Investing in a changing rate environment

The impact of duration

Duration defined

Duration is the expected percentage price change of a security associated with a 1% change in interest rates. Factors that affect a bond's duration include:

(a) **Time to maturity:** bonds with longer maturities have greater sensitivity to interest rate changes. For example, a bond that matures in one year will more quickly repay its true cost than a bond that matures in 10 years. As a result a bond that has a relatively shorter term to maturity would have lower duration and less price risk.

(b) **Coupon rate:** a bond's payment is a key factor in calculating duration – a bond with a higher coupon rate tends to have a lower duration. If two, otherwise identical bonds, pay different coupons, the bond with the higher coupon will pay back its original cost more quickly than the lower yielding bond.

Introduction

One fundamental principle of bond investing is that the longer the duration of a bond, the greater its sensitivity to moves in interest rates. Consequently, during periods of rising interest rates, intermediate and long-term bonds expose investors' portfolios to significantly more volatility risk than short-term bonds, and therefore there is greater risk of capital erosion.

The opposite is true in a falling rate environment. As market yields in the Eurozone have fallen in recent years, longer-dated bonds have generally outperformed shorter-dated bonds given their greater sensitivity to the positive effects of falling rates on the value of fixed income securities.

The possibility of rising government bond yields in the Eurozone over the short to medium term is likely to sharpen the focus of investors to position one's portfolio such that the negative effects of rising rates (interest rate risk or duration risk) are mitigated as much as possible.

In the following pages we try to understand the current bond market and identify ways for investors to mitigate duration risk and position their portfolios for the potential of a rising yield environment.

How we view the market

Over the past year we have been surprised by the strength of the Eurozone's largest economies, which have continued to propel the region's growth despite the deterioration in the Peripheral European Countries or 'peripheries'. We see this scenario persisting this year, due mainly to Germany’s exceptional competitiveness, and helped by the weaker euro. However, we are increasingly concerned about the peripheries' escalating solvency problems. We expect that Eurozone growth will continue to benefit from strong external demand, provided that growth persists in Germany's export markets, in which China's role has rapidly expanded. Domestic demand remains soft, though lending to households and businesses has improved.

What that means for interest rates in the Eurozone is not clear. The European Central Bank (ECB) has started raising its policy rate in response to inflationary pressures and robust activity in the Eurozone's largest economies. While we do not expect aggressive action from the ECB, the possibility of further policy rate increases remains should inflation pressures persist, or as and when signs of stability in the periphery allow the ECB to start to remove what are accommodative monetary policy settings by historical standards.

How to be prepared

We believe that in the current environment where Eurozone interest rate markets are caught between the opposing forces of robust activity in the larger countries and the problems of the peripheral countries, investors may want to to consider their exposure to interest rates with some care. Those investors that expect interest rates to remain steady or even fall over the short- to medium-term may choose to maintain an element of duration or interest rate sensitivity in their portfolio. On the other hand, investors that see an increasing chance of higher rates may wish to reduce their exposure to interest rate risk.

We present below two different ways investors can look to reduce their interest rate exposure while at the same time maintaining exposure to credit spreads and other types of fixed income risk. The first, an unconstrained approach that takes exposure to a broad range of fixed income exposures against a cash benchmark, effectively out sources the sector allocation decision to the investment manager. The second, allocations to duration-hedged share classes of existing mutual funds, involves more targeted exposures where the sector allocation decision rests with investors and their advisers.

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How to generate income in a changing interest rates environment

1. An opportunistic and unconstrained approach

In today’s environment, where the growth outlook remains uncertain, we believe a dynamic strategy, overseen by a portfolio manager, who can shift assets between sectors to optimise the risk/return profile of the portfolio, may prove an attractive option.

We believe a flexible, opportunistic bond portfolio with the ability to allocate meaningful amount of risk to the most attractive opportunities available in the global fixed income market and the flexibility to make material shifts in sector allocations as market conditions change in the longer-term can potentially serve as an all-weather vehicle.

Such an opportunistic portfolio should provide investors with the ability to take greater advantage of the diversity in fixed income markets by outsourcing timing and diversification decisions to a specialist manager focused full-time on evaluating which sectors offer value, which sectors are at risk, and similar questions that can leave investors sidelined by uncertainty or overly exposed to poorly compensated risk. However the portfolio’s returns are dependent on the skill of the manager.

Opportunistic fixed income strategies can play a unique and under-served role in a portfolio, occupying the middle ground between traditional fixed income and equity. An opportunistic fixed income strategy offers the potential for attractive returns that are less dependent on strong economic growth compared to equities and less exposed to duration risk compared to traditional fixed income benchmarks.

2. Duration risk hedging

At Goldman Sachs Asset Management, we think one of the most attractive aspects of the global bond market is the wide variety of risks that can be taken in pursuit of returns and portfolio diversification. Bond investors can take varying degrees of credit risk, currency risk, liquidity risk, and inflation risk among others in order to increase potential yield. These risks factors are distinct in many ways, providing both diversification benefits and significant potential to tailor a portfolio to fit the investor’s outlook, risk tolerance and return goal. However, particularly in this low rate environment with the possibility of further rises in interest rates, it is a challenge to include the above mentioned types of risk without also gaining exposure to duration risk.

A way to generate income and at the same time as reducing the impact of rising interest rates is by investing in strategies that hedge duration risk.

The case for investing in a duration-hedged share class of a fund is most compelling when investors believe that interest rates are likely to rise. Duration-hedged share classes will be of interest for investors who seek to be more exposed to credit risk with less exposure to interest rate risk. However, in an environment where interest rates are stable or falling, the duration component of a bond’s yield will contribute positively to total returns and a duration-hedged portfolio is likely to underperform a portfolio, which is not duration hedged.

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Duration hedging is effectively hedging out our interest rate risk from a portfolio of securities.

1. **Buy fixed income bond**
2. **Hedge out: Interest rate risk**
3. **Residual Risk**

**Credit spread risk**

Protection against interest rate risk using derivatives

**Other risks**

Source: GSAM. For illustrative purposes only.

For more information on opportunistic fixed income strategies and duration hedged strategies, please contact your Goldman Sachs Asset Management Relationship Manager.

**About Goldman Sachs Asset Management (GSAM)**

GSAM offers a wide range of fixed income strategies across the range of markets, sectors and risk spectrum. Our dedicated fixed income team consists of over 195 professionals averaging 19 years of investment experience through multiple market cycles. The team manages over $309bn in fixed income, currency and money market assets, making GSAM one of the largest fixed income managers in the world (as of March 2011).

GSAM is considered an industry leader in the development and adoption of risk management methods and technology. Risk management is an essential element of GSAM's underlying investment philosophy and forms an integral part of our investment process.

**Glossary:**

**Hedging.** Making an investment to reduce the risk of adverse price movements in an asset. Normally, a hedge consists of taking an offsetting position in a related security, such as a futures contract.

**Interest rate.** The amount charged, expressed as a percentage of principal (the amount of money invested in the bond), by a lender to a borrower for the use of assets. Interest rates are typically noted on an annual basis, known as the annual percentage rate (APR).

**Interest rate risk (Duration risk).** The risk that an investment’s value will change due to a change in the absolute level of interest rates, in the spread between two rates, in the shape of the yield curve or in any other interest rate relationship.

**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.
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If you would like more information please contact your Goldman Sachs Asset Management Relationship Manager.