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# Why own bonds when yields are low?

Vanguard research

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**Executive summary.** Given the backdrop of low yields in government bond markets across much of the developed world, many investors may be questioning the value of maintaining an allocation to diversified fixed income securities. In this paper, we evaluate the risk-reduction role that bonds play in a portfolio, and find that the diversification properties of bonds are enduring, with bonds providing stability and downside protection for a portfolio regardless of the interest rate environment.

In addition, we show that a popular strategy aimed at coping with low and rising rates – namely “reaching for yield” – may actually increase portfolio risk. We underscore the fact that a broadly diversified fixed income investment still has an important role to play in balanced portfolios in any interest rate environment.

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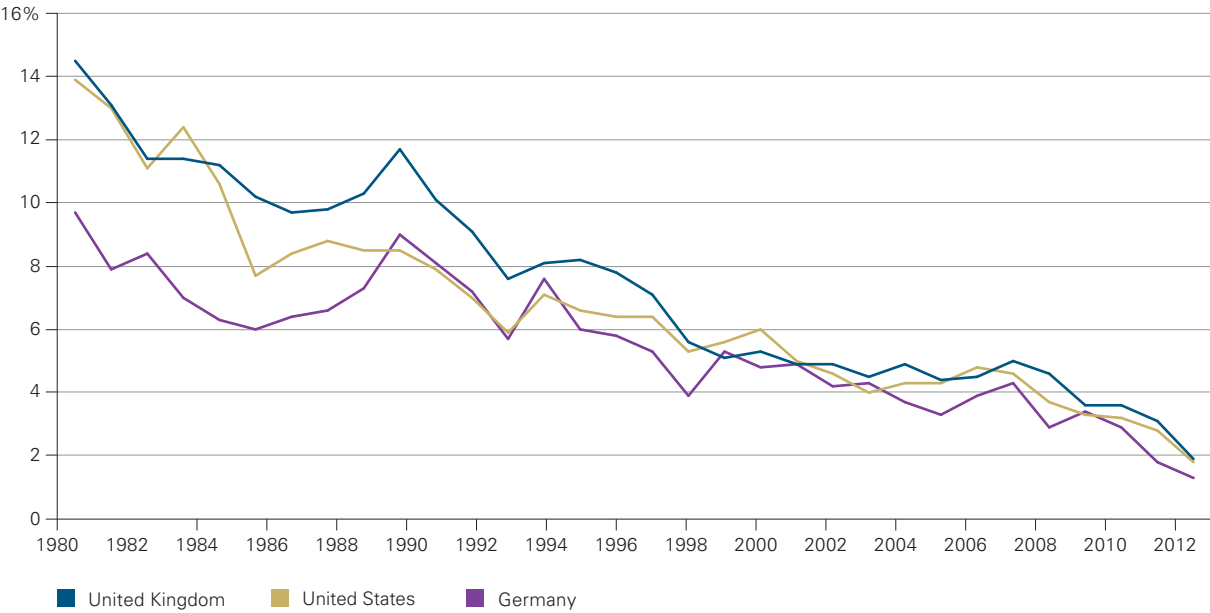
**Current yields and realistic return expectations**

Much attention has been paid to the fact that government bond yields in countries like the UK, Germany, and US, having been recently at historical record lows, have begun to increase. However, looking beyond this past summer’s increases, interest rates are still at very low levels relative to history. In the flight-to-quality of the global financial crisis, then with policymakers at global central banks engaging in aggressive easing policies and communicating their intentions to keep rates low for an extended period of time, market participants drove yields down to very low levels.

While this may seem like a recent development, the reality is that interest rates have generally been falling across most developed markets for over 30 years. Following the high inflation era of the 1970s and 1980s, during which most of Europe and the US experienced double-digit inflation rates, interest rates have broadly fallen year after year as central banks have had great success in stabilising inflation over the past few decades (Figure 1a). Along with falling inflation expectations, real interest rates have fallen as well in response to increases in global savings, mainly from emerging markets.

**Figure 1a.** The long fall in long bond yields

10-year government bond yields in the UK, US, and Germany 1980–2012



**Figure 1b.** Average annualised total returns, 1980–2012

	UK	US	Germany
Government Bonds	9.9%	8.3%	6.8%
Equities	12.0%	11.2%	9.3%
Equity Risk Premium	2.1%	2.9%	2.5%

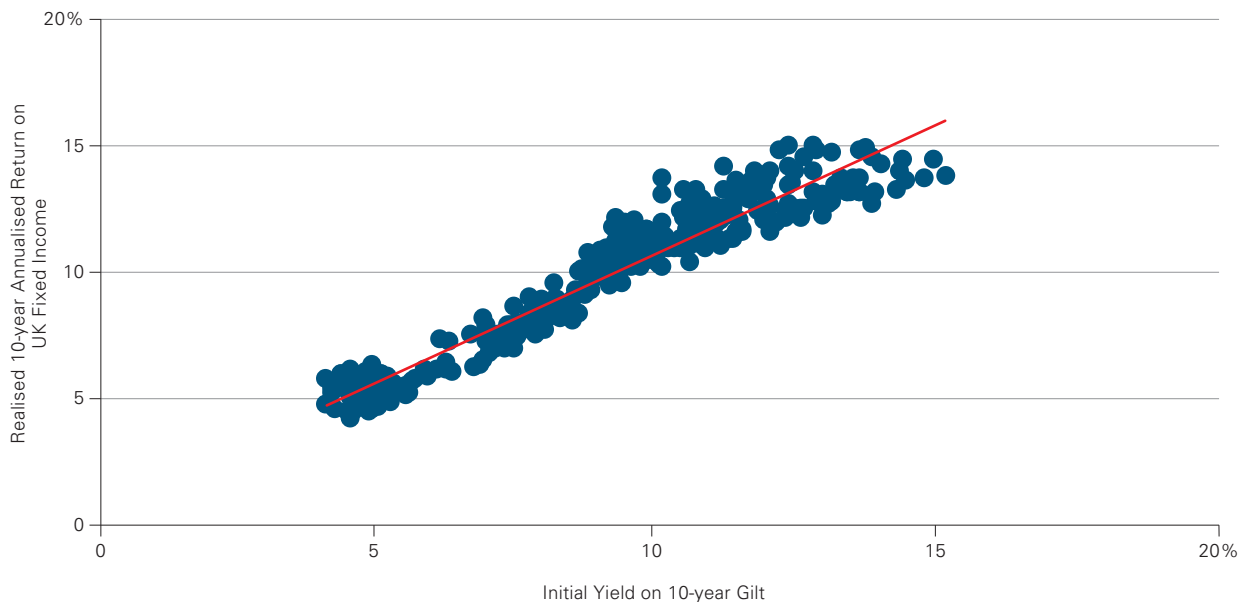
Notes: Figure displays the average annual 10-year government bond yield for each country from 1980 to 2012. Table displays the annualised returns of an investment in the government bonds or equities of each country. UK government bonds defined as the FTSE British Government All Stocks Index, US government bonds defined as the Barclays US Treasury Index, and German government bonds defined as the Rex General Bond Index. Equities are defined as the respective country index from MSCI. The realised equity risk premium, is the simple arithmetic difference between the two. All returns are expressed in the local currency, with income reinvested. Figures cover Jan 1980 to Dec. 2012.

Source: Vanguard, based on data from the US Federal Reserve, Bank of England, Thomson Reuters Datastream, FTSE, Barclays, Rex, and MSCI.

Against this backdrop, bonds have produced impressive average returns in the past few decades (Figure 1b). Starting from a high yield, investors realised high income returns. And with yields falling fairly consistently, capital gains on bond holdings also became the norm, making the overall performance of a broad fixed income investment even more attractive. In many markets since 1980, an investment in government fixed income would have produced a return close to that of equities. For example, in the UK, US and Germany equities produced a return that was between 2 and 3% higher than government bonds, notably less than the 4 to 6% that many would consider to be a reasonable equity risk premium.<sup>1</sup> While this experience changes when extending our time horizon (for example, since 1900, UK bonds have produced an average annualised real return of 1.2%), the recent past has likely influenced the generally favourable perception of fixed income. Given this experience, many investors may have become accustomed to robust returns from a fairly safe investment (Figure 1b).

However, it is different today. Starting from today's yield levels, it is not possible to realise the fixed income returns of the past few decades. The nature of fixed income securities tells us that, for an individual bond, the yield to maturity is a very good predictor of future performance. Assuming no default, an investor earns precisely the bond's yield to maturity if they hold the bond until maturity (and assuming periodic coupon payments are reinvested at the original yield). In Figure 2, we demonstrate that we can roughly apply this relationship to a broad portfolio over time, assuming we match the reference yield to the portfolio's duration.<sup>2</sup> While interest rate movement can cause this association to break down in the short term, in the long run the connection is clear: interest rates are very good predictors of future bond market returns. And with yields today around 2–3%, investors should expect bond market returns to be substantially lower than those realised over history.<sup>3</sup> Because of this, the use of recent historical returns to guide expectations in a fixed income investment is inappropriate.

**Figure 2.** Today's yield predicts future long-term returns



Notes: Figure displays the realised 120-month annualised returns ended Jan. 1986 to Sept 2013, relative to the initial yield on the 10-year UK zero coupon gilt from Jan.1976 to Oct.2002. UK fixed income index defined as FTSE UK Government Index Feb.1976-Feb.2000; Barclays Sterling Aggregate Index thereafter. Returns are in local currency terms, with income reinvested. Data as at 30th Sept. 2013.

Source: FTSE, Barclays, and Bank of England.

1 The equity risk premium (ERP) is often defined as the expected return differential between the "risky" equity market and "safe" government bonds. From 1900 to 2012 this has averaged 4.1% per year in the UK. In setting expectations up to 1980, the average ERP from 1900 to 1979 was 4.7% per year in the UK. Although very uncertain on a forward-looking basis, and time-varying, surveys and academic estimates typically place the ERP at around 4 to 6% in today's environment. See "Re-thinking the equity risk premium" (CFA Institute, 2011) for details.

2 Although variable over time, the average duration of the UK sterling market has been roughly 8 to 9 years for the past decade, meaning that our use of a 10-year gilt as the benchmark yield in Figure 2 is reasonable.

3 As at 30th September 2013, the yield on the Barclays Global Aggregate index was 2.0%. The average level from 1990-2012 was 5.0%.

## Why should investors own bonds at today's yields?

As we have shown, with current yield levels in most developed markets, investors will need to temper their expectations for future fixed income returns. The past experience cannot be repeated from where we are today. Given this fact, how can investors justify maintaining an allocation to fixed income, given that returns are expected to be low? To answer this question, it is important to focus on the role of a fixed income allocation in a portfolio context.

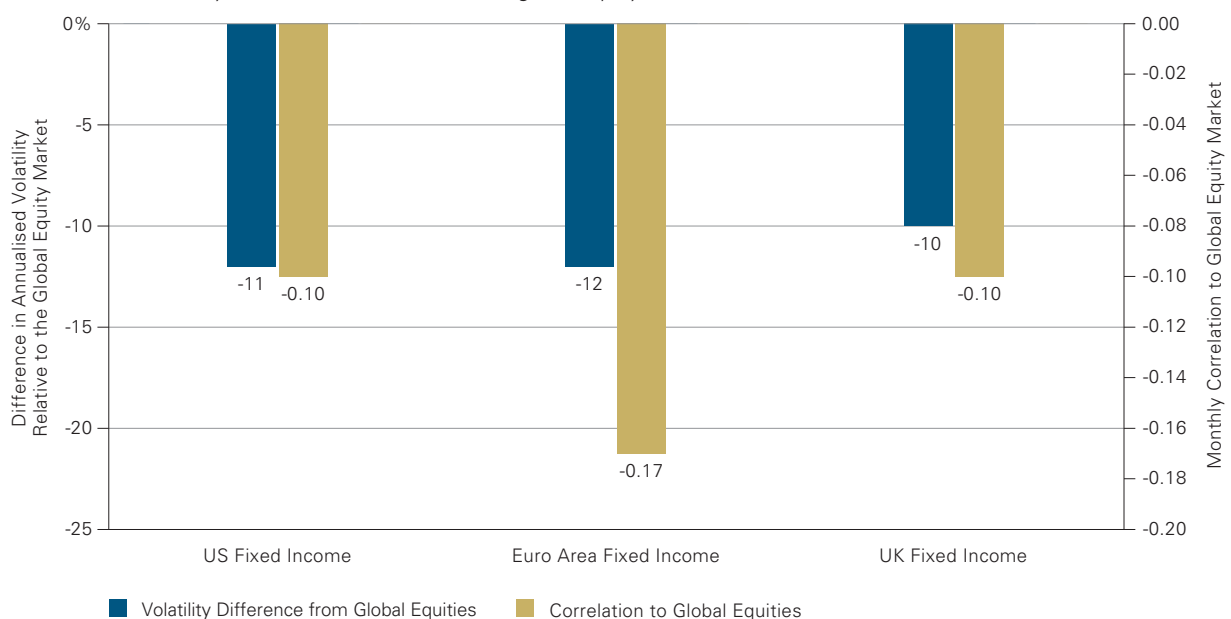
While a backward-looking view of certain time periods in history may prove otherwise, on a forward-looking basis, fixed income will generally be expected to underperform other riskier asset classes on average over the longer term. In this sense, today's environment is not especially different from other periods. If the role of bonds in a portfolio was about the return contribution they provide, it's not clear that bonds would *ever* make sense in a long-term portfolio.<sup>4</sup> But focusing only on returns ignores a very important dimension in the construction of a portfolio: risk.

Bonds may offer a lower return, but this is a return that comes with a fair degree of certainty. This is in stark contrast to riskier assets such as equities. On average over time, an investor might expect equities to outperform safer investments, but the range of actual outcomes for equities in any given time period is very wide. Because of this, fixed income as an asset class has generally played an important role in risk reduction and diversification in a portfolio setting. While bonds do not generally outperform other riskier asset classes over the long run, they have a more stable return profile over shorter periods of time. **Figure 3** shows the volatility of a fixed income portfolio across a few key regions, compared (in absolute terms) to the volatility of the global equity market. When examining short-term movement, fixed income is far more stable in value than an equity investment.

In addition, bonds can be a powerful diversification tool. While relationships can change over time, the prices of high-quality fixed income securities generally do not move in tandem with the equity market, and in many cases actually move against it, acting as a buffer to volatility in a portfolio's equity allocation (**Figure 3**).

**Figure 3.** Bonds for stability and diversification

*Fixed income volatility and correlation, relative to the global equity market 2000–2013*



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 relative to the global equity market over the period Mar. 2000 – Sept. 2013. Global equity market defined as the FTSE All World, US fixed income defined as the Barclays US Aggregate, Euro Area fixed income defined as the Barclays Euro Aggregate, UK fixed income defined as the Barclays Sterling Aggregate. All returns are measured at a monthly frequency, in local currency terms, with income reinvested.

Sources: Vanguard, based on data from FTSE and Barclays.

Not only do bonds provide stability and diversification, they also play a valuable role in protecting the downside risk of portfolios. In **Figure 4a**, we filter the history of UK equity and fixed income returns to examine the range of asset class performance during years of particular equity market stress from 1900–2013. This includes several years in the early 1920s and 1930s, including the crash of 1929; bear markets in the late 1960s and early 1970s; as well the early 2000s and 2008. Bonds have typically acted as a buffer during these equity downturns, moving against the equity market during its worst years of performance, and thus adding valuable diversification to a portfolio. In these “flight to quality” type tail events, the value of maintaining an allocation to fixed income assets is clear. Said another way, the diversification properties of fixed income have tended to be there when investors would have most needed them.

However, the other role of bonds is to add stability to a portfolio. In **Figure 4b**, we filter the available history to show performance during the worst quarters of bond market performance. This includes years of rising interest rates in the 1940s, 1950s and 1960s, as well as the inflation-driven spikes in interest rates in the early 1970s. While the median bond market return is negative

during these episodes, the two distributions exhibit quite a bit of overlap, with equities exhibiting a wide range of performance outcomes even during these fixed income downturns. Because bonds are generally a more stable and less volatile asset class, they can still add value to a portfolio through downside protection, even when they are performing poorly. The reason for this is simple: the most negative outcome in bonds is very different than that of equities, and occurs less frequently. Since 1900, the worst annual return of an equity investment was -51.3% (in 1974) while the worst outcome for bonds was -20.3% (in 1916). The equity market lost more than 20% of its value in five years out of our 113-year sample.

These comparisons demonstrate that it is important to put the prospect for losses in a bond investment into context. Even at their worst, bonds have very different tail-risk outcomes than those of the equity market. While the most likely path of equities might be to produce positive returns in the long run, there is significant uncertainty regarding equity market returns in the short term. Bonds play a valuable role in protecting near-term downside risk when the equity market performs worse than expected over short horizons.

**Figure 4. Bonds protect equity downside risk and are more stable in value**

Figure 4a: Asset class performance during the worst decile equity market outcomes, 1900–2012

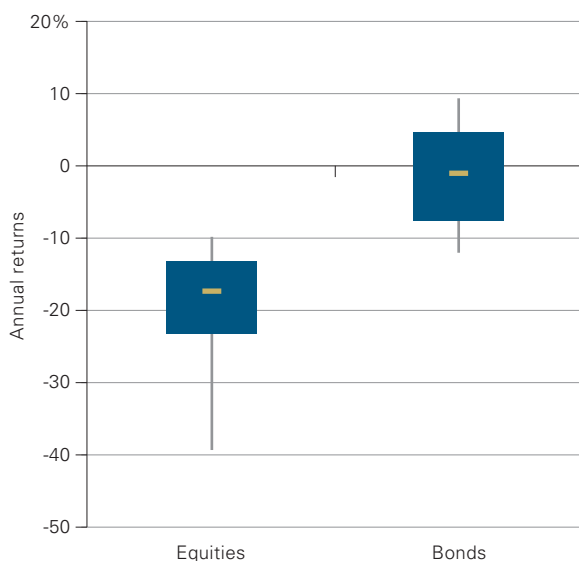
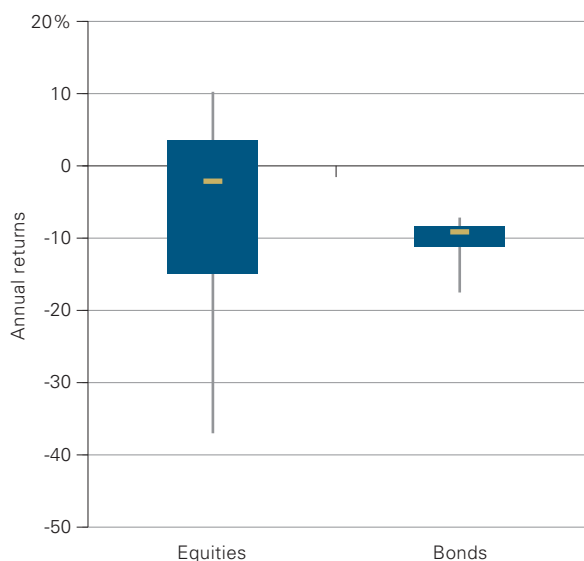


Figure 4b: Asset class performance during the worst decile bond market outcomes, 1900–2012



Notes: Displays the 10th/25th/median/75th/90th distribution of annual returns for both UK equities and UK bonds, during a 10th percentile or worse year for either the equity market or fixed income market from 1900 to 2012. Barclays Equity Gilt Study 1900–1964; Thomson Reuters Datastream UK Market Index Jan.1965–Dec.1969; MSCI UK Jan.1970–Dec.1985; FTSE All Share Jan.1986–Present. Fixed Income market defined as Barclays Equity Gilt Study 1900–1976; FTSE UK Government Index Jan.1977–Feb.2000; Barclays Sterling Aggregate Index Mar.2000–Present. All returns are shown in sterling terms, assuming income is reinvested.

Sources: Vanguard, based on data from Barclays, Thomson Reuters, MSCI, and FTSE.

## Be wary when reaching for yield

Our discussion thus far has demonstrated that the traditional role of fixed income is enduring and not dependent on the interest rate environment. Bonds provide diversification by acting as a buffer to the riskier asset classes within a portfolio, through lower overall volatility and a tendency to perform well during periods of market stress. Critically, this role of a diversifier has little to do with the *level* of a portfolio's yield and much more to do with how this yield *moves* during particular market events.

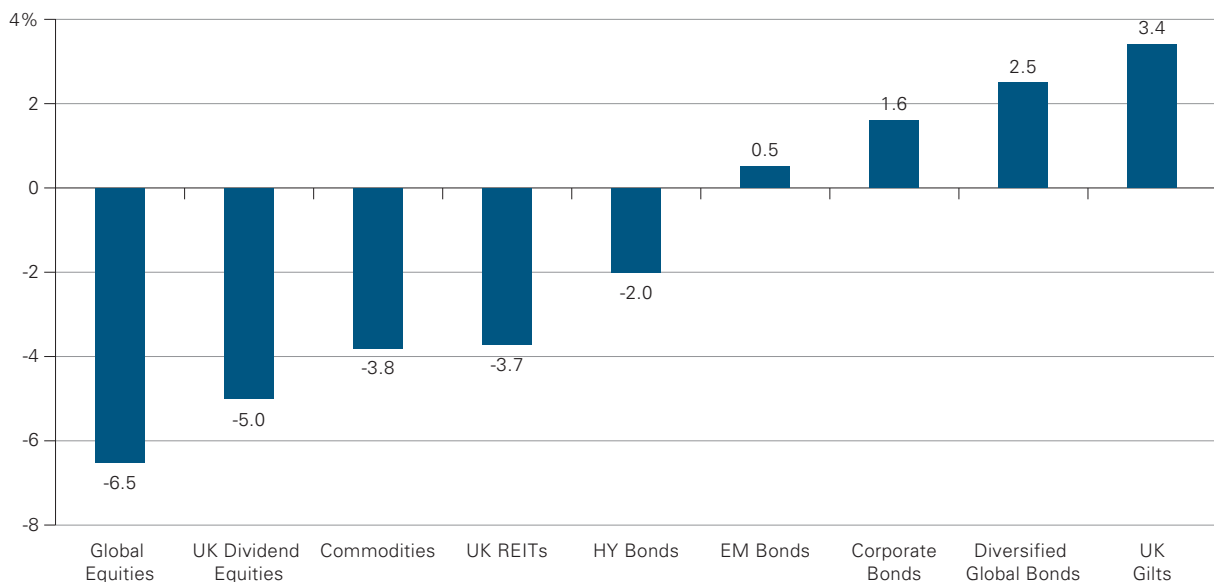
Many common investment strategies exist that might be used to "boost" a portfolio's yield. This has become a particular focus for many investors that may view bonds as a return driver or those that are spending down from a portfolio.<sup>5</sup> In both cases, a more holistic portfolio approach is often a better strategy, and this inherently depends on bonds as a risk control device. Given this, it is worth asking: in fixed income investing, is a reach for yield reaching for the right thing?

In answering this question, we extend the analysis in **Figure 4** to examine the performance across a variety of asset classes during periods of equity market shocks, testing whether these assets have provided diversification when it would have been most desired by investors. The results, in **Figure 5**, illustrate that any "reach for yield" strategy that substitutes a broad fixed income allocation for a higher yielding asset class reduces the ability of that allocation to perform the traditional risk reduction role of bonds. Whether a moderate increase in risk, as when over-weighting corporate bonds, or a significant increase in risk, as when replacing fixed income with dividend equities, the reality is that an excessive focus on yield may cause the investor to under-appreciate the additional risks associated with striving for that yield.

Because of these characteristics, yield-boosting strategies should be evaluated for what they are: a method to increase **both risk and return**. While not "right or wrong", an over-weight to

**Figure 5.** Reaching for yield is a reach for risk

Performance of various asset classes during the worst quartile equity market outcomes 1994–2013



Notes: Displays the median 3-month return of each asset class during the worst quartile of global equity market returns. UK Dividend Stocks as the FTSE 350 High Yield index, UK REITs defined as the FTSE/EPRA NAREIT Index, Commodities defined as the S&P GSCI index, HY Bonds defined as the Barclays Global High Yield Index, EM Bonds defined as the JP Morgan Emerging Markets Bond Index, Global Corporate Bonds defined as the Barclays Global Corporate Index (hedged to GBP), Diversified global fixed income is defined as the Barclays Global Aggregate index (hedged to GBP), Global Government Bonds defined as the Barclays Global Treasury Index (hedged to GBP), and UK Gilts defined as the Citigroup World Government Bond index. All returns are in sterling terms with income reinvested. Figure covers the period Jan.1994–Sept.2013.

Sources: Vanguard, based on data from Barclays, Citigroup, JP Morgan, S&P, and FTSE.

<sup>5</sup> For example, examining the universe of funds available for sale in the United Kingdom, in the 3 years ended 30 June 2013 cash flows into sterling high yield bond funds totalled over £1.0 billion while at the same time cash flows out of sterling government bond funds totalled nearly £6.5 billion.

riskier fixed income sectors or other high-yielding asset classes should be evaluated just as one might evaluate the decision to increase a long-term equity allocation in pursuit of a higher return objective, with the investor's goals, time horizon, and risk tolerance being the key factors driving this decision.<sup>6</sup> In many cases, a more broadly diversified fixed income allocation is ideally suited to meet the needs of an investor's fixed income allocation.<sup>7</sup>

### **Conclusion: Use the market as a starting point**

Today's yield environment means that investors cannot use historical returns as a guide for setting future expectations. Low yields indicate that a bond investment cannot produce the same return that it has on average for the past three decades. However, as we have shown, a primary focus on the yield of a fixed income portfolio ignores the aspect of risk, which is a critical function of a bond allocation. Moving away from a broadly diversified, high-quality bond allocation to "reach for yield", whether in equities or particular segments of the fixed income market, will change the risk profile of an investment. For this reason, despite low yields, we encourage all investors to consider maintaining an allocation to a broadly diversified bond investment in their balanced portfolios.

### **References**

CFA institute, 2011. *Rethinking the Equity Risk premium* [http://www.cfainstitute.org/learning/products/publications/contributed/Pages/rethinking\\_the\\_equity\\_risk\\_premium.aspx](http://www.cfainstitute.org/learning/products/publications/contributed/Pages/rethinking_the_equity_risk_premium.aspx)

*Vanguard's principles for investing success*

Westaway and Thomas, 2013. *Going global with bonds: considerations for UK investors*. Vanguard.

<sup>6</sup> For more detail on the importance of setting an investment plan, see *Vanguard's principles for investing success*.

<sup>7</sup> See *Going global with bonds: Considerations for UK investors* (Westaway and Thomas, 2013) for additional detail on the merits of a broadly diversified fixed income allocation.



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