Duration-hedged share classes

Designed with an aim of minimising bond investors from rising interest rates

June 2015

IN BRIEF

• Fixed income portfolios may be vulnerable to a rise in interest rates due to the duration risk embedded in bond markets.

• Duration-hedged share classes can provide a powerful tool for investors who are looking to target a certain level of yield or a certain level of duration within their portfolios by combining share classes within the same strategy.

• Duration-hedged share classes allow investors to effectively minimise the impact of rising interest rates on returns, so that they can focus instead on returns from changes in credit spreads (which are often positive in a rising rate environment).

• Duration hedging comes with certain risks - most notably, investors can be subject to volatility and underperformance in a falling rate environment.

• It is important to find a manager with a sophisticated hedging approach that is integrated fully into the existing investment process and is able to use multiple instruments in multiple currencies to hedge across the curve without introducing curve risk to portfolios.

HELPING INVESTORS TO MANAGE INTEREST RATE RISK

When interest rates are low, many investors are concerned that their fixed income portfolios will suffer should rates rise. Duration-hedged share classes can provide a potential solution by helping investors to effectively and efficiently manage interest rate risk.

Minimizing duration risk allows investors to focus only on credit returns

Corporate bond yields can be considered as being made up of two components:

• The risk-free (reference government bond) yield, which is driven by government bond or interest rate duration and is influenced by changes in the macroeconomic environment.

• The credit spread, which is the incremental yield due to credit risk and is therefore influenced by the perceived ability of an individual bond issuer to meet its coupon and repayment obligations. The impact of changes in credit spreads on a corporate bond’s price is measured by credit spread duration.

WHAT ARE DURATION RISK AND CREDIT RISK?

DURATION RISK is the sensitivity of bond prices to changes in interest rates. As interest rates rise, so will the risk-free component of bond yields, pushing down prices. Conversely as interest rates fall, prices move higher.

CREDIT RISK determines the additional yield that bond issuers must pay to investors to compensate them for the risk they may default on their obligations. This is referred to as the credit spread. As credit risk falls, yields should reduce and bond prices rise. However, when credit risk rises, yields should increase and bond prices fall. The impact of changes in credit spreads on bond prices is measured by credit spread duration.
The aim of duration-hedged share classes is to remove the risks associated with changes in the reference government bond yield from a bond fund’s portfolio, so that the fund is then exposed only to changes in credit spreads (Exhibit 1).

EXHIBIT 1: COMPONENTS OF YIELD ON A CORPORATE BOND

- Corporate bond yield
- Credit spread: Extra return for credit risk; Influenced by factors specific to the bond issuer
- Risk free yield: US Treasury, German Bund, UK Gilt; Influenced by macro factors
- Duration hedging
  - Keep these risks
  - Remove these risks by selling bond futures

EXHIBIT 2: WHEN RATES RISE, CREDIT SPREADS NARROW

However, spread tightening often isn’t enough to entirely offset the impact of rising rates on bond prices. Since 1989, the correlation between credit spreads (BBB Option Adjusted Spread) and ten-year Treasury yields has been around -0.5, which means when yields rise, say, by 0.2% spreads would be expected to contract by 0.1%.

The effect of this residual duration risk on total returns can be negative in periods of rising interest rates. Duration-hedged share classes are designed to minimise the impact of interest rate changes on returns and allow investors to focus instead only on the returns from changes in credit spreads.

THE IMPACT OF RISING RATES ON A CORPORATE BOND PORTFOLIO

The Barclays Global Aggregate Corporate Index has a duration of six years and a yield to worst of almost 3.2% (source: Barcap.com, as at 31 May). Assuming credit spreads remain the same, it would only take a small rise in interest rates for duration risk to wipe out the expected annual return from the index.
USING DURATION-HEDGED SHARE CLASSES IN A PORTFOLIO

Duration-hedged share classes can be used on their own by investors to minimise the interest rate risk in their bond portfolios. However, hedged share classes can also be combined by investors to achieve a smarter asset allocation that targets individual yield or duration preferences. The key advantage is that investors can take a holistic view of their bond exposure with no need to switch between funds to adjust duration or yield levels.

TARGETING A LEVEL OF DURATION:

Clients can use duration hedged share classes to match the duration of their portfolios to their liabilities. For example, as shown in Exhibit 3, to match a corporate bond portfolio with a duration of six years to liabilities of three years (where the orange line cuts the grey line), investors can allocate 50/50 between a duration hedged and non-hedged share class. This approach would also maintain a higher yield than would be achieved from a fully hedged portfolio.

Targeting a minimum yield:

Duration-hedged share classes can be used to reduce exposure to interest rate risk in line with a target yield. In the example shown in Exhibit 4, to remove enough duration risk from a portfolio so that it can produce a yield of 2% or higher, investors can construct a portfolio strategy with around 90% allocated to a duration-hedged share class. This would give an overall portfolio duration of less than one year, significantly reducing the impact on performance if interest rates were to rise.

Maintaining yield levels by combining strategies:

For clients that do not want to lose any yield from their corporate bond portfolios, but are still worried about the impact of rising interest rates, then a solution could be to combine a duration-hedged share class of a global corporate bond fund with a global high yield fund. However, investors should note that adding high yield exposure will add to the credit risk of the overall portfolio.

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**EXHIBIT 3: USING SMART HEDGING STRATEGIES TO ACHIEVE A TARGET YIELD OR A TARGET DURATION**

Source: J.P. Morgan Asset Management.

**EXHIBIT 4: JPMORGAN FUNDS – GLOBAL CORPORATE BOND FUND AS AT 31 MAY 2015**

<table>
<thead>
<tr>
<th></th>
<th>Global Corp USD Duration Hedged</th>
<th>Global Corp USD</th>
<th>Global High Yield</th>
<th>70/30% combination of Duration hedged Global Corporate and Global High Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighted spread duration</td>
<td>6.59</td>
<td>6.59</td>
<td>3.45</td>
<td>5.65</td>
</tr>
<tr>
<td>Duration (years)</td>
<td>6.23</td>
<td>0.00</td>
<td>3.41</td>
<td>5.38</td>
</tr>
<tr>
<td>Yield (%)</td>
<td>2.98</td>
<td>1.69</td>
<td>5.35</td>
<td>3.69</td>
</tr>
</tbody>
</table>

Source: J.P. Morgan Asset Management. Data: 31 March 2013. Statistics are an indication only and may change from time to time.
**AVAILABLE JPM DURATION-HEDGED SHARE CLASSES**

<table>
<thead>
<tr>
<th>JPM Global Corporate Bond A (acc) – EUR (hedged) &amp; Duration (hedged)</th>
<th>JPM Global Corporate Bond A (acc) – USD - Duration (hedged)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISIN LU0783476608</td>
<td>ISIN LU0621513406</td>
</tr>
</tbody>
</table>

**THE RISKS OF DURATION HEDGING**

By minimising interest rate risks, duration-hedged share classes leave investors exposed only to spread duration risk (ie the returns from changes in credit spreads). Because of the negative correlation between rates and credit spreads, when duration is hedged, the potential offsetting effect between the two is removed and the portfolio’s volatility can be higher than the unhedged risk. This risk is particularly evident when credit risk rises as there is no potential for a concurrent fall in interest rates to moderate the impact. At these times, the duration-hedged share class is likely to underperform a non-hedged share class.

Because the hedged share class effectively replaces a government bond yield with a lower cash yield, investors will receive a reduced yield compared to the full duration share class. For example, in our JPMorgan Funds – Global Corporate Bond Fund, there is no change in spread duration or average credit quality between hedged and non-hedged share classes, but the yield on the hedged share class is lower (see Exhibit 5).

**EXHIBIT 5: JPMORGAN FUNDS – GLOBAL CORPORATE BOND FUND AS AT 31 MAY 2015**

<table>
<thead>
<tr>
<th>Fund (USD)</th>
<th>Fund (EUR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighted spread duration</td>
<td>6.59</td>
</tr>
<tr>
<td>Duration (years)</td>
<td>6.23</td>
</tr>
<tr>
<td>Yield (%)</td>
<td>2.98</td>
</tr>
<tr>
<td>Weighted OAS bp</td>
<td>163</td>
</tr>
<tr>
<td>Average credit quality</td>
<td>A-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Duration hedged (USD)</th>
<th>Duration hedged (EUR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration (years)</td>
<td>0.07</td>
</tr>
<tr>
<td>Yield (%)</td>
<td>1.92</td>
</tr>
</tbody>
</table>

Source: J.P. Morgan Asset Management. Statistics are an indication only and may change from time to time.

**A SOPHISTICATED APPROACH TO DURATION HEDGING IS CRUCIAL**

Hedging duration effectively requires a sophisticated technique. Simplistic approaches that use just one bond futures contract – typically the 10-year US Treasury future – create new risks for the investor. Interest rates for short, medium and long durations can move independently. The simple “one-instrument” method leaves the investor exposed to such curve effects. It is important therefore to use a manager with a more sophisticated approach to hedging that is fully integrated into the fund’s investment process.

At J.P. Morgan Asset Management, for example, our duration-hedged share classes are managed in-house by an experienced fixed income team. The team uses a full range of government futures contracts to hedge key rate duration exposures across multiple instruments and in multiple currencies. Securities are separated into buckets with a similar duration, so that we can sell financial futures with the same duration against each of the buckets. The aim is to hedge the interest rate risk of the underlying portfolio back to a cash rate (Libor). The hedge portfolio is adjusted on a daily basis so that we can react to changes in mark-to-market prices and fund flows.

Because they hedge multiple instruments in multiple currencies, a sophisticated approach to duration hedging can allow investors to hedge duration across the curve without introducing significant curve risk to the portfolio.
INVESTMENT OBJECTIVE

The fund aims to achieve a return in excess of global corporate bond markets by investing primarily in global investment grade corporate debt securities, using financial derivative instruments where appropriate.

RISK PROFILE:

The value of your investment may fall as well as rise and you may get back less than you originally invested.

The value of debt securities may change significantly depending on economic and interest rate conditions as well as the credit worthiness of the issuer. Issuers of debt securities may fail to meet payment obligations or the credit rating of debt securities may be downgraded. These risks are typically increased for emerging market debt securities.

In addition, emerging markets may be subject to increased political, regulatory and economic instability, less developed custody and settlement practices, poor transparency and greater financial risks. Emerging market currencies may be subject to volatile price movements. Emerging market securities may also be subject to higher volatility and lower liquidity than non emerging market securities.

The value of financial derivative instruments can be volatile. This is because a small movement in the value of the underlying asset can cause a large movement in the value of the financial derivative instrument and therefore, investment in such instruments may result in losses in excess of the amount invested by the fund.

Movements in currency exchange rates can adversely affect the return of your investment. The currency hedging that may be used to minimise the effect of currency fluctuations may not always be successful.
NEXT STEPS

To learn more about the Investment Insights programme, contact your local J.P. Morgan Asset Management representative.

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