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. 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 indexes 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

<table>
<thead>
<tr>
<th>Currency</th>
<th>Weight (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Euro (EUR)</td>
<td>50</td>
</tr>
<tr>
<td>British pound (GBP)</td>
<td>25</td>
</tr>
<tr>
<td>Swiss franc (CHF)</td>
<td>5</td>
</tr>
<tr>
<td>Swedish krona (SEK)</td>
<td>5</td>
</tr>
<tr>
<td>Danish krona (DKK)</td>
<td>5</td>
</tr>
<tr>
<td>Norwegian krona (NOK)</td>
<td>5</td>
</tr>
</tbody>
</table>

**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
- Indexes 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 Rates, compiled by The WM Company.

---

1 For details on FTSE Russell’s currency hedging methodology, see our Guide to Calculations for the Global Equity Index Series: 
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

![Currency weights diagram]


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.

<table>
<thead>
<tr>
<th>Spot/Forward Difference</th>
<th>Spot/Forward Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>-0.000755</td>
</tr>
</tbody>
</table>

Beginning of contract period:
September 29, 2017
(Spot Rate USD/GBP= 0.745351)

Hedged index calculation date:
October 13, 2017
(FIR USD/GBP= 0.745021)

End of contract period:
October 31, 2017
(Forward Rate USD/GBP= 0.744596)
**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.

**Calculate the hedged index**

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

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

Disclaimer


FTSE Russell® is a trading name of FTSE, Russell, FTSE Canada, FTSE FI, FTSE FI Europe, YB and BR. “FTSE”, “Russell”, “FTSE Russell”, “FTSE4Good™”, “ICB™”, “The Yield Book™”, “Beyond Ratings™” and all other trademarks and service marks used herein (whether registered or unregistered) are trademarks and/or service marks owned, or used under licence, by the applicable member of the LSE Group or their respective licensors and are owned, or used under licence, by FTSE, Russell, FTSE Canada, FTSE FI, FTSE FI Europe, YB or BR. FTSE International Limited is authorised and regulated by the Financial Conduct Authority as a benchmark administrator.

All information is provided for information purposes only. All information and data contained in this publication is obtained by the LSE Group, from sources believed by it to be accurate and reliable. Because of the possibility of human and mechanical error as well as other factors, however, such information and data is provided “as is” without warranty of any kind. No member of the LSE Group nor their respective directors, officers, employees, partners or licensors make any claim, prediction, warranty or representation whatsoever, express or implied, either as to the accuracy, timeliness, completeness, merchantability of any information or of results to be obtained from the use of FTSE Russell products, including but not limited to indexes, data and analytics, or the fitness for use of the FTSE Russell products for any particular purpose to which they might be put. Any representation of historical data accessible through FTSE Russell products is provided for information purposes only and is not a reliable indicator of future performance.

No responsibility or liability can be accepted by any member of the LSE Group nor their respective directors, officers, employees, partners or licensors for (a) any loss or damage in whole or in part caused by, resulting from, or relating to any error (negligent or otherwise) or other circumstance involved in procuring, compiling, accumulating, interpreting, analysing, editing, transmitting, transmitting, communicating or delivering any such information or data or from use of this document or links to this document or (b) any direct, indirect, special, consequential or incidental damages whatsoever, even if any member of the LSE Group is advised in advance of the possibility of such damages, resulting from the use of, or inability to use, such information.

No member of the LSE Group nor their respective directors, officers, employees, partners or licensors provide investment advice and nothing in this document should be taken as constituting financial or investment advice. No member of the LSE Group nor their respective directors, officers, employees, partners or licensors make any representation regarding the advisability of investing in any asset or whether such investment creates any legal or compliance risks for the investor. A decision to invest in any such asset should not be made in reliance on any information herein. Indexes cannot be invested in directly. Inclusion of an asset in an index is not a recommendation to buy, sell or hold that asset nor confirmation that any particular investor may lawfully buy, sell or hold the asset or an index containing the asset. The general information contained in this publication should not be acted upon without obtaining specific legal, tax, and investment advice from a licensed professional.


Past performance is no guarantee of future results. Charts and graphs are provided for illustrative purposes only. Index returns shown may not represent the results of the actual trading of investable assets. Certain returns shown may reflect back-tested performance. All performance presented prior to the index inception date is back-tested performance. Back-tested performance is not actual performance, but is hypothetical. The back-test calculations are based on the same methodology that was in effect when the index was officially launched. However, back-tested data may reflect the application of the index methodology with the benefit of hindsight, and the historic calculations of an index may change from month to month based on revisions to the underlying economic data used in the calculation of the index.

This document may contain forward-looking assessments. These are based upon a number of assumptions concerning future conditions that ultimately may prove to be inaccurate. Such forward-looking assessments are subject to risks and uncertainties and may be affected by various factors that may cause actual results to differ materially. No member of the LSE Group nor their licensors assume any duty to and do not undertake to update forward-looking assessments.

No part of this information may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior written permission of the applicable member of the LSE Group. Use and distribution of the LSE Group data requires a licence from FTSE, Russell, FTSE Canada, FTSE FI, FTSE FI Europe, YB, BR and/or their respective licensors.

About FTSE Russell

FTSE Russell is a leading global provider of index and benchmark solutions, spanning diverse asset classes and investment objectives. As a trusted investment partner we help investors make better-informed investment decisions, manage risk, and seize opportunities.

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.

To learn more, visit lseg.com/ftse-russell; email info@ftserussell.com; or call your regional Client Service team office:

EMEA +44 (0) 20 7866 1810
North America +1 877 503 6437
Asia-Pacific
Hong Kong +852 2164 3333
Tokyo +81 (3) 6441 1430
Sydney +61 (0)2 7228 5659

FR2855845/05-23