# **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 25<sup>th</sup> 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]. For example, 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 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. But this 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 [1].



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 emergingmarket 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].

The price of Big Macs, accounting for GDP, compared PPP (see chart, GDP, 2019) using market exchange rates, patty-power parity, and the World Bank's more systematic effort to gauge purchasing power (which include the prices of thousands of goods and services across countries). The results showed that the Big Mac index can serve as a proxy for more sophisticated estimates of currency valuation. [3].



The 2024 Big Mac index (see chart, currency under/over valuation) shows the Chinese yuan to be the most undervalued it has been against the dollar since after the GFC of 2007-09. Back then US politicians argued that China's leaders deliberately undervalued their currency to get an unfair advantage and boost exports. In Dec 2023, a Chinese Big Mac cost 23 yuan compared with \$5.69 for the US version. Divide one by the other and the index gives a dollar-to-yuan exchange rate of 4.04. That compares with a nominal exchange rate of 7.20 yuan per dollar, suggesting the yuan is 44% undervalued. Mr. Trump promised to label China a "currency manipulator" on his first day in office (if reelected). Lower inflation in Asia, compared with the US and Europe, has led to relatively cheaper Big Macs: Japan, South Korea and Taiwan have also seen their currencies become more undervalued [4].



#### **Exchange rate and PPP misalignments**

There are three main ways of determining the "correct" value for a currency. The oldest is based on PPP, which is only the relationship between the exchange rate and prices. 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 [5]. 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 [6].

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 [5].

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) in the 2000s was seen as hard evidence that the yuan was severely undervalued. This approach estimates the fundamental equilibrium exchange rate (FEER) as the rate consistent with both a sustainable CA balance (a CA deficit or surplus equal to the sustainable inflow or outflow of capital [5]) and internal balance (i.e., full employment with low inflation) [6].

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 [5].

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, contributing to the increase in the US's trade deficit. FEER studies of the Chinese yuan 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 internalbalance criterion may have called for a lower exchange rate [6].

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 fastgrowing 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 [7].

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. But, those who fret about trade "imbalances" favour the FEER approach [7].

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 [6].

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 [6]. FEER values are 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 [5].

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 [6].

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 [6].

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 [6].

This focus on misalignment was based on the widespread assumption that the Chinese yuan was undervalued against the dollar [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. 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. An awkward conclusion was that the highly subjective nature of assessing currency misalignment made it very hard for the US or the IMF to agree on whether a currency is out of line [6].

#### Foreign-exchange movements seem to be driven by four key factors: yield differentials on bonds, relative inflation rates, trade flows and growth prospects [8]. Yield differentials seem to

have been the dominant driver since 2000. The difference in relative inflation rate can be a good predictor. A country with a relatively high rate of inflation 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. Trade flows are less reliable a predictor. A country with a persistent CA deficit might be expected to see its currency fall over the long term, but it does not always signal a weakening of the US dollar [9].

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 [9].

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 [9]. With covid and Russia's invasion of Ukraine, the dollar's strength in value was attributed to investors looking for safety (although there was a return to gold as well).

#### **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 [8]. The left-hand panel in the chart (real US dollar index) tracks the changes in the relation to 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 [10].

The increase in real value of the dollar in the late 1990s was driven, in part, by the expectation of US productivity gains from

a dot.com tech revolution. The bursting of the bubble contributed to the fall in the dollar's value 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 [6].

The world economy hit by two major shocks in succession – the Covid-19 pandemic and the Russian invasion of Ukraine – 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, i.e., Brazil and Mexico (right-hand panel) [10].



Sources: Federal Reserve Bank of St Louis, FRED; national data; BIS calculations

Another factor driving the broad-based strengthening of the dollar in the 2020s was the change in the terms of trade (TOT), the value of a country's exports relative to the value of its imports, that favored the US (see chart, changes in TOT). The change in TOT was associated with the food and energy price shocks triggered by the Russian invasion of Ukraine. The TOT deterioration in energy-importing economies – included the euro area (EA) and Japan (JP) – 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 experienced a TOT improvement, partly because of its recent transition to being a net exporter of energy, notably of natural gas [10].



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

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 ensued from the war in Ukraine, compounding its inflationary effect. The coincidence of higher commodity prices and a stronger dollar broke the historical tendency for dollar appreciation to coincide with weaker commodity prices measured in dollars (see chart, 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 (chart, 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 right-hand panel, 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 [10].

## **Exchange rate-inflation relationship:**

#### Case of Argentina

There are four types of countries in the world: developed, undeveloped, Japan and Argentina. Decades after the Nobelprize-winning economist Simon Kuznets is said to have coined this phrase in the 1970s, Argentina still stands out for its exceptional record for high annual inflation, which in 2023 averaged 133% [11].

Argentina's decline has been gradual and mostly self-inflicted. A century ago, it had a GDP per person higher than that of Germany, Italy, or France. Millions of European migrants flocked to work on its fertile lands. *"Riche comme un Argentin"* became a colloquialism to describe obscene wealth by a landowning aristocracy. Today the phrase is a joke. Germany's GDP per person is now quadruple Argentina's, Chile's a third higher [11].

According to the World Bank between 1950 and 2016, the country experienced 14 recessions, defined as one or more consecutive years of negative growth (by 2023 it had another two). Over this period, for every two years of growth, Argentina has had one year of recession (see chart, GDP growth), a record more typical of war-torn oil states (e.g., Libya and Iraq). Recessions not only happen frequently but have been deep too. In an average slump, Argentina's GDP contracts 3.5% per year. The result is that it is almost impossible to maintain economic growth. According to Martín Rapetti of Equilibria, a consultancy in Buenos Aires, Argentina's real GDP per person was roughly the same in 2020 as it was in 1974 [11].



## Argentina has defaulted nine times on its sovereign debt since it became independent in 1816, including three times since 2000. This has led it to be shut out of international capital markets. Administrations have either forced the central bank to print money to finance the deficit, or taken out debt with multilateral lenders to keep spending going. In 2023 the money supply rocketed. The budget has been in deficit since 2008, ranging between 5 and 10% of GDP. Since 1956, when it joined the IMF, Argentina has

been involved in 22 bail-out programmes. In Oct 2023 it owed the fund \$43bn [11].

The country's economic problems have mostly been caused by its politics. Since 1930 Argentina has had six military coups, which have impeded the regular functioning of the courts and the legislature. Even in democracy, institutions have been undermined. Populist presidents have fired central-bank chiefs at will and expropriated dozens of private companies. Between 2007 and 2014, when a particularly left-wing strand of Peronism was in power, the government published bogus inflation statistics and fined economists who divulged their own estimates, which were often more than double the official one (see chart, inflation, left-hand axis) [11].

The inflation rate matches up with the change in the exchange rate (i.e., the rate of annual devaluation). A new currency introduced in 1992 slowed the inflation and eliminated the devaluations (right-hand axis). This coincided with the currency board that brought Argentina' currency into a one-to-one fixed exchange to the US dollar. This lasted until the fixed regime was broken in 2002, reflecting a return to inflation, devaluation, and a substantial increase in government debt as a % of GDP (right-hand axis).

The Peronist government in power in 2023 created or increased at least 27 taxes, often by decree. There are at least 15 different exchange rates and a host of complex capital, price, import and export controls, which made it near impossible to invest. In Oct 2023 the official exchange rate stood at 365 pesos to the dollar, which was overvalued and the central banked propped up by selling reserves. The government-imposed capital controls, prohibited Argentines from buying more than \$200 a month. Capital controls led to an underground economy where one dollar fetched 1000 pesos [11]



In the run-up to the election, Mr Massa abolished income taxes for 99% of registered workers, increased wages for public employees and handed out a bonus in pesos worth \$100 (converted at the official exchange rate) for pensioners. More than half the population was estimated to get some form of government welfare. But populism contaminated trade, too. Successive Peronist administrations cut the country off from international commerce to protect workers and keep domestic prices down. Trade as a percentage of GDP was just 33%, among the world's lowest (this compares with 84% in Mexico and 64% in Chile). Such governments have also bashed the country's main export sector, agriculture, by imposing export restrictions on farm produce. Exports of soya, the country's main product, were taxed at 33% [11].

There is also a relationship between the rate of devaluation, the trade balance and government budget balances, i.e., twin deficits (see chart, devaluation, trade and budget balances). During the early 1990s, as the currency was tied to the US dollar under a credible fix, the country experienced twin deficits. The peso was overvalued making exports expensive and imports cheap. Government deficit spending was aimed at lessening the effects of recession. Once the new currency was introduced with a devaluation, the trade balance improved and the budget moved into surplus for a few years. Devaluations returned but they no longer produced trade surpluses (as export taxes kicked in. Government balances worsened as did the rate of devaluation in 2023.



All of this means that most Argentines prefer to do things off the books. Banks, which in the past have effectively confiscated savings under government orders, are avoided. Domestic credit to the private sector is only 11% of GDP, compared with 83% in Chile. Nobody trusts the local currency. Though the country has had five different currencies in as many decades (introduced

in 1970, 1983, 1985, 1992, and 2002). Thus, Argentines have long preferred to save in greenbacks. They are thought to hold at least \$250bn in offshore accounts or under the mattress, the equivalent of more than a third of GDP [11].

The IMF lends to the world's unstable economies as a "preferred creditor". Argentina is a rare country with the IMF as its biggest creditor, holding roughly a fifth of its external debt (see chart, external debt). The IMF support has delayed disaster, but it has prolonged an increasingly absurd situation [12].



The IMF never takes a loss during its debt restructuring and is the first to be repaid. One escape would be for Argentina to find the cash to repay the IMF. During 60 years of borrowing from the fund, however, the country's politicians have shown little interest in taking its advice. Few reforms stipulated as part of the agreement in 2018 have been enacted. Another option is for the IMF to admit that Argentina has too much debt and things will have to change. Many think that the country is already unable to repay its debts without restructuring. It is unlikely that other creditors, mostly US financial institutions, would agree to take losses while the fund shelters behind its elevated status [12].

So, when does the IMF stop handing out money? Through their desperation to avoid default, the fund's officials are putting up with naked disobedience from Argentina, which may set a bad example for other countries. Meanwhile, Argentina needs a lasting fix. Each month without one deepens the country's economic woes. Worsening inflation makes imports more expensive and increases the likelihood of monetary policy flirting with fiscal dominance, when the government borrows so much that the central bank has no choice but to bail it out.

> Toward the end of 2023, Argentina racked up shortterm debts of \$1.7bn from China, \$1.3bn from CAF, a regional lender, and \$775mn from Qatar [12].

In 2023, Argentina elected president Milei who had indicated that his "contempt for the state is infinite". His resolve was a blast of reforms that shook Argentina out of decades of humiliating decline caused by rampant inflation, absurd handouts, and thickets of regulation. The early results were that inflation was down sharply (see chart, Argentina, consumer prices), and government spending was almost 30% lower in real terms (see chart, budget balance). When he took office, inflation ran at 13% month on month. It spiked to 25% after he devalued the artificially and unsustainably strong peso. But a year later, inflation ran at 3% per month [13].



### 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 [14]. The economy expanded rapidly over President Erdogan's 20 years in power, with annual output growth averaging 5.5% on an inflationadjusted basis [16]. It was one of the few big economies that managed growth in 2020 (see chart, GDP [15]). In 2021 GDP rose by 11%. In the year to

At the centre of the mystery is a tug-of-war between two forces. On one side is a business dynamism that has driven Turkey's economy forward [14]. A creditfuelled construction boom and big investments in infrastructure and industry led to big leaps in the development of Turkey's economy during 2003-13 [16]. And for a while, Turkey had the macroeconomic stability to back it up. 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 constrained public spending and opened up

2019 20 21

22

May 2022, industrial production rose by 9.1% [14].

government procurement to competitive bidding. When Mr Erdogan came to power in 2003, he stuck to the new policies. Inflation dropped to single digits. GDP growth took off. Productivity picked up [14].

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 [14].

But the growth-at-all-costs mentality led to painful levels of inflation: consumers prices growth officially, averaging 55% annually since the start of 2021 [16]. The other force was the

years of unorthodox and erratic policymaking that contributed to a series of escalating economic crises. Under pressure from Erdogan's tightened grip on policymaking, the central bank kept interest rates unduly low despite leaping inflation [14]. Low interest rates have been a pillar of his economic programme. He has had five central bank chiefs between 2019 and 2023, sending foreign capital fleeing Turkey's markets [16]. That is unwise as Turkey is a low-saving country that needs to attract foreign capital to cover persistent CA deficits (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 [14].





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 [14].

Turkey's monetary instability began to catch up with it. The authorities resorted to desperate measures to husband the country's diminishing stock of foreign exchange and to prop up the lira. But credit began to dry up and investments were being put on hold [14]. The government took steps to "lira-ise" the economy at a time when many countries and households sought refuge in dollars and gold. Turkey spent tens of billions of dollars since 2021 in backdoor currency interventions aimed at steadying the lira, while deploying ever-changing rules and regulations that punished companies for holding foreign currencies [16].

At the end 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 [14].

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 valueadded. 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 [14].

Bosses have become experts at juggling finances because of the history of high inflation. 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 [14].

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 singledigits 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 [14].

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 [14].

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) [14].

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 [14].



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 [14].

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 from three to six months were down to zero to three months. And there are other pressure points. Turkey's external deficit did not go away. In principle, devaluation is a remedy. It works by stimulating exports and crushing demand for imports. The export fillip worked, but strong consumer demand kept imports high [14].

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) [14].

Some European bosses see Turkey as a potential alternative to China to shorten and diversify their supply chains. In 2021, IKEA said it would move some production 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 [14].

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 [14].

The authorities tried to curb creeping dollarisation and to stop the lira from falling further. A scheme was put in place in Dec

2021 which indemnifies deposits switched out of dollars or euros and into lira from exchangerate losses. In Jan 2022 Turkish exporters were ordered to hand over 25% of their hardcurrency earnings to the central bank. That figure was raised to 40% in Apr 2023. 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 [14].

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 [14].

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 [14].

The situation for reserves is also perilous [14]. 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 [15]. Official reserves of foreign currency were negative if swaps with local banks were taken into account. (The central bank still had holdings of gold [14].) 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 [15].

In Jan 2023, a currency scheme was unveiled to push exporters to hold less foreign currency and prop up the lira. Under the scheme, the government offered business incentives to swap money earned abroad into lira in return for their vow not to purchase foreign currencies. Turkey's central bank 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. 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 [17].

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 emergingmarket 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 [14].

In Turkey's case the link is between the inflation rate and the change in the value of the currency that are closely related (see chart, inflation, E % change, and government debt). Apart from

the early 2000s, government debt levels (and budgets) as a % of GDP have been modest. Debt levels trended below 40% of GDP and budget deficits below -2% (except during the years of the GFC). But as inflation has crept up through the other channels, the rate of devaluation has moved in tandem.



In Jun 2023, with the appointment of a new finance minister the macroeconomic policy began to move in a more orthodox direction. The programme was based on rebalancing the economy and moderating domestic demand. The aim is price stability while balancing the president's long-held preference for strong economic growth (one that emphasises investment, employment, production and exports). The central bank hoisted interest rates from 8.5% to 30% by Oct 2023. After years of unconventional policy, there is some concern with the transmission mechanisms of an interest rate hike to affect the rest of the economy. A related aspect is that nobody knows if the new policy was a U-turn or if it was a mere detour [16].

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