ECN320 SRP for session 2. Exchange Rates

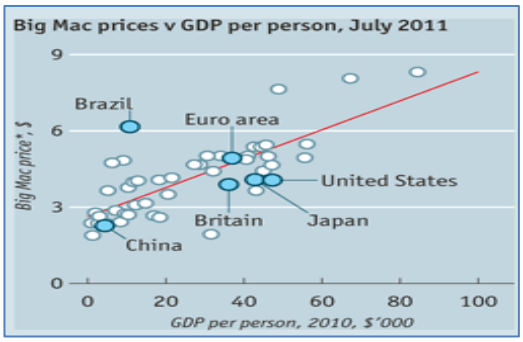
EXCHANGE RATES

Exchange rates and purchasing power parity
The exchange rate is the price of one currency in terms of another currency, i.e., the number of local currency units that must be traded to obtain one unit of a foreign currency. On a very basic level, the value of the exchange rate between two currencies reflects the relative value of exchanges transacted in those currencies. The most elementary definition of an exchange rate is purchasing power parity (PPP). PPP is the relationship between the exchange rate and relative prices of a traded good or service (absolute PPP) or the relative rates of inflation (relative PPP).

Perhaps the most familiar example of PPP is the Big Mac index. In 2011, the index celebrated its 25th birthday, invented by *The Economist* as a guide to whether currencies are at their "correct" level, by gauging how the value one currency compares to the value of the dollar. It was never intended as a precise gauge of currency misalignment, merely a tool to make exchange-rate theory more digestible. Yet the Big Mac index has become a global standard, included in economic textbooks and the subject of academic studies. US politicians have cited the index in their demands for an appreciation of the Chinese yuan [1].

Burgernomics is based on the PPP theory, the notion that in the long run exchange rates should move towards the rate that would equalise the prices of an identical basket of tradable goods and services (e.g., a standard burger) in any two countries [1]. In 2017, a Big Mac cost $5.30 in the US, but just $2.92 in China. So, the "raw" Big Mac index suggests, the yuan, by that metric, was 45% undervalued against the dollar [2].

Burgernomics can be hard to swallow. Burgers cannot easily be traded across borders, and prices are distorted by big differences in the cost of non-traded local inputs such as rent and workers' wages, which tend to be lower in poorer countries. As a result, PPP comparisons are more reliable between countries with similar levels of income. The chart, Big Mac prices v GDP per person, shows the "line of best fit" for 48 countries. The difference between the price predicted by the red line for each country, given its income per head, and its actual price offers a better guide to currency under- and overvaluation than the "raw" PPP index. There is a strong positive relationship between the dollar price of a Big Mac and GDP per person. China's average income was only one-tenth of that in the US so economic theory would suggest that its exchange rate should be below its long-run PPP (i.e., the rate that would leave a burger costing the same in the two countries). PPP is a signal to where exchange rates should be heading in the long run as China gets richer, but it says little about today's equilibrium rate. However, the relationship between prices and GDP per person can perhaps be used to estimate the current fair value of a currency [1].

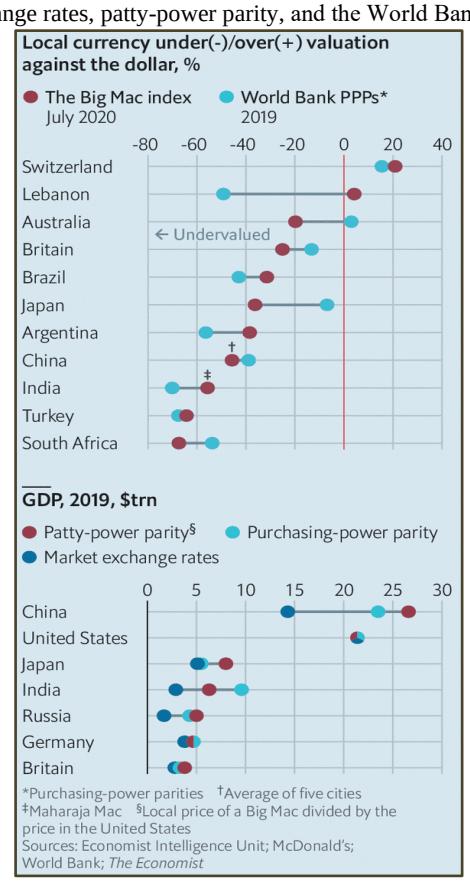


The "raw" Big Mac index for 2011 suggested that emerging-market currencies were significantly undervalued (with Brazil and Argentina the big exceptions). One would expect average prices to be cheaper in poor countries than in rich ones because labour costs are lower. This is the basis of the so-called "Balassa-Samuelson effect". Rich countries have higher productivity and hence higher wages in the traded-goods sector than poor countries do. Because firms compete for workers, wages in non-tradable goods and service sectors are also pushed up, sectors in which the rich countries' productivity advantage is smaller. Therefore, average prices are cheaper in poor countries [1].

When adjusting for GDP per person, the result in the chart (Big Mac prices v GDP per person) shows that the Brazilian real was badly overcooked, at more than 100% too dear. The euro was 36% overvalued against the dollar. The comparison of burger prices in euro-zone countries showed that the *"exchange rates"* of Italy, Spain, Greece and Portugal were all significantly overvalued relative to that of Germany (despite all having the euro as their currency). For China, the yuan was closer to its fair value against the US dollar on the adjusted measure, but both measures were undervalued against many currencies [1].

In trade-weighted terms the calculations suggest that the yuan was a modest 7% undervalued, hardly grounds for a trade war. Other estimates of a 20-25% undervaluation were based on models that calculated the appreciation in the yuan needed to reduce China's CA surplus to a manageable level of, say, 3% of GDP. Even this surplus-based method pointed to a smaller yuan undervaluation than it used to because China's surplus was shrinking. As its productivity rises over time China would have to continue to allow its real exchange rate to rise (either through currency appreciation or through inflation), but the burger barometer suggested that the yuan was not hugely undervalued in 2011 as many critics had argued [1].

In 2019 China's workers produced over 9trn yuan-worth of goods and services. The US's produced $21.4trn-worth. Since it took about 6.9 yuan to buy a dollar in 2019, China's GDP was worth only $14trn when converted into dollars at market rates, well short of the US GDP. But 6.9 yuan stretches further in China than a dollar goes in the US. A Big Mac cost about 21,70 yuan and $5,71 in the US. By that measure it only took 3.8 yuan to buy one. So, 99trn yuan could buy as much as $26trn, making China's economy considerably bigger than the US's. Motivated by this logic, *The Economist*, compared the price of Big Macs against the World Bank's PPP estimates (see chart, bottom panel, GDP, 2019). The comparison of PPP using market exchange rates, patty-power parity, and the World Bank's more



systematic effort to gauge purchasing power (including the prices of thousands of goods and services across countries) shows that the Big Mac index can serve as a proxy for more sophisticated estimates of currency valuation [3]. Thus, PPP is one means of predicting a change in the value of a currency relative to another currency over time.

Equilibrium exchange rate and misalignments

However, there are three main ways of determining the "correct" value for a currency. The oldest is based on PPP. In practice, PPP can be a poor guide to exchange-rate forecasting. Currencies can deviate from their PPP for long periods. PPP is only a sustainable equilibrium exchange rate if the CA is simultaneously in balance, but a country can have a CA that is persistently out-of-balance [4]. More sophisticated PPP models adjust for differences in productivity or income per head, because it is natural for prices to be lower in low-income countries. The biggest weakness of PPP is that the equilibrium is only a very long-run one, as it completely ignores capital flows [5].

Ignoring capital flows was fine when trade flows dominated foreign-currency transactions. Now, capital flows largely determine the size of CA balances, rather than the other way round. If a country has a persistent CA deficit, its foreign debt will rise. It would need to run a trade surplus to cover its growing debt interest payments. This would require the exchange rate to remain below its PPP [4].

A more popular definition of the fair value of a currency is the exchange rate that corresponds to a trade position considered "sustainable", i.e., the rate consistent with a steady economy at full employment and a sustainable CA balance. Thus, China's large and rising CA surplus (and reserve accumulation) since 2000 was seen as hard evidence that the yuan was severely undervalued. A related approach estimates the fundamental equilibrium exchange rate (FEER), the rate consistent with both a sustainable CA balance (a CA deficit or surplus equal to the sustainable inflow or outflow of capital [4]) and internal balance (i.e., full employment with low inflation) [5].

Unlike PPP, which remains constant in real terms, FEER changes over time in line with changes in net foreign assets or liabilities. Once an exchange rate departs from its FEER, this will affect the size of the CA balance, the level of foreign debt, and hence the FEER itself [4].

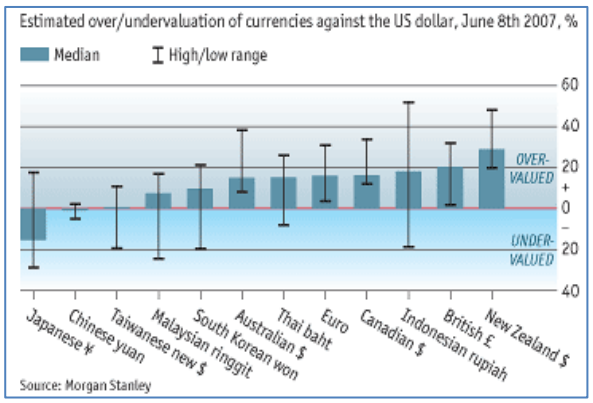
Many FEER studies of the yuan in the mid-2000s focussed only on trade and assumed that China was close to internal balance—despite its vast pool of underemployed rural workers. Even if the trade surplus required a big revaluation, the internal-balance criterion may have called for a lower exchange rate. The FEER approach was pioneered by John Williamson at the Peterson Institute for International Economics in Washington, DC, who, with his colleague William Cline, published estimates for 30 countries. Against the FEER the dollar may have been overvalued in the mid-2000s [5].

However, FEER estimates depend heavily on assumptions about what counts as a CA balance that can be sustained in the long run. The Williamson-Cline model imposes a symmetrical 3% rule: that no country's surplus or deficit should exceed 3% of its GDP. That may be too restrictive for some tastes. R. Cooper of Harvard University pointed out that the US's relatively fast-growing population, secure property rights and liquid financial markets make it a magnet for global savings. The share of assets owned by foreigners was still lower than in some other rich countries, so large trade deficits could plausibly continue, if not indefinitely, then for many years [6].

Such judgments matter. A rule-of-thumb for FEER models is that a 1% of GDP increase in the "permitted" trade deficit lifts a currency's fair value by 10%. Investors who are relaxed about the CA point to the PPP gauge as evidence on when could be a good time to buy or sell the dollar. Those who fret about "imbalances" favour the FEER approach and believe the greenback should stay weak. For them, the increasingly familiar sound of French and German accents on New York streets is a symptom of a necessary adjustment [6].

Nevertheless, the FEER approach has two flaws. First, a large CA surplus does not necessarily prove that a currency is unfairly cheap; it may just reflect countries' different savings and investment rates. Second, it is increasingly difficult to define the sustainable level of a CA in a world of mobile capital. Yet the equilibrium value of a currency is highly sensitive to this assessment [5].

Morgan Stanley uses no fewer than 13 models to value currencies. In 2007, it offered a wide range for the euro's fair value against the dollar from $1.02 to $1.29, with a median value of $1.15. By all measures, the euro's rate of $1.34 looked overvalued. Sterling and the New Zealand, Australian and Canadian dollars also all looked too expensive (see chart estimated over/undervaluation of currencies). None of these numbers should be taken as precise. The problem is that traditional models for estimating the fair value of currencies still focus mainly on the real economy (goods and services) but increased cross-border investment flows (based partly on nominal interest-rate differentials) are now much more important [5].



Thus, FEERs are also flawed. Their value is sensitive to the estimated level of sustainable capital inflows. In a world of highly mobile capital this whole concept may not make sense, since investors' asset preferences can easily shift, and will themselves depend upon the value of currencies. Moreover, some economists in the mid-1990s argued that by itself, a lower dollar might not eliminate a US CA deficit. It could simply create inflationary pressure in the US and deflationary pressure in Japan, offsetting the gain in competitiveness from a cheaper dollar [4].

For this reason, Stephen Jen of Morgan Stanley prefers a third method of calculating the fair value of a currency: the so-called behavioural equilibrium exchange rate. This does not attempt to define long-term economic equilibrium. Instead, it analyses which economic variables, such as productivity growth, net foreign assets and the terms of trade, seem to have determined an exchange rate in the past, and then uses the current values of those variables to estimate a currency's correct value [5].

With the rise of China's trade surplus vis-à-vis the US in the 2000s came claims of "currency misalignment" (i.e., Chinese government intervention to keep the yuan cheap), but determining whether a currency is undervalued is hard. A bill, introduced in the US Senate in 2007, to punish countries where the exchange rate was found to be "fundamentally misaligned" was aimed at China. This would have required the Treasury to identify seriously undervalued currencies, and then, if the culprits did not take action, would have allowed US firms to ask for protective anti-dumping duties. If a culprit persisted with its

"manipulation", the Treasury would have to lodge a formal complaint at the World Trade Organisation [5].

The US congress hoped that it would be easier to show that a currency is misaligned than manipulated. In June 2007, the IMF announced a framework for monitoring countries' exchange-rate policies. It would track indicators such as heavy foreign-exchange intervention and "fundamental exchange rate misalignment" in order to identify countries that are unfairly manipulating their currencies [5].

This focus on misalignment was based on the widespread assumption that the Chinese yuan was undervalued against the dollar [just as PPP studies suggested]. Yet the awkward truth is that it is almost impossible to be sure when a currency is misaligned, let alone by how much. A Treasury research paper admitted that there was no fail-safe method to estimate the correct value of a currency. S. Dunaway and X. Li, two IMF economists, examined eight different estimates of the yuan's supposed undervaluation: they ranged from zero to almost 50% depending on the methods and assumptions used [5].

The range of results in the Morgan Stanley study (chart above) support this. Two conclusions follow. The first is that, in theory at least, there was a stronger case for declaring Japan's currency to be misaligned than China's. It was bizarre that the weakest currency was the yen, when Japan was the world's largest net creditor and had faster GDP growth than either the US or the euro area. The second awkward conclusion was that the highly subjective nature of assessing currency misalignment make it very hard for the US or the IMF to agree on whether a currency is out of line [5].

Foreign-exchange movements seem to be driven by four key factors: yield differentials on bonds, relative inflation rates, trade flows and growth prospects. Yield has probably been the dominant influence since 2000, particularly in the form of the "carry trade", which involves investors borrowing money in the currency with the lowest interest rate and depositing it at a higher rate elsewhere [7].

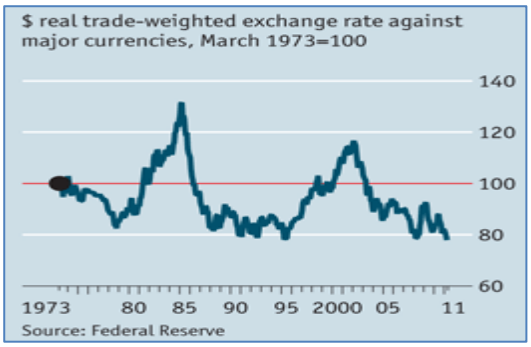
As for inflation, a country with a relatively high rate ought to see its currency depreciate, so that its real exchange rate is roughly stable over time. This does tend to happen when inflation rates are very high, as they were in Latin America in the 1980s or Zimbabwe in 2011. A country with a persistent CA deficit might be expected to see its currency fall over the long term. That had indeed been the US's experience, but it is hard to explain the 2011 weakness of the dollar in this way, since the deficit was lower than it was three years prior [8].

Markets are apt to overlook a trade deficit when they are excited by an economy's growth prospects. The dollar's strength in the late 1990s owed much to a belief that a productivity miracle, driven by the internet, had increased the US's growth rate: as investors clamoured to get hold of dotcom stocks, portfolio flows drove the greenback higher [8].

All of these factors seem to be trumped by the dollar's unique role as the world's reserve currency and provider of the most liquid markets. The former has given the US the "exorbitant privilege" of issuing debt at low rates in its own currency to investors like the Chinese central bank who held dollars for reasons of economic policy. The latter means that the dollar is seen as a "safe haven" currency at times of stress even when, as in 2008, the stress was the result of events within the US itself. The perverse corollary is that, as sentiment improved since 2010 (in part owing to a US rebound), the dollar's value retreated [8].

Real trade-weighted exchange rates

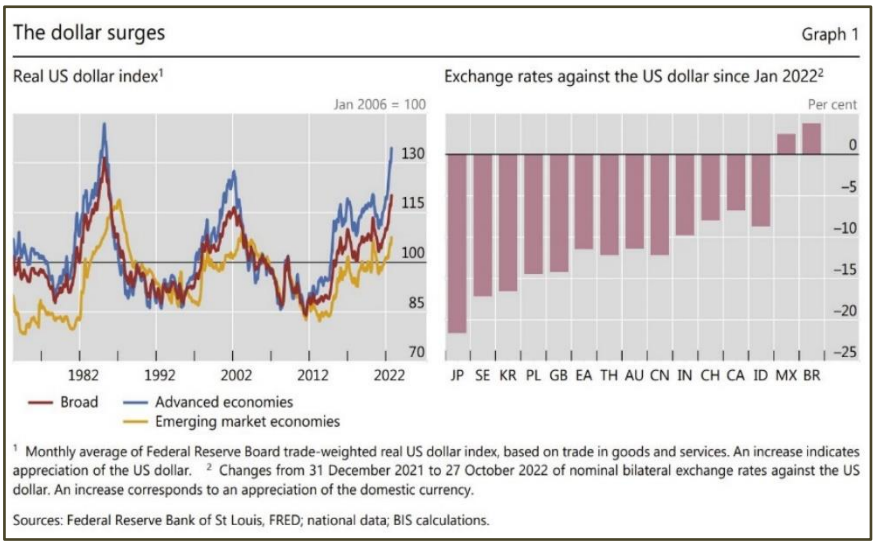
A country's trade-weighted exchange rate is an average of its bilateral exchange rates, weighted by the amount of trade with each country. It measures the strength of a currency against other currencies based on the amount of trade with each trade partner. The dollar's trade-weighted rate measures the value of the dollar relative to the currencies of the US's trading partners. The chart below tracks the changes in the dollar's real trade-weighted value relative to major currencies since the end of the Bretton Woods managed exchange system. In the early, 1980s the dollar was buoyed by relatively high interest rates in the US as Paul Volcker, the US central bank chief, attempted to squeeze inflation out of the system [9].



The dollar's value fell by a quarter from a peak in 2002 to 2007. Some economists long argued that such a big drop was necessary. By curbing imports and boosting exports, a cheaper dollar helps shrink the US's CA deficit and wean the economy off its reliance on consumer spending. Exports helped prop up the ailing US economy, but the CA deficit did not narrow by as much as hoped [5].

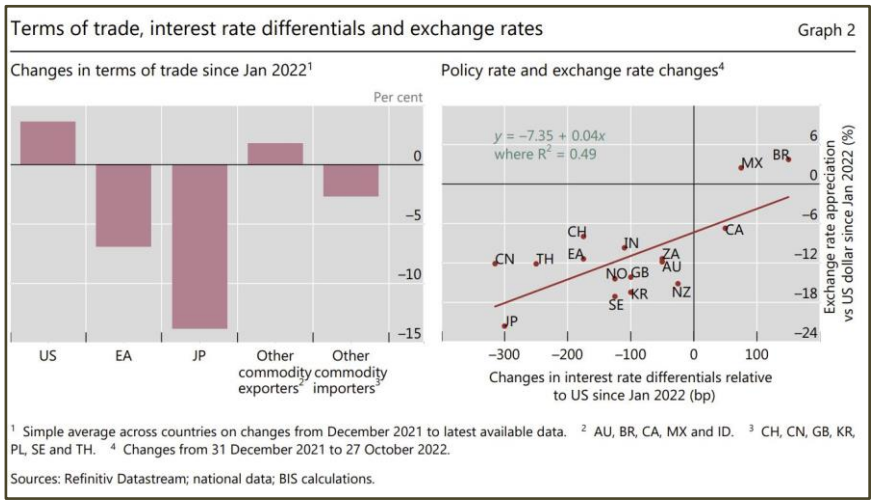
Drivers of exchange rate adjustments

The world economy was hit by two major shocks in succession – the Covid-19 pandemic and the Russian invasion of Ukraine – which contributed to a significant rise in inflation and a global economic slowdown. These global shocks and the macroeconomic policy responses to contain inflation have been associated with large exchange rate adjustments. The US dollar's appreciation in 2022 was broad-based against almost all major global currencies, with only a few exceptions (see graph 1, real US dollar index, right-hand panel) [10].



One factor driving the broad-based strengthening of the dollar has been changes in the terms of trade (TOT), the value of a country's exports relative to the value of its imports, associated

with the food and energy price shocks triggered by the Russian invasion of Ukraine (see graph 2, left-hand panel, exchange against US dollar). The TOT deterioration in energy-importing economies – included the euro area and Japan – are consistent with the real exchange rate depreciations that help restore external balance. In a departure from past episodes of energy price increases, the US has experienced a TOT improvement, partly because of its recent transition to being a net exporter of energy, notably of natural gas [10].



A second key factor driving the appreciation of the US dollar was the divergent pace of monetary policy tightening across countries. The Federal Reserve tightened monetary policy more rapidly than most other central banks, reflecting cross-country differences in economic conditions and the asymmetric impact of the global shocks. Widening policy rate differentials were associated with larger depreciations against the dollar (graph 2, right-hand panel, policy rate and exchange rate changes). Mexico and Brazil appreciated against the dollar because their respective central banks tightened money earlier and more aggressively [10].

Finally, in addition to economic fundamentals and divergent pace of monetary tightening, flight to safety dynamics in financial markets against the backdrop of high economic uncertainty have also supported the dollar [10].

Economic impacts of exchange rate adjustments

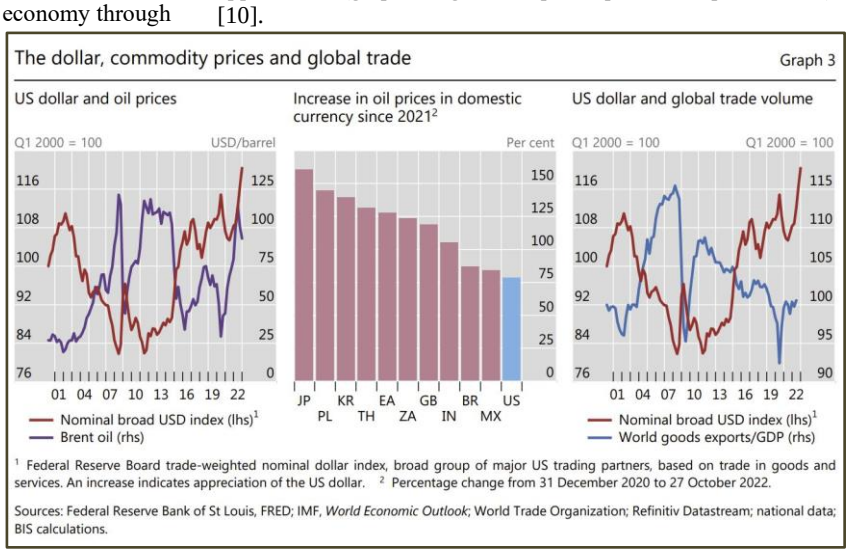
The dollar is the premier international currency across all uses – trade invoicing, trade financing, cross-border payments and funding in global capital markets. It was on one side of 88% of all foreign exchange trades in April 2022, according to the BIS Triennial Survey of Foreign Exchange and Over-the-counter Derivatives Markets (2022), unchanged from the previous survey in 2019. To a greater extent than other currencies, the dollar's movements therefore affect the global economy through inflation, trade and financial conditions [10].

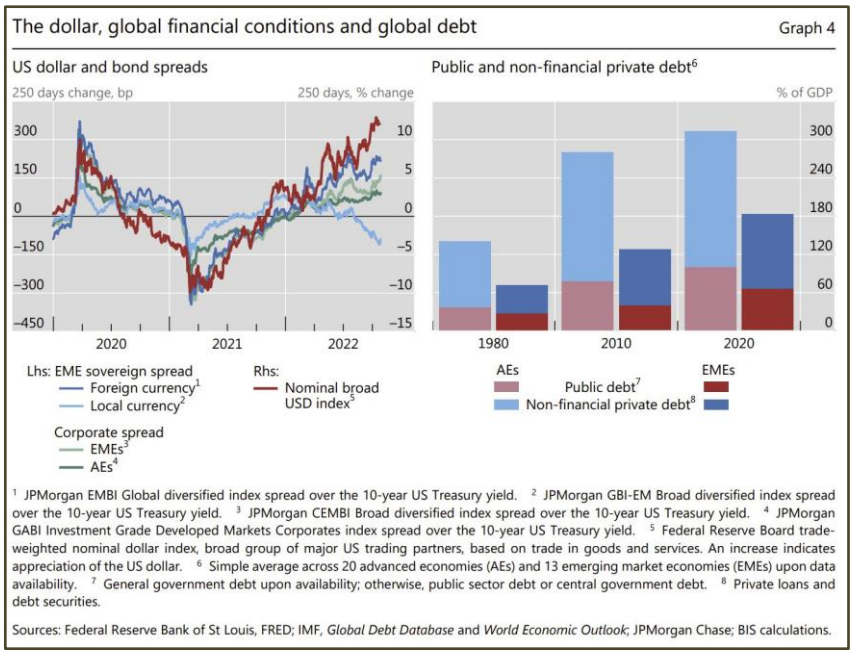
First, given the use of the dollar in trade invoicing, a dollar appreciation tends to boost import prices abroad. (A dollar appreciation tends to be disinflationary in the US by lowering import prices; however, this effect is muted in the short run because of widespread dollar invoicing.) In the 2022 episode, dollar appreciation occurred at the same time as the surge in energy and food prices that ensured from the war in Ukraine, compounding its inflationary effect. The coincidence of higher commodity prices and a stronger dollar broken the usual historical tendency for dollar appreciation to coincide with weaker commodity prices measured in dollars (see graph 3, left-hand panel, US dollar and oil prices). Due to this break from past empirical relationships, commodity prices in local currencies have generally surged much more strongly than in US dollar terms (graph 3, centre panel, oil prices in local currency). Given the salience of food and energy prices in inflation dynamics, the dollar's strength was a factor in the rise in inflation across the world [10].

Second, an appreciation of the dollar tends to go hand in hand with weaker global trade (see graph 3, right hand side, US dollar and global trade). This is linked to the widespread use of the dollar for trade invoicing and financing. When the dollar appreciates, export prices, which are sticky in the short term, do not change much, while import prices in local currency increase, depressing import demand. In addition, a stronger dollar tightens trade credit conditions as trade credit is denominated in dollars. This hinders both imports and exports and puts pressure on global value chains. Consistent with such outcomes, the WTO forecasted a slowdown in global trade growth in 2023 [10].

Third, as the main funding currency in global capital markets, a stronger dollar tends to be associated with tighter global dollar funding conditions, tighter balance sheet constraints for borrowers with dollar debt and diminished appetite for risk-taking more broadly. These effects show up in a positive relationship between the broad dollar exchange rate and emerging market economy (EE) sovereign and corporate bond spreads in both dollars and local currency as well as advanced economy (AE) corporate bond spreads (graph 4, left-hand panel; US dollar and bond spreads). Also in 2022, spreads widened as the dollar appreciated, except for EME local currency sovereign spreads, reflecting the notable resilience of many EMEs [10].

More generally, it is unclear whether the impact of swings in the dollar exchange rate on global financial conditions is now stronger or weaker than in the past. On the one hand, compared with the crisis-prone 1980s and 1990s, EMEs have reduced their reliance on foreign exchange borrowing and strengthened their policy frameworks. On the other hand, dollar borrowing by EMEs rose again over the past decade or so, driven mainly by corporates, and foreign investors often play an important role in local currency bond markets. More generally, in both EMEs and AEs, public and non-financial private debt reached historical highs, compounding the macro-financial effects of tightening global financial conditions, including those linked to dollar appreciation (graph 4, right-hand panel, public and private debt) [10].





to single digits. GDP growth took off. Productivity picked up. But over time the impetus for economic reform faded. The central bank succumbed to political pressure and lost sight of its inflation goal. Mr Erdogan's love for grand infrastructure projects was given free rein. The procurement law was gutted. Building contracts were handed out to cronies. A building boom displaced export-led manufacturing as the economy's engine. Construction is a low-productivity industry, so the quality of GDP growth dropped. It is also notoriously sensitive to interest rates—perhaps one reason for Mr Erdogan's insistence on keeping them low [11].

Even so, a decade of easy money and surplus global savings after 2008 kept Turkey's international credit line open. But there were balance-of-payment scares, such as during the "taper tantrum" of 2013, when the prospect of tighter monetary policy in the US sparked an emerging-market mini-crisis. By the summer of 2018, Mr Erdogan's belligerent insistence that high interest rates were a cause of high inflation, and not a cure for it, sparked a flight of foreign capital. The lira began a steep collapse in value (see chart, Turkish lira per $). The last vestiges of central-bank independence were destroyed. Three governors were sacked by Mr Erdogan in as many years [11].

Exchange rate-inflation relationship: Case of Turkey

Since 2018 Turkey has limped from one currency crisis to the next. Foreign investors shed Turkish bonds and stocks. The lira slumped. Inflation jumped up to 85% in Nov 2022 (see chart, consumer prices), before falling under 60% in Feb 2023. Yet the economy kept going. The resilience of Turkey's real economy is something of a puzzle. It was one of the few big economies that managed growth in 2020 (see chart, GDP [12]). In 2021 GDP rose by 11%. In the year to May 2022, industrial production rose by 9.1% [11].

At the centre of the mystery is a tug-of-war between two forces. On one side is a business dynamism that drives Turkey's economy forward. On the other is the erratic policymaking that has undermined it. Under pressure from President Erdogan, the central bank has kept interest rates unduly low in the face of leaping inflation. That is especially unwise as Turkey is a low-saving country that needs to attract foreign capital to cover a persistent deficit on its CA (see chart, CA balance). It is an importer of energy, with much of its gas supplied by Russia and Iran. When energy prices rise, its trade deficit—and its need for foreign capital—tends to increase [11].

Business dynamism trumped fragility and bad policy. But beneath the surface, there are signs that Turkey's monetary instability is catching up with it. The authorities have resorted to desperate measures to husband the country's diminishing stock of foreign exchange and to prop up the lira. But credit is drying up and investments are being put on hold. Runaway inflation has left many people struggling to make ends meet. Mr Erdogan faces presidential and parliamentary elections in 2023 and he trails in the polls. He has dominated Turkey's politics for two decades and seems unlikely to go quietly [11].

For a while, Turkey had the macro-economic stability that now eludes it. Reforms after a crisis in 2001 were transformative. One big change was the granting of greater independence to the central bank in pursuit of low inflation. New laws put constraints on public spending and opened up government procurement to competitive bidding. When Mr Erdogan came to power in 2003, he stuck to the new policies. Inflation dropped

In the closing months of 2021, interest rates were cut by five percentage points, to 14%. The lira came under renewed pressure. Inflation surged from about 20% to above 80%. Mr Erdogan was unmoved: those who insist on a link between interest rates and inflation "are either illiterates or traitors", he said [11].

Amid such chaos, it has been remarkable that the economy kept going as well as it had. Much of that is the result of Turkey's many commercial strengths. It has a large domestic market of 85m mostly young consumers and has long been a staging post for trade between east and west. The country's business culture has deep roots. The proportion of the population that aspires to be entrepreneurs is high by international standards [11].

There are, broadly speaking, three kinds of Turkish business. The first is large firms, often conglomerates. These account for a quarter of employment and half of the business sector's value-added. Some are joint ventures with European firms. The best manufacture high-quality capital goods, car parts and military hardware for export. They approach German levels of productivity. At the other end of the scale are small, unregistered firms, with low productivity. In between is a third group of medium-sized family firms, with some workers on the books and others not. This structure helps explain the agility of Turkish business. Many large firms are conservatively run and diversified across industries and export markets, which gives them a built-in resilience. The best mid-sized family firms share with them a nimbleness that comes from years of living with economic volatility [11].

Turkey has a history of high inflation. Bosses have become experts at juggling finances. Companies have had time to adjust to a weak lira since 2018. Many have reduced their dollar debts. Smaller firms adjust by other means. The line between company and household is blurred. Risks are pooled among family members. Very often the response to adversity is to work harder. Four-fifths of the workforce put in more than 40 hours a week in their main job, one of the highest shares in the OECD – though long hours compensate for low labour productivity. Another strategy for small and mid-sized firms is to push business into the grey economy, where wages often do not keep up with inflation or minimum-wage laws [11].

Hard work and agility help businesses to keep going. But they also need demand. One of the big surprises in Turkey has been the strength of consumer spending. Inflation in the high single-digits has weighed on consumers in Europe and the US. Yet, in Turkey, far higher inflation has not sapped demand. There are plenty of theories as to why. One is that consumers saw the fall of the lira, knew what that meant for future inflation, and splurged in anticipation of higher prices. Durable goods in, particular, are a hedge against inflation. New cars, white goods or imported luxuries hold their worth better than lira, even if they are not as liquid a store of value as, say, gold coins or dollar bills. With interest rates so low in real terms it is almost negligent not to borrow to spend [11].

But credit is not the only fuel. Turkey's young population has a high propensity to consume out of wealth gains, says one Istanbul-based economist. And well-off householders have much of their wealth tied up in foreign-currency deposits and property, which have held or increased their value [11].

For companies that sell mainly in Turkey and for whom imported raw materials are a big part of total costs, the lira's collapse is a headache. But it has been a big stimulus to exporters whose costs are mostly in lira and whose revenues are in hard currency. The real exchange rate (that is, adjusted for relative inflation in Turkey and its export markets) is what matters for export competitiveness. Turkey's has fallen a long way (see chart, real exchange rate) [11].

There are other factors that also favour Turkish exports. The cost of shipping from Turkey to Europe is far lower than from China. Goods can be shipped from Gaziantep via local ports in less than 72 hours, says Mr Mahsereci, compared with a minimum of a month from China. And supply is more reliable. Turkey can also export via the Aegean or the Black Sea [11].

Yet accelerating inflation poses big challenges for even the most agile business. One is pricing strategy. It is tricky to judge where to pitch prices. Too high, and you risk losing market share to rivals; too low, and you may find you do not cover replacement cost. Hard decisions seem to multiply. "You have to be ready to negotiate with all of your customers and all of your suppliers all of the time," says a businessman. "It is very, very tiring." Some prices are slow to adjust. A large share of mobile-phone subscribers have 12-month contracts. Many are still on last year's prices [11].

Businesses must protect themselves from inflation to survive. This often means that the cost is pushed onto others. That creates tensions—between landlords and tenants, shops and customers, and firms and their suppliers. No business can afford to defer the settlement of its customers' bills for very long. "Payment terms of three to six months are down to zero to three months," says an Istanbul-based investor. And there are other pressure points. Turkey's external deficit has not gone away. In principle, devaluation is a remedy. It works by stimulating exports and crushing demand for imports. The export fillip is working, but strong consumer demand has kept imports high [11].

Turkey must either attract fresh foreign capital or draw on its existing reserves of foreign currency. Both are becoming harder. The quality of capital inflows to Turkey has steadily degraded over the past 20 years. Foreign direct investment (FDI), the "stickiest" form of capital inflow, has not matched the levels of the mid-2000s, when Turkey followed more orthodox policies (see chart, FDI) [11].

Some European bosses now see Turkey as a potential alternative to China as they seek to shorten and diversify their supply chains. In 2021, IKEA said it would move production of some of its furniture from Asia to Turkey. Hugo Boss, a clothing firm, said it would add capacity to reduce reliance on Asia. But Turkey's monetary instability—and a deterioration in

governance and the rule of law—is a bar to another FDI boom. Portfolio flows into Turkish bonds and shares have evaporated. That leaves Turkey ever more reliant on short-term syndicated loans extended to local banks. As interest rates go up worldwide, these are harder to come by [11].

The situation for reserves is also perilous [11]. Emergency measures stopped a run on the lira in 2021. As it began sliding again in 2022, Turkish officials rationed bank loans and sold tens of billions of dollars' worth of foreign reserves, to prop up the lira, leaving the central bank's coffers depleted [12]. Official reserves of foreign currency were negative if swaps with local banks were taken into account. (The central bank still had holdings of gold [11].) After losing 80% of its dollar value in five years, the lira stabilized, but only at the expense of the exporters that Mr Erdogan's model was expected to benefit. The lira still trades at just under 20 to the dollar, but exporters said the currency was overvalued and squeezing profits [12].

But private-sector demand for dollars and euros continued. At their peak in 2021, two-thirds of bank deposits were held in foreign currency. The growing illiquidity in currency markets means exporters had every incentive to hoard dollars and euros from their overseas sales [11].

The authorities strive to curb this creeping dollarisation and to stop the lira from falling further. A scheme has been in place since Dec 2021 which indemnifies deposits switched out of dollars or euros and into lira from exchange-rate losses. In Jan 2022 Turkish exporters were ordered to hand over 25% of their hard-currency earnings to the central bank. That figure was raised to 40% in April. Complaints from corporate treasurers that they needed a float of dollars and euros to pay for vital imports or to service debts had no effect [11].

In a sign of growing desperation, the authorities went further. In June Turkey's bank regulator said it would ban loans to firms that clung to significant hard-currency holdings. This measure was to stop companies borrowing lira on the cheap to speculate in dollars. The initial reaction in Istanbul was shock. Suddenly the main concern of corporate Turkey was not inflation but a potential credit crunch [11].

If the regulation were strictly enforced, says one executive, banks would be unwilling to lend, and firms would be forced to cut back on non-essential spending. Some could struggle even to get enough trade credit to finance their working capital. It would not come to that. Noises from Ankara were that the banks would not bear the burden of verifying whether borrowers are complying with the new regulation [11].

In Jan 2023, a new currency scheme was unveiled to further push exporters to holdless foreign currency so as to again prop up the lira. Under this scheme, the government would offer business new incentives to swap money earned abroad into lira in return for a vow not to purchase foreign currencies. Turkey would provide 2% "conversion support" when companies exchanged international earnings into lira with the central bank, and they pledged not to buy foreign currencies over a set period, according to the central bank. The length of the commitment that companies were required to make had not been specified. It was not clear whether this would have the desired impact or if the incentives were large enough for firms to convert their earnings into lira. However, if anything had been learnt since 2021, it was that the central bank would eventually try to plug any hole in the financial system to reduce foreign currency demand [13].

Still, companies are cautious and big investments put on hold. Everybody was waiting for the elections. Mr. Erdogan's defeat would probably mean a return to monetary orthodoxy. Taming inflation is a big and painful job, but Turkey's experience after 2001 shows that, with the right policies, it can be done. FDI could rebound to take advantage of Turkey's position as a low-cost manufacturing hub on Europe's doorstep. A rally in the stockmarket is plausible, given how cheap Turkish shares have become.

And before then, the exchange-rate crisis might enter a new, more combustible phase. The state had $6bn of external debt payments due in the second half of 2022, according to Morgan Stanley, a bank; big companies and banks had $23bn coming due. It seemed unlikely that all these debts would be fully rolled over. Yet somehow the diminishing stock of foreign exchange must be augmented—or husbanded. In a worst-case scenario, limits might be placed on withdrawals of householders' dollar deposits [11].

As strange as Mr Erdogan's approach to monetary policy has been, his fiscal policy has been quite conservative. The public debt-to-GDP ratio was 41.6% of GDP in 2021. This is comfortably below the debt burden of Turkey's emerging-market peers. Given the country's low solvency risk, perhaps its friends in the Gulf might stump up some of their petrodollars. Turkey has withstood some remarkable strains, but inflation breeds uncertainty and uncertainty breeds caution [11].

Speculation: Currencies and commodities

Speculators have never had a good press. An astonishing war of words broke out in 1997 between Mahathir Mohamad, the former prime minister of Malaysia, and George Soros, a well-known financial speculator, when Mr Mahathir said that currency trading (beyond, he conceded, the level needed to finance trade) was "unnecessary, unproductive and immoral". Is it? [14]

What was beyond doubt was that the volume of currency trading burgeoned relative to trade. In 1995, $1.2 trillion of foreign exchange swapped hands on a typical day. That was roughly 50 times the value of world trade in goods and services. In the early 1970s, prior to the liberalisation of the world's capital markets, the value of currency trading was only six times greater than the value of "real" trade. Mr Mahathir claimed that these speculative flows were not only "unproductive", but wreaked unnecessary damage on workers and firms and were a primary cause of the Asian Financial Crisis [14].

The Mahathir view of the world rests on a belief that speculators' decisions are guided by their own appetite for profit, and therefore pay little or no attention to the underlying health of economies. However, speculators do not select their targets at random. It is true that their objective is to make money, but the best way to do this in the long term is to spot currencies that are out of line with economic fundamentals, and whose price is therefore likely to change. The devaluations of sterling and the lira in 1992, the Mexican peso in 1994 and South-East Asian currencies in 1997 all reflected economic imbalances. The changes in the prices of these currencies were necessary anyway; the speculators, arguably, just called the change first [14].

Hedge funds, such as Mr Soros's Quantum Fund, were blamed for much financial turmoil in the late 1990s. The IMF estimated that hedge funds could then mobilise between $600 billion and $1 trillion to use to bet against currencies and other assets—for example, selling a currency forward in the hope that they could buy it back later at a cheaper rate. However, these funds invest a lot of time studying economic and political fundamentals, seeking out those economic imbalances which offer profitable opportunities—such as a fixed exchange rate that conflicts with domestic economic policy. If exchange rates are forced to move in line with fundamentals sooner rather than later, that is probably a good thing for the "real" economies concerned. It is

also worth noting that speculators do not attack currencies that are backed by credible economic policies [14].

Currency trading also plays an important role in providing liquidity in the market for foreign-exchange, helping to match buyers and sellers. Suppose that speculation were banned, so anyone who had bought a foreign-currency denominated asset would have to keep it for a specified period, regardless of changes in economic conditions. In such a situation, there would be a strong incentive not to hold the currency at all [14].

This suggests that Mr Mahathir was wrong to claim that currency trading has no economic value, but it does not mean currency markets are perfect either. Financial markets are vulnerable to "bubbles" and excessive volatility. In such cases, prices move more than is warranted by the underlying factors they are supposed to reflect. Differences in countries' inflation rates and CA deficits explain exchange-rate movements quite well in the long run, but in the shorter run currencies seem to disregard fundamentals. A case in point is the dollar's ride relative to the yen: the fall from ¥260 in 1985 to ¥80 in 1995, and rebound to around ¥120 in 1997 cannot really be explained by the fundamentals [14].

The problem is that all financial markets, from currencies to shares, are subject to waves of excessive optimism followed by excessive pessimism. In theory, speculation should be stabilising: to make money, investors need to buy when the price is low and sell when it is high. However, in a bubble it is profitable to buy even when the price of an asset is high, as long as it is expected to rise further—until the bubble bursts. An investor will lose money if he does not go with the crowd [14].

For Mr Mahathir to win his argument, it is not enough to show that financial markets are fallible (a point Mr Soros has famously conceded). He must also suggest a better alternative. On the face of it, there is a stronger case for governments to interfere in currency markets than in some other markets. A fall of 20% in the price of a particular share has limited economic repercussions. By contrast, a sudden drop of 20% in the price of a currency may provoke foreign countries to block imports, or make firms over-invest when a currency is too cheap [14].

Several respected economists have pondered the value of measures to dampen currency trading. One such idea is a tax on foreign-exchange transactions, to "throw sand in the wheels of international finance". The snag is that today's technology and financial wizardry would probably make it impossible to enforce such a tax. Moreover, if it substantially reduced liquidity—and hence the ability of investors to sell quickly when the time comes—it might discourage long-term cross-border investment as well as short-term speculation [14].
In any case, Mr Mahathir and others who favour exerting more control over currency trading make the dangerous assumption that governments know better than markets what the "correct" exchange rate is. In fact there are good reasons to expect governments to make even bigger mistakes. Moreover, financial markets find it a lot easier than governments to admit their mistakes, and to reverse out of them [14].

Speculators have also long been a popular target for politicians frustrated by volatile commodity prices. In 1947, when wartime controls ended and food prices soared, Harry Truman raised margin requirements (the share of the value of a futures contract that a trader must post upfront with an exchange) to 33%, vowing that food prices should not be a "football to be kicked about by gamblers". In 1958 the US Congress banned futures trading in onions for much the same reason [15].

In the commodity price spike in the late 2000s, it was not only politicians who blamed financiers for distorting prices. The same George Soros declared in 2008 that commodities were a "bubble". M. Masters, a hedge-fund manager, caused a storm when he told a congressional committee in June 2008 that the price of oil (then $130 a barrel) might be halved were it not for financial speculation. Even S. Aggarwal, the chief executive of the Rajdhani exchange, said futures trading in food products should be banned, at least temporarily [15].

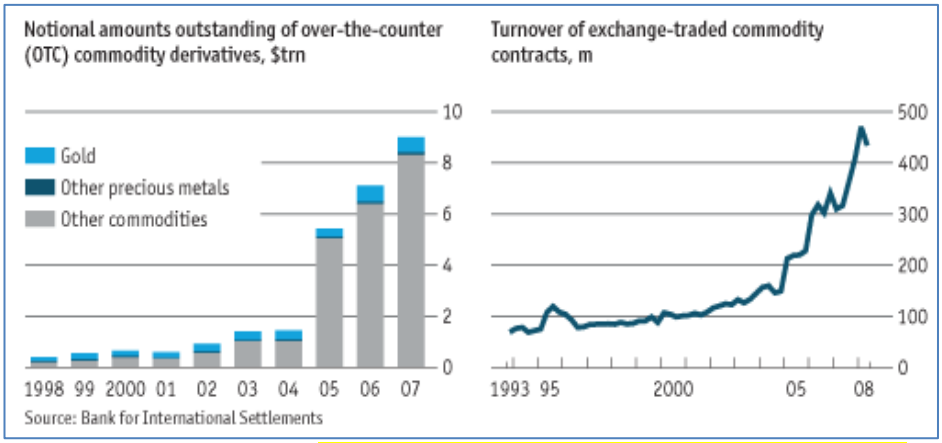
Broadly, these men all made the same argument: that the flood of money from pension funds, hedge funds and the like that poured into commodity futures in the 2000s was distorting spot markets for physical commodities. Rather than helping producers and consumers to hedge their risks and set commodity prices more transparently and efficiently, futures markets have become dominated by hedge funds, sovereign-wealth funds and so on seeking to diversify their portfolios [15].

If that argument were true, the consequences would be profound. Commodity prices have a more immediate impact on people's lives than do stock or bond prices, particularly in poorer countries, where many households spend much of their budgets on food. If speculators distorted commodity prices rather than improving price discovery, there may be good reason to shift the balance between government and market [15].

At first sight, the finger did seem to point to the speculators. Commodities had become a popular alternative asset class for investors. According to Barclays Capital, institutional investors had around $270 billion in commodity-linked investments at the end of June 2008, up from only $10 billion in 2002. The number of futures contracts on commodities exchanges quadrupled since 2001. The notional value of over-the-counter commodity derivatives rose 15-fold, to $9 trillion (see chart, turnover of exchange-trade commodity contracts) [15].

The timing of this increase coincided neatly with the long commodities boom. Prices between 2002 and 2008 soared by any yardstick. The climb was most pronounced in dollars, the currency in which most globally traded commodities are priced, because the dollar had weakened. Nevertheless, during 2002-08 commodity prices rose in euros or indeed any other currency [6].

Speculation might also explain the extraordinary volatility of prices between Aug 2007, when the financial turmoil struck, and June 2008. As large swathes of debt instruments suddenly became illiquid and risky, investors—so the argument went—sought safety in commodities. The US Federal Reserve slashed interest rates, so money managers, fearful of inflation, fled to



hard assets, particularly oil. That surge of cash created a new bubble which subsequently burst [15].

On closer inspection, however, the speculation theory of the 2000s stands up less well. First, there was no consistent pattern between the scale of investors' purchases of a commodity and the behaviour of spot prices. For example, as investment funds piled into hog futures the price fell sharply—even as prices of other commodities rose. Second, many of the commodities in which prices soared, from iron ore to molybdenum, were not traded on exchanges and thus offer less opportunity for investors. Third, much of the surge of cash that went into commodities futures was due to rising prices. As the price of a commodity goes up, so does the value of a commodity-linked fund, even without any new money [6]. One must be careful with the direction of the causation: i.e., increased speculation can lead to increased prices; increased prices can lead to increased speculation.

Lastly, stocks of most commodities had been low compared with their historical averages. This is important, because rising stocks are the channel through which speculation in futures markets affects the spot price. When speculators push up the futures prices of oil, for instance, they create an incentive for someone to buy oil in the spot market, sell a futures contract on it and store the oil until delivery is due. Hoarding should show up in higher stocks of unsold oil, but official oil stocks were well below their average. The same was true for many other commodities [15].

The absence of hoarding is not conclusive proof of speculators' innocence. As Roger Bootle of Capital Economics pointed out, arbitrageurs must simply want to hold bigger stocks; they do not have to succeed. In markets where supply is constrained, their attempts to hoard could push up spot prices without any increase in physical stocks, at least temporarily. Moreover, in some commodities, particularly those that are mined or pumped, producers can reduce supply simply by holding back production. Oil producers, for instance, can simply pump less, but there was scant evidence that this happened. As prices soared in 2008, oil experts reckoned that most producers pumped at full capacity. Saudi Arabia was the only large producer with spare capacity; if anything, it produced more [15].

All told, the case that speculators drove the commodity boom is weak. To be sure, futures markets can overshoot, and investors may have added temporary fuel, particularly in the first half of 2008, but the long rise in commodity prices—and their subsequent decline—is more easily explained by economic fundamentals [15].

Over the past 50 years commodity prices have, on average, fallen relative to other goods and services as their supply more than kept up with demand. As population growth and greater affluence increased the world's demand for calories, for instance, agricultural productivity grew, which in turn increased supply. Nevertheless, this broad downward trend included plenty of volatility and several big shocks, notably in the 1970s when commodity prices of all sorts soared for several years [15].

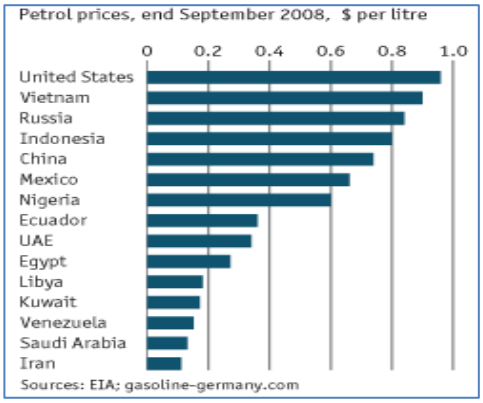
One reason for those price swings was that neither the supply of nor the demand for commodities can change quickly. People have to eat, even if a bad harvest temporarily reduces the world's grain stocks. It takes years to develop an oil field. In economists' jargon, the price elasticity of both demand and supply is low in the short term. So any surprises on either side quickly translate into big price changes [6].

The 1970s commodity shocks were mostly set off by unexpected shortfalls in supply. Culprits included the Arab oil embargo of 1973, catastrophic harvests in 1972 and 1974 and the Iranian revolution in 1979. The boom of the 2000s, by contrast, was due largely to unexpectedly strong demand. The world economy grew faster for longer than anyone foresaw. An IMF forecasts of April 2003, for instance, expected average global growth below 4% a year over the following three years when, in fact, the world economy grew at an annual average of 4.5% between 2003 and 2007 [15].

The boom was driven by emerging economies, which grew at an average pace of 7.3% a year. The IMF expected China's economy, for example, to grow by 7.5% a year, but in fact it grew at an average annual rate of 10.6% a year. Not only did emerging economies grow unexpectedly fast, but at this stage of development their use of commodities becomes more intense as they get richer. The result was a dramatic rise in demand, particularly for energy and industrial commodities [6].

Take oil. In the four years from 1998 to 2002 world oil demand grew at an average rate of 1.1% a year. Between 2003 and 2007 the pace almost doubled, to an average of 2.1%, and almost all the increase came from the emerging world (oil demand in the OECD countries has been falling since 2006). In 2007 China alone accounted for one-third of the increase in global oil demand. In products such as most metals it made up an even bigger share [15].

Rising prosperity, however, is not the whole story behind stronger demand. Government-induced distortions also blunted price signals. In many emerging economies, governments control the prices of important fuels, such as diesel, and keep them below world-market levels. Oil-exporting countries are the worst offenders. Whereas the US price was close to a dollar per litre, for instance in 2008, Saudi Arabia sold petrol at 13 cents and Venezuela at 16 cents (see chart, petrol prices). Tellingly, the Middle Eastern oil exporters have seen a big increase in oil consumption. In 2007 they accounted for a quarter of the rise in global oil demand even though they represent a far smaller share of the world economy [15].



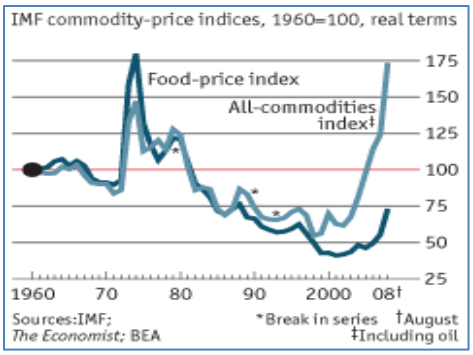
The distortions that governments introduce are even more evident in foodstuffs, and this time the culprits are rich countries, particularly the US and Europe. Ostensibly to reduce carbon emissions, governments in both places introduced policies to encourage biofuels (corn-based ethanol in the US and biodiesel in the EU). Thanks to these subsidies and regulations, demand for maize and vegetable oils (on which biodiesel is based) exploded and these crops displaced others, such as wheat [15].

Analysts from the OECD to the World Bank argued that biofuel demand was the biggest single reason why food prices soared in the 2000s, accounting for as much as 70% of the rise in maize prices and 40% of the rise in soyabean prices. Higher energy prices also made a difference as fertiliser and other input costs have risen. Rather than recognise their own role in creating the food-price spike, many Western politicians pointed to rising affluence in emerging economies. Richer Indian and Chinese consumers are indeed eating more meat than they did—though a

lot less than people do in the West—but that shift was not sudden enough to explain the price surges since 2006. Biofuels made up the difference [15].

Demand shocks and misguided government policies go a long way towards explaining the behaviour of commodity prices in the 2000s. However, supply surprises also played a role, particularly in oil, where the supply response to higher prices was sluggish even by its standards. After years of low oil prices in the 1990s the OPEC producers began that boom with plenty of spare capacity. That spare capacity all but disappeared, largely because production outside OPEC was disappointing. Again, government policy played a part. The vast majority of the world's oil reserves are in the hands of government-owned oil companies. Too often these firms use their revenues for political purposes rather than invest it to raise output [15].

In agriculture, emerging governments restricted supply, aggravating the problems caused by demand in the rich world. Panicked by rising food prices in 2007, more than 30 governments, from Ukraine to China, introduced export restrictions for farm produce. This cut the supply of food on world markets, sending prices even higher. Rice was worst hit because only 4% of its global crop is traded across borders, compared with 13% for maize and 19% for wheat. On news of bans in China, Vietnam, Cambodia, India and Egypt (which between them grew 40% of world rice exports in 2007), the price tripled within a few weeks (see chart, IMF price indicies) [15].



In this panicked environment, futures prices for all food commodities shot up. At times investment funds may have exacerbated fears about scarcity. But for food, as for fuel, the main reason for the price rises of the 2000s was unexpected demand growth, often compounded by government distortions. Contrary to what the critics of speculation suppose, the main task of futures markets is to signal these fundamentals to firms and households, speeding up their adjustment to the changing balance of supply and demand for physical commodities. In the absence of such signals, it would have taken even bigger and more extended swings in the prices of physical commodities to bring supply and demand into balance [15].

Currency values and currency manipulation

In 2010, the US loosened its monetary policy through a quantitative easing program – QE2 – which seemed to coincide with a weakening of the US dollar. This irked many outside the US. Brazil's finance minister said his country was under fire in an international currency war. By contrast, in 2019, the dear dollar bothered the US, particularly President Trump who was concerned with trade balances. The US economy grew fast and the had higher interest rates by rich-world standards [16].

President Trump signalled his desire for a weaker dollar and the designation of China as a "currency manipulator", sparking fears that his trade battles would morph into a currency war. The last time there was a global competitive devaluation was in the 1930s, as the world descended into the Depression. But in the 2010s, currency values were set in huge global markets rather than against gold. That left the US alone on a battlefield, armed with only the equivalent of a pea shooter [17].

Trump also put Japan, Germany, and Italy on the manipulation watchlist. However, naming countries as currency manipulators is a dead end. First, under US law, the next step is for the Treasury Department to consult with the IMF, which gave China's practices a clean bill of health [17]. In 2007 the IMF refrained from declaring China a currency cheat, despite its CA surplus of 19% of GDP and the central bank buying around $2bn in dollar-denominated asset each business day [18].

But even if the US Treasury secretary were able to prove a country were manipulating its currency, the punishment is "expedited negotiations", hardly a big stick for the president to wield. Trump could have created sanctions in the form of tariffs [17]. The US Department of Commerce had proposed a new rule enabling tariffs on imports from currency manipulators [18] but threatening to do what Trump had already been doing was limited in terms of its power of persuasion. Moreover, the yen, as a safe-haven currency, was strengthening, not depreciating, because of the trade war. Germany and Italy do not have their own currencies to manipulate [17].

Nevertheless, the US could have engaged in direct currency intervention. The Treasury secretary can deploy the exchange stabilization fund, or ESF – which held roughly $95bn, of which $23bn was in dollars – to sell dollars and buy foreign-currency denominated assets. But that is peanuts compared with the more than $5tn traded on average each day in global foreign exchange markets. The previous three times the US had intervened to affect the dollar's value, it was joined by G7 allies. In 2019 it would have had to act alone [17]. To be credible, the ESF would need hundreds of billions of dollars at its disposal [18]. Unconvinced that the US government had the firepower to weaken the dollar, markets would bet against the intervention and force the government to burn through all its available funds [17].

The Fed might have matched the Treasury's ammunition (as on previous occasions), but its participation was not a foregone conclusion, given the Fed's concerns about its independence and the impact of a currency war on global financial stability. Even if it did match the ESF, the total amount of funds available would only have been about $190bn [17].

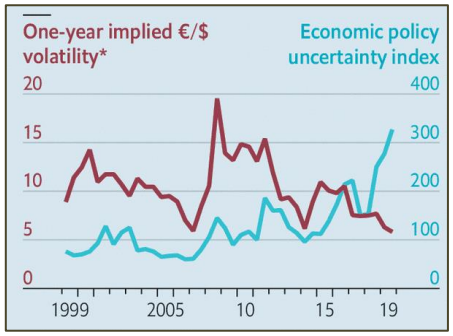
The Fed would have been more likely to sterilize the intervention, selling Treasury notes to absorb the additional dollars in the market to head off the inflationary threat from increasing the money supply. This means short-term interests rates stay the same, so there was little reason to expect exchange rates to move. Some economists argued that intervention of weaken a currency sends a strong signal the monetary policy will ease. But, as the Fed had signalled easing, so too had other central banks [17].

Intervention against the onshore renminbi would have been even more problematic. The Chinese government controls that market, and the US cannot buy a currency that is not for sale. The US could intervene in the offshore renminbi market (based primarily in Hong Kong), but it is not very deep or liquid. Intervention in euro and yen markets in the hope of knock-on effects on currencies was not promising either. Growth was slow in Japan and the eurozone, and an attempt of US currency intervention would likely have led to retaliation [17].

There is a topsy-turvy logic to currency wars. The winners are the currencies that fall in value. In such a race to the bottom, investors seek to back the losers. In times of trouble they will go for the usual boltholes: the yen, Swiss franc, and gold, all of which were lifted by trade-war anxiety. The dollar stays strong because the US has the higher rates and strong growth. When growth slows and interest rates fall other factors come into play.

These include trade balances and valuation. Starting a trade war with your biggest trading partners makes them get a weak currency and you get a strong one [16]. The US cannot unilaterally weaken the dollar. By trying, it would spart a global recession, raise political tensions, and upend financial markets as countries try to depreciate their currencies against everyone else's [17].

With talk of trade wars, the spread of populist politicians, and hung parliaments across Europe, it was hardly surprising that an index from Policy Uncertainty, a geopolitical think-tank, put global economic uncertainty at its highest since the gauge was created in 1997. By contrast, the implied euro-dollar volatility was trading at its lowest since the single currency was born in 1999 (see chart, volatility and uncertainty index) [19].



* Implied percentage change in €/$ in one year's time

Why the disconnect between volatility and uncertainty? One explanation is the timing of quantitative easing in both the US and the eurozone. The two central banks' differing monetary-policy trajectories sent the dollar up (as the US ended QE) and the euro down. After monetary policy had been played out, the currencies stopped being dragged in opposite directions. Markets no longer forecast policy changes from either central bank [19].

A second explanation is that no matter how rocky the geopolitics became, the turbulence pales into insignificance compared with the fears arisen during Europe's sovereign-debt crisis that the single currency would break up. In the latter half of the 2010s, the concern with contagion from Brexit did the same [19].

Post-Covid trends

Taiwan was a standout economic performer in a pandemic-plagued world. Its good run was fuelled by semiconductor sales. Orders for its export rose by 49% in the first two months of 2021 compared with a year earlier. The problem is that export strength attracts unwanted attention. The US Treasury placed Taiwan on its "monitoring list" for countries manipulating their exchange rates. An export boom only adds to the scrutiny [20].

Across Asia foreign-exchange reserves – a good proxy for currency intervention – have jumped. Excluding China (where the data are trickier to interpret), reserves in the next ten largest Asian economies increased by about $410bn in 2020, the biggest annual jump on record, according to calculations by *The Economist*. Part of the Asian manufacturing complex benefitted from resilient overseas demand for electronics and consumer goods amid covid-19 lockdowns. In Vietnam, for example, exports grew by 6.5% in 2020. With its currency, the dong, loosely pegged to the dollar, much of those trade receipts wound their way into official foreign-exchange reserves (the central bank issues dong to buy excess dollars from commercial banks at a quasi-fixed exchange rate) [20].

The case against reserves is that, since they stem from efforts to suppress currency appreciation, they represent a beggar-thy-neighbour trade policy: boosting your exports at the expense of others. Yet there is a case for reserves. For small open countries, the goal may be to minimize disruptive exchange-rate swings, not to keep a currency cheap. And for developing countries, reserves are a liquidity backstop if foreign capital dries up, as it did for many in 2020 [20].

During the "taper tantrum" of 2013, when emerging markets sold off over fears of US monetary tightening India and Indonesia were among those seen as vulnerable because of their reliance on external financing. Bigger buffers should make them more stable. If they could wrestle the pandemic under control in 2021, it is likely that imports would rebound and the CA surpluses would diminish. The increase in the their reserves would end up looking like a healthy outcome not a malign trend [20].

The gains in richer countries such as China, South Korea and Taiwan look more objectionable. Most notable is China, which appears to have taken steps to conceal its good fortune. Its central bank's foreign reserves rose by $97bn between the start of 2020 through the first quarter of 2021, making for a relatively modest increase of 3%. But there has been a marked jump in net foreign-currency assets in its banking system, which are up by $133bn, or 80%, in the first nine months of 2020 (see chart, foreign exchange reserves). One possibility is that the commercial lenders have acted as proxies for managing reserves. Currency traders in China say big state-owned banks have indeed been major buyers of dollars at moments of maximum yuan strength [20].

The best defence for these three countries was to check the speed at which their currencies appreciated, particularly given the uncertainties of the pandemic. Even with their bigger reserves, the currencies of China, South Korea and Taiwan were all up by 5% against the dollar since mid-2020. They would have faced more upward pressure had the export boom continued. The pandemic promised to leave a key oddity of the world economy intact: treasure chests of reserves in Asia that are accumulated, held and spent to insulate economies from currency markets that policymakers do not trust [20].

References:

[1] *Economist*, "Economics focus: Beefed-up burgernomics", 30 Jul 2011.
[2] *Economist*, "The Big Mac index: Meat reversion", 15 Jul 2017, p. 56.
[3] *Economist*, "The Big Mac Index: Patty power", 18 Jul 2020, p. 59.
[4] *Economist*, "Economic focus: Buy hard - with a vengeance", 26 Aug 1995, p.66.
[5] *Economist*, "Economics focus: Misleading misalignments", 21 Jun 2007.
[6] *Economist*, "The dollar: FEER of falling", 21 Jun 2008.
[7] *Economist*, "Buttonwood: Good losers", 5 May 2011, p. 68.
[8] *Economist*, " Economic and Financial Indicators", 24 Mar 2012.
[9] *Economist*, "Buttonwood: Good losers", 5 May 2011, p. 68.

[10] Bank for International Settlements (BIS), “Global exchange rate adjustments: drivers, impacts and policy implications”, B. Hofmann, A. Mehrotra and D. Sandri, BIS bulletin, no. 62, 1 Nov 2022.
[11] *Economist*,"Inflation nation", Briefing on Turkey’s economy, 23 Jul 2022, p. 14-6.
[12] *Economist*,"Turkey: Election economics", 1 Apr 2023, p. 21-2.
[13] *Financial Times*, "Turkey launches foreign currency scheme to help support lira", 27 Jan 2023, p. 2.
[14] *Economist*,"Economics focus: Mahathir, Soros and the currency markets", 25 Sep 1997, p. 91.
[15] *Economist*, "Of froth and fundamentals", Special report on the world economy, 9 Oct 2008, p. 16-20.
[16] *Economist*,"Buttonwood: Beggar thy neighbour", 22 Jun 2019, p. 60.
[17] *Financial Times*,"A currency war Trump was never going to win", by M. Greene, 16 Aug 2019, p. 9.
[18] *Economist*,"Currency manipulation: Fishing expedition", 27 Jul 2019, p. 53.
[19] *Economist*,"Euro-dollar volatility: Safe haven", 23 Nov 2019, p. 69.
[20] *Economist*,"Asian economies: Power in reserves", 27 Mar 2021, p. 56.