Verus

The cost of not hedging foreign currency

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ANDREW AKERS
Senior Strategic
Research Analyst

Executive summary

Investors have often overlooked the fact that investing in unhedged international equities or other assets involves two distinct drivers of risk and return: ownership of foreign assets in local currency and an equal long exposure to the foreign currency. There is generally a formal and prudent process to select asset classes included in the total portfolio, but the impact of the foreign currency exposure is often disregarded, or assumed to be negligible over the long term. Traditionally, currency is not hedged, leaving an investor with a basket of foreign currencies determined by a combination of the market capitalization of the equity portfolio and the mix of other international asset exposures. While this naïve foreign currency portfolio has added volatility, and resulted in more significant drawdowns, it is often thought to have an expected return of zero over the long-term. We believe that the embedded foreign currency exposure in international equity investments should be treated as a form of uncompensated risk, and investors should consider a range of different possible approaches to mitigate that risk. In this paper, we consider the simplest solution of introducing a currency hedging program, which in itself may improve overall portfolio risk-adjusted returns. In upcoming papers, we will cover more sophisticated solutions which allows investors to gain exposure to currency market risk in both passive and active ways, and could potentially further improve the risk-adjusted return at the total portfolio level.

Introduction

Appreciation of the U.S. dollar since the financial crisis has hurt unhedged international equity investors as currency losses have reduced strong positive returns in most developed markets. Since the beginning of 2009, the MSCI EAFE index returned 9.9% per year on a hedged basis and 8.6% per year on an unhedged basis as currency movements resulted in a 1.3% annual loss for unhedged positions. During this period, U.S. dollar strength contributed to the underperformance of international equities relative to U.S. equities, leading many investors to reconsider their exposure to international equities. This research paper examines the currency risks potentially involved in investing in international equities and the historical experiences of unhedged versus hedged exposure. Lastly, we will look at what hedging means for portfolio construction, and why we believe this may be the first step in managing currency for investors to consider.

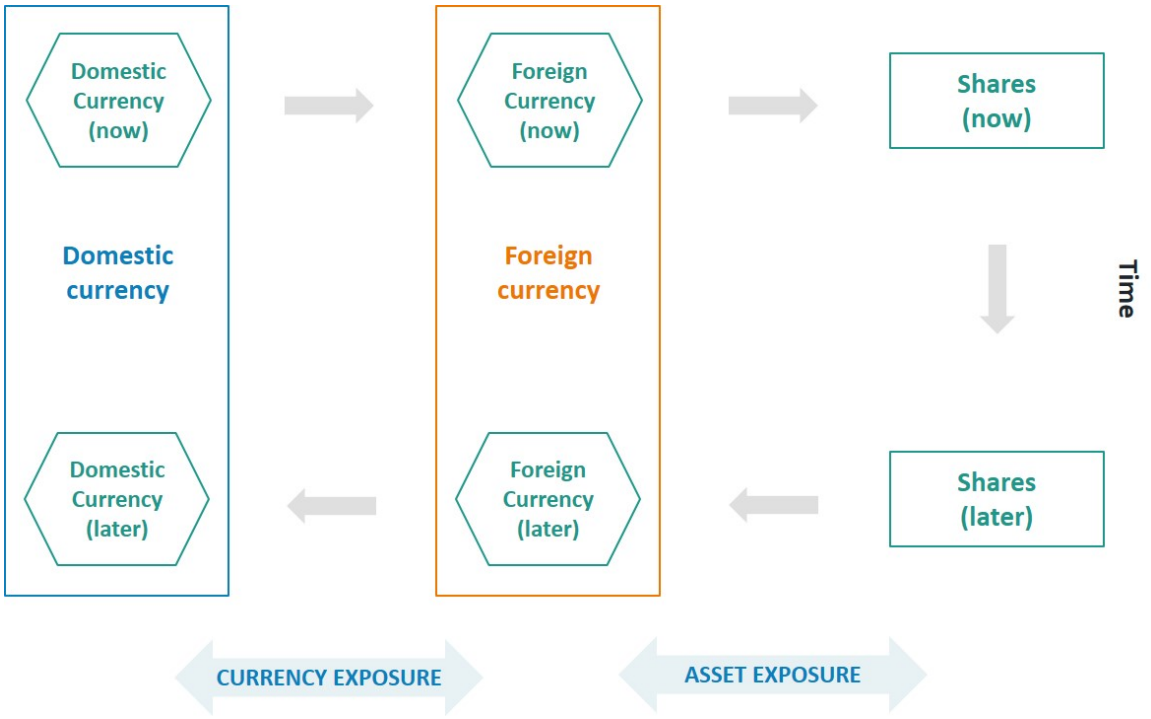
Framing the currency problem

There are two major types of currency risk involved in international equities: internal corporate currency risk and denomination currency risk. Internal corporate currency risk occurs because many corporations, especially larger ones, have operations in multiple foreign countries and exposure to a wide range of currencies. The corporate treasurer and CFO of a multi-national company are responsible for managing internal currency risk and an equity investor should assess the competency of the firm's currency risk management program prior to investing, just like other business risks. It is impossible for an investor to unpick the combination of exposures, hedges and other treasury management tools to understand the company's true net currency position – without this information internal corporate currency risk cannot be effectively hedged.

The second type of risk, denomination risk, is the risk that the exchange rate between the currency in which an asset is denominated and the investor's domestic currency will change during the investment holding period. This paper will focus on denomination currency risk because it directly affects realized returns, and is something investors can mitigate. This type of risk is the focus of extensive investment literature regarding hedging, and what is normally meant by currency risk.

Unhedged international equity investments have two distinct components: ownership of foreign equity in local currency and a long position in the foreign currency (funded by a short position in the domestic currency). Both components will have a material impact on a domestic investor's realized risk and return. For example, if an investor purchases shares of Nestlé (traded on the SIX Swiss Exchange in Swiss francs), they would first need to buy Swiss francs (CHF) in exchange for U.S. dollars (USD), and then exchange the CHF for shares of Nestlé. To close out the position, the investor would need to unwind both trades by selling the Nestlé shares for CHF and then exchanging CHF for USD. A visual depiction of this process is shown in Exhibit A. A key point to note is that the dollar size of the resulting exposure to currency is the same as the exposure to equity – a 1% move in the exchange rate will have the same impact on the portfolio as a 1% move in the price of the equity.

EXHIBIT A – THE SOURCE OF CURRENCY RISK



The embedded currency portfolio

Institutional investors generally follow a prudent process to determine which asset classes to invest in, and within asset classes which managers to select. Investors are also responsible for determining whether mandates for international assets are hedged or unhedged. However, when an unhedged mandate is selected, the embedded currency portfolio is typically disregarded. This leaves an investor with a naively selected basket of foreign currencies that is completely determined by the market capitalization of the equity portfolio, and has equal notional exposure. Trades within the equity portfolio between countries with different currencies will also result in a change to the currency portfolio. For example, if an unhedged European equity portfolio manager for a U.S. investor makes a strategic decision to move assets from the United Kingdom to Germany, he is also implicitly making a bet against the British pound in favor of the Euro. The next section will show that, historically, the market has not rewarded exposure to this type of currency portfolio.

Historical implications of the currency hedging decision

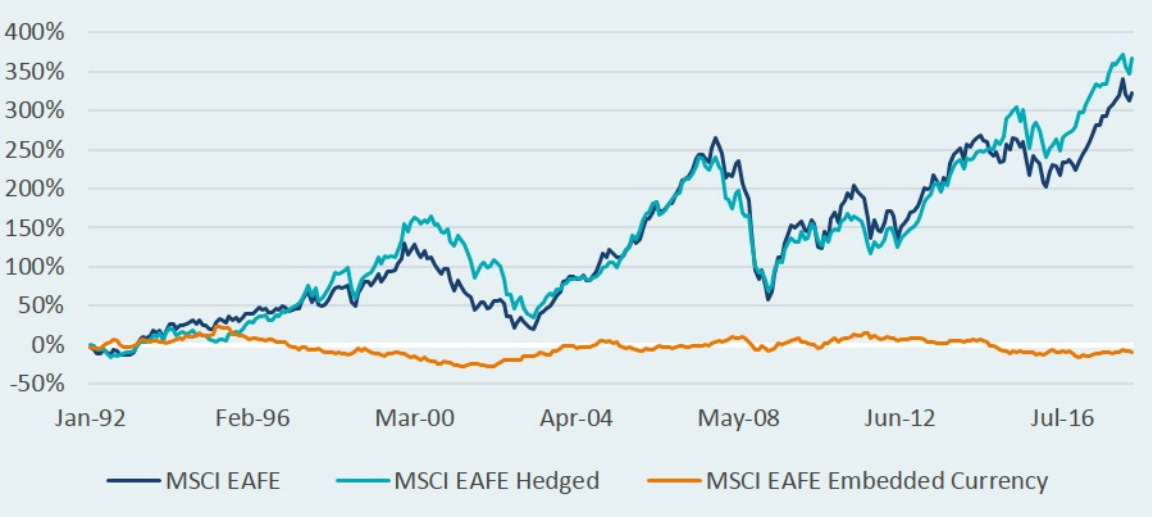
To determine the impact of currency hedging, we can analyze the realized experience of hedged versus unhedged international equity benchmarks in terms of return, risk, and correlations. The difference between the hedged[1] and unhedged benchmarks can be attributed to the embedded foreign currency portfolio. This analysis will focus on the MSCI EAFE index because it is a widely used benchmark for international developed equity exposure. Further, hedging programs for

institutional investors typically encompass only developed currencies due to the low costs and ease of implementation. This discussion generally does not relate to emerging markets because the total cost of hedging these currencies is prohibitive due to low trading volume in the forward market and the typical shape of the forward curve.

Returns

The long-term[2] experienced returns of hedged and unhedged international equity investors based in the U.S. have been similar. Since 1992, the MSCI EAFE index had an annualized return of 6.0% on a hedged basis and 5.6% on an unhedged basis. Over this period, the embedded foreign currency portfolio lowered a U.S. investor's return by 0.4% per year. Exhibit B shows the cumulative returns for hedged and unhedged international equities in addition to the foreign currency portfolio. The embedded currency exposure can be thought of as an unmanaged active portfolio in which a naïve basket of currencies is completely funded by a short position in only the investor's domestic currency. There is no economic or academic evidence that suggests such a portfolio of currencies should receive consistent positive returns over long time horizons. While there is support that, much like the equity market, the currency market has a risk premium to compensate investors, the embedded currency exposure is not representative of the overall market. As mentioned previously, we will take a deeper look at the currency risk premium in upcoming papers as another tool to manage currency risk. While it is impossible to forecast, we think it is reasonable to expect the embedded currency portfolio will deliver a return of zero over the long term.

EXHIBIT B – CUMULATIVE RETURNS



Source: Morningstar, Verus, as of 4/30/18

Risk

Unlike returns, the volatility of the embedded foreign currency portfolio has been significant and remarkably stable. Exhibit C shows the 5-year rolling realized standard deviation of the MSCI

EAFE hedged/unhedged benchmarks and the currency exposure. Over the long-term, the embedded foreign currency portfolio included in an unhedged EAFE exposure has experienced an annualized standard deviation of 7.5% and, other than during the 2008 financial crisis, volatility has been within a relatively stable range between 6-8%. The inclusion of currency risk has caused an unhedged exposure to experience higher overall volatility than a hedged benchmark. This relative difference was exacerbated during the financial crisis when currency volatility rose above historical norms.

EXHIBIT C –5 YEAR ROLLING VOLATILITY

Source: Morningstar, Verus, as of 4/30/18

In addition to increasing overall volatility (as measured by standard deviation), exposure to the unmanaged embedded currency portfolio has resulted in greater downside risk. Over the period examined, the maximum drawdown from peak for both hedged and unhedged international equities occurred from November 2007 to February 2009. Currency exposure for unhedged investors led to a drawdown of 56.7%, whereas hedged investors lost 50.4%.

EXHIBIT D – SUMMARY OF RETURN AND RISK STATISTICS (JAN 1992 - APR 2018)

	Annualized Return	Standard Deviation	Sharpe Ratio	Max 1-Year Drawdown	Max Drawdown from Peak
Fully Hedged	6.0%	14.1%	0.24	-41.3%	-50.4%
Unhedged	5.6%	16.0%	0.19	-50.2%	-56.7%

Source: Morningstar, MPI, as of 4/30/18

Correlations

Some investors have made the argument that the embedded foreign currency exposure in international equities provides a diversification benefit that justifies its standalone volatility. While low and even negative correlations between foreign currencies and international equities in local currency has provided some diversification benefits, they have rarely been low enough to reduce volatility to that of a hedged portfolio. Exhibit E displays the 3-year rolling correlation between the MSCI EAFE currency exposure and the MSCI EAFE index in terms of local currency. The correlation between foreign currency and equities also experienced a dramatic increase during the financial crisis – the diversification benefit weakened when it was most needed.

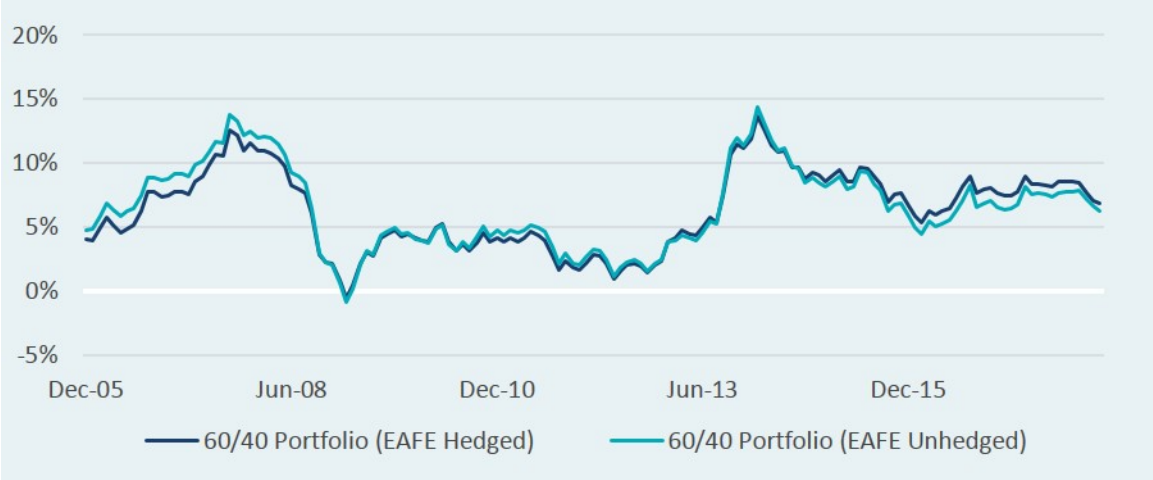
EXHIBIT E – 3-YEAR ROLLING CORRELATIONS: FOREIGN CURRENCY AND EQUITIES (LOCAL)

Source: Morningstar, MPI, as of 4/30/18

Currency hedging and the total portfolio

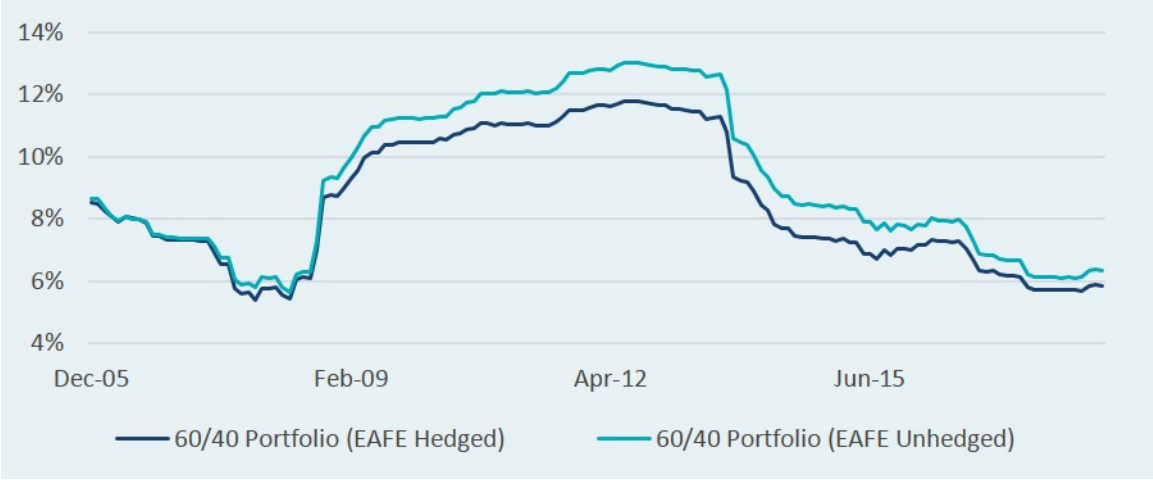
Now that we have examined the impact of currency hedging on an international equity portfolio, it is helpful to look at it from the standpoint of a total portfolio. For this analysis, we use a simple hypothetical balanced portfolio with a passive approach that contains 60% global equity and 40% domestic fixed income.[3] We then compare two identical portfolios, with the only difference being that one hedges the currency exposure in international developed equities, while the other leaves currency unhedged. The results are comparable to that of a standalone international equity portfolio: the long-term returns are similar, but the volatility of the portfolio with unhedged international equity exposure is higher. Even in a balanced portfolio, the diversification benefit the foreign currency exposure provides is not enough to offset its contribution to volatility. Exhibits F and G show the rolling 5-year returns and volatility of these two portfolios since 2001.

EXHIBIT F – 5-YEAR ROLLING RETURNS



Source: Morningstar, MPI, as of 4/30/18

EXHIBIT G – 5-YEAR ROLLING VOLATILITY



Source: Morningstar, MPI, as of 4/30/18

Conclusion

Exposure to unhedged international equities or other assets involves both an investment in foreign assets in local currency and an equivalent long position in a foreign currency portfolio. The embedded currency portfolio, which is naively constructed based on the market capitalization of the equity portfolio rather than based on characteristics of the currency market, has experienced a slightly negative annual return since 1992. Given the dynamics of the currency market and historical data, we think it is reasonable to assume the embedded currency portfolio should have a long term expected return of zero, but the realized return over any specific period will likely differ significantly. While the impact on long-term returns has been negligible, foreign currency exposure has increased the overall volatility and

downside risk of a standalone international equity portfolio and a 60/40 balanced portfolio. The effect of unhedged currency exposure on risk was magnified during the financial crisis when correlations between currencies and other financial assets increased. Therefore, while we believe that investing in international equities makes good economic sense, the embedded currency portfolio represents a form of uncompensated and unnecessary risk that could negatively affect risk-adjusted returns over the long term. Investors need to consider how currency exposure affects their portfolios, and begin thinking about how to manage this exposure as a potential way to improve total portfolio outcomes. A hedging program is the simplest option to manage currency risk. In upcoming papers, we will discuss more sophisticated ways, such as currency beta and alpha strategies, that may lower risk and enhance total portfolio returns.

Notes & Disclosures

1. Hedged indexes represent a close estimation of the return that can be achieved by hedging the currency exposures in the index in the one-month forward market at the end of each month. There are two components to a hedged index return: the performance of the unhedged index in the home currency and the hedge impact, which is aimed to represent the gain or loss on the forward contracts. (Source: MSCI)

2. MSCI created its hedged EAFE benchmark in January 1992. This analysis includes data from 1/1/92 to 4/30/18.

3. The indices used in the hypothetical portfolio include the MSCI Unites States index, the MSCI EAFE Unhedged and Hedged index, the MSCI Emerging Markets index, and the BBgBarc U.S. Aggregate index. The equity portion assumes weights of 33%, 21%, and 6% for the U.S., EAFE, and Emerging Markets, respectively.

Verus

999 Third Avenue, Suite 4200
Seattle, Washington 98104
206-622-3700
verusinvestments.com