

Debt: types and features

1. Introduction

1.1. Chapter overview

One way in which companies raise capital is by issuing shares. Only companies can issue shares, whereas both companies and governments can borrow money via the debt (or **bond**) markets. A bond is an agreement to pay back an agreed amount at some point in the future, paying interest whilst the debt remains outstanding. Bonds represent a transferable loan by a company or a government, where the loan repayments and associated interest can be sold on to other investors in the secondary market.

This chapter begins by considering bonds issued by the UK Government, known as gilt-edged securities (or **gilts**). Because the UK Government often spends more money than it raises in tax revenues, it has to borrow money in the gilt market to make up the shortfall.

You will also learn about bonds issued by overseas governments. The chapter provides details of the names of these bonds, how often they are issued and when they pay interest to the bondholder.

Once government bonds have been considered, the chapter turns its attention to the range of corporate bonds in the marketplace and the various features that are often attached to these instruments.

In the event of a company becoming insolvent, investors (including shareholders and bondholders) will be concerned as to whether or not they will receive their investment back. The chapter explains what happens when this situation arises and the order in which investors who are owed money are repaid.

Note: bonds are often called **fixed income securities** due to the fixed nature of the interest they pay out to investors.

1.2. Learning outcomes

On completion of this module, you will:

Debt: types and features

- 12.2.1 Explain the structure and characteristics of the various types of fixed income instruments issued in the UK including government bonds, index linked bonds, corporate bonds and Eurobonds
- 12.3.1 Identify the components of return of fixed income securities

Other bonds

- 13.3.1 Explain the nature of convertible bonds and convertible preference shares
- 13.3.2 Calculate a conversion price, conversion value and conversion premium
- 13.3.3 Explain the component parts of the valuation of a convertible bond (namely straight bond value, call option value, dilution effect and conversion ratio)
- 12.2.2 Identify the rationale for and risks to the issuer and holder of a convertible, callable or puttable bond

Seniority of bonds

- 12.3.2 Identify the main risks faced by bond holders and how these risks can be addressed

- 12.3.13 Explain the concept of debt seniority

2. Debt: types and features

2.1. Introduction

Background

Companies and governments need cash to operate. However, their cash income does not always cover their cash expenditure. Both, therefore, must raise additional capital to fund shortfalls.

Capital is usually categorised into debt and equity. Debt involves borrowing money with a firm commitment to repay both the capital and associated interest in the future.

All companies issue an element of equity. However, many companies also finance their operations through debt.

Governments do not have such a choice because they cannot raise equity. Governments, therefore, can only raise debt finance.

This chapter is concerned with explaining the features and characteristics of corporate and government debt.

Loans vs. debt securities

A loan is an advance of cash - usually from a bank. Interest and capital are repaid over the term of the loan.

Debt securities, however, are tradable instruments issued to investors in return for borrowed funds. These instruments typically pay a rate of interest (or **coupon**). The capital amount (or **principal**) is repaid in full at some point in the future.

Bonds vs. bills

A bond is a way of describing a medium- to long-term debt security. Typical maturity (i.e. repayment) of a bond is more than one year from its original issue date.

A bill is a short-term debt security: a security maturing in less than one year.

2.2. Gilts: UK Government bonds

Background

UK Government gilts and Treasury bills are issued by the Debt Management Office (DMO) - an executive agent of the Treasury. The usual method used is an **auction**. Historically the DMO has also made 'tap' issues directly into the secondary market. The DMO is also responsible for approving Gilt-edged Market Makers (GEMMs) on the London Stock Exchange.

The **gilt-edged market** is the market in UK Government debt securities. Gilt-edged securities form a large part of national debt, with the remaining being funded by National Savings, short-term borrowing from the Bank of England and overseas borrowings.

Features of gilts: summary

Gilts have the following features: a name, an interest rate (coupon) and a redemption date.

Coupon

Expressed as an annual percentage of the nominal value

Name

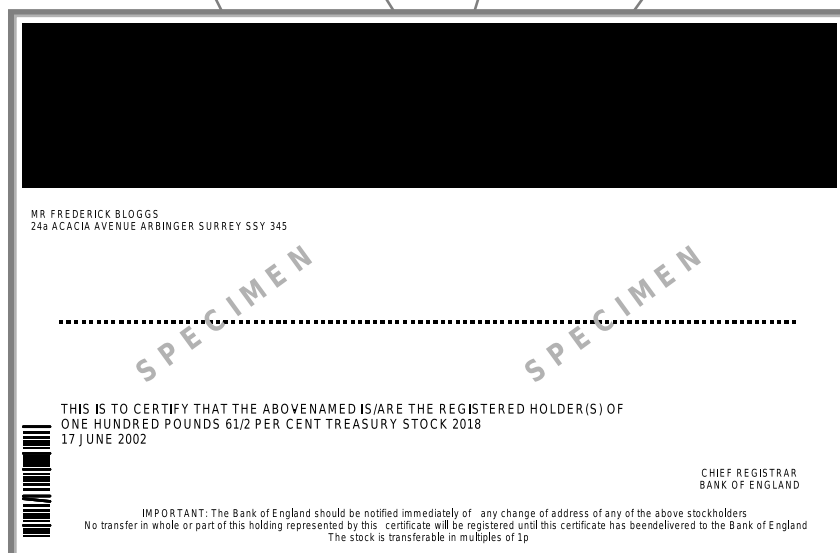
The name given at issue

Nominal value

The capital payment the holder receives at redemption

Redemption

The year when the gilt is repaid

**Coupon**

The quoted coupon of a gilt represents the annual amount of interest paid per £100 nominal value. For example, a gilt with a 9% coupon will pay £9 interest each year per £100 nominal value.

Gilt coupons are generally paid semi-annually, on fixed days six months apart, e.g. 25 January and 25 July. Note, however, that floating rate gilts pay a quarterly coupon.

Coupons are quoted **gross** of income tax, and generally paid gross of income tax. This means that income tax is not deducted from the coupon payment (although it will be due later).

Name

The name of a gilt serves no purpose other than to act as an identifier. Examples of gilt names include:

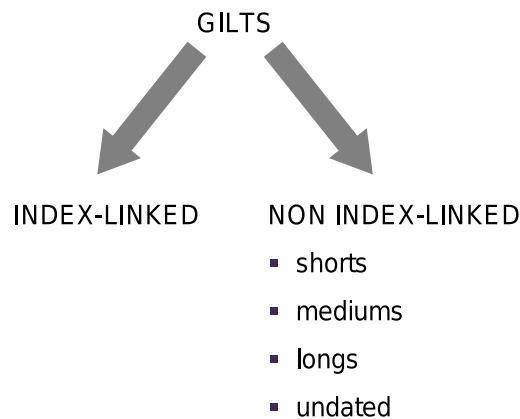
- Treasury
- Consolidated
- War Loan

Consolidated stocks derive from the gathering together, or consolidation, of a number of smaller, earlier issues.

Redemption

The redemption date is the specified date on which the capital is repaid by the Government. Normally, redemption is at par, i.e. £100 for each £100 nominal value held. All remaining stock must be repaid on the redemption date.

Categories of gilt



Conventional (non-index-linked gilts)

Conventional gilts have fixed coupons and fixed redemption dates. They are typically divided into long, medium and short-dated.

Shorts - remaining life < 5 years

Mediums - remaining life 5 - 15 years

Longs - remaining life > 15 years

The **remaining** maturity of the gilt is used for categorisation purposes. For instance, a 20-year bond starts off as a **long** when initially issued, but five years later it will become **medium-dated** and after ten more years **short-dated**.

Many indices use these maturity categories in constructing the index. They may also create an 'irredeemables' index.

Non-conventional gilts

Undated/Irredeemable gilts

With undated gilts there is no obligation for the Government to redeem, but they may still do so at their discretion.

Undated gilts do not usually include redemption dates, e.g. Consolidated 2 1/2%. However, a few carry the abbreviation 'Aft' (e.g. 3% Treasury 1966 Aft). This implies the Government has the right to redeem the gilt in 1966 or at any time after.

Undated gilts are sometimes called **irredeemable** gilts. This is a misleading name as it gives the impression they cannot be repurchased by the Government. This is not the case. They can be redeemed at the Government's discretion.

Index-linked gilts

Index-linked bonds have coupons **and** redemption values which are linked to the UK Retail Price Index (RPI).

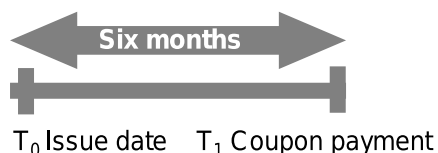
Each index-linked payment, either of interest or capital, is related to the RPI three months **prior** to the month of payment. Values are adjusted by the ratio of this RPI to the **base** RPI, which is the RPI three months prior to issue.

The three-month RPI lag allows an investor to know in advance what the next coupon payment will be rather than have to wait until the RPI figure is published for the payment month.

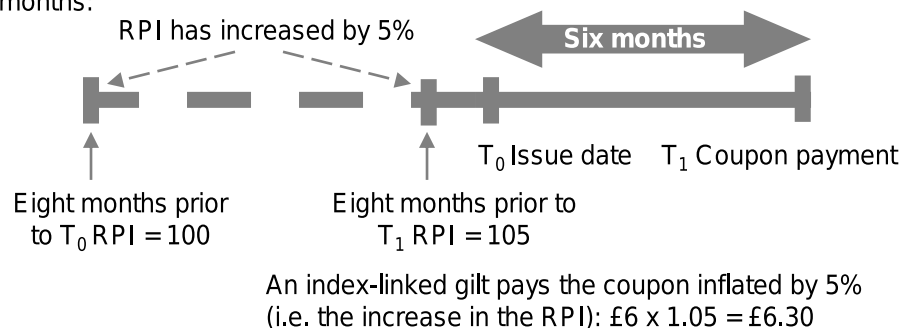
Note that for index-linked gilts issued before September 2005 the RPI lag will be **eight months**.

Example

Consider two gilts, each with a 12% coupon (issued prior to September 2005). One is non-index-linked; it will pay £6 interest per £100 nominal every six months with no adjustment for inflation:



The other is index-linked; it will pay an inflation adjusted coupon every six months:



Other non-conventional gilts

Double dated gilts

Double dated gilts are described with two dates, e.g. Treasury 11 3/4% 2007-2011. The Government has the option of redeeming **after** the first date, but no later than the last date.

Double dated gilts are categorised by using the latter date, e.g. Exchequer 12% 2017-2025 is categorised as a long-dated gilt.

Convertible gilts

Convertibles grant the owner the right to convert the gilt into pre-defined amounts of a **different** gilt at some time in the future.

Convertibles are usually short- to medium-term bonds which may be converted into a longer issue at the discretion of the **investor**.

Floating rate gilts

Floating rate gilts are unusual in that they pay variable coupons. The coupon is set by reference to the London Inter-bank Bid Rate (LIBID) at the beginning of each interest payment period. (LIBOR - x% may also be used as a reference rate).

They are also unusual in that they pay interest four times a year instead of semi-annually.

They tend to trade at around their par (nominal) value.

The STRIPS market

STRIPS stands for Separate Trading of Registered Interest and Principal of Securities.

These gilts can be stripped into their constituent cash flows, i.e. coupons and a redemption amount, and traded separately. These individual strips are registered securities.

For example, a five-year gilt is strippable into ten semi-annual coupons and a final capital payment (11 separate cash flows). If the cash flows are separated out, this equates to eleven individual zero coupon securities, with maturities of 6, 12, 18 months and so on to maturity.

The coupons are redeemed semi-annually on 7 June and 7 December.

The process of stripping is carried out by financial institutions.

2.3. Overseas government bonds

The general features of overseas government bonds and the markets they trade in vary from country to country. Many do not have a centralised exchange or trading system, with trades operating over-the-counter between dealers.

2.4. Corporate bonds

Introduction

Corporate bonds represent debt securities where the issuing company is committed to repaying the capital and associated interest to the holders of these instruments.

Interest on corporate debt can be fixed or variable rate.

In relation to the redemption of fixed rate corporate debt:

- The timing is set out in the terms of issue
- The final redemption date is non-optional
- Any remaining stock is automatically repaid at redemption

Indenture

The details of a particular bond issue are formalised in the bond's terms and conditions (the **indenture**).

Items included in the indenture include:

- **Call provisions** - entitle the issuer to repay the bond early
- **Put provisions** - entitle the holder of the bond to demand early repayment
- **Sinking funds** - enable the issuer to repay a part of the nominal value each year prior to redemption
- **Protective covenants** – These are designed to protect the income streams on the issued bonds from undue risk. Limitations could include things like:
 - A proportion of profit that can be distributed as dividends;
 - How much further debt that can be raised and the ranking of that debt; and
 - Director remuneration

- **Convertibility** - where the bond can be converted into a certain number of equities, often seen as a low risk way of gaining exposure to an equity price increase

Security

Debentures and mortgage bonds

Debentures are secured bonds and can take the form of a fixed charge over assets or a floating charge over assets.

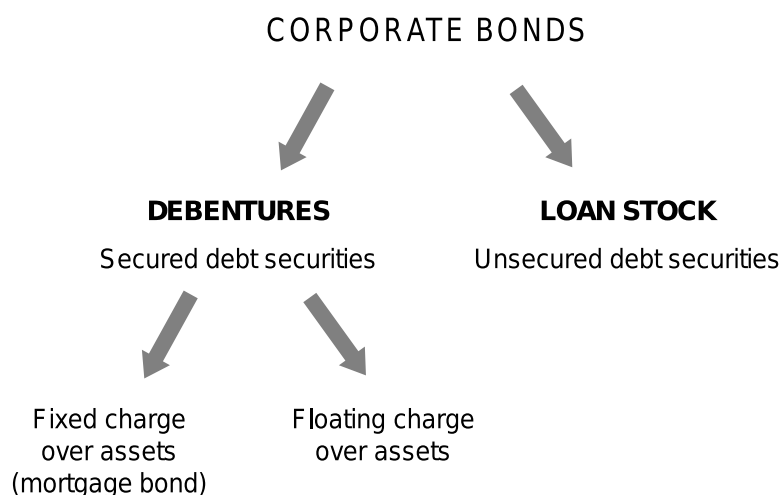
A debenture that is a fixed charge over assets is secured against a specific company asset e.g. a building or land. The difference between a fixed charge debenture and a mortgage bond is that, in the case of default, the holder of the debenture has the right to appoint receivers. The receivers are appointed to sell the assets used for security and use the money raised to meet the company's obligations. These are often referred to as mortgage bonds.

A debenture that is a floating charge over assets is secured against a 'class' of assets e.g. plant and machinery, fixtures and fittings, trade debtors. Like the fixed-charge debenture, the holders of floating charges have the right to appoint receivers if default occurs.

Loan stock

The term **loan stock** refers to **unsecured** corporate debt securities. Lenders have no legal charge over any of the company's assets.

Corporate bonds: summary

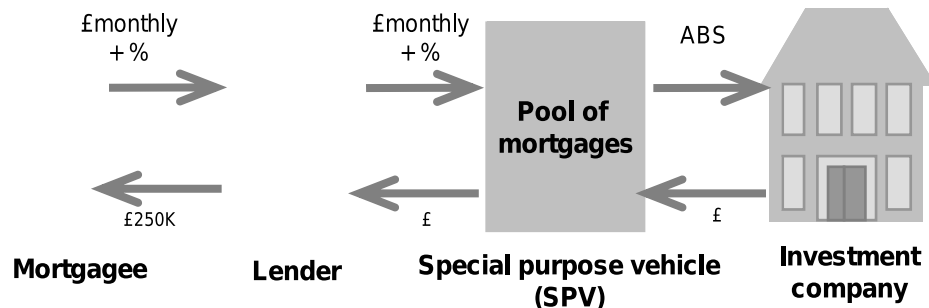


Collateralised debt obligations (CDOs)

A collateralised debt obligation (CDO) is a security secured by the cash flows from a pool of bonds, loans, and other assets. It is a form of asset backed security.

An asset-backed security (ABS) is a financial instrument secured by a pool of assets such as property, loans or credit-card receivables.

They are often issued by companies specially created for the purpose (Special Purpose Vehicles or 'SPVs'). This enables the issuing company to be a separate legal entity from the original owner of the underlying assets leaving them unaffected by any bankruptcy risk in the original owner.



Notes on the diagram:

- The mortgagee agrees to a monthly payment reflecting capital plus interest for a fixed time period, e.g. 25 years
- The lender sells the repayments on to a SPV
- The SPV pools the mortgage with others and securitises them by producing an ABS
- The ABS is sold on to an investment company
- The money raised is passed on to the lender as payment for the mortgage repayments

These instruments are often called 'passthrough securities' as the cash flows from the pool of underlying assets, e.g. rental income on property or interest on loans, are distributed on a pro-rata basis to the holders of the ABS. In other words, the cash flows from the underlying assets have been **securitised**.

One of the most common types of ABS is a collateralised debt obligation (CDO).

Floating rate notes (FRNs)

Normally the coupon is fixed, yet with FRNs it floats in line with market rates and paid either on a semi-annual or quarterly basis. For each period the market rate of interest is assessed by reference to a benchmark such as LIBOR and this is adjusted by a further margin to reflect the additional risk of lending to a company rather than the government.

As the coupon moves in line with market interest rates, the value of a bond should equate to the par value.

International bonds (also called eurobonds)

An international bond (eurobond) is a security where the denomination of the bond and the country of issue are all different. For example, a company issuing dollar bonds in Paris and Tokyo, or a company issuing yen bonds in Frankfurt and Dublin.

Commonly, eurobonds are issued in the currency and country where the issuer finds it cheapest to raise the finance, and then swapped into the currency the issuer wants.

Features

Eurobonds are **bearer** bonds i.e. anonymous, freely-transferable securities. Due to the risks of holding bearer documents, many eurobonds are kept in safe depositaries such as Euroclear or Clearstream. This is referred to as **immobilisation**.

Interest is usually paid on eurobond issues (fixed or floating) once per year. Interest is also paid gross of withholding tax. This feature makes eurobonds very attractive to international investors.

Due to the international nature of eurobonds, they are overseen by the **International Capital Markets Association (ICMA)**.

3. Other bonds

3.1. Convertible loan stock

Features

Convertible loan stock is debt security with an option to convert into a specified amount of equity at a later date.

As a general rule, the price of convertible debt instruments will be higher than similar non-convertible instruments. This reflects the premium paid for the right to convert into equities.

The conversion premium can be calculated as a percentage of the value of the current share price.

Example of conversion premium

Example

A convertible bond is trading at £110.00 (per £100 nominal). Its conversion terms are £100 nominal converts into 40 ordinary shares. What is the conversion premium if the current market price of the shares is £2.40?

The conversion premium (in terms of the share price) would be calculated as follows:

- 100 nominal value costs £110 and would provide 40 ordinary shares. Therefore effective cost of share:

$$\frac{£110}{40 \text{ shares}} = £2.75$$

- So, the conversion premium = £2.75 - £2.40 = £0.35p

- The conversion premium is sometimes expressed as a percentage of the current share price:

$$\frac{35p}{240p} = 0.146 \text{ or } 14.6\%$$

Theoretical price of a convertible bond

The theoretical price of a convertible bond can be calculated by comparing a similar straight bond and an American call option with the same strike and expiry date, taking into account the dilution effect of the conversion. The calculation is as follows:

- Convertible price = straight bond + ((option premium / 1 + dilution) x conversion ratio)

For example, Each of ABC's convertible bonds turns into 10 shares and if they were all converted it would cause a share dilution of 20%. If an American call option with the same strike and expiry has a value of £1.50 and the price of a similar ABC non convertible bond is £90 the theoretical convertible price can be calculated as follows:

- $£90 + ((£1.50 / 1.2) \times 10) = £102.50$

The value of the conversion feature is therefore £12.50 (£102.50 - £90).

Other convertible bond calculations

The conversion value is equal to the current share price multiplied by the conversion ratio:

$$\text{Conversion value} = \text{Current share price} \times \text{Conversion ratio}$$

Continuing with the previous example, the conversion value equals £2.40 (current share price) multiplied by 40 (conversion ratio) = £96 per £100 nominal.

The conversion price is equal to the nominal value divided by the conversion ratio:

$$\text{Conversion price} = \frac{\text{Nominal value of convertible}}{\text{Conversion ratio}}$$

Again, using the above example, conversion price = £100 nominal / 40 = £2.50.

3.2. Callable/Putable bonds

Bonds, as we have seen, tend to be a loan to a company or government for a fixed sum of money, at a fixed interest rate, redeemable at a fixed future date. In effect the investor receives a regular fixed payment (the coupon) for a set period of time, and then receives a return of the nominal value of the loan.

However, some bonds have a provision built into them that allows early redemption of the loan. These provisions could be call provisions or put provisions.

Call provisions

This provision allows the issuer of the bond to pay off the obligations on the bond early. This saves the issuer money as they do not need to keep paying the coupon for the full period. It also works against the holder of the bond, as they do not receive all the cash flows they were expecting.

Where interest rates fall, the issuer of the bond may choose to redeem the bond early. They can then take advantage of the lower borrowing cost to issue lower coupon bonds.

Put provisions

This provision allows the holder of the bond to force the issuer to redeem the bond early. If the holder thinks that the issuer is unlikely to be able to meet its obligations on the loan early, he could call in the loan. The investor may also choose to redeem early if interest rates rise; if they put the bond back to the issuer, they can use the cash raised to buy higher yielding bonds. This gives the holder an added flexibility to avoid default on the loan that they have given. It also could lead to a company having to find alternative cash flows to repay the debt.

4. Debt seniority

4.1. Key risks faced by bond holders

The key risks faced by bond holders are:

- **Interest rate risk** – When interest rates rise, bond prices fall. When interest rates fall, bond coupon can be reinvested at a lower rate. This is less true with floating rate notes
- **Inflation risk** – Most bonds offer a fixed redemption value, often after many years. Inflation will erode the true value of these redemption values. This can be avoided by using index-linked bonds
- **Liquidity risk** – This is risk of not being able to sell the bond, if you need the cash. Most bonds trade over-the-counter and can be quite illiquid. This is less of a problem for exchange-traded bonds and UK government bonds
- **Default risk** – The risk of the issuer not paying you back. Credit ratings – covered in the next chapter – give us an idea of the default risk of an issuer. The higher the credit rating, the less risk of default

4.2. Order of repayment

Background

There is a strict order of repayment of company debts in a liquidation.

All classes of debt rank more highly than equity, i.e. debt is paid back before equity.

However, not all types of debt are equal. Some are **senior** (take priority), while others are **subordinate**.

The full order of repayment is illustrated below:

Full order of repayment

1. Liquidator
2. Fixed charge holders
3. Preferential creditors (e.g. employees)
4. Floating charge holders
5. Unsecured creditors (e.g. trade creditors and the Government)
6. Subordinated loan stock
7. Preference shareholders (nominal value only except participating shares)
8. Ordinary shareholders
9. Deferred shareholders
10. Warrants

↑
CREDITORS
↓
↑
OWNERS
↓

5. Debt types and features: summary

5.1. Key concepts

Debt: types and features

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Now you have finished this chapter you should attempt the chapter questions.

