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Index *Investing*

From Theory to Practice



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CHAPTER 1

What Is an Index?

A basket, a rule book and a number

Opening question

"The evening news says the VN-Index rose 1.2% today. What exactly went up — and by how much did my own stocks rise?"

Investors hear index numbers every day — the VN-Index, the S&P 500, the Nikkei 225 — yet few could say what is inside them, who decides, or why two "market" indexes can move in opposite directions on the same day. This chapter opens the box.

In this chapter

- The three parts of every index: a basket, a rule book and a number
- The six rules that define any index
- A three-stock index built by hand — and why the same day gives three different answers
- Base dates, base values and what an index level really means
- Price, total-return and net-return indexes
- The three jobs of an index: to measure, to benchmark and to invest
- What an index is not
- How to read an index factsheet

1.1 A basket, a rule book and a number

A thermometer turns the movement of billions of air molecules into one number: the temperature. A **stock market index** does the same for a market. It turns the price movements of many securities into a single number that can be followed day by day.

Every index has three parts (Figure 1.1):

- **A basket** — the securities it contains: the 30 largest stocks on the Ho Chi Minh City Stock Exchange, the 500 leading US companies, Vietnamese government bonds, gold.
- **A rule book** — the methodology that says which securities enter and leave the basket, how much weight each one has, and how the basket is maintained when companies pay dividends, issue shares, merge or disappear.
- **A number** — the index level, calculated from the prices of the basket under the rules, starting from a chosen value on a chosen date.

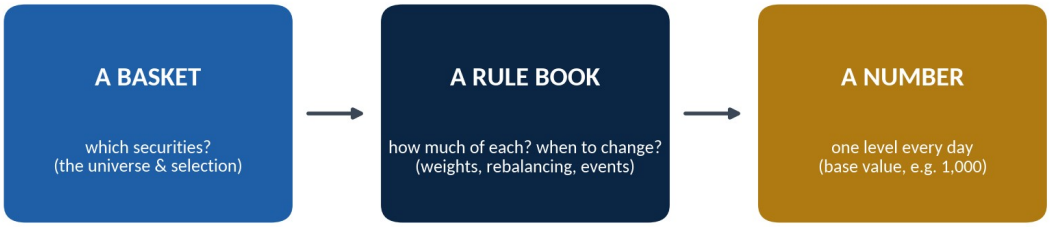


Figure 1.1 — The three parts of every index

The idea is familiar from everyday life. The **consumer price index** follows the price of a basket of goods and services — rice, rent, fuel, school fees — weighted by how much households spend on each. When the news says "inflation is 3.5%", it means the CPI basket costs 3.5% more than a year earlier. A stock index works in the same way, with stocks instead of goods.

The key word is **rules**. An index is not an opinion about which stocks are good. It is a set of public, mechanical rules applied in the same way to every security, every day. That is what makes an index trustworthy as a measure — and, as later chapters show, what makes it a powerful way to invest.

1.2 The six rules of every index

However simple or complex, every index methodology answers the same six questions. Learn them once and you can read any index in the world.

Rule	Question it answers	Example: a "Vietnam 30" index
1. Universe	Which securities can be considered?	Stocks listed on HOSE
2. Eligibility and selection	Which of them enter the basket?	Free float ≥ 10%, minimum liquidity; the 30 largest by free-float market value
3. Weighting	How much of the index does each one represent?	Free-float market capitalisation, no stock above 10%
4. Calculation	How is the daily number produced?	Base value 1,000; price and total-return versions; currency VND
5. Rebalancing and reconstitution	When are the basket and weights reviewed?	Every quarter, with buffer rules to limit turnover
6. Maintenance and governance	How are corporate actions handled, and who decides?	Daily adjustments for splits, dividends and new shares; an index committee publishes changes in advance

Table 1.1 — The six rules that define any index

Each rule is a choice, and each choice changes what the index measures. An index of the 30 largest stocks tells a different story from an index of all listed stocks; weighting by size gives a different result from giving every stock the same weight. Parts I and III of this book look at each rule in detail. For now, remember the six questions — they are the checklist for the practice lab at the end of this chapter.

1.3 Building a tiny index by hand

The quickest way to understand an index is to build one. Imagine a market with only three companies.

Stock	Price day 1	Shares (millions)	Market value day 1	Price day 2
A	50	100	5,000	55 (+10%)
B	20	500	10,000	19 (−5%)
C	100	20	2,000	98 (−2%)
Total	170		**17,000**	172

Table 1.2 — A market of three stocks (prices in thousand VND, market values in billion VND)

Did this market go up or down on day 2? It depends on the rule used to combine the three prices.

> **Example — one day, three answers**
>
> - **Price-weighted** (add the prices, like the Dow Jones Industrial Average): 170 → 172, a rise of **+1.18%**. The expensive stock C counts most, whatever the size of the company.
> - **Market-value-weighted** (add the market values, like the VN-Index or the S&P 500): 17,000 → 5,500 + 9,500 + 1,960 = 16,960, a fall of **−0.24%**. The largest company, B, dominates.
> - **Equal-weighted** (average the three returns): (+10% − 5% − 2%) / 3 = **+1.00%**. Each company counts the same.

The prices are the same; the answers differ in size **and in direction**. Neither answer is "wrong": each index measures something different. The market-value index tells you what happened to the total wealth invested in the market — the rise of the small company A was not enough to offset the fall of the giant B. The equal-weighted index tells you what happened to the typical stock. The price-weighted index tells you mostly about the stock with the highest price, which is an accident of history rather than an economic fact — one reason few new indexes use this method today.

To turn the market-value result into an index level, we choose a **base value** — say 1,000 on day 1 — and scale:

> **From market value to index level**
>
> $$\text{Index level}(t) = \text{Base value} \times \text{Market value}(t) \,/\, \text{Market value}(\text{base date})$$
>
> Day 2: 1,000 × 16,960 / 17,000 = 997.65. In practice the denominator becomes a **divisor** that is adjusted whenever the basket changes, so that changes in the basket do not move the index (Chapter 3).

1.4 Base dates, base values and what a level means

An index level on its own means nothing. "The index is at 1,393" says only that the basket is worth 1.393 times what it was worth on the **base date**, if the base value was 1,000. Different indexes chose different base values and dates, which is why their levels cannot be compared with each other.

Index	Launched	Weighting	Base
Dow Jones Industrial Average (US)	1896	Price-weighted, 30 stocks (since 1928)	Started as a simple average of prices
S&P 500 (US)	1957	Free-float market value, about 500 stocks	10 for the period 1941–1943
Nikkei 225 (Japan)	Calculated since 1950	Price-weighted, 225 stocks	Started from the average price of its stocks

Index	Launched	Weighting	Base
FTSE 100 (UK)	1984	Free-float market value, 100 stocks	1,000 on 3 January 1984
VN-Index (Vietnam)	2000	Market value, all stocks on HOSE	100 on 28 July 2000, the first trading day

Table 1.3 — Some well-known indexes and their bases

Three lessons follow. First, **compare changes in percent, never in points**: a 50-point fall is a crisis for an index at 500 and a quiet day for one at 40,000. Second, **a long history does not mean a constant basket**: the companies in the Dow today have little in common with those of 1896. Third, an index level is **not the value of anyone's investment** — it ignores fees, taxes and trading costs, and the price version ignores dividends.

1.5 Price, total-return and net-return indexes

Companies pay dividends. When a stock goes ex-dividend, its price drops by about the amount of the dividend. A **price index** records only the price change, so the dividend simply disappears from the index. Most indexes quoted in the news are price indexes.

- A **total-return (gross) index** assumes every dividend is reinvested in the index on the ex-date. It measures what an investor who reinvested all dividends, before tax, would have earned.
- A **net-return index** reinvests dividends after deducting the withholding tax that a typical foreign investor would pay. Many international benchmarks used by funds are net-return indexes.



Figure 1.2 — A price index and its total-return version over twenty years (simulated data, 3% dividend yield)

The difference is large. In the simulated example of Figure 1.2, a 3% dividend yield reinvested for twenty years leaves the total-return index about 80% higher than the price index. Comparing a fund's return — which includes the dividends it received — with a price index makes the fund look better than it is. **Always compare like with like: a fund with a total-return or net-return index.**

1.6 The three jobs of an index

Indexes were invented to **measure**. Over time they took on two more jobs.

- **To measure.** An index is a barometer of a market, a sector or an asset class. Economists, journalists, policymakers and investors use it to describe what happened — "Vietnamese banks rose 20% this year" — and to study the relationship between markets and the economy.

- **To benchmark.** An index is the yardstick against which professional investors are judged. A fund that invests in large Vietnamese stocks is compared with the VN30 or the VN-Index; if it cannot beat that yardstick after fees, its investors would have done better with the index (Chapter 5).
- **To invest.** An index can be the recipe for an investment product. Index funds and ETFs hold the securities of the index (Chapter 18); futures, options and structured products use the index as their underlying (Chapters 19 and 20).

The three jobs make different demands on the rules. A **measurement index** can include every stock, however small or illiquid. An **investable index** must contain only securities that can be bought in size at a reasonable cost, and must not change too often — otherwise the funds that track it pay heavy trading costs. That is why investable indexes add liquidity filters, free-float adjustments, weight caps and buffer rules. The VN-Index measures the whole HOSE market; the VN30, with its liquidity rules and caps, was designed to be traded through ETFs and futures.

1.7 A map of index families

Indexes now exist for almost every corner of the financial world. The main families, all explored later in the book, are:

Family	What it groups	Examples / chapter
Broad market	All or most stocks of a market	VN-Index, S&P 500, MSCI World (Ch. 8)
Size	Large, mid or small companies	VN30, VNMidcap, Russell 2000 (Ch. 8)
Sector and industry	Banks, technology, real estate	VNFIN, sector indexes (Ch. 11)
Country and region	Countries, regions, emerging markets	FTSE Vietnam, MSCI Asia (Ch. 11, 21)
Style and factor	Value, growth, dividend, low volatility, quality	VNDiamond, dividend indexes (Ch. 7, 9)
Thematic and ESG	AI, clean energy, ESG leaders	NXW AI Global Leaders (Ch. 11, 17)
Other asset classes	Bonds, commodities, gold, real estate, crypto	Bond and gold indexes (Ch. 11)
Strategy	Rules that combine assets or options	Balanced 80/20, buy-write indexes (Ch. 11, 19)

Table 1.4 — The main families of indexes

1.8 What an index is not

Four misunderstandings cause many investor mistakes.

- **An index is not a fund.** You cannot buy "the VN30" directly. You can buy a fund that tracks it, and that fund has costs, cash and tracking differences (Chapter 18).
- **An index is not neutral.** Every rule — the universe, the size cut-off, the weighting, the caps — is a choice that tilts the index towards some companies. "Passive" investing still starts from active decisions by the index designer (Chapter 12).
- **An index is not a forecast.** An index records what has happened. A rising index says nothing about tomorrow, and a back-tested index — calculated on past data before it existed — can look much better than the future will be (Chapter 16).
- **An index level is not your return.** Your return depends on when you bought and sold, the product you used, its fees, your taxes and whether dividends were reinvested.

1.9 Reading an index factsheet

Every serious index has a **factsheet** — a one- or two-page summary — and a full **methodology document**. The factsheet is the place to start. Here is what to look for, using the NXW Vietnam 30 index of the companion monitor as an example.

Item on the factsheet	NXW Vietnam 30 (example)	Why it matters
Objective	Track the 30 largest liquid stocks of HOSE	Tells you what the index is meant to measure
Universe and selection	HOSE stocks; top 30 by free-float value after liquidity filter	Defines the basket (rules 1–2)
Weighting and caps	Free-float market value, 10% cap	Concentration risk (rule 3)
Base date and value	2 January 2018 = 1,000	How to read the level (rule 4)
Versions	Price and total return, VND	Which number to compare with your fund
Rebalancing	Quarterly	Turnover and trading costs (rule 5)
Top 10 constituents and sector weights	List and chart	What you really own
Performance and risk	Returns 1M to 5Y, volatility, maximum drawdown	History — not a promise
Back-tested period	Data before launch marked as back-test	Treat with caution (Chapter 16)
Provider and governance	Index committee, methodology link	Who can change the rules (rule 6)

Table 1.5 — Anatomy of an index factsheet

Vietnam spotlight — the indexes you hear about

- **VN-Index** — all stocks listed on the Ho Chi Minh City Stock Exchange (HOSE), weighted by market value; the country's best-known market barometer since 2000.
- **HNX-Index** — the equivalent measure for stocks listed on the Hanoi Stock Exchange.
- **VN30** — the 30 largest and most liquid HOSE stocks, with free-float adjustment and weight caps; the underlying of VN30 index futures (Chapter 19) and of several ETFs (Chapter 18).
- **Other HOSE indexes** — VN100, VNMidcap, VNSmallcap, sector indexes and strategy indexes such as VNDiamond, VNFinLead and VNFinSelect, several of which are tracked by ETFs.
- **International indexes** — FTSE Russell, MSCI and other global providers also calculate Vietnam indexes, used by foreign funds; Vietnam's upgrade to emerging-market status by FTSE Russell (Chapter 24) makes these increasingly important.

Key takeaways

- An index is a basket, a rule book and a number: a mechanical summary of many prices.
- Six rules define every index: universe, selection, weighting, calculation, rebalancing, and maintenance and governance.
- The same prices can give different — even opposite — results under different weighting rules.
- Index levels depend on arbitrary base values; compare indexes in percent, and always compare funds with total-return or net-return indexes.
- Indexes measure markets, benchmark managers and serve as recipes for investment products; investable indexes need extra rules for liquidity and turnover.

- An index is not a fund, not neutral, not a forecast — and its level is not your return.

Practice lab 1

Download the workbook **Lab01_What_Is_an_Index.xlsx** from the companion site.

- **Sheet 1 — Three answers.** Reproduce the three-stock example of Table 1.2. Then change the price of stock C on day 2 to 120 and recalculate the three indexes. Which index reacts most, and why?
- **Sheet 2 — Base value.** Calculate the market-value index for ten days with a base of 100, then with a base of 1,000. Show that the percentage changes are identical.
- **Sheet 3 — Price vs total return.** Add a dividend to stock B on day 5 and calculate both the price and the total-return index.
- **Sheet 4 — Read a factsheet.** Download the factsheet of the VN30 (or any index you follow) and fill in the six rules of Table 1.1. Note anything the factsheet does not tell you.

Further reading

- Burton G. Malkiel, *A Random Walk Down Wall Street* — the classic introduction to markets and indexes.
- S&P Dow Jones Indices, *Index Mathematics Methodology* — how a major provider calculates its indexes (spglobal.com).
- Ho Chi Minh City Stock Exchange — index rules and factsheets for the VN-Index, VN30 and other HOSE indexes (hsx.vn).
- John C. Bogle, *The Little Book of Common Sense Investing* — why indexes became the basis of low-cost investing.