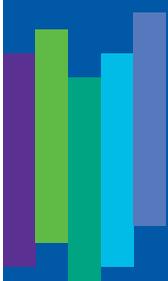


INVESTMENT PRINCIPLES

INFORMATION SHEET FOR CFA PROFESSIONALS

THE BENEFITS OF DIVERSIFICATION

THE IMPACT OF THE CURRENCY AND COUNTRY OF ORIGIN ON GLOBAL DIVERSIFICATION REQUIREMENTS



3D

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- Mutual fund brokers
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- Exempt market dealers
- Portfolio managers
- Investment fund managers
- Life insurance agents
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THE IMPACT OF THE CURRENCY AND COUNTRY OF ORIGIN ON GLOBAL DIVERSIFICATION REQUIREMENTS

Most investors are not sure of how to deal with currency risk. Many pension funds hedge 50% of their exposure to foreign equities, assuming that hedging 50% (or its flipside, which is tolerating 50% exposure) is a neutral decision. Global diversification and the tendency to have a home bias are rarely discussed from the point of view of the investor's home country. This document explains that currencies are not created equal and that different domestic markets do not offer the same level of diversification. Thus, determining how much exposure to foreign currencies and markets is appropriate is, like any other risk management decision, affected by the investor's currency perspective.

IT'S A QUESTION OF PERSPECTIVE AND ECONOMIC STRUCTURE

In October 2008, large-cap stocks in the United States and Canada declined by 17.5% and 16.9%, respectively. During the same month, the Canadian dollar declined by 12.9% against the U.S. dollar while the U.S. dollar appreciated by 14.8% against the Canadian dollar. Thus a Canadian investor who was in the U.S. equity market and fully exposed to the U.S. dollar would have generated a loss of only 5.3% $[(1-.175)*(1+.148)-1]$ whereas a U.S. investor in the Canadian equity market would have suffered a loss of 27.6% $[(1-.169)*(1-.129)-1]$. Even though both equity markets performed similarly in local currency, the performance spread measured in the investors' home currencies was a significant 22.3%! Of course, the U.S. investor could have decided to hedge all the currency risk related to the Canadian dollar (or to buy a product that offers such hedging); if so, her return would have been very close to -16.9%. The Canadian investor would have been better off not hedging at all. But how can we make such a decision?

Currencies are notoriously difficult to forecast. Many factors affect exchange rates, such as the long-term trend toward purchasing power parity (a ratio of the cost of buying a basket of goods and services in one country to the cost of buying the same basket in another country), the difference in potential economic growth, interest rates, and inflation, all of which

affect the relative demand for currencies. Not to mention changes in commodity prices (for commodity-centric economies) and political and social stability, etc. It's complicated! Even so, currencies can also be classified according to how they react, on average and in the long run, to changes in global growth and global uncertainty. Some currencies are clearly procyclical whereas others are considered countercyclical.

- Countercyclical currencies tend to appreciate in bad times and depreciate in good times. Countries with countercyclical currencies have broad economic infrastructure, safe and diversified financial systems, reasonable fiscal soundness, and relative social and political stability. Their currencies are used as a reserve and a safe asset. The U.S. dollar is usually considered the dominant countercyclical currency.
- Procyclical currencies tend to depreciate in bad times and appreciate in good times. Countries with procyclical currencies usually have greater economic dependency on a few industries, and their currencies are not widely used as a reserve asset. The Canadian and Australian dollars are examples of procyclical currencies. The term Dutch disease is often used to describe countries that see their currency appreciate strongly, and their manufacturing sector decline, when a resource sector, such as energy, is booming. This phenomenon may lead to an economy that is less diversified and more procyclical.

IMPACT OF PRO- AND COUNTERCYCLICALITY ON CURRENCY EXPOSURE

It is not always easy to classify a currency as countercyclical or procyclical. But this characteristic affects an investor's appropriate exposure to foreign assets (equities in particular) and to foreign currencies and thus the decision as to whether currency risk should be hedged. Even though we cannot say what specific level of currency exposure or currency hedging is appropriate for an investor, we can provide some guidelines.

The following equation illustrates the level of currency hedging (h) on a specific foreign asset (P) that minimizes its volatility in terms of the investor's local currency. If the equation seems complicated, we suggest you pay more attention to its general implications, which are specified below. $\sigma(P)$ and $\sigma(ER)$ represent the volatility of the asset in its local market and of the exchange rate, measured in units of the foreign currency of the investor per unit of the domestic currency. $\rho(P, ER)$ represents the correlation between them.

$$h = 1 + \rho(P, ER) \times \frac{\sigma(P)}{\sigma(ER)}$$

From this equation, we can conclude the following:

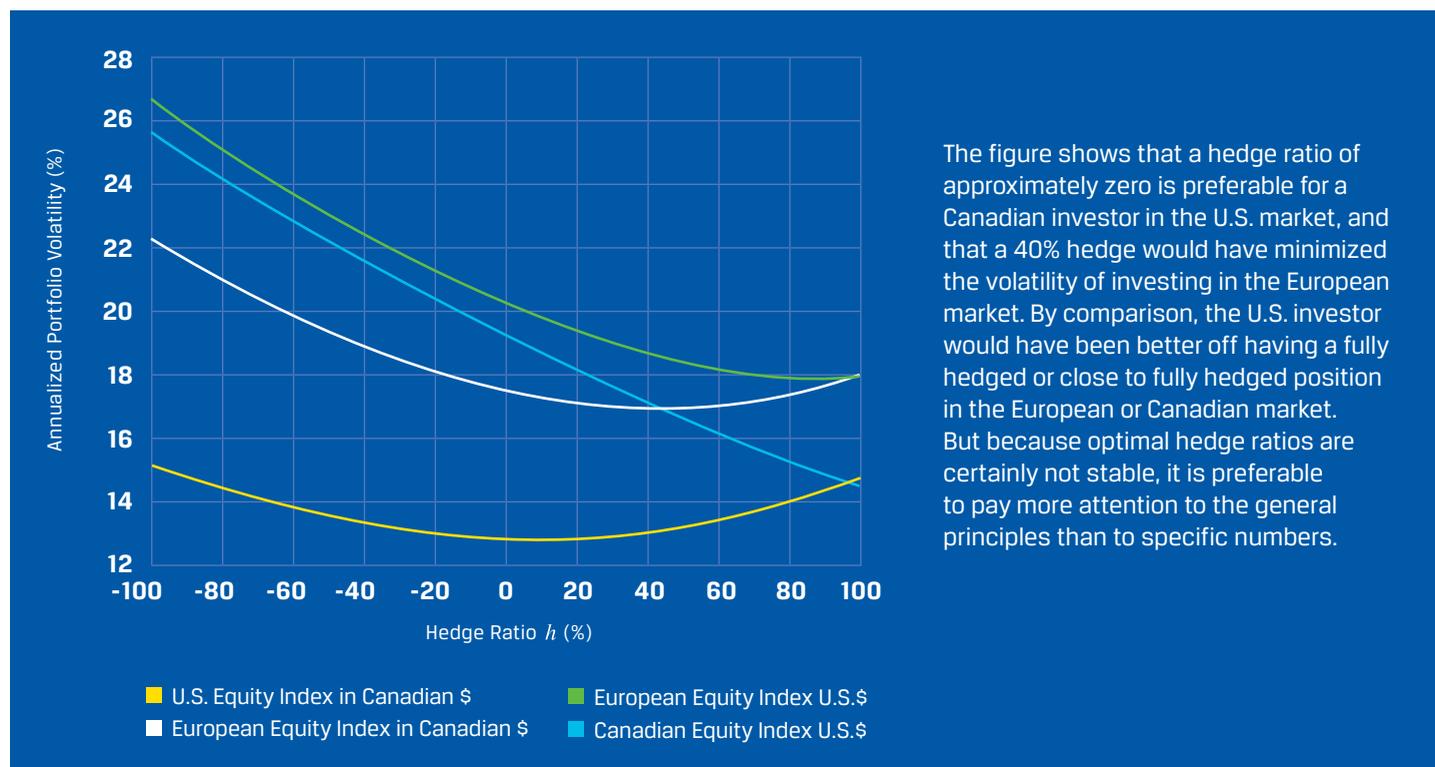
- If there is no clear pattern between currency movements and asset returns (the asset's correlation with the currency is close to nil), full hedging (or acquiring a product that offers a hedging program) is advisable;
- If the foreign currency appreciates (i.e. the domestic currency depreciates) when the asset performs poorly, meaning the correlation is less than zero and the domestic currency is procyclical, hedging should be minimal or nil;
- If the foreign currency depreciates (i.e. the domestic currency appreciates) when the asset performs poorly, meaning the correlation is more than zero and the domestic currency is countercyclical, the hedging ratio should be high, even superior to one, although it would be a difficult policy to implement for most portfolios, even institutional portfolios; and
- If the volatility of the portfolio is much greater than that of the exchange rate, the impact of the correlation on the hedging ratio is amplified.

Over all, we can conclude that the international equity exposure of investors in currencies that are strongly procyclical does not need to be hedged significantly (or not at all), but that the equity exposure of investors in strongly countercyclical currencies should be hedged significantly. The following figure illustrates the relationship between portfolio volatility and level of currency hedging from the point of view of a U.S. or Canadian investor in different markets. The results are based on data from 1991 to 2014.

THE BENEFITS OF DIVERSIFICATION

The Impact of the Currency and Country of Origin on Global Diversification Requirements

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U.S. investors live in the world's most widely diversified economy. Their equity market offers balanced exposure to most sectors and sub sectors and a wide array of potential firms in each sector. U.S. investors know their currency tends to appreciate in bad times. In comparison, the Canadian economy is less diversified. The financials, energy, and materials sectors are dominant, and Canadian investors know their currency tends to depreciate in bad times. In relative terms, Canadian investors have a greater need for exposure to foreign markets and foreign currencies than do U.S. investors. The appropriate exposure to foreign markets and currencies is affected by the diversity offered by the investor's local financial markets and by the status of her own currency. The average U.S. investor needs less exposure to foreign markets than a Canadian investor does. It is also rational for the average U.S. investor to hedge this exposure significantly, whereas the Canadian investor may not want to hedge at all or as much.

Of course, the timing for implementing such an approach is always a challenge. Although purchasing power parity is a poor indicator of future currency trends, because there are so many other considerations of currency valuation, it is preferable not to hedge a procyclical currency (assuming it is currently hedged) when it is significantly overvalued, whereas it is preferable to hedge a countercyclical currency (assuming it is unhedged) when it is severely undervalued. We should consider hedging a procyclical currency only if it appears severely undervalued and not hedging a countercyclical currency if it appears severely overvalued. At the very least, we should realize that hedging 50% of assets denominated in a foreign currency is almost never a neutral hedging ratio, no matter what the investor's currency of exposure is.