

Types of Bonds and Market Trading Motivation with CQF and CFA Practice Questions

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1 Types of Bonds by Maturity

- **Short-Term Bonds:** Maturity less than 1 year (e.g., Treasury bills, commercial paper)
- **Medium-Term Bonds:** Maturity between 1 and 10 years (e.g., notes, corporate bonds)
- **Long-Term Bonds:** Maturity greater than 10 years (e.g., government or corporate long bonds)
- **Perpetual Bonds:** No maturity date; pay interest forever (e.g., UK Consols)

CQF Question 1

Q: Which type of bond is most sensitive to interest rate changes?

A: Long-term bonds are more sensitive due to the longer duration and greater present value impact of interest rate fluctuations.

2 Types of Bonds by Nominal Value

- **Par Bonds:** Issued at face value; price = nominal value
- **Discount Bonds:** Issued below nominal value; investors profit at maturity
- **Premium Bonds:** Issued above face value; often due to higher-than-market coupon
- **Zero-Coupon Bonds:** No periodic coupon payments; issued at a deep discount
- **Indexed Bonds:** Face value or interest indexed to inflation (e.g., TIPS)

CFA Question 1

Q: A bond is sold for \$950 with a nominal value of \$1,000 and matures in 2 years. What kind of bond is it?

A: A discount bond.

CQF Question 2

Q: How does the taxation of zero-coupon bonds differ from that of coupon-paying bonds?

A: Even though zero-coupon bonds don't pay annual interest, accrued interest is taxed annually in many jurisdictions under the "phantom income" rule.

3 Why Are Bonds Traded?

Bonds are actively traded for a variety of reasons beyond simply holding to maturity:

- **Portfolio Rebalancing:** Asset managers adjust duration or sector exposure.
- **Speculation:** Traders anticipate interest rate movements or credit upgrades/downgrades.
- **Arbitrage Opportunities:** Exploiting pricing inefficiencies across markets.
- **Liquidity Needs:** Institutions may sell bonds to free up cash.
- **Credit Risk Management:** Reducing exposure to specific issuers or sectors.
- **Regulatory Capital Adjustments:** Banks manage holdings based on risk-weighted assets (RWA).

CFA Question 2

Q: Which reason best explains why central banks actively participate in the bond market?

A: Monetary policy implementation — they buy/sell government bonds to influence short-term interest rates and liquidity.

CQF Question 3

Q: An investor buys a bond and sells it a month later at a profit due to a credit rating upgrade. What kind of strategy is this?

A: A speculative credit spread narrowing trade.

Key Takeaways

- Bond types vary significantly by maturity and issuance characteristics.
- Understanding these classifications is critical for pricing, risk assessment, and portfolio construction.
- Bond trading serves purposes beyond yield — from monetary policy to speculative positioning.

4 Additional Practice Questions

Bond Types & Structure

CQF Q4: What is the main risk an investor faces when investing in a long-term zero-coupon bond?

A: Interest rate risk, due to the bond's long duration and lack of interim cash flows.

CFA Q3: A bond sells at a premium. What does this imply about the bond's coupon rate relative to current market yields?

A: The bond's coupon rate is higher than the current market interest rate.

CQF Q5: What is the price of a zero-coupon bond with 3 years to maturity and a face value of \$1,000, if the annual market interest rate is 5%?

$$\text{Price} = \frac{1000}{(1 + 0.05)^3} = \frac{1000}{1.157625} \approx 863.84$$

Bond Trading & Risk

CFA Q4: What kind of bond trade might a bank execute to reduce VaR exposure under stressed market conditions?

A: Replace long-duration or lower-rated bonds with short-term government securities to reduce market sensitivity.

CQF Q6: What is convexity in the context of bond pricing?

A: Convexity measures the curvature in the price-yield relationship, improving duration-based estimates for large rate changes.

CQF Q7: Why do callable bonds typically exhibit negative convexity?

A: Because falling interest rates increase call likelihood, limiting price gains and introducing downward curvature in the price-yield curve.

Credit Risk & Yield Curve

5 CFA Q5: An upward-sloping yield curve is typically associated with what market condition?

5.1 A: Expectations of economic growth and inflation, leading to higher future short-term interest rates.

CQF Q8: If the credit spread between an A-rated and AAA-rated bond narrows, what does it suggest?

A: Improved credit perception of the lower-rated issuer or rising demand for yield.

Advanced Pricing & Trading Concepts

CQF Q9: What model is commonly used to price callable bonds and other interest rate derivatives?

A: Binomial interest rate tree models (e.g., Ho-Lee, Black-Derman-Toy) or Hull-White short-rate models.

CFA Q6: A fund manager sells a Treasury bond and buys a corporate bond of the same maturity. What is this strategy called?

A: Credit spread trading — aiming to profit from a tightening (narrowing) of credit spreads.

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