METHODOLOGY OVERVIEW

FTSE Currency Hedging

US dollar investor perspective

Hedging the currency exposures of an index reduces the impact of foreign currency fluctuations

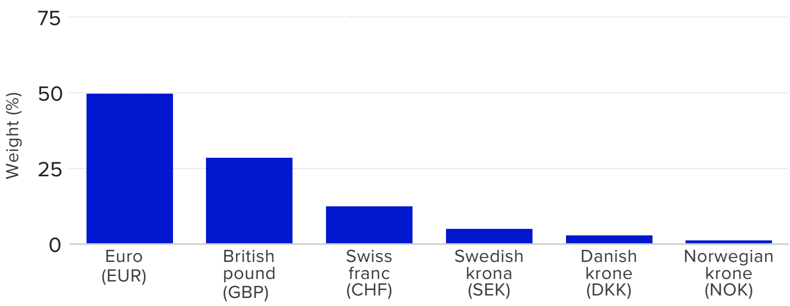
FTSE Russell's standard currency hedging methodology enables users to reduce the currency exposure of investing in securities denominated in foreign currencies.[1] Selecting a hedged or unhedged index depends on the risk appetite of the investor and the user's outlook of the US dollar relative to other currencies.

Global indices inherently include a short position against the domestic currency

International equities are playing an increasingly central role in the asset allocation decisions of investors worldwide. Index-based funds such as ETFs are increasingly providing investors with passive exposure to international equities. As investors diversify their assets outside of their home market, they start to increase their exposure to currency risk.

An index which includes securities denominated in foreign currencies has an embedded currency exposure that is long foreign currencies and 100% short the domestic currency.

FTSE Developed Europe Index currency exposure for a US dollar investor



Source FTSE Russell. Data as of September 29, 2017. Please see disclaimer page for important information. Past performance is no guarantee of future returns.

1 For details on FTSE Russell's currency hedging methodology, see our Guide to Calculations for the Global Equity Index Series: http://www.ftse.com/products/downloads/ftse_global_equity_index_series_guide_to_calc.pdf

Features

- A consistent, transparent and publicly available methodology
- The FTSE standard calculation is to hedge 100% of the currency exposure, however 50% hedged and custom alternatives are available
- Indices can be hedged against all major global currencies, such as the Australian dollar (AUD), Canadian dollar (CAD), Swiss franc (CHF), Euro (EUR), British pound (GBP), Japanese yen (JPY) and US dollar (USD)

Calculating currency exposure

The currency exposure is calculated using security prices on the last trading day of the month. Currency exposure is aggregated for each country, regardless of the local trading currency (e.g. some countries have securities that trade in local and/or USD).

For example: Singapore securities in USD and SGD are all converted into SGD and then hedged.

The subtotals for each country are then combined for a total currency exposure by the assigned currency. These currency baskets are then hedged on a monthly basis.

Currency data and source

WM Reuters one month (16:00 hrs London Time mid price) forward rates are used in the currency hedging calculation. All rates are the last working day of the relevant market month direct USD quotes. Spot rates that are used in the currency hedging calculation are WM/Reuters Closing Spot RatesTM, compiled by The WM Company.

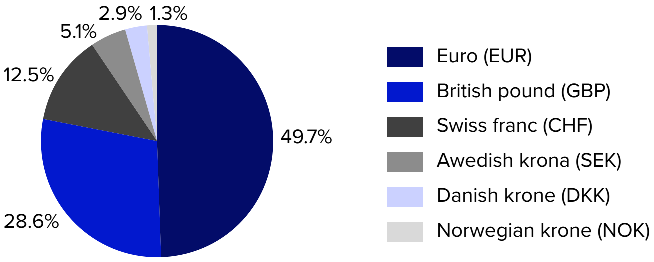
The currency hedging process

Currency weights are constructed from country building blocks and calculated based on month-end prices. Linear interpolation is used to value the currency hedging positions intra-month.

Example: Experience of a US dollar investor benchmarked to the FTSE Developed Europe Index 100% hedged to USD, as of October 13, 2017

Step 1

Calculate index currency weights as of the previous month-end

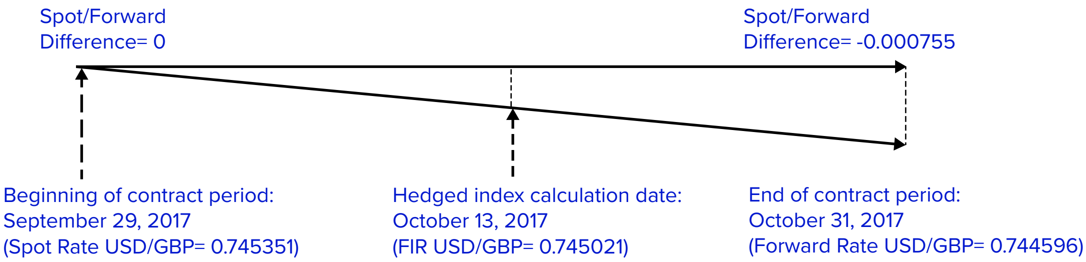


Source: FTSE Russell, data as of September 29, 2017.

Step 1 **Step 2**

Calculate forward interpolated rates (FIR)

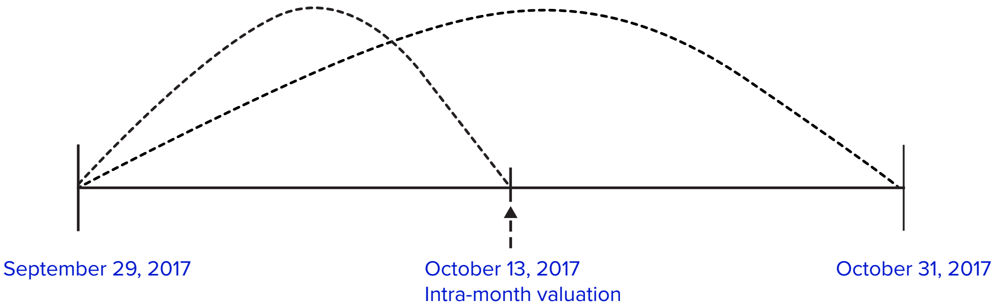
For each currency, calculate the spot/forward discount/premium at the beginning of the contract period, then discount this over the life of the contract. In this example there are 18 days left of the 32-day forward contract.



Step 1 **Step 2** **Step 3**

Calculate the impact of hedging

Calculate the impact of hedging by aggregating the gain/loss of the forward rates with the currency positions at the previous month-end.



Step 1 **Step 2** **Step 3** **Step 4**

Calculate the hedged index

The hedged index is derived from the unhedged index performance and the impact of hedging.

$$\text{Hedged index at previous month end} \times \left(\frac{\text{Unhedged index as of calculation date}}{\text{Unhedged index at previous month-end}} + \text{Impact of hedging as of calculation date} \right)$$

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Market participants look to us for our expertise in developing and managing global index solutions across asset classes. Asset owners, asset managers, ETF providers and investment banks choose FTSE Russell solutions to benchmark their investment performance and create investment funds, ETFs, structured products, and index-based derivatives. Our clients use our solutions for asset allocation, investment strategy analysis and risk management, and value us for our robust governance process and operational integrity.

For over 35 years we have been at the forefront of driving change for the investor, always innovating to shape the next generation of benchmarks and investment solutions that open up new opportunities for the global investment community.

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