Considerations for global equities: A European investor's perspective

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- When examining the equity allocations of European investors, in aggregate, we find that they hold significant overweights not only to their home-country market, but also to equities from broader continental Europe.
- Such concentrations mean European investors are effectively willing to hold allocations that are not on the forward-looking efficient frontier.
- While European investors have been somewhat more willing to invest beyond their own borders compared to investors in other countries around the world, this study concludes that they would benefit from greater global diversification.

The home bias of European investors

According to major market indices (MSCI/FTSE), European equities (including the UK) account for approximately 25% of the global equity market. As a result, equities outside of Europe, including those of developed and emerging markets, currently account for the remaining 75% of global market capitalisation, thus representing the majority of the world's equities. However, according to the most recent survey from the International Monetary Fund (IMF), European residents allocate approximately 80% of their equity portfolios to European equities. This paper evaluates the short- and long-term impacts on a portfolio of investing across a wider range of markets, including the opportunity to invest in a larger number of securities, the risks associated with overweighting domestic markets, expected risks and returns, correlations, and investor preferences, concluding that increasing global diversification can be beneficial to European investors.

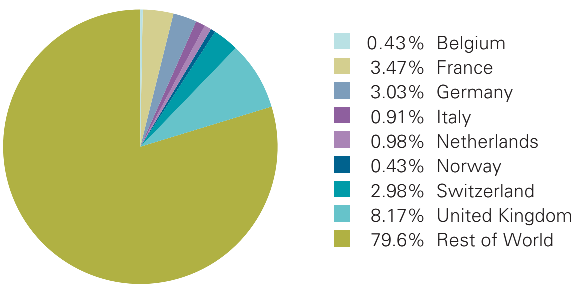
While Europe, in aggregate, accounts for nearly 25% of the global market, for this analysis we elected to focus on a subset of the continent. First, we excluded countries that are not part of the euro area for simplicity with regard to the role of currency. Second, among the euro area countries, we focused on the largest economic powers. As a result our analysis focused on seven countries, namely Austria, Belgium, France, Germany, Italy, Netherlands, and Spain. Figure 1 presents the weight of each country we examined and its size relative to the global equity market, as well as the average European investor's equity portfolio weights as at 31 December 2012.[1]

The stark difference in size between the market weights of European countries and the effective weights of European investors highlights the degree to which investors have reduced their global equity exposure. On average, approximately 80% of the average investor's portfolio is Europe-focused. Investors have almost inverted the market portfolio's weighting scheme. This "home bias" introduces unintended risks into the portfolio, which will be addressed in the following sections. It is worth noting, however, that the size of a country's equity market relative to the world directly affects the consequences of holding mostly domestic equities. For example, Belgian investors overweighting Belgian equities (less than 0.5% of the global market) will be affected more than American investors overweighting American equities (about half of the global market). Larger markets represent smaller trade-offs in giving up global equity exposure.

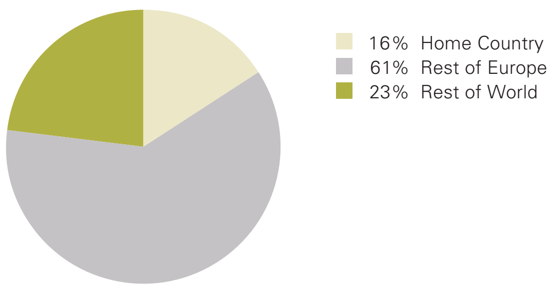
Investors often intentionally overweight their home country (or continent, in the case of Europe). A home bias decision is usually driven by several factors, all of which make their home markets more favourable in their eyes. According to Philips et al. (2012), investors prefer more familiar investments, and therefore are likely to allocate a considerable portion of their portfolios to domestic equities. In short, these investors feel as if they are stepping outside of their "comfort zone" by adding international exposure – they may not think that the additional risk could generate greater expected returns. While the causes of home bias are outside the scope of this analysis, the consequences are not. The effects of favouring domestic equities presented below do not depend on the reason for the overweight.

Figure 1: Europeans significantly overweight domestic equities

Market-weight portfolio (ACWI)



Average European investor



Source: Vanguard calculations, using data from FactSet, and the IMF. The chart on the right represents the implied portfolio weights of an average European investor at the end of 2012 (the latest portfolio holdings data available from the IMF). Each chart uses the MSCI All Country World Index as its benchmark.

1 We evaluated the country weights as at year-end 2012 because at the time of writing this paper, 2012 represents the most recent annual data release from the IMF Coordinated Portfolio Study.

What does an investor get when buying European equities?

A common misconception when investors buy European equities is that they are buying shares in firms that represent the European economy. This is not entirely the case, as many of the companies are large multinational organisations or exporters. Figure 2 examines the sources of revenue for major European companies and finds that a large portion of each firm's revenue is being generated outside of its domicile.

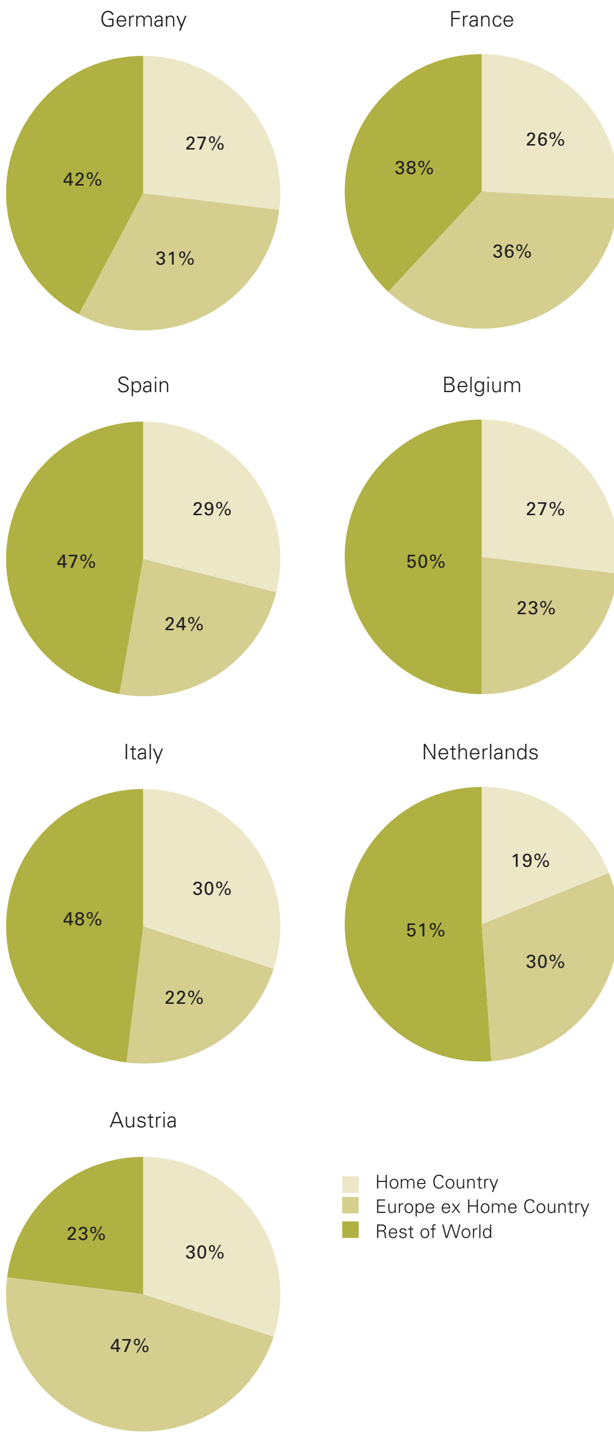
Most companies represented in Figure 2 show similar patterns of revenue generation at home, Europe, and abroad. These charts reveal that European equities are well-integrated into the larger global market, much like those of other large, developed countries.

Diversification of investment opportunities

Given that European companies are affected by forces outside of the continent, some investors may still wonder why they would hold non-European equities at all. The most fundamental reason pertains to diversification: by expanding investments globally, investors not only improve their opportunity set, they also greatly increase the number of securities they hold and reduce the concentration of their portfolios. This expansion limits the idiosyncratic risk associated with any particular company, country, or continent. Therefore, the weight of European equities should serve as a reasonable starting point for investors constructing equity portfolios.

A handful of stocks drive the returns of a portfolio allocated to domestic equities – at the extreme, only 11 and 8 stocks constitute a representative equity portfolio for Belgium and Austria respectively. Investors who favour their home country greatly expose themselves to country-specific risk factors. The same can be said for greater Europe: while continental Europe offers over 320 equities for investors, country-specific (and at this level, continent-specific) risk factors are still present, as continental Europe only represents 13.43% of the stocks available in the entire equity market. Any investor favouring either their home country or continental Europe is taking an implicit view that companies in these regions will perform significantly differently to their peers around the world. This overweight also implies that investors have an active belief that these companies will provide better performance, and that their opinion is superior to the collective wisdom of participants in the global capital markets.

Figure 2: European companies generate much of their revenue internationally



Notes: Publicly traded equities identified as those represented in the respective country indices as determined by MSCI. Revenue distribution was derived from the breakdown of revenue by country for each country's respective representative index. In a limited number of cases, revenue from the home country or Europe ex home country may have been combined with one or more countries, or even regions. All data in euros. Data is for the latest fiscal year to 31 December 2013.

Source: Vanguard calculations, using data from FactSet.

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Figure 3. Investing only domestically can concentrate portfolios in a small number of stocks

	Belgium	France	Germany	Italy	Netherlands	Austria	Spain	Europe	Global
Index	MSCI	MSCI	MSCI	MSCI	MSCI	MSCI	MSCI	MSCI	MSCI
Representing	Belgium	France	Germany	Italy	Netherlands	Austria	Spain	Europe ex UK	ACWI
Country	Index	Index	Index	Index	Index	Index	Index	Index	Index
Number of Stocks	11	71	53	25	23	8	22	323	2,405
% in Top 10 Holdings	98.1	47.7	59.0	75.4	78.2	–	82.5	24.0	8.3

Source: Morningstar. Data as at 10 June 2014.

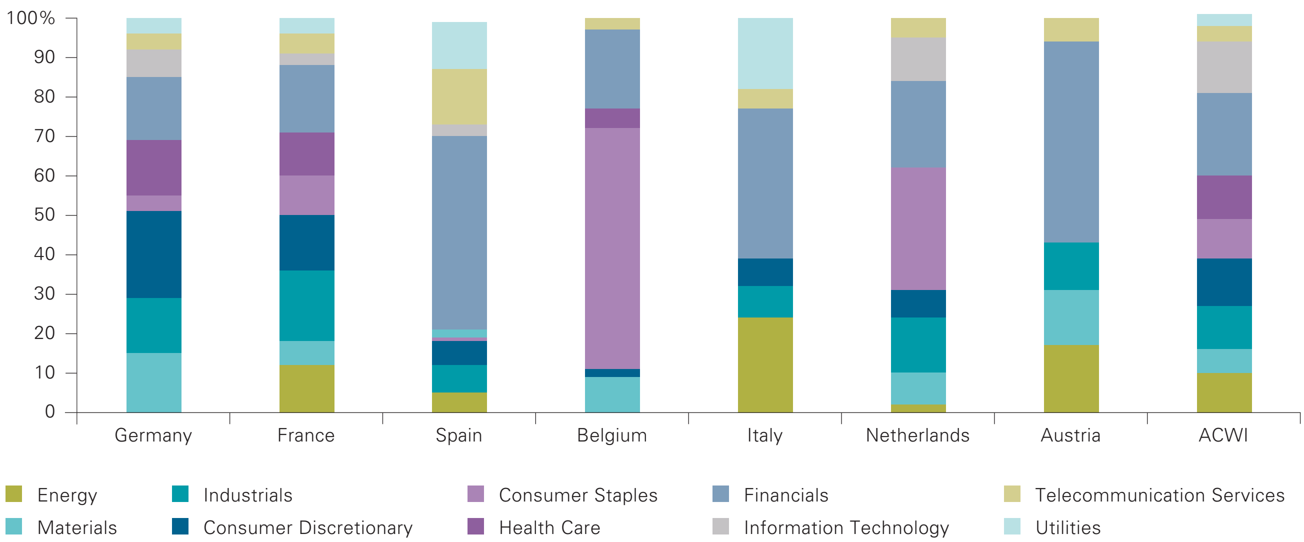
Security concentrations lead to concentrations in certain sectors and industries of the global market. Figure 4 displays the weightings of each country in ten equity sectors. Continental Europe and the global equity market are included to highlight the differences.

Examining Figure 4, several countries are overweight sectors such as healthcare and consumer staples, while being underweight information technology. In some cases, certain sectors are not represented at all – Germany, for example, has no exposure to energy. These sector mismatches create unintended over- and underweights for European investors that offer no expected return premiums relative to other sectors – they are not being compensated for the extra sector risk. As with security concentration, this sector concentration could represent part of a strong active belief that one region will outperform, but such a view also requires the tenuous assumption that another region will underperform and that these assumptions will be persistent throughout time. At the extreme, the sectors' performance could drive most of the portfolio's outcomes in a given period.

Given global exposure, how much?

Over reasonably long periods, the benefits of global diversification can be shown by comparing the volatility of a global index containing both domestic and foreign securities with an index comprising assets solely from a particular country or Europe itself. Recalling Figure 1, a global investor would align his allocation so that approximately 75% of his equity portfolio is outside of Europe, and allow the allocation to vary with market performance. Few investors follow this approach to the letter, however; instead, they more often choose a set

Figure 4: The European equity market has sector biases



Notes: Sector weights represented by the respective country indices as determined by MSCI. Global equities represented by the MSCI All Country World Index. Data as at 30 May 2014.
Source: Vanguard calculations, using data from FactSet.

allocation to securities outside their domicile and maintain it through time. For many investors, this approach represents a reasonable trade-off between the opportunity for diversification and the realities of investor preferences.

The role of home bias on the European stage will be examined in greater detail later on; it is important to remember, though, that investor-specific asset allocations of market participants aggregate to form the theoretical free-floating adjusted portfolio, the objective of fully market-proportional investing.[2]

Historical volatility analysis

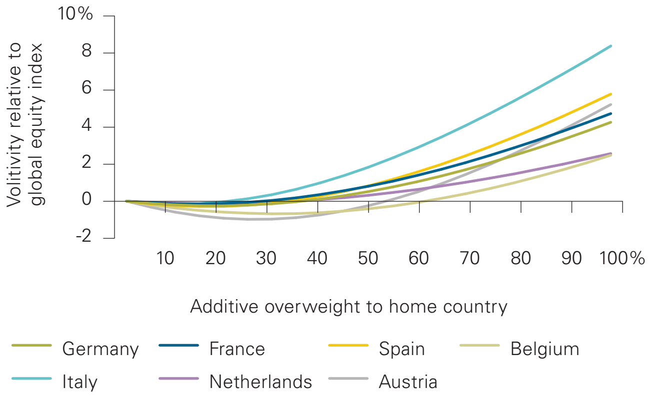
When deviating from the market-proportional approach, a natural first question is: what represents a reasonable allocation? One simple methodology is to conduct an analysis evaluating the diversification impact of various combinations of European and global equities over time. Figure 5 shows the results of volatility analysis since 1970. The focus on volatility assumes that over the long term, returns across developed countries should be more similar than different. In this framework, a 100% equity portfolio was constructed for each country, varying between completely investing in the home country and completely investing in the global equity portfolio.

The downward-curving lines for the portfolios indicate that overweighting the home country relative to the global equity market would have resulted in incrementally lower levels of volatility over the period studied – up to a point. Too large an overweight would actually have increased volatility. Aside from Belgium, every country in the study suggests that only a modest overweight (10-30 percentage points) would have reduced volatility relative to the global equity index. Using investor allocation data from the IMF coordinated portfolio study, most investors in Europe have allocations that would fall on the upper range of this chart. In other words, while some investors would have had less volatility than the global portfolio, most investors in Europe have allocations that would be more risky. That said, it is important to understand that these curves reflect just one time period.

Much of the benefit of a home country overweight was due to the moderate correlations between each home country market and the global equity market, along with relatively lower volatility earlier in the time period. The benefit of the home country overweight was found to be strongly dependent on the timeframe used; when the window was shortened to start at 1980 and 1990 (not pictured), the results were mixed – and in some cases revealed that any overweight added volatility.

In addition to the trade-off between a home country and global equity portfolio, the trade-off between the European continent and the global equity market is worth examining. European investors favour their continent in addition to their home country, so evaluating a "continental overweight" is appropriate. Figure 6 presents the historical volatility relative to the global equity portfolio, varying between the broad market and continental Europe.

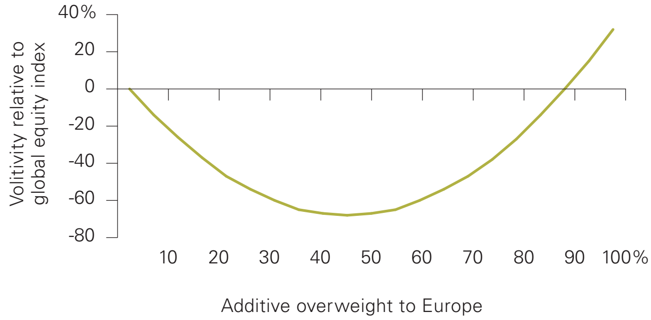
Figure 5: A home-country overweight has its trade-offs



Notes: Country indices represented by the respective MSCI benchmarks. Global equities represented by the MSCI World Index through 1987, and the MSCI All Country World Index thereafter. All data in euros – prior to 1999, the deutschmark was used as a proxy. All data to 31 December 2013.

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

Figure 6: The continental overweight offered some reduction in volatility



Notes: Europe represented by the MSCI Europe ex UK Index. Global equities represented by the MSCI World Index through 1987, and the MSCI All Country World Index thereafter. All data in euros – prior to 1999, the deutschmark was used as a proxy. All data from 1 January 1970 to 31 December 2013.

Source: Vanguard calculations, using data from Thomson Reuters Datastream, Morningstar, and FactSet.

2 Market proportional refers to weighting the securities in a portfolio according to their size in the market from which they were selected based on market capitalisation.

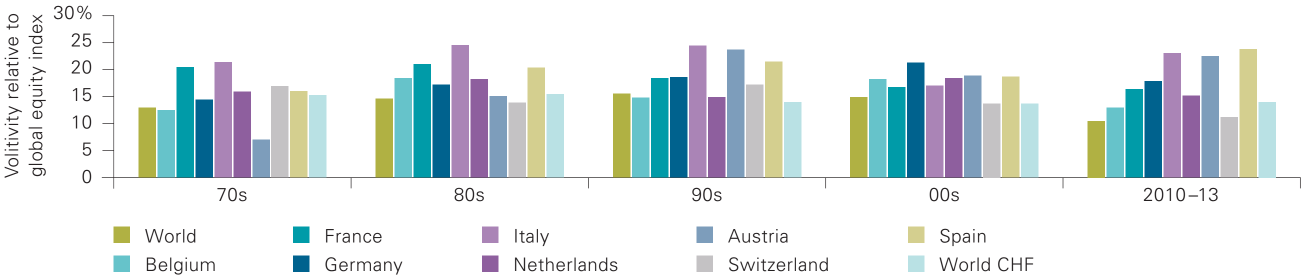
A large overweight to the European continent could have reduced volatility by up to 70 basis points relative to the global equity index. According to this analysis, European investors have actually benefited from their systematic overweight to European stocks over the full period evaluated. However, as with the results of Figure 5, these results were highly dependent on the time period used, and the effect of an overweight has diminished across more recent windows.

Time-varying nature of volatility and correlation

Optimisation can serve as a helpful starting point for portfolio construction, but given it is often run based on historical data, the backward-looking bias and time-period sensitivity are considerable weaknesses. The primary drivers of differences in the trade-off between expected return and volatility are changes in relative volatilities and correlations to the global equity market. Figure 7 presents the average rolling 12-month standard deviations of each country and the global market over the past five decades; Figure 8 presents the average rolling 12-month correlation of each country's equity market to the global market over the same period.

Holding all else constant, increasing the portfolio weight for one's home country exposes an investor to higher volatility than that for the entire market. Therefore, a home-country overweight implies taking on additional volatility without necessarily gaining any expected return. In this framework, taking on additional volatility can sometimes improve a portfolio's variance – this condition is true when assets in the portfolio are negatively correlated. The decision to overweight the home country could be justified from an optimisation perspective if individual countries' equity returns were not highly correlated with the broad equity market's return. The idea behind this strategy is that a given country offers a risk exposure that is different from that of the rest of the world. Equity correlations over time, however, have been increasing, challenging the effectiveness of this strategy. And in the end, regardless of what the ex-post historical volatility of a portfolio turns out to be, on a forward-looking basis, the portfolio with the lowest expected volatility will be the one that is most diversified.

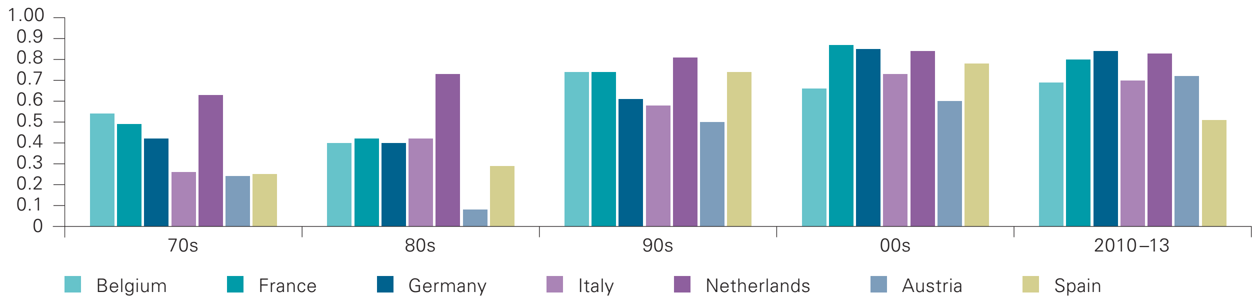
Figure 7: individual countries are often more volatile than the market as a whole



Notes: Country indices represented by the respective MSCI benchmarks. Global equities represented by the MSCI World Index through 1987, and the MSCI All Country World Index thereafter. All data in euros – prior to 1999, the deutschmark was used as a proxy. All data as at 31 December 2013.

Sources: Vanguard calculations, using data from Thomson Reuters Datastream and Morningstar

Figure 8: Correlation with the global market is increasing



Notes: Country indices represented by the respective MSCI benchmarks. Global equities represented by the MSCI World Index through 1987, and the MSCI All Country World Index thereafter. All data in euros – prior to 1999, the deutschmark was used as a proxy. All data as at 31 December 2013.

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

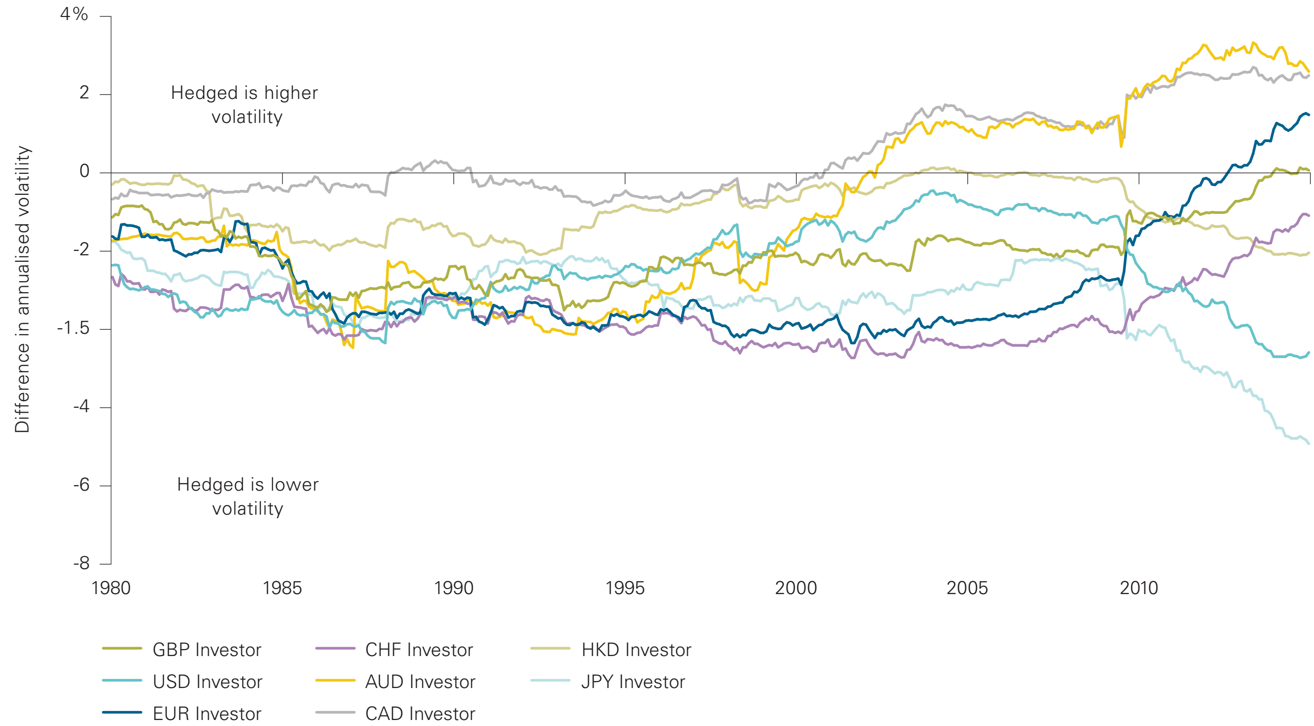
Currency hedging

One significant concern that European investors could have about investing abroad is currency risk. Holding non-euro denominated securities exposes investors to fluctuations in the exchange rate, which could in turn change the value of their holdings. Investors can theoretically mitigate these risks by hedging against currency fluctuations. It is worth noting, however, that long-term gross returns are expected to be equal regardless of whether or not hedging is used. It can reduce risk relative to an unhedged portfolio in the long run, but over shorter windows, the results can be quite varied.

The effectiveness of hedging currency depends primarily on the overall volatility of the portfolio. This measure influences the secondary driver: the correlation between the portfolio and foreign currencies. Less volatile portfolios (generally, those with a fixed income focus) see greater benefits to hedging because the correlation has a small effect – hedging can carve out currency volatility cleanly.[3] The reverse is true for more volatile (generally, equity-focused) portfolios. The correlation between foreign currencies and the portfolio matters. Hedging can, in some cases, harm the portfolio because the effect of currency on the holdings themselves is quite large – carving out currency volatility can become problematic. Hedging an equity portfolio requires a strong degree of confidence in expected future correlations; taking the wrong side is costly, and history does not serve as a useful guide. Figure 9 presents historical currency correlations and the impact of hedging over time.

Figure 9 clearly demonstrates that currency correlations are not persistent – and they are equally likely to be positive or negative. Properly hedging equities is therefore a harder (and potentially costlier) exercise than hedging fixed income, so European equity investors must weigh these expenses against any benefits they would gain at the margin.[4]

Figure 9: Dynamic correlations lead to time-varying hedge impact



Notes: Figure shows the 10-year rolling difference in volatility of monthly returns between a global developed equity portfolio with the currency hedged versus unhedged.
Source: Vanguard, based on data from MSCI and the International Monetary Fund.

3 For more on the case for hedging currency exposure in fixed income centric portfolios, see Westaway & Thomas, 2013.
4 For more on the hedging decision in global equities see Lebarge, 2014.

Conclusion

In light of empirical analysis and qualitative considerations, we have demonstrated that market-cap proportional diversification among global equities provides a reasonable starting point for European investors. Strict adherence to this principle would indicate an allocation to European equities close to 25%, with much smaller allocations to an investor's home country. That said, we have also demonstrated that diversification benefits can be achieved through less than fully market proportional allocations. These higher allocations to European equities may also be considered reasonable because they would allow investors to benefit from exposure to both global and European equities while remaining sensitive to investor preferences. However, over time and as global markets become more integrated and home bias less relevant, this decision may warrant revisiting.

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