MILLENNIUM GLOBAL INVESTMENT WHITE PAPER

Managing Currency Risk in a Portfolio of Illiquid Assets

URN: 102316

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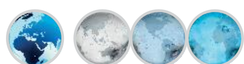

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Introduction

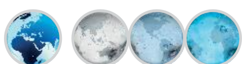
Institutional allocations to illiquid assets - private equity, real estate, infrastructure, etc. – are increasingly international. Investors often struggle to establish a policy for managing the resulting currency risks. The underlying assets are often hard to value and there is a life-cycle to the investments that leads to uncertainty about amounts and maturity dates. In addition, hedging programs can periodically generate large negative cash flows, which may be difficult to manage.

However, it is clear that unmanaged currencies are a source of unrewarded volatility for private assets as they are for other asset classes. Unfavorable currency movements can erase the illiquidity premium over the life-cycle of an investment program and handicap a desired allocation during the investment phase.

Some investors will consider their currency exposure risks all together, irrespective of the asset class from which they originate. The hedging policy will not to be tailored to the specific characteristics of the asset class, but will rather be adapted to the investor's risk capacity, risk profile and organization.

In practice, the way that portfolios are evaluated and investment teams are organized means that currency risks often remain associated with specific asset buckets. There will be one policy for global public equities, another for international bonds and a third for private equity, etc.

This note is aimed at investors who prefer to treat currency risks in buckets associated with specific asset classes. In this paper we propose a common-sense method for determining appropriate hedge ratios and look at how it would apply to different situations.



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Summary

We recommend that investors determine a target hedge ratio based on the magnitude of the potential currency risk relative to the expected return of the investment. Simply put, if the currency stress scenario is significant relative to the expected return of the underlying investments, investors should apply a high hedge ratio to their currency exposure.

For example, a US investor who has invested in a portfolio of European short-term loans with a 3 year life and an expected return of Libor+200 bps would benefit from hedging most or all of the Euro currency risk because any sharp move in the currency could easily negate all the benefit from the credit exposure. Conversely, a European investor with a fully invested portfolio of US buyout funds with a remaining life of 10 years would benefit from hedging much less, as the expected return of the investments should offset a plausible currency stress scenario, especially over such a long horizon.

An inconvenience of currency hedging is that it generates cash flows that may be particularly difficult to manage in a portfolio of illiquid investments. A loss from a passive hedging strategy should be fully offset by a corresponding unrealized gain from an underlying exposure, but investors may find it difficult to make available cash to meet the currency hedging loss. An active or dynamic hedging approach can help to address this problem by adjusting the hedge ratio and reducing the magnitude of the cash flows.

A portfolio that has access to a cash buffer or holds liquid assets will be able to address this problem more easily as these cash reserves can be used to fund potential cash flow requirements.

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Assumptions

Expected Returns will vary widely as a function of the specific asset class, strategy and market environment. The assumptions made here should be taken as broadly indicative of the return expectations.

Asset Type	Expected Return
Private equity:	High – 10%+ per annum
Private debt:	Medium – Libor + 200/300 basis points
Unmanaged currencies:	Zero

Note: ex-ante expected return of *unmanaged* currencies must be zero in aggregate, since currency movements are by definition measured in pairs and if one side of a pair is rising the other side is declining.

In contrast, actively or dynamically managed currency programs should have a positive expected return.

Currency Stress Scenarios represent a plausible extreme negative scenario for developed currency pairs over various horizons. The assumption is that currencies are susceptible to periodic step changes in value but have a tendency to mean revert over the longer term. Therefore as the time horizon gets longer, the potential stress scenario gets lower.

Period	Hypothetical Currency Stress Scenario
Up to 2 years	High – 15% per annum
Over 5 years	Medium – 5% per annum
Over 10 years	Low – 3% per annum

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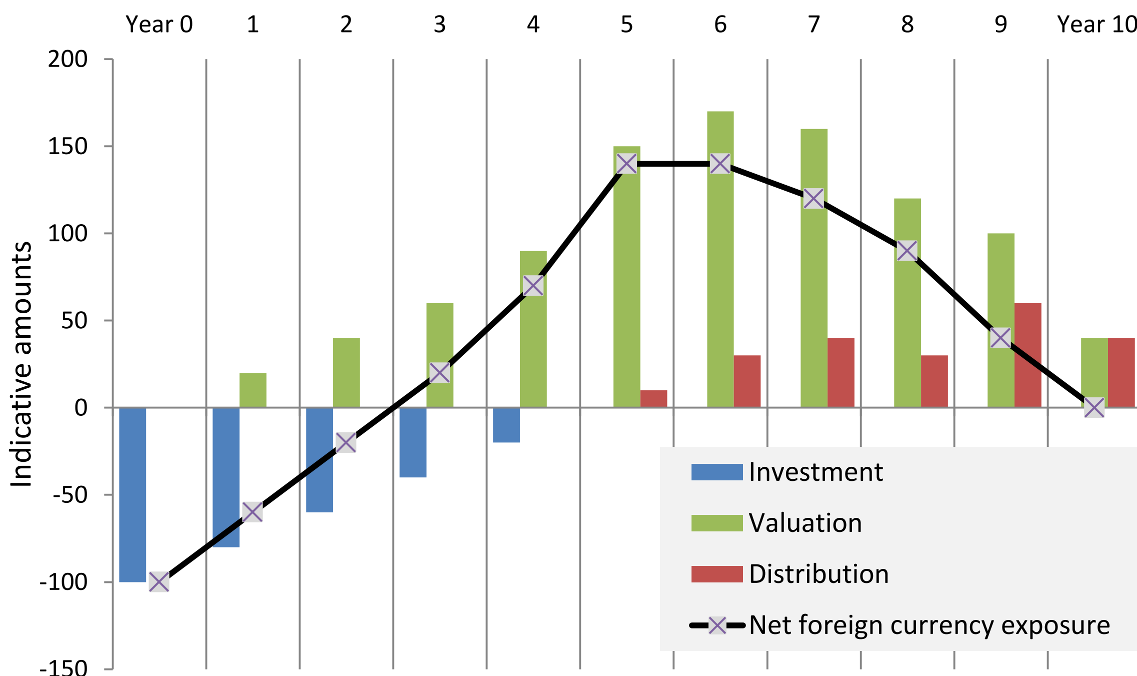
Life cycle of investment program

Depending on where we stand in the life cycle of an international investment program, the currency exposure may look very different. The length and shape of the life cycle will vary depending on the specific assets involved, market environment, etc. but there will always essentially be three phases:

a) Initiation: investor is short the foreign currency as a commitment to invest has been made but no deployment has taken place.

b) Investment period: investor becomes long the foreign currency but faces uncertainty regarding valuation and realization dates.

c) Realization period: investor is still long the foreign currency but the other variables become less uncertain.



This is a stylized representation of the life cycle of an investment in a private equity fund denominated in foreign currencies. A program covering multiple illiquid investments over a long period will have a smoothed and much more stable profile.

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Initiation: Investor is short foreign currency

At inception, the investor has made a decision to allocate to foreign assets but has not yet deployed and remains invested in the base currency.

Perhaps counter-intuitively, this creates a meaningful risk as a large adverse movement can significantly reduce the amount available to invest and may permanently impair the investment program. For example, if a US investor has decided to invest USD 50m to European private equity investments and the Euro then rises by 10%, the amount available to invest in Euro-denominated assets will be 10% less than planned.

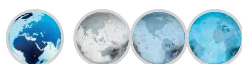
The underlying position by definition has no expected return as it is a commitment and not an investment. On the other hand, the currency stress scenario is extreme as a sharp move may occur with no time for investors to benefit from any mean-reversion effects.

	Expected return	Risk
Investments	Zero	Zero
Unmanaged currency	Zero	High

- The expected return of assets that are committed but uncalled is zero.
- The currency stress scenario is extreme as a sharp move may occur with no time for any mean-reversion effects.
- It is therefore appropriate to hedge against a rise in the investment currency during this period.

Investors may prefer not to give special treatment to uncalled commitments, and instead to treat them as they would any prospective investment in liquid asset classes.

In addition, this risk will not be present if the commitments are denominated in the home currency even though the planned investments are in foreign currencies (for example a global ex-US private equity fund whose units are priced in US dollars).



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Investment Period: Investor moves progressively from short to flat to long foreign currency

Depending on expected return of foreign assets and time to maturity, currency risks can be significant or relatively unimportant.

Example 1: Invested in buyouts – Time horizon 10 years

	Expected return	Risk
Investments	High	Low
Unmanaged currency	Zero	Low

- Because of the nature of the underlying investment strategy the expected return is relatively high (12% as an example).
- The currency stress scenario is moderate as the long time horizon allows for mean-reversion effects to smooth periods of currency weakness.
- A lower hedge ratio against a decline in the investment currency is therefore appropriate.

Example 2: Invested in commercial loans – Time horizon 4 years

	Expected return	Risk
Investments	Medium	Low
Unmanaged currency	Zero	Medium

- Because of the nature of the underlying investment strategy the expected return is moderate.
- The currency stress scenario is relatively high over this time horizon.
- A medium hedge ratio is therefore appropriate.

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Realization period: Very long foreign currency, decreasing progressively to zero

During the realization period at the end of an investment program, investors again find themselves with much more certainty about the value of the investments than the value of the currency at the time the investments are realized.

Example 1: Remaining life 2 years

	Expected return	Risk
Investments	Known with high confidence	Low uncertainty
Unmanaged Currency	Zero	High

- In this scenario the impact of the occurrence of a currency stress scenario is very significant.
- At the same time there should be high confidence in the value of the investments.
- A high currency hedge ratio is therefore appropriate.

Example 2: Remaining life 4 years

	Expected return	Risk
Investments	Known with low confidence	Medium
Unmanaged currency	Zero	Medium

- In this scenario the impact of the occurrence of a currency stress scenario is likely to be meaningful.
- At the same time there a fair amount of uncertainty about the timing and magnitude of the realizations.
- A medium currency hedge ratio is therefore appropriate.

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The horizon over which left-tail risks are assessed is important in determining how much of a given exposure should be hedged at any given time. The currency risks indicated above apply to the full remaining life of the investments (2 years or 4 years in the two examples). If the portfolio is being reviewed on a shorter time-scale, for example three months or one year, the currency risk scenarios would be the same irrespective of the expected life of the underlying investments.

The reality of a long-term investment program is likely to be more complex than this. At any given time, there may be some funded commitments, some unfunded commitments, some scheduled payouts, some expected but unscheduled payouts, and uncertainty about valuations.

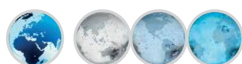
Two areas in particular will affect the hedging strategy: (a) uncertainty about valuations and (b) ability to handle cash flows resulting from currency hedging operations.

Uncertainty of exposures

An important consideration is whether a hedging policy should take into account planned future investments that are currently unfunded. A pension fund that is half way through the planned deployment of a foreign currency private equity program can be viewed as either long the foreign currency if only existing investments are considered, or flat if one includes future commitments.

The valuation of the underlying investments will never be perfect. Most illiquid investments do not have a live market price and are valued infrequently using a combination of statistics, comparables and judgment.

For currency hedging purposes, investors will need to assess whether to hedge unrealized profits as expressed through the NAV of the investments. It may make sense to adopt a differentiated approach depending on whether the value of the original allocation is being defended, or whether unrealized profits above and beyond the allocation are being hedged. It may be preferable to adopt a higher hedge ratio for the initial allocation than for unrealized profits for example. In any case, it is essential to react quickly to any impairments and quickly reduce the currency hedge ratio if necessary.



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Cash flow issues

Currency hedging operations generate periodic negative and positive cash flows, which may be significant when there are large movements. Many institutional investors find this problematic at times, but it may be particularly challenging in the context of illiquid portfolios where the underlying assets cannot be liquidated to meet cash flows from hedging.

Investors who wish to treat currency hedging strictly in association with the related investment bucket will inevitably face constraints if they also wish to adopt a passive hedging strategy, which generates high cash flows. As a result, they will tend to have a lower currency hedge ratio than would otherwise be preferred. Active or dynamic hedging strategies may be preferable for some investors, as they will help to address the cash flow issues by increasing hedge ratios during periods of foreign currency weakness and reducing hedge ratios during periods of strength.

If there is limited access to funds outside the illiquid investment portfolio to meet hedging cash flow requirements, it will be essential to analyze the investment plan very carefully to identify and protect against worst-case scenarios from a cash management perspective. The situation will be eased if the allocation to illiquids includes un-deployed cash and/or accumulated distributions, or if cash can be made available from the overall portfolio.

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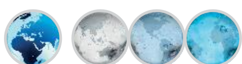
Conclusion

Many investors evaluate currency exposures related to illiquid asset classes such as private equity separately from other more-liquid asset classes. This means that a specific currency management policy is necessary.

In our view, investors should assess the impact of a currency stress scenario on the expected return of the investments and establish a target hedge ratio accordingly. If the currency risk is significant relative to the expected return of the underlying investments, investors should apply a high hedge ratio to their currency exposure.

Given the specific complexities of many illiquid assets, in particular uncertainty about valuations and timings as well as the limited availability of cash to settle currency hedging transactions, dynamic hedging strategies may be more suitable.

Such strategies are intended to improve upon a passive hedging strategy by varying the hedge ratio. In particular, if the amount of hedging can be successfully reduced during periods of strength in the investment currencies, the magnitude of any negative cash flows will be smaller and the currency hedging program will be easier to integrate into an illiquid investment portfolio.



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