local Government Investment Pools performance for the month of August 2018. See memo.

   C. **Endowment Earnings Distributions, Land Sales Monthly Proceeds, Investment and Performance Reports**
   Director of Endowments, Tim White, distributed his outlook and highlighted the results for the Endowment performance for the month of August 2018. See memo.

4. **Approval of August 2018 Report:**
   Mr. Papp made a motion to approve the August 2018 Report. Mr. Davidson seconded the motion. Motion carried.

5. **Treasurers Report:**
   Treasurer Klein provided the Board with a brief Treasurer's Report which included an update on the operations of the office.

6. **Special Presentation on Demographic Trends:**
   Mr. Doug Walls provided the Board with a Special Presentation on Demographic Trends.

7. **Market Update:**
   Mr. Papp provided the Board with a brief Market Update.

8. **Call to the Public:**
   There was no Public comment.

9. **Notice of Next Meeting:**
   Treasurer Klein advised the Board that the next regular meeting of the Board of Investment will be Tuesday, October 30, 2018 at 1:30 p.m. at 1700 West Washington, State Capitol, West Wing, Treasurer's Conference Room, Phoenix, Arizona.

10. **Adjournment:**
    Mr. Charlton made a motion to adjourn the BOI meeting. Mr. Davidson seconded the motion. Upon unanimous approval the BOI Meeting was adjourned at 3:16 p.m.

Respectfully Submitted by:

Christine Thurston

Christine Thurston
Executive Assistant

Approved by:

Eileen I. Klein
Chair

30 October 2018
Date

OFFICE OF THE
ARIZONA STATE TREASURER

EILEEN I. KLEIN
TREASURER

# Investment Summary | September 2018

## Overall Performance – Where We Are Now |

- State Agency Pools:
  - Total assets: $6,069,835,850
  - September earnings distributed: $9,871,928 (+70.61% YoY)
  - Fiscal YTD earnings distributed: $28.6MM (+ 66.24% YoY)

## Outlook |

The Federal Reserve is expected to raise interest rates on December 19. The United States continues to lead the world toward normalization of rates. This will continue to cause foreign capital flows to be invested in American debt and assets. Looking forward, 2018 GDP is on course to finish in the 3.6+ % range.

## Strategy: Monthly Commentary |

We have already begun adding to duration as the Federal Reserve raised rates in September. It is anticipated that we will additionally extend duration after the December rate hike and most likely in the first quarter of 2019. Arizona continues to benefit from population growth affecting all aspects of state wide economy.

## Alternative Scenarios |

There are several scenarios we continue to monitor which could change our expectations that the Fed will raise interest rates. The possibility of banking problems in Europe. The overnight rate for Turkish debt has reached 24%. The Italian governments proposed 2019 budget was rejected by the E.U. commissioners. This is the first time a nations budget has been rejected in the history of the European Union.

The Chinese trade war remains a concern.

Domestic political deadlock and the inability to pass a budget.

Emerging market debt problems. Most of their debt is U.S dollar denominated. As our currency increases it makes financing increasingly difficult. Emerging market economies make up 50% of world GDP.

*Dennis Stevenson, CIO*

## State Agency Investment Pool Balances |

| | September 30, 2018 | September 30, 2017 | FY Change |
|---|---|---|---|
| **Pool 2 FF&C** | $1,035,054,505 | $1,080,078,539 | -$45,024,034 |
| **Pool 3 Internal** | $1,784,481,655 | $1,295,113,062 | +$489,368,593 |
| **Pool 3 External** | $106,132,352 | $104,678,633 | +$1,453,719 |
| **Pool 4 Gov.** | $1,247,795,933 | $1,048,893,016 | +$198,902,917 |
| **Pool 10 Internal** | $1,055,557,628 | $978,638,384 | +$76,919,244 |
| **Pool 10 External** | $117,994,018 | $236,009,530 | -$118,015,512 |
| **Pool 12 CAWCD** | $397,710,675 | $363,161,602 | +$34,549,073 |
| **Pool 16 ECDHB** | $325,109,081 | $354,898,687 | -$29,789,606 |
| **TOTAL STATE AGENCY** | **$6,069,835,850** | **$5,461,471,458** | **+$608,364,392** |

*Dennis Stevenson, CIO*

# Local Government Investment Pools (LGIP) Summary

## Overall Performance – Where We Are Now |

- Local Government Investment Pools:
  - Total assets: $2,839,963,873
  - Total earnings: $15,581,124; +$7.5MM over September 2017
  - Total fiscal year yields:
    - Pool 5: 2.09%; 103bps higher than September 2017
    - Pool 7: 1.88%; 96bps higher than September 2017
    - Pool 500: 2.29%; 61bps higher than September 2017
    - Pool 700: 1.86%; 33bps higher than September 2017

## Strategy: Short-term Pools 5 & 7 |

As expected, the Federal Reserve raised rates by 25bps in the September FOMC meeting. We now look to the December 19th FOMC meeting as our next anticipated move. As previously discussed, we had targeted maturities around the September meeting and are now reinvesting those securities for Pools 5 and 7 at higher yields. We are putting this investable cash to work for our participants, but as always keeping a liquidity buffer for all daily cash needs. Pool 5 is targeting the December FOMC meeting with high quality assets. Amongst those assets we have increased our U.S. Treasury allocation to 5% and expect to remain approximately at that level. Pool 7, our full faith and credit fund, will maintain laddering its U.S. Treasuries. In October the U.S. Department of Treasury issued its first two-month treasury bill, in line with our investment strategy, we have added this to our investment mix.

## Strategy: Intermediate Pools 500 & 700 |

The intermediate LGIP pools will continue our current short duration strategy as we anticipate one more rate hike this year. Leading into the December FOMC meeting we will stay diligent on the FED minutes to see if they start leaning more dovish going into 2019. If we see indications that the FED is less inclined to raise rates passed December, we will take that as an opportunity to further extend our duration. Pool 500 will maintain a 5% monthly liquidity target. We will be looking for high quality fixed and floating rate securities, maturing in the next two to three years. Additionally, we have added a small position in two-year U.S. Treasuries, planning to increase this to 2% to 3% within the next few months. Pool 700 will maintain a higher monthly liquidity balance of 10% to 15% to ensure any participant needs. We will be focused on increasing our U.S. Treasury assets, maturing less than a year. The goal for Pool 700 will be to match monthly maturities to our target liquidity balance and stabilize yield movement.

## LGIP Investment Pool Balances |

| | September 30, 2018 | September 30, 2017 | FY Change |
|---|---|---|---|
| **Pool 5 LGIP** | $1,286,890,208 | $1,085,703,140 | +$201,187,068 |
| **Pool 7 LGIP FF&C** | $1,071,540,439 | $1,122,745,375 | -$51,204,936 |
| **Pool 500 LGIP Med.** | $345,803,402 | $324,856,557 | +$20,946,845 |
| **Pool 700 LGIP Med FF&C** | $135,729,825 | $146,114,525 | -$10,384,700 |
| **TOTAL LGIP** | **$2,839,963,873** | **$2,679,419,598** | **+$160,544,275** |

*Jake Richardson, Portfolio Manager*

# Endowment Summary – September BOI

## Overall Performance – Where We Are Now |

- Highlights:
  - PLETF 10-year annualized total return 8.73%
  - PLETF 1-year annualized total return beats bench by 34bps
  - Prop 123 monthly distributions highest ever

***Big Picture:***

- PLETF fair market value at $6,095,273,020.00
- Monthly distributions continue at record levels of $28.8MM
- FYTD2019 distribution increased from $79.5MM to $86.4MM; up $6.8MM vs FYTD2018
- PLETF outperforming benchmark by +7bps Q1/FYTD; +34bps for the trailing 12 months
- Total annualized 1-Year return was 10.13% vs Benchmark 9.78% – better by +34bps overall
- Annualized 10-Year total return through September is 8.73% versus August at 8.16% - better by+ 57bps
- Fair Market Value down $76MM MoM; Up $361MM YoY
- Unrealized Gains: $3.3B (Up $461MM or 16.35% YoY)
- September Realized Gains: $14.9MM
- September TRR PLETF -0.44% vs Benchmark -0.54% - outperforming the benchmark by +10bps
- Pool 203 MidCap equities beat S&P 400 by +16bp
- Pool 205 significantly outperformed the FTSE BIG Index by +28bps
- All other pools are within 5bps of benchmarks

## Equity Strategy: Stay the Course; Long-Term Horizon |

As we begin the second quarter, we continue our long-term strategy of being overweight in SmallCap stocks. After hitting an all-time high on the S&P600 Index on August 31st, SmallCaps began a correction phase which is not uncommon for healthy markets over time when multiples become elevated. Our equity exposure was 62.15% at month-end. This was 35bps shy of triggering a rebalancing event per our investment policy, therefore we adhered to investment policy and did not rebalance to risk targets this month. As previously discussed, SmallCap stocks have historically outperformed over long periods of time and our position has taken advantage of this return. Our 10% target is approximately three times more than the SmallCap exposure of the S&P 1500 total market cap. As this fund is invested in perpetuity, our goal is to take advantage of this historic outperformance over time. Since inception, our SmallCap exposure has returned 13.99% (-65bps MoM), still outperforming the MidCap exposure at 9.88% (-11bps MoM), our LargeCap exposure at 5.50% (unch), and our fixed income return of 4.52% (-4bps MoM). We will continue to invest in the individual components of the various indices per our investment policy on a market capitalization-weighted basis, although we are still examining the merits of an equal capitalization-weighted component for future possible consideration in light of the large concentration in a few tech names due to stock price appreciation.

## Fixed Income Strategy: Continue to Keep Duration Short; Lighten Corporates |

Strategy has been to be very defensively positioned on a duration basis such that Pool 205 performs well in a rising rate environment. Presently the portfolio is positioned to perform best in a "bear-steepener" scenario and a "bear-flattener" scenario. We will continue to be defensive in terms of both, credit and duration risk. While corporates have been performing well and we are still upbeat, we continue to pay close attention to OAS (option-adjusted

spread) and CDS (credit default swaps) levels for hints of credit and liquidity stress. We will look to strategically lighten some corporate positions in favor of higher quality paper and spreads where advantageous. This strategy has benefitted Pool 205 tremendously versus the benchmark for the quarter just ended, in fact for the trailing 12 months and we feel rates still have potential to move higher, albeit not in a straight line. To do this, we will hold well-structured mortgage-backed securities and CMO's which serve to provide nice cash flows for Prop 123 distribution requirements and incrementally add liquid US Treasuries and some longer fixed rate bond positions to hedge against an economic downturn, or any possible credit-driven market dislocations so we can continue to make timely K-12 distributions. Due to larger Prop 123 monthly distributions, pool duration may extend naturally if interest rates continue to increase and our equity portfolios do not realize large appreciation and subsequent cash rebalancing back into our fixed income portfolios. Bearing this in mind, we think interest rates will eventually rise but the curve will stay flat in line with wall street economists' consensus. Therefore, we have kept our duration shorter than the benchmark by 2.37 years at 3.69 years (+0.06 MOM) versus 6.06 (+.04MOM) for the SBBIG Index. Note the forward-looking Bloomberg Bond Yield Forecast compiled by averaging 56 Wall Street economists' forecasts:

95) Chart 96) Export Page 1/3 Bond Yield Forecasts

Region G7 Spread 2 Year - 10 Year

| | Rate | Market Yld | Q4 18 | Q1 19 | Q2 19 | Q3 19 | Q4 19 | Q1 20 | Q2 20 | Q3 20 | Q4 20 | Q1 21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | United States | | | | | | | | | | | |
| 1) | US 30-Year | 3.33 | 3.35 | 3.43 | 3.51 | 3.56 | 3.64 | 3.70 | 3.75 | 3.77 | 3.74 | 3.74 |
| 2) | US 10-Year | 3.11 | 3.17 | 3.26 | 3.33 | 3.36 | 3.41 | 3.44 | 3.48 | 3.50 | 3.46 | 3.53 |
| 3) | US 5-Year | 2.95 | 2.95 | 3.05 | 3.14 | 3.20 | 3.26 | 3.32 | 3.30 | 3.32 | 3.35 | |
| 4) | US 2-Year | 2.84 | 2.89 | 3.02 | 3.13 | 3.21 | 3.26 | 3.31 | 3.33 | 3.34 | 3.28 | 3.28 |
| 5) | US 3-Month Libor | 2.51 | 2.61 | 2.79 | 2.96 | 3.10 | 3.17 | 3.24 | 3.24 | 3.26 | 3.21 | 3.21 |
| 6) | Fed Funds Rate - Upper Bound | 2.25 | 2.50 | 2.70 | 2.90 | 3.05 | 3.10 | 3.05 | 3.05 | 3.05 | 3.05 | 3.05 |
| 7) | Fed Funds Rate - Lower Bound | 2.00 | 2.23 | 2.45 | 2.66 | 2.80 | 2.85 | 2.81 | 2.81 | 2.81 | 2.79 | 2.80 |
| | 2 Year - 10 Year Spread | 0.27 | 0.28 | 0.25 | 0.20 | 0.16 | 0.15 | 0.13 | 0.15 | 0.16 | 0.18 | 0.25 |

## Endowment Monthly Land Sale Proceeds |

- +$8.3 MM in September
- +$1.4 MM vs August
- +$3.5 MM FYoY

## Endowment Prop 123 Distributions |

- $28.8 MM total/$26.8 MM for K-12 successfully distributed on time from Pool 123
- FYTD K-12 distribution $80.3MM; up $6.3MM YoY
- Pool 123 mechanism working well (2-3 months laddered liquidity)

## Pool Performance |

Portfolio 3Yr standard deviation was 5.74 versus benchmark at 5.85; Portfolio is less risky/volatile versus benchmark.

Equity/Fixed Income Pools:

- Pool 201 LargeCap Equity lagged the S&P 500 by 5bps MOM at 0.52%.
- Pool 203 MidCap Equity outperformed the S&P 400 by +16bp MOM at -0.94%.
- Pool 204 SmallCap Equity outperformed the S&P 600 by 1bp MOM at -3.18%.
- Pool 205 significantly outperformed the SBBIG Index by 28bps MOM; continues to outperform by +121bps YTD.
- Pool 123 returned 0.16% versus benchmark at 0.17% for September.

*Tim White, Director of Endowments*

**EARNINGS DISTRIBUTION - INVESTMENT POOLS**
**SEPTEMBER 2018**

| Recipient | Earnings Distributed SEPTEMBER 2018 | Fiscal YTD 18/19 | Fiscal YTD 17/18 | Change from Previous Year | Fiscal YTD Investment Management Fees Received |
|---|---|---|---|---|---|
| General Fund * | $2,689,784 | $8,379,682 | $4,615,295 | 81.6% | |
| 2 State Agencies - Full Faith & Credit | 1,406,236 | 4,204,331 | 2,212,392 | 90.0% | 120,875 |
| 3 State Agencies - Diversified (Combined) ** | 1,870,751 | 5,470,967 | 3,640,490 | 50.3% | 221,279 |
| 4 State Agencies - Gov | 1,831,559 | 4,299,800 | 2,294,045 | 87.4% | 136,322 |
| 5 LGIP | 2,277,214 | 7,276,276 | 3,008,826 | 141.8% | 191,924 |
| 7 LGIP Gov | 1,735,490 | 5,504,198 | 2,806,652 | 96.1% | 167,197 |
| 9A Public School Credit Enhancement *** | 0 | 0 | 0 | 0 | 13,756 |
| 10 Restricted Operating | 759,918 | 2,304,843 | 1,406,816 | 63.8% | 163,618 |
| 12 CAWCD Medium-Term | 761,070 | 2,257,889 | 1,509,886 | 49.5% | 54,461 |
| 16 ECDH Medium-Term | 647,849 | 2,018,618 | 1,628,079 | 24.0% | 51,817 |
| **Subtotal** | **$13,979,872** | **$41,716,604** | **$23,122,481** | **80.4%** | **$1,121,248** |
| **NAV POOL** | | | | | |
| 500 LGIP - Med Term | 651,189 | 1,988,678 | 1,383,099 | 43.8% | 47,838 |
| 700 LGIP - FF&C Med Term | 164,689 | 524,240 | 558,706 | -6.2% | 18,080 |
| **Total** | **$14,795,750** | **$44,229,521** | **$25,064,285** | **76.5%** | **$1,187,165** |
| **SEPTEMBER 2017 TOTALS** | **$8,356,734** | | | | **$1,113,057** |

* Note: Pool 15 AHCCCS Operating Earnings are reported in General Fund
** Note: Pool 15 AHCCCS Operating Management Fees are reported in Pool 3 State Agencies Diversified (Combined)
*** Note: Pool 9A represents $80 million invested in School Funding Obligations; earnings on this investment revert to the General Fund

**OPERATING MONIES**
**AVERAGE INVESTED BALANCE**
Through September 30, 2018
(in millions)

| Month | Fiscal Year 2016/2017 | Fiscal Year 2017/2018 | Fiscal Year 2018/2019 |
|---|---|---|---|
| JULY | $2,012 | $1,635 | $1,824 |
| AUGUST | 1,504 | 1,303 | 1,495 |
| SEPTEMBER | 1,694 | 1,455 | 1,594 |
| OCTOBER | | | |
| NOVEMBER | | | |
| DECEMBER | | | |
| JANUARY | | | |
| FEBRUARY | | | |
| MARCH | | | |
| APRIL | | | |
| MAY | | | |
| JUNE | | | |
| **Y-T-D Average** | **$1,737** | **$1,464** | **$1,638** |
| **Full Year Average** | **$1,922** | **$1,806** | |

# STATE AGENCY POOLS
# PORTFOLIO EARNINGS ANALYSIS
# SEPTEMBER 2018

| FUND | DESCRIPTION | Current Month 09/30/18 | Prior Month 08/31/18 | Prior Year 09/30/17 | Net Asset Value Per Share |
|---|---|---|---|---|---|
| 2 | STATE AGENCIES - FULL FAITH & CREDIT | 1,415,353 | 1,458,474 | **803,287** | 0.9891 |
| 3 | STATE AGENCIES - DIVERSIFIED | | | | |
| | INTERNAL MANAGERS | 2,550,389 | 2,462,271 | **1,459,378** | 0.9953 |
| | EXTERNAL MANAGERS | 184,570 | 187,137 | **129,568** | 0.9959 |
| | FUND 3 TOTAL | 2,734,960 | 2,649,407 | **1,588,945** | 0.9953 |
| 4 | STATE AGENCIES - GOV | 2,008,214 | 1,553,647 | **915,364** | 0.9937 |
| 9A | PUBLIC SCHOOL CREDIT ENHANCEMENT | 159,847 | 160,035 | **84,508** | 0.9891 |
| 10 | RESTRICTED OPERATING | | | | |
| | INTERNAL MANAGERS | 1,894,923 | 1,894,399 | **1,131,283** | 0.9917 |
| | EXTERNAL MANAGERS | 144,589 | 157,270 | **178,331** | 1.0006 |
| | FUND 10 TOTAL | 2,039,512 | 2,051,669 | **1,309,615** | 0.9928 |
| 12 | CAWCD MEDIUM-TERM | 761,070 | 751,433 | **506,761** | 0.9943 |
| 15 | AHCCCS OPERATING | 105,124 | 102,968 | **28,248** | N/A |
| 16 | ECDH MEDIUM-TERM | 647,849 | 660,898 | **549,502** | 0.9862 |
| | TOTAL STATE AGENCIES | **9,871,928** | **9,388,531** | **5,786,230** | |

## STATE AGENCY POOLS
## PORTFOLIO YIELD ANALYSIS
## SEPTEMBER 2018

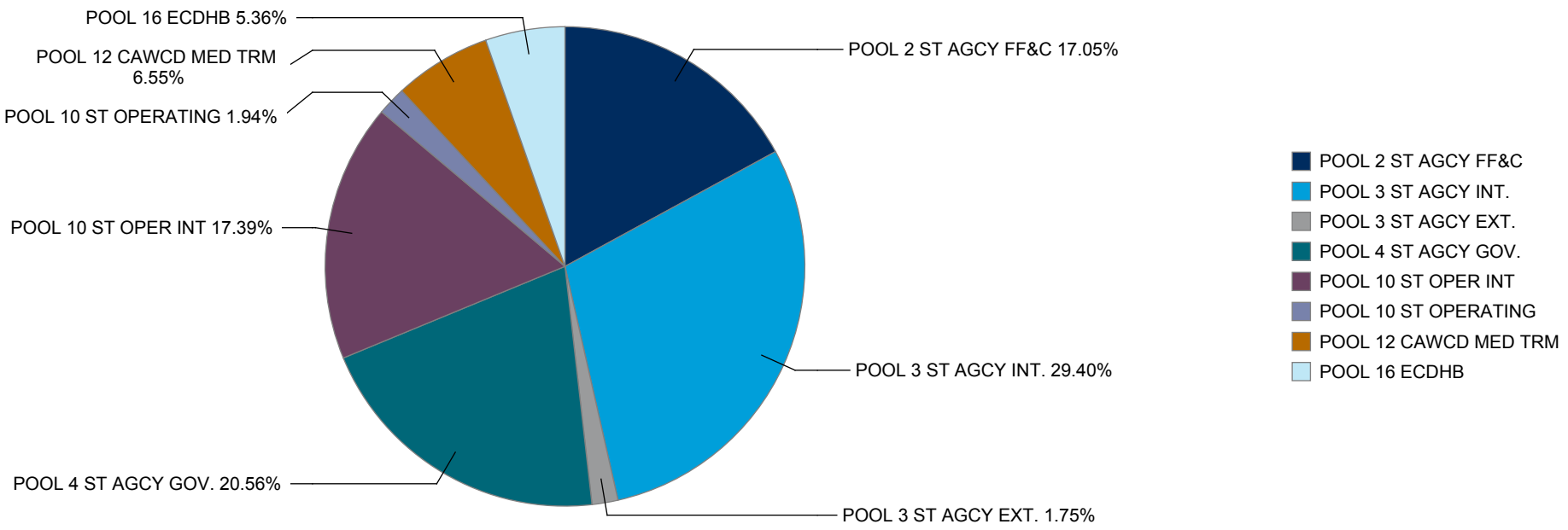
| FUND | DESCRIPTION | Current Month 09/30/18 | Prior Month 08/31/18 | Prior Year 09/30/17 |
|---|---|---|---|---|
| 2 | STATE AGENCIES - FULL FAITH & CREDIT | 2.00% | 1.96% | 1.16% |
| | 75% MERRILL 0-1 US TREAS INDEX / 25% MERRILL US GNMA MORTGAGE BACKED INDEX | 2.55% | 2.39% | 1.60% |
| 3 | STATE AGENCIES - DIVERSIFIED | | | |
| | INTERNAL MANAGERS | 2.23% | 2.17% | 1.44% |
| | EXTERNAL MANAGERS | 2.11% | 2.07% | 1.51% |
| | COMBINED | 2.21% | 2.16% | 1.44% |
| | 50% 3 MONTH LIBOR INDEX / 50% MERRILL 1-3 US BROAD MARKET INDEX | 2.65% | 2.56% | 1.50% |
| 4 | STATE AGENCIES - GOV | 2.05% | 2.02% | 1.21% |
| | 50% MERRILL 6 MTH US T-BILL INDEX / 50% MERRILL 1-3 UNSUB. US TREAS / AGY INDEX | 2.57% | 2.39% | 1.34% |
| 9A | PUBLIC SCHOOL CREDIT ENHANCEMENT | 2.00% | 1.96% | 1.16% |
| 10 | RESTRICTED OPERATING | | | |
| | INTERNAL MANAGERS | 2.18% | 2.14% | 1.46% |
| | EXTERNAL MANAGERS | 1.39% | 1.35% | 0.77% |
| | COMBINED | 2.10% | 2.05% | 1.29% |
| | 50% 3 MONTH LIBOR INDEX / 50% MERRILL 1-3 US BROAD MARKET INDEX | 2.65% | 2.56% | 1.50% |
| 12 | CAWCD MEDIUM-TERM | 2.31% | 2.27% | 1.69% |
| | 75% MERRILL 1-5 US D M INDEX / 25% S & P LGIP INDEX | 2.81% | 2.67% | 1.70% |
| 15 | AHCCCS OPERATING | 0.63% | 1.02% | 0.32% |
| 16 | ECDH MEDIUM-TERM | 2.39% | 2.36% | 1.89% |
| | 75% MERRILL 1-5 US D M INDEX / 25% S & P LGIP INDEX | 2.81% | 2.67% | 1.70% |

# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

## STATE AGENCY

### Manager Allocation



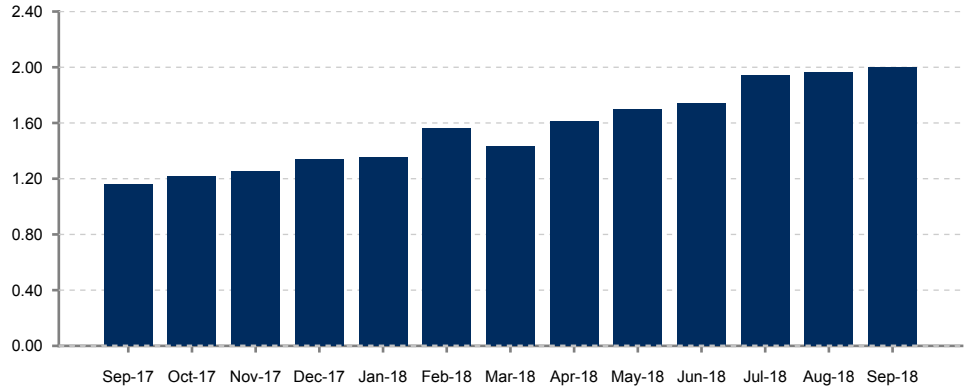

| | Market Value | % of Portfolio |
|---|---|---|
| POOL 2 ST AGCY FF&C | 1,035,054,505 | 17.1 |
| POOL 3 ST AGCY INT. | 1,784,481,655 | 29.4 |
| POOL 3 ST AGCY EXT. | 106,132,352 | 1.7 |
| POOL 4 ST AGCY GOV. | 1,247,795,933 | 20.6 |
| POOL 10 ST OPER INT | 1,055,557,628 | 17.4 |
| POOL 10 ST OPERATING | 117,994,018 | 1.9 |
| POOL 12 CAWCD MED TRM | 397,710,675 | 6.6 |
| POOL 16 ECDHB | 325,109,081 | 5.4 |
| TOTAL STATE AGENCY | 6,069,835,850 | 100.0 |

# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

**POOL 2 ST AGCY FF&C**

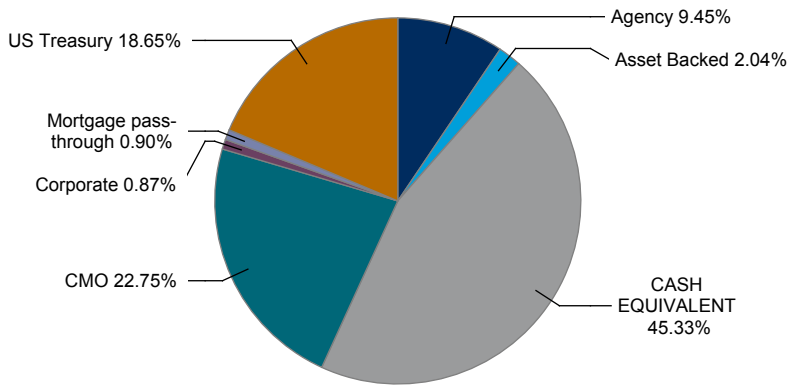
## Net Yield



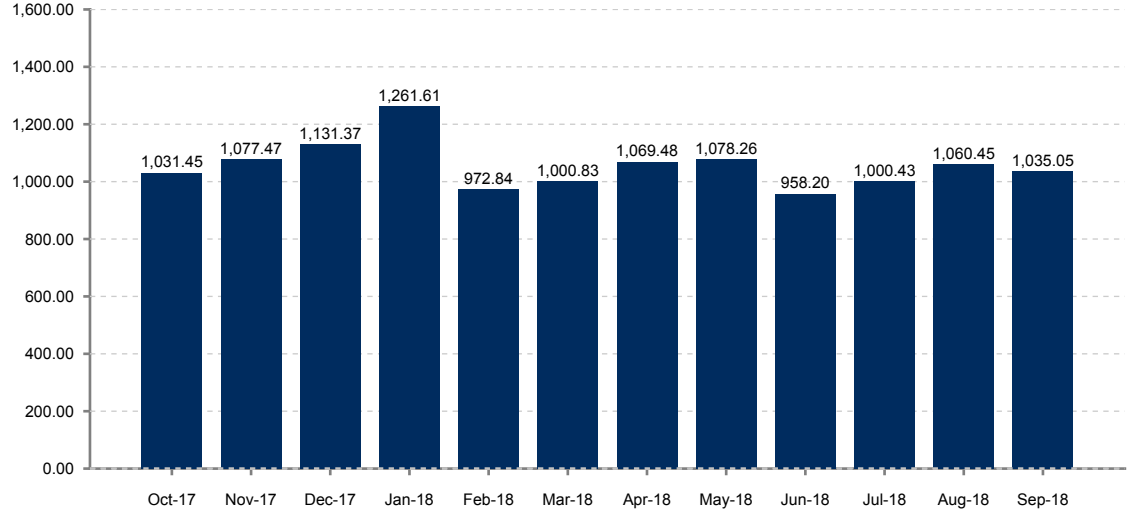

| | Current Mth | Prior Mth | 1 Year Ago |
|---|---|---|---|
| POOL 2 ST AGCY FF&C | 2.00 | 1.96 | 1.16 |

## Asset Allocation

| | Ending Market Value |
|---|---|
| POOL 2 ST AGCY FF&C | 1,035,054,505 |



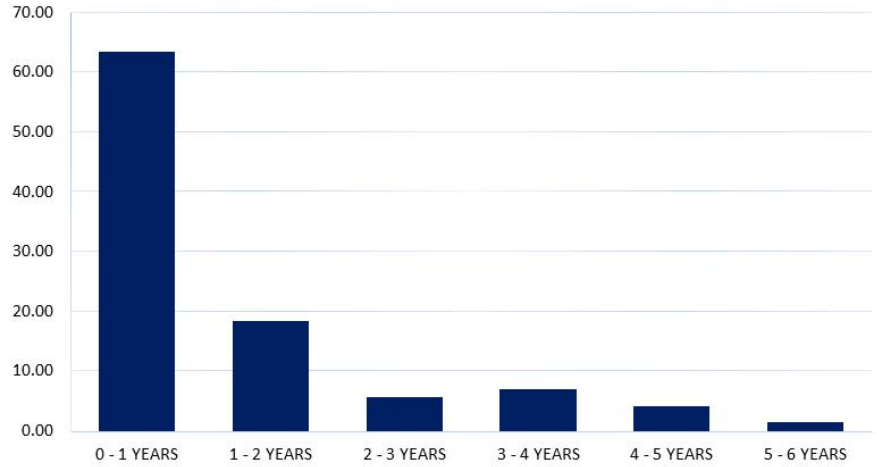

## Net Asset Values over Time ($MM)



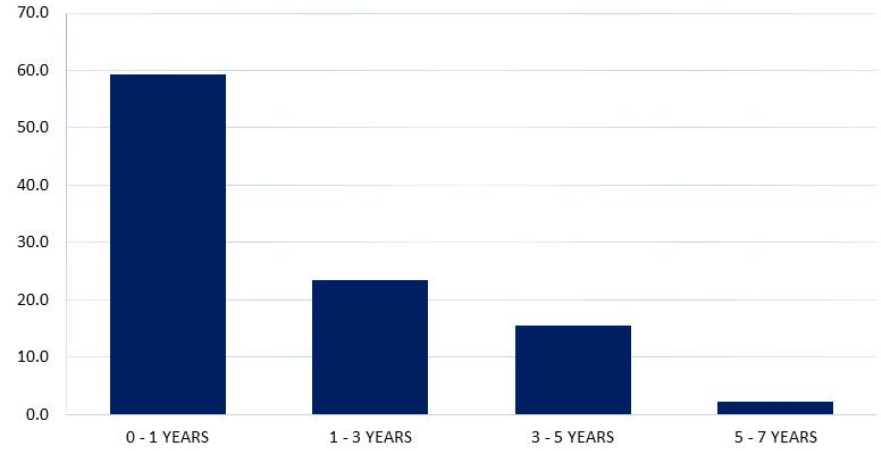

## Top 10 Holdings

| Security Name | Ending Market Value | % of Portfolio |
|---|---|---|
| POOL 2 ST AGCY FF&C | | |
| DAIWA CAPITAL MARKETS | 200,036,667 | 19.33 |
| CREDIT AGRICOLE REPO | 108,815,558 | 10.51 |
| US TREASURY N/B | 79,892,334 | 7.72 |
| WELLS FARGO REPO | 55,019,158 | 5.32 |
| TREASURY BILL | 39,212,040 | 3.79 |
| OVERSEAS PRIVATE INV C | 25,091,031 | 2.42 |
| US TREASURY N/B | 25,029,042 | 2.42 |
| TREASURY BILL | 24,924,144 | 2.41 |
| US TREASURY N/B | 20,072,720 | 1.94 |
| TREASURY BILL | 19,933,625 | 1.93 |

## Duration Distribution



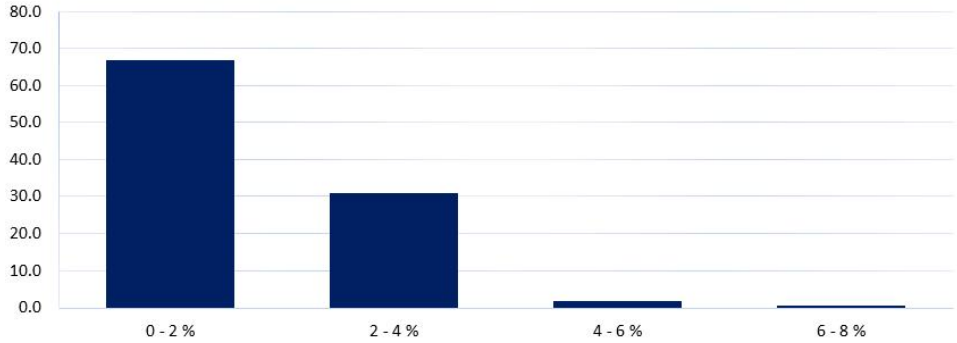

## Expected Maturity Distribution




## Portfolio Level Characteristics

| | POOL 2 ST AGCY FF&C |
|---|---|
| Effective Maturity | 1.25 |
| Coupon | 1.19 |
| Effective Duration | 1.08 |
| Quality Rating (Moody's) | AAA |

## Coupon Distribution



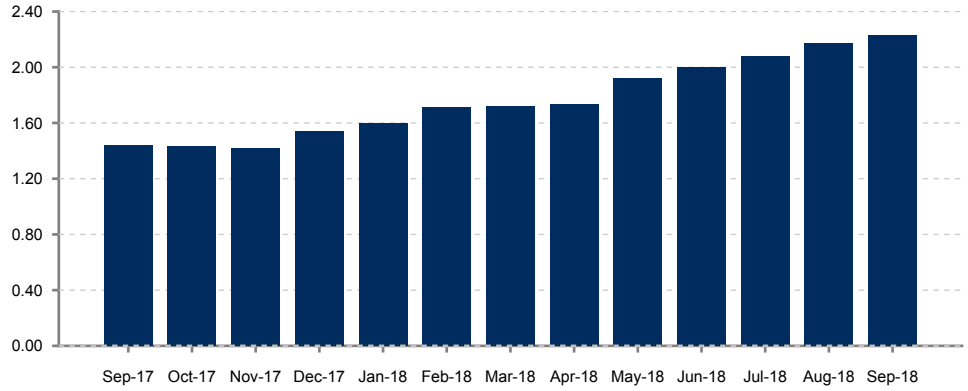

## Rating Distribution

# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

**POOL 3 ST AGCY INT.**

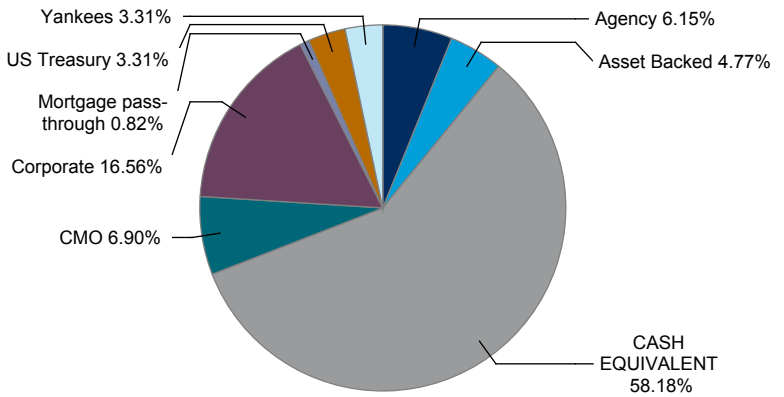
## Net Yield



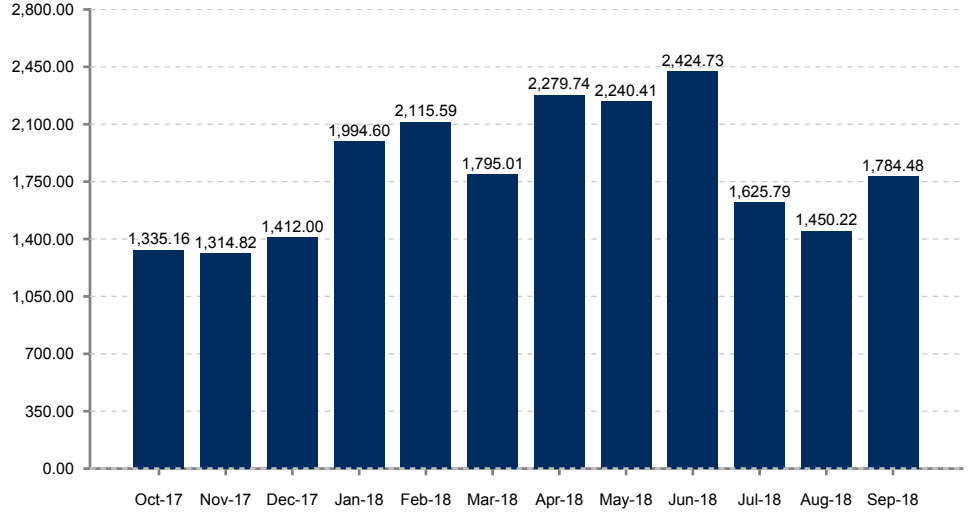

| | Current Mth | Prior Mth | 1 Year Ago |
|---|---|---|---|
| POOL 3 ST AGCY INT. | 2.23 | 2.17 | 1.44 |

## Asset Allocation

| | Ending Market Value |
|---|---|
| POOL 3 ST AGCY INT. | 1,784,481,655 |




## Net Asset Values over Time ($MM)




## Top 10 Holdings

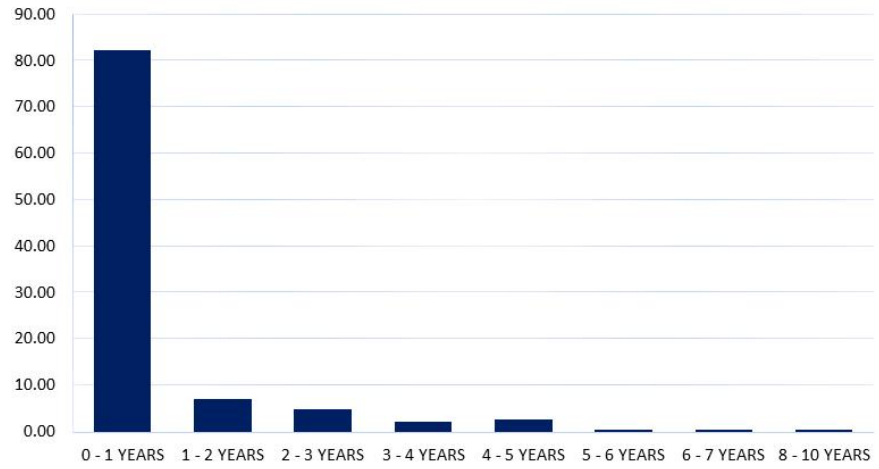
| Security Name | Ending Market Value | % of Portfolio |
|---|---|---|
| POOL 3 ST AGCY INT. | | |
| AMHERST PIERPONT | 500,097,083 | 28.02 |
| RBC CAPITAL MARKETS REPO | 109,026,900 | 6.11 |
| AMHERST PIERPONT | 100,018,917 | 5.60 |
| WELLS FARGO REPO | 55,019,158 | 3.08 |
| IBM CORP | 30,223,323 | 1.69 |
| EXXON MOBIL CORP | 29,974,625 | 1.68 |
| HALKIN FINANCE LLC USC | 25,000,000 | 1.40 |
| GEN DYNAMICS CORP | 24,998,563 | 1.40 |
| NESTLE CAP CORP | 24,997,028 | 1.40 |
| GEN DYNAMICS CORP | 24,988,611 | 1.40 |

# OFFICE OF THE ARIZONA STATE TREASURER

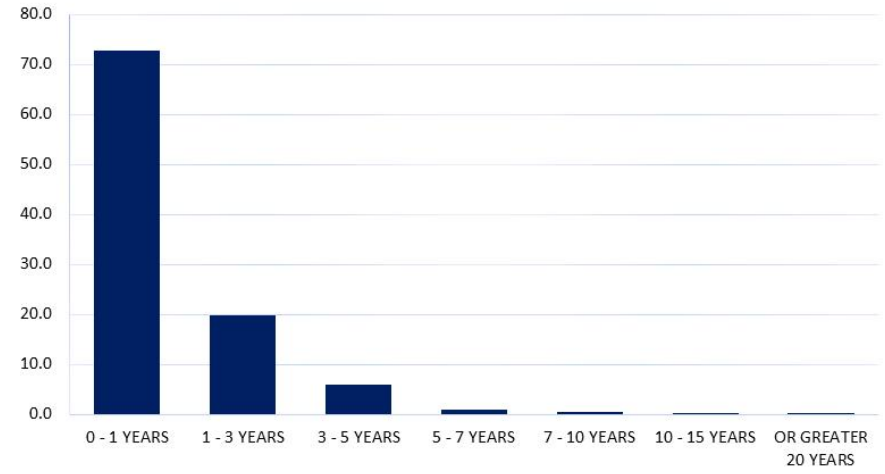
**September 30, 2018**

**POOL 3 ST AGCY INT**

## Duration Distribution



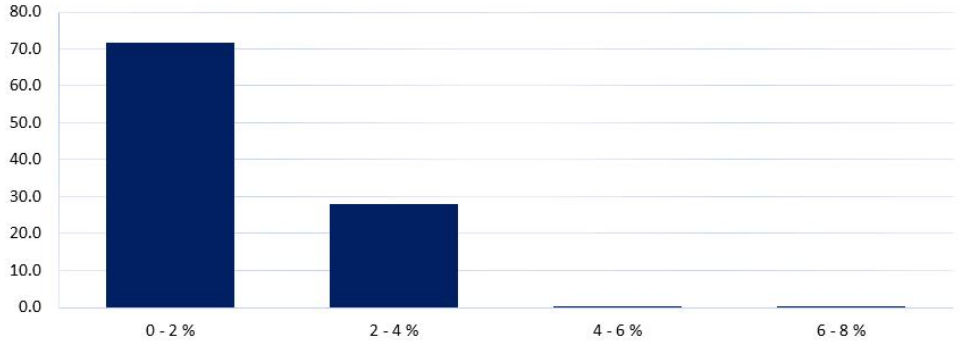

## Expected Maturity Distribution



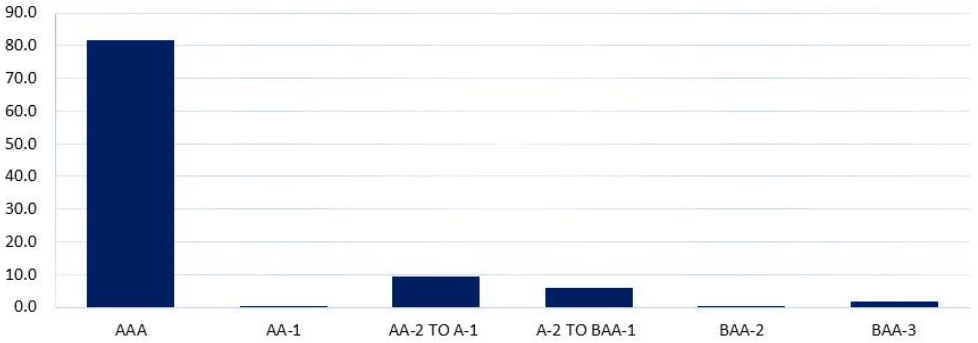

## Portfolio Level Characteristics

| | POOL 3 ST AGCY INT. |
|---|---|
| Effective Maturity | 0.83 |
| Coupon | 1.03 |
| Effective Duration | 0.59 |
| Quality Rating (Moody's) | AA-1 |

## Coupon Distribution




## Rating Distribution

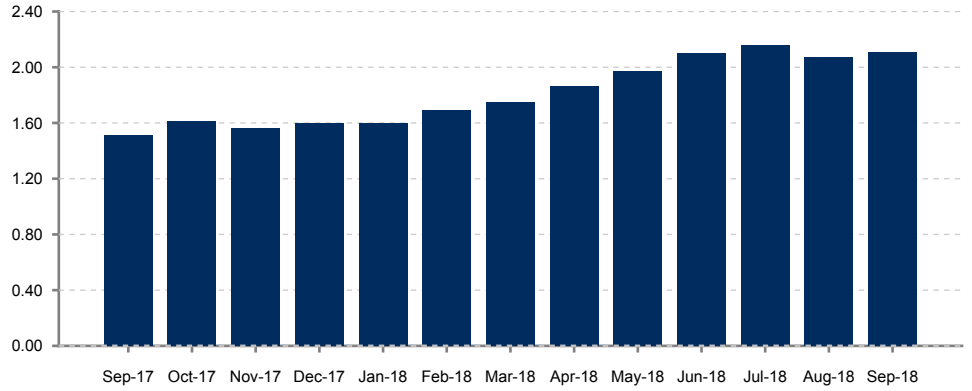


# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

**POOL 3 ST AGCY EXT.**

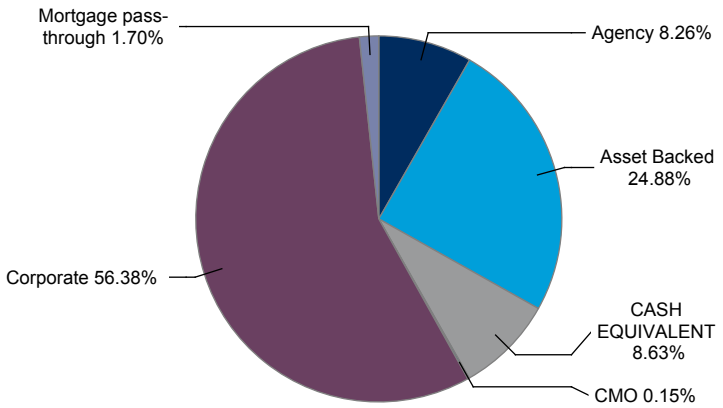
## Net Yield



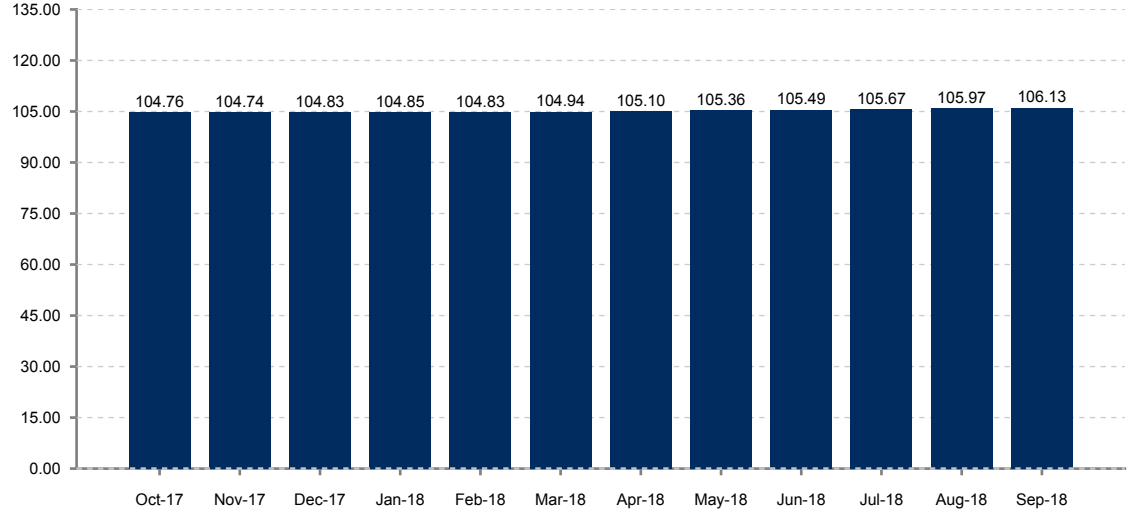

| | Current Mth | Prior Mth | 1 Year Ago |
|---|---|---|---|
| POOL 3 ST AGCY EXT. | 2.11 | 2.07 | 1.51 |

## Asset Allocation

| | Ending Market Value |
|---|---|
| POOL 3 ST AGCY EXT. | 106,132,352 |




## Net Asset Values over Time ($MM)




## Top 10 Holdings

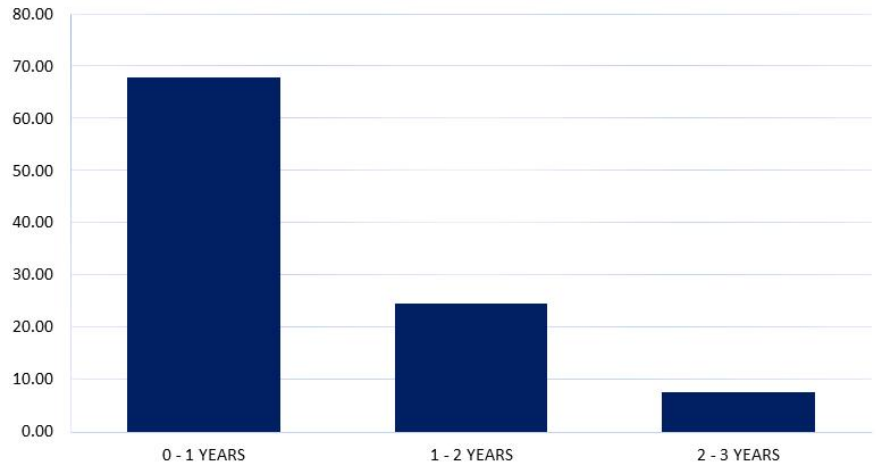
| Security Name | Ending Market Value | % of Portfolio |
|---|---|---|
| POOL 3 ST AGCY EXT. | | |
| FANNIE MAE | 2,968,101 | 2.80 |
| FREDDIE MAC | 2,752,025 | 2.59 |
| DISCOVER CARD EXECUTION NOTE T | 2,092,850 | 1.97 |
| AUSTR & NEW ZEALND B | 2,001,952 | 1.89 |
| CISCO SYSTEMS INC | 1,998,605 | 1.88 |
| FANNIE MAE | 1,977,607 | 1.86 |
| BANK OF AMERICA CREDIT CARD TR | 1,907,834 | 1.80 |
| BRANCH BANKING + TRUST | 1,867,821 | 1.76 |
| MANUF + TRADERS TRUST CO | 1,817,199 | 1.71 |
| CITIBANK NA | 1,760,907 | 1.66 |

# OFFICE OF THE ARIZONA STATE TREASURER

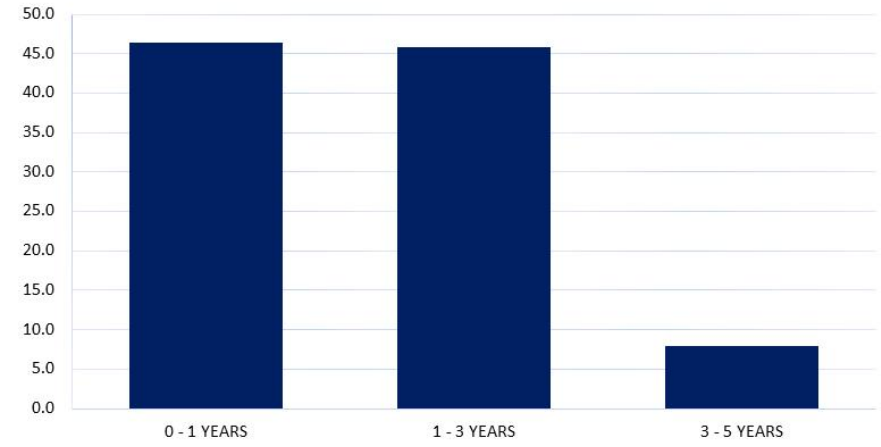
**September 30, 2018**

**POOL 3 ST AGCY EXT**

## Duration Distribution



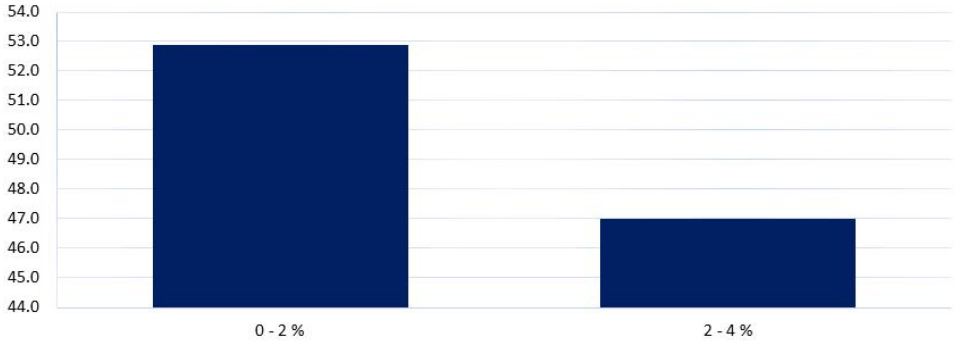

## Expected Maturity Distribution



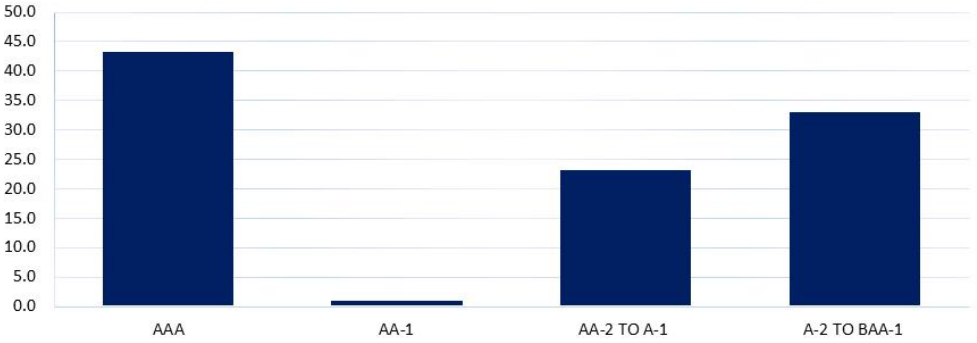

## Portfolio Level Characteristics

| | POOL 3 ST AGCY EXT. |
|---|---|
| Effective Maturity | 1.35 |
| Coupon | 1.98 |
| Effective Duration | 0.79 |
| Quality Rating (Moody's) | AA-3 |

## Coupon Distribution




## Rating Distribution

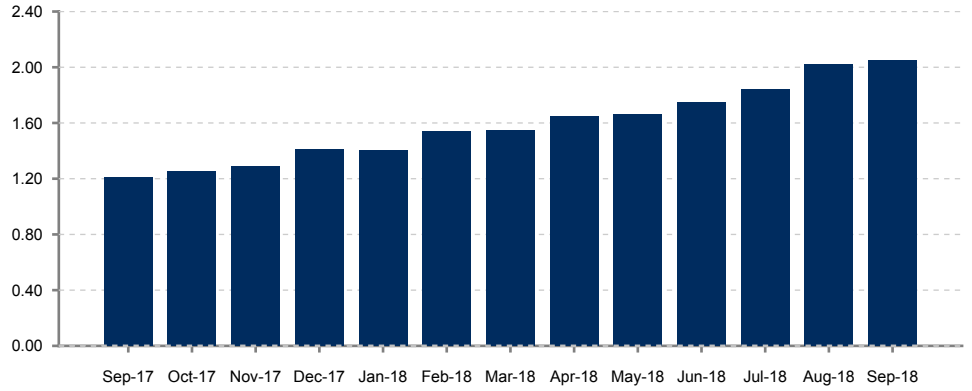


# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

**POOL 4 ST AGCY GOV.**

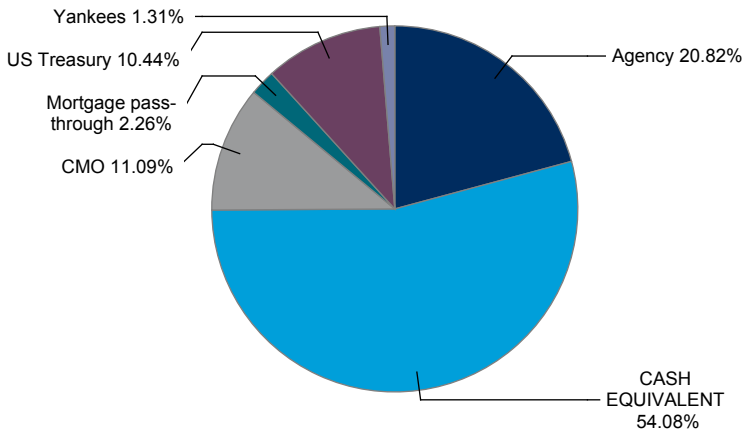
## Net Yield



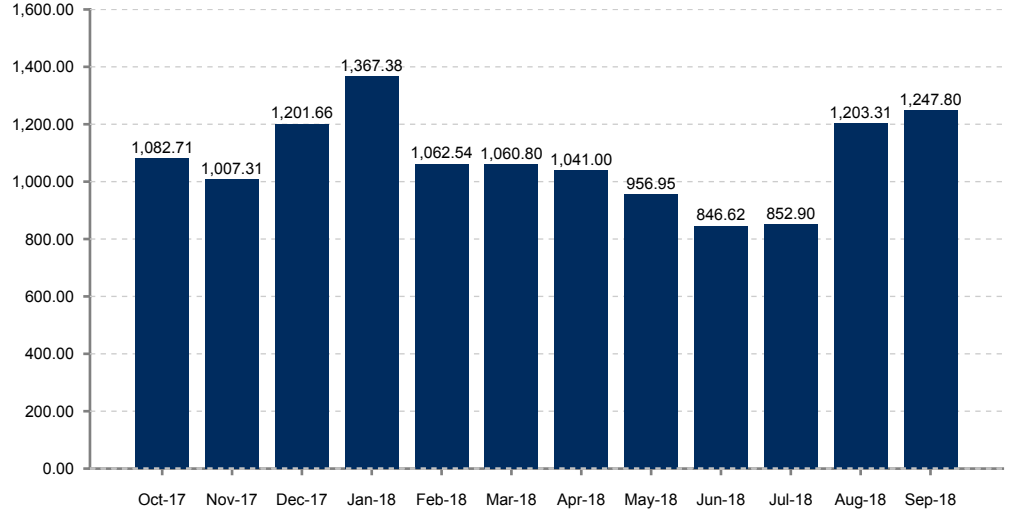

| | Current Mth | Prior Mth | 1 Year Ago |
|---|---|---|---|
| POOL 4 ST AGCY GOV. | 2.05 | 2.02 | 1.21 |

## Asset Allocation

| | Ending Market Value |
|---|---|
| POOL 4 ST AGCY GOV. | 1,247,795,933 |



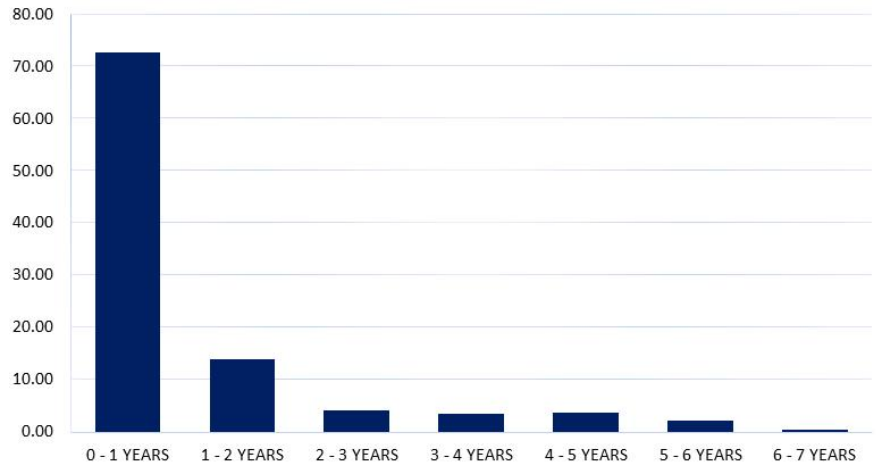

## Net Asset Values over Time ($MM)



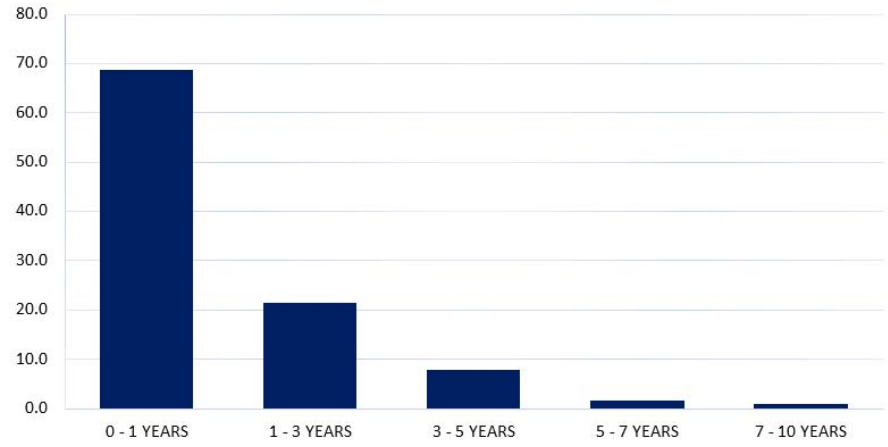

## Top 10 Holdings

| Security Name | Ending Market Value | % of Portfolio |
|---|---|---|
| POOL 4 ST AGCY GOV. | | |
| SOUTH STREET REPO | 460,087,783 | 36.87 |
| US TREASURY N/B | 64,912,522 | 5.20 |
| SOUTH STREET REPO | 60,011,000 | 4.81 |
| FANNIE MAE | 47,835,303 | 3.83 |
| RBC CAPITAL MARKETS REPO | 41,000,850 | 3.29 |
| TREASURY BILL | 39,915,885 | 3.20 |
| TREASURY BILL | 39,212,040 | 3.14 |
| PRIVATE EXP. FUNDING | 29,911,667 | 2.40 |
| US TREASURY N/B | 25,029,042 | 2.01 |
| FARMER MAC | 20,154,510 | 1.62 |

## Duration Distribution



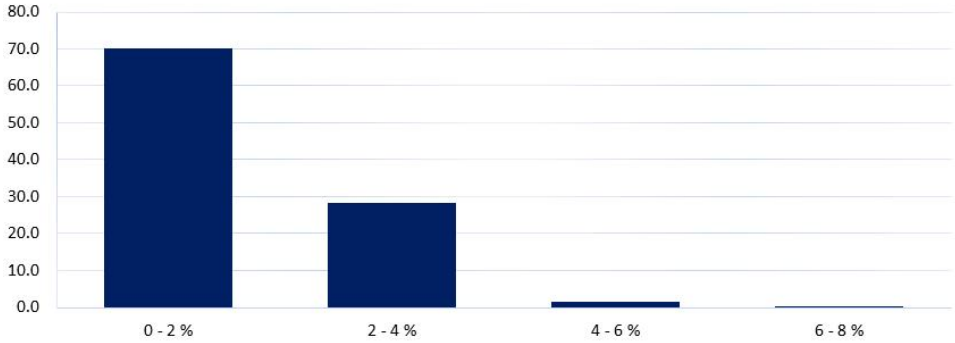

## Expected Maturity Distribution




## Portfolio Level Characteristics

| | POOL 4 ST AGCY GOV. |
|---|---|
| Effective Maturity | 0.92 |
| Coupon | 0.99 |
| Effective Duration | 0.84 |
| Quality Rating (Moody's) | AAA |

## Coupon Distribution



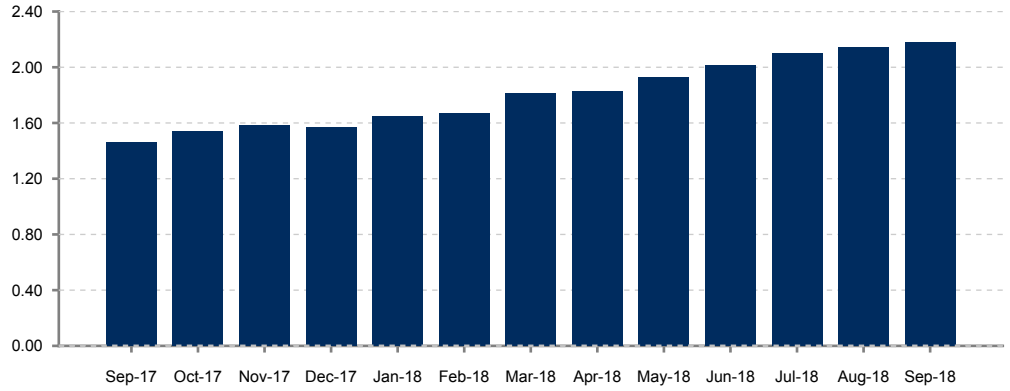

## Rating Distribution

# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

**POOL 10 ST OPERATING INT**

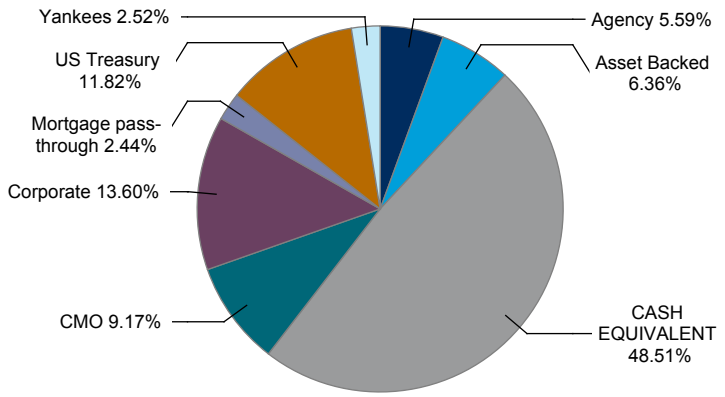
## Net Yield



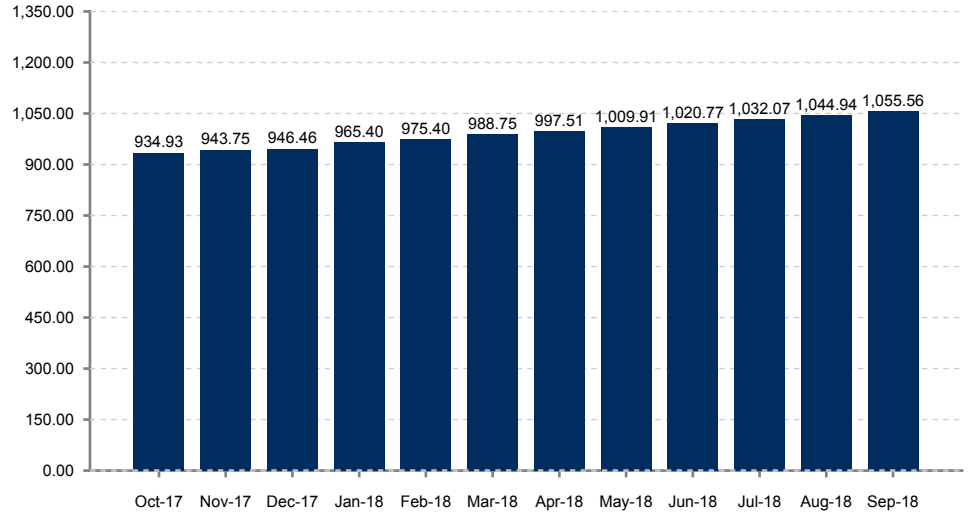

| | Current Mth | Prior Mth | 1 Year Ago |
|---|---|---|---|
| POOL 10 ST OPER INT | 2.18 | 2.14 | 1.46 |

## Asset Allocation

| | Ending Market Value |
|---|---|
| POOL 10 ST OPER INT | 1,055,557,628 |




## Net Asset Values over Time ($MM)




## Top 10 Holdings

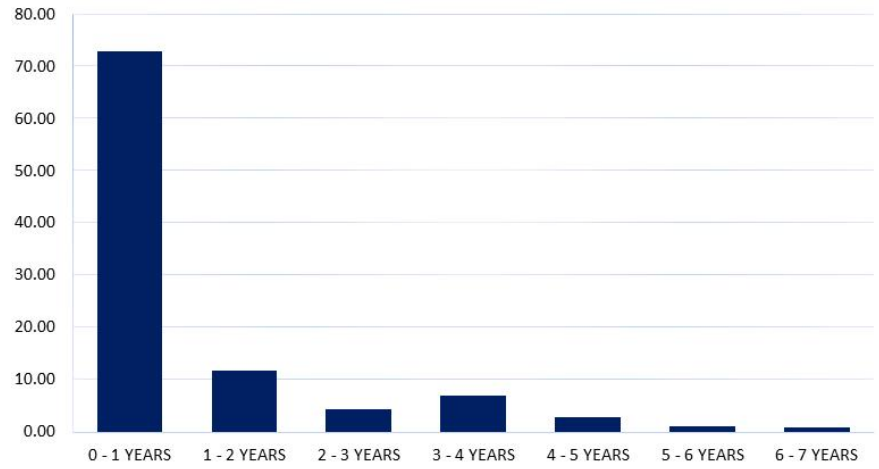
| Security Name | Ending Market Value | % of Portfolio |
|---|---|---|
| POOL 10 ST OPER INT | | |
| BMO TRIPARTY MTGE CLAS/ISIT/RTRP MATU//20121224 | 48,233,885 | 4.57 |
| MANHATTAN ASSET FDG. | 29,962,725 | 2.84 |
| CONCORD MIN CPTL CO | 29,906,250 | 2.83 |
| US TREASURY N/B | 29,768,700 | 2.82 |
| COCA-COLA COMPANY | 24,839,775 | 2.35 |
| ATLANTIC ASSET SECUR | 19,977,200 | 1.89 |
| US TREASURY N/B | 19,968,788 | 1.89 |
| SANOFI | 19,950,383 | 1.89 |
| LEXINGTN PKR CAP CO LL | 19,938,478 | 1.89 |
| CRC FUNDING LLC | 19,937,500 | 1.89 |

# OFFICE OF THE ARIZONA STATE TREASURER

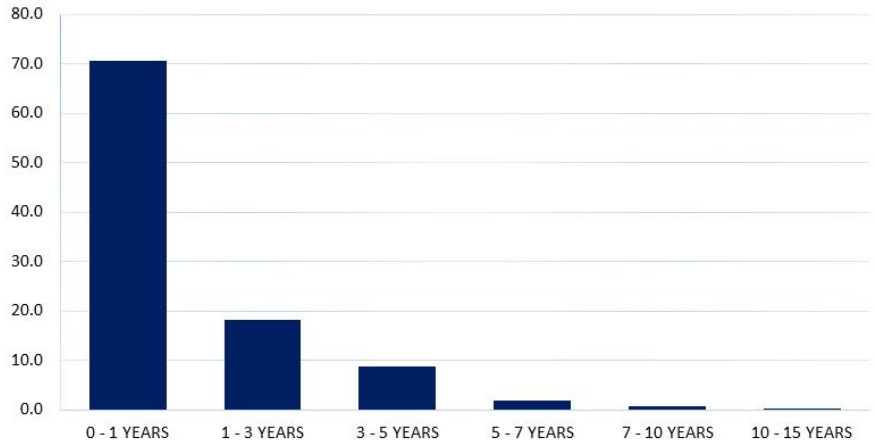
**September 30, 2018**

**POOL 10 ST OPERATING INT**

## Duration Distribution



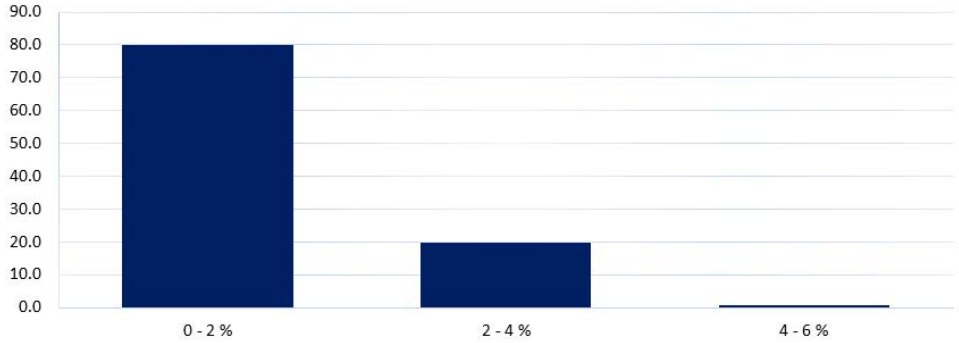

## Expected Maturity Distribution



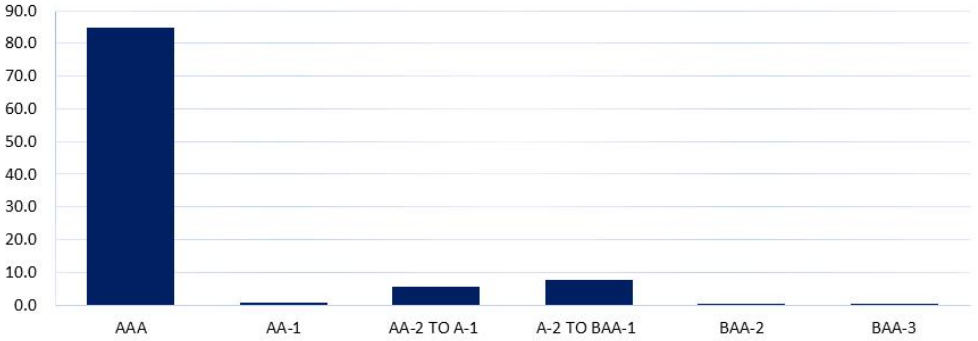

## Portfolio Level Characteristics

| | POOL 10 ST OPERATING INT |
|---|---|
| Effective Maturity | 1.04 |
| Coupon | 0.98 |
| Effective Duration | 0.98 |
| Quality Rating (Moody's) | AA-1 |

## Coupon Distribution




## Rating Distribution

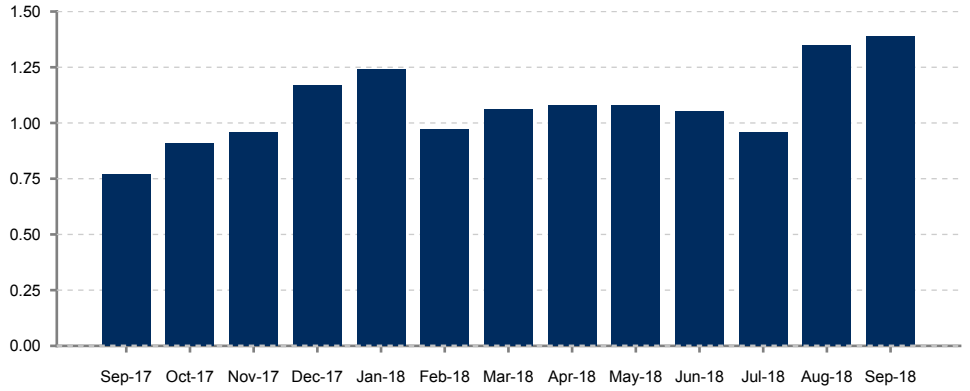


# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

**POOL 10 ST OPERATING Ext**

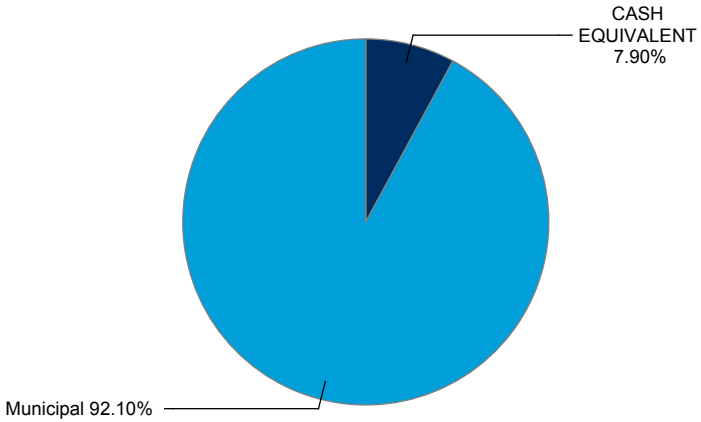
## Net Yield



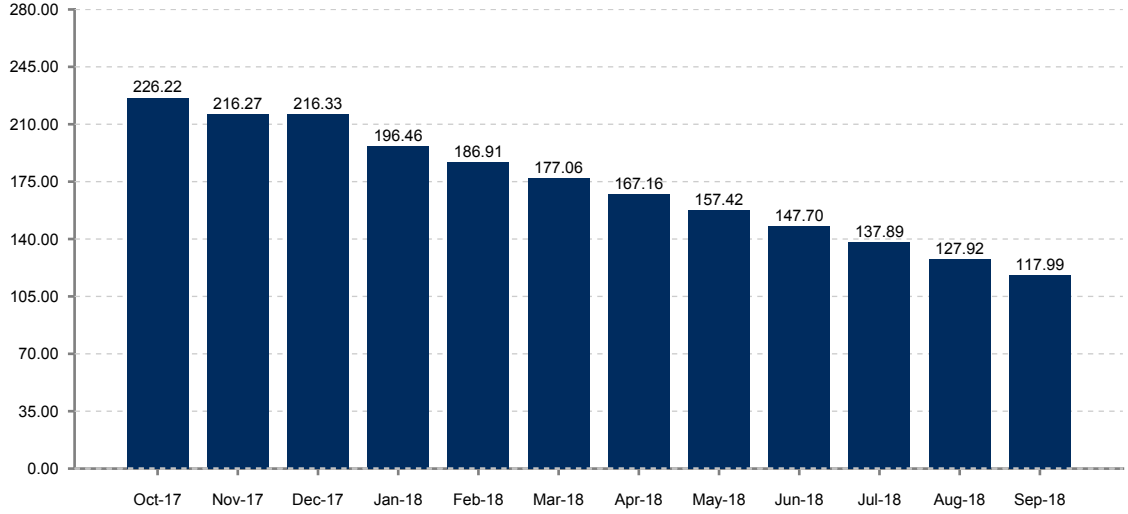

| | Current Mth | Prior Mth | 1 Year Ago |
|---|---|---|---|
| POOL 10 ST OPERATING | 1.39 | 1.35 | 0.77 |

## Asset Allocation

| | Ending Market Value |
|---|---|
| POOL 10 ST OPERATING | 117,994,018 |




## Net Asset Values over Time ($MM)




## Top 10 Holdings

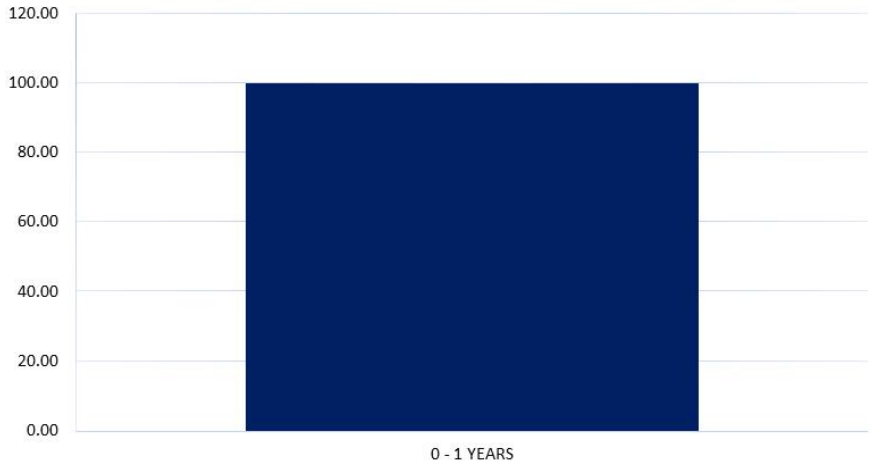
| Security Name | Ending Market Value | % of Portfolio |
|---|---|---|
| POOL 10 ST OPERATING | | |
| ALPINE UT SCH DIST | 10,215,121 | 8.66 |
| PRINCE GEORGES CNTY | 10,192,759 | 8.64 |
| DREYFUS TAX EXEMPT CA | 10,125,154 | 8.58 |
| SHELBY CNTY TN | 9,863,656 | 8.36 |
| WISCONSIN ST PETROLEU | 8,778,109 | 7.44 |
| GEORGIA ST ROAD TOLL | 7,984,499 | 6.77 |
| MISSISSIPPI ST BUSINESS | 6,507,130 | 5.51 |
| LOWER NECHES VLY TX A | 6,507,084 | 5.51 |
| ILLINOIS ST FIN AUTH REV | 5,881,446 | 4.98 |
| CLEVELAND CUYAHOGA C | 5,656,217 | 4.79 |

# OFFICE OF THE ARIZONA STATE TREASURER

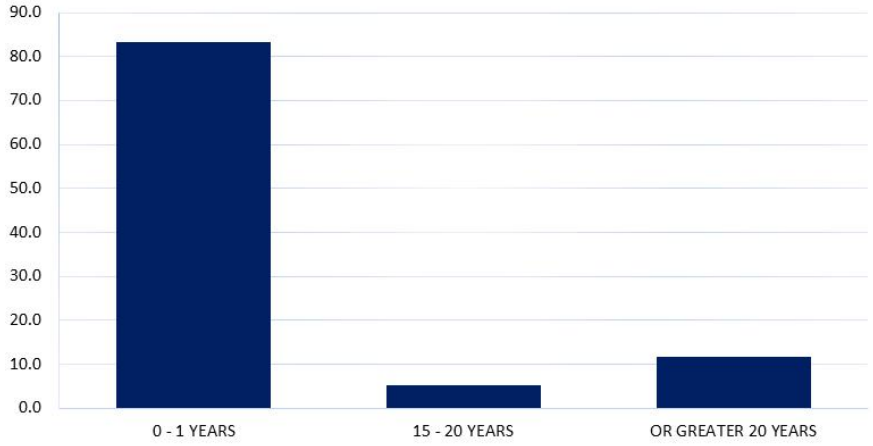
**September 30, 2018**

**POOL 10 ST OPERATING Ext**

## Duration Distribution



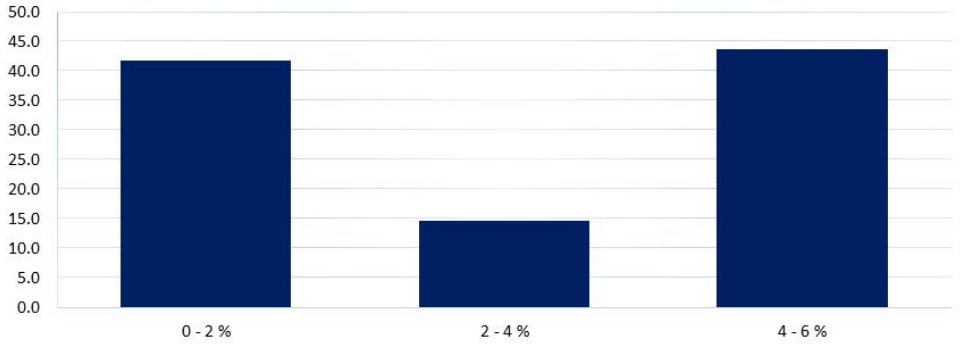

## Expected Maturity Distribution




## Portfolio Level Characteristics

| | POOL 10 ST OPERATING |
|---|---|
| Effective Maturity | 5.46 |
| Coupon | 3.35 |
| Effective Duration | 1.25 |
| Quality Rating (Moody's) | AA-1 |

## Coupon Distribution



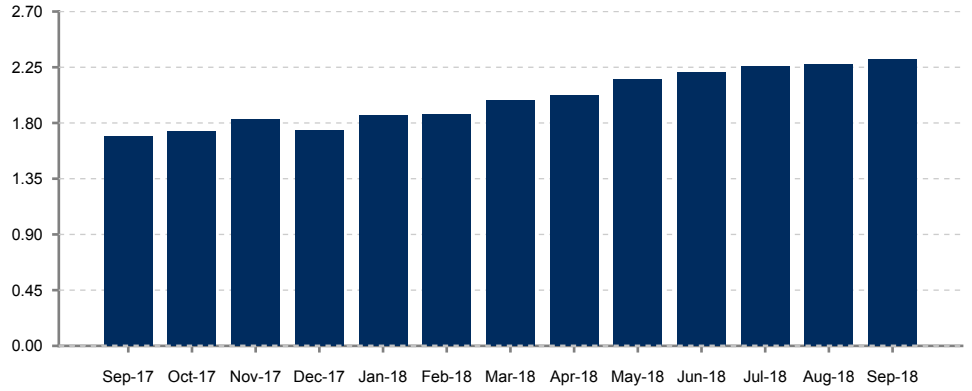

## Rating Distribution

# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

**POOL 12 CAWCD MED TRM**

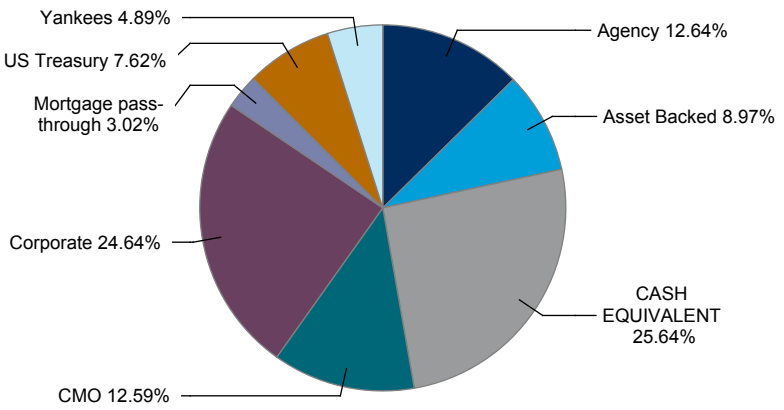
## Net Yield



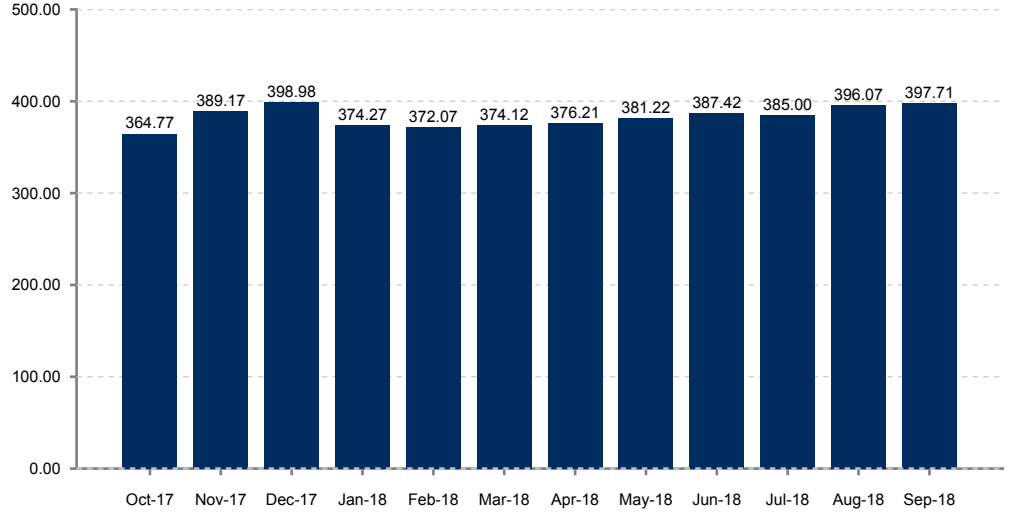

| | Current Mth | Prior Mth | 1 Year Ago |
|---|---|---|---|
| POOL 12 CAWCD MED TRM | 2.31 | 2.27 | 1.69 |

## Asset Allocation

| | Ending Market Value |
|---|---|
| POOL 12 CAWCD MED TRM | 397,710,675 |




## Net Asset Values over Time ($MM)




## Top 10 Holdings

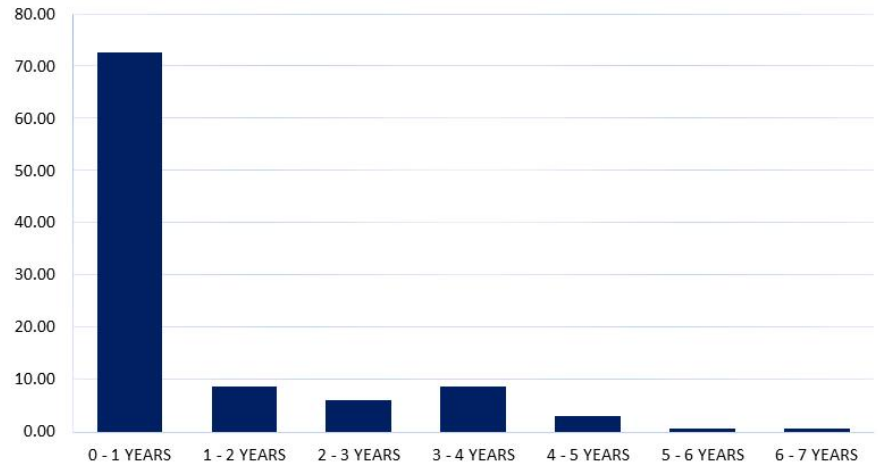
| Security Name | Ending Market Value | % of Portfolio |
|---|---|---|
| POOL 12 CAWCD MED TRM | | |
| GUGGENHEIM SECURITIES REPO | 24,376,266 | 6.13 |
| ATLANTIC ASSET SECUR | 9,968,472 | 2.51 |
| GOTHAM FDG CORP | 9,955,231 | 2.50 |
| TREASURY BILL | 9,866,320 | 2.48 |
| TREASURY BILL | 9,803,010 | 2.46 |
| TREASURY BILL | 6,996,184 | 1.76 |
| FANNIE MAE | 5,516,861 | 1.39 |
| FANNIE MAE | 5,363,542 | 1.35 |
| FREDDIE MAC | 5,294,743 | 1.33 |
| US TREASURY N/B | 5,100,068 | 1.28 |

# OFFICE OF THE ARIZONA STATE TREASURER

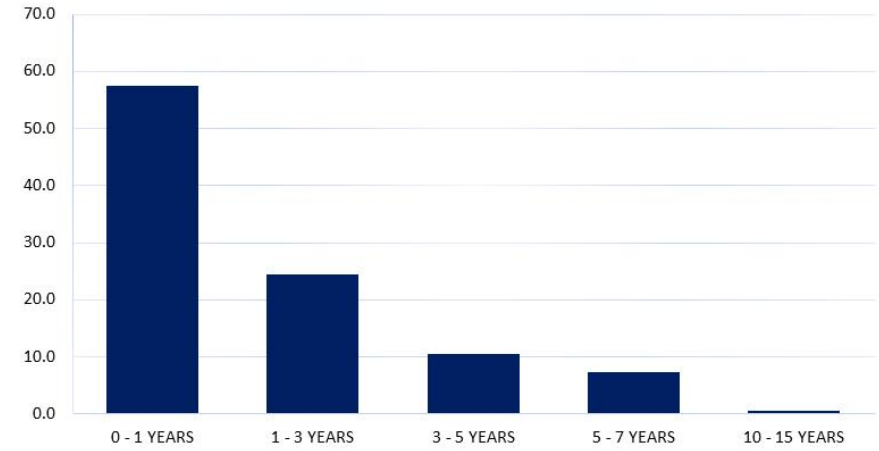
**September 30, 2018**

**POOL 12 CAWCD MED TRM**

## Duration Distribution



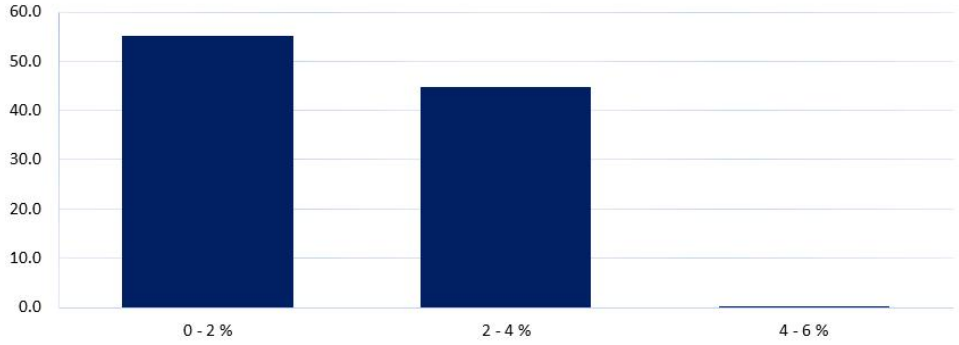

## Expected Maturity Distribution



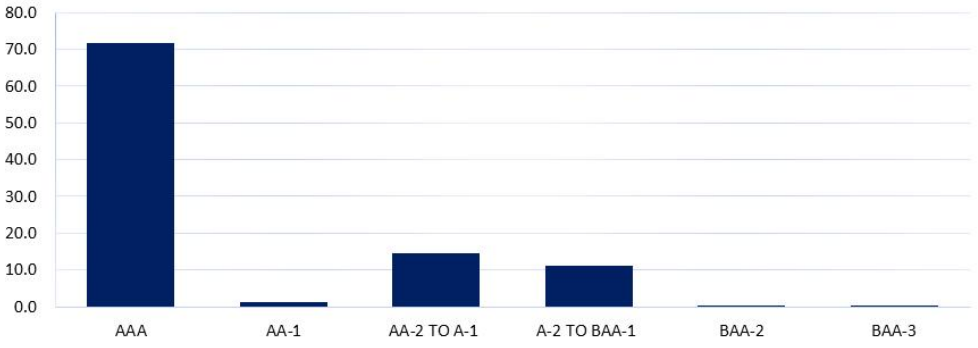

## Portfolio Level Characteristics

| | POOL 12 CAWCD MED TRM |
|---|---|
| Effective Maturity | 1.52 |
| Coupon | 1.67 |
| Effective Duration | 0.95 |
| Quality Rating (Moody's) | AA-2 |

## Coupon Distribution




## Rating Distribution

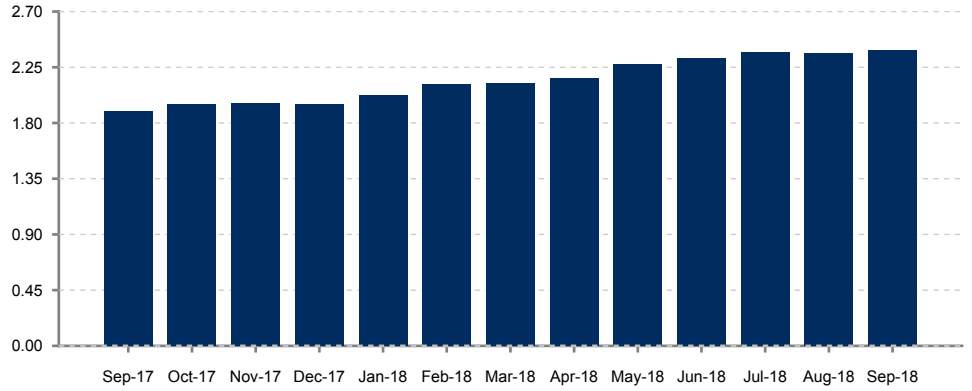


# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

**POOL 16 ECDHB**

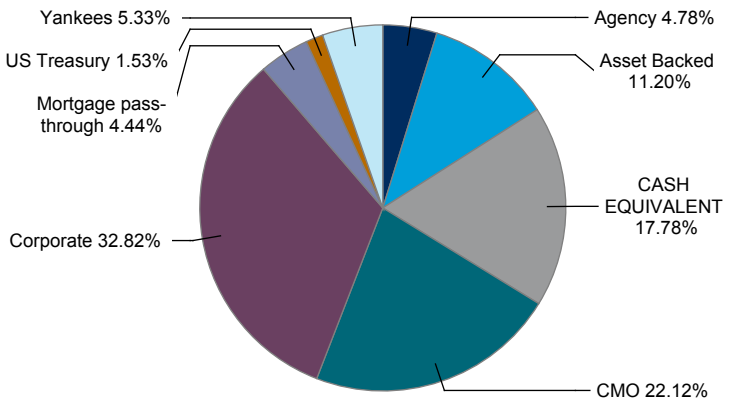
## Net Yield



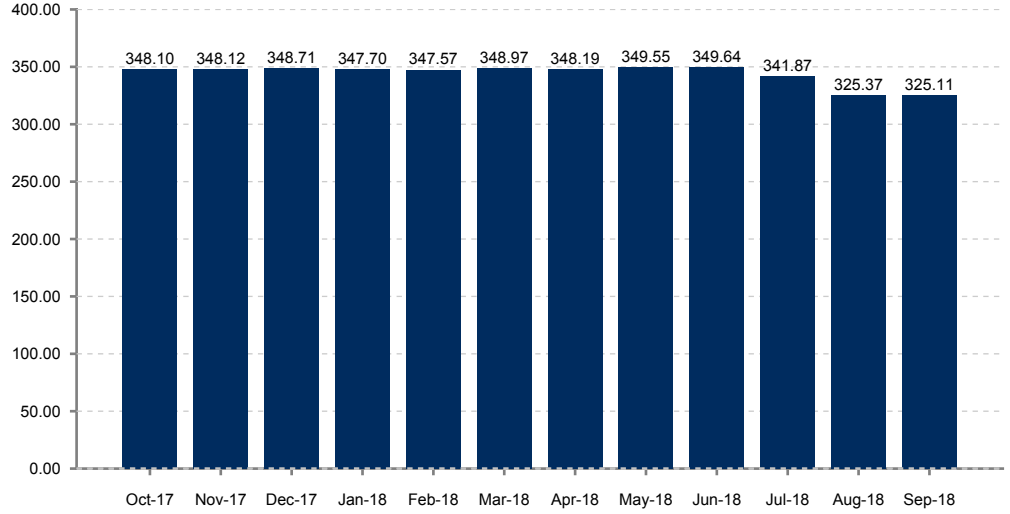

| | Current Mth | Prior Mth | 1 Year Ago |
|---|---|---|---|
| POOL 16 ECDHB | 2.39 | 2.36 | 1.89 |

## Asset Allocation

| | Ending Market Value |
|---|---|
| POOL 16 ECDHB | 325,109,081 |




## Net Asset Values over Time ($MM)




## Top 10 Holdings

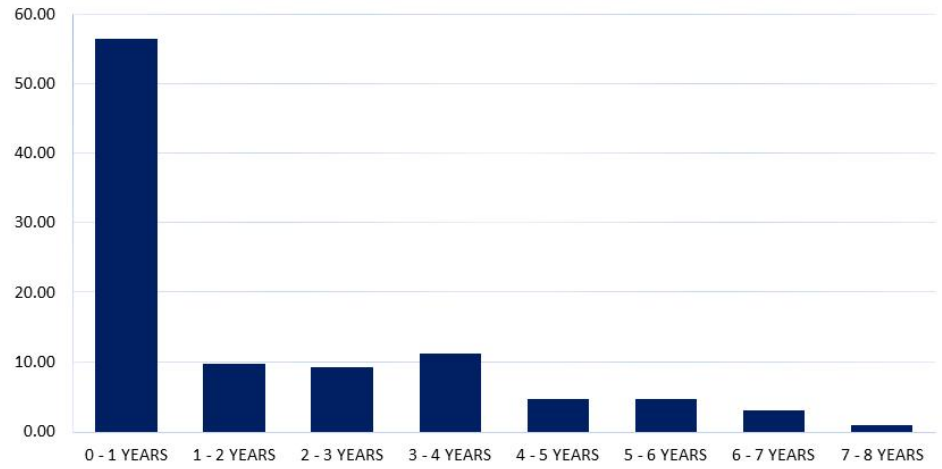
| Security Name | Ending Market Value | % of Portfolio |
|---|---|---|
| POOL 16 ECDHB | | |
| GUGGENHEIM SECURITIES REPO | 38,007,062 | 11.69 |
| CAN AST & CAN LTD JT | 9,958,383 | 3.06 |
| FANNIE MAE | 6,108,142 | 1.88 |
| BANK OF NY MELLON CORP | 5,061,741 | 1.56 |
| BRANCH BANKING + TRUST | 5,048,166 | 1.55 |
| NISSAN MOTOR ACCEPTANCE | 5,041,462 | 1.55 |
| ROYAL BANK OF CANADA | 5,035,484 | 1.55 |
| CAPITAL ONE NA | 5,031,512 | 1.55 |
| ANHEUSER BUSCH INBEV FIN | 5,029,142 | 1.55 |
| AMERICAN EXPRESS CREDIT | 5,027,513 | 1.55 |

# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

**POOL 16 ECDHB**

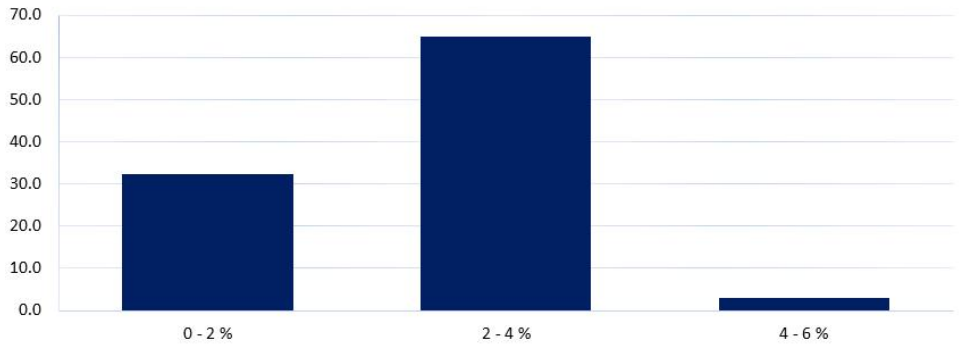
## Duration Distribution



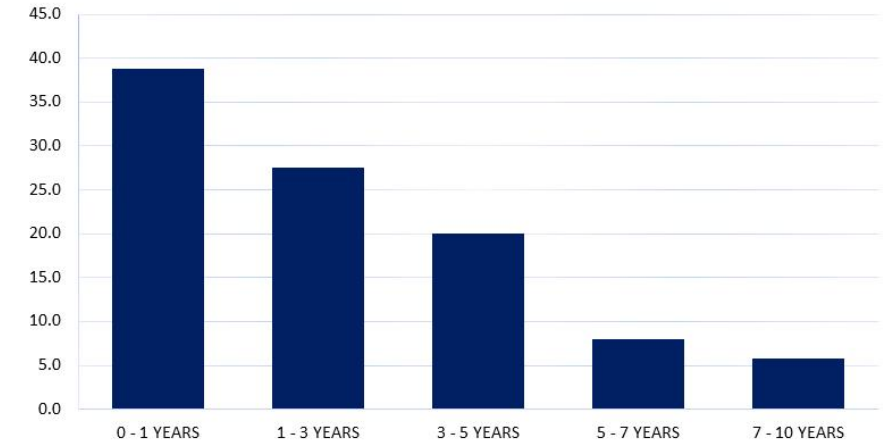

## Portfolio Level Characteristics

| | POOL 16 ECDHB |
|---|---|
| Effective Maturity | 2.33 |
| Coupon | 2.27 |
| Effective Duration | 1.63 |
| Quality Rating (Moody's) | AA-2 |

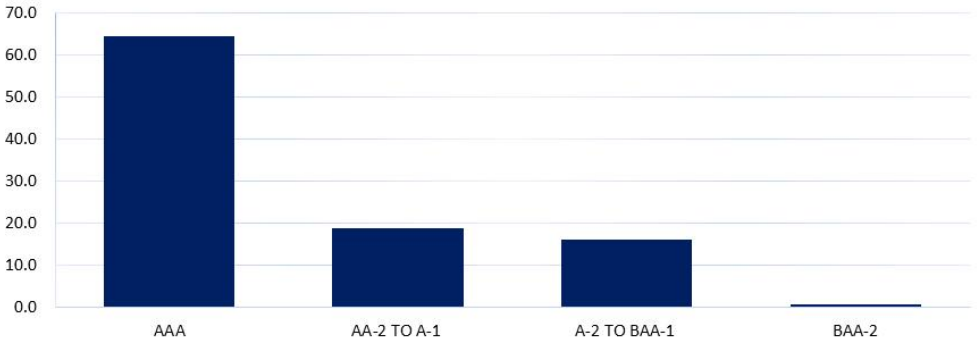
## Coupon Distribution




## Expected Maturity Distribution




## Rating Distribution



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# LGIP & LGIP- GOV
# PORTFOLIO YIELD ANALYSIS
# SEPTEMBER 2018

## NET EARNINGS

| FUND | DESCRIPTION | Current Month 09/30/18 | Prior Month 08/31/18 | Prior Year 09/30/17 | Net Asset Value Per Share |
|---|---|---|---|---|---|
| 5 | LGIP | 2,277,279 | 2,476,958 | 958,526 | 1.0000 |
| 7 | LGIP - GOV | 1,783,944 | 1,902,906 | 907,552 | 1.0000 |
| | TOTAL LGIP & LGIP-GOV | 4,061,223 | 4,379,864 | 1,866,078 | |

## YIELDS

| | MONTHLY | Current Month 09/30/18 | Prior Month 08/31/18 | Prior Year 9/30/17 |
|---|---|---|---|---|
| 5 | LGIP (NET) | 2.10% | 2.09% | 1.07% |
| | S & P LGIP INDEX | 1.98% | 1.96% | 1.03% |
| 7 | LGIP - GOV (NET) | 1.93% | 1.87% | 0.96% |
| | 3 MONTH T-BILL | 2.15% | 2.05% | 1.03% |

| | YEAR TO DATE | | | |
|---|---|---|---|---|
| 5 | LGIP (NET) | 2.09% | 2.08% | 1.06% |
| | S & P LGIP INDEX | 1.95% | 1.94% | 0.99% |
| 7 | LGIP - GOV (NET) | 1.88% | 1.85% | 0.92% |
| | 3 MONTH T-BILL | 2.05% | 2.01% | 1.04% |

* Note: The LGIP-GOV Pool consists of only securities explicitly backed by the full faith & credit of the US Government.

# LGIP & LGIP- GOV MEDIUM TERM POOLS
# PORTFOLIO YIELD ANALYSIS
# SEPTEMBER 2018

## NET EARNINGS

| FUND | DESCRIPTION | Current Month 09/30/18 | Prior Month 08/31/18 | Prior Year 09/30/17 | Net Asset Value Per Share |
|---|---|---|---|---|---|
| 500 | LGIP - MED TERM POOL | 651,189 | 673,157 | 466,151 | 1.0207 |
| 700 | LGIP - FF&C MED TERM POOL | 211,411 | 227,898 | 238,275 | 0.9925 |
| | TOTAL LGIP MEDIUM TERM POOLS | 862,600 | 901,055 | 704,426 | |

## YIELDS

| | MONTHLY | Current Month 09/30/18 | Prior Month 08/31/18 | Prior Year 9/30/17 |
|---|---|---|---|---|
| 500 | LGIP - MED TERM (NET) | 2.29% | 2.29% | 1.75% |
| | 75% MERRILL 1-5 US D M INDEX / 25% S & P LGIP INDEX | 2.81% | 2.67% | 1.70% |
| 700 | LGIP - FF&C MED TERM (NET) | 1.89% | 1.98% | 1.99% |
| | 75% MERRILL 1-5 US TREAS INDEX / 15% MERRILL US GNMA 15 YR INDEX / 10% MERRILL US 3 MO T-BILL INDEX | 2.82% | 2.62% | 1.64% |

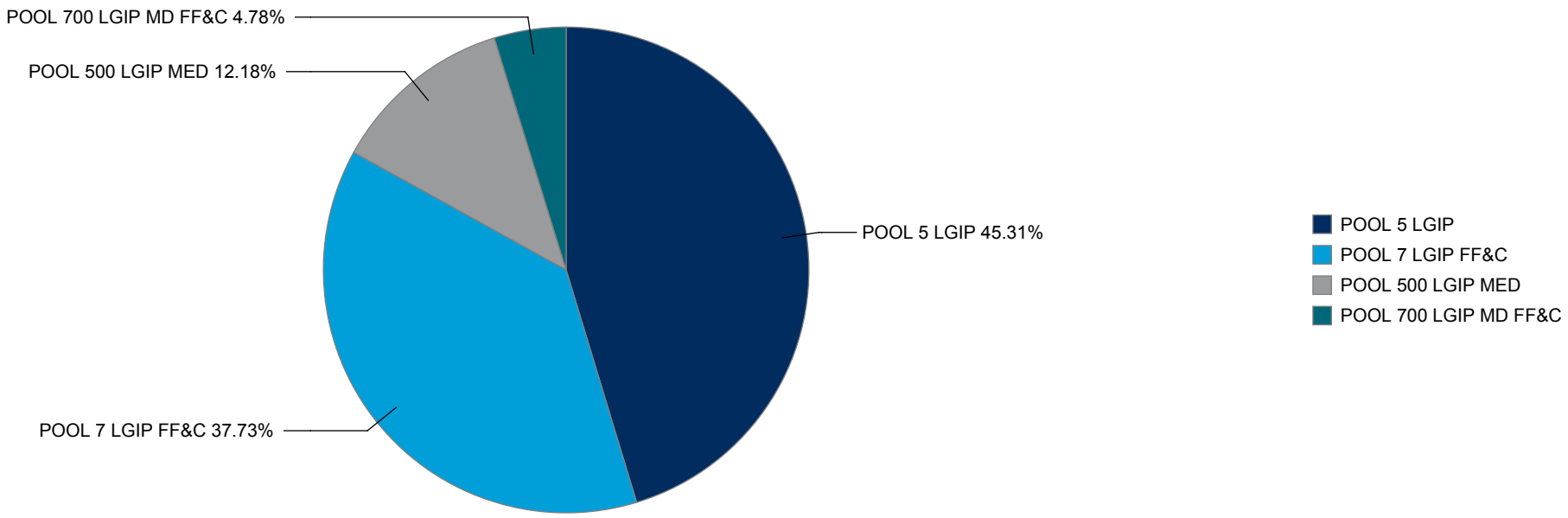
| | YEAR TO DATE | | | |
|---|---|---|---|---|
| 500 | LGIP - MED TERM (NET) | 2.29% | 2.28% | 1.68% |
| | 75% MERRILL 1-5 US D M INDEX / 25% S & P LGIP INDEX | 2.72% | 2.68% | 1.62% |
| 700 | LGIP - FF&C MED TERM (NET) | 1.86% | 1.84% | 1.53% |
| | 75% MERRILL 1-5 US TREAS INDEX / 15% MERRILL US GNMA 15 YR INDEX / 10% MERRILL US 3 MO T-BILL INDEX | 2.71% | 2.65% | 1.56% |

# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

**LGIP**

## Manager Allocation



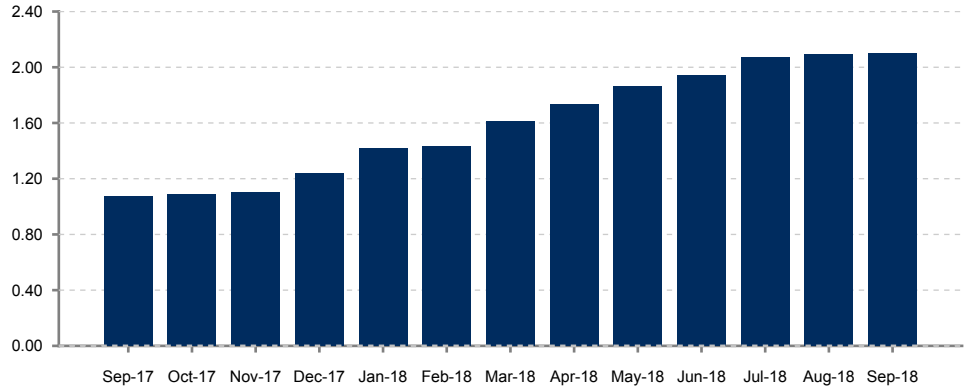

| | Market Value | % of Portfolio |
|---|---|---|
| POOL 5 LGIP | 1,286,890,208 | 45.3 |
| POOL 7 LGIP FF&C | 1,071,540,439 | 37.7 |
| POOL 500 LGIP MED | 345,803,402 | 12.2 |
| POOL 700 LGIP MD FF&C | 135,729,825 | 4.8 |
| TOTAL LGIP | 2,839,963,873 | 100.0 |

# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

**POOL 5 LGIP**

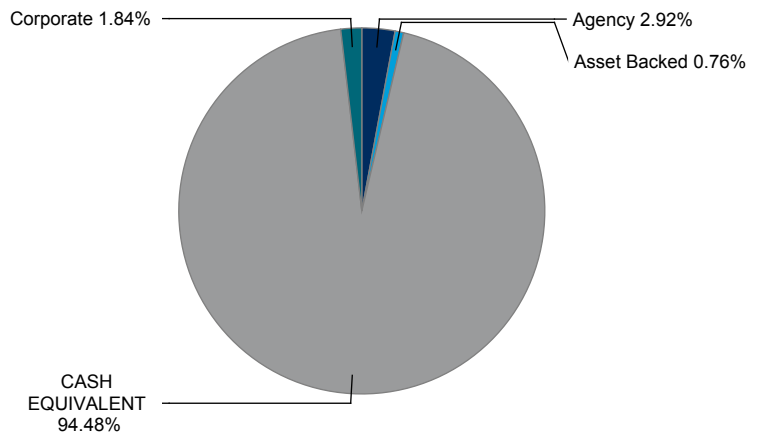
## Net Yield



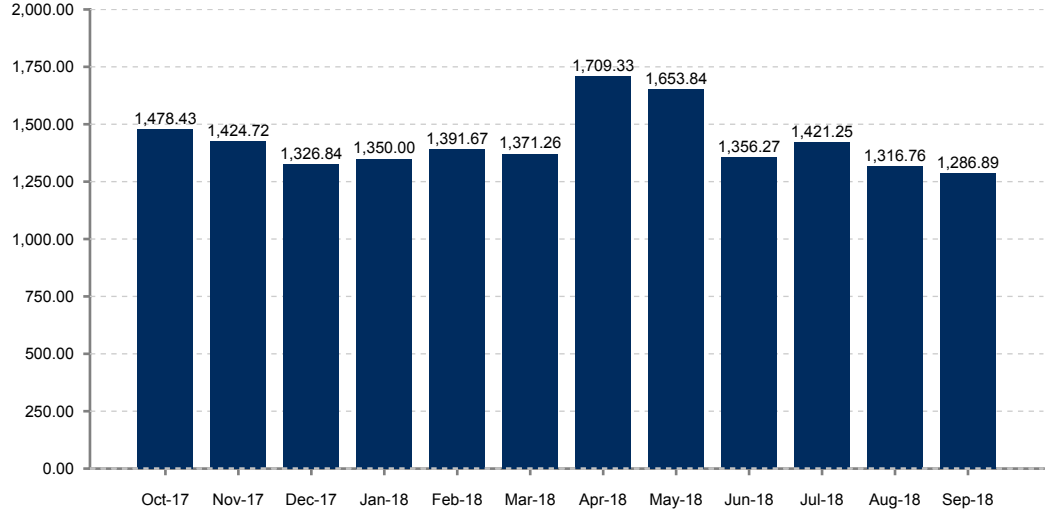

| | Current Mth | Prior Mth | 1 Year Ago |
|---|---|---|---|
| POOL 5 LGIP | 2.10 | 2.09 | 1.07 |

## Asset Allocation

| | Ending Market Value |
|---|---|
| POOL 5 LGIP | 1,286,890,208 |




## Net Asset Values over Time ($MM)




## Top 10 Holdings

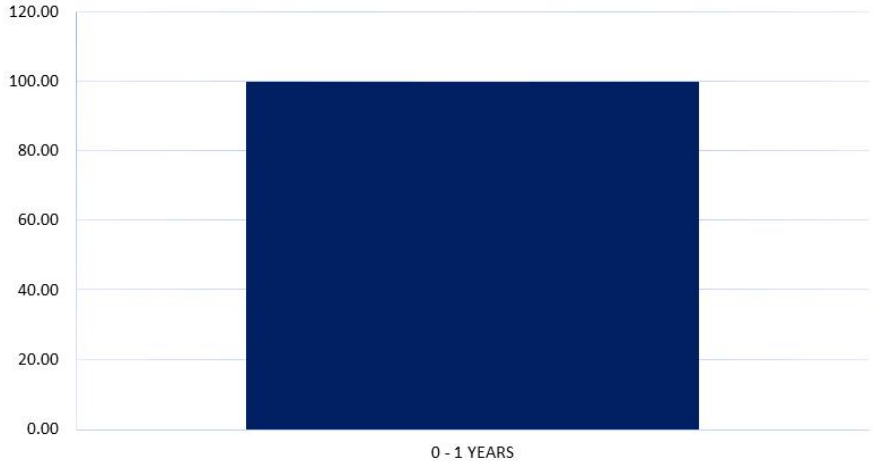
| Security Name | Ending Market Value | % of Portfolio |
|---|---|---|
| POOL 5 LGIP | | |
| CREDIT AGRICOLE REPO | 166,235,775 | 12.92 |
| BANK OF AMERICA REPO | 100,017,083 | 7.77 |
| TREASURY BILL | 39,789,919 | 3.09 |
| VICTORY RECEIVABLES | 29,992,400 | 2.33 |
| CEDAR SPRING CPTL CO | 29,986,000 | 2.33 |
| NORTHWESTERN UNIVERS | 29,891,833 | 2.32 |
| NATIONAL SECS CLEARING | 26,500,000 | 2.06 |
| GOTHAM FDG CORP | 25,361,731 | 1.97 |
| INTL BK RECON + DEVELOP | 25,081,125 | 1.95 |
| SHEFFIELD RECEIVABLE | 25,000,000 | 1.94 |

# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

**POOL 5 LGIP**

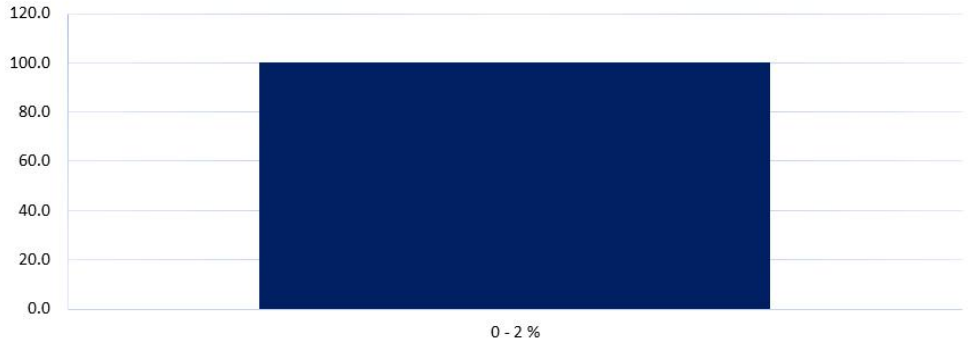
## Duration Distribution



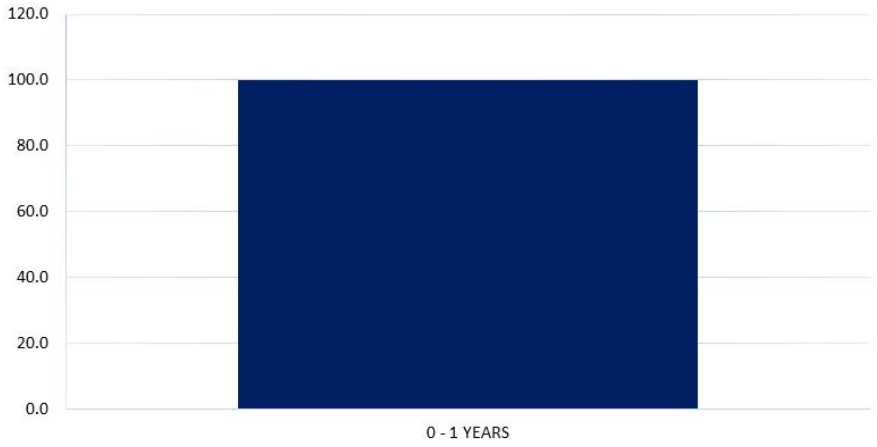

## Portfolio Level Characteristics

| | POOL 5 LGIP |
|---|---|
| Effective Maturity | 0.10 |
| Coupon | 0.06 |
| Effective Duration | 0.09 |
| Quality Rating (Moody's) | AAA |

## Coupon Distribution




## Expected Maturity Distribution



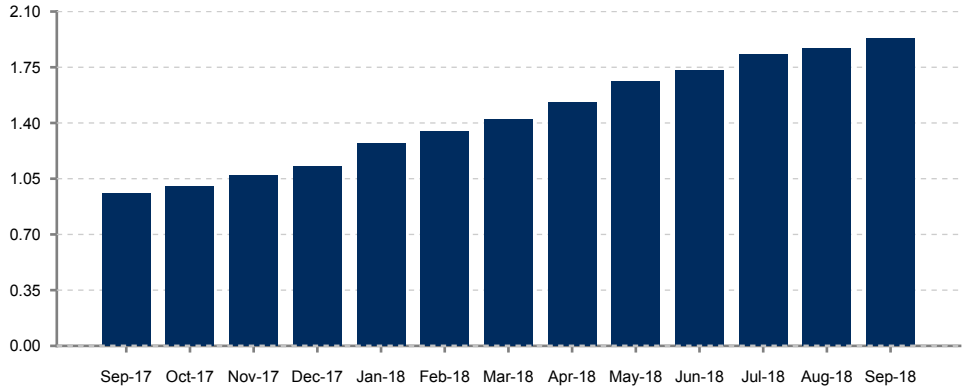

## Rating Distribution

# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

**POOL 7 LGIP FF&C**

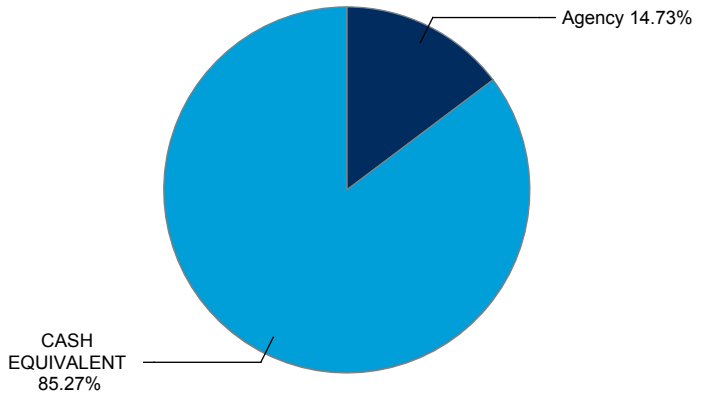
## Net Yield



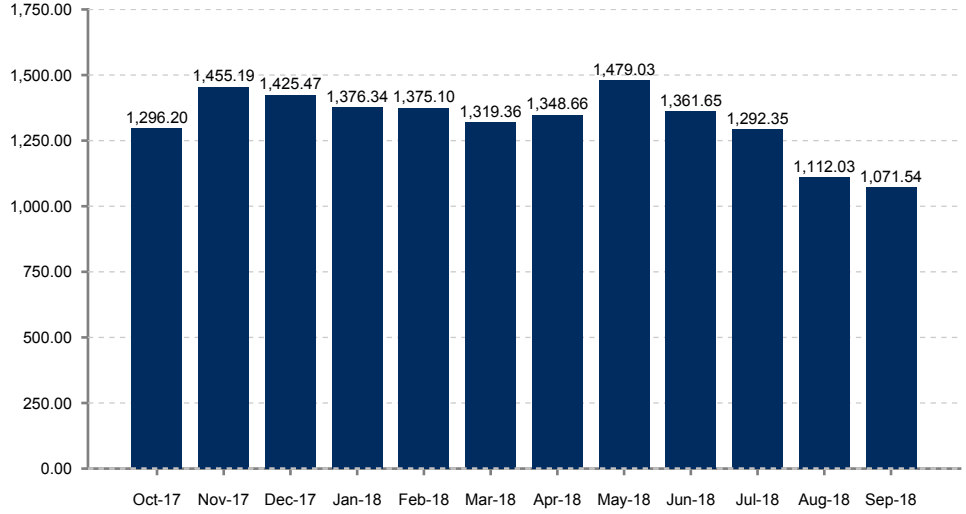

| | Current Mth | Prior Mth | 1 Year Ago |
|---|---|---|---|
| POOL 7 LGIP FF&C | 1.93 | 1.87 | 0.96 |

## Asset Allocation

| | Ending Market Value |
|---|---|
| POOL 7 LGIP FF&C | 1,071,540,439 |



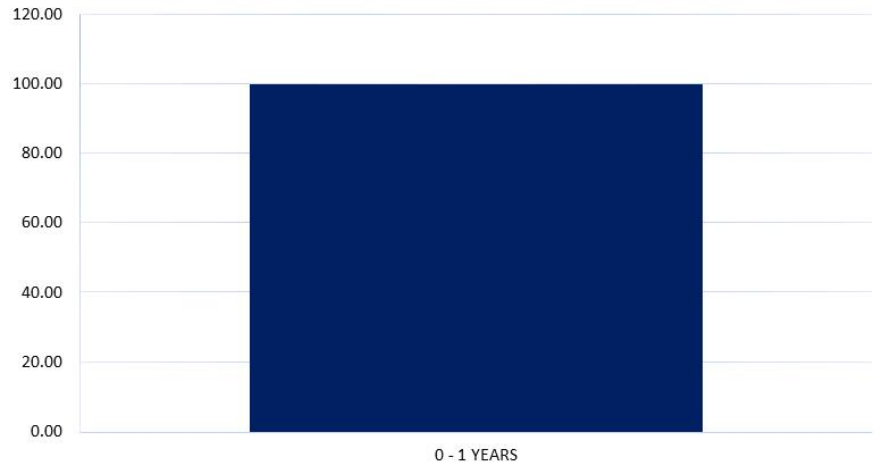

## Net Asset Values over Time ($MM)




## Top 10 Holdings

| Security Name | Ending Market Value | % of Portfolio |
|---|---|---|
| POOL 7 LGIP FF&C | | |
| BMO TRIPARTY MTGE CLAS/ISIT/RTRP MATU//20121224 | 141,614,566 | 13.22 |
| WELLS FARGO REPO | 110,038,317 | 10.27 |
| GUGGENHEIM SECURITIES REPO | 107,648,264 | 10.05 |
| TREASURY BILL | 107,439,872 | 10.03 |
| AMHERST PIERPONT | 80,120,000 | 7.48 |
| TREASURY BILL | 79,961,386 | 7.46 |
| TREASURY BILL | 59,990,165 | 5.60 |
| TREASURY BILL | 57,729,630 | 5.39 |
| TREASURY BILL | 49,914,328 | 4.66 |
| TREASURY BILL | 39,962,600 | 3.73 |

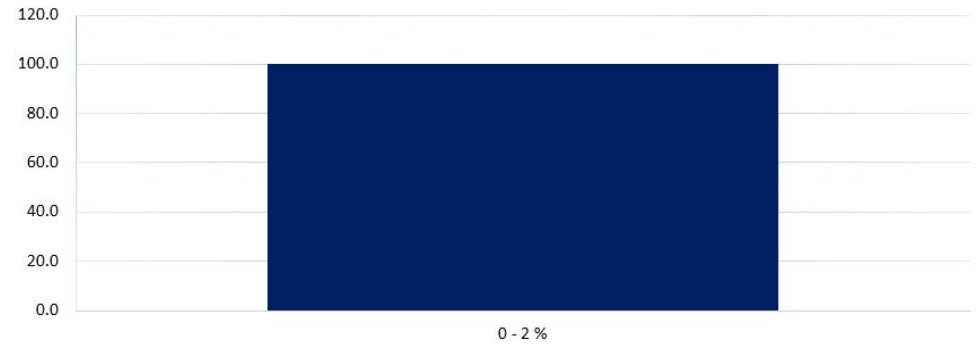
## Duration Distribution



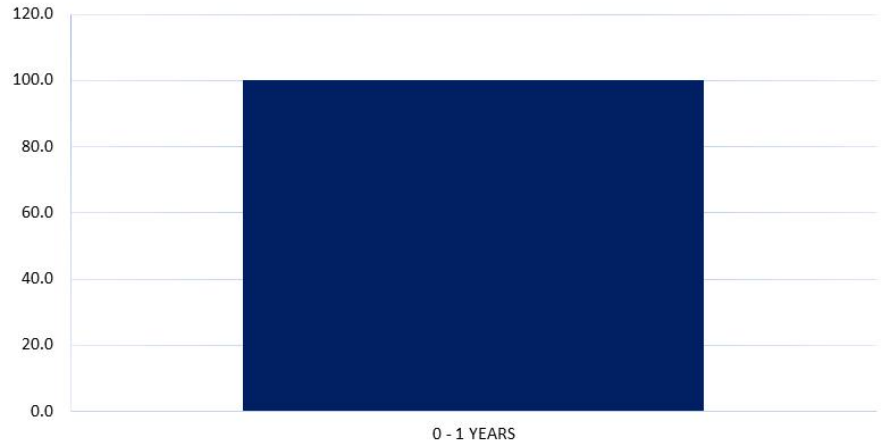

## Portfolio Level Characteristics

| | POOL 7 LGIP FF&C |
|---|---|
| Effective Maturity | 0.11 |
| Coupon | 0.00 |
| Effective Duration | 0.11 |
| Quality Rating (Moody's) | AAA |

## Coupon Distribution




## Expected Maturity Distribution



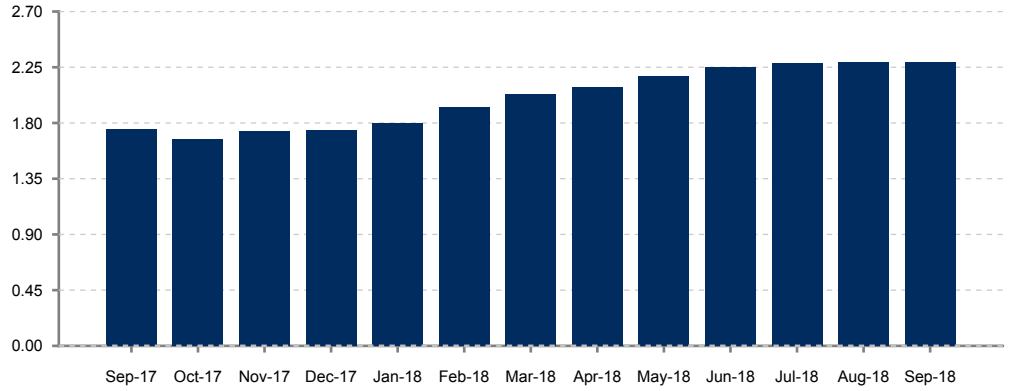

## Rating Distribution

# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

**POOL 500 LGIP MED**

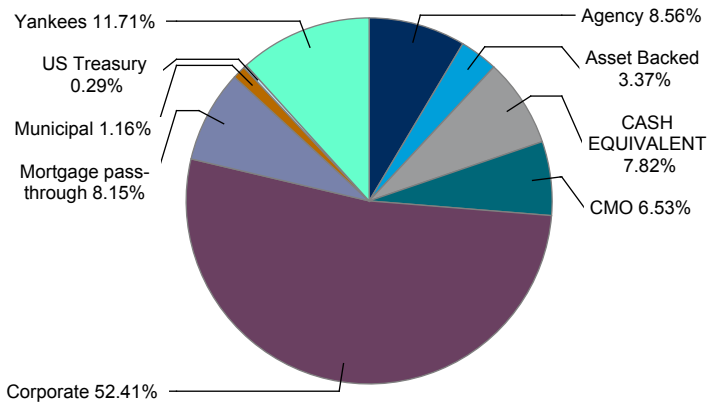
## Net Yield



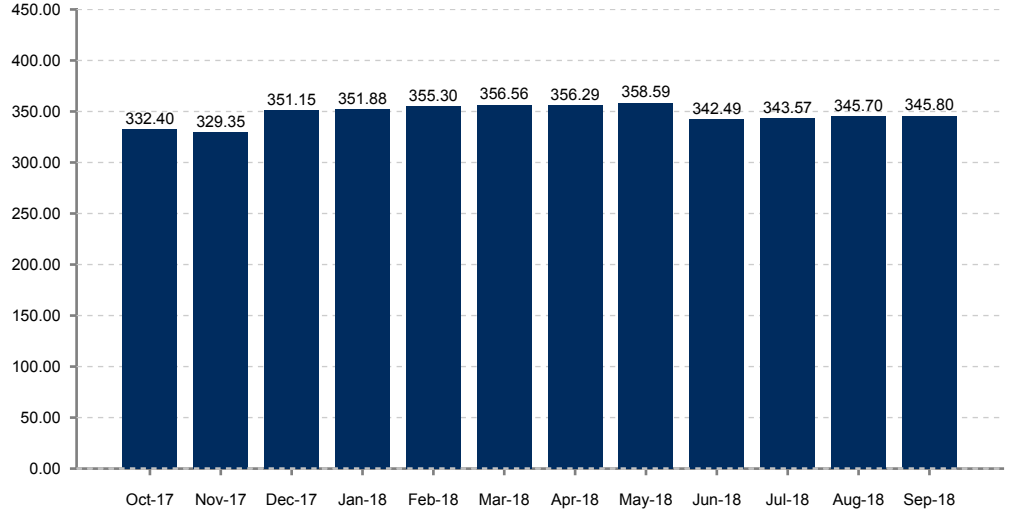

| | Current Mth | Prior Mth | 1 Year Ago |
|---|---|---|---|
| POOL 500 LGIP MED | 2.29 | 2.29 | 1.75 |

## Asset Allocation

| | Ending Market Value |
|---|---|
| POOL 500 LGIP MED | 345,803,402 |




## Net Asset Values over Time ($MM)




## Top 10 Holdings

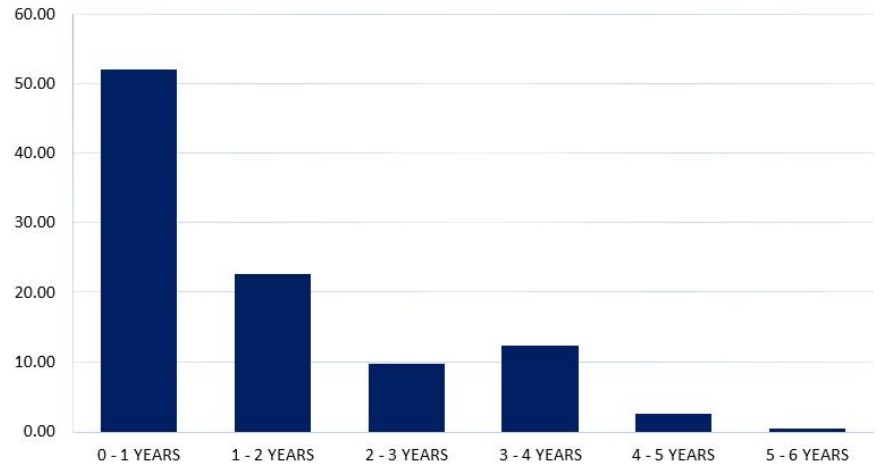
| Security Name | Ending Market Value | % of Portfolio |
|---|---|---|
| POOL 500 LGIP MED | | |
| AMHERST PIERPONT | 20,029,756 | 5.79 |
| GOLDMAN SACHS GROUP INC | 7,932,851 | 2.29 |
| MICROSOFT CORP | 7,918,064 | 2.29 |
| APPLE INC | 7,100,518 | 2.05 |
| MANUF + TRADERS TRUST CO | 7,035,295 | 2.03 |
| GUGGENHEIM SECURITIES REPO | 7,001,301 | 2.02 |
| BANK OF AMERICA CORP | 5,808,569 | 1.68 |
| MERCK + CO INC | 5,543,374 | 1.60 |
| FNMA POOL AB5991 | 5,167,431 | 1.49 |
| APPLE INC | 5,038,156 | 1.46 |

# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

**POOL 500 LGIP MED**

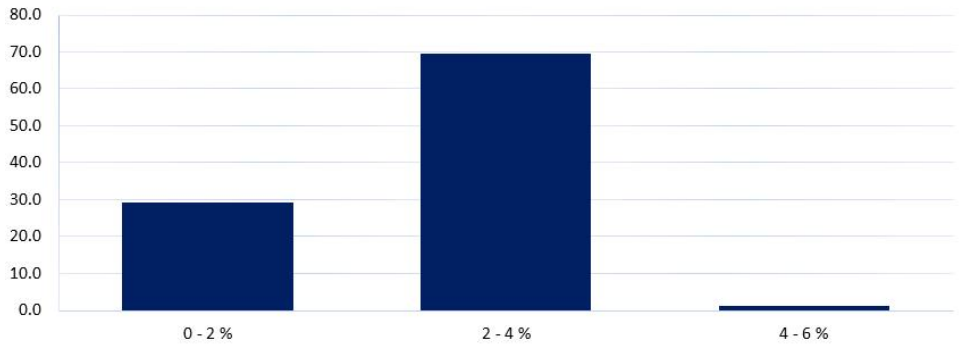
## Duration Distribution



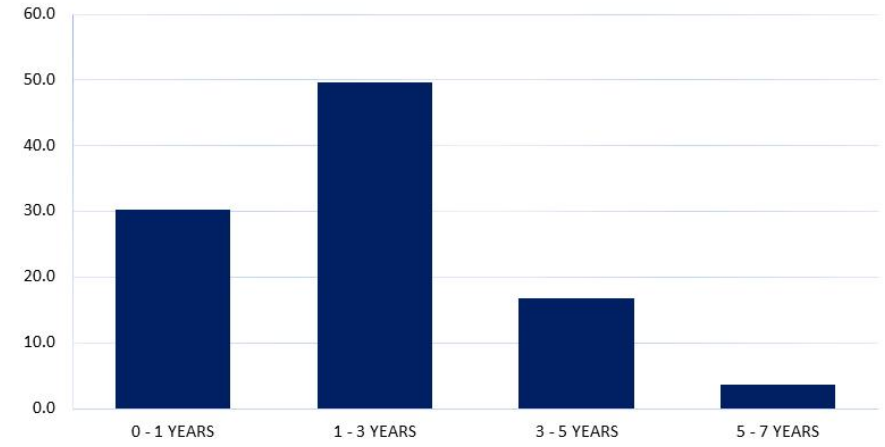

## Portfolio Level Characteristics

| | POOL 500 LGIP MED |
|---|---|
| Effective Maturity | 1.83 |
| Coupon | 2.25 |
| Effective Duration | 1.24 |
| Quality Rating (Moody's) | AA-3 |

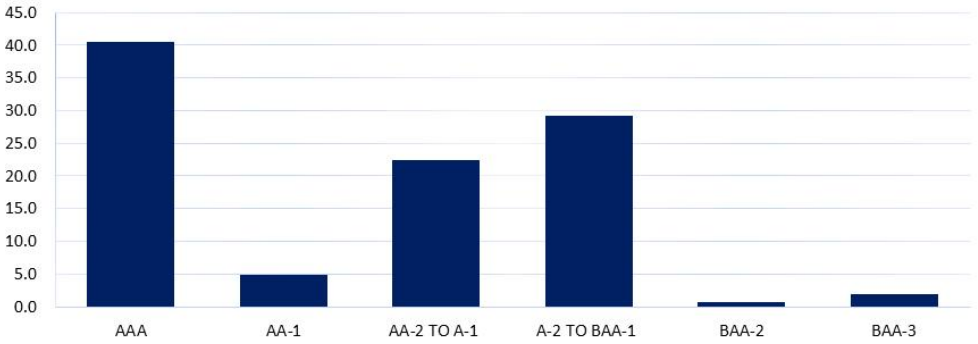
## Coupon Distribution




## Expected Maturity Distribution




## Rating Distribution

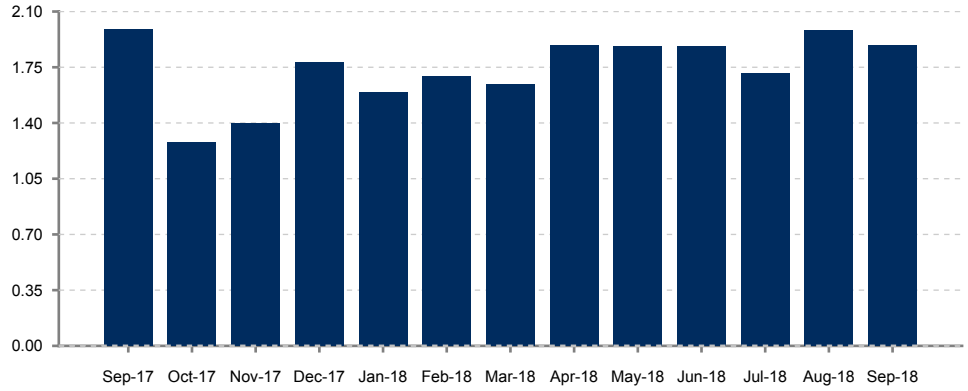


# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

**POOL 700 LGIP MD FF&C**

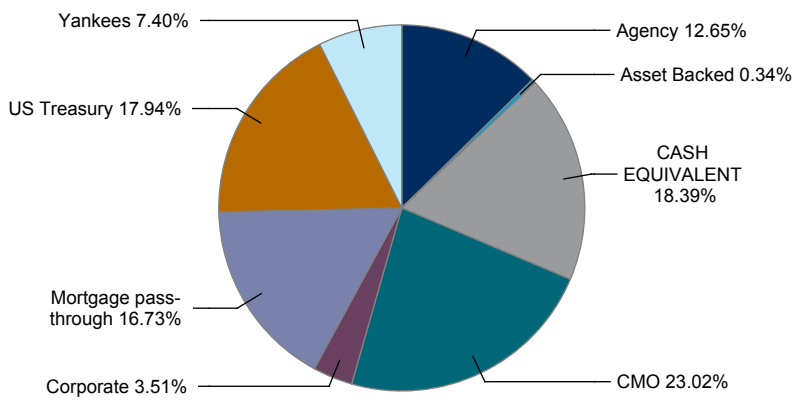
## Net Yield



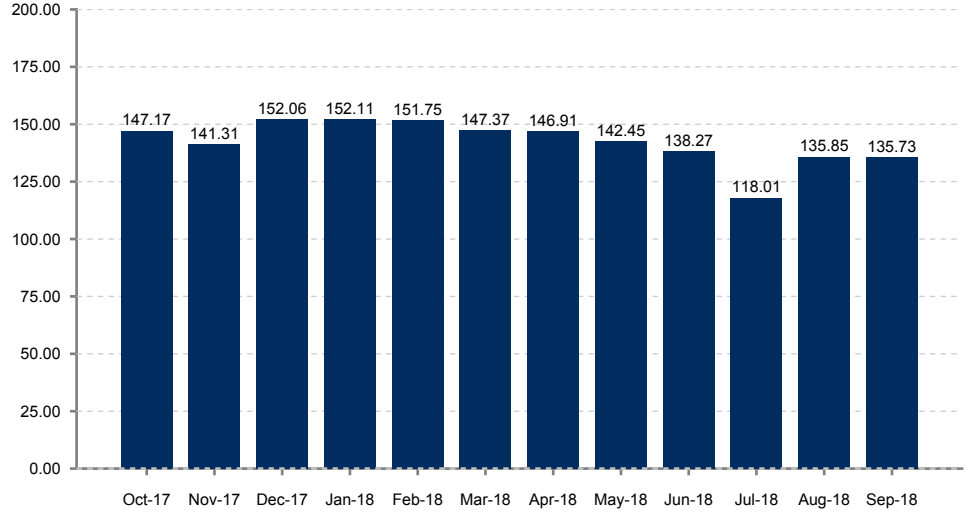

| | Current Mth | Prior Mth | 1 Year Ago |
|---|---|---|---|
| POOL 700 LGIP MD FF&C | 1.89 | 1.98 | 1.99 |

## Asset Allocation

| | Ending Market Value |
|---|---|
| POOL 700 LGIP MD FF&C | 135,729,825 |




## Net Asset Values over Time ($MM)




## Top 10 Holdings

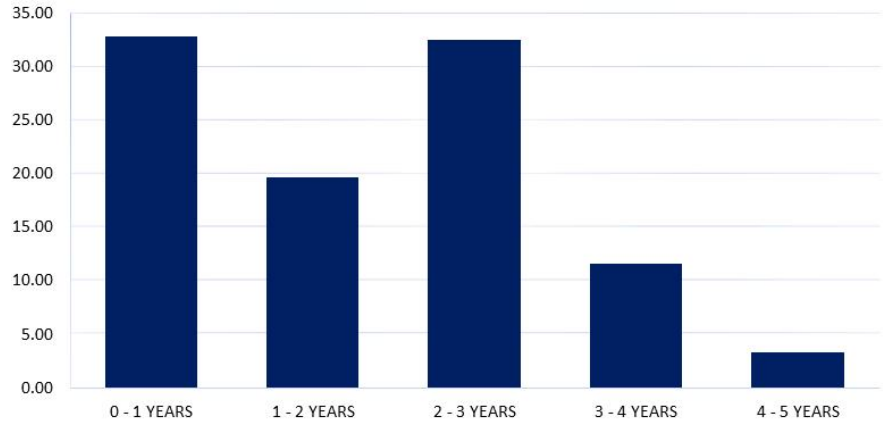
| Security Name | Ending Market Value | % of Portfolio |
|---|---|---|
| POOL 700 LGIP MD FF&C | | |
| AMHERST PIERPONT | 20,030,000 | 14.76 |
| GOVERNMENT NATIONAL MORTGAGE A | 7,014,339 | 5.17 |
| AID JORDAN | 6,287,751 | 4.63 |
| OVERSEAS PRIVATE INV COR | 5,005,946 | 3.69 |
| US TREASURY N/B | 4,968,300 | 3.66 |
| US TREASURY N/B | 4,941,771 | 3.64 |
| US TREASURY N/B | 4,921,136 | 3.63 |
| US TREASURY N/B | 4,871,903 | 3.59 |
| GNMA II POOL MA0213 | 3,744,804 | 2.76 |
| PRIVATE EXPORT FUNDING | 3,414,766 | 2.52 |

# OFFICE OF THE ARIZONA STATE TREASURER

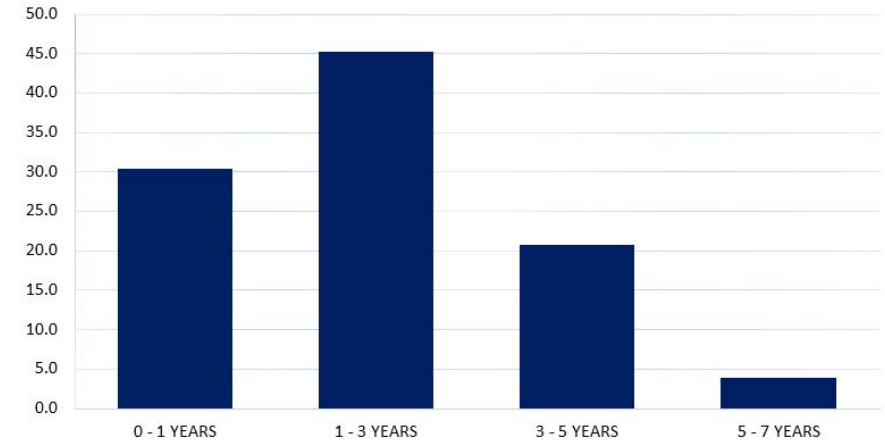
**September 30, 2018**

**POOL 700 LGIP MD FF&C**

## Duration Distribution



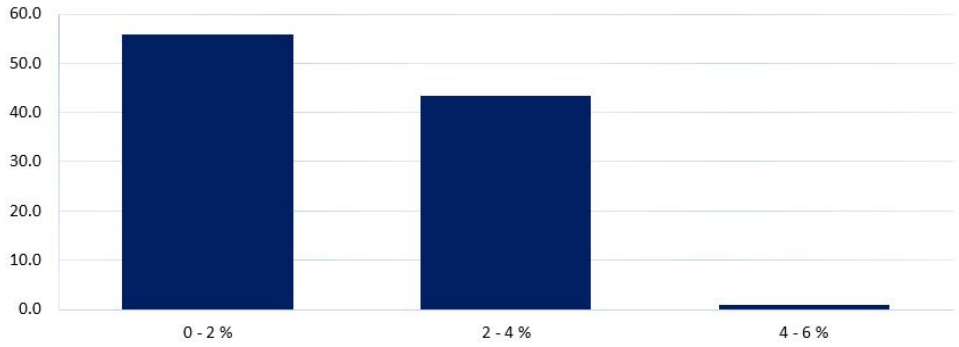

## Expected Maturity Distribution



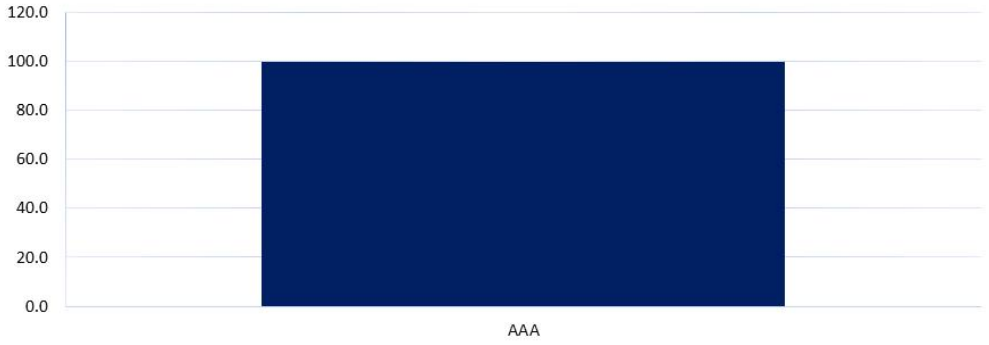

## Portfolio Level Characteristics

| | POOL 700 LGIP MD FF&C |
|---|---|
| Effective Maturity | 1.90 |
| Coupon | 1.63 |
| Effective Duration | 1.65 |
| Quality Rating (Moody's) | AAA |

## Coupon Distribution




## Rating Distribution



**EARNINGS DISTRIBUTED**
**ENDOWMENT FUNDS**
**SEPTEMBER 2018**

| Recipient | | Distributed in Current Month SEPTEMBER 2018 | Fiscal YTD 18/19 | Fiscal YTD 17/18 | Fiscal YTD Change |
|---|---|---|---|---|---|
| 101 | A & M Colleges | $70,405 | $211,216 | $199,463 | $11,753 |
| 102 | State Hospital | 47,085 | 141,255 | 128,976 | 12,279 |
| 103 | Leg., Exec., & Jud. | 58,321 | 174,962 | 164,691 | 10,271 |
| 104 | Military Institute | 3,868 | 11,603 | 10,926 | 677 |
| 105 | Miners Hospital | 158,118 | 474,354 | 430,922 | 43,432 |
| 107 | Normal School ASU/NAU | 28,855 | 86,565 | 78,344 | 8,221 |
| 108 | Penitentiaries | 106,084 | 318,251 | 286,055 | 32,196 |
| 109 | Permanent Common School | 26,770,470 | 80,311,409 | 73,981,309 | 6,330,099 |
| 110 | School for Deaf & Blind | 38,606 | 115,818 | 106,785 | 9,034 |
| 111 | School of Mines | 79,866 | 239,597 | 225,820 | 13,777 |
| 112 | State Charitable-Pioneers Home | 394,116 | 1,182,348 | 1,110,434 | 71,913 |
| 112 | State Charitable-Corrections | 197,058 | 591,174 | 555,217 | 35,957 |
| 112 | State Charitable-Youth Treatment | 197,058 | 591,174 | 555,217 | 35,957 |
| 113 | University Fund | 143,386 | 430,159 | 398,989 | 31,170 |
| 114 | U of A Land - 1881 | 492,037 | 1,476,110 | 1,299,551 | 176,559 |
| | **Total** | **$28,785,331** | **$86,355,994** | **$79,532,699** | **$6,823,295** |

# Land Sales Monthly Proceeds
# Endowment Funds

| Month | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|
| **January** | 85,209,777 | 29,493,046 | 7,126,212 | 5,108,687 | 2,960,815 | 809,822 | |
| **February** | 24,412,865 | 33,969,801 | 2,535,244 | 1,083,178 | 1,103,303 | 744,295 | |
| **March** | 13,469,847 | 1,323,549 | 1,096,232 | 1,106,860 | 3,045,043 | 8,296,029 | |
| **April** | 4,599,024 | 2,252,527 | 1,968,281 | 28,981,969 | 78,134,289 | 22,707,772 | |
| **May** | 12,685,871 | 1,100,261 | 19,123,417 | 20,147,116 | 27,642,672 | 16,234,823 | |
| **June** | 6,493,351 | 4,564,719 | 33,179,898 | 31,844,678 | 2,451,110 | 6,799,100 | |
| **July** | 5,694,705 | 4,196,738 | 6,092,396 | 2,469,997 | 13,838,188 | 27,835,379 | |
| **August** | 2,304,138 | 24,838,430 | 1,038,971 | 13,094,287 | 5,746,802 | 6,932,754 | |
| **September** | 10,399,639 | 1,960,673 | 1,967,125 | (12,580,728) | 19,937,751 | 8,293,343 | |
| **October** | 1,240,497 | 3,150,170 | 2,366,519 | 10,614,885 | 480,710 | | |
| **November** | 8,995,327 | 34,193,583 | 1,358,711 | 28,490,238 | 9,500,048 | | |
| **December** | 3,574,631 | 1,136,538 | 4,264,354 | 6,127,407 | 3,869,818 | | |
| **Calendar Year** | 179,079,672 | 142,180,034 | 82,117,360 | 136,488,573 | 168,710,549 | 98,653,317 | - |
| **Fiscal Year (July 1st to June 30th)** | 234,004,734 | 104,912,840 | 134,505,415 | 105,360,563 | 163,553,318 | 108,965,158 | 43,061,476 |

## NET REALIZED CAPITAL GAINS / LOSSES - ENDOWMENT FUNDS

| Endowment Fund | September 2018 NET GAIN(LOSS) | September 2017 NET GAIN(LOSS) |
|---|---|---|
| Fixed Income Pool | ($322,363) | **($423,670)** |
| 500 Large-Cap Fund | 11,289,807 | **$606,059** |
| 400 Mid-Cap Fund | 537,116 | **$6,861,470** |
| 600 Small-Cap Fund | 3,441,640 | **$4,318,682** |
| **Totals** | $14,946,200 | **$11,362,541** |

| Endowment Fund | 2018/2019 FISCAL YEAR TO DATE GAINS(LOSSES) | 2017/2018 FISCAL YEAR TO DATE GAINS(LOSSES) |
|---|---|---|
| Fixed Income Pool | ($1,113,156) | **($1,143,820)** |
| 500 Large-Cap Fund | 10,676,885 | **5,793,224** |
| 400 Mid-Cap Fund | 4,794,504 | **19,767,992** |
| 600 Small-Cap Fund | 7,300,676 | **6,355,429** |
| **Totals** | $21,658,909 | **$30,772,826** |

# ENDOWMENT FUNDS FIXED-INCOME POOLS
# PURCHASES & SALES
# SEPTEMBER 2018

**I. Endowment Funds Purchases**

| POOL | SECURITY DESCRIPTION | RATE | MATURITY | *WAL YEARS | PAR VALUE | PURCHASE COST | YIELD | MOODY'S RATING |
|---|---|---|---|---|---|---|---|---|
| 205 | CANCARA | 0.00 | 12/06/2018 | NA | $13,000,000 | $12,925,405 | 2.28% | P-1 |
| 205 | US TREASURY | 2.63 | 08/31/2020 | NA | 5,000,000 | 4,982,813 | 2.81% | Aaa |
| 205 | US TREASURY | 2.75 | 09/30/2020 | NA | 5,000,000 | 4,992,188 | 2.83% | Aaa |
| 205 | US TREASURY | 1.00 | 09/30/2019 | NA | 5,000,000 | 4,919,336 | 2.64% | Aaa |
| 123 | CANCARA | 0.00 | 12/06/2018 | NA | 2,000,000 | 1,988,524 | 2.28% | P-1 |
| 123 | COCA-COLA | 2.00 | 09/24/2018 | NA | 6,000,000 | 5,998,000 | 2.00% | P-1 |
| 123 | MOUNTCLIFF | 2.00 | 09/18/2018 | NA | 6,000,000 | 5,996,000 | 2.00% | P-1 |
| | **TOTAL ENDOWMENT FUNDS PURCHASES** | | | | **$42,000,000** | **$41,802,265** | | |

**II. Endowment Funds Sales**

| POOL | SECURITY DESCRIPTION | RATE | MATURITY | PAR VALUE | AMORTIZED COST/PROCEEDS | SALES GAINS/(LOSSES) | MOODY'S RATING |
|---|---|---|---|---|---|---|---|
| | **TOTAL ENDOWMENT FUNDS SALES** | | | **$0** | **$0** | **$0** | |

* WAL is the weighted average life of the security based on the Bloomberg calculation at the time the trade is executed. The calculation is used only with mortgage-backed pass-through/CMO securities.

# EQUITY FUNDS
# PURCHASES & SALES
# SEPTEMBER 2018

## I. Equity Fund Purchases

| | SHARES | PURCHASE COST | COMMISSIONS |
|---|---|---|---|
| 400 Mid-Cap Fund | 39,358 | $3,969,189 | $88 |
| 500 Large-Cap Fund | 189,473 | $17,898,231 | $1,422 |
| 600 Small-Cap Fund | 200 | 3,922 | 2 |
| **TOTAL EQUITY PURCHASES** | **229,031** | **$21,871,342** | **$1,512** |

## II. Equity Funds Sales

| | SHARES | SALES AMOUNT | COMMISSIONS |
|---|---|---|---|
| 400 Mid-Cap Fund | 2,500 | $923,687 | $19 |
| 500 Large-Cap Fund | 211,009 | 18,646,099 | 1,583 |
| 600 Small-Cap Fund | 57,448 | 5,606,133 | 224 |
| **TOTAL EQUITY SALES** | **270,957** | **$25,175,919** | **$1,826** |

**ENDOWMENT FUNDS**
**INVESTMENTS OUTSTANDING**
**SEPTEMBER 30, 2018**
**(In Thousands)**

| FUND | NAME OF FUND | SHARES OUTSTANDING | BOOK VALUE | MARKET VALUE | UNREALIZED GAINS (LOSSES) | **Mkt Value/ Book Value** |
|---|---|---|---|---|---|---|
| 101 | A & M Colleges | | | | | |
| | *Shares in Equity Pools* | 388 | $2,727 | $8,550 | $5,824 | |
| | *Shares in Fixed Income Pools* | 3,871 | 2,771 | 5,167 | 2,396 | |
| | Total | 4,259 | 5,498 | 13,718 | 8,220 | **2.495** |
| 102 | State Hospital | | | | | |
| | *Shares in Equity Pools* | 305 | 2,650 | 6,737 | 4,087 | |
| | *Shares in Fixed Income Pools* | 3,139 | 2,608 | 4,191 | 1,582 | |
| | Total | 3,445 | 5,258 | 10,928 | 5,670 | **2.078** |
| 103 | Leg., Exec, & Jud | | | | | |
| | *Shares in Equity Pools* | 317 | 2,395 | 6,994 | 4,600 | |
| | *Shares in Fixed Income Pools* | 3,390 | 2,429 | 4,525 | 2,096 | |
| | Total | 3,707 | 4,824 | 11,519 | 6,696 | **2.388** |
| 104 | Military Institute | | | | | |
| | *Shares in Equity Pools* | 21 | 167 | 471 | 304 | |
| | *Shares in Fixed Income Pools* | 233 | 164 | 311 | 147 | |
| | Total | 255 | 331 | 782 | 451 | **2.360** |
| 105 | Miners Hospital | | | | | |
| | *Shares in Equity Pools* | 941 | 8,356 | 20,765 | 12,409 | |
| | *Shares in Fixed Income Pools* | 9,456 | 8,241 | 12,622 | 4,381 | |
| | Total | 10,397 | 16,597 | 33,387 | 16,790 | **2.012** |
| 107 | Normal School ASU/NAU | | | | | |
| | *Shares in Equity Pools* | 181 | 1,565 | 3,994 | 2,429 | |
| | *Shares in Fixed Income Pools* | 1,868 | 1,497 | 2,493 | 996 | |
| | Total | 2,049 | 3,062 | 6,487 | 3,425 | **2.118** |
| 108 | Penitentiaries | | | | | |
| | *Shares in Equity Pools* | 625 | 5,299 | 13,793 | 8,494 | |
| | *Shares in Fixed Income Pools* | 6,391 | 5,264 | 8,532 | 3,268 | |
| | Total | 7,017 | 10,563 | 22,325 | 11,762 | **2.114** |

**ENDOWMENT FUNDS**
**INVESTMENTS OUTSTANDING**
SEPTEMBER 30, 2018
(In Thousands)

| | NAME OF FUND | SHARES OUTSTANDING | BOOK VALUE | MARKET VALUE | UNREALIZED GAINS (LOSSES) | **Mkt Value/ Book Value** |
|---|---|---|---|---|---|---|
| 109 | Permanent Common School | | | | | |
| | *Shares in Equity Pools* | 159,897 | 1,300,856 | 3,527,349 | 2,226,492 | |
| | *Shares in Fixed Income Pools* | 1,609,041 | 1,316,731 | 2,147,811 | 831,080 | |
| | Total | 1,768,938 | 2,617,587 | 5,675,160 | 3,057,572 | **2.168** |
| 110 | School for Deaf & Blind | | | | | |
| | *Shares in Equity Pools* | 226 | 1,876 | 4,983 | 3,107 | |
| | *Shares in Fixed Income Pools* | 2,538 | 1,995 | 3,388 | 1,393 | |
| | Total | 2,764 | 3,871 | 8,371 | 4,500 | **2.162** |
| 111 | School of Mines | | | | | |
| | *Shares in Equity Pools* | 439 | 3,292 | 9,674 | 6,383 | |
| | *Shares in Fixed Income Pools* | 4,506 | 3,345 | 6,014 | 2,669 | |
| | Total | 4,944 | 6,637 | 15,689 | 9,051 | **2.364** |
| 112 | State Charitable | | | | | |
| | *Shares in Equity Pools* | 4,554 | 35,507 | 100,465 | 64,957 | |
| | *Shares in Fixed Income Pools* | 44,268 | 35,618 | 59,091 | 23,473 | |
| | Total | 48,822 | 71,125 | 159,555 | 88,430 | **2.243** |
| 113 | University Fund | | | | | |
| | *Shares in Equity Pools* | 801 | 6,350 | 17,675 | 11,325 | |
| | *Shares in Fixed Income Pools* | 8,259 | 6,297 | 11,024 | 4,728 | |
| | Total | 9,060 | 12,647 | 28,700 | 16,052 | **2.269** |
| 114 | U Of A Land - 1881 | | | | | |
| | *Shares in Equity Pools* | 3,037 | 29,576 | 67,001 | 37,425 | |
| | *Shares in Fixed Income Pools* | 31,204 | 26,944 | 41,652 | 14,708 | |
| | Total | 34,241 | 56,520 | 108,653 | 52,133 | **1.922** |
| | TOTALS - ALL FUNDS | | | | | |
| | *Shares in Equity Pools* | 171,733 | 1,400,617 | 3,788,453 | 2,387,836 | |
| | *Shares in Fixed Income Pools* | 1,728,164 | 1,413,905 | 2,306,820 | 892,916 | |
| | **Grand Total** | $1,899,897 | $2,814,522 | $6,095,273 | $3,280,751 | |
| | **PRIOR YEAR: SEPTEMBER 2017 BALANCE** | **$1,970,955** | **$2,915,118** | **$5,734,733** | **$2,819,614** | |

**ENDOWMENT FUNDS**
**INVESTMENTS OUTSTANDING**
SEPTEMBER 30, 2018

**ASSET ALLOCATION PERCENTAGE**

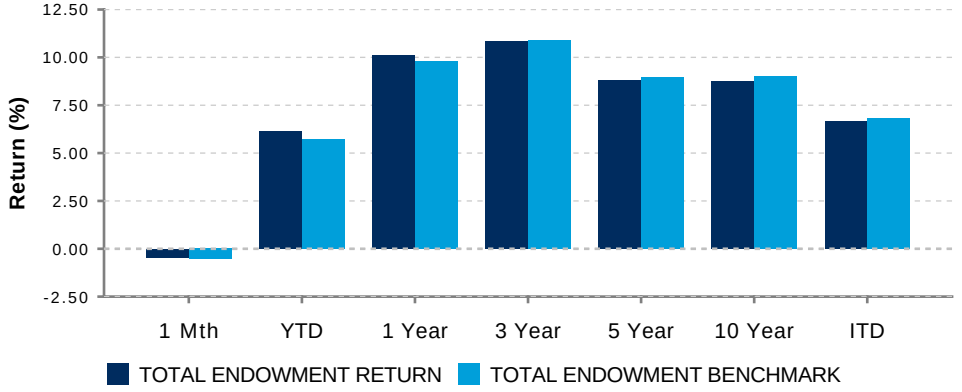
| | SHARES OUTSTANDING | **BOOK VALUE** | MARKET VALUE | SEPTEMBER 2017 MARKET VALUE |
|---|---|---|---|---|
| *Shares in Equity Pools* | 9.04% | **49.76%** | 62.15% | 60.87% |
| *Shares in Fixed Income Pools* | 90.96% | **50.24%** | 37.85% | 39.13% |
| **Total** | 100.00% | **100.00%** | 100.00% | 100.00% |

# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

Total Endowment Summary

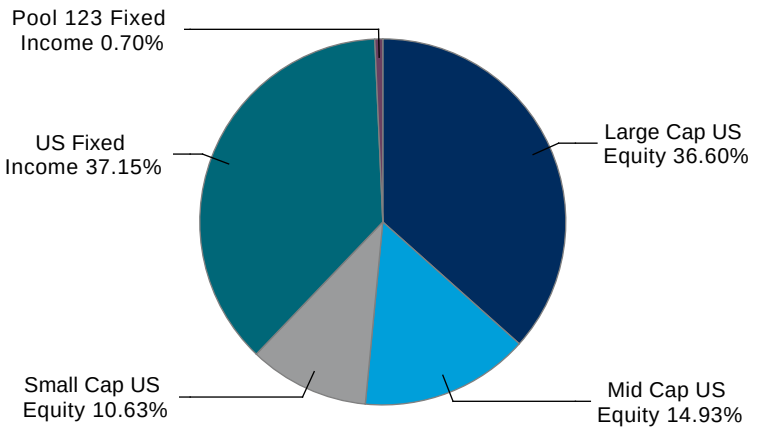
## Performance



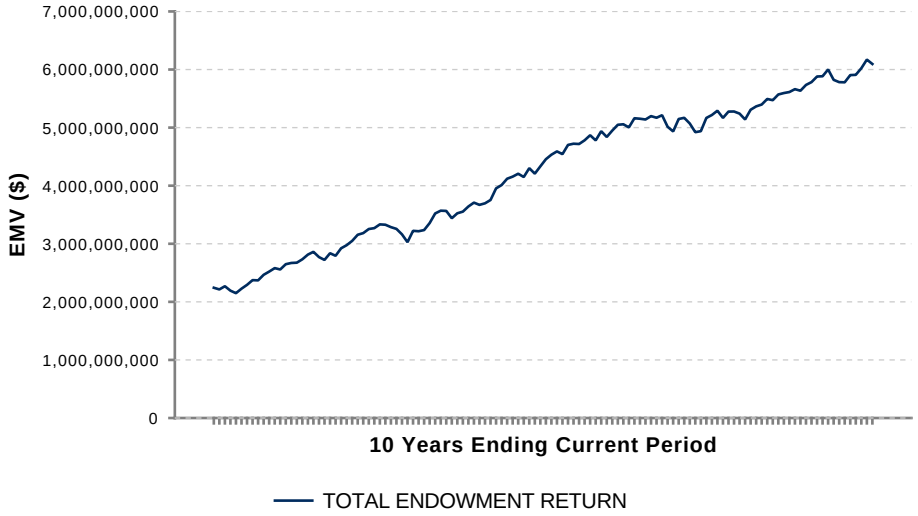

| | 1 Mth | YTD | 1 Year | 3 Year | 5 Year | 10 Year | ITD | Incept Date |
|---|---|---|---|---|---|---|---|---|
| TOTAL ENDOWMENT RETURN | -0.44 | 6.13 | 10.13 | 10.83 | 8.81 | 8.73 | 6.65 | 07/99 |
| TOTAL ENDOWMENT BENCHMARK | -0.54 | 5.70 | 9.78 | 10.89 | 8.98 | 9.03 | 6.81 | 07/99 |
| Excess | 0.10 | 0.43 | 0.34 | -0.07 | -0.17 | -0.30 | -0.16 | |

## Asset Allocation

| | Ending Market Value |
|---|---|
| TOTAL ENDOWMENT RETURN | 6,095,273,020 |

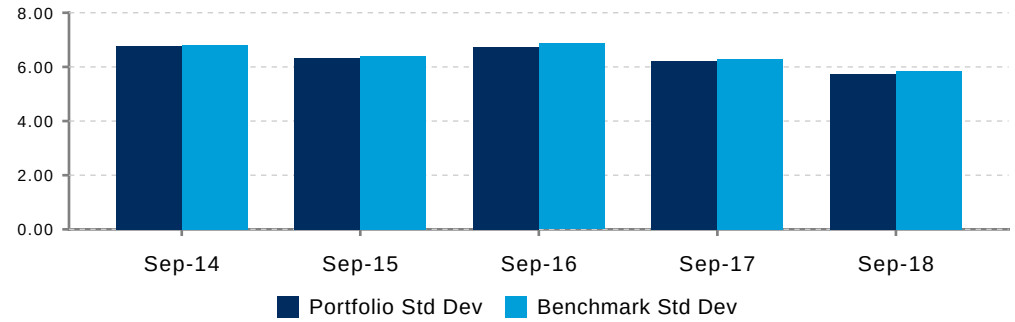



## Ending Market Value




## 3 Year Risk Statistics

| | Return | Portfolio Std Dev | Benchmark Std Dev | Sharpe Ratio | Beta | Tracking Error | Information Ratio |
|---|---|---|---|---|---|---|---|
| TOTAL ENDOWMENT RETURN | 10.83 | 5.74 | 5.85 | 1.74 | 0.98 | 0.35 | -0.19 |

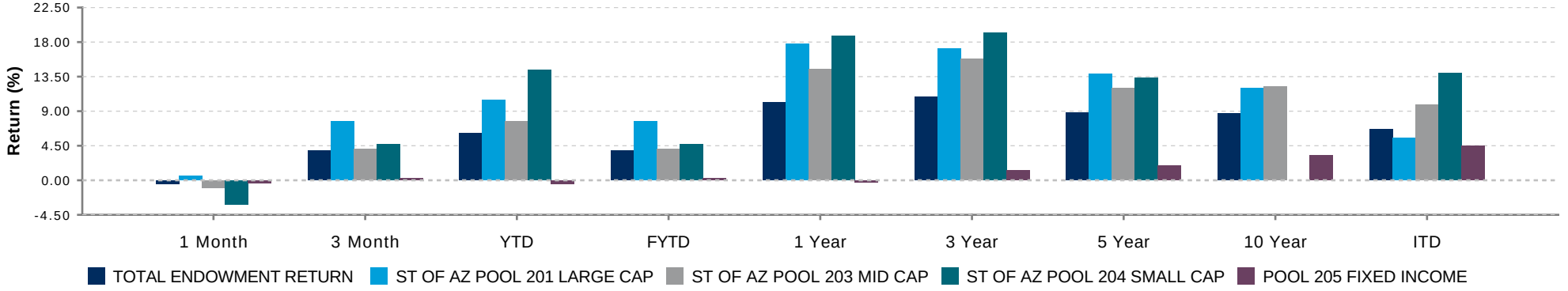


# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

Total Returns Net Mgr

## Return Comparison



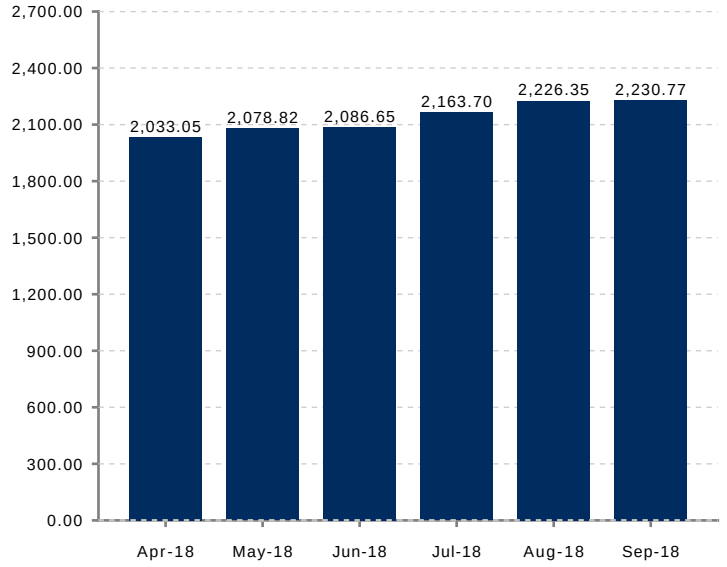

| | Market Value | Actual Weight | 1 Mth | 3 Mth | YTD | FYTD | 1 Year | 3 Year | 5 Year | 10 Year | ITD | Inc Date |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOTAL ENDOWMENT RETURN | 6,095,273,020 | 100.00 | -0.44 | 3.88 | 6.13 | 3.88 | 10.13 | 10.83 | 8.81 | 8.73 | 6.65 | Jul-01-99 |
| TOTAL ENDOWMENT BENCHMARK | | | -0.54 | 3.82 | 5.70 | 3.82 | 9.78 | 10.89 | 8.98 | 9.03 | 6.81 | Jul-01-99 |
| Excess | | | 0.10 | 0.07 | 0.43 | 0.07 | 0.34 | -0.07 | -0.17 | -0.30 | -0.16 | |
| ST OF AZ POOL 201 LARGE CAP | 2,230,773,362 | 36.60 | 0.52 | 7.64 | 10.43 | 7.64 | 17.74 | 17.17 | 13.86 | 11.96 | 5.50 | Jul-01-99 |
| S&P 500 INDEX (DAILY) | | | 0.57 | 7.71 | 10.56 | 7.71 | 17.91 | 17.31 | 13.95 | 11.97 | 6.00 | Jul-01-99 |
| Excess | | | -0.05 | -0.07 | -0.13 | -0.07 | -0.17 | -0.13 | -0.09 | -0.00 | -0.50 | |
| ST OF AZ POOL 203 MID CAP | 909,772,457 | 14.93 | -0.94 | 4.10 | 7.67 | 4.10 | 14.44 | 15.81 | 12.00 | 12.16 | 9.88 | Aug-01-01 |
| S&P 400 MIDCAP INDEX (DAILY) | | | -1.10 | 3.86 | 7.49 | 3.86 | 14.21 | 15.68 | 11.91 | 12.49 | 9.87 | Aug-01-01 |
| Excess | | | 0.16 | 0.23 | 0.19 | 0.23 | 0.24 | 0.14 | 0.10 | -0.33 | 0.01 | |
| ST OF AZ POOL 204 SMALL CAP | 647,906,764 | 10.63 | -3.18 | 4.67 | 14.32 | 4.67 | 18.76 | 19.26 | 13.31 | | 13.99 | Mar-01-11 |
| S&P SM 600 TR | | | -3.17 | 4.71 | 14.54 | 4.71 | 19.08 | 19.41 | 13.32 | | 14.00 | Mar-01-11 |
| Excess | | | -0.00 | -0.05 | -0.22 | -0.05 | -0.32 | -0.14 | -0.02 | | -0.01 | |
| POOL 205 FIXED INCOME | 2,264,362,956 | 37.15 | -0.38 | 0.24 | -0.42 | 0.24 | -0.24 | 1.33 | 1.89 | 3.29 | 4.52 | Jul-01-99 |
| FTSE BIG (DAILY) | | | -0.66 | 0.03 | -1.62 | 0.03 | -1.24 | 1.34 | 2.15 | 3.76 | 4.77 | Jul-01-99 |
| Excess | | | 0.28 | 0.21 | 1.21 | 0.21 | 0.99 | -0.01 | -0.26 | -0.48 | -0.25 | |
| POOL 123 FIXED INCOME | 42,457,483 | 0.70 | 0.16 | 0.43 | 1.22 | 0.43 | 1.54 | | | | 1.16 | Jun-01-16 |
| ASTO-POOL 5 BENCHMARK | | | 0.17 | 0.52 | 1.36 | 0.52 | 1.65 | | | | 1.10 | Jun-01-16 |
| Excess | | | -0.01 | -0.10 | -0.14 | -0.10 | -0.12 | | | | 0.07 | |

# OFFICE OF THE ARIZONA STATE TREASURER

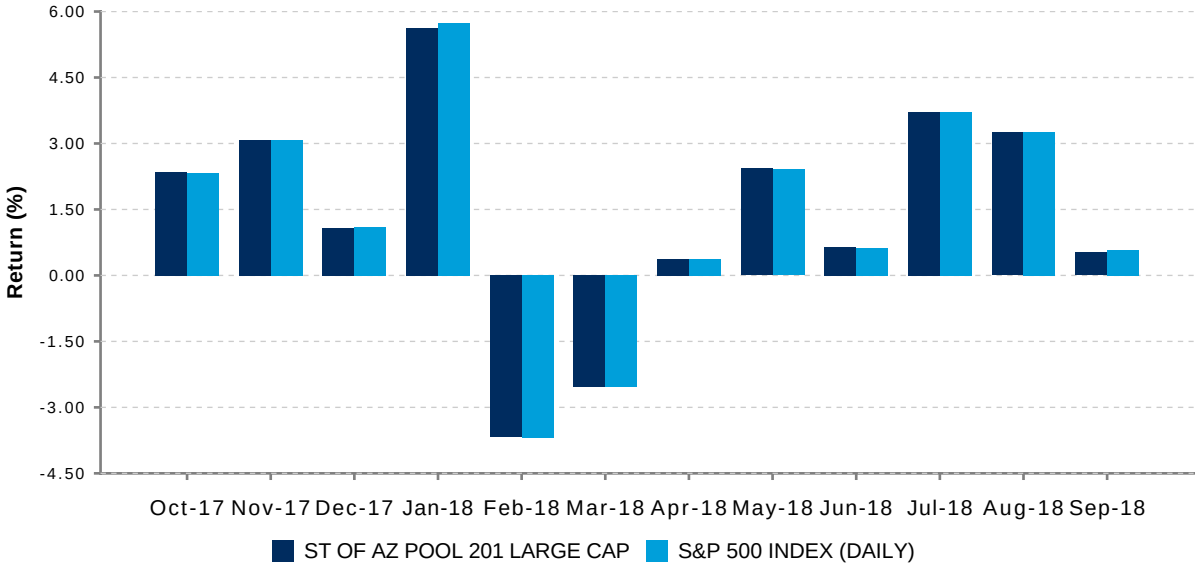
**September 30, 2018**

ST OF AZ POOL 201 LARGE CAP

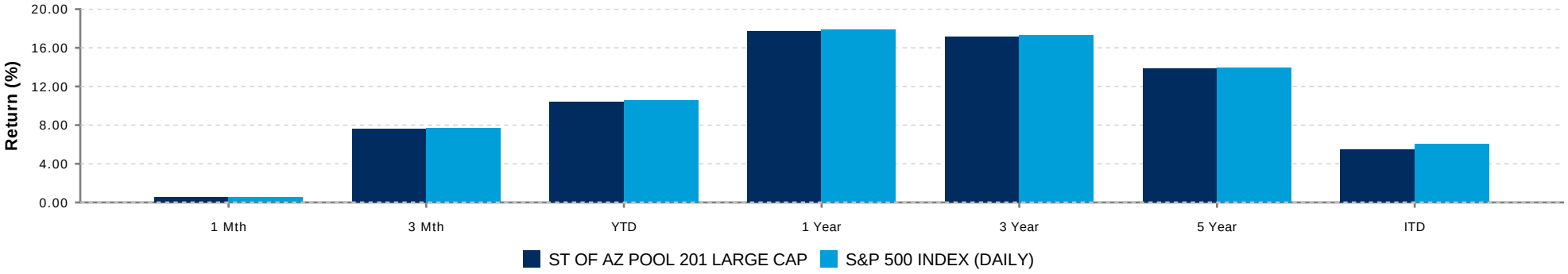
## Net Asset Values over Time ($MM)




## Monthly Returns




## Rates of Return

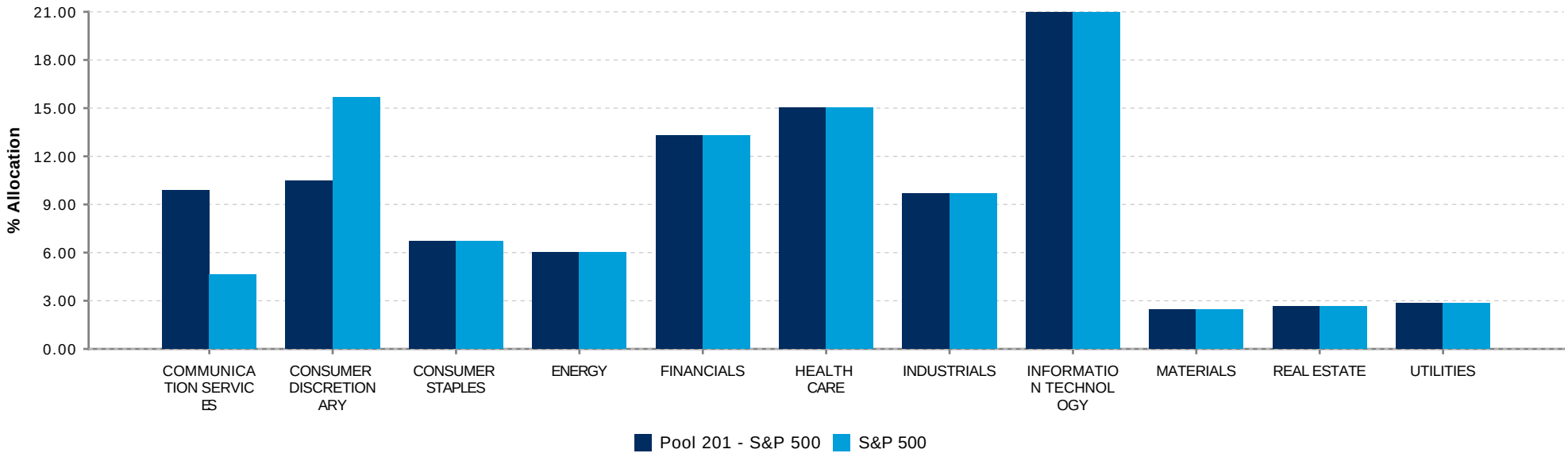



| | 1 Mth | 3 Mth | YTD | 1 Year | 3 Year | 5 Year | ITD | Sep 30 2016 | Sep 30 2017 | Sep 30 2018 |
|---|---|---|---|---|---|---|---|---|---|---|
| ST OF AZ POOL 201 LARGE CAP | 0.52 | 7.64 | 10.43 | 17.74 | 17.17 | 13.86 | 5.50 | 15.22 | 18.59 | 17.74 |
| S&P 500 INDEX (DAILY) | 0.57 | 7.71 | 10.56 | 17.91 | 17.31 | 13.95 | 6.00 | 15.43 | 18.61 | 17.91 |
| Excess | -0.05 | -0.07 | -0.13 | -0.17 | -0.13 | -0.09 | -0.50 | -0.21 | -0.02 | -0.17 |

# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

ST OF AZ POOL 201 LARGE CAP
Sector Allocation vs S&P 500



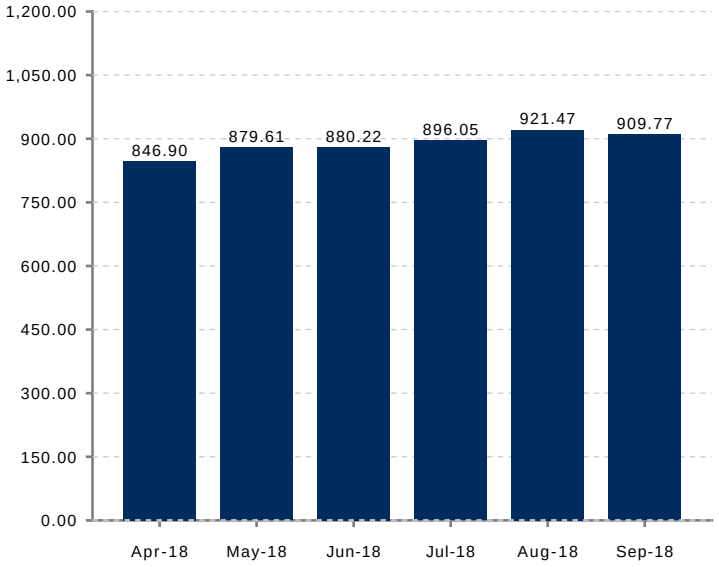

| | Fund Weight | Benchmark Weight | Relative Weight |
|---|---|---|---|
| ST OF AZ POOL 201 LARGE CAP | 100.00 | 100.00 | 0.00 |
| COMMUNICATION SERVICES | 9.90 | 4.56 | 5.34 |
| CONSUMER DISCRETIONARY | 10.34 | 15.66 | -5.33 |
| CONSUMER STAPLES | 6.70 | 6.70 | -0.00 |
| ENERGY | 5.87 | 5.86 | 0.02 |
| FINANCIALS | 13.79 | 13.79 | -0.00 |
| HEALTH CARE | 14.62 | 14.62 | 0.00 |
| INDUSTRIALS | 9.59 | 9.60 | -0.01 |
| INFORMATION TECHNOLOGY | 21.15 | 21.16 | -0.01 |
| MATERIALS | 2.49 | 2.49 | 0.00 |
| REAL ESTATE | 2.71 | 2.73 | -0.02 |
| UTILITIES | 2.84 | 2.83 | 0.01 |

# OFFICE OF THE ARIZONA STATE TREASURER

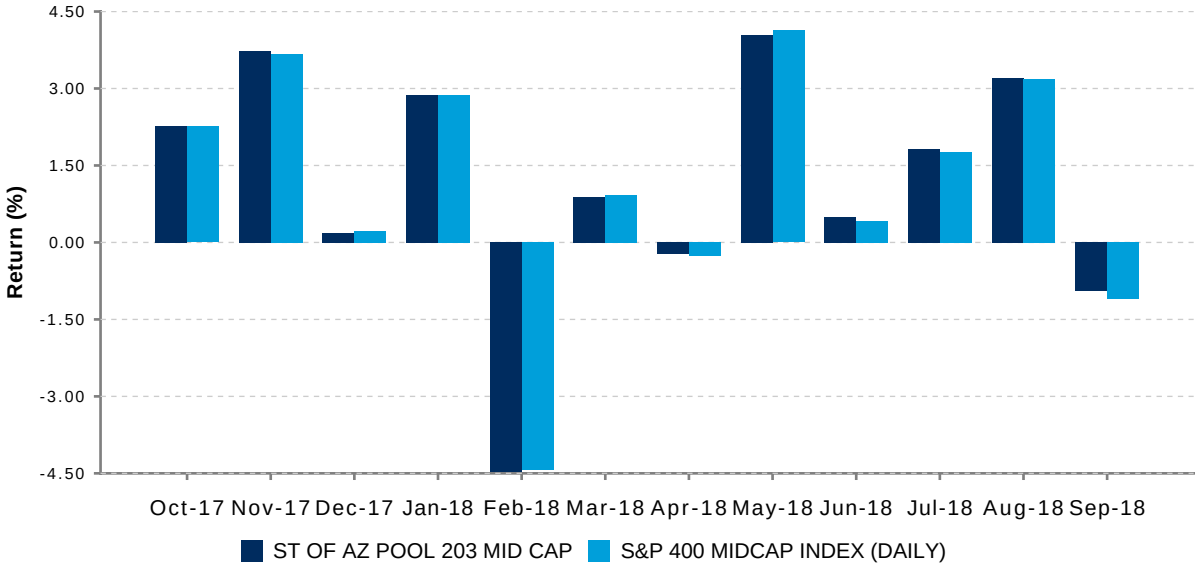
**September 30, 2018**

ST OF AZ POOL 203 MID CAP

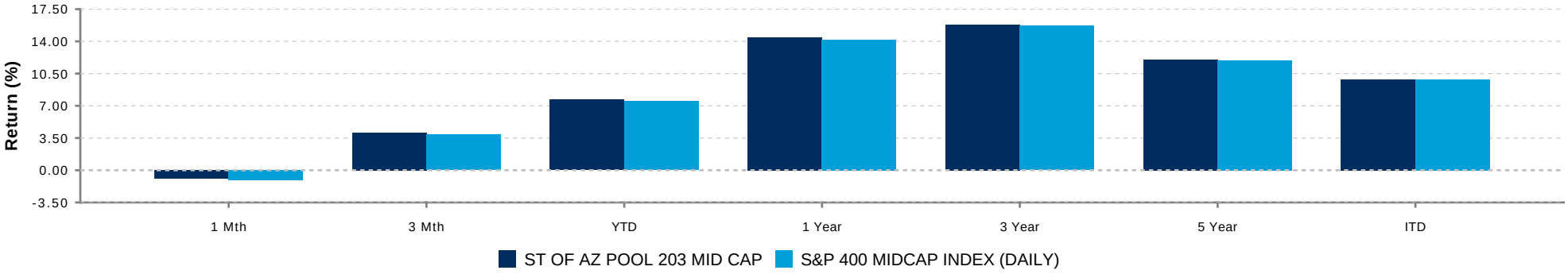
## Net Asset Values over Time ($MM)




## Monthly Returns




## Rates of Return

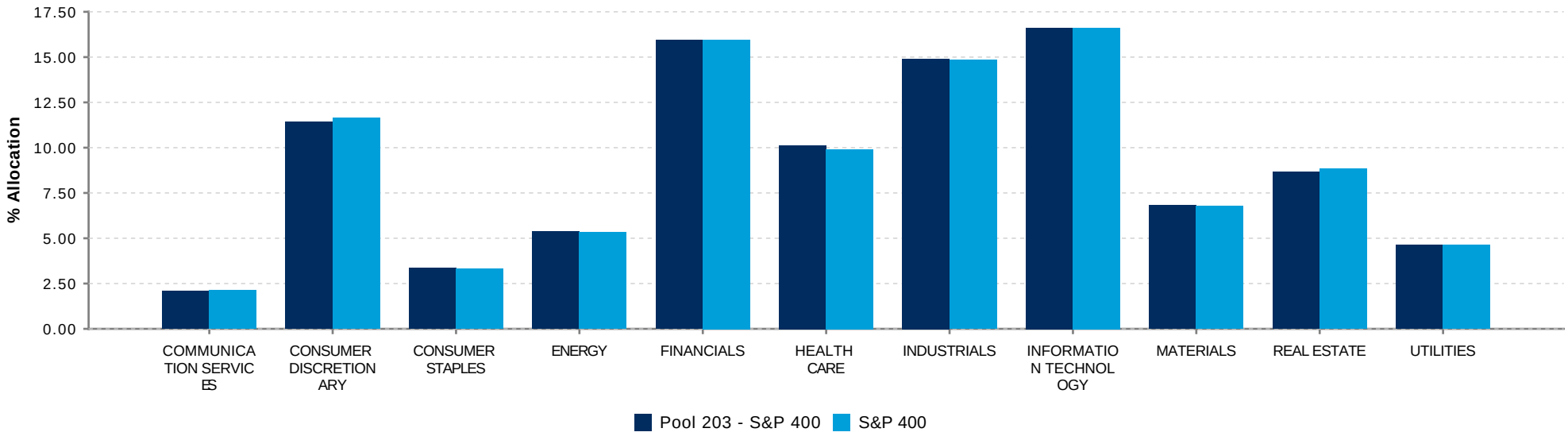



| | 1 Mth | 3 Mth | YTD | 1 Year | 3 Year | 5 Year | ITD | Sep 30 2016 | Sep 30 2017 | Sep 30 2018 |
|---|---|---|---|---|---|---|---|---|---|---|
| ST OF AZ POOL 203 MID CAP | -0.94 | 4.10 | 7.67 | 14.44 | 15.81 | 12.00 | 9.88 | 15.38 | 17.65 | 14.44 |
| S&P 400 MIDCAP INDEX (DAILY) | -1.10 | 3.86 | 7.49 | 14.21 | 15.68 | 11.91 | 9.87 | 15.33 | 17.52 | 14.21 |
| Excess | 0.16 | 0.23 | 0.19 | 0.24 | 0.14 | 0.10 | 0.01 | 0.05 | 0.13 | 0.24 |

# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

ST OF AZ POOL 203 MID CAP
Sector Allocation vs S&P MID CAP 400



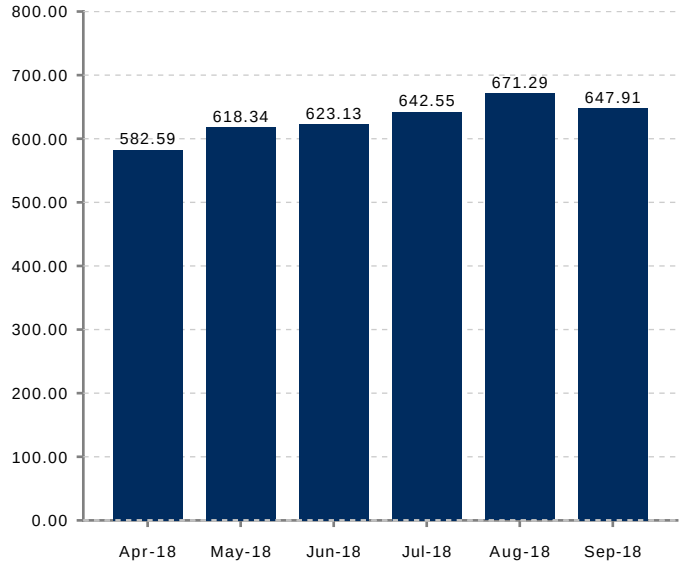

| | Weight Fund | Weight Benchmark | Weight Relative |
|---|---|---|---|
| ST OF AZ POOL 203 MID CAP | 100.00 | 100.00 | 0.00 |
| COMMUNICATION SERVICES | 1.97 | 1.96 | 0.01 |
| CONSUMER DISCRETIONARY | 11.50 | 11.58 | -0.08 |
| CONSUMER STAPLES | 3.40 | 3.37 | 0.02 |
| ENERGY | 5.07 | 5.08 | -0.01 |
| FINANCIALS | 16.41 | 16.33 | 0.08 |
| HEALTH CARE | 9.85 | 10.03 | -0.18 |
| INDUSTRIALS | 14.67 | 14.77 | -0.10 |
| INFORMATION TECHNOLOGY | 16.75 | 16.67 | 0.08 |
| MATERIALS | 6.86 | 6.81 | 0.05 |
| REAL ESTATE | 8.97 | 8.89 | 0.08 |
| UTILITIES | 4.55 | 4.51 | 0.04 |

# OFFICE OF THE ARIZONA STATE TREASURER

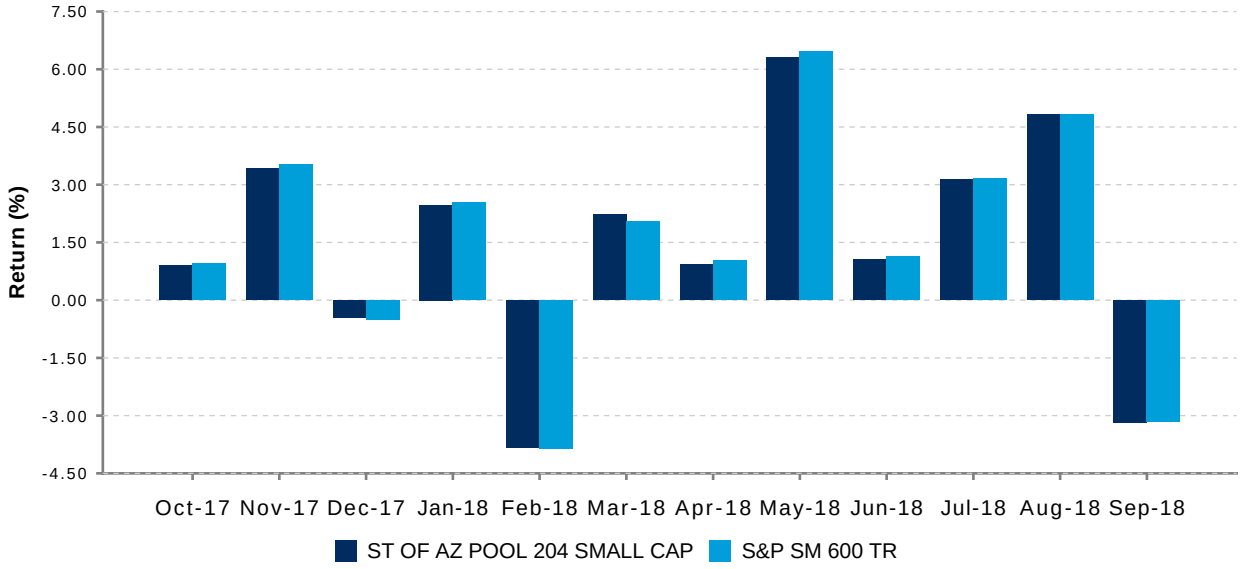
**September 30, 2018**

ST OF AZ POOL 204 SMALL CAP

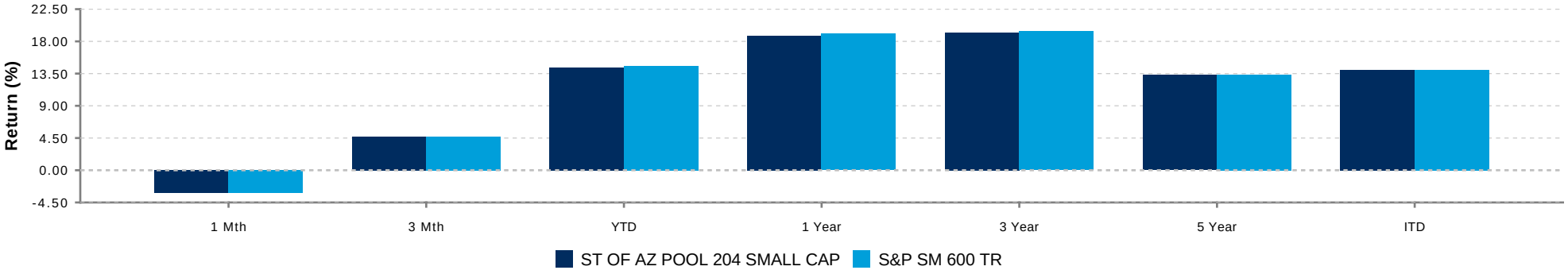
## Net Asset Values over Time ($MM)




## Monthly Returns




## Rates of Return

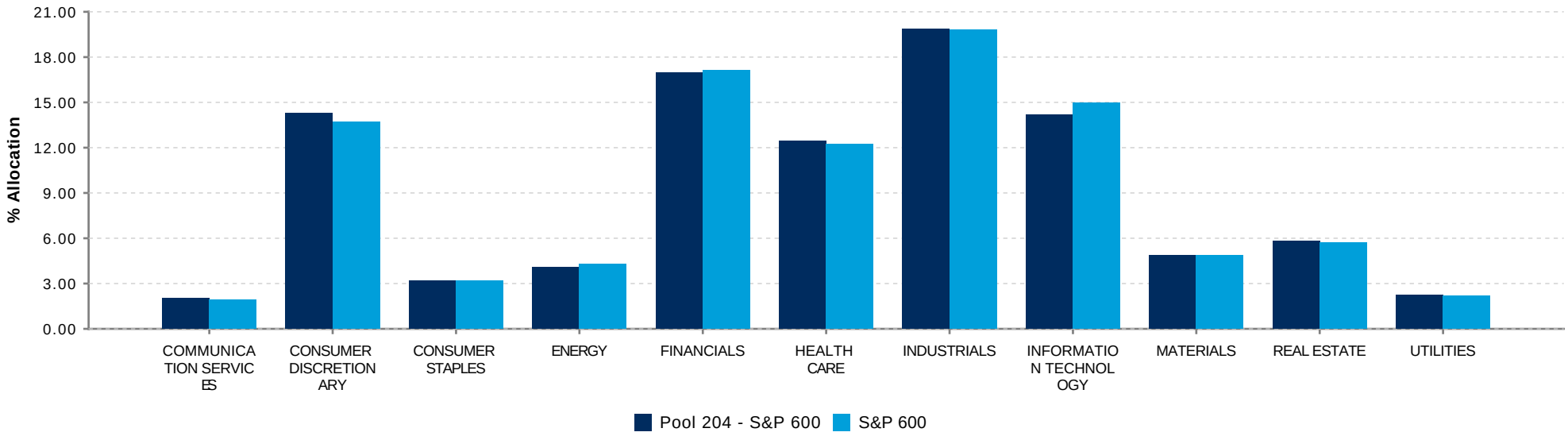



| | 1 Mth | 3 Mth | YTD | 1 Year | 3 Year | 5 Year | ITD | Sep 30 2016 | Sep 30 2017 | Sep 30 2018 |
|---|---|---|---|---|---|---|---|---|---|---|
| ST OF AZ POOL 204 SMALL CAP | -3.18 | 4.67 | 14.32 | 18.76 | 19.26 | 13.31 | 13.99 | 17.97 | 21.09 | 18.76 |
| S&P SM 600 TR | -3.17 | 4.71 | 14.54 | 19.08 | 19.41 | 13.32 | 14.00 | 18.12 | 21.05 | 19.08 |
| Excess | -0.00 | -0.05 | -0.22 | -0.32 | -0.14 | -0.02 | -0.01 | -0.15 | 0.04 | -0.32 |

# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

ST OF AZ POOL 204 SMALL CAP
Sector Allocation vs S&P SMALLCAP 600



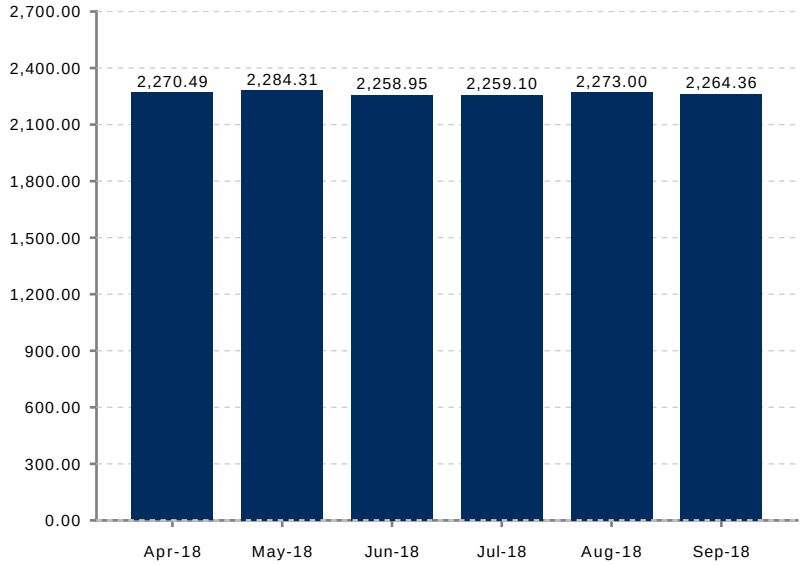

| | Weight Fund | Weight Benchmark | Weight Relative |
|---|---|---|---|
| ST OF AZ POOL 204 SMALL CAP | 100.00 | 100.00 | 0.00 |
| COMMUNICATION SERVICES | 1.85 | 1.71 | 0.15 |
| CONSUMER DISCRETIONARY | 14.58 | 14.10 | 0.48 |
| CONSUMER STAPLES | 3.14 | 3.14 | -0.00 |
| ENERGY | 3.97 | 3.92 | 0.06 |
| FINANCIALS | 16.97 | 16.98 | -0.01 |
| HEALTH CARE | 12.46 | 12.55 | -0.09 |
| INDUSTRIALS | 19.64 | 19.63 | 0.01 |
| INFORMATION TECHNOLOGY | 14.58 | 15.22 | -0.64 |
| MATERIALS | 4.79 | 4.77 | 0.01 |
| REAL ESTATE | 5.88 | 5.86 | 0.03 |
| UTILITIES | 2.13 | 2.13 | 0.00 |

# OFFICE OF THE ARIZONA STATE TREASURER

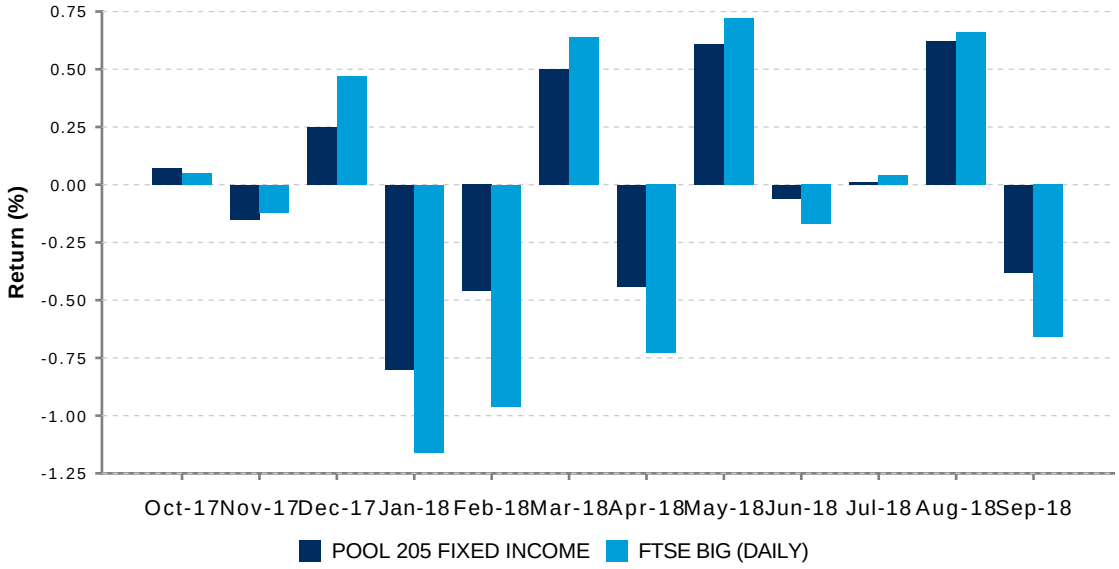
**September 30, 2018**

POOL 205 FIXED INCOME

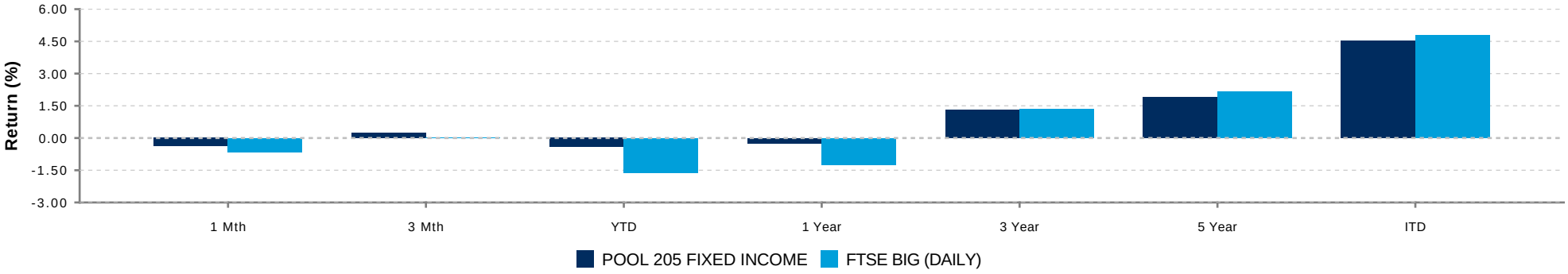
## Net Asset Values over Time ($MM)




## Monthly Returns




## Rates of Return




| | 1 Mth | 3 Mth | YTD | 1 Year | 3 Year | 5 Year | ITD | Sep 30 2018 | Sep 30 2017 | Sep 30 2016 |
|---|---|---|---|---|---|---|---|---|---|---|
| POOL 205 FIXED INCOME | -0.38 | 0.24 | -0.42 | -0.24 | 1.33 | 1.89 | 4.52 | -0.24 | 0.48 | 3.79 |
| FTSE BIG (DAILY) | -0.66 | 0.03 | -1.62 | -1.24 | 1.34 | 2.15 | 4.77 | -1.24 | 0.06 | 5.32 |
| Excess | 0.28 | 0.21 | 1.21 | 0.99 | -0.01 | -0.26 | -0.25 | 0.99 | 0.42 | -1.53 |

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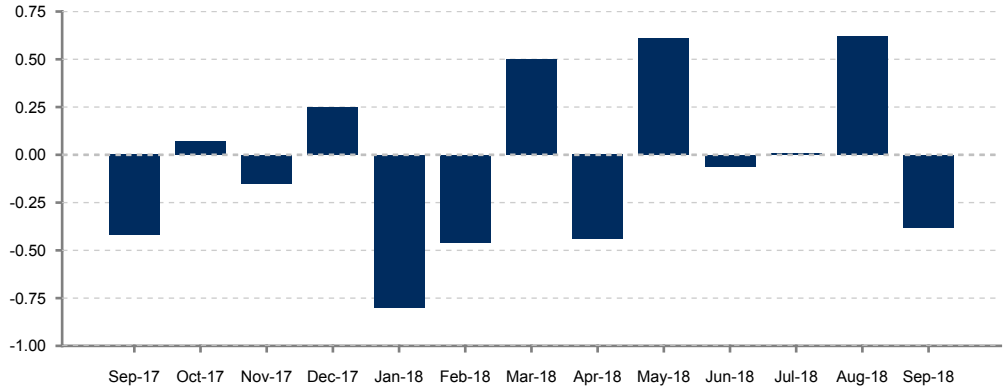
# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

**POOL 205 FIXED INCOME**

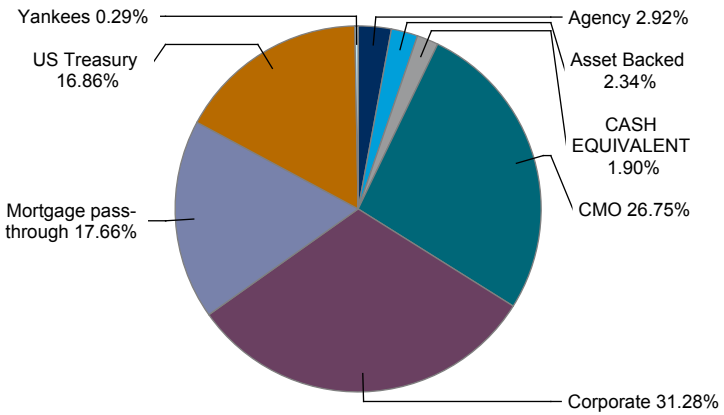
## Net Mgr Return



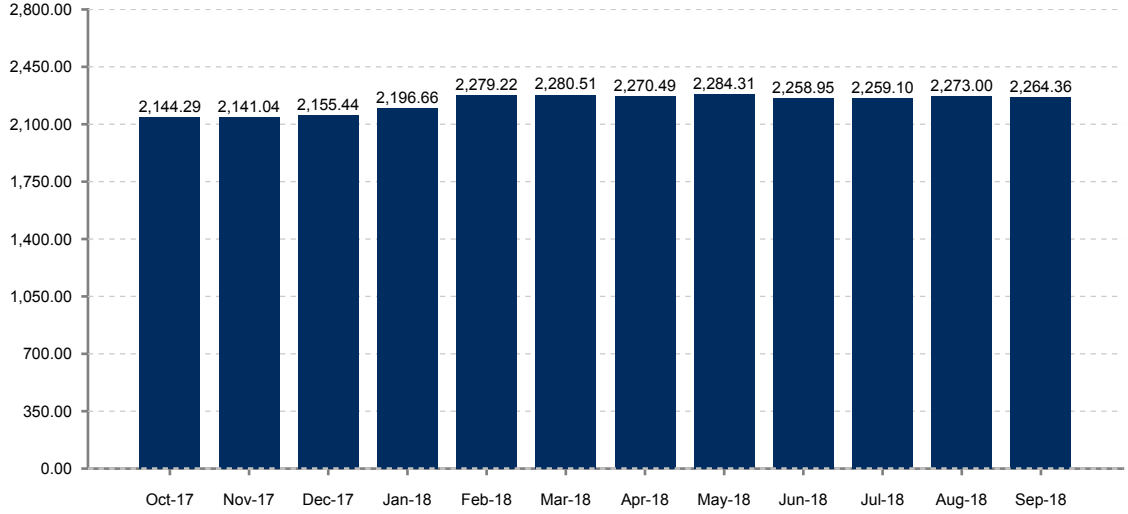

| | Current Mth | Prior Mth | 1 Year Ago |
|---|---|---|---|
| POOL 205 FIXED INCOME | -0.38 | 0.62 | -0.42 |

## Asset Allocation

| | Ending Market Value |
|---|---|
| POOL 205 FIXED INCOME | 2,264,362,956 |




## Net Asset Values over Time ($MM)




## Top 10 Holdings

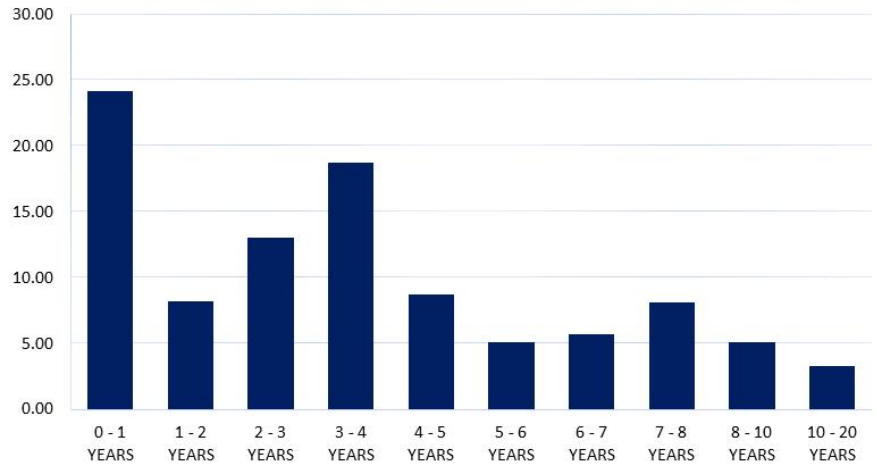
| Security Name | Ending Market Value | % of Portfolio |
|---|---|---|
| POOL 205 FIXED INCOME | | |
| US TREASURY N/B | 33,388,680 | 1.47 |
| US TREASURY N/B | 25,789,266 | 1.14 |
| US TREASURY N/B | 25,388,825 | 1.12 |
| US TREASURY N/B | 24,009,103 | 1.06 |
| US TREASURY N/B | 23,331,976 | 1.03 |
| US TREASURY N/B | 21,161,774 | 0.93 |
| PEPSICO INC | 20,240,926 | 0.89 |
| PNC BANK NA | 20,124,940 | 0.89 |
| FORD MOTOR CREDIT CO | 20,050,646 | 0.89 |
| US TREASURY N/B | 19,008,551 | 0.84 |

# OFFICE OF THE ARIZONA STATE TREASURER

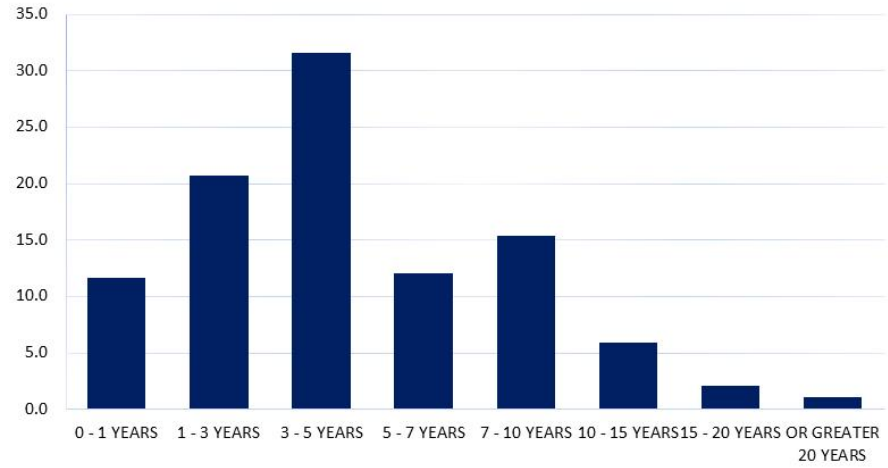
**September 30, 2018**

**POOL 205 FIXED INCOME**

## Duration Distribution



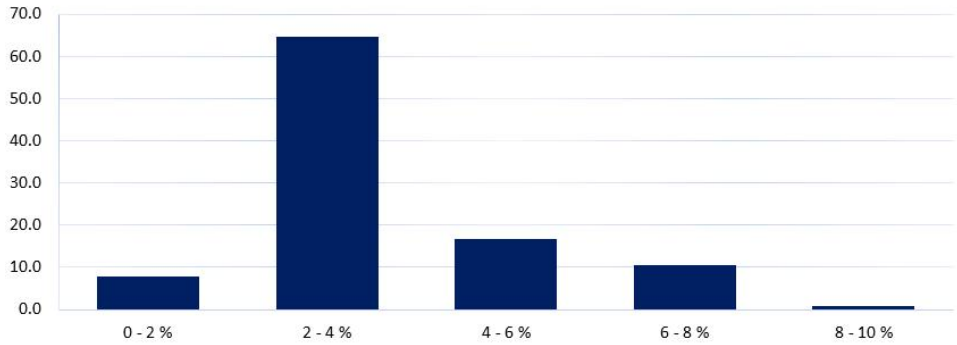

## Expected Maturity Distribution



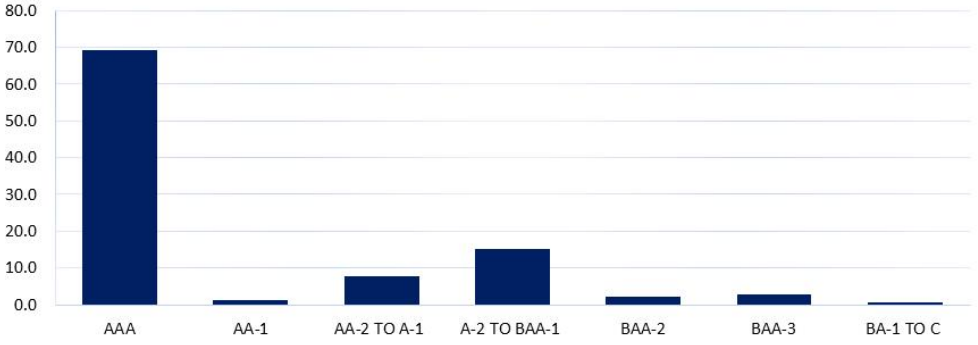

## Portfolio Level Characteristics

| | POOL 205 FIXED INCOME |
|---|---|
| Effective Maturity | 5.09 |
| Coupon | 3.63 |
| Effective Duration | 3.69 |
| Quality Rating (Moody's) | AA-2 |

## Coupon Distribution




## Rating Distribution

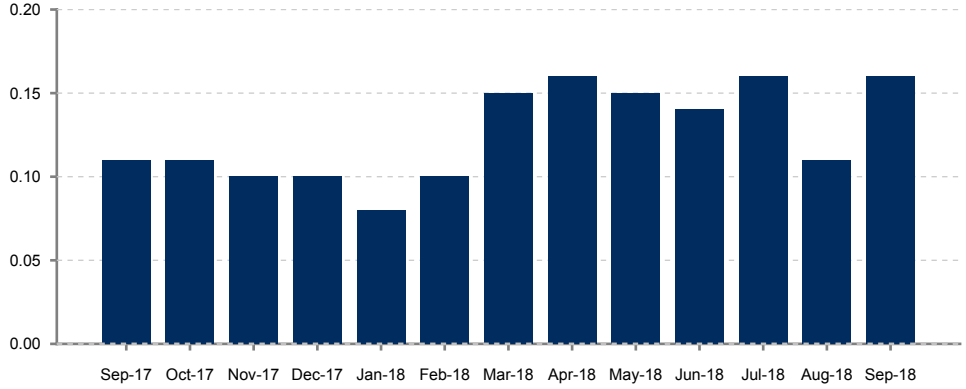


# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

**POOL 123 ST**

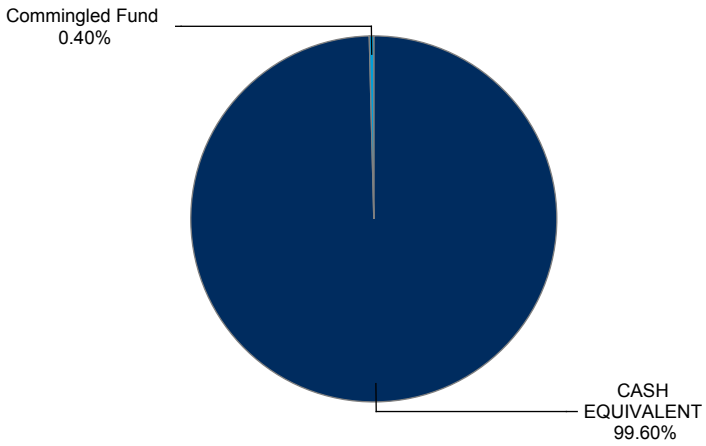
## Net Yield



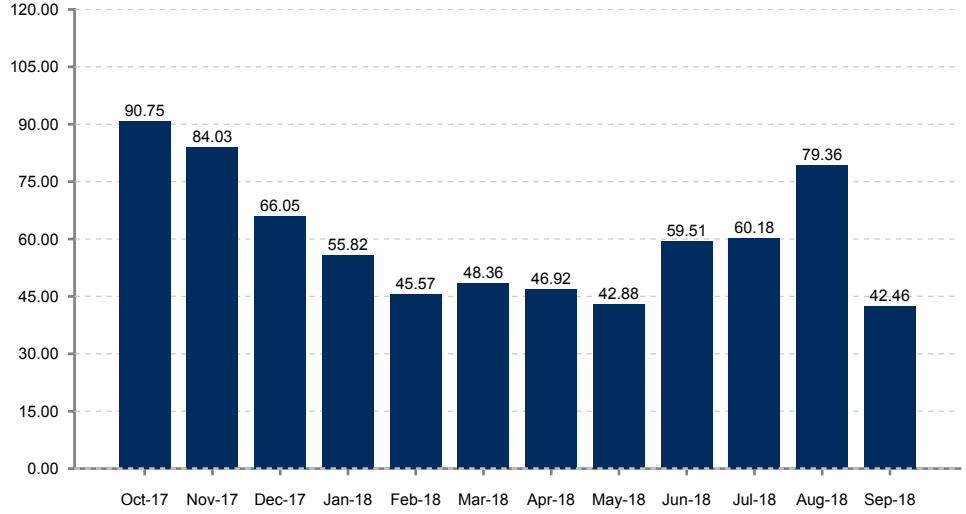

| | Current Mth | Prior Mth | 1 Year Ago |
|---|---|---|---|
| ST OF AZ POOL 123 ST FIXED INC | 0.16 | 0.11 | 0.11 |

## Asset Allocation

| | Ending Market Value |
|---|---|
| ST OF AZ POOL 123 ST FIXED INC | 42,457,483 |




## Net Asset Values over Time ($MM)




## Top 10 Holdings

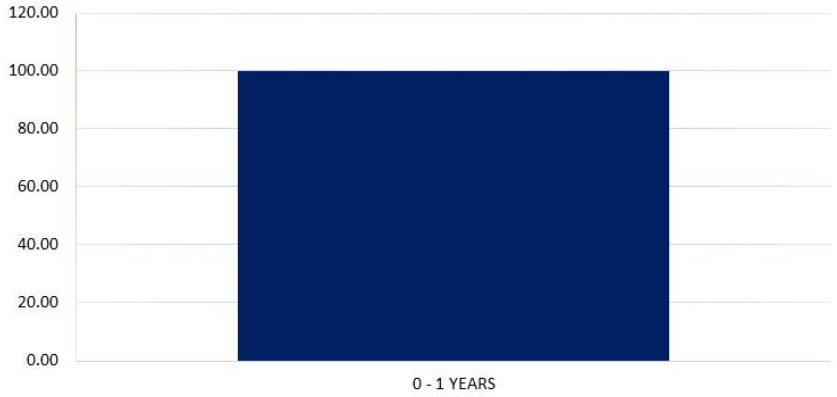
| Security Name | Ending Market Value | % of Portfolio |
|---|---|---|
| ST OF AZ POOL 123 ST FIXED INC | | |
| BLACKROCK PROV TEMP BLACKROCK PROV TEMP FUND 24 | 20,322,559 | 47.87 |
| MANHATTAN ASSET FDG. | 4,993,992 | 11.76 |
| CONCORD MIN CPTL CO | 4,993,963 | 11.76 |
| HALKIN FINANCE LLC USC | 4,993,817 | 11.76 |
| MOUNTCLIFF | 4,990,250 | 11.75 |
| CAN AST & CAN LTD JT | 1,991,677 | 4.69 |
| LOCAL GOVERNMENT INVEST POOL | 171,226 | 0.40 |

# OFFICE OF THE ARIZONA STATE TREASURER

**September 30, 2018**

**POOL 123 ST**

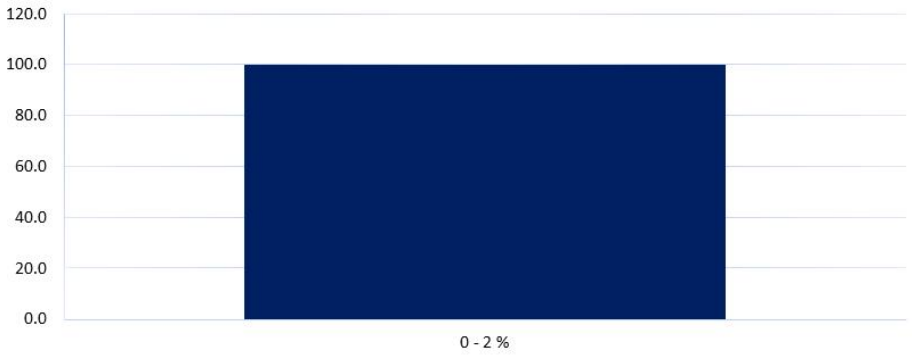
## Duration Distribution



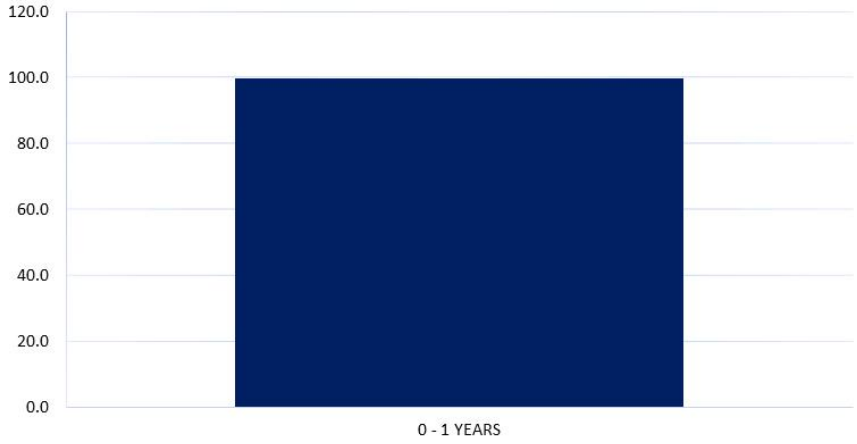

## Portfolio Level Characteristics

| | POOL 123 ST |
|---|---|
| Effective Maturity | 0.04 |
| Coupon | 0.48 |
| Effective Duration | 0.04 |
| Quality Rating (Moody's) | AAA |

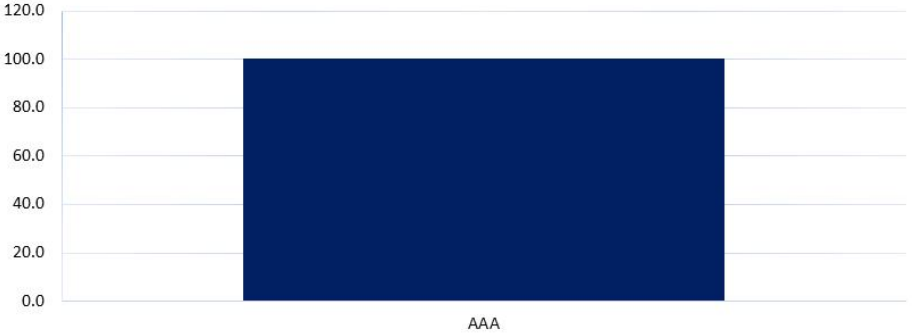
## Coupon Distribution

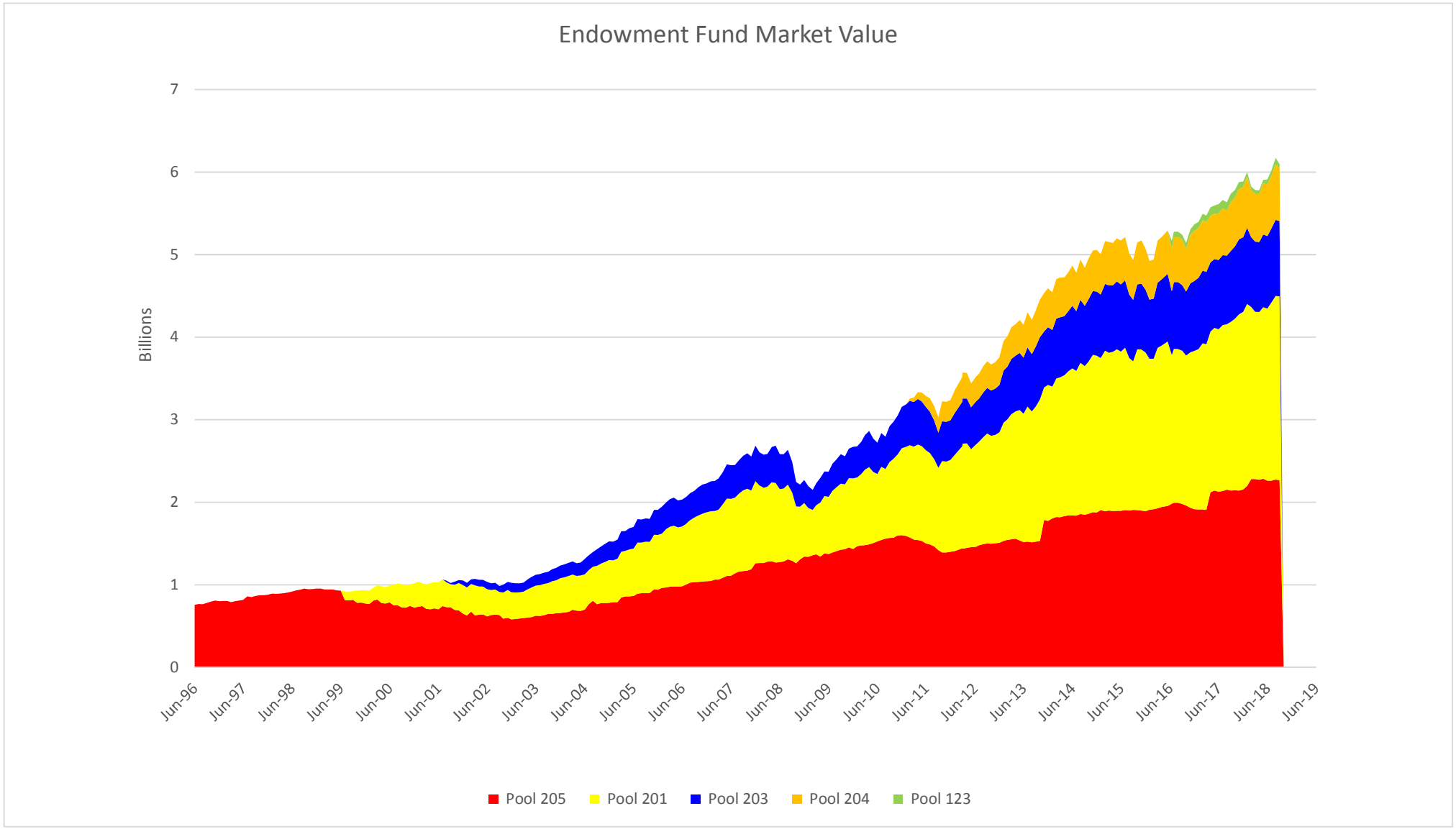



## Expected Maturity Distribution




## Rating Distribution




Endowment Fund Market Value
Billions
7
6
5
4
3
2
1
0
Jun-96
Jun-97
Jun-98
Jun-99
Jun-00
Jun-01
Jun-02
Jun-03
Jun-04
Jun-05
Jun-06
Jun-07
Jun-08
Jun-09
Jun-10
Jun-11
Jun-12
Jun-13
Jun-14
Jun-15
Jun-16
Jun-17
Jun-18
Jun-19
Pool 205
Pool 201
Pool 203
Pool 204
Pool 123

# BROKER ACTIVITY REPORT
# STATE AGENCY POOLS 2, 3 Int., 4, 10 Int.,12, 15 and 16
# JULY 1 - SEPTEMBER 30, 2018

| Broker Name | Asset Group | Book Value | Pct Of Type | Pct Of Total |
|---|---|---|---|---|
| AMHERST SECURITIES | | | | |
| | REPO | 28,772,478,802 | 33.74% | 32.98% |
| | CORP NOTES | 2,021,175 | 5.18% | 0.00% |
| B OF A SECURITIES INC. | | | | |
| | COMMERCIAL PAPER | 163,886,840 | 15.90% | 0.19% |
| | US TREAS | 178,499,257 | 23.79% | 0.20% |
| BARCLAYS CAPITAL INC. | | | | |
| | COMMERCIAL PAPER | 19,870,800 | 1.93% | 0.02% |
| | CORP NOTES | 5,023,083 | 12.87% | 0.01% |
| | US TREAS | 48,000,000 | 6.40% | 0.06% |
| BMO CAPITAL MARKETS | | | | |
| | REPO | 3,962,505,222 | 4.65% | 4.54% |
| | US TREAS | 149,258,506 | 19.89% | 0.17% |
| BREAN | | | | |
| | USA MBS | 9,992,292 | 18.58% | 0.01% |
| CASTLEOAK | | | | |
| | COMMERCIAL PAPER | 176,735,011 | 17.15% | 0.20% |
| CITIGROUP | | | | |
| | COMMERCIAL PAPER | 123,932,467 | 12.03% | 0.14% |
| CREDIT AGRICOLE | | | | |
| | REPO | 2,028,707,994 | 2.38% | 2.33% |
| CREDIT SUISSE SECURITIES | | | | |
| | COMMERCIAL PAPER | 59,949,493 | 5.82% | 0.07% |
| DAIWA CAPITAL MARKETS | | | | |
| | REPO | 11,817,227,660 | 13.86% | 13.55% |
| | US TREAS | 24,980,766 | 3.33% | 0.03% |
| DEUTSCHE BANC | | | | |
| | US TREAS | 24,993,159 | 3.33% | 0.03% |
| FIRST TENNESSEE | | | | |
| | COMMERCIAL PAPER | 9,942,500 | 0.96% | 0.01% |
| | US TREAS | 19,929,646 | 2.66% | 0.02% |

# BROKER ACTIVITY REPORT
# STATE AGENCY POOLS 2, 3 Int., 4, 10 Int.,12, 15 and 16
# JULY 1 - SEPTEMBER 30, 2018

| Broker Name | Asset Group | Book Value | Pct Of Type | Pct Of Total |
|---|---|---|---|---|
| GUGGENHEIM SECURITIES | | | | |
| | REPO | 2,665,273,073 | 3.13% | 3.06% |
| | COMMERCIAL PAPER | 59,780,069 | 5.80% | 0.07% |
| | US TREAS | 59,043,483 | 7.87% | 0.07% |
| JP MORGAN CHASE | | | | |
| | COMMERCIAL PAPER | 66,644,336 | 6.47% | 0.08% |
| | CORP NOTES | 2,000,000 | 5.12% | 0.00% |
| | US TREAS | 51,229,266 | 6.83% | 0.06% |
| MITSUBISHI | | | | |
| | REPO | 1,162,916,649 | 1.36% | 1.33% |
| | CORP ABS | 15,500,000 | 20.44% | 0.02% |
| MIZUHO SECURITIES | | | | |
| | REPO | 1,361,427,567 | 1.60% | 1.56% |
| | COMMERCIAL PAPER | 29,877,568 | 2.90% | 0.03% |
| PIPER JAFFRAY | | | | |
| | USA MBS | 4,732,091 | 8.80% | 0.01% |
| RBC CAPITAL MARKETS | | | | |
| | REPO | 3,090,302,713 | 3.62% | 3.54% |
| | COMMERCIAL PAPER | 159,305,690 | 15.46% | 0.18% |
| | CORP NOTES | 20,000,000 | 51.22% | 0.02% |
| | CORP ABS | 60,340,142 | 79.56% | 0.07% |
| | USA MBS | 5,133,699 | 9.55% | 0.01% |
| ROBERT W. BAIRD | | | | |
| | USA MBS | 26,755,793 | 49.75% | 0.03% |
| SOUTH STREET | | | | |
| | REPO | 29,764,328,702 | 34.90% | 34.12% |
| SUNTRUST ROBINSON | | | | |
| | COMMERCIAL PAPER | 24,998,688 | 2.43% | 0.03% |
| | USA MBS | 7,169,896 | 13.33% | 0.01% |
| WELLS FARGO | | | | |
| | REPO | 660,000,000 | 0.77% | 0.76% |
| | COMMERCIAL PAPER | 135,663,810 | 13.16% | 0.16% |
| | CORP NOTES | 10,000,000 | 25.61% | 0.01% |
| | US TREAS | 194,396,168 | 25.91% | 0.22% |

# BROKER ACTIVITY REPORT
# LGIP POOLS 5, 7, 500 and 700
# JULY 1 - SEPTEMBER 30, 2018

| Broker Name | Asset Group | Book Value | Pct Of Type | Pct Of Total |
|---|---|---|---|---|
| AMHERST PIERPOINT SECURITIES | | | | |
| | REPO | 1,188,521,198 | 3.16% | 2.98% |
| | US TREAS | 198,899,670 | 28.69% | 0.50% |
| B OF A SECURITIES INC. | | | | |
| | REPO | 6,300,000,000 | 16.77% | 15.77% |
| | COMMERCIAL PAPER | 81,932,884 | 4.91% | 0.21% |
| | US TREAS | 9,950,775 | 1.44% | 0.02% |
| BARCLAYS CAPITAL INC. | | | | |
| | COMMERCIAL PAPER | 24,908,125 | 1.49% | 0.06% |
| | CORP NOTES | 2,005,700 | 50.07% | 0.01% |
| | US TREAS | 2,000,000 | 0.29% | 0.01% |
| BMO CAPITAL MARKETS | | | | |
| | REPO | 5,220,494,778 | 13.90% | 13.07% |
| | COMMERCIAL PAPER | 29,941,511 | 1.80% | 0.07% |
| | US TREAS | 112,192,202 | 16.18% | 0.28% |
| BNP PARIBAS | | | | |
| | CORP ABS | 6,500,000 | 100.00% | 0.02% |
| CANTOR FITZGERALD | | | | |
| | COMMERCIAL PAPER | 44,929,275 | 2.69% | 0.11% |
| CASTLEOAK | | | | |
| | COMMERCIAL PAPER | 139,039,425 | 8.34% | 0.35% |
| CITIGROUP | | | | |
| | COMMERCIAL PAPER | 154,233,494 | 9.25% | 0.39% |
| CREDIT AGRICOLE | | | | |
| | REPO | 8,406,292,006 | 22.38% | 21.05% |
| CREDIT SUISSE | | | | |
| | COMMERCIAL PAPER | 282,625,040 | 16.95% | 0.71% |
| DAIWA CAPITAL MARKETS | | | | |
| | REPO | 782,772,340 | 2.08% | 1.96% |

# BROKER ACTIVITY REPORT
# LGIP POOLS 5, 7, 500 and 700
# JULY 1 - SEPTEMBER 30, 2018

| Broker Name | Asset Group | Book Value | Pct Of Type | Pct Of Total |
|---|---|---|---|---|
| | US TREAS | 119,297,888 | 17.21% | 0.30% |
| *FIRST TENNESSEE* | | | | |
| | COMMERCIAL PAPER | 9,943,250 | 0.60% | 0.02% |
| *GUGGENHEIM SECURITIES, LLC* | | | | |
| | REPO | 8,067,726,925 | 21.47% | 20.20% |
| | COMMERCIAL PAPER | 64,252,377 | 3.85% | 0.16% |
| | US TREAS | 79,644,010 | 11.49% | 0.20% |
| *JP MORGAN CHASE* | | | | |
| | COMMERCIAL PAPER | 375,180,543 | 22.50% | 0.94% |
| | US TREAS | 44,786,438 | 6.46% | 0.11% |
| *LLOYDS SECURITIES* | | | | |
| | COMMERCIAL PAPER | 24,856,549 | 1.49% | 0.06% |
| *MITSUBISHI* | | | | |
| | REPO | 462,083,351 | 1.23% | 1.16% |
| | COMMERCIAL PAPER | 24,940,417 | 1.50% | 0.06% |
| *MIZUHO SECURITIES* | | | | |
| | REPO | 703,572,433 | 1.87% | 1.76% |
| | COMMERCIAL PAPER | 114,129,977 | 6.85% | 0.29% |
| *RBC CAPITAL MARKETS* | | | | |
| | REPO | 3,144,697,286 | 8.37% | 7.87% |
| | COMMERCIAL PAPER | 197,653,284 | 11.86% | 0.49% |
| | CORP NOTES | 2,000,000 | 49.93% | 0.01% |
| | US TREAS | 19,890,648 | 2.87% | 0.05% |
| *SOUTH STREET* | | | | |
| | REPO | 1,093,671,297 | 2.91% | 2.74% |
| *WELLS FARGO* | | | | |
| | REPO | 2,200,000,000 | 5.86% | 5.51% |
| | COMMERCIAL PAPER | 98,593,119 | 5.91% | 0.25% |
| | US TREAS | 106,601,217 | 15.38% | 0.27% |

# BROKER ACTIVITY REPORT
# ENDOWMENT FIXED INCOME POOLS 123 and 205
# JULY 1 - SEPTEMBER 30, 2018

| Broker Name | Asset Group | Book Value | Pct Of Type | Pct Of Total |
|---|---|---|---|---|
| BARCLAYS CAPITAL INC. | | | | |
| | COMMERCIAL PAPER | 13,471,801 | 11.85% | 6.77% |
| | CORP NOTES | 10,028,500 | 100.00% | 5.04% |
| B OF A SECURITIES INC. | | | | |
| | COMMERCIAL PAPER | 5,998,000 | 5.28% | 3.01% |
| | US TREAS | 4,882,003 | 10.99% | 2.45% |
| BREAN CAPITAL | | | | |
| | USA MBS | 18,146,035 | 58.61% | 9.12% |
| CASTLEOAK | | | | |
| | COMMERCIAL PAPER | 29,826,829 | 26.24% | 14.98% |
| CITIGROUP | | | | |
| | COMMERCIAL PAPER | 17,443,714 | 15.35% | 8.76% |
| | US TREAS | 4,891,843 | 11.01% | 2.46% |
| CREDIT SUISSE | | | | |
| | COMMERCIAL PAPER | 5,996,000 | 5.28% | 3.01% |
| DEUTSCHE BANC | | | | |
| | US TREAS | 4,995,898 | 11.24% | 2.51% |
| GUGGENHEIM | | | | |
| | USA MBS | 5,194,922 | 16.78% | 2.61% |
| JP MORGAN CHASE | | | | |
| | COMMERCIAL PAPER | 14,972,743 | 13.17% | 7.52% |

# BROKER ACTIVITY REPORT
# ENDOWMENT FIXED INCOME POOLS 123 and 205
# JULY 1 - SEPTEMBER 30, 2018

| Broker Name | Asset Group | Book Value | Pct Of Type | Pct Of Total |
|---|---|---|---|---|
| | US TREAS | 19,734,262 | 44.41% | 9.91% |
| MIZUHO SECURITIES | | | | |
| | COMMERCIAL PAPER | 3,994,693 | 3.51% | 2.01% |
| PIPER JAFFRAY | | | | |
| | USA MBS | 3,106,224 | 10.03% | 1.56% |
| RBC CAPITAL MARKETS | | | | |
| | COMMERCIAL PAPER | 9,946,051 | 8.75% | 5.00% |
| | USA MBS | 4,513,548 | 14.58% | 2.27% |
| SUNTRUST ROBINSON | | | | |
| | COMMERCIAL PAPER | 11,999,367 | 10.56% | 6.03% |
| WELLS FARGO | | | | |
| | US TREAS | 9,934,127 | 22.35% | 4.99% |

# BROKER ACTIVITY REPORT
# ENDOWMENT EQUITY POOLS 201, 203, & 204
# JULY 1 - SEPTEMBER 30, 2018

| Broker Name | Asset Group | Book Value | Pct Of Type | Pct Of Total |
|---|---|---|---|---|
| BARCLAYS CAPITAL INC. | | | | |
| | LARGE CAP | 34,519,464 | 68.48% | 37.60% |
| | SMALL CAP | 126,368 | 0.65% | 0.14% |
| BLOOMBERG | | | | |
| | LARGE CAP | 12,898,230 | 25.59% | 14.05% |
| | MID CAP | 20,194,224 | 92.48% | 22.00% |
| | SMALL CAP | 16,445,801 | 84.06% | 17.91% |
| LUQUIDNET | | | | |
| | SMALL CAP | 1,444,045 | 7.38% | 1.57% |
| MKM HOLDINGS | | | | |
| | LARGE CAP | 2,987,594 | 5.93% | 3.25% |
| | MID CAP | 1,642,763 | 7.52% | 1.79% |
| | SMALL CAP | 1,548,368 | 7.91% | 1.69% |