

Choices to Address Foreign Currency Exposure

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Overview

Institutional investor portfolios typically hold a significant allocation of foreign currency denominated assets. Left unmanaged, this currency exposure functions like a buy-and-hold strategy which receives little or no risk premium and adds unwanted volatility to portfolio returns.

In this paper, we discuss the variety of solutions to address foreign currency exposures such as using passive currency management choices or selecting from the different active currency management solutions available.



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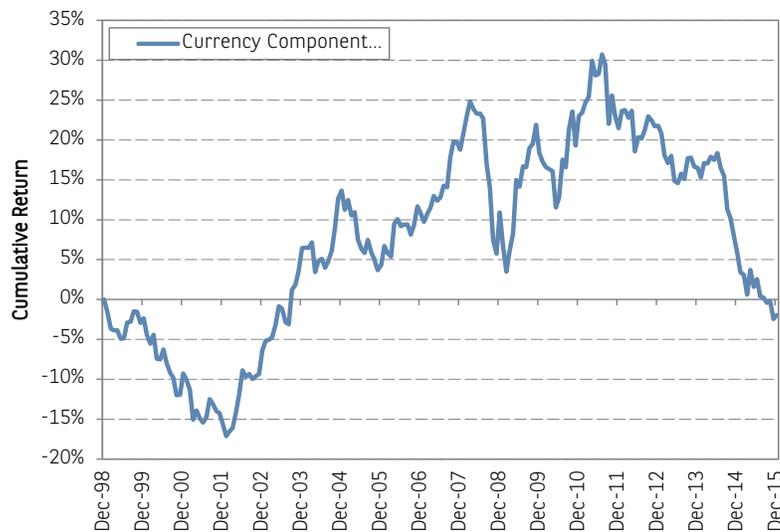
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THE CONUNDRUM FOR INTERNATIONAL INVESTING

Foreign currency exposure is a by-product of international investing. When obtaining exposure to global assets, investors also obtain the embedded foreign currency exposure. The sharp increase in the value of the US dollar since mid-2014 has caused a big divergence in the performance of US equities and unhedged international equities due in part to the depreciation of foreign currencies against the US dollar. Foreign currency return is measured as the difference in the return to an unhedged portfolio versus that portfolio position hedged back into the investor’s domestic currency. Exhibit 1 plots the foreign currency return of the MSCI ACWI ex USA Index since the introduction of the euro in January 1999 until December 2015. The chart illustrates that unmanaged foreign currency exposure is a source of uncompensated risk. Currency has no long-term expected return, because although it is a risk exposure, it is not an economic asset for which a long-term premium exists. From January 1999 until December 2015, the average foreign currency return has been about zero (-0.12%), but the volatility has been 6.63% and the drawdown has been as high as 28.45%. In a weak US dollar environment, from 2000 until 2011, US investors enjoyed a windfall as the foreign currency return contributed positively to the performance of international equities. The positive return from holding foreign currencies might have contributed to the unwillingness to address this uncompensated risk. However, since mid-2014, the foreign currency return has fallen about 20%, causing a significant drag on performance.

Exhibit 1: Spot Return of the Current Currency Component of the MSCI ACWI ex US



Annualized Return	-0.12
Volatility	6.63%
Maximum Drawdown	-28.45%

Source: FFTW, Bloomberg

THE CHOICES TO ADDRESS FOREIGN CURRENCY EXPOSURE

Although there is no best-practice solution to address foreign currency exposures, institutional investors have the following choices (see Exhibit 2).

1. Do nothing, i.e. maintain unhedged foreign currency exposure in international equities
2. Hedge at least some (perhaps up to 100%) of the foreign currency exposure
3. Use dynamic hedging (D-H) techniques to vary the hedge ratio
4. Use active currency management to vary the hedge ratio
5. Try to overcome the return shortfall through allocation to currency alpha



Options 1 and 2 are passive currency management choices. Options 2, 3 and 4 represent the different active currency management solutions available. The best solution will differ from institution to institution. But it boils down to two fundamental choices. First, the importance of risk versus return and negative cash flow. Second, investors must decide if they believe that currency managers are able to achieve a positive information ratio after fees over the long run and importantly, if they will be able to identify these currency managers. In the following sections, we will address the available choices in more detail.

Exhibit 2

	Passive Management		Active Currency Management		
	Do Nothing	100% (or lower) passive Hedge Ratio	Dynamic Hedging	Active Hedging	Currency Alpha
Rationale	Hedging foreign currency will only marginally reduce risk. Average long-term currency return is about zero	Foreign Currency exposure is a source of uncompensated risk and should be fully (or at least partly) hedged	Vary the hedge ratio between 0% and 100% to add value against a 50% hedged benchmark	Vary the hedge ratio to add value against a static hedge benchmark	Generate absolute return (typically uncorrelated to global equity returns)
Major Drawback	Foreign currency return is volatile and historical drawdowns have been significant	A passive hedging program will cause significant negative cash flow in periods of US dollar weakness	An option replication technique, which typically generates a low information ratio	An asymmetric benchmark will typically lead to lower information ratios than an unconstrained alpha program	Manager selection risk
Major Advantage	No currency expertise (internal or external) is required	No manager selection risk. Passive hedging is commoditized	Little manager selection risk. Dynamic hedging (D-H) approaches can be commoditized	Can be tailored to fit client's needs (0% vs 100% hedged benchmark etc.)	A fully unconstrained approach should lead to the highest information ratio
Expected Information Ratio	0	0	0-0.25	0.25 to 0.5	0.5 to 1

Do nothing, i.e. maintain unhedged foreign currency exposure in international equities

Doing nothing is always the easiest option, but from a risk/return perspective (especially in light of the current market environment and central bank policy intervention) is the worst available option. Some institutional investors defer the currency decisions to their international equity managers. But international equity managers will rarely make currency investing decisions. As Exhibit 1 demonstrates, doing nothing means to continue taking uncompensated risk in the portfolio. Option 1 might be best for institutions, which lack the resources for considering other available choices or which hold only a small foreign currency exposure.

Hedge 100% or at least some of the foreign currency exposure

Hedging some or all of the foreign currency risk will decrease the risk of the portfolio. Pojarliev et al. (2014) illustrate that by hedging foreign currency exposures, the typical US investor could reduce the volatility of the portfolio. The higher the hedge ratios, the lower the volatility and the declining volatility can be substantial, ranging between 1.17% and 3.18%, depending on the time period. Yet, passive hedging creates its own problems, from generating negative cash flow when the foreign currency is appreciating to subtracting return due to hedging costs. In an environment of a weak US dollar, settling foreign currency forwards will cause negative cash flow, which could be substantial. For example, between 2000 and 2011, cumulative negative cash flow would have been as high as 40%, forcing investors to sell international assets in order to cover the losses on the currency forwards. Indeed, some US institutional investors who used passive hedging, liquidated the program at the worst possible time, as the US dollar bottomed in 2011, after locking in significant losses on the short foreign currency forwards. A 50% hedge ratio is often recommended as a minimum regret hedge ratio, but a lower than 100% hedge ratio, only mitigates the problem of negative cash flows and accordingly provides less risk reduction rather than being a better solution than higher hedge ratios.

One way to address negative cash flow is to combine passive hedging with an active currency management. The idea is that the active currency program will generate positive returns in periods when the passive hedging program generates negative cash flows. We will discuss the available currency management choices below.

Use dynamic hedging techniques to vary the hedge ratio

Some currency managers offer dynamic hedging programs to vary the hedge ratios of the foreign currency exposure. The dynamic hedging (D-H) methodology is based on option replication techniques and effectively seeks to hedge foreign currency exposures when foreign currency depreciates and to lift the hedges when foreign currency appreciates. Put differently, the risk/return profile is similar to this of purchasing put options on foreign currencies and therefore protecting the portfolio when the foreign currencies depreciate. Importantly, the D-H approach is purely systematic and the achieved information ratios are typically low. In recent years, the increased intervention by central banks has resulted in underperformance of purely systematic approaches, such as D-H.

Use active currency management to vary the hedge ratio

Active hedging mandates could be symmetric (against a 50% hedged benchmark) or asymmetric (against an unhedged or fully hedged benchmark). For example, an active hedging mandate against an unhedged benchmark means that the currency managers can only sell the existing foreign currency exposures, but can't buy more foreign currencies than what is already in the portfolio.

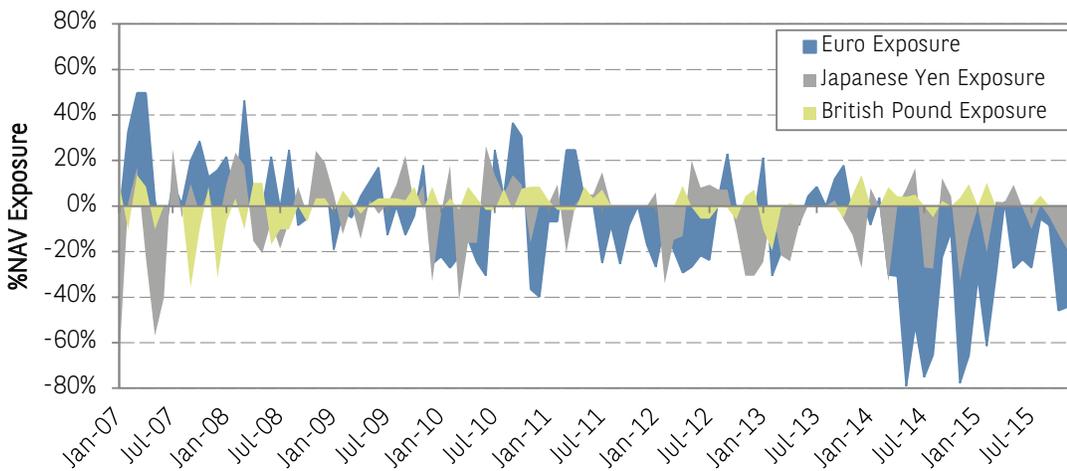
An innovative approach to active hedging is to take the hedging signals from an unconstrained absolute return currency program and apply them to the constrained hedging mandate. Exhibit 3 illustrates this approach. Panel A plots the active positions for the major currencies (euro, yen and sterling relative to the US dollar) as taken from a fully unconstrained absolute return currency program. Panel B translates these exposures for an active hedging mandate with an unhedged benchmark. The differences illustrate the objectives of the mandate. In Panel A in 2007, the active euro exposure was positive (and as high as 40-50%), but in Panel B, the active euro exposure is zero. This is because in an unconstrained absolute return currency alpha mandate (Panel A), a manager could go long euro in the portfolio relative to the benchmark. In the active hedging mandate with unhedged benchmark, the manager is not allowed to buy foreign currencies (euro), but can only sell foreign currency up to the amount embedded in the foreign equities portfolio. So during the period of May to September 2014, while



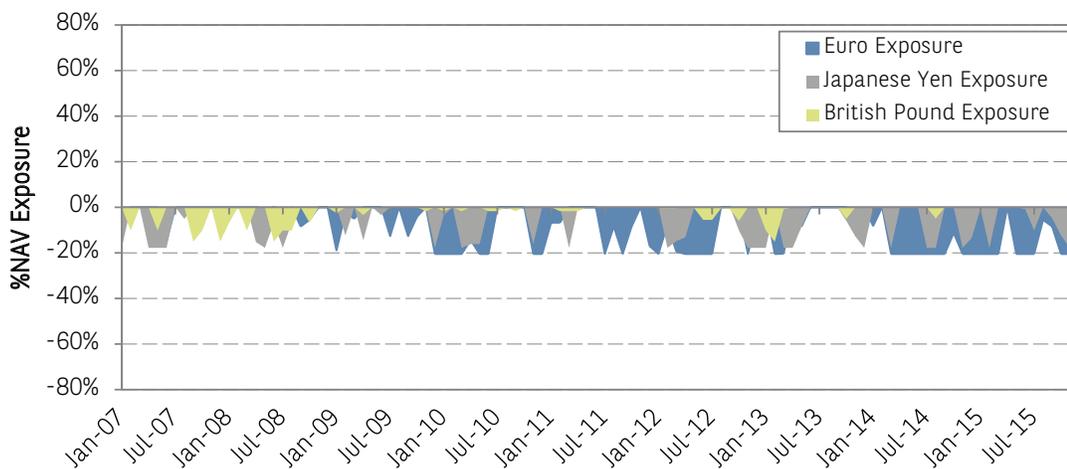
the currency alpha program was running a short euro position between 60% to 80%, the active hedging mandate can only hedge the euros in the portfolio – the active euro position is then limited to about 20% (the amount coming from the foreign equity exposures). The obvious disadvantage of an asymmetric active hedging mandate is that by restricting the manager to only buy the US dollar (unhedged benchmark), the expected information ratio will be lower than the expected information ratio of a fully unconstrained currency alpha program. However, there are also advantages. First, a restriction of only buying the US dollar and hedging (selling) the foreign currencies, ensures that each trade is a risk reduction trade, i.e. simply hedging foreign currencies. Such a structure can be suitable for institutions looking for an active hedging program as an insurance – to provide value in periods of US dollar strength, but to do nothing in periods of US dollar weakness. Second, an active hedging program can be structured against different benchmarks, for example, to complement a passive hedge (option 2) and offset negative cash flows from the passive hedge in periods of US weakness.

Exhibit 3: Innovative Active Hedging Approach

Panel A: Portfolio Exposures for Currency Alpha Strategy



Panel B: Hypothetical Portfolio Exposures for the Active Hedging Strategy



Source: FFTW

Hypothetical or simulated performance results are presented for illustrative purposes only and have many inherent limitations. Such results do not reflect actual portfolio returns or fees and are generally prepared with the benefit of hindsight. No representation is made that any portfolio will or is likely to achieve profits or losses similar to those shown.

Try to overcome the return shortfall through allocation to currency alpha

While the landscape of active currency management has changed dramatically over the last 25 years, following Black's (1989) seminal article on universal hedging, investors have focused predominantly on hedging and less on using currencies as a source of alpha. In practice, institutions can also invest in absolute return currency strategies (currency alpha) to overcome the return shortfall in periods of US dollar appreciation. At least three reasons support this conclusion.

First, various established currency trading strategies have tended to produce returns, which can be proxied by style or risk factors and have the nature of beta returns. Many academic and professional studies support the notion that various types of currency trading strategies have been quite profitable over the last 20-30 years. Research has focused on three types of strategies. The carry trade or forward rate bias relies on the general tendency for currencies with high interest rates to appreciate. Technical trend following strategies rely on persistent movements in spot exchange rates. Value investing strategies based on mean reversion to long-run purchasing power parity (PPP) exchange rates offer another approach. Not surprisingly, investable foreign exchange indices, seeking to replicate the returns of these generic strategies have developed and gained popularity over the last few years. These returns tend to be imperfectly correlated with traditional equity market returns. Second, even if a more demanding expected return benchmark based on style factor returns is used, some currency managers produce alpha. Persistence of both alpha and beta style currency returns heightens the appeal of the currency asset class. Pojarliev and Levich (2012) evaluate the performance of currency hedge funds as a subset of the general hedge fund industry and report that some currency managers have generated economically and statistically significant alpha for their clients in excess of these generic strategies. And finally, the global currency market offers enormous liquidity and continues to function uninterrupted throughout the depths of the recent Global Financial Crisis. While a global recession may provoke a correlated decline across global equity markets, currency values and returns depend on the relative performance of economies. And so, the opportunities for profitable currency investing are likely to persist throughout business cycles, and may even be enhanced by an economic shock that impacts only one economy or one region. The advantage of allocating to currency alpha is that a currency alpha program would have a higher expected information ratio than a constrained asymmetric active hedging mandate. The disadvantage is that institutions deciding to allocate to active currency alpha would have to have the resources required for due diligence and manager selection.

CONCLUSION

Institutional investor portfolios typically hold a significant allocation of foreign currency denominated assets. Left unmanaged, this currency exposure functions like a buy-and-hold strategy which receives little or no risk premium and adds unwanted volatility to portfolio returns. Currency risk has long bedevilled investors, with many opinions and recommendations as to whether investors should ever hedge their currency exposure (Anson 2014). But simply passive hedging of foreign currencies, creates its own problems and will generate negative cash flow in periods when the base currency weakens. Fortunately, investors do have a variety of options to deal with foreign currency exposures. The best option will differ from institution to institution and depend on the importance placed on negative cash flows, risk reduction versus value added and the resources available to select and monitor active currency managers. Institutional investors should re-evaluate their investment policy to currency to ensure that they have the optimal approach for their particular situation.

BIOGRAPHY



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Momtchil is a Senior Portfolio Manager on the Currencies team at FFTW where he focuses on generating alpha for portfolios as well as contributing to the investment process, both in the judgment and quantitative styles. Momtchil also contributes to the growth and development of FFTW's currency alpha strategy as a stand-alone product. He joined FFTW, a subsidiary of BNP Paribas Investment Partners, in 2013 and is based in New York.

Prior to joining us, Momtchil was a Director and Senior Portfolio Manager at Hathersage Capital Management, responsible for both investments as well as business development for foreign exchange portfolios. Prior to that, he was Head of Currencies for Hermes Fund Managers and Senior FX Portfolio Manager at Pictet Asset Management.

He began his investment career at Invesco Asset Management, first as a Senior Economist and then as a Senior FX Portfolio Manager.

Momtchil has 15 years of investment experience. He holds an MSc in Finance from Vienna University of Economics and Business Administration, and a PhD in Financial Econometrics from University of Basel. He is a CFA Charterholder.

Momtchil has advised various asset management firms, including PIMCO and Goldman Sachs Asset Management, in the area of currency return analytics. He has published extensively in finance and investment journals, including the *Journal of Portfolio Management* and the *Financial Analysts Journal*. Most recently, Momtchil has co-edited the book "The Role of Currency in Institutional Portfolios", published by Risk Books. He is a member of The Economic Club of New York and the Swiss Society for Financial Market Research. He currently serves on the Editorial Board of the *Financial Analysts Journal*.

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