A Guide to Bonds

Sponsored by

bondscape.net

Introduction


Robert E. Diamond Jnr


Brian Winterflood

It hasn't always been made easy for private client brokers to deal in bonds. Access has been inconvenient, information hard to come by and competitive pricing difficult to achieve. We are confident that the Bondscape trading platform will address these issues.

In addition, Bondscape has sponsored this guide, in the hope that it encourages more brokers to deal in bonds. We know that many brokers are already very knowledgeable about the markets and are trading regularly on their clients' behalf. We hope to increase that community and bring in many more, who can see the attractions of bonds' security and predictability of income, but who have not yet ventured into the markets.

The guide has been written for professionals, to give an overview of the bond markets. But we are sure that its approach will also be a valuable reference, when advising clients.

We are certain that the retail market for bonds will grow significantly in the UK and that Bondscape will play a large part in this. We hope that this guide, as well as the Bondscape system, will help brokers develop their businesses at the same time.

Robert E. Diamond Jnr
Chief Executive
Barclays Capital

Brian Winterflood
Chairman
Winterflood Securities

Overview

Bonds occupy a less well-known stretch of investment market water but they are at least as important as shares. For some investors – especially those who need income and want to preserve the capital value of savings – bonds are probably more important than shares. Older people will find bonds especially hard to ignore.

Bonds have a reputation for being more difficult to understand than shares. In fact they are probably simpler. It is certainly easier to see value for money in a bond. Bonds are also less volatile.

Discussion of share price related information dominates the financial pages of newspapers exactly because shares are more complicated. Complexity makes shares more interesting. But it does not necessarily make shares better or more useful than bonds.

Tradeable loans

A bond is an IOU. It is a loan. If a government, other international institution or company wants to borrow money one of the ways to do it is to issue bonds. With a bond an investor lends in return for a series of interest payments and, usually, the promise to have the loan repaid on a fixed date.

The feature that distinguishes a bond from any other kind of loan is that a bond is tradeable. Investors can buy and sell bonds without the need to refer to the original borrower.

The total value of bonds issued in sterling is about £500 billion – about one-third the value of all UK company shares. Moreover, institutions and companies are using bonds for much more of their financing needs. LSE statistics show that British companies raised more than four times as much cash through bonds as shares in the year 2000. Just over £100 billion worth of bonds were issued last year and that number is four times higher than it was five years ago.

Gilts and non-gilts

Bonds come in many shapes and sizes. Some are issued by governments, some by other state institutions and some by companies.

British government bonds are called "gilt-edged bonds" or "gilts" because bond documentation used to be edged with gold leaf. It signified the creditworthiness of the issuer. US government bonds are called "Treasury bonds," "Treasuries" or "T-bills." The German equivalents are "bunds". All types of government bond are also known as "sovereign" debt.

Bonds issued by other governments and international institutions such as those issued by the European Investment Bank (EIB), which is owned by the EU's 15 member states, could be described as "gilt substitutes". They have similar levels of security to gilts, but have higher coupons because investors frequently prefer to hold gilts for regulatory and other reasons.

Corporate bonds are bonds issued by companies. These are also sometimes called "credits."

Interest rates

The rate of interest paid to bondholders depends on the creditworthiness of the borrower, the economic climate and the length of the term of the loan.

Interest may be thought of as being lenders' compensation for uncertainty. The greater the uncertainty, the greater the amount investors will demand in return for lending money. The amount of compensation required by investors rises with their fears that a borrower will go bust and be unable to pay interest or repay the loan.

The central bank interest rate is also relevant, as is the outlook for interest rates and inflation. Bank deposits are an alternative place for investors to place money so bonds need to pay competitive returns. By the same token inflation reduces the real value of money over time so if inflation is high investors demand more compensation.

Yield

Bonds are sometimes called "fixed-interest securities" because the borrower often pays a pre-set and unchanging amount of interest. This fixed payment is sometimes called the "coupon" because bond certificates used to be issued with detachable coupons that were cashed in when interest payments fell due.
But while bond interest rates are usually fixed in pounds and pence terms the yield is variable to investors who buy in the open market. It varies because the price of bonds traded between investors moves as the economic climate, and stock market conditions, change.

"Income yield" or "flat yield" is calculated by dividing the fixed interest rate by the price paid for the bond.

If a bond is purchased above its issue price the investors suffer a loss of capital if the bond is held to redemption. If the bond is bought for less than the issue price bondholders stand to enjoy a capital gain. The so-called gross redemption yield takes account of such gains or losses.

Yields rise as bond prices fall. Yields fall when bond prices rise. Bond prices change with the economic climate. If general interest rates rise the relative value of a fixed-interest bond will fall because the right to receive payments, conferred on the owner of the bond, is worth less.

Bond prices will also change if the issuer becomes less likely to be able to afford to pay interest or repay the capital. Creditworthiness is assessed and constantly updated by credit rating agencies such as Moody's or Standard and Poor's.

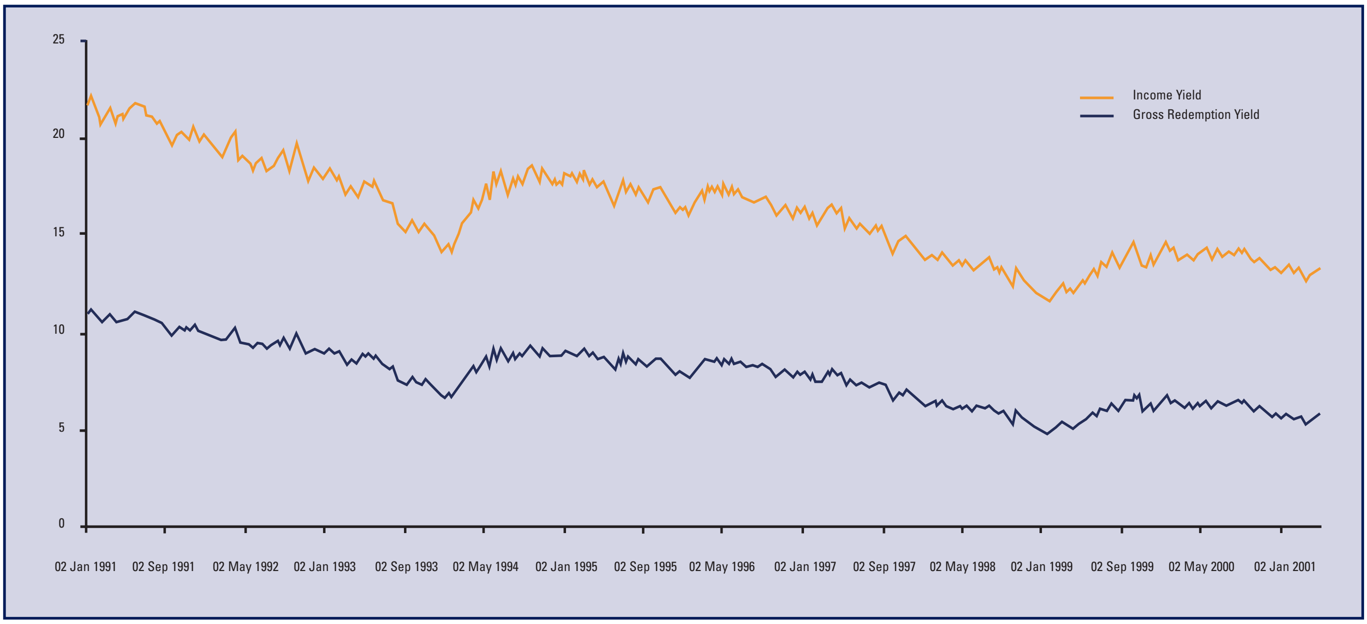
Investment gradings

	Standard & Poor's	Moody's
	AAA	Aaa
	AA+	Aa1
	AA	Aa2
	AA-	Aa3
	A+	A1
	A	A2
	A-	A3
	BBB+	Baa1
	BBB	Baa2
Investment Grade	BBB-	Baa3
Non Investment Grade	BB+	Ba1
	BB-	Ba2
	B+	Ba3
	B	B1
	B-	B3

Source: Barclays Capital

The strongest investment grade is AAA/Aaa, which is generally accorded to governments and other organisation of similar security

Income yield versus redemption yield



Source: Barclays Capital

Bonds deemed relatively unlikely to fail are called "investment-grade bonds." They sit on ratings of at least Baa3 from Moody's and BBB- from Standard & Poor's.

Bonds thought to be less reliable are derogatively known as "junk" bonds. Kinder observers call them "high-yield bonds." It is worth noting that if the yield is high enough investors may deduce that there is adequate compensation paid on bonds of even the highest risk.

The Yield Curve

Time plays a key role in the way yields work. Classically, investors will be happy to accept less annual interest on bonds due to be redeemed in short periods of time than on bonds set to run many years into the future. The reason, again, comes down to the price of uncertainty.

If it is a long time before money is due to be repaid there is more time for things to go wrong. There is greater opportunity for the borrower to run into financial difficulty; there is also more chance that investors can get caught out by changing economic circumstances.

Bonds issued by a developed nation such as the UK or the US are thought to be risk free and the yield curve gives an indication of the anticipated risk of economic variance and time. When it comes to corporate bonds or credits the risk that the issuer will go bust is also added into the equation. It is also reflected in the shape of the graph plotted. This kind of graph is sometimes called a credit curve.

A yield curve graph is drawn plotting changing yield across time. The normal shape shows a line that gradually gets steeper. However, in certain economic climates it can mutate. Bond yields anticipate changes in general interest rates and if it is thought those will rise in the near future the yield curve line may start high and move lower.

Factors connected with supply of bonds and demand for them can – as seen with long dated UK government bonds in the late 1990s – also influence the shape of the yield curve.

Broadly speaking government bonds are the most secure. Promises to pay interest and repay capital are backed by the most powerful of forces – governments and their ability to raise money through taxation. The creditworthiness of governments means the interest payments on government bonds are lowest because investors need the least amount of compensation for the risk that the borrower will renege on financial commitments.

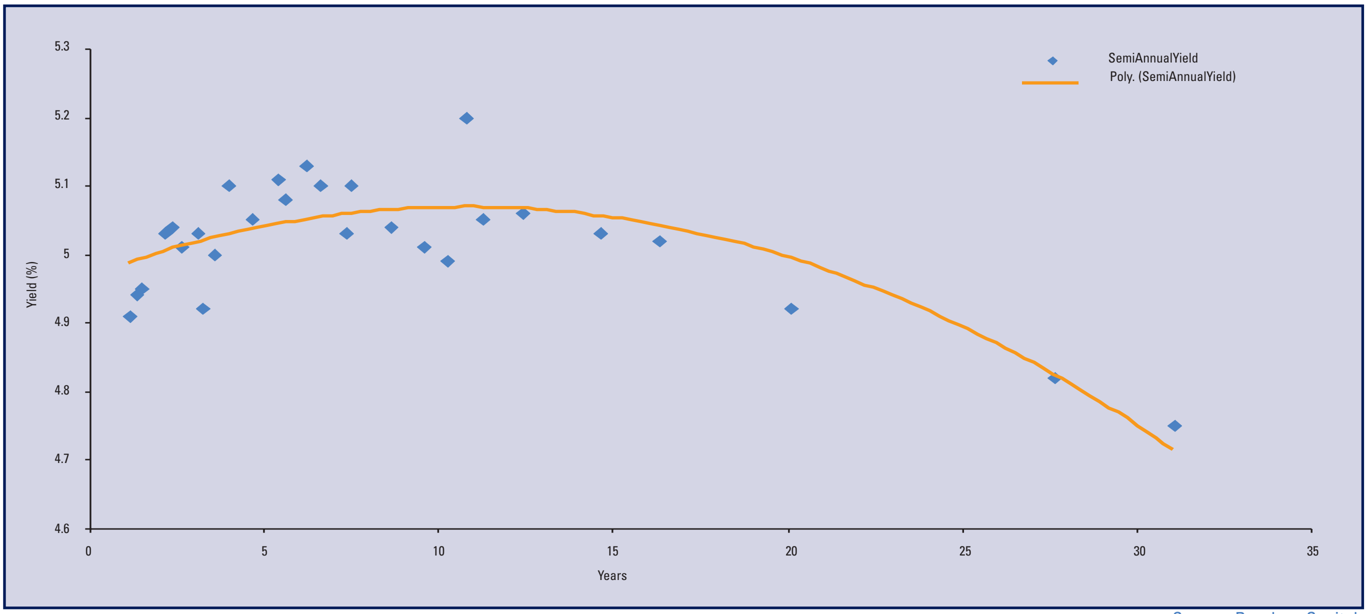
But some governments are more reliable than others. In August 1998, for example, Russia defaulted on its debt. Some corporates are perceived to be more reliable than some developing world governments.

By and large, however, non-government bonds pay more interest than those issued by governments. The difference is called the "spread." Spreads are usually calculated with reference to the yield on a typical gilt, or US Treasury bond, or a bund. Spreads can be calculated for an individual bond or for an average of a collection of bonds.

Non-government bonds make up an increasingly influential part of the UK bond market. Although 'gilt substitute' bonds, from international institutions, offer a level of security close to that of gilts, corporate bonds because of the default risk are more difficult for investment managers to assess. A large part of the skill of actively managing a portfolio of bonds comes down to making sense of the difference between the yield paid on risk-free bonds (such as gilts) and the yield on credits.

Professional operators also keep a close eye on information about "swaps" or "asset swaps". One of the functions of the market is to enable investors to switch or "swap" fixed interest payments for ones that pay a floating rate. They may want to do this for a variety of reasons. Examination of movements and trends in the swap market gives traders invaluable information used in the dealing process.

Gilt yield curve



Source: Barclays Capital

The yield curve plots the changing yields earned on a bond, with redemption rates stretching into the future. This illustration shows a long term bond, on which the 'price of uncertainty' is reflected in the higher yield on the early years.

Yield spread

Source: Barclays Capital

The yield spread reflects the differences in returns from different bonds. This is commonly used to show that difference between gilts and corporate bonds. The difference between gilts and 'gilt substitutes' would be less pronounced.

Brief History

Bonds used to form the bulk of a private investor's portfolio. They offer fixed income for a fixed term, together with full capital repayment at redemption, and this made them appear safe and dependable. More volatile equities, in contrast, were considered a rather risky asset, and not suitable for private investors.

However, the onset of high inflation in the 1960s and 1970s wiped the shine off bonds. The interest and repayment value of bonds are fixed in nominal terms and this meant that the real value of money invested in bonds eroded quickly.

If inflation runs at five per cent a year the real value of money halves in fifteen years. So when inflation started to soar, investors demanded a higher yield on their bonds to compensate for the effect of inflation. As a result bond prices slumped and losses were substantial. A £1,000 investment in gilts in 1970, even with all the income reinvested tax-free, was worth just £682 in real terms by the end of the decade.

The tide turned back in favour of bonds in the 1980s. In the 1990s, the apparent defeat of inflation allowed bonds to perform well. Yields have fallen to their lowest level since the 1950s.

For many years the UK bond market was dominated by gilts. However, the UK government has shown an ability to reduce its borrowings and gilt issuance has declined as a result. At the same time other sovereigns and international institutions have increased their issuance and companies have turned to the bond markets for finance where once they called upon shareholders for money. This has increased the total value of bonds in existence. At the time of writing there is about the same amount of money invested in non-gilt bonds as UK government bonds. It seems likely that non-gilt issuance will continue to grow and that the non-gilt bond market will increasingly overshadow gilts.

US companies and investors are much more familiar with bonds and have used them for decades. There are about $14 trillion (£10,000,000,000) worth of US bonds in existence. Of this US$3 trillion is direct US Government bonds with the balance being issued by companies, municipals and government agencies.

Non-government bond issues are now sometimes larger than government bond issues. The largest of these can be seen in the accompanying table.

Largest sterling non-gilt issues

Name	Coupon	Maturity	Size £m
European Investment Bank	6.000	07-Dec-28	3600
Kfw Intl Finance (US)	6.000	07-Dec-28	2950
Kfw Intl Finance (US)	5.550	07-Jun-21	2560
European Investment Bank	5.500	07-Dec-09	2300
European Investment Bank	6.000	26-Nov-04	2033
Fannie Mae	6.875	07-Jun-02	1900
European Investment Bank	5.375	07-Jun-21	1775
European Investment Bank	6.250	15-Apr-14	1450
European Investment Bank	7.000	08-Dec-03	1300
European Investment Bank	7.625	07-Dec-06	1250

Source: Barclays Capital

Performance

Recent history suggests that returns from bonds can exceed those from equities. Government bond holdings in OECD countries (excluding Japan) produced a total return of at least 8 per cent in the 12 months to March 2001. According to one estimate, a portfolio of top government bonds like US Treasuries and top-quality corporate bonds outperformed a global equity fund by a margin of 15 per cent in the year 2000.

It has not always been so. Indeed the margin by which shares have beaten bonds over the long run is remarkable. Leaving inflation aside, £1,000 invested in UK shares in 1945 would have grown, with gross income re-invested, to be worth just over £970,000 by the end of 2000. The same £1000 invested in bonds would have grown to total £33,000 although this does not reflect the fact that bonds are predominantly held for their security and stability whilst shares are held for long term performance.

Western economies appear to have changed in recent years, with interest rates and inflation markedly lower than in the past. In the course of the year 2000 US equities under-performed bonds by more than 30 per cent – the widest margin of underperformance since the Great Depression of the 1930s. In the UK, over the full 100 years that the study examines, the average annual additional return from equities compared to gilts has been 4.4 per cent. Over the past decade it dropped to 2.4 per cent.

The prospects for non-government bonds are especially interesting. History indicates that investment-grade bonds rarely default and many investors believe that by holding such bonds to maturity they achieve a superior return compared with gilts because the interest rates are higher.

Some will argue that UK government bonds may be overpriced because issuance has fallen at the same time as pension fund managers have chased stock to comply with regulatory obligations on funding requirements. If true, it suggests that non-government bonds offer even better value for money.

Who buys bonds, and why?

Bonds have most appeal to income seekers – hence their traditional popularity with older investors. In the US, and often in continental Europe, the received investment wisdom is that bonds should make up a proportion of a portfolio equivalent to the age of the investor – 30% for a 30 year old, and 70% for a 70 year old. This may be too conservative an approach, especially for younger investors. But the principle that bond holdings should increase with age is sound.

The main investors in non-government bonds in the UK have traditionally been big institutions, pension funds and life insurance companies. They have bought bonds to meet liabilities to pay pensions and policyholders. They have also tended to be long-term investors, often holding a bond from issue to redemption. Institutions have also been the predominant owners of gilts.

For the most part, private investors have avoided non-gilts in favour of gilts. The creditworthiness of the UK government is unquestioned and there is a simple and cheap way of buying gilts via forms obtainable from a Post Office. Gilt prices and yields are also relatively easy to find in the newspapers.

Corporate and some government bonds have been less easy for retail investors to buy individually. It is also harder to assess the risk associated with bonds issued by companies. But it is possible to buy individual bonds directly and new technology is making it much easier for stockbrokers to offer a full-service.

Corporate bond funds, assisted by the widening of the tax breaks for private investors, have proved popular. The number of bond funds in the UK has ballooned since 1996 when the rules were changed to allow them to be held in tax-free Personal Equity Plans. It is now possible to hold corporate bonds in Individual Savings Accounts. Statistics collected by AUTIF, the unit trust trade association, show that corporate bond unit trusts have grown rapidly to be worth £12.5 billion at the last count.

Bonds also offer portfolio diversification. A strategy of combining bonds and shares should lead to a more stable investment performance. Corporate bonds commonly pay higher yields than shares of the same company. The income is also more secure because bond coupon payments have to be honoured before shareholders can claim their dividends. Bondholders also get preferential access to assets if a company is wound up.

There are good arguments to be made for investing in bonds in times of economic and stock market uncertainty. Bond prices and yields tend to move less violently than share prices. Policymakers also often respond to economic weakness by lowering the base rate of interest and when the cost of borrowing falls bond prices generally edge up.

Whether buying via a fund or individually, the risk-reward principle of finance holds. The less creditworthy the organisation, the higher the yield investors will demand. Anyone searching for a higher income than gilts can provide will have to choose how much risk he or she is willing to accept. This will vary greatly, depending on individual risk tolerance levels, age and the diversification profile of individual portfolios.

There is little to stop investors buying bonds issued in US$ or European currencies anywhere in the world. However, the risks posed by fluctuating foreign exchange rates makes the exercise more challenging.

Frequently asked questions

Why are bonds traded?

It enhances the attraction of bonds from an investor perspective because it means they can liquidate the investment at any time. They are not tied to a redemption date. If trading makes life easier for investors it also makes it easier for companies and governments to raise money by issuing bonds.

How safe are non-government bonds?

There is no such thing as a risk free non-government bond, although those issued by international institutions such as the EIB are widely regarded as being as secure as gilts. Some bonds (called debentures) are secured on property or other assets that can be sold to repay the debt. But many bonds are unsecured and it is quite possible to lose everything. But failures are not everyday occurrences. Moreover if a company does fail bondholders are repaid before shareholders see any return. Failed companies are commonly able to repay at least some of the bondholder capital. Studies suggest this could be as much as 40p in the pound.

The table shows cumulative default probabilities. The figures represent the probablilty that a bond with a given rating in year 0 will default by any of the subsequent 20 years. So from the table we can see that the probability of a Aaa defaulting by year 5 is 0.12% and 27.92% for a B rated bond. However it should be noted 'default' does not necessaily mean total loss but can be a delay in payments. AAA issues that later default are often downgraded before the event.

Cumulative default probabilities

Yr	Aaa	Aa	A	Baa	Ba	B
1	0.00	0.02	0.01	0.14	1.27	6.16
2	0.00	0.04	0.05	0.44	3.57	12.90
3	0.00	0.08	0.18	0.83	6.11	18.76
4	0.04	0.20	0.31	1.34	8.65	23.50
5	0.12	0.31	0.45	1.82	11.23	27.92
6	0.21	0.43	0.61	2.33	13.50	31.89
7	0.31	0.55	0.78	2.86	15.32	35.55
8	0.42	0.67	0.96	3.39	17.21	38.69
9	0.54	0.76	1.18	3.97	19.00	41.51
10	0.67	0.83	1.43	4.56	20.76	44.57
15	1.37	1.45	2.65	8.01	29.87	52.83
20	1.77	2.24	4.30	11.27	36.50	54.52

Source: Moody's

What is the tax situation?

Interest on gilts and eurosterling bonds are subject to full income tax but payments are normally paid gross. Some domestic issues still pay net of tax. Capital gains are usually free of Capital Gains Tax, but capital losses on corporate bonds cannot be set against gains subject to CGT made elsewhere.

Most government and non-government bonds can be held within Personal Equity Plans (PEPs) and Individual Savings Accounts (ISAs). Bonds held in PEPs and ISAs escape tax altogether. In order to qualify, bonds must have at least 5 years remaining life at time of purchase.

Is it better to invest directly or via a fund?

Owners of individual bonds usually enjoy low dealing costs, fixed regular incomes, and peace of mind when it comes to the security of savings. In particular, these advantages are felt by those who buy bonds at issue and hold them until redemption. The predictability of bonds makes them ideal for financial planning. Any investor happy to buy shares in a company should be more than happy buying government or well-rated non-government bonds.

The advantages of using a collective investment vehicle, such as unit trust allied with an ISA, is that investors benefit from the services and expertise of a professional manager. But there are reasons to be cautious. Funds levy a management fee. They also tend to trade bonds actively in order to maximise returns but this adds to transaction charges. Moreover, collective investment vehicles rarely promise a fixed income or maturity.

A brief bond glossary

Asset swap – The mechanism that lets bond investors receive a floating rate of interest instead of a fixed rate of interest.

Bearer bond – A bond that is exchangeable or tradeable by virtue of physical possession of a certificate.

Clean price – Most bond prices are quoted 'clean'. This means the price does not account for interest that has accrued since the last interest payment but an amount of accrued interest will be added to the settlement figure.

Credit rating – A quality assessment from a professional rating agency such as Moody's Investors Services or Standard & Poor's. The rating may change as the borrower's perceived ability to meet financial commitments also changes.

Crest – The electronic system that ensures that trades are completed properly. New technology now offers settlement of bearer bonds using Crest.

Coupon – Another name for the interest payments made to bondholders.

Gilt – Another name for a bond issued by the UK government. Also known as a gilt-edged security.

Investment grade – A term describing bonds of higher quality and greater creditworthiness. BBB- and above.

Junk bonds – Bonds paying higher rates of interest and issued by less creditworthy companies. Also called high yield bonds

Longs, shorts and mediums – Different types of bond categorised according to the length of time before they are due to be redeemed. Short-dated bonds are usually those with less than five years to run, mediums have between five and fifteen years of life left and longs have more than fifteen years to go.

Yield – The (usually) fixed annual coupon value divided by the price paid for the bond. The calculation is sometimes adjusted to take account of any potential loss or gain incurred because of the difference between the acquisition price of the bond and its redemption value. The simpler calculation gives the so-called income yield or flat yield. The more complicated, but more revealing, sum gives the gross redemption yield.

Yield curve – A graph plotting the changing yields earned on bonds with redemption dates stretching into the future.

Yield spread – The difference between the yields on different bonds. Commonly used in reference to the difference between government bonds and corporate bonds.

Who are Bondscape?

Barclays Capital is the investment banking division of Barclays PLC, one of the largest financial services groups in the world. Barclays has operations in 60 countries, including all major financial centres, assets of £316 billion, more than £21 billion in capital resources and an AA credit rating. Barclays Capital is a debt-focused investment bank. It concentrates on risk management and financing - activities where the size and strength of the Barclays group give the firm a competitive advantage. Its clients include corporations, other banks, governments and supranational agencies worldwide.

Winterflood Securities. Formed in 1988, Winterfloods very quickly achieved successes as a market maker in smaller UK equities. Initial backing was received from Union Discount who relinquished their interest in 1993 to Close Brothers Group who now own in excess of 97% of the Company. Today, Winterfloods provides an unparalleled level of service to the retail market, and is established as a leading Retail Service Provider (RSP). Cutting-edge technology has been embraced to produce the Winner automated dealing system, and the product range has been extended to enable brokers to trade almost 5000 UK and international equities together with a comprehensive list of sterling bonds, either electronically or over the telephone, providing a unique blend of immediacy and flexibility to its customers.

in association with

Headquartered in London, HSBC Holdings plc is named after its founding member, the Hongkong and Shanghai Banking Corp. Ltd. In July 1992, HSBC acquired the UK's Midland Bank, creating one of the largest banking and financial services organisations in the world with some 6,500 offices in 79 countries and territories. Through a global network, HSBC provides a comprehensive range of financial services, from personal, commercial and private banking through insurance and investment fund management to securities and custody services.

bondscape.net

5 The North Colonnade, Canary Wharf, London E14 4BB tel +44 (0) 8702 426 637 fax +44 (0) 20 7773 4882 www.bondscape.net

bondscape.net
5 The North Colonnade, Canary Wharf, London E14 4BB tel +44 (0) 8702 426 637 fax +44 (0) 20 7773 4882 www.bondscape.net