

INTRODUCTION TO BOND INVESTING

Credit analysis

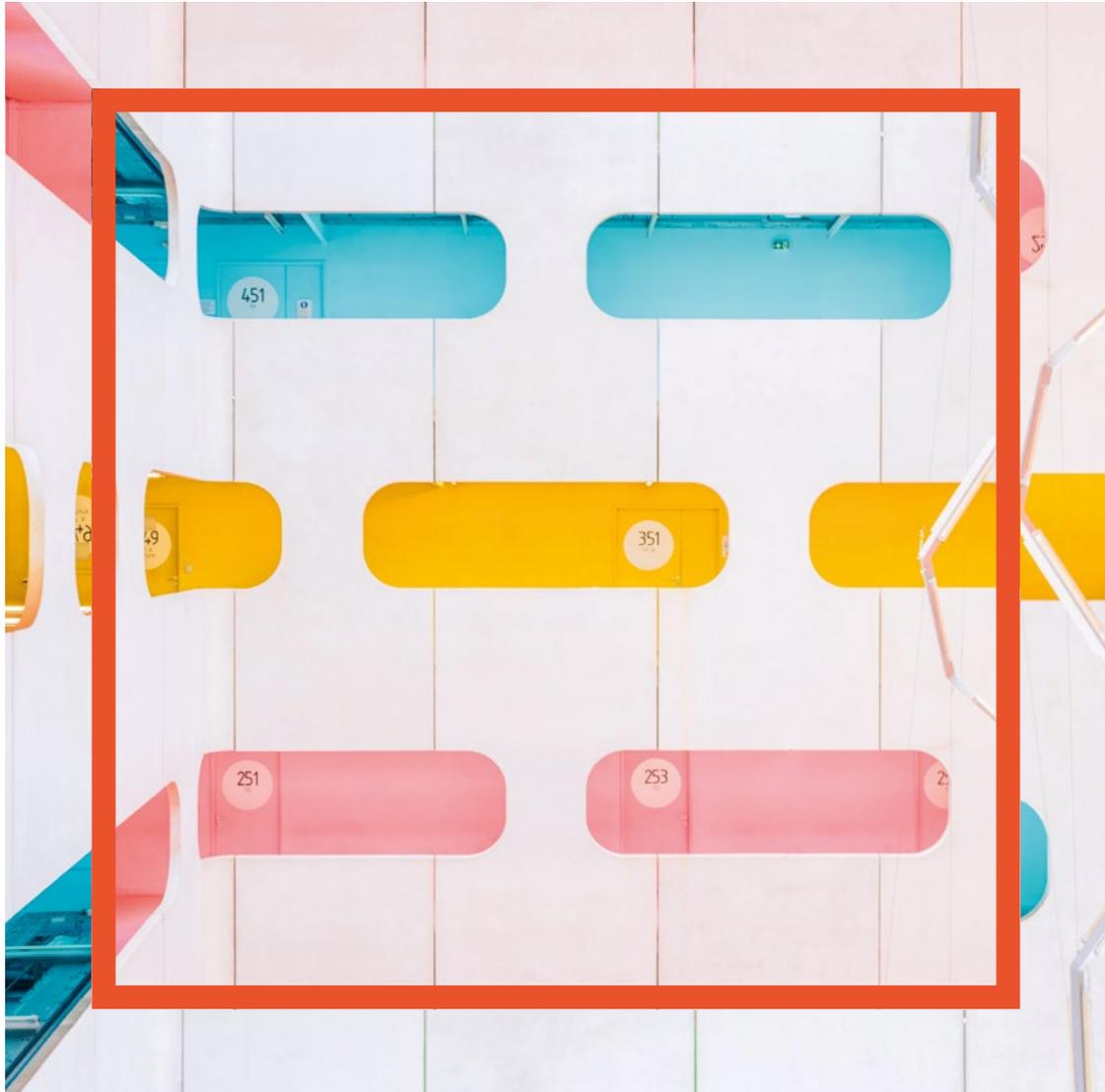


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BOND BASICS

1. Definition

What is a bond?

A bond is a fixed income instrument that represents a loan made by an investor to a borrower (typically corporate or governmental).

Company A Capital Structure



Why do companies issue bonds (vs stock)?

When companies or other entities need to raise money to finance new projects, maintain ongoing operations, or refinance existing debts, they may issue bonds directly to investors.

Stock issuance, on the other hand, puts additional stock shares in circulation, which means that future earnings must be shared among a larger pool of investors. This can result in a decrease in earnings per share (EPS), putting less money in owners' pockets (we talk about «dilution»)

Where are bonds exchanged?

Many corporate and government bonds are publicly traded; others are traded only over-the-counter (OTC) or privately between the borrower and lender.

Fixed rate	The interest rate remains the same for the entire duration of the bond
Floating rate	The interest rate changes over time according to benchmark movements

Maturity

The maturity is the date at which the principal has to be repaid.



Issuer (Type & Ratings)

The type and quality of the bond issuer is a critical characteristic as it is closely linked to its default risk.

- For example, the US government is far safer than any corporation.
- The 10 year german bond («bund») is considered as one of the reference rate in EU.
- The rating agencies (S&P, Moody's, Fitch) help investors determine a company's credit quality and default risk.
- Both an issuer and its bonds can be rated by credit rating agencies.

4. Bond characteristics – The role of credit rating agencies

BOND RATING			
Moody's	S&P / Fitch	Credit Worthiness	Risk
Aaa	AAA	Investment grade	Highest Quality
Aa	AA	Investment grade	High Quality
A	A	Investment grade	Strong
Baa	BBB	Investment grade	Medium Grade
Ba, B	BB, B	High-Yield	Speculative
Caa/Ca/C	CCC/CC/C	High-Yield	Highly Speculative
C	D	High-Yield	In Default

- AAA is the highest possible rating that can be assigned to an issuer / a bond by credit rating agencies.** An AAA-rated bond has an outstanding degree of creditworthiness because the issuer can easily meet its financial obligations.
 - Example of AAA-rated countries: Germany, Canada, Denmark, Luxembourg
 - Example of AAA-rated corporations: Johnson & Johnson.

- Lowest possible rating that can be assigned to an issuer / a bond by credit rating agencies.** A D (respectively C for Moody's) rated company/ government is considered in default.
 - Example of a D rated country: Venezuela.

- An investment grade issuer/bond is an issuer / a bond with a relatively low risk of default.**
 - A bond/issuer is considered to be investment grade if its rating is BBB (specifically BBB- / Baa-3) or higher.

- A junk issuer/bond is an issuer / a bond which is really risky.**
 - A bond/issuer is considered to be investment grade if its rating is BB (specifically BB+ / Ba1) or lower.

BOND PRICE & YIELD

Yield refers to the earnings generated and realized on an investment over a particular period of time, and is expressed in terms of percentage based on the invested amount.

Yield is a measure of cash flow that an investor gets on the amount invested in a security. Usually it is computed on an yearly basis.

1. Inverse relationship

Current yield

The current yield represents the return the bond will deliver if the bondholder holds it for a year.

Since the bond price changes over time, the current yield will vary consequently.

$$\text{Current Yield ROA} = \frac{\text{Coupon}}{\text{Current bond price}}$$



There is an inverse relationship between a bond's price and yield:
as bond prices increase, bond yields fall.

Current yield < Coupon rate	>	Current price > 100%	The bond is traded at a premium.
Current yield = Coupon rate	>	Current price = 100%	The bond is traded at par.
Current yield > Coupon rate	>	Current price < 100%	The bond is traded at a discount.

Price

Just like that of any other publicly-traded security, a bond's price changes on a daily basis, according to supply and demand.



Amazon.com Inc. DL-Notes 2017 (17/25) Latest Price

KEY DATA

Coupon in %	5.2000%	Yield in %	2.75%
Trade Time	02:02AM	Daily High	114.91
Trade Date	06/04/2019	Daily Low	114.91
Open	114.91	52-week High	114.91
Prev. Close	114.48	52-week Low	107.63

2. What affects bonds' prices?

Interest rates

When a new bond is issued, it typically carries a coupon rate at or close to the prevailing market interest rate.

Since the price of a bond changes over time, the current yield will vary consequently.

Suppose Amazon issues a CHF 1'000 bond («Bond 1») carrying a 5% coupon maturing in 5 years. Investors will be paid CHF 50 annually.

Next year, rates go up. How does that impact the price of the bond?

- Amazon now issues a new bond («Bond 2») offering a 7% coupon with the same maturity. Bond 2 investors will receive a CHF 70 coupon per year (> CHF 50).
- The bond 1 becomes less attractive. In this situation, the bond price drops to compensate for the less attractive yield.

Next year, rates go down. How does that impact the price of the bond?

- Amazon now issues a new bond («Bond 2 bis») offering a 3% coupon with the same maturity. By investing in Bond 2 bis, investors will receive an annual coupon of CHF 30 (< CHF 50).
- Conversely, the price of the bond 1 goes up as it becomes more attractive.

Inflation

Rising prices (inflation) over time reduce the purchasing power of each interest payment a bond pays. Therefore, the stronger the inflation the higher the return on bonds that investors want → yield increase = price decrease

Credit ratings

As we saw earlier, Moody's, S&P and Fitch assign a rating to bonds and issuers assessing the risk for default. **The riskier the bond/issuer (the lower the rating), the higher the return on bonds that investors want.**

Suppose Amazon (S&P rating: AA) issues a CHF 1'000 bond.

If, during the life of the bond, Amazon is downgraded to A (meaning that its credit quality worsen), investors will require a higher yield, since they carry a higher risk.

→ A higher yield means a lower price.

CREDIT ANALYSIS

1. General principles

Credit analysis

Credit analysis is used to measure the issuer's ability to meet its debt obligations. This process seeks to identify the appropriate level of default risk associated with investing in that particular entity.

THE FOUR C'S OF CREDIT

Capacity

Collateral

Covenants

Character

Technical analysis

Technical analysis focuses on analyzing statistical trends gathered from trading activity, such as yield/spread/price movements, to evaluate investments and identify trading opportunities. Bond spreads are the common way that market participants compare the value of one bond to another. Bond spreads reflect the relative risks of the bonds being compared. The higher the spread, the higher the risk usually is.

TECHNICAL MEASURES

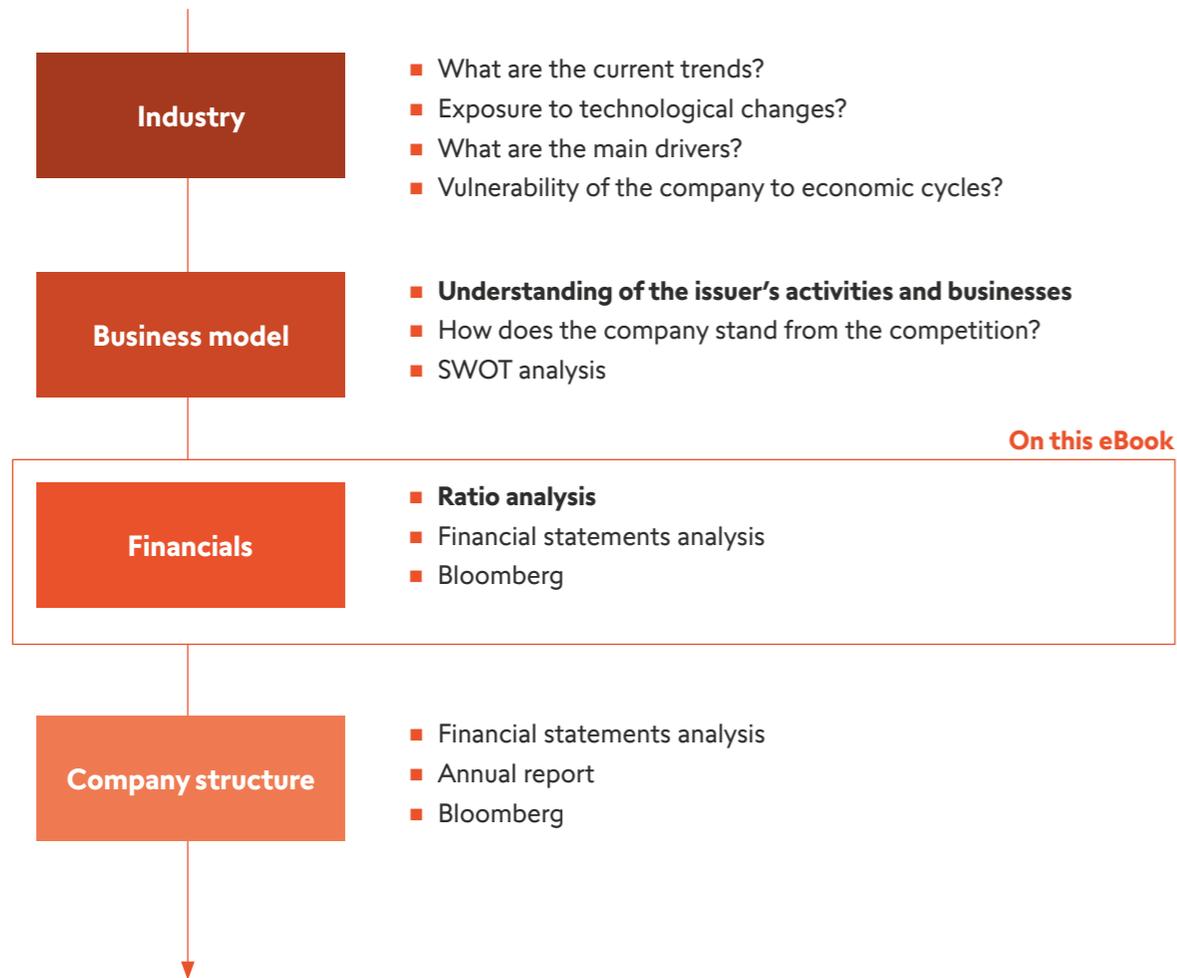
Price trends, chart patterns

Yield comps table

Spread movements

2. Capacity

Capacity: assessing the issuer's capacity to repay its debt obligations



Leveraged ratios

Credit analysts also calculate leverage ratios to determine the extent to which the corporation is using financial leverage.

Leverage ratios are indicators that measure the proportion of debt in a company's capital structure.

Debt-to-Equity Ratio

The Debt/Equity ratio is a measure of the degree to which a company is financing its operations through debt versus wholly owned funds.

$$\text{Debt/Equity} = \frac{\text{Total Debt}}{\text{Total Shareholder Equity}}$$

Company A
Debt = CHF 100
Shareholder Equity = CHF 20

Company B
Debt = CHF 100
Shareholder Equity = CHF 200

▼
Debt/Equity = 5x
A highly levered and risky investment

▼
Debt/Equity = 0.5x
A low-risk company and a better investment

Leverage ratio

Analysts use it on a «snapshot» basis, as well as to look at trends over time.

$$\text{Leverage} = \frac{\text{Net Debt}}{\text{EBITDA}}$$



Liquidity ratios

«Liquidity» refers to the ease and quickness with which assets can be converted to cash—without a significant loss in value. The more liquid a firm's assets, the less likely the firm is to experience problems meeting short-term obligations.

Current Ratio

The current ratio measures a company's ability to pay short-term obligations or those due within one year. A company's current ratio should be compared with its peers and the industry average.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current liabilities}}$$

Current ratio > industry avg	management may not be using their assets efficiently
Current ratio = industry avg	generally considered acceptable
Current ratio < industry avg	may indicate a higher risk of distress or default

Quick Ratio

Similarly to the current ratio, the quick ratio is an indicator of a company's short-term liquidity position and measures a company's ability to meet its short-term obligations with its most liquid assets. The reason why we subtract inventory is that inventory's liquidity can sometimes be a problem (not easily sellable).

Coverage & Cash Flow ratios

Cash flow ratios are used to test the adequacy of cash flows generated through earnings for purposes of meeting debt and lease obligations.

Operating Cash Flow

The operating cash flow ratio is a measure of how well current liabilities are covered by the cash flows generated from a company's operations. An OCF Ratio > 1 indicates that a company has generated more cash in a period than what is needed to pay off its current liabilities.

FCF/OCF to Sales ratio

$$\text{OCF-to-Sales Ratio} = \frac{\text{OCF}}{\text{Sales}}$$

$$\text{FCF-to-Sales Ratio} = \frac{\text{FCF}}{\text{Sales}}$$

FFO / Total Debt Ratio

This is a leverage ratio that a credit rating agency or an investor can use to evaluate a company's financial risk.

$$\text{FFO-to-Total Debt Ratio} = \frac{\text{FFO}}{\text{Total Debt}}$$

Interest Coverage Ratio

The Time Interest Earned ratio indicates how many times a company can cover its interest charges on a pretax earnings basis.

$$\text{Times Interest Earned} = \frac{\text{EBIT}}{\text{Interest}}$$

THE 3 OTHER C'S OF CREDIT

Collateral

Collateral is looked at not only in the traditional sense of assets pledged to secure the debt, but also to the quality and value of those unpledged assets controlled by the issuer.

Covenants

Covenants are the terms and conditions of the lending agreement. They lay down restrictions on how management operates the company and conducts its financial affairs.

Character

Character of management is the foundation of sound credit. This includes the ethical reputation as well as the business qualifications and operating record of the board of directors, management, and executives responsible for the use of the borrowed funds and repayment of those funds.

TECHNICAL ANALYSIS

1. Understanding the concept of yield spread

Yield spread

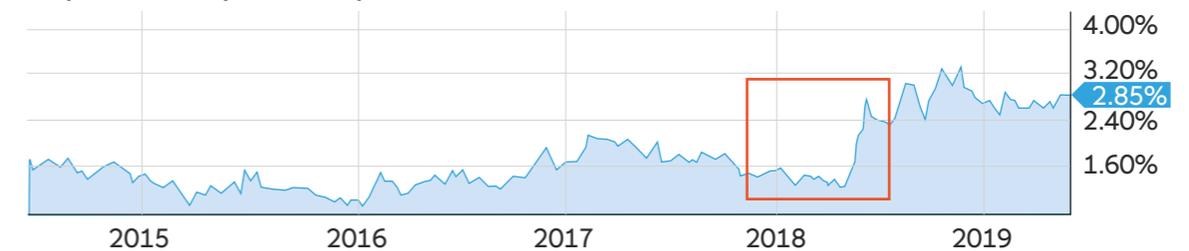
The term «bond spreads» or «spreads» refers to the interest rate differential between two bonds. Mathematically, a bond spread is the simple subtraction of one bond yield from another.

Yield spreads are not fixed. Because bond yields are always in motion, so too are spreads. Spread is expressed in «basis points» (bp), with 1% = 100 bps.

**Bond spreads reflect the relative risks of the bonds being compared.
The higher the spread, the higher the risk usually is.**

Worries about the country's debt led to a sharp increase of the Italian interest rate, increasing the spread against the 10 years German bund.

Italy-German 10 year Bond Spread



NEXT STEPS – START TRADING WITH SWISSQUOTE

1

Go to [swissquote.com/trading](https://www.swissquote.com/trading)

2

Open a demo account.

3

You can practice trading with CHF 10'000 virtual money. No risk & no obligation.

[Try a demo now!](#)

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