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Bonds LS

27 October 2025

Fall 2025





AGENDA

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Types of Investment

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Credit Scoring Model

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Bond Fundamentals

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Basics

Bonds are typically seen as less risky than stocks

Coupon rate

- Percentage of the face value of **interest** the bond pays
- Largely influenced by interest rates
- Stays **fixed** for the entire length of the bond, usually states in the ticker
 - Example: "MBONO 7.75 11/23/34"

Value

- If coupon rate > YTM (price > par):
 - The bond trades at a **premium**, as coupon payments are higher than current market rates
- If coupon rate < YTM (price < par):
 - The bond trades at a **discount**, as coupon payments are lower than current market rates

YTM

- Total **expected annualized return** on the bond if you hold until maturity
- Sensitive to interest rates, maturity, credit risk
- Yields include coupon payments, repayment of the bond, and the discount rate

Types of bonds

- Bonds can be issued by almost any entity looking to **borrow money from investors** to fund projects
- Sovereign, municipal, corporate, supernational
- You can **filter** for certain types of bonds such as emerging markets, high yield, inflation-linked, etc.

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Types of Investment

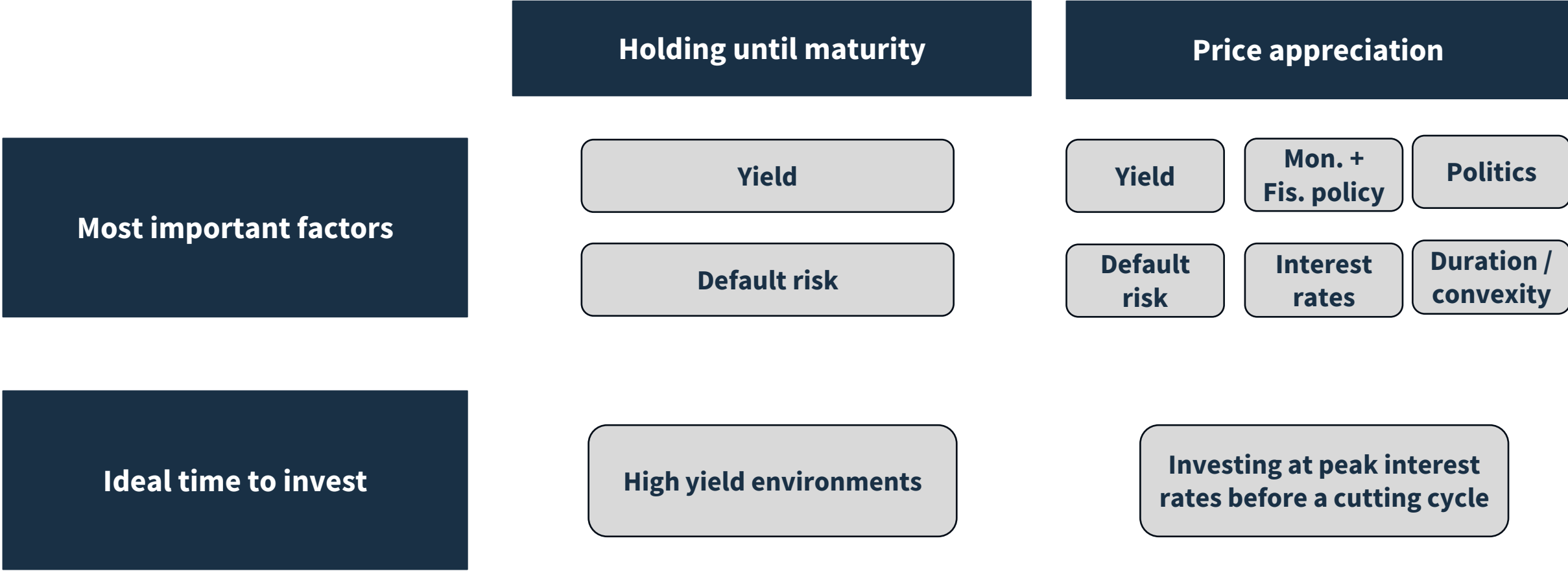
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The Two Strategies of Bond Investing

At PMC, we should aim for gains from price appreciation



Bond price vs Bond yield

They have an inverse relationship

Calculations

- Price is calculated as the **present value of future cash flows**, like most financial assets
- Formulas should be on the whiteboard
- $\text{Current Yield} = \text{Annual Coupon} / \text{Current Bond Price}$



Relationship

- Prices and yields have an **inverse relationship**
- If yields increase, future cash flows are worth less today, pushing prices downwards
- So when looking at bonds with the goal of gains from price appreciation, we should find factors that push yields down
 - **Decreasing** interest rates
 - **Decreasing** inflation expectations
 - Economic **slowdowns** or recessions
 - Quantitative easing

Duration

Interest rates are one of the main drivers of bond performance

Theory

- Duration measures **interest rate sensitivity**
- Weighted average time it takes to **receive all cash flows**
- Modified duration is the percentage change in price for a **1% change in yield**
 - $\text{Modified Duration} = (\text{Duration} / 1+y)$
- If a bond has a modified duration of 5
 - If yields rise by 1%, prices fall by 5%
- Main factors going into duration includes:
 - Maturity
 - Coupon
 - Yield

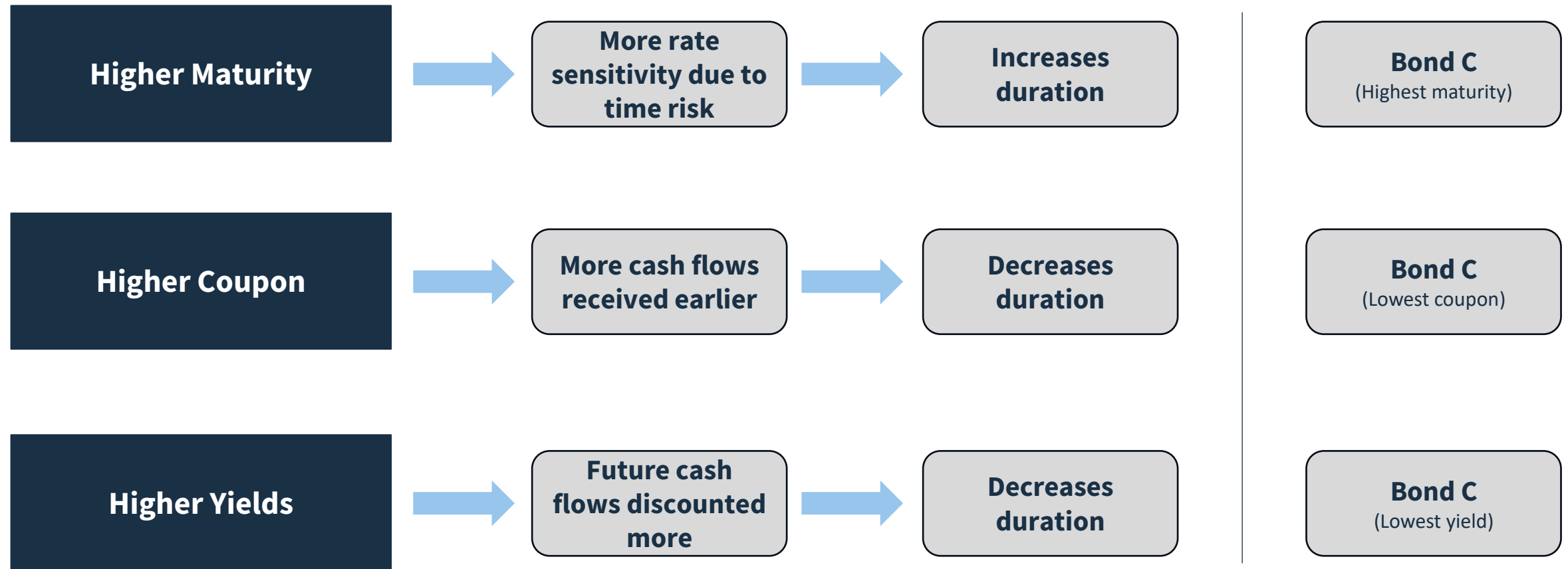
Practical example

Prompt: We are living in a world where people **fear a recession** and have decreasing inflation expectations. The central bank is likely to **cut rates** a few times over the next year. **Without any calculations, which bond should we invest in (price appreciation strategy)?**

	<u>Maturity</u>	<u>Coupon</u>	<u>YTM</u>
Bond A	2 Year	8%	7%
Bond B	7 Year	5%	8%
Bond C	15 Year	3%	4%

Answer

We want the bond with the highest duration



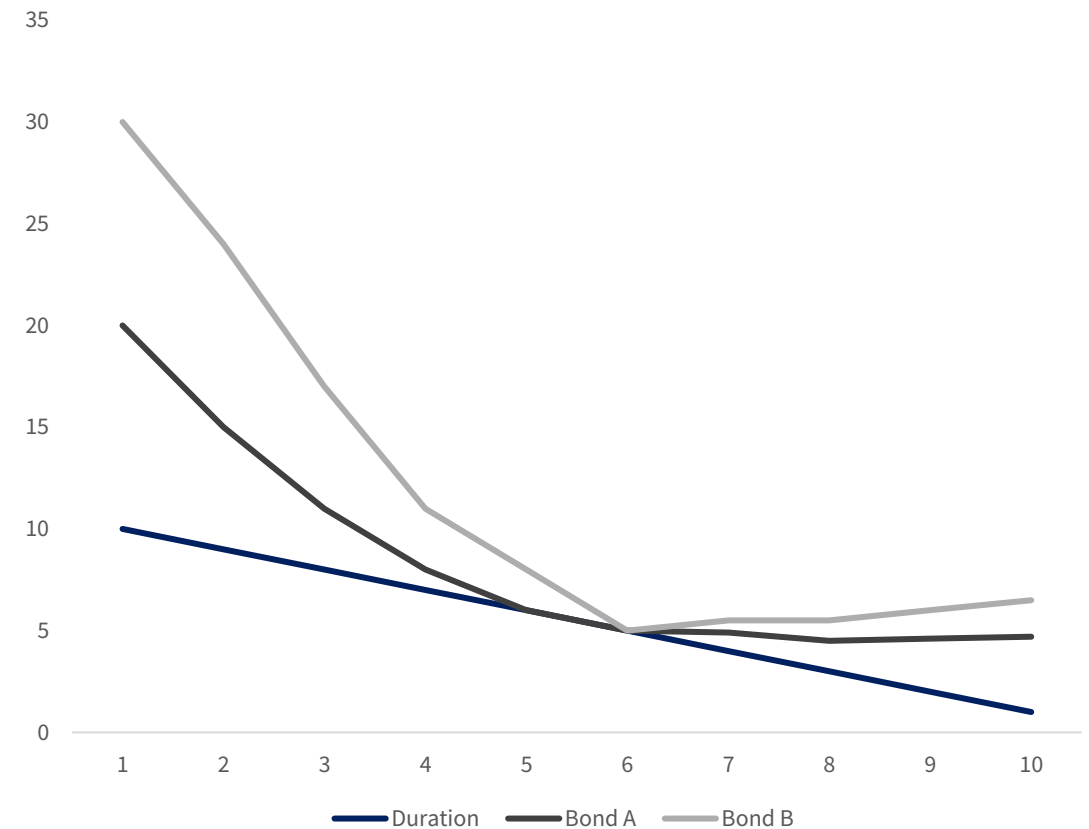
Convexity

Duration is too simplistic

Theory

- Convexity is essentially **the second derivative of the duration**
- Duration is linear, convexity shows a **curved relationship** between yields and maturities
- Bonds such as callable corporate or inflation-linked will have a **low or even negative convexity**

Different convexities portrayed



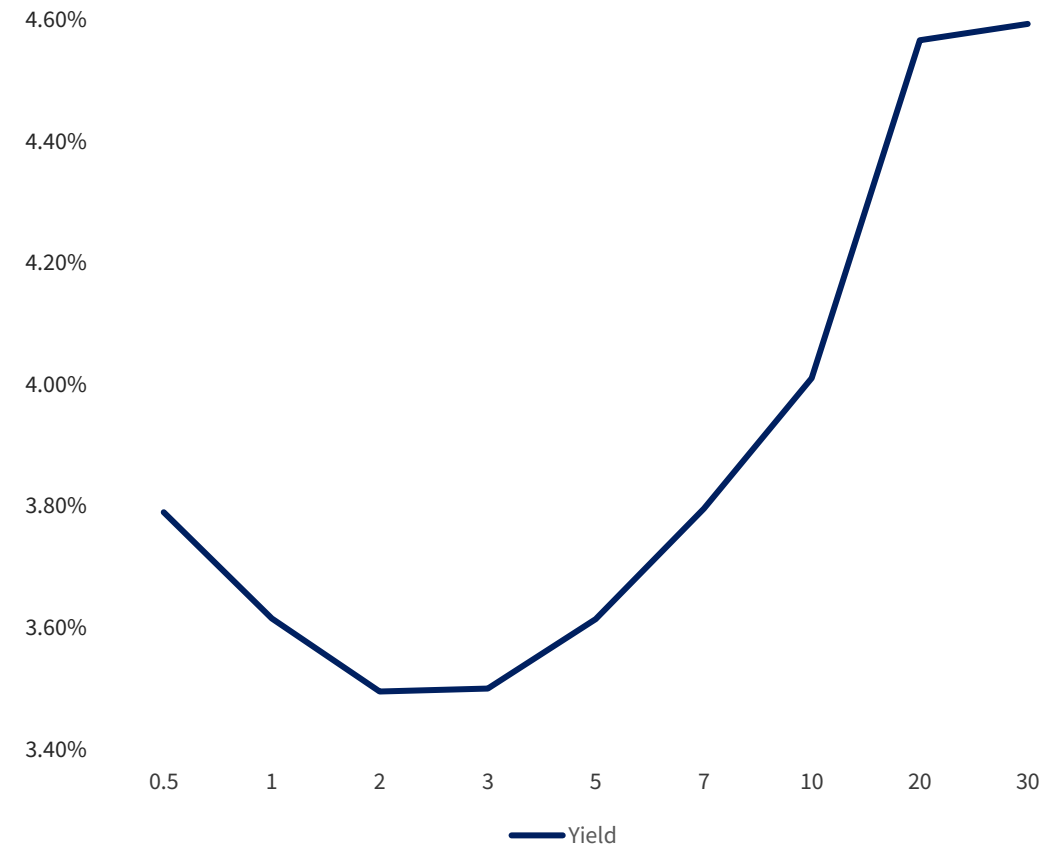
Yield curve

Is the yield curve an economic genie?

Theory

- A yield curve shows the yields on various maturities of a certain bond
- Under normal circumstances, **shorter maturities should have a lower yield**
- An inverted yield curve is often a sign of **upcoming recession**
- Flat yield curves often happens in times of uncertainty
- The curve also derives from interest rate expectations
- Corporate yield curves can serve as good indicators for a **company's financial health**
 - Inverted curve could mean investors are worried about credit risk or liquidity issues

U.S. Treasury yield curve



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Currency Risk

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What appreciates a currency?

Can truly enhance or dampen profits

Catalysts

- Strong economic growth leading to increased **FDI's**
- Trade surplus or reduction in trade deficit, leading to higher **demand for the local currency**
- **Higher interest rates**
- Low inflation
- Fiscal and budgetary **discipline** lowers default risk
- Political **stability**
- Tighter monetary policy **decreases money supply**

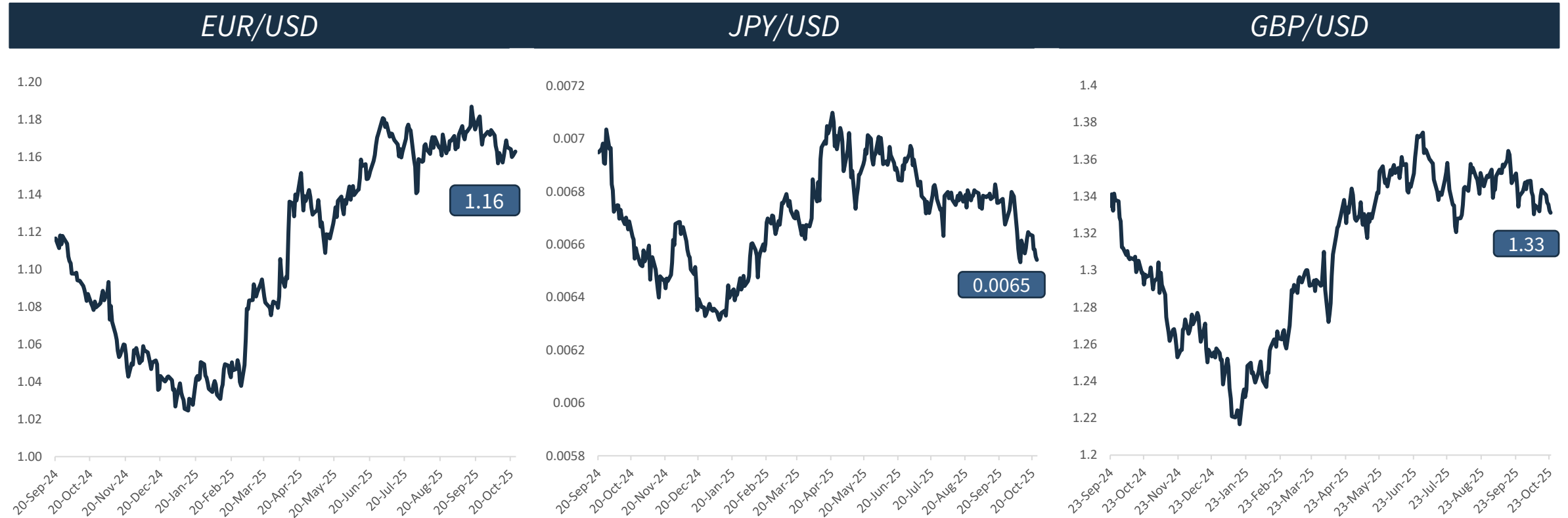
Brainteaser

1 year ago, we bought a European stock at a EURUSD rate of **1.08**. The stock grew **20%**, and we sold it today at a rate of **1.16**. What is our real return?



USD 2025 example

Rough year for the dollar



Political and trade uncertainty, lower U.S. yields, and improved European policy has **appreciated the euro** against the dollar, benefitting our portfolio. This has repeated over various currencies.

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Default Risk

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Fitch credit rating ranks

Grade	Definition	Examples
AAA	Highest grade possible.	Microsoft, Apple JNJ
AA	Not significantly vulnerable to foreseeable events.	U.S. Treasuries
A	Capacity for repayment is strong, but may be more vulnerable to adverse economic conditions	Toyota, France
BBB	Adequate repayment abilities. Lowest investment grade rating	Ford, Citigroup, Italy
BB	Elevated vulnerability to default risk	Delta Airlines, Petrobras, Hungary
B	Default risk present with a limited margin of safety	American Airlines, Egypt, Pakistan
CCC	Very low margin of safety	Argentina
CC	Default of some kind probable	
C	A default process has begun	
RD	Restricted default	Russia (2022)
D	Default	Lebanon (2020)

How are these credit ratings made?

Covers all aspects of finance

General outlook and data

Balance sheet health

Macro risk

Competition

Economic outlook

Interest rates

Ratios

Debt-to-Equity

Cash flows and liquidity

Leverage ratios such as
Total Debt / EBITDA

Coverage ratios such as
EBITDA / Interest expense

Profitability ratios and
margins

Qualitative factors

Market share and position

Exposure to economic
cycles

Regulatory environment

Currency risk

Political risk

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Fiscal Policy

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How does fiscal policy affect bond performance?

Especially important in sovereign bond investing

Effects of Fiscal Policy



Expansionary fiscal policy often works in tandem with **easing monetary policy**, which is positive for bond price appreciation



Bonds can also perform well in **austerity/recessions** due to **rate cuts and supply dynamics**



In order to finance debt, governments may issue more bonds **pushing yields up** and **prices down due to supply growth**



This year, with **flattening inflation expectations** we have seen yields falling and prices increasing



Remittances and policies targeting **capital inflows** can greatly influence bond prices too (a main point behind Mexico pitch)



Responsible and balanced budgets are one of the main drivers for a safe credit rating

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Credit Scoring Model

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Credit Scoring Model

Developed by the Quant team to standardize and support the credit analysis

What is it about?



Issuer fundamentals: It evaluates a company's financial strength, including leverage, coverage, profitability, liquidity, and debt structure



Security characteristics: It incorporates bond-specific metrics like OAS, volatility, liquidity, maturity structure, and convexity.



Scoring & Interpretation: Each metric is standardized to a 0–100 score using predefined calibration ranges. Weighted scores, which allows teams to identify strengths and weaknesses, are then aggregated into an overall credit score



Visual Outputs: Breakdown charts and peer comparisons help interpret key drivers, making it easier to explain why a bond stands out or lags behind.

How can you integrate it in your pitch?

Select Peers & Bonds



Calibrate Scoring Model



Run market and fundamental data (Bloomberg API)



Analyse Scores & Drivers

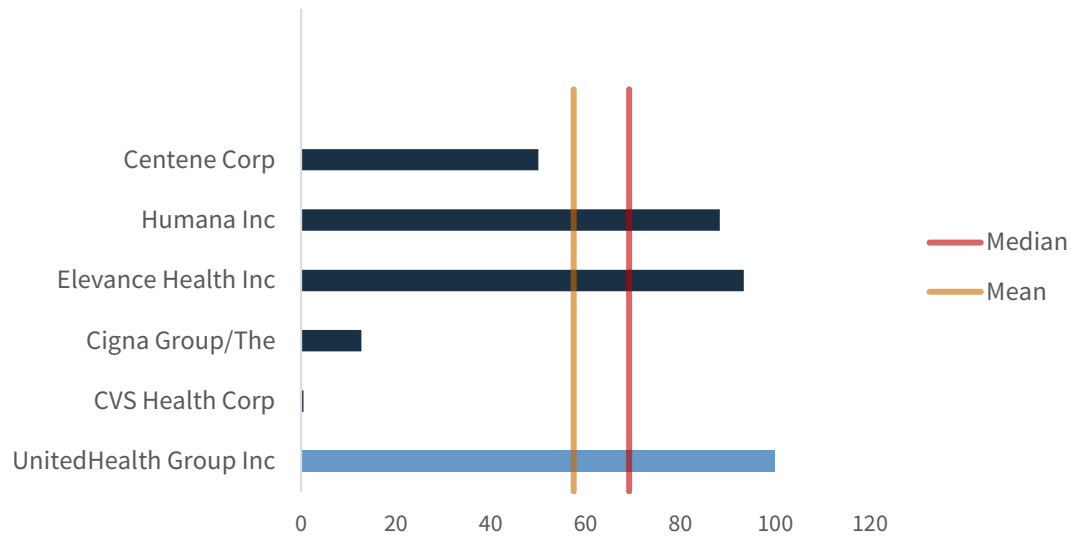


Include insights to your pitch

Credit Scoring Model

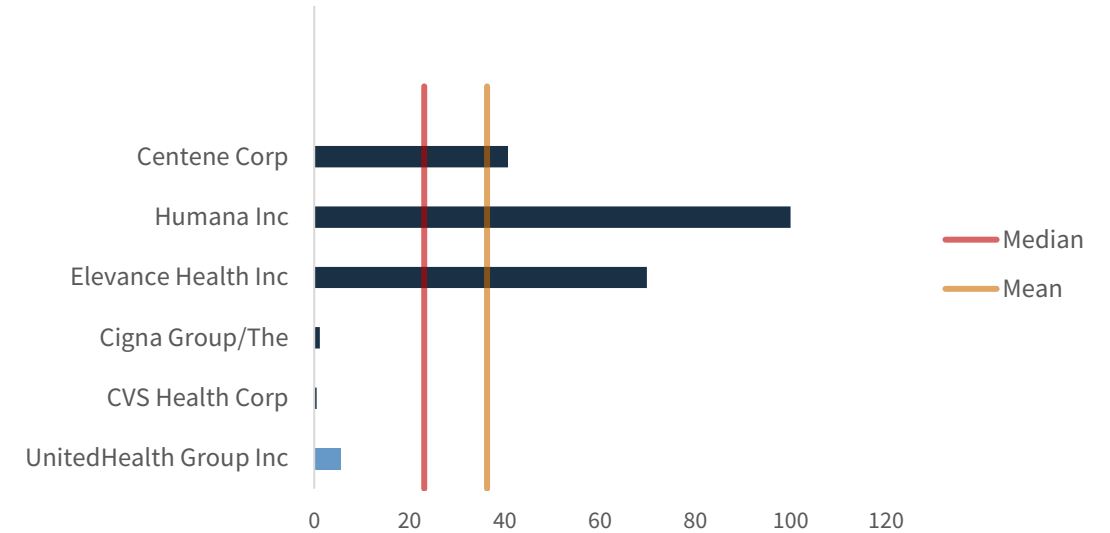
Example: UNH

Leverage Scores



- Based on several **leverage ratios** (e.g. D/E) then calibrated into a 0–100 score
- UNH scores well above peers, highlighting **strong balance sheet strength**

Liquidity Scores



- Pulled directly from **Bloomberg's LQA Liquidity Score**
- UNH scores below peer average, which may **limit flexibility in trading** or sizing the position

Note: You can access it at 09. PMC Intellectual Capital > 02. PMC Models > 02 Credit Scoring Model

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