Staying alive: Bond strategies for a normalising world

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November 2013
Plan of the discussion

• Yes, yields are low; don’t expect the same returns from fixed income as you saw in recent decades
   → Re-thinking the way one approaches fixed income investing

• Strategic asset allocation is the most important decision one makes
   → The enduring role of bonds is to provide diversification, risk control and stability

• There are many dimensions to global fixed income investing
   → Maturity, liquidity and credit risk – know what you are buying and why

• Consider going global and remember: costs matter!
   → Principles for investing success remain: have realistic goals, diversify, stay disciplined, watch costs
For the past 30 years, bond yields have gone in one direction

Falling yields have created an extremely favourable environment for bond returns

10-year Government Bond Yields

<table>
<thead>
<tr>
<th>Bond index</th>
<th>Total returns, 1980-2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>8.1%</td>
</tr>
<tr>
<td>UK</td>
<td>9.3%</td>
</tr>
<tr>
<td>Germany</td>
<td>6.7%</td>
</tr>
<tr>
<td>Global*</td>
<td>5.3%</td>
</tr>
</tbody>
</table>

*1984-2013
Source: Vanguard, based on data from the US Federal Reserve, Bank of England, Thomson Reuters Datastream, FTSE, Barclays, Rex, Citigroup, and Barclays
Notes: Figure displays the year-end 10-year government bond yield for each country from 1981 to Oct 2013. Table displays the annualised returns of selected bond indexes. UK government bonds defined as the FTSE British Government All Stocks Index, US government bonds defined as the Barclays US Treasury Index, and German government bonds defined as the Rex General Bond Index. Global bonds are represented by the Citigroup World Global Bond index from Dec. 1985 through Feb. 1999, Barclays Global Aggregate from Mar. 1999 through Oct 2013. All returns are expressed in the local currency, with income reinvested.
Perspective on starting yield and return


Notes: Figure displays (1) the realised 120-month annualised returns Jan. 1979 through Oct 2003 relative to the initial yield on the 10-year UK zero coupon gilt from Jan. 1979 through Oct. 2003. UK fixed income index defined as FTSE UK Government Index Feb.1979-Feb.2000; Barclays Sterling Aggregate Index thereafter; and (2) realised 120-month annualised returns from Jan. 1988 through Oct. 2003 relative to the Swiss 10-year government bond. Swiss fixed income index defined as Citigroup World Government Bond Index total return from Jan. 1988 through Jan. 1999, Barclays Swiss Aggregate thereafter. Returns are in local currency terms, with income reinvested.
Treat the future as a range of possibilities – but central tendencies are instructive!

Average return on Global Fixed Income Market over next 10 years
VCMM estimated probability distribution

Source: The Vanguard Group, Inc..
Note: Displays the projection of a portfolio of 40% US fixed income, 60% ex-US fixed income. Returns in dollar terms, assuming income is reinvested.
IMPORTANT: The projections or other information generated by the VCMM regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. Distribution of return outcomes from Vanguard Capital Markets Model® (VCMM), derived from 10,000 simulations for U.S. equity returns and fixed income returns. Simulations as of 30 June 2013. Results from the model may vary with each use and over time.
The key questions we will answer today...

Range of Annual Outcomes in Global Balanced Portfolios. 1985-2013

Source: Citigroup, Barclays Capital, MSCI, International Monetary Fund, and Thomson Reuters Datastream, based on Vanguard Calculations.
Notes: Figure displays the maximum and minimum 12-month returns from 1985 through Oct. 2013 for portfolios invested according to the indicated global fixed income and equity combinations. Global Equities are represented as the MSCI World Index (non-free float adjusted) from Dec. 1984 through Dec. 1987, MSCI All Country World (non-free float adjusted) from Jan. 1988 through May 1994, MSCI All Country World (free float adjusted) thereafter. Indexes in USD, converted to CHF. Global bonds represented by Citigroup World Government Bond Index from Jan. 1985 through Feb. 1999, Barclays Global Aggregate thereafter, both indexes hedged in CHF.
Bonds: A source of... return? Or risk control?

Risk characteristics of global bonds relative to global and Swiss fixed income, 1984-2013

Sources: Vanguard, based on data from MSCI, Barclays, Citigroup, and Thomson Reuters Datastream.
Notes: Displays the difference in annualised monthly volatility for each fixed income market relative to the global equity market, and the correlation of monthly returns of each fixed income market relative to the global equity market over the period Dec. 1984 through Oct. 2013. Global Equities are represented as the MSCI World Index (non-free float adjusted) from Dec. 1984 through Dec. 1987, MSCI All Country World (non-free float adjusted) from Jan. 1988 through May 1994, MSCI All Country World (free float adjusted) thereafter. Swiss Bonds defined as Citigroup World Government Bond Index total return from Jan. 1988 through Jan. 1999, Barclays Swiss Aggregate thereafter. Global bonds represented by Citigroup World Government Bond Index from Jan. 1985 through Feb. 1999, Barclays Global Aggregate thereafter, both indexes hedged in CHF. All returns are measured at a monthly frequency, in local currency terms, with income reinvested.
Global fixed income is multi-dimensional

Composition of major components of global fixed income market, mid-2013

- **86%** Investment grade
- **4%** High yield
- **4%** Inflation linked
- **6%** Emerging market

Breakdown of investment grade sector:
- **6%** Canadian dollar
- **6%** Sterling
- **26%** Euro
- **42%** US dollar
- **17%** Yen
- **3%** Canadian dollar
- **1%** Australian dollar
- **5%** Other

Notes: Displays the percentage of the Barclays Global Aggregate Index by various sector, according to index composition.
Spectrum of risks in fixed income

Duration / Maturity

- Short
  - Cash
  - ST Gov. Bills

- Low Risk
  - Commercial Paper
  - Investment-Grade Corporate Bonds

- High Risk
  - Floating-Rate Bank Loans
  - Emerging market bonds
  - High yield corporate bonds

Credit Risk

Uncertainty regarding the end payment
Increasing credit exposure is increasing risk

Average risk and return of various credit segments of the global fixed income market

Median quarterly return during quarters of worst (4th quartile) of equity market performance, by asset class

Notes: Equities represented by the FTSE All World Index. Treasuries are represented by the Barclays Global Treasures index. Gov-related represented by the Barclays Government Related Index. Securitised represented by the Barclays Global Securitised Index. IG Corporates represented by the Barclays Global Investment Grade Credit Index. HY Corp represented by the Barclays Global High Yield Corporate Index. EM Bonds represented by the Barclays Global Emerging Market Index. Global Market is represented by the Barclays Global Aggregate Index. Figures Cover Jan 2001 through June 2013. Source: Vanguard based on data from FTSE and Barclays.
Term risk: higher risk and return, but equity diversification decreases as you shorten duration

Average risk and return of various maturity segments of global fixed income market, 2001-2013

Median quarterly return during quarters of worst (4th quartile) of equity market performance, by maturity segment 2001-2013

Notes: Equities represented by the FTSE All World Index. Each maturity is represented by the corresponding component of the Barclays Global Treasury Index, hedged to GBP. Returns are shown in sterling terms, with income reinvested. Figures cover January 1990 through June 2013. Source: Vanguard, based on data from FTSE and Barclays.
Short duration tilts mute diversification during equity downturns

Performance of various maturity ranges of government bonds during 3-month periods when global equity returns are negative

Source: Vanguard, based on data from Citigroup and MSCI. Notes: Both figures display the average 3-month performance of the stated maturity government fixed income investment for each country, during those 3-month periods when the global equity market has negative returns. Each country’s government fixed income market is represented by the particular maturity and country component of the Citigroup World Government Bond Index, in local currency terms, with income reinvested. Global equity returns are measured by the MSCI World index, in local currency terms, with income reinvested. Figure covers the period Jan. 1995 to Dec. 2012.
Global diversification can help in a rising rate environment

Yields are unlikely to move in lock-step across all major markets

Correlation of 10-year government bond yields with the Swiss bond yields 1995-2012

Source: Vanguard, based on data from Thomson Reuters Datastream.
Notes: Figure displays the correlation of the monthly change in the yield of each country’s 10-year government bond to the change in the 10-year Swiss government bond yield.
Active Fixed Income Management: Does it protect you when you need it?

Percentage of active bond funds which underperform benchmarks during periods of rising interest rates, 1995-2013

Notes: Figure displays the percentage months during which US 10-year bond yields (defined as Datastream Benchmark Government Bond Yield) that global bond funds available for purchase in Switzerland (hedged and unhedged in CHF) outperform relevant global fixed income benchmarks between Jan 1994 through Oct 2013. Global bond benchmarks are defined as Citigroup World Government Bond Index from Jan. 1985 through Feb. 1999, Barclays Global Aggregate thereafter.
Source: Vanguard, based on data from Thomson Reuters Datastream. Morningstar, Barclays, Citigroup.
Weighted-average expense ratios for active funds in selected fixed income categories

<table>
<thead>
<tr>
<th>Bond Type</th>
<th>Expense Ratio</th>
<th>Yield on 31 Oct</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHF Bond</td>
<td>0.40%</td>
<td>0.92%</td>
</tr>
<tr>
<td>EUR Diversified Bond</td>
<td>0.82%</td>
<td>1.84%</td>
</tr>
<tr>
<td>EUR Global Bond</td>
<td>1.22%</td>
<td>1.95%</td>
</tr>
<tr>
<td>USD Diversified Bond</td>
<td>0.95%</td>
<td>2.26%</td>
</tr>
</tbody>
</table>

Source: Vanguard, based on data from Morningstar and Barclays.
Notes: Displays the asset-weighted average of all share classes of funds available for sale in the United Kingdom, in the stated Morningstar category. The expense ratio is taken from the 2012 annual report. Assets are defined as the Dec. 2012 net share class assets. Yield is from the applicable Barclays benchmark: CHF Aggregate, Euro Aggregate, US Aggregate, and Global Aggregate. Morningstar data as at 7 November 2013.
Conclusions

• Just because yields are low, doesn’t mean you should abandon fixed income → Remember why you have them in the first place

• Bonds’ role in strategic asset allocation endures → The enduring role of bonds is to provide diversification, risk control and stability

• Within fixed income, a good starting point is diversification → Credit, maturity, duration, global exposure – but beware of focussing exclusively on individual strategies

• Be aware of active management’s limits when rates rise → History shows active management does not necessarily out-perform in such episodes ratios and costs matter!
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VISG-2013-11-08-0496