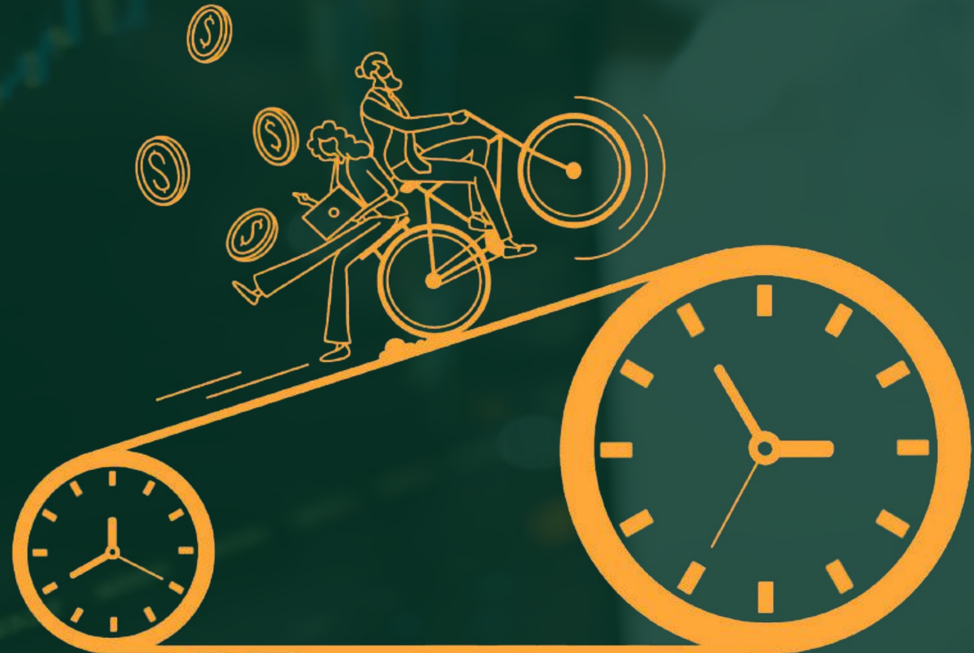
MODULE

Welcome to the World of Company & Government Debt...

POWERED BY



Key Takeaways From This Module

Guiding Questions

- How do companies and governments borrow money?
- Are there good and bad types of debt for companies and governments as well?
- What are credit scores for large institutions when they want to borrow capital?
- How do investors profit on large debt?
- How can a company access capital once they have already had an initial public offering?

Enduring Understandings

- Governments and companies borrow capital from institutional lenders by issuing bonds or other debt instruments.
- Bond Ratings can be thought of as credit scores for large borrowers and they are issued by credit rating agencies.
- Bond prices are closely related with interest rates because they are a collection of cash flows which investors discount.
- Bond markets provide a massive source of funding for large companies.

Debt Is The Bedrock Of Our Economy

Nearly every company uses debt, at least with corporate credit cards. But the world of debt is a lot larger than what you can spend on a credit card!

Skyscrapers, fiber optic tunnels, sports stadiums, and national highway systems are all multi-billion dollar projects that take years to complete

It would be inefficient to allocate all of the necessary capital for a project up front, particularly if those building the skyscraper believed they could sell apartments and earn a profit. Or perhaps the government wants to spend more than they earned in tax receipts to fund an infrastructure project?

That's where large scale debt comes in.

Debt fuels growth by lending at an interest rate and allows individuals, companies and governments access to capital in the present.

Total Size of Global Debt Markets

Each Borrower Has Different Objectives

Banks

Banks often borrow from other banks to meet liquidity ratios stipulated by the Federal Bank

Investors

Investors take on debt to, finance investments. Doing so, can increase your rate of return

Consumers

Consumers borrow for consumption. This includes education, housing, cars, etc

Companies

Companies take on debt to finance their day to day operations or larger expansions

Governments

Government borrowings finance infrastructure, social security programs, military etc.

Corporate Debt

These are debts taken on by businesses to finance business operations and expansions.

Depending on the creditworthiness and relationships a business has, different forms of corporate debt will be available to them.

Similar to personal loans, the more likely companies are to repay your loan, the better the interest rate for their debt.

Investors pay a LOT of attention to how companies borrow money and what they spend it on.

A key measure of how effective a company is at spending capital is **ROE: Return On Equity**. ROE is a measure of management's ability to generate income from the equity available to it. ROEs of **15–20%** are generally considered good.

Revolving Credit

Here, the business enters to an agreement with the bank which allows it to repeatedly borrow money upto a certain limit

Term Loans

A loan from a bank for a specific amount that has a specified repayment schedule and either a fixed or floating interest rate

Bonds

A tradable, financial instrument that represents a loan made by an investor to a borrower

Commercial Paper

A security issued by large corporations to meet short term obligations like payroll

Government Debt

Governments borrow money primarily through government bonds, which offer the lenders interest payments on a quarterly basis for a period of time until the bond matures. When the bond matures, the government repays the initial loan amount. In the US, these bonds are called Treasury Bills, but they exist for nearly every country around the world.

Lenders provide capital in US Dollars, including large companies and entire countries, as a loan to the government.

Governments use this money to fund a deficit in spending where the government is investing in the country while also meeting interest payment obligations

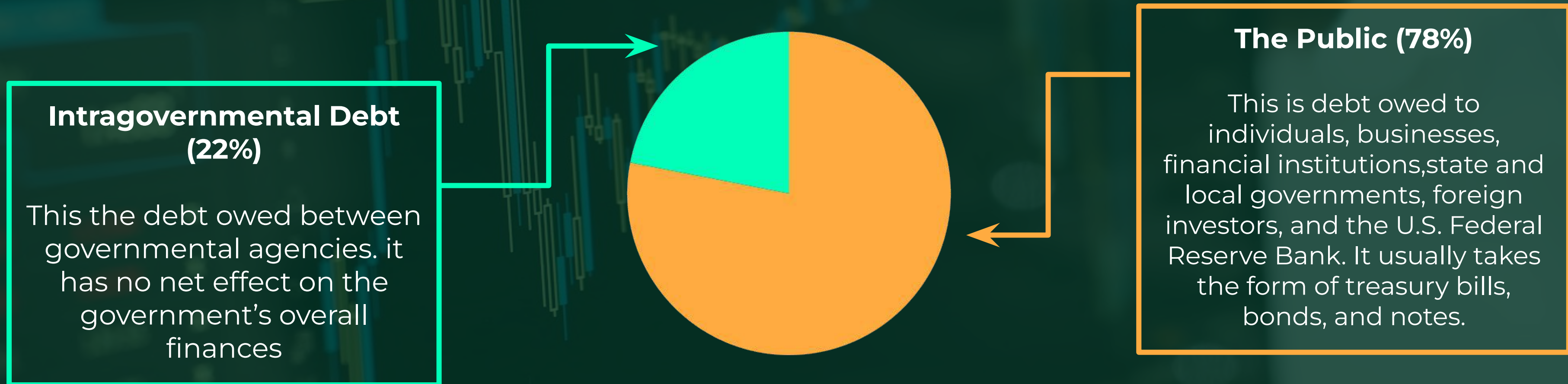
Government Debt ranges in risk. US Treasury Bills are considered a safe-haven asset, whereas, Argentina's Bonds have been classified as 'Junk' when the government announced they did not have intention to pay a few years ago.

Many governments run a deficit, which means that the government spends more than they make. This may not be a bad thing. Economists continue to debate if a country should run a deficit, and if so, at what levels and for how long. But clearly without Treasury Bills, that debate wouldn't even be possible.

Understanding The US Deficit

The word deficit refers to to the difference between government expenditure and receipts in a given annual budget. Government debt is an accumulation of all theses deficits and is basically the money the government (state or federal) owes to its creditors. So therefore U.S. debt is the sum of all outstanding debt owed by the federal government, which passed $28 trillion in 2021!

How Does That Debt Break down?



The Largest Way Companies Raise Money:

BONDS!

What Are Bonds?

Bonds are units of company debt that are issued by the company in order to raise capital in exchange for paying an interest rate for a period of time. Once bonds are issued, they are traded in secondary bond markets. Each bond is different, but they share some similarities:

Face value: the money amount the bond will be worth at maturity

Coupon rate: rate of interest the issuer will pay on the face value of the bond

Dates: includes when coupon payments will be made and when the bond matures

Issue price: price at which the bond issuer originally sells the bonds

Types of Bonds

Zero Coupon
Offers no coupon payments but price is less than its face value

Convertible
Can be converted to equity depending on certain conditions

Callable
The company can retire the bond before it matures

Puttable
The investor can get their principle before the bond matures

Just Like Stocks... With Risk Comes Reward

Different companies and governments are more or less likely to pay back their debt, based on multiple factors. This results in bonds having different risks. In order to be compensated for this risk, investors charge a higher interest rate on bonds.

Grading Debt With Bond Ratings

A bond rating is a letter-based credit scoring scheme used to judge the quality and creditworthiness of a bond.

A lot of the same factors that impact an individual's credit score play a factor with a company's bond rating.

The ratings are published by credit rating agencies and used by investment professionals to assess the likelihood the debt will be repaid and they evaluate:

- *Past borrowing history to see if a company has repaid bonds in the past.*
- *Outstanding debt on a Company's balance sheet to ensure they do not have too much debt.*
- *Cash flows to determine if a Company will have enough money to repay the Bond in the future.*

And a lot more, including - in some cases - how the company plans to spend the bond.

Interpretation of Rating	S&P Rating	5-Year Default Probability
Highest Quality	AAA	1.3%
High Quality	AA+ AA AA-	2.4%
Strong Payment Capacity	A+ A A-	2.7%
Adequate Payment Ability	BBB+ BBB BBB-	6.1%
High-Risk Obligations	B+ B B-	18.4%

How Do Companies Issue Debt?

Decide

Before issuing, companies have to decide what kind of bonds they want and whether they want their bonds publicly traded, OTC or privately issued

Issue

The bond is issued with a stated face value, price, coupon rate, coupon date, and maturity date. Typically, the bond starts trading at its face value

Trade

Once the bond is issued, its price will vary depending on company reputation, interest rates, and expiration date. The initial and subsequent bondholders can trade the bond till maturity

Debt vs Equity

Companies often choose to issue debt over equity since they do not dilute company control and are cheaper to issue.

However, bonds create a fixed liability for the company. They have to make coupon payments on time and repay the principal once the bond matures.

Two Types of Bond Valuations

Intrinsic Valuation

Here, you discount the **future cash flows** of the bond using a required rate of return that you decide. These future cash flows include coupon payments and the face value of the bond.

If the **present value of these cash flows is greater than the current price of the bond**, this would be a good investment option.

Relative Valuation

Here, you **compare the bond's yield spread to a benchmark spread**. This benchmark is usually developed by studying the yield spread of comparable companies.

You want to purchase undervalued bonds which will have a spread that is **larger** than the industry standard (the benchmark.)

Understanding Discounted Cash Flows

Turns out $1000 today is not worth the same as $1000 one year from now!

The intuition behind that idea is that $1000 today could be put in a savings account and would earn you interest in a year's time. This means that:
$1000 one year from now = $1000 today invested for a year - interest earned

That wordy equation can be summed up with 3 terms: present value, future value, and discount rate.

- **Present value:** Current value of a future sum of money or stream of cash flows given a specified rate of return.
- **Future value:** Value of a current asset at a future date based on an assumed rate of return
- **Discount rate:** A stipulated rate of return. Treasury rates are often used here.

$$\text{Present Value} = \frac{\text{Future Value}}{(1 + \text{discount rate})^{\text{no. of periods}}}$$

How To Calculate The Value Of A Bond

The present value of a bond is calculated by discounting the bond's future cash payments by the current market interest rate. This is because money in the future is worth less than money in the present. For that reason, bond prices are heavily influenced by interest rates which are used to discount future cash flows.

These future cash flows are determined by adding the present value of typically, semi-annual interest payments with the principal repayment on the date the bond matures.

Below are the cash flows for a $100,000 bond with 9% interest and 2 interest payment periods per year. A company would issue this bond if they thought they could earn more than 9% per year by investing the $100,000 into their company.

	At Start	1 Year	1.5 Years	2 Years	3 Years	4 Years	5 Years
Borrower Receives	$100,000	$-	$-	$-	$-	$-	$-
Total Interest Paid	$-	$9,000	$13,500	$18,000	$27,000	$36,000	$45,000
Principal Repayment	$-	$-	$-	$-	$-	$-	$100,000

Good & Bad Corporate Debt

REMEMBER: WHAT'S THE ROE?

ROE is a measure of management's ability to generate income from the equity available to it. That means, when we look at if a company's debt is "good" or "bad", we should look at the ROE of the debt.

If companies borrow money at a 7% interest rate, to grow their company at a 20% rate or develop a new product, then that's a phenomenal use of debt which has an ROE higher than the interest rate you paid.

If a company borrows money to pay their executives large salaries or payout large dividends to shareholders, then they are not creating value with the debt.

Good Investments

- Projects with a high ROE, higher than the interest rate of the bond.
- Research & development of new products that can help drive growth.
- Expansion of marketing and sales in order to expand the business.
- Create a cash reserve during a market downturn or pandemic in order to ensure the business remains solvent (has enough cash to operate).

Bad Ways To Spend A Bond

- Lucrative Executive Compensation
- Dividend Programs
- Stock Buyback Programs
- Projects with an ROE lower than the interest rate of the bond.

Key Takeaways

CORE & FUNDAMENTALS

- How do companies and governments borrow money?
- Are there good and bad types of debt for companies and governments as well?
- What are credit scores for large institutions when they want to borrow capital?
- How do investors profit on large debt?

APPLIED KNOWLEDGE

- How to calculate net present value.
- How to calculate the price of a bond and apply the net-present value formula.
- Why companies and governments rely upon bonds to access large amounts of capital.
- How bond markets are the largest markets in the world.

RELEVANCE FOR YOU

- Governments & Companies use bonds to access large amounts of capital.
- Bond ratings are similar to credit scores & are issued by rating agencies.
- Bond prices are closely related with interest rates because they are a collection of cash flows which investors discount. This is the same as the stock market.