Scottish Borders Council Pension Fund

Currency Hedge

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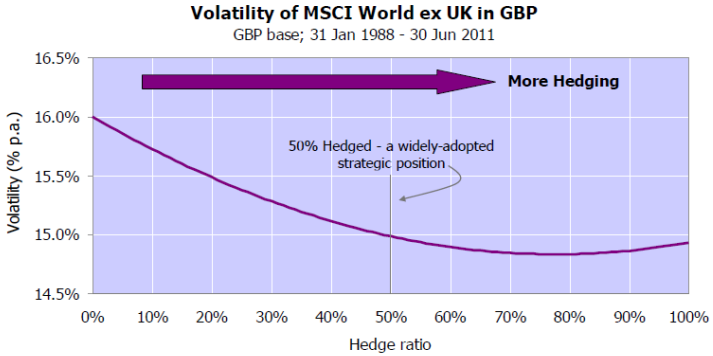
How much should we hedge?

Empirical evidence indicates that a hedge level of 50% to 70% is optimal

How much to hedge?

- Empirical studies suggest that a currency hedge of 50% to 70% is the optimal position in reducing the volatility of overseas equity asset returns over time.
- A hedge of 100% would not be expected to deliver the optimal level of risk reduction given that underlying businesses are often exposed to overseas currencies – determining the precise underlying currency exposure of an equity market or individual stock is not straightforward.
- While the optimal hedge ratio ultimately varies according to prevailing correlations, a 50% hedge is broadly aligned with the empirical analysis, whilst also offering both a lower cost and cashflow management burden than higher levels. It is the position of least regret often adopted by pension funds seeking to hedge overseas currency risk to reduce volatility of returns.
- The chart opposite illustrates the reduction in volatility in the MSCI World equity index by hedging back to Sterling - the majority of the volatility reduction can be achieved by moving to a 50% hedge.
- The empirical evidence indicates that hedging an element of overseas currency risk will achieve a not insignificant reduction in short term asset volatility.
- However, for a Sterling investor it is also important to look at the interaction of hedging and whether this offers risk reduction when it is needed most. It is also worth noting that any currency hedging programme has a cost and associated governance burden (which could increase significantly as new regulations come into force).



Source: Record asset management

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Risk management and correlations

The current hedging programme seeks to hedge the Fund's overseas exposure to the US dollar, Euro and Yen.

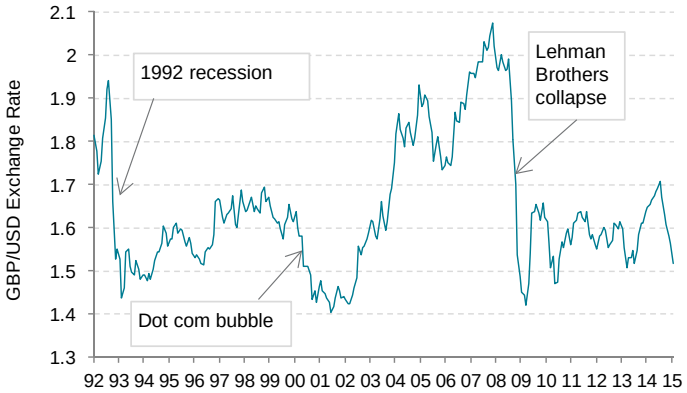
Historically Sterling has tended to behave as a 'risk on' currency relative to the US dollar and Japanese Yen in times of stress.

The currency hedge will have compounded losses when equity markets experienced a sharp sell off.

Hedging can increase tail risks

- The largest component of the overseas currency exposure is the US$/ £ hedge. Historically the US$ has been seen as a safe haven and has offered an offset to equity market risk (performing strongly in times of crises). Sterling exposure has (relative to the US Dollar and Yen) compounded equity gains/ losses in times of crisis.
- The chart opposite illustrates that Sterling has fallen sharply relative to the US dollar during a number of past market crises – the dollar exposure offers unhedged investors some protection at the overall portfolio level. We can observe a similar pattern with the Japanese Yen.
- It is of course overly simplistic to say that these relationships will hold true in the future, but the historical behaviour indicates that the risk reduction offered by hedging back to Sterling has tended to 'fail' when it is needed most.
- The Fund is currently exposed to not insignificant inflation risk (the liabilities are linked to inflation without a cap). In a scenario where UK inflation increases relative to elsewhere, we might expect Sterling to depreciate. The very long term inflation protection that might be expected from holding global equities would be lost through the hedge. In this scenario, again the hedge would somewhat compound other risks within the Fund.
- The Fund also carries some risk linked to interest rates remaining lower for longer (which will drive up the value placed on the liabilities). If the UK keeps rates lower for longer than others (e.g. US) then we would expect Sterling to fall in the short term realising a loss on the currency hedge. This would compound the risk of the liability value increasing.
- Whilst the leverage involved in currency hedging is generally viewed as relatively benign, it does increase overall market exposure and can act to amplify losses in certain scenarios when historical correlations fail – it is important to understand the underlying market dynamics and whether these have changed rather than simply relying on historical empirical evidence.

GBP/USD exchange rate – times of wider market stress



KPMG view

- Whilst short term volatility is reduced by currency hedging, a number of tail risks could be amplified by this approach.
- At an overall portfolio level, there is an argument to remove the currency hedge (living with additional day to day volatility in asset values), in the belief that the overseas currency exposure (US dollar and Yen) will act as an offset against losses in severely stressed market environments.

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What are the costs?

The risk reduction offered by hedging overseas currency exposure is not cost free.

A combination of direct and indirect costs are incurred and the process can often consume internal management time.

It is not cost free

- Whilst currency hedging is expected to reduce overall volatility, it is not cost free and there are a variety of direct and indirect costs involved in running a programme.
- As highlighted by the Fund's recent experience, the currency forward contracts create cashflows as profits or losses are realised. In the case of losses, there is a requirement to fund this by posting collateral to the counterparty bank from time to time.
- The disinvestment required has an associated cost. These can be significant if currency markets are volatile – this has certainly been the case for the Fund in recent quarters. Whilst some of the calls might be managed through ongoing cashflow, there will ultimately be some element of cost incurred.
- Going forward the EMIR regulation may require daily collateralisation and 5% to 10% of the notional exposure to be held as collateral – this will increase the administrative burden further if it proceeds.
- There is also the "cost" of entering into the forward contracts from the spread on the buying and selling of these contracts. Currency transactions are one of the most frequent and largest investment activities in the financial world. The currency markets are liquid, and costs have declined significantly over the last 20 years. Recent Vanguard research has estimated that the transaction cost to hedge an international bond portfolio is less than 0.20% a year for investors hedging back to a liquid, developed-market currency, such as Sterling.
- There is the also time and governance required by the Scottish Borders Council Officers to manage the administration and detailed reporting of the underlying programme. The cash calls are typically required at short notice which can create difficulties.
- State Street also charge a fee for managing the programme on the Council's behalf.

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Current conditions

Sterling has fallen dramatically against the US dollar, Euro and Yes and very sharply so following Brexit.

Sterling has recently touched 30 year lows against the dollar.

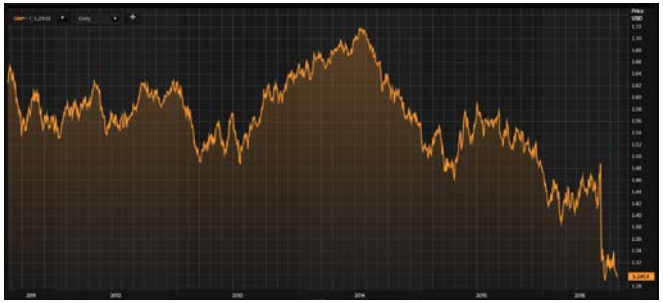
Recent performance

- Sterling has fallen sharply against all major developed market currencies following Brexit. This has led to sharp losses on the existing hedging programme.
- All else being equal, the recent fall in Sterling would represent an opportunity to crystallise some gains on overseas holdings by increasing the level of hedging.

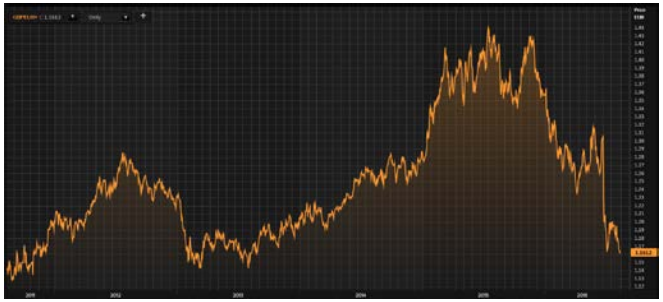
KPMG view

- From a strategic perspective, we would recommend unwinding the currency hedge recognising the small reduction in volatility is balanced by the costs involved, the potential compounding of loss in certain stressed market scenarios and an (increasing) governance burden.
- However, Sterling has recently fallen very sharply and there could be significant regret risk associated with unwinding the programme at the current time. Sterling has recently hit 30 year lows against the US dollar.
- Recognising this, the challenge of trying to call currency markets and the practical difficulties involved in making changes, we therefore propose that the currency hedge should be gradually unwound in a phased manner. We propose that this should be implemented over the next 12 months with the hedge reduced to nil across all currencies in a straight line manner over that period. This should be achievable through a written instruction to State Street. Delegated responsibility to change the hedge following any significant changes should be retained in line with the current approach.
- Alongside this, we believe that options to make the collateral management more cost efficient during that period should be reviewed in order to minimise transaction costs over the period.

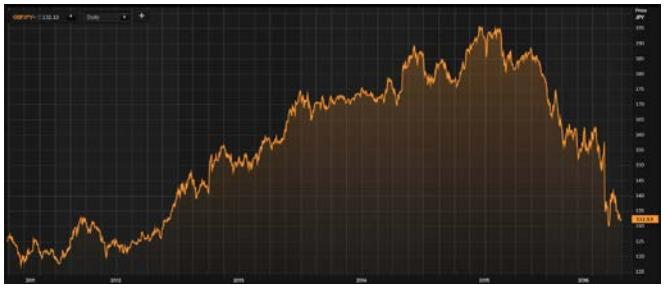
USD VS £



EU VS £



YEN VS £



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