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Currency risk in a portfolio: Why take it?

Investors are becoming increasingly aware of the impact that currencies have on their portfolios, not only from a return perspective, but also with regard to risk. When the currency exposure of international equities is left unhedged, investors are accepting currency risk as part of their portfolio.

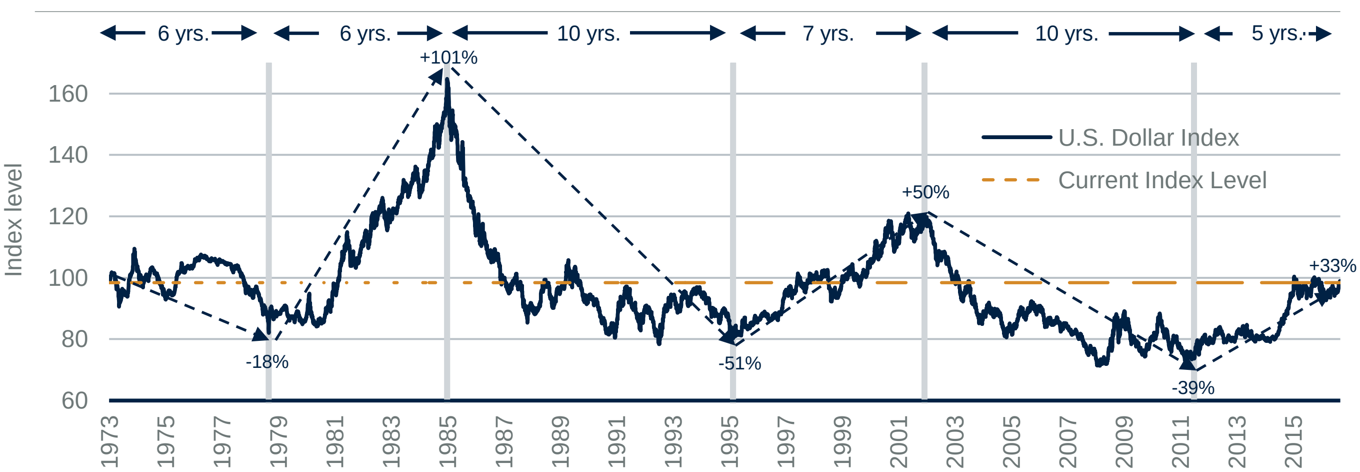
But can currency exposure be expected to benefit a portfolio in terms of higher return, or risk reduction through diversification? With the advent of currency-hedged investment solutions, investors need no longer take undesired risks and maintain undesired exposures. Let's dispel some common misconceptions about the role of currency risk in a portfolio.

Misconception #1: Currencies are a wash in the long run, so why hedge?

Over the long run, a reasonable expectation for the real return of most currencies is zero. Generally speaking, exchange rates should return to their equilibrium value over time. This implies that in the long run, the return of a hedged or unhedged investment in international equities should not be different.

And in fact, over long periods of time, the return of currency hedged and unhedged developed market international equity exposures tend to converge. Since its inception in 1992, the currency hedged version of the MSCI EAFE Index (a widely-followed benchmark for international developed equity markets)

Figure 1: U.S. dollar is cyclical – U.S. Dollar Index (2/28/73–10/31/16)



Source: Deutsche Asset Management, Bloomberg as of 10/31/16. Vertical axis represents index levels for the U.S. Dollar Index. **Past performance does not guarantee future results**.

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outperformed the unhedged index by 54 basis points annualized. Over such long periods of time, rarely is the return of hedged and unhedged exposures meaningfully different. We think the assumption that currency exposure will provide zero excess expected return is reasonable.

However, exchange rates can and do diverge from the equilibrium rate implied by purchasing power parity or other valuation models, and these divergences can last for years and be very significant in magnitude. Figure 2 shows the annual currency return of the MSCI EAFE Index going back to 1988. Currencies returned as much as 15.2% (in 2003) to as little as -12.0% (in 2005). Investors must consider if they are able to weather such significant short- and medium-term swings in investment performance.

Given the zero expected return of the asset over long time periods and the potential for significant swings in the short term, investors should consider if currency exposure is right for their portfolio.

What drives currency fluctuations?

Over long periods of time, exchange rates are determined by fundamental variables like long-term trends in trade, savings and investment, and net foreign asset and liability positions.

Over the medium term, exchange rates are typically driven by macroeconomic factors such as real interest-rate differentials, current and capital account balances, relative national inflation, and relative economic growth to name a few.

The theory of purchasing power parity (PPP) says that over long periods of time, the equilibrium value of currencies is driven by relative purchasing power: at the equilibrium exchange rate, consumers would be able to purchase a basket of goods at home or exchange their currency and buy the same basket of goods abroad.

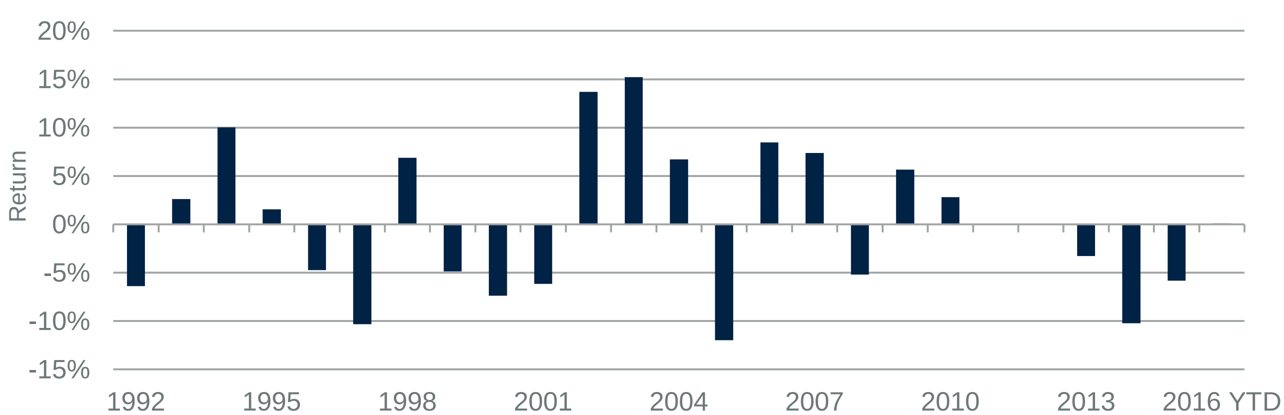
If an investor has no view on the directionality of currencies, why roll the dice?

Misconception #2: Currency exposure does not impact volatility

Just as currency exposure is an additional source of return in an investment portfolio (positive or negative), currency exposure is also an additional source of **risk**.

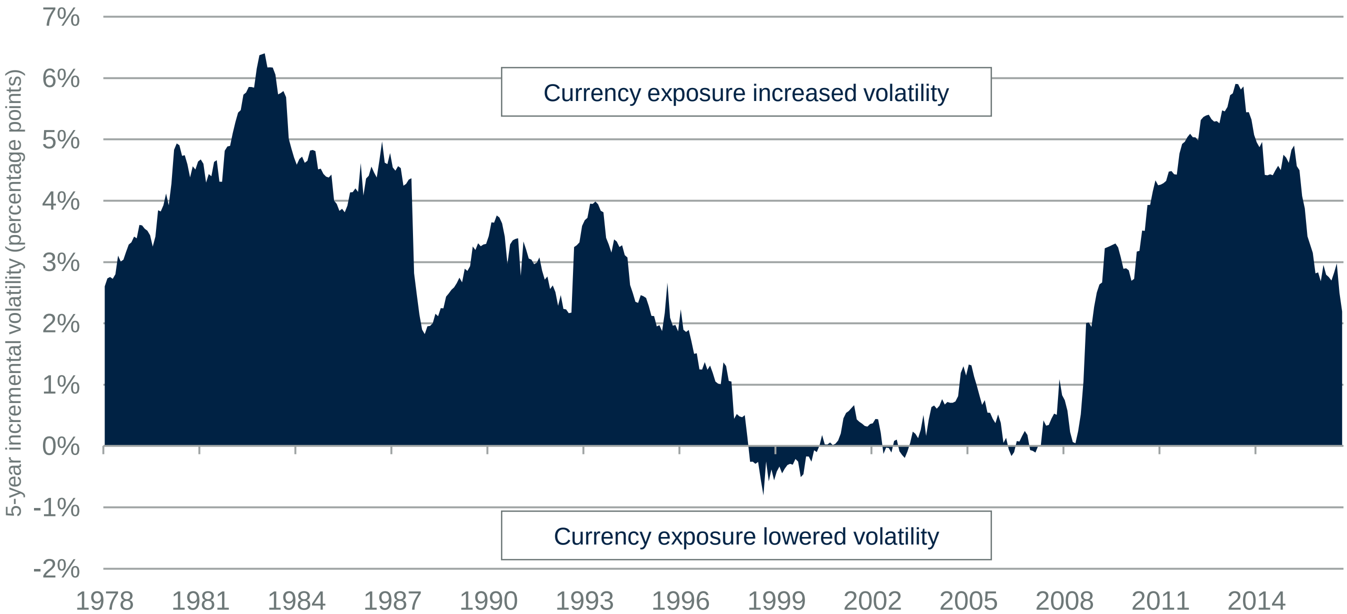
The risk (volatility) of a currency unhedged investment has three primary components: the volatility of the equities, the volatility of the currencies, *and* the correlation of the two. Currency volatility is typically less than that of equities, making the correlation figure an important contributor to overall volatility. If currencies and local market returns are positively correlated, currency exposure can add significant incremental volatility. Leaving currency exposure unhedged can typically only result in lower volatility if currencies and local market returns are negatively correlated enough to offset the volatility of exchange rate fluctuations.

Figure 2: Annual currency return of the MSCI EAFE Index (1992-2016 year-to-date)



Source: Deutsche Asset Management, Morningstar as of 10/31/16. **Past performance does not guarantee future results.**

Figure 3: Historically, currency exposure repeatedly increased volatility (MSCI EAFE Index, 1978-2016)



Source: Deutsche Asset Management, Morningstar as of 10/31/16. Rolling difference in annualized 5-year volatility of monthly index returns.
Past performance does not guarantee future results.

If we look at the rolling 5-year volatility of the MSCI EAFE Index, we can see that currency exposure has repeatedly contributed to incremental volatility over time. Figure 3 shows the difference in volatility of the MSCI EAFE Index in local currency and U.S. dollar terms. The chart begins in early 1978, a few years after the U.S. dollar became free-floating. During this time period, currency has added to risk in most time periods: Currency exposure increased volatility in 91% of the 465 five-year rolling periods examined.

Is the volatility reduction potential of currency hedging dependent on time period? Figure 4 below shows that regardless of the investment time horizon, currency has typically added incremental volatility historically. Critically, incremental volatility from currency risk has been on the rise since the financial crisis as equity-currency correlations have increased.

Investors with no outlook for the directionality of currency and no expectation that currency exposure will enhance returns may be accepting additional, uncompensated risk by not hedging. With the potential of currency exposure to increase volatility, investors in or nearing retirement in particular may want to consider currency hedging their international equity exposure to reduce cash flow variability.

Figure 4: Incremental volatility from currency in the MSCI EAFE Index (1973-2016)

Time horizon	Number of rolling time periods	Number of rolling time periods currency exposure increased volatility	% of periods currency exposure increased volatility
3 years	489	432	88%
5 years	465	424	91%
10 years	405	396	98%
15 years	345	345	100%

Source: Deutsche Asset Management, Morningstar as of 10/31/16. Rolling difference in annualized volatility of monthly index returns.
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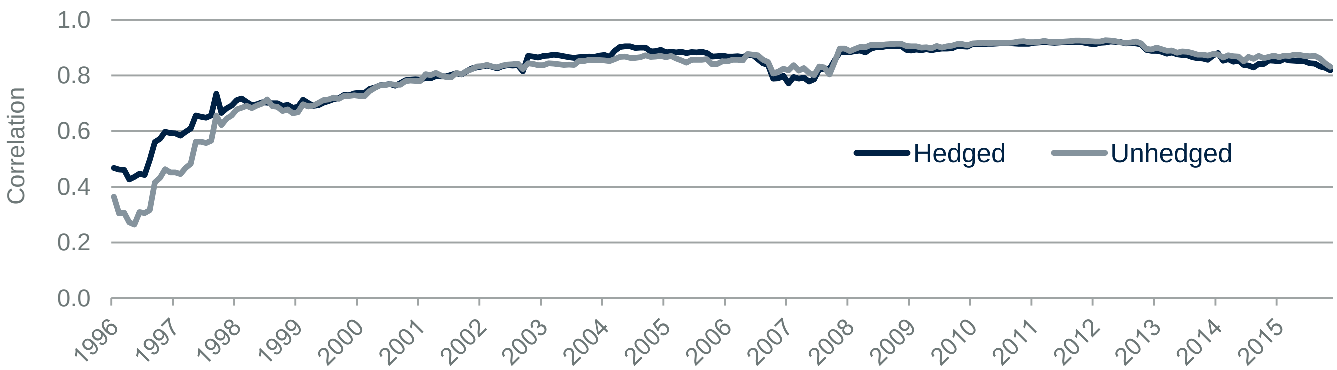
Figure 5: Five-year rolling correlation of MSCI EAFE with the S&P 500 Index (1996-2016)



Source: Deutsche Asset Management, Morningstar as of 10/31/16.

Misconception #3: Currency exposure is a good portfolio diversifier

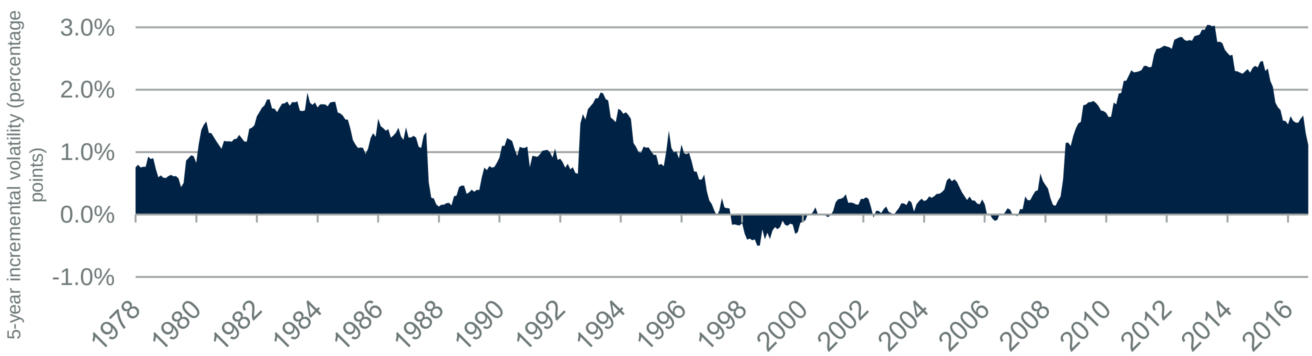
Some investors believe that the inherent currency exposure of international equities is beneficial from a portfolio diversification standpoint. According to modern portfolio theory, if assets are less-than-perfectly correlated with each other, combining them in a portfolio can result in lower overall volatility than the volatility of the assets on a standalone basis. Because currencies are not perfectly correlated with equity or bond returns, some investors view currencies as uncorrelated “noise” with the potential to reduce the overall volatility of an investment in global equities.

However, this has not been the case historically. Unhedged international equities, again represented by the MSCI EAFE Index, have not exhibited lower correlation with the S&P 500 (domestic equities) than currency hedged international equities. As shown in Figure 5, correlations have been indistinguishable for many years. The diversification benefit of international equities is a function of the equities themselves, not their inherent currency risk.

If the inherent currency exposure of unhedged equities offered superior diversification benefits, then global equities could be expected to exhibit lower volatility in U.S. dollar terms than in local currency terms. But in 90% of the rolling 5-year time periods since early 1978, currency exposure introduced incremental volatility to the MSCI World Index—*actually adding* risk instead of reducing it through diversification, shown below in Figure 6.

Investors considering the role of unhedged currency exposure in their portfolio should ask themselves: with no expectation of higher returns, potential for incremental risk, and limited diversification benefits, why leave currency risk unhedged?

Figure 6: Incremental volatility of currency exposure in MSCI World Index (1978-2016)



Source: Deutsche Asset Management, Morningstar as of 10/31/16. Difference in annualized volatility of monthly rolling index returns.

The MSCI EAFE Index tracks the performance of stocks in select developed markets outside of the United States. The MSCI EAFE U.S. Dollar Hedged Index is calculated using the same methodology as the MSCI EAFE Index, but is designed to mitigate exposure to fluctuations between the value of the U.S. dollar and non-U.S. currencies. The MSCI World Index tracks the performance of stocks in select developed markets around the world, including the United States. The S&P 500 Index tracks the performance of 500 leading U.S. stocks and is widely considered representative of the U.S. equity market. Standard deviation is often used to represent the volatility of an investment. It depicts how widely an investment's returns vary from the investment's average return over a certain period. The U.S. Dollar Index tracks the performance of the U.S. dollar relative to other world currencies. Correlation is a measure of how closely two variables move together over time. A 1.0 equals perfect correlation. A –1.0 equals total negative correlation. A currency forward is a contract in the foreign-exchange market that locks in the price at which an entity can buy or sell a currency on a future date.

Diversification does not eliminate the risk of experiencing investment losses.

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