

California Society of Municipal Finance Officers

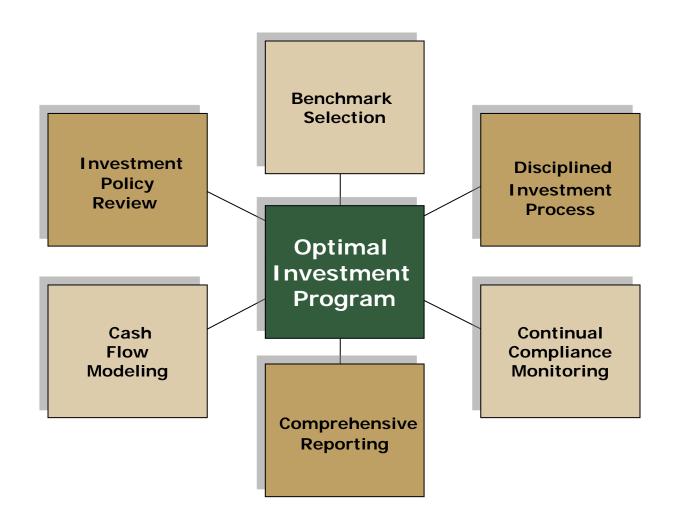
Common Mistakes in Managing Your Municipality's Investment Portfolio

March 2, 2016





Comprehensive Investment Program





- Test of compliance is one of conduct, not performance
- Measures for evaluating compliance
 - Establishment of formalized investment policy
 - Compliance with policy
 - Prudent investment decisions
 - Best price trade executions
 - Diversification of risk
 - Strict avoidance of conflicts of interest



Portfolio Management is Risk Management

- The greater an investor's exposure to properly <u>diversified</u> risk, the higher the expected return over time.
- The greater an investor's exposure to risk, the higher the volatility of return from period to period.
- The objective of "safety" requires establishing risk constraints.
- Risk is something to be managed not avoided.



Managing Risks in the Portfolio

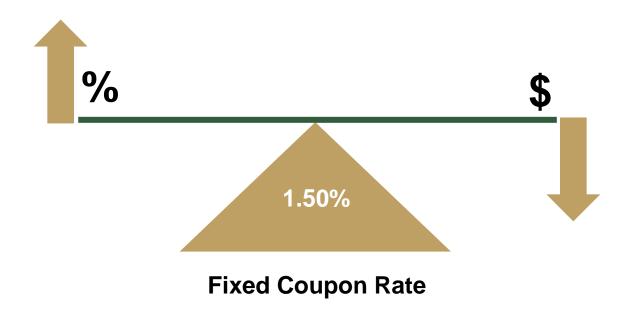
- Market Risk: The risk that the value of an investment will decrease due to moves in market factors.
- Credit Risk: The risk that the issuer of a bond may not be able to make timely payments of principal and/or interest.
- Liquidity Risk: The risk stemming from the lack of marketability of an investment that cannot be bought or sold quickly enough to prevent or minimize a loss.
- Reinvestment Risk: The risk resulting from the reinvestment of cash flows from an investment that must be reinvested at the market rate at the time the cash flow occurs.
- Event Risk: The risk of possible financial loss arising from circumstances that were unexpected and unpredictable.



- Also called interest rate risk.
- The risk that the value of an investment will decrease due to moves in market factors.
 - Value can go up or down, inversely to interest rate changes
 - All securities are subject to market risk, even US government guaranteed
 - The longer the duration of the portfolio, the greater the change in value
- We cannot predict interest rates, however, using duration, we can estimate how much the portfolio market value will change with a given instantaneous change in interest rates.



Yield & Price Inversely Related





Facts About Duration

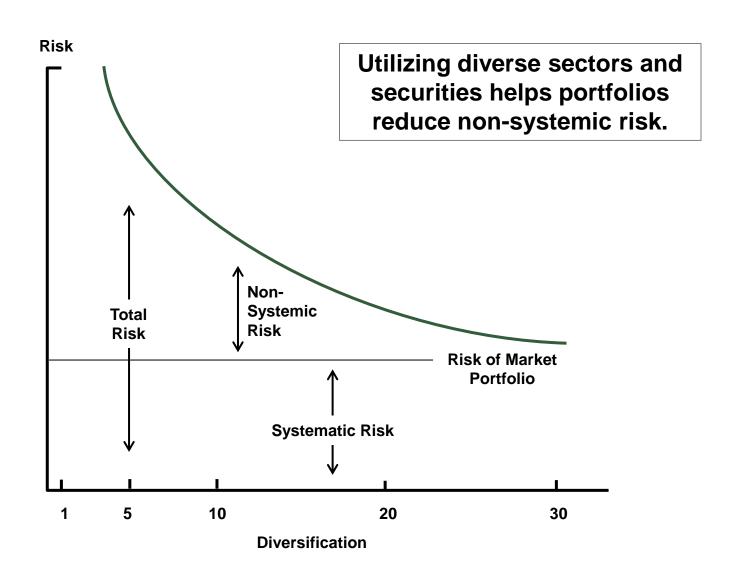
- Duration is a direct measure of exposure to market risk in a fixed maturity bond.
- Duration is a better measure of the sensitivity to changes in interest rates than term-to-maturity.
- Duration is a close approximation of the percent change in the price of a bond for a given change in yield.
- Securities with equal maturity dates may not have equal interest rate risk - duration quantifies the difference.



- Credit risk is the risk that the issuer of a bond may not be able to make timely payments of principal and/or interest.
- Investors receive higher yields when they purchase with a higher degree of credit risk:
 - Agencies versus Treasuries
 - Corporates versus Agencies
 - "A" versus "AAA" Corporates
- Credit ratings change over time.
- Credit spreads vary over time.
- Diversification is one way to reduce credit risk.



Reducing Risk Through Diversification





- Liquidity risk is the risk that:
 - The portfolio won't provide adequate cash flow for the agency.
 - That a security can't be sold, if necessary, at a good price:
 - Measured by such factors as the difference between bid and ask
 - Number of market makers for the issue
 - Usually, the larger the issue size, the greater the liquidity
- Liquidity risk can be minimized by maintaining appropriate balances of short-term securities in the portfolio.



Establishing a Liquidity Target for the Portfolio



Liquidity Component

- Meets specific liquidity needs
- Invests in short-term securities
- Average maturity short
- Very low volatility
- Cash flow matching

Reserve Component

- Targeted to highest suitable duration
- Longer-term securities
- Normally not used for liquidity, but invested in highly-marketable securities
- Greater volatility
- More stable income stream



Cash Flow Model Sample

Sample Cash Flow Projections

	Beg. Balance	Mar-14	Jun-14	Sep-14	Dec-14	Projected Total
Fund Balances	50,000,000	51,470,000	49,610,000	49,220,000	50,300,000	
Inflow						
Member Payments/Premiums		3,000,000	3,000,000	3,000,000	3,000,000	12,000,000
Assessments		0	0	0	0	0
Other Revenues		30,000	30,000	30,000	30,000	120,000
Total Inflows		3,030,000	3,030,000	3,030,000	3,030,000	12,120,000
Outflows						
Salaries & Benefits		210,000	210,000	210,000	210,000	840,000
Administration Expenses		120,000	120,000	120,000	120,000	480,000
Rent		18,000	18,000	18,000	18,000	72,000
Professional Services		12,000	12,000	12,000	12,000	48,000
Pooled Losses/Insurance		1,200,000	6,000,000	1,200,000	1,200,000	9,600,000
Total Expenses		1,560,000	6,360,000	1,560,000	1,560,000	11,040,000
Net Change		1,470,000	(3,330,000)	1,470,000	1,470,000	1,080,000
Cumulative Net Change		1,470,000	(1,860,000)	(390,000)	1,080,000	1,080,000
Ending Balance		51,470,000	48,140,000	51,080,000	50,690,000	
Liquidity Investment Pool	10,000,000	11,270,000	7,739,000	10,476,995	9,883,980	
Reserve investment Pool	40,000,000	40,200,000	40,401,000	40,603,005	40,806,020	



Reinvestment and Event Risk

- Reinvestment risk: Cash flows from a bond must be reinvested at the market rate at the time the cash flow occurs:
 - Interest payments
 - Principal paid at maturity
 - Principal from called bonds
- Event risk: The possibility of financial loss arising from circumstances that were unexpected and unpredictable.
 - An unexpected event causes a sudden deterioration in an issuer's credit quality, and a concomitant instant decline in price.
 - The credit ratings from a Nationally Recognized Statistical Rating Organization such as S&P, Moody's or Fitch do not (cannot) reflect event risk.



Performance Measurement

- Yield = income from current investments
 - Used to forecast income for line item in next year budget
 - And often, to compare portfolio return to a yield benchmark
- Realized return: Adds realized gains and losses
 - No realized return benchmark
 - Return information can be distorted
- Total rate of return
 - Incorporates all elements of return income, realized and unrealized gains and losses, reinvestment of cash flows
 - Can be used to provide comparable results in a consistent format



Benchmarking Results

- Replicates an entity's selected risk profile for portfolio
- Keeps you focused on managing risk in entire portfolio
- Provides guidance for investment decisions
- Controls exposure to:
 - Market risk (duration; weighted average maturity)
 - Credit risk (sector allocation)
- Improves expectations in all market environments
- Provides clarity of strategy communication to board



Effective Allocation of Tools and Resources

Systems

- Investment Accounting Software
- Real Time market information using a system such as Bloomberg
- Electronic trading platforms such as TradeWeb and MarketAxess

Research

- Macroeconomic Advisers
- Credit Sights
- Regulatory Filings
- Information from Nationally Recognized Statistical Rating Organizations (NRSROs)

Staff

- Ongoing and continuous monitoring of portfolio holdings and issuers
- Continuing Education

Disclosures

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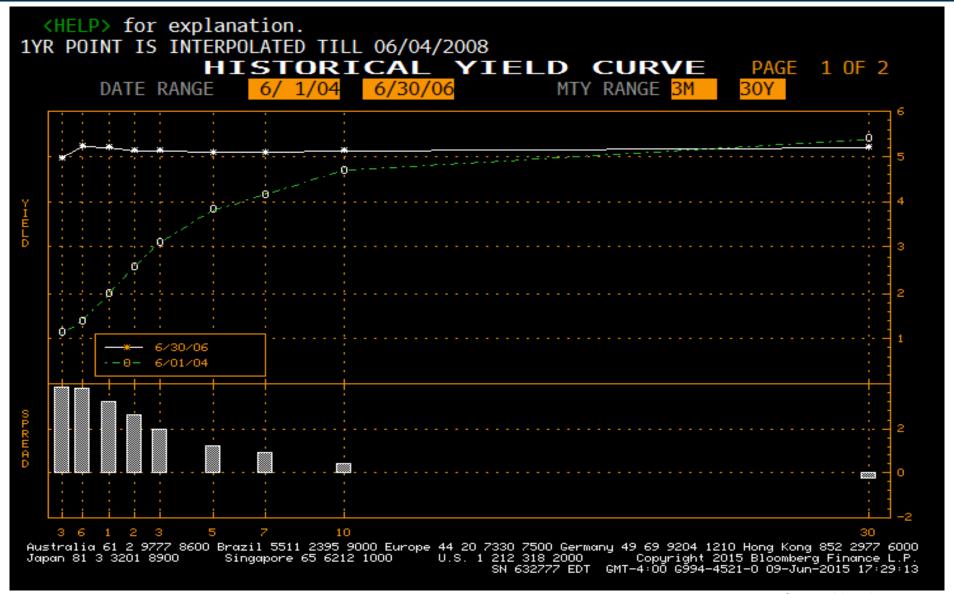
Rates and the Economy



How Long Can Low Interest Rates Persist?

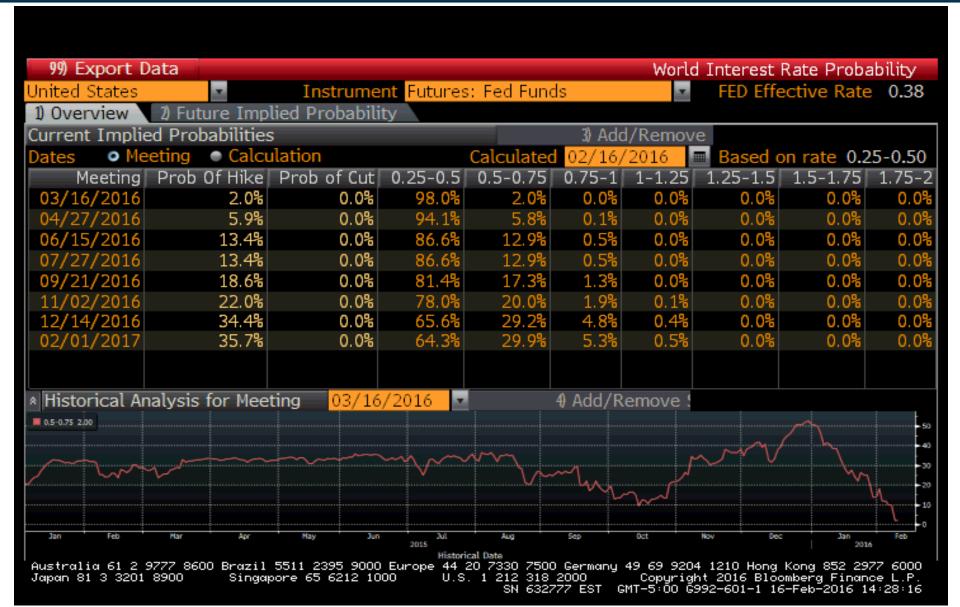
The Last Tightening Cycle





Probability of a Fed Rate Hike





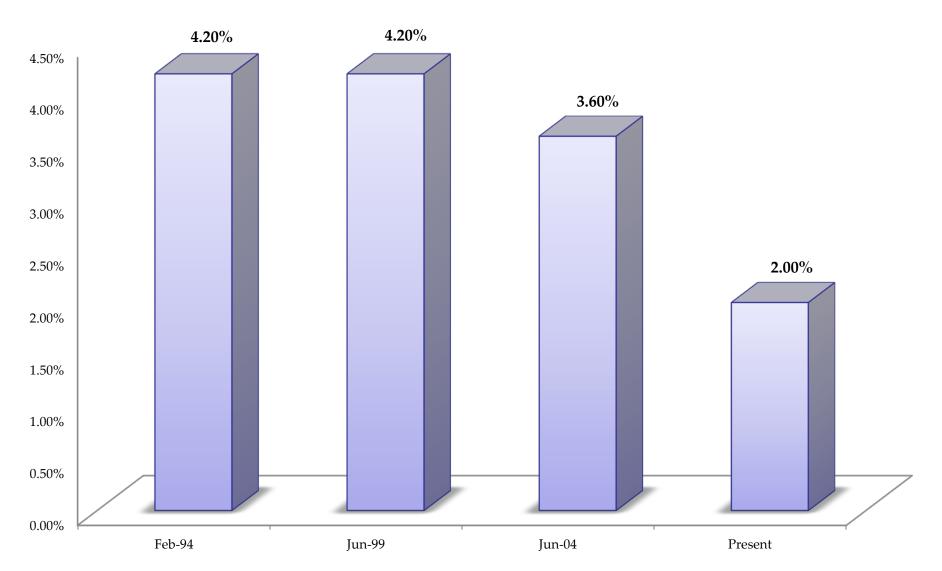
Economic Data/Forecast



96) Chart 7) Set a	s Defau	lt Vie						Econo	mic For	ecasts
Country/Region/World	Contr	ibutor	Contribut	or Com	posite	•	0	Yearly	Quar	terly
United States	Brows	se	Private	•	Official					
				Ac	tual / Fo	recasts	S			
Indicator	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Economic Activity										
■Real GDP (YoY%)	-2.8	2.5	1.6	2.2	1.5	2.4	2.4	2.2	2.3	2.1
Industrial Production (YoY %)	-11.2	5.6	3.0	2.9	1.9	3.7	1.3	1.1	2.3	2.3
Price Indices										
CPI (YoY%)	-0.3	1.6	3.2	2.1	1.5	1.6	0.1	1.2	2.2	2.3
■PCE Price Index (YoY%)							0.3	1.2	1.9	1.9
^L Core PCE (yoy%)	1.2	1.3	1.5	1.9	1.5	1.5	1.3	1.5	1.8	1.9
Housing Market										
Housing Starts (000s SAAR, mo							1110	1240	1354	1400
New Home Sales (000s SAAR,							501	559	630	695
Existing Home Sales (000s SAA							521	540	550	545
Building Permits (000s SAAR,							1164	1317	1383	1440
Labor Market										
Unemployment (%)	9.3	9.6	8.9	8.1	7.4	6.2	5.3	4.8	4.6	4.7
Non Farm Payrolls (000s SA,							209	182	163	148
External Balance										
Curr. Acct. (% of GDP)	-2.7	-3.0	-3.0	-2.8	-2.3	-2.3	-2.6	-2.7	-2.8	-2.8

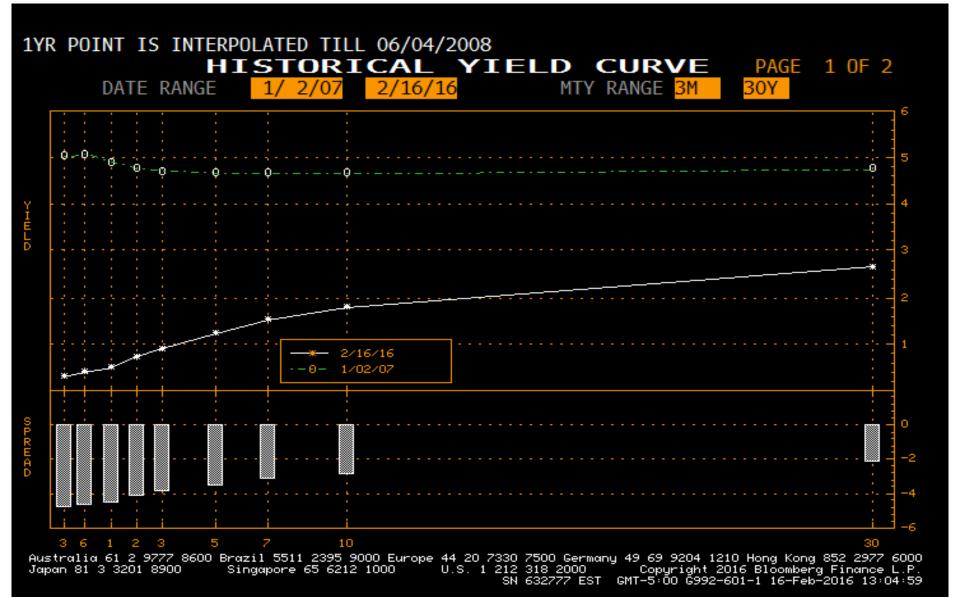
GDP growth prior to first rate hike





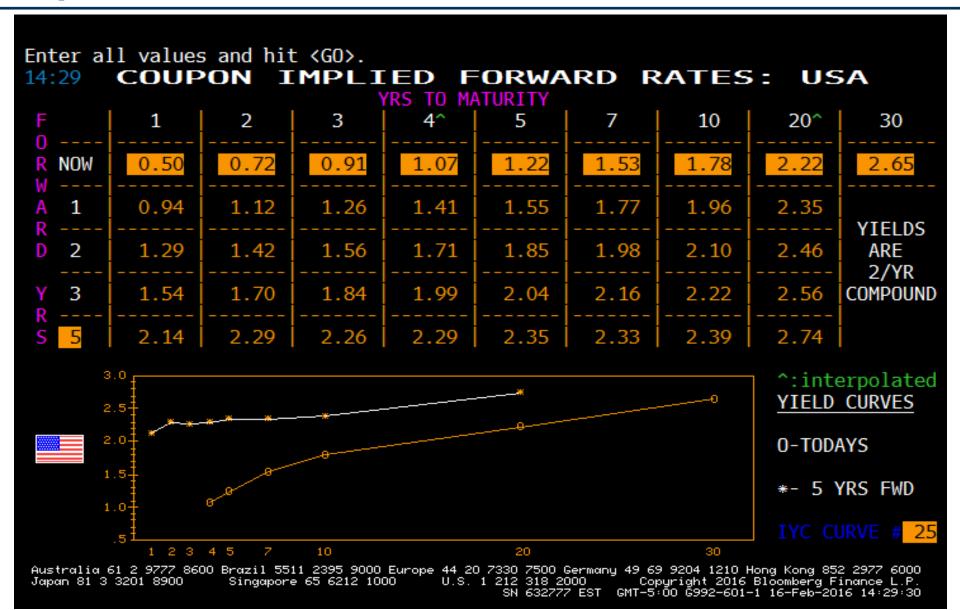
Curve movement since credit crisis FIRST EMPIRE SECURITIES





Implied Forward Rates





Curve Movement in 2016

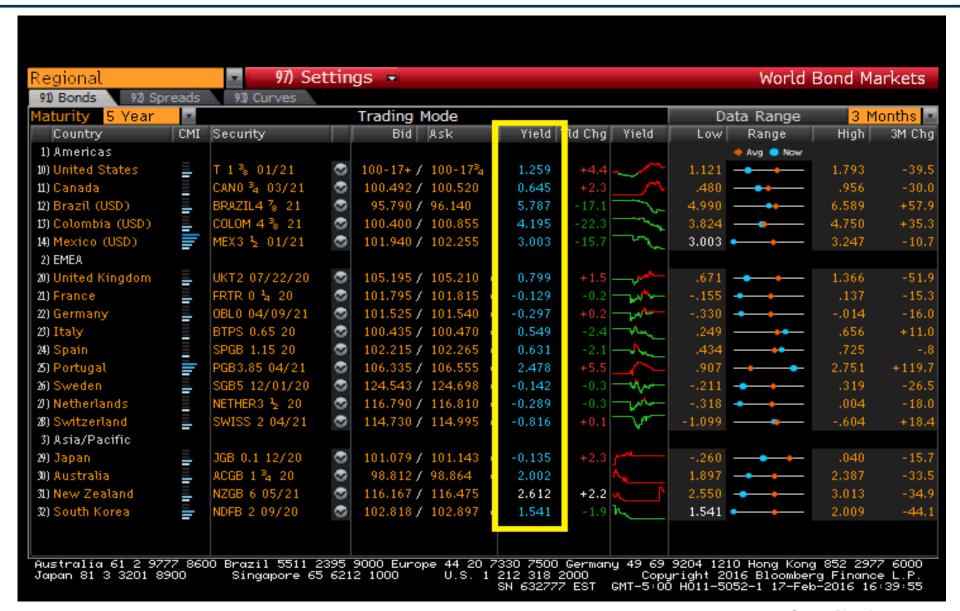


	TSTOR	ICAL V	'IELD (TURVE	PAGE 2 OF 2
DATE RANGE	12/31/15	2/17/16		RANGE 3M	30Y
		12/31/15	2/17/16	Change	
	3 MONTH	0.163	0.300	0.1374	
	6 MONTH	0.474	0.433	-0.0408	
	1 YEAR	0.597	0.510	-0.0870	
	2 YEAR	1.048	0.742	-0.3059	
	3 YEAR	1.307	0.930	-0.3764	
	5 YEAR	1.760	1.261	-0.4992	
	7 YEAR	2.091	1.567	-0.5246	
	10 YEAR	2.269	1.812	-0.4573	
	30 YEAR	3.016	2.680	-0.3362	

Australia 61 2 9777 8600 Brazil 5511 2395 9000 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2016 Bloomberg Finance L.P. SN 632777 EST GMT-5:00 H011-5052-1 17-Feb-2016 16:43:02

Relative Value







30 Years of Falling Interest Rates





Japan's 10-year Government Note





Conclusion



If I think rates will rise soon, should I just stay very liquid so we can re-invest at higher rates?

Conclusion



Opportunity Cost – Waiting to Invest

If I wait in money market funds, at what yield do I need to invest in the future?

• Investment assumptions: Amount = \$1,000,000 Maturity = 5 Years

Interest rate assumptions: LAIF = 0.45%

Alternative = 1.50%

Waiting	Accumul	ımulated Income		Accumulated Income		Accumulated Inco				Remaining	Inc	ome Needed	Yield
Period	MMkt	MMkt 5yr Agency		F	oregone	Term	Thr	ough Maturity	Needed				
(Months)	@ 0.45%	5% @ 1.50%		I	ncome	(Years)	To	"Breakeven"	to BE				
3	\$ 1,125	\$	3,750	\$	(2,625)	4.75	\$	73,875	1.56%				
6	\$ 2,250	\$	7,500	\$	(5,250)	4.50	\$	72,750	1.62%				
9	\$ 3,375	\$	11,250	\$	(7,875)	4.25	\$	71,625	1.69%				
12	\$ 4,500	\$	15,000	\$	(10,500)	4.00	\$	70,500	1.76%				
15	\$ 5,625	\$	18,750	\$	(13,125)	3.75	\$	69,375	1.85%				
18	\$ 6,750	\$	22,500	\$	(15,750)	3.50	\$	68,250	1.95%				
21	\$ 7,875	\$	26,250	\$	(18,375)	3.25	\$	67,125	2.07%				
24	\$ 9,000	\$	30,000	\$	(21,000)	3.00	\$	66,000	2.20%				
27	\$10,125	\$	33,750	\$	(23,625)	2.75	\$	64,875	2.36%				
30	\$11,250	\$	37,500	\$	(26,250)	2.50	\$	63,750	2.55%				





Thank You!

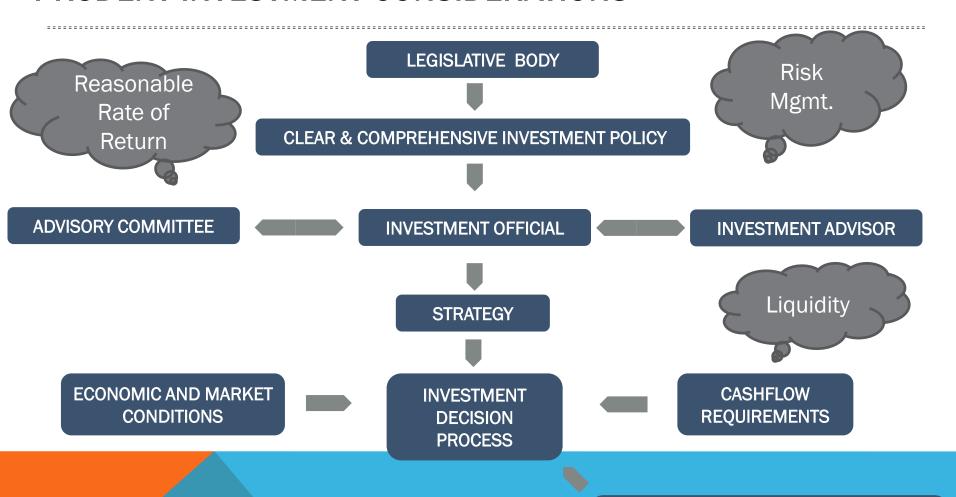
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PRUDENT INVESTMENT CONSIDERATIONS



ADJUSTMENTS IN INVESTMENT STRATEGY
MADE AS A RESULT OF CHANGES IN
CIRCUMSTANCES

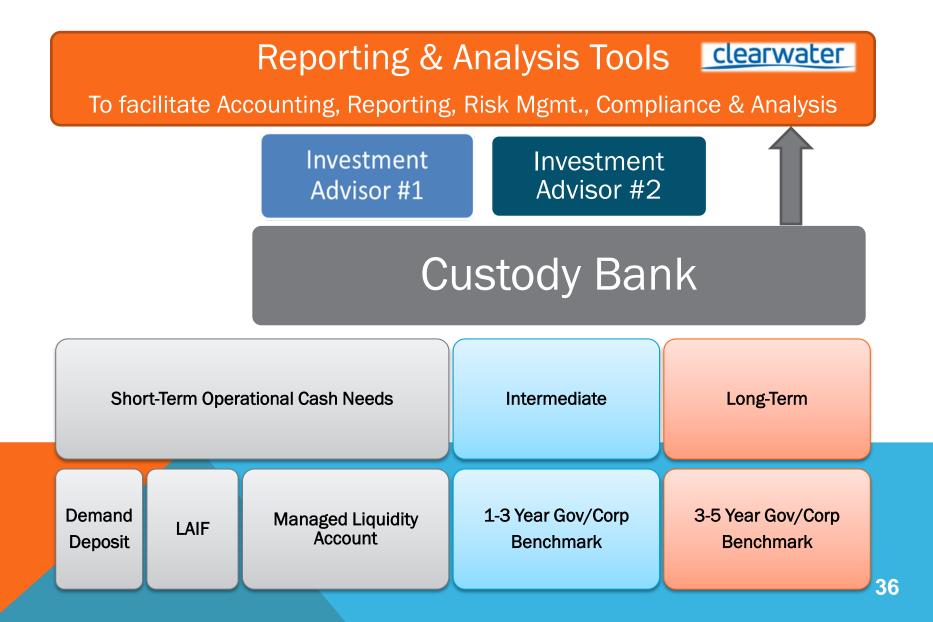


REASONS TO CONSIDER A REGISTERED INVESTMENT ADVISOR

- Lack of adequate staffing
- Lack of internal technical training and resources
- Lack of market information systems, such as Bloomberg
- Additional Board confidence in a trained professional
- Increased access to broker offerings
- Save the public agency time and safeguard the agency's funds
- Greater return potential available from full-time expert management of the investment program



EXAMPLE TACTICAL APPROACH



ACCOUNTING, REPORTING & PERFORMANCE BENCHMARKING clearwater

CITY OF

Newport Beach

1-3 yr Treasury Index Total Return

■ 1-3 yr Gov./Corp Index Total Return

Periods greater than one year are annualized



Medium-Term Investment Portfolio by Security Type for the Month Ended

	December 31, 2015										
Security Type	Par Value	Original Cost	Amortization Cost	Unreal Gain/Loss	Fair Value	Accrued Interest	Market Value	% of Portfolio	YTM @ Cost	YTM @ Market	
Cash Equivalents	-	110,867	110,867	-	110,867	-	110,867	0.07%	0.11%	0.11%	
Marketable Securities											
Agency	54,280,000	54,482,848	54,380,972	(147,154)	54,233,819	141,915	54,375,734	32.07%	0.88%	1.00%	
U.S. Government	48,450,000	48,519,196	48,495,707	(163,044)	48,332,663	143,355	48,476,017	28.58%	1.03%	1.17%	
Corporate Notes	44,956,000	45,580,648	45,105,278	(98,194)	45,007,084	212,714	45,219,798	26.61%	1.34%	1.43%	
Certificates of Deposit	10,945,000	10,945,000	10,945,000	-	10,945,000	20,051	10,965,051	6.47%	0.94%	0.94%	
Asset-Backed Securities	6,338,654	6,336,537	6,339,855	(19,966)	6,319,889	2,389	6,322,278	3.74%	0.94%	1.30%	
Supranational	1,970,000	1,966,651	1,966,910	(19,250)	1,947,660	4,597	1,952,257	1.15%	1.06%	1.42%	
Commercial Paper	1,700,000	1,697,790	1,698,987	-	1,698,987	-	1,698,987	1.00%	0.39%	0.39%	
Municipal Bonds	530,000	530,000	530,000	843	530,843	1,841	532,684	0.31%	1.05%	0.68%	
Total Marketable Securities	169,169,654	170,058,670	169,462,709	(446,765)	169,015,944	526,862	169,542,806	99.93%	1.05%	1.17%	
GRAND TOTAL (MIP)	169,169,654	170,169,537	169,573,576	(446,765)	169,126,811	526,862	169,653,673	100.00%	1.05%	1.17%	

Performance History 1.000% 0.800% Rate of Return 0.600% 0.400% 0.200% 0.000% -0.200% -0.400% -0.600% Prior Month Current Month Curent Year to Date Prior Fiscal Year Trailing Year Trailing 3 Years* ■ Income Return 0.084% 0.087% 0.490% 0.824% 0.919% 0.814% -0.168% Price Return -0.243% -0.182% -0.402% 0.097% -0.190% ■ Total Return = Income Return + Price Return -0.159% -0.094% 0.088% 0.921% 0.729% 0.649%

-0.126%

-0.034%

0.876%

0.906%

0.541%

0.661%

0.505%

0.645%

-0.094%

-0.109%

-0.246%

-0.200%

RISK ANALYSIS

clearwater

CITY OF

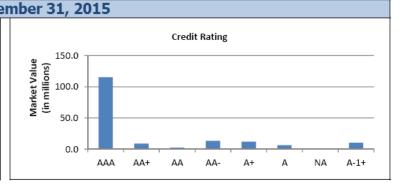
Newport Beach

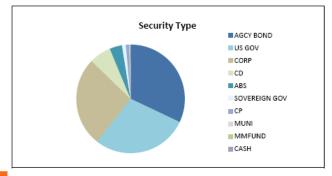


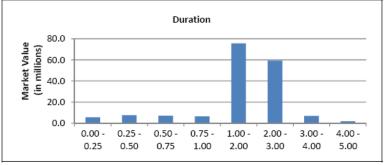
Risk Summary of Medium-Term Investment Portfolio

for the Month Ended

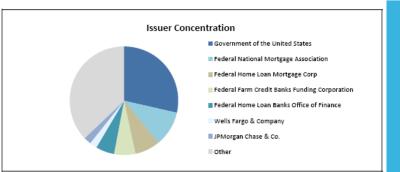
	Dece							
Summary								
Cash	110,867							
Fixed Income	169,542,806							
Duration	1.760							
Convexity	0.006							
Weighted Avg Life	1.794							
Weighted Avg Maturity	1.874							
Weighted Avg Eff Maturity	1.791							
Yield	1.17%							
Purchase Yield	1.05%							
Avg Credit Rating	AA+/Aa1/AA+							













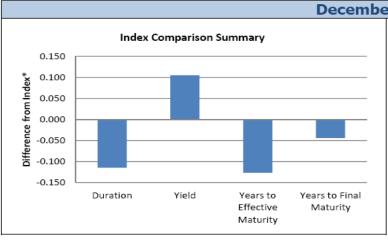
BENCHMARK COMPARISONS

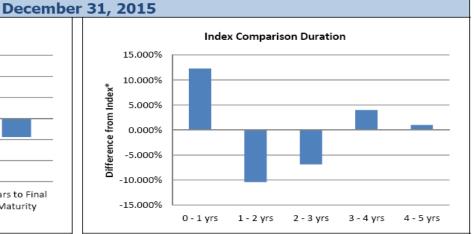


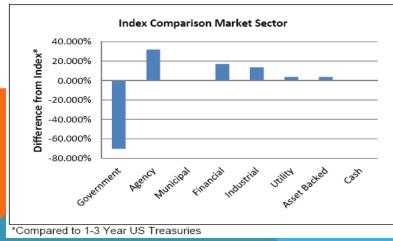


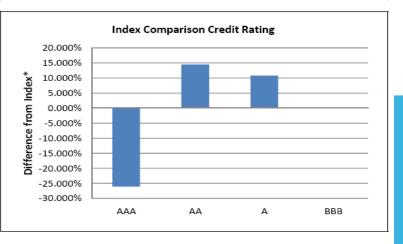
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POLICY COMPLIANCE



CITY OF

Newport Beach



Medium-Term Investment Portfolio Compliance Status

		B 04 004E						
December 31, 2015								
Status	Account	Policy Name	Rules	Compliant Rules	Violating Rules			
Compliant	Medium-Term Portfolio	Statement of Investment Policy	29	29	0			
Status	Rule Basis	Rule Requirements	Rule Limit	Actual				
Compliant	Concentration	Bankers Acceptance Concentration	40.00%					
Compliant	Concentration	Bankers Acceptances Rated Below (LT) A / A2 (ST) A-1/P-1	0.00%					
Compliant	Concentration	CD	30.00%	6.10%				
Compliant	Concentration	Commercial Paper	25.00%	1.50%				
Compliant	Concentration	Corp Rated Below A- / A3	0.00%					
Compliant	Concentration	CP and CDs Rated Below A/A2 or A1/P1	0.00%					
Compliant	Concentration	Issuer Concentration Except for Agency, Repo, FDIC	5.00%	2.08%				
Compliant	Concentration	Max Concentration of Corps (%)	30.00%	26.99%				
Compliant	Concentration	Max Concentration of Funds Assets	10.00%	0.01%				
Compliant	Concentration	Max Concentration of MBS and ABS	20.00%	3.52%				
Compliant	Concentration	Max Concentration of MMF	20.00%	0.14%				
Compliant	Concentration	Max Concentration of Munis (%)	30.00%	0.30%				
Compliant	Concentration	Max Concentration of Supranationals	20.00%	1.09%				
Compliant	Concentration	Max Issuer Concentration of Corporate Bonds (%)	5.00%	2.08%				
Compliant	Concentration	Max Issuer Concentration of Supranationals	10.00%	1.09%				
Compliant	Concentration	Minimum Credit rating for MBS of AAA	0.00%					
Compliant	Concentration	Minimum Issue Size for CD's - In Billions	10	1,000,000				
Compliant	Concentration	Minimum Issue Size for CP's - In Millions	500	15,000				
Compliant	Concentration	Minimum Rating for Supranational Securities AA	0.00%					
Compliant	Concentration	Munis Rated Below A/A2	0.00%					
Compliant	Concentration	Repos	10.00%					
Compliant	Concentration	Supranational is in USD	0.00%					
Compliant	Maturity	Max Effective Maturity for Repos (in years)	0.08					
Compliant	Maturity	Max Final Maturity (from Settle) for Munis	5.00	2.617				
Compliant	Maturity	Max Final Maturity for CP (in years)	0.74	0.696				
Compliant	Maturity	Max Final Maturity From Settle Date (in years)	5.00	4.986				
Compliant	Maturity	Max Final Maturity From Settle for Corp excl CD	5.00	4.077				
Compliant	Maturity	Max Maturity CD	2.00	2.000				
Compliant	Maturity	Max Maturity of Bankers Acceptances	0.49					

I verify that this investment portfolio is in conformity with California laws and the City's Investment Policy.

/S/ Dan Matusiewicz Dan Matusiewicz Finance Director

TAKEAWAYS

Fiduciary Duty requires a Comprehensive Investment Program

- Well Written and Comprehensive Investment Policy
- Regular Investment Policy Review
- Benchmark Selection
- Disciplined Investment Process
- Cash Flow Modeling
- Compliance Monitoring
- Comprehensive Reporting

www.newportbeachca.gov/treasury



TAKEAWAYS - CONTINUED



Risk Management is an integral component of a Comprehensive Investment Program

- Market, Credit, Liquidity, Reinvestment & Event
- Diversify to reduce exposure to risks

Measure Performance against Benchmarks

Important to manage expectations and communicate strategy

Make use of analysis tools and resources at your disposal

Review Policy with oversight board frequently

Cash flow forecasts are important to Comprehensive Investment Program

Opportunity cost of remaining too liquid or waiting for market changes

QUESTIONS? - HERE ARE A FEW TO GET YOU STARTED:

- 1. Where can agencies get advice on the clarity and comprehensiveness of their investment policy?
- 2. What are some best practices in validating "Best Price Trade Execution"
- 3. What are some best practices in broker selection?
- 4. Many cities don't have the manpower to run a comprehensive investment program and therefore leave their treasury in LAIF. What are some options they should consider?
- 5. Is there a minimum portfolio size that makes sense for an Investment Advisor to manage?
- 6. What is the future of Fannie, Freddie and similar instrumentalities; and what alternative investments might we consider in their stead?
- 7. What are the practical implications of Dodd Frank and Basel III to fixed income investors?

