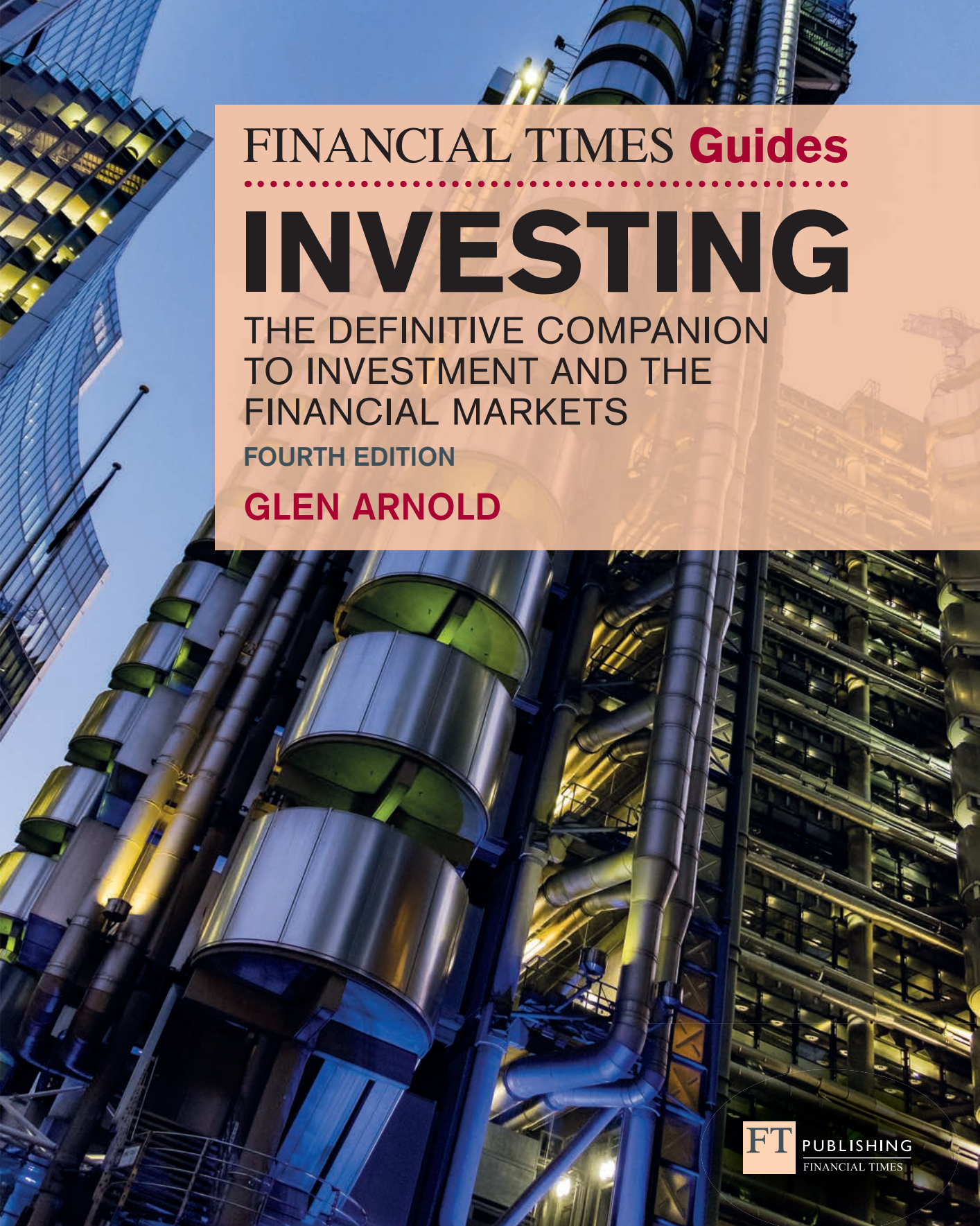

FINANCIAL TIMES **Guides**

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over the five years it's obviously £2 per year. The capital loss as a percentage of what the investor pays (£110) is £2/£110 × 100 = 1.82 per cent per year.

This loss to redemption has to be subtracted from the annual interest yield to give an approximation to the **redemption yield** (also called **yield to maturity, YTM**): 4.55 per cent − 1.82 per cent = 2.73 per cent. This is sometimes called **gross redemption yield** because it does not allow for tax levied on the income received from it. While this example tries to convey the essence of redemption yield calculations, it oversimplifies in that a compound interest-type calculation is required to obtain a precise figure.[2]

The general rules are as follows:

- If a dated gilt (or other bond) is trading at less than £100 the purchaser will receive a capital gain between purchase and redemption and so the redemption yield is greater than the interest yield.
- If a dated gilt is selling at more than £100 a capital loss will be made if held to maturity and so the redemption yield is below the interest yield.

Of course, these capital gains and losses are based on the assumption that the investor buys the gilt and then holds to maturity. In reality, many investors sell a few days or months after purchase, in which case they may make capital gains or losses dependent not on what the government pays on maturity but on what another investor is prepared to pay. This, in turn, depends on general economic conditions – in particular, projected general inflation over the life of the gilt. Investors will not buy a gilt offering a 5 per cent redemption yield over five years if future inflation is expected to be 7 per cent per year for that period. Interest rates (particularly for longer-term gilts) are thus strongly influenced by market perceptions of future inflation, which can shift significantly over a year or so, hence the high annual gains or losses in the secondary gilt market (shown in Chapter 2).

Bond prices and redemption yields move in opposite directions. Take the case of our five-year gilt offering a coupon of 5 per cent with a redemption yield of 2.73 per cent. If general interest rates rise to 4 per cent because of an increase in inflation expectations, investors will no longer be interested in buying this gilt for £110, because at this price it yields only 2.73 per cent. Demand will fall, resulting in a price reduction until the bond yields say 4 per cent. A rise in yield goes hand in hand with a fall in price.

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[2] For more details, see Chapter 11 of my book co-authored with D Lewis, *Corporate Financial Management* or my guide *The Financial Times Guide to Bond and Money Markets*.

Redemption yields for gilts are quoted daily online at www.reports.tradeweb.com as well as at www.ft.com and many other financial websites, such as www.bloomberg.com, www.fixedincomeinvestor.co.uk, www.hl.co.uk, www.londonstockexchange.com, www.selftrade.co.uk and www.ii.co.uk.

Quotes

The gilts market is focused around **gilt-edged market makers (GEMMs)** who are prepared to buy from or sell to investors. They quote two prices: the **bid price** is the price at which they will buy, and the **offer price** is their selling price. The UK gilts table shown daily in the *Financial Times* shows the middle price, half way between the bid and offer price.

Box 6.1 UK gilts 12 June 2019

Name of gilt and coupon (Treasury 4.25 per cent, redeemed in 2032, when the loan will be repaid)

Price: the mid-price between the market makers bid and offer price for a nominal £100 of stock

	Price in £s	Redemption yield
Treasury 1.75%, 2019 (Tr 1.75pc '19)	100.11	0.75
Treasury 4.75% 2020 (Tr 4.75pc '20)	102.96	0.69
Treasury 5% 2025 (Tr 5pc '25)	124.38	0.66
Treasury 4.25% 2032 (Tr 4.25pc '32)	138.29	1.08
Treasury 3.75% 2052 (Tr 3.75pc '52)	161.47	1.42
Treasury 4% 2060 (Tr 4pc '60)	181.31	1.38

FT *Source*: Raw data taken from *The Financial Times*.

Note that the redemption yield shown in the *Financial Times* is relevant if you are an investor on that particular day paying the price shown. However, if you bought your gilt years ago and expect to hold to maturity you will receive the yield that was obtainable at the time of purchase.

Buying and selling gilts

You can buy or sell gilts through brokers or investment platforms in the same fashion as shares (see Chapters 4 and 5). Telephone or online dealing is offered by many brokers. You would state the nominal value of the gilts you want to deal and whether you want to trade 'at best' (the best price currently in the market) or with a limit on the price you are prepared to pay (or sell for).

High street banks, some building societies, independent financial advisers and even some solicitors and accountants will buy or sell gilts for you.

You can buy and sell gilts in the primary and secondary market via the DMO's Gilt Purchase and Sales Service using Computershare (www-uk.computershare.com). You will have to fill in forms to become an 'Approved Group of Investors' member. You post a completed form with a cheque – see www.dmo.gov.uk. You are not able to specify the price or a maximum/minimum price at which your purchase or sale of gilts are to be made.

Unlike with the purchase of shares, you do not have to pay 0.5 per cent stamp duty.

Another way of gaining exposure to the gilt (or corporate bond) market is to buy units in a unit trust or investment trust that specialises in the type of bonds you are interested in. You gain professional management and diversification but you will pay fees (sometimes over 1 per cent per year, which is a lot as a proportion of the annual interest on gilts of say 2 or 3 per cent). Exchange traded funds (see Chapter 5) are another alternative.

Cum-dividend and ex-dividend

Gilts usually pay coupons twice a year. Between payments the interest accrues on a daily basis. If you buy a gilt you are entitled to the accrued interest since the last coupon. You will receive this when the next coupon is paid. That is, you buy the gilt **cum-dividend**. Gilts (and other bonds) are quoted at **clean prices** – that is, without taking account of the accrued interest. However, the buyer will pay the clean price plus the accrued interest value (called the **dirty price** or **full price, invoice price** or **full accrual price**) and receives all of the next coupon. So, if you buy a gilt four months before the next coupon due you would pay the clean price, say, £98 plus 60 days' accrued interest.

If you bought just before the coupon is to be paid the situation is different. There would not be enough time to change the register to make sure that the coupon

goes to the new owner. To allow for this problem a gilt switches from being quoted cum-dividend to being **ex-dividend** a few (usually seven) days before an interest payment. If you buy during the ex-dividend period the person you bought from would receive the accrued interest from the issuer. This would be reflected in the price you pay.

Index-linked gilts

There is a danger with conventional gilts – **inflation risk**. Suppose that you, along with the rest of the gilt-buying community, figure that inflation over the next ten years will average 2.5 per cent. As a result, you buy ten-year gilts that have a redemption yield of 4.8 per cent giving a comfortable real income over and above cost-of-living rises. However, two years later inflation starts to take off (oil prices quadruple, or the government goes on a spending spree). Now investors reckon that inflation will average 6 per cent over the following eight years. As a result, your gilt yield will fail to maintain your capital in real terms.

The government introduced a type of bond that ensures you receive a return above the inflation rate throughout the entire life of the bond. These are called **index-linked stocks (gilts)**, where the coupon amount and the nominal value are adjusted or uplifted according to the Retail Price Index (RPI). The gilt initially offers to pay £100 at the end of its term, say ten years away. It also offers to pay a low coupon, say 0.25 per cent. The key thing about index-linked bonds is that neither the capital sum on maturity nor the coupon stays at these levels unless inflation is zero over the next ten years.

Suppose inflation is 4 per cent over the first year of the bond's life. The payout on maturity rises to £104. This inflation-linked uplift happens every year (more specifically, it happens every six months). So, if over the ten years the inflation measure has risen by 60 per cent, the payout on the bond is £160. This means that you can buy just as many goods and services at the end with the capital sum as at the beginning of the bond's life (if you paid £100). Furthermore, the coupon rate also rises through the years if there is inflation. So, after the inflation experienced in the first year, the coupons for the first six months of the second year go up by 4% to $(£0.25 \div 2) \times (1.04) = £0.13$. (The situation is slightly more complicated than this in that the inflation figures used are those for three months preceding the relevant coupon dates, but this example illustrates the principle.)

Because most investors hold them to maturity secondary trading is thin and dealing spreads wider than for conventional gilts.

While these are virtually risk-free investments, if held to maturity the price of the bonds in the secondary market fluctuates on a daily basis. Thus, you could buy at, say

130 and end up selling a year later at 110 resulting in a negative return. A viable alternative is index-linked national savings certificates available at post offices (www.nsandi.com).

Corporate bonds

Corporate bonds offer a higher rate of return than gilts but, as you might expect, this comes with a greater degree of risk. It has been known for companies to be unable to pay interest and principal on the bonds they issue, and for bondholders to end up with nothing following liquidation. This downside should not be overemphasised because the vast majority of corporate bonds pay out the full promised amount. They are certainly much safer than investing in shares.

Corporate bonds are generally **negotiable** (that is, tradable in a secondary market). They come in a variety of forms. The most common is the type with regular (usually annual or semi-annual) fixed coupons and a specified redemption date. These are known as **straight**, **vanilla** or **bullet bonds**. Other bonds are a variation on this. Some pay coupons every three months, while some do not pay a fixed coupon but one which varies depending on the level of short-term interest rates (**floating-rate** or **variable-rate bonds**), and others have interest rates linked to the rate of inflation. In fact, the potential for variety and innovation is almost infinite.

Bonds issued in the last few years have linked the interest rates paid or the principal payments to a wide variety of economic events, such as a rise in the price of silver, exchange-rate movements, stock market indices, the price of oil, gold or copper – even to the occurrence of an earthquake. These bonds were generally designed to let companies adjust their interest payments to manageable levels in the event of the firm being adversely affected by some economic variable changing. For example, a copper mine pays lower interest on its finance if the copper price falls. Sampdoria, the Italian football club, issued a €3.5 million bond that paid a higher rate of return if the club won promotion to the 'Serie A' division. If the club rose to the top four in Serie A the coupon would rise to 14 per cent.

If you want to research corporate bonds a good place to start is the issuing company's website. If you know the year of issue you can download the relevant annual report telling you about the issue. You can also read the bond prospectus on the company's website.

Debentures and loan stocks

In the UK and a few other countries the most secure type of bond is called a **debenture**. They are usually secured by either a fixed or a floating charge against the firm's

assets. A **fixed charge** means that specific assets are used as security, which, in the event of default, can be sold at the insistence of the debenture bondholders and the proceeds used to repay them. Debentures secured on property may be referred to as **mortgage debentures**. A **floating charge** means that the loan is secured by a general charge on all the assets of the corporation (or a class of assets such as inventory or receivables). In this case the company has a high degree of freedom to use its assets as it wishes, such as sell them or rent them out, until it commits a default which 'crystallises' the floating charge. If this happens a receiver will be appointed with powers to dispose of assets and to distribute the proceeds to the creditors. Even though floating-charge debenture holders can force a liquidation, fixed-charge debenture holders rank above floating-charge debenture holders in the payout after insolvency.

The terms 'bond', 'debenture' and **'loan stock'** are often used interchangeably and the dividing line between debentures and loan stock is a fuzzy one. As a general rule, debentures are secured (have the backing of collateral) and loan stock is unsecured, but there are examples that do not fit this classification. If liquidation occurs, the unsecured loan stockholders rank beneath the debenture holders and some other categories of creditors such as the tax authorities.[3]

Trust deeds and covenants

Bond investors are willing to lower the interest they demand if they can be reassured that their money will not be exposed to a high risk. This reassurance is conveyed by placing risk-reducing restrictions on the firm. A **trust deed** (or bond indenture) sets out the terms of the contract between bondholders and the company. A trustee (if one is appointed) acting for the bondholders ensures compliance with the contract throughout the life of the bond and has the power to appoint a receiver (to liquidate the firm's assets). If a trustee is not appointed, the usual practice is to give each holder an independently exercisable right to take legal action against a delinquent borrower. The loan agreement will contain a number of **affirmative covenants**. These usually include the requirements to supply regular financial statements, interest and principal payments. The deed may also state the fees due to the lenders and details of what procedures are to be followed in the event of a default, such as non-payment of interest.

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[3] In the US and other markets a debenture is an unsecured bond and so the holders become general creditors who can only claim assets not otherwise pledged to creditors. The secured form of bond is referred to as the mortgage bond and unsecured shorter-dated (less than ten years) issues are called notes.