Considerations for global equities: A UK investor’s perspective

Executive summary. Equities outside the United Kingdom, including those of developed and emerging markets, currently account for more than 90% of the global market capitalisation, thus representing the majority of the world’s equities. However, according to the most recent survey from the International Monetary Fund, UK investors only allocate around 50% of their total equity allocation outside the United Kingdom (Philips, 2012). This paper values the short- and long-term impacts to a portfolio of investing across a wider range of markets, including the opportunity to invest in a larger number of securities, risks associated with overweighting domestic markets, expected risks and returns, correlations and investor preferences and concludes that:

- Global diversification among the world’s equity markets should be considered a reasonable starting point for an investor’s equity allocations.
- Investor preferences and bias towards domestic securities must be weighed against the relative advantages of global diversification.
- The precise overweight to UK equities will depend on the investor’s view regarding the short- and long-term trade-offs.
As of 30 June 2013, UK equities accounted for 7.9% of the global equity market. Equities outside the UK, including those of developed countries such as Germany, Japan and the United States, plus those of emerging countries such as Brazil, India and China, accounted for the remaining 92%. As shown in Figure 1, the 2013 UK market capitalisation was slightly below the long-term average of 9%, but remained significantly above the all-time low of 4.5%, reached in the mid-1970s when the United Kingdom experienced a period of high inflation and negative growth. A portfolio investing solely within the UK equity market thus automatically excludes the majority of the global equity opportunity set.

What are you getting when you buy UK equities?

In figure 2, we examine the source of revenue for UK-listed companies and find that a large majority of their revenue is being generated from outside the domicile. This is because the UK, much like many other developed equity markets, is dominated by large multinational organizations or exporters. This may lead investors to assume that because the UK market is highly integrated with the global economy, there may be limited benefits to global diversification. However, as we will demonstrate in the remainder of the paper, there is still a compelling case for owning non-UK equity.

Notes: UK equity market represented by MSCI UK Index; Global equity market represented by MSCI World Index from 1969 to 1987 and MSCI All Country World Index thereafter. Data are in GBP and as of 30 June 2013.
Sources: Vanguard calculations, using data from Thomson Reuters Datastream.

Notes: Revenue distribution was derived from the breakdown of revenue by country for the FTSE All Share Index. In a limited number of cases, revenue from the UK may have been combined with one or more countries. Data is as of the latest fiscal year to 31 July 2013.
Sources: Vanguard calculations, using data from Factset.
Diversification of investment opportunities

Given that UK companies are therefore affected by forces outside their borders, some investors may be wondering why they need to hold non-UK equities at all. The most fundamental reason is that by expanding the opportunity set and diversifying across a larger number of securities, the idiosyncratic risk of any particular company and market is reduced. Therefore, the market weight of UK equity should serve as a reasonable starting point for investors when constructing their equity portfolios.

In figure 3, we display the top 10 holdings in the UK and global equity markets. We note that the UK is significantly more concentrated than the global equity market with the top 10 holdings making up nearly 44% of the index, compared to only 3.5% for the global market (a 12.5x more concentrated portfolio). This same comparison can also be extended to individual organisations, such as the largest holding in the UK equity market, HSBC Holdings (GP), a multinational that also has an overweight of almost 12.5x (8.1%/0.65%) relative to its weight in the global market. Holding a higher allocation to UK equities than their weight in the global market means taking an implicit view that UK domiciled companies will perform significantly different than their peers around the world. However, all else equal this means that an investor solely invested in UK equities is 12.5x more exposed to the idiosyncratic risks of these organisations than the globally diversified investor.

It also means, all else equal, that an investor must be 12.5x more confident that those organisations will provide superior performance than the collective wisdom of participants in the global capital markets. For example, examining figure 3, there is no reason to believe that the largest oil company in the UK market, British Petroleum (BP), will provide superior performance relative to the largest oil company in the world, Exxon Mobil. Yet, the global markets have assigned Exxon Mobil a higher weighting in the capital markets. The same comparison could be made for any two companies from the same industry in Figure 3. Underweighting securities can also result as a by-product of a UK-centric portfolio, such as for example Apple from the second chart in Figure 3. Despite being the largest organisation in the world by market capitalisation, it is excluded from UK market due to its US domicile, again contrary to the collective wisdom of market participants.

Of course, most investors do not solely invest in UK equities and instead hold a mixture of domestic and foreign securities, so to the extent that they overweight domestic securities these relationships would be present on a spectrum of risk from fully concentrated to fully diversified.

![Figure 3. The UK equity market is concentrated relative to the global equity market](image-url)

3a: Top 10 holdings in the UK equity market

<table>
<thead>
<tr>
<th>Holding</th>
<th>Market Value (GBP bn)</th>
<th>Market Weight</th>
<th>Global Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSBC Holdings (GP)</td>
<td>138</td>
<td>8.1%</td>
<td>0.65%</td>
</tr>
<tr>
<td>Vodafone Group</td>
<td>97</td>
<td>5.6%</td>
<td>0.45%</td>
</tr>
<tr>
<td>British Petroleum (BP)</td>
<td>87</td>
<td>5.1%</td>
<td>0.41%</td>
</tr>
<tr>
<td>Royal Dutch Shell A</td>
<td>84</td>
<td>4.9%</td>
<td>0.39%</td>
</tr>
<tr>
<td>GlaxoSmithKline</td>
<td>83</td>
<td>4.8%</td>
<td>0.39%</td>
</tr>
<tr>
<td>British American Tobacco</td>
<td>68</td>
<td>3.9%</td>
<td>0.32%</td>
</tr>
<tr>
<td>Royal Dutch Shell B</td>
<td>61</td>
<td>3.5%</td>
<td>0.28%</td>
</tr>
<tr>
<td>Diageo</td>
<td>52</td>
<td>3.0%</td>
<td>0.24%</td>
</tr>
<tr>
<td>Astrazenca</td>
<td>42</td>
<td>2.4%</td>
<td>0.19%</td>
</tr>
<tr>
<td>BG Group</td>
<td>40</td>
<td>2.4%</td>
<td>0.19%</td>
</tr>
<tr>
<td><strong>Total Top 10</strong></td>
<td><strong>751</strong></td>
<td><strong>43.7%</strong></td>
<td><strong>3.50%</strong></td>
</tr>
</tbody>
</table>

3b: Top 10 holdings in the global equity market

<table>
<thead>
<tr>
<th>Holding</th>
<th>Market Value (GBP bn)</th>
<th>Global Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apple</td>
<td>280</td>
<td>1.31%</td>
</tr>
<tr>
<td>Exxon Mobil Corp</td>
<td>277</td>
<td>1.29%</td>
</tr>
<tr>
<td>Johnson &amp; Johnson</td>
<td>172</td>
<td>0.81%</td>
</tr>
<tr>
<td>Microsoft Corp</td>
<td>167</td>
<td>0.78%</td>
</tr>
<tr>
<td>General Electric Co</td>
<td>167</td>
<td>0.78%</td>
</tr>
<tr>
<td>Chevron Corp</td>
<td>161</td>
<td>0.75%</td>
</tr>
<tr>
<td>Google</td>
<td>157</td>
<td>0.73%</td>
</tr>
<tr>
<td>Procter &amp; Gamble Co</td>
<td>145</td>
<td>0.68%</td>
</tr>
<tr>
<td>Wells Fargo &amp; Co</td>
<td>144</td>
<td>0.67%</td>
</tr>
<tr>
<td>Nestle</td>
<td>144</td>
<td>0.67%</td>
</tr>
<tr>
<td><strong>Total Top 10</strong></td>
<td><strong>1,813</strong></td>
<td><strong>8.48%</strong></td>
</tr>
</tbody>
</table>

Notes: Market values translated to GBP at the exchange rate from of the Bank of England.

UK equities represented by MSCI UK Index. Global equities represented by MSCI All Country World Index. Data to 30 June 2013.

Similar to the discussion above, UK equities are also more concentrated in certain sectors and industries of the global market. In Figure 4, we display the relative weightings of ten equity sectors relative to their weight in the global opportunity set. Examining the figure, the UK equity market is notably overweight in the consumer staples and energy sectors with a more modest overweight in materials and telecommunications. The UK market is also significantly underweight in the information technology sector with more modest underweights in consumer discretionary, industrials, and healthcare. These sector mismatches can represent unintended over- and underweights for the UK-centric investor that have no expected return premiums relative to the other sectors and are more or less uncompensated. It is also noteworthy that these sector biases have been fairly persistent over the past ten years and to a lesser extent before then.

**Figure 4. The UK equity market has sector biases**

Notes: UK equities represented by MSCI UK Index; Global equities represented by MSCI All Country World Index. Data to 30 June 2013. Sources: Vanguard calculations, using data from MSCI.

Given global exposure, how much?

At a high level and over reasonably long periods, the benefit of global diversification can be shown by comparing the volatility of a global index that contains both domestic and foreign securities with an index that invests a larger portion of its assets in UK companies alone. As shown in Figure 1, UK equities currently make up approximately 7.9% of the global market. Accordingly, an investor focused solely on market capitalisation to determine their equity allocation should currently have 92% of their equity portfolio in non-UK equities, and this weight would fluctuate with market performance. However, few investors follow this approach to the letter; instead, they more often choose a set allocation to securities outside their domicile and maintain it through time. For many investors such an approach represents a reasonable trade-off between the opportunity for diversification and the realities of investor preferences.

We will examine the role of home bias in more detail later on, however, it is important to keep in mind that the investor-specific asset allocations of participants in each market aggregate to form the theoretical free-floating adjusted portfolio, which would be the objective of fully market-proportional investing.
Historical minimum-variance analysis

When deviating from a market-proportional approach, a natural question is: What represents a reasonable allocation? One simple methodology is to conduct an analysis evaluating the diversification impact of various combinations of UK and global equities over time. Figure 5 shows the results of a minimum-variance analysis since 1976. We elected to focus on volatility under the assumption that over the long term, returns across developed countries should be more similar than different. In this framework, we examine the volatility impact to a 100% equity portfolio and three balanced portfolios of stocks and bonds. In each case, we begin with a global market-cap weighted equity portfolio and then add a separate allocation to UK equities resulting in an overweight along the horizontal axis.

The downward-curving lines for the three equity-centric portfolios indicate that overweighting UK equities relative to the global equity market would have resulted in incrementally lower levels of aggregate portfolio volatility over the period studied up until a point when an overweight to UK equities would start to actually increase volatility. Much of these diversification benefits were due to the moderate and unstable correlations between UK and global equities and lower volatility of the UK equity market relative to the global portfolio more recently (a relationship we will expand on in the next section). Examining the diversification benefits of the fixed income-centric portfolio, the historical benefits of overweighting UK equities disappeared due to the higher correlation between UK equity and a hedged fixed income allocation. This is important because it illustrates that there was no optimal weight for all investors.

Figure 5. An overweight to UK equities has its trade-offs

Notes: UK equities are represented by the MSCI UK Index; Global equities are represented by MSCI World Index through 1987, MSCI All Country World Index through 1994 and MSCI All Country World Ex-U.S. Index thereafter. UK bonds are represented by the FTSE Government Index to February 2000 and Barclays Sterling Aggregate Index thereafter. Global bonds are represented by the hedged Citibank WGBI Index to 1989 and the hedged Barclays Global Aggregate Index thereafter. Global bonds are added in 1985 at a weight of 70% of the fixed income allocation. All data are in GBP and to 30 June 2013.

Sources: Vanguard calculations, using data from Thomson Reuters Datastream.

1 We started our analysis in February of 1976 based on data availability.
2 Prior Vanguard research (Davis, 2012) has shown that valuation metrics such as the P/E ratio have been the most useful gauge of long-term equity returns. Therefore, given that valuations across developed markets are currently similar, we would expect future returns to be similar.
3 We define the overweight in additive terms and not multiplicative.
4 Over the time period studied, the correlation between U.K. equity and the bond allocation was 0.32, relative to 0.01 between U.K. equity and global equities.
Time varying nature of volatility and correlation

Although optimisation can serve as a reference point, a significant weakness of this analysis is that it is backward-looking and particularly dependent on the time period examined. For example, if we were to start the analysis of the 100% equity investor represented by the blue line in Figure 5 in 1990 instead of 1976, the optimal overweight to UK equity would have been close to 74%. At the other extreme, if we were to start this analysis in 1976 and end it in 2000, the optimal overweight would be closer to 37%. Further, when evaluating portfolios diversified across multiple asset classes, the results may also change. For example, as mentioned previously, the minimum-volatility portfolio in Figure 5, given a 40% allocation to bonds, is different from an equity-only allocation and a portfolio more heavily invested in bonds such as the 20% equity and 80% fixed income allocation shown.

The primary driver of this recent divergence from long-term history has been a significant change in relative volatility between UK and global equities. Figure 6a displays the relationship between the trailing 12-month standard deviation of returns in UK and global equities. It is notable that the significant spike in relative volatility that occurred in the mid-1970s and lasted until the late-1980s

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**Figure 6a.** Volatility of UK equity relative to global market has been time-varying

**Rolling 12-month standard deviation of returns**

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**Figure 6b.** Correlations can also be time-varying

Notes: UK equities represented by MSCI UK Index; Global equities represented by MSCI World Index from 1970 through 1987 and MSCI All Country World Index thereafter. Data to 30 June 2013.

Sources: Vanguard calculations, using data from Thompson Reuters Datastream.
would have made global equities seem more attractive from a volatility reduction standpoint over that period. However, since then, volatility has been more in line with the global market and at many times below, resulting in UK equities appearing more attractive over recent periods.

Similar to volatility, correlations can also be time-varying. In Figure 6b, we display the rolling 36-month correlation coefficient between UK and global equities over time. While the correlations have generally been increasing over time reflecting the general integration of global markets, they have also been subject to volatility, most notably in the period of heightened volatility mentioned previously, but also more recently in their trend upward. The time varying nature of volatilities and correlations are just some of the reasons we do not focus solely on optimisation techniques to form portfolios.

Real world considerations and the role of home bias

Investors in the UK and other domiciles around the world display a persistent and significant home bias, regardless of domicile, which often prevents them from becoming fully diversified across the global equity markets. It is interesting that this bias is often conscious and intentional, with investors actively overweighting domestic holdings at the expense of foreign securities. For example, according to a recent survey from the International Monetary Fund, UK investors only allocate roughly 50% of their total equity allocation outside the United Kingdom when it accounts for 92% of the global investment opportunity set.

Prior Vanguard research (Philips, 2012) has investigated the underlying drivers of these biases and found that expectations regarding future return differentials, a preference for the familiar, corporate governance standards, the need to hedge domestic liabilities (if applicable), exposure through multinationals and currency risk can cause investors to overweight domestic securities. These real-world considerations may further support a different allocation to UK equities than that recommended by market proportions simply based on investor preferences. Simply put, if these investor-specific allocations make them more comfortable, they may be more likely to stick with them over time and maintain discipline during periods when foreign equities underperform, or vice versa.

Costs and barriers to investment (for instance, commissions, opportunity costs, market-impact costs and repatriation of investment income) can also play a role in determining the optimal allocation (Philips, 2012). However, on the domestic front, UK equities impose a stamp duty tax, currently 50 basis points, that must be factored into the allocation decision as a disincentive for maintaining a home bias. Finally, our empirical analysis shows that significant diversification benefits have been achieved at less than fully market proportional allocations. Of course, because each investor’s objectives and constraints are unique, no single answer is right for all investors.
The impact of currency exposure

Investments in foreign markets are exposed to fluctuations in foreign exchange rates. Currency fluctuations have periodically added to or subtracted from the return for UK investors of international investments. For example, currency movements added 22% to the annual return of ex-UK equities in 1984, only to then subtract 17% in 1985.\(^5\)

In the long-term, currencies tend to reflect macroeconomic factors such as inflation and trade flows, factors that should be reflected in securities prices. However, short-term currency return is very difficult to forecast accurately, with many researchers treating it as random, uncompensated risk.\(^6\) Since forward-looking markets should be accounting for any currency return that is actually predictable in the long-term, currency exposure is best evaluated from the perspective of risk minimisation. Some investors may approach global equity exposure with a view that currency risk should be removed through a hedging programme that uses derivative contracts to mitigate the impact of currency return on the portfolio.

Both equities and currency are fairly risky asset classes, meaning that the amount of currency exposure that will minimise risk will depend heavily on the correlation of foreign currency to the underlying equity portfolio. This relationship is quite volatile over time, as demonstrated in Figure A. This makes any investor’s hedging decision not entirely clear. Even with an explicit goal of minimising portfolio risk, the ideal currency exposure is difficult to determine: sometimes it has moved against the equity market, providing diversification benefits, other times it has not.

In figure B, we contrast the volatility reduction from hedging a global equity portfolio with hedging a global fixed income portfolio. Notably, the historical volatility contribution from currency was greater for global fixed income than global equity and the benefits associated with hedging would then have been relatively modest, especially when compared to the risk reduction achieved from hedging global bonds.

On a forward-looking basis, it may be reasonable to assume 0 correlation (if one is “agnostic” with respect to future currency correlation), but in this case any risk benefit from hedging is likely to be marginal: somewhat less than that realised over the history for the equity market in Figure B. The key point for investors is that, while hedging a global bond investment clearly reduces risk, the same is not true for global equities: the average result is likely to be a modest improvement but this is very uncertain and likely to be highly variable over time. Some investors may choose to approach global equity exposure on a hedged basis, while others may prefer to leave currency intact. Given the relatively modest expected reduction in risk that might be achieved from hedging, we encourage investors considering a hedging programme in their global equity portfolio to be particularly mindful of the costs and operational hurdles in the implementation.

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5. The theory of purchasing-power parity states that real returns will be the same across countries, as exchange-rate movements and inflation differentials should be identical. Interest rate parity is based on the notion that the interest rate differential between the home and foreign markets will determine the change in the exchange rate. There is considerable empirical support for these theories in the long run, but substantial research documents significant departures from a currency’s “fair value” in the short run.

Absent any home bias considerations, we do not believe that the higher idiosyncratic risks represented by specific countries or regions outside the UK offer adequate compensation to warrant an overweight. This is especially true considering the relationship between economic growth and market performance and the higher degree of concentration risk typically found in individual country or regional funds that can translate into heightened return volatility and increased potential for loss. At a minimum, these more concentrated positions do not offer the same level of diversification otherwise offered by a more globally diversified portfolio.

Conclusion

In light of empirical analysis and qualitative considerations, we have demonstrated that diversification among global equities provides a reasonable starting point for investors. Strict adherence to this principle would indicate an allocation to UK equities close to 8% while we have also demonstrated that diversification benefits can be achieved through less than fully market proportional allocations. These higher allocations to UK equities may also be considered reasonable because they would allow UK investors to benefit from exposure to both global and UK equities while remaining sensitive to investor preferences. However, over time and as the global markets become more integrated and home bias less relevant, this decision may warrant revisiting.

Determining appropriate regional and country exposures

The analysis we have laid out until this point has focused on the allocation decision between UK and global equities, however, some investors may consider over-weighting their allocations to specific countries or regions to coincide with their views regarding expected growth rates, returns or correlations, with a notable example being emerging markets and in particular the BRICs (Brazil, Russia, India, and China). These countries have received attention in the past due to their high historical growth rates and more recently as their growth has begun to slow. Prior Vanguard research (Davis, 2013) explored the relationship between economic growth and equity returns and found that contrary to conventional wisdom, average cross-country correlations between long-run GDP growth and long-run stock returns have been effectively zero, largely because consensus growth expectations are already priced into equity valuations. Therefore, we would caution investors from basing their asset allocation decisions on expectations of economic growth.

Just as broad emerging markets and the BRICs have attracted attention, so have single-country mutual funds and exchange-traded funds (ETFs). These products allow investors to make long-term strategic or tactical investments in individual countries as part of their allocation to global equities. When considering these vehicles, investors should fully appreciate that the market capitalisation of individual countries, especially those characterised by relatively small markets, can be concentrated in a few sectors or even just a few companies (Zilbering, 2012). Therefore, when evaluating the merits of these dedicated allocations to markets with higher concentration and other idiosyncratic risks, investors should carefully weight these risks against their convictions that those markets will provide superior performance.
References


