CAPITAL MARKETS FIXED INCOME

Paul H. Lundmark, CFA
Managing Director, Portfolio Manager

Richmond Capital Management
Fixed Income Investment Managers
Richmond, Virginia

XYZ PENSION FUND

HOLDINGS: 11/30/2024

Security Description	Par Value	Market Price	Bloomberg Rating	% Portfolio	Yield-to-Maturity
Wells Fargo, 3.00% due 4/22/2026	300,000	97.78	A	1.8%	4.72%
FNMA, 1.78% due 9/24/2026	1,000,000	96.05	AA+	4.8%	4.22%
FNMA #CB2610, 2.00% due 1/1/2052	842,839	79.54	AA+	3.4%	4.93%
U.S. Treasury Note, 4.25% due 11/15/2034	2,000,000	98.95	AA+	9.9%	4.38%
MSC 2016-UB11 A4, 2.78% due 8/15/2049	730,000	96.11	AAA	3.5%	5.22%
HART 2022-A A3, 2.22% due 10/15/2026	200,000	99.18	AAA	1.0%	4.66%

WHAT IS A BOND? AN EXAMPLE

- A bond is a loan.

  Example: IBM borrows $100,000,000 from investors for five years at 5% interest.

  In return, IBM pays the investors a certain rate of interest ($5,000,000 annually) for the life of the loan.

  When the loan comes due or matures, IBM will repay the investors the face amount (par value) of the bond which is $100,000,000.

- Bonds are also called debt securities or fixed income investments.

TERMS ASSOCIATED WITH BONDS

- **Par Value**

1) Is the actual amount being borrowed (face value);
2) The amount on which interest is paid; and
3) The amount to be paid back at maturity.

So par value could be:

$1,000
$100,000
$1,000,000
$10,000,000
$100,000,000

Bonds are usually issued in $1,000 increments.

TERMS ASSOCIATED WITH BONDS

- **Maturity Date**

  Date on which payment of face value (par value) is due. For fixed income securities all bonds are expected to pay at face value.

  In contrast, stocks have no maturity date.

TERMS ASSOCIATED WITH BONDS

- **Coupon Rate/Interest Rate**

The stated rate paid on a debt security's par value.

Example: A 5% annual coupon rate/interest rate on $100,000,000 par value would pay a holder $5,000,000 annually.

Formula: $100,000,000 x .05 = $5,000,000

Coupon payments/interest payments are usually paid annually, semi-annually, quarterly, or monthly.

TERMS ASSOCIATED WITH BONDS

Best measure when comparing bonds is:

- **Yield-to-Maturity**

  It is the anticipated annual total return on a bond at the time of purchase which **factors the coupon rate, the length of maturity, and the dollar price.** (Assumes the bond is held to maturity.)

TERMS ASSOCIATED WITH BONDS

- **Basis Points**

Yields are shown in percentage terms (2.00%). The unit of measure to describe the changes in yield is called a **basis point**. One basis point is 1/100 of a percentage point or .01%. For example, the difference between 2.01% and 2.00% is 1 basis point. The difference between 2.00% and 3.00% is 1% or 100 basis points.

0.01%	=	1 basis point
0.50%	=	50 basis points
1.00%	=	100 basis points
1.51%	=	151 basis points
2.25%	=	225 basis points

BOND PRICES

- Bonds are typically issued at **par** and mature at **par**.

  Example: IBM issues $100,000,000 and will pay $100,000,000 at maturity.

  In between the issue date and the maturity date, the price to buy or sell the bond can fluctuate above and below **par** (100%).

DETERMINING BOND PRICES

- **Price**

The market price of a bond is stated as a percentage of the par value.

Examples:

- Price of **$100** means **100% of the par value** or $1,000 for $1,000 par value. Priced at **par**.
- Price of **$90** means **90% of the par value** or $900 for $1,000 par value. If price of bond is less than its par value, it is said to be priced at a **discount**.
- Price of **$110** means **110% of the par value** or $1,100 for 1,000 par value. If price of bond is more than its par value, it is said to be priced at a **premium**.

RELATIONSHIP BETWEEN BOND PRICES AND YIELDS

- **Interest rates go up ↑ Bond prices go down ↓**

- **Interest rates go down ↓ Bond prices go up ↑**

  The coupon on a bond remains fixed for the life of a bond. As interest rates in the market change, new bonds are issued with higher or lower coupons. To keep pace with current interest rates, the market price of existing bonds will change.

RELATIONSHIP BETWEEN BOND PRICES AND YIELD-TO-MATURITY

Example: Caterpillar issued a bond on 8/16/2024 at par value. It will mature in 5 years on 8/16/2029, and has a coupon rate of 4.375%. One month after issuance, 9/16/2024, let's consider three scenarios:

First Scenario: Interest Rates Have Not Changed Since Issuance			
Security Description	Par Value	Market Price	Yield-to-Maturity
Caterpillar, 4.375% due 8/16/29	**500,000**	**100.00**	**4.375%**

Second Scenario: Interest Rates Have Risen 100 Basis Points Since Issuance			
Security Description	Par Value	Market Price	Yield-to-Maturity
Caterpillar, 4.375% due 8/16/29	**500,000**	**95.73**	**5.375%**

Third Scenario: Interest Rates Have Fallen 100 Basis Points Since Issuance			
Security Description	Par Value	Market Price	Yield-to-Maturity
Caterpillar, 4.375% due 8/16/29	**500,000**	**104.49**	**3.375%**

HOW DO BONDS DIFFER FROM STOCKS

- Bonds are a contractual obligation.
- Bonds have seniority status to stocks in the capital structure.
- Bondholders are not owners of the company.
- Bonds trade in “over-the-counter” market vs. stocks which trade on an exchange.

WHY INVEST IN BONDS?

- Stable income streams
- Probability of negative returns is limited
- Diversification
- Attractive yields

WHY INVEST IN BONDS:
1) STABLE INCOME STREAMS

Components of Total Return as of 11/30/2024

Bonds (Bloomberg Aggregate)

Years	Total Return	Price Return	Coupon Return	Coupon % of Total Return
Annualized: 20 Years	3.15%	-0.31%	3.48%	100%

* Assumes coupon reinvested into index
Source: Bloomberg

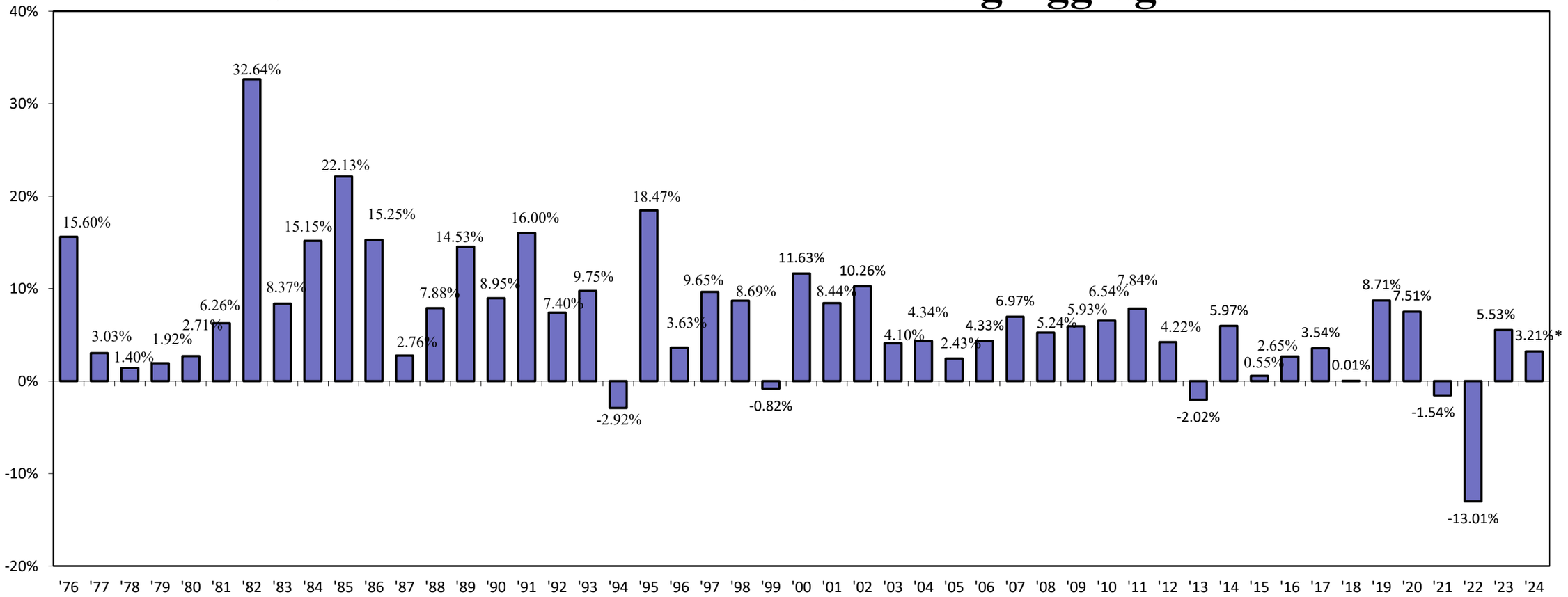
Stocks (S&P 500)

Years	Total Return	Price Return	Dividend Return	Dividend % of Total Return
Annualized: 20 Years	10.66%	8.52%	2.14%	20.2%

* Assumes dividend reinvested into index
Source: Bloomberg

WHY INVEST IN BONDS:
2) PROBABILITY OF NEGATIVE RETURNS IS LIMITED

Calendar Year Returns of Bloomberg Aggregate Index



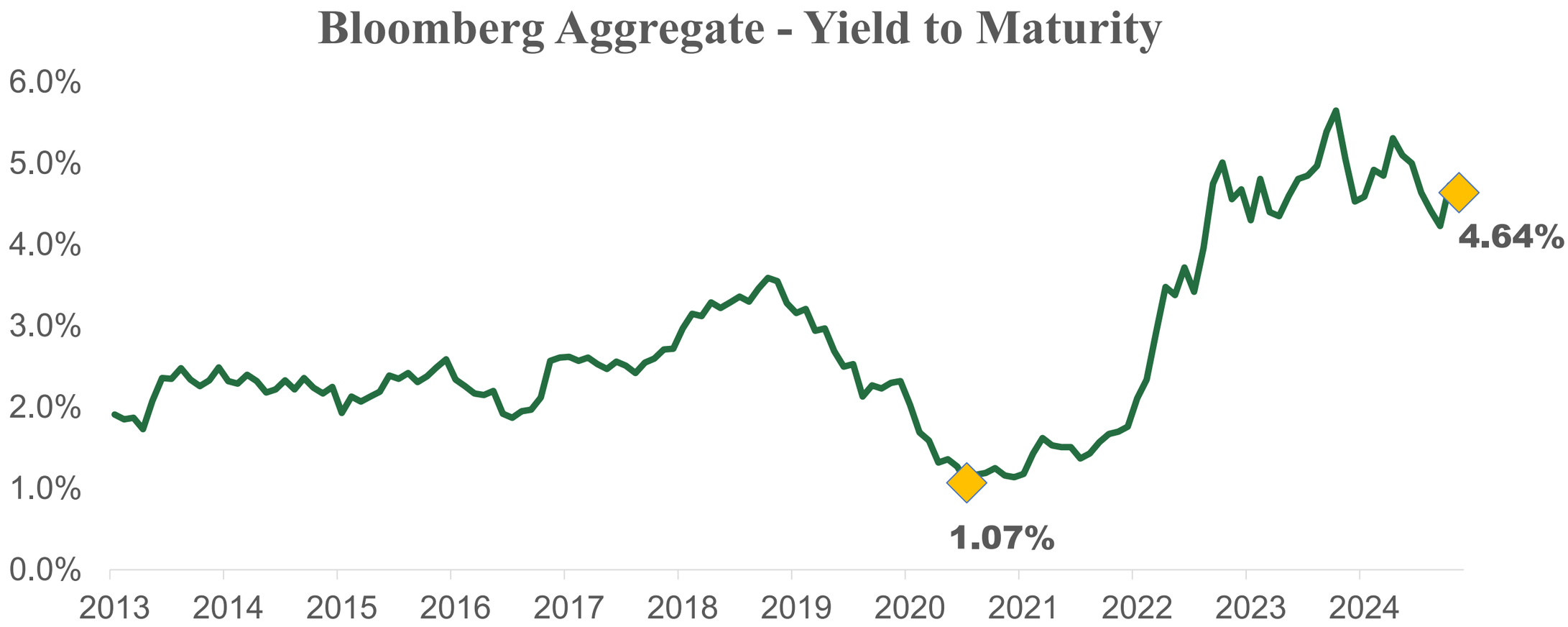
Source: Bloomberg
* As of November 30, 2024

WHY INVEST IN BONDS:
3) DIVERSIFICATION

Do You Remember 2000, 2001, 2002? How About 2008? 2011?
No Place to Hide in 2022

Equity Returns (S&P 500)	Year	Fixed Income Returns (Bloomberg Aggregate)
-9.10%	2000	11.63%
-11.92%	2001	8.44%
-22.10%	2002	10.26%
-37.00%	2008	5.24%
2.11%	2011	7.84%
-18.17%	2022	-13.01%

WHY INVEST IN BONDS:
4) ATTRACTIVE YIELDS



Source: Bloomberg
* As of November 30, 2024

TYPES OF RISK IN FIXED INCOME

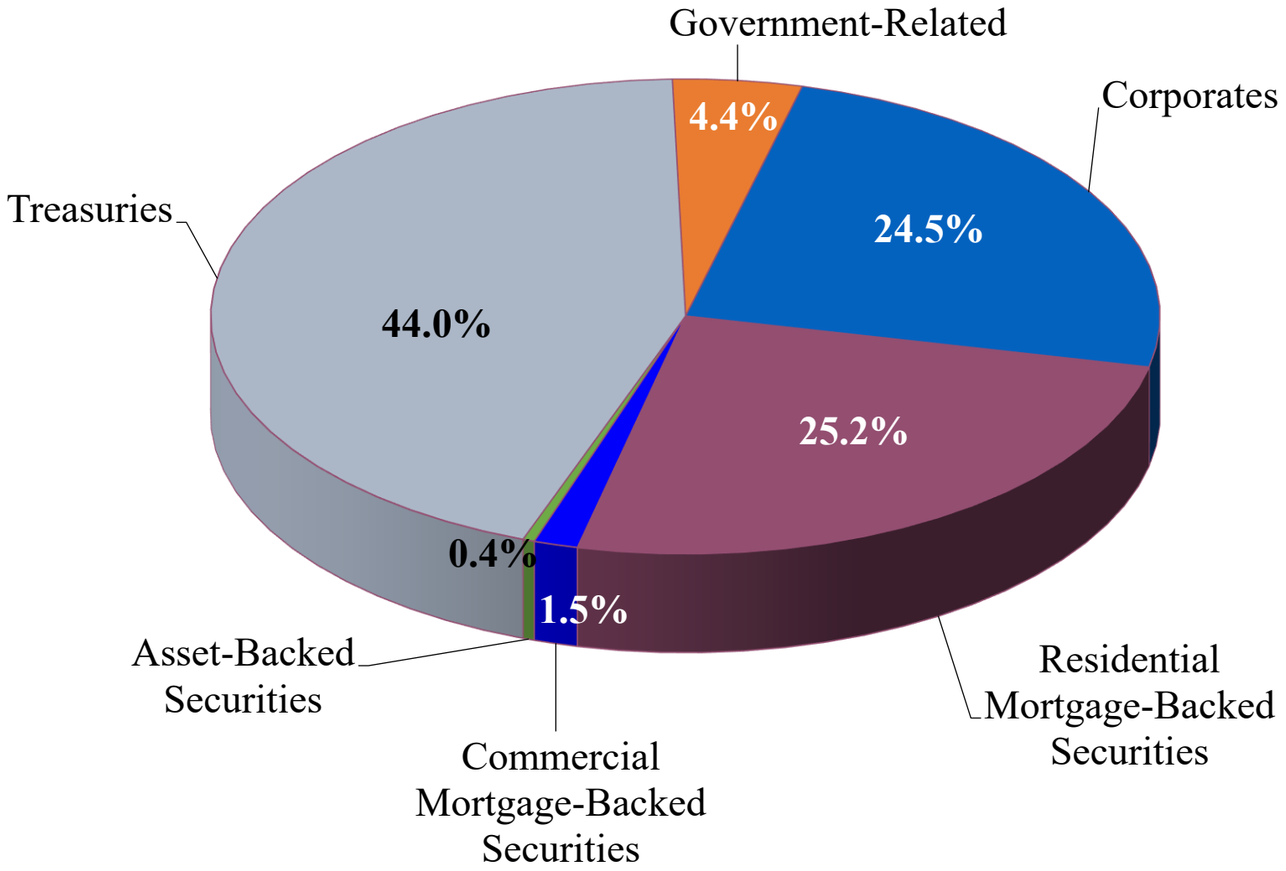
- Interest rate risk
- Credit risk
- Call/prepayment risk

FIXED INCOME RISKS

- Interest Rate Risk
  - Risk that the price of bond will decline if interest rates rise.
  - All bonds have interest rate risk.
  - Longer maturity bonds have more interest rate risk.
  - Inflation is a bond's worst enemy.
  - Duration: Tool to help investors understand the interest rate risk or price sensitivity to interest rate changes.
- Credit Risk
  - Issuer may not make a coupon payment or principal payment.
- Call/Prepayment Risk
  - Issuer redeems bonds before final maturity.
  - Mortgage-backed securities are callable bonds because homeowners have ability to refinance (call) mortgage when rates decline.

TYPES OF BONDS THAT YOU WILL FIND IN YOUR PORTFOLIO

COMPOSITION OF BLOOMBERG AGGREGATE INDEX AS OF 11/30/2024
$28.6 TRILLION MARKET VALUE



Source: Bloomberg

U.S. TREASURY SECURITIES

Holdings Report: U.S. Treasury Note, 4.25% due 11/15/2034

- Backed by full faith and credit of United States Government
- Extremely liquid

CORPORATE SECURITIES

Holdings Report: Wells Fargo, 3.00% due 4/22/2026

- Issued by corporations to fund operating requirements and capital needs
- Varying liquidity and credit risk
- Credit risk is classified by rating agencies
  - Moody's
  - Standard and Poor's (S&P)
  - Fitch

RATINGS REVIEW

	Moody's	Standard & Poor's	Fitch
Investment Grade			
Highest Quality	**Aaa**	**AAA**	**AAA**
High Quality (Very Strong)	**Aa**	**AA**	**AA**
Upper Medium Grade (Strong)	**A**	**A**	**A**
Medium Grade	**Baa**	**BBB**	**BBB**
High Yield or Non-Investment Grade			
Somewhat Speculative	**Ba**	**BB**	**BB**
Speculative	**B**	**B**	**B**
Highly Speculative	**Caa**	**CCC**	**CCC**
Most Speculative	**Ca**	**CC**	**CC**
Imminent Default	**C**	**C**	**C**
Default	**D**	**D**	**D**

TYPES OF CORPORATE BONDS

- Industrial
- Finance/Bank
- Utility

GOVERNMENT-RELATED SECURITIES

- **U.S. Agencies**

  Holdings Report: FNMA, 1.78% due 9/24/2026

  - Purpose is to provide public financing to sectors of the economy viewed as important from a public policy perspective

  - Housing
    FNMA (Fannie Mae) – Federal National Mortgage Association
    FHLMC (Freddie Mac) – Federal Home Loan Mortgage Corporation

- **Sovereign, Supranational, Local Authority**

  - Italy, World Bank, Hydro-Quebec

RESIDENTIAL MORTGAGE-BACKED SECURITIES

Holdings Report: FNMA #CB2610, 2.00% due 1/1/2052

- Mortgage loans that are packaged into pools. Pools may consist of several thousand mortgages or only a few.
- Most are purchased and guaranteed by FNMA (Fannie Mae) or FHLMC (Freddie Mac). Implicit U.S. Government guarantee.
- GNMA (Ginnie Mae) Government National Mortgage Association also guarantees mortgage pools – agency of U.S. Department of Housing and Urban Development – explicit U.S. Government guarantee.
- Pay interest and principal and any prepayments monthly.
- Uncertainty of when you receive cashflows exists due to prepayments.

FOLLOW THE RESIDENTIAL MORTGAGE

Borrower

Works with a lender to get a home-purchase loan or a refinancing.

What they get

Financing needed to purchase a home or cash from refinancing.

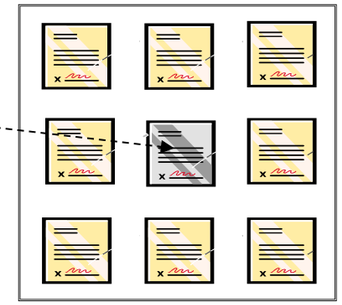
Lender

Takes up-front fees for making the loan.

FNMA/FHLMC/GNMA

Packages the loans into a mortgage-backed bond deal, often known as a securitization.

MORTGAGE-BACKED SECURITY



Collects fees for packaging the loans into bond deal and providing guarantee of principal and interest.

Investors

Earn interest on the bonds and absorb any gain or loss in price of the bond.

COMMERCIAL MORTGAGE-BACKED SECURITIES

Holdings Report: MSC 2016-UB11 A3, 2.78% due 8/15/2049

CMBS are securities backed by mortgages of commercial income producing properties:

- Apartments
- Offices
- Retail
- Industrial
- Warehouse
- Lodging

ASSET-BACKED SECURITIES

Holdings Report: HART 2022-A A3, 2.22% due 10/15/2026

- Backed by variety of income-producing collateral:
  - Credit card balances
  - Automobile loans
  - Consumer or commerce-related loans such as Harley-Davidson motorcycles and Caterpillar farm equipment
  - Music royalties