COLUMBIA THREADNEEDLE INVESTMENTS

Loving the alien: Strategic currency considerations

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Executive summary

This paper explores the extent to which developed-market currency exposures should form part of an investor's strategic asset allocation. The key consideration is how a currency can diversify the rest of the portfolio, acting as a stabiliser in times of stress. Some currencies are pro-cyclical, doing well in times of economic expansion; thus, hedging exposures to these currencies could be beneficial. Other currencies, in contrast, earn their place in a portfolio due to their propensity to rise during times of economic turbulence. We find a modest exposure is sufficient: allocating around 20% of the portfolio's risk budget to these counter-cyclical currencies provides diversification while keeping in check the risk that currency movements might drive the overall portfolio return.

Introduction

Investors are well versed in diversification, spreading their risk exposures across a wide range of investments. These exposures, offering returns at different times, then work to produce an overall return stream that is smoother than the underlying constituents. A particular challenge with casting the investment net wide is that many assets exist in different domiciles to that of the investor. Exposure to the currencies of these domiciles therefore enter the portfolio often as an afterthought.

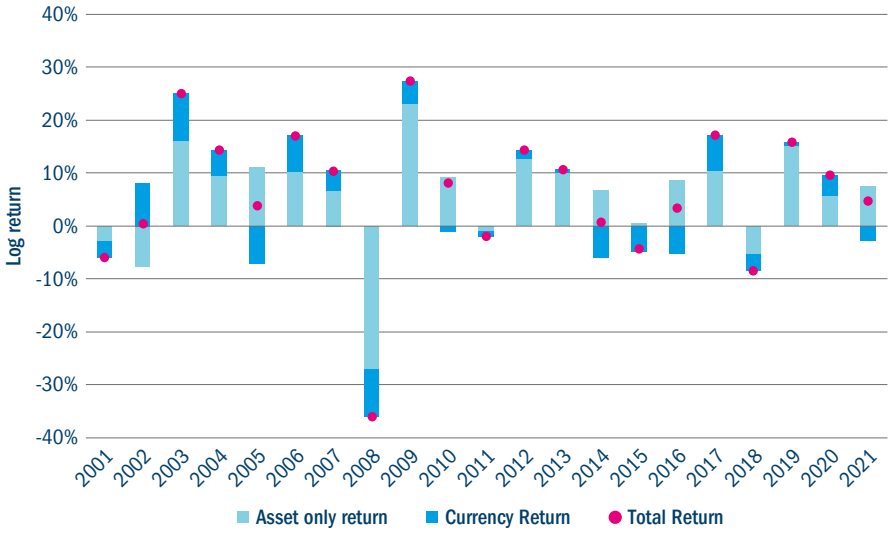
The question then arises as to whether these foreign exchange exposures should be hedged or retained. On the one hand, these exposures are unintended and not expected to contribute materially to return (so: hedge); on the other, they are an additional source of risk and may be able to reduce volatility at the portfolio level (so: retain).

How do we approach this as a Solutions team? We start with a review of the importance of the currency decision for an investor's returns, and contrast this with the observation that the hedging decision should have negligible long-run expected return. In the short run, however, the way a currency's returns covary with asset returns is the key characteristic that determines how much of it should be retained rather than hedged. We apply this insight first to single-currency assets and then to portfolios, uncovering a simple risk-budgeting rule that works well across a wide range of portfolios and currencies.

Currency's impact

Figure 1 shows the impact of currency moves on a multi-asset portfolio[1] with a 50% equity and 50% fixed income split, from the perspective of a US dollar investor. For context, this portfolio has underlying currency exposure roughly broken down as 20% USD, 25% GBP, 25% EUR and 30% in other currencies. It can be seen immediately that non-USD currency returns are material in the context of the total return – over the 21 years the average size of currency return (in absolute terms) is 40% of the average size of the total return (also in absolute terms). This size ratio can be higher for other asset mixes – for example, a GBP investor in EUR corporate bonds would see typical currency components as large as 80% of the total return – but 40% is not unusual for a multi-asset portfolio.

Figure 1: currency is material – contributions to return for a USD investor (50% equity/50% fixed income portfolio)

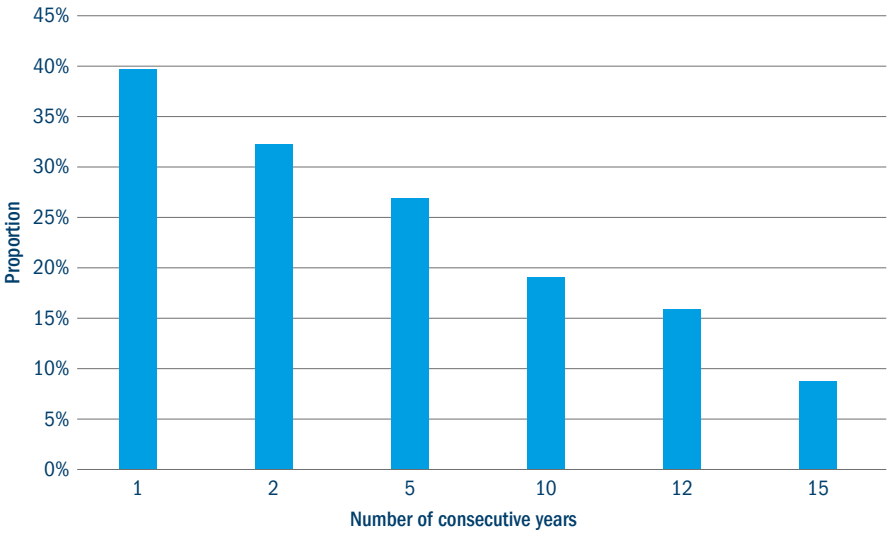


Source: BlackRock Aladdin, Columbia Threadneedle Investments calculations, July 2022.

Alternatively, we can express this in terms of risk budgets: the expected volatility of FX returns is about 38% as a proportion of the expected volatility of total returns, using a long-run measure of volatility. Such an ex-ante measure is well suited for use in the portfolio construction process. But the time period matters. If looking at periods longer than 12 months, the relative importance of currencies diminishes (Figure 2). An investor relaxed about short-term returns may therefore view currencies as relatively ignorable. Of course, this is rarely true, even for investors with a long time-horizon. For most portfolios, currencies deserve careful consideration.

[1] Portfolio and index proxies used are as follows: 10% global treasuries (FTSE World Government Bonds Index), 10% UK corporate bonds (ICE BofA Sterling Corporate Index), 10% US corporate bonds (ICE BofA US Corporate Index), 10% Euro corporate bonds (ICE BofA Euro Corporate Index), 5% global corporate bonds (Bloomberg Global Aggregate Corporate Index), 2% US high yield (ICE BofA US High Yield constrained index), 2% Euro high yield (ICE BofA Euro High Yield Index), 1% Global high yield (ICE BofA Global High Yield constrained index), 15% UK large cap equities (FTSE 100 index), 11% US large cap equities (S&P 500 index), 12% Europe ex UK equities (MSCI Europe ex UK index), 2% Japanese equities (MSCI Japan index), 5% APAC ex Japan equities (MSCI AC Asia Pacific ex Japan index) and 5% Emerging market equities (MSCI Emerging Market index).

Figure 2: currency impact becomes less material for longer time periods



Source: BlackRock Aladdin, Columbia Threadneedle Investments calculations, July 2022.

Currency hedging costs and long-run returns

The uncertainty of currency returns can be removed by hedging. Variable currency returns are replaced by costs which are set each time the currency hedge is put in place or rolled – for example, monthly or quarterly. This cost-of-hedging is normally close to the difference in interest rates in the two currencies (the investor's base currency and the overseas currency being hedged), with an additional cross-currency basis that reflects aggregate market participants' demand for cash in different currencies.

Forecasting currency moves is tough, especially in the short run – and has helped dig the grave of many active managers' careers. Here, in contrast, we are taking a longer-run strategic perspective. In the long run, at least for developed currencies, interest rate differentials and currency moves have regularly offset each other. Figure 3 shows an example of a 30-year period where local yield differentials were almost exactly offset by currency moves. Higher-yielding currencies depreciated while lower-yielding currencies appreciated. Such simultaneous offsetting is rare, and in the short term FX rates can travel far in the opposite direction – for example, currencies that increase their interest rates can attract capital and appreciate. In addition, regime shifts, such as Brexit for the GBP, and interest rates being held close to their lower bound for an extended period after the 2008 financial crisis, can disturb these dynamics. But the general picture of interest rates and currency moves acting as counterweights across long periods holds true, and it is reasonable to share the common view that currency is a zero-sum game, with an expected return close to zero.

Figure 3: higher interest rates have historically compensated for falling currencies

	Annualised cash returns, 1972-2001				
	USD	GBP	DEM/EUR	AUD	JPY
Nominal return in local terms	7.4%	9.7%	6.2%	10.2%	4.0%
Exchange rate change vs USD	–	-2.0%	1.4%	-2.8%	3.4%
Nominal return in USD terms	7.4%	7.7%	7.6%	7.4%	7.4%

Source: Federal Reserve Economic Data, Federal Reserve Bank of St. Louis, Columbia Threadneedle analysis.

For a foreign asset we have a choice between an unhedged position, in which one receives the local return plus the currency move, and a hedged position, which provides the local return plus the cost of hedging, which is primarily the interest rate differential. The preceding discussion tells us that while the short-run differences may be significant, the return we should expect to generate from the hedging decision should be close to zero. (The cross-currency basis referred to above is small but can be an important secondary consideration.) In contrast, the hedging decision has an impact on portfolio volatility that is far from nil, and this will therefore be the primary decision driver below.

This argument holds best for developed currencies. Emerging market (EM) currency hedging costs often exceed what would be expected from interest rate differentials, and the higher interest rates in EMs offer more attractive compensation for the currency risk that investors are bearing. Therefore, investors rarely seek to hedge EM currencies and our focus here is on the developed-market currencies that dominate many multi-asset investors' portfolios.

Cyclical behaviour and diversification

As stated above, in the short run the interest rate differentials and currency moves may not balance out, with higher interest rates able to attract capital and lead to currency appreciation. Currency moves often dwarf small interest rate differentials. Crucially, the time when these moves occur – and what else is occurring in the portfolio – determines whether their large impact is welcome or problematic.

Figure 4 illustrates the case of a US dollar investor over the past 20 years. Japanese yen has a -27% correlation with developed equity returns, ie it has tended to rise when equity markets do poorly. Sterling and the euro, in contrast, have positive correlations – 62% and 32% respectively – and have tended to appreciate in good economic times. By being pro-cyclical, sterling and euro are adding to portfolio volatility despite not adding much overall return; but the counter-cyclical yen has been able to reduce volatility, acting as a diversifier for a global equity investor.

Figure 4: behaviour of different currencies versus USD, compared with MSCI equity return, 2002-2021

Source. Bloomberg figures, Columbia Threadneedle analysis. Annual returns of three currencies versus MSCI World, all measured in US dollars.

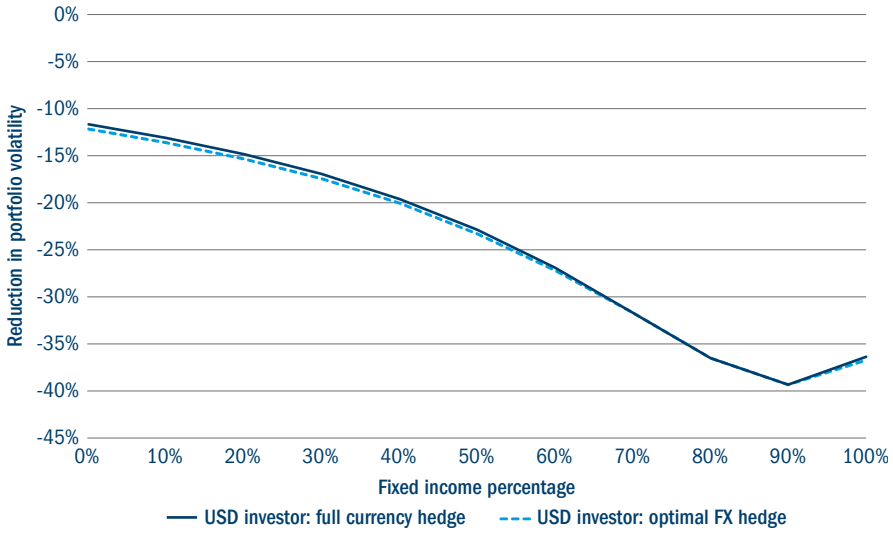
Thus, while the hedging decision may have minimal expected return impact, the effect on volatility through diversification can be significant. This explains why volatility impact should be the primary driver of a hedging decision for most investors. We implicitly assume that the correlations of recent years will continue, for example that the dollar will continue to have a "safe haven" status, but such features of market behaviour should of course be kept under active review.

Some investors may have additional factors to consider. For example, some regulatory regimes require additional capital to be held for unhedged FX risk, making higher hedge ratios attractive. By contrast, investors with less liquid portfolios may be overly impacted by the need to collateralise currency forward contracts, reducing appetite for hedging. Here, we focus on the risk-return considerations that are common to all. Application of this for a specific investor will adjust the conclusions.

A hedging policy for USD-based investors

For the 50% equity/50% fixed income portfolio in Figure 1, we saw that FX volatility was around 40% of the total portfolio volatility. It is therefore no surprise that fully hedging the currency risk reduces the USD investor's portfolio volatility – indeed, we see a 23% reduction. Figure 5 shows the volatility impact of hedging for a USD investor for a range of equity/bond mixes. This is not the hedging policy that produces the most risk reduction – this involves retaining a small amount of JPY exposure and is shown in the dotted line – but the additional benefit is small compared to that produced by the much simpler full-hedging policy.

Figure 5: the impact of optimal hedging vs full hedging for various equity/ bond mixes (USD investor)



Source: BlackRock Aladdin, Columbia Threadneedle Investments calculations.

It is tempting to think currencies are symmetric and what works in one should work in others, but as we saw in Figure 4 things are more complicated. Let us now investigate three further currencies: GBP, EUR and JPY. These are often the largest exposures in portfolios; nonetheless, they allow us to explore the extent to which hedging policies should vary by investor base currency. We will start with simpler, single asset class portfolios, each of which involves just one currency, before turning to multi-asset portfolios.

Single asset class analysis

Figure 6 shows how the impact of hedging on volatility depends on both the investor's currency (seen in the rows) and the overseas currency being hedged (different equity markets in the columns).

Figure 6: the attraction of currency hedging equities depends on both the asset and the investor

	Annualised cash returns, 1972-2001			
	UK equities (FTSE 100)	US equities (S&P 500)	European equities (MSCI EMU)	Japanese equities (MSCI Japan)
GBP investor	–	8%	-7%	25%
USD investor	-23%	–	-22%	20%
EUR investor	-10%	6%	–	24%
JPY investor	-34%	-20%	-32%	–

Source: BlackRock Aladdin, Columbia Threadneedle Investments calculations, July 2022. Table shows change in volatility as a percentage of the unhedged volatility.

This shows that a dollar or yen investor gets a significant risk reduction from hedging their EUR, GBP or USD equity exposure. On the other hand, hedging JPY exposure leads to an increase in risk for all foreign investors – the yen acts as a diversifier, strengthening in times of market stress. The US dollar is similar, so that fully hedging USD exposure leads to an increase in risk for GBP- and EUR-based investors.

Of course, not hedging and fully hedging are just two possibilities; Figure 7 shows the impact of choosing a partial hedge ratio – between 0% (ie unhedged) and 100% (ie fully hedged) – that leads to an optimal reduction in volatility.

Figure 7: the impact of optimal partial hedging on equities

	Volatility change (optimal hedge)				Optimal partial hedge ratio			
Equity market	UK	US	EUR	JP	UK	US	EUR	JP
GBP investor	–	-1%	-8%	-2%	–	25%	81%	18%
USD investor	-23%	–	-22%	0%	100%	–	100%	0%
EUR investor	-10%	-2%	–	-1%	89%	33%	–	12%
JPY investor	-34%	-20%	-32%	–	100%	100%	100%	–

Source: BlackRock Aladdin, Columbia Threadneedle Investments calculations, July 2022.
Note, left-hand panel shows change in volatility as a percentage of the unhedged volatility for the hedge ratio (shown in the right-hand panel) that produces the greatest reduction.

Again, GBP and EUR currency exposures are close to, or fully, hedged. The optimal hedge ratio for USD and JPY investors is 100% hedged; but for GBP and EUR investors in the other currency, the optimal hedge ratio is very high and there is essentially no difference between the volatility reduction available from fully hedging (Figure 6) and partial hedging (Figure 7).

For a holder of US or Japanese equities things have become more interesting. There is now some benefit – though very little, only a 1% or 2% reduction – for GBP and EUR investors to hedge up to a third of the currency exposure. US investors in Japanese equities are likely best off not hedging at all.

We can perform the same comparison for bond markets (Figure 8). This time the optimal hedge ratios are all at or close to 100% and there is almost no difference between a full hedge and an optimally risk-reducing hedge. For an investor just holding bonds, full hedging is therefore the sensible policy, which is of course very common in practice.

Figure 8: the impact of optimal partial hedging: bonds

	Volatility change (full hedge)				Volatility change (optimal hedge)			
Bond market	UK	US	EUR	JP	UK	US	EUR	JP
GBP investor	–	-50%	-60%	-86%	–	-50%	-60%	-86%
USD investor	-53%	–	-62%	-81%	-54%	–	-62%	-81%
EUR investor	-50%	-46%	–	-85%	-51%	-47%	–	-85%
JPY investor	-66%	-36%	-68%	–	-68%	-41%	-70%	–

Source: BlackRock Aladdin, Columbia Threadneedle Investments calculations, July 2022.

The preliminary takeaway from our single asset class, single currency analysis is, therefore, that while hedging currencies makes sense when only holding bonds, retaining some yen or US dollar exposure can help to mitigate portfolio volatility when holding equities.

A hedging policy for GBP-based investors

While looking at single asset classes is helpful analytically, allowing each currency to be investigated in a one-dimensional framework, real-life investors hold portfolios of assets. Decisions about currency exposure, like asset class exposure, should therefore be taken at a portfolio level, even if implementation may subsequently occur at the level of individual assets.

Figure 9 shows the example of a 60% fixed income/40% equity portfolio from the perspective of a GBP investor. EUR, JPY and USD are the most significant overseas currency exposures.

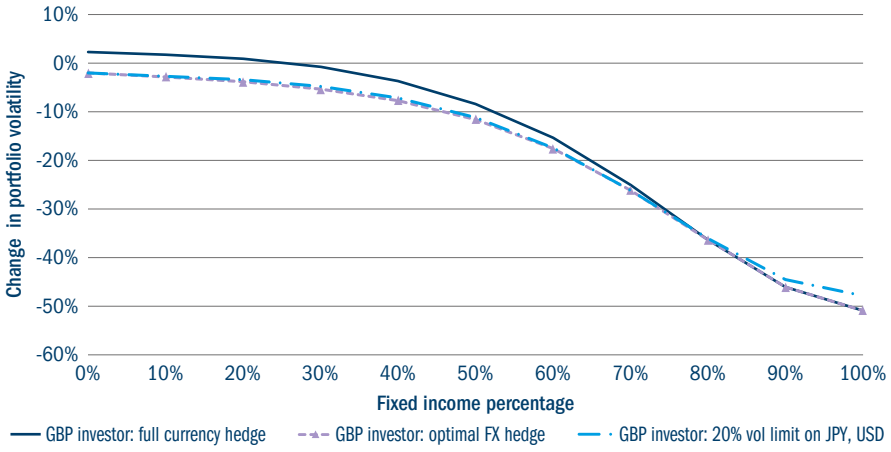
Figure 9: locating the hedging sweet spot for a GBP investor in a 60%/40% fixed income/equity portfolio

	Volatility impact of various hedging policies for a GBP investor				
	Unhedged	Hedge EUR, retain USD, JPY	Hedge EUR, partially hedge USD, JPY	Volatility-minimising policy	Fully hedge EUR, USD, JPY
Vol change vs. unhedged	–	-14%	-17%	-18%	-15%
FX vol ÷ Total vol	60%	51%	20%	23%	0%

Source: Prospective portfolio volatility calculated using BlackRock Aladdin data, July 2022.
FX volatility shown is that due to EUR, USD and JPY.

The more EUR exposure that is hedged, the better from a volatility-reduction perspective – hedging it all itself produces a 14% reduction in portfolio volatility. Hedging all JPY and USD would produce a further risk reduction, to around 15%, but by retaining around 40% of the JPY and USD exposures a volatility reduction of around 17.5% is achievable. Another way to measure this is the risk budget ratio approach used earlier – ie, looking at the FX volatility as a proportion of the total volatility. Reducing this ratio to about 20% produces the best reduction in portfolio volatility. This target ratio turns out to be robust across a wide range of portfolios (Figure 10), which applies this 20% rule across a range from a 100% equity to a 100% fixed income portfolio.

Figure 10: 20% FX volatility risk limit provides a near-optimal FX exposure across a wide portfolio range (GBP investor)

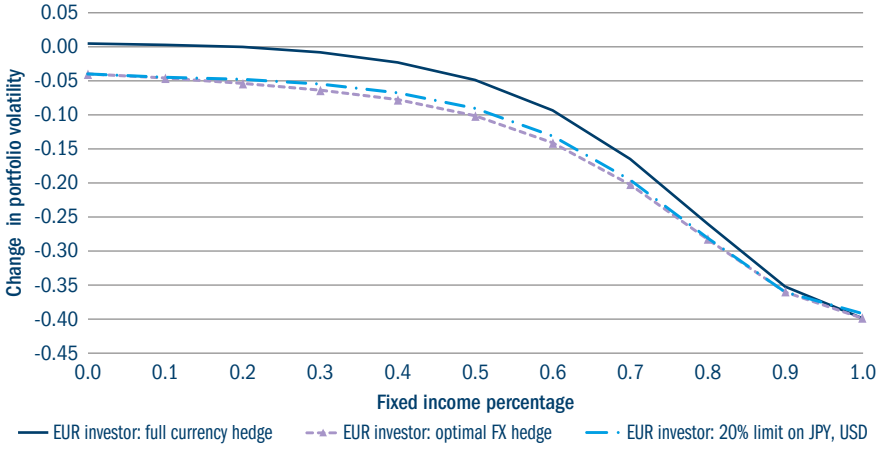


Source: BlackRock Aladdin, Columbia Threadneedle Investments calculations, July 2022.

A hedging policy for EUR-based and JPY-based investors

It turns out that the same rule of thumb – fully hedging GBP exposure and reducing USD and JPY exposure until their expected volatility makes up no more than 20% of the portfolio's volatility – also works well for EUR investors across a wide range of portfolio mixes (Figure 11).

Figure 11: 20% FX volatility risk limit provides a near-optimal FX exposure across a wide portfolio range (EUR investor)



Source: BlackRock Aladdin, Columbia Threadneedle Investments calculations, July 2022.

Similarly, it turns out that a JPY investor is like a USD investor (Figure 5): they should fully hedge their overseas FX exposure if they want to reduce their overall expected portfolio volatility.

Conclusions

We have seen that currency risk is not symmetric. Investors should beware of applying lessons learned in one currency and applying them to portfolios with a different base currency. By applying a consistent framework across different contexts, our analysis shows how currency risk should be treated at a portfolio level. Procyclical currencies are best hedged, while running a small (20%) risk budget for exposures to countercyclical currencies such as USD and JPY can help reduce overall portfolio volatility.

Our approach is based on typical currency behaviours and does not seek to predict current moves. So far in 2022, for example, the yen has fallen modestly, in contrast to other recent episodes of market volatility. The dollar's meteoric rise, however, has been such that investors following the approach outlined here would have been well rewarded overall.

We use this approach in the portfolios we build for our clients. Currency exposure always plays an important role, and by taking a portfolio-level perspective which is deliberate about the risks that are to be included, we can ensure the return experience is in line with our clients' objectives.

To find out more, visit **columbiathreadneedle.com**

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