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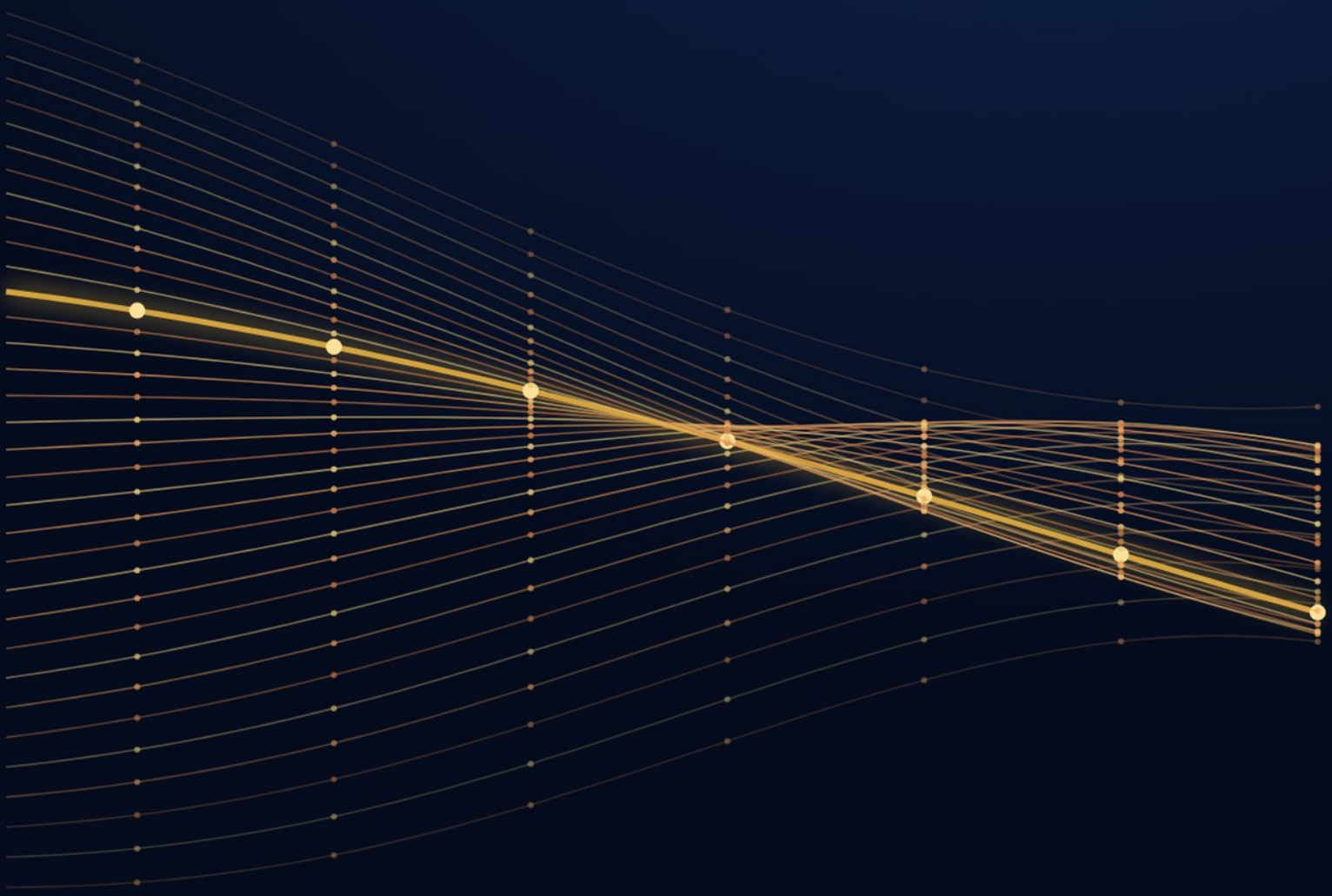
Commodity *Investing*

From Theory to Practice



DR MAI HUU MINH

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CHAPTER 1

What Is a Commodity?

Raw materials, standard grades and why they behave differently from stocks

Opening question

"Gold, oil, rice and coffee are all called commodities. What do they have in common — and why should an investor care?"

A share of a company is a claim on future profits. A tonne of rice is not a claim on anything: it is food that someone will eat, store or sell. Understanding this difference is the first step to investing in commodities sensibly. This chapter defines what a commodity is, how commodities are grouped, why their prices behave as they do, and the four ways an investor can own them.

In this chapter

- What makes a good a commodity: standard grades, interchangeability and a world price
- The three families: energy, metals and agriculture
- Why commodities do not behave like stocks or bonds
- How prices are anchored by the cost of the marginal producer
- The cost of holding a commodity, with a worked example on gold
- Who buys and sells commodities, and why
- Four ways for an investor to get exposure
- Commodities in the Vietnamese economy

1.1 A raw material with a world price

A **commodity** is a raw material or primary product that is produced in large quantities, traded in bulk and sold in **standard grades**, so that one unit of a given grade can replace any other. A tonne of copper cathode of the exchange grade is the same whether it was smelted in Chile, Zambia or China. A barrel of a given crude oil grade is valued the same wherever it is loaded, apart from transport costs.

This interchangeability — economists call it **fungibility** — has a powerful consequence: commodities have a **world price**. A buyer does not care who produced the copper, so producers compete on price alone, and the price is set by global supply and demand. Compare this with a smartphone or a car: two models are never identical, brands matter, and each manufacturer sets its own price.

Three features therefore define a commodity:

- **Standardisation** — the product can be described by a grade (purity, quality, moisture, size) that buyers accept without inspecting each lot.
- **Bulk trading** — it is produced and traded in large volumes by many producers and consumers.
- **A reference price** — exchanges and price reporters publish prices that the whole market uses as a benchmark.

Not every raw material meets all three. Some — specialty coffees, rare minerals, regional electricity — trade in thin, local markets with little price transparency. The more standardised and liquid a commodity is, the easier it is to invest in.

1.2 Standard grades and contracts

Standard grades are what make exchange trading possible. A futures contract specifies exactly what is being traded: the grade, the quantity, the place and the time of delivery. Table 1.1 gives examples. The figures are those commonly used by major exchanges and markets; always check the current specification before trading.

Commodity	Typical standard	Common trading unit	Examples of benchmark
Crude oil	Light, sweet crude of a named grade	1,000 barrels per futures contract	WTI (New York), Brent (London)
Gold	Bars of at least 99.5% purity	Bars of about 400 troy ounces in the London market	London gold price, exchange gold futures
Copper	Grade A copper cathode	25 tonnes (London) or 25,000 pounds (New York)	Exchange copper futures
Robusta coffee	Defined grades and maximum defects	10 tonnes per futures contract (London)	Robusta futures (London)
Rice	Long-grain white rice, a stated share of broken grains	Tonnes, quoted per tonne for export	Export quotations of major exporters

Table 1.1 — Examples of standard grades and trading units (check current exchange specifications)

Grades also explain why prices of "the same" commodity differ. Heavier, more sulphurous crude oil is cheaper to buy but more expensive to refine; rice with more broken grains is worth less; gold in small bars and jewellery carries a premium over the large-bar price. The difference between the price of a physical lot and the benchmark price is called the **basis** — a word you will meet again in Chapters 4 and 21.

1.3 The three families

Commodities are usually grouped in three families, each driven by different forces (Figure 1.1).

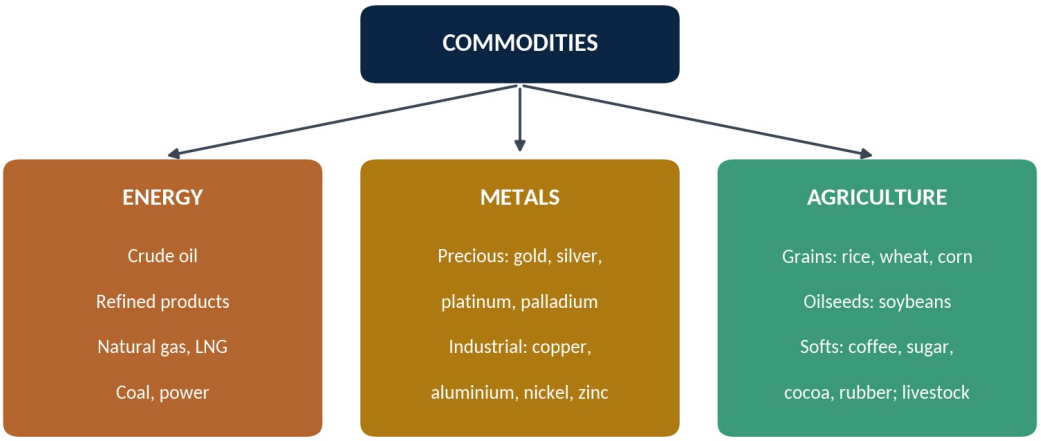

Figure 1.1 — The three families of commodities

- **Energy** — crude oil, refined products (petrol, diesel, jet fuel), natural gas and liquefied natural gas (LNG), coal and electricity. Energy is the largest commodity market by value and the most sensitive to geopolitics and to decisions by producer countries (Chapter 8).

- **Metals** — **precious metals** (gold, silver, platinum, palladium), held largely as stores of value and in jewellery, and **industrial or base metals** (copper, aluminium, nickel, zinc, lead, tin, iron ore), used in construction, manufacturing and electrification (Chapters 9 and 10).
- **Agriculture** — **grains** (rice, wheat, corn), **oilseeds** (soybeans, palm oil), **softs** (coffee, cocoa, sugar, cotton, rubber) and **livestock**. Their supply depends on weather, seasons and disease, and many are perishable (Chapter 11).

A fourth group is emerging: markets created by policy and technology, such as **carbon allowances** and **battery metals** like lithium and cobalt (Chapter 12).

Family	Main demand	Main supply risks
Energy	Transport, industry, power generation, heating	Geopolitics, production decisions of producer countries, refinery outages
Precious metals	Investment, jewellery, central banks, some industry	Mine supply grows slowly; demand driven by investors
Industrial metals	Construction, manufacturing, electrical networks, vehicles	Long mine lead times, ore grades, smelter capacity, export policies
Agriculture	Food, animal feed, biofuels, textiles	Weather, disease, planting decisions, export restrictions

Table 1.2 — What drives each family

1.4 Why commodities are different from stocks and bonds

An investor used to stocks and bonds must change several habits when looking at commodities.

No cash flows

A share entitles its owner to a part of future profits; a bond pays interest. Their value can be estimated as the present value of those cash flows. A barrel of oil or an ounce of gold pays nothing. Its value today depends only on what someone will pay for it tomorrow — which depends on how scarce it is relative to the need for it. There is no "earnings yield" of copper and no "fair price-to-book" of coffee.

Holding costs instead of income

Owning a stock or bond earns income. Owning a physical commodity **costs** money: storage, insurance, transport and the interest forgone on the money invested. Some commodities spoil (grains, coffee, livestock); others are expensive to store (oil, gas). Only a few, such as gold, are cheap to keep for years.

The cost of carrying a commodity

$$\text{Cost of carry} = \text{Financing cost} + \text{Storage} + \text{Insurance} - \text{Convenience yield}$$

The convenience yield is the benefit of having the physical good on hand when it is scarce — for a refinery that needs crude or a mill that needs wheat. When stocks are low, it can exceed the other costs (Chapter 5).

Example — holding one kilogram of gold for a year (illustrative)

One kilogram is about 32.15 troy ounces. At an illustrative price of USD 3,000 per ounce, the bar is worth about USD 96,450.

- Financing: if the investor could earn 4% on cash, holding gold instead costs about USD 3,858 a year in income given up.
- Storage and insurance in a professional vault at an illustrative 0.12% a year: about USD 116.

> Total cost of carry: about USD 3,974, or **4.1% a year**. The gold price must rise by at least that much for the bar to beat a deposit — the hurdle every commodity investment must clear.

Prices anchored by costs, not by earnings

In the long run, commodity prices are anchored by the **cost of production**. Producers can be ranked from the cheapest to the most expensive to form a **cost curve** (Figure 1.2). The market price must be high enough to cover the cost of the **marginal producer** — the most expensive producer still needed to meet demand. If prices fall below that cost for long, high-cost mines and fields close, supply falls and prices recover; if prices rise far above it, new supply arrives — but often only after years.

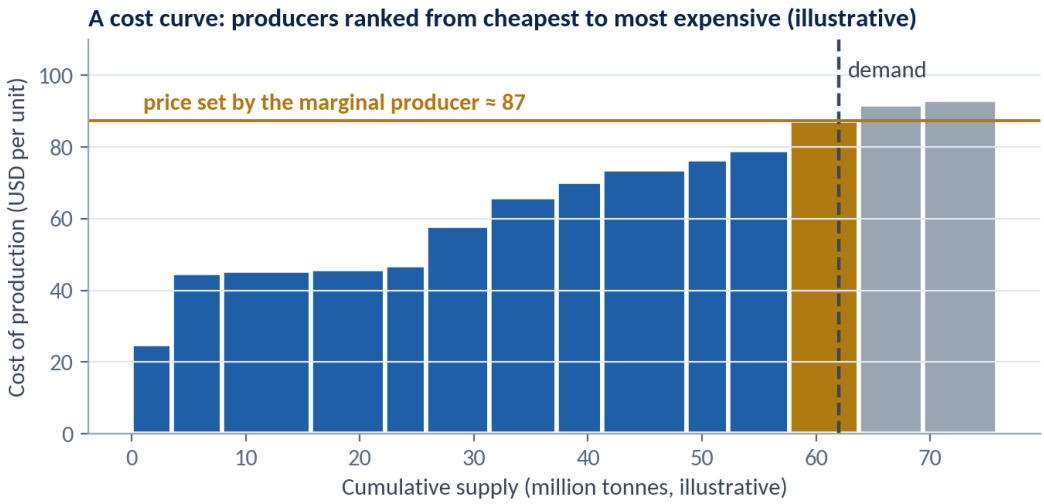

Figure 1.2 — A cost curve: the price settles around the cost of the marginal producer (illustrative data)

This mechanism explains two features of commodity prices: they tend to **revert** towards production costs over long periods, and they can **overshoot** dramatically in the short run, because supply and demand react slowly. A frost in coffee-growing regions or a strike at a large copper mine cannot be offset quickly, so prices jump until demand is rationed.

High volatility and boom–bust cycles

Because supply and demand are slow to adjust, commodity prices are often more volatile than broad stock indexes, and they move in long cycles: years of high prices encourage investment in new capacity, which eventually creates a surplus and years of low prices. Commodity investors must be prepared for large swings and long periods of disappointing returns.

Different links to the economy

Commodity prices are part of what consumers pay, so they tend to rise when inflation surprises on the upside — one reason investors use them to diversify portfolios of stocks and bonds (Chapter 14). But they also fall in recessions, when demand for energy and metals weakens. Gold often behaves differently from the other commodities, acting more like a currency or a crisis hedge (Chapter 9).

Feature	Stocks and bonds	Commodities
Source of value	Present value of profits or interest	Scarcity relative to use; anchored by production cost
Income	Dividends, coupons	None; holding has a cost

Feature	Stocks and bonds	Commodities
Supply	Shares and bonds can be issued quickly	Mines, fields and plantations take years
Typical drivers	Earnings, interest rates, growth	Inventories, weather, geopolitics, the US dollar, growth
Long-run behaviour	Rise with the economy over time	Cycles around production costs

Table 1.3 — Commodities compared with stocks and bonds

1.5 Who buys and sells commodities

Commodity markets bring together participants with very different goals:

- **Producers** — oil companies, miners, farmers and cooperatives — want to secure a price for their future output.
- **Consumers** — refiners, airlines, utilities, food processors, roasters, manufacturers — want to secure the cost of their inputs.
- **Merchants and trading houses** buy, store, transport and blend physical commodities, earning margins on logistics and on price differences between places, grades and dates.
- **Financial investors** — pension funds, index funds, hedge funds and individuals — seek diversification, inflation protection or short-term profits.
- **Governments** manage strategic reserves, set export rules and taxes, and sometimes control domestic prices of fuel or food.

Producers and consumers who use markets to reduce price risk are called **hedgers**; participants who take price risk in the hope of a profit are called **speculators**. Both are needed: speculators provide the other side of hedgers' trades and make markets liquid. Chapter 13 shows how the payment hedgers make for this service may be one source of the return investors earn.

1.6 Four ways to invest in commodities

An investor who wants exposure to commodities has four main routes. Each gives a different kind of return and carries different risks.

Route	What you own	Main advantages	Main risks and costs
Physical	Bars, coins, stored goods	Direct ownership, no counterparty for metal in hand	Storage, insurance, spreads, authenticity; impractical except for precious metals
Futures	Exchange contracts on future delivery	Liquid, cheap, precise exposure	Leverage, margin calls, rolling costs (Chapter 5)
Funds and ETFs	Units of a fund holding metal or futures	Simple, diversified, small amounts	Fees, roll costs, tracking; structure risk for notes (Chapter 16)
Producer equities	Shares of miners, oil companies, plantations	Dividends, liquidity, familiar to stock investors	Company and stock-market risk; only partial commodity exposure (Chapter 17)

Table 1.4 — Four ways to invest in commodities

The choice matters more than in most asset classes. An investor who believed "oil will rise" could see the oil price rise while an oil futures fund loses money because of the cost of rolling contracts (Chapter 5), or while an oil company's shares fall because of rising costs or a weak stock market. **Before choosing a product, decide which return you want: the spot price, the futures return or the producer's profits.**

1.7 Commodities and the Vietnamese economy

Commodities are not a distant topic for Vietnam: they shape exports, inflation, household savings and company profits.

Vietnam spotlight — a commodity economy

- **Agricultural exporter.** Vietnam is one of the world's leading exporters of rice, robusta coffee, black pepper and cashew nuts, and a major exporter of natural rubber and seafood. World prices of these products directly affect farmers' incomes and export earnings.
- **Importer of energy and inputs.** The country imports large quantities of petroleum products, coal, cotton, animal feed and many metals, so rising world prices feed into domestic costs and inflation.
- **Gold as household savings.** Many Vietnamese households hold gold bars and rings as savings. Domestic gold prices have at times been well above world prices, a gap that depends on import rules and domestic supply.
- **A domestic commodity exchange.** The Mercantile Exchange of Vietnam (MXV) connects Vietnamese participants to international commodity futures through its member firms.
- **Listed producers.** Companies in steel, oil and gas, fertiliser, rubber and agriculture listed on HOSE and HNX give stock investors indirect exposure to commodity prices.

For a Vietnamese investor, commodities can therefore be both a **risk already present** in the economy and in local stocks, and an **opportunity** to diversify a portfolio dominated by domestic equities and deposits. Chapter 20 returns to these questions in detail.

1.8 Commodity investing: a first map of the book

This book follows the same path as its companion, *Index Investing: From Theory to Practice*. Module 1 explains what commodities are, how their markets developed and how prices are formed. Module 2 opens the toolbox of markets and instruments: spot, futures, the futures curve, options and benchmarks. Module 3 visits each sector. Module 4 asks where commodity returns come from and what commodities add to a portfolio, including the commodity indexes that most funds track. Module 5 turns to products and practice — funds, producers, physical assets and building your own commodity index. Module 6 applies everything to Vietnam and Asia, to risks and regulation, and to the future of commodities in the energy transition.

Key takeaways

- A commodity is a standardised raw material, traded in bulk, with a world reference price; standard grades make exchange trading possible.
- Commodities fall into three families — energy, metals and agriculture — each driven by different forces, plus new markets such as carbon and battery metals.
- Commodities pay no income and cost money to hold; their value depends on scarcity and is anchored in the long run by the cost of the marginal producer.
- Slow-moving supply and demand create high volatility and long boom–bust cycles.

- Producers, consumers, merchants, investors and governments all take part; hedgers and speculators need each other.
- Investors can own commodities physically, through futures, through funds or through producers — and each route delivers a different return.

Practice lab 1

Download the workbook **Lab01_What_Is_a_Commodity.xlsx** from the companion site.

- **Sheet 1 — Read a contract.** Open the specification of one energy, one metal and one agricultural futures contract on an exchange website. Record the grade, contract size, delivery months and last trading day.
- **Sheet 2 — Cost of carry.** Reproduce the gold example of Section 1.4; change the interest rate and the storage fee and find the price rise needed to break even.
- **Sheet 3 — Build a cost curve.** Using the illustrative producers in the sheet, rank them by cost, plot the curve and find the marginal producer for three levels of demand.
- **Sheet 4 — Vietnam's commodity trade.** From official trade statistics, list Vietnam's five largest commodity exports and imports by value for the latest year and chart them.

Further reading

- Gary Gorton and K. Geert Rouwenhorst, "Facts and Fantasies about Commodity Futures", *Financial Analysts Journal*, 2006.
- Hélyette Geman, *Commodities and Commodity Derivatives* — a reference on commodity markets and pricing.
- Frank J. Fabozzi, Roland Füss and Dieter G. Kaiser (eds.), *The Handbook of Commodity Investing*.
- Javier Blas and Jack Farchy, *The World for Sale* — the story of the commodity trading houses.
- CME Group, ICE and LME — contract specifications for energy, metals and agricultural futures.