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## A pocket *guide* to fixed income



## The expansion of the fixed income marketplace

Investment strategies have traditionally focused on the ‘big three’ asset classes: equities, bonds and cash. Within this traditional framework, fixed income is often seen as a means of diversifying a portfolio away from equities. But this view may underestimate the role today’s fixed income market can play in delivering attractive returns. The universe of fixed income investments, of which bonds are a major part, has more than doubled in size over the past 10 years and is no longer restricted to traditional government and corporate bonds from the investor’s local marketplace.

The arsenal now includes mortgage-backed securities, emerging market bonds, high yield and structured credit securities, inflation-protected bonds, derivatives and currencies. Such instruments have transformed the range of investment strategies available to investors, creating several potential benefits:

1. Investors today have access to a broad range of fixed income strategies across the risk/return spectrum
2. Because global markets experience varying economic cycles, bond portfolios today can be far more diversified than in the past, which can raise the portfolio’s return potential without increasing a portfolio’s overall risk level
3. The new instruments can be harnessed to create strategies that are precisely tailored to an individual investor’s needs

- ? What are fixed income securities?
- ? How does fixed income compare with other asset classes?
- ? How can fixed income be used to achieve your investment objectives and meet future obligations?
- ? How has the fixed income universe changed?
- ? What new strategies and opportunities are available?
- ? What should you look for in a fixed income manager?
- ✓ Fixed income has traditionally been the bedrock of any balanced portfolio. But today’s fixed income market offers far more than a means of diversifying a portfolio away from equities. This *Investment Routemaster* pocket guide aims to answer these questions about fixed income by explaining the different types of fixed income securities available in the market today, and the opportunities and risks involved.



# What is fixed income?

Broadly speaking, fixed income refers to investments that provide a defined, regular income stream, usually over a set term, with return of capital at the end of this term. Government and corporate bonds are the best-known examples.

## Bond basics

### What is a bond?

Put simply, a bond is a loan. When investors buy bonds, they are lending money to the issuer. The issuer (or borrower) is generally obliged to pay interest on the loan at set intervals over the bond's life, and then repay the principal (face value) when the bond matures. Bonds can be issued over any time horizon but commonly fall into three categories: short term (0-2 years), moderate (2-10 years), and long term (10-30+ years). There are four main types of bonds:

- **Government bonds** As the name suggests, government bonds, or gilts, are issued by governments needing to raise cash. The UK government, for instance, issued gilts worth £14bn to repay the Bank of England for keeping Northern Rock afloat with emergency loans. In the developed world government bonds tend to be considered as the safest type of bond. They are also issued by governments of less developed nations and these bonds offer higher returns to compensate for the increased risk of default.
- **Corporate bonds** Corporate bonds are issued by companies, usually to raise money for expanding operations or to fund new developments. They tend to offer higher returns than government bonds to reflect their higher risk. In fixed income market speak they trade 'at a spread to gilts'.
- **Agency bonds** Issued by government agencies, these are considered very safe investments. US examples include the Federal National Mortgage Association (known as Fannie Mae), the Federal Home Loan Mortgage Corporation (known as Freddie Mac) and the Federal Home Loan Bank.

- **Securitised bonds** These are bonds created by pooling the cash flows from similar types of loans. For example, mortgage-backed securities, one of the largest segments of the securitised bond sector, are created by pooling many individual mortgage loans into one security, then selling portions of that pool – this aims to diversify risk of default. These portions are rated by credit agencies depending on the underlying risk. Securitised bonds known as asset-backed securities can also be created from credit card debt, car loans or other loans that generate cash flows.

## How bonds work

Investors have a wide variety of bonds to choose from in today's market, but most have four basic components: maturity, coupon, price and yield.

**Maturity and coupon** Maturity is the term of the loan that the bond investor makes to the bond issuer, which can range anywhere from one month to 30 years or more. When a bond reaches maturity, the bond issuer returns the principal investment (face value) to the bond holder. The coupon is the annual interest rate that the bond issuer pays to the bond holder, usually via semi-annual payments, until the bond reaches maturity. For example, if you were to invest £1,000 in a new bond issue with a coupon of 5% and a five-year maturity, you would receive interest payments of £25 every six months for five years, plus your original £1,000 investment at the end of the five years. The coupon is determined by the prevailing interest rate on bonds with similar maturity and risk characteristics at the time of the issue.

**Price and yield** Investors need not hold a bond to its maturity. Once a bond has been issued, it can be traded in the financial markets. The market price of a bond is based on the amount the bond will pay out as regular interest payments during its life, whereas a bond's yield is the actual annual return an investor can expect if the bond is held to maturity. For example, if you buy a new bond with a 5% coupon for £1,000, the yield is 5%. However, if the price falls to £800 in the open market, then the yield goes up to 6.25%. This is because the buyer of the bond would still receive £50 in annual interest payments, as well as £1,000 at maturity, even though they only paid £800. These price and yield adjustments are what enable older bonds to trade in the market even if their coupon is well above or below prevailing interest rates. For example, a bond with a coupon well below the current level of interest rates will trade at a lower price level in order to make it competitive with other bonds in the market that have coupons at or above the current level of interest, and vice versa.

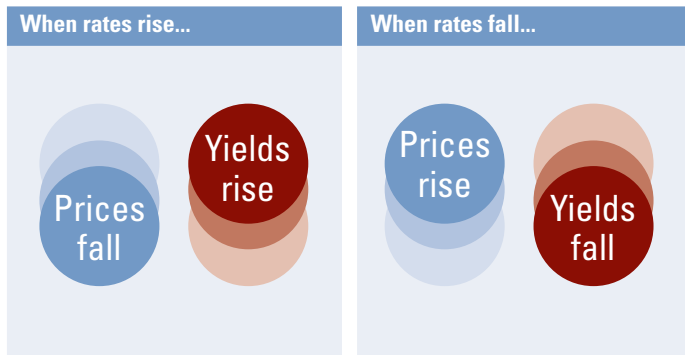
## What are the risks?

Bonds are considered to be less risky overall compared to equities. But they do have risks. The main three risks in bond investing are **interest rate risk**, **economic risk** and **credit perception**.

### Interest rate risk

Rising interest rates are a key risk for bond investors. When interest rates rise, bond prices fall, reflecting the ability of investors to obtain an attractive rate of interest on their money elsewhere. Using the example given on page 7, if prevailing interest rates are only 3%, then the bond – which pays out 5% a year – is likely to be in high demand, thus pushing up its price. But if interest rates are 6%, then the bond is likely to be shunned in favour of other investments, depressing its price.

### The impact of interest rate movements



For illustrative purposes only.

### Economic risk

The wider economy will also have an impact on bond prices. For example, periods of strong economic growth can lead to rising inflation, which erodes the value of future interest payments on a bond. For this reason, long-term bonds tend to be particularly sensitive to changing inflation expectations, declining in value when inflation expectations increase.

Bond prices may also decline when economies weaken and governments cannot meet their spending commitments from reserves and tax revenues. This is partly because governments under pressure tend to issue bonds to raise money, and can flood the market with new issues, pushing the price of bonds down. Conversely, when governments do not have an urgent need for funds, they decrease their borrowing, which may drive bond prices higher. More generally in times of uncertainty, and volatility in equity prices, investors tend to rush into bonds, where the income flow is relatively stable. Bond prices thus have a tendency to rise when stock markets fall, and vice versa, which demonstrates the diversification benefits of holding both equities and bonds together in a portfolio.

### Credit perceptions

The value of a bond depends on the market's judgement of the issuer's creditworthiness. If perceptions of the issuer's creditworthiness deteriorate, investors may become concerned that the issuer will default (i.e., not be able to pay back all of the principal or face value on its outstanding bonds), and the value of the bond will decline. The opposite is also true: if an issuer's creditworthiness increases, its bonds will tend to benefit. Credit risk is primarily a concern for bonds issued by corporations, developing nations or securitised bonds backed by mortgages or other loans. Developed nation government bonds tend to carry little or no credit risk.

## How is the risk of a bond measured?

- **Credit ratings** The credit risks associated with different bonds are indicated by ratings, assigned by independent agencies such as Standard & Poor's (S&P) and Moody's.

The highest rating a bond can achieve with S&P is AAA, which is primarily reserved for bonds issued or backed by highly solvent issuers. Bonds rated BBB and above are considered to be investment grade.

Bonds rated below BBB are below investment grade and are referred to as high yield, or junk, bonds. These typically pay higher rates of interest to compensate for the increased risk of default. The lowest rating is D, which indicates a company is actually in default.

Sometimes, the rating agencies can be slow to downgrade a company's debt, a situation that has been criticised and is linked to the rating agencies' business model of companies paying for their own ratings.

- **Duration** Duration measures how long, in years, it takes for the price of a bond to be repaid by its internal cash flows. Put another way, duration measures the length of time (in years) it takes for a bond to repay its principal amount. Bonds with higher durations carry more interest rate risk and have higher price volatility than bonds with lower durations because duration takes account of those interest payments that are paid throughout the course of holding the bond, occurring at intervals before the maturity date. A bond's duration is thus a function of its maturity, coupon and yield.

Another way of looking at duration is as the change in the value of a bond that would result from a 1% change in interest rates. For example, a 5-year duration means the bond will decrease in value by 5% if interest rates rise 1% and increase in value by 5% if interest rates fall 1%.

The duration on any bond that pays coupons will be less than its years to maturity due to its interim payments.

Generally, the higher the duration and the longer an investor must wait for the bulk of the payment, the more a bond's price will drop as interest rates rise. However, if an investor expects interest rates to fall during the bond's life, a long duration would be appealing, because the bond's price is likely to increase in price more than comparable bonds with shorter durations.

Duration is a good measure of a bond's sensitivity to small changes in interest rates but is less accurate when rates change by a large amount. That's because the relationship between price and yield is not linear but "convex" (i.e., curved). In short, when interest rates change significantly, the price of individual bonds will rise or fall more than duration would suggest, depending on the convexity of each bond. As a rule of thumb, the smaller the coupon, the greater the convexity of the bond. Bonds can also be "negatively convex", which means duration will overestimate the change in price when interest rates move by a significant amount. Mortgage-backed securities are a good example of negatively convex bonds. When interest rates decline, homeowners tend to prepay their mortgages by refinancing into lower-rate mortgages, which slows the price appreciation on mortgage-backed securities.

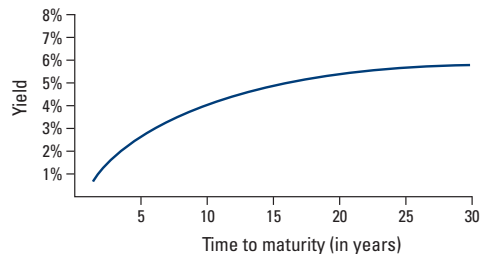
## Understanding the yield curve

The yield curve is the graphical depiction of the relationship between the time to maturity of a bond and its yield to maturity. The curve can take different shapes as illustrated in the charts over the page. A **normal** yield curve is upward sloping, because as maturities lengthen lenders would normally expect to be paid more for the greater uncertainty involved in lending for a longer period.

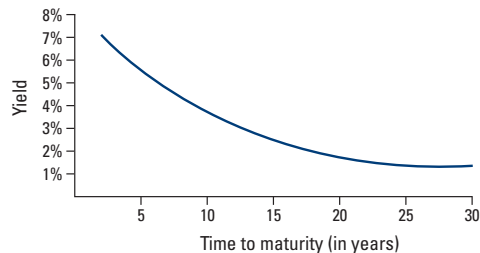
Less typically, in certain market situations, this line may fall, creating an **inverted** or negative yield curve. This indicates that long-term investors will settle for lower yields for longer-dated bonds, perhaps because they think the economy will slow and rates will decline in the future.

A **flat** or a humped yield curve indicates that shorter and longer-term yields are very close together, which is also a sign of economic uncertainty. The slope of the yield curve is important too: the greater the slope, the larger the gap between shorter- and long-term rates.

### Normal yield curve

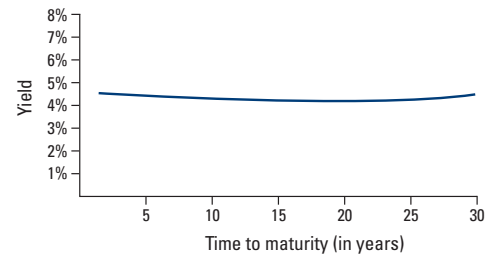


### Inverted yield curve



For illustrative purposes only

### Flat yield curve



For illustrative purposes only

## How bonds differ from equities

Unlike equity investors, a bond investor has no ownership stake in the issuer and no share in its success. Therefore, the risks to a bond are substantially different from a stock. When purchasing a stock, investors hope the company posts solid earnings and profits that lead to rising share prices. Bondholders, on the other hand, receive the same coupon and principal payments regardless of how well or poorly the issuing company performs. As long as the issuer can finance its debt and avoid default, a bond will be repaid. Thus, if equity markets perform poorly, bond holders will not be impacted, which is one reason why bonds offer some protection against stock market downturns.

Many investors sell their bonds before they mature, creating a thriving 'secondary' market. Unlike stock markets, bonds do not have a centralised exchange or trading system and instead trade in dealer-based over the counter (OTC) markets. Bond markets also differ from stock markets in that investors do not pay brokerage commission to dealers with whom they buy or sell bonds, but instead, the dealer's cut is in the spread, or difference, between the price at which the dealer buys a bond – the 'bid' price – and the price at which he sells it – the 'offer' price.

## What fixed income can do for you

According to conventional wisdom, nothing beats the stock market over the long term. So, why invest in bonds at all? Bonds offer investors multiple benefits, including:

- **Capital preservation**

Bonds tend to be significantly less volatile than equities, providing greater potential for capital preservation. Corporate bonds are also senior to equities in the capital structure, which means that in the event of bankruptcy, bond investors get paid back first.

- **Protection from inflation risk**

Bonds generally offer better returns than cash deposits and so have a greater chance of beating inflation. The capital returned at maturity will usually have less buying power than at the time of issue, but this erosion of value is offset by the regular interest payments made throughout the life of the bond.

- **A steady and predictable income stream**

Fixed income instruments generally pay a pre-determined rate of interest, enabling you to make accurate predictions about future income streams. Although equities can also provide income through dividend payments, these are generally smaller than interest payments from bonds and are made at the company's discretion. In an economic downturn this can prove crucial; a struggling company may decide not to pay a dividend, whereas a bond is obligated to pay out.

- **Diversification**

Diversification spreads risk and reduces overall portfolio volatility. The more diversified your portfolio, the less you will be hurt by poor performance in a single investment or asset class. The performance of bond and equity markets is often not closely correlated, as factors that have a negative impact on equities often do not affect bonds, and may even improve bond performance. Thus, an investor who holds shares in a large UK corporation as well as emerging markets government bonds may be able to weather a drop in either asset class because a fall in the share price of a single company and the ability of a foreign government to repay a bond are not usually related.

- **Asset/liability matching**

Investors can buy a fixed income instrument which will mature in time to pay off a particular liability in the future. This is particularly useful for pension schemes, which need to plan long-term, generate regular income and carefully match their assets to liabilities.

- **Fine-tuning a diversified portfolio**

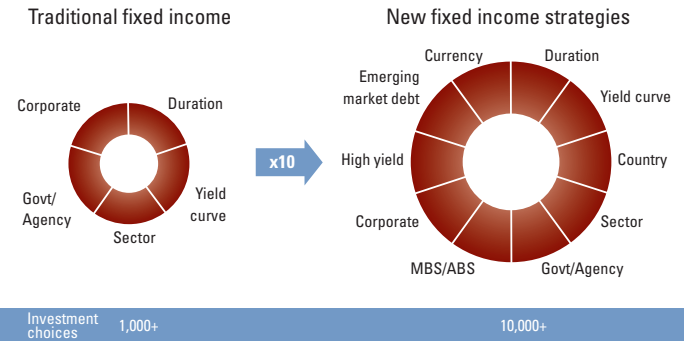
The booming liquidity in derivatives in recent years has enabled specialist managers to fine-tune fixed interest portfolios with greater flexibility. Futures, for example, are often used to manage the risks associated with unintended currency exposure. The market in swaps has also become far more active. Swaps can be used to manage the gamut of interest rate, currency and credit-related exposures by offering investors access to tailored solutions that are not available using traditional instruments.



# How can fixed income generate returns for investors?

Fixed income has expanded dramatically in recent years, becoming a diverse asset class covering a wide range of investments, providing bond investors with a multitude of strategies that can be employed to generate returns.

## A multitude of new strategies



For illustrative purposes only

## Traditional bond strategies

Prior to the growth and expansion of the global fixed income over the last decade, bond investors primarily relied on four key strategies for adding return in a bond portfolio:

- Interest rate** An investor or portfolio manager can increase or decrease exposure to interest rate changes depending on the outlook for rates. The sensitivity of bonds and bond portfolios to changes in interest rates is measured by 'duration', which is closely tied to maturity. The longer the duration of the bond or the portfolio, the more sensitive it is to changes in rates. If interest rates are expected to decline, a portfolio's duration may be lengthened because the longer the duration, the more the portfolio will appreciate in price if rates decline.
- Yield curve** The maturity structure of a portfolio can be adjusted based on anticipated changes in the relationship between bonds with different maturities. This strategy is based on the yield curve, a graphic illustration of how bonds with different maturities offer different yields (see pages 11-12). Typically, longer-dated bonds offer higher yields than shorter-dated bonds to

compensate for investors tying up their money for longer periods of time. However, this is not always the case, and a portfolio following a yield curve strategy would be positioned in the area of the yield curve expected to perform well.

- **Credit** Bonds with a certain credit profile can be selected for their growth prospects. For example, when the economy is on the up, bonds with low credit quality can offer the potential for gain if the creditworthiness of the issuers improves. Similarly, holding investment grade bonds when the outlook is uncertain can help protect a portfolio.
- **Sector** Sector bonds are fixed income securities that invest in the major sectors of the marketplace. Particular sectors include mortgage-backed, emerging markets, investment and non-investment grade bonds. By allocating assets across sectors, a portfolio can be positioned to take advantage of growth in particular industries or regions, or can be protected from declines in other areas.

## New fixed interest strategies

The growth of the global bond market provides investors with a multitude of strategies that can be employed in addition to traditional fixed income strategies. These strategies can be employed in combination to diversify a bond portfolio, increase its return potential or tailor the portfolio to meet specific goals. New strategies that have emerged over the last 10 years include:

- **Mortgage-backed securities/Asset-backed securities** These are bonds whose value is based on an underlying pool of mortgages or assets. They are rated by credit rating agencies in a similar way to traditional bonds, and usually make periodic payments, similar to coupon payments. They generally have high credit ratings because they are based on actual

physical underlying assets, i.e. bricks and mortar or cars (in fixed income speak 'physical collateralisation').

- **High yield debt** Bonds issued by companies with credit ratings that are below investment grade (called 'junk bonds'); BBB or lower from Standard and Poor's, and Baa or lower from Moody's. Most bonds with a rating of C or below carry a high risk of default and so yields are potentially high. This market was established in the 1980s but, as investors' ability to analyse risk has matured, so this asset class has grown and is now frequently accessed as a source of potentially higher returns.
- **Emerging markets debt** These bonds are issued by the governments, agencies and corporations of developing countries and offer attractive yields to compensate for the increased risk of default. The JPM EMBI Global Diversified Index has returned an annualised 8.76% for the last three years (31 March 2008).

Default on debt is becoming rarer as emerging economies develop account surpluses. Since 1998, when Russia defaulted on its domestic currency debt, there have been only a handful of instances, such as Argentina's default of \$93bn in 2002.

- **Credit swaps/derivatives** Derivatives are financial instruments whose value is derived from an underlying asset.

Credit default swaps are the most widely traded credit derivative product. These are contracts between a buyer and a seller under which the seller provides protection against certain credit events, such as default or failure to pay interest, which affect the creditworthiness of the third party. They can be used in fixed income portfolios to:

- manage risk
- generate return in negative or flat markets

- **Structured Credit** pools of securitised bonds that create securities with specific risk and return profiles. Structured credit instruments include collateralized debt obligations (CDOs) and collateralized loan obligations (CLOs) that differ with regards to the underlying collateral pool. For example, to create a CLO, a new corporation known as a special purpose vehicle will be created, which then purchases a pool of securities backed by bank loans. The special purpose vehicle then creates new securities, backed by the cash flows from the bank loan securities, with a range of risk and return characteristics.

#### Why invest in emerging market debt?

This area of the fixed income universe has gained in popularity over the last decade. Not only does it allow investors to access the impressive growth that emerging markets have enjoyed but, as emerging markets bonds are relatively uncorrelated to other major asset classes, it also increases portfolio diversification.

Much of the growth of emerging markets bonds has been fuelled by globalisation and rising prices for locally produced commodities. Another factor has been the implementation of structural changes to attract overseas investment. For example, Brazil has introduced measures designed to control inflation and other countries are bringing in controls that should help to generate account surpluses, limiting their dependence on foreign borrowing.

These changes have led to improvements in credit ratings and the proportion of investment-grade securities issued has risen strongly. This opens up emerging market debt to investors who may previously have considered it too risky.

#### Typical strategies

- **Country strategy** This takes advantage of the differences between international bond markets at different maturities among developed countries. A fixed income portfolio's country allocation may capitalise on growth in one region, for example, while adding stability with exposure to another.
- **Currency strategy** Foreign currency bonds are issued in a currency other than the national currency of the issuer. This strategy takes advantage of the differences between interest rates in different countries. A highly liquid and inefficient market currency offers significant opportunities for skilled active managers to add value.

#### Why invest in currency bonds?

Foreign currency bonds are a useful diversification tool. Not only is their price affected by movements in a foreign country's interest rate, the bonds also change in value depending on currency exchange rates. When foreign currency bonds are converted back to the home currency of an investor, the holder can potentially benefit from differences between the two currencies. Investors can also benefit from bonds that have interest payments and principal payments in different currencies. For example, a bond issued in the US may make interest payments in Japanese yen but pay out the principal in US dollars. This could benefit an investor who needs yen income in the short term – such as a Japanese institution for example – but who wishes to reinvest in dollars at maturity.

## The Global Fixed Income Risk/Return Spectrum\*



\*For illustrative purposes only.  
The risk and return potential of any individual sector will vary with market conditions.



# Skilled management is more important than ever

Twenty years ago a fixed income portfolio manager only had to make three investment decisions: the direction of the market, the allocation to government and corporate bonds and the selection of individual securities. Today, the array of new choices within global bond markets makes skilled management essential.

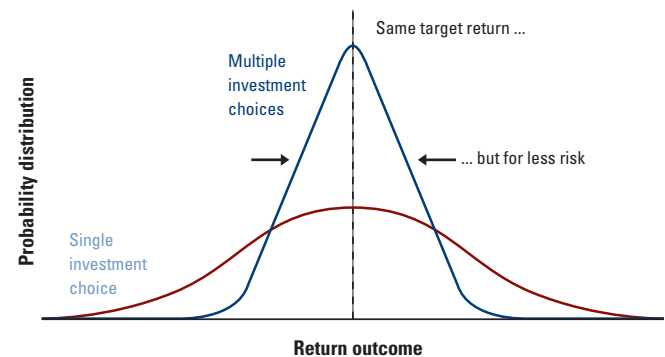
## The potential for higher returns without higher risk

Individual fixed income instruments have different risk and reward profiles. Often when one investment is performing badly, it can be offset by a bond in a different part of the portfolio. For example, while US corporate bonds may suffer in an economic downturn, this may be offset by holding currency bonds that can make money if the US dollar falls.

Low correlation between the various bond holdings in a portfolio can reduce total risk. By understanding the nature of the different sources of risk, at both an individual strategy and total portfolio level, the manager can limit unintended risk and make optimal use of the risk budget.

A skilled active manager can combine a number of fixed income instruments to maximise return. The result is a portfolio whose total target risk is less than that of its individual components, as demonstrated by the chart below:

## Benefits of diversification



For illustrative purposes only

### Measuring results against familiar benchmarks

As with traditional bond investing, a diversified fixed income portfolio can still be measured against recognised bond indices, such as global, European and UK aggregate indices. A benchmark should closely reflect an investor's objectives. Active managers can help investors select the appropriate benchmark.

### Choosing a manager

A good bond manager needs to have a combination of specialist investment expertise, strong risk management capabilities and a comprehensive global research network. There are two key approaches to fixed income management – active and passive:

- **Active managers** will use a combination of investments to maximise return, adjusting a bond portfolio's duration, credit quality and maturity structure to meet risk and return objectives. This gives investors the potential to outperform markets.
- In contrast, the goal of a **passive manager** is simply to replicate the return of a stated bond market. When this bond market is rising, the portfolio will prosper, but when the bond market falls, the portfolio will follow it down because the manager will not make active trading decisions. Investors looking to outperform markets will prefer an active approach, making use of the new generation of fixed income instruments.

### An unconstrained approach

The potential for higher returns is considerably enhanced when the manager is given an unconstrained mandate to venture beyond traditional fixed income investments such as government and corporate bonds and use new tools such as derivatives. It is possible to enhance return without increasing overall risk.

For a successful unconstrained approach, it is necessary to have a manager with:

- The ability to choose fixed income investments from the whole extended range now available
- A proven track record
- An experienced team with extensive global resources
- Experts in each sub-sector of the fixed income universe working to identify attractive investment opportunities
- Access to both in-house and external research so that informed decisions can be made
- Skilled portfolio managers who can build a portfolio that meets investment targets
- The ability to react to market conditions
- An understanding of the different sources of risk



# Fixed income investing at Goldman Sachs Asset Management

The GSAM fixed income team is one of the largest in the world, comprising over 125 professionals in London, New York and Tokyo, managing over US\$430 billion<sup>1</sup> in fixed income, currency and money market assets.

1. Assets under management as at 31st December 2007

## Teamwork

GSAM's fixed income strategy is designed to deliver consistent outperformance over the long term through a disciplined active management approach. We believe that in today's complex markets, one person alone cannot manage a portfolio and, for this reason, the team is divided into nine specialist teams:

- **No stone unturned** GSAM's nine teams seek to identify attractive opportunities across the world through in-depth research and analysis. All the teams regularly come together to discuss their best ideas with the overall portfolio manager.
- **Pulling the strands together** The portfolio manager then ensures that these best ideas are used effectively, constructing a well-blended portfolio to meet the client's investment objectives.
- **Dynamic risk management** We have developed powerful in-house tools to analyse and measure risk and our independent risk management team monitors the portfolio on an ongoing basis. Our aim is to maximise return without increasing overall risk.

## Glossary

**Absolute return** The rate of return an asset actually achieves, rather than the return it achieves relative to a benchmark index.

**Asset allocation** The process of splitting the portfolio across different types of asset classes such as stocks, bonds or cash.

**Asset-backed bond** A bond based on the value of underlying assets such as bank loans or credit card loans.

**Benchmark indices** Indices are often used to evaluate a fund's performance. For example, a UK gilt fund might be compared to the FTSE UK Gilts All Stocks Index.

**Convertible bond** A type of bond that allows the holder to exchange it for a number of shares of the issuer's common stock.

**Coupon** Regular payments (usually every six months) paid throughout the bond's life. For example, a \$1,000 bond with a coupon of 5% will pay \$50 a year.

**Current yield** The annual return on the amount paid for a bond. Derived by dividing the bond's interest payment by its purchase price.

**Derivatives** Financial instruments whose price and value are derived from an underlying asset/pool of assets.

**Diversification** Spreading capital over a wide range of asset classes and individual investments in order to reduce risk or enhance risk-adjusted returns.

**Duration** A measure of the sensitivity of a bond's price to interest rate movements.

**Floating rate notes** Bonds that have a coupon linked to a money market rate, such as Libor and Euribor.

**Gilts** Bonds issued by the UK government.

**Index-linked security** A bond where income payments are related to a specific price index.

**Investment grade bond** A relatively safe bond with a credit rating of BBB or above from an independent rating service such as Standard and Poor's.

**Issuer** The company, government or other entity issuing a bond.

**LIBOR** The London Interbank Offered Rate is an interest rate at which banks can borrow funds from other banks in the London interbank market.

**Long-dated bond** A bond whose revenue stream is generated over a long period of time, 20 years for example.

**Maturity** The date on which the issuer will repay the par value of the bond. This can range from a short period measured in months to the very long term, over 40 years.

**Mortgage-backed security** A security based on an underlying pool of mortgages.

**Municipal bond** A debt security issued by a state, municipality or county to finance its capital expenditure.

**Non-investment grade bond** Also known as a junk bond or a high yield bond, it will have a credit rating below BBB/Baa and is judged less likely to pay interest or repay capital reliably. It usually pays a high interest rate to compensate and attract investors.

**Notes** Bonds issued by the US Treasury with a life between one year and 10 years.

**Par value** The amount paid to the bond holder at maturity, based on the value of the bond at the issue date. Also known as face value.

**Price** The current value of a bond.

**Principal** The amount of money invested in the bond. The principal does not equate to the face value of the bond as they are bought and sold on the secondary market at prevailing prices.

**Rating** Independent assessment of an issuer's credit worthiness and ability to meet required interest and principal repayments.

**Sovereign bond** A bond issued by a national government and denominated in a foreign currency.

**Swaps** The exchange of one security for another, usually to change the maturity or credit quality. Recent innovations include currency and interest rate swaps.

**Treasuries** Bonds issued by the US government.

**Volatility** The manner in which the price of an investment moves up and down. If prices fluctuate dramatically over a short period of time, a market is said to be highly volatile.

**Yield** Yield is the return that is actually earned on a bond, based on the price paid and the interest payments received. There are two types of bond yields: current yield and yield to maturity.

**Yield curve** A graphic illustration of how bonds with different maturities offer different yields.

**Yield to maturity** This is the total return an investor will receive by holding a bond until it matures, including all the interest received from the time of purchase until maturity, plus any gain or loss if the bond was purchased at variance to its par value.

## INVESTMENT ROUTEMASTER CHECKBOX

### A reminder of the benefits of fixed income investing

- ✓ Fixed income is the bedrock of any diversified portfolio
- ✓ A greater choice of both traditional and more sophisticated fixed income instruments can be used to help maximise portfolio returns and minimise risk
- ✓ Diversification within fixed income can help investors better meet objectives, such as matching liabilities or achieving enhanced returns
- ✓ A skilled manager can create a portfolio of traditional and innovative fixed income investments whose total target risk is less than that of its individual component parts

You should carefully consider your liabilities and risks in your portfolio before embarking on any fixed income investments.

**To discuss fixed income further, please contact your  
Goldman Sachs Asset Management relationship manager**