



Food for thought

A regular look across food, beverage and agribusiness supply chains

Q2 2026

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Volatility normalised – Food supply chains in an era of recurring shocks



Overview

- Disruption is not new, but shocks are arriving closer together in a more integrated global system
- Price swings can now flow quickly from geopolitics, freight and weather into farmgate margins and working capital
- The businesses that tended to endure often build pricing flexibility, liquidity and operational options before volatility hits

This chapter was drafted prior to the escalation of conflict involving Iran and the resulting disruption to global energy, fertiliser and freight markets. Subsequent events have reinforced - rather than weakened - the central themes of volatility discussed here. Recent price shocks across fuel, agricultural inputs and food supply chains underline how quickly external pressures can move through costs, margins and cash flow, making the issues explored in this chapter more relevant than ever.

Volatility is not new

Volatility and disruption have shaped food supply chains for as long as food has been traded. Long before refrigerated containers, financial hedging instruments or real-time logistics tracking, food availability depended on weather, transport routes and political stability. Ancient Rome experienced grain shortages when storms delayed shipments from Egypt, demonstrating that maritime disruption

could translate directly into urban price pressure. In medieval Europe, failed harvests pushed up bread prices and contributed to social unrest, while the Irish potato blight in the nineteenth century reshaped migration patterns and national demographics. Even in Australia, cycles of drought and commodity booms have repeatedly altered rural incomes and,

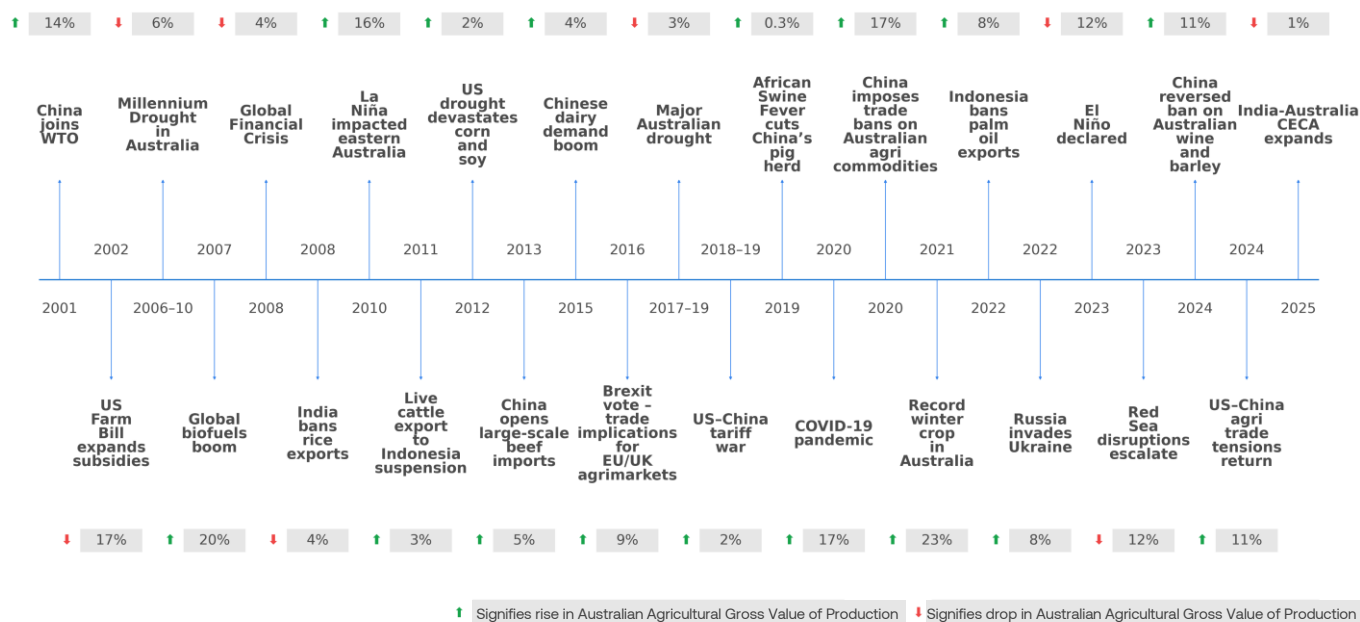
particularly in the early twentieth century, influenced national economic performance.

Volatility has never been limited to farm production; it has travelled through storage, transport, processing and retail, affecting both availability and price. Recent events showed this clearly. During the early months of COVID-19, supermarket shelves in Australia emptied of flour and pasta as supply chains struggled to pivot from food service to retail demand. In 2022, lettuce prices briefly approached ten dollars each after flooding across eastern Australia reduced supply and disrupted transport. Both episodes were temporary, yet they demonstrated how disruption in one part of the system can quickly cascade through the rest.

For much of the past quarter century, however, major disruptions tended to be separated by periods that allowed balance sheets to recover. China's accession to the World Trade Organization expanded global trade flows, Australia endured the Millennium Drought and the Global Financial Crisis unsettled capital markets, yet each episode was followed by sufficient time for businesses to readjust, recover and strengthen their balance sheets before the next major disruption emerged. Operating models were largely built on the assumption that volatility would spike and then subside.

Australian and global agriculture timeline (2000 – 2025)

Australian & Global Agri Timeline (2000-2025)



Source: ABARES, ANZ

Note: Timeline highlights major global and Australian agricultural, trade, climate and policy events since 2000, alongside movements in Australian farm-gate value.

Australian farm performance over the past twenty-five years has been shaped by repeated external shocks rather than a single cycle. Droughts, trade disruptions, financial stress and geopolitical events have driven sharp swings in farm value, with recoveries typically following periods of adjustment rather than steady, uninterrupted growth.

What has changed in the past decade

Over the past decade the assumption that disruption would be followed by a long period of calm has become harder to sustain. Trade policy, animal

disease, weather variability, energy markets and logistics have always influenced food systems, yet the modern supply chain is far more globally integrated and reliant on cross-border flows of fertiliser, fuel, feed, packaging and finished food than

it was twenty years ago. As a result, shocks can travel faster and reach further.

The sequence since the mid-2010s makes this clear. Brexit reshaped European trade just as US - China tariff tensions redirected agricultural flows across the Pacific, while African Swine Fever in 2018–19 removed an estimated 40 percent of China’s pig herd and tightened global protein markets. COVID-19 then constrained labour, disrupted freight and shifted consumption patterns almost simultaneously, followed by Chinese trade restrictions on Australian commodities and Russia’s 2022 invasion of Ukraine, which unsettled grain and fertiliser markets where Russia and Ukraine had accounted for close to 30 percent of globally traded wheat. By 2024, Red Sea shipping disruptions were again extending voyage times to Europe. None of these events were historically unique, but their close sequencing within an interconnected system left less time for businesses to rebuild before the next disruption arrived.

The effect is most visible in export-oriented food economies. In Australia, roughly 70 percent of

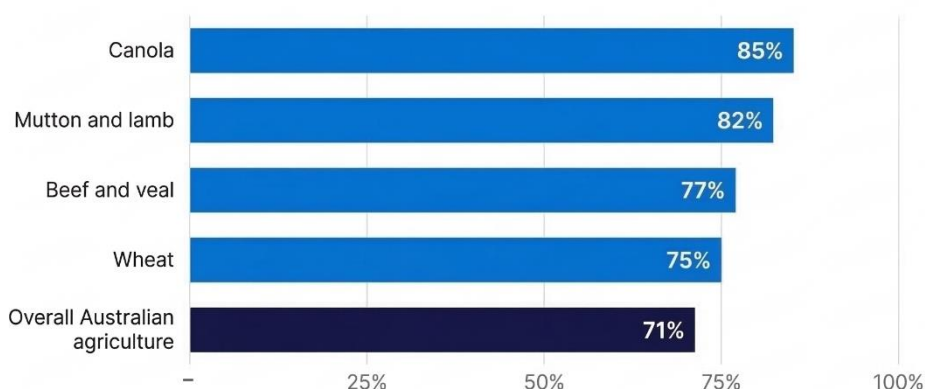
agricultural production by value is exported, so the price received for beef in Queensland, wheat in Western Australia or wine in South Australia can depend as much on demand in Tokyo, Shanghai or Los Angeles as on local conditions. If shipping routes lengthen through the Red Sea or demand softens in a major importing market, the impact flows back through exporters, processors and transport operators to farmgate returns. The same pattern can be seen elsewhere. A dairy processor in New Zealand, a soybean crusher in Brazil or a poultry integrator in the United States may operate domestically, yet earnings are closely tied to global feed prices, energy costs and freight reliability. Processing plants, cold storage facilities and distribution networks require substantial capital investment and ongoing financing, so when fertiliser, fuel and freight prices rise within the same period, higher costs can move quickly through cropping margins, livestock feed bills, factory operating expenses and the value of inventory sitting in warehouses.

Australia is wired into the world

A large share of Australia’s agricultural output is sold offshore, making global demand, freight and trade conditions central to earnings across the supply chain

Export share by commodity

Percentage of production exported by volume



A\$80.2bn

agriculture, fisheries and forestry exports in 2024–25



12.4%

of Australia’s total goods and services exports



2.2%

share of national GDP / value added in 2024–25

Source: ABARES, ANZ

Freight and weather in a tighter system

Freight disruptions over the past several years have shown how little slack now exists in food supply chains. Container rates surged during COVID as

ports closed and labour shortages delayed vessels, and although average rates later eased, shipping did not return to its earlier rhythm. In late 2023 and through 2024, attacks on commercial vessels in the Red Sea led many shipping lines to avoid the Suez

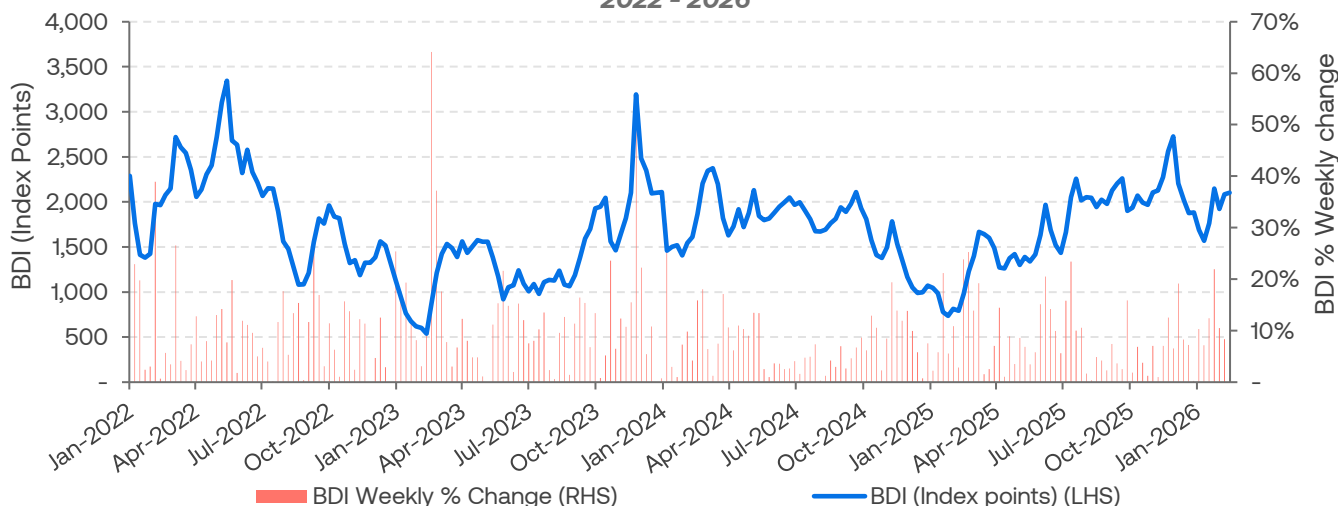
Canal and reroute around the Cape of Good Hope at the southern tip of Africa, adding roughly ten to twenty days to voyages between Asia and Europe. For exporters shipping beef from Australia, dairy from New Zealand or packaged foods from Southeast Asia into European and Middle Eastern markets, that detour meant higher fuel use, longer transit times for chilled product and a slower conversion of shipments into cash, as invoices were settled later and capital remained tied up at sea for extended periods.

Weather swings have reinforced this tightening of conditions. Eastern Australia moved from severe drought in 2019 and 2020, when paddocks were bare and livestock numbers were cut back, to

widespread flooding in 2022 and 2023 that damaged crops, washed out regional roads and slowed grain movements to port. In practical terms, a wheat crop that survives drought may face quality downgrades after harvest rains, and trucks that would normally carry grain to port can be delayed by flooded highways. In the United States during 2022, water levels on the Mississippi River fell so low that barges were forced to reduce loads or halt movements altogether, constraining grain exports at the same time that Black Sea supplies were already disrupted. Europe's extreme summer heat in 2023 reduced crop yields and lifted electricity demand for irrigation and cooling, tightening both agricultural output and energy markets simultaneously.

Baltic Dry Index (Shipping costs) vs. Weekly % change

2022 - 2026



Source: Baltic Exchange, ANZ

Note: The Baltic Dry Index reflects spot freight rates for major dry bulk shipping routes and vessel classes. Global shipping costs have moved through repeated spikes and corrections rather than returning to pre-pandemic norms. COVID related disruption, the Russia-Ukraine conflict and Red Sea rerouting have each lifted freight rates sharply, with volatility persisting even as commodity prices eased. For food and agribusiness exporters, freight has increasingly become a recurring source of cost uncertainty rather than a stable background input.

How volatility shows up in cash flow

When markets turn volatile, the strain rarely appears first in annual profit; it shows up earlier in cash. Businesses begin paying more for grain, milk, fuel or packaging well before they can charge more for flour, yoghurt or bottled drinks, which means that even if the full year later looks acceptable on paper,

the pressure on the bank balance can be immediate and uncomfortable.

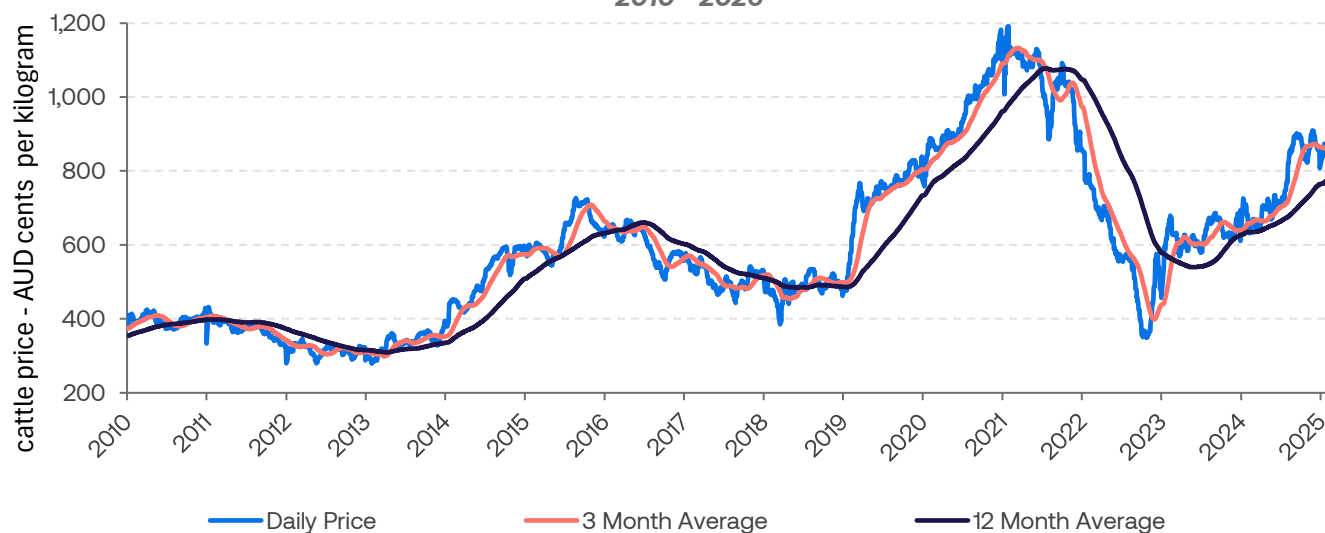
For example, wheat prices rise from \$300 per tonne to \$450 per tonne, a flour mill holding the same physical volume of grain must fund 50 percent more capital simply to keep its silos full. Nothing has changed in tonnes, yet the dollars tied up in inventory have increased sharply. That dynamic

played out during 2022 and 2023 when global grain, dairy and energy prices lifted following the Ukraine conflict and related supply disruptions. Dairy processors paid farmers higher milk prices as global markets strengthened, yet retail and export contracts adjusted only after negotiation cycles, leaving manufacturers to carry elevated input costs for months before higher revenues were realised.

The cattle markets show how price swings translate into financial strain. The benchmark Eastern Young Cattle Indicator, which tracks young cattle prices, fell below 400 cents per kilogram (carcase weight) in early 2023 as good seasons encouraged herd

rebuilding and lifted supply, before rising above 700 cents by mid-2025 as slaughter numbers eased and export demand strengthened. For processors, that movement changed livestock purchase costs and the value of animals and meat held in inventory, affecting cash flow across the cycle. Dairy processors face similar dynamics, where shifts in milk prices and product values can move working capital requirements well ahead of revenue adjustments. In both sectors, outcomes tended to depend less on headline prices and more on how quickly businesses can adjust selling prices relative to rising input costs.

Australian cattle price volatility - Daily vs. longer term averages
2010 - 2026



Source: MLA, ANZ

The Eastern Young Cattle Indicator has moved through sharp cycles in recent years, reflecting seasonal conditions, herd rebuilding and export demand shifts. For processors and feedlot operators, these price swings translate directly into changing inventory values and working capital requirements. Earnings outcomes depend not only on price levels but on how quickly margins adjust relative to input costs.

Planning for sustained volatility

Recent experience has made one thing clear - waiting for things to “settle” is no longer a strategy. For businesses across the food supply chain, the focus has shifted from trying to guess the next disruption to making sure the business can cope when it arrives. That can be as practical as agreeing on pricing that adjusts every few months rather than once a year, so a spike in grain or fuel costs does not sit unpaid for half a year. It can mean contracts that reference published commodity prices, so both

buyer and seller know how adjustments will work instead of renegotiating from scratch each time. It can involve locking in part of next year’s energy bill or currency exposure rather than hoping markets remain stable. It can also mean keeping enough cash and borrowing capacity available so that a jump in inventory values does not force difficult decisions at the wrong time.

Operational flexibility matters just as much. A meat processor that can redirect product between food-service and retail formats - for example shifting

from bulk cuts destined for restaurants into consumer-ready packs for supermarkets - has far more room to respond when demand patterns change than one locked into a single channel. During COVID, beverage companies that could shift volume from kegs destined for pubs into cans and bottles for retail avoided writing off stock when hospitality shut overnight. Similarly, a food manufacturer that sources packaging from both local suppliers and offshore producers is less exposed if a factory fire, flood or port delay interrupts one stream. These arrangements can look slightly less efficient when everything is running smoothly, yet they provide

options when conditions change suddenly, and options are often what separate temporary strain from lasting damage. Food systems have always faced uncertainty, but the recent combination of geopolitical tension, energy price swings, freight disruption and weather shocks has shown how quickly pressure can move through earnings and cash flow. In a setting where several costs can rise together and revenue takes time to adjust, the businesses that remain steady are usually those that prepared for instability rather than assuming it would pass.

What steady businesses do before volatility hits

Resilience in food supply chains is built before disruption arrives – through pricing flexibility, liquidity, operational options, sourcing breadth and disciplined risk management



Dairy reimaged – Why milk still matters to institutional capital



Overview

- Milk production volumes have tightened across developed markets while value has shifted toward cheese, ingredients and nutrition
- Returns increasingly depend on processing mix and flexibility rather than farm expansion alone
- Capital is moving beyond the farm gate into assets that have increasingly converted constrained supply into higher value, repeat demand

Milk coming from a cow is largely the same product that it has been for centuries. What continues to change, however, is the business built around where that milk goes and how value is created from it. Poured over cereal, it looks and tastes much as it always has, yet the same milk may now also become mozzarella on a pizza, protein in a gym shake or powder in an infant formula tin bound for Asia. The product has not changed; the pathways through which it earns money have.

Institutional investment in agriculture has grown steadily over recent decades, but it has not flowed evenly across sectors. Capital has tended to concentrate more consistently in sectors such as beef and red meat supply chains, grains and

oilseeds, poultry and permanent crops, where production systems are easier to replicate at scale, biological risk is more manageable and returns are tied either to global pricing or contracted, high-throughput models. Dairy, by contrast, has seen interest rise and fall rather than build steadily, despite demand remaining strong. The challenge has not been demand, but the way labour intensity, capital requirements and biological risk are concentrated at the farm level, making large-scale exposure harder to standardise.

That distinction matters because dairy operates differently to most other agricultural systems. Unlike cropping or grazing enterprises that move through seasonal cycles, dairy production is continuous.

Cows must be milked every day; infrastructure cannot be idled when prices soften and labour requirements remain constant. Over time, this has driven consolidation at the farm level. As smaller operators have exited, production has been concentrated into fewer, larger businesses, with average Australian herd sizes rising sharply - from fewer than 100 cows per farm in the mid-1980s to around 345 cows in 2024/25 - even as national milk pools have flattened or declined across Australia, New Zealand, parts of Europe, while growth in the United States has slowed. For investors, the issue has been less about dairy being complex and more about where that complexity sits: at the farm gate, where labour, capital and biological risk are tightly linked and difficult to smooth across cycles.

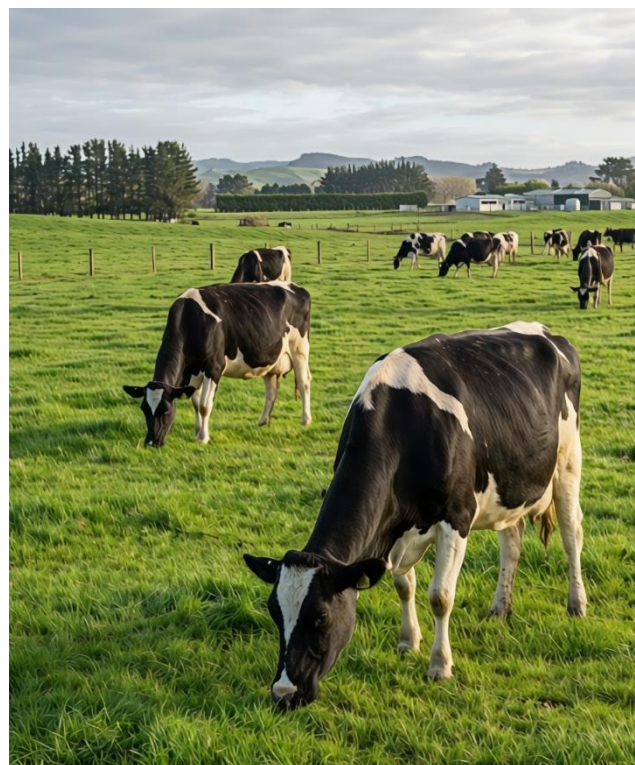
What has changed materially is demand beyond the farm gate. While milk output has tightened in several developed markets, demand for dairy products has continued to broaden across categories and regions. In Australia, per-capita fresh milk consumption has declined over time, while demand for cheese, yoghurt and dairy-based ingredients has grown, reflecting shifts toward convenience foods, takeaway and quick service chains, and higher-protein diets. The same underlying milk supply now feeds a widening set of end uses - from retail cheese and yoghurt to foodservice mozzarella, export powders and specialised ingredients - linking dairy more closely to downstream consumption trends than to fluid milk alone.

This widening gap between constrained supply and expanding, higher-value demand sits behind dairy's modern investment story. A litre of milk that once went straight into a supermarket bottle may now generate far more value as mozzarella for a fast-food chain, whey protein for sports nutrition or powder for export into Asia. Institutional capital has engaged more selectively as value has shifted downstream, yet dairy has continued to offer several clear pathways for returns.

Production down, value up

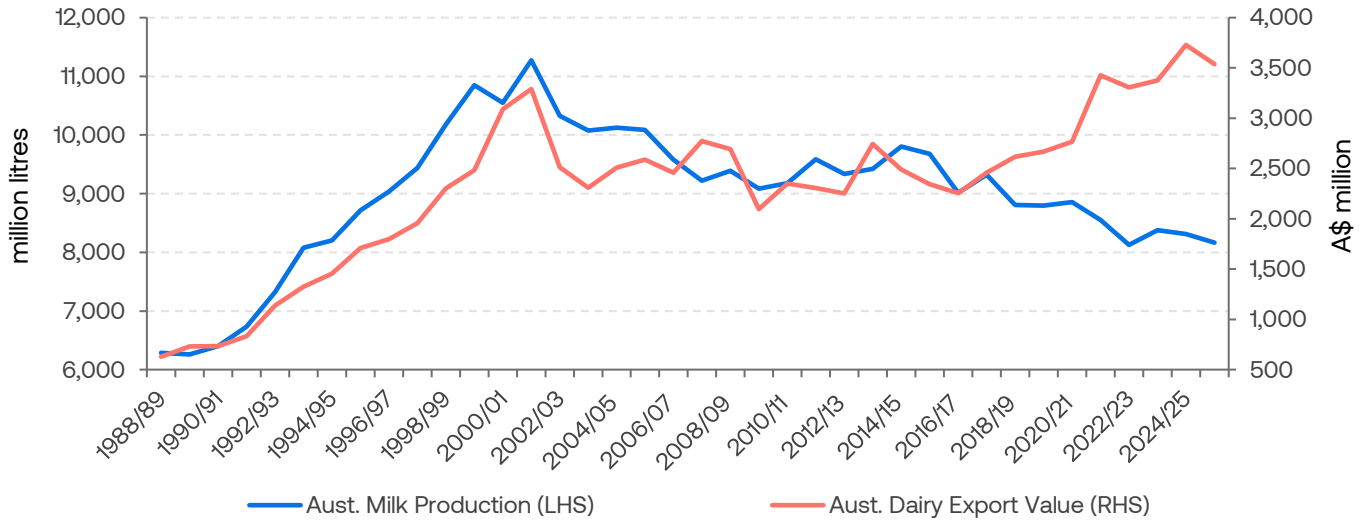
Across much of the developed world, milk production has flattened or declined. Australia's annual milk output has fallen from a peak of around 11.2 billion litres in 2001-02 to roughly 8 billion litres in 2024-25, a decline of close to 30 percent. In New Zealand, growth has slowed sharply from rapid expansion in the 2000s, with milk output broadly flat over the past decade and the national herd edging lower as environmental limits and costs intensify. In the European Union, milk output has remained broadly flat at around 155-158 billion litres for several years.

At the same time, value has continued to rise. Australia's dairy exports exceeded A\$3.5 billion in 2024-25 despite a smaller milk pool, supported by stronger returns for cheese, butter and powders. New Zealand exported a record NZ\$27.15 billion (A\$24.8 billion) of dairy products in the year to 30 June 2025, up 16.9 percent from the previous year, highlighting how value has continued to rise even on stable volumes. Globally, according to FAOSTAT data, dairy trade values rose by around 20 percent between 2013 and 2023, while traded volumes increased only marginally.



Australian milk production vs. Dairy export value

1988/89 - 2025/26f



Source: ABARES, ANZ

Australian milk production has declined materially from early-2000s peaks, yet export value has remained resilient and, in some years, increased. The divergence reflects a shift toward higher-value product streams such as cheese, butter and specialised powders rather than volume growth. For investors, returns increasingly depend on processing efficiency and product mix rather than litres alone.

For investors, the signal is clear. Returns are less driven by producing more milk, but by processing it more effectively, directing it into higher value uses and linking it to markets that pay for reliability, functionality and nutrition.

Milk as a platform

Globally, only around 20–30 percent of milk is consumed as liquid drinking milk. The rest is converted into cheese, yoghurt, butter, powders and an expanding range of nutritional and functional ingredients. Australia reflects the same shift, with fresh milk volumes declining by around 1–2 percent a year, while cheese consumption has grown steadily and exports of powders and ingredients have risen in value.

Processors increasingly operate with a portfolio mindset, allocating milk across product streams

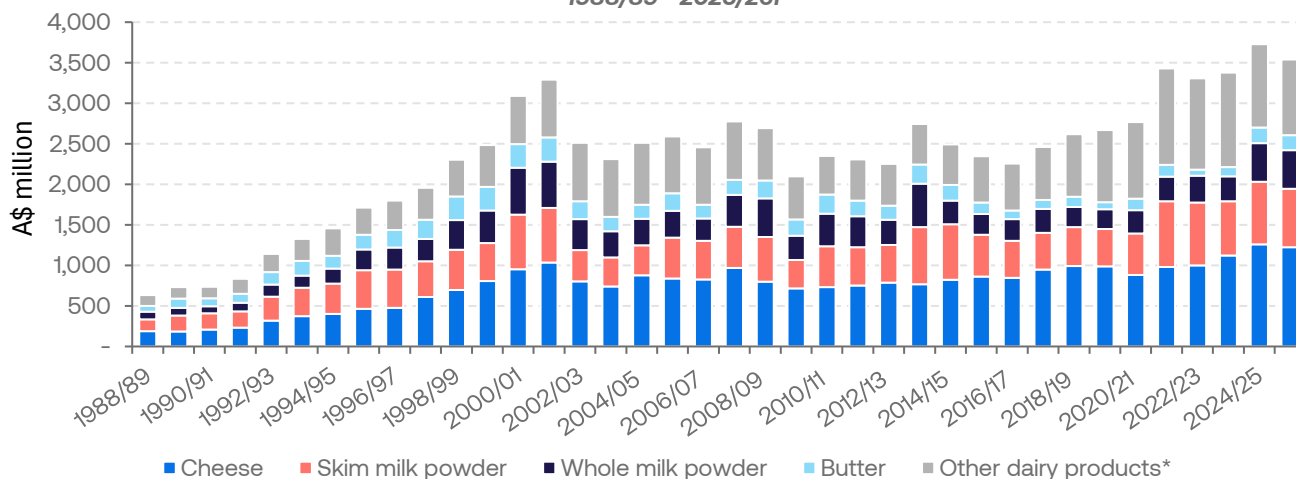
depending on relative returns and demand rather than treating it as a single-purpose input. Internationally, companies such as Arla Foods, Lactalis and Fonterra have invested heavily in flexible processing capacity that allows output to swing between products such as retail cheese, foodservice mozzarella and export powders or ingredients as markets shift.

For investors, that flexibility is often central. As milk supply tightens in Australia, New Zealand and parts of Europe, processors compete for supply through longer contracts, guaranteed offtake and access to higher-value end markets. The advantage increasingly lies not in peak capacity, but in keeping plants full by directing milk to the products and customers offering the strongest returns at any given time.



Australia Dairy export mix and export value

1988/89 - 2025/26f



Source: ABARES, ANZ

Note: Other dairy products include, whey, lactose, casein & specialised dairy ingredients

The composition of Australia's dairy exports has shifted steadily toward cheese, butter and specialised ingredients. The chart shows that growth in export value has been led by higher-value products rather than bulk powders alone. This shift reflects changing global demand and highlights why processing capability and market access matter more than raw milk volumes.

Whey and protein: where margins have moved

Few parts of dairy illustrate this shift more clearly than whey. When milk is made into cheese, it separates into solid curds, which become the cheese, and a pale liquid called whey. Once treated as waste or low-value feed, whey is now filtered, concentrated and dried into protein powders and isolates used in sports nutrition, high-protein foods, medical diets and infant formula.

Recent estimates place the global whey protein market at roughly US\$11–14 billion (around A\$15–21 billion) in 2024–25, with sustained growth expected as protein consumption expands beyond athletes into everyday diets, ageing populations and clinical nutrition. In the United States, around half of all whey solids now go into human nutrition rather than animal feed. European and Australian processors have invested heavily in filtration and drying to move whey into higher-value ingredient markets. Much of this value creation occurs out of sight, with whey embedded inside nutrition powders, packaged foods and supplements rather than sold as a visible consumer dairy product.

For investors, dairy proteins sit closer to industrial ingredients than traditional consumer dairy, with different margins, customer relationships and risk profiles. They also show how value can now be extracted from the same milk in ways barely contemplated a generation ago.

Geography still matters

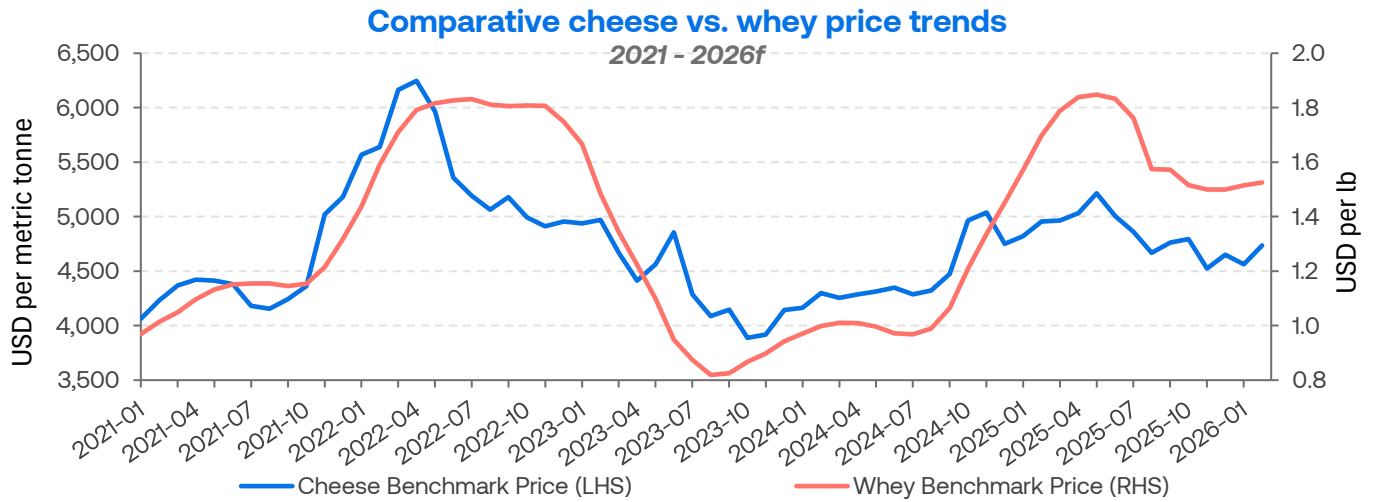
Geography still matters in dairy investment. New Zealand remains the most export-oriented major producer, with most milk converted into products for offshore markets and dairy export earnings exceeding NZ\$26 billion in 2025. Australia sits between this model and Europe's, with a smaller milk pool than two decades ago but resilient export returns, placing emphasis on processing efficiency and product mix rather than volume growth.

In the European Union, milk production has stabilised at scale, with total raw milk output of around 150 million tonnes in 2025. Cheese production, however, reached approximately 10.8 million tonnes, up materially from a decade earlier. The United States shows a different dynamic again: fluid milk production reached about 105 million tonnes in 2025, while cheese output rose to around 6.6 million tonnes, confirming a long-term shift toward

processing and ingredient streams even as liquid milk consumption declines.

In much of Asia, growth in dairy demand is driven more by processing and trade than by drinking milk. China's fluid milk production has grown from around 31.6 million tonnes in 2010 to roughly 41.5 million tonnes in 2025, but much of that growth is directed into making products such as cheese, yoghurt, milk

powders and ingredients, rather than milk for drinking. Cheese production remains at around 200,000 tonnes, compared with imports of roughly 190,000 tonnes. Southeast Asia reinforces this pattern. In Indonesia, domestic milk and powder production remains limited, with ongoing reliance on imported whole milk powder highlighting continued dependence on external supply chains.

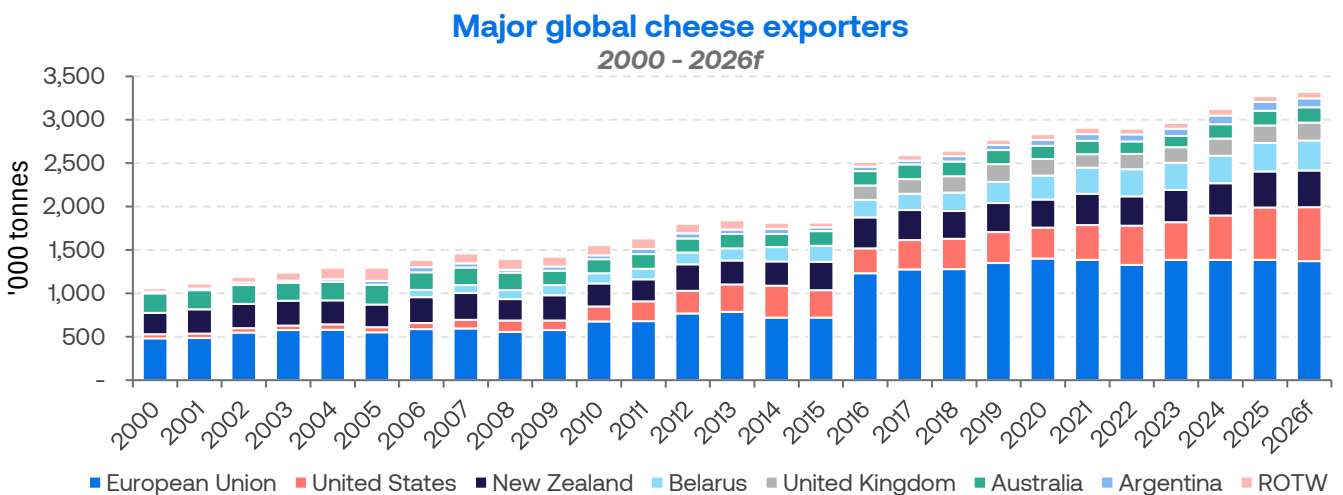


Source: USDA, ANZ

Note: Prices shown compare Oceania cheddar cheese (USD per metric tonne) with whey protein concentrate (USD per lb).

Whey protein prices have consistently traded above cheese prices since 2021, with sharper increases and higher peaks during periods of tight dairy markets. The chart shows that value growth within dairy has increasingly favoured protein and ingredient streams over traditional commodity cheese, reinforcing why margins and investment interest have shifted toward higher-functionality dairy components rather than bulk products.

Source: USDA, ANZ



Note: Post-2015 jump reflects EU quota removal and improved reporting of EU cheese exports, rather than one-year demand growth.

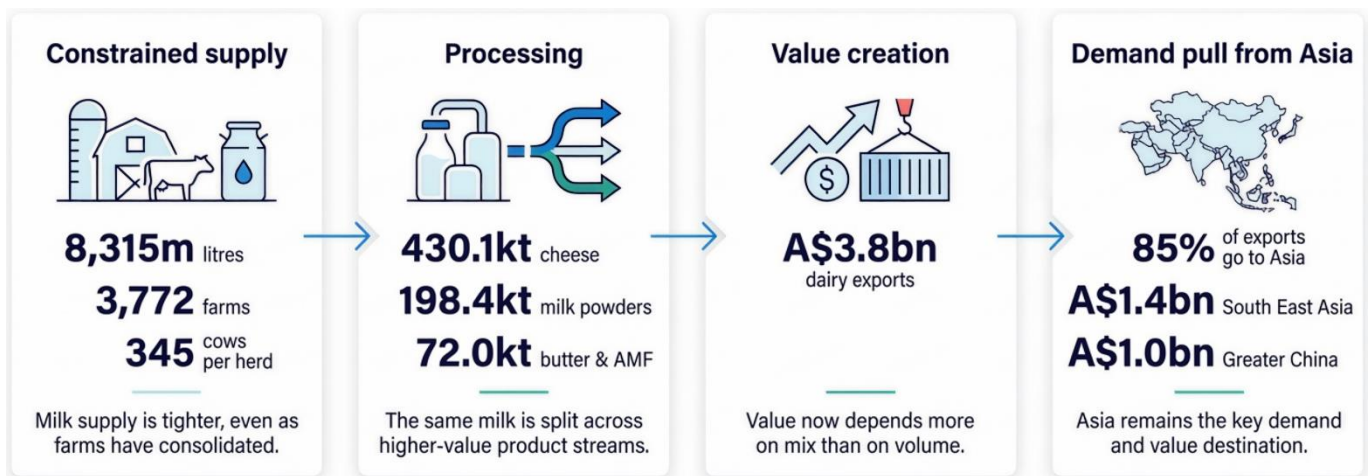
Global cheese trade has expanded steadily, with Europe, the United States and New Zealand accounting for most export growth. The chart highlights the structural rise in cheese exports following regulatory and policy changes, particularly in the European Union. For Australia, where milk supply has tightened, cheese offers a way to direct a smaller milk pool into higher-value export markets rather than relying on volume growth.

Why dairy still matters to capital

Institutional capital’s relationship with dairy hasn’t diminished, but it has changed. More interest now sits beyond the farm gate, in processing assets that turn milk into ingredients, nutrition products and exportable dairy goods for food and human nutrition markets. Production remains essential but returns increasingly depend on flexibility.

Dairy remains hard to replace at scale and deeply embedded in how the world eats, from cheese on pizzas to protein in clinical nutrition. For investors, the opportunity is no longer about chasing litres but backing the parts of the system that turn the same milk into multiple revenue streams. In that sense, dairy is not a fading sector, but one that has learned new ways to earn its returns.

How dairy creates value beyond the farm gate – the Australian dairy supply chain



The opportunity is no longer just producing milk, but directing it into **repeatable, higher-value outlets**

Source: ABARES, ANZ
 Note: Data is for 2024/25

Capital in food, beverage and agribusiness

– Where it finds comfort and why



Overview

- Agriculture's GDP share understates its export weight and system footprint
- Most consumer food spending flows beyond the farm gate into processing, logistics and retail
- Understanding where value is earned along the chain often matters more than simply producing volume

Food, beverage and agribusiness (FBA) is often spoken about as though it were a single sector, when in reality it is a long and uneven system made up of very different businesses that just happen to be linked by what ends up on a plate. A wheat farm, a cold storage warehouse, a yoghurt factory and a seed genetics company can all sit within FBA, yet they earn money in fundamentally different ways, face different sources of volatility and attract very different kinds of investors. Understanding where value sits in that system is less about deciding which activities matter most – because all of them matter – and more about understanding where returns can be repeated, defended and scaled over time.

In Australia, agriculture and related primary industries account for only around 2 to 3 percent of GDP, depending on the season, yet their footprint is far larger than that headline suggests. Agriculture alone typically contributes more than 12 percent of goods

and services exports, supports a significant share of regional employment and drives heavy use of transport, storage, energy and water infrastructure. Add food and beverage manufacturing, fibre processing, forestry, fisheries, logistics and retail, and FBA becomes one of the country's most strategically important industrial ecosystems, anchoring trade relationships and everyday consumption alike. The weekly supermarket shop, the takeaway coffee on the commute and the carton of milk in the fridge all sit on top of that system.

That importance, however, does not mean capital is spread evenly across it. Some parts of FBA attract deep pools of institutional investment, while others – often productive, efficient and globally competitive – continue to rely more heavily on family ownership, bank debt or shorter-term funding. The difference is not how essential an activity is, but whether it can generate returns that are repeatable and resilient across cycles.

Australian agriculture's contribution to GDP, exports and production value

(2024-25)

| | | | |
|---------------------------|---|--|--|
| 2.2% | 12.4% | \$84.8bn | \$107.4bn |
| Share of FBA in Aust. GDP | Share of FBA in Aust. Goods and service exports | 2025/26 forecasted value of total agricultural, fisheries and forestry exports | 2025/26 forecasted Gross Value of Production of farm, fisheries and forestry |

Source: ABARES, ABS, ANZ

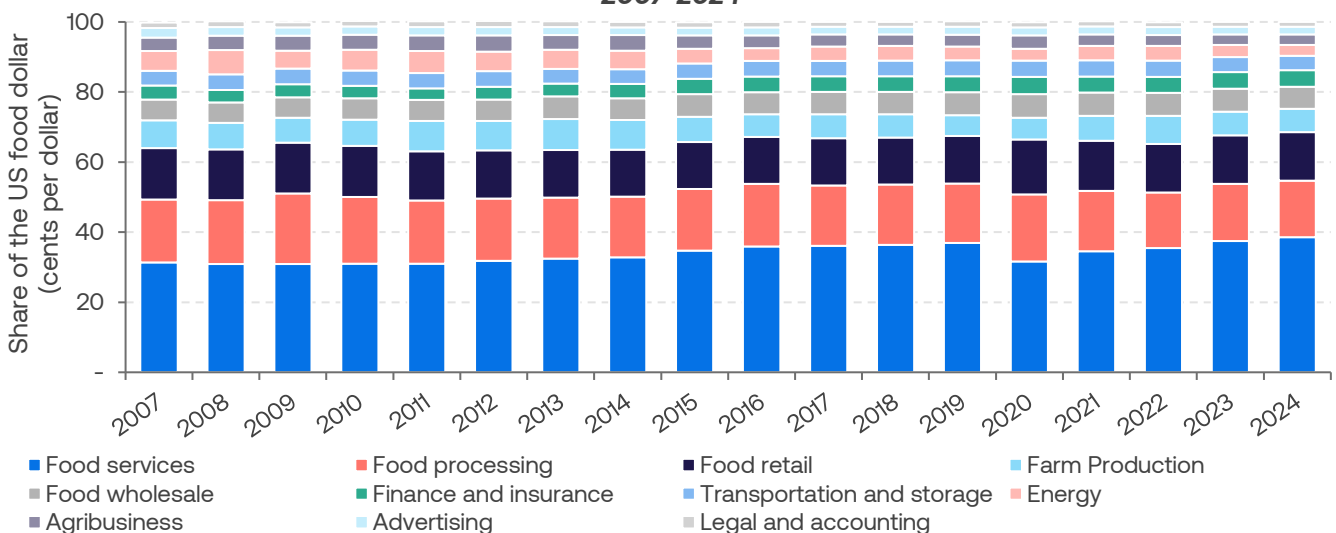
Agriculture contributes a relatively small share of domestic economic output while accounting for a much larger share of exports. This gap highlights the sector's outsized role in trade and foreign earnings compared with its headline GDP contribution, helping explain why agriculture drives demand for transport, storage and export infrastructure despite appearing modest in aggregate economic statistics.

Why value follows control, not volume

Across food, beverage and fibre supply chains, capital – particularly capital new to the sector – tends to focus less on how strong margins can be in a good year and more on how predictable returns are across many years. Grain, milk, timber, fishing and cotton production can all deliver excellent outcomes when seasons and prices align, but those outcomes arrive unevenly and are shaped by forces well beyond management control, including weather, disease, geopolitics and global markets.

Institutional capital does invest in primary production, especially where scale, land quality, water security or diversification help smooth results, but at the farm gate returns still rise and fall with rainfall, yields and prices. By contrast, capital tends to gravitate toward parts of the system that control how volume moves rather than how it is produced. That control might sit with customer access, quality specifications, throughput capacity, long term contracts or regulatory permissions. In these parts of the chain, earnings depend less on where commodity prices land and more on providing services that remain essential whether prices rise or fall.

Share of the US food dollar by supply chain sector (cents per dollar)
2007-2024



Source: USDA, ANZ

Note: Each column shows how revenue from one dollar spent on domestically produced food in the US is earned across different parts of the supply chain.

Consumer spending on food is concentrated well beyond the farm gate, with processing, transport, wholesale, retail and foodservice capturing the majority of value. Farming receives a comparatively small share of the final food dollar, reflecting how earnings increasingly depend on activities that standardise, move and sell food rather than on primary production alone.

The US “food dollar” makes this visible. Of every dollar Americans spent on food in 2024, farms received around 12 cents, with the rest flowing to processing, transport, wholesale, retail and foodservice. The farmer grows the wheat, but most of the money is earned by the mill, the baker, the distributor and the supermarket that makes sure the loaf is on the shelf every morning.

The beef supply chain is a clear example. A cow is grown over years, exposed to weather, feed costs, animal health and global prices. Once it reaches the processor, variation in weight, fat cover and carcass quality is absorbed and reorganised into consistent cuts that meet supermarket and export specifications. Cold storage ensures steaks arrive fresh, burger patties fit the bun, and mince looks the same every week. Brands and retailers sell that product reliably, while genetics, feed additives and animal health inputs quietly shape performance behind the scenes. Every step matters, but each step earns money in a very different way, and capital pays close attention to where risk gives way to control.

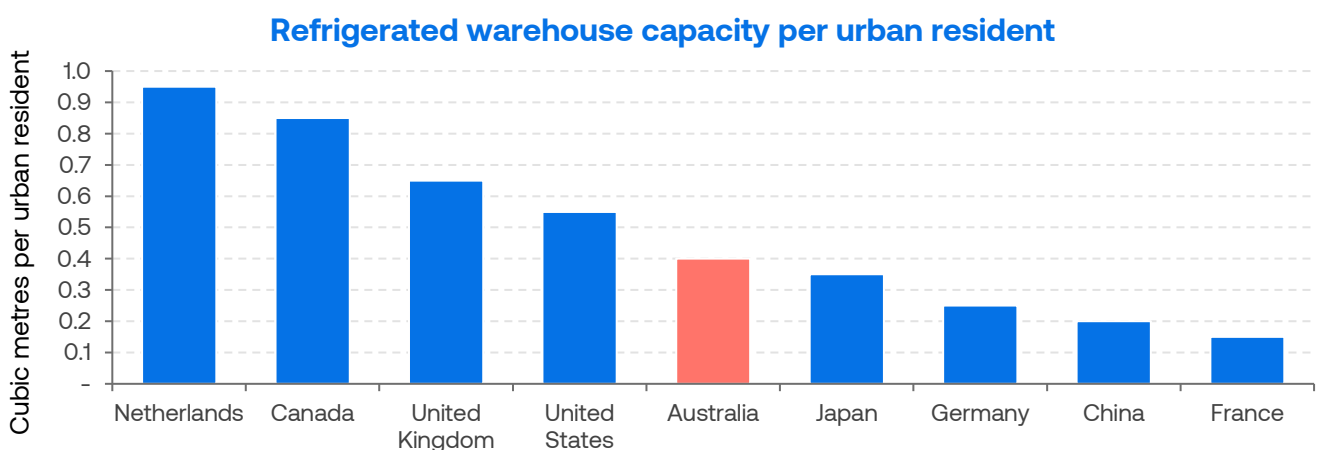
Infrastructure: earning like a toll road

Infrastructure is one of the most consistent magnets for capital across the FBA system because it sits at

unavoidable junctions. Grain storage and export terminals, refrigerated warehouses, logistics hubs linking road, rail and ports, bulk handling facilities and regulated ports all share a simple feature: food must pass through them.

These assets tend to earn money from use rather than price. Grain still has to reach the port whether prices are high or low. Meat still has to move from abattoir to retailer. Fresh food still needs cold storage before it reaches a supermarket shelf or a home delivery van. For investors, that distinction matters because volumes tend to be more stable than prices, and replacement costs are high.

Temperature controlled storage illustrates the point. Australia has roughly 0.4 cubic metres of refrigerated warehouse capacity per urban resident, compared with around 0.6 in the United States and close to 0.9 in the Netherlands. That gap reflects capacity growth that has lagged the expansion of protein, dairy and fresh food trade. It matters because an increasing share of food now relies on strict temperature control to meet retail, export and regulatory standards. A cold store rarely features in a consumer’s thinking, but it quietly earns its fee every night while food keeps moving.



Source: CBRE, ANZ

Cold storage capacity varies widely across countries, with Australia holding less capacity per person than several major food exporting and importing peers. As a growing share of food trade relies on temperature-controlled handling, this gap highlights cold storage as both a constraint within supply chains and a persistent focus for infrastructure investment.

Processing: turning volatility into margin

Processing attracts capital because it sits between the unpredictability of farming and the relative predictability of retail and export demand.

Processors are not paid for how a season turns out on any one farm; they are paid for turning uneven, variable supply into products customers can buy with confidence, week after week.

At the production end of the chain, milk quality shifts with seasons, livestock weights vary, fish catches fluctuate and logs differ in size and grade. At the buying end, that variation is unwelcome. A supermarket buyer ordering yoghurt, a fast-food chain ordering burger patties, or an export customer ordering timber panels expects the same protein level, the same cut size, the same shelf life and the same certification every time. Processing captures value by absorbing variation and delivering consistency.

This plays out across the system. Dairy processors push milk into specialised ingredients and nutritional powders. Meat processors extract value from the whole animal while meeting multiple customer and export protocols. Seafood processors turn unpredictable catches into uniform fillets that fit a fish and chips box or a sushi tray. Timber processors convert mixed logs into standardised beams, panels or pulp. A school lunch yoghurt tastes the same in March and September not because milk quality stands still, but because someone is paid to manage the swings behind the scenes.

Manufacturing, brands and repeat demand

If processing is about making raw supply usable, manufacturing is about creating products that earn shelf space. Once a product is embedded in retail or foodservice, orders are driven by repeat buying and replenishment rather than by seasonal production outcomes.

A processor may turn variable milk into a standard ingredient, but a manufacturer turns that ingredient into a specific yoghurt that sits in the same spot in the fridge every time a shopper walks past.

Supermarkets, cafés and food-service distributors order because shelves must be stocked and menus must be filled, not because the season has been favourable. Value sits less in the commodity and more in formulation, packaging and route to market.

This helps explain why large food manufacturers, beverage bottlers and private label suppliers attract institutional capital. A bottling plant earns its returns by filling millions of identical cans every day, regardless of whether sugar prices move. Private label manufacturers grow by reliably supplying supermarkets with products that scan, stack and restock smoothly. The same logic applies in fibre-based packaging, where cartons and boxes are designed to fit filling lines, protect products and meet food safety requirements under multiyear contracts.

Inputs, IP and the system behind the system

Some of the strongest investment positions in FBA sit out of sight of the consumer. Genetics, animal health products, crop inputs, enzymes, flavours, formulations and traceability systems attract capital because they become embedded in how food is produced and manufactured and are not easily replaced once adopted.

A poultry producer does not casually swap genetics that determine growth rates and feed efficiency. A processor does not change a flavour that affects taste and shelf life without months of testing. A supply chain does not replace its traceability system without retraining staff and re-qualifying customers. These businesses earn returns because production continues largely regardless of prices or seasons. Animals are still bred, crops are still planted and products still need to be tracked.

A QR code on a salmon tray may seem trivial to a shopper, but once a retailer relies on that system to meet food safety, provenance and audit requirements, replacing it becomes costly and risky. That embedded dependence is where value sits.

Choosing where to sit in the chain

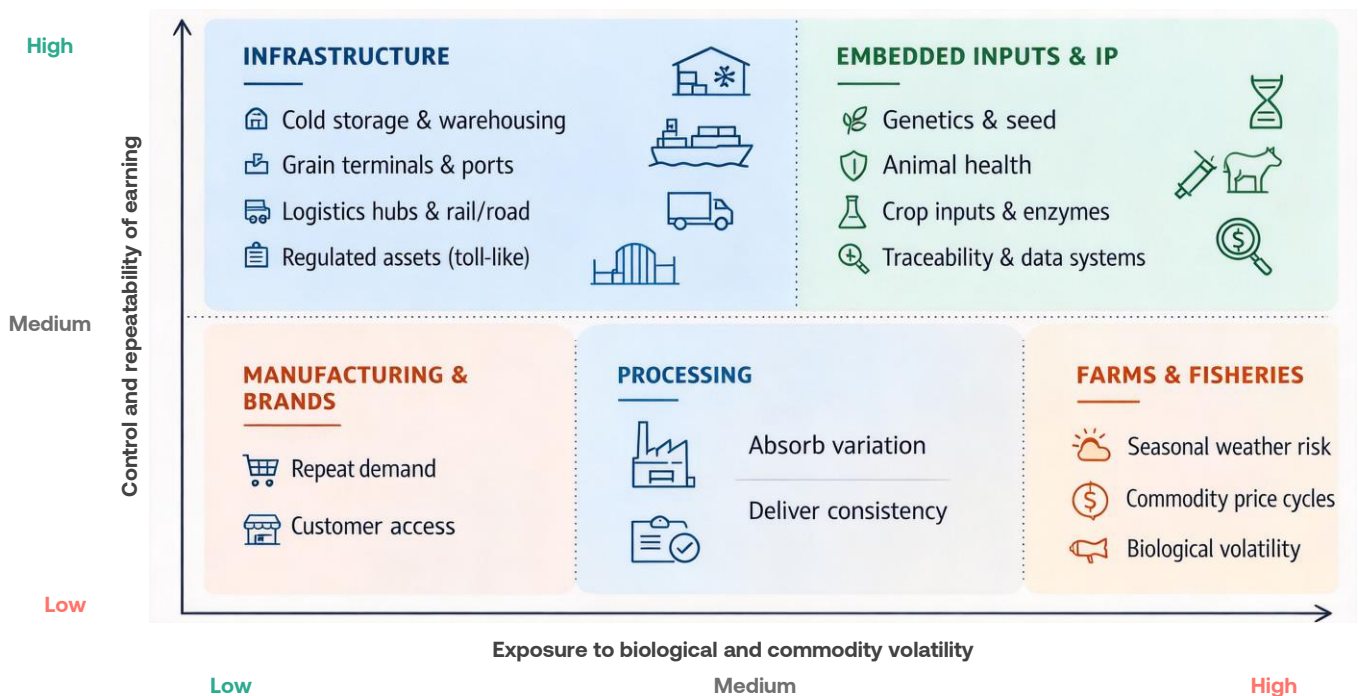
Seen as a whole, the FBA system is not a hierarchy but a menu. Different types of capital are drawn to different parts of the chain depending on their appetite for risk, volatility and resilience. Some investors are comfortable backing farms or fisheries where returns rise and fall with seasons. Others prefer infrastructure where volumes keep flowing. Processing attracts capital paid to organise volatility. Manufacturing and brands appeal to those seeking repeat demand. Inputs and IP suit investors looking

for scalable platforms that earn money because the system keeps running.

It is all visible in a single supermarket visit. The lettuce depends on the weather. The cold room earns its fee overnight. The yoghurt tastes the same all year. The barcode still scans. Capital shows up at every step.

For those assessing the sector, the real decision is not whether to invest in food, beverage and agribusiness, but where along the chain best matches the risk, return and durability for which an investor is actually looking.

Opportunities and variables for capital in food, beverage and agri supply chains



Source: ANZ

Indonesia – Big appetite, complex plate



Overview

- Indonesia is one of the world's largest food demand markets, with scale approaching 300 million consumers
- Feeding that demand requires a mix of domestic production, structural imports and complex logistics across thousands of islands
- For FBA producers, processors and investors, Indonesia is too large and too influential to ignore

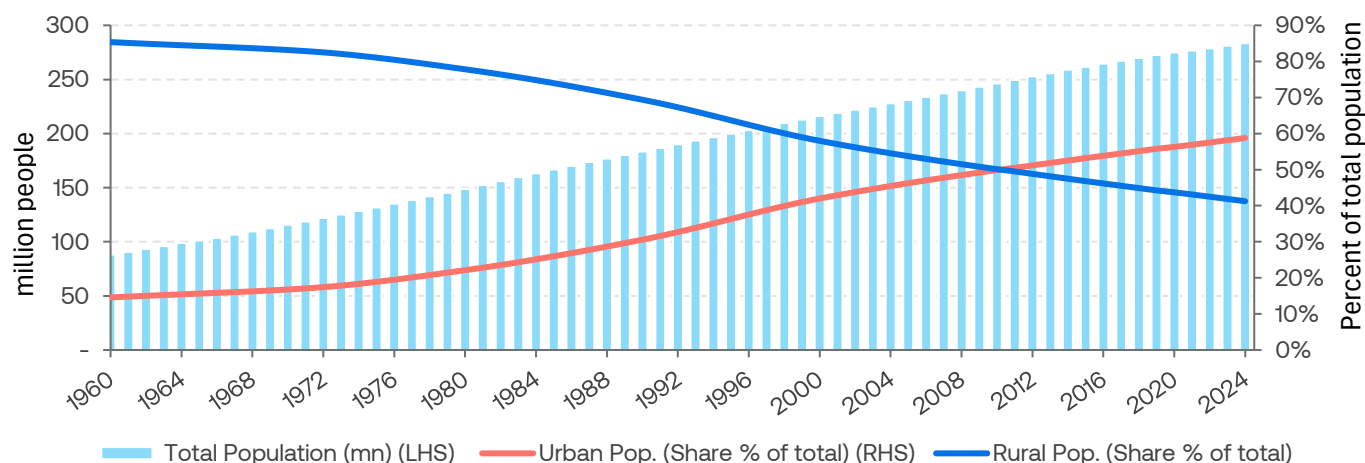
Indonesia sits at the centre of one of the most consequential food and beverage stories of the coming decades. A bowl of noodles bought from a Jakarta street stall might contain imported wheat, locally grown vegetables, soy-based protein and cooking oil that has already travelled across several islands before it reaches the wok. That single meal captures how Indonesia feeds itself: a vast domestic market supplied through a mix of local production, global inputs and a distribution system shaped as much by geography and policy as by farming.

With a population of around 280 million people, Indonesia is already the world's fourth most populous country, adding more than 2 million people each year as population growth continues at roughly 0.8 percent annually. Urbanisation has advanced steadily, with close to 60 percent of Indonesians now living in cities, compared with less than 45 percent

two decades ago. Greater Jakarta - now estimated at more than 40 million people and widely regarded as the world's largest urban area - concentrates food demand on a scale comparable to entire mid-sized countries. That scale is reshaping how food is bought, prepared and delivered, shifting purchasing toward supermarkets, convenience stores, delivery platforms and modern foodservice.

For food, beverage and agribusiness companies – and for investors looking across the FBA supply chain – Indonesia's demand is not theoretical. It shows up every day in supermarket volumes, the rapid expansion of foodservice, and sustained import flows across key commodities. The more complex task lies in understanding how that demand is supplied, regulated and converted into reliable returns.

Indonesia Urban vs Rural Population 1960-2024



Source: World Bank, ANZ

Note: Population shown in absolute terms, split between urban and rural residents.

This shift has supported growing demand for processed foods, modern retail, foodservice and logistics, while increasing the pressure on supply chains to move food efficiently into dense urban centres.

A consumption-driven food economy

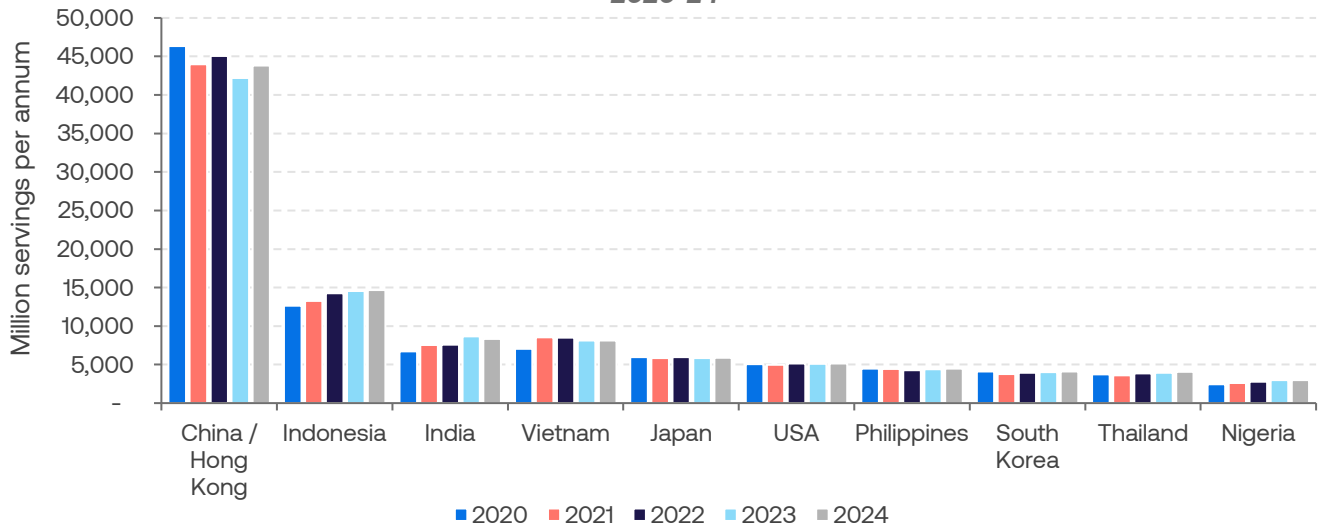
Indonesia has long been a significant agricultural exporter, particularly in palm oil, coffee, cocoa and seafood, and it remains a core participant in global commodity markets. Alongside that outward facing role, its domestic food economy has expanded into one of the largest in Asia outside China and India, with internal consumption now playing an increasingly influential role in shaping policy, supply chains and commercial strategy.

GDP per capita now sits at roughly A\$7,500, or around US\$5,000, well below developed Asian economies such as Japan or South Korea, but high enough to support discretionary food spending in urban centres. Estimates vary, but 50 to 70 million Indonesians are generally considered middle class, with annual household incomes commonly cited in the A\$10,000 to A\$30,000 range (roughly US\$7,000 to US\$20,000). This group underpins demand for packaged foods, branded beverages, café culture and meals eaten outside the home.

Food still absorbs close to half of total household expenditure, compared with around 10 to 15 percent in developed markets. That level of food spending shapes consumer behaviour, retail strategy and policy choices. Food affordability carries political weight, retail strategy remains price sensitive, and consumer behaviour changes gradually rather than abruptly. When incomes rise, spending does not move away from food; it shifts within it. Loose rice becomes packaged rice. Wet markets coexist with supermarkets. App-based delivery platforms extend restaurant access into residential neighbourhoods, particularly among younger, urban consumers.

Indonesia is also one of the world's largest instant noodle markets, consuming well over 14 billion servings each year. Brands such as Indomie have become household staples across income groups, illustrating how processed, wheat-based foods have embedded themselves into daily diets despite the absence of any domestic wheat production.

Instant noodle demand - Top ten markets 2020-24



Source: World Instant Noodle Association, ANZ

The chart highlights how deeply wheat-based processed foods have become embedded in daily diets despite the absence of domestic wheat production. This scale helps explain why wheat imports remain structurally important to Indonesia’s food system and why milling and branded food manufacturing capture a large share of downstream value.

Staples first, diversification second

Rice remains the foundation of the Indonesian diet, with per capita consumption still around 90 to 100 kilograms per year. That level is broadly comparable to Thailand, lower than Vietnam, where consumption exceeds 140 kilograms per person, and far higher than China or Japan, where rice intake has fallen sharply over time. In Indonesia, rice consumption has edged down gradually, but it remains central to most meals and politically sensitive when prices move.

Animal protein intake is increasing, but from a low base and in a very Indonesian way. Poultry dominates because it is affordable, widely distributed and consistent with halal requirements. Fried chicken chains, both international and domestic, are now common not only in major shopping centres but also in provincial towns, while poultry features heavily in street food as well as formal retail. Beef consumption remains low by global standards, at less than 3 kilograms per person per year, rising seasonally around Ramadan and Eid when festive demand meets heightened price sensitivity. Fish continues to provide a substantial share of protein intake, particularly in coastal

provinces where supply chains are shorter and prices are often lower than red meat.

Dairy is increasingly shaped by policy as much as by consumer choice. Successive governments have identified milk consumption as a national nutrition priority, embedding dairy into programs aimed at improving childhood health and food security at scale. From a low starting point – with milk consumption still under 20 litres per person per year, compared with roughly 90 litres in Australia and far higher levels in Europe – the structure of demand is changing. Sweetened milk beverages, yoghurt drinks, powdered milk for children and ice cream have expanded rapidly in urban areas, and Indonesia has become one of Southeast Asia’s largest infant formula markets. Domestic milk production supplies only a minority of national requirements, leaving processors reliant on imported milk powders and whey. Across a population approaching 300 million people, even modest policy-driven increases in milk intake translate into very large shifts in dairy ingredient demand

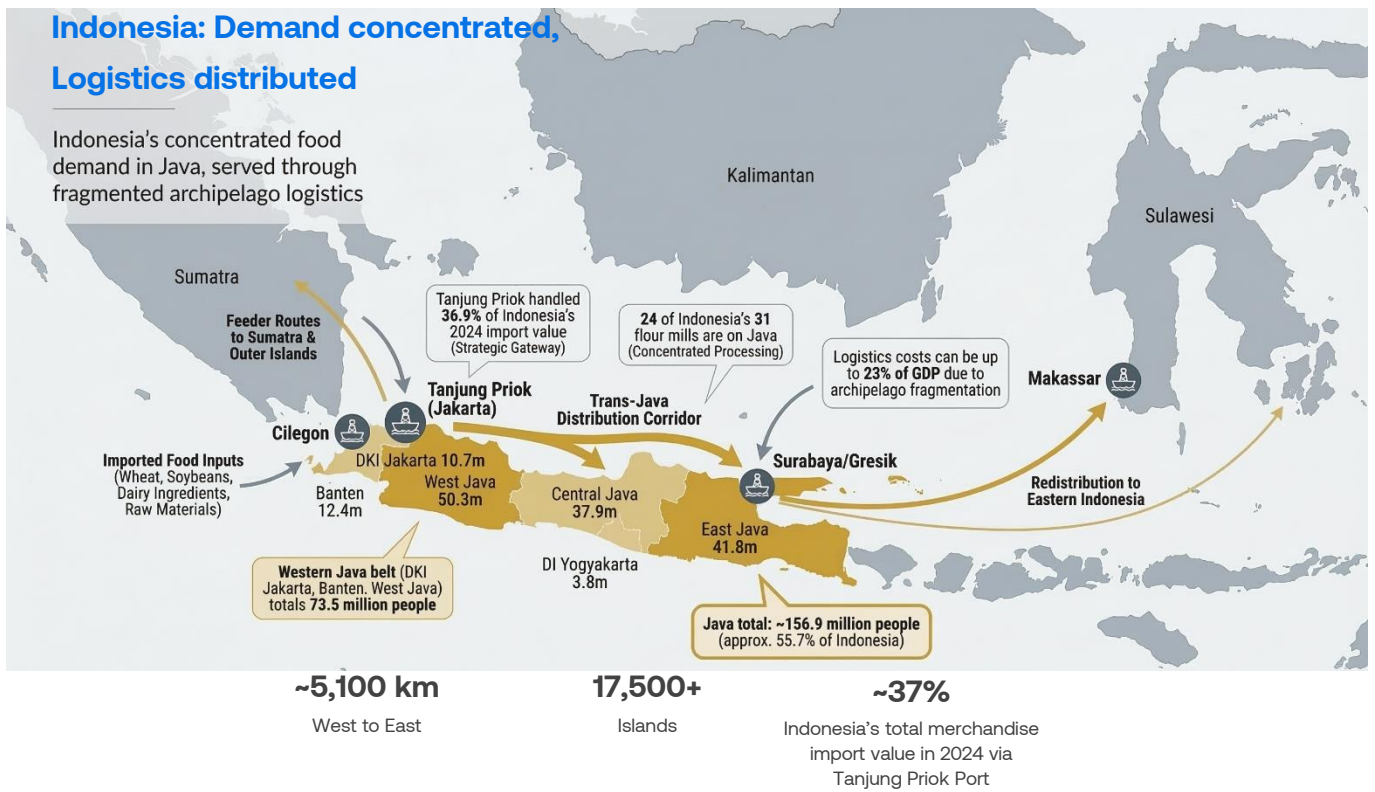
How the system actually works

Supplying food across more than 17,500 islands introduces logistical realities that few large economies share. Indonesia stretches roughly 5,100 kilometres from west to east, so imported wheat unloaded in Jakarta must still move through domestic transport networks before reaching mills and retailers in other provinces. Fresh produce grown in one region may travel by sea before appearing in supermarkets elsewhere. Cold storage, port facilities and road infrastructure have improved over time, but coverage remains uneven, particularly outside major urban corridors.

Agricultural production itself remains highly fragmented. In parts of East Java, dairy farmers commonly keep only two or three cows, delivering

milk to cooperatives for aggregation. Similar smallholder patterns dominate rice and horticulture. While productivity gains have been achieved, scaling output fast enough to keep pace with urban demand is slow when farms are small and access to capital is limited.

Food affordability carries real political weight because of its share in household budgets. When rice prices spike or beef supply tightens ahead of Ramadan, authorities often adjust import volumes or licensing arrangements to stabilise retail markets. Policy therefore influences not just whether imports occur, but when they occur and in what form, even as underlying consumption continues to expand.



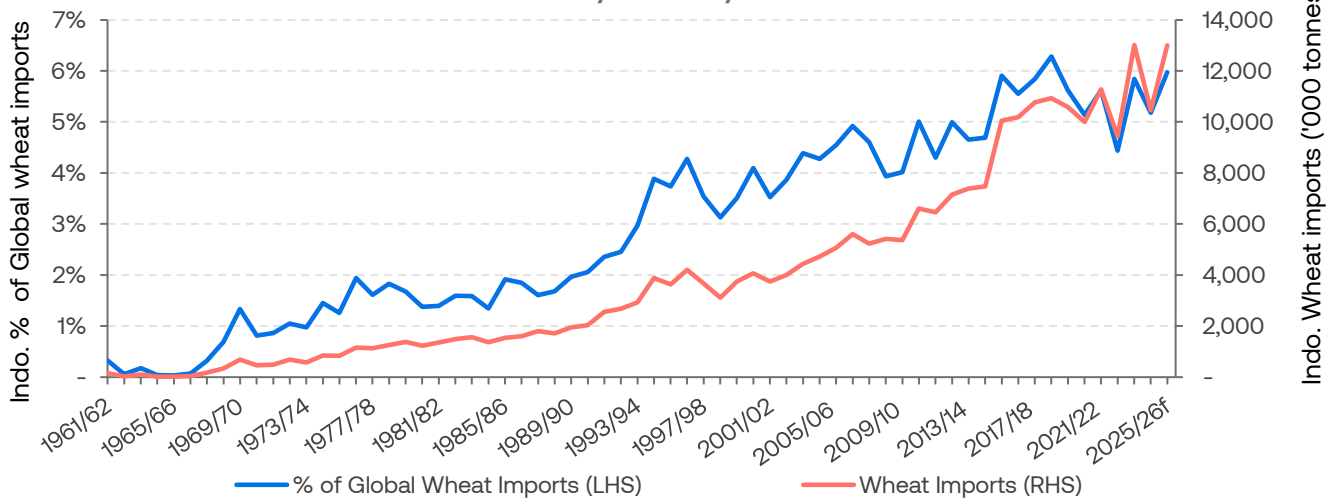
Source: ANZ

Imports in the Indonesian food system

While Indonesia places strong emphasis on food self-sufficiency, certain imported commodities remain a structural input to the food system. The country imports around 10 to 11 million tonnes of wheat each year, consistently ranking among the

world's largest buyers. That wheat feeds domestic mills producing noodles, bakery items and snack foods sold through chains such as Alfamart and Indomaret as well as traditional kiosks. During the Russia–Ukraine conflict, global wheat markets were heavily disrupted, yet Indonesian consumption patterns persisted as millers diversified sourcing.

Indonesia wheat imports vs. % of total global imports 1961/62 - 2025/26f



Source: USDA, ANZ

Indonesia's share of global wheat imports has increased materially since the 1970s, even though that share fluctuates from year to year as global trade conditions change. This combination indicates that wheat is now a structural input into Indonesia's food system, while still remaining exposed to global market cycles rather than insulated from them.

Dairy imports, largely from New Zealand, Australia, the European Union and the United States, support local processing of milk-based beverages and powders. When global dairy prices surged in 2022 and 2023, retail prices rose but import dependence did not diminish. Beef imports from Australia and Brazil supplement domestic cattle supply, particularly during festive periods. Soybeans from the United States and South America underpin tofu and tempeh production nationwide. During periods of elevated soybean prices, small tofu producers have protested rising costs, a reminder of how directly global commodity markets shape everyday meals.

Who supplies Indonesia's food imports

Given that wheat is not produced domestically, Indonesia imports around 10 to 11 million tonnes each year to supply flour mills that feed noodle production, bakery goods and a wide range of processed foods consumed daily across the country. These imports come mainly from Australia, the Black Sea region and North America, with relative shares shifting according to those countries' harvest volumes, export availability and price competitiveness. In years when Australian crops are

large and freight conditions are favourable, exports to Indonesia have reached several million tonnes, reinforcing Indonesia's position as one of Australia's most important offshore grain markets.

Beef and cattle trade into Indonesia reflects a similar need to balance reliability of supply, price and policy objectives. Australia remains Indonesia's principal supplier of live cattle, supporting domestic feedlot operations and wet market supply, while boxed beef imports are sourced mainly from Australia and Brazil. Import volumes are often adjusted by authorities ahead of Ramadan and Eid, when demand rises sharply and retail price sensitivity intensifies. At times, Indonesia has also approved imports of frozen buffalo meat from India to ease pressure on domestic prices, with this trade playing a role in managing affordability rather than providing a consistent base of supply.

Dairy imports are concentrated in ingredients rather than finished products, with Indonesia sourcing milk powders and whey to support domestic beverage, infant nutrition and processed food manufacturing. New Zealand is a major supplier of milk powders, while Australia, the European Union and the United States provide a range of dairy ingredients across different specifications and product uses including

milk powders for beverages, whey and lactose for infant nutrition, and butterfat for processed foods.

Soybeans are imported largely from the United States and South America, particularly for tofu and tempeh production, while raw sugar is commonly sourced from Brazil and Thailand. Poultry feed ingredients and oilseed meals link Indonesia to global grain exporters, with soybean meal, corn and other protein and energy inputs sourced largely from the United States, South America and parts of the Black Sea region. These products are used primarily in poultry feed, reflecting the scale of the domestic chicken sector, but they also support aquaculture and, to a lesser extent, dairy and other livestock production as feed demand expands.

For Australia, Indonesia represents a long-standing destination for wheat, beef and dairy products, while for exporters in Europe, North America and the region it is one of Southeast Asia's largest food import markets, with access shaped by pricing, product specifications and regulatory settings rather than distance alone.

Where returns are made – and where risk sits

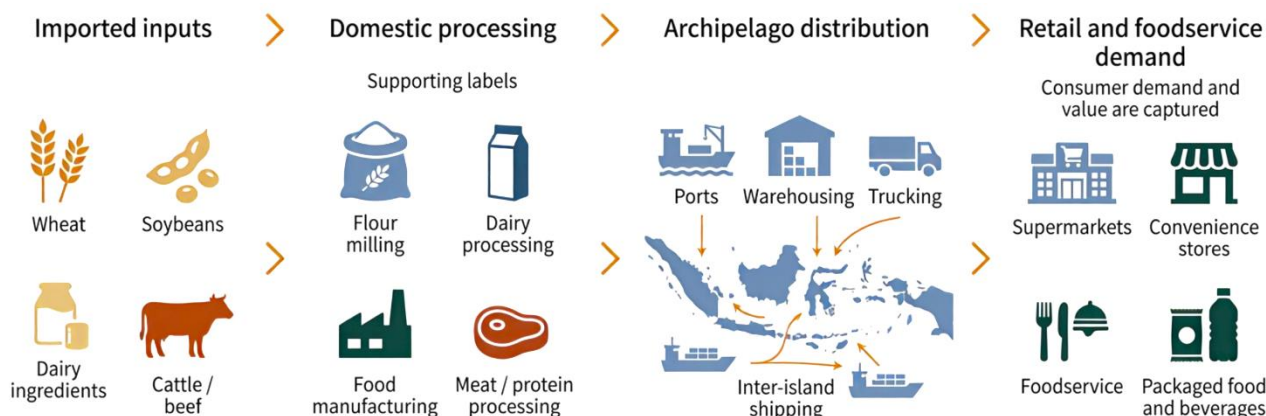
For many food and agribusiness participants, the commercial story begins once commodities enter Indonesia. Wheat, milk powder and soybeans arrive as inputs, but margins are largely captured once those ingredients are milled, processed and branded for domestic consumers.

Imported wheat becomes Indomie noodles, packaged bread and biscuits sold across urban and rural markets. Milk powders are reconstituted into sweetened beverages and café style drinks consumed in shopping centres and neighbourhood outlets. A KFC restaurant in Surabaya generates demand across poultry processing, feed grain, cold storage and distribution networks. A cup of iced milk coffee in Jakarta links imported dairy inputs directly to local retail margins.

Exposure to Indonesia therefore often sits in milling assets, dairy processing facilities, cold storage operators and branded consumer companies, rather than solely in raw commodity exports. Australian suppliers of wheat, beef and dairy ingredients participate through trade flows, yet much of the value capture occurs downstream in processing, distribution and retail.

Indonesia's scale makes it central to Southeast Asian food dynamics. Its regulatory settings, licensing frameworks and policy adjustments require attention, but the underlying demand trajectory appears durable. The country is neither a frictionless growth market nor an inaccessible one. It is a large, evolving food system in which domestic consumption drives trade flows, processing investment and supply chain decisions across the region. For companies and investors prepared to engage with that structure, Indonesia will continue to shape regional food markets well beyond its own borders.

How value moves through Indonesia's food system



Source: ANZ

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