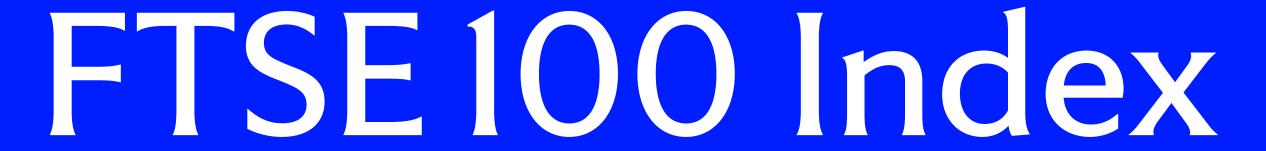
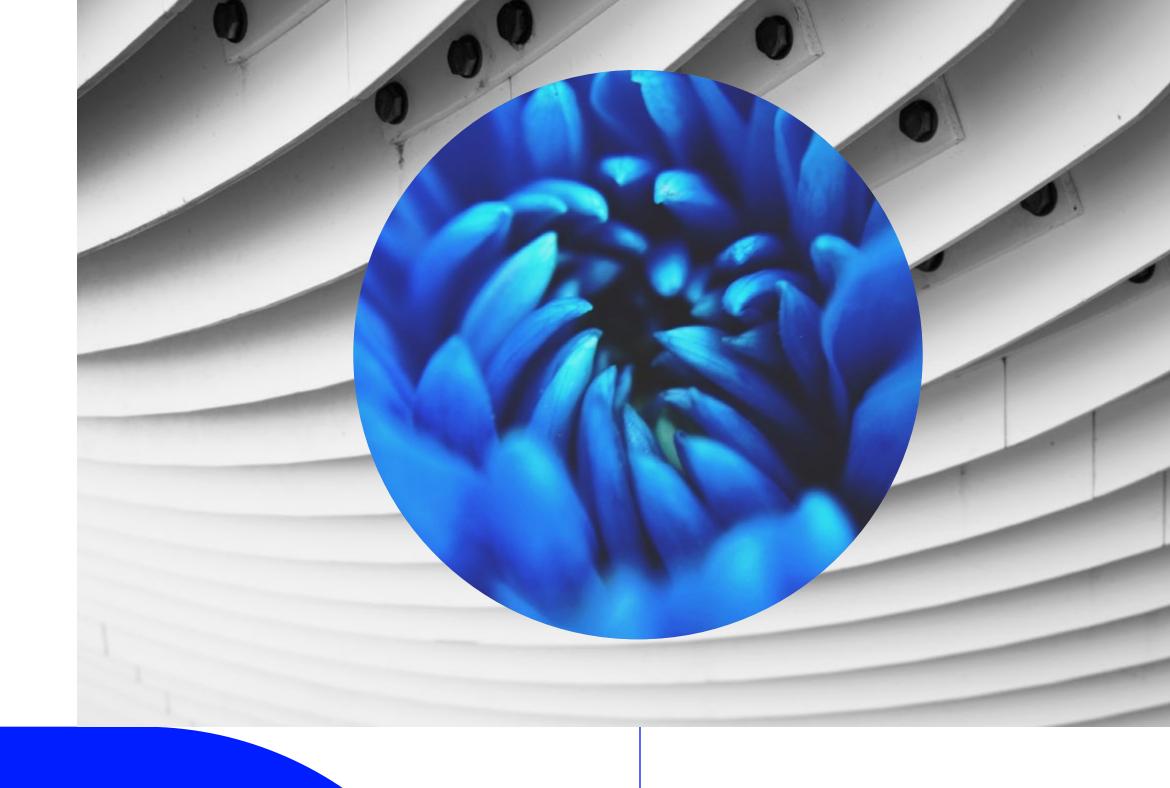


Index Insights
FTSE UK Index Series



The UK's best-known equity index turns forty





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The FTSE 100 Index met with immediate success in 1984 and has never looked back.

Equity traders soon focused on the novelty of being able to track stock market movements minute by minute. The FTSE 100's daily rise or fall immediately became a feature of evening television news bulletins. A series of large-scale privatisations led to immediate index inclusion. Analysts covered the quarterly index reviews, and company CEOs celebrated promotions to the exclusive club of index members.

But some of the nuances of the FTSE 100 remained – and remain – less well-understood.

- What is a UK company for the purposes of the index?
- Who decides which stocks make it into the index and how does the constituent list get reviewed?
- Is the FTSE 100 part of a broader index family?
- Which original FTSE 100 constituents remain in the index and how have they performed?
- What have been the largest one-day rises and falls of the index and why and when did they occur?

As the FTSE 100 Index celebrates its fortieth anniversary, this paper answers these and other questions, picking out some of the most notable moments in the index's history. We show how the FTSE 100 rose to prominence in the 1980s equity bull market and how its evolution has mirrored the growth of the financial index business.

We highlight the major design features of the index and place the FTSE 100 within a modular, comprehensive set of benchmarks tracking one of the world's oldest, largest and most liquid stock markets. And we show how the index reflects the openness of the UK's financial system.



Do you remember 1984?

It's perhaps best known via George Orwell's dystopian novel. But in the financial markets, that year signalled things were taking a turn for the better at last.

After the oil price shocks and bear markets of the previous decade, share prices had stabilised and then started to increase. As inflation rates peaked, so did global interest rates, launching what turned out to be a multi-decade bull market in bonds. Governments in the US and UK pushed supply-side economics, disinflation and a new policy (in the UK) of privatisations via stock market listings.



Year of the yuppie

Following the social and political strife of the 1970s, some focused on the prospects for future prosperity. 1984 was dubbed the 'year of the yuppie' by Newsweek as young, urban professionals started a trend of more conspicuous consumption.

Pop music hits

1984 has been rated as pop music's greatest year, with number-one singles from:

- Prince ("When Doves Cry," "Let's Go Crazy"),
- Madonna ("Like a Virgin"),
- Cyndi Lauper ("Time After Time"),
- Wham ("Wake Me Up Before You Go-Go", "Freedom") and
- Frankie Goes to Hollywood ("Relax", "Two Tribes", "The Power of Love").

Rise of the financial index

And 1984 was a big year for the business of index provision, which was suddenly no longer the preserve of backroom staff at newspapers.

From lagged index prices to real-time calculation

For many years, the UK stock market's ups and downs had been measured by the FT 30 index (also known as the FT Ordinary Index), launched in 1935.

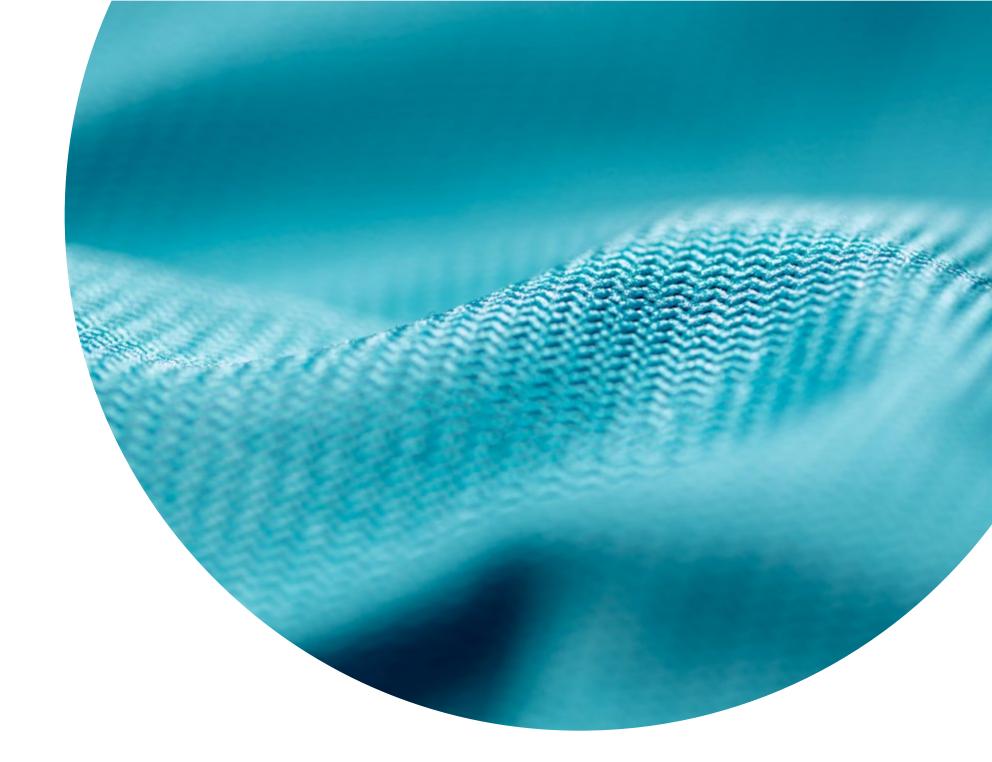
The early years

Consisting of 30 industrial stocks (chosen by three editors at the Financial Times to represent the UK's economy), the FT 30 used an antiquated, geometric averaging calculation method¹, which tended to understate index returns over time. It weighted stocks equally, rather than by their market capitalisation.

The FT 30 index's calculation methodology also reflected the technological constraints facing early index compilers. Although the FT 30 was more up-to-date than daily UK stock indices such as the FTSE All-Share Index, it was updated only hourly, with a 15-minute lag.

TRADERS AND INVESTORS WANT MORE

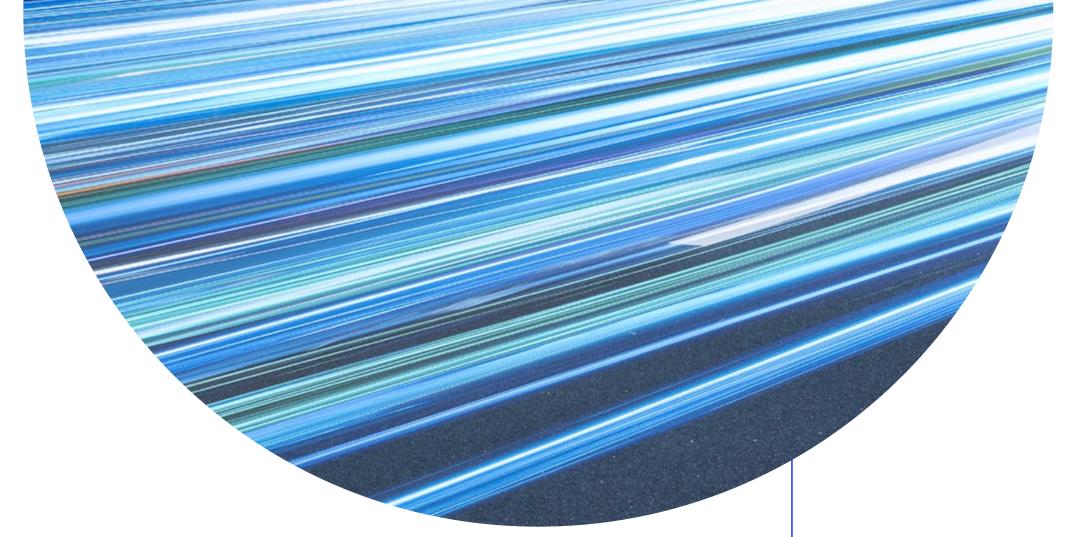
By the 1980s, such intermittent and delayed index prices were unacceptable for most equity market practitioners. Share trading and portfolio analysis were becoming computerised and there was a boom in equity derivatives like futures and options. Traders and investors wanted an index calculated in real time, or with as close to continuous price updates as possible.



And so, after a year of planning, a new 100-stock UK equity index was launched on 3 January 1984 with a starting value of 1000 points. The index was initially known as the Stock Exchange 100 (SE-100) and then, a few weeks later, once the Financial Times had overcome its initial objections to the appearance of a competitor to the FT 30 and joined the new venture, it was renamed the 'FT-SE 100'.

Soon after that, 'FT-SE 100' was shortened to 'FTSE 100' and traders and investors started to refer to the 100-share index as the 'footsie'. And that name stuck. It is still in use forty years later, most notably as part of the FTSE Russell index brand name.

"Traders and investors wanted an index calculated in real time, or with as-close-to-continuous price updates as possible."



Increasing index speed

The new index's calculation frequency was a major improvement on the FT 30. The FTSE 100 was updated every 60 seconds on the London Stock Exchange's proprietary 'TOPIC' information terminals. With advances in technology, the index started to be updated every 15 seconds in 1995, and in real time from 1997.

According to Professor Elroy Dimson, who played a significant role (with his colleague Paul Marsh) in the creation of the new index, the subsequent popularity of the FTSE 100 still came as a surprise. "We helped design the FTSE 100 Index as a liquid reference benchmark for equity index futures and options contracts," said Dimson, who went on to chair FTSE Russell's policy and advisory board. "When we launched it in January 1984, we had no idea it was going to be such an enormous success."

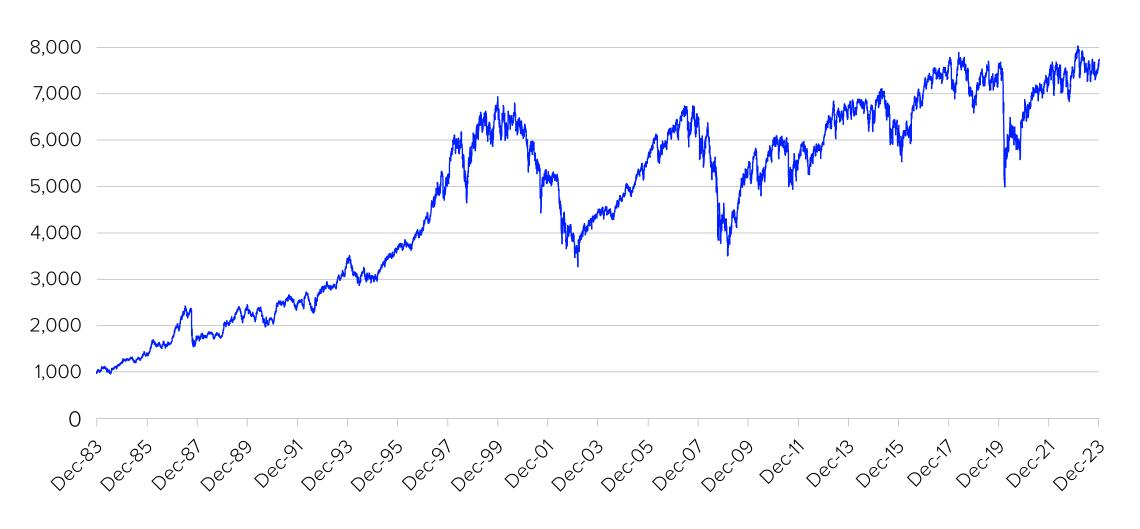
Professor Elroy Dimson
Professor of Finance,
Cambridge University Judge
Business School



Forty years later

The FTSE 100 is widely used by news media, investment professionals and the general public. It's still the main way of reporting on the UK share market's ups and downs. By the end of 2023, the index had risen to 7733, a near eight-fold increase on its 1984 starting value.

Figure 1: FTSE 100 Index



FTSE 100 Index

Source: FTSE Russell, 03/01/1984-31/12/2023. Past performance is not a guide to future returns.

How privatisations helped establish the FTSE 100

During the 1980s, a series of privatisations of state-owned UK companies helped boost public awareness of the new 100-share index.

British Telecom

The 3 December 1984 sale of shares in British Telecom (now BT and still an index member) was of particular importance for the FTSE 100, since it generated enormous publicity.

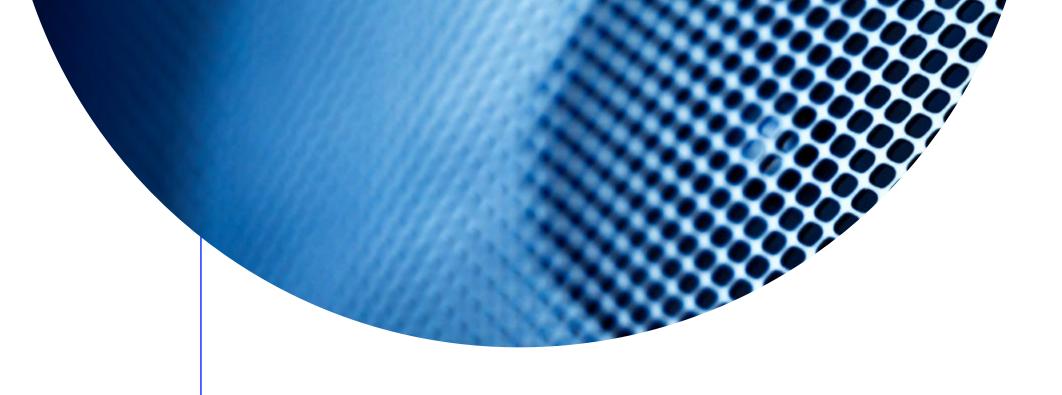
The government was selling half of its shares in BT and around two million UK citizens had applied to buy them.

On the day the shares were listed, early activity was frenetic. Dealers swarmed the BT booth on the London Stock Exchange floor to buy the company's shares. (This was still a time when LSE share deals were struck face-to-face between brokers and jobbers).

By the end of 3 December, BT shares had risen by a third from their initial offer price of 130p, a startling first-day performance for a large company.



Sir Nicholas Goodison (centre of picture), former chairman of the London Stock Exchange, on the stock exchange floor in 1984



More companies go private

Other 1980s privatisations that became FTSE 100 Index members included the following.



Like BT, British Gas (now part of Centrica), British Aerospace and BP were still index members at the end of 2023.

Index effect of the 1984 British Telecom sale

FAST GAIN AND PAIN

The jump in BT shares on 3 December 1984 (from sale price of 130p up to 173p by the end of the day) meant an immediate windfall for those lucky UK citizens who had received shares in the public sale.

But it created a headache for those institutional investors who hadn't received a full allocation. Instead, they had to buy shares in the secondary market at a higher price than that of the public sale.

There was also a debate about whether BT shares should have been included in the FTSE 100 index at the 130p sale price and at full market capitalisation, as they were at the time.

WHAT'S DIFFERENT TODAY?

These days, to mitigate the possible volatility surrounding initial public offerings, the FTSE 100 index rules specify that fast entry for large companies occurs after the close of business on the fifth day of trading. To avoid distortions, we also now only include the 'free float' (shares freely available for trading) in the index, rather than the full market capitalisation.

FTSE UK Index Series

The FTSE 100 Index is a member of the FTSE UK Index Series, a suite of indices designed to measure the performance of the UK equity market.

The FTSE UK Index Series represents the performance of all eligible companies² listed on the London Stock Exchange's main market.

Modular in nature

The series provides market participants with a complementary set of benchmarks that measure the performance of all the market's size and industry segments.

In addition to the FTSE 100 Index of large-cap stocks, the FTSE 250 Mid-Cap Index includes the next 250 companies after the FTSE 100. The large- and mid-cap UK stocks in these two indices (the FTSE 100 and FTSE 250) make up the FTSE 350 Index. The FTSE SmallCap Index includes stocks from the FTSE All-Share Index that are not large enough to enter the FTSE 350 (see figure 3).

Figure 3: Flagship indices in the FTSE UK Index Series

INDEX	WHAT IS INCLUDED
FTSE 100 Index	Largest 100 companies listed on the London Stock Exchange
FTSE 200 Index	Next 250 largest companies after the FTSE 100
FTSE 350 Index	Aggregating the FTSE 100 and FTSE 250, the index represents large- and mid-cap stocks
FTSE SmallCap Index	Companies from the FTSE All-Share Index that are not large enough to be constituents of the FTSE 350

Source: FTSE Russell

Did you know?

After 40 years of the FTSE 100

- No one at FTSE Russell decides which companies enter the FTSE 100.
 Membership is open to any company with a premium listing on the
 London Stock Exchange. If you're large enough, you're in (subject to certain screens).
- Many indices are derived from the FTSE 100, including the
 - FTSE 100 Equally Weighted Index
 - FTSE 100 Minimum Variance Index
 - FTSE 100 ESG Risk-Adjusted Index
- Over 75% of sales for FTSE 100 constituents come from outside the UK

- 1987 The FTSE 100 fell 21.73% over two days
- Highest calendar year return: 36.95%
- Pirst FTSE 100 exchange-traded fund (ETF) was launched by iShares
- 2008 Lowest calendar year return was -30.9%
- 4/5 of the highest one-day returns occurred during a bear market! They were brief rallies during the great financial crisis
 - Of the original 100 members in 1984, 26 still remain (12 under new names)
 - If you invested £100 in Reed International (now Relx) at the index's launch, now it would be worth £35,393 (assuming full reinvestment of dividends)

Figure 4: Five highest and lowest FTSE 100 daily returns (1984–2023)

	Highest five one-day returns	Date	Worst five one-day returns	Date
1	9.84%	24/11/2008	-12.22%	20/10/1987
2	9.05%	24/03/2020	-10.87%	12/03/2020
3	8.84%	19/09/2008	-10.84%	19/10/1987
4	8.26%	13/10/2008	-8.85%	10/10/2008
5	8.05%	29/10/2008	-7.85%	06/10/2008

History and heritage: FTSE All-Share Index

The FTSE All-Share Index is the combination of the FTSE 100, FTSE 250 and FTSE SmallCap indices (see figure 5). It covers 98%–99% of the UK equity market's capitalisation.

The All-Share index's history extends over 60 years. It was launched in 1962 as the FT-Actuaries Index. At the time, it covered around 60% of the UK equity market's capitalisation.

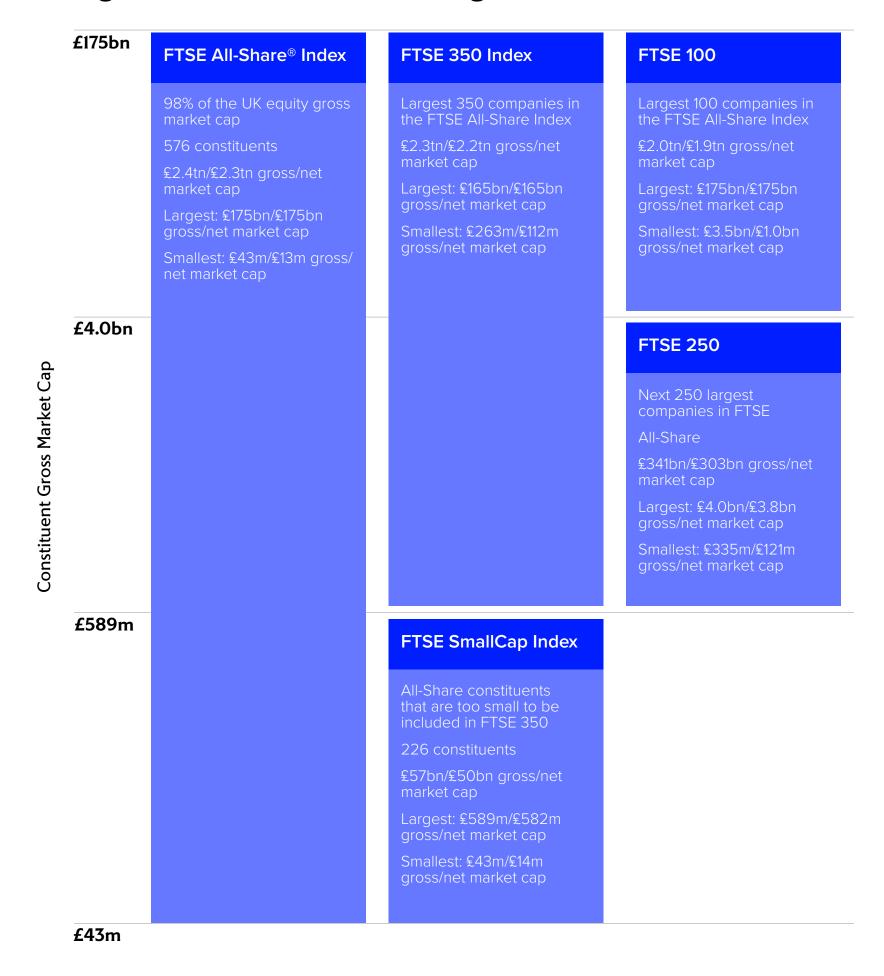
The All-Share index quickly became established among brokers, traders and professional investors as the standard measure of the UK share market's day-to-day performance. Given the fact that it included all the size segments of the UK equity market, it has also long served as a preferred reference benchmark for index-tracking funds.

Design of the All-Share

Over the years, the All-Share index's designers introduced a number of features that are now standard in the equity index business:

- Daily index pricing, a novelty for the UK market in 1962;
- Arithmetic averaging, rather than geometric averaging;
- Capitalisation-based weighting, rather than equal weighting;
- Free float adjustment of index constituents' share totals.

Figure 5: FTSE UK indices at a glance



Source: FTSE Russell, as of 29 September 2023. Vertical axis represents the size of the constituent at each index cut-off: £175bn, £4.0bn and £589m represent the largest constituent in each of the FTSE All-Share Index, FTSE 250 Index and FTSE SmallCap Index respectively as of 29 September 2023. £43m represents the smallest constituent in the FTSE SmallCap Index as of 31 September 2023.

"...in 2001 the FTSE UK Index Series pioneered the concept of adjusting for companies' free float..."

Expert external input into index design

From the outset, the governance of the FTSE UK Index Series has been the responsibility of both internal and external experts.

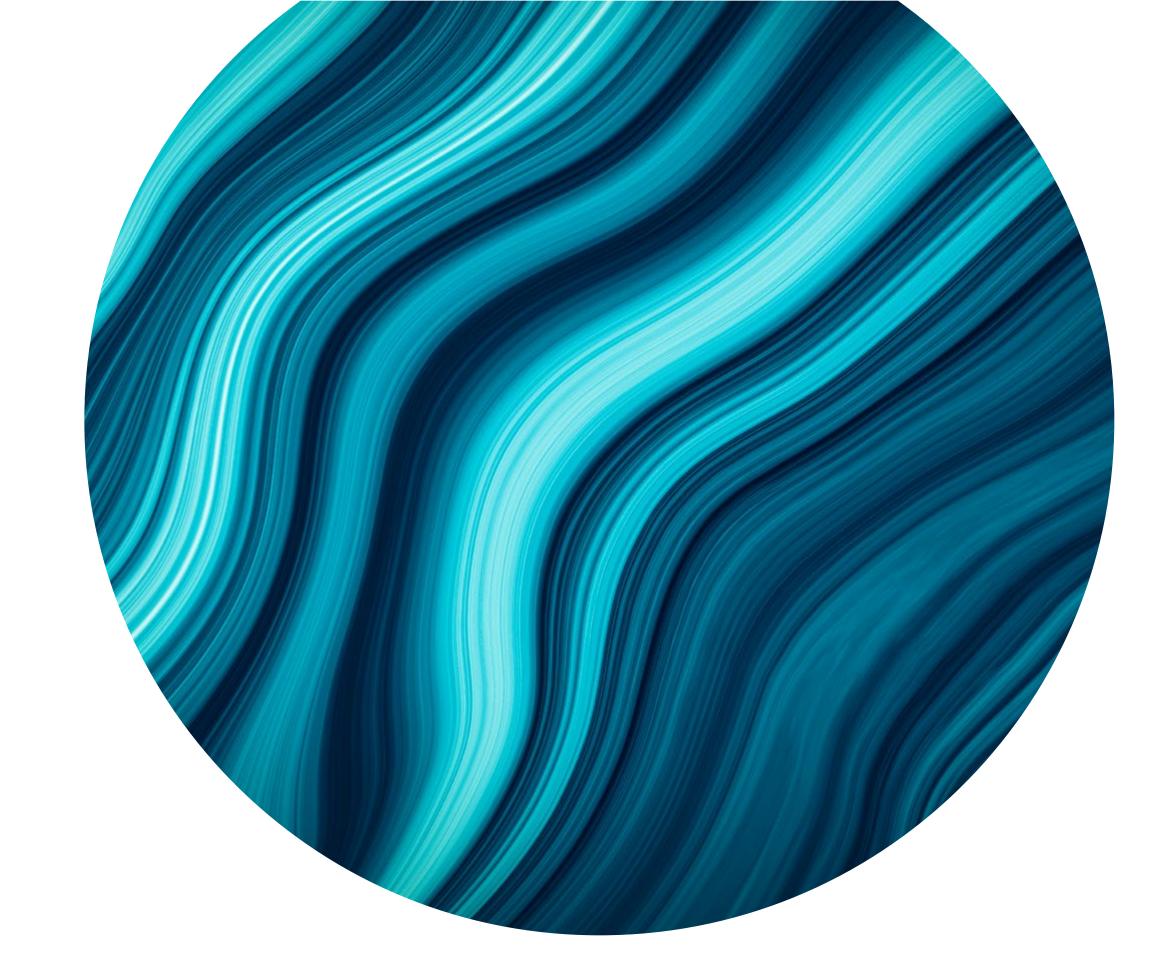
The original designers of the FT-Actuaries All-Share Index were members of the Institute and Faculty of Actuaries and the statistical department of the Financial Times³.

In 1993 the London Stock Exchange, the Institute and Faculty of Actuaries and the Financial Times became jointly responsible for the new FTSE UK Index Series, which included the All-Share index. All three parties appointed members to a steering committee that worked with representatives of the UK's investment community to set the rules used to select constituents.

GROUND-BREAKING DECISIONS

Many of the UK index committee's decisions were ground-breaking. For example, in 2001 the FTSE UK Index Series pioneered the concept of adjusting for companies' free float by the application of investability weightings to index constituents' share totals. FTSE's global equity indices were soon also adjusted for free float. This method is now standard in equity index calculation.

The involvement of external experts in the oversight of the FTSE All-Share Index continues to this day. The day-to-day work of managing the index series is now in the hands of FTSE Russell professionals.



For more on the history of the FTSE All-Share and the FTSE UK Index Series, read our paper on the subject.

What is a UK equity?

This question feels like it ought to have a simple answer. But in an era of multinational companies and multinational listings, deciding which country an index constituent belongs to is not straightforward.

For the investment community, however, nationality remains important. Asset managers typically build equity portfolios by assigning weights to regions, then countries, then selecting stocks.

People unfamiliar with the FTSE 100 Index are sometimes surprised to find that a significant proportion of the earnings of the index constituents – as much as three quarters – comes from non-UK activities⁴.

For the FTSE 250, the overseas share of earnings is lower; around 50% in recent years. As a result, the FTSE 250 has gained a reputation as a more domestic index – in the sense of exposure to the UK's national economy – than the FTSE 100.

Overseas-focused constituents

But in what sense are overseas-focused FTSE 100 and FTSE 250 constituents UK equities in the first place? Remember that the FTSE UK Index Series selects its constituents from the companies with a premium listing on the London Stock Exchange.

FTSE Russell's nationality rules specify that if a company is incorporated in one country and is listed only in countries other than the country of incorporation, FTSE Russell will normally allocate the company to the country with the greatest liquidity⁵. That could be the UK, given that the London Stock Exchange is one of the world's largest and most liquid equity markets.

As a result, there are many companies listed in London, and with a presence in the FTSE UK Index Series, that feel 'foreign' – perhaps because they are incorporated outside the UK.

FTSE 100 Index

UK prominence as a trading nation

According to stock market historian Leslie Hannah⁶, in 1900 more than 4,000 companies traded in London, compared with only 200 on the New York Stock Exchange and around 800 in Berlin. In Germany and America these companies were overwhelmingly domestic in nature. But in Britain, the majority operated primarily overseas, reflecting the UK's prominence as a trading nation.

GROUND RULES AS A SAFEGUARD

And there are safeguards built into the FTSE UK Index Series rules⁷ to ensure that foreign-incorporated companies abide by high local standards of corporate governance. The ground rules specify that if a company is UK-incorporated, FTSE Russell will assign it UK nationality, provided the company has its sole listing in the UK and it has a minimum free float of 10%.

But if a company is not incorporated in the UK, it must meet more stringent conditions in order to gain a UK nationality assignment – and thereby become eligible for the FTSE UK Index Series:

- The company must publicly acknowledge adherence to the principles of the UK Corporate Governance Code,
 pre-emption rights and the UK Takeover Code as far as practicable;
- It must have a minimum free float of 25%.

⁴ FTSE Russell calculated that the revenue generated overseas by FTSE 100 Index constituents (excluding investment trusts) was 76% in 2015–2017. For the FTSE 250 it was 51% over the same period.

⁵ FTSE Russell, "Determining Nationality, v1.8, July 2022," Rule 1.7.

⁶ Leslie Hannah, "Pioneering Modern Corporate Governance: A View from London in 1900," June 2007.

⁷ FTSE UK Index Series Ground Rules, rules 5.1.2 and 5.1.3.

How FTSE Russell classifies countries

FTSE Russell's treatment of company nationality is only one aspect of a larger country classification system. We use a unique, four-tier approach when classifying individual equity markets as developed, advanced emerging, secondary emerging or frontier.

These classifications impact the way our global equity benchmarks are put together. For example, the FTSE All-World Index, our leading global equity benchmark, includes both developed and emerging markets. The FTSE Emerging Index, another popular benchmark, includes advanced and secondary emerging market stocks.

The design of our country classification system reflects the input of detailed past consultations with institutional investors and other market participants.

The country classifications (see figure 6) reflect our assessment of individual equity markets' quality of infrastructure, including

- market and regulatory environment,
- equity trading,
- foreign exchange market,
- clearing,
- settlement and
- custody.

The country classification process ensures that FTSE Russell's global benchmarks reflect the most relevant and accurate information, offering our clients risk management insight into the global and regional indices they use as benchmarks or in index-tracking investment products.

To ensure that the potential reclassification of markets is transparent to investors, each year FTSE Russell creates a watch list containing markets under consideration for a possible change in classification.

A full list of markets currently on the watch list, and the results of the latest country classification announcement can be viewed in the annual update published each September⁸.

Figure 6: FTSE Russell Country Classifications (as at September 2023)

Developed	Advanced Emerging	Secondary Emerging	Frontier
Australia	Brazil	Chile	Bahrain
Austria	Czech Republic	China	Bangladesh
Belgium/Luxembourg	Greece	Colombia	Botswana
Canada	Hungary	Egypt	Bulgaria
Denmark	Malaysia	Iceland	Côte d'Ivoire
Finland	Mexico	India	Croatia
France	South Africa	Indonesia	Cyprus
Germany	Taiwan	Kuwait	Estonia
Hong Kong	Thailand	Pakistan	Ghana
Ireland	Turkey	Philippines	Jordan
Israel		Qatar	Kazakhstan
Italy		Romania	Kenya
Japan		Saudi Arabia	Latvia
Netherlands		United Arab Emirates	Lithuania
New Zealand			Malta
Norway			Mauritius
Poland			Mongolia*
Portugal			Morocco
Singapore			Oman
South Korea			Palestine
Spain			Peru
Sweden			Republic of
Switzerland			North Macedonia
UK			Serbia
USA			Slovak Republic
			Slovenia
			Sri Lanka
			Tanzania
			Tunisia Vietnam

^{*}Mongolia to be reclassified from Unclassified to Frontier market status effective from September 2023.

 $^{^{8}}$ See https://research.ftserussell.com/products/downloads/FTSE-Country-Classification-Update_latest.pdf

How do companies get into the FTSE 100?

If a company has obtained a premium listing on the London Stock Exchange and passed the minimum free float requirement, it must satisfy additional tests to enter the FTSE UK Index Series.

These tests cover

- foreign ownership restrictions,
- size (for companies with a dual-class share structure, any unlisted specified weighted voting rights shares are not included in the calculation of market capitalisation) and
- liquidity, if companies demonstrate adequate trading liquidity.

Full details of these screens are given in the FTSE UK Index Series Ground Rules⁹. Having passed the tests, a company is then automatically eligible for inclusion in the index series.

The FTSE 100 Index is created by selecting the largest 100 UK companies by full market capitalisation (i.e., before the application of any investability – or free float – weightings). The index is then reviewed each quarter, along with other constituent indices of the FTSE UK Index Series, with free float assessed at the same time (see figure 7). Any index changes are implemented on a transparent, fixed schedule. Unplanned market events, such as initial public offerings and corporate actions, are reflected in the index series daily.



Quarterly reviews

But what do we do when companies change their relative positions in the rankings, as happens continuously as a result of share price movements? At each quarterly review, companies enter and exit the respective indices in the FTSE UK Index Series as follows:

- A company will be inserted in the FTSE 100 at the review if it has risen to 90th or above in the ranking;
- A company will be inserted in the FTSE 250 at the review if it has risen to 325th or above;
- A company will be deleted from the FTSE 100 if it has fallen to 111th or below;
- A company will be deleted from the FTSE 250 if it has fallen to 376th or below;
- Companies deleted from the FTSE 100 at the review will normally be included in the FTSE 250;
- Companies added to the FTSE 100 at the review will be deleted from the FTSE 250;
- Companies deleted from the FTSE 250 at the review will normally be included in the FTSE SmallCap;
- Companies added to the FTSE 250 at the review will be deleted from the FTSE SmallCap.

Applied as above, these rules could lead to an imbalance in the number of index constituents. So to maintain the required number of constituents in the FTSE 100, FTSE 250 and FTSE 350 at each periodic review, we follow an additional rule:

- Where a greater number of companies qualify to be inserted in an index than those qualifying to be deleted, the lowest-ranking constituents presently included in the index will be deleted to ensure that an equal number of companies are inserted and deleted.
- Likewise, where a greater number of companies qualify to be deleted than those qualifying to be inserted, the securities of the highest-ranking companies not included in the index will be inserted to match the number of companies being deleted.

These rules ensure a seamless progression of stocks between the adjoining indices for large-caps (FTSE 100), midcaps (FTSE 250) and the FTSE SmallCap Index.



Interactions with index users

The primary means of interaction between FTSE Russell and index users (such as asset managers) is through our external advisory committees. These committees are made up of leading investment market professionals from around the world.

Committee members are drawn from organisations that make use of FTSE Russell indices, both on the buy-side and sell-side. The firms typically include asset owners, asset managers and investment consultants, as well as representatives from the broking, custodian, securities lending, digital asset and other communities.

Committee members are valuable

Committee members offer a depth of knowledge, unique viewpoints and share the objective of seeking to preserve the integrity of the indices and a transparent index review process.

Sometimes, we conduct wider consultations on potential changes to the methodology of our indices to ensure that they continue to meet investors' requirements and define and lead global standards. Responses to these consultations provide valuable market feedback and may result in changes to FTSE Russell index methodologies.

Some of the past consultations with particular relevance for the FTSE UK Index Series Ground Rules were:

- Market consultation on nationality, cross-holdings and free float in FTSE indices (1999);
- Country classification (2003);
- Market consultation on open offer implementation in the FTSE UK Index Series (2011);
- Market consultation on dual-class share structures and the associated minimum voting rights requirement, and on the minimum free float requirements (2021).

Full details of these consultations, and of any resulting changes to the index ground rules, are published on the FTSE Russell website¹⁰.

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¹⁰ https://www.lseg.com/en/ftse-russell/governance/market-consultations



As one of the world's leading index providers, FTSE Russell is supervised and regulated both directly and indirectly (for example, by means of funds regulation).

Some of the most relevant global, regional and national regulations and guidelines are:

- The EU (and UK) Benchmark Regulation;
- The International Organization of Securities Commissions (IOSCO) Benchmark Principles;
- The ESMA Guidelines on ETFs and other UCITS issues;
- The US ETF listing standards;
- The EU Markets in Financial Instruments Regulation (MiFIR).

The UK's Financial Conduct Authority (FCA) has granted FTSE International Limited authorisation as a benchmark administrator and FTSE International Limited is listed on the FCA Benchmarks Register. This authorisation covers different asset classes and includes the FTSE, Russell, FTSE Canada equity and fixed income index brands that are used as benchmarks in the UK.

FTSE Russell also issues a Statement of Compliance with respect to the recommendations made by the International Organization of Securities Commissions (IOSCO) in the Principles for Financial Benchmarks Final Report (the IOSCO Principles).



A benchmark administrator

FTSE Russell has processes in place to identify, assess and manage potential conflicts of interest. Any conflicts of interest are recorded in a Conflicts of Interest Register and reviewed periodically in line with our governance framework. Conflicts of interest may arise in areas including organisational ownership, index design, clients, partners or suppliers, individual employees and directors.

These processes are subject to review by the FTSE Russell Index Management Board on an annual basis, or more frequently if the possibility of a conflict arises. If a conflict is identified, management and compliance assess the nature of the conflict and determine what controls may be put in place to manage the conflict adequately, and any disclosure that may be required. If satisfactory controls cannot be established, the activity will be declined or discontinued.

FTSE 100 Index

An all-weather gauge of the UK stock market and economy

From its launch in 1984, the FTSE 100 became the most popular measure of the UK's stock market and its economy, helping to gauge shifts in sentiment quickly and accurately.

Drawing upon the sixty-year history and heritage of FTSE Russell's index business in the UK, the FTSE 100 Index offers our clients transparency, quality and a high integrity of index methodology. The index is well-set to continue as investors' preferred UK equity benchmark as it embarks on its fifth decade.

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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.

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