Insight INVESTMENT

CURRENCY HEDGING SOLUTIONS

AN INTRODUCTORY GUIDE

MAY 2020

> As portfolios have diversified internationally, it has become increasingly important for institutional investors to manage currency risk. While geographical diversification is a key tool in spreading investment risk, investors are presented with another, unintended risk, that of international currency exposure. In this paper, we explore how currency hedging solutions can help manage these risks.

BNY MELLON | INVESTMENT MANAGEMENT

EXECUTIVE SUMMARY

- Static exposure to foreign currency is not expected to deliver a long-run positive return but its potential to generate short to medium-term losses, particularly amid bouts of heightened currency volatility, has prompted many funds to focus on the management of their currency risks.
- In periods where the investor's base currency rises or falls considerably over a short period of time, CRM solutions that systematically adjust hedge ratios as the currency landscape evolves can be beneficial.
- In addition to reducing risk, currency risk management (CRM) solutions provide an opportunity to generate return. This is achieved by moving currency hedges away from the chosen strategic level in certain environments, so that over time, currency losses are reduced by more than currency gains.
- To manage currency risk investors must decide on three things: the strategic hedge ratio (a passive approach), if and how to deviate from the strategic hedge ratio (a dynamic approach), and what to do for emerging market currencies, which are typically more volatile than their developed market counterparts.

INSIGHT INVESTMENT
A FACTOR-BASED APPROACH TO CURRENCY MANAGEMENT

AS PORTFOLIOS HAVE DIVERSIFIED INTERNATIONALLY, IT HAS BECOME INCREASINGLY IMPORTANT FOR INSTITUTIONAL INVESTORS TO MANAGE CURRENCY RISK. WHILE GEOGRAPHICAL DIVERSIFICATION IS A KEY TOOL IN SPREADING INVESTMENT RISK, INVESTORS FIND THEMSELVES PRESENTED WITH ANOTHER, UNINTENDED RISK, THAT OF INTERNATIONAL CURRENCY EXPOSURE. AS SUCH, THE PERFORMANCE OF INVESTMENTS WILL DEPEND ON BOTH THE LOCAL ASSET RETURNS AND THE FLUCTUATIONS OF INTERNATIONAL CURRENCIES VERSUS THE INVESTOR'S DOMESTIC CURRENCY. GIVEN THE VOLATILE NATURE OF CURRENCY MOVEMENTS, THE IMPACT ON RETURNS CAN BE MATERIAL. SKILFUL CURRENCY MANAGERS CAN HELP YOU MANAGE THESE RISKS AND EXPLOIT OPPORTUNITIES TO CAPTURE VALUE.

INTRODUCTION TO CURRENCY RISK MANAGEMENT

To achieve sufficient asset diversification and exploit more compelling return opportunities, investors diversify into non-domestic assets. Typical institutional investors will hold international assets spread across equities, fixed income and alternatives, and those assets will be subject to currency risk.

THE IMPACT OF EXPOSURE TO CURRENCY

Currency exposure comes as a by-product of investing in international assets. The return on international assets is therefore the sum of the foreign asset return and the currency return (see Figure 1).

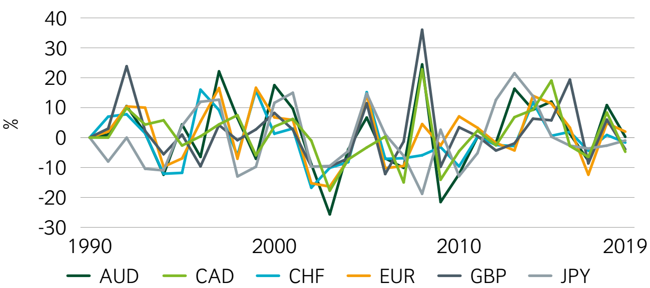
Figure 1: Total non-domestic investment returns are the sum of foreign asset return in non-domestic currency terms and currency return

Total non-domestic return = Asset return in offshore terms + Currency return

Most investors are likely to expect their international assets to deliver a positive return over the long term. However, it is generally agreed that there is no long-term expected return associated with passive exposure to developed market currencies. **The majority of a fund's currency risk is therefore an unrewarded risk**.

In the short term, currency risk can be beneficial or detrimental, as can be seen in Figure 2 which shows the annual currency returns of major currencies versus the US dollar since 1990. In any given year, the impact from currency can be significant, evidenced by the maximum and minimum annualised currency returns over the period. While the average annual currency return over the period has been low, individual currency moves are often noteworthy in any given year, meaning currency return is a very important consideration when evaluating the investment horizon of overseas investments. Large currency moves could potentially erode the value of investments when realised. Investment gains made from investment in foreign equity or bond markets could become a loss when translated into investor's domestic currency base.

Figure 2: Major currency returns versus the US dollar from 1990 to 2019[1]

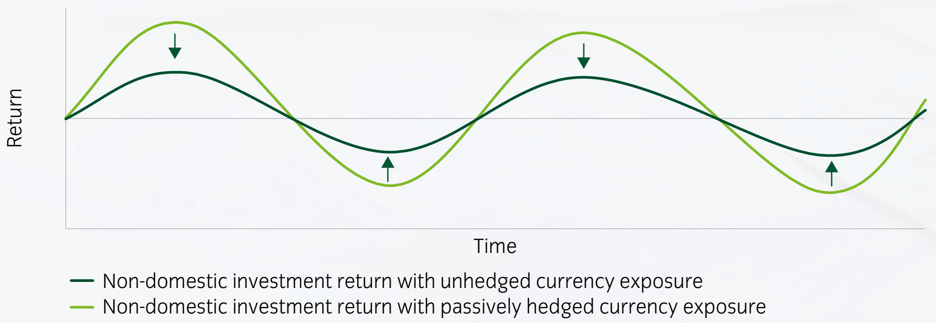


Given that static exposure to foreign currency is not expected to deliver a long-run positive return, the potential for currency fluctuations to generate short to medium-term losses has prompted many funds to focus their attention on the management of their currency risks.

[1] Source: Bloomberg, Insight Investment, as at March 2020.

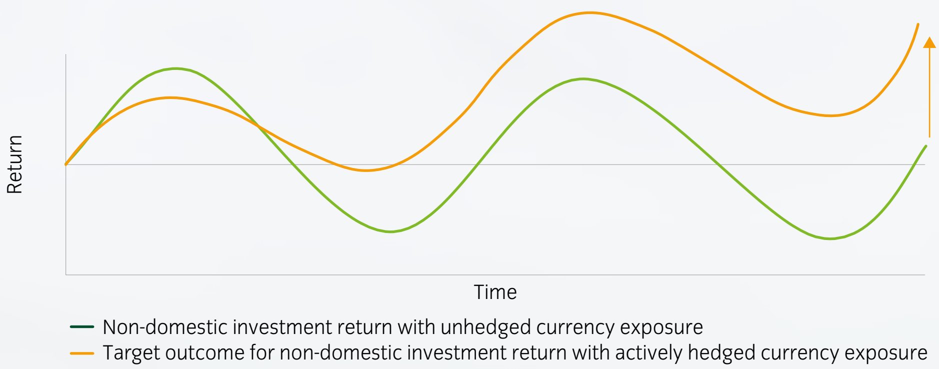
The focus on reducing return volatility by adopting a suitable strategic hedge ratio is a common starting point for a currency risk management solution (see Figure 3). This strategic hedge ratio can be implemented in a variety of approaches, spanning both passive to dynamic hedging strategies. However, passive hedging strategies exchange currency volatility for cashflow volatility which is a risk which requires careful consideration (forward FX contracts require periodic funding and when an investor's base currency weakens additional funding is required). Specialist currency managers can help investors to consider factors such as these, and have helped develop and implement new risk-management solutions to reflect the specific sensitivities of institutional investors. We have provided details of these solutions in the "Managing Currency Risk" section of this document.

Figure 3: Passive currency risk management will typically reduce volatility of returns[2]



In addition to reducing risk, currency risk management solutions can also assist in generating return. This is achieved by moving currency hedges away from the chosen strategic level in certain environments, so that over time, currency losses are reduced by more than currency gains (see Figure 4). An additional benefit of a dynamic currency hedge is the ability to manage the potential cashflow implications of a passive hedge which we discuss in detail later in this document.

Figure 4: Dynamic currency risk management aims to manage currency exposure and increase the positive contribution over time[3]



[2,3] For illustrative purposes only.

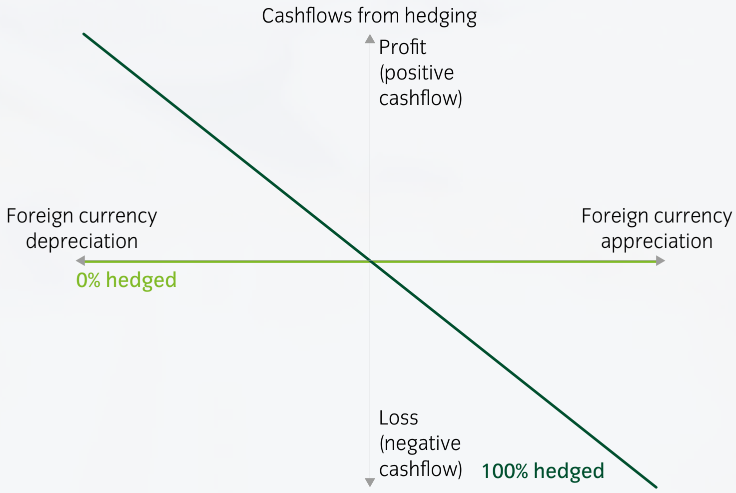
CURRENCY RISK MANAGEMENT: THE STARTING POINT

ADOPTING A STRATEGIC HEDGE RATIO

A currency risk management solution begins with establishing a strategic hedge ratio appropriate for the fund. A number of factors can influence this decision, and it is important to recognise the impact that different hedge ratios have on the potential return outcomes of the fund. If a strategic hedge ratio of 0% hedged is chosen, the fund will be exposed to all of the foreign currency gains and losses that occur, which can be significant over both short and long term horizons. At the other extreme, for a 100% hedged position, the currency return experienced is zero (neglecting interest rate differentials) regardless of movements in foreign currencies.

It should be noted that the 100% hedged position does not remove all risks associated with foreign currency. Currency hedges generate cashflows designed to offset the movements in the foreign currencies, which can be large and require short-term funding. As a consequence, adopting a 100% hedged position as foreign currencies appreciate could lead to costs accruing as a result of the derivative contracts used to implement the hedge . Cashflows from hedging can be illustrated with a payoff diagram, as in Figure 5 below.

Figure 5: Cashflows from hedging will typically be equal and opposite to the underlying foreign currency returns experienced by international investments, adjusted for the interest rate differential between the currencies in question



The appropriate strategic hedge ratio can typically lie anywhere in between 0% and 100%, and increasing the hedge ratio effectively exchanges currency risk with cashflow risk. The strategic hedge ratio should generally be chosen for the long run and so should provide the appropriate mix of these two risks. Skilful currency managers are able to assist with setting a strategic hedge ratio, taking into consideration the investor's individual tolerances to both these risks.

MANAGING CURRENCY RISK

To manage currency risk investors must decide on three things: the strategic hedge ratio (a passive approach), if and how to deviate from the strategic hedge ratio (a dynamic approach), and what to do for emerging market currencies, which are typically more volatile, thereby creating more opportunity and risk.

1 PASSIVE CURRENCY OVERLAY

A passive currency solution should aim to implement the strategic hedge ratio as efficiently as possible. Specialist currency managers can also assist investors with their strategic hedge ratio decision. Although this can be swayed by strong views on the future direction of the investor's base currency or by the hedging decisions of peer group funds, it should depend more on the investor's own sensitivities to cashflow and the characteristics of the underlying assets. Investors should therefore consider the following when deciding on the passive strategic hedge ratio:

Sensitivity to negative cashflows

Passively implementing a strategic hedge requires the construction of an overlay of currency forwards that require periodic cash settlement. These hedging instruments sometimes require large cash payments from the fund to settle hedging losses throughout the life of the investment.

The higher the strategic hedge ratio chosen, the greater the potential for negative cashflows. If a fund is sensitive to cashflows, there is an implied maximum hedge ratio the fund can tolerate. Scenario analysis is useful for revealing this implied maximum, as it shows the negative cashflows that may occur for the fund in various base currency weakening environments (see Figure 6).

Figure 6: Potential cash losses under various weakening base currency environments depending upon the strategic passive hedge ratio adopted[4]

		Hedge Ratio			
		100%	75%	50%	25%
Fall in base currency	10% fall	-10m	-7.5m	-5m	-2.5m
	20% Fall	-20m	-15m	-10m	-5m
	30% Fall	-30m	-22.5m	-15m	-7.5m
	40% Fall	-40m	-30m	-20m	-10m

Potential for diversification benefits

Passively hedging currency can reduce currency risk. At times, this risk can be beneficial from a diversification standpoint, as it can reduce the overall volatility of the non-domestic portfolio. This diversification benefit increases as the correlation between movements in non-domestic assets and foreign currencies is significantly negative. The overall impact will depend upon the investor's base currency and the correlation between that and the international assets held by the investor.

[4] Source: Bloomberg, Insight Investment, as at March 2020. For illustrative purposes only, based upon an example portfolio size of 100 million.

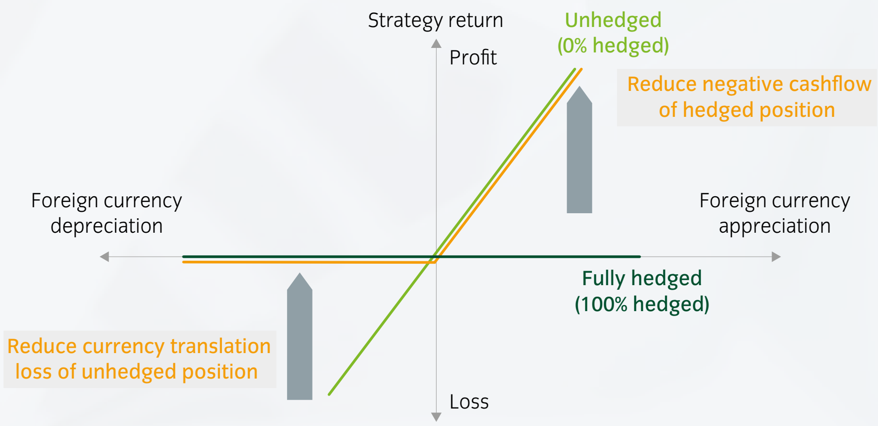
2 DYNAMIC CURRENCY OVERLAY

In order to better manage currency risk, investors may consider introducing the flexibility to deviate away from the strategic hedge ratio in certain environments.

When foreign currencies are depreciating versus the investor's base currency the best position to adopt is 100% hedged. Conversely, when foreign currencies are appreciating versus the investor's base currency the best position to adopt is 0% hedged. Managing currency exposure to reflect currency movements in this way would result in the 'perfect' currency hedge; the objective of a dynamic currency risk management solution is to attempt to create similar asymmetry in its investment outcome. The perfect currency hedge is shown in Figure 7 as the 'ideal outcome'.

The larger the appreciation or depreciation in a foreign currency, the greater the return difference between the ideal outcome and the investor's strategic passive currency hedge. This is why adopting a dynamic process for managing currency risk is so important for many investors – it reduces the sensitivity to a single path of currency returns.

Figure 7: The ideal outcome from currency hedging is one where the investor captures all of the foreign currency gains and is not exposed to any foreign currency losses



Specialist currency managers can provide dynamic CRM solutions that systematically adjust hedge ratios as the currency landscape evolves. This can prove to be beneficial, especially in periods where the investor's base currency rises or falls considerably over a short period of time. Specialist currency managers will make dynamic hedge ratio adjustments based on various factors and can accommodate a blend that best matches the desired outcome of the investor.

FACTORS DRIVING CURRENCIES

At Insight, we believe that investment returns can be generated via awareness of a number of persistent behavioural features that occur within currency markets. By utilising a systematic approach to capturing these behavioural features, we believe that it is possible to achieve reliable and repeatable returns over time. This approach can be utilised within either absolute return strategies, which aim to generate returns above the risk-free rate, or to enhance the returns of hedging strategies. For more information, see our whitepaper: 'A Factor-Based Approach To Currency Management'.

3 EMERGING MARKET CURRENCY OVERLAY

Investing in emerging market (EM) assets has become mainstream over the past decade. In some cases funds are strategically overweight EM equities relative to developed market equities, when compared to benchmarks like the MSCI World All Country Equity Index. In addition, there is increasing appetite for EM fixed income assets, which can be denominated in hard currency, e.g. US dollars (USD) or euro (EUR) or in the issuer's local currency. Anecdotal evidence suggests greater demand for investments in EM real assets, like property and infrastructure, which have EM currency risk attached.

When these assets are denominated in the local currency of the emerging market, the investor also gains an exposure to the performance of the local currency versus the investor's base currency. Historically, a significant part of the EM asset return has been derived from the local currency appreciation. However, there remains little consensus as to how to deal with this additional source of risk and potential return from the EM currency exposure, because emerging market currencies are generally more volatile than their developed market counterparts.

We would argue that an investor has three choices:

1. To maintain the EM currency exposure, if the investor has a long-run expected return from adopting this strategy
2. To hedge the EM currency exposure directly, if the investor believes the additional potential return from EM currency is not worth the additional risk
3. To hedge the EM currency indirectly, if practical considerations may lead the investor to use proxy hedges (typically developed market (DM) currencies) to reduce risk resulting from EM currency

Each of the strategies has various strengths and weaknesses and can often be considered in combination.

What considerations do currency managers need to be mindful of when opting for unhedged EM currency exposure?

When considering an unhedged exposure to EM currencies, we need to consider an investor's base currency and its correlation to EM currencies, and the risk this introduces. Since 1998, the annualised currency return difference for MSCI EM equities has exceeded 4% dependent upon the base currency of the investor.

Be mindful of the barriers of hedging EM currencies directly

If the investor believes the potential returns from EM currency do not warrant the additional risk, then the obvious conclusion is to hedge a portion or all of the exposure directly using currency forwards. This strategy has some complex practical considerations and may incur additional costs.

Firstly, most EM currency forwards are non-deliverable; this means that the notional amount is never exchanged and that upon settlement the difference between the agreed initial price and the settlement price multiplied by the notional amount is exchanged via a cash payment between the counterparties which carries greater operational risk than standard deliverable forward contracts. Unlike deliverable currency forwards, regulators typically require that non-deliverable currency forwards are margined daily. This is where the daily mark-to-market price movement of the contract is posted in cash or collateral between the two counterparties (similar to more complex derivative transactions). This process adds administrative costs to the hedging process.

Additional costs also include higher transaction costs from wider bid/offer spreads and lower liquidity, and finally interest rate differentials may result in a return drag on the hedge where hedging results in EM currencies being sold forward at a discount. This can be significant for high yielding emerging market currencies.

Hedging EM currencies indirectly

If the investor believes the potential returns from EM currency do not warrant the additional risk, but barriers such as the cost and complexity of directly hedging the currencies are insurmountable, then hedging via proxies is an alternative. Hedging by proxy currencies involves constructing a basket of deliverable currencies (both DM and EM) that is expected to track the performance of the actual currency exposures of the underlying assets. The tracking basket will have an expected annual tracking error between the performance of the actual versus the proxy. Hedging by proxy involves selling a portion or all of the tracking basket exposure with currency forwards against the base currency of the investor. A specialist currency manager will assist with constructing the proxy basket based on quantitative measures such as historical correlations and/or qualitative measures such as knowledge of fundamental drivers of currencies through time.

Assessing whether to hedge directly or indirectly

Determining whether to hedge directly or indirectly requires an assessment of the costs of direct hedging versus the potential tracking error of indirect hedging. It should take into account interest rate differentials, the size of the hedge versus available liquidity and administration cost.

//

A specialist currency manager will assist with constructing the proxy basket based on quantitative and/or qualitative measures

THREE WAYS TO INCREASE THE CUSTOMISATION OF A CURRENCY SOLUTION

The initial ways a CRM mandate is customised to the specific circumstances of a particular investor is through the choice of a passive or dynamic strategy and the choice of hedge ratio. Below, we highlight three further ways an investor might fine tune the behaviour of a currency risk management programme so as to target desired outcomes.

Maximum cash loss

A CRM solution will require the use of FX Forward contracts which brings with it the risk of negative cashflows. An attractive feature of a CRM solution is the ability to impose a risk control on cashflows such that the total amount that might be paid out over a specified period does not exceed a pre-defined amount.

Maximum currency loss

The imposition of a risk control on total absolute currency return, such that the total currency loss over a specified period should not exceed a specific amount, may also be attractive. This can be thought of as a maximum underperformance relative to the fully hedged position. This risk control would therefore generally have an impact as foreign currencies depreciate versus an investor's base currency, increasing the size of the currency hedges.

Maximum benchmark-relative loss

For dynamic CRM programmes, it is important to establish ahead of time the degree to which the performance outcome can lag that of the investor's strategic hedge ratio. This is strictly a downside risk control, with the potential for benchmark-relative gains not being curtailed.

THREE CONSIDERATIONS WHEN IMPLEMENTING A CRM PROGRAMME

The principles behind currency risk management are relatively straightforward, but in reality implementation can be complex. Before embarking on a CRM strategy there are several factors to consider.

The structure

A CRM solution is typically put in place as a segregated mandate, where every factor is designed and implemented by the asset manager specifically for the fund. These mandates can be designed to manage currency risk at the asset-class level, the member-option level, or holistically.

- Traditionally, CRM mandates have been implemented at the asset-class level as investors have tended to require different approaches for different asset classes. As an example, a passive mandate with a strategic hedge ratio of 100% hedged might be adopted for an international fixed income portfolio, whereas a dynamic mandate with a strategic hedge ratio of 50% hedged might be chosen for an international equity portfolio.
- Defined contribution pension funds might find it more suitable to implement CRM mandates at the member-options level. It could be argued that as the risk level of the option changes, a dynamic approach may be more or less appropriate. Similarly, where applicable, different strategic hedge ratios might be deemed appropriate for the various cohorts of lifecycle funds.
- The holistic approach to managing currency risk has become more popular as investors recognise the fact that currency risk can affect all asset classes in the same way. Under the holistic method, all currency risk is managed via a single overlay, which leads to investment and operational efficiencies.

Liquidity considerations

A currency hedging portfolio will typically utilise FX Forward contracts to hedge a fixed or variable portion of the underlying currency risk that an investor is exposed to. These contracts tend to be fairly short-term in nature, with tenors typically between one and three months, and as each contract matures a profit or loss will be realised. While the underlying asset will have appreciated in local currency terms, losses on forward contracts can be significant and will require near term liquidity to fund.

In the case where the underlying asset has a stream of known cashflows, it is possible to term and stagger the contracts so that this risk is somewhat mitigated. However, for infrastructure or private equity assets that do not have a known future cashflow stream, an investor must carefully consider the implications and costs of this liquidity risk. This impact is exaggerated when the value of the underlying investment is correlated to the investor's base currency, as losses will likely accrue at times when asset valuations also fall. This can lead to significant risks as if the investor is forced to sell the asset to cover near-term liquidity; valuations would also likely be suppressed.

One solution that is sometimes employed is to utilise longer-term forward contracts or cross-currency swaps that better match the investment horizon of the underlying asset. However, there are associated complexities with trading longer-term contracts as counterparty banks are likely to charge for holding the liquidity risk through time.

Specialist currency manager

CRM solutions are complex and can transform an investor's investment outcome. They require a manager with knowledge of the investor's underlying portfolios and their tolerances for currency returns and cashflows, a deep understanding of current market conditions and extensive experience in derivative markets.

WHY INSIGHT INVESTMENT FOR CRM

At Insight, we offer a comprehensive and diverse range of currency strategies. These range from passive and dynamic hedging to our flagship fully customisable Currency Risk Management (CRM) strategy. We are specialists in constructing tailored risk management solutions that accommodate clients' objectives and constraints with respect to their broader investment needs. We believe Insight has a market-leading currency solutions platform, one that encompasses a broad range of fully customisable products that aims to deliver comprehensive end-to-end currency solutions to our clients.

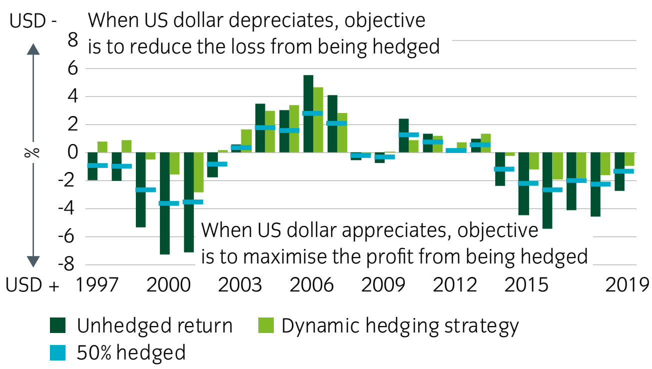
Implementation example

We aim to appropriately tailor structured solutions for our clients in a way that satisfies their objectives and meets their performance and risk targets. We are able to utilise our hedging approach in multiple ways, and to illustrate this point, we show an example of one such potential solution design.

Dynamic hedging

- Underlying portfolio of MSCI World ex US
- Risk budget set at 3% (calendar year) relative to 50% benchmark
- Objective of maximising asymmetric returns subject to risk constraints

Figure 8: Dynamic hedging, rolling five-year effective currency return[5]



	3-year	5-year	10-year	From inception
Annualised return	0.08%	0.40%	0.67%	0.90%
Annualised volatility	1.37%	1.30%	1.23%	1.55%
Information ratio	0.06	0.31	0.54	0.58

[5] Source: Insight. Data between 31 December 1995 and 31 December 2019. Gross of any fee.

IMPORTANT INFORMATION

RISK DISCLOSURES

Past performance is not indicative of future results. Investment in any strategy involves a risk of loss which may partly be due to exchange rate fluctuations.

The performance results shown, whether net or gross of investment management fees, reflect the reinvestment of dividends and/or income and other earnings. Any gross of fees performance does not include fees and charges and these can have a material detrimental effect on the performance of an investment.

Any target performance aims are not a guarantee, may not be achieved and a capital loss may occur. Strategies which have a higher performance aim generally take more risk to achieve this and so have a greater potential for the returns to be significantly different than expected.

Portfolio holdings are subject to change, for information only and are not investment recommendations.

ASSOCIATED INVESTMENT RISKS

Currency risk management

Currency hedging techniques aim to eliminate the effects of changes in the exchange rate between the currency of the underlying investments and the base currency (i.e. the reporting currency) of the portfolio. These techniques may not eliminate all the currency risk.

Derivatives may be used to generate returns as well as to reduce costs and/or the overall risk of the portfolio. Using derivatives can involve a higher level of risk. A small movement in the price of an underlying investment may result in a disproportionately large movement in the price of the derivative investment.

Investments in emerging markets can be less liquid and riskier than more developed markets and difficulties in accounting, dealing, settlement and custody may arise.

Where leverage is used through the use of swaps and other derivative instruments, this can increase the overall volatility. Any event that adversely affects the value of an investment would be magnified if leverage is employed by the portfolio and losses would be greater than if leverage were not employed.

CONTRIBUTORS

Francesca Fornasari,
Head of Currency Solutions,
Insight Investment

Matt Badowski,
Portfolio Manager, Currency Solutions,
Insight Investment

Alison Hutchison,
Investment Content Specialist,
Insight Investment

FIND OUT MORE

Institutional Business Development
businessdevelopment@insightinvestment.com
+44 20 7321 1552

European Business Development
europe@insightinvestment.com
+49 69 12014 2650
+44 20 7321 1928

Consultant Relationship Management
consultantrelations@insightinvestment.com
+44 20 7321 1023

@InsightInvestIM

company/insight-investment

www.insightinvestment.com

14945-04-20