

Where an index price actually comes from

INDEX CALCULATION AND DISSEMINATION

The chain that turns share trades into an index level: constituent shares trade on an exchange, an index provider applies the weighting rule to those prices and publishes a level at a defined frequency, and data vendors distribute it. The cash index exists only while its constituent market is open.

The number has a supply chain, and knowing its links explains most of the odd behaviour you will see later.

Three links

The constituent shares trade on their exchange, each with its own bid and ask. An index provider - FTSE Russell, S&P Dow Jones Indices, Deutsche Boerse and others - applies the published rule to those prices and calculates a level, typically every few seconds. Data vendors carry that level onward to terminals, news sites and brokers.

The provider is a business selling a calculation and licensing its name. That is why index names are trademarks, and why a broker offering an index product either licenses the name or gives its product a different one.

The cash index stops when the shares stop

The level is computed from share prices. When the underlying exchange closes there are no new share prices, so there is no new index level. The cash index does not drift overnight; it stops.

This is the single most important consequence in the module. Whatever is happening in the world between the close and the next open, the cash index is a frozen number until its constituents trade again.

But the derivative venue does not stop

Futures on major indices trade far longer than the underlying cash market - close to around the clock on the big contracts. Those are traded prices, made by participants willing to deal now, and they carry on reflecting news all night.

So at three in the morning there are two very different objects with the same name: a frozen cash calculation, and a live futures price that has moved. They are not the same thing, they are not supposed to be, and the gap between them at the next open is lesson 9.

Why the number is a little stale even in the session

An index level is computed from the last traded price of each constituent. A quiet constituent that has not traded for several minutes contributes a price from several minutes ago.

So the level is a mosaic of prices from slightly different moments, not a photograph of one instant. In a fast move this matters, because the index lags the market it is measuring by however long its sleepiest constituents take to print.

Check your understanding

1. Why does the cash index stop changing when the underlying exchange closes?

- a. The provider stops publishing to save costs
- b. The level is computed from share prices, and there are no new ones
- c. Overnight moves are applied the next morning in one adjustment

Answer: b. No new constituent trades means no new inputs to the calculation. The cash index does not drift overnight - it stops.

2. What is happening to an index future while the cash market is closed?

- a. It is frozen at the cash close too
- b. It keeps trading, so it keeps reflecting news
- c. It tracks the previous day's closing level until the open

Answer: b. The future is a market of its own with participants willing to deal overnight. That is why the two numbers can be far apart by morning.

3. Why is an index level slightly stale even during the session?

- a. Providers publish on a delay for licensing reasons
- b. It uses each constituent's last traded price, and quiet shares trade rarely
- c. The divisor is recalculated hourly

Answer: b. The level is a mosaic of prices from slightly different moments. In a fast move it lags by however long the sleepiest constituents take to print.