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INFORMATIONAL REPORT

UNIVERSITY TREASURY UPDATE

Attached is an annual report which provides a University treasury update. The report includes sections which discuss University cash pool balances, cash pool investments, debt and banking relationships. The annual report for the Foundation endowment fund is being submitted under separate cover.

**Wayne State University
Budget & Finance Committee
Treasury Update**

January 27, 2017

April 28, 2017

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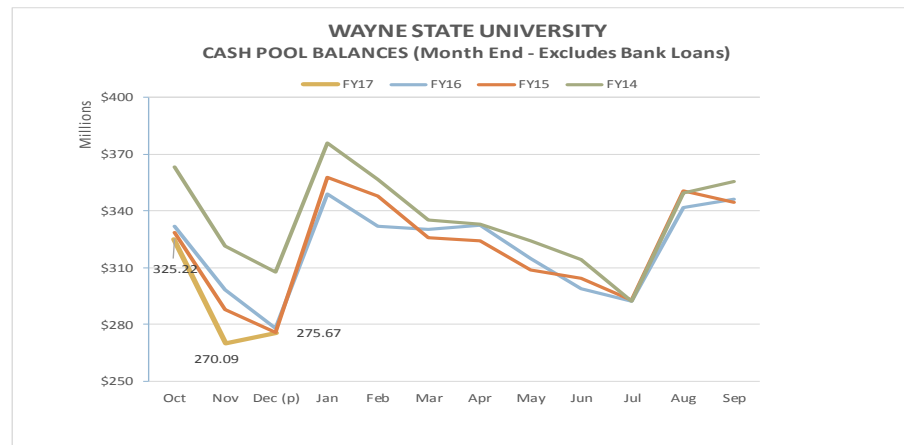
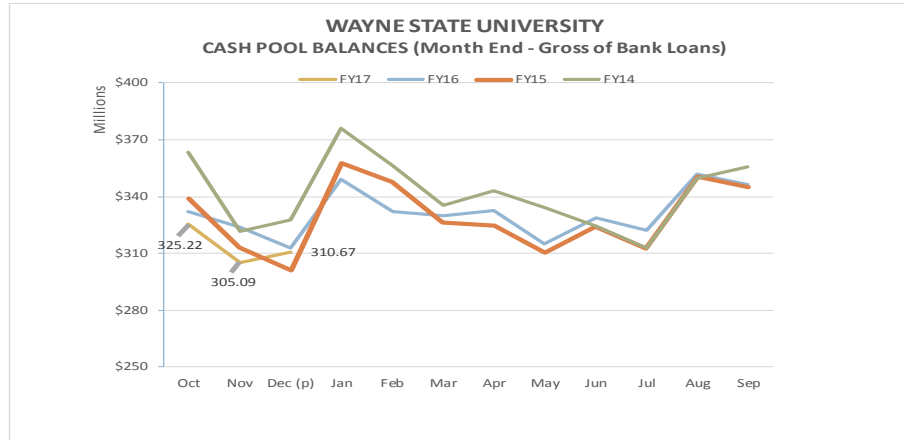
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Cash Pool Balances

➤ Cash Pool Balances – Liquidity Needs

- **The cash pool experiences variability in inflows and outflows throughout the fiscal year**
 - Inflows are largely dependent on sponsored programs, state appropriations and tuition receipts – peaks are typically in the January/February and August/September periods due to tuition inflows
 - Outflows are driven by general disbursements and payroll; debt service payments also impact flows in May and November
- **Because of cyclicity in cash flows, the value of the cash pool varies throughout the year (see charts on following page)**
- **The maximum cash drawdown is a key factor in addressing very short term liquidity needs**
 - Over the past 3 years, the largest consecutive monthly net outflow was \$62 million (in fiscal year 2014)
- **The following page illustrates the net flow variability for the past 3 fiscal years (2014, 2015 and 2016)**
- **Line of credit**
 - \$35 million used to meet seasonal liquidity requirements
- **Mutual fund investments in core or opportunistic portfolios could supplement liquidity as well**
- **Estimated liquidity required is approximately \$70-\$90 million**
 - Asset Allocation Policy conservatively targets \$105 million

➤ Cash Pool Balances – Cash Flows



- Consistent with historical patterns, the largest inflows occur in January and August due to tuition receipts
- Largest net drawdown occurs from October through early January

Cash Pool Investments

➤ CASH POOL INVESTMENTS

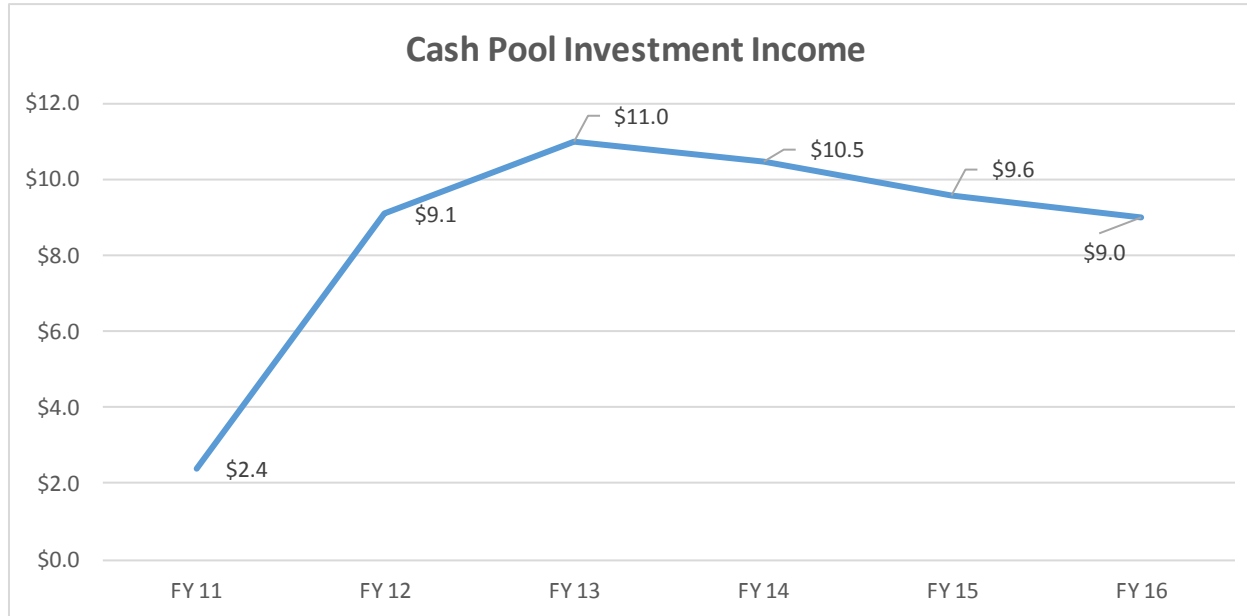
Executive Summary

- The investment policy for the WSU cash pool is contained in Board Statute 2.73.03, Cash Pool Investment Policy.
- The main objective is to generate income to support the budget while protecting principal and maintaining sufficient liquidity.
- The portfolio had the following investment returns:
 - +3.8% for fiscal year ended 9/30/16
 - +1.4% for fiscal year ended 9/30/15
- The portfolio has an average yield to maturity of 2.1% at 9/30/16
 - Average credit quality is A
 - Average effective maturity is 3.4 years
 - Effective duration, which is a measure of principal sensitivity to changes in interest rates, is 2.7 years
- Generates income of approximately \$9.5M annually, exclusive of unrealized gains/losses.

High Level Portfolio View

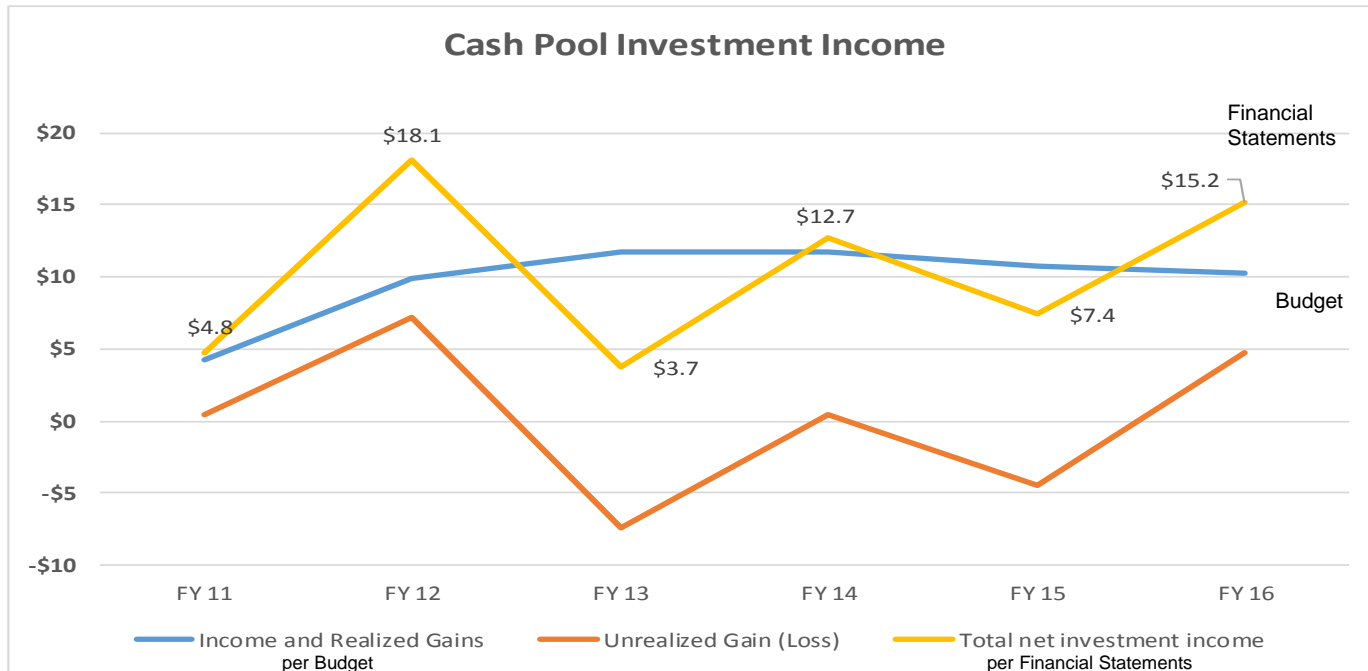
- Three tier portfolio structure
 - Portfolio composition – All fixed income instruments. Three tiers in portfolio
 - Short Term Liquidity Portfolio (Target 30%) Range 15-70%
 - Core Portfolio (Target 62%) Range 30-85%
 - Opportunistic Portfolio (Target 8%) Range 0-12%
- Description of each tier
 - Short Term Liquidity Portfolio: to meet working capital needs, very little return and risk
 - Core Portfolio: a blend of high quality fixed income investments with a focus on stable income generation while protecting principal
 - Opportunistic Portfolio: select strategies used to enhance return with an acceptable level of risk
- Assets are held in both separate accounts and commingled vehicles
 - Separate accounts provide ability to control guidelines and to tightly manage credit quality and interest rate risk
 - The commingled vehicles support diversification, return enhancement and liquidity
- Investment Advisor – New England Pension Consultants (NEPC)

Historical Interest Income Summary – Budget Basis



- **There can be differences between results reported on financial statements vs. budget**
 - Financials recognize income plus realized and unrealized capital gains and losses
 - Budget recognizes income and only realized capital gains and losses
 - Rising rates impact financial statements more than the budget

Historical Interest Income Summary Comparison of Budget to Financial Statements



- **There can be differences between results reported on financial statements vs. budget**
 - Financial statements recognize income plus **realized and unrealized** capital gains and losses
 - Budget recognizes income and **only realized** capital gains and losses
 - Rising rates impact financials more than the budget

The Asset Allocation Is Viewed As Appropriate

- **The asset allocation is in compliance with the investment guidelines**
 - A disciplined approach to managing the assets is being utilized to maintain a low level of interest rate and credit risk
- **The asset allocation has a target risk level of 3.0%**
 - This compares to a risk level of 11.9% for a traditional 60/40 Endowment portfolio, 11.4% for the WSU Foundation Endowment, and 17.5% for the S&P 500

Asset Class	Target	Range	Actual (9/30/16)
<u>Short term Liquidity Portfolio</u>	30%	15 – 70%	17%
Money Market Funds, U.S. Government Obligations/Agencies, Bank Accounts, Certificates of Deposit, Commercial Paper, Corporate Bills, Notes, or Bonds and Variable Rate Demand Obligations	20%	10 – 60%	14%
Short Term Bond Funds	10%	0 - 20%	3%
<u>Core Portfolio</u>	62%	30 - 85%	74%
Short/Intermediate Duration Fixed Income	62%	30 - 85%	74%
<u>Opportunistic Portfolio</u>	8%	0 - 12%	9%
Short Term High Yield Bonds	4%	0 - 7%	5%
Multi Strategy Fixed Income	4%	0 - 7%	4%
Duration			2.7
Projected Risk (Std Dev)	3.0%		3.4%
Traditional 60/40 Endowment Portfolio Risk	11.9%		
Endowment Risk	11.4%		
S&P 500 Risk	17.5%		

Note: The actual realized annual standard deviation of the WSU cash pool portfolio has been 1.4% over the past 3 years

Manager Performance and Portfolio Characteristics Summary as of September 30, 2016

	Market Value(\$)	% of Portfolio	Performance			Estimated YTM (%)	Avg. Effective Maturity (Yrs)	Effective Duration (Yrs)	Average Quality
			3 Mo (%)	1 Year	Since Inception (%)				
Composite	\$349,987,212	100.0%	0.8	3.8	2.6	2.1	3.4	2.7	A
Short Term Liquidity Portfolio	\$61,121,791	17.46%	0.3	0.6	0.4	0.5	0.6	0.6	A
Composite - ex ST Liquidity	\$288,865,421	82.5%	0.9	4.3	3.2	2.5	4.1	3.3	A-
Core Portfolio	\$258,821,196	74.0%	0.7	4.0	3.1	2.2	4.1	3.3	A
Baird Intermediate Gov/Credit	\$75,950,469	21.7%	0.5	3.5	3.1	1.9	2.9	2.8	A-
IR&M Intermediate Gov/Credit	\$79,034,830	22.6%	0.8	4.9	3.9	2.3	4.9	4.2	A
JPMorgan Core Bonds	\$35,984,841	10.3%	0.5	4.9	3.3	2.4	7.1	5.5	AA-
PIMCO Low Duration Fund	\$2,048,334	0.6%	0.7	2.4	2.0	2.4	2.6	1.9	AA-
Ford Interest Rate Advantage Note	\$10,338,143	3.0%	0.3	1.1	1.1	1.1	0.0	0.0	BBB
DoubleLine Total Return	\$36,706,499	10.5%	0.8	3.6	4.3	2.5	4.1	2.6	A+
DoubleLine Low Duration	\$18,758,079	5.4%	0.8	2.8	1.9	2.5	2.0	1.1	A
Opportunistic Portfolio	\$30,044,226	8.6%	3.1	7.8	5.4	5.0	4.6	2.7	BB
Loomis Sayles Fixed Income	\$13,527,476	3.9%	3.4	9.7	6.4	4.6	6.0	4.0	BBB-
Sky Harbor Short Duration High Yield	\$16,516,750	4.7%	2.9	6.2	1.4	5.3	3.5	1.7	B+

- **The portfolio has returned 3.8% for the past 1 year period**

The Opportunistic portfolio has returned 7.8%

The Core portfolio has returned 4.0%

The Liquidity portfolio has returned 0.6%

- **The since inception return is 2.6%**

- **The portfolio has an estimated yield to maturity of 2.1%**

- **The average duration is estimated at 2.7 years and the average credit quality is A**

Looking Forward

- **Continue to balance income needs with an acceptable level of risk**
 - Limited ability to capture price appreciation tied to falling rates given current interest rate levels
 - Rising rates over time would be a positive as cash flow (coupons and maturities) could be reinvested at higher rates
- **Need to maintain multi-year time horizon**
 - Over time the potential risk associated with rising rates is moderated by the higher level of income received
 - Recognizes that the level of risk in the portfolio remains low
 - If interest rates rose 1 percentage point, the expected return on the portfolio would be ~0% to -1% as the income from coupons helps offset price depreciation

Debt

➤ DEBT

DEBT PORTFOLIO OVERVIEW AND RECENT UPDATES

▪ Overview

- \$ 413.6 million in debt as of December 31, 2016
- All natural fixed interest rate debt
- Amortizing debt of approximately \$15 million per year over remaining life of outstanding bonds.
- Weighted average life of debt portfolio is 12 years.
- Average interest cost is 3.98%%
- Swaps
 - The University has two basis swaps outstanding related to the Series 2015A bonds with a total notional amount of \$42.2 million as of December 31, 2016.

▪ University Credit Ratings

- **Moody's**
Rating of "Aa3" with an outlook of "negative". Outlook downgrade from "Stable" in June 2016.
- **Standard & Poor's**
Rating of "A+" with an outlook of "Stable". Rating downgraded from "AA-" in June 2016

▪ Recent Financing Updates

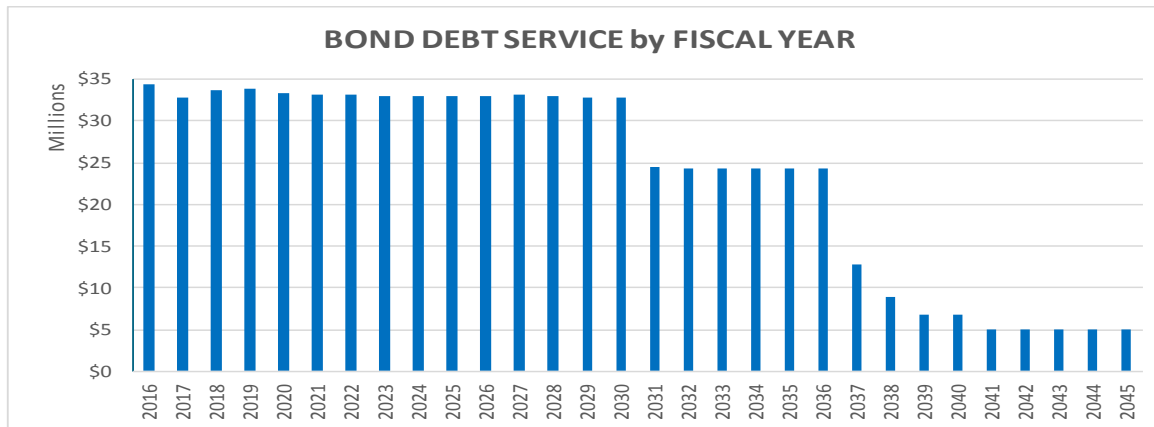
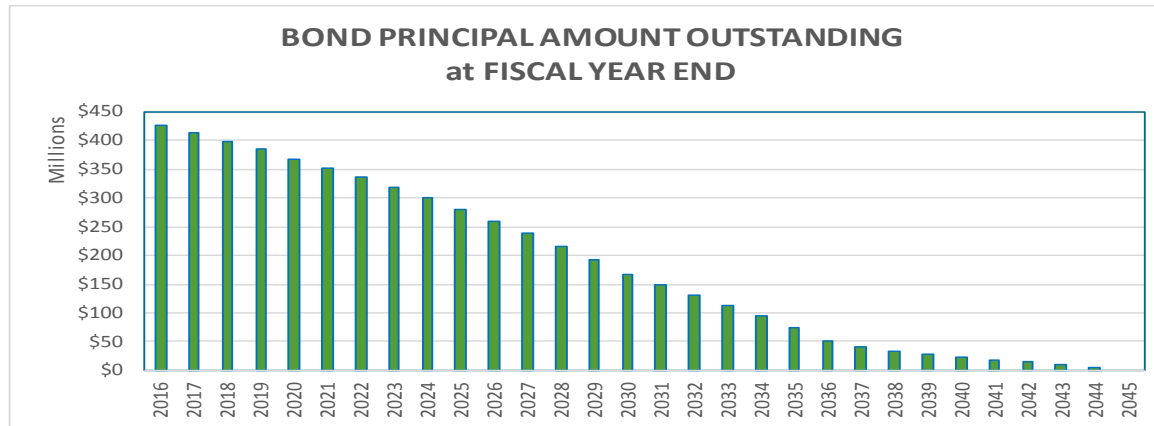
- **Series 2015 bond issue**
Issued \$10 million in bonds for new money projects and refunded \$42 million of existing bonds outstanding. Refunding reduced debt service costs by approximately \$250,000 per year for a net present value savings of \$4.3 million.
- **Series 2016 bond issue**
Refunded \$105 million of existing bonds outstanding to reduce debt service cost by approximately \$700 thousand per year for a net present value savings of \$12.7 million.

LONG-TERM DEBT OUTSTANDING (par amount)

Series	9/30/2016	12/31/2016	Final Maturity	Type of Bond
Series 2016A	\$ 89,975,000	\$ 89,975,000	2037	Tax-exempt
Series 2016B	11,285,000	11,285,000	2037	Taxable
Series 2015A	50,070,000	49,820,000	2036	Tax-exempt
Series 2013A	82,300,000	80,870,000	2044	Tax-exempt
Series 2009A	65,555,000	61,060,000	2029	Tax-exempt
Series 2009B	26,940,000	26,230,000	2039	Taxable
Series 2008	93,000,000	88,485,000	2035	Tax-exempt
Series 2007A	1,605,000	820,000	2037	Tax-exempt
Series 2007B	4,220,000	4,220,000	2030	Taxable
Series 2006	1,205,000	-	2036	Tax-exempt
Series 2003B	1,235,000	845,000	2018	Taxable
	<u>\$ 427,390,000</u>	<u>\$ 413,610,000</u>		

- All debt is fixed interest rate
- The remaining average life for the portfolio is approximately 12 years
- Almost all of the University's debt has a 10 year par call feature. Series 2009B bonds have a make whole call until 2019, when the call provision becomes a par call
- Series 2009B bonds are taxable Build America Bonds. Federal subsidy is received which makes the effective interest rate paid approximately equivalent to the tax exempt interest rate available at the time of issuance
- Excludes the University's \$35 million line of credit

Debt Profile - 2016 Fiscal Year End



Debt Related Swaps

- 2 basis swaps outstanding on Series 2015 bonds – \$43.4 million notional amount as of September 30, 2016.
 - \$521 thousand (combined) positive MTM at September 30, 2016
 - Since inception, the swaps have generated about \$1.8 million of cash receipts

- Swaps with Goldman Sachs (2/3) and PNC (1/3)
 - Swap novation replaced UBS with PNC in March 2012
 - Basis for cash flow exchanges and collateral posting remain the same

- The University has not had to post collateral

Bank Relationships

➤ BANK RELATIONSHIPS

- **Fifth Third Bank** – Disbursements and Receipts accounts, Line of credit
 - Line of credit – for seasonal operating needs - \$35M maximum
- **Comerica Bank** – Payroll account, investment custodian
- **Bank of America** – Procurement card
- **JP Morgan** – Travel card
- **Bank of New York** - Bond trustee

Appendix

LINE OF CREDIT			
SUMMARY OF BORROWINGS			
(000's)	High Outstanding	Low Outstanding	Average Outstanding
December 2016	35,000.0	35,000.0	35,000.0
November 2016	35,000.0	-	20,500.0
October 2016	-	-	-
September 2016	10,000.0	-	7,000.0
August 2016	30,000.0	10,000.0	28,064.5
July 2016	30,000.0	30,000.0	30,000.0
June 2016	30,000.0	15,000.0	23,500.0
May 2016	-	-	-
April 2016	-	-	-
March 2016	-	-	-
February 2016	-	-	-
January 2016	35,000.0	-	13,548.3
December 2015	35,000.0	35,000.0	35,000.0
November 2015	25,000.0	-	15,000.0
October 2015	-	-	-
September 2015	-	-	-
Aug 2015	20,000.0	-	19,354.8
July 2015	20,000.0	20,000.0	20,000.0
June 2015	20,000.0	-	18,666.6
May 2015	-	-	-
April 2015	-	-	-
March 2015	-	-	-
February 2015	-	-	-
January 2015	25,000.0	-	5,645.1

Note: The purpose of this revolving line of credit is to finance (seasonal) temporary cash flow needs of the University and to provide temporary financing for certain capital projects. Traditionally, peak upticks in cash balances occur in January and August/September as the result of tuition revenues and any outstanding bank loans are paid down with these proceeds.

Investment Managers

- **Core Portfolio Managers**

- Baird Advisors
 - Strong generalist manager; adds value by tactically positioning the portfolio on the yield curve, by over/underweighting spread sectors of the bond market, and by security selection
- IR&M
 - Security selection is the key driver of returns; has ability to identify overlooked opportunities in small, complex bond sub-sectors; typically structure portfolios to benefit from an income bias
- JP Morgan
 - Experienced team, quantitative approach to securitized bonds that relies heavily on mortgage investments, interest rate exposure typically very close to the benchmark
- PIMCO
 - The source of their expected alpha is their well-informed long-term secular outlook, the periodic refinements of short-term views, their ability to capture the benefits associated with the size and depth of their organization, and their global reach and influence within the fixed income markets
- DoubleLine
 - Strategy typically relies heavily on mortgage investments as this firm is considered best in class in that space; their tactical approach is viewed as a complement to JP Morgan

- **Opportunistic Portfolio Managers**

- Loomis Sayles Multi-Sector Fixed Income
 - Represents the best ideas across the global fixed income market as observed by the Loomis Sayles fixed income organization; portfolio managers will tactically allocate to global bond market sectors where the best relative value opportunities exist in both investment grade and high yield bonds
- SKY Harbor
 - Dedicated high yield boutique with experience managing a low volatility, short duration high yield strategy.

	Market Value (\$)	% of Portfolio	Ending September 30, 2016								Inception			
			3 Mo (%)	Rank	YTD (%)	Rank	Fiscal YTD (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	Return (%)	Since
Composite	349,987,212	100.00	0.82	--	4.20	--	3.79	--	2.59	--	2.68	--	2.55	Oct-11
<i>Allocation Index</i>			0.38	--	3.86	--	3.31	--	2.55	--	2.29	--	1.72	Oct-11
Composite - ex ST Liquidity	288,865,421	82.54	0.91	--	4.79	--	4.34	--	3.06	--	3.22	--	3.15	Oct-11
<i>Allocation Index</i>			0.43	--	4.38	--	3.77	--	3.03	--	2.76	--	2.28	Oct-11
<i>Policy Index</i>			0.39	--	3.93	--	3.37	--	2.66	--	2.49	--	2.26	Oct-11
Core Portfolio	258,821,196	73.95	0.66	--	4.41	--	3.96	--	3.22	--	3.25	--	3.10	Oct-11
Baird Intermediate Govt/Credit	75,950,469	21.70	0.53	27	4.02	61	3.46	71	2.65	80	2.68	72	3.07	Jan-12
Barclays 1-5 Yr. Govt/Credit			0.04	86	2.64	99	2.06	99	2.01	98	1.73	99	1.59	Jan-12
IR&M Intermediate Govt/Credit	79,034,830	22.58	0.80	13	5.30	7	4.86	6	3.56	7	3.71	8	3.86	Jan-12
Barclays Int Govt/Credit			0.16	74	4.24	38	3.52	66	3.10	38	2.79	56	2.40	Jan-12
JPMorgan Core Bonds	35,984,841	10.28	0.50	65	5.73	68	4.87	78	4.16	40	4.00	64	3.31	Feb-12
Barclays Aggregate			0.46	72	5.80	64	5.19	68	4.06	50	4.03	61	2.87	Feb-12
PIMCO Low Duration Fund	2,048,334	0.59	0.67	9	1.87	60	2.41	21	1.22	69	1.33	54	1.98	Jan-12
Barclays 1-3 Yr. Govt/Credit			0.02	75	1.68	69	1.31	73	1.25	68	1.09	74	1.05	Jan-12
Ford Interest Rate Advantage Demand Note	10,338,143	2.95	0.26	11	0.79	25	1.05	15	1.05	1	1.05	1	1.05	Oct-13
91 Day T-Bills			0.07	94	0.20	92	0.23	91	0.12	97	0.09	92	0.09	Oct-13
Doubleline Total Return	36,706,499	10.49	0.83	31	4.08	93	3.59	93	3.91	61	4.30	39	4.30	Oct-13
Barclays Aggregate			0.46	72	5.80	64	5.19	68	4.06	50	4.03	61	4.03	Oct-13
Doubleline Low Duration	18,758,079	5.36	0.84	7	2.73	19	2.77	13	1.93	24	--	--	1.90	Feb-14
Barclays 1-3 Yr. Govt/Credit			0.02	75	1.68	69	1.31	73	1.25	68	--	--	1.07	Feb-14
Opportunistic Portfolio	30,044,226	8.58	3.12	--	8.25	--	7.76	--	1.75	--	2.99	--	5.42	Jan-12
Loomis Sayles Fixed Income	13,527,476	3.87	3.36	10	10.55	10	9.72	8	1.58	97	3.84	79	6.41	Jan-12
Barclays Aggregate			0.46	99	5.80	84	5.19	87	4.06	44	4.03	68	3.00	Jan-12
Sky Harbor Short Duration High Yield	16,516,750	4.72	2.92	92	6.45	97	6.21	94	1.88	87	--	--	1.41	Apr-14
BofA Merrill Lynch US 1-3 Year Cash Pay High Yield			4.34	75	12.50	41	11.10	24	5.25	11	--	--	4.18	Apr-14
Short Term Liquidity Portfolio	61,121,791	17.46	0.31	--	0.56	--	0.57	--	0.31	--	0.36	--	0.40	Oct-11
PNC Ultra Short Bonds	3,168,144	0.91	-0.02	99	0.69	27	0.58	29	0.42	27	0.37	18	0.39	Oct-11
BofA ML 1 YR Treasury Note Index			0.06	99	0.71	27	0.54	31	0.40	28	0.36	20	0.32	Oct-11
Comerica Cash	17,069,599	4.88	0.00	99	0.00	99	0.00	99	0.00	99	0.00	99	0.05	Oct-11
91 Day T-Bills			0.07	94	0.20	92	0.23	91	0.12	97	0.09	92	0.08	Oct-11
Fifth Third Cash	29,084,163	8.31	0.00	99	0.00	99	0.00	99	0.00	99	0.00	99	0.06	Oct-11
91 Day T-Bills			0.07	94	0.20	92	0.23	91	0.12	97	0.09	92	0.08	Oct-11
PIMCO Short-Term Fund	11,799,885	3.37	1.12	1	1.69	1	2.57	1	1.33	1	1.45	1	1.37	Sep-12
91 Day T-Bills			0.07	94	0.20	92	0.23	91	0.12	97	0.09	92	0.08	Sep-12

END