



# Investment Accounting

**Everything You Wanted to Know  
but are Afraid to Ask**

**Karen Jones, CPA Australia, Managing Director**

---

50 California Street,  
Suite 2300  
San Francisco, CA 94111  
415.982.5544

---

601 South Figueroa,  
Suite 4500  
Los Angeles, CA 90017  
213.489.4075

---

213 Market Street  
Harrisburg, PA 17101  
717.231.6200

---

[www.pfm.com](http://www.pfm.com)



# Agenda

---

- 1. ACCOUNTING METHODS FOR INVESTMENTS**
- 2. COMPARISON OF METHODS**
- 3. EXAMPLES OF REVENUE CALCULATIONS**  
(separate presentation)
- 4. APPENDICES**
  1. Terminology
  2. GASB 72
  3. Risks to Portfolios
  4. Developing an Investment Strategy



# Accounting Methods for Investments





# Cash Basis

- ◆ Based on completed transactions  
*(receipt of interest, proceeds of sale, etc.)*
- ◆ Recognizes impact on financial statements only when assets are exchanged
- ◆ Verifiable and objective
- ◆ Some potential for manipulation  
*(e.g., purchasing investments at a deep discount that mature into the next fiscal year)*

---

FASB     GASB

Some states require their school districts to use  
cash basis accounting

Financial Accounting Standards Board (FASB)  
Governmental Accounting Standards Board (GASB)



# Accrual Basis

- ◆ Revenues are recognized when earned, not when received in cash
- ◆ Expenses are recognized when incurred, not when paid
- ◆ Provides a better measurement of current performance
- ◆ Subject to some management discretion  
*(subjectivity associated with the estimation that is an inherent aspect of the accrual process)*

---

FASB     GASB

Unless there is specific guidance to the contrary



# Fair Value Basis

- ◆ Uses current market values as basis for recognizing certain assets and liabilities. Often called “mark to market.”
- ◆ Recognizes market fluctuation
- ◆ Investments are reported at fair value on the balance sheet
- ◆ Changes in fair value are reported on the income statement as revenue

---

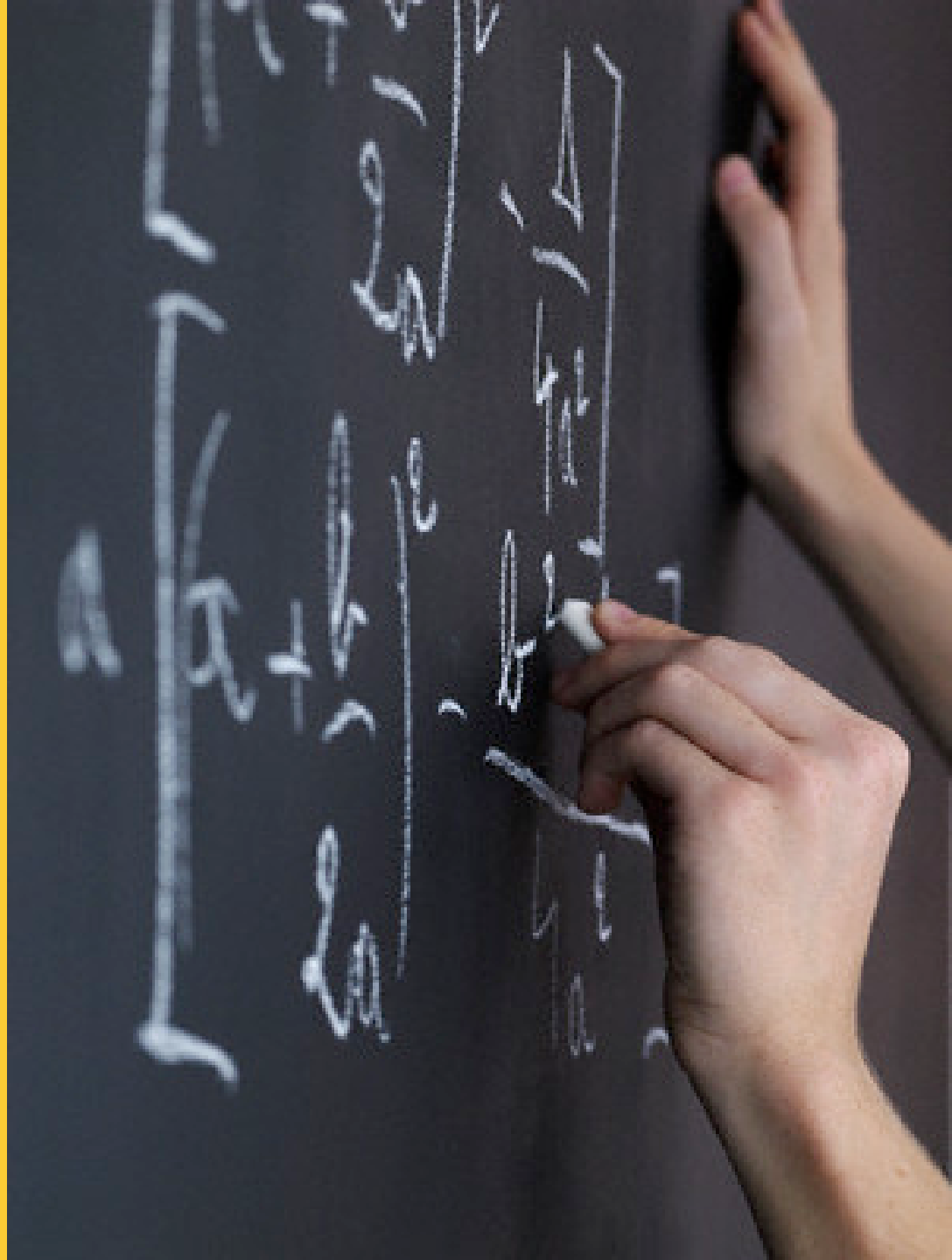
FASB     GASB

**FASB** - ASC 820 “Fair Value Measurement” defines a common fair value measurement methodology when fair value measurement is required by other accounting standards and/or where the fair value option is elected.

**GASB** – GASB Statement No. 72 “Fair Value Measurement and Application” extended the application of fair value reporting to most investments that a government holds.



# Comparison of Methods





# Choice of Method

- ◆ Determines the timing of when revenue and expenses are recognized
- ◆ Typically determined by the accounting standard setting boards that an organization follows

## **FASB**

Required for U.S. based publicly traded companies who file with SEC

Used by private companies

Cash basis is NOT GAAP

## **GASB**

Used by state and local governments

Cash basis is NOT GAAP

*Generally accepted accounting principles (GAAP)*





# EXAMPLE: DISCOUNT SECURITY

---



Bank of Tokyo Commercial Paper, \$1,000,000 par

Bought for \$998,576 Aug 2016

Maturity = Dec 2017

Discount at purchase = \$1,424

Amortized cost as of August 31 = \$998,751

Fair value on August 31 = \$998,620

*For illustrative purposes only.*



# Entries for FASB & GASB are Identical

<b>Cash</b>	<b>Investments</b>
998,576	998,576

- ✓ **Cash Basis**
- ✓ **Amortized Cost**
- ✓ **Fair Market Value**





# Recording the Discount

## Amortized Cost

### Cash

998,576

### Investments

998,576

175

### Investment Income

175

GASB and FASB will record discount in similar fashion



# Recording the Discount

## Fair Market Value

### Cash

998,576
---------

### Investments

998,576
44

### Investment Income

(change in fair value)

44
----

GASB differs from FASB depending on how the security is classified for FASB. GASB Statement No. 31 indicates there is no need to separate interest income and gains/losses in fair value. FASB requires market gains/losses to be recorded in Other Comprehensive Income (OCI) for **Held-For-Sale (HFS) Securities**; interest will still be recorded as interest income.



# Comparison of Income & Balances

	Cash Basis	Accrual Basis	Fair Value Basis
<b>Income earned as of August 31</b>	\$0	\$175	\$44
<b>Balance sheet value</b>	\$998,576	\$998,751	\$998,620

*For illustrative purposes only.*



# Comparison of Income Over Time

	Cash Basis	Accrual Basis	Fair Value Basis
August	\$0	\$175	\$44
September	\$0	\$361	\$1,171
October	\$0	\$362	(\$28)
November	\$0	\$360	\$163
December	\$1,424	\$166	\$74
<b>Total</b>	<b>\$1,424</b>	<b>\$1,424</b>	<b>\$1,424</b>

*For illustrative purposes only.*



# EXAMPLE: INTEREST BEARING SECURITY

---



FNMA Note 0.500% coupon, \$2,000,000 par

Bought 8/3/2018 for \$1,999,400

Accrued interest = \$0

Maturity = 8/7/2019

Discount at purchase = \$600

Amortized cost as of August 31 = \$1,999,413, accrued interest of \$667

Fair value as of August 31 = \$1,999,364, accrued interest of \$667

*For illustrative purposes only.*



# Entries for FASB & GASB are Identical

<b>Cash</b>	<b>Investments</b>	<b>Acc'd Interest</b>
1,999,400	1,999,400	

- ✓ **Cash Basis**
- ✓ **Amortized Cost**
- ✓ **Fair Market Value**







# Recording the Interest

## Amortized Cost

### Cash

1,999,400

### Investments

1,999,400  
13

### Acc'd Interest

667

### Investment Income

680

GASB and FASB will record interest in similar fashion



# Recording the Interest

## Fair Market Value

Cash	Investments	Acc'd Interest
1,999,400	1,999,400	
	36	667

## Investment Income

631
-----

For FASB, the amount recorded as interest income and gains/losses on fair value will be separated. The choice of account for posting the gains/losses will further depend on how the security is classified (either Trading or Held for Sale)



# Comparison of Income & Balances

	Cash Basis	Accrual Basis	Fair Value Basis
<b>Income earned as of August 31</b>	\$0	\$680	\$631
<b>Balance sheet value</b>	\$1,944,400	\$1,999,413 <i>(accrued interest of \$667)</i>	\$1,999,364 <i>(accrued interest of \$667)</i>

*For illustrative purposes only.*



# Permissible Methodologies for Investments

## FASB

- ASC 320 “*Investments – Debt and Equity Securities*”
- Applicable to all “investments in securities that have readily determinable fair values” and “all investments in debt securities” except for specialized industries with scope exclusion (see ASC 320-10-20 for definition of security)
- Requires classification
  - **Trading**
  - **Available for Sale**
  - **Held to Maturity**
- Classification determines measurement and where any unrealized gains or losses are reported
- **Trading** measures security at fair value with changes in fair value recorded in net income for each period
- **Available for Sale** securities are measured at fair value with unrealized gains and losses reported in Other Comprehensive Income (OCI) when sold realized gains and losses are recorded in net income
- **Held to Maturity** are reported at amortized cost
- Fair Value Measurement is assessed as Level 1, 2 or 3 (ASC 820)

**Level 1**  
**Level 2**  
**Level 3**

Observable. Quoted prices for identical assets or liabilities in active markets (unadjusted).  
Quoted prices for similar items in active markets  
Unobservable inputs (e.g., using your own data assumptions)

## GASB

- GASB Statement No. 31 “Accounting and Financial Reporting for Certain Investments and for External Investment Pools”
- Applicable to all investments held by governmental external investment pools and establishes fair value standards for investments that have readily determinable fair values
- Investments meeting the definition **MUST** be carried at fair value
- Does not require classification into Trading, Available for Sale or Held to Maturity
- Clarifies the meaning of investment as “a security or other asset that
  - A government holds primarily for the purpose of income or profit, and
  - has a present service capacity based solely on its ability to generate cash”
  - ASC 320 does not have the same definition
- Required to assess as Level 1, 2 or 3 (GASB Statement No. 72)
- It would be unusual for governmental entities to have any investments using Level 3



# Recordkeeping Options for Governmental Entities

## Option No. 1

Record investment at cost, don't amortize discount, and adjust to fair value at end of year

### Advantages

- ✓ Meets requirements of GASB GAAP  
*would not be permissible for SEC registrants*
- ✓ Simplicity

### Disadvantage

- ✓ No recognition during the year of fair value change that will be recognized at end of year



# Recordkeeping Options for Governmental Entities

## Option No. 2

Record investment at cost, amortize discount on a monthly basis, and adjust to fair value at end of year

### Advantages

- ✓ Meets requirements of GASB  
*would not be permissible for SEC registrants*
- ✓ Monthly amortization of discount approximates the monthly change in fair value
- ✓ Smaller adjustment at end of year

### Disadvantage

- ✓ May require more time to calculate and amortize discounts each month/quarter



# Recordkeeping Options for Governmental Entities

## Option No. 3

Record investment at cost and each month or quarter adjust to fair value

### Advantages

- ✓ Meets requirements of GASB  
*FASB and GASB – SEC registrants file quarterly*
- ✓ Recognizes on a monthly or quarterly basis the full amount of the fair value adjustment applicable to that reporting period
- ✓ No distortion created by year end adjustment

### Disadvantages

- ✓ May require more time to calculate the fair value adjustment each month/quarter
- ✓ Difficult to explain fair value fluctuations each month/quarter



# **Examples of Revenue Calculations**

(separate presentation)





# Appendices



# Terminology



## Par - principal amount of the bonds

- Stated value of bond at maturity
- Amount that will be repaid by issuer
- May be referred to as face or original face
- Security may be sold at a price above (premium) or below (discount) the face amount

## Maturity Date

- The date that the issuer has promised to pay the par or face value of the security

## Coupon - Stated interest rate

- Interest rate on a debt security that an issuer promises to pay
- Multiply coupon rate by par/face to compute interest
- Typically paid semi-annually

## CUSIP – Security identifier

- Committee on Uniform Security Identification Procedures
- Identifies most financial instruments, including: stocks of all registered U.S. and Canadian companies, commercial paper, and U.S. government and municipal bonds
- Nine digits and first six are the base



## Purchase Date

- Trade Date - The date the transaction was consummated
- Settlement Date - The date on which the security transaction was cleared; payment made and securities delivered
- Should be recorded in the financial statements as of **trade date**

## Cost

- Amount paid for the security
- Does not include accrued interest
- Sometimes referred to as clean cost
- Some custodians referred to as tax cost

## Straight Line

- Easiest way to amortize a bond or loan because it allocates an equal amount of interest each year over the debt's life.
- Generally not allowed by FASB unless the difference between straight line amortization and effective yield amortization is negligible
- GASB **does** permit the use of straight line and does not require proof that the difference is negligible
- Example: Bond maturing in five years for \$1 million purchased at a discount of \$100,000. Amortize \$100,000 over the life of the bond. \$20,000 of income is recognized each year over five years.



## Accrued Interest

- Interest earned but not paid
- Accrues from issue date or last coupon date
- Coupons usually pay semi-annually
- On anniversary date of maturity and six months prior
- Can be calculated on a variety of day count methods
- Most common are actual/actual or 30/360

## Amortized Cost

- May be referred to as book value or carrying value
- The original cost of the principal/par adjusted for the periodic reduction of any discount or premium from the purchase date until the valuation date
- Can be calculated using a variety of methods
- Most common are straight line or effective yield



## Fair Value

- The price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.
- Fair value is a market-based measurement, not an entity-specific measurement (GASB 72 “Fair Value Measurement and Application” and FASB 820 “Fair Value Measurement”)

## Realized Gain/(Loss)

- Difference between the sale proceeds and the carrying value

## Unrealized Gain/(Loss)

- Difference between the market/fair value and the carrying value

## Yield

- Rate of return of an investment

## Effective Yield

- Calculates amount of income to be recognized in each period so that a consistent rate of return is maintained
- Example: Bond maturing in five years for \$1 million purchased at discount of \$100,000. Amortize \$100,000 over life of bond at an effective constant rate of interest.

Year 1	$\$19,156 / \$900,000 = 2.13\%$
Year 2	$\$19,563 / \$919,156 = 2.13\%$
Year 3	$\$19,980 / \$938,719 = 2.13\%$
Year 4	$\$20,405 / \$958,699 = 2.13\%$
Year 5	$\$20,896 / \$979,104 = 2.13\%$



## Basis Point

- 1 basis point = 1/100 of 1%
- 100 basis points = 1%
- 500 basis points = 5%
- The difference between 4.90% and 4.95% is 5 basis points

**\$1 Million x 1 basis point = \$100/year**

## Duration - measure of bond price volatility

- Measurement of the length of security's term-to-maturity
  - Timing of cash flows
  - Influenced by coupon rate and yield to maturity
- The higher the duration, the greater the price volatility for changes in interest rates

Risk/Return of Various Investment Strategies 10 Years Ended February 28, 2019				
Bank of America Merrill Lynch Treasury Index	Duration (years)	Annualized Total Return	Cumulative Value of \$1 Million	Month With Negative Returns
3M T Bill	0.24	0.41%	\$1,041,906	7 out of 120
6M T Bill	0.49	0.58%	\$1,060,009	8 out of 120
1 Yr Treasury	0.98	0.69%	\$1,071,443	22 out of 120
1-3 Treasury	1.89	1.03%	\$1,108,175	41 out of 120
1-5 Treasury	2.63	1.46%	\$1,156,004	48 out of 120
1-10 Treasury	3.70	2.05%	\$1,225,666	51 out of 120
3-5 Treasury	3.79	2.11%	\$1,232,829	48 out of 120

Source: Bloomberg, as of February 28, 2019



# **GASB 72**





# What This Statement Does

- ◆ Clarifies how fair value should be measured for those assets (such as investments) and liabilities (such as derivatives that are in a liability position) that are currently required to be reported at fair value
- ◆ Expands the definition of investments subject to fair value
- ◆ Expands the disclosures in the footnotes of fair value
- ◆ Goal is to maximize observable inputs and minimize unobservable inputs when deciding which technique is best



# Three Part Statement

## ◆ Measurement

The act or process of assigning dollar amounts to elements in financial statements

## ◆ Application

Definition of what should be fair valued

## ◆ Disclosures

Presentation in the footnotes



# Measurement

The ***price*** that would be received to sell an asset or paid to transfer a liability in an orderly transaction between ***market participants*** at the ***measurement date***

## ◆ Price

Not adjusted for transaction costs

Government's principal or most advantageous market

## ◆ Market participants

Use assumptions that market participants would use to price asset or liability

## ◆ Measurement date

Not necessarily financial statement date



# Measurement – Valuation Techniques

## ◆ Market approach

Uses prices

Relevant information generated by market transactions involving identical or similar assets/liabilities

## ◆ Cost approach

Amount required currently to replace the service capacity of an asset

## ◆ Income approach

Converts expected future cash amounts into a single amount

Present value

Option-pricing models

Revisions to fair value due to a change in technique is considered a change in accounting estimate (applied in current period and disclosed in the footnotes)



# Measurement

## ◆ Risk adjustments

Includes a risk premium or discount that market participants would demand as compensation

Reflects an orderly transaction



# Application

## ◆ Definition of an investment

***A security or other asset that a government holds primarily for the purpose of income or profit*** and with a present service capacity that is based solely on its ability to generate cash or to be sold to generate cash

## ◆ Service capacity

Refers to a government's mission to provide services

## ◆ Held primarily for income or profit

Acquired first and foremost for future income and profit



# Application

- ◆ An asset that is being held in order to further some part of the mission of the local government to provide services is **NOT** required to be reported at fair value
- ◆ Determination of whether the asset was acquired solely to generate cash and not for a program objective is determined **at the time of acquisition**
- ◆ A later change in the usage of the asset will **not** change the initial determination as to whether or not that asset will be reported at fair value



# Application

4.40. Q—A city government constructs an office building with the intent to occupy the building for a city program. While the city awaits the grant approval, the city leases the building and receives lease income. Should the building initially be classified as an investment and then reclassified when the city uses the building for the city’s program?

A—No. The asset should be classified at acquisition as a capital asset. Because the city intended, at acquisition, to use the building for the purpose of a city program, the building does not meet the definition of an investment. After an asset is classified at acquisition, its classification should not change.

4.41. Q—A city government seeks to provide affordable housing to the community. It lends money to its housing authority (a component unit of the city) to complete the development of an existing affordable-housing project. The housing authority will repay the loan over a 20-year period and will compensate the city with an interest rate commensurate with market conditions. Should the city classify this loan as an investment?

A—No. The loan is a receivable and not an investment because the purpose of the loan is to support its affordable-housing program.

*Source: 2016 GASB Implementation Guide*





# Acquisition Value

- ◆ This statement requires measurement at acquisition value for:
  - Donated capital assets
  - Donated works of art, historical treasures and similar assets
  - Capital assets received through a service concession arrangement



# Hierarchy of Fair Value Inputs

◆ **Level 1 - quoted prices in active markets for identical assets or liabilities**

◆ **Level 2 - quoted prices for similar assets or liabilities**

Quoted prices for identical or similar assets/liabilities in markets that are not active other than quoted prices that are observable

◆ **Level 3 - unobservable inputs**

Inputs when actual market data is not available  
assumptions and considerations that market participants use when pricing the asset



# Common Categorization

## ◆ Level 2

Federal agency securities, corporate notes and bonds, municipal bonds

## ◆ Level 3

Should be rare in California



# External Investment Pools

- ◆ 2017 GASB Implementation Guide (Exposure Draft) clarifies how to report External Investment Pools in the schedule of fair value hierarchy

**Q. 4.38:** If pool is compliant with GASB 79 and elects to measure its investments at amortized cost, the government measures the investment at amortized cost and it should not be categorized within the fair value hierarchy.

If the pool measures investments at fair value, regardless of whether the pool transacts with participants at a floating net asset value per share or a fixed net asset value per share (for example \$1.00), positions in external investment pools that are measured at fair value should not be categorized within the fair value hierarchy.



# Disclosures

- ◆ Organized by type or class of asset or liability
- ◆ Information for each class or type of asset/liability
  - Fair value measurement at the end or reporting period
  - Level of hierarchy
  - Description of valuation techniques
- ◆ For fair value measurements categorized within Level 3
  - Effect of those investments on investment income



# Disclosure of Fair Value Inputs

The City categorizes its fair value investments within the fair value hierarchy established by generally accepted accounting principles. The City has the following recurring fair value measurements as of June 30, 2016:

	<u>Fair Value Hierarchy</u>			<u>Total</u>
	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>	
US Treasury Notes	\$15,290,373	-	-	15,290,373
Federal Agency securities	-	10,000,000	-	10,000,000
Negotiable CDs	-	9,197,337	-	9,197,337
Corporate Bonds	-	3,773,445	-	3,773,445
<b>Total investments</b>	<b><u>\$15,290,373</u></b>	<b><u>22,970,782</u></b>	<b><u>-</u></b>	<b><u>38,261,155</u></b>

*Unless you include a reconciliation of investments NOT measured at fair value, this schedule will not agree to your other investment schedules.*



# Disclosure of Fair Value Inputs

<b>Investments Measured at the NAV</b> (\$ in millions)	<b>Fair Value</b>	<b>Unfunded Commitments</b>	<b>Redemption Frequency (if Currently Eligible)</b>	<b>Redemption Notice Period</b>
Equity Long/Short	\$40		Quarterly	30-60 days
Real Estate Fund	20	\$5	Annually	30-60 days
LGIP	10		Daily	None
Total investments measured at the NAV	<u>\$70</u>			

*For illustrative purposes only.*



# Optional Narrative Format

The City categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs.

The City has the following recurring fair value measurements as of June 30, 20X1:

- U.S. Treasury securities of \$45 million are valued using quoted market prices (Level 1 inputs)
- Corporate bonds of \$12 million are valued using a matrix pricing model (Level 2 inputs).

The City also has a nonrecurring fair value measurement as of June 30, 20X1, for a closed performing arts hall that will no longer be used by the government and therefore is considered to be impaired. The hall has been written down from \$5.6 million to \$3.4 million based on an appraisal of the property (Level 3 inputs).

*Source: GASB Codification*



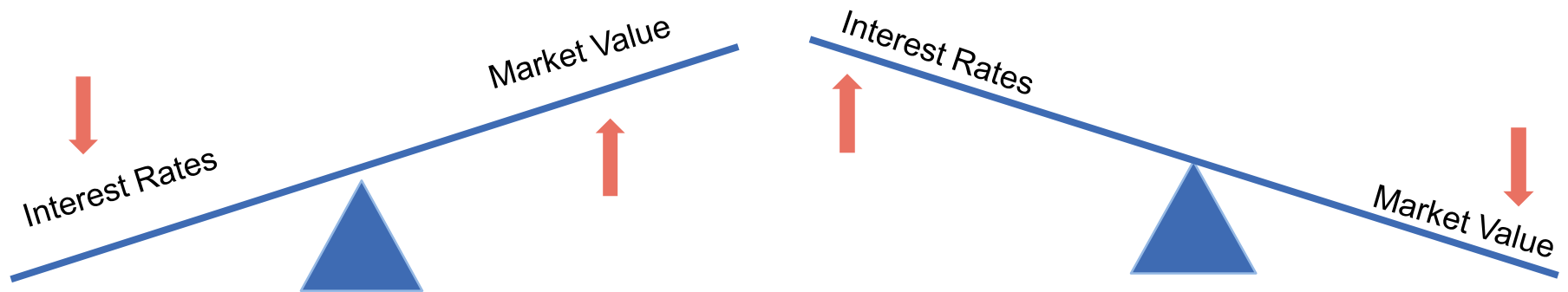


# Risks to Portfolios



# Volatility

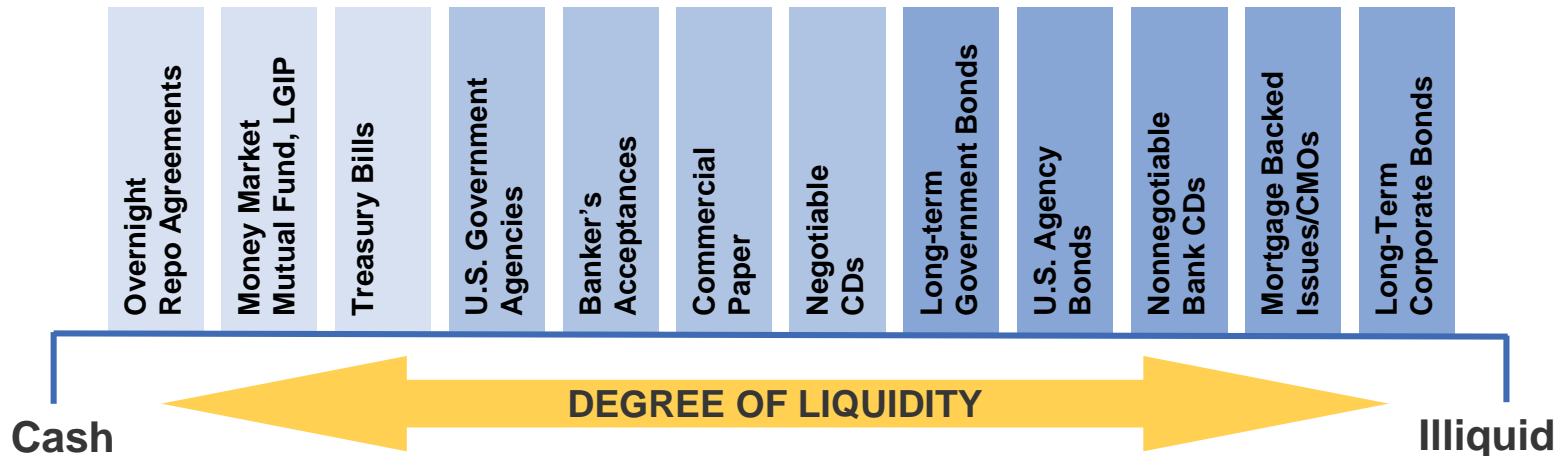
- The effect of interest rate changes on the price/return of a security or portfolio
- Interest rates and portfolio value are inversely related (normally)





# Liquidity Risk

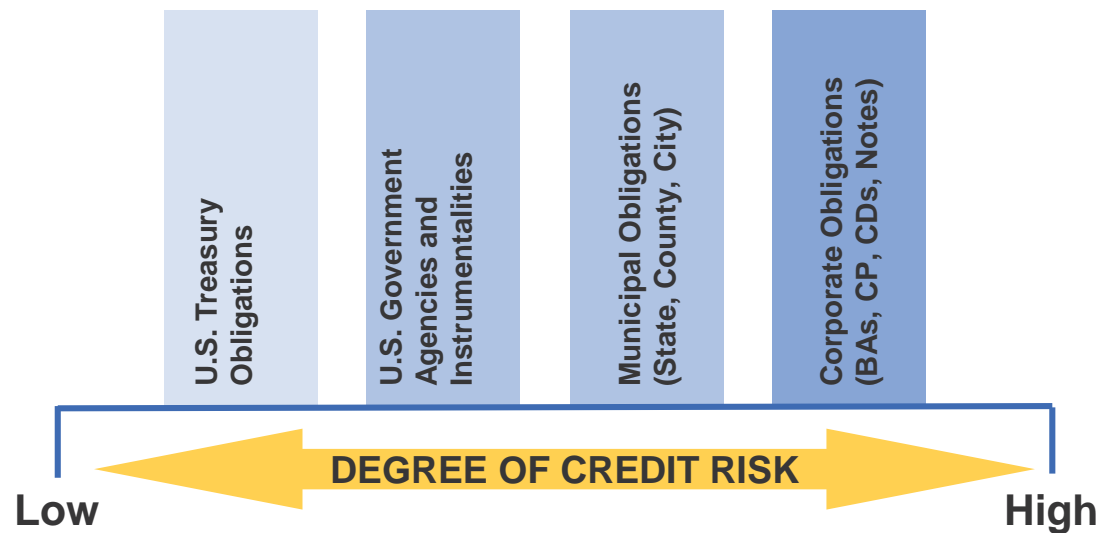
- ◆ Inability to sell portfolio holdings at a competitive price
  - Substantial penalty for earlier withdrawal
  - Capital losses if interest rates have gone up
  - Fire sale prices
- ◆ Long period to maturity





# Credit Risk

- ◆ Risk of default or decline in security value due to conditions outside investors control
  - Bankruptcy
  - Rating agency downgrades
  - Regulatory changes





# Monitoring Credit Risk

- ◆ Nationally Recognized Statistical Rating Organizations (NRSRO)
  - Designated by the SEC
- ◆ Largest and most active NRSROs
  - Standard & Poor's
  - Moody's Investors Service
  - Fitch Ratings





# Ratings Actions

Jargon	Definition
Credit Rating	<ul style="list-style-type: none"><li>• Reflection of the probability of default (default rate) &amp; loss to investor (loss rate) → long-term debt investor</li><li>• Reflection of the probability of default → short-term investor</li></ul>
Rating Watch	<ul style="list-style-type: none"><li>• Indication that the agency is reassessing the rating in response to a material change to the credit quality of the issuer</li><li>• Potential upgrade or downgrade may occur within 3 months</li></ul>
Rating Outlook	<ul style="list-style-type: none"><li>• Longer-term projection of a possible ratings change</li><li>• Potential upgrade or downgrade may occur 6 months – 2 years</li></ul>



# Ratings

<b>S&amp;P</b>	<b>Moody's</b>	<b>Explanation of Rating</b>
AAA	Aaa	High quality. Smallest degree of investment risk
AA	Aa	High quality. Differs only slightly from highest-rated issues
A	A	Adequate capacity to pay interest and repay principal
<hr/>		
BBB	Baa	More susceptible to adverse effects of changes in economic conditions
<hr/>		
BB	Ba	Has speculative elements; future not considered to be well-assured
B	B	Generally lack characteristics of desirable investment
CCC	Caa	Poor standing. Vulnerability to default
C	C	Extremely poor prospect
D	D	In default



# Reinvestment Risk

- ◆ The risk that a security's cash flow will be reinvested at a lower rate of return than what is being earned by the security
- ◆ Exposure to reinvestment risk
  - Callable securities
  - Mortgage backed securities
  - Securities with larger earlier cash flows (high coupon bonds)





# Developing an Investment Strategy



# Investment Objectives for Government Entities

**Protect principal**



**Provide necessary  
liquidity to cover  
both ongoing and  
unexpected cash  
needs**

**Maximize earnings recognizing need for  
safety and liquidity, and subject to  
restrictions specified by state statutes  
and the local governing body**



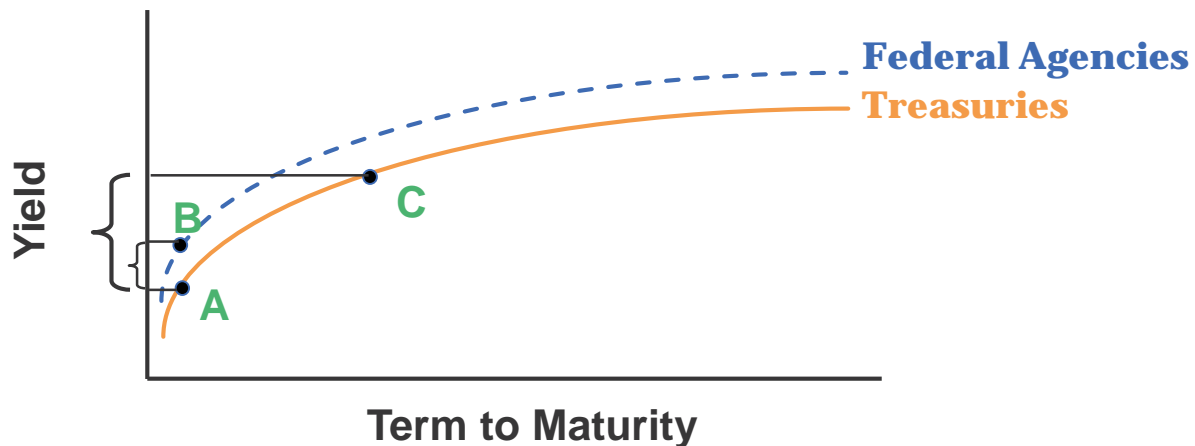
# Key Considerations

- ◆ Safety of principal
- ◆ Securities and maturities permitted by California Government Code
- ◆ Securities and maturities permitted by the agency's investment policy
- ◆ Cash flow needs
- ◆ Diversification
- ◆ Risk tolerance
- ◆ Capabilities of investment staff
- ◆ Relative value of securities being purchased



# Average Maturity

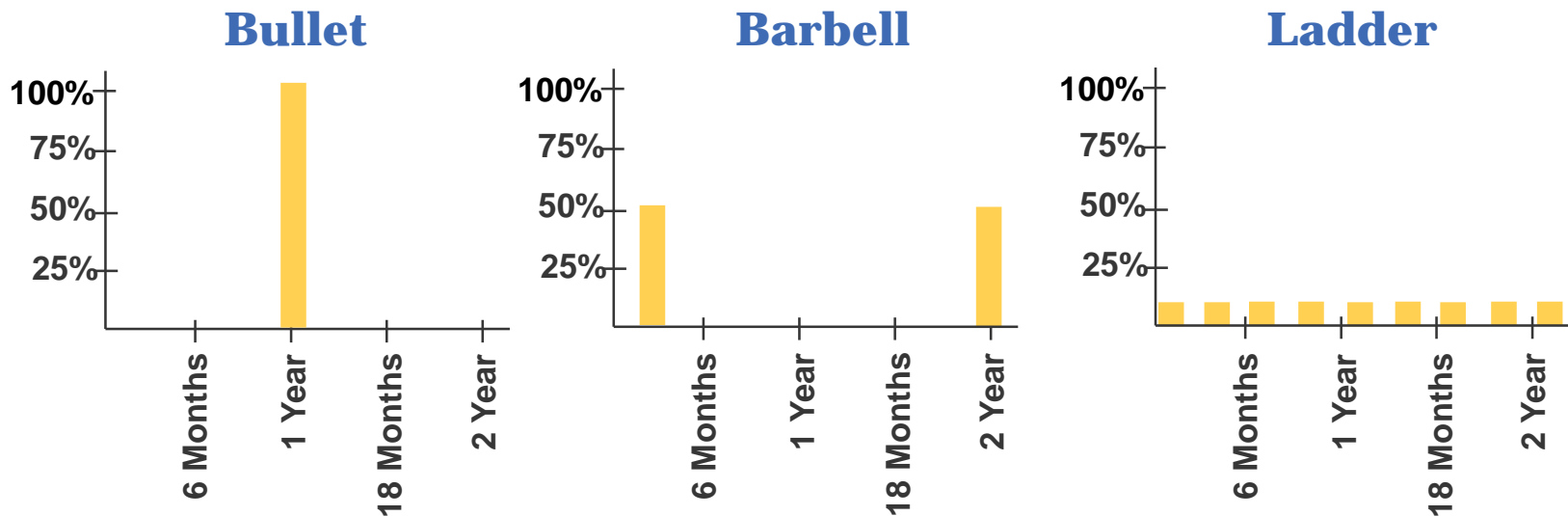
- ◆ Average maturity contributes to investment performance
- ◆ Typically, to increase returns:
  - extend maturities
  - increase credit risk
  - reduce liquidity





# Portfolio Structuring

- ◆ Many ways to achieve a specific target maturity
- ◆ The optimal structure will depend on the shape of the yield curve





## Disclosures

This material is based on information obtained from sources generally believed to be reliable and available to the public; however, PFM's Asset Management business cannot guarantee its accuracy, completeness or suitability. This material is for general information purposes only and is not intended to provide specific advice or a specific recommendation. All statements as to what will or may happen under certain circumstances are based on assumptions, some but not all of which are noted in the presentation. Assumptions may or may not be proven correct as actual events occur, and results may depend on events outside of your or our control. Changes in assumptions may have a material effect on results. Past performance does not necessarily reflect and is not a guaranty of future results. The information contained in this presentation is not an offer to purchase or sell any securities.

# Thank You



pfm