

ECN320 SRP for session 1. Macroeconomic Accounting

INTRODUCTION

Macroeconomics is difficult to teach partly because its theorists (classical, Keynesian, monetarist, New Classical and New Keynesian among others) disagree about so much. It is difficult also because the textbooks disagree about so little. To reach the widest possible audience, courses must cover similar material: a miscellany of models that are not always consistent with each other or even with themselves. The result is that many professors must teach things they do not believe [1].

Macroeconomics is full of *faux amis*: words that mean something different in everyday speech. "Saving" is an example. In ordinary life, it means the opposite of spending. In macroeconomics it means the opposite of consumption (or, more precisely, not buying new consumer goods with income earned from production). In macro, someone who spends a fortune on a house is saving even if they have emptied their bank account to do so [1].

In a closed economy that does not trade with the rest of the world, too little spending leads to job losses and downward pressure on prices, whereas too much should push up employment and, eventually, prices. In an open economy, however, some of the effects of the shifts in demand spill over to the rest of the world. A sharp drop in spending, for instance, maybe associated with plunging demand for imports, in which case some of the pain of a slump is exported abroad. During the global financial crisis (GFC) of 2007-09, troubles in financial markets wreaked havoc all over the world, but even countries relatively insulated from those woes felt a chill thanks to trade links with the US and Europe [2].

DOMESTIC AND EXTERNAL MACRO IMBALANCES

Economic fallacies and misconceptions: why running a current-account deficit is not necessarily bad

Few bits of economic management sound as irresponsible as running a current-account (CA) deficit. Perhaps the word "deficit" conjures up notions of profligacy and excess. Whatever it is, many regard a CA deficit as self-evidently bad [3].

A casual glance suggests that deficits have indeed lurked behind many countries' economic problems. Mexico's bungled devaluation in December 1994 can be traced back to its "unsustainable" CA deficit of 8% of GDP. Other emerging economies with big CA deficits in the mid-1990s, such as Hungary or Thailand (9% and 6% of GDP, respectively), had trouble as investors became fearful of funding large deficits. CA deficits in rich countries can also be the source of economic woes. The dollar's decline in the 1990s was blamed on the US's hefty external deficit (and its budget deficit) [3].

Does this mean countries should as a matter of course aim for a CA surplus? Even if they could all succeed in doing this, a mathematical impossibility because one country's CA surplus is another's deficit, it would be a mistake to try [3].

Typically, the biggest components of the CA are the exports and imports of goods. The difference between them is known as the visible-trade balance. The close relationship between this and the CA balance can lead to confusion. People often suppose that a CA deficit means that a country is exporting too little because of restrictions in other countries. The US was fond of blaming its CA deficits on Japanese import restrictions in the 1980s and 1990s (or in the 2000s on China's weak currency) [3].

It is not that simple because the CA balance is not just a matter of trade in goods. It also comprises services (such as transport and banking); interest or dividend payments to foreign investors (and receipts on overseas investments); private transfers from

workers (such as migrant Turkish workers in Germany sending money home, remittances, to their relations); and official transfers (such as foreign aid) [3].

Thus a country that has borrowed a lot from abroad in the past, but now has a trade surplus, can still find that the interest payments on its past debts turn the surplus into a CA deficit (see box entitled Dissecting the deficit). A way to avoid confusion is to see the CA as the change in a country's net external financial position. What running a CA deficit really means is that a country is becoming more indebted to foreigners [3].

Dissecting a deficit: the trade balance vs the current account

Analysing countries' CA deficits requires some care. Though some information can be gleaned from the overall figure, this can often conceal as much as it reveals. Consider Canada and Mali, two of the countries in the table below. Both had a CA deficit of just over 4% of GDP in 1993. But in Canada the visible-trade balance (BOT) showed a surplus of almost 1% of GDP, while Mali's was in deficit by almost 5% of GDP. Canada's interest payments on its large foreign debt, as well as net imports of services, dragged the overall CA into deficit. Mali also had huge net imports of services, of over 12% of GDP: the CA deficit was saved from exploding only by massive inflows of foreign government aid, worth 11% of GDP.

Turkey and Australia make another striking pair. Both had similar CA deficits in 1993, but whereas Turkey had a BOT deficit of 8% of GDP, Australia's trade was in balance; again, it was net interest payments which pulled the country into CA deficit. Proof enough that it is important to look beyond the bottom line.

Current account (CA) balance by components					
As % of GDP, 1993	Australia	Brazil	Canada	Mali	Turkey
Exports	15.0	8.8	26.1	13.7	8.9
Imports	-15.0	-5.9	-24.7	-18.5	-16.9
Visible-BOT	0.0	3.0	1.4	-4.8	-6.0
Services	-0.4	-1.1	-2.0	-12.6	3.2
Investment income	-3.5	-2.4	-3.7	-0.9	-0.9
Private transfers	0.3	0.4	0.1	3.4	1.7
Official transfers	-0.2	0.0	-0.1	10.8	0.4
CA balance	-3.8	-0.2	-4.3	-4.1	-3.6

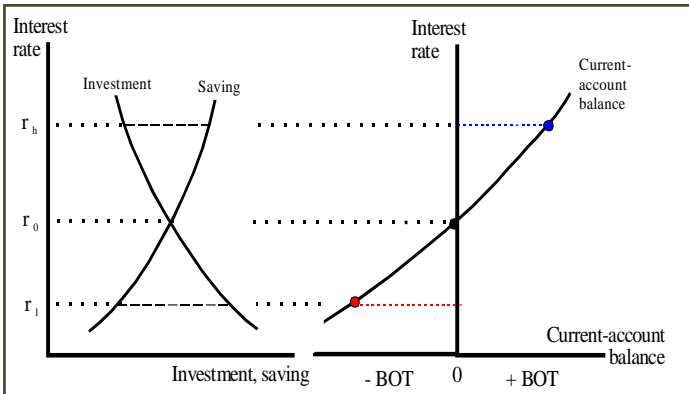
Source: IMF

Whether this is prudent depends on why the increased indebtedness occurs. Here, some national-income accounting is necessary. Assume first that a country has a closed economy: that is, it has no trade or financial flows with any other country. Its total production must be divided between what is consumed now and what is invested. At the same time the total income received by households (ie, the proceeds from the output) must be either consumed or saved. In such an economy the interest rate will be such that total saving equals total investment [3].

In an open economy, however, investment can be higher or lower than saving, with the CA deficit (or surplus) accounting for the difference between them. As the figure (interest rates, saving and investment, and CA balances) shows, a rise in interest rates is likely to reduce a CA deficit (or push it into surplus) as saving tends to rise and investment falls [3].

On its own, the size of the CA balance says little. A large surplus does not necessarily signal strength. It could mean that residents find it more profitable to invest abroad. If this is due to a lack of investment opportunities at home, the country may be forfeiting domestic growth. In Japan's case in the 1990s (and China in the 2000s), large surplus may have signalled excessive saving [3].

So, why is it a mistake to pursue a CA surplus? This is because the CA is only one part of a country's overall balance of



payments (BOP), the record of all the transactions between a country and the rest of the world [3]. A country's BOP has two main parts. The CA measures mainly trade in goods and services (known as the trade balance, BOT) and the other listed items. The second part is the capital account (K-acct), which measures all asset transactions (borrowing and lending) with foreigners. The private K-acct is made up of private investments, whether foreign direct investment, stocks, bonds or bank loans. All official transactions (such as the central bank reserves, R) are dubbed "official reserve transactions" [4]. The change in the reserve position of the central bank is denoted as ΔR .

The sum of the CA, the private K-acct and the ΔR is always zero, i.e., $BOT + \text{net K-acct} + \Delta R = 0$ (see chart). Thus, net capital inflows, whether private or official, imply a CA deficit. Net capital outflows, in contrast, mean a CA surplus [4].

Current account	+ Private capital account
Merchandise trade	Direct investment
Exports of goods	Portfolio capital
- Imports of goods	Equity flows
= Trade balance	Bond flows
+ Services	Long-term bank debt
Tourism	= Basic balance
Transport	+ Short-term capital flows
Professional and other services	= Balance of payments
= Goods-and-services balance	
+ Interest and other investment income	+ Official reserve transactions
+ Unilateral transfers	Changes in foreign central banks' holdings of domestic currency
= Current-account balance	Changes in domestic central banks' holding of foreign assets (including gold, foreign-exchange reserves)
	= 0

Sources: "World Trade and Payments", by Richard E. Caves, Jeffrey A. Frankel and Ronald W. Jones; *The Economist*

What do these balances mean in economic terms? A country that runs a CA deficit spends more than it produces, making up the difference by borrowing from abroad. Put another way, the CA is the difference between how much a country saves and how much it invests. A rising CA deficit could imply rising investment or falling saving, or both. To reduce a CA deficit, a country must save more and/or invest less. Higher saving can come from the private sector (companies or households) or from the government through a smaller budget deficit [4].

Thus, like a company's books, the BOP accounts must balance [3]. A CA deficit shows the pace at which debt is being incurred (or, for a surplus country, the pace at which assets are being accumulated) [4]. A CA deficit means that more goods and services are flowing into a country than are flowing out. This difference needs to be paid for, so the CA deficit must be matched by an equivalent amount of foreign borrowing or investment (i.e., a capital account surplus) or by running down reserves of foreign exchange at the central bank [3].

The basic BOP (the CA plus long-term private capital inflows) gives a sense of how much a country is borrowing and how

willing private investors are to fund that borrowing by providing long-term capital [4]. Reserves are accumulated when a CA surplus exceeds capital outflows (net export earnings). Reserves are withdrawn when capital inflows are insufficient to cover the CA deficit (i.e., to pay for imports or to cover other international debt obligations).

In principle, for the world as a whole, the current and capital accounts must be in balance. Since the world is a closed economy (we do not, as yet, trade with Mars), world saving must equal world investment [3].

The fear of CA deficits stems from an era when economies were relatively closed. Under the post-war Bretton Woods monetary system, countries fixed their exchange rates and imposed capital controls, making it hard to borrow from abroad. So a CA deficit meant drawing down reserves. Once reserves ran out there would be a "BOP crisis". Nowadays, capital flows relatively freely across borders, and countries can run CA imbalances for years. Whether it is wise to do so depends on the circumstances. Is saving too low? Is domestic investment too low? Is the money borrowed being used for productive investment? [3]

Running a sizeable deficit may make sense for a country at a particular stage of development. Poor countries are likely to have accumulated less capital than richer ones. This means that any investment in capital should reap higher returns than in richer countries to import capital (ie, run a CA deficit).

Examples abound of developing countries borrowing to finance growth: throughout the 1970s, for instance, South Korea's CA deficit averaged more than 5% of GDP [3].

Economists have tried to formalise the idea that countries are more likely to be net borrowers or savers at different times. A "theory of BOP stages" has it that poor countries begin by running both CA and trade deficits as they invest heavily. Over time the exports generated by investment generate a trade surplus, but the CA stays in deficit because of the interest due on the debt already accrued. In time, the country pays off enough of its debt to shift into CA surplus, and becomes a net creditor to the rest of the world. Finally, at a mature stage, a country runs a trade deficit as it lives off the income from its investments, but it remains a net creditor [3].

Until recently, the US conformed to this. For most of the 19th century it borrowed from the rest of the world and ran a CA deficit. By the 1870s it was running a trade surplus, and by 1900 it managed a CA surplus. During the first half of the 20th century, the US became the world's biggest net creditor and entered the mature stage in the 1970s: financing trade deficits with the income from investments abroad. In the late 1970s, the CA moved into deficit, despite remaining a net creditor. Then, in the 1980s the CA deficits became so large that the US reached a new stage – one not foreseen in the theory – of being a net debtor again [3].

Some countries never followed the pattern. Australia and Canada were net debtors throughout their history. What matters is not that a country "grows out" of a habit of running CA a deficit, but that it is capable of servicing its debts. A sensible CA deficit is one used to finance profitable investment [3].

Another reason for running a sizeable CA deficit is to respond to a temporary shock. Consider the impact of a sudden drop in the price of a country's main export products. If the fall in price is temporary, it makes sense to maintain current consumption and allow the CA deficit to rise. If the price fall is permanent, a

country needs to reduce its consumption, because it is now (permanently) poorer. So the best course is to finance a temporary shock but adjust to a permanent one—provided it is possible to tell the difference between them [3].

It is not always easy to work out exactly what a CA deficit is financing. One clue comes from overall changes in saving and investment. If the CA deficit widens while saving declines and investment remains unchanged, this is a worry. It implies that the borrowed foreign money must be financing consumption rather than investment, which makes it difficult to generate the resources needed to repay the debts later. A budget deficit and a CA deficit are closely linked because a country's total investment and saving are each made up of two components: those of the private sector and those of the government. How much does it matter which of these two components, public or private, contributes most to a CA deficit? [3]

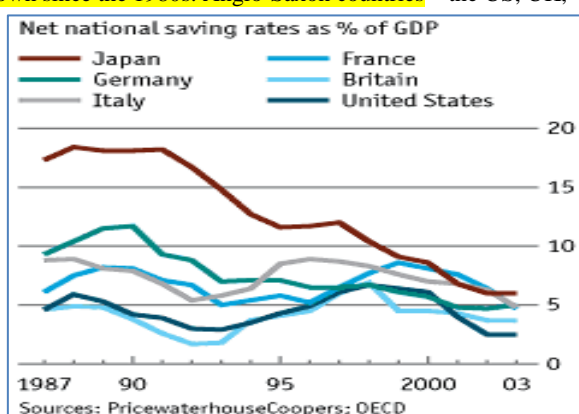
Much of the increase in the US CA deficit of the 1980s can be explained by the sharp rise in its budget deficit. Since most of the government's expenditure was on consumption (in the form of subsidies or transfers), a rising CA deficit fuelled by budget deficits is particularly dangerous. But sometimes a CA deficit can occur when the government's budget is in balance, or even in surplus. Does this matter? [3]

Many think not; they argue that a CA deficit that is driven by the private sector merely reflects rational investment decisions made by private individuals. N. Lawson, a former UK chancellor, held this view; as a result it is often known as the "Lawson Doctrine". But – as Mexico showed so spectacularly – large CA deficits, even if the public finances are relatively healthy, can be a problem. Mexico's official budget deficit in 1994 was less than 1% of GDP, its CA deficit almost 8% [3]. (Spain's public finances were in order when Spain went into meltdown during the GFC in the late 2000s).

Contrary to the Lawson doctrine, there are at least two good reasons for worrying about private borrowing. First, some private borrowers (particularly banks) may borrow more from abroad than is prudent, often because they think governments will bail them out if they hit trouble. Second, for all the talk of globalisation, capital markets are still not fully integrated, and the supply of funding from abroad is not limitless; again as Mexico showed, foreign funds can suddenly dry up if markets perceive a country to be too risky. At that point countries that have financed their CA deficits with volatile portfolio capital, and especially with short-term debt, cause problems. For both these reasons, another test of whether a CA deficit is healthy is the form and maturity of the financial flows into a country [3]. In sum, there are no simple rules to work out how much of a CA deficit is safe. It depends on a country's stage of development, on how it is using the money, and on how markets perceive it to be using the money. What is certainly clear is that contrary to what is often supposed, CA deficits are not always bad [3].

Trends in savings and investment

Household saving rates in many OECD countries have trended down since the 1980s. Anglo-Saxon countries—the US, UK,



Canada, Australia and New Zealand—had the lowest rates of household saving in the 2000s. Americans on average, saved less than 1% of their after-tax income in 2003 compared with 7% in the 1990s. In Australia and New Zealand personal saving rates were negative as people borrowed to consume more than they earned [5].

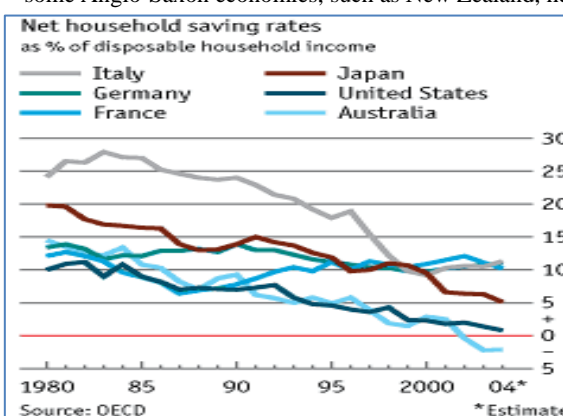
Countries with greying populations, e.g., Japan and Italy, also saw their personal saving rates plummet, though from a higher level. The Japanese saved 5% of their household income, compared with 15% in the early 1990s. France and Germany, bucked the trend away from thrift. Germans saved around 11% of their after-tax income in 2004, up slightly from the mid-1980s (see charts, national and household savings rates). These shifts raise important questions. Do people save too little? What are the consequences of falling saving rates? Should governments try to encourage people to save more? If so, how? If the "savings glut" argument were correct, then presumably there was little need to worry about falling thrift in the rich world [5].

Others argue that declining thrift is a sign of economic vigour. Thanks to high returns from shares and (pre-financial crisis) rising housing prices, people could achieve their financial goals with less discretionary saving. The sophistication of financial markets in Anglo-Saxon economies allowed people to tap their wealth more easily, by refinancing their mortgages, for example. For people who live in bank-dominated systems, such as Germany, that was much harder. Higher saving rates in Germany, according to this logic, were the result of poor returns and underdeveloped financial markets [5].

Pessimists fret that the shift away from thrift is dangerous. The demographic profile of Japan or Italy may explain their falling saving rates, but other rich countries, including the US, should have been saving more as the baby-boomers entered their peak earning years. People put aside far too little money to pay for their retirement, relying on unfulfillable promises from bankrupt government pension plans and absurdly rosy assumptions about capital gains from their shares and houses. This myopia greatly reduced the pool of capital available for investment and also worsens existing global imbalances [5].

The truth is more complicated. Both the right measure of saving and the appropriate rate of saving depend on whether you are looking at individuals or economies. From a macroeconomic perspective, the right measure is the national saving rate: the sum of private saving (i.e., household and corporate savings, or companies' retained profits) and public saving (i.e., a budget surplus) or dis-saving (a budget deficit). It does not matter who in an economy does the saving. What matters is how much in aggregate is set aside to finance the investment that supports economic growth [5].

In the mid-1990s, national saving rates rose in many OECD economies despite the decline in household thrift, thanks to improved public finances. (Japan, where national saving has been falling since the early 1990s, was a big exception.) In some Anglo-Saxon economies, such as New Zealand, healthy

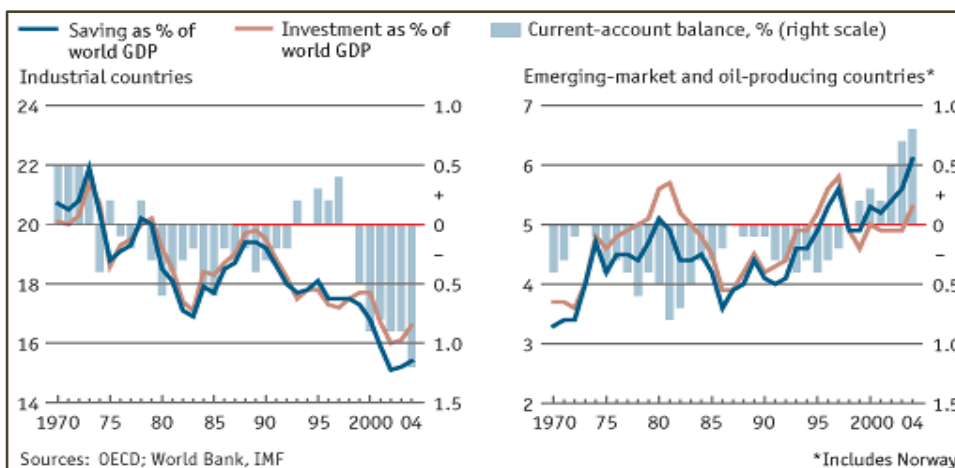


budget surpluses lessened the impact of low personal saving. In the US, the dramatic shift from budget surplus to deficit since 2001 amplified the effect of falling household saving. Savings by households was close to a record low; net national saving (at around 2% of GDP) was at its lowest since the Depression [5].

Does this matter? The relationship between thrift and economic growth is complicated. High rates of saving do not guarantee rapid economic growth (e.g., Germany). Nor, as global capital markets integrate, must domestic investment be funded by domestic saving alone. Countries can borrow cheaply from abroad and run CA deficits (e.g., what most low-saving Anglo-Saxon economies do). Low long-term interest rates seemed to imply, in the 2000s, that global savings were more than adequate relative to investment opportunities [5].

Is this sustainable? Even in a more global capital market, there are limits to foreign borrowing. The debts incurred must be serviced, capping how big a CA deficit can become. More important, the excess savings of the 2000s had less to do with a structural surplus of saving than a shortfall in investment. Despite its plummeting national saving rate, Japan still exported capital to the rest of the world because its investment rate fell by even more [5].

The chart on saving, investment and CA balance (below) support what some economists argued, i.e., that the imbalances in the world economy were blamed, in part, on excess savings and capital from developing countries that gushed into US assets and financial markets. Emerging-market economies, particularly in Asia, ran high CA surpluses, keeping their economic fires stoked with a steady stream of exports, especially to the US. In mirror image, US CA deficits soared past 5% of GDP (and 1% on average across industrial countries). Household savings dwindled to negligible levels as Americans ran down assets and took on debt to keep the spending binge going. Moreover, long-term interest rates remained low even as the US Federal Reserve progressively tightened monetary policy [6].



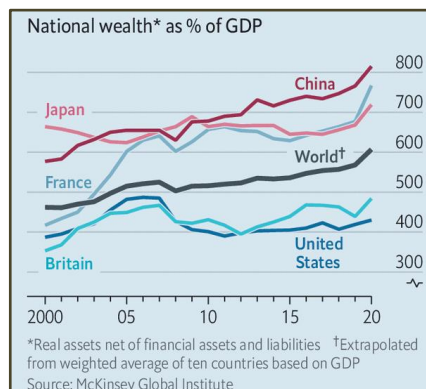
More broadly, savings and investment had been on a downward trend in industrial countries since the 1970s, thanks to a sharp decline in personal savings that an increase in corporate savings failed to offset. The trends continued until 2010, at which point they levelled off at about 10% of GDP. By contrast, savings in emerging markets and oil-producing countries have risen since the mid-1980s, outpacing the investment rate [6].

A global savings glut?

In 2005, Ben Bernanke, a former US central banker, commented on the tide of money flowing into the US economy. "Over the past decade", he then noted, "a combination of diverse forces has created a significant increase in the global supply of saving – a global savings glut." Savers of all sorts – from older Americans preparing for retirement to oil-exporting countries accumulating sovereign-wealth funds – were shoving more

money into stocks and bonds than could be put to use by those looking to invest in plants and equipment [8].

Since 2000, the value of global wealth held by households, firms and governments has roughly tripled, from \$160trn to \$510trn, or from about 460% of global GDP to 610%, according to McKinsey Global Institute, a think-tank (see chart, national wealth). This savings growth helped push asset prices ever upward and interest rates ever lower, creating macroeconomic headaches worldwide [8].

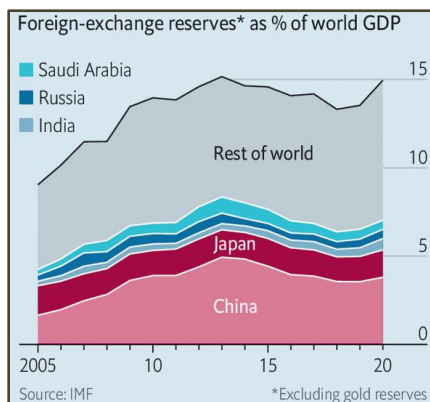


The rising reservoir of global savings, most of which is held in bank deposits, bonds, corporate equity and property, has been fed by three main tributaries: governments hungry for foreign-exchange reserves, penny-pinching households and firms, and workers nearing retirement age. The first flow, saving by governments, preoccupied Mr Bernanke. Governments' accumulation of foreign-exchange reserves adds to saving in two ways. Resource-exporting economies save part of the windfall earned from their exports and plough it into stocks and bonds. Some of these piles are held as official reserves. Other windfalls were shifted into sovereign-wealth funds (Norway's is valued at more than \$1.3trn) [8].

Some governments pile up foreign-exchange reserves as they intervene in markets to reduce the value of their currencies, to boost exports or to build up a hoard of safe assets which can be drawn upon in times of financial stress. In effect, these interventions squeeze consumption in their home economies, reducing spending relative to production and thus contributing to current-account surpluses which must be absorbed by the rest of the global economy [8].

The contribution of growth in reserves to savings was most pronounced around the time Mr. Bernanke sounded his warning. From 1998 to 2008, official foreign-exchange reserves jumped from 5.2% of global GDP to 11.5%, powered by a steady rise in oil prices and reserve accumulation by China. Reserve growth paused during the GFC, then resumed peaking in 2013 at a rate of 15.2% of global GDP (see chart, reserves) [8].

The effects of reserve accumulation could also be offset by increased government borrowing. Government debt loads, already high pre-pandemic, exploded as governments in rich countries provided stimulus. In 2020 alone, public debt as a share of GDP surged by nearly 20 percentage points across advanced economies, to 123%, and nearly ten points across emerging economies, to 63% [8].



A second stream of saving has flowed from the households and firms which have done best over the past few decades. Since the 1970s, inequality has risen across many economies. Wealthier households have a higher propensity to save, so this shift in the distribution of income contributed to the saving glut. The “saving glut of the rich” has meant the average annual saving by the top 1% of US earners alone outstripped annual average net domestic investment since 2000. Increased inequality contributed to the decline in rich-world interest rates since the 1970s [8].

For decades, corporations had been hoarding money as well, retaining a large share of their hefty net profits. According to Peter Chen, of the Analysis Group, an economic consultancy, and Brent Neiman, of the University of Chicago, and Loukas Karabarounis, of the University of Minnesota, annual global corporate saving rose from less than 10% of world GDP to nearly 15% between 1980 and 2015. The corporate sector has been acting as a net lender to the global economy, rather than as a net borrower from it. In the US, for instance, corporate profits have hovered above 10% of GDP during most of 2006-22, after never rising above 8% over the prior quarter century [8].

What is more, the effects of inequality on saving can feed on themselves. As high saving by the rich push down interest rates, poorer households increase their borrowing to sustain their consumption. But as debt piles up, they find themselves forced to reduce spending to pay back loans. Their debt payments, furthermore, represent a transfer of more money to rich households whose purchases of assets (like mortgage-backed securities) effectively finances the borrowing of the non-rich. The trap which results—of perpetually high inequality, low interest rates, and high debt among poorer households—could prove difficult to escape, sustaining the savings of the rich as a potent macroeconomic force [8].

The third great river of savings is from older persons. The world is not getting any younger, and in coming decades the savings of the old stand to apply relentless pressure on the macroeconomy. Across time and countries, household saving follows a reliable pattern. When workers are young, they save little or even take on debt. Their savings rise through their 30s and 40s before peaking a decade or so before retirement. As populations have grown older over the past half century, in the rich world especially, the share of workers in their prime saving years has risen as well, leading to ever more money in nest-eggs and ever lower yields on the assets therein [8].

The share of global population over the age of 50 rose from 15% in the 1950s to 25% in 2022, say Adrien Auclert and Frédéric Martenet, of Stanford University, Hannes Malmberg, of the University of Minnesota, and Matthew Rognlie, of Northwestern University. It is expected to rise to 40% by 2100. The effect of ageing populations in rich countries can be to

further contribute to lowering interest rates as we enter a world with more savings than what we know what to do with it [8].

Credit glut?

In 2005 Bernanke also spoke of the “remarkable reversal in the flows of credit” by several East Asian emerging economies. So while the countries saved more than they invested at home, they became a “net supplier of funds” to the rest of the world. This helped finance the US’s widening CA deficit and allowed the world’s richest country to buy more goods and services from others than it sold to them. Some economists later blamed the glut for the US’s housing bubble that led to the GFC.

Concerns resurfaced in 2020 when in the second quarter the US’s net national saving rate dipped below zero, as Stephen Roach of Yale University pointed out in the *Financial Times*. Lacking saving of its own, the US instead borrowed “surplus saving from abroad”, he wrote. Its CA deficit widened faster in the second quarter than ever before recorded.

This sort of reasoning is quite common. But a number of economists, including Michael Kumhof of the Bank of England, Phurichai Rungcharoenkitkul of the Bank for International Settlements (BIS) and Andrej Sokol of the European Central Bank, take strong issue with it.¹ Echoing work by Claudio Borio and Piti Disyatat of the BIS,² they call for a careful distinction between flows of saving and flows of finance. The two are not the same. They need not even move together. The implication is that Mr Bernanke may have got things the wrong way around.

In everyday language, saving is the opposite of spending. The word evokes money accumulating in a bank account. It is easy to imagine this money helping finance spending elsewhere. But in economics, saving is rather different. It is the opposite of consumption. By producing something that is not consumed, the economy is saving. Thus, someone who spends all their earnings on home improvements is saving, however stretched they may seem, because a house is a durable asset, not a consumer trifle. Similarly a farmer who stores his harvest in a barn, rather than eating it, is saving—even if he never deposits money in a bank.

So how does saving, properly defined, flow across borders? Any output that is not consumed meets one of two fates: it is either invested or exported. It follows that anything that is neither consumed nor invested at home must be exported. (A farmer might, for example, export wheat to a barn overseas.) What flows across borders are the unconsumed goods and services themselves. “Other countries are not sending saving to the US to give it ‘funds’ to finance their imports,” argue Mr Kumhof and Mr Sokol. “Their net exports are the saving, by definition.”

But how then do Americans pay for these foreign goods? That raises the question of financing. Unlike saving, financing is inseparable from money. To ask “how did you finance that?” is to ask “how did you obtain the money to buy that?”. Most money is brought into the world by banks, which have the happy ability to create it whenever they make a loan or purchase an asset. Thus the amount of financing available to a country depends heavily on the behaviour of banks, rather than on the amount of saving that either it or its trading partners do.

In a world of gluts and deficits, who finances whom? The conventional answer is that countries with excess saving finance those with saving shortfalls. But this less

¹ Kumhof, M., P. Rungcharoenkitkul and A. Sokol, “How does international capital flow?”, Bank of England, Staff Working Paper No 884, Nov 2020.

² Borio, C. and P Disyatat, “Global imbalances and the financial crisis: Link or no link?”, Bank for International Settlements Working Papers, No. 346, May 2011.

conventional group of economists argues that the answer depends not on the geography of saving and investment but on that of banking and finance. In many cases, US importers will fund their purchases with dollars borrowed from (or already held in) US banks.

When the purchase is complete, the dollars will be held by foreigners. They then represent a foreign financial claim on the US. Because US buys more stuff from the world than it sells, these claims on the US grow faster than the payments it receives for its exports. Many conventional economic models treat these net payment flows as the only kind of capital flow. But in reality, they are but a small fraction of the financial flows between countries. Many cross-border transactions, after all, do not involve goods and services at all. They instead represent purchases of foreign assets, including shares, bonds, property and the like. When Mr Bernanke made his speech, the net capital outflow from “saving glut” countries (with CA surpluses) was 2.5% of global GDP. Gross capital flows, by comparison, were around 30%, according to Mr Borio and Mr Disyatat.

An excess of saving, determines neither the geographical source nor the scale of cross-border financing. Nor is excess saving necessarily the right causal starting point. Kumhof et al. point to a “credit glut”: an abundance of lending by US banks to the country’s citizens. In spending this fresh money, Americans would no doubt import goods from abroad. This leads other countries to increase their saving, since the US cannot import goods that are being consumed or invested elsewhere. But in this case, the increase in foreign saving and surpluses is a side-effect of a financial boom within the US, not a cause of its overspending. The authors believe a credit, rather than a saving, glut is a more convincing explanation for the pre-2008 imbalances identified by Mr Bernanke, although they have less to say about more recent developments.

For many people (including some economists), it is natural to think that saving must precede investment and that deposits must precede bank lending. It is therefore tempting to see saving as a source of funding and the prime mover in many macroeconomic developments. Mr Kumhof and his co-authors see things differently, giving banks a more active, autonomous role. They give less credit to saving and more to credit.

Economist, “Free exchange: An unbalanced debate”, 28 Nov 2020, p. 70.

So why the talk of a savings glut in the 2000s? And even if there was a surplus, why was it flowing the “wrong way”—from the developing world, where returns on capital should be higher, to more mature economies like the US [7]?

An IMF report in 2005 offered an explanation. What the world suffered from was not so much a savings glut as an investment deficit, in both rich and poor countries. Emerging markets and oil-exporting nations, still felt the lingering effects of the Asian financial crisis of 1997-98, and demand for capital failed to keep up with supply. Scrimping consumers sent their money to the West [6]. The capital inflow into industrial countries, the result of net savings and capital outflows from emerging economies [6], financed government spending and consumption just as both the rates of saving and investment fell there.

In theory, returns on capital should be higher in the developing world, where economies are labour-intensive. In practice, the story is more complicated. Emerging markets saw a return on aggregate capital of 13.3% over 1994-2003, compared with 7.8% in the G7 group of industrialised nations. However, investments in emerging markets are riskier, because their economies tend to be more volatile and their institutions weaker. Hence, the return on aggregate capital is not a good

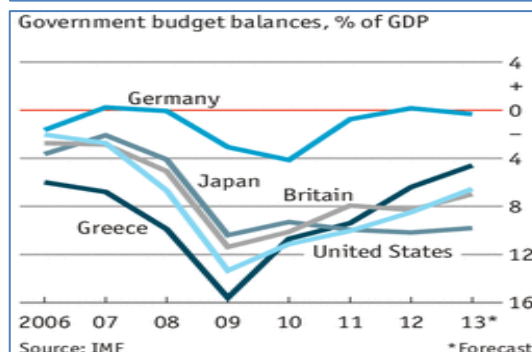
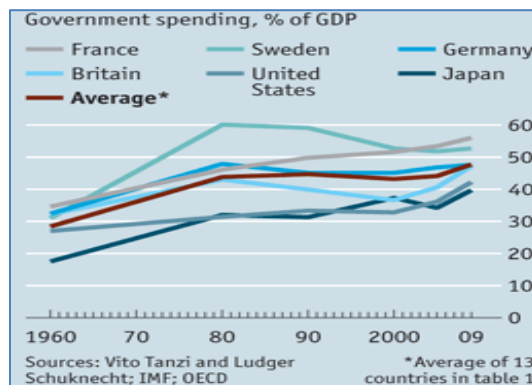
indicator of returns that investors can actually expect. Growth could be concentrated in smaller firms that are harder to invest in, for instance, or the data could be unreliable. The IMF’s analysis suggested that the internal rate of return on invested capital in publicly traded firms in emerging markets had been poor, even before currency risk was taken into account [6].

With investment down in the rich world too, capital flowed not directly into businesses but into markets for consumer and government credit, where presumably it does little to increase the recipient economy’s ability to repay the loans in the future. That means consumer retrenchment when interest rates rise or the bills come due. This hurts emerging markets if they cannot generate domestic demand, and rely on exports for growth [6].

So what would be the cure? Traditionally, national saving is calculated as simply national income minus consumption. This, the World Bank argues, ignores important underlying changes in the productive capacity of the society. Should education, for example, be counted as consumption, or as an investment in human capital that will enable the nation to produce more in future years? On the flip side, every dollar earned by selling finite natural resources like oil or diamonds represents an incremental decrease in the country’s ability to generate future wealth. If one accounts for things like this, say the Bank, then a lot of developing countries, especially in Africa and the Middle East, were running down wealth at a fast pace – though in Asia, even with those adjustments, savings rates were still high [6].

Like the World Bank, the IMF did not think lower savings rates in developing countries was an answer. Several other things were identified that could make a difference: higher national savings in the US, an investment recovery in Asia, and increased real GDP growth in Japan and Europe [6].

Economists tend to agree about the surest way to increase savings: to focus on government finances and debt. Budget deficits do run down national savings [6]. However, governments have expanded the state’s share of economic activity (see chart, government spending). This has happened even in countries where government spending as a percent of GDP was already high. As spending rose so did debt, and the governments’ share of the total debt as a percent of GDP ranged from 80% to more than 100% (see chart, total debt) [7]. Finally, negative budget balances in many rich countries, though at relatively low rates as a % of GDP, took bigger dips when the financial crisis hit (see chart, government budget balances) [9].





Alan Greenspan, another former US central banker, called greater fiscal discipline “the most significant vehicle” to raise national saving. However, some budgetary prudence may be offset by lower private saving. A theory called “Ricardian equivalence” holds that increases in public saving are cancelled out by falls in private saving as individuals anticipate future tax cuts. In low-saving economies, budgetary prudence is the surest route to higher national saving. That does not mean private saving rates are irrelevant. Encouraging higher private saving would clearly help raise national saving. Moreover, the adequacy of personal saving is important from the perspective of individual welfare. Even if a country overall is saving adequately to fund future economic growth, savings might be distributed in a way that leaves certain groups with insufficient wealth [5].

Global macroeconomic imbalances

Up until the GFC, emerging Asian economies’ development through export-led growth strategies coincided with rising global imbalances. Much of the focus of these global imbalances centred on the US’ twin deficits and Asia’s trade surpluses. Some questioned: should there be a concern about the global imbalances? Those concerned answered: imbalances are undesirable, cannot be continued indefinitely, and that the longer they last, the bigger and more painful is the adjustment. Worse, arguably, is the damage that could come to the world economy and international relations as repeated threats come from the US congress regarding China “exchange rate manipulation” (the cause of US deficits) [10].

To understand the dangers, one needs first to recognise what was happening. One perspective in the mid-2000s (of many people in the rest of the world – and not a few inside the US), was that the US was mostly at fault. If only, critics argued, the US government had a smaller fiscal deficit, and US households were less profligate, the CA deficits would disappear. This is correct: if the US has an economic depression, the trade deficit would vanish. Yet this cure is vastly more painful than the disease [10].

Bernanke led the thinking of the school that argued the world suffered from too much rather than too little saving, pointing out that long-term interest rates were extremely low across the globe. He attributed this largely to high saving by Asian economies [5]. This was echoed by Lawrence Summers, a former US Treasury secretary in a lecture: “There is one striking fact about the global economy that belies a predominantly US explanation for the pattern of global capital flows: real interest rates globally are low, not high.”³ The rest of the world’s surplus savings [in the 2000s] “crowded in” the high US CA deficits and domestic spending; it was not deficient US saving “crowding out” domestic spending elsewhere. Analysts at London-based Lombard Street Research explained that the driving force behind the global imbalances was Asia’s structural savings surplus, with China playing a significant role⁴ [10].

³ Reflections on Global Account Imbalances and Emerging Markets Reserve Accumulation, 24 Mar 2006, www.president.harvard.edu/speeches

The US could not diminish its excess spending if others did not diminish their excess saving at the same time. If one accepts the propositions that the US domestic spending and CA deficits are a desirable response to the excess of desired savings over investment in the rest of the world, why would one worry? Answer: even if better than the immediate alternatives, the growing imbalances are worse than the best ones [10].

First, are the imbalances the result of bad policies in the capital exporting countries? The global accumulation of \$2,340bn (€1,945bn) in additional foreign currency reserves in 2006 since the beginning of 2000 was the result of decisions to intervene in currency markets. At a global level, the opportunity cost of reserves held by the 10 largest holders was about 2% of GDP in 2006, argued Mr Summers. China’s reserves alone were \$600 for every man, woman and child – and rising. Cannot a government rightly concerned about persistent mass poverty do something more intelligent with this money than lend it to the US, at very low interest rates, only to have the latter both complain and ultimately, in all likelihood, depreciate its currency so as to partially default on its liabilities? [10]

Second, even if economists did agree that the scale of the US’s debt levels were reckless, they did not agree on whom to blame. Foreign borrowing under the Bush administration to finance the government’s profligate budget deficits offered more spending on everything, but the adverse impact on sectors producing tradable goods and services also exacerbate protectionist sentiments. A correction could only complicate trade relations further [10].

Third, something strange was happening in the US economy. When the foreign sector runs a huge financial surplus, the domestic sectors must, in aggregate, run huge deficits (excesses of expenditure of income). In the US economy, after the bursting of the equity bubble, the corporate sector moved into surplus. The government and, above all the household sector, were in huge deficit. In 1982, the household sector ran a surplus of 5.5% of GDP; instead in 2006 it had an unprecedented deficit of close to 7% of GDP. Household indebtedness and debt service were both soaring (which would lead to the housing bubble and financial crisis) [10].

Finally, the counterpart of the huge capital inflow was not increased investment, but increased consumption and falling national savings. Gross savings were about 14% of GDP and net savings just 1%. Investment was tilted towards real estate and the non-traded sector, which do not pay the foreign debts. Last, but not least, financing the inflow increasingly took the form of short-term lending, including large-scale official lending [10].

Of course, another perspective among economists was that the huge US CA deficits did not matter or, if not that, were indefinitely sustainable. Professor Willem Buiter of the London School of Economics, dealt with the argument in an FT forum.⁵ The position is mistaken unless one assumes almost limitless generosity on the part of the capital exporters [10].

Between 1990 and 2006, US imports at constant prices grew at a trend rate of 8.3% per year, while exports grew at 5.1%. As a result, imports were 60% bigger than exports in 2006. A substantial turnaround in these relative rates of growth would be necessary for the CA deficit merely to stabilise as a share of GDP, let alone fall. If those trends continued, the rising CA deficit would cause the net liability position to worsen [10].

Perhaps the GFC of 2007-09 intensified China’s need to rebalance its economy in light of its internal disequilibria.

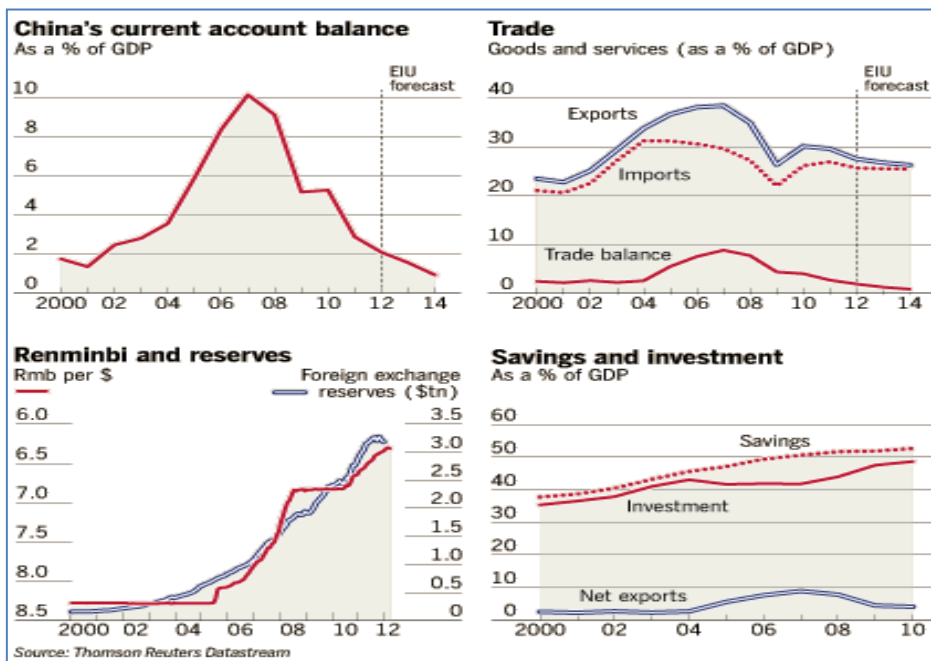
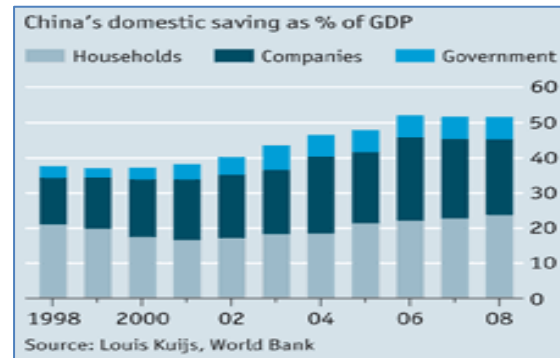
⁴ Dumas, C. and D. Choyleva, *The Bill from the China Shop: How Asia’s Savings Glut Threatens the World Economy* (Profile Books, 2006)

⁵ www.ftblogs.typepad.com/martin_wolf/

Domestically, economic activity migrated from the coasts, where export zones were established, to inland regions. This was macroeconomic “rebalancing”. Investors put up houses instead of factories, and the economy relied less on investment spending and more on consumer demand. Despite the best efforts, China’s demand continued to fall well short of supply, amounting to about half of Asia’s surpluses and 30% of those around the world in 2009 [11].

Since 2000, China’s CA was a rollercoaster. Between 2003 and 2007, the trade surplus rose from 2.8% to 10.1% of GDP, before falling to about 2% in 2012 (see charts, current account and trade). Over the same period, the share of exports and imports in GDP rose and fell. In theory, the level of trade surpluses and deficits reflect voluntary decisions to save and invest: countries with surplus savings (China) export capital while countries with a deficit import it. While it seems peculiar that a poor country exports capital to a rich one, as China has done with the US, there is no reason, in this view, to question the wisdom of the underlying choices [11].

young and the old. Urban households headed by 25-year-olds saved almost 30% of their disposable income, as did those headed by 60-year olds. This pattern was quite different from that in most countries, where the young borrow against future income and the elderly run down savings accumulated during their high-earning years [12].



One prominent critic of China’s economy, Michael Pettis of the Guanghua School of Management at Peking University, pointed out that consumption was suppressed by a variety of mechanisms that deprived households of income and transferred it to corporate borrowers. The most powerful, in Mr Pettis’s opinion, was the cap the government placed on the interest earned by household deposits in banks. One expects that low interest rates would encourage consumption by reducing the reward for saving, but the evidence suggested that Chinese households saved to meet certain goals, such as making a down-payment on a home. If saving yielded little, they saved more [13].

The counterparts to China’s surpluses were deficits in the UK, Spain and most notably the US. Since the financial crisis, the macroeconomic gyroscope began to level out. The US external deficit was halved from \$804bn in 2006, the equivalent of 6% of GDP, to \$395 billion (at an annual rate) in the 2nd quarter of 2009, about 2.8% of GDP. China’s surplus, though hefty, was reduced. However, this move toward equilibrium was mostly the wrong kind of rebalancing. The US, for example, rather than increasing its exports to match its prodigious imports, squeezed foreign purchases. Between the 4th quarter of 2007 and the 2nd quarter of 2009 its exports fell by \$215bn (in 2005 dollars, at an annual rate) and its imports fell by \$440bn. US cutbacks in spending affected domestic as well as foreign production [12].

To adjust upwards, the surplus countries would have had to spend more to fill the vacuum left by US consumers and house builders. For China’s exporters to fill this gap, its \$297bn surplus would have had to swing into a \$463 billion deficit. That would have required a dramatic fall in its saving rate, which amounted to over half of GDP in 2008. Spending more and saving less would not be the worst macroeconomic imperative a country might face, but China’s thrift was well entrenched [12].

Households made the biggest contribution to saving (see chart, China’s domestic savings). According to E. Prasad of Cornell University and M. Chamon of the IMF, the thriftiest were the

Another reason the Chinese save is because they have to pay for things such as education and health care which in other countries are provided by the state. “It’s not saving; it’s self-taxation,” says Mr. P. French of Access Asia, a consumer-research firm in Shanghai. The government promised to widen health-insurance coverage and to improve public clinics and hospitals, and reform of the pension system which left out over half of urban workers and 90% of their rural counterparts. Yet another reason why they save is because they find it hard to borrow. Only a small proportion of younger households (11%) in 2009 had a mortgage, and those that did scrimped and saved to try and repay within five years [12].

China’s industry was heavier than it needed to be. Energy and capital were both artificially cheap. Fuel was subsidised explicitly; capital implicitly by a repressed banking system that remunerated savers poorly. Because it overuses these inputs, Chinese industry underemployed labour. Despite the country’s reputation as the workshop of the world, employment grew by just 1% per annum in the 2000s, even as the country’s GDP raced ahead at double-digit rates. So the share of wages and other household income in GDP fell from 72% in 1992 to 55% in 2007. This was perhaps the biggest single reason why China’s consumption accounted for only 35% of GDP. It was not because households saved so much of their income (although they did), but because household income accounted for such a small slice of the national cake [12].

The other side of this equation is the large share of national income that flows to capital, in the form of profits. Corporate profits amounted to 22% of GDP in 2007. These earnings mostly stayed with the companies that generated them. China's big corporations can hold on to their profits, rather than pay out dividends, because aggrieved shareholders have little clout with them. China's small firms retained earnings because they need them. They are neglected by China's banks, which prefer to make big loans to large companies. This forces underserved small companies to rely on their own savings to finance their ventures [12].

Hence, saving by firms, not households, accounted for biggest increase in China's thrift. Savings went back into investment, which kept profits high as a share of national income, thereby adding further to corporate savings and continuing the saving-investment boom cycle. In the first half of 2009, investment accounted for 87% of China's growth, according to Standard Chartered Bank [12].

To become rich, a poor country must enlarge its productive power, mobilising workers, absorbing new technology and accumulating capital. It must expand the "supply side" of the economy, which determines how much a country can produce, and therefore how much it can earn and spend [13].

The other side of the economy—demand—also intrudes on the story. In the course of development, poor countries often struggle to keep spending in check. They are prone to inflation and trade deficits, which must be financed by foreign borrowing. Sometimes these excesses result in a financial crisis that leaves demand in the dumps and supply in disarray. Simply put, successful development entails expanding supply as quickly as possible without allowing demand to grow even faster. China's policymakers fretted a great deal about the supply side of their country's economy. They worry about accommodating the flow of rural migrants to the cities, amassing the physical infrastructure appropriate to their ambitions, and upgrading the country's technology [13].

Critics of China's growth model focus on the demand side because it was too weak. China's domestic demand fell short of supply in 22 out of 23 years to 2013, and inflation averaged under 3%. China's critics worry instead about the composition of China's demand. Household consumption accounted for too small a share and investment loomed too large (see chart on investment and household consumption). If this imbalance were not corrected, they argued, China could suffer from an investment bust, causing a sharp slowdown in spending—perhaps even a contraction [13].

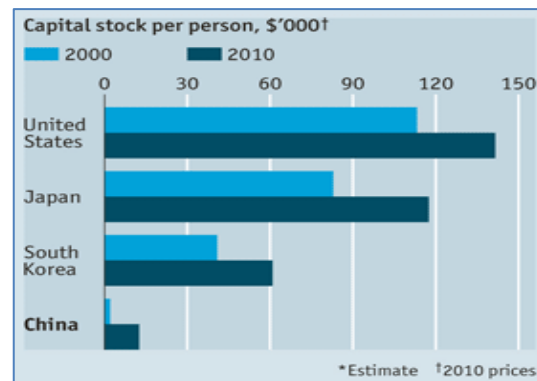
Mr. Pettis notes that investment accounted for a dizzying 48% of China's spending (see chart on China's investment as % of GDP [12]). Was this excessive investment? The data were mixed. Most pointed to the rapid growth in China's capital spending and its unusually high share of GDP. Fixed-asset

investment grew at breathtaking annual rates of 26% since the mid-2000s [13].

Yet these numbers mislead because they do not adjust for inflation and included purchases of existing assets, such as land, that were inflated by the rising value of land and property. More reliable is the real fixed-capital formation, measured on a value-added basis like GDP. The increase was a less alarming annual average of 12% over that period, not much faster than the 11% annual average GDP growth rate. Nevertheless, a level of fixed-capital formation of 48% of GDP in 2011 did look unusually high. China's rising investment and falling consumption as a share of GDP were commonly portrayed as an economic anomaly, but this pattern is normal in a rapidly industrialising country. In a traditional agricultural economy farmers consume most of their income, but once industrialisation gets under way a rising share of national income goes to owners of capital, who invest it in factories and the like. Investment rises as a share of GDP, and consumption falls. Nevertheless, by comparison, during their peak periods of industrialization, South Korea and Japan's capital formation maxed at under 40%. In most developed countries it was around 20% or less [14].

Normally, investment plays a dual role in development, adding both to demand and, when projects reach fruition, to supply. In his criticism of China's high rates of investment, Mr. Pettis, argues that they were nothing to celebrate because they were both excessive and misdirected. Moreover, overinvestment led to underconsumption through the emphasis on export-led growth [13].

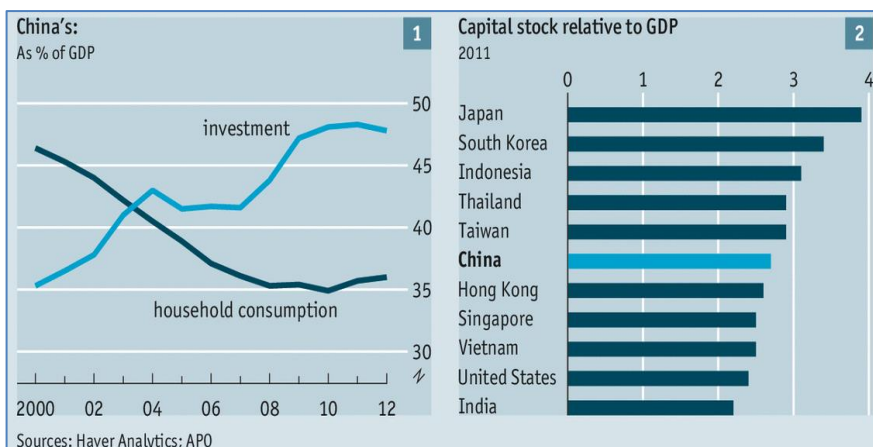
China misallocated capital on a grand scale. Much of the investment was financed by bank loans and other kinds of debt [13]. Given China's rapid growth, cheap loans and the big role played by state-owned banks, it is inevitable that capital was wasted in some industries. But the evidence suggests that China had not seriously overinvested [14].



The annual investment-to-GDP ratio does not actually reveal whether there has been too much investment. To determine that one needs to look at the size of the total capital stock—the value of all past investment, adjusted for depreciation. Qu Hongbin, chief China economist at HSBC, estimated that China's capital

stock per person was less than 8% of the US's and 17% of South Korea's (see chart, capital stock per capita). Another study, by A. Batson and J. Zhang at GK Dragonomics, a Beijing-based research firm, found that China still had less than one-quarter as much capital per person as the US did in 1930, when it was at roughly the same level of development as China in 2012 [14].

Some claim that (1) a rise in the ratio of China's capital stock to GDP is evidence that new investment became less efficient: a given increase in capital leads to a smaller increase in GDP.



However, a rising capital-output ratio is perfectly normal when a poor country shifts from agriculture to more capital-intensive industry. GK Dragonomics estimated that China's ratio of 2.4 in 2010 was well within the range of 2 to 3 seen in most countries (right-hand chart on the bottom of previous page) [14].

Another yardstick is (2) the return on capital, which should fall if there is huge spare capacity. Yet average industrial profit margins and the rate of return on capital of listed firms were fairly steady since 2000, after adjusting for the cycle. Although many firms, particularly state-owned ones, benefitted from cheap loans, the average real cost of borrowing across the whole economy was much higher, so this distortion was more likely to lead to a misallocation of investment than to excess overall investment [14].

The next metric is (3) the growth rate in China's "total factor productivity" (TFP), a measure of the efficiency with which both labour and capital are used, was one of the fastest in the world [13]. TFP growth had probably fallen in the late 2000s, but that largely reflected a spurt in infrastructure investments, which deliver modest immediate gains but boost longer-term productivity (20 or 30 years later). Although sceptics dismissed many of these projects as white elephants, a report by BCA Research suggests that the country's infrastructure still lagged behind demand. The total length of railway track increased by 50% since 1995, for example, but passenger numbers doubled and freight traffic increased by 150%. China had around 6% of the world's total railway network, yet carried 24% of global freight volumes [14].

Despite all the new property construction since 2000, there was still an overall shortage of housing in China. Hence, the problem was a misallocation of investment rather than oversupply. There was huge unsatisfied demand from people who could not afford to buy at the current prices, while a rising number of richer households owned more than one home, often as an investment. Under China's capital-heavy model of growth, owners of capital became much richer than workers. The main reason for shifting from capital-intensive production to the more labour-intensive, consumer-friendly sort was not to sustain economic growth, but to reduce inequality. Workers could then enjoy more of the rewards of China's past investment [14].

None of this means that the rebalancing away from too much investment and too little consumption was unnecessary. In principle, investment should create useful assets that have a higher economic value than the liabilities incurred to finance them. If the investment is misconceived, the debts will prove difficult to repay. Diminishing returns on capital can cramp future growth; and massive overcapacity from investment can bring the economy crashing down. If China did reach the limits of its "debt capacity" and suffered a sharp slowdown in capital expenditure, it is probably correct that consumption would not be a position to compensate for a drop-off in investment because household expenditures accounted for only 35% of China's demand [13].

So, even if this saving-investment cycle unbalances China's economy, why should it also unbalance the world economy? After all, capital spending adds to domestic demand. If investment is strong enough, it will suck in imports and narrow China's CA surplus. Other countries can provide the coal to fill China's lorries and the architects to design its futuristic cityscapes [12].

Even if investment eventually bears fruit, it adds to the economy's capacity to produce things which Chinese firms have struggled to sell at home. China's policymakers solved this problem by keeping the yuan competitive and selling their excess output on world markets instead [12]. If a country is to have an investment boom and a strong external position, consumption has to be repressed and savings encouraged [11]. The exporters that benefited from the cheap yuan provided a

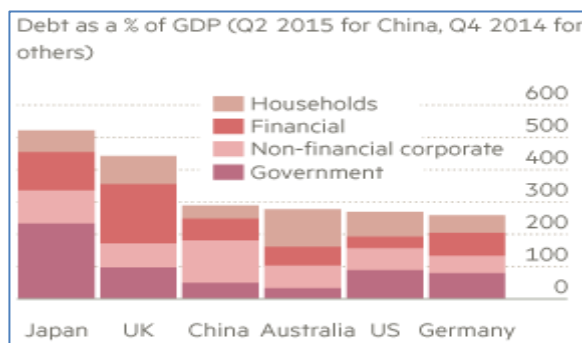
disproportionate share of China's jobs. Many were small firms lacking access to bank loans, which forced them to rely on labour more than capital. These firms gravitated towards the export market by default because their larger, better-connected rivals often had the lucrative domestic markets sewn up [12].

Beyond these general points, specific issues arose over the past explosion in China's surpluses. These were partly the consequence of interventions in foreign currency markets and consequent accumulation of foreign currency reserves. The latter rose from \$170bn in January 2001 to \$3.2tn at the end of 2011. One tool in the policy box was to sterilize the monetary consequences of these interventions. These are mercantilist policies [11].

So, overinvestment and underconsumption was solved through undervaluation of the currency and export [12]. Private consumption fell from 46% of GDP in 2000 to just 36% in 2007. Public and private consumption together fell from 62% of GDP to 49%, while gross saving jumped from 38% of GDP to 51%. A substantial part of these savings was invested in low-yielding foreign assets, at great cost: China's external reserves were \$2,300 for every man, woman and child or as much as 40% of GDP in 2012 [11].

The domestic counterpart to China's external adjustment from rebalancing consisted of ever higher investment as a share of GDP: between 2007 and 2010, the share of investment in GDP rose by close to 7% points. In every year since 2007, real fixed investment grew faster than GDP. The OECD noted: "Thus far, the adjustment toward domestic demand has almost entirely reflected strong public infrastructure investment that has been financed off-budget". Unfortunately, the process of eliminating one important imbalance – the external surplus – has exacerbated the most striking of the internal imbalances – the extraordinarily high investment [11].

China's investment binge can endure because the saving that China taxes exceeds the investment it subsidises. Many of China's companies are heavily in debt (see chart, debt as % of GDP) [15]. However, as a country, China consistently spends less than it earns, generating a CA surplus and adding to its foreign assets [13].



China is living within its means and those means are now considerable. It produces over \$8 trillion-worth of goods and services, without undue strain on its capacity. There is little question that capital does not always go to the most deserving investment, and that the lives of China's citizens would be more comfortable if consumption played a bigger part in the economy [13].

Whatever its flaws, the development of China's supply side is undoubtedly impressive. It boasts an industrious, mobile workforce, ingenious entrepreneurs eager to absorb new tricks and serviceable, even occasionally lavish, infrastructure. On the demand side of the economy it is hard to think of a developing economy that has been held back for long by a shortage of demand [13].

Contrary to the conventional wisdom, the transition to a new pattern of growth in China, in response to the 2008 financial crisis, has not really begun. What is unclear is how and whether the transition of a more balanced economy is to be made. Some focus on the transition from manufacturing to services. This does seem to be going quite well: according to Chinese data, industry grew at an annual rate of just 6% in the first three quarters of 2015, while services grew 8.4%. However, a large part of this is due to growth of income from financial services. This was the case in the west, before the crisis, and is as much a symptom of credit growth as of a transition [15].

The fundamental indicators of a transition would be a fall in savings and investment and a rise in consumption. Not only because much of the investment is wasted, but because it is associated with an explosive rise in debt. China has a far higher share of investment in GDP than other high-growth East Asian economy ever had. Furthermore, according to the McKinsey Global Institute, overall indebtedness is extremely high (exceeds the US) with a concentration in non-financial corporations [15].

In response to the crisis, China promoted a huge rise in debt-fuelled investment to offset the weakening in external demand. The underlying growth in the economy was slowing. As a result, the “incremental capital output ratio” — the amount of capital needed to generate additional income — roughly doubled since the early 2000s. China’s overall capital-output ratio was high and rising. At the margin, much of this investment was likely to be lossmaking. If so, the debt associated with the investment was either unsound or wasteful, requiring government bailouts.

So, did credit-fuelled investment fall and consumption rise as shares of GDP? No, or at least it happened far too slowly. The investment share fell slightly after 2010 (consumption ticked up a bit) while the explosion in indebtedness continued: the ratio of debt to GDP was 157% at the end of 2007, 250% at the end of 2013 and 290% at the end of the 2nd quarter of 2015 [15].

Oil exporters: A main driver of global imbalances

China’s CA surplus was at the centre of the debate about global imbalances in the 2000s. But the real news was that China was never really the prime culprit behind the global imbalances. The biggest counterpart to the US’s CA deficit was the combined surplus of oil-exporting economies, which enjoyed a huge windfall from high oil prices until 2014 (see left-hand chart, below). In 2012, the IMF estimated their surplus to be a record \$740 billion, with three-fifths going to the Middle East, higher than China’s expected surplus of \$180 bn in 2012. Since 2000 the cumulative surpluses of oil exporters were over \$4 trillion, twice as much as that of China [16].

One reason why this enormous stash received less attention than China’s is that only a fraction of it went into official reserves. Most was in opaque government investment funds. Middle Eastern purchases of Treasury bonds were often channeled through intermediaries in London, hiding their true ownership. A lot of money was invested in equities, hedge funds, private equity and property, where ownership is harder to track. Oil exporters’ surpluses proved much more durable than those accumulated after previous oil-price shocks. This was partly because the tightness of oil supplies kept prices high, and partly because oil exporters spent less of their windfalls on imports than in previous booms. The impact of higher oil

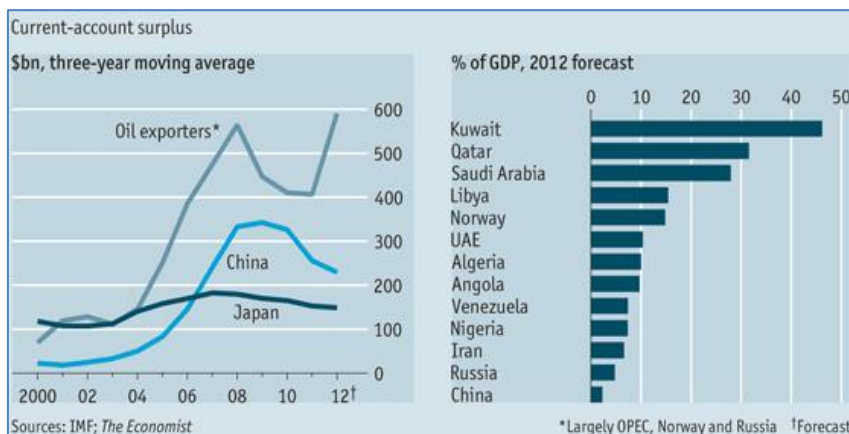
prices on the world economy depends on whether oil exporters spend or save their petrodollars. If they recycle them by buying more from oil-importing countries, this cushions global demand. If they save them, income is permanently transferred from oil consumers to oil producers, depressing global demand. After the oil-price shocks in the 1970s, about 70% of the increase in export revenues was spent on imports of goods and services. IMF figures suggest that less than 50% of the windfall was spent in the three years to 2012 [16].

The recycling of petrodollars was also unevenly distributed. Oil exporters imported more from Europe and Asia than from the US, so a shift in the “terms of trade”, which redistributes income from oil consumers to oil producers, tended to reduce the relative demand for US goods. Research by the International Energy Agency, found that for each dollar the US spent on oil imports from OPEC countries in 2011, only 34 cents came back in exports; the EU got back more than 80 cents; and for China 64 cents flowed back in increased exports [16].

Oil producers understandably did not want to repeat the mistakes of previous times, when spending surged as oil prices rose—only to leave behind large deficits when prices later fell. Saudi Arabia, for instance, shifted from a CA surplus of 26% of GDP in 1980 to a deficit of 13% in 1983. Exporters should run a surplus as a buffer for when oil prices drop or wells run dry. The surpluses of 5-7% of GDP run by Russia, Nigeria and Venezuela seemed sensible, but some countries’ prudence was excessive. Saudi Arabia’s CA surplus was around 28% of GDP, and Kuwait’s 46% (see right-hand chart). Kuwait’s cumulative surpluses over the since 2002, even ignoring capital gains, amounted to 200% of 2011’s GDP [16].

Normally, a large CA surplus would be eroded over time by stronger domestic spending and a higher exchange rate. However, the Gulf currencies are pegged, or closely linked, to the dollar. Since 2000, years their real trade-weighted exchange rates have stayed flat or fallen, despite the massive gain in their terms of trade. [A country’s trade-weighted exchange rate is an average of its bilateral exchange rates, weighted by the amount of trade with each country.] A floating exchange rate could lead to excessive volatility and discourage diversification of these economies (by making other sectors uncompetitive as the currency appreciates), but a bit more flexibility might assist global rebalancing [16].

Some economists suggested that oil exporters’ currencies should peg to a basket which includes the oil price as well as other currencies. A more flexible exchange rate which rose (and fell) with the oil price would boost (or reduce) consumers’ purchasing power, and hence imports, and also smooth out the local-currency value of government oil revenues. However, a 2009 IMF working paper⁶ concluded that exchange-rate appreciation was unlikely to have much impact on oil exporters’ external balances. The authors estimated that it would take a



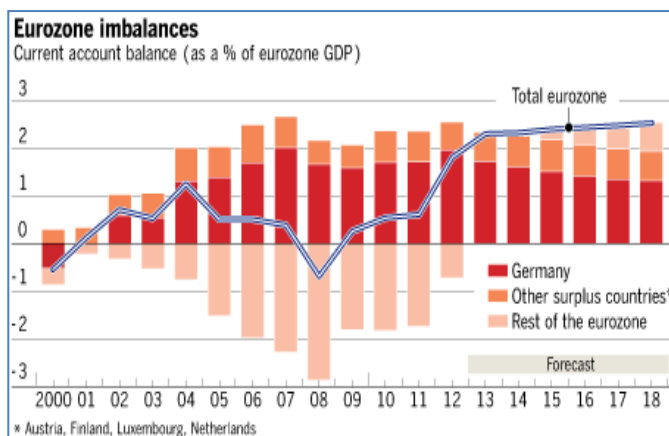
⁶ R. Arezki and F. Hasanov, “Global imbalances and petrodollars”, IMF Working Paper, Apr. 2009.

100% appreciation to reduce a surplus by just 2.5% of GDP, both because a revaluation has no effect on oil revenues, which are priced in dollars, and because there is little scope for imports to substitute for domestic production since the manufacturing sectors of these economies are generally tiny. A huge appreciation would also drive down the local-currency value of the large net external assets of some of these countries [16].

The most effective policy tool to reduce oil exporters' CA surpluses would be public spending, and investment in particular because of its high import content. Increased public spending could also help these economies diversify away from oil. That would support their future economic development and create more private-sector jobs for young, growing populations. To maintain social stability, many of these governments need to spend more on education, health care, housing and welfare benefits. Some oil producers, such as Russia and Nigeria, ran fairly balanced budgets, but the governments of the Gulf States were awash with cash. From 2005 to 2012 Saudi Arabia, Kuwait and the UAE increased public spending by 7-8 percentage points of GDP. Even so, the three countries ran average budget surpluses of over 15% in 2012 [16].

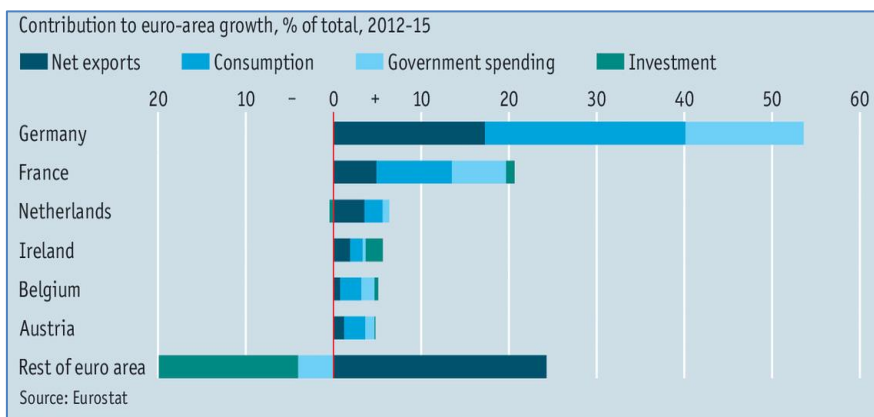
Rebalancing in the Euro-area

Europe's economic crisis was a stew with many ingredients, from spendthrift governments to inadequate safeguards in the banking system. The stock in which it all simmered, however, consisted of big imbalances in trade and capital flows. Economic integration encouraged high-saving households in slow-growing northern economies to ship their money to the periphery, where potential returns were higher. The flipside of that lending was a parallel imbalance in trade, as peripheral economies consumed more goods and services than they could produce themselves. On the eve of the GFC, Germany ran a trade surplus of 2% of euro-area GDP (see chart eurozone imbalances), while Spain had a deficit of 1% of euro-area GDP [17].



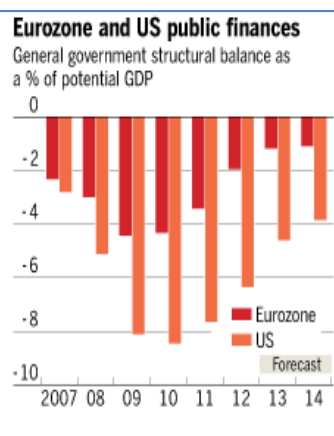
Such imbalances are not inherently bad: it makes sense for savings-rich countries to fund investment in poorer ones. Such investment, if sensibly used, should boost growth in the long run, making it easier to repay the debts. In the euro area, too much of the borrowed money paid for consumption or investment in bubbly property. When northern Europeans began pulling money out in the aftermath of the GFC, the periphery had to make an abrupt adjustment. Jobs that had relied on construction and booming domestic consumption evaporated. Investment collapsed amid financial panic and the wobbling of the euro-area banking system. Government spending also faced

a squeeze, thanks to pressure from bond markets and austerity-minded politicians in other parts of the euro area. The best hope for peripheral economies was exports, to provide jobs for the jobless and to earn money to repay lenders. Thus, the euro-zone economy remained heavily dependent on exports for its growth. That is both an indicator of the weak and incomplete nature of Europe's recovery and a dangerous vulnerability (see chart, euro-area growth) [17].



Outside a currency union, rebalancing toward exports is made easier by exchange-rate movements: capital-flow reversals lead to depreciations that make exports cheaper in foreign markets. Within the euro area, depreciation was not an option, and no peripheral economy was willing to risk the financial chaos that would have resulted from dropping out of the single currency. Even so, rebalancing could have been made easier if northern Europe, and especially Germany, had shared in the adjustment [17].

Faster growth in wages might have boosted German consumption and investment while limiting how much wages in peripheral economies needed to fall to make export industries there more competitive. German labour unions asked for only modest pay rises, despite low unemployment. Had the periphery been able to export more to the core, it would not have needed to slash imports so viciously. From 2011 to 2015, German imports grew only slightly faster than those of the rest of the euro area, by 10% compared with 7%. Meanwhile, German exports rose faster still, by 17%. Exports' starring role in



European growth reveals the pitiful weakness of other elements of the euro zone's economy [17].

In other words, stronger northern countries did not pick up much of the slack. Poor policy choices contributed to the feebleness of German domestic demand. In 2012 and 2013 German officials lobbied against looser monetary policy. The

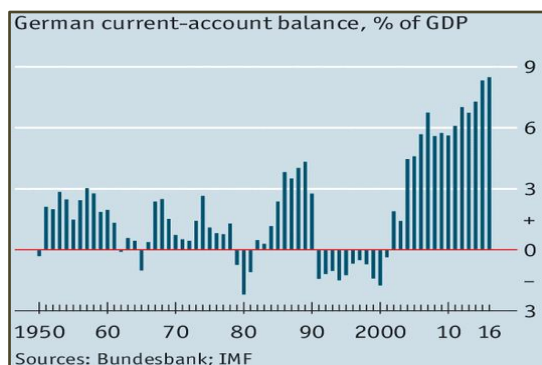
European Central Bank (ECB) moved too slowly, compared with other big central banks, in launching asset-purchase programmes. The German government joined the continent's fiscal austerity drive, closing the country's budget gap even as Germany briefly sank back into recession. Instead, Germany relied on exports as the source of growth [17].

The rebalancing that occurred within the euro area was therefore of an odd sort. The periphery leaned more heavily on exports since the onset of the crisis—albeit more to the rest of the world than to other parts of the euro zone. That is because consumption only grew relatively modestly, and investment

scarcely at all, in Germany and the rest of the core. Instead, core and periphery alike relied on international demand for their exports. Between 2011 and 2015 the euro area's trade surplus rose from just 0.1% of euro-zone GDP to 3.7% (higher than that forecasted in the chart below [18]). Even in 2015, as emerging economies slowed and as Germany enjoyed its lowest unemployment rate in decades, German net exports contributed about as much to the rise in euro-area GDP as German household spending did [17].

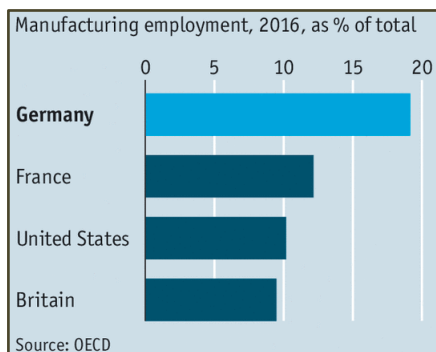
The German case

In most years since 1950, Germany has run a CA surplus (see chart, German CA balance). In 2016, Germany's surplus was 8.3% of GDP. At almost \$300bn that was far larger than China's surplus, which has been a target of angry US policymakers [19].



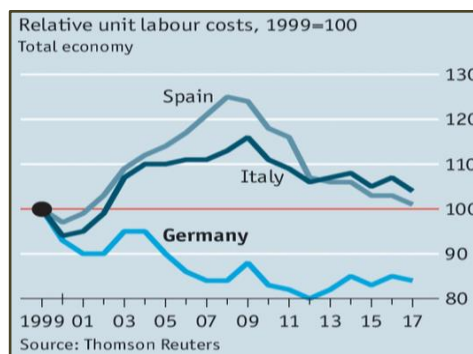
The Berlin consensus (Germany's orientation towards its macroeconomic policy) favours stability-oriented policies: monetary policy should aim at price stability in the medium term; fiscal policy should aim at a balanced budget and low public debt. No Keynesian macroeconomic stabilisation there. To make this approach work, Germany uses its external accounts to stabilise the economy: a rising surplus when domestic demand is weak, and the reverse [18].

Germany's economy may seem too big to rely on a mechanism characteristic of small and open economies: in this case a reliance on its superb export-oriented manufacturing and its ability to curb real wages [18]. Germany's share of manufacturing jobs did not all fall anything like it had in other industrialised countries (see chart, manufacturing employment) [19]. In the 2000s, the combination allowed the country to regenerate the CA surplus lost during the post-unification boom of the 1990s. This, in turn, helped bring modest growth, despite feeble domestic demand [18].



For this approach to stabilisation to work well, a large export-oriented economy also needs buoyant external markets. The financial bubbles of the 2000s helped deliver this. Between 2000 and 2007, Germany's CA balance moved from a deficit of 1.7% of GDP to a surplus of 7.5%. In part, the flip side of Germany's surplus was Eurozone imbalances. Offsetting deficits emerged elsewhere in the Eurozone. By 2007, the CA deficit was 15% of GDP in Greece, 10% in Portugal and Spain, and 5% in Ireland [18].

German firms slowly began to claw back the export competitiveness they had lost in the reunification boom. An important gauge of this is a country's relative unit labour costs, which shifts downwards as wages fall, productivity relative to other countries improves or the currency weakens. The index for Germany fell by 16% between 1999 and 2007 (see chart, relative unit labor costs), largely because of wage restraint [19].



Germans are proud of this record. The idea that the country's trade surplus is a negative feature is dismissed. Thrift is defended as rightful prudence, and the surplus is not the outcome of an economic policy distortion. The IMF countered that Germany's trade surpluses were bigger than could be justified or than was desirable for global economic stability. What makes the issue so difficult to resolve, or even to acknowledge, is that Germany's savings surpluses are not the outcome of explicit economic policy. Instead, their roots lie in a tacit business model from which emerge both the admired and disparaged facets of Germany's economy [19].

To understand this model, go back to the late 1990s when the economy was failing. Unemployment was above 4m, a tenth of the workforce. Germany's share of merchandise exports was shrinking. The CA was in a rare deficit. The economy's struggles were in part a legacy of devaluations against the Deutschmark earlier in the decade, when speculators broke the bounds of Europe's exchange-rate mechanism, a system that limited currency fluctuations. The orders and jobs lost to Italy's capital-goods industry in the 1990s are part of German business folklore [19].

Within the euro club, the gripe was that Germany, as the most creditworthy member, insisted on austerity for countries with heavy debts, without recognising that its own tight rein on spending makes that adjustment harder [19].

Pay restraint put Germany back on track but at a cost. It has left the economy more unbalanced than ever. Exports were super-competitive. In 2016's annual health-check, the IMF said Germany's real effective exchange rate was undervalued by 10-20%. Consumer spending, meanwhile, remained depressed. Despite abundant jobs growth, the share of GDP going to households fell from 65% in the early 1990s to 60% or below, to the benefit of corporate profits (see chart, HH disposable income and consumer spending). The rate of household saving, however, had not changed much: in the mid-2010s it was 9.8%, exactly in line with its 20-year average [19].



As a consequence, the share of consumer spending has fallen to 54% of GDP, far lower than in the US or UK. If workers were paid more, they could buy more. That would mean fewer exports (because firms would produce for a bigger domestic market) and more imports. But Germany has been hopelessly locked into a model that always puts exports ahead of anything else [19].

The exports-first response to the adversity of the late 1990s is a refinement of a tried-and-trusted German model. The country's talent for precision engineering means that for decades it has had an edge in luxury cars, chemicals and machinery. To have industries of the required scale in these areas requires a global market: a national market is too small to be efficient [19].

Germany's particular talents thus naturally gave rise to an economy that is led by exports rather than domestic spending. A lot of high-wage jobs relied on exports, either directly or indirectly. Sustained success in such high-end manufacturing required a commitment to vocational training and to research and development. For German firms to stay ahead and sustain a premium for their superior products, profits had to be continuously ploughed back into innovation and skills. These requirements have over decades shaped the norms and institutions that govern Germany's economy, according to an insightful paper by David Soskice and David Hope, of the London School of Economics, and Torben Iversen, of Harvard University [19].

Wage restraint in export industries was a crucial strut. The bargaining power of skilled workers makes this tricky to enforce. Before Germany joined the euro and ceded its monetary policy to the European Central Bank (ECB), the Bundesbank acted as policeman. Inflationary wage bargains would be "punished" by higher interest rates. Another strut was a strict fiscal policy to keep public-sector wages in check and thus in line with those in industry. But the state supported vocational training to ensure an ample supply of skilled workers [19].

Two changes make the resulting savings higher than in the past. First, competition from low-cost emerging markets has made unions even less willing to ask for big pay rises. Job security is paramount. Second, German companies are less likely, or able, to recycle higher profits into investment at home. Marcel Fratzscher of the German Institute for Economic Research reckons half of Germany's CA surplus reflects an "investment gap". A dearth of public investment is one cause. Others are red tape and a tax system that is not conducive to startups [19].

German firms would argue that it made more sense to invest abroad, where populations are growing, than in a domestic market in relative decline. The figures offered some backing. A study by the Bundesbank found that annual returns on German foreign direct investment were a healthy 7.25% between 2005 and 2012. What is more, Germany's rate of domestic investment was not obviously weak by comparison with other countries. Indeed it was the share of consumer spending that looked unduly low [19].

The domestic-demand counterparts of the huge external deficits run in these countries were mostly credit-fuelled private spending. Then came the global financial crisis. Capital inflows halted and private spending collapsed, creating huge fiscal deficits. Harvard's C. Reinhart and K. Rogoff have shown that this was predictable. Between 2007 and 2009, the fiscal balance shifted from a surplus of 1.9% of GDP to a deficit of 11.2% in Spain, from a surplus of 0.1% to a deficit of 13.9% in Ireland, from a deficit of 3.2% to one of 10.2% in Portugal and from a deficit of 6.8% to one of 15.6% in Greece [18].

The mistaken consensus swiftly emerged, notably in Berlin, that this was a fiscal crisis. That confused the symptoms with the causes, except in the case of Greece. Yet, being deprived of

access to the bond market or close to that plight, crisis-hit countries had to tighten, despite their deep recessions. Tighten they did. Between 2009 and 2012, according to the IMF, the structural fiscal deficit shifted by 15.4% of potential GDP in Greece, 5.1% in Portugal, 4.4% in Ireland, 3.8% in Spain and 2.8% in Italy. This combination of financial crises with fiscal tightening caused deep slumps: between the 1st quarter of 2008 and the 4th quarter of 2012, GDP fell 8.2% in Portugal, 8.1% in Italy, 6.5% in Spain and 6.2% in Ireland [18].

Unfortunately, the eurozone's healthier countries also hew tightly to the stability mantra. So they, too, tightened fiscal positions, and slowing growth. The European Central Bank also showed next to no interest in spurring demand. Unsurprisingly, the eurozone economy was becalmed, with GDP at the same level in the 4th quarter of 2012 as it was in the 3rd quarter of 2010 [18].

If one wants to understand how far the folly goes, one must study the EC's work on macroeconomic imbalances. Its features are revealing. It takes a CA deficit of 4% of GDP as a sign of imbalance. Yet, for surpluses, the criterion is 6%. Is it an accident that this happens to be Germany's? No account is taken of a country's size in assessing its contribution to imbalances. In this way, Germany's role is brushed out. Yet its surplus savings create huge difficulties when interest rates are close to zero. Its omission makes this analysis of "imbalances" close to indefensible. The implications of the attempt to force the eurozone to mimic the path to adjustment taken by Germany in the 2000s are profound. For the eurozone it made prolonged stagnation, particularly in the crisis-hit countries [18].

Correcting trade imbalances: Current-account targets?

In 2010, the debate on "global imbalances" went full circle when T. Geithner, the US Treasury Secretary, proposed a target on CA imbalances. This was a return to the preoccupations of John Maynard Keynes, who represented the UK at the Bretton Woods conference of July 1944. Keynes was obsessed with the dangers of asymmetric adjustment by surplus and deficit countries. The US, then the world's dominant surplus country, rejected the call for a mechanism to impose pressure on both surplus and deficit countries to rebalance. The US was now in the other camp [20].

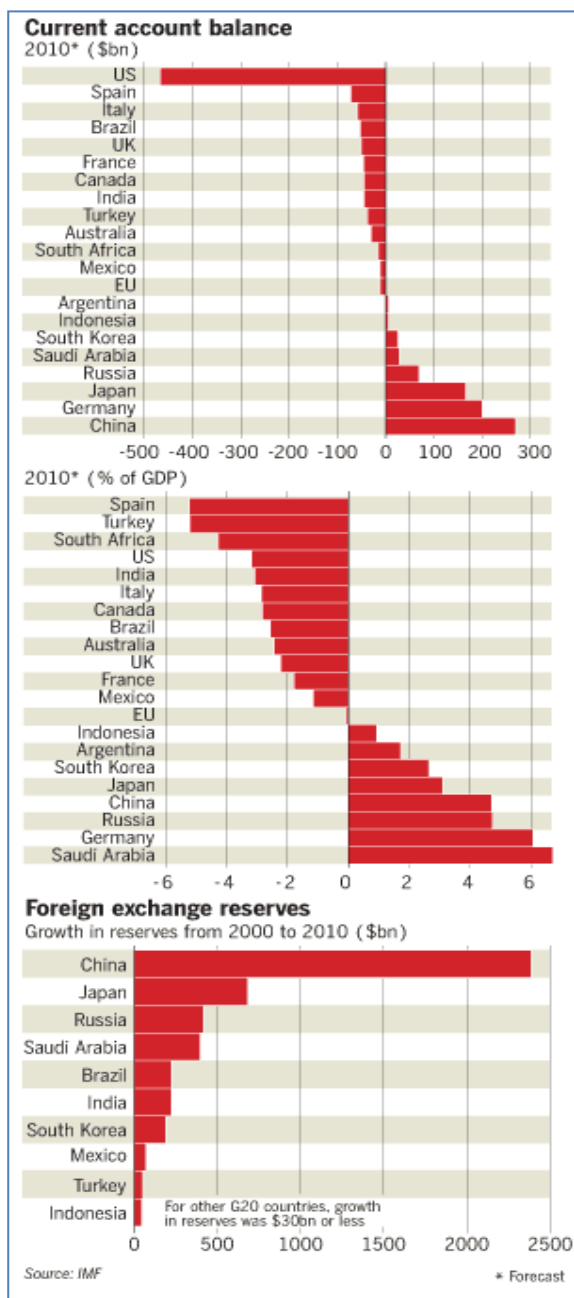
Would China, now among the surplus countries, accept what the US rejected? A communiqué of the meeting of the finance ministers and central bank governors of the Group of 20 in 2010 stated that: "persistently large imbalances, assessed against indicative guidelines to be agreed, would warrant an assessment of their nature and the root causes of impediments to adjustment as part of the Mutual Assessment Process, recognising the need to take into account national or regional circumstances, including [those of] large commodity producers." This ugly sentence was in response to Mr Geithner's suggestion of 4% of GDP as an indicator for the CA [20].

So what was the US after? The US aim was to establish the principle that both surplus and deficit countries have an obligation to adjust. It suggests that there should be an agreed numerical value for the surplus or deficit at which a country should act. This would not be a target. Nor would there be sanctions. The global monetary regime would continue without the automatic mechanisms proposed by Keynes in 1944. In addition, the US hoped to secure appreciation of the currencies of a number of emerging economies, particularly China's, against those of the high-income countries, particularly the US dollar [20].

Did the proposal make sense? Could it work? Rainer Brüderle, Germany's then economy minister, provided the orthodox rejection. He stated that "we should lean toward a market

economy process and not on a command economy”. But there are three decisive qualifications [20].

First, the huge accumulations of foreign currency reserves then were not a market phenomenon: they were the product of government decisions (see chart bottom panel, reserves). They could be justified, initially, as a way of creating insurance against shocks. But these reserves went well beyond insurance, as the response to the financial crisis required only a modest decline of \$470bn, or 6% of the total. Second, the repeated evidence that the world economy is unable to use large flows of surplus savings in a safe and effective way cannot be ignored. Finally, the world had massive excess capacity. That made adjustment by deficit countries alone hugely undesirable, as Keynes would surely have argued [20].



So which G20 countries would be affected by the US indicators? The US, South Africa, Turkey and Spain were forecasted to have “excessive deficits” in 2010, and China, Russia, Germany and Saudi Arabia to have “excessive surpluses”. Russia and Saudi Arabia would presumably be exempt, as “large commodity exporters”. Moreover, if one were to focus on the scale of the surpluses and deficits rather than just shares of GDP, Japan would be among the surplus countries and Italy, Brazil and the UK countries among those with large deficits (see chart, CA balance, top and middle panel) [20].

Such CA indicators can only be a starting point. It is also important to focus only on countries that are systemically significant: Singapore’s CA surplus was forecast at 20% of GDP, but the rest of the world need not care about that. Moreover, for the very biggest countries even 4% of GDP might be far too large. Yet quantitative indicators can at least make the discussion of adjustment far better focused than hitherto [20].

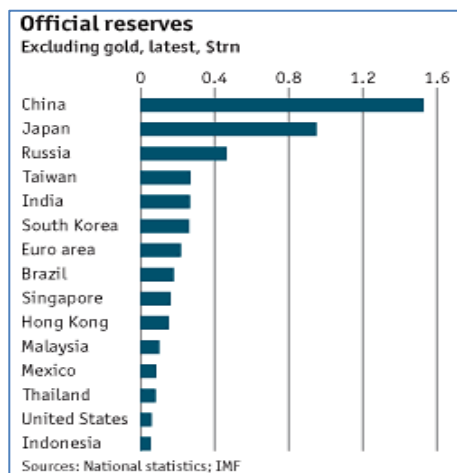
Finally, can this approach be made to work? Two different Chinese economists noted that China has already decided to limit its surpluses. So a discussion of this topic should be far more fruitful than a focus on the exchange rate alone. Yet, given the vast scale of its reserves (close to 50% of GDP) and its rapid growth, China should seek external balance, if not a deficit, rather than a surplus of 4% of GDP. Unlike the deficit countries that so worried Keynes, the US at least has heavy weaponry at its disposal, not least its ability to issue the world’s principal reserve currency. The rest of the world cannot easily force the US to adjust if it does not wish to do so [20].

The core of any discussion of global adjustment, then, must be between the US and China. Germany would continue to be obstructive. But its victims are its partners in the eurozone: they have chosen to live with Germany’s devastating combination of external competitiveness with domestic restraint, under an irrevocably fixed exchange rate. Japan seems simply unable to deal with its macroeconomic predicament. But China is a very different case, as a burgeoning superpower with a vast population and enormous domestic needs. There is no reason for it to remain a massive capital exporter [20].

Official reserves

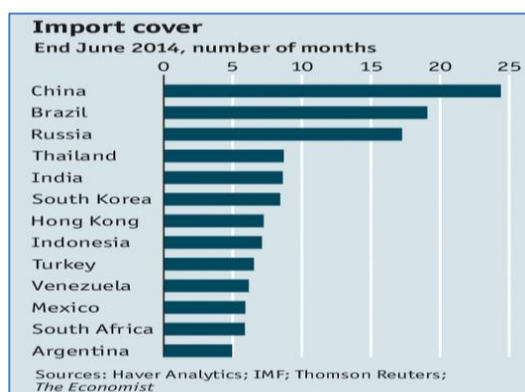
Official reserves, a component of the capital account, consist of a nation’s holdings of tradable foreign currencies, foreign currency denominated assets, gold, and special drawing rights (IMF “paper gold”). How important are official reserves in the BOP? The answer depends on how a country balances its payments, i.e., whether reserves are used to cover insufficient capital inflows to finance CA deficits, or whether reserves accumulate in response to CA surpluses. It also depends on the type of exchange rate regime and policy decisions regarding external payments. Under a purely flexible exchange rate regime, reserves have no practical importance. Under a strictly fixed exchange regime, a CA surplus (deficit) results in reserve accumulation (de-accumulation). In this way, the official reserve position can reflect policy decisions over the value of a local currency or changes in its value [21].

In 2005, China surpassed Japan in maintaining the world’s largest foreign-exchange reserve as it passed the \$1tn mark. At the end of 2007, China’s currency hoard passed \$1.5 tn (see chart, official reserves, 2007). China’s swollen reserves reflected its CA surpluses and its exchange-rate policy. Russia’s currency stash doubled in less than two years, thanks to



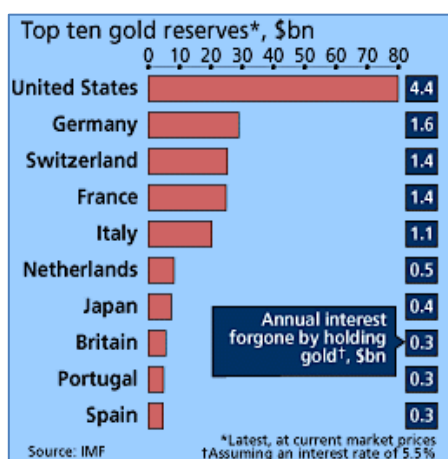
booming revenues from oil and commodity exports (prior to the bust in prices in 2014-15) [22].

China's central bank bought huge quantities of foreign currency to stop the yuan's value from rising too quickly. Japan built most of its stockpile earlier in the 2000s, when it intervened in currency markets to keep the yen weak. Many other Asian economies adopted a similar plan, motivated either by prudence or merchantilism. That is, its reserve accumulation can either reflect the region's fear of another financial crisis, or a by-product of countries efforts to keep currencies cheap to conquer foreign markets. In 2014, the value of China's reserves amounted to 24 months of its average monthly value of imports (see chart, import cover). Thus, holding reserves minimizes exchange rate risk because the country will not have to exchange its currency to buy foreign currency to meet an international debt obligation. Typically, a reserve worth the value of three months' cover is deemed adequate. Three of the BRIC countries (Brazil, China and Russia) had import cover of between 1.5 and 2 years in 2014 [23].



Gold's role as a reserve

Since the end of the gold standard and fixed exchange regimes, gold has been less of a monetary asset and more of a commodity. Central banks and international financial institutions such as the IMF own more than 35,000 tonnes of it, equivalent to 30% of all the gold ever mined and to 18 years of world mine production. In the late 1990s, developed economies, including the US, Switzerland and France, held some 40% of their total foreign reserves in gold, and these massive reserves keep the gold price artificially high (see chart, gold reserves, 1996) [21].



Governments in the Netherlands, Belgium, Australia and Canada sold big chunks of their gold. Gold bugs have long been satisfied with the argument that none of the big holders of gold (US, Germany, Switzerland and France) would dream of dumping their reserves because if they did, then gold would meet the same fate as silver. In the 1870s, Germany and the US stopped minting silver coins. Germany dumped silver on the market, and by the early 1900s the price had tumbled by two-thirds [21].

Gold has been viewed as a precious asset for ages, but gold gives a modest return – the worst return of any financial asset (e.g., equities or bonds). If in 1987 one had invested \$100 in US shares tracked by the Standard & Poor's 500-stock index, one would have had more than \$350 10 years later. Had one bought gold, one would have had about \$70. An economist at UBS in London, estimated that switching all central bank gold reserves into foreign-government bonds in 1997 would have earned \$20 billion a year [21].

If central banks built their reserve portfolios from scratch now, there would be less in gold held and more in interest-yielding assets. The big holders of reserves among emerging economies, such as China and Taiwan, hold little gold. So, why do central banks hold gold? There are two traditional motives [21].

- A monetary asset. Gold once played an important role in the international monetary system. However, the gold standard in the 19th and early 20th centuries, under which the value of many currencies was set, has long been abandoned. Some favour a return to a gold standard to ensure price stability, but an independent central bank committed to price stability can hold inflation down while ignoring gold [21].
- A war chest. Governments traditionally held gold to provide security at times of international crisis, but its role as a store of value has been tarnished. From the 1970s until the late 1990s, gold failed to keep pace with inflation, and gold is also less liquid than foreign currency, so cannot easily be used for foreign-exchange intervention to defend a currency under attack [21].

With the economic instability and geopolitical tensions since the GFC, some central bankers have started to load up on gold again. In an annual poll in 2023 of 83 central banks, which manage a combined \$7tn in foreign exchange assets, found that more than two-thirds of respondents thought their peers would increase their gold holdings in 2023. World Gold Council figures show many purchases made since 2022 have been by central banks in countries that are not aligned with the west. China, for example, bought 62 tonnes of gold in Nov and Dec 2022. Turkey's official gold reserve rose by 148 tonnes to 542 tonnes over 2022. States in the Middle East and Central Asia were also active buyers of gold in 2022 [24].

Sanctions against Russia's central bank caused many non-aligned central banks to reconsider where they should hold their international reserves. Countries have recognised that the gold Russia holds, because it is outside of anybody else's control, is useful in situations where you might not be able to access any other reserves. Many central banks have kept their reserves abroad, including at the Bank of England and the New York Federal Reserve – reflecting London and New York's status as the biggest gold dealing markets [24].

Case of the Swiss 2014 referendum to return to gold

The Swiss franc was explicitly backed by gold until 2000, long after most rich countries had switched to fiat currencies. Gold amounted to about a third of Switzerland's reserves in 1999 when the Swiss National Bank (SNB) concluded that it held too much gold: reserves were worth 25% of annual imports, to Germany's 6%. Tumbling gold prices at the time made the hoard less sensible. By 2005, the SNB sold half its gold—1,300 tonnes, reducing gold's share of reserves to 8%.

This alarmed many Swiss who have a soft spot for gold. The SNB added insult to injury by acquiring big foreign currency reserves. From 2010 to 2014 it acquired about \$400bn in foreign currencies (of the \$530bn in total reserves). When the financial crisis hit, investors flocked to the Swiss franc, widely seen as a safe haven, pushing up the franc's value:

from 2010 to 2012 it appreciated by about 20% against the euro. The strong franc hurt Swiss exports, so the SNB bought foreign currencies to stop it appreciating.

Annoyed by the SNB's behaviour, activists of the right-wing Swiss People's Party forced a referendum. On 30 Nov. 2014, Switzerland voted on a radical proposal to boost the SNB's gold reserves. Bigger gold reserves, activists argued, would make the Swiss economy more stable and prosperous. The reforms, if approved, would have required the SNB to: (1) hold 20% of its reserves in gold, which would involve the purchase of about 1,500 tonnes; (2) repatriate the 30% of its gold which is held in foreign central banks; and (3) would prevent the SNB from selling any gold again.



Campaigners spoke vaguely of a "gold-backed franc", but one would not have been able to trade in francs for gold bars, nor would there have been a relationship between gold reserves and the francs in circulation. The franc might have strengthened had the Swiss voted Yes by limiting the SNB's ability to influence the currency's value. If it wanted to buy foreign currency to stem its rise, it would have to buy yet more gold to keep to the 20% ratio. That could be expensive and also compound its problems. To support a depreciating franc the SNB would have to offload foreign currency. The proportion of gold in its reserves would rise because selling it would be forbidden. "Gold could end up comprising 100% of Swiss reserves," said Robin Winkler of Deutsche Bank. As the proportion of gold grew, the SNB's profits would fall. Foreign-exchange reserves are typically held in the form of foreign bonds, which earn interest; gold does not. It would have been trickier for the central bank to control the domestic money supply, and thus inflation, says Mr Winkler. The SNB can reduce the money supply by selling reserves of any sort. It would have had less flexibility if a big chunk of its assets were unsellable.

The measure was rejected by 77.3% of the voters and failed to win a majority in any of Switzerland's cantons.

"Setting monetary policy by popular vote: Full of holes", *Economist*, 29 Nov 2014, p. 62.

to sheer economic clout: at its zenith, the British empire encompassed nearly a quarter of the world's people and territory. However, Eichengreen and others⁷ at the University of California, Berkeley, show that this was not a sufficient condition for financial hegemony. The US economy overtook Britain's in size around 1880, yet the dollar was rarely used abroad until after WWI [25].

After 1914, the UK switched from net creditor to net debtor, and by the 1920s the dollar was the only currency convertible to gold (although the pound returned to gold in 1925). Two costly wars and two episodes of currency devaluation in the UK later the dollar was unchallenged as the world's chief reserve currency [26].

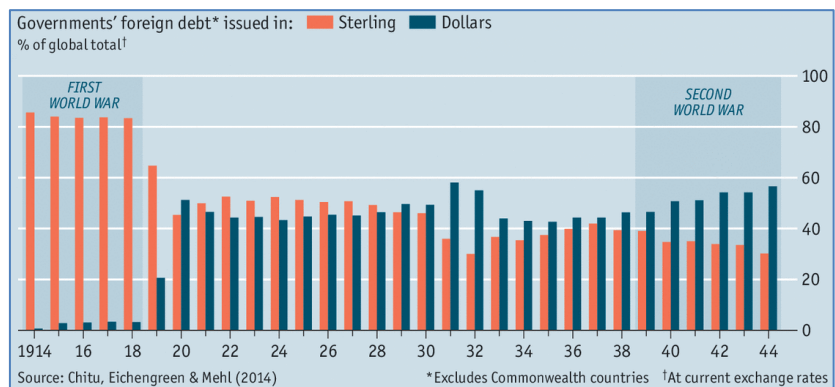
So, how has one currency maintained such dominance? The textbook explanation says that domestic money has three uses: as a unit of account against which the value of goods is measured; as a medium of exchange; and as a store of value (for future consumption). While a local currency does this job in the domestic economy, the dollar provides these services in international markets as well as in the US. It is the unit of account for commodities such as crude oil that are traded globally. Most trade not settled in a currency of the trading partners is quoted in dollars. In addition, because the dollar is the benchmark for world prices and is used to settle cross-border trades, it makes sense for countries to keep stores of dollar reserves. However, only a small fraction of the world's \$4 trillion in foreign-exchange deals each day is to settle trades. The bulk of currency dealing is for hedging or related to trading in stocks, bonds and other assets [27].

A reserve currency's status depends on three gauges of economic dominance: size of economy, exports and net foreign assets [27]. Eichengreen argues that the "size, stability and liquidity" of financial markets are the most important determinants of reserve status. The pound was a reliable store of value, having been freely convertible with gold since the 1820s. It also offered access to London, the world's biggest and most stable financial centre. Kindleberger⁸, another economic historian, noted that sterling's place in the world was bolstered by international co-operation led by Britain: to help deal with destabilising CA imbalances, Europe's central banks co-ordinated monetary policy and extended one another loans [25].

As a result, the dollar only began to supplant the pound after the establishment of the Federal Reserve in 1913, which helped make US financial markets both more liquid and more stable. Soon after, the international co-operation that supported the pound collapsed amid acrimony regarding reparations and war loans following WWI. US government debt issued in dollars rivaled UK debt issued in sterling in 1920 (see chart, government foreign debt) [25].

International reserve currencies

The leading international currency has changed many times in the past 2,000 years, from the Roman denarius via the Byzantine solidus to the Dutch guilder and then to sterling [29]. History offers perhaps only one true example of a reserve-currency shift, from the British pound to the US dollar. The pound dominated the financial world in the late 19th century: more than 60% of trade and 90% of public-debt issuance around the world was conducted in sterling. This owed



⁷ "When did the dollar overtake sterling as the leading international currency? Evidence from the bond markets", Chitu, L., B. Eichengreen and A. Mehl, *Journal of Development Economics* (2014); "The Federal Reserve, the Bank of England and the rise of the dollar as an international currency, 1914-39", B. Eichengreen and M. Flandreau, *Open Economies Review* (2012); B. Eichengreen, "Exorbitant privilege:

the rise and fall of the dollar" (2011); B. Eichengreen and M. Flandreau, "The rise and fall of the dollar (or when did the dollar replace sterling as the leading reserve currency?)", *European Review of Economic History* (2009).

⁸ Charles Kindleberger, *The world in depression, 1929-1939* (1973).

Cost and benefit of managing a reserve currency

As the dollar became the dominant reserve currency, it delivered big economic benefits for the US. The US can pay for imports and borrow in domestic currency and at low interest costs. Foreigners willing to invest in the US or hold US-denominated assets, at any interest rate, means the US can borrow relatively cheaply. US debt is denominated in dollars so the US can repay debts in its own currency (so long as foreigners continue to trust the currency and US policies). This is the major advantage of a reserve currency. A normal debtor country, such as Argentina, usually must borrow in a foreign currency. A depreciation of the peso translates into higher cost of foreign currency debt. If foreigners did not accept the dollar for payments, the US would need to hold more gold and foreign currency in reserve. New York's status as a key international financial centre makes for a more liquid foreign exchange market, also reinforcing the dollar's role as a vehicle currency.

Another advantage is that the US dollar is used to purchase imports. If imports are denominated in dollars, then the US economy is less affected by transactions costs to convert currency and less exposure to exchange rate changes. Those sectors that rely on imported inputs are less affected by changes in the relative value of the dollar to a foreign currency.

However, there is a cost for having the dollar as the reserve currency too. The most obvious is that it can place a constraint on domestic macroeconomic policies (e.g., inflation, exchange rates, interest rates, credit, capital and banking regulations, debt levels, budgetary decisions, employment levels, savings programs, etc.). Basically, anything that can affect the US's asset-liability position can affect foreigners' willingness to accept the US dollar as payment.

Thus, there can be an inherent trade-off between domestic policy objectives and international policy objectives that manifests itself in the dollar's value relative to foreign currency. A stronger or weaker US dollar affects the US economy differently than a foreign country's economy. For example, in times of global trouble, an increase in foreigners' willingness to hold dollars can strengthen the dollar, but the stronger dollar can negatively affect export sectors and hurt the US economy. Keeping the US economy as a safe haven in troubled times could mean the US having to tolerate a bigger recession. In effect, the US as manager of the reserve currency limits its ability to depreciate its currency for macroeconomic purposes.

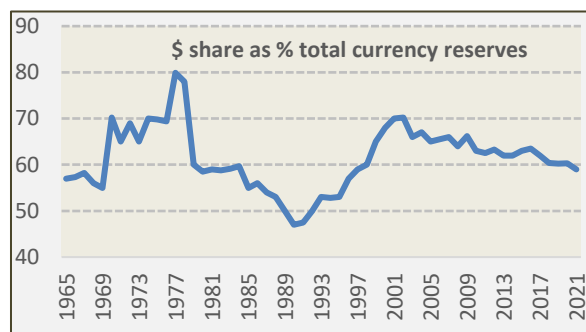
But US policies that affect the dollar's value also have implications for foreign countries. An increase in US budget deficits (or overall debt) might require increases in US interest rates that lead to large capital outflows from foreign countries. This might make foreign currencies cheaper relative to the US dollar, making their exports more competitive, but any dollar denominated debt those countries might have becomes more expensive in local currency terms. Thus, US policies that affect the value of the dollar, can destabilize the macroeconomies of small, open economies.

Challenge to the dollar's role as reserve currency

Despite the dollar's dominance since the second world war, the dollar's share of global foreign-exchange reserves fell from 80% in the mid-1970s to around 65% in the mid-2000s, and below 60% in 2021 for the first time in 25 years (see chart, dollar as share of total reserves). Though, if dollars hoarded by China and Middle Eastern oil exporters are factored in (not included in the IMF breakdown of official reserves), then the dollar's share may have been higher than reported since 2000 [28] [29]. However, the longer-term perspective suggests that while the dollar's value has been relative unchanged, the US dollar's share of reserves has declined, suggesting that central banks have shifted away from the US dollar.

Does the dollar really risk losing its status as the world's main currency? The same question was asked in the early 1990s after

the dollar's previous long slide, but the dollar's pre-eminence survived. Then, however, there was no alternative to the dollar. With the euro in 1999 came a rival currency, and before the euro crisis, it was the likeliest challenger to the dollar [28].



Reserve currencies need to have a large, open home economy with a large share of global output and trade, and well-functioning financial markets, low inflation, and confidence in the value of the currency. In the early 2000s, the US economy still dominated, but the euro area was not much smaller. The euro area had slower real GDP growth than the US, but in dollar terms the euro area's economic weight grew relative to the US's from 2000 to the GFC (see chart, US – euro area comparison). In 2007, the euro area's total trade with the rest of the world was about as big as the US's; with half of the trade invoiced in euros; and the euro-area combined was the world's biggest exporter [28].

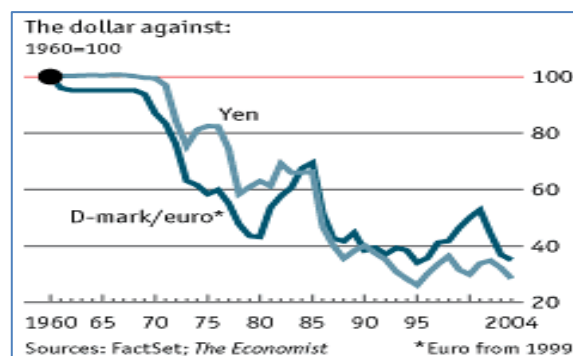
	United States	Euro area
GDP, \$trn	11.6	9.5
Foreign-exchange market turnover, % of total	43.0 (in \$)	18.5 (in €)
Stockmarket value, \$trn	15.6	13.7
Currency in circulation, \$bn	821	895

Sources: BIS, ECB, IMF DoTS, Thomson Datastream

The financial market of the reserve currency country must also be deep, open and well developed. The creation of the single currency helped integrate Europe's financial markets, making them deeper and more liquid. A limiting factor of the euro is the question of how much trust investors can put into a currency with no central fiscal authority to stand behind it [28].

The role for the dollar as an international means of exchange is entirely different from its role as a reserve currency. Reserves are held to buttress confidence in a country's own currency, not as a float for global trading. As a backstop, reserves need to be easily convertible (so they can be used as an emergency source of liquidity) and a good store of value. The dollar, with its large and liquid capital markets, meets the first criterion [28].

Where the dollar has failed is as a store of value. From 1960 until the mid-2000s, the dollar has fallen by around two-thirds against the euro (using Germany's currency as a proxy before 1999) and the yen (see chart, the dollar) [29]. In the mid-1990s, the dollar's value against the basket of leading currencies



tracked by the US Federal Reserve was at an all-time low. Against a broad range of currencies, the dollar lost a quarter of its value during 2002-07. Its decline has been especially marked against the euro. At one point in 2002 the euro was worth 86 cents; in late 2007 it bought \$1.48 [28].

That currencies rise and fall and test records is hardly unusual. What lends the dollar's decline an air of crisis is that the world's bloated currency reserves are crammed with depreciating dollar assets. Foreign-exchange stockpiles almost tripled to \$5.7 trillion since 2000. In 2007, China alone had \$1.4 trillion of reserves and Japan's accumulated another \$1 trillion [28].

Those bearish on the dollar ask why investors would want to hold the assets of a country that had, by its own actions, jeopardised its reserve-currency position. Before the financial and euro crises, the euro area was a net creditor, unlike the US. Never before has the guardian of the world's main reserve currency been its biggest net debtor. A debtor may be tempted to use devaluation to reduce its external deficit—hardly a desirable property for a reserve currency [29].

The US deficit is at the heart of this issue. Various economists have put forward at least four arguments why the deficit does not matter and the dollar's reserve status is safe. First, the deficit is a sign of the US's economic might, not a symptom of weakness. Second, sluggish demand overseas is a big cause of the deficit, so it is reversible. Third, the deficit exists largely because of multinationals' overseas subsidiaries. Fourth, central-bank demand for dollars creates, in effect, a stable economic system. It is not difficult to demolish each argument in turn [29].

The first argument, favoured by the US Treasury, claims that foreigners want to invest in the US because it offers higher returns than Europe or Japan. If the US runs a capital-account surplus, it must, by definition, run a CA deficit. There may have been some truth to this argument in the late 1990s, when the US enjoyed large net inflows of foreign direct and equity investment, but in the mid-2000s, there was a net outflow of such long-term investment from the US. Moreover, the US had lower returns on FDI, equities and bonds than Europe or Japan [29].

The CA deficit was financed by foreign central banks and short-term money. In the year to mid-2004, foreign central banks financed as much as three-fifths of the US deficit. That purchase of reserves by central banks was unprecedented: reserves rose by \$1 trillion in just 18 months when the previous addition of \$1 trillion to official reserves took a decade. These purchases of dollars had nothing to do with the returns in the US, but were aimed at holding down the currencies of the purchasing countries [29].

Worse still, capital inflows into the US were financing not productive investment (which would boost future income), but a consumer-spending binge (and a housing boom) and a growing budget deficit. A CA deficit that reflected a lack of saving is hardly a sign of strength [29].

The second argument is that sluggish demand in the rest of the world is to blame for the US external deficit. If Asia and Europe saved less, spent more and imported more from the US, it was argued, the US deficit would simply vanish. M. Barnes, economist at the Bank Credit Analyst, a Canadian investment-research firm, reckons that this was exaggerated⁹. In 2001, when domestic demand did grow slightly faster in Europe and Japan than in the US, the US deficit barely budged [29].

The problem is that US imports were 50% bigger than its exports, so if exports and imports simply grew at the same pace,

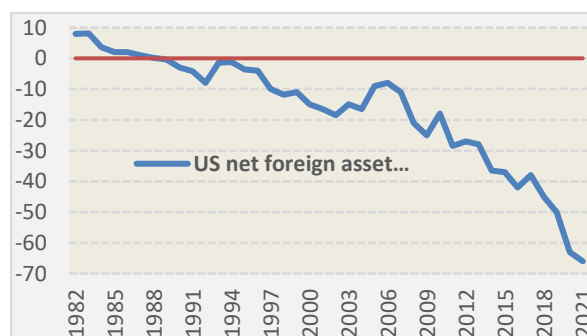
the trade deficit would automatically widen. If imports rise by, say 10%, then exports need to grow by 15% just to prevent the deficit from widening. This means that while stronger foreign demand would undoubtedly help, it would be virtually impossible for the US to reduce its deficit significantly through stronger exports alone [29].

The third argument is that fretting about the CA deficit is outmoded because a large slice of the deficit reflects transactions between US multinationals and their foreign subsidiaries. Thus, it is claimed, importing an IBM computer from China is not the same as importing a Toshiba from Japan. Outsourcing by US firms boosts their profits. The problem with this argument, Mr Barnes notes, is that the total trade between multinationals and their foreign subsidiaries still creates a deficit even allowing for the return of profits and dividends, and this gap must still be financed by borrowing from abroad [29].

Last is the notion that the world enjoyed the equivalent of the Bretton Woods system (the system of fixed exchange rates after WW2), in which Asian governments happily bought Treasury bonds that financed the US deficit to maintain cheap currencies to support their own export-led growth. In turn, Asia's purchases of bonds held down interest rates in the US, which supported consumer spending and imports. This cycle, perpetuated the imbalances [29].

One big difference is that under the original Bretton Woods system the US ran a CA surplus and the dollar's value was officially pegged to gold. Under continuous deficits financed by reserves, some Asian central banks worry about the value of their dollar reserves. To sustain that current arrangement, they would have to keep buying more and more dollars as the US CA deficit widened. This exposes Asian central banks to enormous potential losses in local-currency terms should their currencies appreciate against the dollar. It would be prudent to diversify their reserves, but that could send the dollar tumbling. Larry Summers, a Treasury secretary under President Clinton, called this the "balance of financial terror": in effect, the US relies on the costs to Asian central banks of not financing its deficit as assurance that financing continues indefinitely [29].

Economists worry about the US CA deficit and a plunge in the dollar's value. The dollar fell sharply in the late 1980s, but with few ill effects on the economy. So why worry? One reason is that the CA deficit ran at close to 6% of GDP in the mid-2000s, almost twice as big as at its peak in the late 1980s. Second, in the 1980s the US was still a net foreign creditor. In the mid-2000s net foreign liabilities were approaching 30% of GDP by the mid-2000s (see chart, US net foreign assets) [29]. The net foreign asset position of a country reflects the level of indebtedness of the country (i.e., the value of assets owned abroad less the value of domestic assets owned by foreigners at home), which has steadily worsened after 2010. This could also reflect that Americans were earning moderate returns from foreign assets, while foreigners were earning high returns on US assets (i.e., the US stock market had much stronger returns).



⁹ "Re-assessing the Dollar Outlook" by Martin Barnes, *The Bank Credit Analyst*, December 2004.

Foreign creditors carry the currency risk on the US's trillions worth of gross liabilities. The US, by contrast, can see its net foreign investment position improve as the dollar declines, because this boosts the dollar value of overseas assets. This makes devaluation an attractive option for the US, but doing so would undermine confidence in the dollar [29].

Confidence in the value of the currency and its role in maintaining the world order are also important requirements, and this is where critics of the dollar have taken aim. Eichengreen argues in another paper¹⁰ that whether the dollar retains its reserve-currency role depends mostly on US policy. If the US allows its large CA deficit to persist and its net foreign liabilities to rise, foreigners will become less willing to hold more dollars. The more foreign debt that is run up by the US, the greater is the risk that it will partly default on its obligations, either through currency weakness or inflation. US public debt and dysfunctional government only weaken confidence. The dollar would depreciate, creating inflationary pressure in the US and making dollar reserves less attractive—even if the Federal Reserve raised interest rates [26]. Devaluations of the pound and exchange controls after WWII terminally damaged sterling's reputation for reliability and stability [25].

There is no reason why a single currency should dominate reserves as the dollar has. The dollar could share its status if other currencies become more attractive. The preference to stick with the dominant currency could secure the greenback's position for some time. M. Chinn, of the University of Wisconsin, and J. Frankel, of Harvard¹¹, estimated the importance of these factors in determining the shares of different currencies in the world's total reserves. They take "network externalities" into account: the tendency of each monetary authority to favour the dominant currency because all others do. The dollar's favoured position in international trade owes something to this network effect [26].

Global markets in commodities are priced and transacted almost exclusively in dollars, because it is convenient for buyers and sellers. The competing pressures of supply and demand set the oil price: the dollar is just an easy way of keeping score. The convention of quoting in dollars is often employed when the currency of one or more trading partners is not used. Once such a standard is set, there are costs to shifting to a new one, but the network effect over time can still weaken [26].

The fear that the dollar could be swiftly supplanted as top dog is based on the idea that one currency will always have a near-monopoly: if everyone holds dollars chiefly because everyone else does, you could imagine how a falling share of global reserves might reach a point when central banks all suddenly switch to a new currency standard [26].

So when will the yuan rival the dollar? What effect could it have if China's currency vies with the dollar for global pre-eminence? Scholars have looked for clues in the transition from the pound to the dollar, but that took place during a very different context. The dollar and the pound were both convertible into gold at fixed rates, making the leap of faith for those switching from one to the other less risky. The shift from the pound to the dollar reflected a passage of economic power, one that had started many decades earlier, between two allies with shared democratic values and economic ideas. Today's reserve currencies are not backed by gold, their value more slippery—a function of supply and demand. And, China is a possible adversary, governed by an autocratic regime with a statist approach to the economy [36]. Moreover, the geopolitical order framed by the current multilateral institutions (IMF and World Bank) that underpin the financial system is under serious challenge. Washington's willingness to use the dollar and the financial system as instruments of its foreign policy to

impose economic sanctions has spurred efforts by some governments to reduce dependence on the dollar and finding alternatives to the dollar. This is witnessed by Russian-China trade being settled in yuan, for example.

As China's economy becomes biggest (in 2014 it was in terms of purchasing power) [25], many expect the currency to match its status, able to challenge the dollar's dominance in the global monetary system. China has made efforts to promote the use of the yuan in international transactions. Eswar Prasad, at Cornell University and author of *The Dollar Trap*, noted assessed three aspects of the yuan's internationalization [27].

The first began in 2009 when China became the world's biggest exporter, as the yuan was used to settle trade and financial deals. By 2015, the yuan was reckoned to be the 5th-most-used currency in the world [27]. It ranked 8th-most used for both international bond issuance (about 0.6% of global debt securities were denominated in yuan) and cross border payments (1% of world total), and 11th in global currency trading (0.8% of currency transactions in the global currency spot markets in 2013) [30] [31]. On the second, liberalizing the capital account had barely been started in 2015. This involves making the yuan freely convertible with other currencies at market rates. Without convertibility, much deeper domestic financial markets and a floating exchange-rate, the yuan cannot achieve the third essential—functioning as a global reserve currency, like the dollar, euro, yen, sterling or Swiss franc [27].

But China has been building a network for yuan-trading hubs around the world: Singapore, London and Frankfurt with New York the glaring exception. The Hong Kong and Shanghai stock exchanges were allowed to settle trades in yuan. China's central bank signed swap arrangements with more than 20 countries. The market in yuan-denominated "dim sum" bonds issued offshore (mainly in Hong Kong) grows. The US has not tried to thwart the yuan's rise, except for when the US tried, unsuccessfully, to persuade its allies to stay out of the Asian Infrastructure Investment Bank, launched by China [36] [27].

The yuan's exchange rate has been tightly managed, to the irritation of trading partners, which believed it was kept artificially cheap. China maintains tight capital controls and still pressures banks to extend financing to state-owned enterprises on favorable terms. Nevertheless, in 2016 the IMF granted the yuan global reserve currency status to encourage reform and liberalization [27]. While the currency is still managed, there is much greater flexibility and the authorities seek currency stability on a trade-weighted basis without a fix on the dollar.

The share of Chinese cross-border trade settled in yuan rose from nothing in 2009 to 22% in 2014. Economists started talking of an emerging "yuan bloc", encompassing China, Hong Kong, Taiwan and the ten members of the Association of South-East Asian Nations. Some 50 central banks held reserves in yuan, but only in small amounts. Foreigners hold \$200 billion in Chinese stocks and bonds; they had 80 times more in US securities [36] [27]. At the start of the 2020s, the yuan was a small on the global stage, but at the start of the 20th century, so was the dollar.

Economic historians re-examine sterling's downfall, in search of clues about how the impending tussle between the dollar and the yuan might unfold. The research yields lessons in three broad areas—how a currency attains reserve status, whether a two-currency system is possible, and how poor policymaking can speed a currency's decline [25].

¹⁰ "Sterling's Past, Dollar's Future: Historical Perspectives on Reserve Currency Competition". NBER Working Paper No. 11336: www.nber.org/papers/w11336.

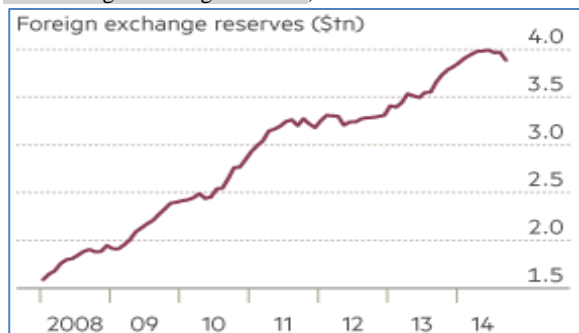
¹¹ "Will the Euro Eventually Surpass the Dollar as Leading International Reserve Currency?" NBER Working Paper No. 11510: www.nber.org/papers/w11510.

“Turning away from the dollar”, by J. Kynge and J. Noble, *Financial Times*, 10 Dec 2014, p. 7.

In the mid-2010s, capital flowed more freely out of China, and the channels and the destinations of that flow shifted in response to market forces and changes in Beijing. Deutsche Bank referred to this as an “age of Chinese capital”, raising the prospect of fundamental changes in world finance.

Three big, inter-related changes were under way: (1) a waning of China’s appetite for US Treasury bonds, a feature of the global economy since 2000; (2) Beijing’s overseas development agenda to boost financial returns and serve key geopolitical interests; and (3) the promotion of the renminbi as an international currency liberating Beijing from the dollar zone and opening up to more foreign portfolio investment flows.

The reorientation strategy away from Treasuries intensified after Premier Li Keqiang announced financial reform. One task was the redeployment of China’s \$3.9tn in foreign currency reserves, much of which since 2000 was recycled into Treasuries, helping to keep US interest rates low and underpin economic growth in the west. The reform calls for: “Better use of China’s foreign exchange reserves to support the domestic economy and the development of an overseas market for Chinese high-end equipment and goods” (see chart foreign exchange reserves).



Source: Haver Analytics

A senior Chinese official noted, “We want to use reserves more constructively by investing in development projects around the world rather than just reflexively buying US Treasuries. We usually lose money on Treasuries, so we need to find ways to improve our return on investment.”

Some say China is effectively locked into steady purchases of US Treasuries, a product of Beijing’s earlier intervention in currency markets to keep the renminbi cheap, because any sell-down of its huge holdings could send prices of Treasuries into a tailspin, reducing the value of Beijing’s position. However, the tapering of China’s Treasury purchases was evident after 2011 (see chart, Chinese holdings).



Structural forces were driving the changes. “There will be smaller Chinese current-account surpluses in the future because of greater Chinese spending overseas on tourism and

services and greater spending power at home may lead to more imports,” says Jan Dehn, head of emerging market research at the Ashmore fund. Not only was China’s desire to buy US debt diminishing, so is its ability to do so.

Rewiring global finance

What is clear is that Beijing was diversifying the deployment of its foreign exchange reserves. In 2013, it created three international institutions dedicated to development finance: the Shanghai-based New Development Bank along with Brazil, Russia, India and South Africa; the Asian Infrastructure Investment Bank and the Silk Road Fund. Each is designated to receive funding from foreign currency reserves. The \$40bn Silk Road Fund, 65% funded from reserves, demonstrates Beijing’s ambitions clearly. The fund is charged with achieving Mr Xi’s Belt and Road Initiative. “By building roads and railways over its borders and upgrading Asian ports, Beijing was tying its neighbours’ prosperity to their relationship with China,” says Tom Miller, senior Asia analyst at Dragonomics, a consultancy. “It is an attempt to restore China’s position at the heart of Asia.” The infrastructure work will directly benefit the big Chinese construction and equipment companies that are awarded contracts financed by China-backed institutions. This should boost China’s chances of realising Mr Xi’s aim that Chinese firms invest some \$1.25tn overseas during the next decade.

China’s pursuit of investment programmes would not longer require banking most of its surplus savings in US Treasuries. China does have alternatives to maintaining their attachment to the US dollar, which can present a long-term threat to the dollar’s status. The drive to internationalise the currency stems from a desire to carve out China’s own space within a US-dominated global financial system. The outbreak of the global financial crisis in 2008 accelerated the process of settling trade in renminbi (issuance) as policy makers in Beijing realised their economy’s fate was umbilically linked to that of the US.

Yuan and IMF’s inclusion in SDRs status

In 1969 the IMF created Special Drawing Rights (SDR). They were intended to reduce the world’s dependence of dollars at a time when many currencies were tied to the dollar, which in turn was tied to gold. When too few dollars circulated in the world economy, perhaps as a result of the US spending less on imports, countries would hoard dollars to defend their pegs, and global commerce ground to a halt. But creating enough dollars to satisfy the global demand for reserves imperiled the credibility of the dollar’s peg to gold. The SDR would provide an alternative reserve asset, escaping from this dilemma. SDRs never made much headlines; the need for them was less pressing after the US untethered the dollar from gold in 1971 [33].

The SDR is an artificial accounting unit on the margins of the global financial system. Technically, SDRs are an international reserve asset that helps maintain balance between countries with big external liabilities (deficits) and those flush with cash (surpluses). In practice, countries rely more on capital markets and hard currencies to cover their obligations, but the IMF does allocate some of its SDRs to its members, who can swap it for their constituent parts to make external payments [31].

The IMF manages SDRs by conducting five-year reviews of the basket of four currencies that form its value (i.e., the US dollar, euro, pound and the yen). In 2014, it considered bringing the Chinese yuan into the basket (see chart, currency weights for SDR) and included it in 2016 [30] [31]. That the yuan even qualified for reserve currency consideration in 2014 was surprising to many.

The IMF countered that “freely usable” refers to whether a currency is widely used in international transactions and widely

traded in global markets. Full convertibility helps a currency meet these standards but is not a prerequisite for SDR status. Few goods or services are priced in SDRs. If they were priced in SDRs, then the IMF's decision would have forced companies around the world to buy yuan-denominated assets as soon as possible, to hedge their exposure. Thus, admission to the currency club was mainly for its symbolism: the IMF lent its imprimatur to the yuan as a reserve currency—a safe, liquid asset in which governments can park their wealth [34].



Nevertheless, inclusion in the SDR deepened expectations that China would let market forces decide the yuan's exchange rate. To bring the yuan into the SDR, the IMF asked China to make the necessary change to its currency regime to make it "freely usable". The PBOC was under more pressure to manage the yuan as central banks in most rich economies do their currencies—by letting market forces determine their value. Reformists in China saw currency liberalisation much as they did WTO accession in the late 1990s: a way external pressure could force powerful domestic lobbies to reform. SDR status would improve China's financial system, which lacks both depth and respected regulators. In particular, reformers hoped to force banks to compete for savings in a system that had, by keeping deposit rates low, penalised small savers in favour of big state-owned corporate borrowers, and inflated a property bubble [27] [34].

China now ties the yuan's exchange rate at the start of daily trading to the previous day's close; in the past the starting quote was in effect set at the whim of the PBOC, often creating a big gap with the value at which it last traded. Every morning, market makers such as the big state-owned banks submitted yuan-dollar prices to the PBOC. It then averaged these to calculate a "central parity" rate, or midpoint. Over the course of the day, the PBOC intervened to keep the exchange rate from straying more than 2% above or below the midpoint [35].

In theory, it was the market makers, not the PBOC that set the midpoint, and thus the trading band. In practice, the PBOC got market makers to submit rates that would yield its preferred midpoint rate, irrespective of market sentiment (state-owned banks are pliant, after all). Critics in the US and elsewhere had long alleged that China manipulated the market in this way to keep its exchange rate cheap. They had a point up until 2012 or so. However, for much of 2014-15, the PBOC in fact tipped the scales in the opposite direction, preventing a depreciation even as the Chinese economy weakened and the dollar surged (see chart, trade-weighted exchange rate). In early 2015, trading of the yuan regularly swung towards the weak end of the 2% band, but the PBOC nudged it back up by orchestrating stronger midpoints [35].

It was the elimination of the band in August 2015 that lay behind the yuan's 2% devaluation, a move that rattled global markets. Though the yuan is still far from being a free-floating currency—the PBOC has since intervened to prop up the yuan—the cost of such intervention is now higher. The PBOC must spend real money during the trading day to guide the yuan to its desired level. The decline in China's foreign-exchange

reserves, from a peak of nearly \$4 trillion in 2014 to \$3.5tn in 2015 is a reflection, in part, of the PBOC's selling of dollars was to support the yuan [34].



The US has good reason to worry about a rival yuan. A credible alternative to the dollar would undermine a cornerstone of US power. Sanctions against Iran and North Korea have had bite because of the dollar's centrality to global finance. The dollar's political leverage will dissipate as the yuan goes global. China is already close to launching a system for processing cross-border yuan payments. Although described blandly as a platform for facilitating transactions, its consequences could over time be far-reaching. It will allow banks and companies to move money around the world on a financial superhighway delinked from the dollar [36].

The US will find it far harder to track who is using the China International Payment System (CIPS) and for what. The threat of exclusion from the US financial system will lose its force, and China would have a new tool to propagate its way of thinking. When heads of state meet the Dalai Lama, the Tibetan spiritual leader regarded by China as a separatist, they may find their banks placed on the CIPS blacklist. This tactic would damage the yuan's standing if used too liberally, but the mere threat of punishment might be enough for China to get its way [36].

But there are also downsides. Demand for the dollar as a reserve asset means the currency is stronger than it would otherwise be, making it harder for US exporters to compete. McKinsey found this lops as much as \$60 billion off GDP. Net, the US still gains 0.3-0.5% of GDP a year thanks to the dollar's status [36].

When the yuan rivals the dollar, China will eat into this pie. Investors from other countries might sell off dollar assets since they would have alternatives in the yuan; this would drive up US interest rates and weaken the economy. Researchers have shown that the Fed can mitigate but not fully counteract this effect by buying the bonds sold by foreigners. The upshot is that the US would have to work harder to retain the confidence of global investors, perhaps leading it to rein in government debt [36].

However, the changes required of China are even more dramatic. In his account of how the dollar remained the world's pre-eminent currency despite being at the centre of the global financial crisis, Mr. Prasad explains that its strength resides in US institutions. Deep financial markets, a robust legal system and a generally transparent political process underpin the dollar. Faith in these make the US and its currency a haven [36].

China would have to build a similar complement of institutions to persuade investors that the yuan is as reliable. It would need to make its currency truly convertible, stop intervening in its exchange rate and build a big, liquid, transparent bond market. Heavy-handed intervention to prop up stocks when they recently crashed shows how far China is from developing a mature financial system. China would also, like the US, need proper rule of law. This would require allowing courts to go against the wishes of the Communist Party, something

unthinkable for now. And through all this, China needs to keep its economy marching forward. Stagnation would undermine the yuan's appeal [36].

If China somehow accomplishes all that, a global monetary system with multiple poles could in theory engender greater economic stability. The US and China might compete to make their respective currencies more attractive by demonstrating sound fiscal and monetary policies. The exorbitant privilege would become an extraordinary responsibility, but there would also be "more room for friction and accidents" [36].

As of 2020, there had been only three allocations of SDRs, the most recent in 2009. They make up less than 3% of non-gold reserves to the dollar's half. In 2009, \$183bn were issued to help fight the GFC. But Ousmene Mandeng of Economics

Advisory, a consultancy, finds that emerging markets (excluding China and members of the EU) swapped just 1.9bn for cash in 2009-10. As a source of liquidity, though, SDRs have their advantages. They are not a true currency, as they can be exchanged only between IMF members and not in private markets. When a country faces a liquidity crunch, they can offer cash-rich countries SDRs in exchange for hard currency. They must pay interest at a rate of 0,05%, on the amount of their SDRs they choose to convert, making exchanging an SDR like drawing an emergency overdraft. Opposition to SDRs is the belief that the IMF should not be printing money (when converted, SDRs increase the amount of cash in circulation). However, SDRs do not have to be used to be useful. Their very presence on balance-sheets frees up dollars [33].

To those who argue that even a weakening US dollar cannot lose its status as the world's dominant currency because there is no alternative should take a rethink. Countries are already seeking an alternative. Gold is one example. Central banks are buying more gold than at any time since data was kept in the 1950s. Central bank buyers and Nine of the top 10 central bank buyers are in the developing world, including Russia, India and China. Not coincidentally, these three countries are in talks with Brazil and south Africa about creating a new currency to challenge the dollar. Their immediate goal: to trade with one another directly, in their own coin [37].

The oldest and most traditional of assets, gold, is now a vehicle of central bank revolt against the dollar. So, why are emerging nations rebelling now, when global trade has been based on the dollar since the 1950s? Because the US and its allies have increasingly turned to financial sanctions as a weapon. Astonishingly, 30% of all countries now face sanctions from the US, the EU, Japan and the UK – up from 10% in the early 1990s. With the all-out sanctions against Russia since its invasion, Russian banks have been cut off from the dollar-based global payment system. It was clear than any nation could be a target [37].

The risk for the US is that its over-confidence grows, fed by the no alternative story. That narrative rests on global trust in US institutions and rule of law, but this is exactly what weaponising the dollar has done so much to undermine [37].

References:

- [1] *Economist*, "Free exchange: Why is macroeconomics so hard to teach?", 11 Aug 2018.
- [2] *Economist*, "Free exchange: Radiant energy – If America's economy runs hot, what happens to the rest of the world?", 20 Feb 2020.
- [3] *Economist*, "Economics focus: In defence of deficits", 16 Dec 1995, p. 68-9.
- [4] *Economist*, "Facts behind the figures", 18 Sep 2003.
- [5] *Economist*, "Economics of saving: The shift away from thrift", 7 Apr 2005.
- [6] *Economist*, "Don't blame the savers", 16 Sep 2005.
- [7] *Economist*, "Taming Leviathan", Special report on the future of the state, 19 Mar 2011, p. 3-6.
- [8] *Economist*, "Global savings: Too much of a good thing", 5 Feb 2022, p. 16-8.
- [9] *Economist*, "Stimulus v austerity: Sovereign doubts", 28 Sep 2013.
- [10] *Financial Times*, "Don't believe everything you hear about global imbalances", by M. Wolf, 29 Mar 2006, p. 13.
- [11] *Financial Times*, "Two Cheers for China's Rebalancing", by M. Wolf, 4 Apr 2012, p. 4.
- [12] *Economist*, "Special report on the world economy, The hamster-wheel", 3 Oct 2009.
- [13] *Economist*, "Free exchange: A reasonable supply", 30 Nov 2013.
- [14] *Economist*, "Free exchange: Capital controversy", 14 Apr 2012, p. 71.
- [15] *Financial Times*, "China's great economic shift needs to begin", by M. Wolf, 20 Jan 2016, p. 9.
- [16] *Economist*, "Free exchange: Petrodollar profusion," 28 Apr. 2012.
- [17] *Economist*, "Free exchange: Lean on me", 2 Apr 2016, p. 66.
- [18] *Financial Times*, "The German model is not for export," by Martin Wolf, 7 May 2013, p. 7.
- [19] *Economist*, "Briefing: The German Economy", 8 Jul 2017, p. 14-16.
- [20] *Financial Times*, "Current account targets are a way back to the future", M. Wolf, 3 Nov 2010, p. 11.
- [21] *Economist*, "Economics focus: Losing the Midas touch", Nov 20, 1997, p. 74.
- [22] *Economist*, "Official reserves", 31 Jan 2008.
- [23] *Economist*, "Import cover", 2 Aug 2014.
- [24] *Financial Times*, "Central banks go for gold as geopolitical strains force strategy shift", D. Mosolova, 24 Apr 2023, p. 4.
- [25] "Free exchange: Taking a pounding", *Economist*, 3 Oct 2015, p. 72.
- [26] "Currency competition", *Economist*, 29 Sep 05.
- [27] *Economist*, "Banyan: The red and the green", 26 Apr 2014.
- [28] "Losing faith in the greenback", *Economist*, 29 Nov 07.
- [29] *Economist*, "Special report: The future of the dollar: Passing of the buck?", 2 Dec 2004, p. 71-3.
- [30] *Economist.com*, "The yuan and the SDR: China knocks of the reserve-currency door", 5 Aug 2015.
- [31] *Economist*, "The yuan and the SDR: Feeling special", 7 Nov 2015, p. 68.
- [32] *Economist*, "Free exchange: Special delivery", 11 Apr 2020, 59.
- [33] *Economist*, "The yuan joins the SDR: Maiden voyage", 5 Dec 2015, p. 65.
- [34] *Economist*, "The devaluation of the yuan: The battle of midpoint", 15 Aug 2015, p. 63-4.
- [35] *Economist*, "If the yuan competes with the dollar: Clash of the currencies", special section, The World If, 1 Aug 2015, p. 8-9.
- [36] *Financial Times*, "What strong gold says about the weak dollar", R. Sharma, 24 Apr 2023, p. 21.