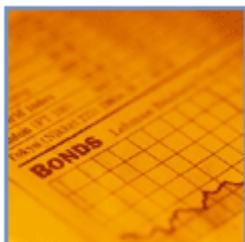




Washington State Investment Board Fixed Income Program



May 11, 2012

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Senior Investment Officer, Fixed Income



Outline



- ◆ **Introduction to the Fixed Income Program**
- ◆ **What is Fixed Income?**
- ◆ **Fixed Income Risk Components**
- ◆ **Fixed Income Return Components**
- ◆ **The Yield Curve**
- ◆ **Fixed Income Strategies**
- ◆ **Interest Rates and the Federal Reserve**
- ◆ **Fixed Income Portfolios**
- ◆ **Fixed Income Sector Allocation**
- ◆ **Management of the Program**
- ◆ **Keys to Success**



Introduction to the Fixed Income Program

Fixed Income portfolios are managed for several different clients

- ◆ Retirement
- ◆ Labor & Industries (seven portfolios)
- ◆ Permanent Funds
- ◆ Deferred Compensation Program (DCP)
- ◆ Guaranteed Education Tuition Program (GET)
- ◆ Developmental Disabilities Endowment Trust Fund (DDEF)

Introduction to the Fixed Income Program

Approximately \$29 billion in assets under management

There are 10 members of the fixed income unit, including portfolio manager/traders, credit and securitized analysts, and database and risk management

Sectors for fixed income investment include:

- ◆ U.S. Treasuries
- ◆ U.S. Treasury Inflation-Protected Securities (TIPS)
- ◆ U.S. agencies
- ◆ Investment grade credit bonds
- ◆ High yield
- ◆ Emerging markets
- ◆ Pass-through mortgages
- ◆ Collateralized Mortgage Obligations (CMOs)
- ◆ Asset-Backed Securities (ABS)
- ◆ Commercial Mortgage-Backed Securities (CMBS)
- ◆ Floating rate securities
- ◆ Non-dollar bonds



What is Fixed Income?

Debt obligation in the form of a security

- ◆ Borrower pays interest (coupon payments)
- ◆ Promises to pay debt back at maturity (par or principal payment)

The “fixed” in fixed income

- ◆ Fixed coupon payments
- ◆ Fixed par amount
- ◆ Fixed maturity

There are exceptions

- ◆ Coupon resets and floating rate coupons
- ◆ Calls and puts
- ◆ Sinking fund bonds and bonds with amortization of principal
- ◆ TIPS

**Barclays Capital U.S. Aggregate Index***March 31, 2012*

U.S. Treasury Index	\$ 5.7 trillion	35.1%
U.S. Agency Index	0.9 trillion	5.5%
U.S. Credit Index	4.2 trillion	25.8%
CMBS Index	0.0 trillion	0.2%
ABS Index	0.3 trillion	2.0%
MBS Index	5.0 trillion	31.3%
U.S. Aggregate Index	<u>\$ 16.1 trillion</u>	<u>100.0%</u>
Number of Bonds in U.S. Aggregate Index		7,929

**Barclays Capital U.S. Universal Index***March 31, 2012*

U.S. Aggregate Index	\$ 16.1 trillion	86.0%
U.S. Corporate High Yield Index	1.0 trillion	5.5%
Eurodollar Index	0.3 trillion	1.7%
Emerging Market Index (ex-Agg.)	0.3 trillion	1.6%
144a Index	0.9 trillion	5.0%
CMBS Other Index	0.0 trillion	0.1%
U.S. Universal Index	\$ 18.7 trillion	100.0%
Number of Bonds in U.S. Universal Index		12,096



Fixed Income Risk Components

Interest rate risk (yield change)

- ◆ Change in interest rates → change in market value

Credit risk (spread)

- ◆ Change in spread → change in market value

Structure risk (cash flow timing)

- ◆ Change in when payments received → change in market value
→ change in duration



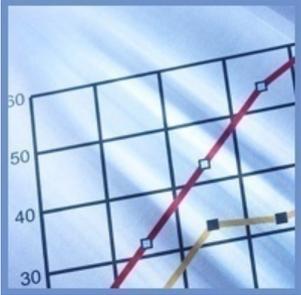
Duration:

**The sensitivity of price
to changes in yield (the level of interest rates)**

Duration is most closely tied to maturity: longer maturity bonds will usually have greater durations

The greater a bond's duration, the more its price will change for a given change in yield

Fixed Income Return Components



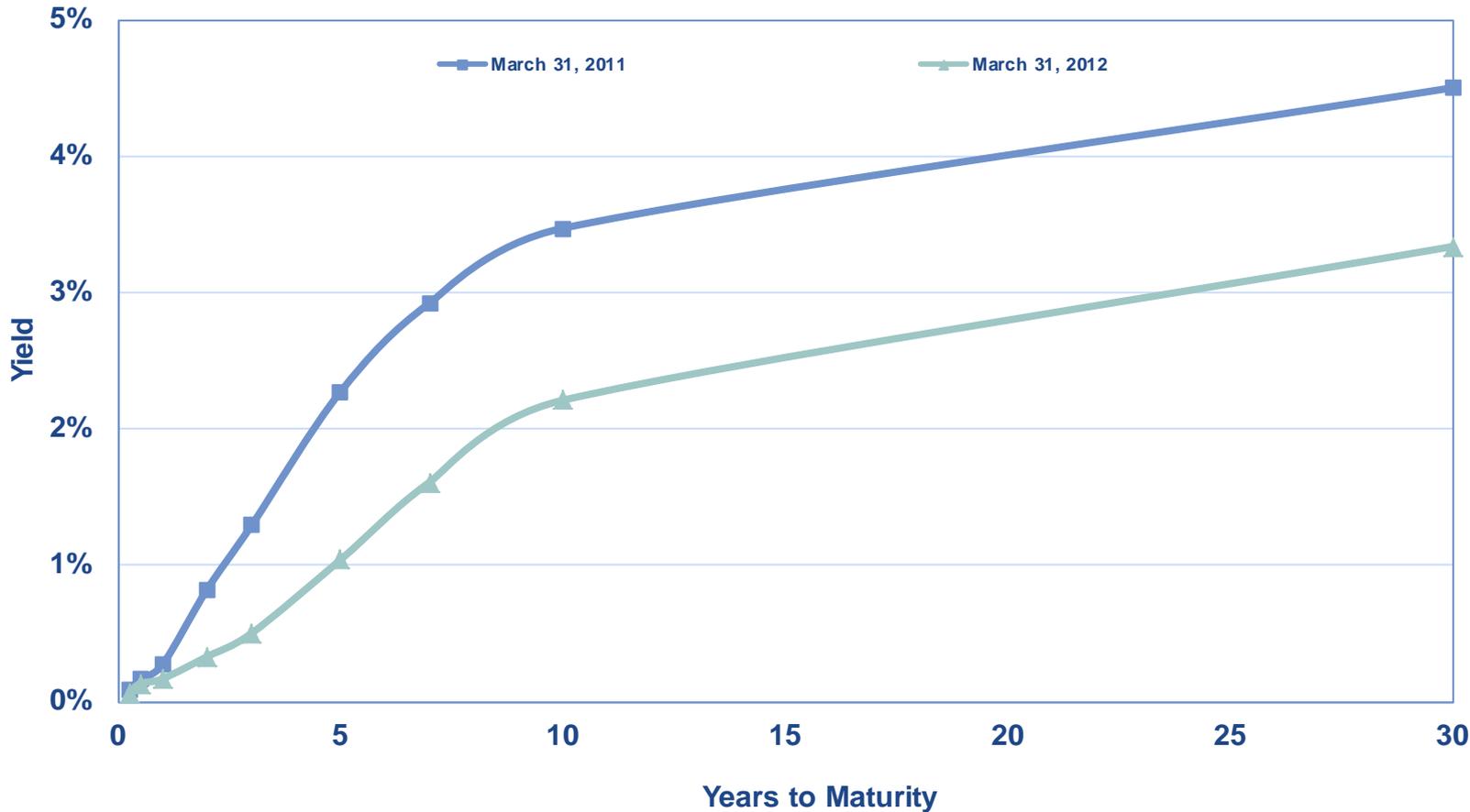
Components of fixed income return are:

- ◆ Price return
- ◆ Coupon return
- ◆ Paydown return

The Yield Curve

Relationship between yield and maturity for like securities

U.S. Treasury Yield Curve





Fixed Income Strategies



Interest rate anticipation

- ◆ Direction of rate changes

Sector rotation

- ◆ Over- or under-weight sector allocations

Security selection

- ◆ What to hold
- ◆ What not to hold
- ◆ How much to hold

Portfolio Analysis



Macro-economic

- ◆ **Gross Domestic Product (GDP)**
- ◆ **Inflation**
- ◆ **Income**
- ◆ **Employment**

Interest rates

Sector level valuations

- ◆ **Government**
- ◆ **Credit**
- ◆ **Securitized**



Credit Analysis

Economic outlook

Industry outlook

Company outlook

Quality ratings

AAA Extremely strong capacity to meet financial obligations

AA Very strong

A Strong

BBB Adequate

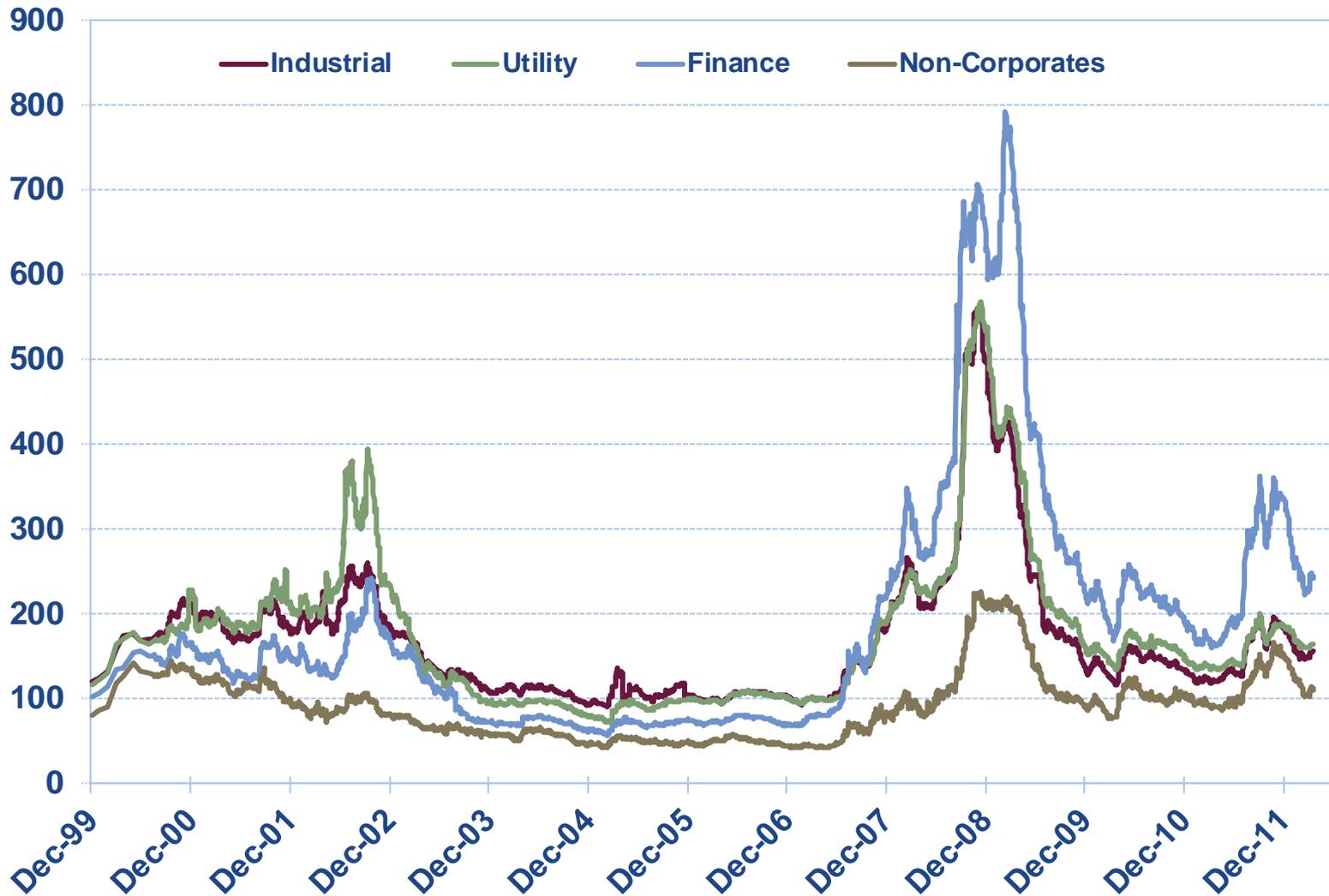
<BBB Limited capacity to meet obligations (high yield)

Financial analysis

- ◆ Balance sheet / income statement / statement of cash flows

Investment Grade Credit Spreads (in basis points)

December 31, 1999 – April 20, 2012





Interest Rates and the Federal Reserve

- ◆ **The Federal Reserve (Fed) is responsible for U.S. monetary policy**
- ◆ **The Fed sets the federal funds rate (short-term interest rate)**
- ◆ **A neutral federal funds rate is consistent with stable inflation and an economy that is growing just in line with its potential**
- ◆ **Monetary policy is accommodative if the federal funds rate is below the neutral rate**
- ◆ **Monetary policy is restrictive if the federal funds rate is above the neutral rate**



10-Year Treasury Yield

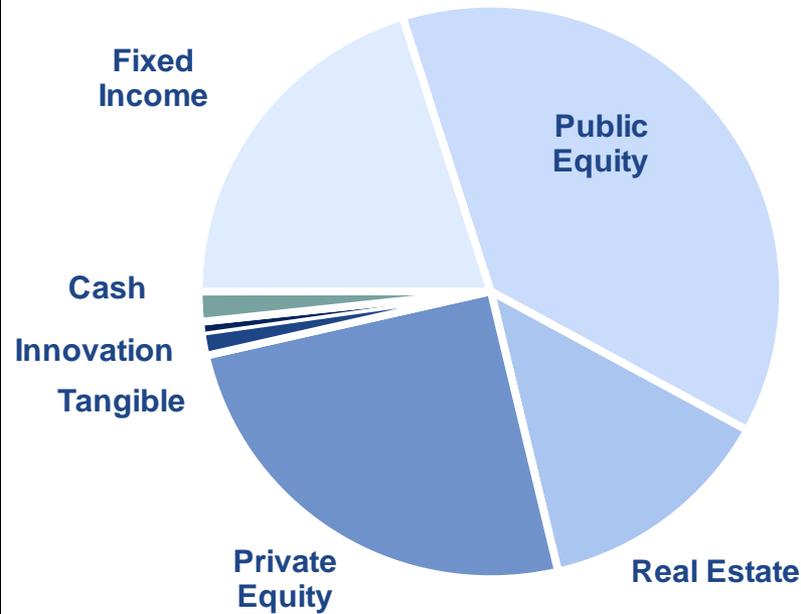
December 31, 1999 – April 20, 2012



Retirement Portfolio

March 31, 2012

Market Value (in 000s)



Fixed Income	\$ 12,558,563	20.1%
Public Equity	23,662,450	37.9%
Real Estate	8,293,414	13.3%
Private Equity	15,685,140	25.1%
Tangible Assets	829,022	1.3%
Innovation Funds	353,443	0.6%
Cash	1,059,252	1.7%
Total	\$ 62,441,284	100.0%

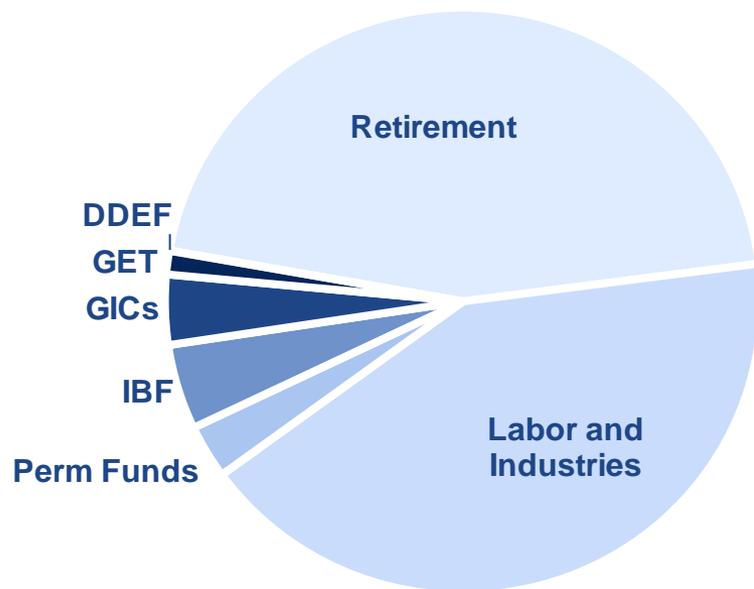
market values from JP Morgan



Fixed Income Portfolios

March 31, 2012

Market Value (in 000s)



Retirement	\$ 12,558,563	45.2%
Labor and Industries	11,685,473	42.0%
Permanent Funds	825,605	3.0%
Intermediate Bond Fund	1,303,620	4.7%
Savings Pool (GICs)	1,069,342	3.8%
GET TIPS	359,599	1.3%
DDEF TIPS	4,206	0.0%
Total	\$ 27,806,407	100.0%

market values from JP Morgan and Barclays POINT analytics

Retirement Fixed Income

Goals

- ◆ Meet or exceed performance of the Barclays Capital U.S. Universal Index
- ◆ Provide diversification
(in combination with other asset classes)

Return (%)

	Annualized			
March 31, 2012	1 year	3 year	5 year	10 year
Retirement	6.86	10.17	7.65	6.94
Barclays Universal	7.59	7.89	6.23	6.07
Difference:	-0.73	2.28	1.42	0.87



Retirement – Summary Statistics

March 31, 2012

Market Value (in 000s)

	Retirement	Barclays Capital U.S. Universal
Market Value	\$12,558,563	\$ 18.7 trillion
Number of Bonds	573	12,096
Average Quality	A1 / A2	Aa2 / Aa3
Average Coupon	4.75 %	4.26 %
Average Maturity (Yrs)	6.21	6.96
Average Yield	3.25 %	2.66 %
Effective Duration	4.57	4.97

**Retirement – Sector Allocation***March 31, 2012*

	Retirement	Barclays Capital U.S. Universal
Cash	1.8	--
TIPS	--	--
Treasury	24.0	30.4
Agency	--	4.7
Credit	57.8	35.7
ABS	1.0	0.2
CMBS	1.9	1.9
Pass-Through	7.5	27.1
CMO	6.0	--
	100.0%	100.0%

Management of the Program



13 fund portfolios

10 fixed income staff positions:

William Kennett

Head of Fixed Income

**Thomas Bosworth
Curtis Littlegreen**

Risk Management and Performance

**Donna May Ong
Lisa Grigg
Ralph Ripple
Shelley Scott
Paul Elwood**

**Credits and Emerging Markets
Communications, Consumer and Technology
Banks and Finance
Industrials
Energy & Utilities**

**Maria Tosteson Rosen
Dorota Czub**

Governments and Securitized



Management of the Program



- ◆ **Public Markets Committee recommends funds' investment policies to Board**
- ◆ **Board approves investment policies and monitors investment performance**
- ◆ **Staff invests portfolios in accordance with policy guidelines**



Keys to Success



- ◆ **Macro-Economic Understanding**
- ◆ **Market and Industry Fundamentals**
- ◆ **Security Valuations**
- ◆ **Judgment**
- ◆ **Strategy Execution**
- ◆ **Investment Discipline**
- ◆ **Quality Personnel**
- ◆ **Hard Work**