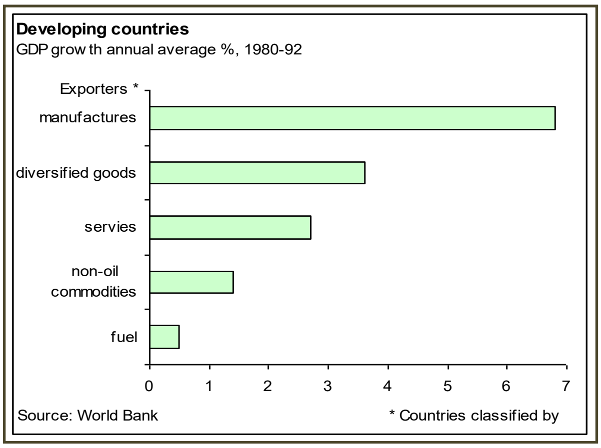
ECN230 SRP sessions 10-11. Specialization and Trade in Agriculture

Are third-world commodity producers condemned to eternal poverty?
"Economic development" is more a slogan than a term with a precise definition. In the thinking of politicians and economists around the world, it has long been synonymous with "industrialisation". Today's advanced economies grew rich by shifting resources from agriculture into industry, so it is no wonder that emerging economies from India to Brazil have sought to emulate that trick by fostering manufacturing [1].

This belief in the importance of industry was in conflict with one of the fashions of the 1990s, freer trade. In principle, reductions in trade barriers could open new markets for manufactured exports from developing countries. There was no assurance that this would happen. Under free trade, after all, each country tends to specialize in those products in which it is relatively most efficient, compared with other countries. This could mean that some countries would end up producing coffee and cattle rather than computers and cars. If they got "stuck" in agriculture, would they condemned to poverty and slow growth [1]?

The World Bank's (WB) "Global Economic Prospects and the Developing Countries" (1994) focused on the less promising prospects of low-income commodity producers. Countries where manufactured goods accounted for at least 50% of total exports enjoyed average annual GDP growth of 6.8% between 1980 and 1992. Diversified exporters grew by 3.6% (see chart, GDP growth). However, those that exported mainly non-oil commodities grew by only 1.4% - so slowly, in fact, that their real income per head declined [2].

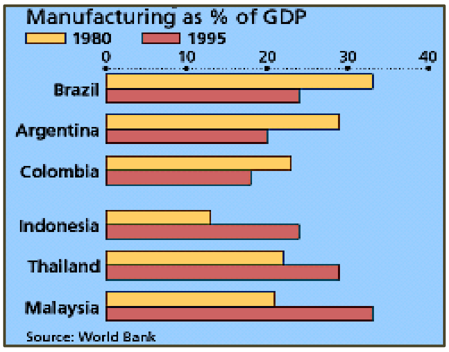


The 35 countries (26 in Africa) which the WB categorised as low-income commodity producers had an average GDP per head of only $420. They contained 31% of the world's population but contributed only 3% of total output. In 1992, their average income per head was only 46% of the average for all developing countries, down from 63% in 1960. Does dependence on commodities act as permanent brake on economic growth [2]?

From 1980 to the early 1990s, average commodity prices dropped by more than half in real terms. This represented an annual loss to developing countries of $100 billion in 1993, almost twice what they received in foreign aid. Behind this was the fact that world trade in commodities grew more slowly than trade in manufactures and services. One reason is that, as countries get richer, the share of income spent on food shrinks. A second factor is the shift within economies to activities that use fewer raw materials. Combined with the introduction of synthetic substitutes, this reduced the demand for some metals. If a commodity boom is not expected, can commodity producers grow faster only if they shift their output and exports into other sectors as quickly as possible [2]?

Some economists took this question seriously. Kiminori Matsuyama, a professor at Northwestern University, showed[1] that under free trade countries richly endowed with arable land and natural resources might grow more slowly relative to others because such natural wealth encourages the growth of agriculture at the expense of industry. This matters because in Mr Matsuyama's model of manufacturing is special. He assumes there are economies of scale in manufacturing: the more resources employed in the sector, the faster productivity will grow. However, is it not possible that agriculture can have large productivity improvements as more capital and other resources are invested? If this were to happen, agriculture could have a special role in stimulating growth too, just as Mr Matsuyama assumes manufacturing does [1].

The empirical evidence of sectoral growth on GDP is mixed. As Mr Matsuyama's model assumes, the relative importance of manufacturing in Latin America shrank between 1980-95 as trade liberalisation took hold (see chart, manufacturing as % of GDP). However, the consequences were not as bleak as expected. This is because productivity growth in agriculture was as fast as in manufacturing [1].



Chile provided a good test case. Since the country opened up to trade in 1976, the relative size of its manufacturing sector has declined. Manufacturing accounted for 27% of Chile's GDP in 1973; in 1995, its share was only 16.8%. Agriculture, on the other hand, did not decline—as traditional models of development would have predicted—but instead it grew modestly as a share of GDP [1].

The decline of manufacturing did not mean slow growth, however. Chile's economy expanded at an average rate of 7.2% between 1987 and 1997. Exports were the engine of growth and agricultural products were the star performers. Chile went from being a small player in the global fruit market, exporting just apples in the 1960s, to become one of the world's largest fruit exporters in the 1990s [1].

Such exports are not manufactured, but the businesses that make and export them used increasingly sophisticated production technology and management methods. Although table grapes were by far the main fruit export, Chile began exporting wines in a significant way in the 1980s and achieving important world market shares in the 1990s. Similarly, fish exports, once produced almost entirely by an ocean-going fleet, saw the growth of salmon farms. Technological advances led to marked productivity increases in agriculture and higher incomes [1].

It is true that many of the most successful (Asian) emerging economies used to be heavily dependent on primary

[1] "Agricultural Productivity, Comparative Advantage, and Economic Growth". *Journal of Economic Theory* (58), 1992.

products. In 1965 commodities made up 89% of Malaysia's exports; in the early 1990s their share was only 28%. Some might conclude that it was because Malaysia shifted out of commodities that its economy did so well since. They would be wrong. Malaysia's agricultural output boomed. Production of palm-oil increased more than 16-fold since 1970, while cocoa output soared from 3,000 tonnes in 1970 to 225,000 in 1993. Indonesia and Thailand are further examples of dramatic expansion of farm exports between the 1970s and early 1990s, precisely as their reliance on commodities fell [2].

The experience of these economies suggests that successful diversification away from commodities was itself triggered by efforts to boost output and productivity in their primary sectors. WB estimates suggest that total factor productivity growth (i.e., the increase in output that was not explained simply by the use of more labour and capital) was just as high, if not higher, in agriculture as in manufacturing. This means that commodity-exporting countries are not necessarily condemned to slow growth [2].

In successful countries, such as Malaysia, productivity increases in agriculture, spurred by newer technology and more efficient marketing methods, allowed countries to produce more with fewer workers, releasing labour into manufacturing. The implication, however strange, is that commodity exporters can best accelerate diversification and lift their growth rates by boosting the efficiency of primary-product industries. Governments can encourage this by lowering trade barriers and opening up to foreign direct investment, a springboard for diversification [2].

So does agriculture offer an alternative path of economic development? "We used to think that countries would develop by climbing ladders of production that led from textiles to clothing, to toys and eventually electronics," says Ricardo Hausmann, chief economist at the Inter-American Development Bank. "Now we know that there are different ladders, and countries can grow by going from fruit to wine, furniture, salmon… [1]"

Fair enough, say some advocates of industrial policy, but even if agriculture is highly productive, emerging economies need to industrialise because there is a limit to the demand for foodstuffs. This contention is based on the well-established finding known as "Engel's law", which holds that people tend to spend a smaller share of their budgets on food as their incomes rise. Engel's law, however, does not mean that agriculture will eventually become a slow-growth sector. Rather, it implies that producers must constantly adapt to changing tastes: wealthier societies consume less manioc and potatoes, but spend more on beef, fruit and oven-ready frozen foods [1].

In contrast, many African countries adopted policies that stunted the growth of agriculture (e.g., import barriers on manufactured goods such as tractors, and export taxes on farm produce). As a result, Africa remain heavily dependent on primary commodities, but its market share fell. The continent's share of world coffee production shrunk from 29% to 15% from the 1970s to the mid-1990s [2].

The WB admitted that the extent to which Sub-Saharan Africa can copy Malaysia, say, was limited by countries' low levels of physical and human capital. Even so, they could still achieve big efficiency gains in commodity production and export. There is a wrinkle. If all commodity exporters tried to boost their exports simultaneously, that would reduce prices and net export revenues could even fall. The WB reckons that this is a problem only for coffee, cocoa and tea. For other commodities, a rise in volume would bring a rise in net revenues. Even for tropical beverages, it says policies which boost efficiency in production and marketing are likely to achieve more lasting gains in net revenues than export quotas or taxes [2].

Supply shocks such as bad harvests make the prices of commodities twice as volatile as those of manufactures. This is a particularly serious problem for countries such as Zambia, Rwanda and Uganda, where a single commodity makes up more than three-quarters of the total exports. Uncertainty discourages long-term investment and so reduces long-term growth prospects. Is there anything developing countries can do to cushion themselves against these swings [2]?

Countries tried to stabilise prices by export quotas or by maintaining buffer stocks. Such schemes collapsed mainly because they attempted to support prices at too high a level. The WB argues that financial instruments such as futures contracts, swaps and options are a better way for countries to hedge their price risk. Such instruments are not widely used in developing economies. In some countries, their use is restricted by foreign-exchange controls. However, the WB could do more to familiarise governments and firms with the advantages of risk-hedging instruments. A big problem is that a country that lacks international creditworthiness is denied the benefits of these financial devices. The WB could help set up a system to underwrite counterparty risks on a case-by-case basis [2].

There is one final argument against the idea that countries will end up getting "stuck" in agriculture. This worry assumes that a country's comparative advantage is static, so that a country that grows bananas today will inevitably grow bananas in 20 years' time. This need not be the case. If a country does what it does best and sees its incomes grow as a result, it can afford better education and infrastructure. These, in turn, will give it an advantage in other products in future [1].

Just as few could have predicted the dramatic growth spurt of East Asian economies starting in the 1970s, it is hard to forecast how open, agriculturally-rich economies will continue to develop. It may be that they will move towards a service economy without ever having a large industrial sector. Perhaps, they may find new ways to prosper from their natural resources. Although open trade may make it difficult for them to establish certain kinds of industries, this does not necessarily doom them to slow growth, but it does not guarantee fast growth either. Their own economic policies matter, but so do the trade policies of wealthier nations. Many of these are more protectionist towards farm products than towards manufactured goods. No wonder officials in many emerging economies worry about being stranded on the farm [1].

<u>Green revolution and the rice market</u>

For years rice production kept pace with rising demand thanks to the enduring effects of the green revolution, which began in the 1960s. To tackle poor yields, scientists at the International Rice Research Institute (IRRI), based in the Philippines, developed IR8, a variety that flourished with the use of fertiliser and irrigation systems. As IR8 spread across Asia, rice yields increased. Greater productivity made rice a more attractive crop, so more resources were dedicated to it. Reduced worries about food security freed Asian governments to focus on industrialisation and economic growth [3].

In the 2020s, Asia accounted for 90% of the world's rice production and almost as much of its consumption, accounting for more than a quarter of their daily calories. Yet global rice demand is soaring, but yields are stagnating. The land, water and labour that rice production requires are becoming scarcer. Climate change is a graver threat with more frequent floods and rising temperatures, but its production is a major cause of it too. A paddy field emits a lot of methane, a potent greenhouse gas. Asia's rice productivity growth is falling. Yields increased by an annual average of only 0.9% over the decade to 2023. This is down from around 1.3% in the decade before that [3].

The IRRI has developed new varieties of rice that could repeat some of the success it had. They are more productive, climate-resilient, and require less water. They have also produced more nutritious strains. But meeting growing demand looks harder than it did in the 1960s. Urbanisation and relentless sub-division are eating into land holdings. Between 1971 and 2016 the size of the average Indian farm fell by more than half, from 2.3 hectares to 1.1. This makes productivity gains harder, especially where labour is scarce [3].

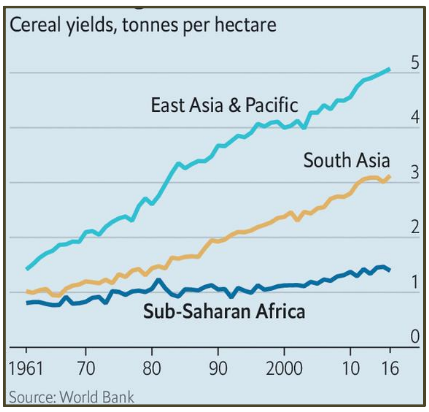
If the first green revolution was about productivity says the director-general of IRRI, then the next one should focus on "systems rather than solutions at the plant or plot level". This calls for better rice policies as well as better varieties. Poor or outdated government interventions underlie most of the productivity and environmental worries. They distort markets and blunt incentives for change. India procures rice from farmers at a guaranteed price, often set above the market rate. The crop is then sold to the poor at a subsidised price, promoting rice consumption. Fertilisers and water are also subsidised. Such interventions are prevalent across Asia [3].

Governments can play a big role in highlighting the benefits of new varieties and methods. A bottom-up approach is important. Agriculture-extension workers can play a big role in transmitting know-how but are often neglected by policymakers. Most public agriculture spending goes on subsidies and irrigation, which tend to benefit richer farmers with bigger landholdings [3].

The green revolution, which saw increased agricultural yields in most parts of the poor world apart from Africa, is unlikely to succeed if government is obstructive. Government is an important partner. Ideally, governments would pay for public goods such as research and roads, and regulate markets lightly but fairly. Too often governments fail at some basic tasks. In Uganda, for instance, the market is awash with understrength bags of fertiliser and feeble seeds that farmers are reluctant to invest in them. Many are also unable to get their crops to the market due to bad roads [x].

Earlier African regimes were even worse. After independence, governments squeezed farmers mercilessly, forcing them to sell their crops for a pittance through state-run marketing boards. (The aim was to provide cheap food for city dwellers – the result was to deter investment in farming and encourage smuggling [x].)

Then in the 1980s, many African states liberalised trade, cut spending on agricultural research and subsidies, and hoped for the best. In 2003, with farm yields stagnating (see chart cereal yields) the rhetoric shifted again. Governments



pledged to allocate 10% of their budgets to agriculture. But by 2016 only 10 countries were meting that target, out of 44 with available data [x].

Between 2002 and 2018, the proportion of African workers employed in agriculture fell from 66% to 57%. Yet the real value of agricultural production grew at an average pace of 4.6% per year, double the rate between 1970 and 2000. Even so, the region lags behind. Most of the increase came from using more land, rather than improved productivity [x].

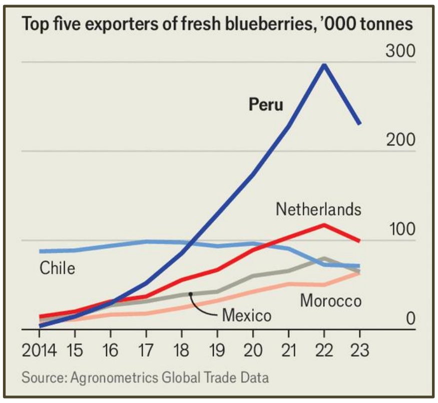
Malawi topped the public-spending charts, allocating more than 15% of its budget to agriculture. But much of that was swallowed up in a costly system of seed and fertilser subsidies. The scheme raised yields, but it also lined the pockets of the well-connected businesses who won procurement contracts. It also had unintended consequences. Farmers who use cheap fertiliser on their fields grow fewer nitrogen-fixing legumes, a cheap and green way of improving the soil [x].

Ethiopia, another big spender, by contrast took a differ approach. Farming output grew by 6% a year since 2000, more than three times the rat in Malawi. Subsidies were relatively low. Instead, the government pumped money into research, infrastructure and training. Its network of 72,000 "development agents" – experts sent to teach modern farming techniques – is Africa's largest [x].

Why might the approaches vary so much? One explanation is that in Malawi politicians use wasteful subsidies to win votes. By contrast, in authoritarian Ethiopia the government worked to avert the rural discontent that fed rebellions against its communist predecessors. It sees agricultural development as a way to build legitimacy. Some see the development agents as part of an oppressive system of state control, which worked well in some places while failing spectacularly in others. Elsewhere, poor governance has derailed policy altogether. In Uganda the state's training services for farmers crumbled, along with the with the president's popularity. As a result, the quest for votes shifted from training farmers to handing out inputs, but it was no guarantee that seedlings would arrive in time. The value added by the average Ugandan farm worker fell by a quarter between 2002 and 2018 [x].

Non-traditional agricultural exports

Peru caught blueberry fever in the early 2010s. Farmers noticed that their counterparts in Chile were making a lot of money selling the fruit during the off-season in the US, when prices are high. They sought to do the same. In 2013 Peruvians earned about $17mn exporting blueberries, by 2024 export receipts soared to $1.7bn. In 2019 Peru became the world's biggest exporter of fresh blueberries (see chart, top exporters) [4].



Peru's blue revolution relies on newfangled "low chill" varieties, developed in the US, that thrive on Peru's coast. The International Blueberry Organisation, an industry group, said that in 2022 the yield of a typical Peruvian blueberry farm was nearly double the global average. Farmers have gained from trends that have boosted all manner of Peruvian produce. These include tax breaks and irrigation mega projects that have opened land along Peru's desert coastline. Between 2000 and 2023, total annual Peruvian farm exports grew 16-fold to $10.5 bn. Blueberries remain the most profitable crop [4].

More growth is expected. The world's taste for blueberries in increasing. Peruvian exporters have their eye on China. There is additional land that can be used to grow the fruit, if politicians and investors bless the big infrastructure projects needed to water them. Yet growers will have to swerve some risks. In 2023, extreme weather stole a big chunk of Peru's production. And farmers in lots of other places fancy a slice of Peru's success. Colombia, Morocco and others are growing berries [4].

The parable of the cherry orchard

Chile has a booming new industry, cherries. The mix of market forces and government help is an example of what Chile needs to escape from the "middle-income trap". It is the country's good fortune that the southern-hemisphere cherry harvest comes just before Chinese new year. Cherries are marketed as something close to a luxury product than a humdrum fruit. This means that quality is paramount [5].

Cherries are easily damaged by rain, hail or rough handling. They must be harvested by hand and processed individually. At Greenex, a small firm, a $3.2 m intelligent processing machine began work at the end of 2018. It washes the fruit, then guides it into individual channels, where the stems are plucked. The machine, which works only for about six weeks a year, sorts by colour, form, weight and defects. About 15% of the fruit is discarded as inferior, which goes for sale on the domestic market [5].

Seizing the opportunity of the Chinese market has required innovation. There are new varieties, and better farming practices such as high-density planting. Garces Fruit uses giant fans to warm the trees in winter and, after heavy rains, draughts of air from a helicopter to dry the cherries, since dampness can cause them to split. The biggest changes were in logistics. To pack his product Mr Garcés brought plastic bags from the US that regulate the air inside them (they are now made in Chile). Ships ply the route from Chile to China in 22 days, compared with 40 in the recent past [5].

Thanks mainly to Chinese demand, Chile exported $1.1bn-worth of cherries in 2018, double the value of 2017 and two-thirds that of its much better-known wine exports. Such is the potential demand in China that Mr Garcés is confident that Chile's cherry exports can double again over the next five years [5].

That is welcome. If Chile is going to become a developed country, it must reduce its reliance on copper, which accounts for around half of its exports, and develop higher-value products. That transition began in the 1990s, with rising exports of wine, salmon and grapes, but had seemed to stall recently [5].

Creating new industries sometimes requires government involvement. The cherry industry would not exist but for Chile's free-trade agreement with China and its rigorous sanitary standards. Corfo, the state development agency, provides seed money for innovative ventures. It is inviting bids to build and run a centre to develop lithium batteries. The country also has potential in astrodata, according to Sebastián Sichel of Corfo. With its clear, dark skies, Chile's desert is home to several of the world's biggest telescopes. Astronomy is the highest-paying profession in Chile, says Mr Sichel [5].

But the cherry industry, and Chile's diversification, also owe much to market forces. Cherries require field labour, which Chileans spurn. Some 700,000 immigrants, mainly from Haiti and Venezuela, arrived between 2015 and 2017, averting a labour shortage. Farmers are tearing out vines to plant cherry orchards, which are more profitable. Farther south, apple growers are switching to hazelnuts for the same reason [5].

Peru has enjoyed a similar agro-industrial revolution. It rivals Chile in exports of blueberries. Competition is leading to specialisation. Peru and Chile squabble over trademark rights to pisco (a grappa named after a Peruvian seaport). Nevertheless, Chile is now importing Peruvian pisco, a superior product. Although the cheap local version remains the favourite tipple of hard-up young people, some Chilean pisco producers have switched to making good white wine. Had he lived to see this happy evidence of the invisible hand of market forces, Adam Smith might have downed a glass and polished off a bowl of cherries to celebrate [5].

Graduation: from cotton to T-shirts

A T-shirt made from cotton grown in Benin, picked, ginned, spun, woven into fabric and dyed before being cut and stitched is the strategy of the government to capture the whole value chain through industrialisation (see chart, share of GDP by sector). An apparel industry, which relies on cheap labour once machines have churned out the yarn and fabric, has long been considered one of the most accessible rungs on the ladder of industrialisation. Benin, a nation of 13mn people, is trying to achieve what few African countries have managed: systematically transforming raw materials – not just cotton, but raw cashews nuts, soya, shea and even human hair for wigs – into finished goods. Benin has been trapped in a trading pattern in which it sells cheap raw commodities and imports expensive finished goods [6].

Virtually its entire cotton crop, of about 300,000 tonnes of lint cotton, is exported raw, mostly to Bangladesh (see chart, exports), where it is transformed into clothing for the world's $1.5tn fast-fashion industry. In selling raw cotton, Benin, Africa's biggest producer, is missing out on more than 90% of the value, according to industry exports. If the entire cotton crop were processed into apparel, it would add $12bn to Benin's $17bn economy, experts say [6].

The national industrialisation strategy is intended to quintuple the country's agro-manufacturing capacity by

2030. The government helped solve many potential obstacles at the textile factories. It supplies electricity at a competitive rate per kilowatt hour and established an on-site one-stop shop to smooth the licence procedures and coordinate various government departments [6].

Benin's cotton is rain-fed, not irrigated, and that raw cotton does not have to spend 4-5 days on a ship to factories in Asia and 45 days on the return leg. This means made in Benin is up to two-thirds less carbon intensive. As Europe erects barriers to discourage carbon-intensive goods, that out to be a competitive advantage. A patented technology called Fibre-Trace will embed a pigment into the fabric that acts like a serial code containing supply chain information [6].

Industrialisation in Africa has been a mantra for decades. But fragile manufacturing sectors have buckled under global competition, especially from China. Poor roads, corrupt and inefficient ports, lack of power, the high cost of capital and an elite that is often more interested in extracting rent from raw material or import-export licences have done the rest [6].

Mauritius grew through developing a high-end tourist destination and financial services hugs. Botswana achieved relative success through its diamond industry. Instead of exporting uncut diamonds, it has struck progressively better deals with diamond company De Beers to ensure that value-added activities, such as cutting and polishing, is done at home. Morocco has combined excellent infrastructure, skilled labour and easy access to European markets to build a competitive auto and aerospace industry from scratch. Ethiopia, which 120mn people and cheap hydroelectric energy, made steady progress in apparel, lather, and shoes, but its success was interrupted by war and its subsequent removal in 2022 from tariff-free access to the US market [6].

Dani Rodrick, a Harvard economist, is more pessimistic about the chances of Benin, or any other country, emulating the growth-through-factories model that was successful in Asia. In an age of automation, he argues, there will be fewer manufacturing jobs required for labour in low-cost countries. Others disagree. Manufacturing jobs in Africa are not disappearing. Nobuya Haraguchi of the UN Industrial Development Organization showed that the manufacturing sector's employment and value-added contribution to global GDP has not changed significantly since the 1970s. There is nothing to prevent at least some African countries starting on an Asian-style growth trajectory. Even if five countries manage it, that can have a very positive demonstration effect [6].

Moving downstream to capture value added

West Africa produces 70% of the world's cocoa, an important source of income. In 2018, Ghana and Côte d'Ivoire accounted for about 60% between them. The largest producer, Côte d'Ivoire, earned more than 20% of its export revenues from cocoa. In 2007, sales of cocoa beans earned $4 bn, but global sales of chocolate amounted to $75 bn. In 2018, Ghana and Côte d'Ivoire's cocoa-export earnings were equivalent to less than a tenth of world chocolate sales. Chocolate earns the real money. African farmers were not in a position to expand into chocolate-making. Or are they [7]?

The power lies with a small group of trading firms and chocolate-makers in rich countries. "We send raw materials, they add value," sighs Owusu Afriyie, Ghana's agricultural minister [7].

In 2018, Ghana and Côte d'Ivoire were trying to further claw up the value chain. Ghana was close to finalising a $600m loan form the African Development Bank, some of which was expected to support cocoa processing. It was also seeking Chinese help to build a state-run processing plant. Observers see cocoa as a test-case for African industrialisation. But it is not a very useful model. Cocoa is unlikely to bring much revenue or many jobs. The capital investment required to create one job grinding cocoa could create over 300 jobs processing cashew nuts, said the World Bank in 2012 [7].

Granted, there have been successes. In 2018, about 21% of the world's cocoa was ground in Africa, up from 15% a decade ago. Côte d'Ivoire ground near a third of its beans and rivals the Netherlands as the world leader by volume. In Ghana's Tema "free zone", where firms earn tax breaks, the smell of cocoa is in the air. Niche Cocoa, one of several processors there, ships cocoa butter, liquor and cake abroad, while selling chocolate at home. Customers cannot believe it is made in Ghana, chuckles Lloyd Ashiley, the plant manager [7].

Most of the processing the region is done by the same multinationals that were already grinding cocoa in Europe or elsewhere. In Ghana, the government dominates the cocoa industry and gives a discount of smaller, "light-crop" beans to encourage local processing. But when the cheap beans run out, machines sit idle. Nearly half of capacity is unused [7].

Divine Chocolate, founded in the UK in 1998, counts cocoa farmers as its biggest shareholding group. Kuapa Kokoo, Ghana's largest co-operative, with a membership of 45,000 cocoa growers, owns 45% of Divine and has two seats on its board. The chocolate, made in Germany, is sold alongside more familiar chocolate brands, says Sophi Tranchell, Divine's boss. Sales were £9m ($18m) in 2006, and in 2007, Divine launched a US affiliate that is one-third owned by Kuapa Kokoo [7].

Before becoming owners of Divine, most members of Kuapa Kokoo had never tasted chocolate, and many had never even heard of it. Commercial skills honed in local African markets seem applicable to Divine's business and the farmers take a keen interest in their company. "The farmers are very proud that they own something like this outside Ghana," says Erica Kyere, Kuapa Kokoo's head of research [7].

Could stepping into a consumer market expose growers to unanticipated risk? Not so far. Divine bought 1,200 tonnes of cocoa from Kuapa Kokoo in 2006, all of it on Fairtrade terms. The co-op sold 98% of its production at commodity prices to Ghana's state-run marketing board. Kuapa Kokoo's cocoa finds its way to supermarket shelves under many brand names besides Divine's [7].

Ms Tranchell says Divine's structure has proved its strongest asset, distinguishing it from competitors, attracting high-profile endorsements and mobilising activists to insist that supermarkets sell it. It has also unlocked non-traditional sources of finance, receiving investment from charities and development lenders and loan guarantees from aid agencies. Without Kuapa Kokoo, says Ms Tranchell, "it would have been implausible to set up a chocolate company in this very competitive, very mature market with so little money." (In the UK, Cadbury, Nestlé and Mars account for over 80% of the market [7].)

Other firms are pursuing similar strategies. Agrofair, a Dutch-based tropical-fruit distributor, is half-owned by producers. It owns part of Oké USA, which markets Fairtrade bananas there. Pachamama, a federated co-operative of Latin American coffee growers, completed its first year roasting coffee in the US. With the help of in-kind loans of green coffee from its members, the firm has not had to solicit outside investors at all. Coffee Pacifica, a coffee importer publicly traded in the US, is one-third owned by the Papua New Guinea Coffee Growers Federation, which represents 120,000 farmers. In 2006 its sales doubled to $3m in the US and Europe [7].

Anna Laven, a researcher at the University of Amsterdam who studied Kuapa Kokoo, cautions that this approach is not always possible for producers. Without support and advice from charities, formal organisation and reliable export channels, she says, moving upstream through "functional upgrading" is not feasible for most farmers. Divine is an exception to this rule: Kuapa Kokoo expects to the board to announce its first-ever dividend [7].

The biggest problem is geography. Most of the value in chocolate comes from marketing and branding. And it is a big step from grinding to chocolate-making. Consumers are mostly in Europe or North America. Transporting chocolate through tropical climates is a logistical headache. Chocolate consumption in Africa is low [7].

Fairtrade branding

Fairtrade went mainstream because its calculus is simple. Fairtrade growers reap significant benefits, price protection chief among them. For a guaranteed minimum price for their product, Fairtrade coffee growers in the Third World join certified co-operatives that meet certain employment and environmental standards. Included in the Fairtrade minimum is a $0.05 premium - like a voluntary consumption tax - that must be invested in the growers' communities [8].

From the consumer's perspective, buying Fairtrade is an easy way of satisfying a Western conscience that wants to help poor people on the other side of the world. The Fairtrade guarantee comes in the form of certified virtue. The success of Fairtrade farms depends on the existence of a consumer market with enough disposable income to artificially boost their prices [8]. If Fairtrade is a means of getting more people to think about where the stuff they buy from and the conditions under which it is produced, then that can only be a good thing [9].

From the buyer's perspective, Fairtrade offers an avenue into the luxury end of the retail coffee market without the hard work of building an independent brand. By leveraging Fairtrade's cachet among discriminating consumers, distributors can spread the brand's equity across their entire range of products, even if only a small percentage are certified. Retailers and distributors that pay the small Fairtrade premium for their beans can then turn around and jack up the prices of the end product, knowing that the conscientious customers will pay over the odds for a mug of steaming justice [8].

Fairtrade's brand has redefined consumption as a moral response to global economic inequality by using the power of capitalism against itself. Guaranteeing a minimum price for a commodity may be contrary to free market principles, but it's the free market that is choosing Fairtrade products in abundance. Major companies have issued statements emphasising their dedication to social responsibility, but a straightforward statement of capitalist logic is: "This initiative is being led by consumers. They want Fairtrade and they want it now" [8].

Growing consumer demand for ethical food has encouraged more companies to certify their output, leading to the emergence of new fair-trade schemes and putting pressure on established fair-trade certifiers to expand their operations, despite limited resources [9]. Paradoxically, a problem stems from the success of consumer labels that purport to tackle the issues involved, e.g., sustainability, inequality, and poverty. There has been a dizzying proliferation of sustainability and fair-trade labels. The Guardian, a UK paper, counted more than 460 in 2019 offering everything from dolphin-free tuna to bird-friendly coffee. Many big companies have abandoned eternal certifications, devising in-house labels – often without outside auditing – promising conscience-free shopping [10]. The proliferation of labels results from strong differences in how producers and people in the fair-trade movement believe they can best respond," says Anna Canning, campaigns manager for Fair World Project, a fair-trade watchdog [9].

The trend threatens to undermine consumer confidence, while encouraging "fairwashing" — when a company applies for a fair-trade label to gloss over its problems — Ms Canning says. Some leading producers have recently pulled out of established fair-trade schemes to set up their own ethical labels. The decision in 2016 by Cadbury, the British confectionery maker owned by US food group Mondelez International, to pull out of the Fairtrade scheme in favour of its own sustainability programme, Cocoa Life, placed a question mark over the viability of established fair-trade organisations. Green & Black's, which pioneered organic Fairtrade chocolate and was bought by Cadbury in 2005, joined Cocoa Life the following year [9].

In 2017, UK retailer J Sainsbury announced it would also drop the Fairtrade label from its own-brand tea, launching its Fairly Traded label instead. Meanwhile, Nestlé is expanding its in-house Cocoa Plan sustainability programme. Trishna Shah, senior analyst at market researcher Euromonitor International, says that "2009 was the year when the big global fair trade brands became important to companies, they began to seek them out — Cadbury, Mars and Nestlé went fair trade; 2017 is when they switched". While Fairtrade, UTZ and the Rainforest Alliance have been seen as the gold standard for fair trade certification in recent years, there is now "a ripple of change", with leading manufacturers moving to self-certification, Ms Shah says. "For some manufacturers with complex supply chains, established fair trade schemes don't offer enough flexibility. That's why they are looking to adapt to the current business climate," she says. In this sense, the best-known fair trade certification brands are victims of their own success [9].

Fairtrade has responded to the changing business environment. In the 2020s Fairtrace was launched, which uses blockchain technology to increase traceability and allows shoppers to know more about the origin of the products they are holding in their hands. The move is a recognition that sustainability is a lot more nuanced, with consumers more demanding and inquisitive than before, making it harder for companies to win their trust [9].

Other criticisms are that by guaranteeing farmers minimum prices for products from coffee to cotton, Fairtrade distorts the markets. It effectively subsidises growers, encouraging over-production and discourages poor communities from shifting to more promising activities. The counter-position is a Fairtrade buyer, like any other consumer, simply makes a choice. Fairtrade rests as much on market forces as conventional trading does. Fairtrade works not because it subsidises goods no one wants, but because some free market consumers are willing to support it [11].

Buying Fairtrade chocolate no more distorts the chocolate market than buying a Louis Vuitton handbag distorts the handbag market. In both cases, buyers send a signal: they are prepared to spend more on a bag with a prestigious label, or on chocolate that provides cocoa growers with a better life. Fairtrade gives a buyer the satisfaction of helping the neediest [11].

Does Fairtrade really help the neediest? Consumers thinks so. Fairtrade products represented only 0.01% of global food and beverage sales in 2009, but revenues rose by more than 40% annually between 1998 and 2007, by 22% in 2008 and by 15% in 2009. In some niches, Fairtrade exercises considerable clout: it took only 1% of the global coffee market in 2009, but had 20% of UK retail sales of ground coffee [11].

Some question whether Fairtrade consumers make a difference in terms of helping the poor. Certification is expensive: £1,570 in the first year, so it is more likely to help farmers in middle-income countries. In 2007, the four leading Fairtrade-certified nations were Mexico, Colombia, Peru and South Africa. Fairtrade counters that it operates in the poorest countries too, e.g., Democratic Republic of Congo, Afghanistan, Ethiopia, Tanzania, Mali, and supports those who cannot afford certification [11].

How much of the Fairtrade price-premium goes to the producers? Studies cite a premium of 10% to 25%, but how well monitored is the system? A 2006 *Financial Times* investigation found Fairtrade coffee farms in Peru paid workers below the country's minimum wage. Fairtrade said, the study confused the retail price premium with the "social premium", a sum that producers use to build schools or clinics. The farm workers concerned in the *FT* report earned 25% more than they could elsewhere. Several sellers of Fairtrade products, such as J Sainsbury (bananas), Ben & Jerry's (ice cream) and Cadbury (chocolate), switched to Fairtrade without charging consumers extra. Fairtrade did not guarantee a retail price premium, but insists that producers receive the minimum price and the social premium. A 2006 *FT* investigation into Fairtrade cotton in Mali found that the social premium built schools and concrete grain stores and that the system appeared to work well [11].

Commodity Dependency Theory in Practice

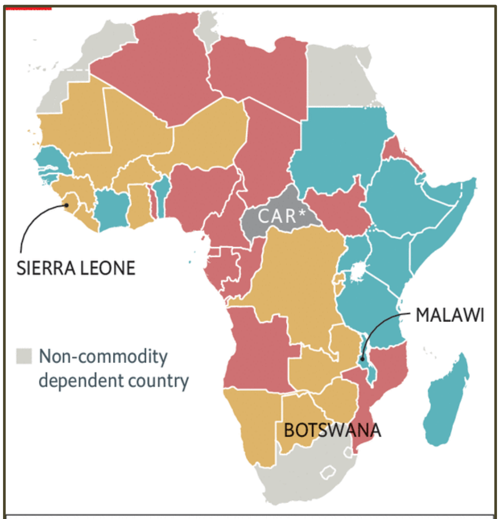
Resource curse in Africa

The UN defines a country as dependent on commodities if they make up more than three-fifths of its physical exports. Too many countries in Africa rely too much on raw materials for their income. Fully 83% of African countries meet the UN's threshold, up from 77% a decade ago. Some depend on produce such as tea, but most rely on mining or on pumping oil. When commodities crashed in 2015, foreign direct investment (FDI) and growth tumbled and have yet to fully recover [12].

Broad averages obscure some of the progress that has been made to diversify economies. Since 2012, resources have become less important to GDP. The share of commodities in goods exports from the continent as a whole has fallen, too. In countries such as Botswana and Malawi, services have grown strongly. Even manufacturing is rebounding [12]. This suggests there is some degree of economic diversification taking place.

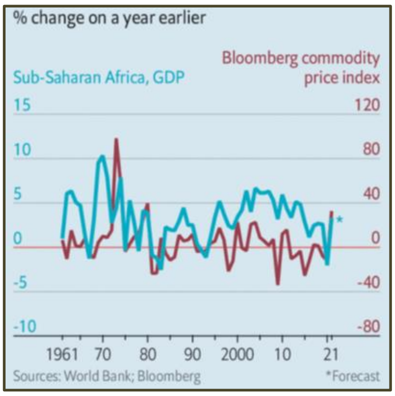
Yet Africa has a long way to go if it is to break free of the resource curse (see chart, commodity dependency by type). In countries rich in diamonds or oil, political power can be a licence to loot. Resource-rich countries are more likely to suffer dictatorships, and also tend to have more and longer civil wars. Diamonds fuelled a bloody conflict in Sierra Leone that dragged on for 11 years [12].

Commodity prices leap and fall, leading to booms and busts. Cash crops create jobs, but, without processing, do relatively little to improve productivity (which is needed to make a country rich). Worse still, commodities exports can often hold back the rest of the economy by pushing the exchange rate up and making other exports uncompetitive. Being endowed with commodities is correlated with too little economic diversification. Every extra dollar in foreign currency earned from exporting resources reduces non-resource exports by $0.74, reckon Torfinn Harding of the NHH Norwegian School of Economics and Anthony Venables of Oxford University. So tight is this straitjacket that Michael Ross of the University of California found that among 38 big oil exporters, neither good government nor democracy has any solid relation with diversification. The only thing that correlates is having less oil [12].



Commodity dependent†, by main export type, 2018-19
Oil and Gas · Minerals, ores and metals · Agriculture
*Insufficient data †Over 60% of physical exports are commodities
Source: UNCTAD

In Sub-Saharan Africa, GDP growth rates still move in tandem with commodity prices (see chart, % change in SSA GDP). This is yet more evidence that some countries' fortunes as still closely tied to commodities.



It is too easy to blame economics alone. Governments often spend windfalls from commodities on fat salaries rather than investing them in infrastructure or education. Too often when cash is tight and governments are frustrated at the lack of revenue, politicians try to renegotiate existing deals to get more tax revenue, nationalize the ownership of resources, or simply expropriate mining or oil companies. Yet the result of state ownership is usually idle or unprofitable mines and angry investors who take their money and skills elsewhere [12].

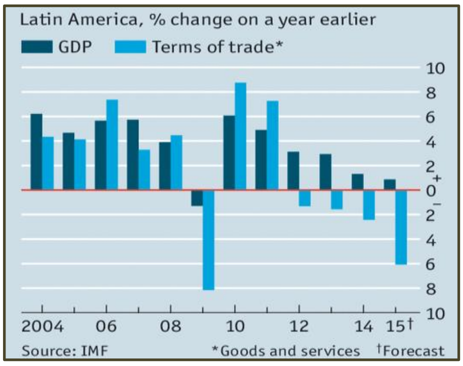
Often overlooked is the reality that some politicians simply do not want to diversify. Oil revenues tend to go through state coffers, giving the connected political class access to those funds. The politically connected can benefit in other ways too, says Rabah Arezki, a former chief economist at the African Development Bank. In many cases imports, which tend to jump during commodity booms, are controlled by a few big players. If there is little competition from domestic producers, they can bump up prices and gouge ordinary folk. As long as they share some of this wealth with their friends in politics, the government might do little to encourage local production. In any case, creating, say, a clothing industry from scratch is slow, so there is little reason for politicians to put in the effort if the credit will be claimed by their successors [12].

Even so, it is possible for governments to manage their commodities better. One basic principle, especially for things like oil and minerals that will run out, is to turn riches in the ground into other sources of wealth, such as roads or an educated population. The World Bank now argues that, even if countries cannot diversify their exports, they will still be making progress if they diversify their sources of wealth [12].

Commodity trade: Uneven growth in Latin America

The rise in the prices of commodities—minerals, oil and grains—brought about by China's industrialisation unleashed a golden decade in Latin America's commodity-exporting countries. Growth averaged 4.1% in the decade to 2012. In its train came a social transformation: 60m were lifted out of poverty, and the middle class swelled [13].

The good times are over as Latin America's economy screeched as its growth slowed to just 1.3% in 2014. IMF estimates put growth in 2015 at 0.9%, marking the fifth successive year of deceleration (see chart, Latin America's GDP and TOT). Not only did this surprise forecasters, but Latin America's growth slowed more than any other emerging region. Many reckon it now faces a "new normal" of growth of just 2-3% a year. That would jeopardise recent social gains; already the fall in poverty has halted [13].



So what has gone wrong? Did Latin America squander its boom? An immediate explanation for the slowdown is the fall in the region's terms of trade—the ratio of the price of its exports to the price of its imports. Having risen threefold between 2003 and 2011, commodity prices fell somewhat thereafter before plunging sharply in 2014. Since 2011, investment in the region's economies has slowed; the IMF finds that it is closely correlated with commodity prices [13].

In the past, such abrupt reversals tended to cause panic and capital outflows. This time is at least partly different. Better macroeconomic policies, such as floating exchange rates and lower public debt, have allowed many countries to adjust smoothly. Chile, Colombia and Peru, which have handled their affairs responsibly, are still growing, but much more slowly. Mexico, Central America and the Dominican Republic, net importers of commodities, are set to do better than average in the coming years [13].

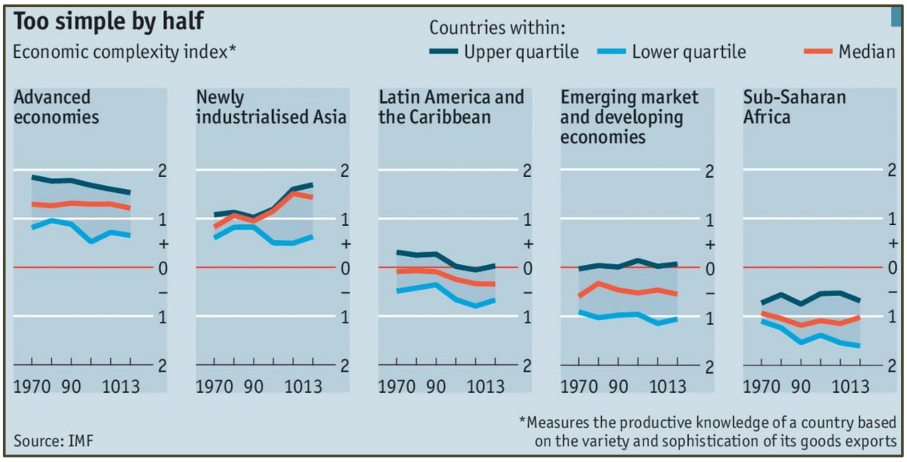
"The boom was not completely wasted, but neither was it completely capitalised on," Guillermo Perry and Alejandro Forero of the University of the Andes in Bogotá conclude in a paper. Most of its proceeds went on a consumption binge and imports. By contrast, Asia's expansion was powered by manufactured exports, investment and infrastructure spending, increasing its potential for future growth [13].

Latin America's traditionally low investment levels did increase. Stronger and better-regulated banks and public finances and higher levels of international reserves meant that the region sailed through the great recession of 2008-09 with only a brief downturn, but many governments were then too slow to withdraw the fiscal stimulus they applied. With the partial exception of Chile and Peru, no government now has scope to mitigate the slowdown through monetary or fiscal policy [13].

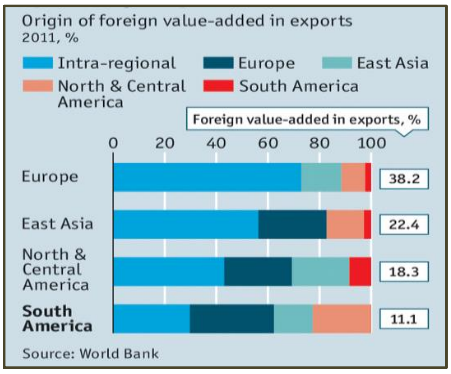
To return to faster growth, Latin America must address its chronic structural weaknesses. Put simply, it exports, saves and invests too little, its economies are not diversified enough and too many of its firms and workers are unproductive [13].

To make matters worse, the rise of China, and of the emerging world generally, since the 2000s exacerbates some of these problems, a World Bank 2015 report concluded. China reinforced Latin America's role as a commodity exporter while the relative weight of its manufactured exports diminished, the bank found. That is partly because of Latin Americans' low savings rate (under 20% of GDP, compared with 30% in South-East Asia). The region relied on drawing in foreign savings, which meant that its currencies appreciated during the boom more than they might otherwise have done, rendering many non-commodity businesses uncompetitive [13].

In the 1990s, Latin America began to diversify its exports, selling a bigger variety of products. However, that reversed in 2000. Only a small and declining percentage of the region's exports are of "complex" (ie, knowledge-intensive) products (see chart, economic complexity index). Ricardo Hausmann, a Venezuelan economist at Harvard, found a close correlation between the diversity and complexity of exports and subsequent economic growth. The problem Latin America faces, says Mr Hausmann, "is the things that could be there and are not". Latin Americans "seldom talk about technology and innovation, so there are no new industries to take over from commodities" [13].



Latin America's problem is its failure to join what are called "global value chains"—which are in fact mainly regional. Modern industry needs elaborate supply chains with parts coming from several different (neighbouring) countries. Some 72% of the "foreign value-added" in exports from European countries is intra-regional, in other words it originates in other European nations; the equivalent for East Asia is 56% and for South America only 30%, according to the World Bank (see chart, origin of value added). Only Mexico is plugged into these value chains, thanks to its economic integration with the US [13].



The productivity gap between Latin America and the rest of the world has been widening. According to the Inter-American Development Bank (IDB), Latin America's total factor productivity (the efficiency with which labour and capital work together) was slightly over half the level in the United States in 2010, compared with almost three-quarters in 1960. Over the same period, East Asia has narrowed the gap from around half to a third [13].

Why are Latin Americans so relatively unproductive? Latin America has large modern companies, some of which have evolved into successful multinationals, but the typical Latin American business resembles a family workshop, lacking scale, technology and professional management [13].

There are several reasons why Latin American firms find it hard to be more productive. Andrés Velasco, who was Chile's finance minister, stresses the lack of competition in what, Brazil and Mexico apart, are smallish national markets. Achieving greater scale is vital for raising productivity, and that means going abroad. Despite much talk about integration, Latin America is still quite protectionist. Growing beyond the region is hard, given South America's location. As Mr Velasco points out, exporters in Germany or China have 20% of the world economy within fair proximity (less than 3,000km); their Chilean counterparts have no such advantage. So global value chains may be out of reach. "To sell to Asia you have to sell the whole product, not part of it," he says [13].

Another old explanation for low productivity is that half of Latin Americans work in informal non-registered businesses, which struggle to obtain technology and capital; such firms compete unfairly with legal ones and make their tax burden bigger. Informality is in part a consequence of baroque regulation which adds to business costs. [13].

An even more powerful brake on productivity is the region's lack of infrastructure (roads, ports and so on). While China invests 9% of its GDP in infrastructure and India 6%, Latin America manages just 3%, according to CAF, a development bank. Lack of money is no longer the main problem: countries such as Chile, Colombia and Peru have mobilised private finance for infrastructure. Rather, it is the difficulty of building anything. Take Peru, between 2005 and 2013 the government awarded contracts for 62 infrastructure projects worth $15 billion. Only 55% of the money was spent, says Gonzalo Prialé, a lobbyist [13].

Governments have failed to expropriate the necessary land. Then there are the permits required before you start pouring concrete. Environmental impact studies take three years on average, says Mr Prialé. A 1,100km gas pipeline in the south of the country needs 4,102 separate permits [13].

A third traditional explanation for low productivity is an ill-educated workforce. Latin America has made huge strides in expanding educational coverage, but the quality of teaching in schools is poor: the eight Latin American countries that participated in the PISA international tests of 15-year olds all came in the bottom third of the ranking. Some economists caution that schooling is no panacea; there is little evidence directly linking more education to higher productivity. They point to the danger that sociology graduates will drive taxis—unless governments try to stimulate the demand for, as well as the supply of, better-qualified workers [13].

Latin America has traditionally been poor at innovation. Its spending on research and development as a share of GDP is less than half that in developed countries. Farming is a shining exception. In Brazil, agriculture "is the only sector that has put technology at the heart of its business," says José Roberto Mendonça de Barros, an economist in São Paulo. The latest innovation, pioneered by Enalta, a firm in upstate São Paulo, is called "precision farming" and involves installing sensors in farm machinery to control planting and fertiliser use, boosting productivity. Almost half the farmers in Mato Grosso have adopted the technology, says Mr Mendonça de Barros. He expects agribusiness to grow by 2.5% this year, even as the rest of Brazil's economy contracts [13].

The Centre for Agroindustrial Technological Innovation, founded by the Peruvian government in 2000 with Spanish aid and private support has helped to raise productivity in Peru's grape, wine and pisco industries. It advises farmers, for a fee, and offers them the services of a small research laboratory and a model distillery. Since 2000, output of grapes per hectare has more than doubled. Peru is now the third-biggest exporter of table grapes to China; annual production of pisco, a grappa-style brandy, has risen from 1.8m litres to 7.8m, says Pedro Olaechea, a winemaker who chairs the centre's board. Peruvian pisco, an ancient product, is starting to gain a global name. Mr Ghezzi, the production minister, has plans for several more such technology centres, starting with leather goods, forestry and dairy products [13].

Extracting more value from natural resources by applying technology is part of Latin America's future, but the region also needs to develop new businesses, in industry and services. The IDB, in an influential report in 2014, called for "productive development policies", in which governments try to foster such new enterprises [13].

Heavy-handed industrial policies have often failed in Latin America. The latest example is a new approach calling for a lighter touch, to provide things—from training in specific skills, to new roads, or grants for innovation—whose absence may deter private investment. For example, Costa Rica's investment agency helped to develop a surgical-devices industry by persuading a US firm to set up a sterilising service. Start-Up Chile offers a grant and visa to would-be tech entrepreneurs from around the world. It has survived, with tweaks, a change of government [13].

Since 2000, only one Latin American country has become an important node in the world trading system, notes Augusto de la Torre, the World Bank's chief economist for the region. Mexico has joined global value-chains, diversified its exports and moved into more complex products. Yet Mexico's economic growth (averaging 2.4% a year for 20 years) and productivity have disappointed [13].

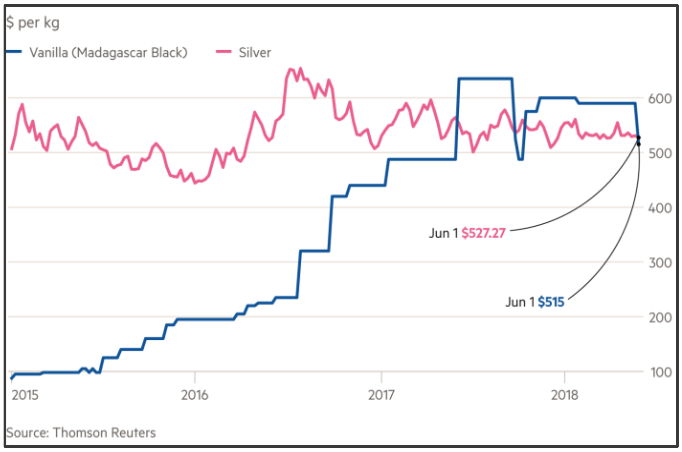
One theory is that Mexico has too many monopolies, especially in services. Others cite a weak legal culture and contract enforcement, and violent crime, as factors that deter investment. The underlying problem is the gulf in productivity between large modern companies, mainly in the north of the country, and small, informal producers and the south [13].

The same goes for other countries. "The problem of Latin America is that it has not been able to replicate its better-performing regions nationally," says Mr Hausmann. Doing so requires better transport, the upgrading of skills, more competition and the spread of technology. During the commodity boom, many governments could ignore that challenge. They can't any longer [13].

Dutch Disease: The case of vanilla in Madagascar

Madagascar supplies 80% of the world's natural vanilla and was in the grip of a vanilla boom in 2018. Farmers responded by producing vanilla rather than crops to feed themselves. Though some farmers did well from the vanilla rush, many more did not. The lion's share of profits go to the buyers, intermediaries and exporters who purchase vanilla, process it and sell it to the world's makers of chocolate, perfume, ice cream and flavouring. The price hike caused ripples in London and New York where some ice-cream parlours took vanilla off their menus [14].

While the likes of Coca-Cola, Unilever, the British-Dutch consumer goods group, or Danone, the French food company, were forced to pay inflated prices, farmers received only 5 to 10% of the value of their crop, according to industry observers. Worse, they say, if farmers switched to lucrative vanilla and abandon food crops such as rice and manioc, they could be left in desperate straits when the vanilla market crashes, as it inevitably will. Vanilla has been through violent booms and busts before. In 2013, it traded at $20 a kilogramme against some $515 in 2018, down from an earlier peak of $600 and compared to a silver price of $528/kg (see chart, price in $/kg). Dutch disease refers to the curse that commodities can bring. The IMF representative to Madagascar, referred to what was happening in the vanilla market as the vanilla disease [14].



The inability to convert natural wealth into a decent standard of living is not only of concern to Madagascar and other, mostly poor, commodity-producing countries in Africa, Asia and Latin America. Increasingly, it is a problem for the buyers of commodities too. Consumers are more concerned about where their food comes from and the environmental and social impact of their buying preferences [14].

"I think what everybody's discovering is that the supply chain is broken," says Victoria Mars, a fourth-generation member of the family that owns Mars, which purchases about 0.5% of the world's vanilla, mainly for chocolate brands such as Snickers and Twix. "We've got to take some responsibility," she says. "Vanilla is a small piece, but we've got to start somewhere." Barry Parkin, head of procurement and sustainability at Mars, says companies must change the way they buy commodities [14].

"Historically, commodities have been something that's uniform, that people bought at arm's length, that you didn't know where it came from," he says. When he was buying cocoa for Mars 15 years ago, the specification was "west African flavour". Mars did not know whether it came from, Ghana, Nigeria, Cameroon or Ivory Coast — nor anything about the conditions for production. "We bought it from the cheapest supplier that week, that month." That sort of relationship will no longer wash, says Mr Parkin, who credits NGOs with exposing the underbelly of supply chains that too often see luxury goods at one end and malnutrition, deforestation and child labour at the other [14].

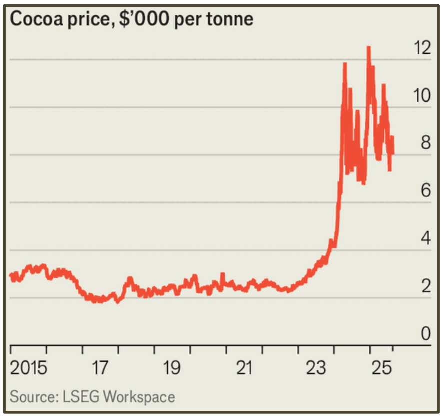
"This train is running and running fast," he says. "The big commodity houses — the Cargills, the Archer Daniels Midlands, the Bunges, the 200-year-old companies that were built on moving commodities around the world at the most efficient price — they did not see this coming." Emmanuel Faber, chairman and CEO of Danone, another big purchaser of vanilla, expresses similar views. He estimates that Danone sources its ingredients from 70 to 100 countries [14].

"For generations, consumers in the western world have entrusted large brands to supply delicious, affordable food," Mr Faber says. "The next generation came educated with doubts about the system, doubts about climate change, doubts about inequality." That means, he says, that multinationals like Danone have to make credible efforts to find out what is going on in their supply chains and to tackle issues when they identify them. "Food and water is not just a consumer good," he says. "That's a huge ideological simplification we maintained for 50 years [14]."

Agricultural commodity price fluctuations

In 2024, the global cocoa market came under strain with massive shortages of beans and soaring costs of securing long-term supply contracts in the market. Prices in the most active futures contracts in New York and London plunged by 25% in two days in May before rebounding sharply as the world's growers of and buyers of cocoa struggled to manage supply shortfalls [15].

An unholy combination of disease, climate change and poor farming practices in Cote d'Ivoire and Ghana, where about 70% of the world's cocoa is grown, caused a severe shortage. Prices hit a record high of more than $12,000 a tonne in Dec 2024. They fell to $8,000 a tonne in Aug 2025, but that was more than triple the price in 2022 (see chart, cocoa price) [y].



The wild swings and sharply diverging prices were a sign of market volatility and stress following successive poor harvest in Ivory Coast and Ghana. Fears over long-term supply triggered a rush among refiners and customers to secure shipments in 2024. This left the price more than $3000 per tonne higher than a contact to deliver in a year's time while traders frantically searched for a reliable source of beans. The cost of cocoa rocketed from 2023 to 2024. As poor weather and disease in the world's main growing region in west Africa compounded structural problems, including under-investment and ageing trees, slashing yields [15].

New York cocoa hit an all-time high above $12,000 per tonne in April 2024, more than four times higher than in 2023. In May, prices dipped below $9,000 per tonne on news of rains arriving in west Africa. Traders noted that the rollercoaster moves put most strain on longer-term futures contacts as they feared both Ghana and Ivory Coast would not be able to meet orders for hundreds of thousand of tonnes of beans [15].

However, government intervention also plays an unhelpful role in the functioning of the market. The two countries set prices for farmers and sell forward contracts to traders to deliver the beans, but failing to meet orders means traders become reluctant to enter into new forward contracts with them. Futures contacts lock in prices. These contracts effectively ask a trader's counterpart (trading houses) to assume at least part of the price risk and the cost of non-delivery [15].

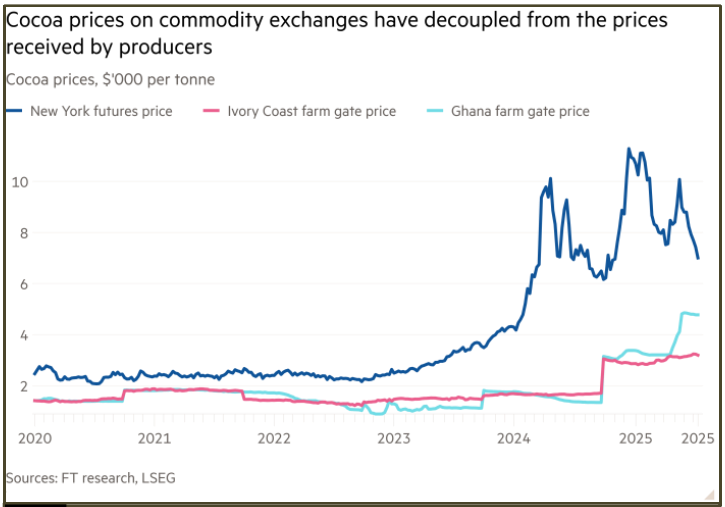
To encourage farmers to invest in their plantations and boost yields, regulators in both countries increased the set prices paid to farmers. The price increases irked international trading houses. With delivery of hundreds of thousands of tonnes of beans potentially being deferred until the next harvest, traders feared that they may be asked to pay much higher prices than they had previously agreed. The question was where were the governments going to get the money to pay farmers a higher price? The intent was to use funds from a cocoa reserve fund which was designed to mitigate price risks, but it was unclear how much, if anything, was in the reserve fund. It was doubtful whether there were sufficient funds to fully compensate all. Farmers were unsatisfied by the price rise because it was still too far below the prices in New York and London [15].

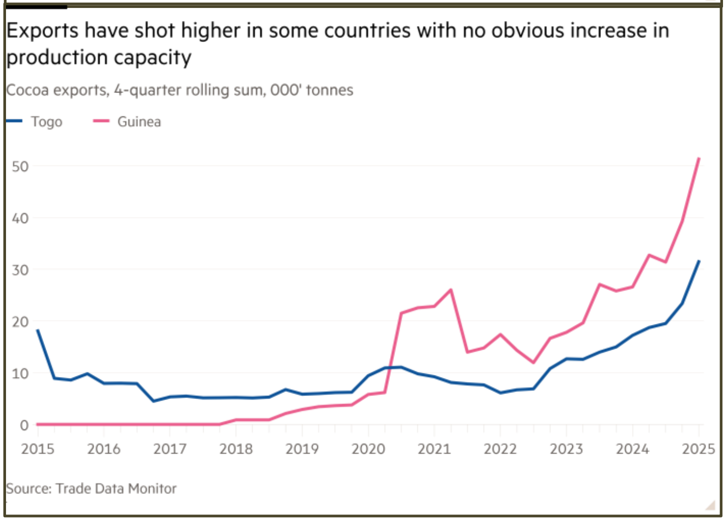
Few farmers can afford to hoard their cocoa in the hope of higher future prices, the divergence between global markets and farmgate prices in Ghana and Ivory Coast. The divergence in global markets and domestic prices drove smuggling into neighbouring countries with free markets, worsening the shortage of cocoa beans [15].

Despite the soaring international prices of cocoa, local farmers in Ghana and Cote d'Ivoire only earn a slice of the market value. This is because of state price controls in both countries, which were intended to protect growers from market lows, have resulted in a gap between international prices and farmgate prices in Ghana and Ivory Coast (see chart, cocoa price gap). Many farmers began sidestepping these controls by selling their beans to intermediaries who smuggle them into neighbouring countries, where they are sold at market prices [z].

Government data shows that, in the 2023-24 season, about 160,000 tonnes of cocoa beans were smuggled out of Ghana – by some estimates as much as a quarter of output – with a further 200,000 tonnes from Ivory Coast. Burkina Faso, Togo and Sierra Leone reported surging exports despite producing almost no cocoa [z].

What fuels smuggling is the price gap between Ivory Coast and the other African markets. Much of the smuggling follows well-trodden paths with beans moving through northern plantations across the border to Burkina Faso and onward to Guinea or Togo where they are "washed" in warehouses and exported as local produce (see chart, exports) [z].



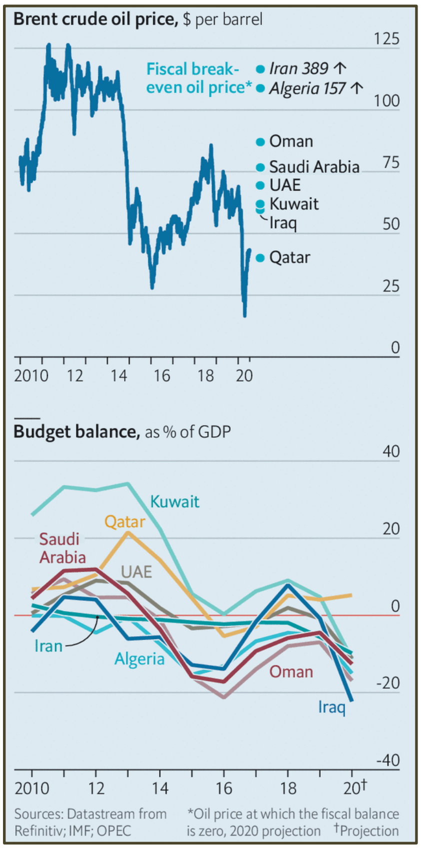


Both Ivory Coast and Ghana more than doubled their buying prices in 2025 to close the gap between international prices and farm gate prices, but farmers and experts said the increases were nowhere near the amounts required. In 2025 in Ghana, the farmgate rate was $4,800 per tonne, but smugglers could make almost double that by reselling the beams in Guinea or Liberia where buyers paid as much as $9,000 [z].

Oil revenue dependence

Covid-19 sent the price of oil plummeting to all-time lows as people stopped moving around to limit the spread of the virus and as economies entered lockdown, slowing economic activity. When commerce resumed in mid-2020, the price ticked back up slowly [16].

However, the world's economies are moving away from fossil fuels. Oversupply and the increasing competitiveness of cleaner energy sources could mean that oil might be cheaper in the foreseeable future. Is the turmoil in oil markets an aberration or a glimpse of the future? It was wondered whether the world had entered an era of low prices. If so, then no region would be more affected than the Middle East and north Africa. Oil revenues in the region, which produces more of the black stuff than any other region, fell from over $1trn in 2012 to $575bn in 2019, says the IMF Their government budgets were not adding up. Algeria needs the price of Brent crude, an international benchmark for oil, to reach $157 dollars a barrel to balance its books. Oman needs it to hit $87. No Arab oil producer, save tiny Qatar, could balance its books at the mid-2020 price of around $40 (see chart, oil price and budget balance) [16].



Qatar and the United Arab Emirates have huge sovereign-wealth funds. Saudi Arabia, the region's largest economy, had foreign reserves worth $444bn in mid-2020, enough to cover two years of spending at the current rate. But the region was hit hard by the pandemic, as well as low oil prices. And they have long overspent. Arab leaders knew that sky-high oil prices would not last forever. In 2016 Muhammad bin Salman, the de facto ruler of Saudi Arabia, produced a plan called "Vision 2030" that aimed to wean his economy off oil. Many of his neighbours have their own versions. [16].

This was before Russia's invasion of Ukraine, of course, which caused price spikes from the ensuing uncertainty and disruption of energy and agricultural commodity markets. The return of high oil prices can again lead to the bankrolling of unproductive economies, propping up unsavoury regimes and inviting unwelcome foreign interference. The region would do well to continue to spread riches through trade, tourism and investment in other sectors to create a more dynamic economy [16].

Structural reforms

<u>Role of land reform</u>
A voluminous literature ponders the causes of the East Asian miracle, in which first Japan, then the four original "Asian tigers"—Hong Kong, Singapore, South Korea and Taiwan—and then China sustained bounding growth for decades. Most studies point to market-friendly policies that encouraged exports of manufactures and the rapid accumulation of capital, including the human sort. Others emphasise the importance of institutions. Yet one crucial factor has been relatively underplayed: restructuring agriculture [17].

"Land reform" sounds innocuous but involves great upheaval: seizing land from those who have it and giving it to those who do not. Yet radical action may be necessary in countries with big, impoverished, rural populations. As Joe Studwell points out in "How Asia Works", farm yields often stagnate in such places. As populations grow, making land scarce, landlords jack up rents and lend at extortionate rates. That leaves poor tenant farmers mired in debt, with no means to invest [17].

China provides a stark example. By the 1920s, a tenth of the population owned over seven-tenths of the arable land. Three-quarters of farming families had less than a hectare. Mao Zedong's Communists reallocated land in every new territory they seized. After the defeat of the Kuomintang (KMT) in 1949, they rolled out land reform nationwide. Landlords, some with scarcely more land than most, were blamed for everything. In the decade after 1945 millions of them were beaten to death or shot, or left to starve. Revolution, Mao said, was not a dinner party [17].

The effect was immediate. Grain output leapt by perhaps 70% in the decade after the war. When farmers can capture most of the value of their land, they have a powerful incentive to produce. And while smallholder agriculture is hugely labour-intensive, that makes sense when labour is abundant. (Only a few years later the Communists embarked on the madness of collectivisation. China emerged from that disaster in 1978, after Mao died. North Korea is starting to do so only now) [17].

China's early success challenged Japan, South Korea and Taiwan. These countries, pressed by the US to carry out land reform, showed that it does not require mass murder. By the war, half of Japan's arable land was worked by tenant farmers, and rent was never less than half the crop. After the war, farm size was limited to three hectares. Land committees on which tenants outnumbered landlords oversaw a reapportionment that took land from 2m households and gave it to 4m others. Compensation fell short (and was gobbled up by inflation), but there was little violence among farmers. Perhaps it helped to be able to blame the occupiers when politely taking over someone's paddy field. At any rate, agriculture boomed [17].

South Korea had the most unequal land ownership in the region, and resistance by the elites was strongest. Some landlords lost as much as 90% of their land. But Taiwan under the KMT shows the clearest benefits from land reform, which started with rent controls and reforms to tenancy. Sales of formerly Japanese-owned land followed. Then, in 1953, came appropriation. The share of land tilled by the owner rose from just over 30% in 1945 to 64% in 1960. Yields on sugar and rice leapt. New markets sprang up for exotic fruits and vegetables. Household farmers dominated early exports. Crucially, income inequality shrank thanks to the new farmer-capitalists. Less spent on imports of food, more money in Taiwanese pockets, a new entrepreneurialism: farming was the start of Taiwan's economic miracle [17].

Indonesia, Malaysia and Thailand could have followed Taiwan's example, but did not. Their economies have done far worse. With between 25% (Malaysia) and 48% (Thailand) of their populations still living in the countryside, land distribution matters. The state favours agribusiness and plantations over small farmers. There is a yawning gap in income between countryside and city [17].

The situation is worse in the Philippines, which had a similar income per person to Taiwan's just after the war. Before independence in 1946, the US auctioned off the Catholic church's huge estates. Only the local elites could afford them. These became the hacienda class that thrives today, forming the basis of many political dynasties. Admittedly, after the People Power revolution (led by Cory Aquino, from one landed family, who married into another), political pressure for land redistribution culminated in a reform law passed in 1988. Nearly 30 years on the law, replete with loopholes, is still being implemented. The operations of many big estates have hardly been affected, while household farmers still lack technical and financial support. Many of those given plots have had to lease them back cheaply to the big planters, becoming wage labourers on their own land [17].

There are political consequences too. In South Korea and Taiwan inclusive agricultural growth prefigured the inclusive politics of today's thriving democracies. In South-East Asia, by contrast, cronyism and inertia are consequences of an economy that is unfair to those at the bottom. The Philippines and Thailand have most clearly paid a price, in the form of insurgencies and rural unrest, for keeping poor people down. When weighed against the costs, land reform, done well, starts to look cheap [17].

Land reform in Africa

A system of private land titles is still some way off in the continent. Roughly three-quarters of land is under customary ownership; that is, in theory it is managed by communities in line with tradition. But there is no consensus about how that should work in practice. Which community? Whose tradition? Should decisions be made by chiefs, families or individuals [18]?

These questions have become more urgent as demand for land rises. After the 2007 food price spike, a land rush ensued. Foreign investors concluded large-scale deals for roughly 200,000 square kilometers of land in Africa. Many countries began rethinking customary tenure as a means of addressing agricultural production and investment decisions. This does not just recast political authority over the land, but changes property rights. Access to rural land is often mediated by chiefs, who present themselves as heirs to ancestral tradition. This puts them at the heart of negotiations with investors. Some chiefs insist they are owners of the land, not mere custodians. Some chiefs struck deals with companies that want land for crops and minerals by riding roughshod on communities insisting on investments even when communities did not want it. Other chiefs wee argued to be responsive to local needs, were trustworthy, less corrupt and better at their jobs than politicians or outsiders. Thus, efforts to reduce the power of chiefs to strike deals have been being contested [18].

New laws to weaken chiefly power include guaranteeing women the same land rights as men. Some require the consent of a majority of adults in the families who, in effect, own it before an investment is approved. One way to change land use is to register ownership. This turns customary land into something markets and institutions can recognize [18].

Structural change in Africa

In much of Africa, the informal service economy is a crowded place to be. But it is hard to find work anywhere else. In 2016, GDP in sub-Saharan Africa grew by just 1.4%. Income per person fell. But growth in itself is not the issue that troubles policymakers and intrigues academics: for most of this century, after all, African economies have been among the fastest-growing in the world. What has flummoxed observers is where that growth comes from. In 1954 Arthur Lewis, a Nobel prize-winning economist, argued that development occurs as labour shifts from an unproductive "traditional" sector—activities such as subsistence farming, or petty trade—into modern, capitalist activities [19].

Research by Margaret McMillan, of Tufts University, and Dani Rodrik, of Harvard, investigates how far Africa has followed this pattern. They distinguish two traditions of thinking about growth. One focuses on raising labour productivity within sectors of the economy, by adding capital or improving skills and technology. The other stresses structural change, as workers move between sectors. The output of the average African manufacturing worker is five times that of his agricultural counterpart [19].

Move people from farms to jobs in factories or high-value services and growth will follow. As a thought experiment, consider changing the sectoral distribution of African workers to match that in the advanced economies, holding everything else constant. Productivity in Ethiopia would increase sixfold; in Senegal by a factor of eleven [19].

Things are rarely so simple, however. In the 1990s structural change in sub-Saharan Africa actually went into reverse; it was a drag on growth. In Zambia, for example, workers returned to their fields, as industries and mines shut down. But in the new millennium, momentum picked up again. Between 2000 and 2010 structural change accounted for almost half of productivity growth in a 19-country sample. The effect was especially strong in places with a lot of farmers, such as Ethiopia, Malawi and Tanzania. Overall, the proportion of Africans employed in agriculture fell by 11 percentage points [19].

This was no industrial revolution, however. For every ten workers to lay down their hoes, only two found their way into industry. The service sector absorbed the rest. Cities like Nairobi offered new jobs for skilled professionals in technology and finance. But most workers were more likely to be hawking phone credit than designing the next app; selling second-hand clothes, not stitching new ones. In the oil-soaked cities of Luanda and Lagos, they manned construction sites or waited on tables for the rich. "There's been structural change," says Yaw Ansu of the African Centre for Economic Transformation, a Ghana-based think-tank, "but not the type that really improves the lives of people" [19]

In East Asia both kinds of growth have occurred at once: workers have moved into more productive sectors, and productivity in those sectors has increased. So another puzzle is that in African countries that have seen large-scale structural change, productivity outside agriculture has often fallen [19].

From 19th-century Britain to 21st-century Vietnam, sustained growth has been built on manufacturing. Factories create lots of low-skilled jobs. And, as Mr Rodrik has shown, manufacturing productivity in poor countries tends to catch up with the most advanced economies, even in places with shoddy institutions or bad geography. But African manufacturing has stagnated. Its contribution to GDP has changed little since the late 1970s [19].

Orthodox remedies, focused on trimming regulation and improving governance, have lost their appeal. So there has been a revival of interest in active industrial policies. Ethiopia, where manufacturing employment has quintupled this century (from a low base), is experimenting with this approach. A new paper by Cornelia Startiz and Lindsay Whitfield for the Centre of African Economies, at Roskilde University in Denmark, describes how the government has encouraged Asian apparel exporters to open factories in industrial parks, while protecting local firms in the domestic market. Foreign investment helps, if multinationals connect with local suppliers and share know-how [19].

Yet the record of interventionist industrial policy elsewhere is mostly a sorry one. And old-style industrialisation is in any event becoming more difficult. Automation is transforming manufacturing, as it becomes a viable substitute for labour in countries at ever-lower levels of income per head. The result is that Africans are competing not just with low-wage workers in Bangladesh and elsewhere, but with even lower-wage robots. The development path followed by Japan, the East Asian tigers and, most spectacularly, China—moving from agriculture to low-margin labour-intensive manufacturing such as clothing and toys—may be fast closing. Trade patterns have changed, too. Instead of producing finished products in one country, African industries must slot into global supply chains [19].

Structural change is about more than factories. John Page of the Brookings Institution, a US think-tank, argues for the importance of "industries without smokestacks": tradable, productive sectors, like cut flowers, call-centres and tourism. Africa can learn from the successes of other regions, such as East Asia. But it will take a different path [19].

Commodities and strategy

Strategic minerals for the green transition
Lithium salts are used to make high-capacity batteries. Extracting deposits of the lithium is the start of a supply chain that ends in the lithium batteries that power electric vehicles (EVs). The global EV fleet is expected to grow at least 10-fold by 2030, to 250m, according to the International Energy Agency. A Chilean firm, SQM, has tripled its lithium output between 2018 and 2023, accounting for a quarter of the global total [20].

Latin America is no stranger to supplying the world with raw materials, but it could be on the verge of a boom. Three forces are pushing the region to become this century's commodity superpower. The green transition is increasing demand for metals and minerals that Latin America has in large supply, as well as the renewable energy to process them. The region supplies more than a third of the world's copper, used in wiring and wind turbines, and half of its silver, a component of solar panels. Its fertile land produces enough grain, animals, coffee and sugar to help feed a growing global population. And geopolitical tensions between the US and China are causing countries to seek investment opportunities in relatively neutral regions [20].

But Latin America's experience with raw materials is as chequered. Argentina owes its name to the Latin for the silver shipped from its ports after it was extracted by conquistadors in Bolivia and Peru; Brazil's descends from the brazilwood tree, exploited by Europeans in the 16th century. The countries' vast riches subsequently helped spark coups, populist takeovers, crime and corruption. Meanwhile the region's economies remain lopsided, its GDP per person is worth a quarter of that of the US, and inequality is high. Can Latin America manage to reap the rewards of this new boom [20]?

Fully 21 of 33 countries in Latin America get more than half their export revenue from commodities; rising to over 60% for all 12 countries in South America (see chart, commodity export share). They mainly flog minerals and food rather than energy, which dominates only in Venezuela and Colombia. Being overly dependent on commodities is often a problem, but now it could be more of an opportunity [20]

Demand fed by the green transition is likely to be more durable than the oil, coal and steel boom of the 2000s. That was fuelled by China's industrialisation, which slowed in the mid 2010s when there were fewer new factories to build. By contrast, the energy transition is global and requires investment over decades. Low-carbon technologies are much hungrier for minerals than their dirtier equivalents. An electric car contains three to four times more copper than a petrol-fuelled one. Installing one megawatt of capacity in an offshore-wind farm requires six times more scarce metal than in a gas-fired plant [20].

In the race to satisfy demand, Latin America stands out. The region holds vast deposits of critical minerals and metals (see chart, Latin American reserves). Despite mining copper for decades, Chile and Peru together retain 30% of the world's exploitable reserves of the metal. Latin America is home to almost 60% of known lithium. Bolivia has tin, used as a solder in electrical components. Brazil has graphite, another battery metal [20].

The metals are often easier to extract in Latin America than elsewhere. It is cheaper to get lithium by evaporation than to drill it from rocks, as is done in Australia and China. Brazil's magnetic rare earths lie close to the surface. Latin America needs far better roads and ports, but its infrastructure is not as bad as in many mining regions in Africa and parts of Asia [20].

Mining and processing minerals are energy-intensive. But many countries in Latin America can tap cheap, green electricity for it. Renewables make up 45% of Brazil's energy use, one of the highest rates in the world, and the infrastructure to transmit this clean energy is growing. Chile aims to produce the cheapest green hydrogen by 2030, thanks to its 6,500km (4,000 miles) of coastline, sunny north and windy south [20].

The rising demand for Latin America's food is also likely to be long-lived. By 2050 the global population is forecast to grow by 1.5bn to 9.7bn and its middle class to double to 6bn people. Latin America is the world's largest net food exporter (see chart, agricultural trade balance) thanks to

huge tracts of farmland and a relatively small population. The region provides 60% of the world's traded soyabeans, which China imports to feed its 450m pigs. It also supplies more than 30% of the global supply of maize, beef, poultry and sugar. Net exports are expected to rise by 17% in the next decade to hit $100bn [20].

Grand expansion plans are visible at the port of Santos, in the Brazilian state of São Paulo. Among rusty buildings, Cofco International, the trading arm of China's state foodmaker, is building a second terminal that will boost its export capacity from 3m tonnes to 14m by 2026. Brazil accounts for 40% of Cofco International's global investment [20].

The third pillar favouring Latin America is geopolitics. As the rivalry between the United States and China intensifies, countries are diversifying where they import from and invest in. Latin America is relatively neutral, peaceful, open to investment, and close to manufacturing sites in North America. The US's Inflation Reduction Act mandates that from 2027 80% of the market value of the critical minerals used to make EV batteries must be extracted or processed in the US or one of the countries with which it has a free-trade agreement, as Chile, Peru and Mexico do [20].

All this presents Latin America with a huge opportunity. But the region needs to act to turn prospects into reality. Capital scarcity is an issue. Wood Mackenzie, a data firm, estimates that between now and 2040, at least $575bn of investment is needed to meet global demand for copper. By 2030 nearly $40bn is required for lithium. In 2022, more money was spent in Latin America than in any other place on exploring for eight green metals [20].

Yet the region continues to punch below its weight. Even though its pipeline of projects looks decent—amounting, on paper, to some $100bn in capital expenditure on copper alone by 2030—traders complain that mines are always five years away from getting started. Africa has fewer projects on paper but a similar number of "committed" new mines—with all the necessary permits and finance [20].

Other obstacles abound. Chile's copper ores have been reduced to low-grade deposits, forcing miners to dig deeper to produce the same amount. Climate change is making investors anxious. Earlier this year floods forced copper mines to close in Chile and Peru [20].

Mining projects themselves can endanger the environment, prompting activists and regulators to act. Operations at a Peruvian copper mine that produces 2% of global supply were halted in Feb 2023 protests. Some worry about lithium or copper mining affecting water supplies for other uses. Between 2017 and 2021 it took an average of 311 days for new mines in Chile to get approval, compared with 139 between 2002 and 2006 [20].

Investors need legal certainty because capital invested in new mines or wells is recouped only years into the project. But that is elusive. It is not just the fiery rhetoric of the raft of left-wingers and green-resource nationalists in Latin America that is causing jitters. Governments are looking to get more value from their materials by imposing more rules. In May Chile voted to raise the top tax rate on copper miners from 41-44% to nearly 47%, among the highest in the world. Mexico's President Andrés Manuel López Obrador has nationalised his country's lithium deposits [20]. Bolivia's lithium industry is almost entirely run by the state. Chile's left-wing president announced plans in 2023 to create a state-owned company to produce lithium. Private firms would have to form joint ventures in which the state firm has a majority stake. The governments of Argentina, Bolivia, Brazil and Chile are discussing creating a lithium OPEC to control global prices [21].

If Latin America manages to take advantage of the boom, it may then struggle to manage the risks involved in a sudden influx of riches. Buoyed by current-account surpluses, domestic currencies appreciate, making non-commodity exports less competitive. Labour and capital flow to extractive industries, depriving others of scarce resources. Both make the domestic economy more dependent on a volatile sector. Following the end of the most recent commodities boom in 2013, regional economies grew at an average annual rate of only around 1% compared with 4.1% in the decade before. Swings in commodity prices loom: the green transition is likely to advance in fits and starts, and geopolitical rifts can stem exports overnight [20].

Tools exist to mitigate such threats. Central banks can intervene in foreign-exchange markets to keep a lid on the currency. Exporters can hedge against price fluctuations by buying futures and options on derivatives markets. Smart fiscal rules can dictate that a share of proceeds be saved when prices are high. Yet governments in the region are more focused on grabbing a share of the proceeds than on planning for the risks. Many lack the technocratic nous to implement fixes. Fiscal rules are often ignored. Only six countries have non-partisan public-finance watchdogs. Save for Chile's, Latin America's 24 sovereign funds lack serious guardrails against raids by governments. During the pandemic, the governments of Colombia, Mexico and Peru all exhausted their national kitties, notes Diego López of Global SWF, a data firm in New York [20].

Latin American governments also want to run with the windfall, by developing local processing and manufacturing that uses the materials. Argentina's first lithium-battery plant is expected to start operations in Sep 2023. Chile offers a 25% discount on lithium to companies that will use it to develop the local supply chain. That could make sense, but creating new industries is easier said than done [20].

Refineries are vulnerable to rises in the costs of materials and energy: in Dec 2023 Brazil's largest copper processor filed for bankruptcy protection. High-value industries require skills and innovation, but Latin America educates too few engineers. The region invests annually just 0.6% of its GDP in research and development, less than a quarter of the average in the OECD, a rich-country club. Analysts reckon most batteries will be built in or close to the United States, China and Europe, where EV markets are most developed. (EV demand is low in Latin America. [20])

History counsels caution. Latin America will have to act with savvy if it wants to exploit the resources and to make the most of the income. With the right approach, the commodities rush presents a historic opportunity to transform the region's fortunes [20].

<u>Green-resource nationalism</u>
The new left in Latin America has three goals with respect to green-resource nationalism. The first is to increase the state's revenues and economic clout. Codelco, Chile's state copper-mining company, provides more than three times the tax revenue of private companies per unit of production. Its president hopes the state lithium firm can do the same. Tangible signs of a windfall are visible. In 2022, SQM, one of only two companies that mine lithium in Chile, paid more than $5bn in revenue to the treasury, making it the country's biggest corporate tax contributor. Chile's lithium production quadrupled between 2009 and 2022 [21].

Other countries can smell the money. Argentina is expecting investments in lithium worth $4.2bn, or 0.7% of GDP, over the next five years. Exports of the metal surged in 2022, from $200m to $700m (or from 7% of all mining exports in 2021 to 18%). Nickel production in Brazil increased by almost a tenth between 2021 and 2022.

In 2022 Vale, a Brazilian mining firm, signed a long-term agreement to supply nickel to Tesla, the world's biggest maker of EVs, though the value of the deal was not disclosed [21].

A second reason why Latin America's politicians are ramping up resource nationalism is that they hope to create more jobs and opportunities for business. Until now the region has failed to produce higher-value goods because of a poorly skilled labour force, low investment in research and development (R&D) and an unpredictable regulatory environment. Chile, Mexico, Colombia and Argentina spent an average of 0.3% of GDP on R&D in 2020 compared with 2.7% in the OECD, a club of mostly rich countries. The share of workers who receive some form of skills training is only 15% compared with 56% across the OECD [21].

Many politicians think natural resources should be used as inputs into local manufacturing rather than be exported as raw materials. On the same day he announced his lithium plans, Chile's president Boric proclaimed: "This is the best chance that we have to transition to a sustainable and developed economy. We don't have the luxury to waste it." Western governments are courting this desire. In Jan 2023 Olaf Scholz, Germany's chancellor, said while in Buenos Aires that German companies would be "real partners" to South America, asking: "Can one not move the processing of these materials, which creates thousands of jobs, to those countries where these materials come from? [21]"

Finally, a sense of social justice is fuelling these politicians' plans. Many hope that their policies will not only increase revenue, but reduce conflict. Since 2000 over a third of all conflicts related to extractive projects globally have taken place in South America, according to the Environmental Justice Atlas, a research project at the Autonomous University of Barcelona. Mexico's mining law would make companies give 5% of their revenues to the indigenous communities in which they mine. Mr Boric's proposal would make companies use extraction techniques that require less water in order to minimise drought, which has been a source of anger among locals and indigenous groups [21].

But resource nationalism carries risks. Nationalisation has a bad track record in the region. Pemex, Mexico's state oil firm, is the world's most indebted oil company. Venezuela's state oil giant, PDVSA, is synonymous with the country's collapse. Petrobras, Brazil's public oil company, was at the heart of the region's largest corruption scandal, known as "Lava Jato" [21].

And state firms may lack access to the cutting-edge technology that multinational companies typically excel at. For example, LitioMx, Mexico's new state lithium firm, is unlikely to prosper on its own. To date, Mexico has been unable to produce lithium at commercial scale, partly because its deposits are harder to extract, as they are in clay rather than brine. Digging them up will require technology, know-how and investment, which many analysts believe LitioMx lacks [21].

How has the wave of resource nationalism affected investment? In some places where property rights have been thrown down a mine-shaft, capital flows have dropped. Bolivia has the world's second-largest lithium reserves, according to its government statistics. But it has yet to pump any out of the ground at scale. In 2019 the government issued a decree overturning a lithium project which involved investment worth $1.3bn by ACI Systems, a German company, after local protesters demanded higher royalties [21].

Yet even in Bolivia some firms are prepared to face unstable policies in return for access to scarce minerals. In January Bolivia awarded a Chinese consortium a $1bn contract to develop its industry. Chinese firms are active elsewhere. On April 21st byd, a big electric-vehicle maker, announced plans to open a lithium-processing plant with Chile's government. Gotion, a Chinese battery-producer, has promised to produce batteries in Argentina [21].

Often their interests go beyond minerals to other parts of the green supply chain. On April 27th China Energy, a renewable giant, promised $10bn worth of investments in renewables in Brazil, particularly in green hydrogen. Jörg Husar of the International Energy Agency reckons Latin America has the largest share of global projects to export green hydrogen [21].

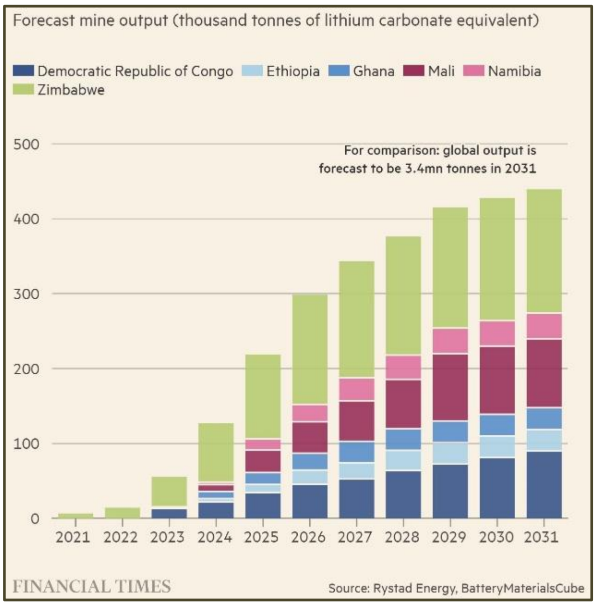
For as long as appetite remains insatiable for green resources Latin America will have enough leverage (see chart, lithium reserves) to impose conditions on private firms without strangling investment flows. Yet the big question is whether its slice of the cake ends up being smaller than it might have been [21].

Chile offers a cautionary tale. The government already plays a large role in the production of lithium, which is deemed a strategic resource. Royalties go up to 40% (compared with 3% in neighbouring Argentina), and companies are required to sell up to 25% of output locally at below-market prices to producers who promise to develop the domestic lithium value chain. As a result, Chile is losing market share. Production is forecast to grow by three-fifths by 2026. By comparison, Australia is expected to double production over the same period [21].

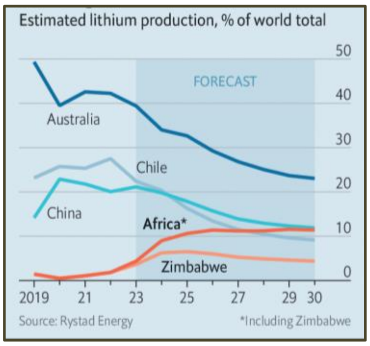
The race for strategic commodities in Africa

Africa's first Chinese-owned lithium concentrate plant started up trial production in Zimbabwe in Mar 2023. That mine was bought by Huayou Cobalt in 2021 for $422mn, part of a billion-dollar wave of Chinese lithium deals in a country where many western investors fear to tread. More than just lithium is at stake. From Brussels to London to Washington, concern over access to critical minerals is at an all-time high after Russia's invasion of Ukraine and amid escalating tensions between the west and China. The People's Republic has built a dominant position in many of the minerals that are crucial for the energy transition, including cobalt, lithium and rare earth metals. The west is preparing to spend hundreds of billions of dollars to try to catch up [22].

Thierry Breton is the EU internal markets commissioner in charge of the bloc's strategy for ensuring supplies of critical minerals and Amos Hochstein, Joe Biden's energy security envoy. Both have been touring Africa and have plans to invest in the continent's minerals (see chart, forecast mine output). "We have to have the mining in the hands of multiple countries, companies, and there needs to be competition," says Mr. Hochstein [22].



Across the continent, it is clear who has already stolen a march. “It’s not so much fear of the Chinese getting there first. It’s already happened,” says Russell Fryer, executive director of Critical Metals, a London-listed investor in African mines. After Zimbabwe, Namibia is the next country in Chinese investors’ sights [22].



In 2022 the value of China’s imports of mineral and energy was double those of the US and EU combined (see chart, mineral and metal imports), according to the Carnegie Endowment for International Peace, a think-tank in Washington. Its role in Africa’s lithium boom shows why. In 2025 Africa’s share of global lithium production will be about 11% reckons Rystad Energy, a Norwegian firm, up from just 0.1% in 2019 (see chart, estimated lithium production), with Zimbabwe accounting for most of the rise. Overall, more than 90% of Africa’s supply this decade will come from entities at least partly owned by Chinese firms, estimates Benchmark Mineral Intelligence, a consultancy [23].

Known as “white gold”, lithium is the lightest solid element in the periodic table. Its high electrochemical potential makes it critical to electric vehicle batteries. It is produced from the brines of Latin America or hard-rock ore bodies in Australia — the leading producer — and other parts of the world, including Africa and China itself. Lithium is abundant across the Earth, meaning that there should be enough to go around if money is pumped into the right projects. The challenge is timing: the rapid uptake of EVs is expected to drive a near fivefold increase in lithium demand by 2030 [22].

The EU and a growing number of US states such as California and New York want to stop selling petrol and diesel cars by 2035, a deadline that leaves little lead time to discover good lithium deposits and develop them to consistent production. Fearful of deeper shortages later this decade, carmakers such as General Motors have even invested in mines [22].

If Africa can rapidly bring lithium projects online this decade, it will go a long way to fixing a bottleneck in the energy transition. Commodity trading giant Trafigura predicts Africa could supply a fifth of the world’s lithium in 2030 while Susan Zou, an analyst at Rystad Energy, says the continent “could be a rising star for lithium minerals” [22].

“If you look at the development of mines in Africa, they are quick.” In particular, she says, Huayou Cobalt’s development of Arcadia in Zimbabwe was “outside of people’s expectations”. Chinese financiers are far more likely to take big risks than western development and commercial banks [22]. China’s dash for lithium is part of a bigger challenge for the West. The US and its allies want to weaken China’s grip on clean-energy supply chains. They see Africa, home to perhaps 30% of the world’s critical mineral reserves, as part of the solution, and argue that they can do more to help African countries add value to the minerals before export [23].

While US and European officials have been promoting African partnerships and compiling lists of critical minerals, Chinese investors have been not only buying up African mines to produce these minerals but building refineries at home to process their output. China is way out in front when it comes to converting the metal to raw materials for batteries; the International Energy Agency puts its share of global refining capacity at 58% [22].

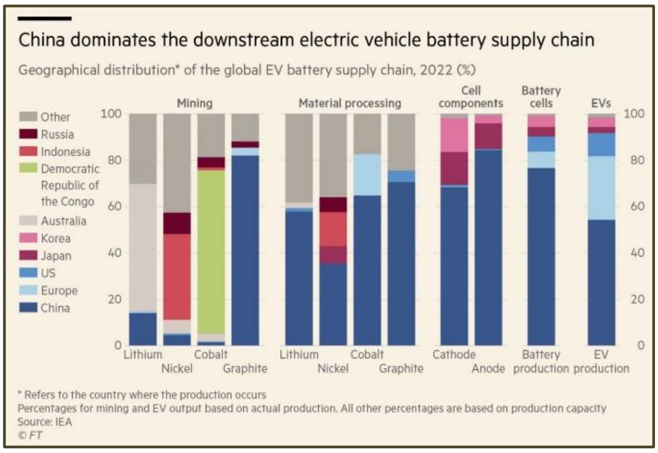
Until similar facilities are operational in Europe, the US, or Africa itself, China will be the main customer for Africa’s lithium. Africa is closer to Europe and shipping the product to somewhere in Europe would make economic sense, but China has already put a lot of infrastructure in place, says Bernard Aylward, chief executive of Kodal Minerals, a London-listed lithium developer active in Mali [22].

African countries are attractive, says Cameron Perks of Benchmark, because there are not many places left to go for the Chinese. Australia, a US ally, blocked two Chinese investment proposals from firms involve in mining lithium and rare-earth minerals in 2022. Africa is virgin land for lithium minerals, adds Susan Zou of Rystad, but China has operated in African countries for many years [23].

Chinese companies invested in lithium supply in Africa and Latin America even when lithium prices were low. As Australia builds domestic processing plants for its own mineral riches and after the Canadian government ordered Chinese investors to divest from certain Canadian mining companies, China is doubling down on those developing regions. They put money in long before anyone else did [22].

Faced with China’s dominance of the lithium supply chain (see chart, geographical distribution of the global EV battery supply chain) western officials are pitching their investment offer to African countries as a more socially responsible alternative. African counterparties “see us as a fair arbiter, as someone that can help with greater transparency,” says Nusrat Ghani, the UK minister responsible for critical minerals. But that only goes so far when confronted with challenges on the ground, which range from lack of transport infrastructure to corruption and capricious politics [22].

Zimbabwe’s lithium boom comes with the unpredictable politics of the Zanu-PF government. In Dec 2022, the country banned exports of raw lithium ore to stifle informal mining and favour local processing, but the decision could increase project costs. Even if it ends up partly processed at home, landlocked Zimbabwe's lithium would still need to cross a border to get to the global market [22].



Many other African lithium projects are far from ports. Lithium metal from Manono in Congo would require a 630km road just to get to the Zambian border, where queues as long as 70 km have held up trucks laden with copper and cobalt. An upgrade to the route has been mired in a dispute between the government and a Chinese contractor. "Governments need to start working on cross-country logistics and infrastructure if we really want to open up Africa," Tantalex's Natus says. But it is slow going. US presidential adviser Hochstein cited working for 12 months to secure western operators for the Lobito Corridor, one section of a railway that stretches across the continent from Angola's Atlantic coastline through DRC's mineral-rich Katanga region and the Zambian copper belt to Dar es Salaam in Tanzania [22].

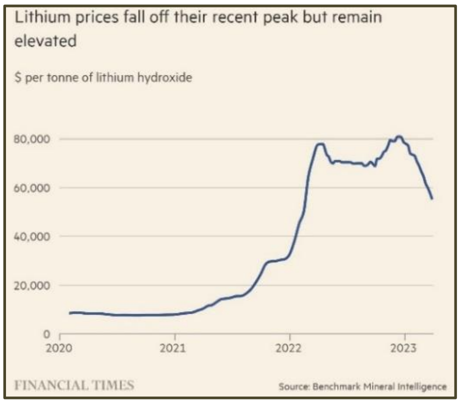
"We're using critical minerals to incentivise the financing of the rail and port," Hochstein says. "Once you do that, you can extend that rail to build agribusiness and other kinds of business that wouldn't go into these countries if there wasn't a way to get equipment in and out." African governments would always prefer value to be added to their country's mineral wealth at home, rather than exported abroad for others to get the benefit. Tom Alweendo, Namibia's mining minister, has said his country may follow Zimbabwe in banning exports of raw ore [22].

But a full-scale lithium hydroxide plant needs power, chemicals and raw lithium for processing. For now, few locations on the continent can provide all these things. "The quicker the west comes to terms with the fact that this is a business environment, then the quicker they're going to find they have the opportunity to get a very significant foothold," says George Roach, chief executive of Premier African Minerals, a lithium developer in Zimbabwe that has committed half of its supply to China [22].

Lithium mining could bring much more. In Namibia, a company wants to find a partner that can build a full-scale plant to transform the metal beyond concentrate to battery-grade lithium chemicals. Before 2023, Namibia would sell [ore] to China. But if you're talking about a long-term strategic partner, there are various options. Western miners pay well and offer stability, whereas their Chinese rivals hire quicker to get the resources sooner. They do small mining — take 50 guys, do the mining and finish the job very fast [22].

Western firms are exploring for lithium in Ethiopia, Ghana, Namibia and Rwanda, but more projects are not yet producing ore. Some may still end up in the hands of Chinese firms because of frustration at the slow pace that Western firms arrive at a deal. There are reasons for Western hesitation. Some refineries are being built outside China. But investors worry that new mines and processing plants could lead to oversupply and depress prices. They also fret about the political risks of African projects, especially in countries with histories of graft and human-rights abuses, such as Zimbabwe and Congo [23].

Another issue is that the lithium market is volatile; prices for lithium hydroxide soared throughout 2022 and peaked at $80,000 a tonne in Dec, but then dropped to $55,000 in Apr 2023 (see chart, lithium prices). Although that is still almost four times the long-term average of about $15,000, the dip has led some western miners to come under pressure from investors to moderate their investment plans — even as Chinese firms push ahead [22].

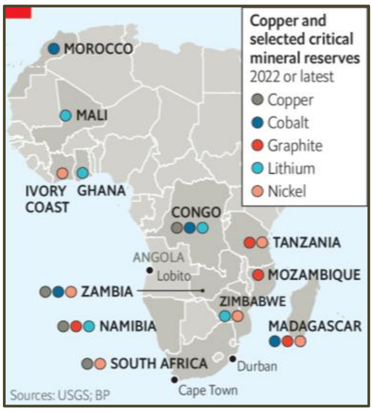


Some believe the ultimate answer to potential shortages of lithium is not in digging more of it out of the African rock, but developing substitutes such as sodium-ion batteries in laboratories. The amount of intellectual capital and brainpower looking to find substitutes to lithium-ion batteries is remarkable. To limit this substitution risk, some investors prefer to fund projects that can produce multiple metals, or ones with multiple uses. Copper is one such metal; it is being substituted for aluminium in some areas but it is still used in everything from electric cables to plumbing — and African copper deposits often yield valuable cobalt as a byproduct. African miners pivoting to lithium expect it to be used in EVs for years or decades to come, saying that it would take time for a new battery technology to be widely adopted and for supply chains to adapt. Meanwhile, there is a race to develop new deposits not just with Chinese-owned rivals but also rivals in more established jurisdictions such as Australia and Canada [22].

While US officials say the energy transition with help transform African economies, they also see Africa as helping to solve two problems. The first is the global shortfall in the minerals that will be needed if the world is to meet its climate goals. The second problem, for the West, is China's outsized influence on supply chains. China refines 68% of the world's nickel, 40% of copper, 59% of lithium and 73% of cobalt (see chart, mineral reserves). China has had free rein for 15 years while the rest of the world slept, says Brian Menell, chief executive of Tehmet, a minerals firm. Though China is less dominant in mining where its firms compete with multinational majors, Western governments are concerned that, without additional supply, firms will struggle to feed new downstream processing facilities that officials are keen to see built in friendly countries [24].

Cobalt, which is used in batteries, serves as a cautionary tale. Congo is the source of about 70% of global production. Chinese entities owned or had stakes in 15 of 19 cobalt-producing mines as of 2020. "We cannot allow

China to become an OPEC of one in critical minerals", says a US official [24].



There are three strands in the US approach to prevent this from happening. The first isa multilateral effort involving Wester allies. In Jun 2023, the US launched the Minerals Security Partnership, whose 13 members include all the G7 countries and the EU. Many of these countries are also looking to secure more scarce rocks. The UK launched a "critical minerals strategy" in Jul 2022 and the EC proposed a Critical Raw Materials Act. The common idea is for members to support their own firms to propose mining projects that meet high environmental, social and governance (ESG) standards [24].

A second strand in the US's approach involves its development agencies "de-risking" projects as they have done in, say, agriculture or the power sector. As well as the US Export-Import Bank, which offers trade-financing, there is the International Development Finance Corporation (DFC). In 2018 the Trump administration doubled the DFC's (or rather, its predecessor's) lending cap to $60bn and changed the rules so it can take equity stakes in firms, too. Though DFC only has one direct investment in mining at present (Mr Menell's TechMet), it is keen to add more [24].

The third element is more active diplomacy in Africa. The US has more interests in Africa than just minerals. But it was notable that Mr Hochstein, who spent much of 2022 managing the fallout from Russia's invasion of Ukraine on oil and gas markets, has been engaged with diplomatic efforts in Africa [24].

An early diplomatic success is the Lobito corridor. The idea of revamping the railway that could take copper from Congo and Zambia to Angola's Lobito port has been mooted for decades. It would be a much quicker route than the typical journey by road to the South African port of Durban. But progress stalled until the accession of new presidents in the three relevant African countries (João Lourenço in Angola in 2017, Félix Tshisekedi in Congo in 2019 and Hakainde Hichilema in Zambia in 2021). The trio have better relations than some of their predecessors with the US and with each other—and are less China-leaning. In 2022 a Western-led consortium beat Chinese firms to the contract to rebuild the railway. US diplomats hope it will make investment in the three countries more attractive and create a new route to processing plants outside China [24].

Another potential success is a memorandum of understanding signed by the US, Congo and Zambia in January. The US says it will help Africa's two largest copper exporters do more than just sell the metal in its elemental state. Under it, the US agreed to help the two African countries build supply chains to process their raw minerals into battery precursors for EVs [24]

African politicians are giving the US push a cautious welcome. Situmbeko Musokotwane, Zambia's finance minister, says he knows that Western countries cannot boss their own firms about. But "they can still be helpful by talking down the perceived risks of Africa [24]."

Small mining firms are responding to the West's signals. An Australia-based executive who has sold mines to Chinese firms says he is now exploring projects in countries which are on good terms with America, such as Namibia and Zambia. "In five years the West will be really desperate. And we want to be ready," he says [24].

Other small miners hope that the West's hunger for ESG-friendly mineral projects will make them more attractive investment propositions. Many cite the example of Lifezone Metals, a firm set to list in New York, that plans to extract nickel from a planned mine in Tanzania using a technique that is much less carbon-intensive than the usual method of smelting it. In 2022 it won the backing of BHP Group—the first significant investment in Africa by the world's biggest miner in several years. The Tanzanian government, for its part, sees the nickel project as the start of more processing of raw materials in the country [24].

It is unclear, though, whether the West's geostrategic ambitions will translate into a massive increase in investment. Capital expenditure by 20 large miners is forecast to rise by about 12% in 2023, according to Mining Technology, an industry tracker. This is below analysts' estimates of what is required for the world to meet climate goals. Duncan Wanblad, the CEO of Anglo American, says that there are too few bankable projects in development. "I can't get the maths right," he sighs. Over the past 20 years "the only big capital deployment has been the Chinese ecosystem," argues Benedikt Sobotka, the CEO of Eurasian Resources Group. Part of the problem remains perception, argues a consultant to the mining industry. When American investors "think of mining in Africa, they still think of cobalt, Congo and child labour" [24].

"The American intention is real," adds another executive, "but they don't know what they're doing." African priorities are often not US. "My worry is that half the US delegation believes their own bullshit," says another CEO, adding: "It is not enough just to be the US [24]."

Sameh Shenouda, the executive director of the Africa Finance Corporation, a pan-African fund based in Nigeria, welcomes renewed Western interest in African mining, but he has two worries. The first is that projects will take too long to get started because of US. The second is that the US's push to ally ESG-friendly investing with mining would not endure under a Republican president [24].

US domestic policies do not encourage investment in African mines. For example, some tax incentives in the Inflation Reduction Act (IRA), Biden's bumper package of clean-energy subsidies, are applicable only if a rising proportion of the underlying minerals comes from the US or countries with which it has a free-trade agreement. Yet the US does not have any such agreements with countries in sub-Saharan Africa. Thus, the IRA can have the unintended effect of ceding the African market in critical minerals to other nations – such as China [23].

US officials sometimes come across as patronising when they warn Africans against doing deals with China. "The Americans are completely clueless about what goes on in our politics," says a former adviser to an African president. China's success in Africa, he posits, is because their firms can get projects done in time for the next election [24].

Many African governments would like more US involvement in the continent but are in no rush to ditch

China. “Zambia takes countries case by case”, says Paul Kabuswe, Zambia’s minister of mines. “We’re not going to say that this country is not working with us.” One reason may be that greater competition could allow African governments to strike better deals. After all, says Mr Kabuswe: “Zambia has been mining for decades and has very little to show for it [24].”

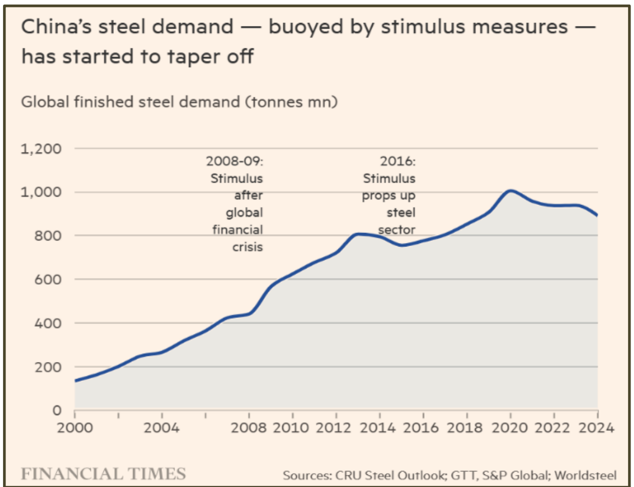
China is not blind to Africa’s desire to add value. More Chinese firms could process and refine metal in Africa over the newt years, notes Ms. Zou. She points out that Chinese miners already do most of the first stage of cobalt-processing in Congo. Chinese battery firms are also building facilities in Morocco. However, the case of Zimbabwe and lithium is also a reminder that Chinese mining comes in various forms. In addition to formal miners, there are numerous middlemen who buy rocks from artisanal miners at knockdown prices. A report published in Mar 2023, the Zimbabwe Environment Law Association (ZELA), a local NGO concluded that the Chinese are heavily involved in the illicit trade of lithium. It added: “Domination by one country may lead to undesirable results such as under-valuation of mineral resources, tax avoidance and human-rights abuses in the sector” [23].

End of the China commodity supercycle
Wuhan is the birthplace of China’s steel industry, which rode the country’s meteoric development in the two-decade boom to become the biggest in the world. The scale of Chinese appetite for steel was epic. As it built up cities, the country consumed twice as much of the metal between 2000 and 2020 as the US did during the entire 20th century. The massive industrialisation and urbanisation occurred at a pace the world had never seen before. It drove a huge commodities supercycle, sending prices of raw materials such as iron ore and steelmaking coal skyrocketing and profoundly reshaped the global mining and energy industries [a]. [During this same period, the growth of China’s GDP also contributed to increased prices of agricultural commodities.]

The real estate boom that drove the Chinese economy has ended. The resources industry has given up hope of another construction boom of that sort. For the countries and companies that rode the wave of the Chinese supercycle for the past 20 years, it is a profound and at times painful shift. But some within the industry are hopeful that the end of the China boom might be coinciding with the start of a new cycle led by electrification, the energy transition and artificial intelligence. Huge investments in clean energy have laid the foundation for a very different kind of commodities boom. This next phase will require lots of coper for building out electricity grids, data centres and renewable power – as well as demand for metals such as lithium, cobalt and nickel for EV batteries [a].

The China cycle was in many ways the apogee of the era of globalisation: Beijing was able to access open markets to feed its economy with iron ore from Brazil, copper from DRC and oil from Saudi Arabia. Demand in the next cycle, however, will be more spread out geographically, with dozens of countries vying for the raw materials to build renewable energy and electricity infrastructure. That dynamic means competition over scarce resounds will play a much greater role. Western countries are racing to build their own supply chains outside of Chinese control for critical materials such as cobalt, lithium and copper [a].

The structural and demographic factors that underpinned that boom – China’s rapid urbanisation and industrialsation – have become less powerful. Th vast migration to cities, in which half a billion people moved from rural to urban settings during the boom years, is starting to slow. China’s previous rounds of economic stimulus – including 2009, 2013 and 2016 – pumped money into heavy industry and construction, bolstering the steel industry again and again. But this time is different. In 2024, Beijing announce stimulus measures aimed at helping local governments reduce their debt, rescuing the property market and loosening monetary policy. These are intended to stave off an economic downturn, but none of them will have the same big impact on steel (see charts, feel demand and iron ore prices). But for the global steel industry, the rest of the world will not be able to pick up the slack left by the decline in China [a].



The energy transition requires more electrical cables, more EVs and more solar and wind farms. China remains the world’s largest buyer of many raw materials – and will be the world’s biggest steel producer for decades. Its dominance in the battery materials is even greater: it controls two-thirds of global lithium and cobalt processing. The critical minerals needed for the energy transition are often more niche than the commodities that drove the real estate boom, and lower value in terms of market size. The competition over resources will shape the new era for commodities. There is a collision between the upcoming critical minerals boom and heightened geopolitical tension in almost every part of the world [a].

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