



Factsheet and Monthly Index Review Calculations Guide

v1.1



Contents

1.0	Introduction.....	3
2.0	Glossary of Terms	4
3.0	Assumptions	5
	Appendix A: Further Information	9



Section 1

Introduction

1.0 Introduction

1.1 This document provides the definitions and calculations used in the FTSE Factsheets and Monthly Index Review documents available on the FTSE Russell.

1.2 FTSE Russell

FTSE Russell is a trading name of FTSE International Limited, Frank Russell Company, and FTSE TMX Global Debt Capital Markets Limited and its subsidiaries (including MTSNext Limited). FTSE International Limited is the administrator of all FTSE Russell indexes.



Section 2

Glossary of Terms

2.0 Glossary of Terms

2.1.1 Capital letters are used for index levels and returns; j denotes an index.

2.1.2 Lower case letters stand for stock prices and returns.

T — Number of business days/weeks/months/years

A — Annualisation factor. $A = 252$ (daily)/ 52 (weekly)/ 12 (monthly)

P_t^j — Capital Return series of index j at time t .

I_t^j — Total Return series of index j at time t .



Section 3

Assumptions

3.0 Assumptions

- 3.1.1 The data frequency used for the 1, 3 and 12-month metrics is daily.
- 3.1.2 The data frequency used for the 36-month metrics is weekly (mid-week closing price time series).
- 3.1.3 The data frequency used for the 60-month metrics is monthly (last day of the calendar month time series).
- 3.1.4 The actual number of data used within each designated period (i.e. 1, 3, 12-months respectively) is based on the actual number of trading days in that period.
- 3.1.5 For the purpose of annualising performance metrics, the assumption will be that there are 252 trading days in a year.

Section 4

Definitions

Daily Index Return

$$TR_t^j = \frac{I_t^j}{I_{t-1}^j} - 1$$

Annualized Total Return (e.g. for 3 years)

$$CAR_T^j = \left(\frac{I_T^j}{I_{t-3Y}^j} \right)^{1/3} - 1$$

Annualized Total Return is a measure of gain or loss on the index.

Volatility

$$\sigma_T^j = \sqrt{\frac{\sum_{t=1}^T (TR_t^j - \overline{TR})^2}{T-1}} * \sqrt{A}$$

Volatility is a measure of index return dispersion. Annualized volatility is computed as the standard deviation of monthly index Total Returns.

Return/Risk Ratio

$$SR_T^j = \frac{CAR_T^j}{\sigma_T^j}$$

The Return/Risk Ratio is computed as the ratio of annualized total return to annualised volatility.

Drawdown

$$DD_T = \min_{t \in (0, T)} \left(\frac{TR_t^j}{TR_{t-1}^j} - 1 \right)$$

Maximum drawdown is an ex-ante proxy for downside risk that computes the largest percentage drop in Total Returns from the start to the end of a period.

Correlation

$$\rho_T = \frac{\text{Cov}(TR_t^j, TR_t^k)}{\sigma_T^j \sigma_T^k}$$

Correlation between the index and its underlying from the start to the end of a period.

Daily Index Excess Return

$$XR_t = TR_t^j - TR_t^k$$

Daily Index Excess Return is the Total Return of an index relative to its underlying.

Compound Annual Excess Return

$$CXR_T = CAR_T^j - CAR_T^k$$

Compound Annual Excess Return is the Annualized Total Return of an index relative to its underlying.

Tracking Error	$TE_T = \sqrt{\frac{\sum_{t=1}^T (XR_t - \overline{XR}_t)^2}{T-1}} * \sqrt{A}$ <p>Tracking Error measures the dispersion of Daily Index Excess Returns between an index and its underlying, and is calculated as the annualized standard deviation of Daily Index Excess Returns.</p>
Information Ratio	$IR_T = \frac{CXR_T}{TE_T}$ <p>Information Ratio is calculated as the ratio of Compound Annual Excess Return to Tracking Error.</p>
Two Way Turnover	Two way turnover (t) is the sum of the absolute difference in closing (t-1) and opening weights (t). Total Two Way Turnover is summed from the start to the end of a period and annualised.
Dividend Yield (Aggregates)	Total free float weighted annual dividends paid by index constituents divided by the total free float adjusted market capitalization of the index.
Price/Earnings (Aggregates)	Total free float adjusted market capitalization of the index divided by total free float weighted earnings of its constituents.
Return on Equity (ROE) (Aggregates)	The sum of weighted ROE values of index constituents.
Price/Book Value (Aggregates)	Total free float adjusted market capitalization of the index divided by total free float weighted book value of its constituents.
Price/Cash Earnings (Aggregates)	Total free float adjusted market capitalization of the index divided by total free float weighted cash earnings of its constituents.
Price/Sales (Aggregates)	Total free float adjusted market capitalization of the index divided by total free float weighted sales of its constituents.
Dividend Yield	Stock yield on the report day.
Price/Earnings	Price to Earnings is price divided by earnings per share. Earnings are based on net income from continuing operations, before amortization of goodwill and extraordinary items and after tax, minority interests, preferred dividend, at fiscal year-end. Earnings are attributed across the different share classes, where common equity is comprised of more than one share type.
Return on Equity (ROE)	Return on Equity ratio is net income (as defined in Price/Earnings above) divided by average common equity. Common equity is averaged over the accounting year. It may be adjusted to include goodwill written-off and is attributed across different share classes, where common equity is comprised of more than one share type. ROE is expressed as a percentage and is not calculated when average common equity is negative.
Price/Book Value	Price to Book (P/B) is price divided by book value per share. Book value is based on common equity, excluding minority interest and preferred stock at the most recent fiscal year-end. Goodwill written off may also be added back. The divisor is company market capitalisation (issued shares x price) at the review date. Common equity is attributed across different share classes, where common stock is comprised of more than one share type.
Price/Cash Earnings	Price to Cash Earnings is Price divided by Cash Earnings per share. Cash Earnings is earnings plus depreciation, amortisation, deferred taxes, other non-cash items, extraordinary items and changes in working capital for the most recent year. If Cash Flow is not reported it is estimated based on net income plus depreciation at year end. Cash

earnings are attributed across the different shares classes, where common equity is comprised of more than one share type.

Price/Sales

Price to Sales is price divided by sales per share. It is based on Sales from continuing operations for the fiscal year. It is generally as reported but occasional adjustments may be made. Sales values are also computed for banks, insurance and other financial companies based on appropriate definitions. Sales are attributed across different share classes, where common equity is comprised of more than one share type.



Appendix A: Further Information

A Glossary of Terms used in FTSE Russell's methodology documents can be found using the following link:

[Glossary.pdf](#)

For further details please visit the FTSE Russell website or contact FTSE Russell client services at info@ftserussell.com.

Website: www.ftserussell.com

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