



# **CDIAC & CMTA Investment Reporting**

**Rick Phillips**  
**President & Chief Investment Officer**

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# Clearly Communicating Information to Your Audiences

- **Know Your Audiences:**
  - Governing Body
  - Management
  - Auditors
  - Rating Agencies
  - GFOA (CAFR)
  - Peers
  - Taxpayers
- **Be Completely Transparent**
- **Keep it Simple – Charts/Graphs/Tables**
- **Provide Details to the Appropriate Audiences**
- **Demonstrate How the Investment Portfolio is Meeting Objectives**

# Top 10 Common Mistakes of Investment Programs

- Not Having a Robust Cash Flow Schedule
- Having Too Much Liquidity (Opportunity Cost)
- Having Too Low of WAM/Duration (Too Many Callables)
- Benchmarking Incorrectly
- Thinking One Can Time the Market
- Not Amortizing
- Wrong Issuer Exposure (Concentration Risk/Foreign Issuers )
- Not Having the Right Number/Mix of Brokers
- Having Too Many Investment Positions
- Not Providing Transparent Reporting

# The Foundation of an Investment Program – 53600.5



## Model Investment Policy

**Safety:** Safety of principal is the foremost objective of the investment program. Investments of the (Local Agency) shall be undertaken in a manner that seeks to ensure the **preservation of capital** in the overall portfolio. To attain this objective, the (Local Agency) will diversify its investments by investing funds among a variety of securities with independent returns.

**Liquidity:** The (Local Agency's ) investment portfolio will remain sufficiently liquid to enable the (Local Agency) **to meet all operating requirements which might be reasonably anticipated.**

**Return on Investments:** The (Local Agency's ) investment portfolio shall have the objective of **attaining a comparative performance measurement or an acceptable rate of return throughout budgetary and economic cycles.** These measurements should be commensurate with the (Local Agency's ) investment risk constraints identified in the Investment Policy and the **cash flow characteristics** of the portfolio.

# Monthly Reporting Requirements



**53607:** The authority of the legislative body to invest or to reinvest funds of a local agency, or to sell or exchange securities so purchased, may be delegated for a one-year period by the legislative body to the treasurer of the local agency, who shall thereafter assume full responsibility for those transactions until the delegation of authority is revoked or expires, and **shall make a monthly report of those transactions to the legislative body**. Subject to review, the legislative body may renew the delegation of authority pursuant to this section each year.

## Sample Excel Transaction Report

Trade Dt	SetDt	Side	Security	Cusip	Issuer	Price	Quantity	Coupon	Principal	Acc Int	YTM
3/8/13	3/14/13	Buy	FNMA 0 3/4 03/14/17	3135G0VM2	FNMA	99.87500000	25,000,000.00	0.750	24,968,750.00	0.00	0.778
3/14/13	3/14/13	Sell	CSCO 1.625 03/14/14	17275RAJ1	Cisco	101.23800000	(20,000,000.00)	1.625	(20,247,600.00)	0.00	1.374
3/19/13	3/26/13	Buy	MDT 1 3/8 04/01/18	585055BA3	Metronic	99.85000000	5,000,000.00	1.375	4,992,500.00	0.00	1.421
3/20/13	3/26/13	Buy	SYK 1.3 04/01/18	863667AD3	Stryker	99.56500000	20,000,000.00	1.300	19,913,000.00	722.22	1.357
3/20/13	3/21/13	Sell	T 2 04/30/16	912828QF0	US Treasury	104.91796875	(20,000,000.00)	2.000	(20,983,593.75)	155,801.10	0.385
3/28/13	4/1/13	Sell	T 1 3/4 03/31/14	912828KJ8	US Treasury	101.57031250	(60,000,000.00)	1.750	(60,942,187.50)	2,868.85	0.194
3/28/13	4/1/13	Buy	FNMA 0 1/2 09/28/15	3135G0NV1	FNMA	100.34780000	20,000,000.00	0.500	20,069,560.00	833.33	0.331
3/28/13	4/1/13	Buy	T 2 1/4 01/31/15	912828MH0	US Treasury	103.69921876	25,000,000.00	2.250	25,924,804.69	93,232.04	0.241

# Sample Inv. Management Software Report

## Portfolio Management Activity By Type February 1, 2013 through February 28, 2013

CUSIP	Investment #	Issuer	Beginning Balance	Stated Rate	Transaction Date	 Purchases or Deposits	Redemptions or Withdrawals 	Ending Balance
<b>Federal Agency Non-Callables</b>								
3133783D1	6193	FHLB		0.300	02/08/2013	0.00	9,988,800.00	
		<b>Subtotal</b>	<b>189,559,960.00</b>			<b>0.00</b>	<b>9,988,800.00</b>	<b>179,571,160.00</b>
<b>Federal Agency Callables</b>								
3134G3NZ9	6208	FHLMC		0.550	02/13/2013	0.00	19,960,000.00	
3134G3A91	6911	FHLMC		1.400	02/26/2013	19,910,000.00	0.00	
3135G0KK8	6310	FNMA		0.650	02/26/2013	0.00	20,000,000.00	
3136G1CM9	6882	FNMA		1.100	02/13/2013	20,000,000.00	0.00	
		<b>Subtotal</b>	<b>199,935,000.00</b>			<b>39,910,000.00</b>	<b>39,960,000.00</b>	<b>199,885,000.00</b>
<b>Treasury Notes</b>								
		<b>Subtotal</b>	<b>59,874,218.75</b>					<b>59,874,218.75</b>
<b>Corporate Notes</b>								
38141EB32	6903	Goldman Sachs		1.600	02/22/2013	2,018,000.00	0.00	
459200HK0	6887	IBM		1.250	02/08/2013	995,420.00	0.00	
24422ERW1	6888	John Deere		1.200	02/11/2013	2,997,810.00	0.00	
58933YAC9	6904	Merck		1.100	02/22/2013	1,996,160.00	0.00	
68389XAN5	6900	Oracle Corp		1.200	02/21/2013	3,984,400.00	0.00	
931142DA8	6770	Wal-Mart		1.625	02/22/2013	0.00	3,052,620.00	
		<b>Subtotal</b>	<b>50,333,830.00</b>			<b>11,991,790.00</b>	<b>3,052,620.00</b>	<b>59,273,000.00</b>
<b>Corporate Floaters</b>								
		<b>Subtotal</b>	<b>3,000,000.00</b>					<b>3,000,000.00</b>
<b>Commercial Paper Discounts</b>								
0556N0QD0	6905	BNP Paribas		0.150	02/20/2013	4,999,562.50	0.00	
06416JPT4	6732	Bank of Nova Scotia		0.210	02/27/2013	0.00	4,997,375.00	
0556N0P58	6828	BNP Paribas Fin		0.150	02/05/2013	0.00	4,999,708.33	
0556N0PL3	6885	BNP Paribas Fin		0.140	02/06/2013	4,999,727.78	0.00	
0556N0PL3	6885				02/20/2013	0.00	4,999,727.78	
89233GSM9	6886	Toyota		0.150	02/06/2013	4,997,833.33	0.00	
		<b>Subtotal</b>	<b>19,986,625.00</b>			<b>14,997,123.61</b>	<b>14,996,811.11</b>	<b>19,986,937.50</b>

# Quarterly Reporting Requirements (Optional)

**53646 (b) (1):** The treasurer or chief fiscal officer **may** render a quarterly report to the chief executive officer, the internal auditor, and the legislative body of the local agency.

**If you do provide a quarterly report (which you should!), it must:**

- Be Submitted within 30 days After the Quarter End
- Include: Investment Type, Issuer, Maturity Date, Par Amount, Dollar Amount Invested, Description of Funds Managed by an Outside Party (including Securities Lending), the Market Value and Source for Any Security Managed by an Outside Party that is Not a Local Agency or in LAIF
- State that the Portfolio is in Compliance with the Policy or Manner in which it is Out of Compliance
- State the Ability of the Entity to meet its Expenditure Requirements for the Next 6 Months or Explain Why it Cannot

# Sample Report

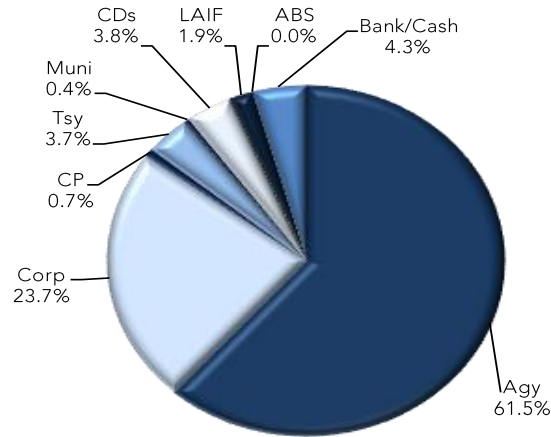
CUSIP	Inv. Type Investment #	Fund	Issuer	Investment Class	Par Value Par Value	Maturity Date YTM	Market Price	Market Date	Market Value Market Value	Dollar Amt Inv Book Value	Price Source Pricing Source	
<b>Time Certificates of Deposit</b>												
SYSG130151	G130151	1000	Bank of the West	Fair	100,000.00	0.120	08/31/2013	100.000	02/28/2013	100,000.00	100,000.00	Bank of the West
SY8130531	G130531	1000	Heritage Bank	Fair	100,000.00	0.400	02/22/2014	100.000	02/28/2013	100,000.00	100,000.00	Heritage Bank
<b>Subtotal</b>					<b>200,000.00</b>	<b>0.260</b>				<b>200,000.00</b>	<b>200,000.00</b>	
<b>Negotiable Certificates of Deposit</b>												
78009NKZ8	G130494	1000	Royal Bank of Canada	Fair	25,000,000.00	0.100	05/01/2013	100.005	02/28/2013	24,999,250.00	25,000,000.00	IDC
89112WFX9	G130422	1000	Toronto Dominion Bank	Amort	20,000,000.00	0.200	05/10/2013	100.004	02/28/2013	20,000,800.00	20,000,000.00	IDC
89112WRN9	G130438	1000	Toronto Dominion Bank	Fair	10,000,000.00	0.170	03/15/2013	100.000	02/28/2013	10,000,000.00	10,000,000.00	IDC
<b>Subtotal</b>					<b>55,000,000.00</b>	<b>0.149</b>				<b>55,000,050.00</b>	<b>55,000,000.00</b>	
<b>Commercial Paper Disc. -Amortizing</b>												
06416JQ14	G130536	1000	Bank of Nova Scotia	Fair	10,000,000.00	0.099	03/01/2013	100.000	02/28/2013	10,000,000.00	10,000,000.00	IDC
06416JQ14	G130544	1000	Bank of Nova Scotia	Fair	20,000,000.00	0.079	03/01/2013	100.000	02/28/2013	20,000,000.00	20,000,000.00	IDC
19121ARN3	G130508	1000	Coca Cola Co	Fair	20,000,000.00	0.100	04/22/2013	99.973	02/28/2013	19,994,600.00	19,997,111.11	IDC
19416EQC4	G130539	1000	COLGATE-PALMOLIVE CO	Fair	10,000,000.00	0.080	03/12/2013	99.995	02/28/2013	9,999,500.00	9,999,755.56	IDC
36960LQ16	G130526	1000	General Electric Co	Fair	10,000,000.00	0.100	03/01/2013	100.000	02/28/2013	10,000,000.00	10,000,000.00	IDC
36959HQ42	G130545	1000	General Electric Cap Corp	Fair	25,000,000.00	0.050	03/04/2013	99.999	02/28/2013	24,999,750.00	24,999,895.83	IDC
43851TQU3	G130533	1000	HONEYWELL INTERNATIONAL	Fair	20,000,000.00	0.100	03/28/2013	99.988	02/28/2013	19,997,600.00	19,998,500.00	IDC
<b>Subtotal</b>					<b>115,000,000.00</b>	<b>0.083</b>				<b>114,991,450.00</b>	<b>114,995,262.50</b>	
<b>U.S. Agency Coupon Securities</b>												
313380RJ8	G130384	1000	Federal Home Loan Bank	Fair	13,080,000.00	0.130	03/18/2013	100.000	02/28/2013	13,080,000.00	13,080,118.28	IDC
313372RK2	G130411	1000	Federal Home Loan Bank	Fair	20,000,000.00	0.101	03/27/2013	100.061	02/28/2013	20,012,200.00	20,012,970.79	IDC
313372RK2	G130416	1000	Federal Home Loan Bank	Fair	5,000,000.00	0.079	03/27/2013	100.061	02/28/2013	5,003,050.00	5,003,325.58	IDC
313372RK2	G130421	1000	Federal Home Loan Bank	Fair	20,135,000.00	0.079	03/27/2013	100.061	02/28/2013	20,147,282.35	20,148,386.77	IDC
313372RK2	G130426	1000	Federal Home Loan Bank	Fair	20,000,000.00	0.090	03/27/2013	100.061	02/28/2013	20,012,200.00	20,013,148.57	IDC
313379WT2	G130537	1000	Federal Home Loan Bank	Fair	13,000,000.00	0.108	03/25/2013	100.003	02/28/2013	13,000,390.00	13,000,710.07	IDC
3133XES91	GCP0086	1100	Federal Home Loan Bank	Fair	5,000,000.00	0.223	03/08/2013	100.094	02/28/2013	5,004,700.00	5,004,636.52	IDC
313372RK2	GCP0103	1100	Federal Home Loan Bank	Fair	5,000,000.00	0.253	03/27/2013	100.061	02/28/2013	5,003,050.00	5,002,690.03	IDC
313378S28	GCP0104	1100	Federal Home Loan Bank	Fair	5,000,000.00	0.248	03/21/2013	100.001	02/28/2013	4,999,950.00	4,999,858.19	IDC
<b>Subtotal</b>					<b>106,215,000.00</b>	<b>0.118</b>				<b>106,262,822.35</b>	<b>106,265,644.80</b>	

Market values of all securities are provided by the public agency's custodian



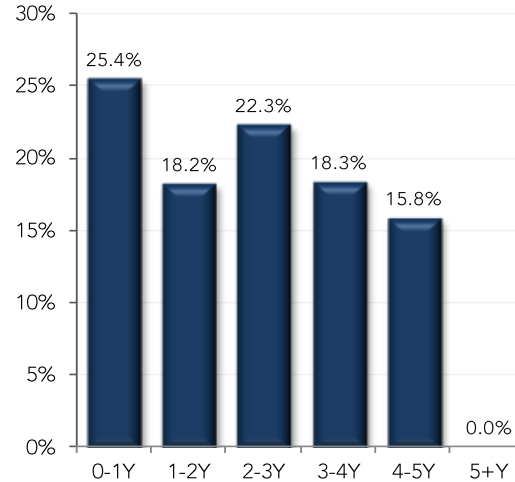
# Recommended Additional Reports - Summary

## SECTOR ALLOCATION



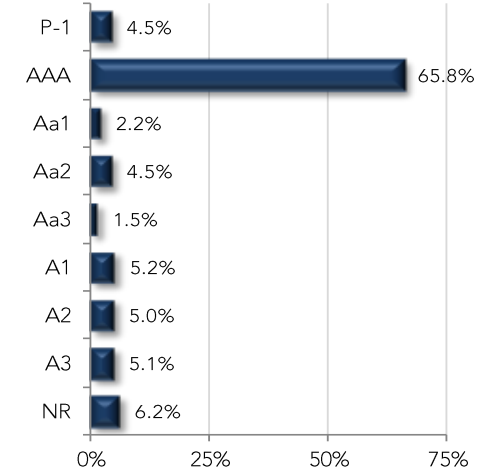
Per Book Value

## MATURITY DISTRIBUTION



Per Book Value

## CREDIT QUALITY (MOODY'S)



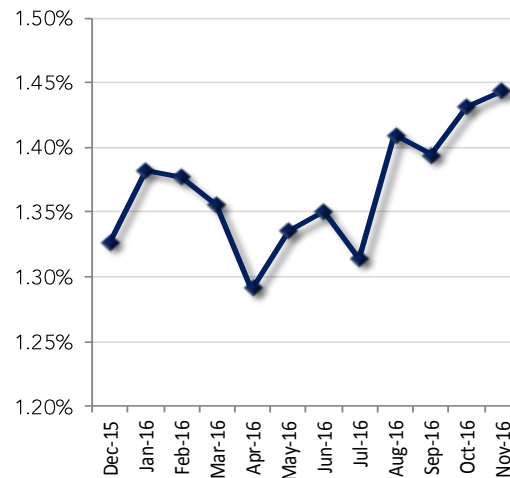
NR: Not Rated

## ACCOUNT SUMMARY

	11/30/16	9/30/16
Market Value	\$2,662,271,594	\$2,618,983,563
Book Value*	\$2,663,610,728	\$2,599,324,163
Unrealized G/L	-\$1,339,135	\$19,659,400
Par Value	\$2,653,391,638	\$2,588,050,261
Net Asset Value	\$99.950	\$100.756
Book Yield	1.44%	1.43%
Years to Maturity	2.24	2.23
Effective Duration	2.14	2.14

\*Book Value is Amortized

## PORTFOLIO BOOK YIELD HISTORY



## TOP ISSUERS

Issuer	% Portfolio
FNMA	25.2%
FHLB	18.5%
FHLMC	14.3%
BNP PARIBAS NY BRANCH	3.8%
US TREASURY NOTE	3.7%
FFCB	3.5%
BANK OF NEW YORK	3.3%
WELLS FARGO	3.1%
JP MORGAN	3.0%
CHEVRON CORP	2.4%
BANK OF THE WEST BANK ACCT	2.4%
APPLE INC	2.2%
BERKSHIRE HATHAWAY	2.2%
CATERPILLAR	2.1%
TOYOTA MOTOR CREDIT	1.9%

Per Book Value

# Recommended Additional Reports - Compliance

Item / Sector	Parameters	In Compliance	
Weighted Average Maturity	Weighted Average Maturity (WAM) must be between 1.5 years and 2.5 years	Yes:	1.95 Yrs
Liquidity: Less than 1 Year	At least 25% of the portfolio must have maturities of 1 year or less	Yes:	28.7%
Liquidity: Less than 3 Years	At least 50% of the portfolio must have maturities of 3 years or less	Yes:	91.5%
U.S. Treasuries	No limit, maximum maturity 5 years	Yes:	6.8%
U.S. Federal Agencies	No limit, 50% issuer limit, maximum maturity 5 years	Yes:	51.1%
Bankers' Acceptances	Sector limit 40%, issuer limit 5%, maximum maturity 180 days, A-1/P-1 by two	Yes:	0.0%
Time Deposits	No sector limit, collateralized according to State Code	Yes:	0.0%
Negotiable Certificates of Deposit	Sector limit 30%, issuer limit no greater than FDIC insured limit (currently \$250,000), max maturity 5 years, Issued by national/state charter banks or savings and loan associations	Yes:	5.1%
Commercial Paper	25% limit, 5% per issuer, maximum maturity 270 days, A-1 (S&P)/P-1 (Moody's), issued by a domestic corporation w/ at least \$500 million of assets and A- (S&P)/A3 (Moody;s) long term debt	Yes:	0.0%
Local Agency Investment Fund	No more than \$50 million	Yes:	11.4%
Corporate Medium Term Notes	Sector limit 30%, Issuer limit 5%, Max maturity 5 years, AA- (S&P)/Aa3 (Moody's), issued by domestic corporation/depositories	Yes:	18.2%
Money Market Funds	Sector limit 15%, Issuer limit 10%, AAA by two of the three rating services	Yes:	0.0%
Guaranteed Investment Contract	No sector limit, AA- (S&P)/Aa3 (Moody's), not to exceed \$5 mil annually	Yes:	0.0%
CD Placement Service	Sector limit 30% (combined w/ negotiable CDs)	Yes:	0.0%
Collateralized Bank Deposits	No sector limit, collateralized according to State Code	Yes:	7.4%
Supranationals	Sector limit 15%, Issuer limit 5%, Max maturity 5 years, AA or better by at least 1 of 3 rating agencies	Yes:	0.0%

# Additional Reports – Quarterly Comparison

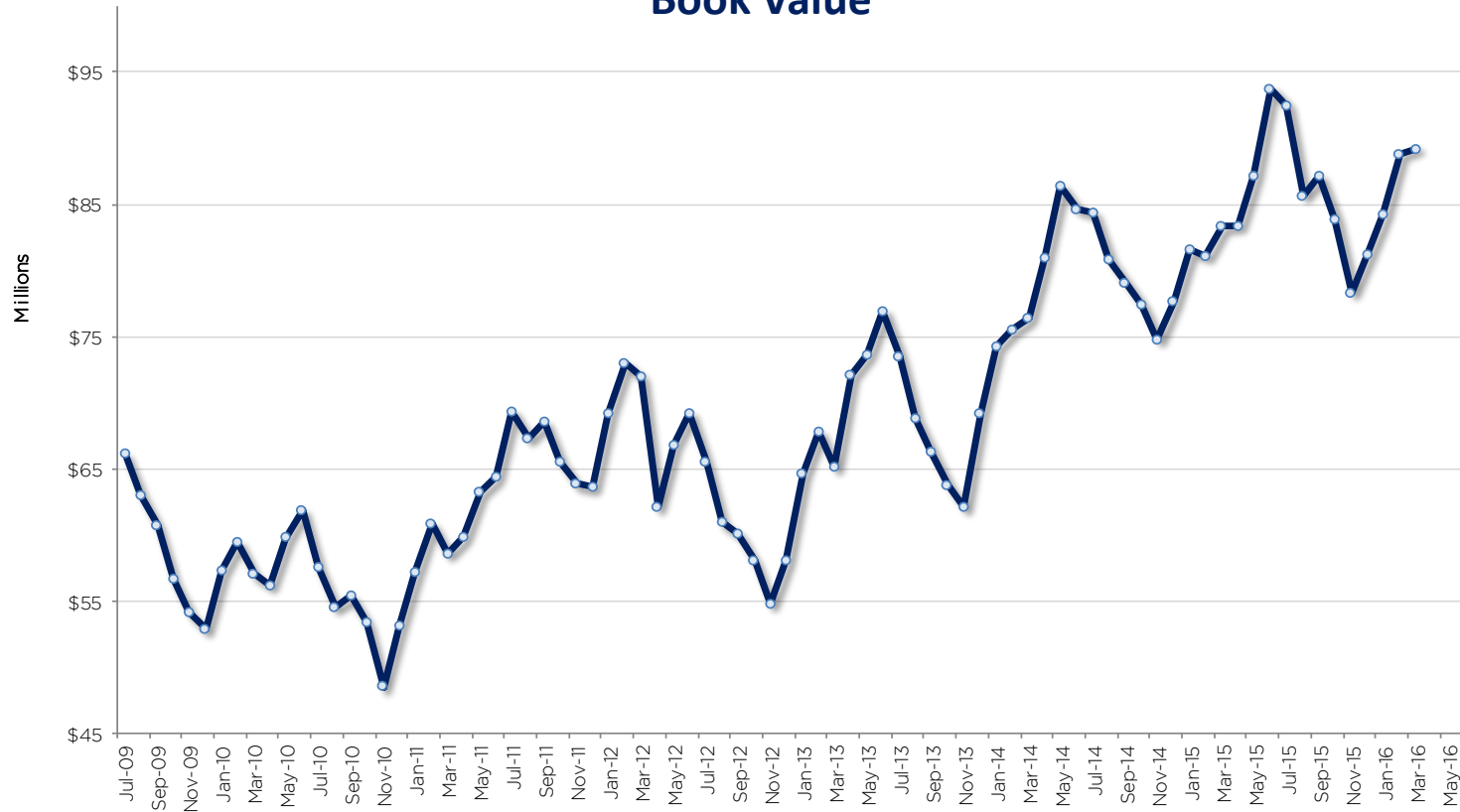
Portfolio Metrics	3/31/2016	12/31/2015	Change
Market Value	\$88,184,282	\$85,510,754	\$2,673,528
Book Value	\$87,997,453	\$85,676,062	\$2,321,391
Par Value	\$87,968,183	\$85,646,661	\$2,321,522
Net Asset Value	\$1.002	\$0.998	\$0.004
Yield to Maturity	1.019%	0.861%	0.158%
2Yr Treasury Note Yield	0.723%	1.050%	-0.327%
LAIF Yield (monthly avg)*	0.450%	0.372%	0.078%
Average Years to Maturity	1.95	1.33	0.62
Effective Duration	1.21	0.98	0.23

\*LAIF rate is estimated for current month/quarter end

Sectors (Book Value)	3/31/2016	12/31/2015	Change
Federal Agency	\$45,009,294	\$35,005,960	\$10,003,334
LAIF	\$10,000,000	\$13,500,000	-\$3,500,000
Corporate	\$16,037,175	\$17,046,506	-\$1,009,330
Certificates of Deposit	\$4,471,847	\$4,971,816	-\$499,970
U.S. Treasury	\$5,982,954	\$3,977,119	\$2,005,836
Checking	\$6,496,183	\$11,174,661	-\$4,678,478
Total	\$87,997,453	\$85,676,062	\$2,321,391

# Recommended Additional Reports - History

## Book Value

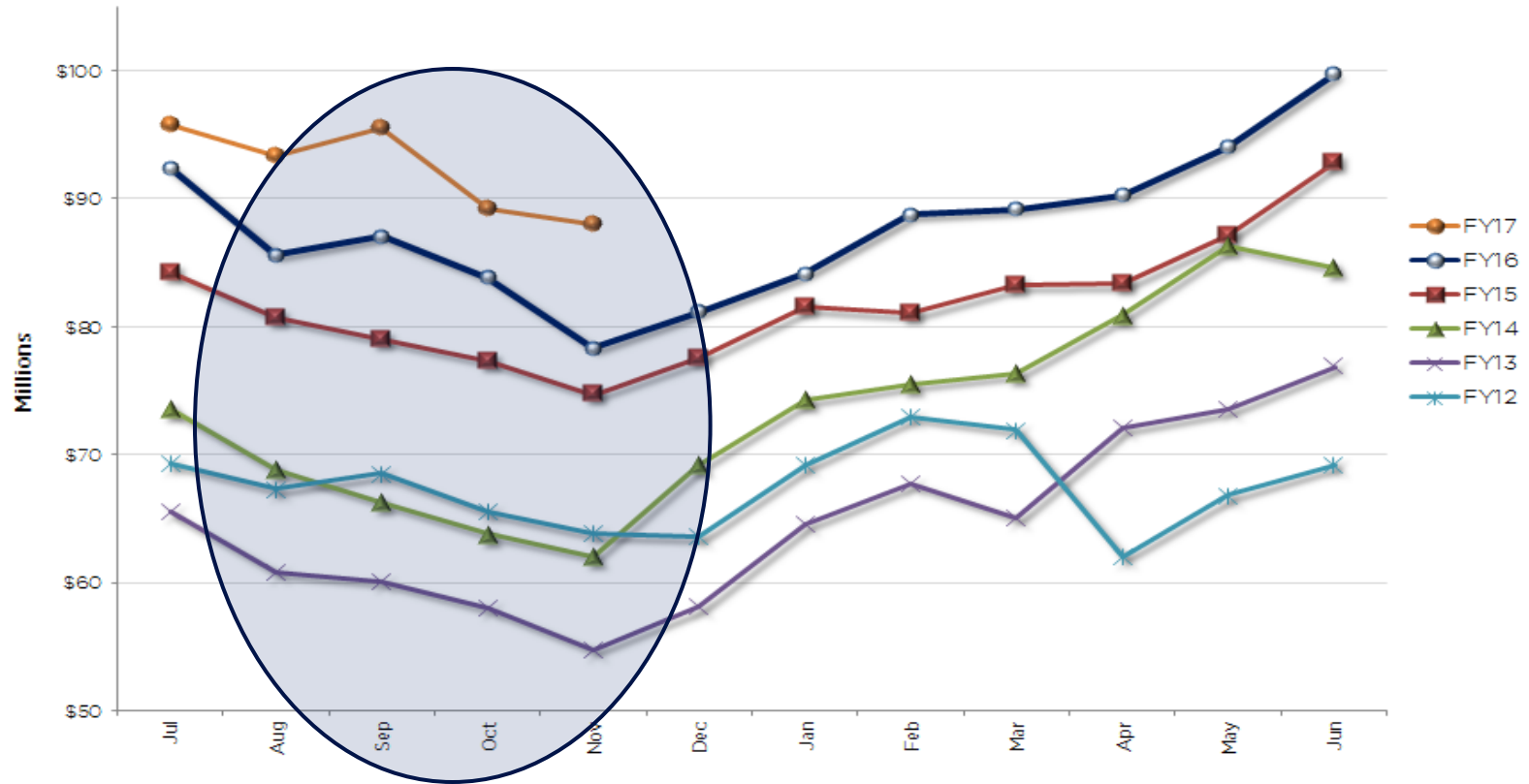


	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Fiscal Year 2010	\$66.1	\$63.0	\$60.7	\$56.6	\$54.2	\$52.9	\$57.2	\$59.5	\$57.0	\$56.2	\$59.8	\$61.9
Fiscal Year 2011	\$57.5	\$54.6	\$55.4	\$53.3	\$48.5	\$53.1	\$57.1	\$60.9	\$58.6	\$59.8	\$63.2	\$64.3
Fiscal Year 2012	\$69.3	\$67.3	\$68.5	\$65.5	\$63.8	\$63.6	\$69.2	\$73.0	\$71.9	\$62.1	\$66.8	\$69.2
Fiscal Year 2013	\$65.5	\$60.9	\$60.1	\$58.0	\$54.8	\$58.1	\$64.6	\$67.8	\$65.1	\$72.1	\$73.6	\$76.9
Fiscal Year 2014	\$73.5	\$68.8	\$66.3	\$63.8	\$62.1	\$69.2	\$74.2	\$75.5	\$76.3	\$80.9	\$86.3	\$84.6
Fiscal Year 2015	\$84.3	\$80.8	\$79.1	\$77.4	\$74.8	\$77.6	\$81.5	\$81.0	\$83.3	\$83.3	\$87.1	\$92.9
Fiscal Year 2016	\$92.4	\$85.6	\$87.1	\$83.8	\$78.3	\$81.2	\$84.2	\$88.7	\$89.2			

Figures in Millions, Average Daily Balance

# Recommended Additional Reports - History

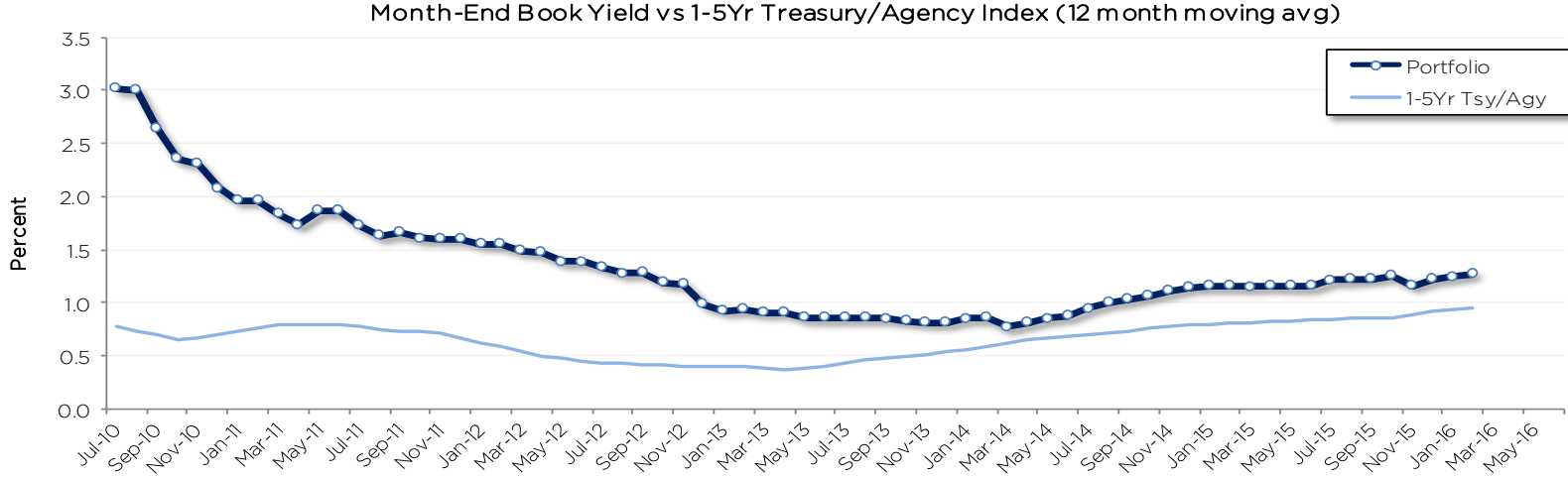
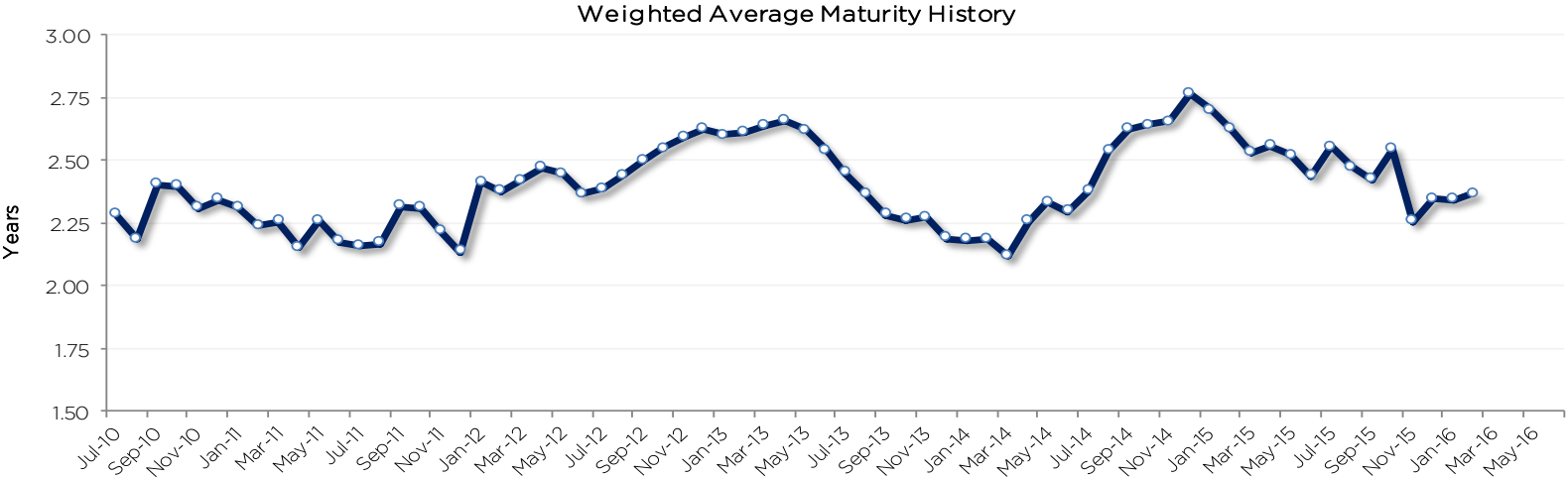
## Book Value by Fiscal Year



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
<b>Fiscal Year 2012</b>	\$69.3	\$67.3	\$68.5	\$65.5	\$63.8	\$63.6	\$69.2	\$73.0	\$71.9	\$62.1	\$66.8	\$69.2
<b>Fiscal Year 2013</b>	\$65.5	\$60.9	\$60.1	\$58.0	\$54.8	\$58.1	\$64.6	\$67.8	\$65.1	\$72.1	\$73.6	\$76.9
<b>Fiscal Year 2014</b>	\$73.5	\$68.8	\$66.3	\$63.8	\$62.1	\$69.2	\$74.2	\$75.5	\$76.3	\$80.9	\$86.3	\$84.6
<b>Fiscal Year 2015</b>	\$84.3	\$80.8	\$79.1	\$77.4	\$74.8	\$77.6	\$81.5	\$81.0	\$83.3	\$83.3	\$87.1	\$92.9
<b>Fiscal Year 2016</b>	\$92.4	\$85.6	\$87.1	\$83.8	\$78.3	\$81.2	\$84.2	\$88.7	\$89.2	\$90.2	\$94.0	\$99.7
<b>Fiscal Year 2017</b>	\$95.7	\$93.4	\$95.5	\$89.2	\$87.9							

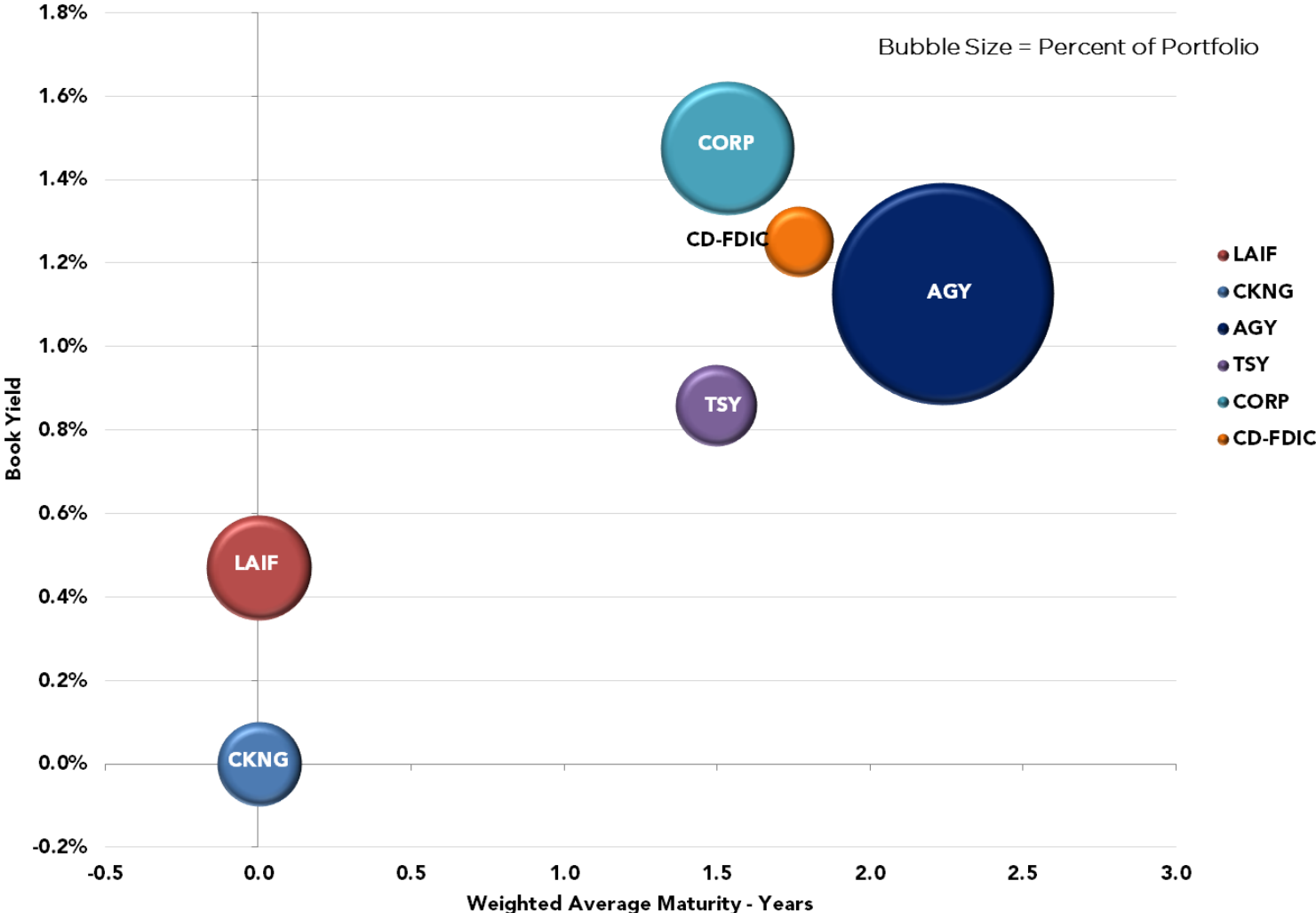
Figures in Millions, Average Daily Balance

# Recommended Additional Reports - History



# Recommended Additional Reports - Analysis

## Purchase Yield and Weighted Average Maturity

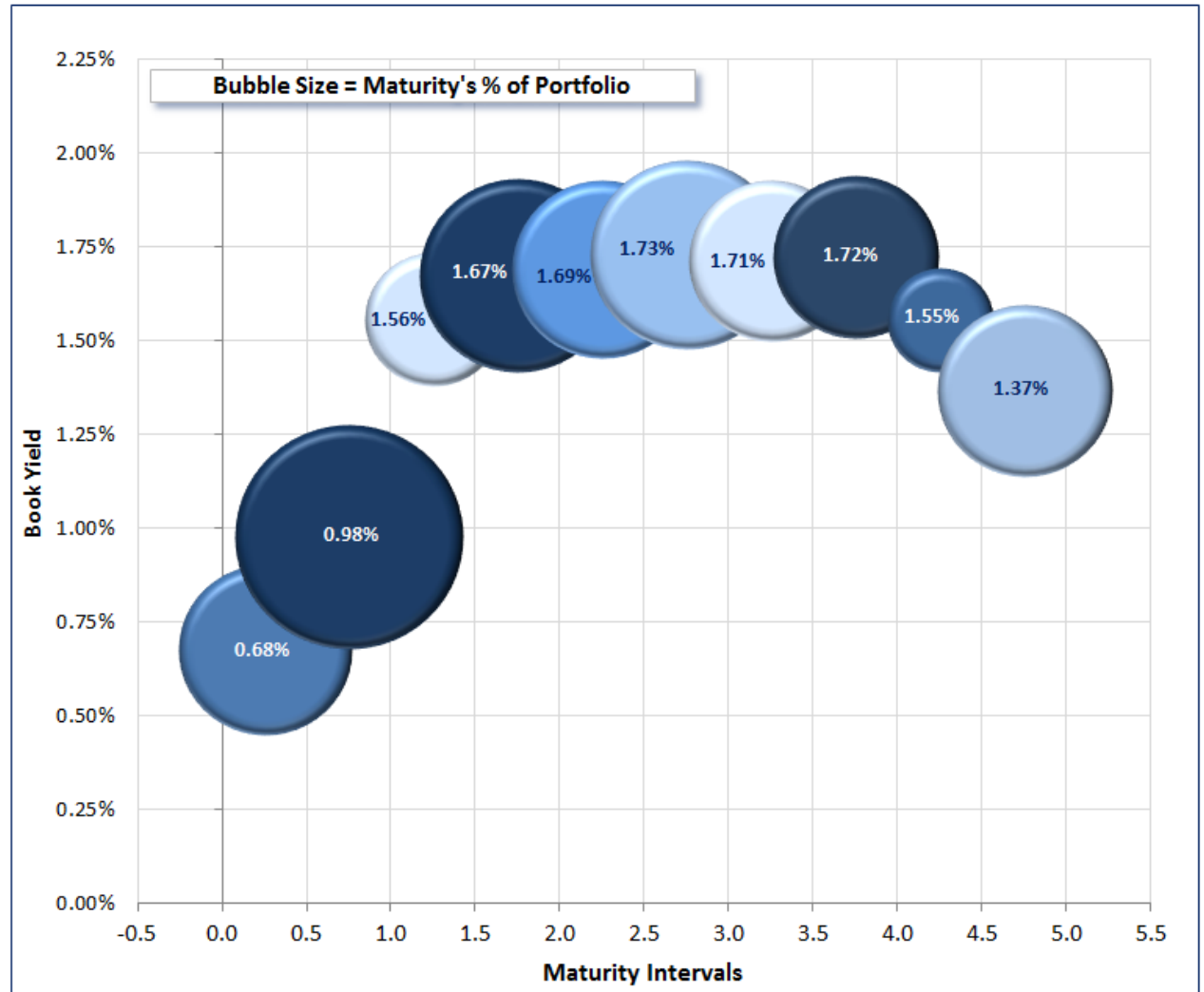


# Recommended Additional Reports - Analysis

## Purchase YTM Per 6-Month Maturity Intervals

Years	Book Yield	% of Portfolio*
0 to .5	0.68%	9.80%
.5 to 1.0	0.98%	17.05%
1.0 to 1.5	1.56%	6.06%
1.5 to 2.0	1.67%	12.79%
2.0 to 2.5	1.69%	10.70%
2.5 to 3.0	1.73%	12.16%
3.0 to 3.5	1.71%	8.87%
3.5 to 4.0	1.72%	8.91%
4.0 to 4.5	1.55%	3.61%
4.5 to 5.0+	1.37%	10.06%

\*Based on Book Value



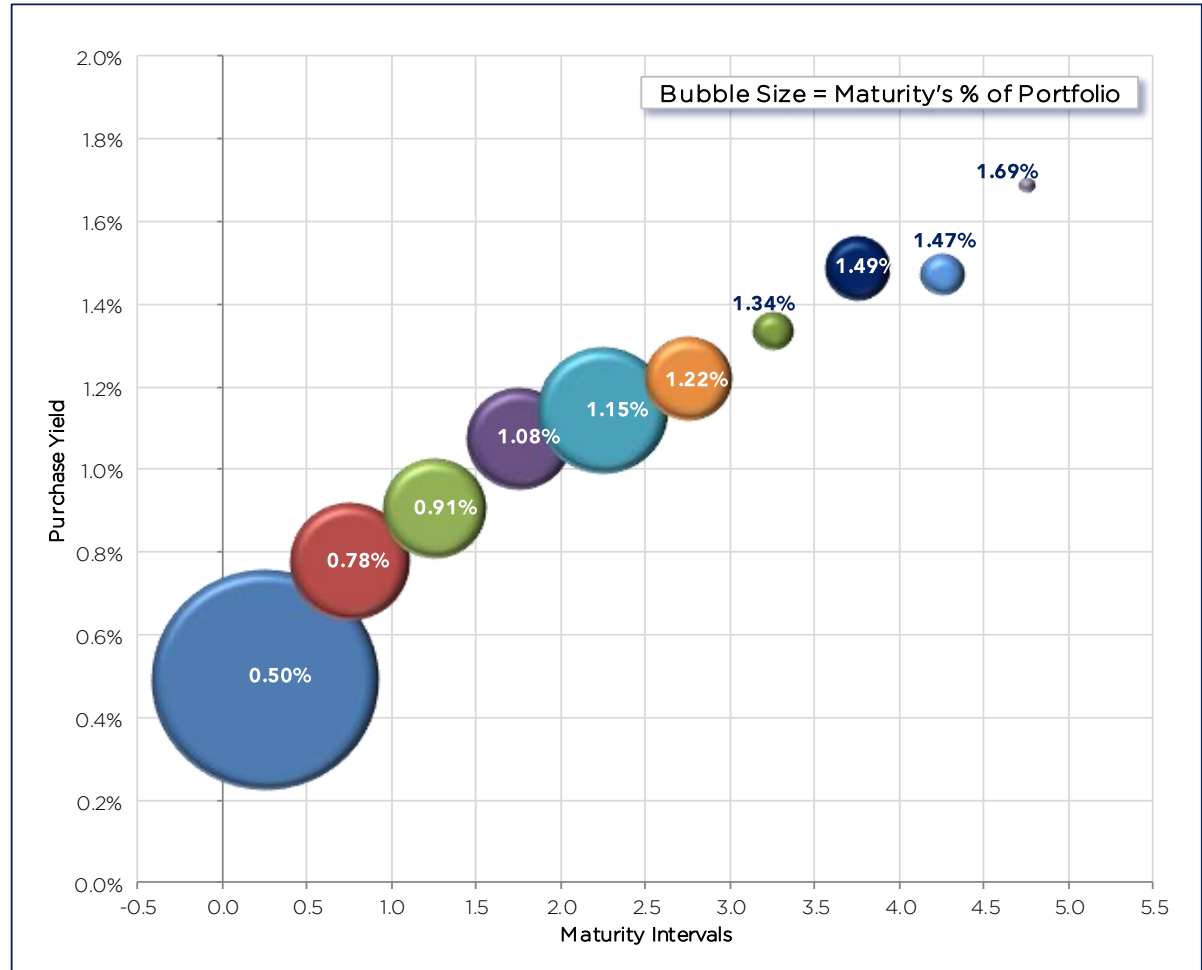


# Recommended Additional Reports - Analysis

## Purchase YTM Per 6-Month Maturity Intervals

Years	Purchase Yield	% of Portfolio*
0 to .5	0.50%	43.00%
.5 to 1.0	0.78%	12.13%
1.0 to 1.5	0.91%	8.76%
1.5 to 2.0	1.08%	9.24%
2.0 to 2.5	1.15%	14.19%
2.5 to 3.0	1.22%	6.22%
3.0 to 3.5	1.34%	1.26%
3.5 to 4.0	1.49%	3.49%
4.0 to 4.5	1.47%	1.52%
4.5 to 5.0+	1.69%	0.19%

\*Based on Book value

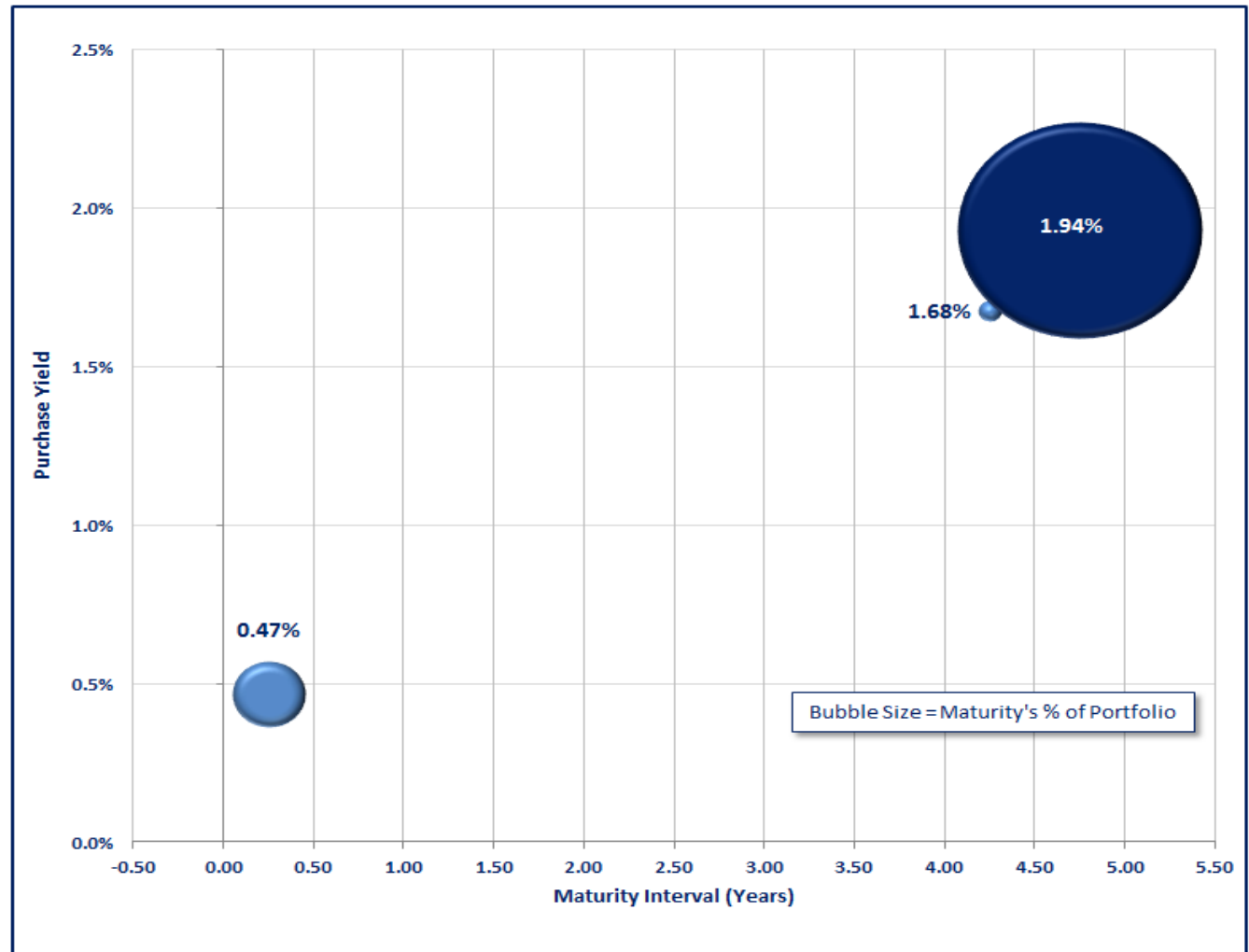


# Recommended Additional Reports - Analysis

## Purchase YTM Per 6-Month Maturity Intervals

Years	Purchase Yield	% of Portfolio*
0 to .5	0.47%	8.14%
.5 to 1.0	0.00	0.00%
1.0 to 1.5	0.00	0.00%
1.5 to 2.0	0.00	0.00%
2.0 to 2.5	0.00	0.00%
2.5 to 3.0	0.00	0.00%
3.0 to 3.5	0.00	0.00%
3.5 to 4.0	0.00	0.00%
4.0 to 4.5	1.68%	0.77%
4.5 to 5.0+	1.94%	91.09%
<b>Total</b>	<b>1.82%</b>	<b>100.0%</b>

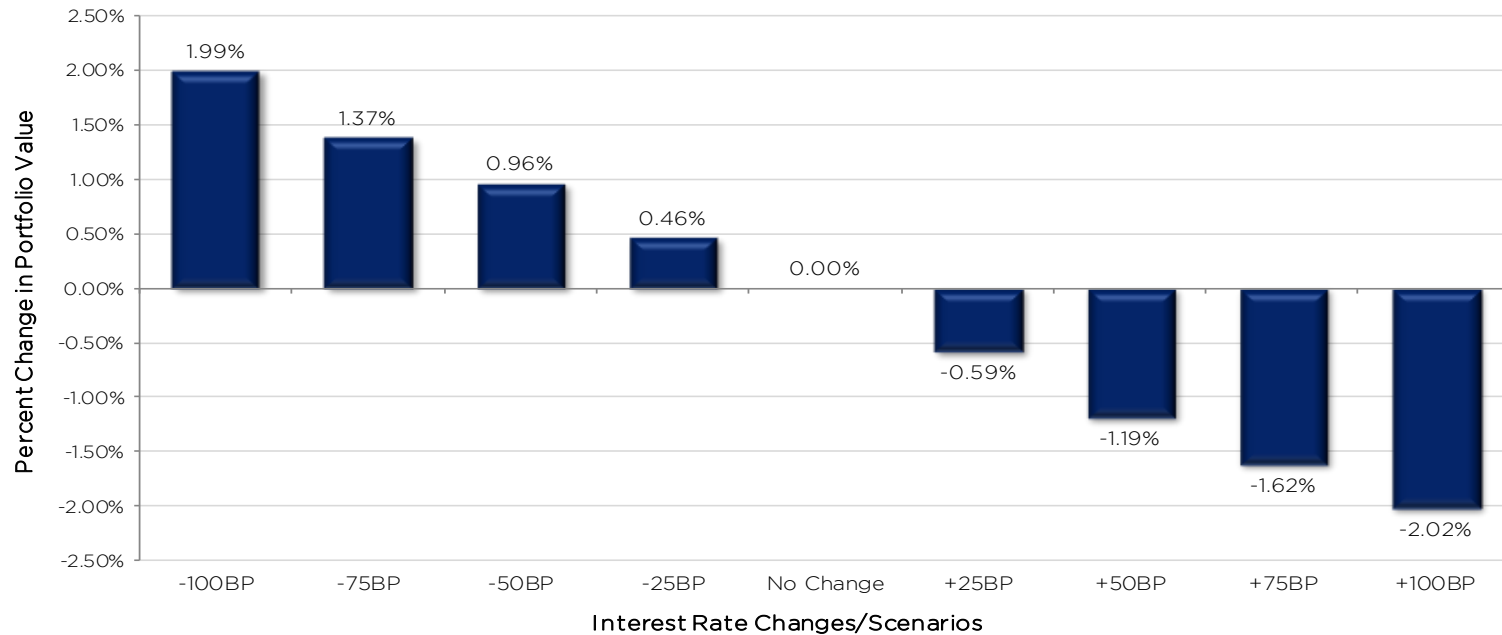
\*Based on Bloomberg Market Value



# Recommended Additional Reports - Analysis

## Interest Rate Shock Analysis

Instantaneous Interest Rate Changes and Approximate Change in Portfolio's Market Value



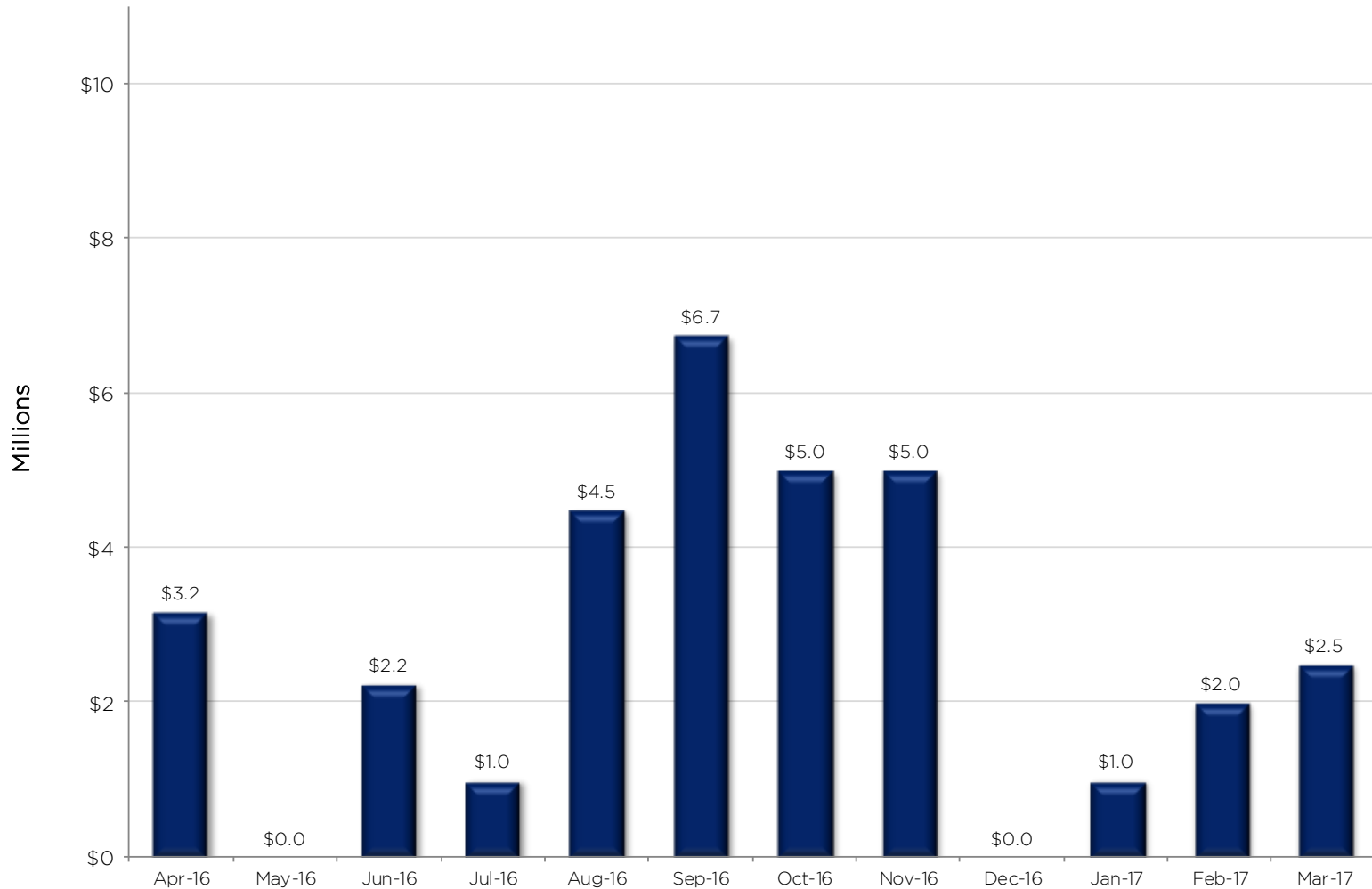
Interest Rate Change	Portfolio Value	Value Change	Percent Change
-100 Basis Points	\$101,990,000	\$1,990,000	1.99%
-75 Basis Points	\$101,373,100	\$1,373,100	1.37%
-50 Basis Points	\$100,955,200	\$955,200	0.96%
-25 Basis Points	\$100,457,700	\$457,700	0.46%
No Change	\$100,000,000	\$0	0.00%
+25 Basis Points	\$99,414,200	-\$585,800	-0.59%
+50 Basis Points	\$98,808,200	-\$1,191,800	-1.19%
+75 Basis Points	\$98,384,000	-\$1,616,000	-1.62%
+100 Basis Points	\$97,980,000	-\$2,020,000	-2.02%

?

What's the approximate duration of this portfolio?

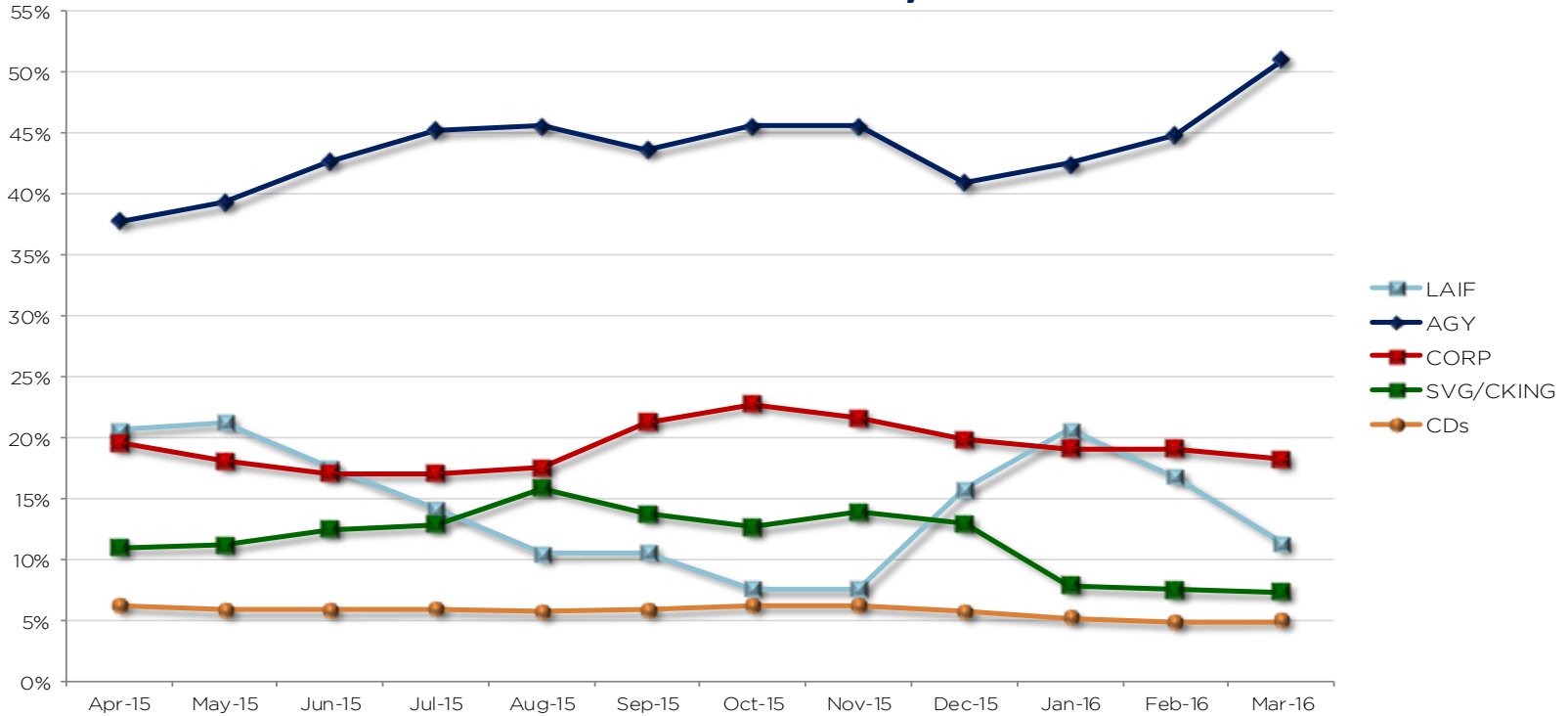
# Recommended Additional Reports – Cash Flow

## Next Twelve Month Maturities



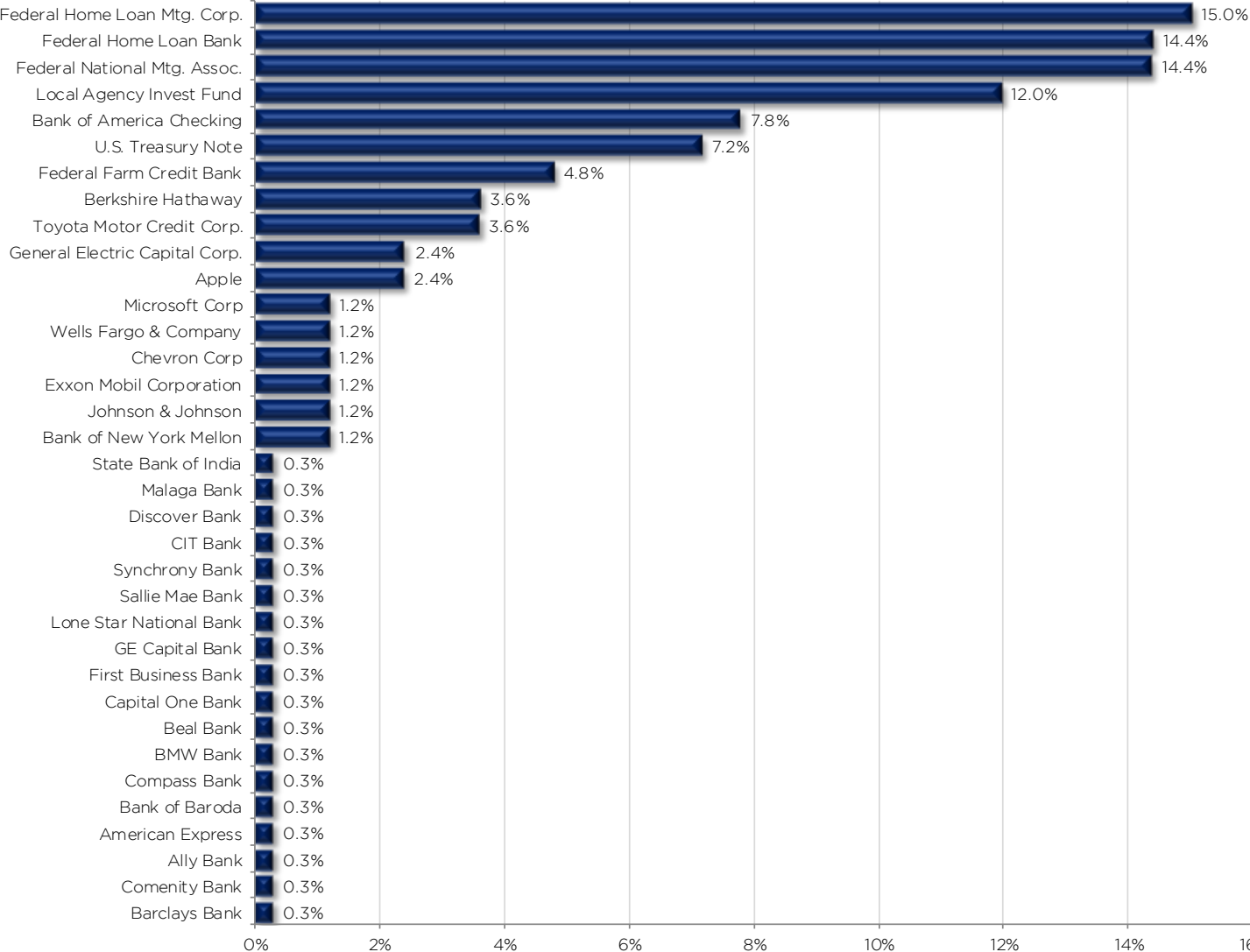
# Recommended Additional Reports - History

## Sector History



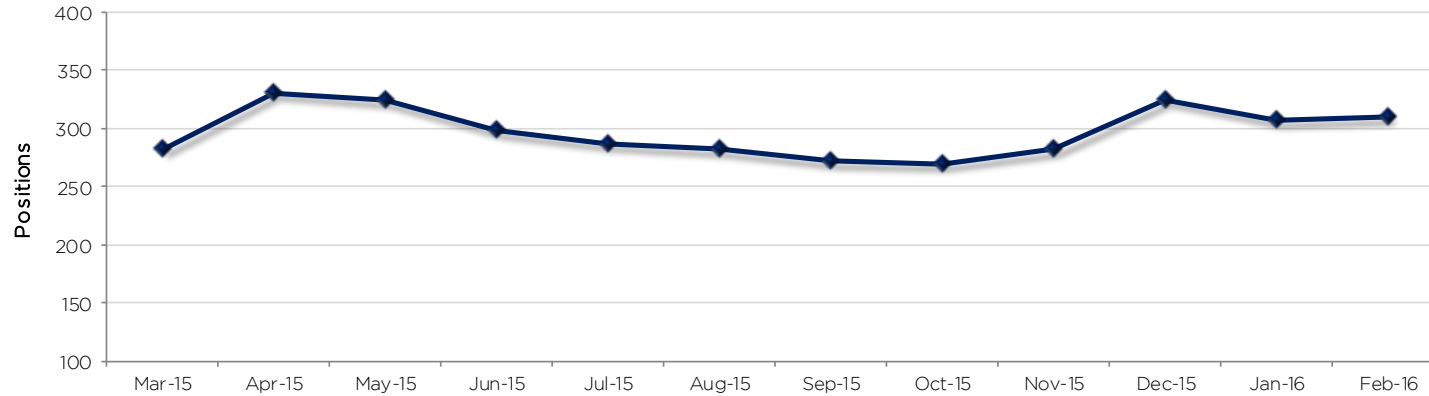
Sector	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16
Agency	37.8%	39.3%	42.7%	45.3%	45.6%	43.7%	45.6%	45.6%	40.9%	42.5%	44.8%	51.1%
Corporate	19.6%	18.1%	17.1%	17.1%	17.6%	21.3%	22.8%	21.6%	19.9%	19.1%	19.1%	18.2%
Treasury	4.6%	4.2%	4.2%	4.5%	4.6%	4.7%	5.0%	5.0%	4.6%	4.5%	6.7%	6.8%
Certificates of Deposit	6.3%	5.9%	5.9%	6.0%	5.8%	5.9%	6.3%	6.3%	5.8%	5.3%	5.0%	5.1%
Savings/Checking	11.0%	11.2%	12.5%	12.9%	15.9%	13.8%	12.7%	13.9%	13.0%	7.9%	7.6%	7.4%
LAIF	20.7%	21.3%	17.6%	14.2%	10.5%	10.6%	7.6%	7.6%	15.8%	20.7%	16.8%	11.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

# Recommended Additional Reports - Issuers



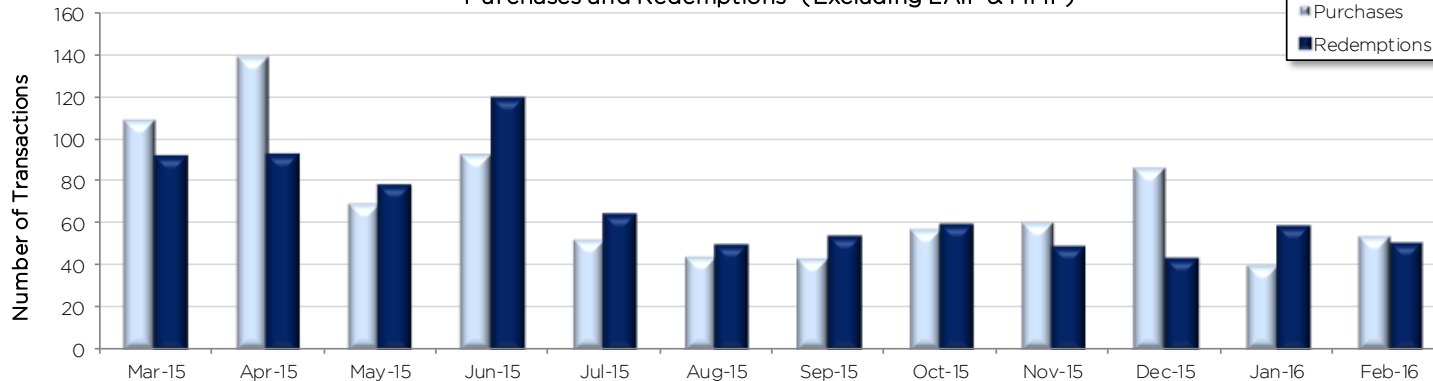
# Recommended Additional Reports - Activity

Number of Positions at Month End



	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16
<b>Number of Positions</b>	283	332	325	299	288	283	273	271	283	326	308	311

Purchases and Redemptions\* (Excluding LAIF & MMF)



\*Redemptions include maturities, calls, and sells (excluding paydowns)

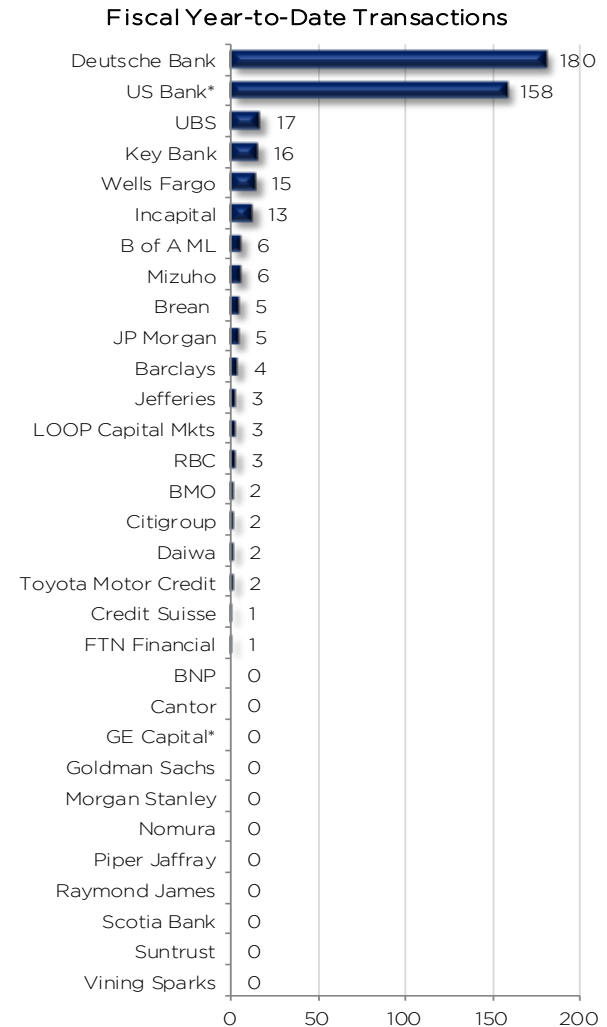
	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16
<b>Number of Purchases</b>	109	139	70	93	53	45	44	58	61	87	41	55
<b>Number of Redemptions</b>	92	93	78	119	65	50	54	60	49	44	59	51
<b>Total Transactions</b>	<b>201</b>	<b>232</b>	<b>148</b>	<b>212</b>	<b>118</b>	<b>95</b>	<b>98</b>	<b>118</b>	<b>110</b>	<b>131</b>	<b>100</b>	<b>106</b>

# Recommended Additional Reports - Activity

## Transactions by Dealer

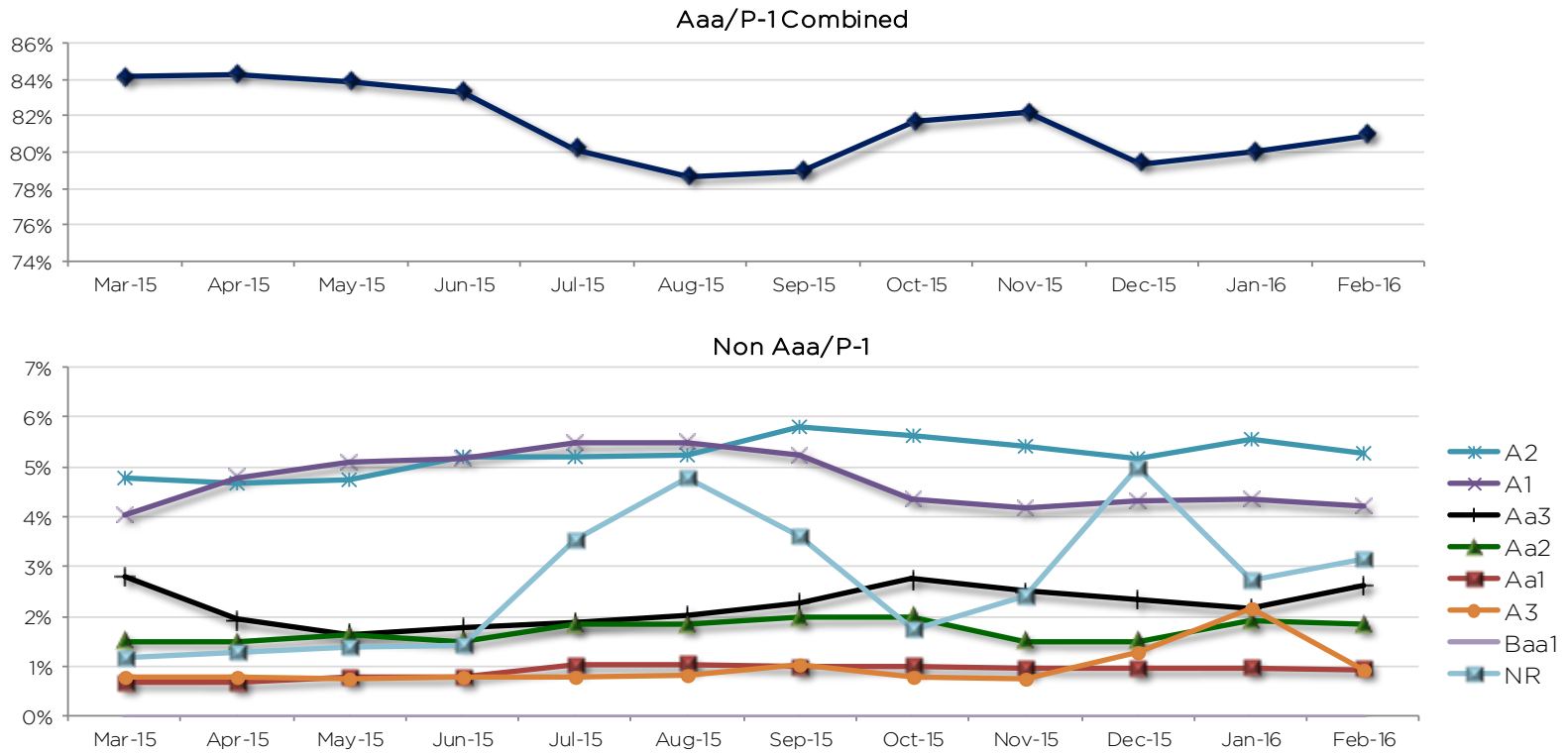
Dealer	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Deutsche Bank	22	23	20	23	23	28	20	21					180
US Bank*	22	18	21	19	19	21	18	20					158
UBS	2			1	1	13							17
Key Bank	1		1	6	5	1		2					16
Wells Fargo	2	1		2	3	5		2					15
Incapital	2			1	1	5		4					13
B of A ML			1	1		2		2					6
Mizuho		1			1	3	1						6
Brean	1	1				2	1						5
JP Morgan				1	2			2					5
Barclays	1			1	2								4
Jefferies	1	1					1						3
LOOP Capital Mkts						3							3
RBC	1		1			1							3
BMO					1	1							2
Citigroup					1			1					2
Daiwa				1		1							2
Toyota Motor Credit					2								2
Credit Suisse				1									1
FTN Financial								1					1
BNP													0
Cantor													0
GE Capital*													0
Goldman Sachs													0
Morgan Stanley													0
Nomura													0
Piper Jaffray													0
Raymond James													0
Scotia Bank													0
Suntrust													0
Vining Sparks													0
<b>Total</b>	<b>55</b>	<b>45</b>	<b>44</b>	<b>57</b>	<b>61</b>	<b>86</b>	<b>41</b>	<b>55</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>444</b>

\*Direct Issuers





# Recommended Additional Reports - Ratings



Types	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16
Aaa/P-1	84.2%	84.4%	83.9%	83.4%	80.3%	78.8%	79.1%	81.7%	82.3%	79.5%	80.1%	81.0%
Aa1	0.7%	0.7%	0.8%	0.8%	1.0%	1.1%	1.0%	1.0%	1.0%	1.0%	1.0%	0.9%
Aa2	1.5%	1.5%	1.6%	1.5%	1.8%	1.9%	2.0%	2.0%	1.5%	1.5%	1.9%	1.9%
Aa3	2.8%	1.9%	1.6%	1.8%	1.9%	2.0%	2.3%	2.7%	2.5%	2.3%	2.2%	2.6%
A1	4.0%	4.8%	5.1%	5.2%	5.5%	5.5%	5.2%	4.3%	4.2%	4.3%	4.4%	4.2%
A2	4.8%	4.7%	4.8%	5.2%	5.2%	5.2%	5.8%	5.6%	5.4%	5.2%	5.5%	5.3%
A3	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	1.0%	0.8%	0.7%	1.3%	2.2%	0.9%
NR-Not Rated	1.2%	1.3%	1.4%	1.4%	3.5%	4.8%	3.6%	1.7%	2.4%	5.0%	2.7%	3.2%
Baa1	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

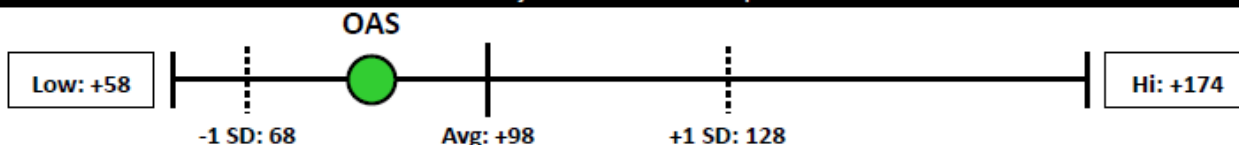
# Recommended Additional Reports - Analysis

Descriptive Information		Last 4 Qtrs	2015	2014	2013	2012	Relative Credit Performance - Most Recent Period		
CUSIP	94974BFG0	<b>Key Credit Metrics</b>					<b>Pct Ranking vs Peer Group</b>		
Issuer	Wells Fargo & Co	3-Yr Average Pre-Provision Net Revenue/ RWA (%)	2.80	2.83	3.03	3.11	3.29	90%	1
Ticker	WFC	Tier 1 CET Common Ratio (%)	10.82	11.07	11.04	10.72	10.03	50%	3
Sector	Financial	NPA+ Loans 90PD/ Tang Common Equity + LLR (%)	16.14	28.88	35.51	45.46	52.93	20%	4
Subgroup	Bank - Domestic	Reliance on Wholesale Funding (3-yr Avg)	26.38	24.06	22.08	21.35	20.44	20%	4
Peer Group	Bank - Domestic	Efficiency Ratio (%)	57.10	56.95	57.01	56.35	56.35	80%	1
Maturity	01/16/2018	Liquidity Ratio (%)	39.07	37.76	37.78	35.26	28.54	20%	4
Issue Date	12/26/2012	Earnings Stability Ratio (3-yr Avg) (%)	97.72	96.72	95.71	95.28	95.24	80%	1
Coupon	1.500	ROAE (%)	11.47	12.02	12.83	13.36	12.60	80%	1
Currency	USD	Total Assets (\$000)	1,889,235,000	1,787,632,000	1,687,155,000	1,527,015,000	1,422,968,000	60%	2
Amt		Tier 1 Common Capital (\$000)	169,287,000	164,584,000	154,666,000	140,735,000	126,607,000	90%	1
Outstanding	\$2,100,000,000	<b>Financials(\$000)</b>					<b>Rank vs Peers</b>		
		Total Loans & Leases	974,706,000	931,918,000	877,996,000	839,988,000	841,894,000	90%	1
		Total Deposits	1,245,866,000	1,223,559,000	1,168,708,000	1,079,531,000	1,003,205,000	100%	1
		Risk-Weighted Assets	1,354,621,610	1,303,142,460	1,242,544,700	1,141,514,100	1,077,149,700	90%	1
		Total Liquid Assets	675,776,000	641,154,000	595,738,000	500,772,000	399,311,000	100%	1
		Loans/Deposits (%)	78.24	76.16	75.13	77.81	83.92	90%	1
		NPAs/Total Loans (%)	2.71	2.84	3.44	4.10	4.62		
		Net Interest Margin (NIM) (%)	2.85	2.84	2.99	3.26	3.61		
		Yield/ Cost Spread (%)	2.74	2.73	2.88	3.12	3.43		
		Net NonCore Funding Dependence (%)	11.66	8.51	7.70	6.37	8.71		

All Pricing as of:  
**11/14/2016**  
All Financials as of:  
**09/27/2016**

Market Monitor - Debt Performance					Market Monitor - Equity Performance				
Issuer 5-yr OAS	OAS(bps)	Diff(bps)	SD	SDs +/-	Equity	1Yr(%)	Diff.	Sharpe	Diff.
Peer Group Avg	83	-15	30.5	-0.48	Issuer Eqy	0.31	-19.39	0.01	-0.68
Issuer Rank Avg	98	14	32.5	0.42	Peer Group Avg	19.70	-43.56	1.55	-1.54
IG Index Avg	70	-39	135.8	-0.29	Issuer Rank Avg	43.87	-13.09	0.49	-0.48
	122				IG Index Avg	13.40	-8.92	0.58	-0.57
					S&P Index				
5-yr CDS	CDS(bps)	Diff(bps)	SD	SDs +/-					
Peer Group Avg	52	-10	18.2	-0.55					
Issuer Rank Avg	62	-38	86.2	-0.46					
IG Index Avg	90	-40							
	92								

5-yr Issuer OAS vs Peer Group



Historical Transition



# Additional Reports - GASB

## Quarterly GASB 31 Calculation

INVESTMENT POOL  
MARK-TO-MARKET  
FISCAL YEAR 2016 Y-T-D

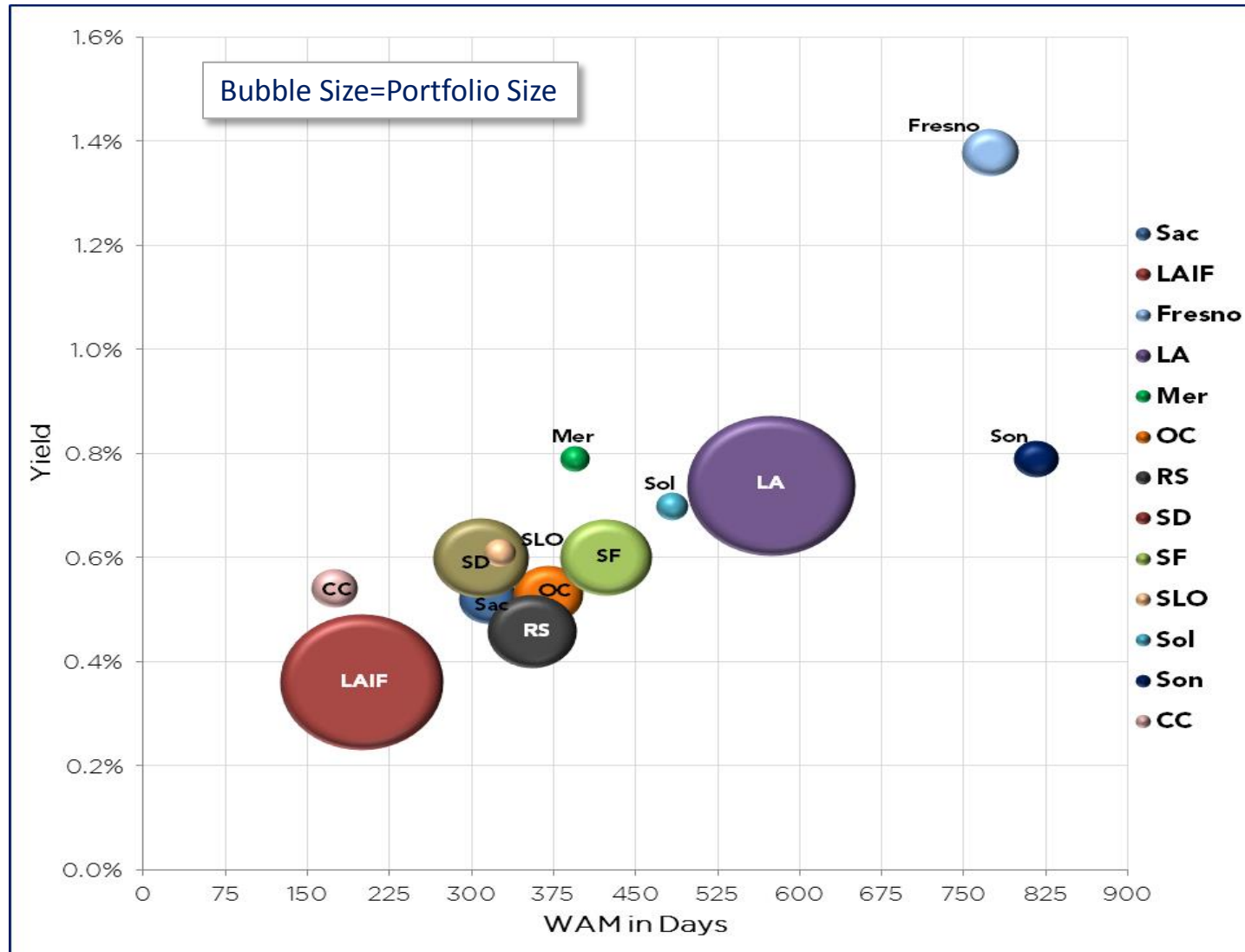
DESCRIPTION	AMOUNT
Invested Value at December 31, 2015	333,092,674
<b>Add:</b> Proceeds of Investments Matured/Sold in FY16	172,338,733
<b>Less:</b> Cost of Investments Purchased in FY16	<b>(159,417,821)</b>
<b>Add:</b> Amortization Adjustment	<b>0</b>
<b>Less:</b> Invested Value at June 30, 2015	<b>(346,590,397)</b>
<b>Change in Market Value of Investments</b>	<b>(576,810)</b>

# Standard of Prudence

## 53600.3:

“Except as provided in subdivision (a) of Section 27000.3, all governing bodies of local agencies or persons authorized to make investment decisions on behalf of those local agencies investing public funds pursuant to this chapter are trustees and therefore **fiduciaries subject to the prudent investor standard**. When investing, reinvesting, purchasing, acquiring, exchanging, selling, or managing public funds, a trustee shall act with care, skill, prudence, and diligence under the circumstances then prevailing, including, but not limited to, the general economic conditions and the anticipated needs of the agency, that **a prudent person acting in a like capacity and familiarity with those matters would use in the conduct of funds of a like character and with like aims**, to safeguard the principal and maintain the liquidity needs of the agency. Within the limitations of this section and considering individual investments as part of an overall strategy, investments may be acquired as authorized by law.”

# Standard of Prudence: “Like Capacity”



Sources: Entities' websites

# Additional Reports - GASB

NO. 347 | FEBRUARY 2015

## Governmental Accounting Standards Series

Statement No. 72 of the  
Governmental Accounting  
Standards Board

Fair Value Measurement  
and Application

**Level 1** of the fair value hierarchy are valued using prices quoted in active markets for those securities or offer same day liquidity at a price of par.

**Level 2** of the fair value hierarchy are generally valued using a matrix pricing technique. Matrix pricing is the process of estimating the market price of a bond based on the quoted prices of more frequently traded comparable bonds.

**Level 3** of the fair value hierarchy are generally used for assets where there are unobservable inputs.

Sources: FTN Main Street

# Additional Reports - GASB

FTN Financial Main Street Recommended GASB 72 Category Levels		
Level 1	Level 2	Level 3
Treasuries	Agency Bullets	Small Business Administration
Agency Discount Notes	Agency Floating Rate Notes	Local Bank Certificates of Deposit
Money Market Funds	Agency Callables	Investment Agreements
LGIP	Commercial Paper	Non-Negotiable Certificates of Deposit
Federally Insured Cash Account	Negotiable Certificates of Deposit	Certificate of Deposit Placement Service
	Asset-Backed Securities	U.S. Treasury State and Local Govt Series (SLGS)
	Mortgage-Backed Securities	
	Corporate Notes/Bonds/Floater	
	Bankers' Acceptances	
	Repurchase Agreements	
	Bank Notes	
	Deposit Notes	
	Time Deposit	
	Municipal Notes/Bonds/Obligations	

Sources: FTN Main Street

# Additional Reports - GASB

NO. 355 | DECEMBER 2015

## Governmental Accounting Standards Series

Statement No. 79 of the  
Governmental Accounting  
Standards Board

Certain External Investment Pools  
and Pool Participants



### LAIF Performance Report

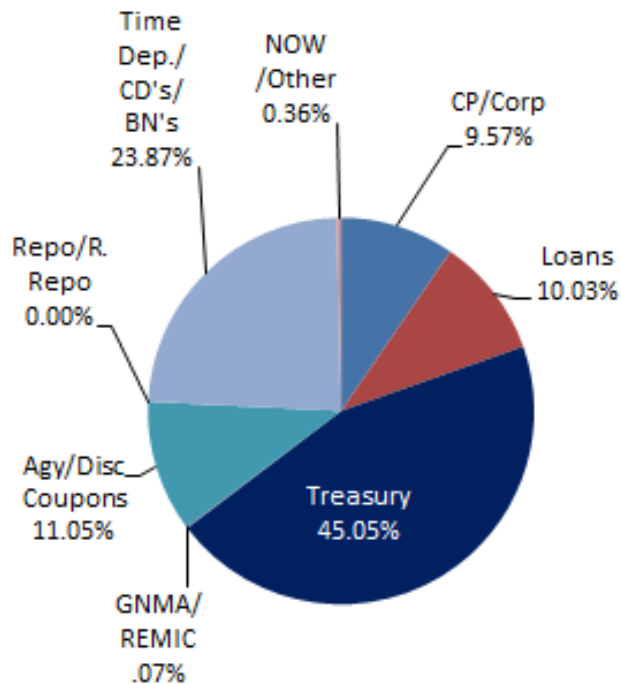
Quarter Ending 12/31/15

Apportionment Rate:	0.37%
Earnings Ratio:	0.00001006140492611
Fair Value Factor:	0.999186963
Daily:	0.43%
Quarter to Date:	0.38%
Average Life:	179



# Additional Reports - LAIF

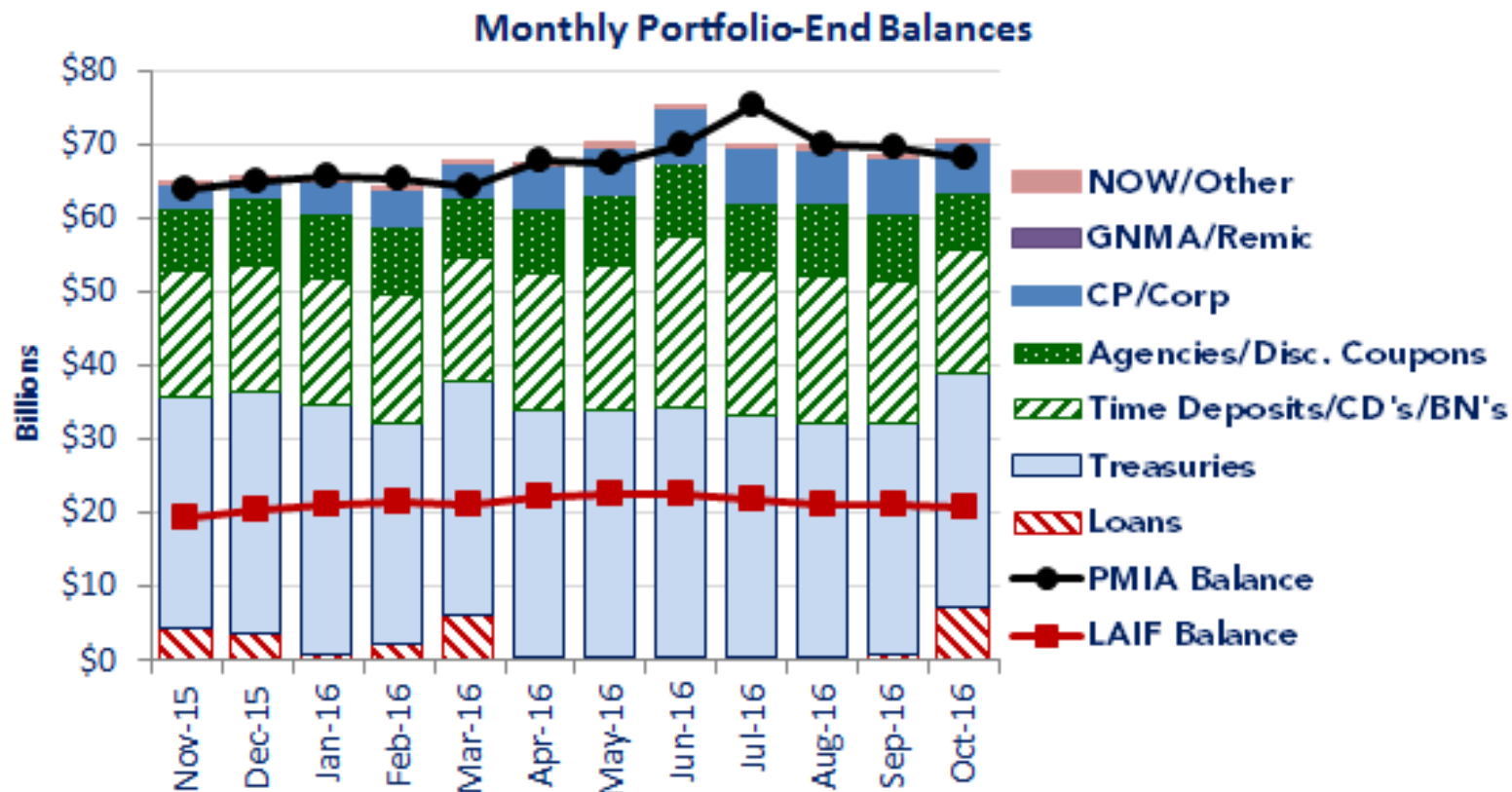
**PMIA Avg. Monthly Yield  
0.654%**



Type of Security	Amount (000's)	% of Portfolio
Government		
Bills	\$11,051,333	15.71%
Bonds	\$0	0.00%
Notes	\$20,643,257	29.34%
Strips	\$0	0.00%
<b>Total Government</b>	<b>\$31,694,590</b>	<b>45.05%</b>
Federal Agency Coupons	\$1,793,214	2.55%
Certificates of Deposit	\$11,000,028	15.63%
Bank Notes	\$600,000	0.85%
Bankers' Acceptances	\$0	0.00%
Repurchase Agreements	\$0	0.00%
Fed. Agency Disc. Notes	\$5,979,780	8.50%
Time Deposits	\$5,197,440	7.39%
GNMA's	\$0	0.00%
Commercial Paper	\$6,734,264	9.57%
FHLMC/REMIC	\$52,205	0.07%
Corporate Bonds	\$0	0.00%
AB 55 Loans	\$620,831	0.88%
GF Loans	\$6,437,300	9.15%
NOW Accounts	\$0	0.00%
Other	\$249,997	0.36%
Reverse Repo	\$0	0.00%
<b>Total</b>	<b>\$70,359,649</b>	<b>100.00%</b>

Source: LAIF Website, FTN Main Street Calculations

# Additional Reports - LAIF



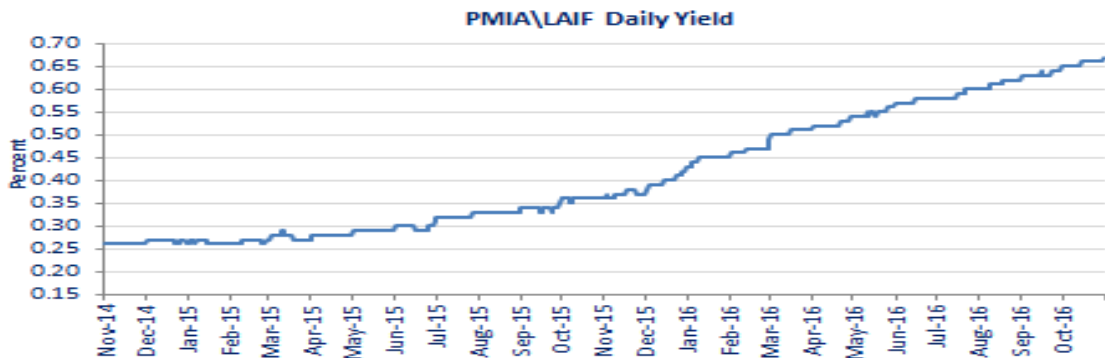
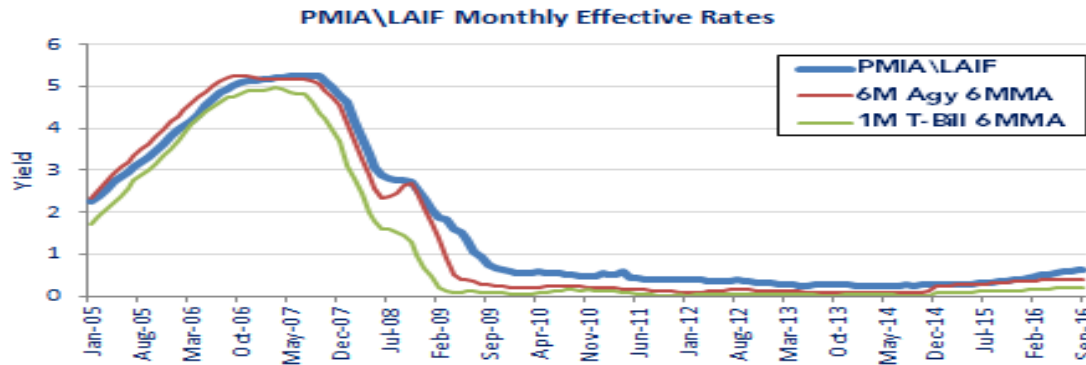
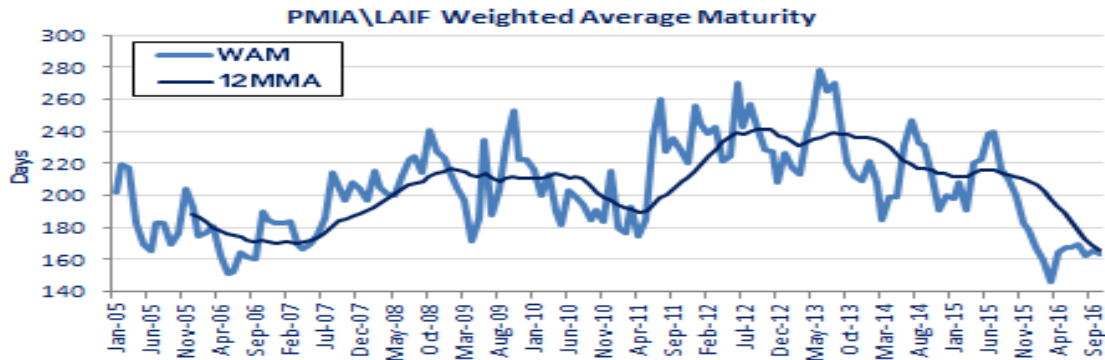
**Weighed Avg Maturity**  
163

**LAIF % of PMIA**  
29.74%

**Loans % of PMIA**  
10.03%

Source: LAIF Website, FTN Main Street Calculations

# Additional Reports - LAIF



Source: LAIF Website,

# Additional Reports - LAIF

Treasuries



Loans



Time Deposits\CD's\BN's



Agencies\Disc. Coupons



CP\Corp



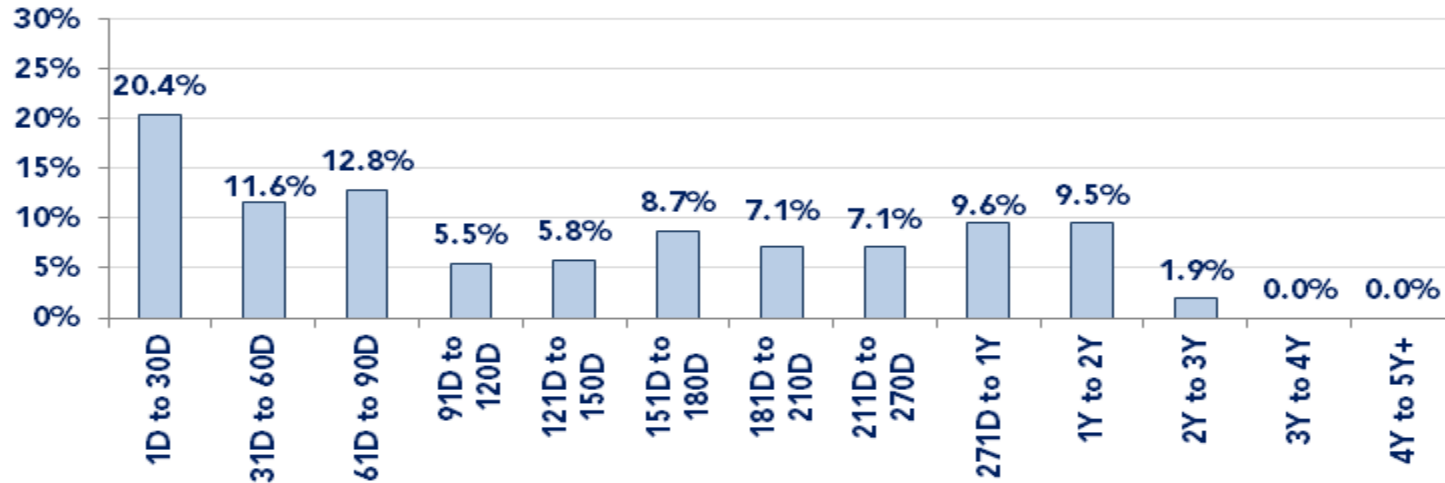
GNMA\Remic



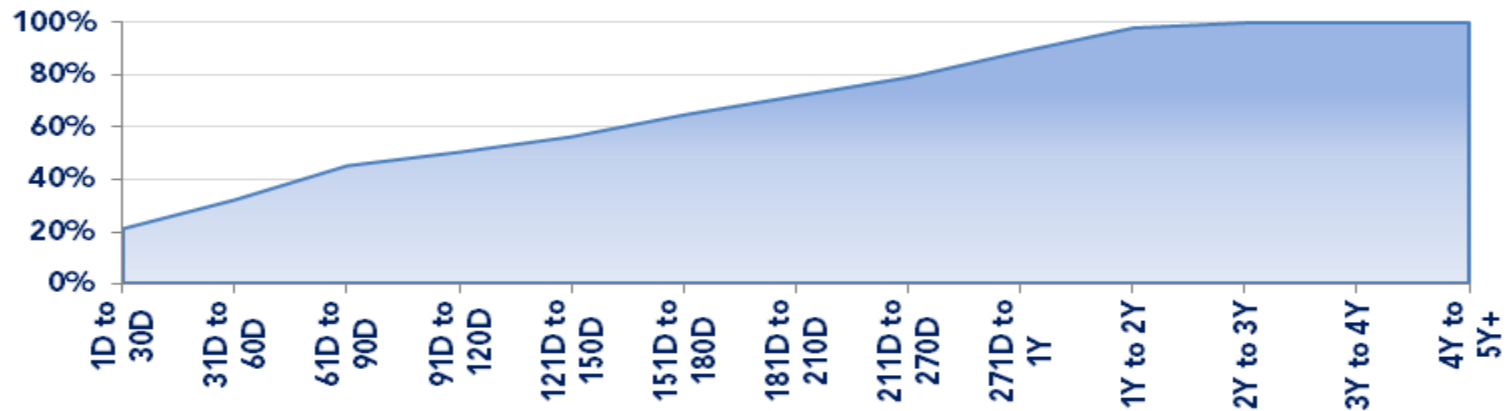
Source: LAIF Website

# Additional Reports - LAIF

PMIA/LAIF % of Par Value Maturities by Date--As of 9/30/2016\*

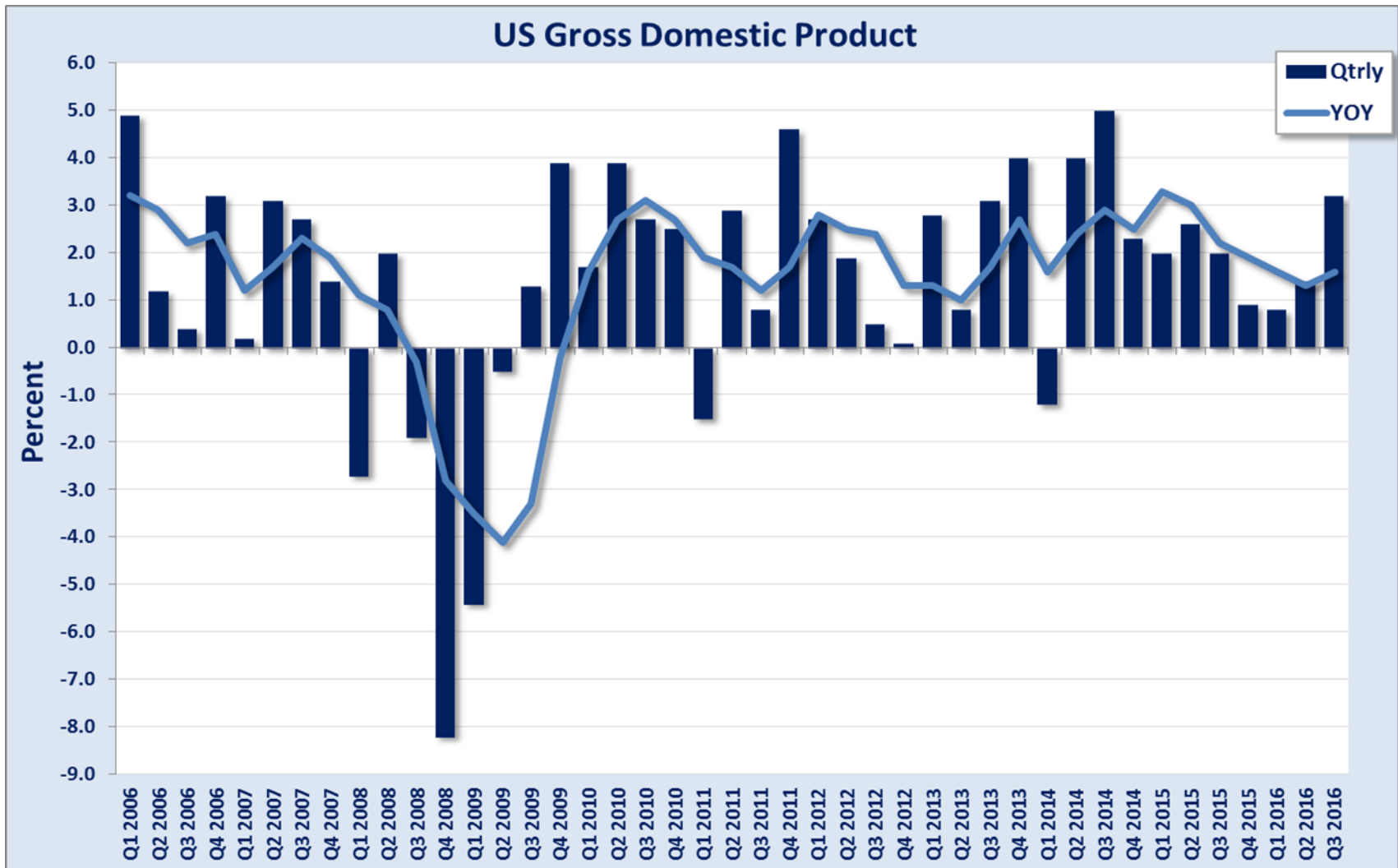


PMIA/LAIF Cumulative % of Par Value Maturities by Date--As of 9/30/2016\*



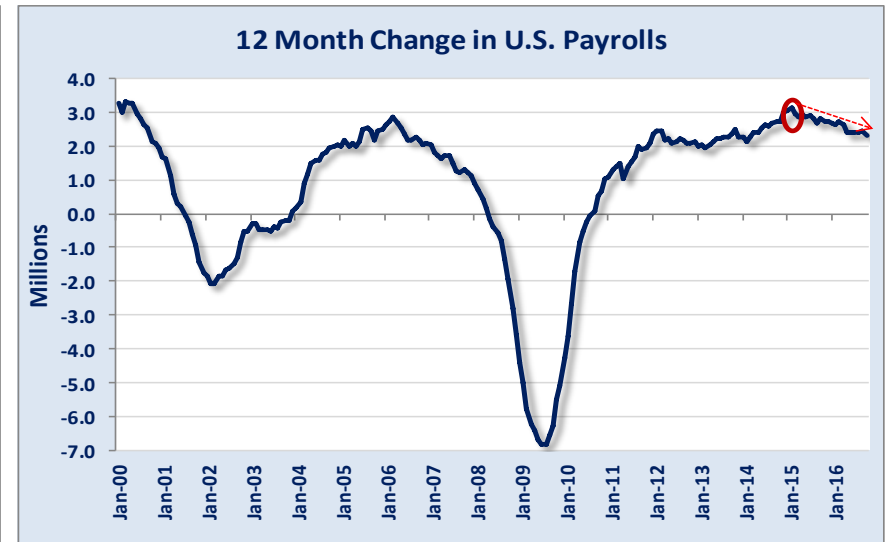
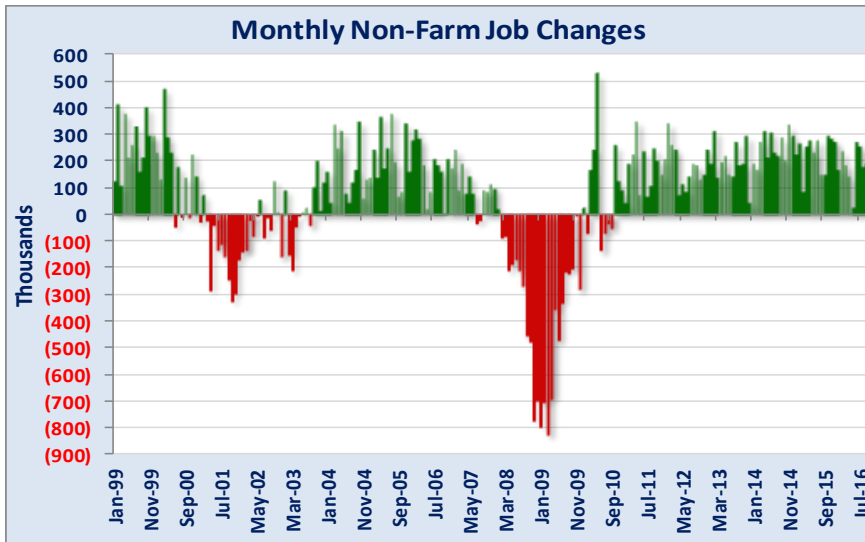
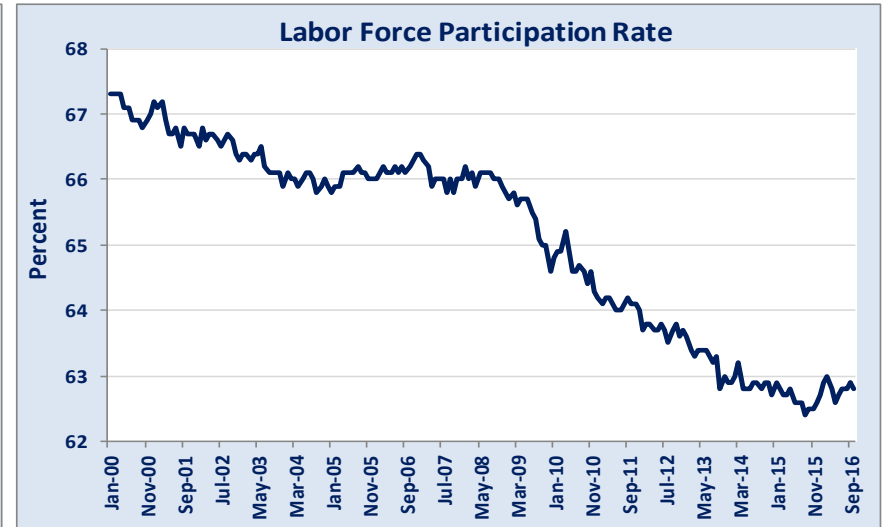
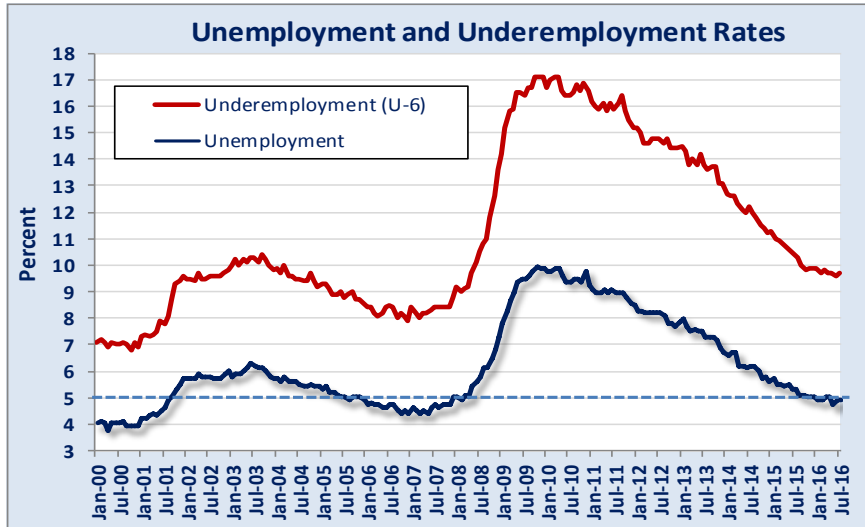
Source: LAIF Website

# Additional Reports – Economic/Market



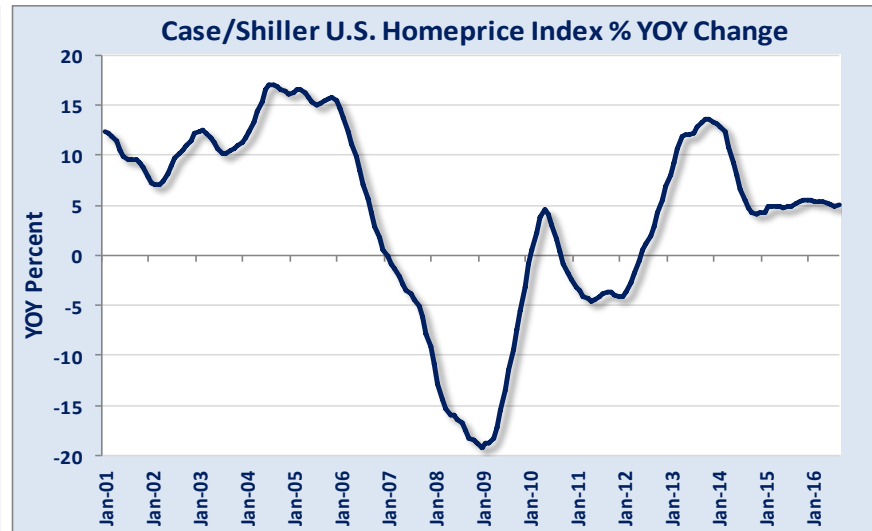
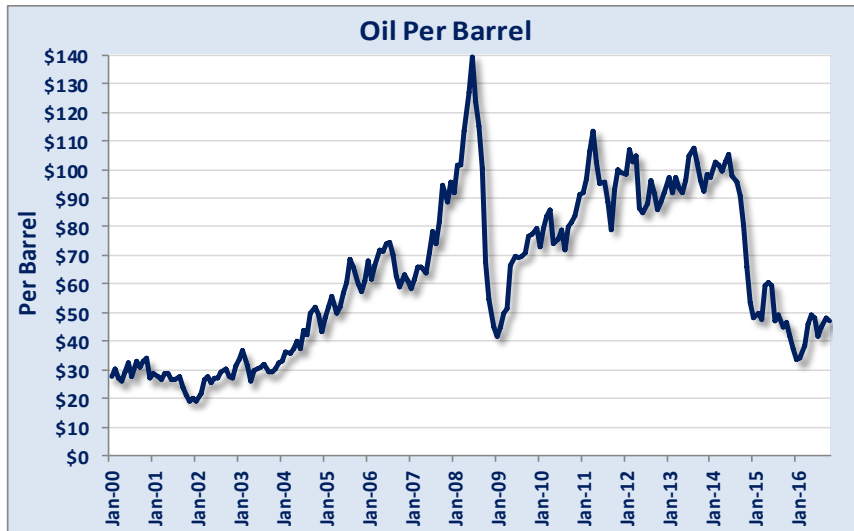
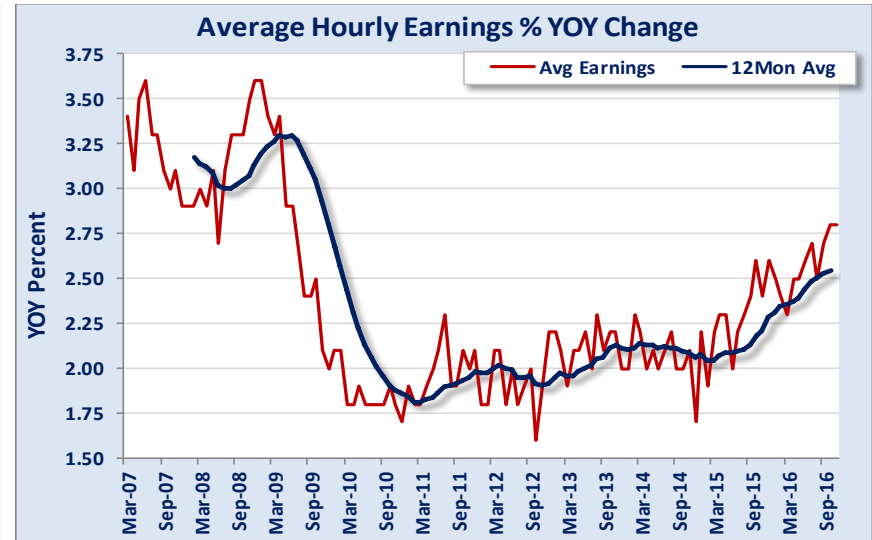
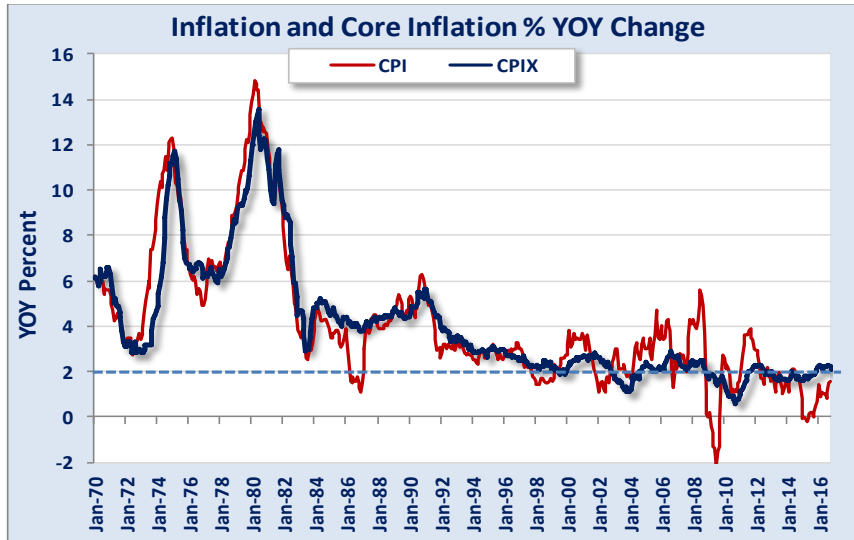
Source: Bloomberg

# Additional Reports – Economic/Market



Source: Bloomberg

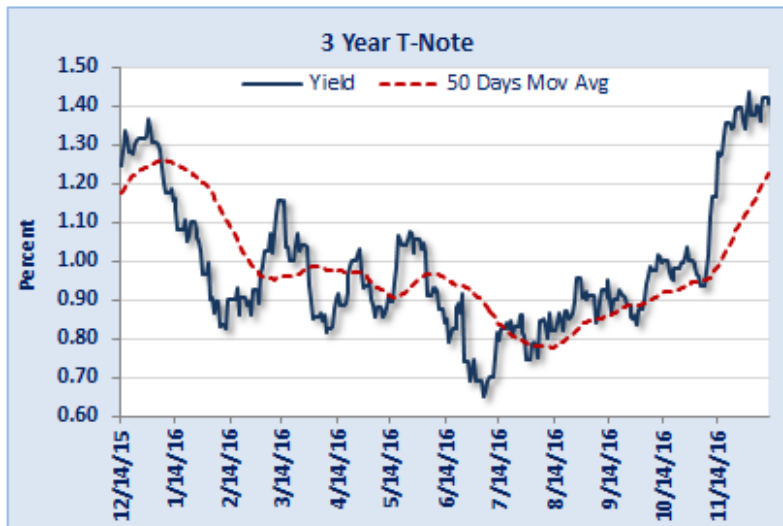
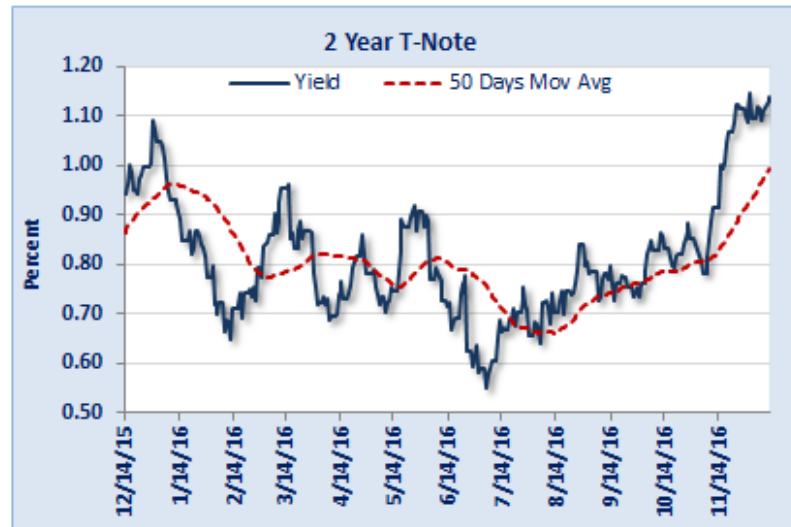
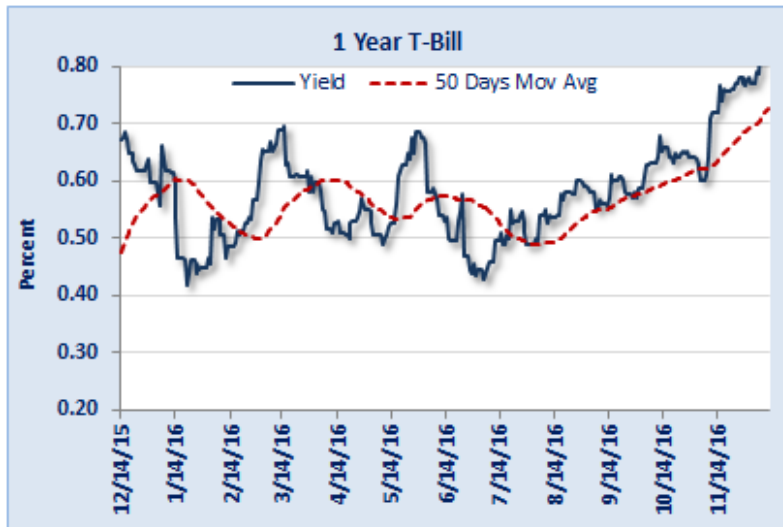
# Additional Reports – Economic/Market



Source: Bloomberg

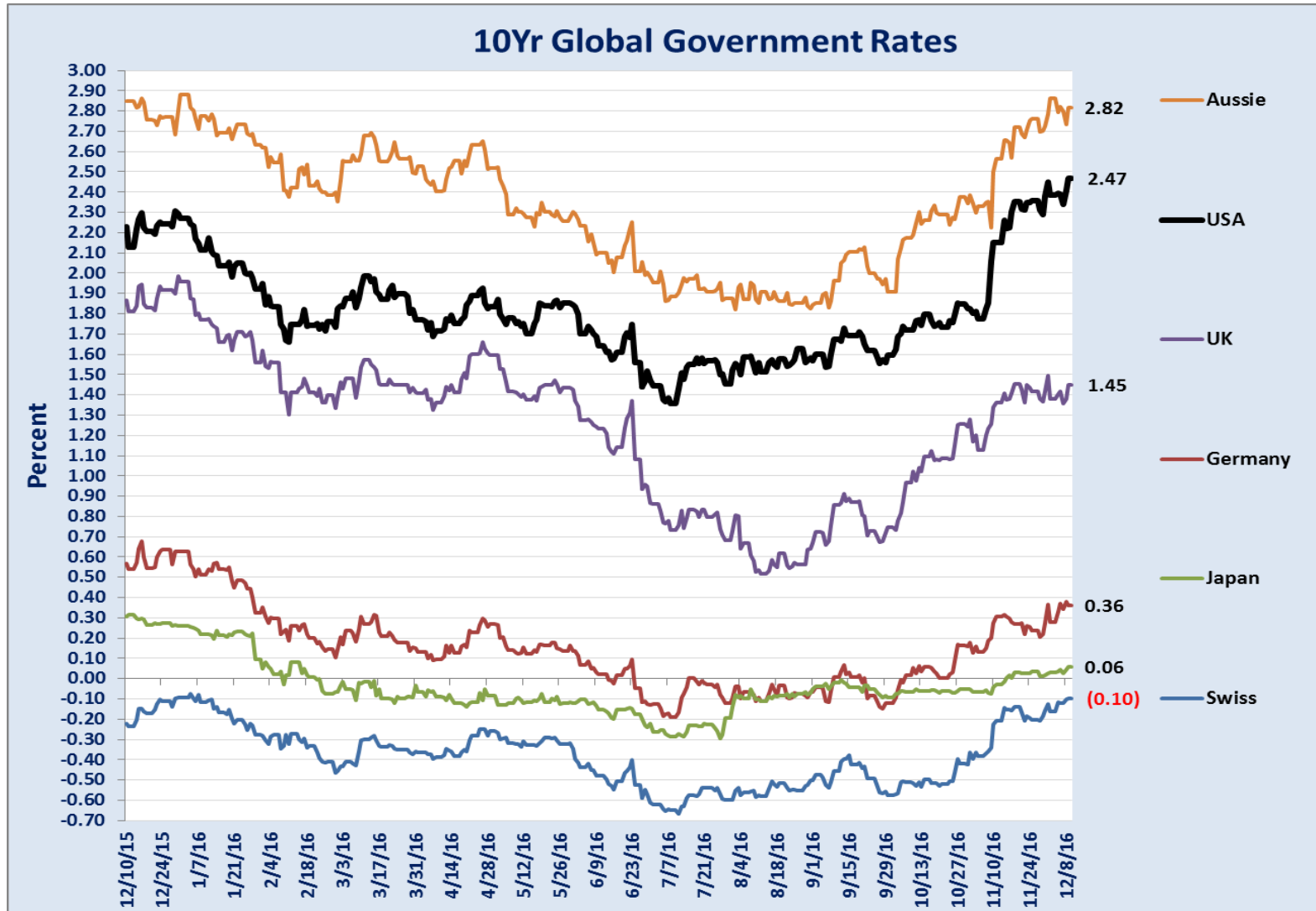


# Additional Reports – Economic/Market



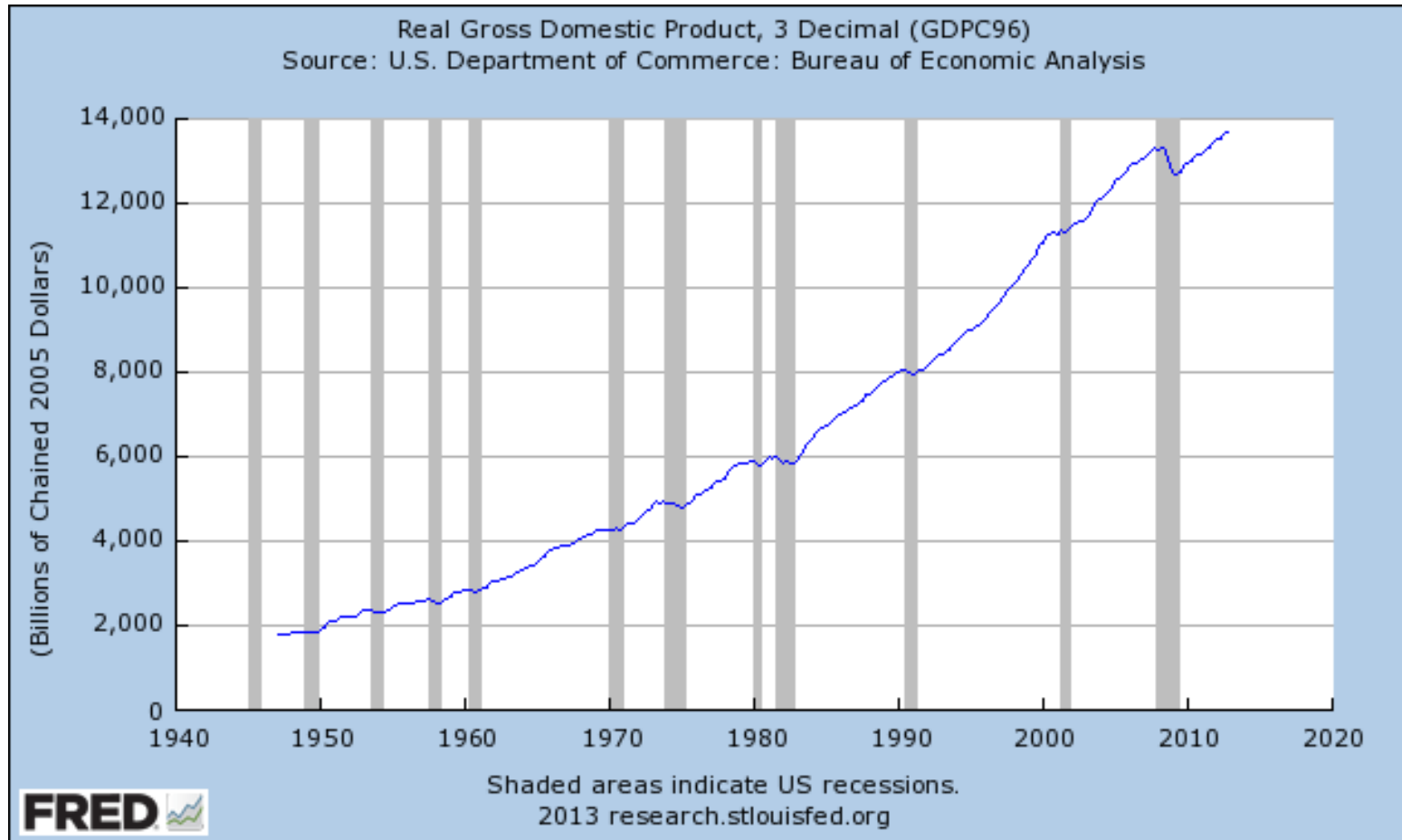
Source: Bloomberg

# Additional Reports – Economic/Market



Source: Bloomberg

# Resources: Federal Reserve Econ. Data Base



# Resources: FreeLunch.com

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## Free Economic, Demographic & Financial Data

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### Interest Rates: Treasury Constant Maturities Nominal - 2 year, (% p.a., NSA)

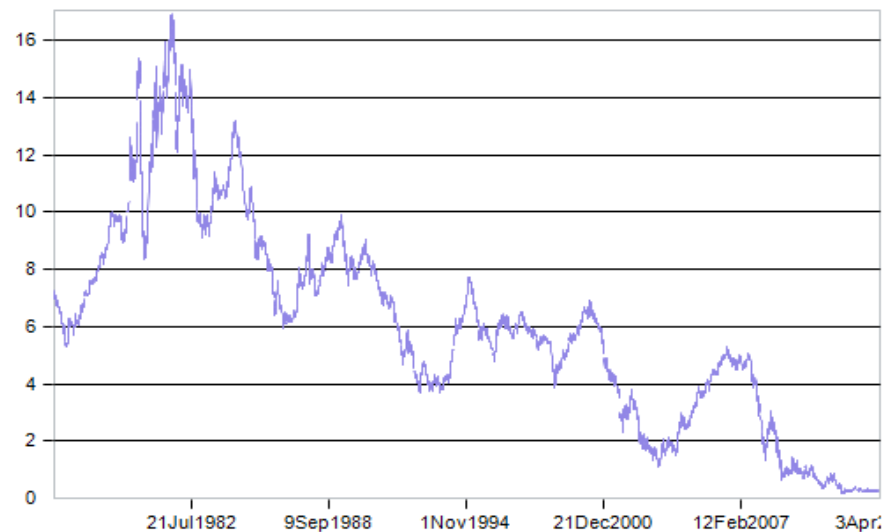
Geography: United States

Source: U.S. Board of Governors of the Federal Reserve System (FRB): Selected Interest Rates (H.15) - code TCMNOMY2; U.S. Department of the Treasury

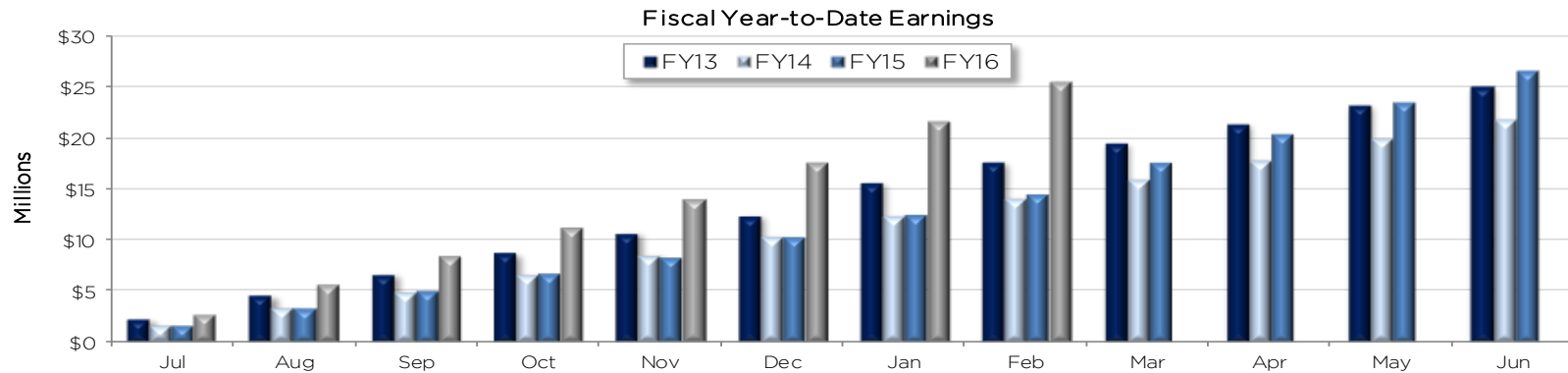
[Add to basket](#) | [Export to Excel](#) | [Close This Window](#)

View Data As:   [Refresh Data Now](#)

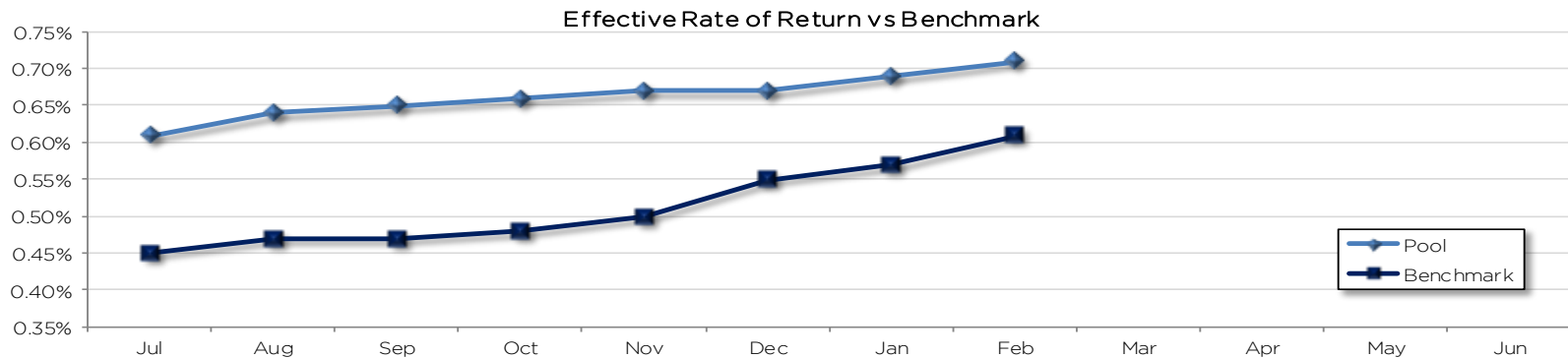
Date	Value
3Apr2013	0.24
2Apr2013	0.25
1Apr2013	0.23
29Mar2013	ND
28Mar2013	0.25
27Mar2013	0.25
26Mar2013	0.25
25Mar2013	0.24
22Mar2013	0.26
21Mar2013	0.27
20Mar2013	0.26
19Mar2013	0.24
18Mar2013	0.26
15Mar2013	0.25
14Mar2013	0.27
13Mar2013	0.27
12Mar2013	0.27



# Recommended Additional Reports - Performance



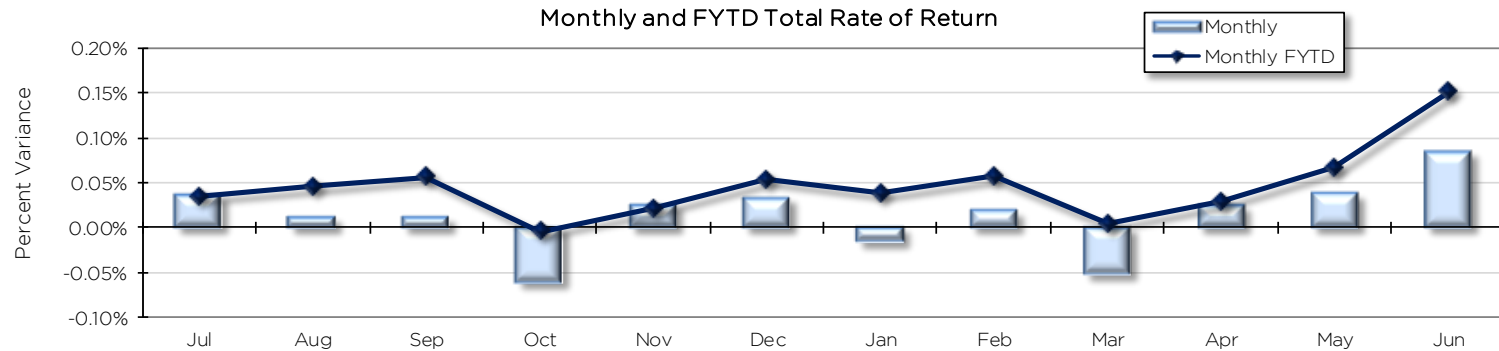
Fiscal YTD	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
<b>FY 2013</b>	\$2.4	\$4.7	\$6.8	\$8.9	\$10.8	\$12.6	\$15.8	\$17.8	\$19.6	\$21.5	\$23.4	\$25.2
<b>FY 2014</b>	\$1.8	\$3.5	\$5.0	\$6.8	\$8.7	\$10.5	\$12.5	\$14.2	\$16.1	\$18.0	\$20.0	\$21.9
<b>FY 2015</b>	\$1.8	\$3.5	\$5.2	\$6.9	\$8.5	\$10.4	\$12.6	\$14.7	\$17.8	\$20.6	\$23.7	\$26.8
<b>FY 2016</b>	\$2.9	\$5.8	\$8.6	\$11.3	\$14.2	\$17.8	\$21.8	\$25.7				



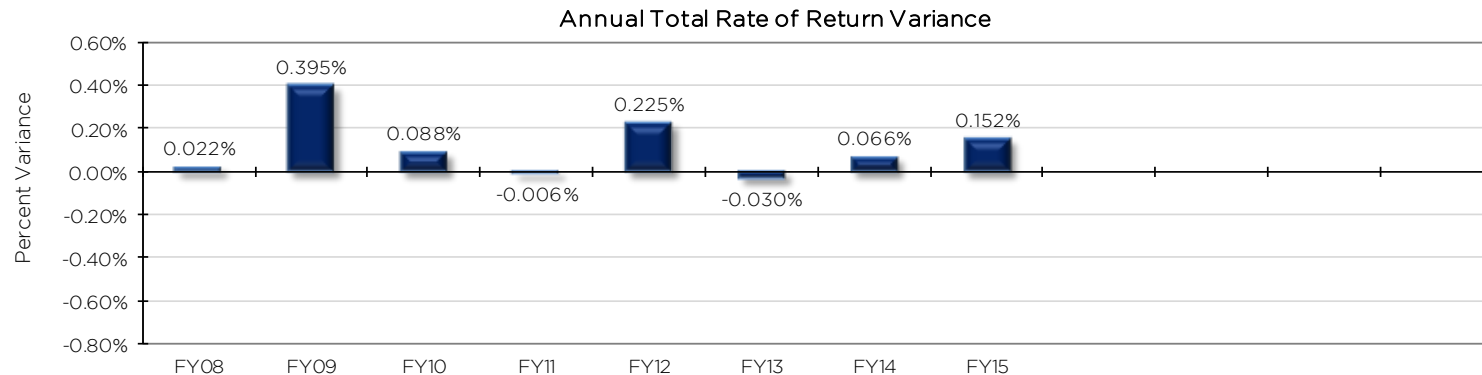
Fiscal YTD	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
<b>Effective Rate of Rtn</b>	0.61%	0.64%	0.65%	0.66%	0.67%	0.67%	0.69%	0.71%				
<b>Custom Benchmark*</b>	0.45%	0.47%	0.47%	0.48%	0.50%	0.55%	0.57%	0.61%				
<b>Variance</b>	0.16%	0.17%	0.18%	0.18%	0.17%	0.12%	0.12%	0.10%				

\*Benchmark: 40% Agy 1-3Y, 30% Agy Discount Note 180D, 10% Corp AA-AAA 1-3Y, 10% CP 1D, 5% Repo 1D, 5% MMF

# Recommended Additional Reports - Performance



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Portfolio	-0.180%	0.360%	-0.180%	0.420%	0.350%	-0.290%	0.990%	-0.440%	0.350%	0.061%	0.124%	-0.040%
Benchmark	-0.215%	0.349%	-0.191%	0.481%	0.325%	-0.323%	1.006%	-0.458%	0.402%	0.037%	0.087%	-0.124%
Monthly Variance	0.035%	0.011%	0.011%	-0.061%	0.025%	0.033%	-0.016%	0.018%	-0.052%	0.024%	0.037%	0.084%
FYTD Variance	0.035%	0.046%	0.057%	-0.004%	0.021%	0.055%	0.039%	0.057%	0.005%	0.029%	0.067%	0.152%



	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15				
Portfolio	7.181%	5.240%	2.834%	1.373%	1.062%	-0.052%	0.354%	1.527%				
Benchmark	7.159%	4.845%	2.746%	1.379%	0.837%	-0.022%	0.288%	1.375%				
Yearly Variance	0.022%	0.395%	0.088%	-0.006%	0.225%	-0.030%	0.066%	0.152%				

Index: FY 08-12 BofA Merrill Lynch 1-3Y Tsy/Agy (G1P0), FY 13 1-5Y Tsy/Agy (GVA0), FY 14 forward 1-5Y Govt/Corp A-AAA (BU10)

# Why Do We Benchmark Performance?

**Safety:** Safety of principal is the foremost objective of the investment program. Investments shall be undertaken in a manner that seeks to ensure the preservation of capital in the overall portfolio. The objective will be to mitigate credit risk and interest rate risk.

**Liquidity:** The investment portfolio shall remain sufficiently liquid to meet all operating requirements that may be reasonably anticipated. This is accomplished by structuring the portfolio so that securities mature concurrent with cash needs to meet anticipated demands (static liquidity). Furthermore, since all possible cash demands cannot be anticipated, the portfolio should consist largely of securities with active secondary or resale markets (dynamic liquidity). A portion of the portfolio may be placed in money market mutual funds or local government investment pools, which offer sameday liquidity for short-term funds.

**\*Yield:** The investment portfolio shall be designed with the objective of attaining a market rate of return throughout budgetary and economic cycles, taking into account the investment risk constraints and liquidity needs. Return on investment is of secondary importance compared to the safety and liquidity objectives described above. The core of investments are limited to relatively low risk securities in anticipation of earning a fair return, relative to the risk being assumed. Securities shall generally be held until maturity, with the following exceptions:

- A security with declining credit may be sold early to minimize loss of principal.
- Liquidity needs of the portfolio require that the security be sold.
- Liquidity a security swap would improve the quality, yield, or target duration in the portfolio.

# Primary Benchmarking Factors to Consider

A benchmark is a collection of securities or risk factors and associated weights that represents the persistent and prominent investment characteristics of a manager's investment process. A benchmark should be:

- **Unambiguous**: The identities and weights of securities constituting the benchmark are clearly defined.
- **Investable**: It is possible to forgo active management and simply hold the benchmark.
- **Measurable**: The benchmark's return is readily calculable on a reasonably frequent basis.
- **Appropriate**: The benchmark is consistent with the manager's investment style and sectors.
- **Specified in Advance**: The benchmark is specified prior to the start of an evaluation period and known to all interested parties.

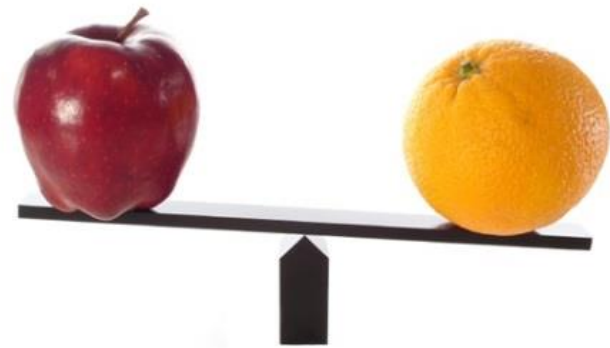
“The failure of a benchmark to possess these properties compromises its utility as an effective investment management tool. The properties listed merely formalize intuitive notions of what constitutes a fair and relevant performance comparison. It is interesting to observe that a number of commonly used benchmarks fail to satisfy these properties.” **CFA Institute**



# Relevant General Characteristics

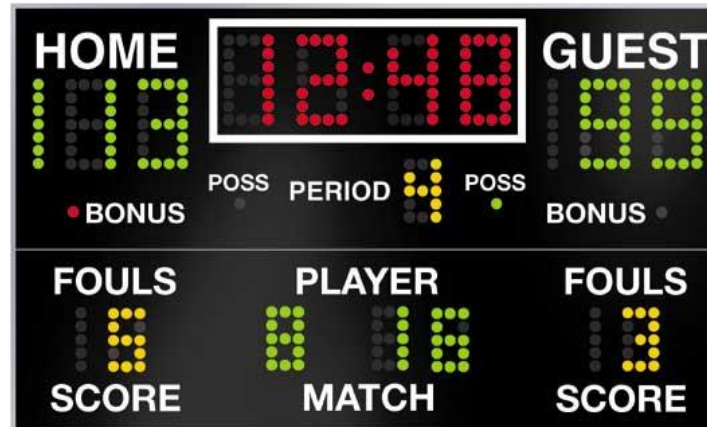
## To Be Relevant, Benchmarks Should Reflect the General Characteristics of a Portfolio's:

- Sector Allocations
- Duration/Maturity
- Turnover



# Three Types of Benchmarking

## Keeping Score of Your Portfolio



- Yield
- Book Rate of Return
- Total Rate of Return

# Calculation Methodology of Each Benchmark

**Yield Return=** Portfolio's Weighted Average Yield

**Book Return=** + Accrued/Received Interest  
+/- Amortization/Accretion of Premiums/Discounts  
+/- Realized Gains/Losses  

---

Average Daily Book Balance for the Period

**Total Return=** + Accrued/Received Interest  
+/- Realized Gains/Losses  
**+/- Unrealized Gains/Losses**  

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Time Weighted Invested Market Value for the Period

# Yield Return-Calculation Assumptions

## Portfolio's Average Weighted Book Yield and Holding Period\*

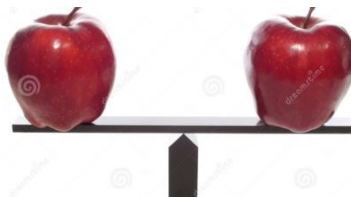
Security	Maturity	Maturity in Years	Par Weighted Maturity	Par Value	% of Portfolio	Book Yield	Weighted Yield	Purchase Date	Holding Period in Years	Weighted Holding Period In Years
MMF	3/1/16	0.0	0.00	40,000,000	30.8%	0.25%	0.08%	3/1/16	0.00	0.00
Agency	9/30/16	0.6	0.04	10,000,000	7.7%	0.40%	0.03%	9/30/15	0.42	0.03
Treasury	3/31/17	1.1	0.08	10,000,000	7.7%	0.50%	0.04%	6/30/15	0.67	0.05
Agency	9/30/17	1.6	0.12	10,000,000	7.7%	0.70%	0.05%	12/31/14	1.17	0.09
Treasury	3/31/18	2.1	0.16	10,000,000	7.7%	0.80%	0.06%	3/31/14	1.92	0.15
Agency	9/30/18	2.6	0.20	10,000,000	7.7%	0.95%	0.07%	9/30/13	2.42	0.19
Treasury	3/31/19	3.1	0.24	10,000,000	7.7%	1.10%	0.08%	12/31/13	2.17	0.17
Agency	9/30/19	3.6	0.28	10,000,000	7.7%	1.25%	0.10%	12/31/12	3.17	0.24
Treasury	3/31/20	4.1	0.31	10,000,000	7.7%	1.35%	0.10%	3/31/14	1.92	0.15
Agency	9/30/20	4.6	0.35	10,000,000	7.7%	1.50%	0.12%	12/31/14	1.17	0.09
<b>Total/Average</b>			<b>1.79</b>	<b>130,000,000</b>	<b>100.0%</b>		<b>0.73%</b>			<b>1.16</b>

\*May be calculated daily, weekly, monthly, quarterly, or annually

Yields and weights for illustration purposes only

### Sector Allocations:

MMF	30.8%
Agency	38.5%
Treasury	30.7%
<b>Total</b>	<b>100.0%</b>



### Weighted Average Maturity:

1.79 Years

### Weighted Holding Period:

1.16 Years

# Yield Return-Custom Benchmark

## Yields

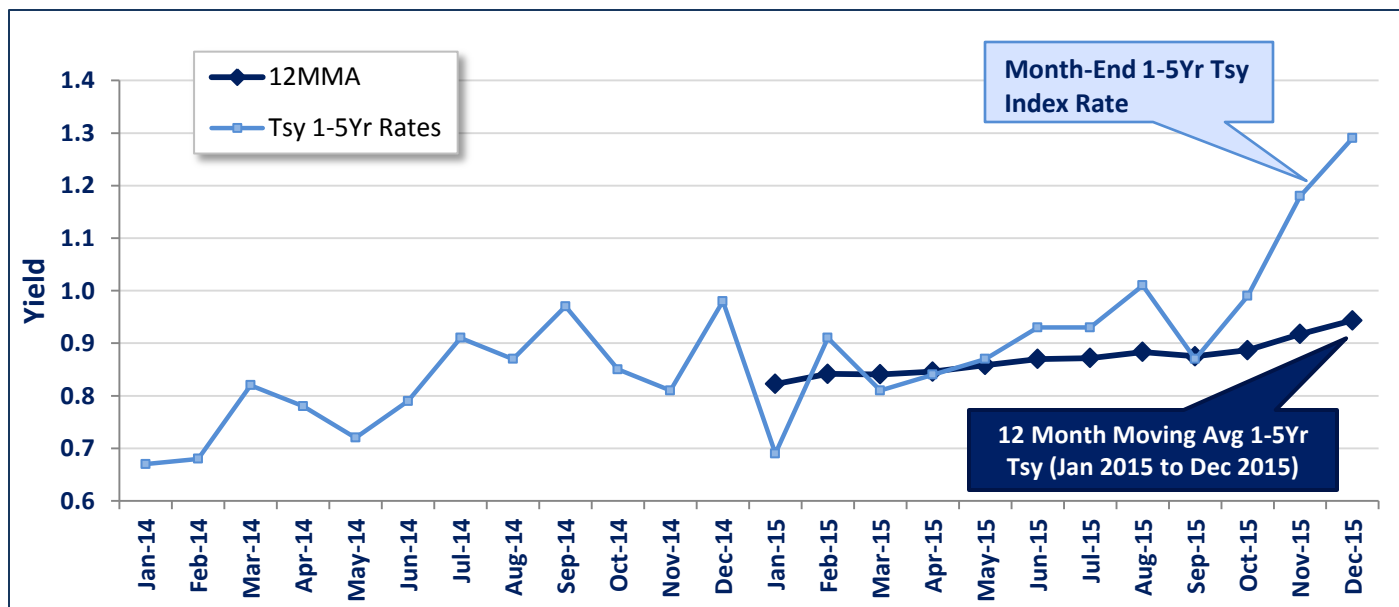
Index	Jan-2015	Feb-2015	Mar-2015	Apr-2015	May-2015	Jun-2015	Jul-2015	Aug-2015	Sep-2015	Oct-2015	Nov-2015	Dec-2015
MMF	0.03%	0.04%	0.05%	0.06%	0.06%	0.07%	0.08%	0.08%	0.10%	0.10%	0.11%	0.24%
BAML 1-5Yr Agy	0.75%	0.92%	0.84%	0.88%	0.89%	0.96%	0.96%	0.99%	0.86%	0.98%	1.13%	1.30%
BAML 1-5Yr Tsy	0.69%	0.91%	0.81%	0.84%	0.87%	0.93%	0.93%	1.01%	0.87%	0.99%	1.18%	1.29%

## Weights

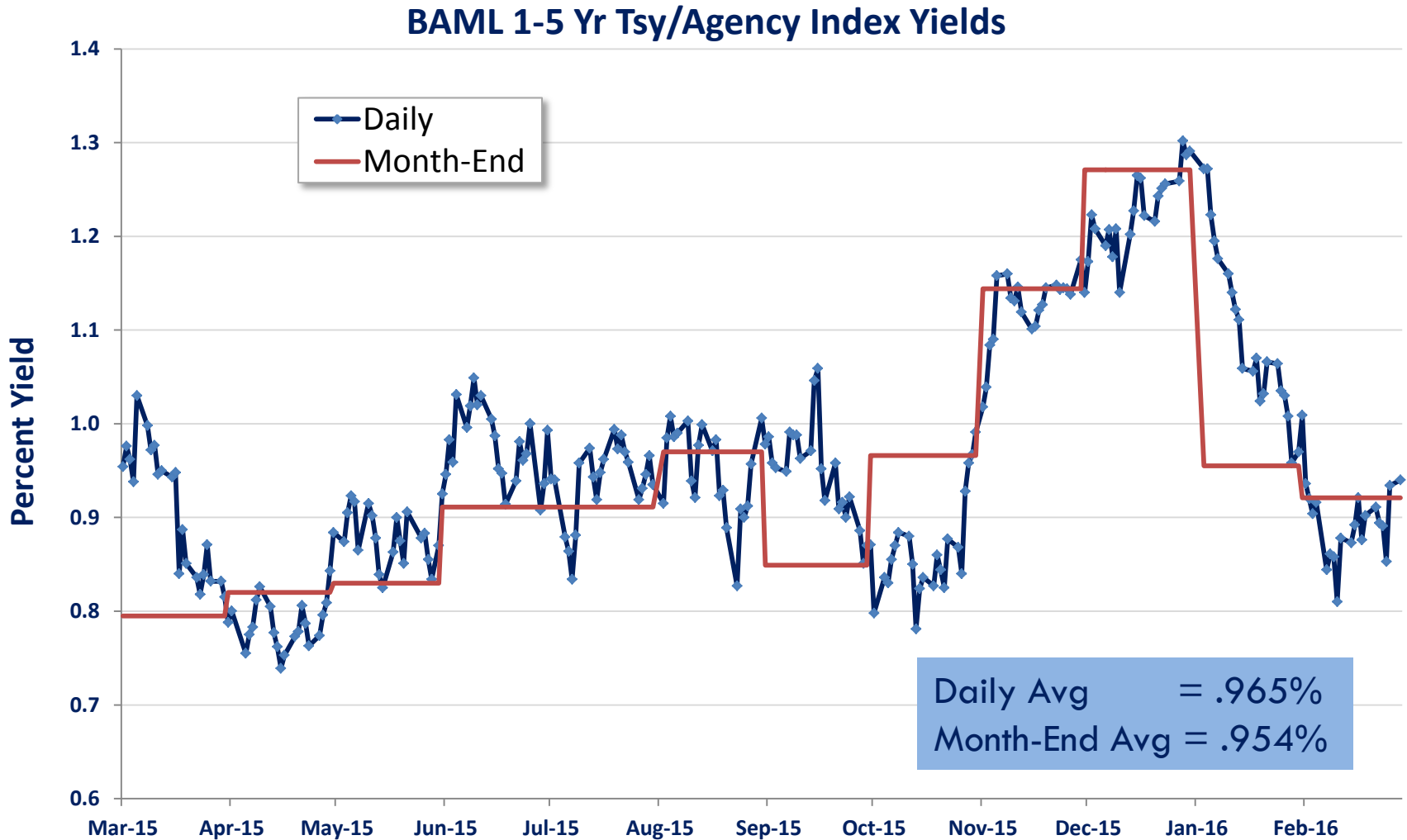
Index	Jan-2015	Feb-2015	Mar-2015	Apr-2015	May-2015	Jun-2015	Jul-2015	Aug-2015	Sep-2015	Oct-2015	Nov-2015	Dec-2015
MMF	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
BAML 1-5Yr Agy	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
BAML 1-5Yr Tsy	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

## Weighted Yield

Index	Jan-2015	Feb-2015	Mar-2015	Apr-2015	May-2015	Jun-2015	Jul-2015	Aug-2015	Sep-2015	Oct-2015	Nov-2015	Dec-2015	12 Mon. Avg.
Weighted Yield	0.51%	0.65%	0.59%	0.62%	0.64%	0.68%	0.69%	0.72%	0.63%	0.72%	0.84%	0.98%	0.69%



# Yield Return-Index Construction (Month-End vs Daily)



# Yield to Maturity Assumptions

Future Coupons Payments are Reinvested at the Purchase Yield

Step-Up Example: 5 Year Maturity, Annual 1% Steps,  
Purchased at Par

**Coupons:**

Year 1 – 1%

Year 2 – 2%

Year 3 – 3%

Year 4 – 4%

Year 5 – 5%

Avg = 3%

**What is the Yield to Maturity?  
1% or 3% or ?%**

# Yield Return-Pros and Cons

## Pros:

- Ease of Calculation
- Ease of Understanding (presenting to governing boards)
- Helpful for Budgeting Interest Income

## Cons:

- Does Not Account for Realized Capital Gains or Losses
- Does Not Accurately Account for Accrued Interest
- Subject to Yield To Maturity Assumptions



# Book Rate of Return-Calculation Assumptions

$$\text{Book Return} = \frac{\begin{aligned} &+ \text{ Accrued/Received Interest} \\ &+/- \text{ Amortization/Accretion of Premiums/Discounts} \\ &+/- \text{ Realized Gains/Losses} \end{aligned}}{\text{Average Daily Book Balance for the Period}}$$

**Amortization:** The accumulation of value until maturity (premiums)

**Accretion:** The accumulation of value until maturity (discounts)

**Realized Gains/Losses:** Liquidation Principal minus Book Value Principal

# Book Rate of Return-Calculation Details

Purchase a \$100,000 principal at \$112 price with a 18% coupon paid at maturity

Date	Amortized Book Value	Monthly Amortization	Held at Cost Book Value	Monthly Interest Accrual	Cumulative Interest Accrual	Coupon Payments
9/30/2015	112,000		112,000			
10/31/2015	111,000	1,000	112,000	1,500	1,500	
11/30/2015	110,000	1,000	112,000	1,500	3,000	
12/31/2015	109,000	1,000	112,000	1,500	4,500	
1/31/2016	108,000	1,000	112,000	1,500	6,000	
2/29/2016	107,000	1,000	112,000	1,500	7,500	
3/31/2016	106,000	1,000	112,000	1,500	9,000	
4/30/2016	105,000	1,000	112,000	1,500	10,500	
5/31/2016	104,000	1,000	112,000	1,500	12,000	
6/30/2016	103,000	1,000	112,000	1,500	13,500	
7/31/2016	102,000	1,000	112,000	1,500	15,000	
8/31/2016	101,000	1,000	112,000	1,500	16,500	
9/30/2016	100,000	1,000	112,000	1,500	18,000	18,000
<b>Totals</b>		<b>12,000</b>		<b>18,000</b>		<b>18,000</b>

Sale bond on  
3/31/16 for  
\$106

# Gain/Loss: Amortized vs. Held at Cost (Sold Early)

## Amortized Method

Sale Proceeds	106,000
Book Value	-106,000
Gain/Loss	0
Gain/Loss	0
Accrued Interest	9,000
Amortization	-6,000
Net Earnings	3,000

Net Earnings/ Cost	3,000 112,000
<b>Holding Period Return</b>	<b>2.68%</b>

# Gain/Loss: Amortized vs. Held at Cost (at Maturity)

## Amortized Method

Maturity Proceeds	100,000
Book Value	-100,000
Gain/Loss	0

Gain/Loss	0
Accrued Interest	18,000
Amortization	-12,000
Net Earnings	6,000

Net Earnings/ Cost	6,000 112,000
<b>Holding Period Return</b>	<b>5.36%</b>

# Book Rate of Return-Pros and Cons

## Pros:

- Matches Budgeting Process
- Closely Matches Actual Cash Flows

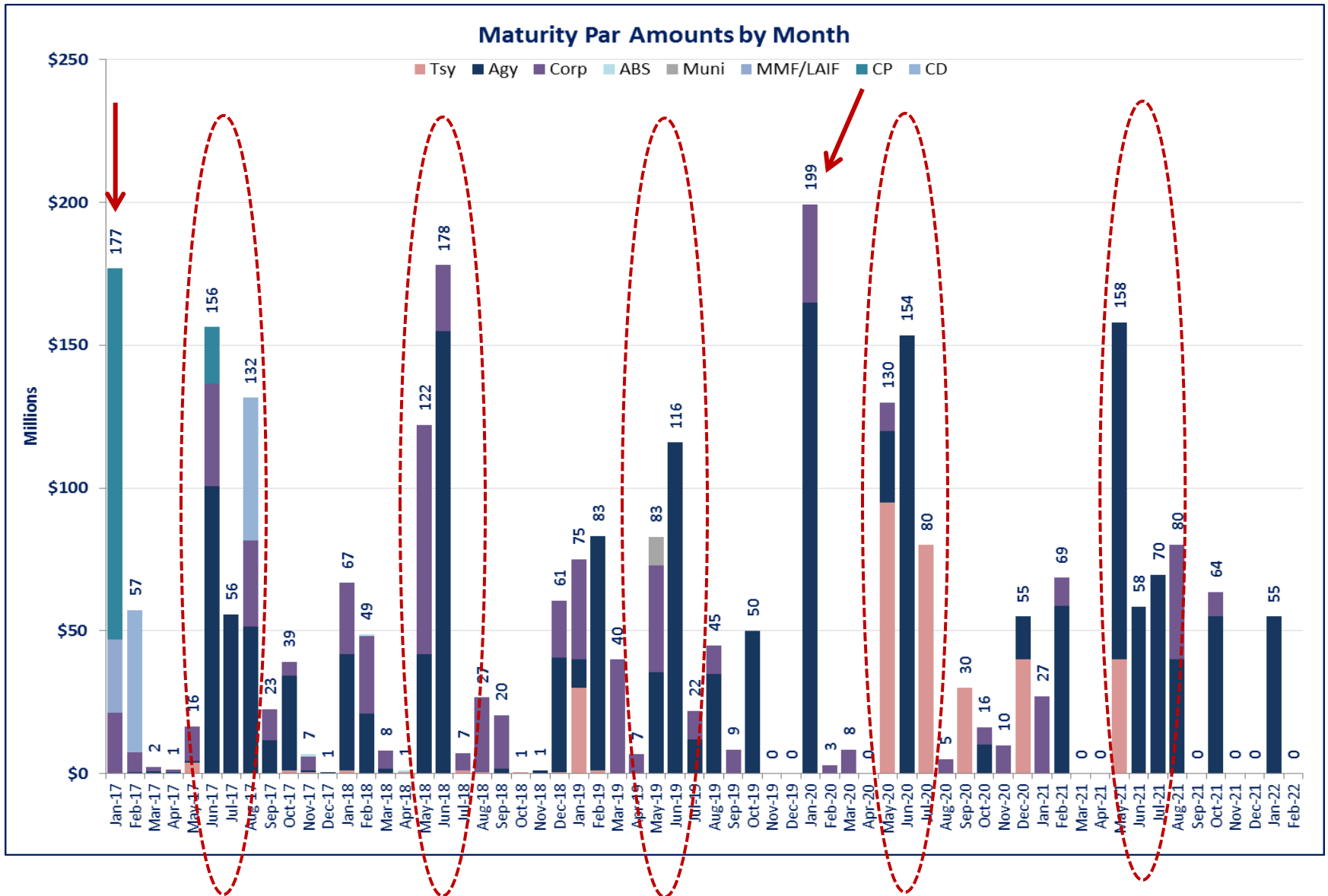
## Cons:

- Subject to Manipulation of Realized Gains/Losses
- May Not Reflect Portfolio's Market Volatility Changes
- Calculation is More Complex

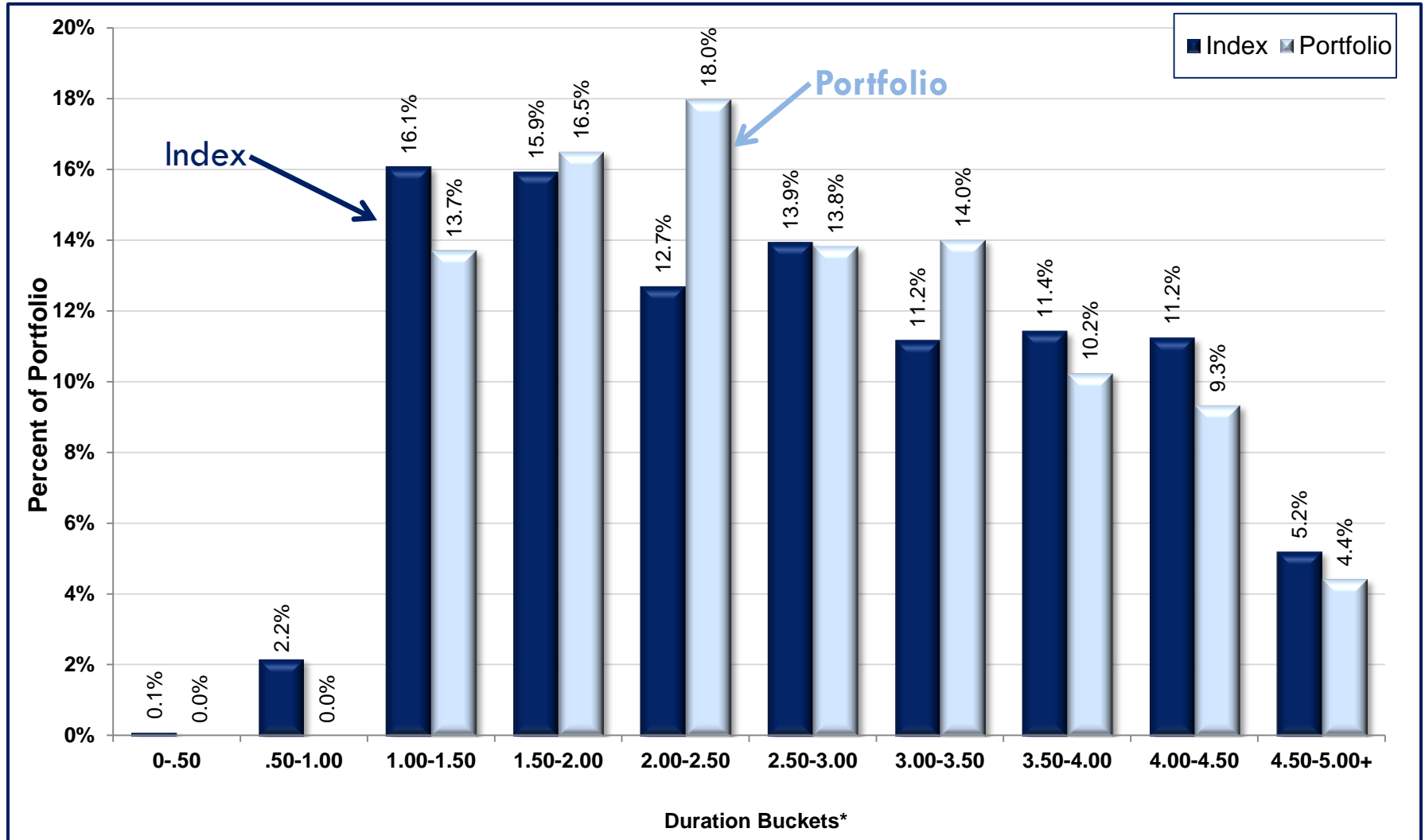
Note: Benchmark Development is Similar to Yield Return Methodology

When Should You Change Your Benchmark?

# 0-5 Year Cash Flow Matched Portfolio

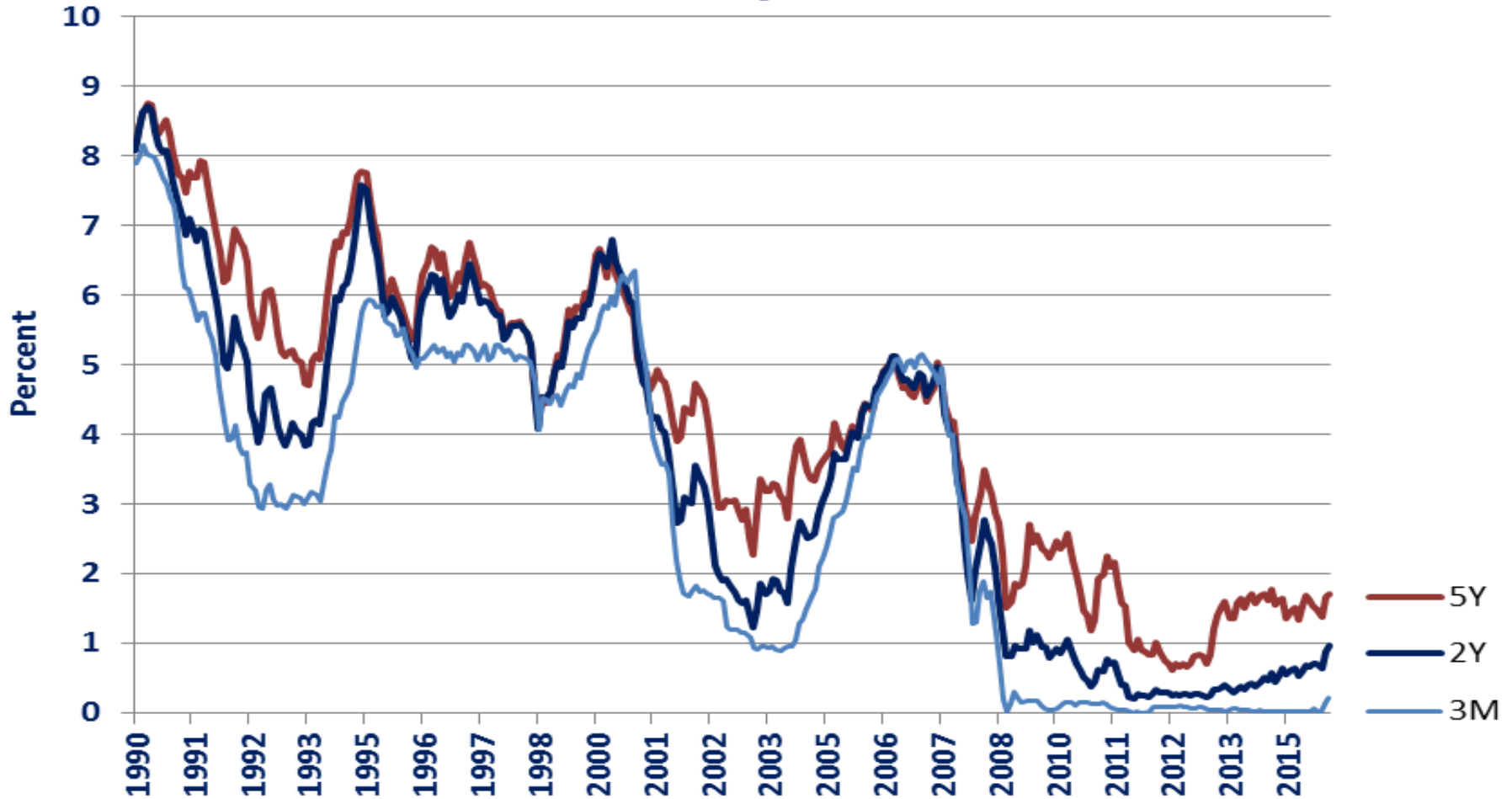


# 1-5 Year Index Matched Portfolio



# Duration Sweet Spot

## Treasury Yields



Source: Bloomberg



# Duration Sweet Spot (Risk Adjusted Return)

## Benchmark Treasury Modified Sharp Ratio Analysis

1/31/1990 to 12/31/2015

	Maturity	Avg Yield	Avg Duration	Modified Sharp Ratio	% Return of 30Yr / % 30Yr Risk
	3 Mon T-Bill	3.00	0.24		56% / 2%
	6 Mon T-Bill	3.13	0.48	0.283	58% / 3%
	1 Yr T-Bill	3.27	0.97	0.279	61% / 6%
<b>Sweet Spot</b>	2 Yr T-Note	3.60	1.90	0.316	67% / 12%
	3 Yr T-Note	3.84	2.85	0.294	72% / 19%
	5 Yr T-Note	4.27	4.45	0.285	80% / 29%
	10 Yr T-Note	4.85	7.96	0.233	90% / 52%
	30 Yr T-Bond	5.36	15.35	0.154	100% / 100%

$$(3.60 - 3.00) / 1.90 = .316$$

$$3.60 / 5.36 = 67\%$$

$$1.90 / 15.35 = 12\%$$

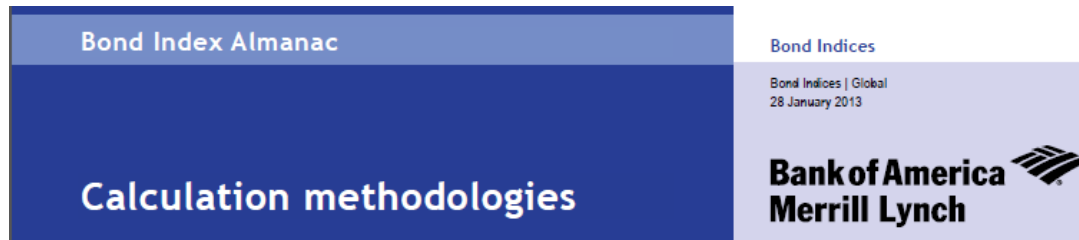
Source: Bloomberg

# Total Rate of Return -- GIPS Methodology

$$\text{Total Return} = \frac{\begin{aligned} &+ \text{Accrued/Received Interest} \\ &+/- \text{Realized Gains/Losses} \\ &+/- \text{Unrealized Gains/Losses} \end{aligned}}{\text{Time Weighted Invested Market Value for the Period}}$$



# Total Rate of Return Complexities



## Total return calculations

### Calculating index values

The daily closing Index value is a function of the prior month-end index value and the current month-to-date return:

$$IV_n = IV_0 \times (1 + TRR_n)$$

where:

$IV_n$  = closing index value on day  $n$

$IV_0$  = closing index value on prior month-end

$TRR_n$  = month-to-date index total return on day  $n$

The month-to-date return of an index ( $TRR_n$ ) is equal to the sum of the individual constituent returns times their respective beginning of month weights:

$$TRR_n = \sum_{i=1}^k B_i TRR_{n,i} \times B_i Wgt_0$$

where:

$TRR_n$  = Index month-to-date total return on day  $n$

$B_i TRR_{n,i}$  = month-to-date total return on day  $n$  of bond  $i$

$B_i Wgt_0$  = beginning of month weight of bond  $i$

Periodic returns between any two dates can be derived from the beginning and end of period index values. Since index values represent closing levels, period returns will include market movement on the end of period date but exclude market movement on the beginning of period date. Therefore, to capture returns for the month of June, divide the June 30 Index value by the May 31 Index value:

$$TRR = \frac{IV_n}{IV_0} - 1$$

where:

$TRR$  = periodic total return

$IV_n$  = closing index value on the end of period date

$IV_0$  = closing index value on the beginning of period date

Annualized returns are derived from period total returns:

$$AnnTRR_n = (1 + TRR_n)^{365/d} - 1$$

where:

$AnnTRR_n$  = annualized total return for period  $n$

$TRR_n$  = periodic total return for period  $n$

$d$  = number of actual days in period  $n$

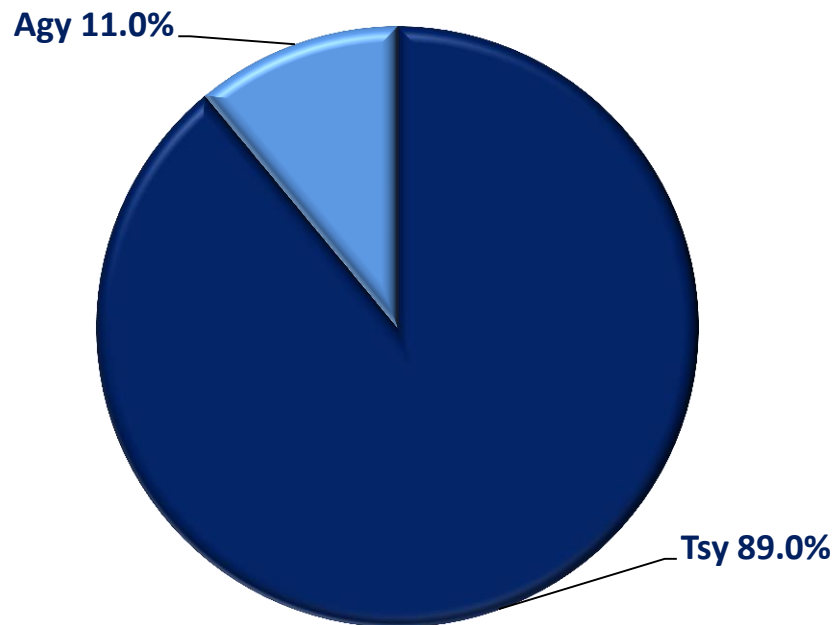
# Total Return Index Parameters/Rules

## **Bank of America/Merrill Lynch 1-3 Year Treasury and Agency Index (Ticker: G1A0 -- Fixed Coupon)**

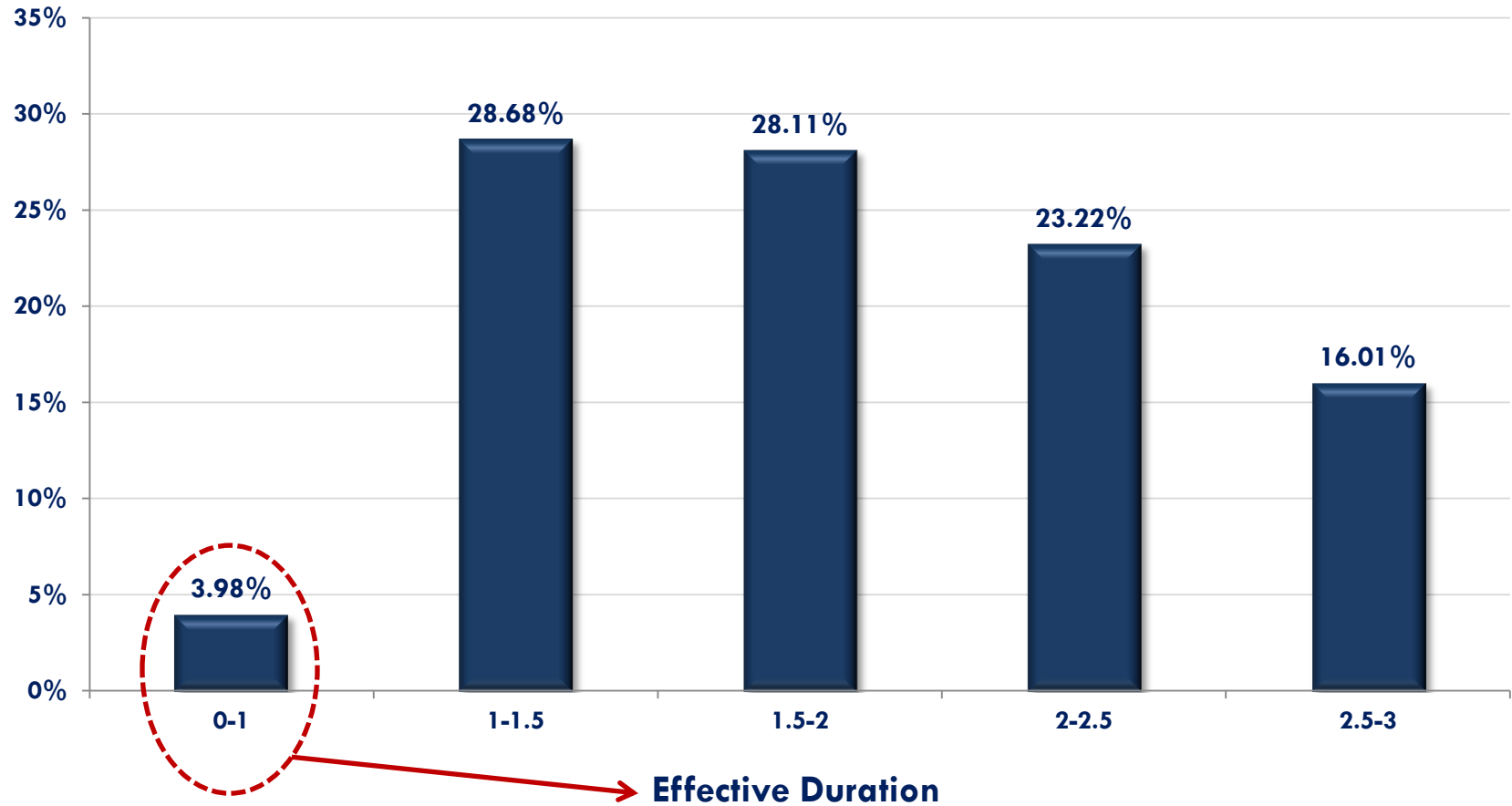
- Issue Size: \$250 Million and Up (Agency), \$1 Billion and Up (Treasury)
- Monthly Rebalanced
- Index “Buys” all Treasuries and Agency (non-subordinated) Fixed Rate Securities Between 1-3 Yrs
- Index “Sells” all Treasury and Agency Fixed Rate Securities Less Than 1 Yr
- “Buys” Newly Added Securities at the Bid

# BofA Merrill 1-3 Year Treasury & Agency Index (12/31/16)

Issuer	Percent
TSY	88.98%
FNMA	3.15%
FHLMC	3.13%
FHLB	2.39%
NCUA	1.66%
FFCB	0.39%
FICO	0.14%
TVA	0.11%
PEFCO	0.06%
TOTAL	100.00%



# BofA Merrill 1-3 Year Treasury & Agency Index (1/31/16)

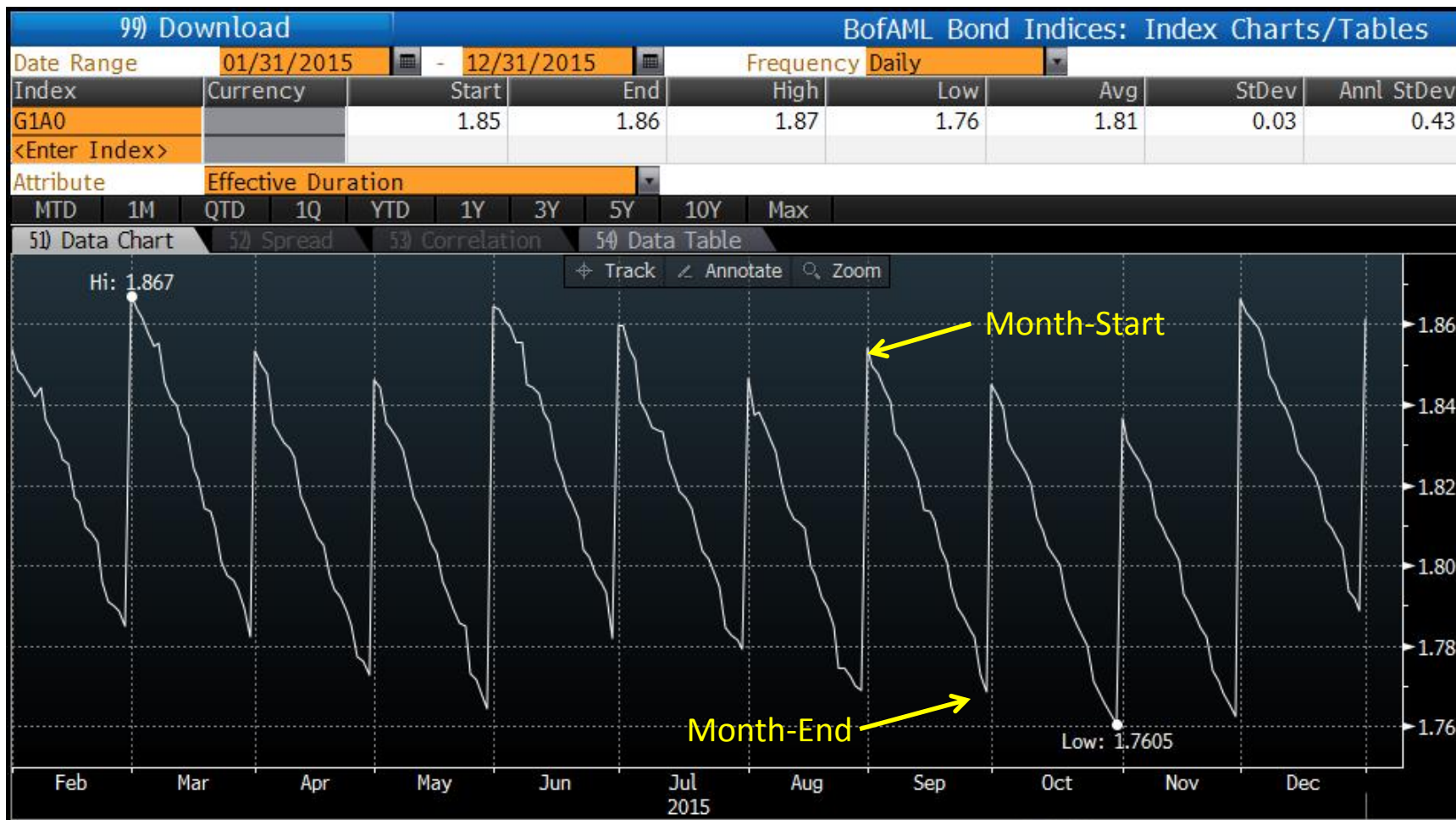


# BofA Merrill 1-3 Year Treasury & Agency Index

G1A0		99) Download		BofAML Bond Indices: Index Characteristics			
The BofA Merrill Lynch 1-3 Year US Treasury & Agency Index				Inception Date		09/30/1982	
01/31/2016		Currency	USD	Calculation		Conventional	
		1/31 Rebalancing			Jan Market Change		
		Feb Index	Jan Index	Rebal Chg	Jan Index	MTD Chg	
		1/31/2016	1/31/2016	1/31/2016	12/31/2015	1/31/2016	
<b>Returns</b>							
Total Return Value		652.172			648.234		
<b>Valuations (Scale MM)</b>							
# of Issues		398	396	2	396	0	
Face Value		3,103,588	3,146,688	-43,100	3,146,688	0	
Accrued Interest		13,174	13,230	-56	11,725	1,505	
Cash		0	3,029	-3,029	0	3,029	
Full Market Value		3,168,148	3,214,287	-46,140	3,194,879	19,408	
% of GOA0		32.59	33.01	-0.43	33.52	-0.51	
<b>Yield</b>							
Effective Yield		0.81	0.79	0.01	1.07	-0.28	
Yield to Worst		0.81	0.79	0.01	1.07	-0.28	
Yield to Maturity		0.81	0.80	0.01	1.07	-0.27	
<b>Spread (in Semi-Annual Terms)</b>							
To Worst (vs Govt)		1	2	-1	1	1	
OAS (vs Govt)		1	1	0	1	0	
Libor OAS		-2	-3	1	-7	4	
Asset Swap		-2	-2	0	-6	4	
<b>Duration</b>							
Effective Duration		1.84	1.77	0.07	1.86	-0.09	
Spread Duration		1.84	1.76	0.07	1.86	-0.09	

30 Bonds Left the Index and 32 Bonds Were Added to the Index

# BofA Merrill 1-3 Year Treasury & Agency Index



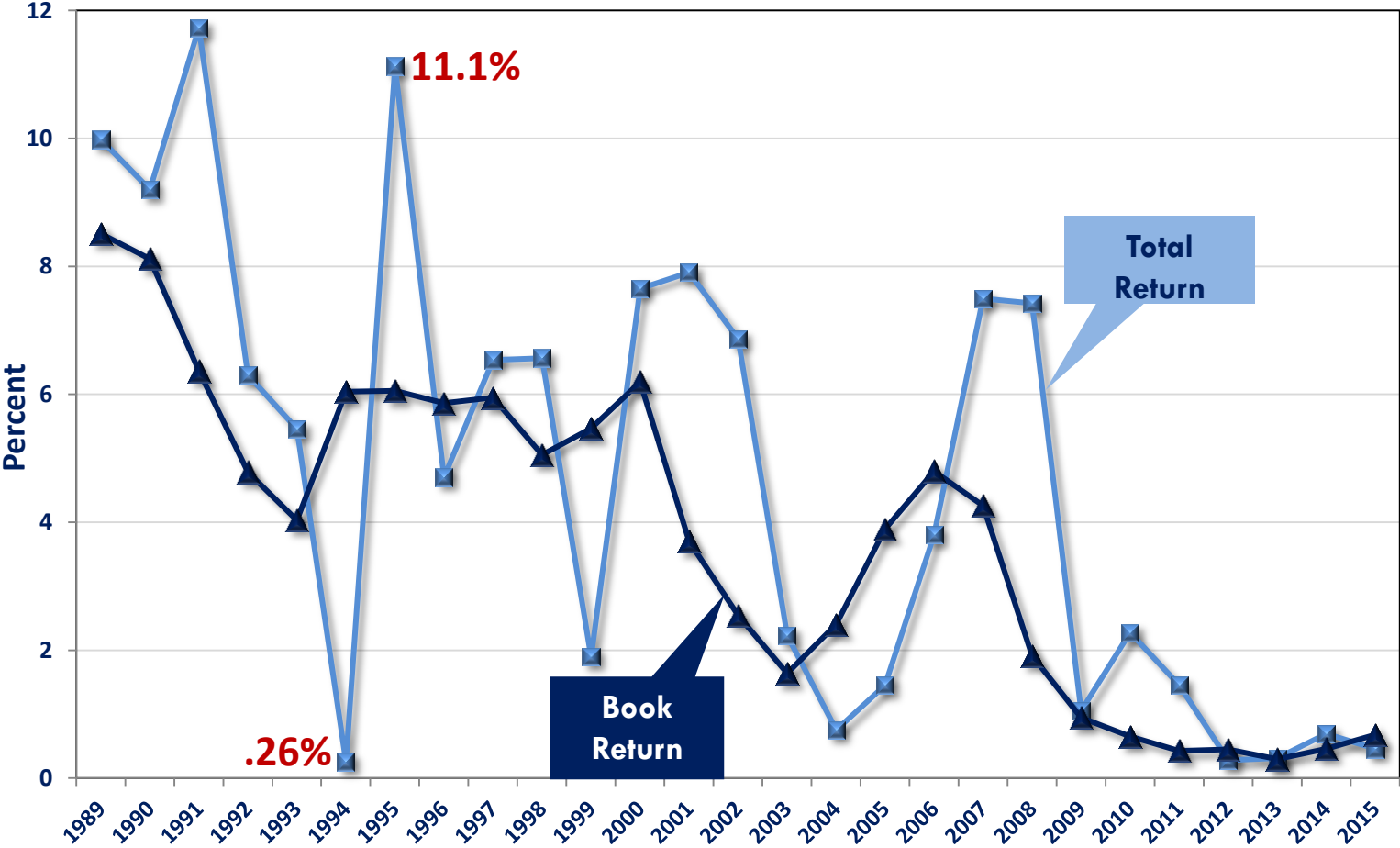


# BofA Merrill 1-5 Year Agency Callable Index



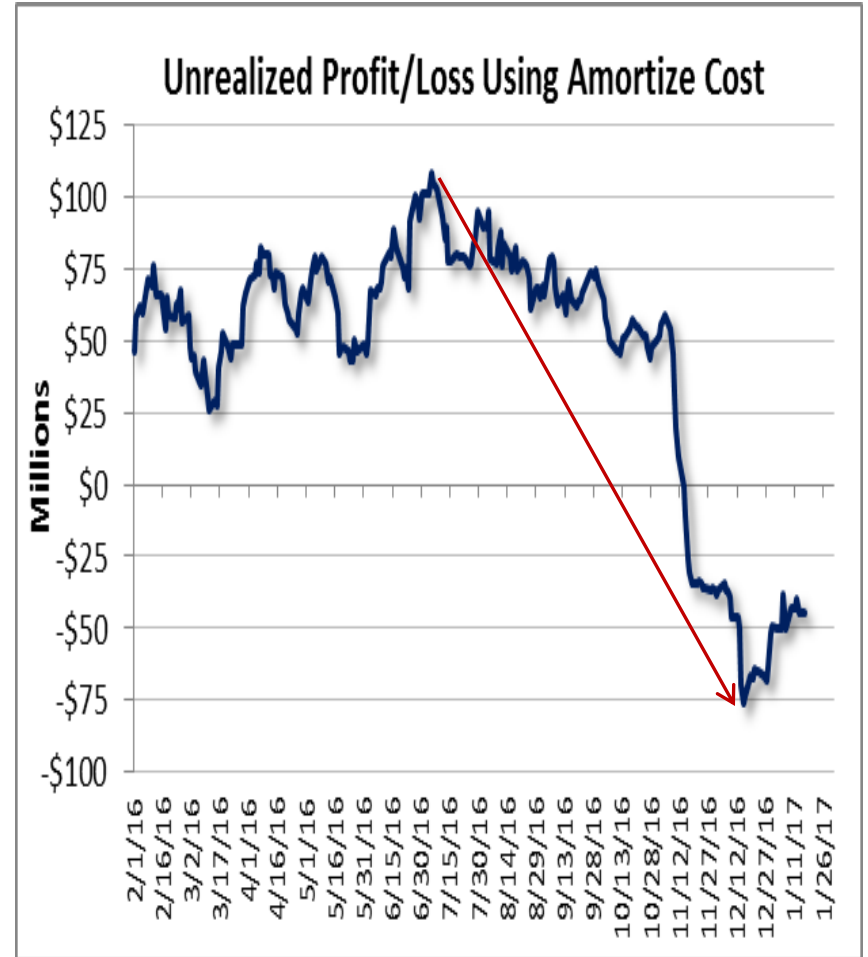
# Book Return vs. Total Return

BofA/Merrill 2 Yr T-Note Index

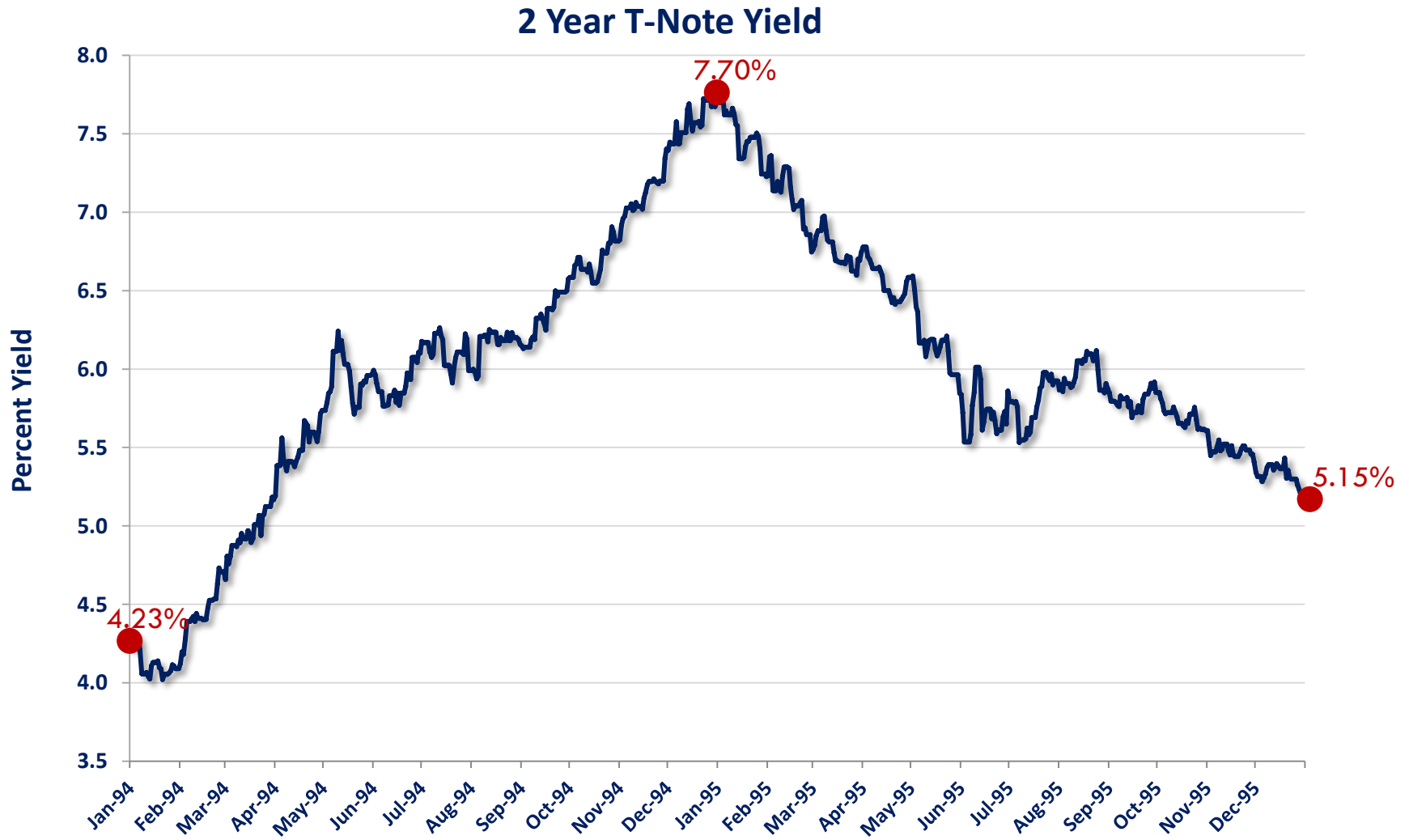


\*Book Return = 12 Month Moving Average of Index's Month-End Yield

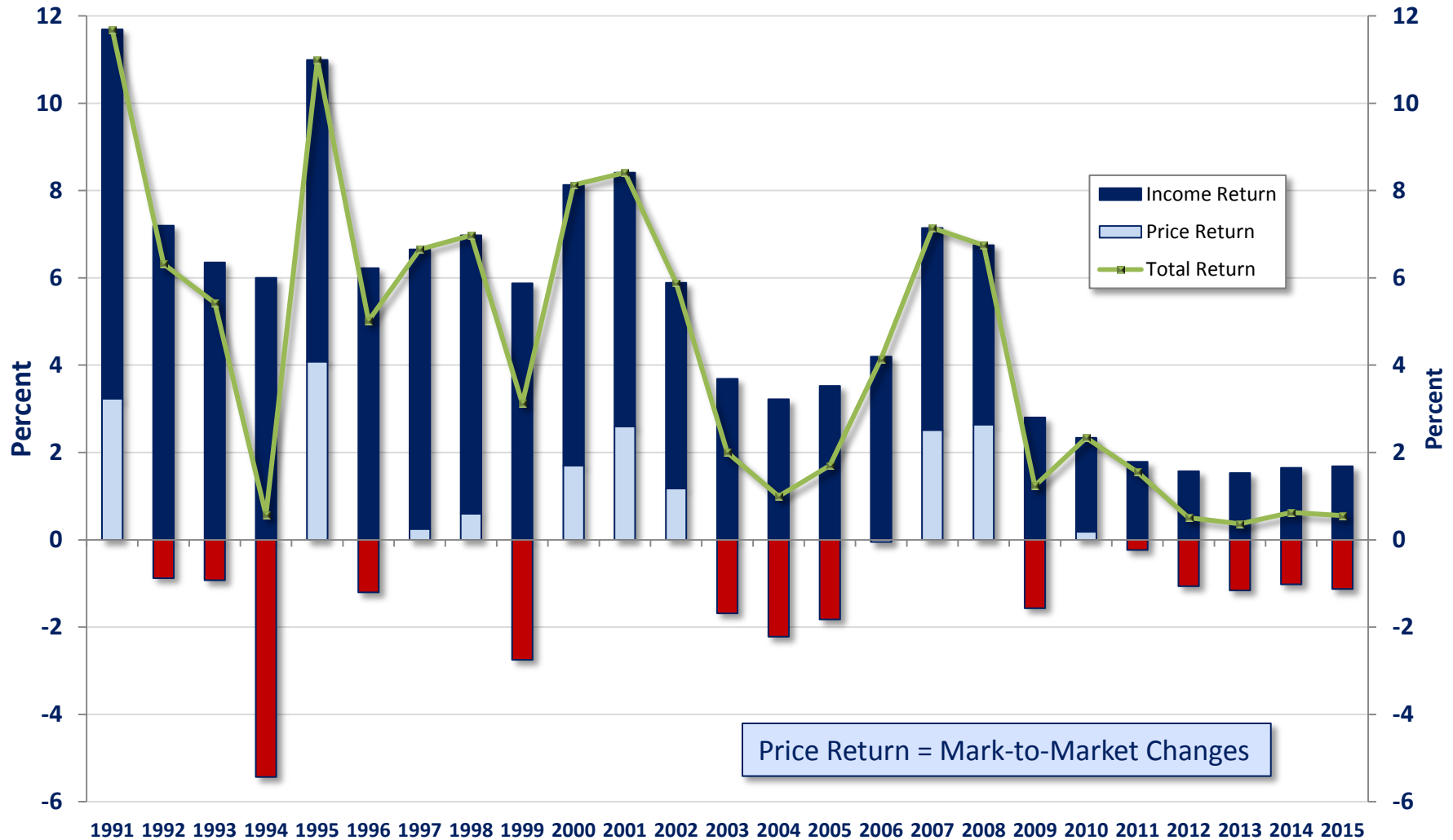
# Real World Example



# Yield vs. Price



# 1-3Yr Tsy/Agy Index Components of Total Return



# 2Yr T-Note: Yield vs. Price

GT02 Govt			97) Settings				Fixed Income Horizon Analysis					
99-24 <sup>1</sup> / <sub>4</sub> /99-24+			0.876/0.872		CBBT @ 17:09		95) Buy		96) Sell			
1) Load CIX		2) Save as CIX		↻		● Financing		● Dur/Cvx		● Tax Rates		
Swap Type		Risk	Settlement		OAS		Horizon		03/24/17		Financing	
Security	B/S	Amt (M)	Date	Price	Yield	W	Risk	Price	Yield	W	Rate	
GT02 Govt	B	1,000	03/24/16	99.522030	1.000000	W	1.91	96.604061	4.500000	W		
Add Security					↑				↑			
Add Security												
											B/E	2.08
Return Analysis												
Reinvestment Rate		0.235 %		Income Tax		43.400 %		Capital Gains Tax		23.800 %		
4) View Cashflows			Pre Tax				After Tax					
Total Return %		HPR %	MMKT %	Net P&L	Total Return %		HPR %	MMKT %	Net P&L			
GT02 Govt		-2.189	-2.177	-2.147	-21,674	-1.815	-1.807	-1.782	-17,988			

# 1-3Yr Tsy/Agy Index Components of Total Return

## Price Return vs Coupon Return 1991 to 2015

Component	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Price	3.2	-0.9	-0.9	-5.4	4.1	-1.2	0.2	0.6	-2.8	1.7	2.6	1.2	-1.7
Income	8.5	7.2	6.4	6.0	6.9	6.2	6.4	6.4	5.9	6.4	5.8	4.7	3.7
Total	11.7	6.3	5.4	0.6	11.0	5.0	6.7	7.0	3.1	8.1	8.4	5.9	2.0

Component	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Price	-2.2	-1.8	0.0	2.5	2.6	-1.6	0.2	-0.2	-1.1	-1.2	-1.0	-1.1
Income	3.2	3.5	4.2	4.6	4.1	2.8	2.2	1.8	1.6	1.5	1.6	1.7
Total	1.0	1.7	4.1	7.1	6.7	1.2	2.3	1.6	0.5	0.4	0.6	0.6

Component	% of Total	Avg Return
Coupon Return	102.3%	4.5%
Price Return	-2.3%	-0.1%
Total Return	100.0%	4.4%

Book Return and Total Return are basically the same over the long run for short-term fixed income indexes and portfolios.

# Book Return vs. Total Return

## Interest Rates Decline 50 Basis Points for the Month Calculation of Return

### Book Return

vs

### Total Return

Interest Collected	300,000
Plus Accrued Interest at End of Period	150,000
Less Accrued Interest at Beginning of Period	(100,000)
Less Accrued Interest at Purchase During Period	(50,000)
Interest Earned During Period	300,000
<b>Adjusted by Premiums and Discounts</b>	
Adjusted by Premiums and Discounts	50,000
<b>Adjusted by Realized Capital Gains or Losses</b>	
Adjusted by Realized Capital Gains or Losses	100,000
<b>Adjusted by Mark-to-Market</b>	
Adjusted by Mark-to-Market	N/A
Earnings During Period	450,000
<b>Daily Weighted Balance for Period</b>	
Daily Weighted Balance for Period	100,000,000
<b>Book Rate of Return - Period</b>	
Book Rate of Return - Period	0.45%
<b>Book Rate of Return - Annualized</b>	
Book Rate of Return - Annualized	5.40%

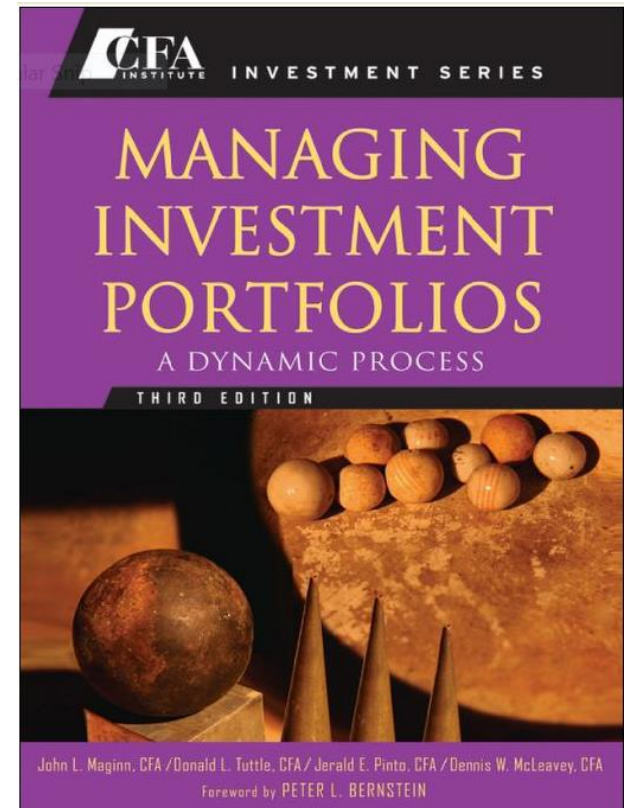
Interest Collected	300,000
Plus Accrued Interest at End of Period	150,000
Less Accrued Interest at Beginning of Period	(100,000)
Less Accrued Interest at Purchase During Period	(50,000)
Interest Earned During Period	300,000
<b>Adjusted by Premiums and Discounts</b>	
Adjusted by Premiums and Discounts	N/A
<b>Adjusted by Realized Capital Gains or Losses</b>	
Adjusted by Realized Capital Gains or Losses	100,000
<b>Adjusted by Mark-to-Market</b>	
Adjusted by Mark-to-Market	750,000
Earnings During Period	1,050,000
<b>Daily Weighted Balance for Period</b>	
Daily Weighted Balance for Period	100,000,000
<b>Total Rate of Return - Period</b>	
Total Rate of Return - Period	1.05%
<b>Total Rate of Return - Annualized</b>	
Total Rate of Return - Annualized	12.60%

Mark-to-Market: \$100,000,000 x 1.5 duration x .50% = \$750,000



# Total Return Implications

“**Total rate of return** measures the increase in the investor’s wealth due to both investment income (for example, dividends and interest) and capital gains (both realized and unrealized). The total rate of return implies that a dollar of wealth is equally meaningful to the investor whether that wealth is generated by the secure income from a 90-day Treasury bill or by the unrealized appreciation in the price of a share of common stock.” (emphasis added)



Does your benchmarking methodology represent “the persistent and prominent investment characteristics” of your investment process and your investment objectives?

Source: (2010-03-18). Managing Investment Portfolios: A Dynamic Process (CFA Institute Investment Series) (Kindle Locations 18222-18225). Wiley. Kindle Edition.

# Total Rate of Return-Pros and Cons

## Pros:

- Provides a GASB 31 Type of Risk Assessment
- Reflects Portfolio's Market Volatility Changes
- Provides a standardized approach (GIPS) of returns

## Cons:

- May not match objective in investment policy (principal preservation)
- May not match interest income budget objectives
- Complex calculations

# Benchmark Reporting Conclusions

- To Adhere To the Third Object of Your Investment Policy-One Needs to Benchmark the Portfolio to See If It's Earning a "Market Rate of Return"
- Change the Benchmark Only When There Are Material Changes to the Portfolio
- It's Okay to Use All Three Measures
- Book Return and Total Return Are More Sophisticated Measures
- Book Return Is Generally More Congruent With Most Municipalities' Budgeting Process and Investment Process and Should Be the Primary Method to Benchmark the Portfolio
- Total Return Shows a Portfolios' Risk Similar to GASB 31 and is Helpful in Assessing Market Risks