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SOME LIKE IT HEDGED

Momtchil Pojarliev, CFA



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THE CHOICES TO ADDRESS FOREIGN CURRENCY EXPOSURE

Foreign currency exposure is a by-product of international investing. When obtaining global asset exposure, investors also obtain the embedded foreign currency exposure. The impact of this foreign currency exposure on the return and the volatility of the institutional investor's portfolio can be quite meaningful. For example, according to a Reuters' article, the rise in the US dollar wiped out about \$1 trillion in US pension fund assets (i.e., in the dollar value of the funds' non-dollar-denominated assets) between mid-2014 and March 2015 (Chavez-Dreyfuss 2015).

How to address this exposure has been a subject of much debate over the years. The seminal paper by Black (1989) argued for a "universal" hedge ratio for all investors. Perold and Schulman (1988) argued that US investors should completely hedge foreign currency exposure; another school of thought is that foreign currency exposure provides diversification benefits and should be left unhedged. Recently, Chen, Kritzman, and Turkington (2015) evaluated the impact of various currency-hedging strategies on a typical institutional investor portfolio. As expected, more-flexible strategies provide greater risk reduction, but there is no single best strategy *ex ante*, leaving investors to consider different risk–return trade-offs.

Although no single best-practice solution exists for addressing foreign currency exposures, institutional investors have three main choices:

1. Do nothing (i.e., maintain unhedged foreign currency exposure).
2. Hedge passively (i.e., maintain a constant hedge ratio).
3. Hedge actively (i.e., vary the hedge ratio).

The best solution will differ from institution to institution, but it comes down to two fundamental factors. First, the optimal solution depends on the importance of risk versus return and the institution's tolerance for negative cash flow. Second, investors must decide whether they believe that currency managers are able to achieve a positive

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information ratio over the long term after fees and, importantly, whether they will be able to identify these currency managers.

Before I address the available choices, I present the estimated impact of foreign currency exposure on institutional portfolios. In the following sections, I consider four different base currencies: the US dollar, Canadian dollar, euro, and Japanese yen.

Hedging for US Investors

The starting point of a US institutional portfolio is the classic 60% allocation to stocks and 40% to bonds. This classic portfolio has evolved considerably over the years by diversification into a variety of asset classes. For our analysis, however, the 60/40 equity/bond split represents a reasonable proxy.

Exhibit 1 sketches the composition of the prototypical US institutional investor's portfolio. I assumed that the 60% allocation to equities is divided among US equities (27.5%), non-US developed economy equities (25%), and emerging market equities (7.5%). US equities are assumed to contribute zero currency exposure, whereas non-US and emerging market equities are assumed to be fully exposed. This methodology, a fairly standard industry practice, ignores the possibility that some US companies carry significant

EXHIBIT 1. CURRENCY EXPOSURE IN A TYPICAL US INSTITUTIONAL INVESTOR 60/40 PORTFOLIO

	Index Proxy	Weight	FX Exposure
US equities	Russell 3000	27.50%	0.00%
Non-US developed equities	MSCI EAFE	25.00	24.59
Emerging equities	MSCI EM	7.50	6.83
US bonds	Bloomberg Barclays US Aggregate Bond	40.00	0.00
Total		100.00%	31.42%

Notes: As of the end of 2017, the foreign currency exchange (FX) exposure consists of 7.92% euro, 5.97% Japanese yen, 4.45% British pound, 2.49% Hong Kong dollar, 2.00% Swiss franc, 1.74% Australian dollar, 1.16% South Korean won, and 5.69% of other foreign currencies (each less than 1% of the portfolio). The portfolio has about 1.08% US dollar exposure in the MSCI EAFE Index and the MSCI EM Index, which makes the total FX exposure 31.42%.

Sources: BNP Paribas Asset Management, Russell Investments, MSCI, and Bloomberg Barclays.

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currency exposure by virtue of their global operations, and some non-US companies carry little currency exposure for the same reason.¹ In addition, some US companies carry currency exposure in their business lines but hedge it, so the net result to the investor is less currency exposure (but the investor implicitly pays the hedging cost).

Given the makeup of our prototype portfolio, I collected monthly data on the Russell 3000 Index (as a proxy for US equities), the MSCI EAFE Index (non-US developed equities), the MSCI Emerging Markets Index (emerging equities), and the Bloomberg Barclays Aggregate US Index (US bonds). The sample period runs from January 2003 through December 2017 (15 years), which yielded 180 monthly observations to estimate the risk (volatility) to the typical institutional portfolio stemming from foreign currency exposure. Instead of simulating the hedging, I took advantage of the MSCI hedged indexes. MSCI calculates the hedged indexes by starting with the returns from the unhedged index and then fully hedging it for currency exposure by using one-month forward exchange contracts.² The returns on a 50% hedge can thus be calculated simply by investing 50% in the MSCI hedged index and 50% in the MSCI unhedged (in local currency) index.

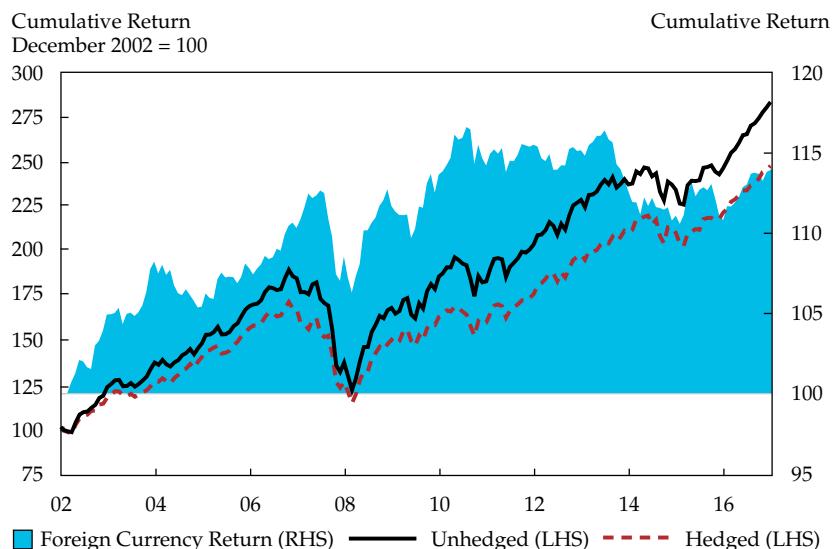
The top part of **Exhibit 2** plots the return for our prototype portfolio, unhedged and fully hedged. (The annualized return, excess return, volatility, and Sharpe ratio are given in the bottom part.) The difference between the unhedged and fully hedged portfolios is the impact of the foreign currency exposure on the portfolio return. During the past 15 years, unhedged foreign currency exposure contributed positively to the return of our prototype US portfolio; the performance of the foreign currencies versus that of the US dollar was cumulatively about 15%, or about 1% per year. Over this period, the unhedged portfolio returned 6.97% annualized, or 0.91% more than the fully hedged portfolio. The volatility of the unhedged portfolio was also higher than the volatility of the fully hedged portfolio (9.33% vs. 8.05%), however, which resulted in a similar Sharpe ratio for both portfolios.

Exhibit 3 plots the impact of various hedge ratios on the volatility of the prototype portfolio described in Exhibit 1. The results are as expected: Higher hedge ratios reduce the risk of the portfolio and—consistent with previous research by Pojarliev, Levich, and Kasarda (2014) and Lettau, Maggiori, and Weber (2014)—show that the US dollar earns a safety risk premium against a basket of foreign currencies and that this premium is particularly high in times of global financial crisis. A higher hedge ratio makes sense, then, especially for US dollar-based investors, because a higher hedge ratio entails buying more US dollars

¹For example, McDonalds, the US fast-food giant, collected 65% of its revenues from outside the United States in 2017. On the other hand, BP, the former British Petroleum, has substantial operations in the United States and operates in an industry where many of the cash flows are in US dollars.

²For more details, see “Index Methodology: MSCI Hedged, MSCI Daily Hedged, MSCI FX Hedge, and MSCI Global Currency Indexes,” MSCI (July 2013). www.msci.com/eqb/methodology/meth_docs/MSCI_Hedged_FX_Hedge_and_Global_Currency_methodology_book_jul2013.pdf.

**EXHIBIT 2. UNHEDGED AND FULLY HEDGED PORTFOLIO
RETURN FOR US INVESTORS, 2003–17**



Measure	Unhedged	50% Hedged	100% Hedged
Return	6.97%	6.52%	6.06%
Excess return	5.36	4.91	4.45
Volatility	9.33%	8.64%	8.05%
Sharpe ratio	0.57	0.57	0.55

Note: Data are as of 31 December.

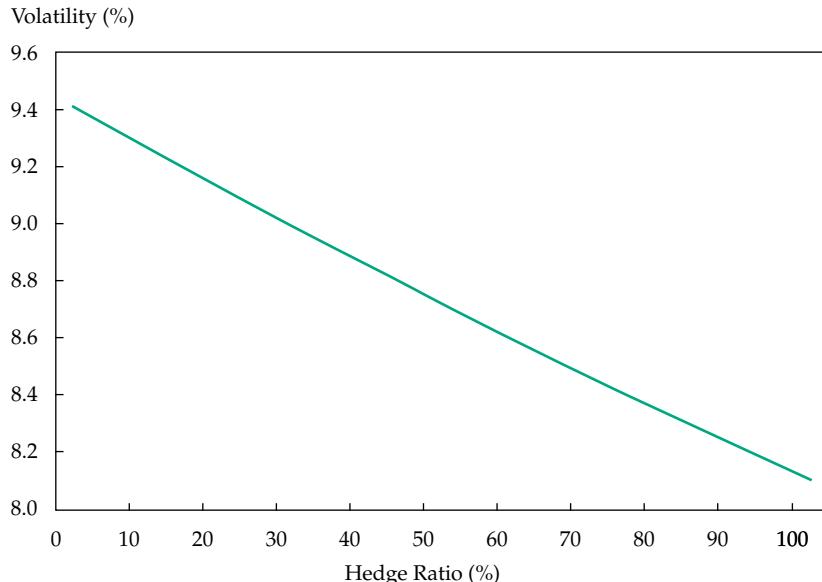
Sources: BNP Paribas Asset Management, Russell, MSCI, and Bloomberg Barclays.

forward versus foreign currencies and the value of the US dollar is likely to appreciate in periods of equity market dislocation. Indeed, Exhibit 2 shows the sharp decline of the foreign currency return in 2008—a period of extreme equity volatility following the collapse of Lehman Brothers on 15 September 2008.³

To investigate the trade-off between volatility reduction and hedge ratios for various base currencies, I repeated the same exercise for different countries. The starting point

³The Chicago Board Options Exchange Volatility Index (VIX), a measure of implied equity volatility, was below 20 in August 2008 and above 80 in October 2008.

EXHIBIT 3. PORTFOLIO VOLATILITY AND VARIOUS HEDGE RATIOS FOR US INVESTORS, 2003–17



Sources: BNP Paribas Asset Management, Russell Investments, MSCI, and Bloomberg Barclays.

is to assume a prototype portfolio and to estimate the return of a fully hedged and unhedged portfolio.

Hedging for Canadian Investors

For the typical Canadian investor's portfolio, I also assumed a classic 60/40 stock/bond portfolio, as shown in **Exhibit 4**. I assumed that the 60% allocation to equities was in global equities and that the 40% allocation to bonds was in global bonds. Note the contrast to the typical US institutional investor, which had a much higher allocation to US assets (often referred to as a "home bias"). Given the makeup of the prototype portfolio, I collected monthly data on the MSCI All Country World Index (ACWI) as a proxy for global equities and from the Bloomberg Barclays Global Aggregate Index as a proxy for global bonds. To keep the analysis consistent with our previous analysis, the sample period remains the same, from January 2003 until December 2017. Again, instead of simulating the hedging, I took advantage of the MSCI hedged indexes, and then I used the Bloomberg Barclays Global Aggregate Hedged CAD Index.

**EXHIBIT 4. CURRENCY EXPOSURE IN A TYPICAL CANADIAN INVESTOR
60/40 PORTFOLIO, 2003–17**

Asset Class	Index Proxy	Weight	FX Exposure
Global equities	MSCI ACWI	60.00%	58.06%
Global bonds	Bloomberg Barclays Global Aggregate Bond	40.00	38.42
Total		100.00%	96.48%

Notes: As of the end of 2017, the FX exposure consisted of 50.70% US dollar, 16.37% euro, 11.29% Japanese yen, 5.65% British pound, 2.22% Hong Kong dollar, 1.93% Australian dollar, 1.85% Swiss franc, 1.59% South Korean won, and 5.42% of other foreign currencies (each less than 1% of the portfolio), which makes the total FX exposure 96.48%.

Sources: BNP Paribas Asset Management, MSCI, and Bloomberg Barclays.

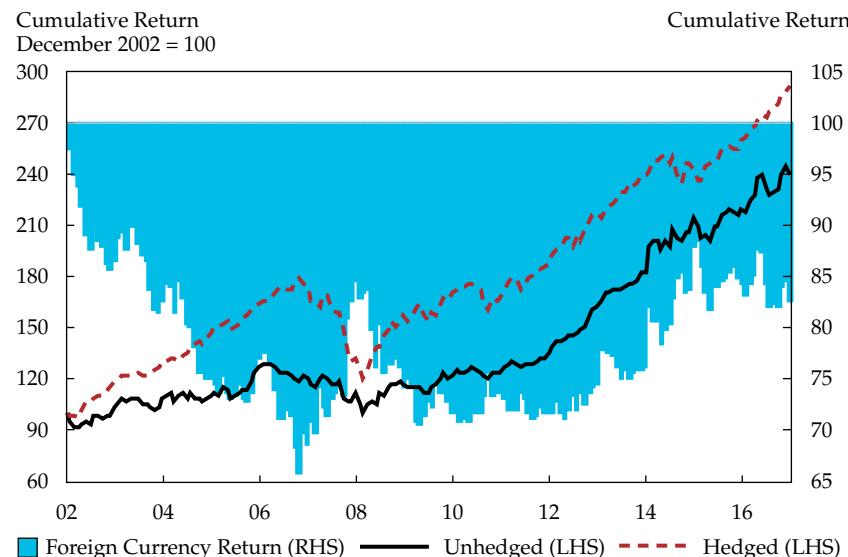
The top part of **Exhibit 5** plots the return for our prototypical Canadian investor, unhedged and fully hedged (with the descriptive statistics given in the bottom part). The difference between the unhedged and the fully hedged portfolio is the impact of the foreign currency exposure on the portfolio return (the blue area). During the past 15 years, unhedged foreign currency exposure contributed negatively to the return of the prototype Canadian portfolio; the cumulative performance of foreign currencies versus the Canadian dollar was close to –20%.

This result is as expected because the biggest foreign currency exposure faced by a Canadian investor is, by far, US dollar exposure, and the Canadian dollar appreciated about 30% against the US dollar over this period. The US dollar represents about half of all foreign currency exposure in our prototypical Canadian investor's portfolio, with euro exposure being a distant second at about 16% (see the notes to Exhibit 4).

As the bottom of Exhibit 5 shows, over this period, the unhedged portfolio returned 5.83% annualized or 1.28% less than the fully hedged portfolio. Note that, in contrast to the US dollar–based investor's case, the volatility of the unhedged portfolio is about the same as the volatility of the fully hedged portfolio.

Exhibit 6 plots the impact of various hedge ratios on the volatility of the prototype portfolio described in Exhibit 4. The hedging initially reduces the risk; the lowest volatility profile is found at around a 50% hedge ratio. Higher hedge ratios start introducing volatility, however, and the volatility of the unhedged portfolio is about the same as the

**EXHIBIT 5. UNHEDGED AND FULLY HEDGED PORTFOLIO
RETURN FOR CANADIAN INVESTORS, 2003-17**



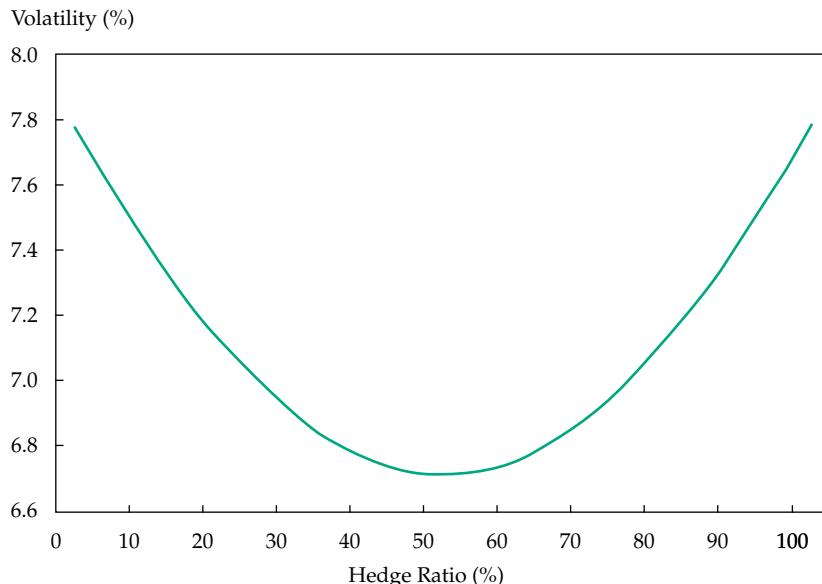
Measure	Unhedged	50% Hedged	100% Hedged
Return	5.83%	6.54%	7.11%
Excess return	3.89%	4.61%	5.17%
Volatility	7.78%	6.71%	7.78%
Sharpe ratio	0.50	0.69	0.66

Note: Data are as of 31 December.

Sources: BNP Paribas Asset Management, MSCI, and Bloomberg Barclays.

volatility of the fully hedged portfolio. This result is in contrast to the US dollar investor's case, where the lowest volatility is at the 100% hedged ratio.

Exhibit 3 and Exhibit 6 demonstrate that there is no standard solution for addressing foreign currency exposure. The base currency and the specific portfolio characteristics play a crucial role in determining the currency policy. US-based investors will generally experience lower volatility from higher hedge ratios, but unhedged US dollar exposure provides diversification benefits to Canadian-based investors. Importantly, Canadian investors are facing much more foreign currency risk than US investors.

EXHIBIT 6. PORTFOLIO VOLATILITY AND VARIOUS HEDGE RATIOS FOR CANADIAN INVESTORS, 2003–17


Sources: BNP Paribas Asset Management, MSCI, and Bloomberg Barclays.

Hedging for European Investors

For the typical portfolio held by European investors, I assumed a 30% allocation to equities and a 70% allocation to bonds. Traditionally, European investors hold fewer equities than US investors. **Exhibit 7** summarizes the composition of the prototypical European institutional investor portfolio. The largest foreign currency exposure is the US dollar (19.86%), followed by the Japanese yen (4.86%) and the British pound (2.23%).

The top part of **Exhibit 8** plots the returns for our prototypical European investor, unhedged and fully hedged (with data at the bottom). The difference between the unhedged and the fully hedged portfolio is the impact of the foreign currency exposure on the portfolio return (the blue area). During the past 15 years, the cumulative impact of unhedged foreign currency exposure was negligible but quite volatile—initially negative when the euro strengthened from 2003 to 2007 but then positive when the euro weakened during the European debt crises of 2010–2012 and when the European Central Bank started quantitative easing in January 2015.

Over the past 15 years, the unhedged portfolio returned 4.94% annualized, which is close to the 5.10% generated by the hedged portfolio. The volatilities of both were also similar.

**EXHIBIT 7. CURRENCY EXPOSURE IN A TYPICAL EUROPEAN INVESTOR
30/70 PORTFOLIO, 2003-17**

Asset Class	Index Proxy	Weight	FX Exposure
European equities	MSCI Europe	10.00%	0.00%
Global equities	MSCI ACWI	20.00	17.92
European bonds	Bloomberg Barclays Euro Aggregate Bond	50.00	0.00
Global bonds	Bloomberg Barclays Global Aggregate	20.00	14.94
Total		100.00%	32.86%

Notes: As of the end of 2017, the FX exposure consisted of 19.86% US dollar, 4.85% Japanese yen, 2.23% British pound, 1.17% Canadian dollar, and 4.74% of other foreign currencies, each less than 1% of the portfolio, which makes the total FX exposure 32.86%.

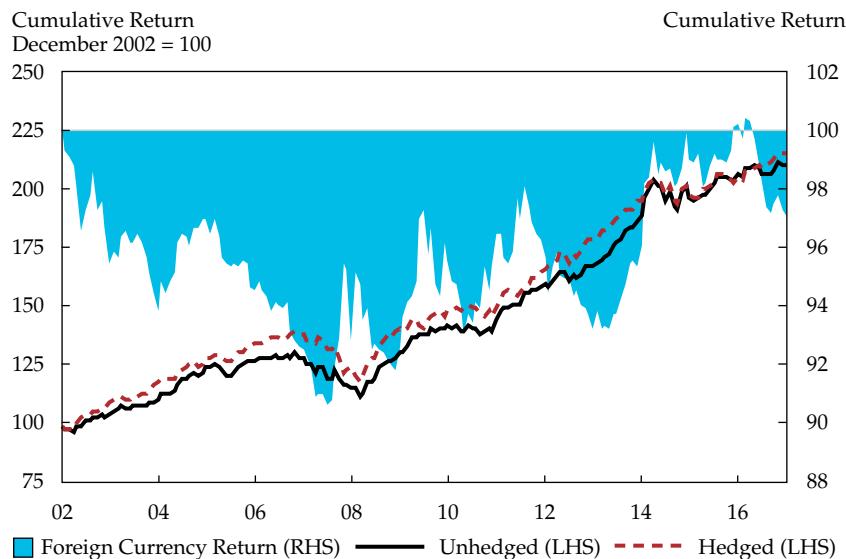
Sources: BNP Paribas Asset Management, MSCI, and Bloomberg Barclays.

Exhibit 9 plots the impact of various hedge ratios on the volatility of the prototypical portfolio described in Exhibit 7. As with Canadian-based investors, the volatility reduction is not linear. The hedging initially reduces the risk, with the lowest volatility occurring around a 50%–60% hedge ratio, and higher hedge ratios start introducing additional volatility. Unlike the case for Canadians, however, in this case the volatility reduction from a 50% hedge ratio is small. Hedging 50% of the foreign currency exposure would have reduced the volatility for Canadian investors from 7.78% to 6.71% (i.e., 107 bps) but for European investors only from 4.52% to 4.23% (i.e., 19 bps) because Canadian investors have a much larger exposure to foreign currencies than European investors, who typically hold a large allocation to “domestic” (euro-denominated) stocks and domestic bonds. This finding illustrates that hedging considerations depend on the size of the foreign currency exposure—the higher the allocation to foreign currency, the more potentially gained by implementing a currency hedging policy.

Hedging for Japanese Investors

For the typical portfolio held by Japanese investors, I assumed a 50% allocation to global equities and a 50% allocation to global bonds. **Exhibit 10** summarizes the composition of the prototypical Japanese institutional investor’s portfolio. The largest foreign currency exposure is the US dollar (49.65%), followed by the euro (17.86%) and the

**EXHIBIT 8. UNHEDGED AND FULLY HEDGED PORTFOLIO
RETURN FOR EUROPEAN INVESTORS, 2003–17**



Measure	Unhedged	50% Hedged	100% Hedged
Return	4.94%	5.03%	5.10%
Excess return	3.02%	3.11%	3.18%
Volatility	4.52%	4.23%	4.35%
Sharpe ratio	0.67	0.73	0.73

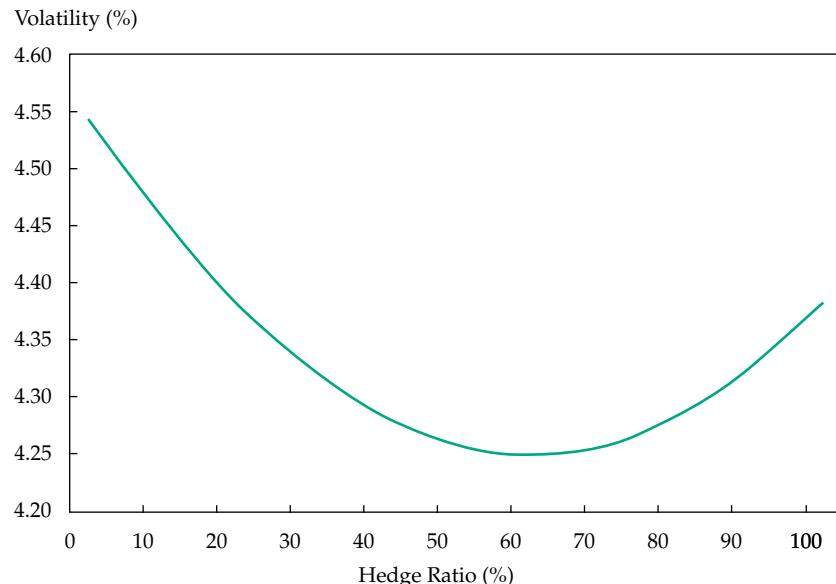
Note: Data are as of 31 December.

Sources: BNP Paribas Asset Management, MSCI, and Bloomberg Barclays.

British pound (5.58%). The top part of **Exhibit 11** plots the returns for our prototypical Japanese investor, unhedged and fully hedged. The difference between the unhedged and the fully hedged portfolio is the impact of the foreign currency exposure on the portfolio return (the blue area).

During the past 15 years, unhedged foreign currency exposure contributed positively to the portfolio return, but the impact was quite volatile. Initially, it was positive, as the Japanese yen weakened from 2003 to 2007, but it became negative when carry trades funded in yen were liquidated during the 2008–09 global financial crisis and the Japanese yen surged. The impact became positive again when the yen weakened after

EXHIBIT 9. PORTFOLIO VOLATILITY AND DIFFERENT HEDGE RATIOS FOR EUROPEAN INVESTORS, 2003–17



Sources: BNP Paribas Asset Management, MSCI, and Bloomberg Barclays.

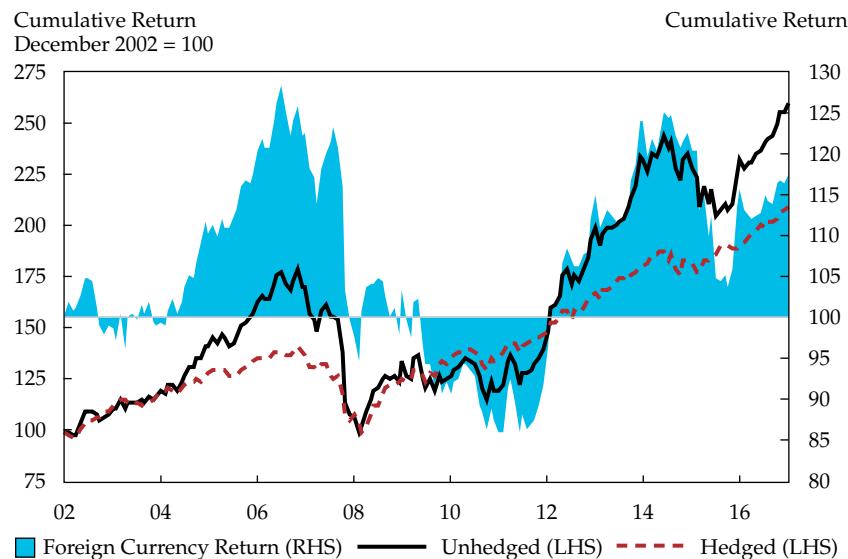
EXHIBIT 10. CURRENCY EXPOSURE IN A TYPICAL JAPANESE INVESTOR 50/50 PORTFOLIO, 2003–17

Asset Class	Index Proxy	Weight	FX Exposure
Global bonds	Bloomberg Barclays Global Aggregate	50.00%	41.81%
Global equities	MSCI ACWI	50.00%	46.06%
Total			87.87%

Notes: As of the end of 2017, the FX exposure consisted of 49.65% US dollar, 17.86% euro, 5.58% British pound, 2.93% Canadian dollar, 1.85% Hong Kong dollar, 1.84% Australian dollar, 1.65% Swiss franc, 1.53% South Korean won, and 4.97% of other foreign currencies (each less than 1% of the portfolio), which makes the total FX exposure 87.87%. The portfolio has 16.37% Japanese yen exposure in the Bloomberg Barclays Global Aggregate and 7.89% Japanese yen exposure in the MSCI ACWI.

Sources: BNP Paribas Asset Management, Bloomberg Barclays, and MSCI.

**EXHIBIT 11. UNHEDGED AND FULLY HEDGED PORTFOLIO
RETURN FOR JAPANESE INVESTORS, 2003–17**



Measure	Unhedged	50% Hedged	100% Hedged
Return	6.27%	5.66%	4.87%
Excess return	6.21%	5.60%	4.81%
Volatility	12.54%	9.05%	6.53%
Sharpe ratio	0.50	0.62	0.74

Note: Data are as of 31 December.

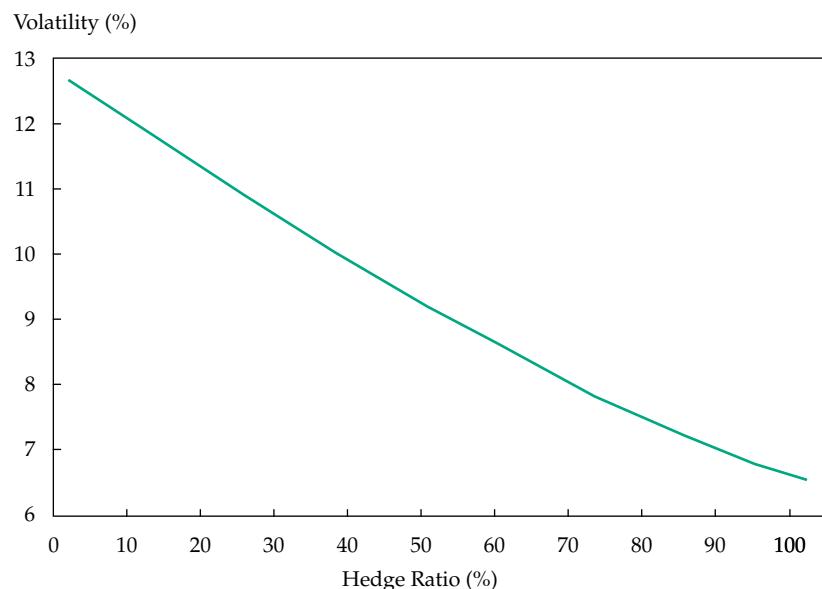
Sources: BNP Paribas Asset Management, MSCI, and Bloomberg Barclays.

the major policy shift in Japan in 2012 following the formation of the government of Prime Minister Shinzō Abe (whose program is referred to as “Abenomics”). Indeed, the speed of the yen’s fall was remarkable: By mid-February 2013, the USD/JPY exchange rate was 94, having increased about 21% from 78 in September 2012. During the same period, the increase of the EUR/JPY rate was 27%, from 100 to 127.

Over this period, the unhedged portfolio returned 6.27% annualized, or 140 bps more than the fully hedged portfolio. The volatility of the unhedged portfolio was almost twice as high, however, as the volatility of the fully hedged portfolio (12.54% vs. 6.53%), resulting in a higher Sharpe ratio for the fully hedged portfolio.

Exhibit 12 plots the impact of various hedge ratios on the volatility of the prototype portfolio described in Exhibit 10. As with US-based investors, the volatility reduction is almost linear: The higher the hedge ratio, the lower the volatility.

EXHIBIT 12. PORTFOLIO VOLATILITY AND DIFFERENT HEDGE RATIOS FOR JAPANESE INVESTORS, 2003-17



Sources: BNP Paribas Asset Management, Bloomberg Barclays, and MSCI.

The analyses suggest that significant differences occur in the impact of foreign currency exposure on institutional portfolios depending on the base currency of the investors and the specific composition of their portfolios. In general, investors whose base currency is negatively correlated with global equities, such as the US dollar and the Japanese yen, will reduce the volatility of their portfolio by hedging foreign currency exposure. In contrast, investors whose home currency is positively correlated with global equities, such as the Canadian dollar, will benefit from keeping some unhedged foreign currency exposure—in particular, exposure to the US dollar. Finally, investors with large allocations to domestic equity and bonds will experience only small reductions in volatility from hedging.

In the following section, I elaborate on the three specific choices to address foreign currency exposure.

DO NOTHING

Doing nothing is always the easiest option, but from a risk–return perspective, it could be the worst available choice. Currency has no long-term expected return because, although currency is a risk exposure, it is not an economic asset. Hence, long-term currency returns are expected to be zero⁴ (see Anson 2014). Hedging should, therefore, have no long-term impact on the return and affect only the volatility. The volatility reduction from hedging can be redeployed more efficiently by increasing exposure to economic assets for which a risk premium exists. “Do nothing” is attractive only for investors with relatively small foreign currency exposure. For example, in the case of our prototype European portfolio, the volatility reduction from hedging is negligible.

HEDGE PASSIVELY

In general, hedging some of the foreign currency risk will decrease the volatility of the portfolio. The relationship between a specific hedge ratio and the decrease in volatility depends on the particular portfolio and, most importantly, on the base currency of the investor. As I already illustrated, volatility reduction will be particularly pronounced for Japanese and US investors because unhedged foreign currency exposure is typically positively correlated with global equity exposure for Japanese and US investors. This freed-up risk budget can then be redeployed more effectively by increasing allocations to compensated risk elsewhere.

Yet, passive hedging creates its own problems, including generating negative cash flow when foreign currencies are appreciating and detracting from returns owing to hedging costs.⁵ For example, because of the higher interest rates in the United States, hedging US dollars is currently “expensive” for European investors. As of the end of September 2018, a hedged euro-based investor in US dollar assets is paying close to 3.25% annualized on currency-forward contracts.

Also important to note is that the word “passive” can be misleading if investors believe it implies no risk. In theory, an institution having a \$1 billion allocation to foreign

⁴Unmanaged, currency exposure functions like a buy-and-hold strategy that receives a zero risk premium. But empirical evidence shows that dynamically managing currency exposure based on traditional currency investment strategies, such as carry, trend following, and value, have achieved positive risk-adjusted returns over much of the floating exchange rate period. Pojarliev and Levich (2008) called returns from such strategies “currency betas.”

⁵Furthermore, there are numerous operational issues that complicate a passive hedging strategy. For example, the maturity of the hedging instrument, the rollover frequency, the mix of instruments (forward, futures, swaps, options), the mixture of currencies—meaning hedging each position currency by currency or excluding some currencies from the hedging program and allowing for cross-hedging—are either all possible choices or decision variables that must be selected in order to implement a passive hedging strategy.

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currencies will reduce the volatility of the portfolio by implementing a passive hedge of 50%. In practice, when the currency policy is changed from “unhedged” to “passively hedged 50%,” the investor is buying \$500 million of his base currency against a basket of foreign currencies.⁶ This change introduces a major market-timing risk. If the base currency weakens after the change is implemented, the investor will suffer substantial hedging losses when the forward currency hedging contracts settle.

For example, **Exhibit 13** illustrates that between 2000 and 2011, the cumulative negative cash flow was as high as 40%, forcing US investors to sell international assets to cover the losses on the currency forwards. So, in the example, the investor will have to pay \$200 million during this period. The passive 50% hedge ratio would have lowered the volatility and possibly increased the Sharpe ratio but at the expense of \$200 million! You can’t eat Sharpe ratios; you need dollars. Indeed, when experiencing this significant negative cash flow, some US institutional investors that passively hedged liquidated their passive hedging program at the worst possible time—as the US dollar bottomed in 2011—after locking in significant losses on the short foreign currency forwards.

HEDGE ACTIVELY

One way to address the market-timing risk of implementing a passive hedging program is to actively time the hedging of the foreign currencies. An active hedging program seeks to reduce the risk of the foreign currency exposure but varies the hedge ratios for the various currencies based on market views to avoid negative cash flow and to generate positive returns. A successful active hedging program should both add to the return of the portfolio and lower the volatility. Active hedging should not be confused with an absolute return currency strategy. An absolute return currency strategy, sometimes called “currency as an asset class,” also seeks to generate attractive risk-adjusted returns but is not linked to any actual foreign currency exposure and should be gauged against a zero benchmark for unfunded mandates and against LIBOR for funded mandates.

Put differently, an investor does not have to have any foreign currency exposure to invest in an absolute return currency alpha program. Such an investment could be attractive because of the idea that currency alpha returns tend to be uncorrelated

⁶Note that, traditionally, some passive hedging programs are implemented only against developed market currencies and ignore exposure to emerging market currencies. Such decisions are typically based on the perception that hedging costs are much higher for emerging market currencies. But this is not the case for every emerging market currency, and from a risk reduction perspective, what matters is the magnitude of the exposures in the portfolio, not the classification of emerging versus developed. For example, typical exposures to the New Zealand dollar or the Norwegian krone (developed market currencies) in global portfolios are nonexistent or negligible, but exposures to the South Korean won or the Hong Kong dollar (emerging market currencies) are often meaningful.

**EXHIBIT 13. DRAWDOWNS IN US DOLLARS OF MSCI ACWI
PASSIVE HEDGED PORTFOLIO: SIGNIFICANT
NEGATIVE CASH FLOWS, 1999–2018**



Note: Data are as of 31 December.

Sources: BNP Paribas Asset Management and MSCI.

with the returns of traditional assets.⁷ Active hedging, in contrast, seeks to generate attractive risk-adjusted returns but is specifically tailored toward the foreign currency exposure of the investor and should outperform both no-hedging and passive-hedging benchmarks. Active hedging is a customized solution, not a product, and in each case needs to be tailored to the investor's specific needs.

Active hedging makes sense, however, only when the investor believes that currency managers will have positive information ratios after fees and that the investor can identify these managers. A recent paper from the consultant Bfinance (Goodworth 2018) argued that active currency hedging overlays have outperformed passive currency hedging and that arguments in favor of active hedging include not only better returns but also improved cash flow management and better portfolio risk profiles.

⁷Pojarliev and Levich (2012) evaluated absolute return currency managers.

CONCLUSIONS

Institutional investor portfolios typically hold a significant allocation of unhedged foreign currencies. But currencies have no specific role in institutional portfolios. Currency has no long-term expected return because it is not an economic asset; it is simply a source of risk. Currency risk has long bedeviled investors, and opinions and recommendations abound as to whether investors should hedge their currency exposures. Left unmanaged, currency exposure functions like a buy-and-hold strategy that receives a zero risk premium and adds unwanted volatility to the portfolio. Passive hedging can reduce this risk, and the freed-up risk budget can be redeployed more effectively by increasing allocations to compensated risk. But simply passively hedging the currency exposure can lead to large negative cash flows and introduces significant market-timing risk. Active hedging is an alternative to passive hedging that seeks to reduce portfolio volatility, add returns, and minimize negative cash flows in periods when the base currency weakens.

As a final comment, note that the analysis and conclusions presented in this article are affected by assumptions regarding the specific investors' portfolios and time horizons. Investors will be well advised to look at their specific portfolios when formulating a foreign currency policy.

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