

FTSE Global Equity Index Series – Guide to Calculation Method for the Median Liquidity Test

v2.8



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Section 1

Purpose of the guide

1. Purpose of the guide

1.1 The aims of the guide are:

1. to describe how the liquidity test is conducted; and
2. to make it easier for users to replicate the liquidity test to support their investment and trading activities.

Section 2

Liquidity screening process

2. Liquidity screening

Volume data

Subject to the exception listed below, for purposes of the liquidity test, security volume data will only be taken from the eligible regulated exchange as defined by FTSE Russell, which corresponds with the price source used in FTSE Russell indexes (primary exchange).

For illustration purposes: company A is listed on and priced from NYSE; however, shares are also traded on NASDAQ. Only security volume data sourced from NYSE will be used for the purposes of the liquidity test.

Exception: companies with a Mexican nationality assignment will have their liquidity calculated using aggregated volume data sourced from both Bolsa Mexicana de Valores and Bolsa Institucional de Valores (BIVA).

For illustration purposes: company B is listed on and priced from Bolsa Mexicana de Valores; however, shares are also traded on BIVA. Volume data sourced from both exchanges will be used for the purposes of the liquidity test. Pricing will still be used from the primary exchange.

Please refer to appendix A in the FTSE Global Equity Index Series (FTSE GEIS) ground rules for a list of eligible exchanges.

2.1 Liquidity screening process

- A. Each security will be tested for liquidity semi-annually in March and September by calculation of its monthly median of daily trading volume.
 - **March review:** liquidity will be tested from the first business day of January to the last business day of December of the previous year.
 - **September review:** liquidity will be tested from the first business day of July of the previous year to the last business day of June of the current year.
- B. When calculating the median of daily trades per month, a minimum of five trading days in each month must exist, otherwise the month will be ignored and not used in the count. The liquidity test will be applied on a pro-rata basis where the testing period is less than 12 months. Please refer to appendix A.
- C. For each month, the daily trading volume for each security is calculated as a percentage of the shares in issue for that day, adjusted by the free float at the review cut-off date. These daily values are then ranked in descending order and the median is taken by selecting the value for the middle ranking day if there is an odd number of days and the mean of the middle two if there is an even number of days (see section 4).
- D. Daily totals with zero trades are included in the ranking; therefore, a security that fails to trade for more than half of the days in a month will have a zero median trading volume for that month.
- E. Only exchange trading days will be included in the calculation, i.e. exchange holidays will be excluded.

- F. Security volume data will be taken on trading days from Sunday to Friday (where applicable) when markets are open.
- G. Any period of suspension will not be included in the test.
- H. For newly eligible securities where the testing period is less than 12 months, the liquidity test will be applied on a pro-rata basis.

The percentage figures detailed in section 3 may be adjusted by up to 0.01% at a market review so that, in FTSE Russell's opinion, the index better reflects the liquid investable market of the region. This discretion may only be exercised across the whole of a region and may not be applied to individual securities or countries.

Please note: although discretion is normally applied to lower the liquidity thresholds of both constituents and non-constituents of a region, FTSE Russell reserves the right (for example, where one or more markets is changing country classification status) to determine if discretion should only apply to non-constituents. Where any discretion is exercised, FTSE Russell would provide advance notification prior to implementation.

Note: any adjusted percentage parameters will be maintained until the next semi-annual review.

- I. If a company fails the liquidity test based on its underlying shares and the company has an equivalent depositary receipt (DR), then the DR may be considered for inclusion in the index if it passes the liquidity test and is traded on an exchange within a similar regional time zone as the underlying shares.

Where the DR (a non-China N share) has been included, it will remain in the index until such time it either fails the liquidity test or the underlying shares pass the liquidity test for two future consecutive reviews.

Where a China N share has been included, it will remain in the index until such a time it either fails the liquidity test or the underlying shares (P Chip or Red Chip) pass the liquidity test for one future review.

Where a China local listing (P Chip or Red Chip) has been included in an index, and the local listing index constituent fails the liquidity requirement, but the company also trades via an N Share, the N share listing will be considered for inclusion in the index if it passes the liquidity test in its own right.

For the avoidance of doubt, where a company only has DRs listed, the DR (non-China N share) will not be eligible for index inclusion.

- J. Existing constituents of the FTSE Global All Cap Index Series and the FTSE Global Micro Cap Index Series, and non-constituent securities that have not traded on 60 or more trading days during the past year (up to and including the review cut-off date), will not be eligible for index inclusion. Regular/ad-hoc market holidays and unscheduled market closures will not count towards the total; otherwise, the reason(s) for a security's non-trading will not be considered. If a security does not have a full year of trading, the 60-day period will be pro-rated according to the number of available trading days passed since its listing.

Please note:

- all standard trading days will be incorporated within the calculation (Fridays and Sundays as appropriate);
- ad-hoc non-standard trading days will not be incorporated within the calculation (e.g. ad-hoc Saturday trading will not be considered);
- where a pro-rata calculation is necessary, the number of available trading days on the underlying market during the previous year up to and including the review cut-off date will be used as the basis of the calculation. For example, market ABC has 253 available trading days for the annual period to the review cut-off date; therefore, the security would not be eligible if for 23.7% (60/253) or more of its available trading days since listing it did not trade; and

- an existing constituent of the FTSE Global All Cap Index Series or the FTSE Global Micro Cap Index Series, which has been removed from the index as a result of this screen, will only be reconsidered for inclusion after a period of 12 months from its deletion. For the purposes of index eligibility, it will be treated as a new issue.

Section 3

Liquidity thresholds

3. Liquidity thresholds

Please note that when conducting the liquidity test, no rounding is applied. For example, a constituent company with a monthly median turnover of 0.0399% will not be deemed to have passed the minimum 0.04% threshold for the month tested.

3.1 New issues and newly eligible

- All non-constituents will be screened as per appendix B.
- New issues and newly eligible securities that do not have a 12-month trading record must have a minimum three-month trading record when reviewed and will be tested from the date of eligibility. Trading records prior to this date will not be considered.
- A non-constituent of the FTSE Global All Cap Index Series must pass at least 10 out of 12 months with a monthly median turnover of at least 0.050%* of their shares in issue (after the application of any investability weightings**) based on their median daily trading volume each month*** on a pro-rata basis since their listing.
- A non-constituent of the FTSE Global Micro Cap Index Series must pass at least 10 out of 12 months with a monthly median turnover of at least 0.0250%* of their shares in issue (after the application of any investability weightings**) based on their median daily trading volume each month*** on a pro-rata basis since their listing.
- Rule 3.1 will not apply to new issues added under the fast entry rule.

Notes

*Subject to adjustment as per 2.1(H).

**When testing liquidity, the investability weight as at the last date in the testing period will be used for the calculation for the whole of that period.

Please note: where the investability weight is equal to the foreign ownership limit (FOL), then the FOL at the end of the testing period will be used for the calculation for the whole of that period.

***When calculating the median of daily trades per month, a minimum of five trading days in each month must exist, otherwise the month will be ignored and not used in the count. For clarification purposes, daily totals with zero trades are included. Therefore, the month will be tested and included in the count, even where a stock has 10 trading days of which six are zero trades.

A new issue that fails the liquidity test will not be eligible for inclusion to the FTSE GEIS Index Series until the next semi-annual review.

3.2 Existing constituents of the FTSE Global All Cap Index Series

- Existing constituents of the FTSE Global All Cap Index Series are required to pass at least eight out of 12 months with a monthly median turnover of at least 0.040%* of their shares in issue (after the

application of any investability weightings**). Those identified as failing this test (step one) will proceed to the next step.

- Step two: those existing constituents of the FTSE Global All Cap Index Series that fail step one will be subject to a further test whereby the last six months of the testing period will be assessed on a pro-rata basis. If the constituent passes at least four out of the last six months (equating to eight out of 12 months on a pro-rata basis), it will be considered to have passed the liquidity test.

Notes

*Subject to adjustment as per 2.1(H).

**When testing liquidity, the investability weight as at the last date in the testing period will be used for the calculation for the whole of that period. However, where FTSE Russell has become aware that an existing index constituent has had a change in foreign ownership limit (FOL) during the testing period and the investability weight is equal to the FOL, then the FOL at the end of the month will be used for the calculation of liquidity for that month.

Illustrative tables below:

EXAMPLE A - Passes Test 1 (constituent PASS) - no further test required											
March 2020 Liquidity Testing Period						Test 2 - n/a					
Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Pass	Pass	Pass	Pass	Pass	Pass	Fail	Fail	Fail	Fail	Pass	Pass
EXAMPLE B - Fails Test 1 (move to Test 2). Passes Test 2 (constituent considered a PASS)											
March 2020 Liquidity Testing Period						Test 2 - pass					
Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Pass	Pass	Pass	Fail	Fail	Fail	Pass	Fail	Pass	Fail	Pass	Pass
EXAMPLE C - Fails Test 1 & Test 2 (constituent deleted & considered ineligible for a period of 12 months)											
March 2020 Liquidity Testing Period						Test 2 - fail					
Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
Pass	Fail	Fail	Pass	Pass	Pass	Fail	Fail	Fail	Pass	Pass	Pass

- Existing constituents of the FTSE Global All Cap Index Series that fail the liquidity test will be ineligible for FTSE Global All Cap index inclusion for a period of 12 months, after which they will be treated as a new issue.

For illustration purposes: a constituent deleted at the September 2019 semi-annual review will not be considered for index eligibility until March 2021.

- Existing constituents of the FTSE All Cap Index Series who are scheduled to be demoted to the FTSE Global Micro Cap index but fail the All Cap liquidity threshold will be added to the FTSE Global Micro Cap Index Series (concurrent with its deletion from the All Cap index), contingent on satisfying the FTSE Global Micro Cap liquidity test (tested as a non-constituent) and all other eligibility criteria.

3.3 Existing constituents of the FTSE Global Micro Cap Index Series

- Existing constituents of the FTSE Global Micro Cap Index Series need to pass at least eight out of 12 months with a monthly median turnover of at least 0.020%* of their shares in issue (after the application of any free float weightings**).

Notes

*Subject to adjustment as per 2.1(H).

**When testing liquidity, the investability weight as at the last date in the testing period will be used for the calculation for the whole of that period. However, where FTSE Russell has become aware that an existing

index constituent has had a change in foreign ownership limit (FOL) during the testing period and the investability weight is equal to the FOL, then the FOL at the end of the month will be used for the calculation.

3.4 Nationality Assignment

Sole listing

– For new issues or newly eligible securities that have a sole listing, no liquidity test is required for the purposes of nationality assignment.

Multiple eligible listings

- a. For new issues or newly eligible securities with multiple eligible exchange listings (as classified in the FTSE Global Equity Index Series), a liquidity test is required to determine country of greatest liquidity (in accordance with [the Determining Nationality rules](#)).
- b. A security must demonstrate that it would pass the FTSE Global Equity Index Series liquidity test (on a pro-rata basis) using eligible exchange trading volume relating to the country of nationality being reviewed.
- c. To determine country of greatest liquidity, the securities will be tested from the date of eligibility up to the business day proceeding the nationality screen cut-off date (see FTSE Global Equity Index series review schedule FAQ document for cut-off dates).
- d. For the avoidance of doubt, country of greatest liquidity is determined by comparing each of the monthly median liquidity test % results (as detailed in Section 4.2), country A vs country B, for a 12-month testing period. For illustration purposes only, if the testing period is January to December, the test looks at how many of those months country A had a greater monthly median liquidity test % result when compared against that of country B. Nationality will be assigned to the country which exhibits the greatest liquidity test % result in the most number of months.

Please note: If as a result of the above, there is an even split (e.g. each country has 6 months where it exhibits greatest monthly median liquidity % when tested over a 12-month testing period), the following treatment shall apply:

- an existing constituent will retain its current nationality.
- a new issue or newly eligible company will have its nationality assignment based on the country which exhibits the greatest liquidity using the latest three months of volume data.
- e. For the avoidance of doubt, where a security has multiple eligible exchange listings and one or more listings has less than 12 months of available trading record, the liquidity test will use the maximum volume data available for each individual listing.

For illustration purposes: company A sole listed on eligible market X in 2019 and then subsequently adopted an additional eligible market Y listing in November 2021. For the March 2022 liquidity test, the full available 12-month volume data for market X will be used while for market Y, volume data since November 2021 will be used in the calculation.

f. In accordance with rule 1.7 of the Determining Nationality guide, a nationality assignment will be reviewed in the event that the country with greatest liquidity of an existing constituent is different to that assigned for two consecutive years. The eligible exchanges of listing will be reviewed semi-annually in March and September using 12-month volume data up to the business day proceeding the nationality screen cut-off date.

For illustration purposes: Company X (assigned country A) passes the liquidity test in both country A and country B. When assessed in March 2023, country B now exhibits the greater liquidity (this is counted as year one). The company will remain assigned to country A subject to continuing to pass the liquidity tests in March 2023 and September 2023. However, if in March 2024 (year two) country B still exhibits the greater liquidity, the company will be reviewed for a nationality change.

g. In accordance with rule 1.9 of the Determining Nationality guide, a nationality assignment will be reviewed should a company make a change to its circumstances (such as a change in incorporation or adoption of an additional eligible listing), The evolution of liquidity may be reviewed for a minimum period of three months up to a maximum period of up to 12 months. The country of greatest liquidity will be assessed

as per (d) and (e) above. At the conclusion of this review, the nationality of the company will either be retained or changed. For the avoidance of doubt, once nationality has been confirmed, liquidity would then need to be greatest in another location for two consecutive years to trigger a switch in nationality (or until current location fails the liquidity test) in accordance with rule 1.7 of the Determining Nationality guide.

Please refer to the Determining Nationality guide for further details on nationality assignments.

Section 4

Liquidity test calculation method

4. Liquidity test calculation method

4.1 For each month the daily trading volumes, as a percentage against that security's free float adjusted shares, are ranked and the median value selected.

Example calculation of daily trading volume %:

Company A has 40m shares in issue, a free float of 50% and a daily trading volume of 20,000 shares.

$$\begin{aligned} \text{Daily volume (\%)} &= \text{daily trading volume/free float adjusted shares} \\ &= 20,000/20,000,000 = 0.1\% \end{aligned}$$

Please note:

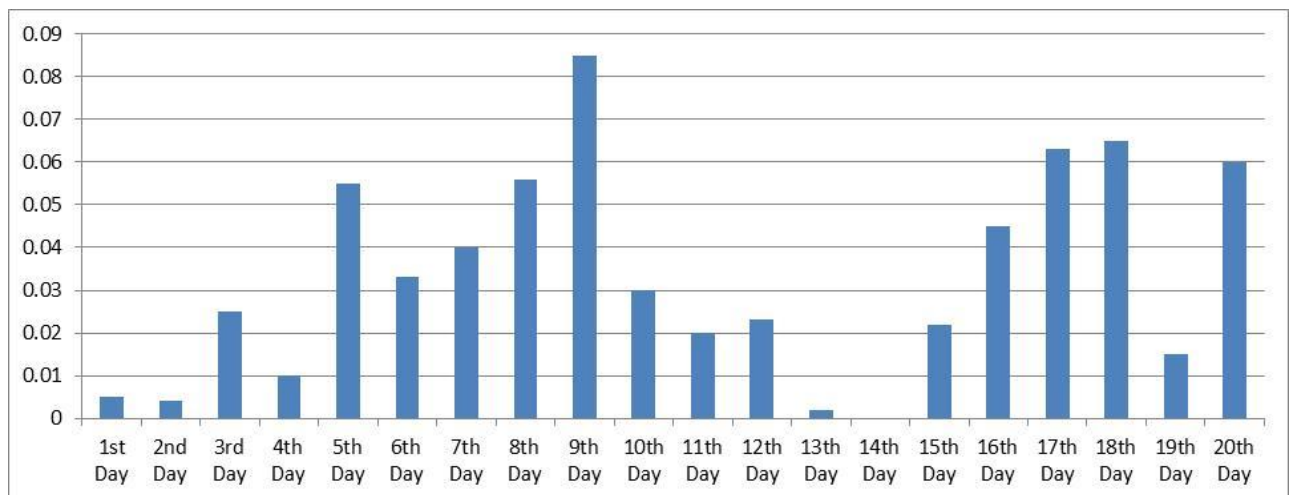
- when testing liquidity, the free float weight as at the last date in the testing period will be used for the calculation for the whole of that period; and
- shares in issue used for the calculation is that as of the date of volume traded.

4.2 Monthly median liquidity test

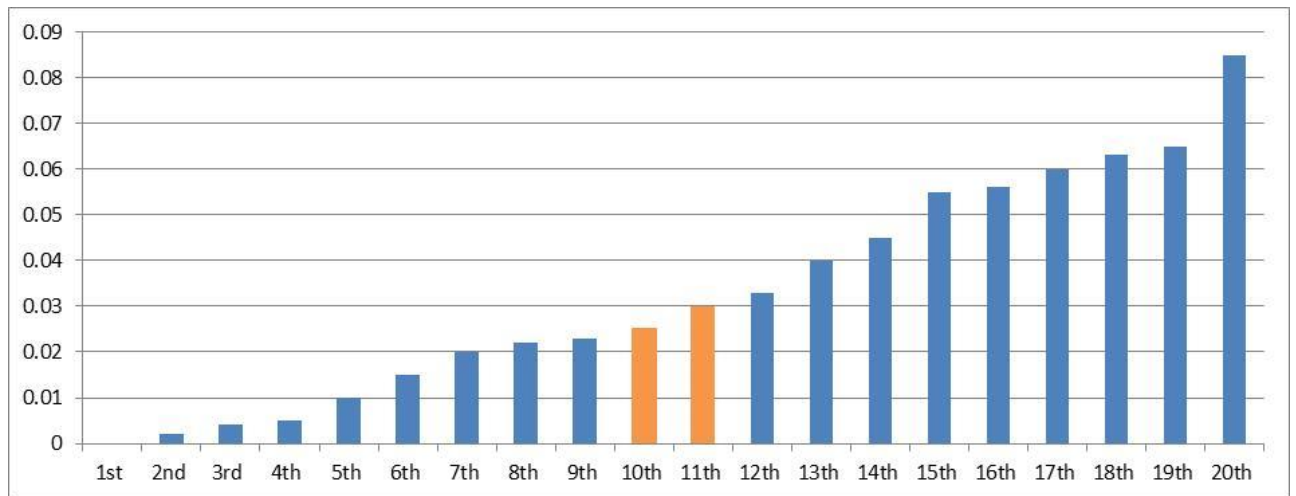
The tables below illustrate the ranking of the daily trading volumes % and the calculation of the median monthly value.

The example assumes that there are an even number of days in the month.

Step one: daily traded volume (%)



Step two: daily traded volume (%) – ranked



Monthly median (%) = (10th + 11th day)/2
= (0.025% + 0.03%)/2 = 0.0275%

Appendix A

Pro-rata pass requirements

New issues

Months tested	Minimum monthly pass rate required
One month	One month ¹
Two months	Two months ¹
Three months	Three months
Four months	Four months
Five months	Five months
Six months	Five months
Seven months	Six months
Eight months	Seven months
Nine months	Eight months
10 months	Nine months
11 months	10 months
12 months	10 months

Current constituents

Months tested	Minimum monthly pass rate required
One month	One month
Two months	Two months
Three months	Two months
Four months	Three months
Five months	Four months
Six months	Four months
Seven months	Five months
Eight months	Six months
Nine months	Six months
10 months	Seven months
11 months	Eight months
12 months	Eight months

¹ Minimum three-month trading record required.

Appendix B

FTSE GEIS liquidity test cases

Test case	Liquidity test
IPO	
Fast entry	Not applicable
Non-fast entry	At the next quarterly review after a minimum three-month trading period from the first day of unconditional dealing to index review cut-off date.
Nationality review	
Existing constituent	Not applicable – nationality change becomes effective at the quarterly review following the date of FTSE notice confirming nationality change.
Non-constituent	At the next semi-annual review following a minimum three-month trading period from the date of FTSE notice confirming nationality change to index review cut-off date. For clarification purposes, this would include a nationality change from a frontier market (non-FTSE GEIS eligible) to an emerging market (FTSE GEIS eligible). For the purposes of the liquidity test, historical trading volume data prior to the FTSE notice confirming nationality will be disregarded.
Former constituent	
Resumption of trading following suspension	At the next semi-annual review following a minimum three-month trading period from the 12-month anniversary deletion date* to the index review cut-off date.
Removed from exchange alert board	At the next semi-annual review following a minimum three-month trading period from the 12-month anniversary deletion date* to the index review cut-off date.
Continuous trading and a float greater than 5% following completed takeover	At the next semi-annual review following a minimum three-month trading period from the 12-month anniversary deletion date* to the index review cut-off date.

*For illustration purposes, if a constituent was deleted on 21 September 2015, it would only be reconsidered for inclusion at the semi-annual index review, which falls after 21 September 2016 (i.e. March 2017), having fulfilled the minimum three-month trading period as at the review cut-off date (31 December 2016).

Appendix C

Further information

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

[Glossary.pdf](#)

Further information on the FTSE Global Equity Index Series is available from FTSE Russell.

For contact details, please visit the FTSE Russell website or e-mail FTSE Russell client services at info@ftserussell.com.

Website: www.lseg.com/en/ftse-russell/

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