

# ECN320 SRP for session 6. Fiscal and Monetary Policy

## FISCAL POLICY AND INSTRUMENTS

### Introduction

Fiscal policy involves decisions on government spending and revenue collection (i.e., taxation). Those decisions have implications for the national budget, whether the government runs a budget deficit or surplus (i.e., government savings), and the nation's net asset/liability position, whether or not the government maintains internal debt or external debt (i.e., the amount owed to foreigners).

So, how should a country determine its fiscal objectives? The answer involves acknowledging what the decisions are intended to achieve in terms of: spending or saving (i.e., public consumption versus social welfare, and investment); taxation (i.e., the rate, basis and methods of revenue collection, and redistribution of income); budget management (i.e., the relationship of the budget to GDP growth, employment, the business cycle and other macroeconomic considerations); and the external position (i.e., the relation between domestic and foreign imbalances).

### The government's role: changing views on public debt

John Maynard Keynes, who more or less founded the study of macroeconomics, was in favour of governments borrowing lots of money, under certain circumstances. Keynes's ideas about borrowing reflected his view of recessions, and the Depression of the 1930s in particular. The "New Keynesian" orthodoxy that evolved from his work in the 2<sup>nd</sup> half of the 20<sup>th</sup> century was much less liberal in terms of government borrowing and had greater concerns of the dangers of its debt. With the GFC, the pendulum in thinking swung back. Bereft of other options, many governments borrowed heavily [a].

Recessions come about when the economy is hit by a sudden rise in the desire to save money; such desires lead to lower spending, which leads to more unemployment, which leads to yet less spending, and so on [a]. Firms and families save too much because of financial uncertainty or because they rush to "deleverage" – to reduce the ratio of their debts to their assets [c]. If the government borrows enough to offset lower private spending with increased spending of its own the circle can be broken – or stopped from getting going [a].

Early Keynesians assumed that the deficits caused by borrowing to stimulate the economy would be temporary; after borrowing more than they raised in taxes to provide a fiscal stimulus, governments would be able to raise more in taxes, and thus pay off their debts, in the good times that followed. Some, though, suspected that the structure of the advanced economies of the 1930s might mean they were low on demand even in the good times, and that a permanent deficit might be necessary to keep the economy going at a rate that minimised unemployment [a].

Debates about the proper role of fiscal stimulus became less urgent in the decades after the second world war, as robust economic growth eased worries that demobilisation might bring a return of Depression-like conditions. Faith in Keynesian orthodoxy was further shaken by the economic developments of the 1970s and 1980s. Some economists began to argue that the public would eventually adjust to stimulus measures in ways that weakened their impact. Robert Barro, a leading proponent of this "rational expectations" approach, argued that a fiscal stimulus paid for by borrowing would see households spend less and save more, because they would know that tax rises were coming. This decreased private spending would then offset the increased public spending [a].

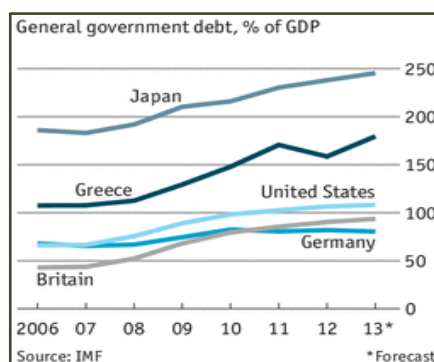
By the 1970s, the ways in which Keynesian governments had been running their economies seemed to have failed. A trifecta of slowing growth, soaring inflation and high unemployment brought the idea of governments being able to avoid recessions

through stimulus into disrepute [a]. Fiscal stimulus through spending or tax cuts was an obsolete relic [b]. The new orthodoxy was that governments should instead rely on monetary policy. When the economy slowed, monetary policy would loosen, making it cheaper to borrow, thus encouraging people to spend. Government borrowing, for its part, should be kept on a short leash. If governments pushed up their debt-to-GDP ratio, markets would become unwilling to lend to them, forcing up interest rates willy-nilly. The usefulness of monetary policy demanded a sober approach to fiscal policy [a].

The 2000s, however, saw a problem with this approach was coming into plain sight. In normal times, central banks try to spur growth by adjusting interest rates to discourage saving and encourage borrowing. From the 1980s, interest rates had been in a long, steady decline. By the 2000s they had reached historical lows, making it harder for central banks to stimulate economies by cutting them further [a]. In early 2009, during the GFC, most central banks had reduced their main interest rate almost to zero without the desired result. Over-indebtedness, some surmised, might have been preventing people from borrowing despite low interest rates. More government borrowing and spending (or taxing less), Keynesians reckoned, would put excess saving to work [5].

The deep recession spurring government into action led to a surge of government debt. In 2009 many countries rolled out big packages of tax cuts and extra spending to buoy growth. This stimulus amounted to 2% of GDP, on average, among members of the G20 club of big economies. Among President Obama's first step in 2009 was to sign the American Recovery and Reinvestment Act, a stimulus plan worth \$831bn, or almost 6% of that year's GDP, to be spent over three years [c].

Yet fiscal stimulus is needed most when governments already have extra costs to bear. From 2007 to 2010 rich countries saw the ratio of their gross sovereign debt to GDP spike from 74% to 101% on average. UK public debt jumped from just 44% of GDP to 79%, while the US's leapt from 66% of GDP to 98%. Japan's rose to above 200% and Greece's soared by 40 percentage points to 148%. Greece's deficit was so high that when the government revealed it, the admission set off a crisis of confidence in public finances in southern Europe, and thus in the viability of the euro itself (see charts, general government debt) [5].



However, fiscal stimulus was not the main reason debt piled up: the biggest drag on public finances came from lower tax receipts, thanks to weak profits and high unemployment. Financial bail-outs added to the fiscal toll, as did "automatic stabilisers"—measures like unemployment benefits that automatically raise spending and support demand when recession strikes. The International Monetary Fund (IMF) estimated that almost 60% of the rise in government debt since 2008 stemmed from collapsing revenues, more than twice the cost of stimulus and bail-outs combined [5].

Governments experimented with more radical monetary policy, such as the form of money printing known as "quantitative

easing". Their economies continued to underperform. There seemed to be room for new thinking, and a revamped Keynesianism sought to provide it. In 2012 Larry Summers, a former US treasury secretary, and Brad DeLong, an economist, suggested a large Keynesian stimulus based on borrowing. Thanks to low interest rates, the gains it would provide by boosting the growth rate of GDP might outstrip the cost of financing the debt taken on [a].

In 2013 Mr Summers followed some 1930s Keynesians, notably Alvin Hansen, in suggesting that borrowing to stimulate might be needed not just as an occasional pick-me-up, but as a permanent part of the economy. Hansen had argued that an ageing population and a low rate of technological innovation produced a long-term lack of demand which he called "secular stagnation". Mr Summers took an updated but similar view. Part of his backing for this idea was that the long-term decline of interest rates showed a persistent lack of demand [a].

Sceptics insisted that such borrowing would drive interest rates up. But as years went by and interest rates remained stubbornly low, the notion of borrowing for fiscal stimulus started to seem more tenable, even attractive. Very low interest rates mean that economies can grow faster than debt repayments do. Negative interest rates, which were experienced in some countries, mean that the amount to repay will actually be less than the amount borrowed [a].

Adherents of "Modern Monetary Theory" (MMT) went further, arguing that governments should borrow as much as needed to achieve full employment while central banks focused simply on keeping interest rates low—a course of action which orthodox economics would expect to promptly drive up inflation. MMT remains on the fringes of academic economics but gained traction on left-leaning politicians [a].

The shift in mainstream thinking on debt helps explain why the huge amounts of government borrowing with which the world responded to the pandemic did not worry economists. Before 2007, a ceiling of around 60% on debt-to-GDP levels in mature economies was the rule of thumb (see chart, government debt as % of GDP). With GDP growth rates higher than interest rates, borrowing seemed to come at low cost (see chart, right panel). But now that governments have, if only for want of an alternative, become more willing to take on debt, what should be their limit? For an empirical answer, it is tempting to consider Japan, where the ratio of net public debt to GDP (debt less financial assets corresponding to debt instruments) stood above 150% prior to the pandemic [a].



If Japan can continue to borrow with that level of debt, it might seem that countries with lower levels should also be fine. But this ignores the fact that if interest rates stagger back from the floor, burdens a lot smaller than Japan's might become perilously unstable. There is no immediate account for why this might be likely. But that does not mean it will not happen. And governments need to remember that debt taken on at one interest rate may, if market sentiment changes, need to be rolled over at a much higher one in times to come [a].

Given this background risk, governments ideally ought to make sure that new borrowing is doing things that will provide a lasting good, greater than the final cost of the borrowing. If money is very cheap and likely to remain so, this will look like a fairly low bar. But there are opportunity costs to consider. If private borrowing has a high return and public borrowing crowds it out, then the public borrowing either needs to show a similarly high return or it needs to be cut back [a].

In 2020, private returns remained well above the cost of new borrowing in most places: in the US, for instance, the earnings of corporations were generally high relative to the replacement cost of their capital. This makes it conceivable that resources used by the government would generate a greater level of welfare if they were instead mobilised by private firms. Despite the seemingly high returns to new capital, private investment in the US is quite low. This suggests either that there are other obstacles to new investment, or that the high returns on investment reflect an insufficient level of competition rather than highly productive companies [a].

Both possibilities call for government remedy: either action aimed at identifying and dismantling the obstacles to investment, or at increasing competition. And until such actions produce greater investment or lower returns, the case for government borrowing remained quite strong. This is even more the case for public investments which might in themselves encourage the private sector to match them – "crowding in", as opposed to crowding out. Investment in a much better electricity grid, for example, could increase investment in zero-carbon generation [a].

In the long run, the way to avoid having to borrow to the hilt is to implement structural changes which will revive what does seem to be chronically weak demand. Unfortunately, there is no consensus over why demand is weak. Is technological progress, outside the realm of computers and communications, not what it was? Is inequality putting money into the hands of the rich, who are less likely to spend their next dollar, rather than the poor, who are more likely to spend? Do volatile financial markets encourage precautionary saving both by government and firms? Is the ageing of the population at the root of it all [a]?

Making people younger is not a viable policy option. But the volatility of markets might be addressed by regulation, and a lack of competition by antitrust actions. If inequality is at the root, redistribution could perk up demand. Dealing with the structural problems constraining demand would probably push up interest rates, creating difficulties for those governments which have already accumulated large debt piles. But stronger underlying growth would subsequently reduce the need for further government borrowing, raise GDP and boost tax revenues. In principle that would make it easier for governments in such situations to pay down their increased debt [a].

The new macroeconomic consensus that government borrowing and spending is indeed an important part of stabilising an economy, and that interest rates are generally low enough to allow governments to manage this task at minimal cost, does represent progress.

Government borrowing is badly needed to deal with many of the world's current woes. But this consensus should ideally include two additional planks: that the quality of deficit-spending still matters, and that governments should prepare for the possibility of an eventual change in the global interest-rate environment—much as 2020 has shown that you should prepare for any low-probability disaster [a].

#### National budget: balanced budgets or stabilization

Much attention is paid to the national budget. How much does it really matter for a government to pursue balanced budgets? The

traditional argument against balancing budgets dwells on the economic cycle. As an economy grows, and employment rises, tax revenues increase. When the economy turns down, fiscal transfers and other spending might be expected to rise, even as tax revenues fall. Far better if governments balance the budget over the economic cycle rather than feverishly seek a balanced budget every year [1].

There are more fundamental problems over the idea of balancing the budget. Budgeting weighs the benefits of spending against the costs of raising taxes and carrying debt. The outcomes of these three activities—spending, taxing and borrowing—follow some simple rules. First, the more a given government spends, the less benefit accrues from the last dollar spent. That is because the most pressing needs should be funded first. Second, the more a government taxes, the more painful it is for the last dollar to be taken from a citizen; the fewer dollars one is left with, the more each matters. Third, the more a government borrows, the greater the risk that the last dollar borrowed will damage private capital markets: it “crowds out” private (and presumably more productive) investment competing for the same dollar. The future cost of repaying the last dollar borrowed, and the chance that the dollar will tip the scales towards default, also rise with the stock of debt outstanding. For this reason, carrying \$2 trn in debt is more than twice as harmful as carrying \$1trn [1].

When public debt and tax-financed spending are relatively low, a deficit may be preferable. When taxes amply cover the legitimate functions of government, then a surplus can help provide against future deficits. This model assumes that the cost of raising money increases with the scale of taxation and debt, and that the additional benefits of spending decline. Fiscal restraint is therefore a virtue. Yet, from a purely economic standpoint, it will almost never be true that a perfectly balanced budget—or, for that matter, any one, fixed target for government accounts—will be the best solution [1].

That has not stopped the US from considering a balanced-budget act, or the EC from setting budget deficits ceilings of 3% in EU economies. Why? Rules of thumb are simpler than steering by complex calculations. Rules can discipline politicians. Without them, governments can run up deficits that are left to a successor to sort out. Rules ensure that changes in fiscal policy do not happen abruptly. Smoothness is good in quiet times—though clearly not when governments face an urgent need for spending, such as in wartime or during a prolonged slump. Even in less extreme situations, one size is unlikely to fit all, as Europe’s fiscal limits are meant to do. Well-intentioned budget rules can have another perverse outcome: they tempt politicians to fudge the numbers [1].

After the financial crisis of 2007 and the consequent jump in deficits and debt, revisiting the question of fiscal objectives became a vital policy issue. Some governments argued for elimination of the fiscal deficit as an overriding objective or that the target should be a balanced current deficit – that is, whether taxes should cover spending on current goods, services and transfers, but not investment. Who is right [2]?

In 2014 the UK Treasury argued it would be wise to lower the debt ratio (by cutting spending and raising taxes), for two reasons: first, it would give a future government room to respond to another crisis; and, second, it would reduce the negative effects of high levels of public debt on the growth of the economy. Neither argument is compelling. One counter-argument is that net public debt of 80% of GDP is well below the UK’s average of the past 300 years. Moreover, the direction of the link between growth and public debt is debatable. Recent experience suggests the link is more from low growth to debt than the other way round: high public debt did not cause the UK’s recent low growth; rather, an unforeseen collapse in growth caused the high debt. The experience of Ireland and Spain tells that low public debt does not help in avoiding crises.

What does help is policing private leverage. Finally, with real interest rates of, say, 2% (the pre-crisis level), the fiscal benefit even of halving the ratio of net debt to GDP would be less than 1% of GDP annually [2].

The IMF even suggests that borrowing for investment in infrastructure is likely to pay for itself, particularly if investments are well planned and executed, and there is deficient demand. This was relevant to the UK, which in 2014 had the second-worst infrastructure in the Group of Seven leading high-income countries, ahead only of Italy. It would have been sensible to plan and execute a big infrastructure push in 2008, when the crisis hit, but too late is still better than never. Fortunately, balancing the current budget would leave room for movement in this direction [2].

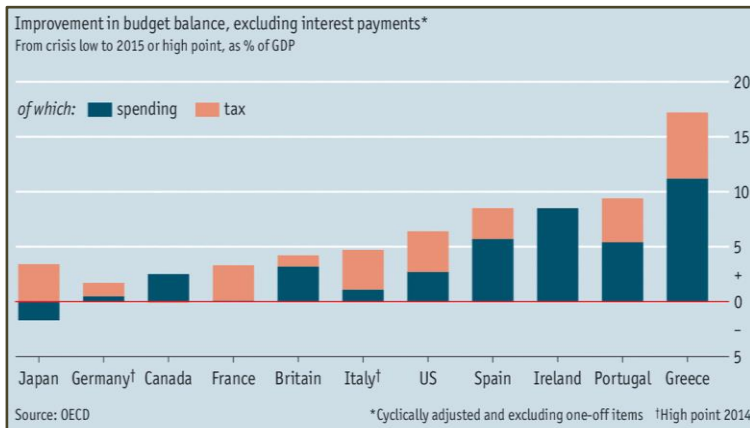
Simon Wren-Lewis of Oxford and Jonathan Portes of the National Institute of Economic and Social Research are rightly critical of fiscal austerity when short-term interest rates were near zero, though they support the UK government’s five-year rolling- deficit target (as well as the creation of the Office for Budget Responsibility). They argued that, since benefits of investment accrue to future taxpayers, it is right for the latter to pay. Yet they also say that, in ordinary times when interest rates are comfortably above near-zero levels, macroeconomic adjustment can be managed through monetary policy alone. This is risky. It might lead to asset-price bubbles and credit booms, and so to worse outcomes than fiscal deficits. That was particularly likely in the UK, with its structural CA deficits. If the fiscal deficit were eliminated, the private sector would run a financial deficit, making it reliant on foreign funding [2].

Targeting a CA budget balance, while borrowing for infrastructure investment, could be reasonable. If the economy moved into rapid growth, the fiscal balance should then be allowed to go into surplus. But lowering the debt ratio should not be an overriding objective. The benefits are unlikely to offset the costs at a time of excess capacity, and public and private under-investment. This debate really matters [2].

Another important debate involves using fiscal austerity in response to debt and imbalances. A simplistic approach to measuring “austerity” is looking at how much a government manages to reduce borrowing (the difference between taxes and spending). But borrowing may change for reasons other than self-denial. In the middle of a debt crisis, ballooning spending on interest payments mask efforts to squeeze public services or state pensions. Likewise, an economic recovery that nudges people off unemployment benefits and into jobs pulls down spending and boosts tax receipts, with the appearance, but not the pain, of austerity [3].

A better method is to look at changes in the cyclically adjusted primary budget balance – i.e., the surplus or deficit after stripping out interest payments and temporary effects of the economic cycle. Isolating temporary effects is not an exact science, but the OECD has had a go. The change in this measure, from the point when public spending was at its most profligate to the moment when it was most restrained (or the projected balance for 2015), provided a fairer measure of austerity (see chart, improvement in budget balance) [3].

Portugal, Ireland, Italy, Greece and Spain—the PIIGS—were in the direst fiscal straits in the crisis and, naturally, were the most austere. Italy reduced its underlying primary deficit by 4.7% of GDP; the others, by more than 8% of GDP. These figures are huge: 8% of GDP is equivalent to average government spending on pensions in the OECD. No one should accuse the Greek government, in particular, of not cutting back enough: the figures reveal tightening of a whopping 17.2% of underlying GDP between 2009 and 2015. At the other end of the scale, Germany barely had to cut back at all. No wonder the PIIGS have squealed [3].



Even this measure of austerity is not perfect, however. By measuring from the high point of profligacy, it includes one-off borrowing intended to inject life into slumping economies. For example, the apparent 6.4% improvement in the US's underlying primary balance rests in part on the expiry of a fiscal stimulus estimated by the IMF to be worth around 2% of GDP in 2009. Although withdrawing stimulus is painful, most would agree that a fiscal splurge in the base year makes a government appear to be more irresponsible than it really is [3].

The other caveat is that the measure obscures the distinction between countries that saw GDP growth and those that saw massive declines. When an economy is shrinking fast, even keeping spending flat as a share of GDP involves deep cuts in cash terms. Thus Greece has had to slash actual spending by more than a quarter to achieve an 11.2 percentage-point cut in spending as a share of GDP. The British government, in contrast, managed to reduce underlying spending, excluding debt interest, as a share of GDP by 3.2 percentage points, but economic growth allowed it to achieve this by holding this measure of spending roughly constant in real terms (ie, after accounting for inflation) [3].

Aggregate numbers mask other differences, too. Public-sector workers take little comfort from the knowledge that overall spending is buoyant if their salaries have been frozen while spending on social welfare has grown. The OECD's estimates suggest that this is indeed what happened: in the US, Britain and the PIIGS, spending on public services has cut relative to spending on benefits and pensions. In Portugal, general government consumption (a broad measure of spending on public services) was slashed by almost a fifth in real terms since 2009, whereas social-security spending crept up by 4%. And even rising spending on social welfare may feel austere if ageing populations put pressure on pension systems [3].

From any perspective, however, the belt-tightening in response to the financial crisis looks severe. Julio Escolano, Laura Jaramillo, Carlos Mulas-Granados and Gilbert Terrier of the IMF (2014) put the cuts in historical context. The authors compiled a database of 48 austerity drives in rich countries between 1945 and 2012, all aimed at steadying public debt as a share of GDP. They find that around half of these consolidations amounted to 5% or more of GDP, and a quarter to 7.5% or more. Italy's recent experience was about average; Britain's below par. Greece, Ireland, Portugal and Spain were far more austere than the norm, but Greece's privations were the most severe of all those that the authors evaluated [3].

Nevertheless, austerity was not adopted at random. Those governments that cut back the most were also those that spent most recklessly before. Greece may have tightened by 17% of GDP, but at its peak its underlying primary deficit was a clearly unsustainable 12%. Citizens of less spendthrift countries such as Germany are entitled to condemn the PIIGS' past excesses.

They may also legitimately rail about the pace of structural reform, but they cannot denounce them for doing too little on the public finances [3].

A final issue to debate is the degree of political independence for the body responsible for using fiscal policy tools. Some have argued that finance ministers can learn a trick from central bankers. It is widely accepted that monetary policy is best set by an independent central bank, insulated from political pressures. Fiscal policy, by contrast, remains in the hands of politicians. Most would object to a system where tax rates would be set by a band of unelected officials. Yet that is exactly what Alan Blinder, an economist at Princeton University and a former vice-chairman of the US Federal

Reserve, have argued<sup>1</sup>. The institutional framework around monetary policy should be extended to fiscal policy. To understand why, consider the arguments in favour of central-bank independence [4].

Monetary policy affects the economy only after a long lag, so policymakers need a long time horizon. Short-sighted politicians might try to engineer a boom before an election, hoping that inflation would not rise until after the votes have been counted. An independent central bank shielded from political pressures is more likely to give priority to price stability; as a result its policies are seen by financial markets as more credible. An independent central bank can deliver both lower inflation and more stable growth. Similar arguments apply to fiscal policy. Tax changes also have consequences that stretch far into the future, beyond a politicians' time horizon (to the next election); all too often they are tempted to cut taxes ahead of an election, which can later cause the economy to overheat. Mr Blinder concludes that the tax system would be simpler and more efficient if left to an independent agency [4].

This idea was adopted by the Business Council of Australia<sup>2</sup> as a way to make fiscal policy more flexible, while still maintaining discipline. Fiscal policy is generally seen as less effective than monetary policy in steering the economy. This is partly because, in most countries, it takes ages to get approval from parliament for changes in taxes, so tax rates cannot be altered as fast as interest rates. As a result, tax cuts in response to a slowdown have typically arrived too late, fuelling the next boom rather than cushioning the impact of a recession [4].

Prior to the financial crisis of 2007, most governments (with the exception of Japan) focused almost exclusively on trimming or eliminating their deficits or setting a limit on budget deficits [3% for the EU]. Reducing the ability of fiscal policy to respond to developments in the economy, could put an excessive burden on monetary policy to prevent economies from either overheating or diving into recession. Central banks may enjoy their new powers, yet it could be argued that monetary policy is not well suited to this role, as its effects on the economy are felt only after long and variable lags. Some studies suggest that fiscal policy is better suited to steering nominal demand, because once implemented it affects the economy more swiftly than changes in interest rates. Furthermore, the effects of monetary policy tend to be spread less evenly across the economy than those of fiscal policy. For example, high interest rates and hence a stronger exchange rate squeeze manufacturers more than other producers [4].

Fiscal policy could be made more effective. Australia and New Zealand pioneered reforms to make fiscal policy more transparent and accountable, helping to reduce the influence of short-term political interests. The dilemma is how to make fiscal policy more flexible, to take pressure off monetary policy, while still maintaining long-term discipline [4].

<sup>1</sup> "Is government too political?". *Foreign Affairs*, Nov. 1997.

<sup>2</sup> "Avoiding boom/bust: macro-economic reform for a globalised economy". Business Council of Australia, discussion paper 2, Oct 1999.

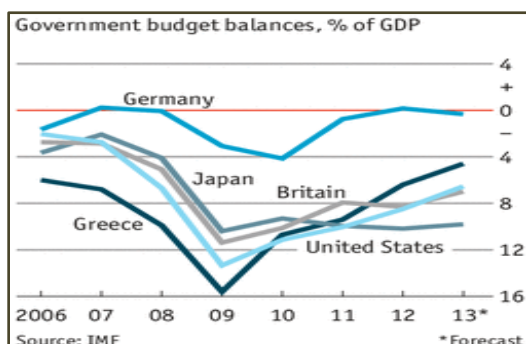
The Business Council of Australia proposed that an independent body should be given the power to make small adjustments to tax rates in response to the state of the Australian economy without the need for parliamentary approval. This would both reduce the lags in fiscal policy and insulate it from political pressure. The government would still determine the size of the welfare state and the structure of the tax system (eg, it would decide how progressive the income-tax schedule should be). It would also set a broad long-term goal for the budget deficit. The independent fiscal authority would then be given discretion to increase or reduce income-tax rates across the board within a narrow band of, say, a percentage point either side of existing rates. If it felt the economy was overheating, say, it could raise taxes; if a recession loomed, it could cut them [4].

This would ease the burden on monetary policy. Nor need it always imply a tighter fiscal policy. Suppose, for example, that in the autumn of 2000, when there were fears that global financial turmoil would drag the US economy into recession, policymakers had responded by cutting taxes rather than interest rates. The likely result could have been that the US's economic and financial imbalances could have looked less serious. The cut in interest rates in 2000, which was later reversed in 2001, pushed share prices higher and encouraged households and firms to borrow more and save less. The bigger the imbalances become, the more painful it is to unwind them. In an economy displaying signs of financial excess, a tax cut delivered by an independent tax agency might be safer than looser money [4].

The idea of an independent fiscal authority deserves serious consideration. It may seem radical and undemocratic, but that is what many governments once said of demands to make their central banks independent [4].

When there is slack in the economy, fiscal stimulus can be particularly powerful thanks to a “multiplier” effect. A dollar spent building a railway, for example, might go to the wages of a construction worker who spends the extra income on groceries, enriching a shopkeeper, who in turn goes shopping and so on. Every dollar of stimulus could thus result in two dollars of output—a multiplier of two. (Multipliers also apply to government cutbacks, amplifying the reduction in GDP.) That allows governments to deliver a hefty economic bang at moderate fiscal cost [5].

There was no question that “fiscal consolidation” would be necessary in response to the GFC; the dispute centered over when it should start. As growth returned in 2010, some leaders argued that it was time to trim public spending. Others worried that the recovery was too fragile to permit any austerity. The UK moved quickly, ending its stimulus in 2010. From 2010 to 2011 the government pared its “structural” budget deficit (ie, adjusted to account for cyclical costs such as automatic stabilisers) by two percentage points, with further drops of a percentage point in 2012 and 2013. Several southern European countries made even deeper cuts as the crisis spread. The US, by contrast, kept spending, adding new tax breaks to the previous stimulus. As a result, its structural deficit declined more slowly (see chart government budget balances) [5].



The debate about these policies hinged on two crucial uncertainties. One was the size of the multiplier. Sceptics reckoned that it would be low, and that neither stimulus nor austerity would have much effect on output or jobs. Stimulus simply absorbs resources that would otherwise have been used by private firms, they argued. Moreover, firms and households would probably save their share of the proceeds, rather than bolster the economy by spending them, since they would assume that the government's largesse was only temporary and that tax bills would soon be going back up [5].

Those of a Keynesian bent downplayed these concerns. With unemployment high and private demand for loans low, there was little risk that the government would “crowd out” private activity. Indeed, in a “balance-sheet recession”, with indebted households forced by falling asset prices to pay off loans quickly, a boost to incomes from a fiscal stimulus would speed the financial adjustment, and thus generate a faster recovery [5].

The other question was how much debt rich governments could take on without harming the economy. Typically, lenders demand ever-higher rates of interest from spendthrift governments as public debts grow. That leads to higher rates for everyone else, crimping economic growth. But supporters of stimulus argued that a slumping economy with rock-bottom interest rates had no reason to fear the vigilantes of the bond market. The academic evidence, inevitably, was also disputed. Carmen Reinhart and Kenneth Rogoff of Harvard University published a much-cited paper claiming that economic growth rates slow sharply when government debt tops 90% of GDP. Follow-on studies also turned up a negative relationship between growth and debt, although not always at the same threshold. Research by Alberto Alesina of Harvard and Silvia Ardagna of Goldman Sachs, an investment bank, showed that fiscal rectitude—especially in the form of spending cuts rather than tax rises—could actually boost growth [5].

Keynesians questioned Mrs Reinhart's and Mr Rogoff's conclusions, noting that slow growth might be a cause of high debt rather than a symptom of it. They also thought Mr Alesina's “expansionary austerity” was a pipe dream. In the past, they observed, it had occurred only under quite different conditions. Had government borrowing been gobbling up scarce credit, pushing interest rates for private firms upwards, then lower deficits could reduce rates and trigger an investment boom. The problem was that in most of the rich world interest rates were already low; excessive saving was the problem [5].

Moteover, the Keynesians asserted, multipliers are much higher during nasty downturns than at other times. Research by Lawrence Christiano, Martin Eichenbaum and Sergio Rebelo of Northwestern University suggests that when interest rates are near zero the multiplier could be higher than two, since people have a greater incentive than usual to spend rather than save. A financial crisis also elevates multipliers, other studies found. Larry Summers, the architect of Mr Obama's stimulus, and Brad DeLong of the University of California, Berkeley argued that given the cost of prolonged unemployment, stimulus during a long recession might pay for itself [5].

A McKinsey study noted that financial deleveraging in the US proceeded more quickly than in the UK and Europe. The IMF's (2012) economic forecasts found that austerity crimped growth much more than it had expected. The larger the cuts a government planned, the IMF concluded, the farther below its forecast growth fell. The multiplier on spending cuts was perhaps twice what researchers had originally assumed. Spanish austerity reduced the government's structural deficit by more than two percentage points from 2011 to 2012, and the cuts helped push the economy into recession causing net government borrowing to rise [5].

In April 2013 research from the University of Massachusetts undermined the Reinhart-Rogoff finding that growth slows

sharply when debt tops 90% of GDP. An analytical error and questionable data choices, it turns out, had underpinned the result. There is no consensus among economists as to what level of debt harms growth, or whether it is even possible to establish such a rule of thumb [5].

That does not mean that ballooning public debt is not a concern. New research suggests that less-indebted governments are much more likely to resort to stimulus to foster economic growth, presumably because they feel they can afford to do so. It may be a long time coming (in 2013 Japan's government debt totaled 245% of GDP), but at some point too much red ink will yield a debt crisis. Worries about a country's solvency will lead creditors to demand higher interest rates, which will then compound its fiscal woes [5].

Panic is more likely when debt is owed in a currency the government does not control, since the central bank cannot then act as a lender of last resort. Uncertainty over whether the European Central Bank would play this role fanned the euro-zone crisis, for example. Carried to extremes government-bond purchases may fuel worries about inflation. That in turn can lead to higher borrowing costs as creditors demand an inflation-risk premium. Yet during the crisis, economies were so weak that central banks' purchases of government bonds proved reassuring to investors rather than worrisome, partly due to the reduced risk of panic and default [5].

Failing banks can swiftly transform debt loads from moderate to crushing. Before the crisis, the assets of Ireland's commercial banks swelled to over 600% of GDP. Ireland's debts exploded from 25% of GDP in 2007 to 117% in 2012, thanks mostly to the government assuming the banks' debts after the crisis struck [5].

Austerity, in short, still has its place. But what sort? Whereas some economists recommend spending cuts, other research indicates that higher taxes can also work. Both approaches have costs. Taxing pay can distort labour markets; consumption taxes can lead to inflation, prompting contractionary monetary policy. Yet cutting spending is more unpopular and can exacerbate inequality [5].

The lesson of the past crisis on the debate about timing of austerity, ideally, is when the economy can bear it. Not all governments have that luxury: Greece could not delay fierce cuts because it could not borrow enough to finance its deficits. Those with more breathing space should aim to stabilise their debts in the long run, the IMF suggests, by laying out plans to reduce their deficits. The more credible their plans, the more leeway they will have to depart from them should conditions warrant it. As Keynes insisted, the time for austerity is the boom not the bust [5].

In the 24 Sep 2016 edition of the *Economist*, it was argued that living in a low-interest-rate world means finding "a form of fiscal policy that can revive the economy in bad times without entrenching the good". This fiscal policy already exists. Chile in 2001, and later by Colombia, Peru, and Paraguay, implemented a structural fiscal rule in which government spending is determined by long-term fiscal revenue rather than current revenues.

Independent experts help estimate the growth trend and the long-term price of the main commodity that influences public revenues. Once this structural revenue is estimated, the government has to make explicit its commitment to the structural fiscal balance, a given number for deficit or surplus.

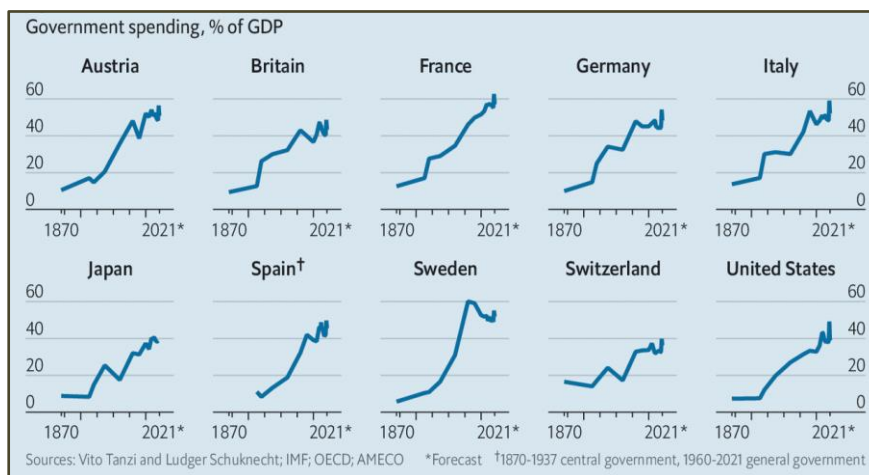
With this kind of fiscal rule, a government can truly run a counter-cyclical fiscal policy, allowing moderate deficits in bad times, which are compensated by fiscal surpluses in the good. The best way to accumulate surpluses is by implementing sovereign funds which normally invest their resources abroad to avoid a Dutch Disease (currency appreciation following resource booms). Counter-cyclical fiscal policy makes the job of central bankers easier as well.

Felipe Larraín, Minister of Finance, Chile, in Letters to the Editor, *Economist*, 8 Oct 2016, p. 20.

### Trends in government spending

Between 1996 and 2019 the US's annual government spending grew by one percentage point of GDP. And when, in 2020, the economy crashed, it rose by another ten. Government spending as a share of GDP in the OECD as a whole has consistently inched higher in the six decades since the club was formed in 1961 [6].

The tendency for government to grow is a hallmark of modernity. From 1274 to 1691 the English government raised less than 2% of GDP in tax. Over the 18th and 19th centuries that changed, with the tax-raising and spending capacities of the government massively expanding, especially at times of war. In the 1870s the governments of rich countries were spending about 10% of GDP. In 1920 it was nearer 20%. It has been growing ever since (see chart, government spending). It is now much higher in the rich world than either in the past or in developing countries [6].



The growth in what governments spend typically comes with a growth in what they do, and how much they control the doings of others. In the US the number of federal regulations has more than doubled since 1970. The total word count of Germany's laws is 60% larger today than it was in the mid-1990s [6].

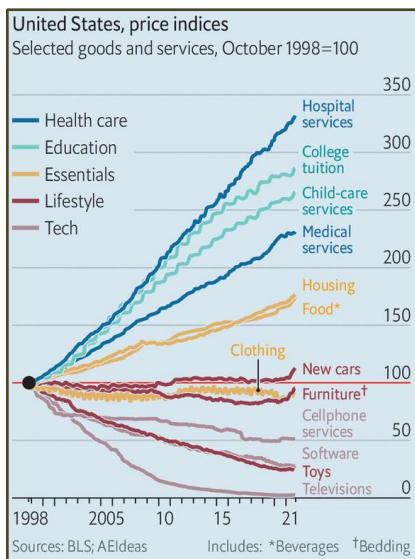
Three forces stand out as driving the trends in spending: the incentives which bureaucrats and politicians face; the rising costs of services provided by the government; and the demands of voters. First, governments and bureaucrats are at least partly self-interested: "public-choice theory" says that unrestrained bureaucracies will defend their turf and seek to expand it. A good recent example would be central banks. Their mandates typically compel them to control inflation and see off bank runs. In recent years, with a cursory and often unconvincing nod to those mandates, central bankers have taken on fresh responsibilities. The Fed sees an obligation to reduce racial inequality, while many central bankers want to raise the relative cost of capital for fossil-fuel companies via interventions in the corporate-bond market [6].

Technology, in particular communications technology, has served to strengthen the bureaucracy's grasp. It is no

coincidence that bigger governments emerged at roughly the same point in the 20th century as large corporations, which also required a new communications infrastructure. More rapid economic growth powered by those new arrangements made the growth of government less burdensome than it might have been [6].

The second broad factor behind the growing power of the state is what William Baumol, an economist, named “cost disease”. In the 1960s Baumol noted that productivity in some sectors is greater than in others. But wages must rise in less productive sectors as they rise in more productive sectors to prevent workers quitting. So despite the fact that an orchestra at the Royal Albert Hall contains about the same number of musicians as it did when the venue opened in 1871, each musician is paid a lot more today, given the vastly greater opportunities that are on offer in the economy [6].

Finally, a lot of government spending is in areas where labour-productivity growth is slow, most notably the provision of education and health care (see chart, US price indices). As the real wages of doctors, nurses and teachers go up at a rate set by other parts of the economy, so does spending. What is more, education and health care are also what economists call “superior” goods. As people become richer they spend a higher fraction of their income on them. If it is the government that provides those services, it must spend more. Across the OECD overall health spending has risen from 8% of GDP in 2005 to 10%, and governments are responsible for the bulk of that [6].



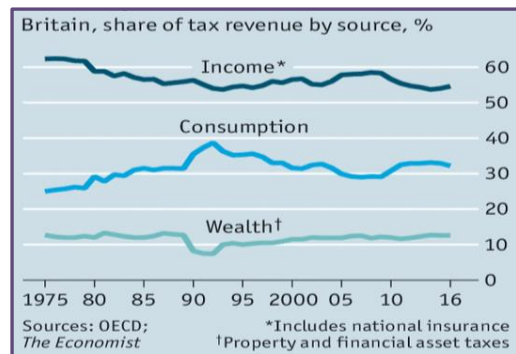
### Taxation: revenue collection

Broadly speaking, a government can tax three things: income, consumption and wealth. Economists like taxes to be simple and to avoid unintentionally distorting behaviour. Where should the government cast its net [d]?

Start with taxes on income. They are an obvious target for revenue-hungry politicians. They are progressive (ie, those on higher incomes pay more). In the UK, since the 1970s income taxes have fallen as a share of the total (see chart, share of tax revenue). The basic and higher rates of income tax, as well as the corporation-tax rate, have been slashed. While the UK raises far less in income taxes, broadly defined, than the average OECD country, it redistributes as much as the OECD average [d].

At some point, progressivity conflicts with efficiency. Rich folk work less, make bigger contributions to their pensions (which enjoy favourable tax treatment) or leave the country. The Institute for Fiscal Studies (IFS), a think-tank, says that higher taxes on personal incomes would raise little revenue [d].

A better approach to taxing income might involve broadening the base, lowering the tax-free personal allowance threshold. But any move to raise taxes on income has a cost. Research by the OECD suggests that income taxes, more than those on consumption and wealth, strongly discourage people from working, slowing economic growth [d].



Consider higher taxes on consumption might. Extra levies on socially damaging activities such as unhealthy eating and pollution such as the UK’s “sugar tax” introduced in April 2018, raising some £500m a year. A “climate-change levy”, taxes energy use by businesses. Doubling all environmental taxes could raise £14bn and would make Britain greener [d].

To raise serious money, though, politicians could turn to the VAT, which is levied at 20%. With the various carve-outs—for food, children’s clothes and much else—the UK’s VAT covers only about half of what the average person buys, the seventh lowest of the OECD. Different VAT rates are designed to help the poor afford essentials. But it is a costly way to do so, as the rich benefit from the exemptions, too. Raising the VAT by itself is regressive, and politically poisonous, so the government would need to help the losers [d].

Increasing wealth taxes, levied on everything from property to financial assets, may be a more palatable option. A housing boom, intergenerational inequality and the need for more health and social care have given rise to a feeling that old, rich people ought to pay more [d].

Some say that the wealthy already pay enough. Britain raises more of its overall tax take from wealth taxes than any other OECD country. But wealth taxes tend to be the most growth-friendly. Since the 1970s, as house prices and equities have soared, total household wealth rose from three times income to eight times. Taxes on that wealth relative to GDP remained steady, however. Council tax, one of the biggest wealth taxes, is based on property valuations from 1991. Rich people often pay less than poor. Buckingham Palace attracts a council-tax bill of £1,400 a year, around the same as some flats in Bradford [d].

Basing council tax on up-to-date values could be a good source of revenue. Other forms of wealth could also be tapped. Cancelling a proposed loosening of the inheritance-tax regime is one idea, though it would not raise much revenue. A land-value taxes are another source. An annual levy on land value would be hard to avoid, since land cannot be hidden or easily substituted. The evidence also suggests that it is landowners, rather than renters, who bear the burden of such a tax [d].

### Fiscal policy: post-GFC and the pandemic

Since the GFC, politicians have become far more willing to shore up vast swathes of the economy. When industries, companies or people get into trouble, fiscal help is never far away. Gains are privatised, but a growing share of losses or even potential losses are socialised. To appreciate this role for the state, discard much of the conventional wisdom, which says that in the “neoliberal” era governments have let free markets run riot. Instead, this is an era of “bail-outs for everyone” [e].

Three events have shaped the new era. First is the global financial crisis of 2007-09. In this period, the US spent 3.5% of GDP on crisis-related bail-outs, including capital infusions for banks and mortgage lenders, according to Deborah Lucas of the Massachusetts Institute of Technology. The justification for the interventions was that doing nothing would have proved far costlier. If the banking system had collapsed, so would the rest of the economy [e].

When covid-19 arrived, bail-outs moved from the financial economy to the real one. The pandemic produced an unusual economic shock, hitting supply first and then demand. Business lockdowns and a quarantined workforce do not produce goods. The concern was that the supply shock would create a demand shock from layoffs and business closures. End the lockdown and business activity returns. Fiscal stimulus to help firms with loans and wage subsidies to firms to retain workers would allow business activity to return once the pandemic had been broken. It was fiscal policy to the rescue. “Everybody said we bailed out the banks and we didn’t look after the people who really suffered,” said Boris Johnson, then UK’s prime minister. This time would be different. During lockdowns governments handed out trillions of dollars of support, guaranteed vast amounts of corporate lending, and banned evictions and bankruptcies. Unlike in previous crises, rates of poverty, hunger and destitution did not rise and in some places fell. Across the rich world, disposable incomes rose [e].

The third event is the surge in energy prices that has followed Russia’s war in Ukraine. The challenge facing Europe, where the consumer price of energy rose substantially over 2021, convinced many politicians that once again there was no option but massive state intervention. Thanks to hastily patched together measures, governments subsidised much of that increase [e].

The cumulative effect of three once-in-a-generation crises, in quick succession, has been a change in the terms of political debate. Politicians have set new expectations of what the state can and should do. This is visible in the smaller bail-outs, guarantees and rescues that have mushroomed since the start of the 2010s. The Italian government, for instance, set up schemes to deal with banks’ non-performing loans, in an attempt to get the private financial sector to lend again. The UK government offered banks vast guarantees to get them to offer bigger mortgages. The value of bank deposits insured by the US’s government rose by 40% during 2017-22 (before the 2023 bank failures and fresh interventions) [e].

Things have gone into overdrive. In 2022, President Joe Biden announced that the US would spend hundreds of billions of dollars to bail out Americans holding student-loan debt. Around the same time, he expanded loan guarantees for clean energy. Australia and New Zealand offered citizens cost-of-living payments to deal with high inflation. Poland introduced a moratorium on mortgage debt. It is only a matter of time before the next intervention comes along. What if Intel, a tech firm crucial to Mr Biden’s domestic semiconductor drive, begins to struggle? What if Russia’s invasion continues and Europe’s energy prices remain sky-high [e]?

Despite a renewed willingness of governments to use fiscal policy, Mian et al. (2021)<sup>3</sup> explored the limits to government borrowing. Government debt can be too low or too high the authors write. Because the supply of bonds matters, a level of government debt that is too low can result in an interest rate that slinks towards zero. But rates cannot fall much further below zero; the result is narrower scope for central banks to stimulate activity, and therefore lower economic growth and higher unemployment. The problems of debt sustainability are often associated with high debt levels, which push the interest rate

above the economic-growth rate. When that condition is met, the debt burden grows steadily even in the absence of new borrowing. But the authors raise the theoretical possibility of another source of fiscal-sustainability problems: when too low a level of debt leads to serious deflation, dragging the growth rate into negative territory and below the interest rate [f].

In between those two extremes, the researchers argue, lies a “just right zone” in which a fiscal free lunch is possible. They flesh out a point highlighted in 2019 by Olivier Blanchard of the Peterson Institute for International Economics: that when the interest rate on public debt is below the economy’s growth rate, existing debt burdens have essentially no fiscal cost. In such cases, existing debt will decline as a share of output even if no new taxes are levied—though a government that continues to run deficits may nonetheless add to its debt pile. Assuming a balanced budget and based on estimates of the convenience yield on Treasuries, the authors reckon that the US’s just right zone—the maximum level of debt you could reach and then stabilise without raising taxes—could extend up to about 260% of GDP. (The uncertainty around their estimates means the limit could lie between 230% and 300% of GDP [f].)

There is also a range of indebtedness across which governments may run deficits in perpetuity without increasing the debt burden. The US, they estimate, could run a deficit of 2.1% of GDP forever so long as its debt is below 130% of GDP (after which threshold the largest deficit that could be run in sustained fashion without raising the debt burden drops steadily towards zero) [f].

This logic suggests that though supersized deficits may be appropriate now, America cannot run them for ever. Doing so would cause debt to rise, potentially out of the Goldilocks zone and into riskier territory. And the longer America waits to shrink its deficit to the maximum sustainable level, the closer to surplus (or the further into surplus) that level will be. Mr Biden may take some comfort from the fact that his borrowing is manageable for now. Even so, it could eventually limit America’s fiscal freedom.

Importantly, the just right window is not fixed. Slower economic growth could shrink the safe zone by narrowing the gap between growth and interest rates—unless, that is, an economic slowdown also causes a sharp drop in interest rates, pushing them closer to zero and necessitating fiscal stimulus. Rising inequality may lead to calls for redistribution, but because the rich tend to buy government bonds in disproportionate numbers, levelling the income distribution may reduce the scope for a fiscal free lunch. That also means, the authors note, that efforts to address wide deficits through progressive taxes may not bear much fruit: taxes on high earners will Hoover up money that might be used to buy bonds.

Analyses such as these are trying to understand circumstances outside of historical experience, and necessarily come with large uncertainties and assumptions attached. Budget-setting politicians too have uncertainties to navigate, and must do so carefully. Government borrowing plays a starring role in today’s macroeconomic zeitgeist. A balance of sorts is still required, between making good use of the government’s capacity to borrow, and acknowledging that limits to public borrowing are not so distant that they can be ignored altogether.

<sup>3</sup> Mian, A. L. Straub and A. Sufi, “A Goldilocks theory of fiscal policy”. NBER Working paper, July 2021.



## MONETARY POLICY AND INSTRUMENTS

### Monetary policy objectives and its relation to external sector

Most central banks set monetary policy with an overall aim of keeping inflation low. The European Central Bank (ECB) has the statutory goal of "price stability". Its aim is also to "support the general economic policies in the Union with a view to contributing to the objectives of the Union, which includes "full employment and balanced economic growth" [ECB website]. The US Fed Reserve (Fed) also has a duty to support employment and economic growth (through moderate long-term interest rates). In most rich countries, the government defines the central banks' aims, but allows it to pursue those without political interference, i.e., central bank independence [7].

To meet their aims, central banks usually adopt intermediate targets. These guide policy, as well as keeping expectations of inflation low. Ideally, the targets should be variables over which the central bank has some control and which have a predictable relationship with its ultimate goal, inflation. In practice, ideal targets do not exist, so a trade-off must be made between controllability and predictability [7].

Historically, one policy tool option has been to target money-supply growth. The narrowest money-supply measure is the monetary base, or M0, which consists of cash and bank reserves. M1 also includes checking accounts. Broader measures, such as M2 and M3, encompass interest-bearing deposits and some short-term securities. Central banks have greater control over narrower measures of money supply, but broader measures are more closely correlated with future price changes [7].

Money-supply targeting was popular in the late 1970s and early 1980s, because there seemed then to be a stable link between money-supply growth and future inflation. It had two big drawbacks. First, it led to volatile interest rates, partly because banks' demand for cash is insensitive to small interest-rate changes. Second, the historical relationship between money-supply growth and inflation broke down, partly because financial deregulation and innovation made the demand for money unpredictable. The ECB adopted a monetary "reference value" for M3, but it has eschewed a binding target [7].

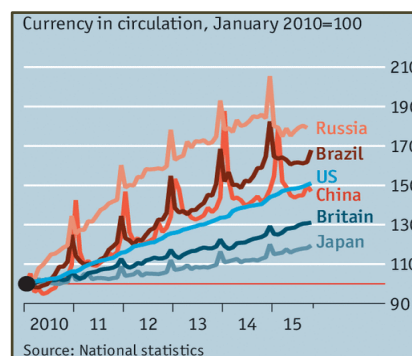
A second option is an exchange-rate target. A country with a poor record of controlling inflation can peg its currency to that of a low-inflation economy. In effect, this allows it to piggy-back on the low-inflation country's credible monetary policies. Many developing countries fix their currencies against the dollar and the euro. With freely mobile international capital movements, exchange-rate pegs are more vulnerable to speculative attack. Most rich countries either have permanently fixed exchange rates, as in the euro area, or they have floating rates and control inflation in other ways [7].

A third option is to target inflation directly, which is what a growing number of central banks began doing after the 1990s. Australia, Britain, Canada, New Zealand and Sweden established explicit inflation targets. These have many advantages, notably transparency and accountability, but they are not without problems. For one thing, because monetary policy operates with long lags, central banks have to adjust policy on the basis not of current inflation, but of future inflation, which is difficult to forecast [7].

Some economists also argue that inflation targets focus too narrowly on consumer-price inflation, which may lead central banks to ignore potentially harmful asset-price bubbles. In Japan in the late 1980s, the Bank of Japan failed to check soaring share and property prices, because consumer-price inflation remained low. When the bubble burst, the economy plunged into recession [7].

### Seasonality in money demand

At the end of the year as retail sales pick up for the holiday season, banks need to stock up on cash. Demand for cash peaks in December, as consumers withdraw money to pay for gifts and holiday travel (see chart). In the weeks leading up, banks stash extra cash in their vaults to meet the additional demand. After the holidays, the excess cash is sent back to central banks and removed from circulation.



In rich countries, where card payments have become common, cash in circulation tends to jump by less than 5% in December; in Japan it hardly rises at all. In emerging economies such as Brazil and Russia, where cards are rarer, it increases by more than 10%. In China, where new year falls between mid-January and mid-February, demand for cash increases by more than 20%.

*Economist*, "Festive splurges: Bank run", 19 Dec 2015, p. 98

As well as setting monetary policy and regulating the banking system, many central banks used at one time to finance governments' budget deficits. When government spending exceeds tax revenues, the difference is financed by selling government bonds. If these are sold to the public, then the net effect on the money supply is zero. But if they are purchased by the central bank, the money-supply rise that accompanies the deficit is not offset: this is known as "printing money" or "monetising the deficit". Typically, central banks in most rich countries were forbidden from financing the government's budget deficit (until non-traditional monetary policy became a necessity). With the extended recession in Japan in the 1990s, there was strong pressure on the Bank of Japan to buy government bonds to kick-start the Japanese economy [7]. ["Quantitative easing", as it became known, was pursued by other major central banks after the 2007 financial crisis.]

Central banks have a huge influence over the financial system through how they conduct monetary policy. Since the late 1990s, central bankers seemed all-powerful, going about their business without interference from politicians (at least in rich countries). Their success at using their independence to bring down inflation earned them great respect. Central banks matter to the financial system for two main reasons. First, they set short-term interest rates. These affect the cost of borrowing throughout the economy, from money markets to mortgage rates, and they have an additional influence through their impact on exchange rates, inflation and growth. Second, central banks generally support (and often regulate) the banking system, notably by acting as a lender of last resort to banks in financial distress [7].

For all central banks' importance, they remain tiny participants in huge financial markets. So how do they affect prices, ie, interest rates, in those markets? Consider the US. Its fixed-income market (government and private) was worth some \$13.6 trillion in 1999. Each day hundreds of billions of dollars of these securities changed hands, and it was not unusual for a single private firm to buy or sell more than \$1 billion in one go. The Fed itself bought or sold only between \$1 billion and \$5

billion of these securities each year: a mere drop in the ocean of a \$14 billion market. Yet somehow the Fed managed to affect the level and structure of prices and yields [7].

The reason the Fed can set interest rates is that it has a monopoly on supplying bank reserves. Private banks are required to hold a fraction of the money deposited with them in a reserve account at the central bank (see chart 1). They usually hold more, for precautionary reasons. The interest rate at which banks' demand for reserves matches the Fed's supply is known as the federal funds rate; this is also the rate at which banks lend reserves to each other overnight. The Fed controls it by changing the supply of reserves through sales and purchases of government securities, known as open-market operations [7].

When the Fed wants to raise the federal funds rate, it sells government securities. It receives payment by reducing the account of the buyer's bank, which reduces the volume of reserves in the banking system. This is illustrated in chart 2 by a shift in the supply curve for reserves from S to S<sub>2</sub>. Because banks' demand for reserves exceeds supply, the federal funds rate is bid up (from f to f<sub>2</sub>) until excess demand is eliminated. And when the Fed wants to lower the rate, it buys securities, which increases banks' reserves and bids down interest rates. The supply curve shifts from S to S<sub>1</sub>, and the rate falls from f to f<sub>1</sub> [7].

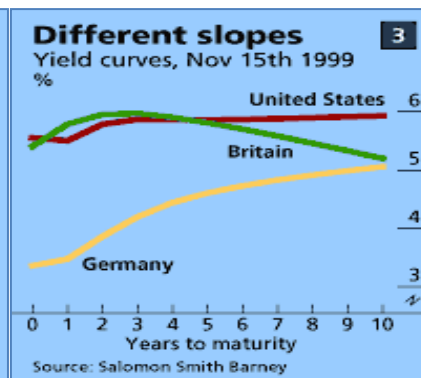
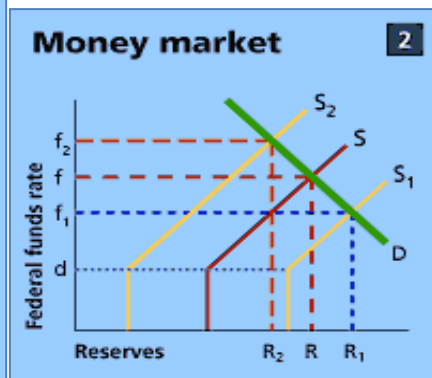
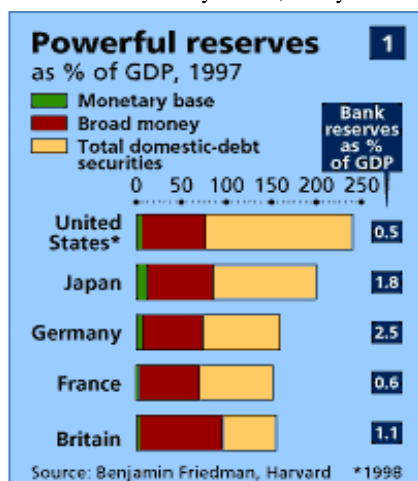
The Fed can also influence the federal funds rate indirectly, by changing the discount rate (d in chart 2), the rate at which it will lend reserves to banks, or altering banks' reserve requirements, the fraction of their deposits that they are required to hold as reserves. Raising the discount rate makes it less attractive for banks to borrow reserves. This reduces the volume of reserves, which pushes up the federal funds rate. Increasing reserve requirements boosts banks' demand for reserves, which also bids up the federal funds rate. But a central bank usually prefers to control the rate through open-market operations, which have a more stable and predictable impact on the money market [7].

Changes in the federal funds rate ripple through financial markets and the economy. They have knock-on effects on the interest rates at which banks lend to households and firms, and hence the amount of credit in the economy. And they influence long-term market interest rates too [8].

Take the yield on a five-year government bond. It is simply the weighted average of expected short-term interest rates over the next five years, plus a risk and a liquidity premium. A rise in short-term interest rates typically has two effects on long-term rates. It raises the five-year weighted average slightly, and it affects expectations of future short-term interest rates [8].

If, for example, investors believe the Fed is raising rates preemptively to prevent inflation rising, then expected future interest rates may fall, and so would five-year yields. However, if the rate increase is seen as a belated recognition by the Fed that inflation is likely to rise, five-year rates may rise in

anticipation of further rate



increases to come [7].

The graphical relationship between interest rates on securities of different maturities is known as the yield curve. Yield curves typically slope upwards, as Germany's does in chart 3, because investors demand a risk premium on bonds of longer maturities to compensate for the extra uncertainty associated with lending for a longer period. But when monetary policy is tightened and short-term interest rates are increased, it is possible sometimes for the yield curve to become inverted, as Britain's is in the chart, sloping downwards for all but the shortest maturities [7].

At the end of the 1990s and early 2000s, some began to question the effectiveness of monetary policy. Monetary policy always needs time to take effect, but interest-rate cuts seemed to be having little effect. One reason why interest-rate cuts might have been less effective than expected in 2001 was that they actually did little to ease financial conditions. The Fed's main policy tool, the federal-funds rate at which banks lend overnight to one another, has little direct impact on the economy, since neither firms nor households pay it. The transmission mechanism through which changes in the federal-funds rate affect the economy is a good deal more complex. The size of a cut in the rate (2.75 percentage points over a six-month period – one of the most aggressive in Fed history) can be a poor measure of the likely impact of monetary policy [9].

Central banks' monopoly on supplying cash and bank reserves is relatively new phenomena. In the 19<sup>th</sup> century, private banks in the UK and the US issued competing currencies. A return to such a "free-banking" era seems unlikely, but even if central banks' monopoly is not in danger, it may eventually become irrelevant. Privately issued electronic money could one day complicate or even nullify central banks' ability to set interest rates, but central banks are not about to vanish soon [7].

Broadly, monetary policy affects the real economy through three channels:

- Through the cost of borrowing in the market which, if reduced, could be expected to spur consumer spending and investment. Interest rates on short-term loans do tend to move in line with the federal-funds rate. But much other borrowing, by both firms and households, is linked to bond yields, which hang more on market expectations about future interest rates and inflation than on changes in short-term rates.
- Through the exchange rate. In theory, looser monetary policy should push down the dollar, so boosting exports.
- Through the prices of financial assets, especially equities. If lower interest rates lift share prices, this may boost consumer spending as private shareholders feel wealthier, or spur corporate investment by reducing the cost of capital [9].

If changes in the federal-funds rate do not feed through into market rates, the dollar or share prices, they will have little effect upon the economy. Bruce Kasman at J.P. Morgan Chase analysed the Fed's macroeconomic model of the US economy, derived from past behaviour. According to the model, a one

percentage-point reduction in the federal-funds rate should raise the level of GDP by 1.7% after two years, but by only 0.6% after one year, suggesting monetary policy works with a lag [9].

However, the model also suggests that, if lower interest rates are to revive the economy, a cut of 2.5 percentage points would normally be expected to have lifted share prices by 22% within a year, reduced long-term bond yields by three-quarters of a point, and left the dollar 5% weaker. Yet from when the Fed first started to slash interest rates at the beginning of 2001, the S&P 500 fell by 10%, the dollar's trade-weighted value gained 7%, and both bond yields and mortgage rates remained broadly unchanged [9].

In previous economic cycles, as much as two-fifths of the total impact of interest-rate cuts on GDP, on average, came through the stockmarket and the dollar—two channels that appeared to be blocked in 2001. This suggests that the Fed would have to push even harder on the monetary lever to revive growth [9].

Boivin and Giannoni<sup>4</sup> find that since the early 1980s, changes in the federal-funds rate seemed to have had a smaller impact on output. However, the authors concluded that there was no evidence that firms and households had become less sensitive to changes in interest rates. Instead, the impact of changes in monetary policy seems to have declined because the conduct of policy improved since the 1980s. The Fed responds more quickly to changing economic expectations, which helps to smooth out the effect of interest-rate shocks, reducing the variability of output and inflation [9].

### The rise of the central bank

In May 1997, the British government gave the Bank of England the freedom to set interest rates. That decision was part of a trend that made central bankers the most powerful financial actors on the planet, not only setting rates but also buying trillions of dollars' worth of assets, targeting exchange rates and managing the economic cycle [13].

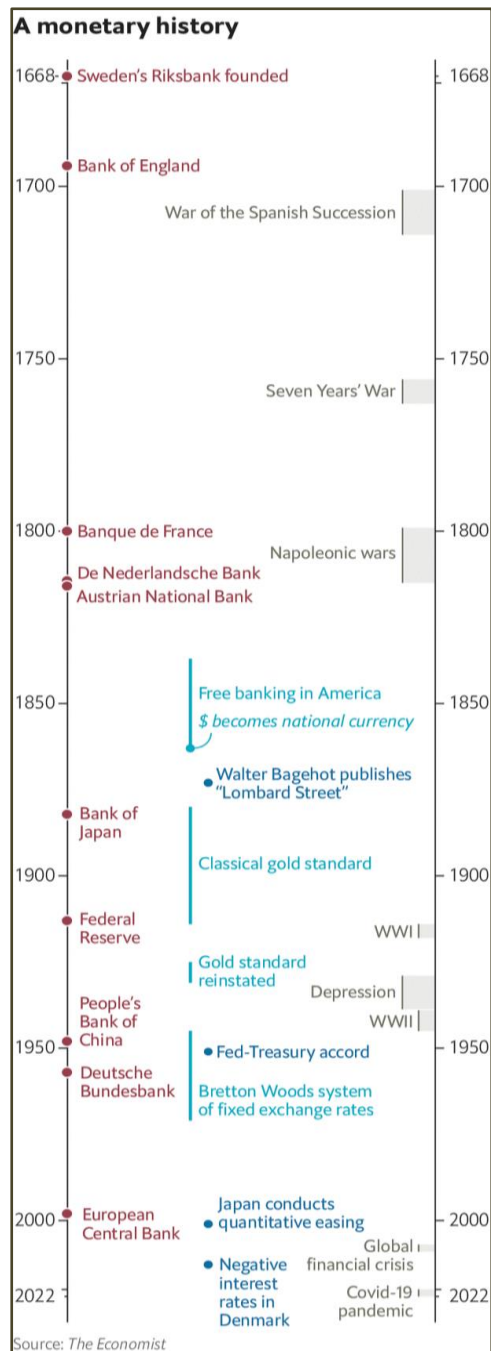
Central banks have great independence now, but many have been criticised for overstepping their brief. They have been blamed for propping up the financial sector, and denting savers' incomes, in the wake of the financial crisis of 2007-08 [13].

Such debate is almost as old as central banking itself. Over more than 300 years, the power of central banks has ebbed and flowed as governments have by turns enhanced and restricted their responsibilities in response to economic necessity and intellectual fashion. Governments have asked central banks to pursue several goals at once: stabilising currencies; fighting inflation; safeguarding the financial system; co-ordinating policy with other countries; and reviving economies [13].

These goals are complex and not always complementary; it makes sense to put experts in charge. That said, the actions needed to attain them have political consequences, dragging central banks into the democratic debate. In the early decades after US independence, two central banks were founded and folded before the Federal Reserve was established in 1913. Central banks' part in the Depression of the 1930s, the inflationary era of the 1960s and 1970s and the credit bubble in the early 2000s all came under attack [13].

The first central banks were created to enhance the financial power of governments. The pioneer was the Sveriges Riksbank, set up as a tool of Swedish financial management in 1668 (see chart, a monetary history [14]). But the template was set by the Bank of England, established in 1694 by William III, ruler of both Britain and the Netherlands, in the midst of a war against

France. In return for a loan to the crown, the bank gained the right to issue banknotes. Monarchs had always been prone to default—and had the power to prevent creditors from enforcing their rights. But William depended on the support of Parliament, which reflected the interests of those who financed the central bank. The creation of the bank reassured creditors and made it easier and cheaper for the government to borrow [13].



No one at the time expected these central banks to evolve into the all-powerful institutions of today. But a hint of what was to come lay in the infamous schemes of John Law in France from 1716 to 1720. He persuaded the regent (the king, Louis XV, was an infant) to allow him to establish a national bank, and to decree that all taxes and revenues be paid in its notes. The idea was to relieve the pressure on the indebted monarchy. The bank then assumed the national debt; investors were persuaded to swap the bonds for shares in a Mississippi company, which would exploit France's American possessions [13].

Paper money was a more useful medium of exchange than gold or silver, particularly for large amounts. Private banks might

<sup>4</sup> Boivin, J. and M. Giannoni, "Has monetary policy become more effective?," Review of Economics and Statistics, Aug 2006 (88(3), p. 445-62.

issue notes but they were less trustworthy than those printed by a national bank, backed by a government with tax-raising powers. Because paper money was a handier medium of exchange, people had more chance to trade; and as economic activity grew, government finances improved. Governments also noticed that issuing money for more than its intrinsic value was a nice little earner [13].

A suspicion that central banks were likely to favour creditors over debtors was not foolish. The UK had moved onto the gold standard, by accident, after the Royal Mint set the value of gold, relative to silver, higher than it was abroad at around the turn of the 18th century, and silver flowed overseas. Since Bank of England notes could be exchanged on demand for gold, the bank was in effect committed to maintaining the value of its notes relative to the metal [13].

By extension, this meant the bank was committed to the stability of sterling as a currency. In turn, the real value of creditors' assets (bonds and loans) was maintained; on the other side, borrowers had no prospect of seeing debts inflated away [13].

Gold convertibility was suspended during the Napoleonic wars: government debt and inflation soared. Parliament restored it in 1819, although only by forcing a period of deflation and recession. For the rest of the century, the bank maintained the gold standard with the result that prices barely budged over the long term. But the corollary was that the bank had to raise interest rates to attract foreign capital whenever its gold reserves started to fall. In effect, this loaded the burden of economic adjustment onto workers, through lower wages or higher unemployment. The order of priorities was hardly a surprise when voting was limited to men of property [13].

The 19th century saw the emergence of another responsibility for central banks: managing crises. Capitalism has always been plagued by financial panics in which lenders lose confidence in the creditworthiness of private banks. Trade suffered at these moments as merchants lacked the ability to fund their purchases. In the panic of 1825 the British economy was described as being "within twenty-four hours of a state of barter." After this crisis, the convention was established that the Bank of England act as "lender of last resort". Walter Bagehot, an editor of *The Economist*, defined this doctrine in his book "Lombard Street", published in 1873: the central bank should lend freely to solvent banks, which could provide collateral, at high rates [13].

The idea was not universally accepted; a former governor of the Bank of England called it "the most mischievous doctrine ever breathed in the monetary or banking world". It also involved a potential conflict with a central bank's other roles. Lending in a crisis meant expanding the money supply. But what if that coincided with a need to restrict the money supply to safeguard the currency [13]?

As other countries industrialised in the 19th century, they copied aspects of the British model, including a central bank and the gold standard. That was the pattern in Germany after its unification in 1871 [13].

The US was eventually tipped into accepting another central bank by the financial panic of 1907, which was resolved only by the financial acumen of John Pierpont Morgan, the country's leading banker. It seemed rational to create a lender of last resort that did not depend on one man. Getting a central bank through Congress meant assuaging the old fears of the "eastern money power". Hence the Fed's unwieldy structure of regional, privately owned banks and a central, politically appointed board [13].

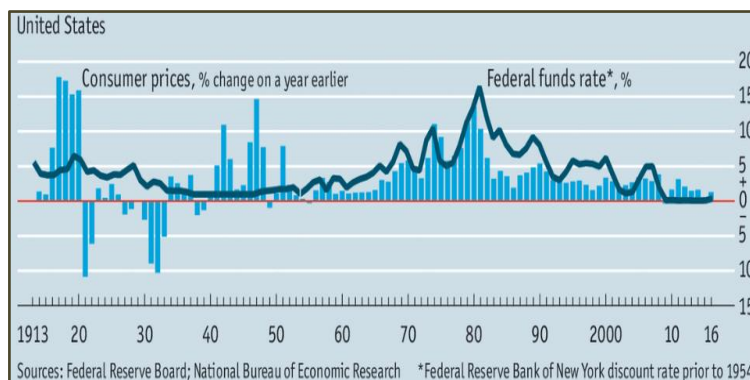
Ironically, no sooner had the Fed been created than the global financial structure was shattered by the first world war. Before 1914 central banks had co-operated to keep exchange rates stable. But war placed domestic needs well ahead of any international commitments. No central bank was willing to see gold leave the country and end up in enemy vaults. The Bank of England suspended the right of individuals to convert their notes into bullion; it has never been fully reinstated. In most countries, the war was largely financed by borrowing: central banks resumed their original role as financing arms of governments, and drummed up investor demand for war debt. Monetary expansion and rapid inflation followed [13].

Reconstructing an international financial system after the war was complicated by the reparations imposed on Germany and by the debts owed to the US by the allies. It was hard to co-ordinate policy amid squabbling over repayment schedules. When France and Belgium occupied the Ruhr in 1923 after Germany failed to make payments, the German central bank, the Reichsbank, increased its money-printing, unleashing hyperinflation. Germans have been wary of inflation and central-bank activism ever since [13].

The mark eventually stabilised and central banks tried to put a version of the gold standard back together. But two things hampered them. First, gold reserves were unevenly distributed, with America and France owning the lion's share. Britain and Germany, which were less well endowed, were very vulnerable. Second, European countries had become mass democracies, which made the austere policies needed to stabilise a currency in a crisis harder to push through. The political costs were too great. In Britain the Labour government fell in 1931 when it refused to enact benefit cuts demanded by the Bank of England. Its successor left the gold standard. In Germany Heinrich Brüning, chancellor from 1930 to 1932, slashed spending to deal with the country's foreign debts but the resulting slump only paved the way for Adolf Hitler [13].

The US was by then the most powerful economy, and the Fed the centrepiece of the interwar financial system. The central bank struggled to balance domestic and international duties. A rate cut in 1927 was designed to make life easier for the Bank of England, which was struggling to hold on to the gold peg it had readopted in 1925. But the cut was criticised for fuelling speculation on Wall Street. The Fed started tightening again in 1928 as the stockmarket kept booming. It may have overdone it [13].

If central banks struggled to cope in the 1920s, they did even worse in the 1930s (see chart US consumer prices and Fed funds rate). Fixated on exchange rates and inflation, they allowed the money supply to contract sharply. Between 1929 and 1933, 11,000 of the US's 25,000 banks disappeared, taking with them customers' deposits and a source of lending for farms and firms. The Fed also tightened policy prematurely in 1937, creating another recession [13].



During the second world war central banks resumed their role from the first: keeping interest rates low and ensuring that

governments could borrow to finance military spending. After the war, it became clear that politicians had no desire to see monetary policy tighten again. The result in America was a running battle between presidents and Fed chairmen. Harry Truman pressed William McChesney Martin, who ran the Fed from 1951 to 1970, to keep rates low despite the inflationary consequences of the Korean war. Martin refused [13].

In many other countries, finance ministries played the dominant



role in deciding on interest rates, leaving central banks responsible for financial stability and maintaining exchange rates, which were fixed under the post-war Bretton Woods regime [13]. The era of the Bretton Woods system of fixed exchange rates and capital controls lasted from 1945 to 1973 [15]. Like the gold standard, the system depended on governments' willingness to subordinate domestic priorities to the exchange rate [13]. It was a time of rapid economic growth in the rich world as countries rebuilt themselves after the war and as the technological innovations of the first half of the 20th century—cars, televisions, and so on—came into widespread use. High taxes reduced inequality; fiscal policy was used to control the economic cycle. It all came crashing down in the early 1970s. By 1971, President Nixon was unwilling to bear the cost and the fixed-currency system collapsed, and an oil embargo imposed by Arab producers ushered in stagflation (ie, high unemployment combined with inflation) [15].

This crisis gave central banks the chance to develop the powers they hold today. Politicians had shown they could not be trusted with monetary discipline: they worried that tightening policy to head off inflation would alienate voters. Milton Friedman, a Chicago economist and Nobel laureate, led an intellectual shift in favour of free markets and controlling the growth of the money supply to keep inflation low. This "monetarist" approach was pursued by Paul Volcker, appointed to head the Fed in 1979. He raised interest rates so steeply that he prompted a recession and doomed Jimmy Carter's presidential re-election bid in 1980. Farmers protested outside the Fed in Washington, DC; car dealers sent coffins containing the keys of unsold cars. But by the mid-1980s the inflationary spiral seemed to have been broken [13].

The new currency system that emerged in the 1980s was floating exchange rates and the abolition of capital controls. The financial sector was liberalised, industry was privatised and tax rates on higher incomes were cut. In this system inequality widened again (although economists still debate how to parcel out the blame between technological change and globalisation, as China and other countries took a full part in trade). Growth was slower than in the Bretton Woods era but inflation was reined in. Monetary measures replaced fiscal ones as the main policy tool [15].

The final years of both periods were marked by a degree of monetary experimentation. In the late 1970s many policymakers were converted to the doctrine of monetarism—the idea that by setting a target for the growth of the money supply governments

could control inflation (and that controlling inflation should be the main aim of their policies). But monetarism proved harder to implement than its proponents thought; the monetary targets behaved unpredictably. By the mid-1980s, monetarism had been quietly dropped [15].

Nevertheless, in the wake of Mr Volcker's success, other countries moved towards making central banks more independent, starting with New Zealand in 1989. Britain and Japan followed suit. The European Central Bank (ECB) was independent from its birth in the 1990s, following the example of Germany's Bundesbank. Many central bankers were asked to target inflation, and left to get on with the job. For a long while, this approach seemed to work perfectly [13]. Interest rates fell steadily from the late 1980s (see chart, US long-term rates).

The period of low inflation and stable economies in the 1990s and early 2000s were known as the "Great Moderation". Alan Greenspan, Mr Volcker's successor, was dubbed the "maestro". Rather than bully him, presidents sought his approbation for their policies. Nevertheless, the seeds were being sown for today's attacks on central banks. In the early 1980s financial markets began a long bull run as inflation fell. When markets wobbled, as they did on "Black Monday" in October 1987, the Fed was quick to slash rates. It was trying to avoid the mistakes of the 1930s, when it had been too slow to respond to financial distress. But over time the markets seemed to rely on the Fed stepping in to rescue them—a bet nicknamed the "Greenspan put", after an option strategy that protects investors from losses. Critics said that central bankers were encouraging speculation [13].

Since 1999, central banking had been dominated by what could be called the "Jackson Hole consensus". This consensus held that central bankers' prime task is to keep inflation low and stable. It favours an inflation target as a way to anchor people's expectations of future policy, and puts a lot of weight on the transparency and predictability of central banks' interest-rate decisions [17]. The practice of inflation-targeting proved remarkably long-lived. For almost three decades, central bankers agreed that their best route to stabilising an economy is to aim for a specific target for inflation, usually 2% in advanced economies and a little higher in emerging ones [16].

The spread of inflation targeting went hand-in-hand with greater independence for central banks. The more independent central banks are, the more they are trusted by investors. Credibility, again. An explicit inflation target anchors price expectations in a straightforward way—by combining a clear, rules-based regime with some tactical discretion by the central bank over how to hit the target. If the central bank can convince the public and the markets that it is utterly committed to its goal, people's expectations will change. If price-setters and wage-bargainers believe that the central bank means business, monetary policy gains extra clout, allowing bankers to get the financial markets to do more heavy lifting. When a central bank cuts short-term interest rates, investors no longer counteract monetary easing by demanding higher rates on long-term bonds, in expectation of rising inflation. As part of the deal, bankers lifted the traditional veils of secrecy, to become more open in their operations and better at signalling their intentions to the markets. [18].

To a large extent, the virtues of inflation targeting lie in the absence of the vices of other regimes. Unlike exchange-rate commitments, inflation targets are not vulnerable to speculative attacks on the currency. Unlike monetary targets, inflation is a final rather than intermediate goal. The money-supply growth link to inflation is not a straightforward relationship mainly because of instability in the demand for money [18]. Inflation-targeting regimes create a framework in which a central bank can be both independent and democratically accountable. The government can set the goal for inflation while leaving to the operationally independent central bank the task of how to meet

that objective. This division of responsibility can reinforce, not diminish, the central bank's authority [18].

However, inflation targeting was launched into calm seas. With largely benign economic conditions during the 1990s, sceptics say, the regime had not really been tested. Not so, respond authors of a study<sup>5</sup> of the first decade of inflation targeting. Many countries with inflation targets are small, open economies that suffered big currency devaluations after the Asian crisis of 1997-98. Yet, unlike earlier shocks, this one did not cause inflation to surge. In emerging economies, the reduction in inflation has involved a smaller sacrifice in terms of lost output than other policy regimes. In both developed and developing countries, output over time had become less volatile [18].

The consensus is not absolute. The Fed never adopted an explicit inflation target (though it has an implicit one). Some central bankers in Europe and Japan argued that monetary policy should "lean against" asset bubbles, whereas Fed officials thought bubbles were hard to spot, and that it was less costly to clean up by cutting rates after they burst. No one focused much on central bankers' responsibility for broader financial stability, or thought much about the financial plumbing through which changes in short-term interest rates affect the broader economy [17].

Nevertheless, however desirable it is to secure low inflation, narrowly defined, this cannot be the sole objective of monetary policy. After all, dangerous imbalances can build up in the economy even when inflation as conventionally measured is at bay. There is a strong case for the central bank to take more explicit account of asset prices or of misaligned exchange rates rather than focus only on retail-price inflation.

The point is that there is more to monetary policy than trying to achieve a single policy objective. The solution to this problem of multiple goals is to allow the central bank more discretion. However, that could start to undermine the credibility that underpins a largely rules-based regime. For all its virtues, inflation targeting did not resolve all the problems surrounding monetary policy [18]. This era suffered its defining crisis in 2007-08, spelling its end [15].

In the wake of the GFC, it became commonplace to demand that central banks worry about the health of the financial system, not just price stability. In many countries there were plans to give them responsibility for "macro-prudential supervision", an ugly term for fretting about financial excesses. Less well understood, though, was how much these new tasks would change the central bankers' world. The main tenet of the Jackson Hole consensus—that central banks earn their credibility by having a simple target which the public understands and to which they are held accountable—would be much harder to maintain [17].

Unlike price stability (measured by a price index), financial stability is hard to define, let alone measure. Nor is it clear what tools to use. Most central bankers reckon regulation should be the first line of defence, though it was becoming widely accepted that rates might need to rise to stem an asset bubble. Just what regulations, though, was less clear. Many countries planned tighter rules on liquidity and capital for systemically important firms. But, as Stanley Fischer, governor of the Bank of Israel, pointed out to the Jackson Hole attendees, older tools such as margin requirements or maximum loan-to-value ratios could also be used. Others argued that the focus on systemically-important institutions was misguided. Instead, central bankers should guarantee the stability of vital markets (such as the money market) [17].

The difficulty of defining financial stability and the plethora of potential tools means central bankers would, in future, have much more discretion. Their new mandate will also affect the old focus on inflation in ways that are, as yet, ill understood. Mark Carney, the governor of the Bank of Canada, pointed out that rules to promote financial stability, such as higher capital charges for big banks, affect the process through which monetary policy decisions are transmitted to the broader economy. And using interest rates to promote financial stability means that inflation-targeting central banks may well deviate from their inflation targets for longer periods (for instance, if asset prices are soaring but consumer prices are stable). That is a sensible trade-off, but it can compromise the central banks' public credibility [17].

Not surprisingly, Fed officials denied an inconsistency between keeping inflation stable and rates low for a long time. The point, they argued, was to stop inflation expectations falling, not to push them up. Nonetheless, some central bankers were intrigued by the idea of price-level targeting. Mr Carney argued that it might prove a good way for central banks to retain their credibility while targeting both price and financial stability. Mr Walsh, worried that price-level targeting is harder to explain to the public. Worse, a change in monetary-policy rules in the aftermath of a crisis would itself damage central bankers' credibility [17].

### Central bank autonomy

What is so special about an independent central bank? Support for their autonomy emerged as a result of the counter-revolution against Keynesianism of the 1970s, and is built on two related ideas. First, independence is necessary to preserve monetary restraint. Robert Lucas, a Nobel laureate, argued that when elected leaders exercise influence over interest rates, they cannot resist the temptation to loosen monetary policy in election years, accepting higher inflation as the price of lower unemployment. Anticipating this behaviour, people's expectations of inflation change. Inflation accelerates, even as unemployment holds steady or rises. To rein in inflation, monetary policy had to be depoliticised and given to central bankers [19].

Second, independence intended to impose discipline on fiscal policy. In 1981 Thomas Sargent (another Nobel laureate) and Neil Wallace pointed out that central banks and governments are locked in a battle for dominance. If a central bank is beholden to the government then spendthrift politicians might become emboldened and rack up enormous debts, knowing that should markets lose faith, a dutiful central bank will step in and print money to cover the fiscal shortfall. If a central bank can credibly assert independence and commit to a monetary-policy target, governments can be persuaded that money-printing is not available as a backstop, and that public debt must be kept under control. In the 1970s governments ran roughshod over their central banks, contributing to the high inflation of the period. During the great moderation of business cycles in the 1980s, by contrast, assertive central bankers hectored their governments about the need for fiscal restraint. By successfully imposing discipline on governments, central bankers avoided being captured by them [19].

This model has been turned on its head by the steady downward march of interest rates that began in the 1980s as a result of financial globalisation, lower inflation and expectations of slower growth. Since the financial crisis rates have fallen to extraordinary depths (see chart, left panel, bond yields). This striking trend, which once looked like a macroeconomic triumph, now threatens to marginalise central banks. It has steadily eliminated the room central banks have to cut their

<sup>5</sup> "One decade of inflation targeting in the world", by Frederic Mishkin and Klaus Schmidt-Hebbel. National Bureau of Economic Research working paper, July 2001.

benchmark interest rates to provide an economic boost during a slump – making them unable to generate strong growth or to return rates to normal levels after years of recovery [19].

The remaining tools available to central banks represents a further erosion of authority, unable to reduce their ability to impose discipline on government budgets. If not eventually reversed, quantitative easing, or the purchase of government bonds with newly created money, represents the monetary financing of some government debt—precisely the outcome independence was meant to rule out. Negative interest rates relax budget constraints by reducing the cost of financing government debt. New policy tools (like the authority to buy a wider range of assets or a change in mandates) would in most cases require government permission. As asset purchases lead to larger central-bank balance-sheets, so do the potential losses to those banks from higher interest rates (and corresponding declines in the prices of the bonds they hold). Such losses do not impair monetary policy, but would open central banks to intense scrutiny [19].

Although economists remain broadly in favour of central-bank independence, new research affirms the importance of stimulatory fiscal policy. The continued economic doldrums create a political opening for more aggressive fiscal action. The loss of central-bank autonomy would create risks—serious ones in places with a history of fiscal incontinence. Governments are not the deftest of economic stewards, often slow to respond to slumping demand. Tax cuts and spending increases can play havoc with people’s incentives, undermining the efficiency of the economy. Yet history also suggests that central-bank submission need not lead to disaster. The period from the 1940s to the 1970s, when governments took primary responsibility for keeping economies out of slumps, was more volatile and inflationary but it was hardly Armageddon. Demand-starved recoveries with central-bank interest rates stuck perpetually at or below zero are corrosive in their own way. The independent central bank was an impressive technocratic institution [19].

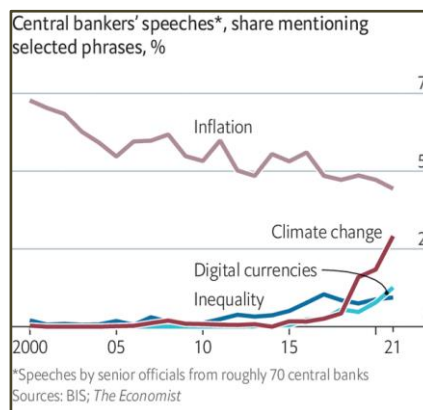
The relationship between central banks and governments has grown complicated. To manage the GFC and the covid-19 pandemic, central banks intervened in a range of financial markets, in some cases buying corporate bonds and equities. To stimulate economies and keep markets functioning they hoovered up massive amounts of government bonds, an action that could be confused for the monetary financing of public debt. At the same time, their struggles to revive inflation have turned some monetary officials into vocal advocates for fiscal stimulus – quite a reversal from past practice. The boundary between the fiscal and monetary spheres, once so clear, has blurred [20].

#### Loss of autonomy: monetary policy’s social objectives

Politicians seem as though they are ducking their responsibilities – and, in the process, make central banks seem like political actors. The ambiguous and occasionally conflicting nature of tacked-on social goals encourages a view of central bankers as multi-tasking dilettantes, rather than stolid guardians of the currency [20]. In assigning greater social tasks to a central bank, one might question whether the rethink is that in the profit-obsessed market economies self-interest crowds out other motivations, making the world a more selfish place, potentially less resilient and less prosperous too?

As monetary-fiscal policy has blurred, both governments and central bankers have also taken a more expansive view of the latter’s mission. Central banks are under pressure to cure all sorts of social ills. Consider their preoccupation with income distribution. According to a database maintained by the Bank for International Settlements (BIS), words related to inequality cropped up in a tenth of speeches made by central bankers in 2021, compared with about 2% before the GFC (see chart, central bankers’ speeches). The greater attention in part reflects a response to arguments that central banks worsened inequality

by keeping interest rates low and boosting asset prices. But they also face calls to do more to remedy inequality and other social ills directly [23].



In the US progressives have called on the Fed to tackle racial gaps in employment, income and wealth [23]. The Fed reviewed its policy framework partly in recognition of the fact that premature tightening tends to impose disproportionate harm on workers from poorer backgrounds. Monetary officials began to pay more attention to inequality and welfare of marginal workers [20]. In April 2021, congress proposed to amend its mandate, which requires it to aim for price stability and maximum employment, to add demands that it tries to eliminate racial gaps [23].

In February 2021, the Reserve Bank of New Zealand (RBNZ) was instructed by the government to take account of house prices when setting monetary policy [20]. As in other rich countries, the central bank is seen as a big contributor to the housing boom. At a finance minister’s instruction and subject to its primary inflation and employment goals, the RBNZ must have regard to housing prices and the government’s objective of making property affordable for first-time buyers [23].

In the ECB, climate change has become a hot topic. Ms. Lagarde said the ECB was assessing how it might contribute to European climate goals. Former governors of the Bank of England have also been vocal on the matter of climate change [20].

By contrast, the PBOC has long had a multiplicity of goals. Chief among them in currency and economic stability. But the government has also asked it to improve the economic structure, implement reforms and enhance household welfare. Since 2014 the PBOC has conducted structural monetary policy, which targets credit to different sectors through subsidized lending facilities, to boost specific parts of the economy without worsening debt problems for overextended state-owned firms. The push to lend to small firms also supports the wider common-prosperity campaign, by lifting employment and therefore household income [23].

For central banks, the problem of tackling a structural problem with a cyclical tool is that it creates a tension between achieving its main mission and fixing social ills. When inflation was low, it was possible for the Fed to run the economy hot to bring disadvantaged workers into the labour force. But as inflation rises those good intentions could make the central bank slower to ensure its target is reached. A central bank would be unlikely to raise rates to reduce house prices if their goals of maximum employment and inflation must always come first [23].

Thus, the line between intrusive politics and independent central banking has blurred. As the examples of climate change and inequality show, not all problems can be fixed by monetary policy [23].

### Loss of autonomy: new financial stability responsibilities

A second blurring of monetary-fiscal policy objectives is the new financial-stability responsibilities handed to central bankers in the aftermath of the GFC and pandemic responses.

The nightmare scenario is that central banks end up financing fiscal deficits, and governments press them to keep monetary policy loose, leading to spiralling inflation (as occurred post-pandemic). The close links between monetary policy, on the one hand, and financial stability and the public finances, on the other, could together make central banks think twice about how tough to be in response to rising inflation [22].

The real test lies ahead. QE did not lower the government's borrowing costs but rather changes it when the bill falls due. QE works by swapping long-term bonds for the shortest-duration liabilities possible: central-bank reserves. These reserves, which are remunerated at a floating rate, form part of consolidated government finances. So, in effect, central banks have become managers of the public debt. With interest rates having to rise to tackle inflation, governments, weighed down by debt burdens swollen during the pandemic, will have a higher bill to pay [22].

Not just because central banks have bought vast quantities of public debt to shore up economies. They have also come closer to disbursing implicit subsidies on their own account [23].

The scope for losses has grown considerably. As the GFC took hold in 2007, many central banks cut their main policy rates to zero to revive collapsing economies. To inject further stimulus, most turned to QE using newly created money to buy riskier assets like long-term government bonds, mortgage-backed securities and, in some cases, equities. Asset purchases in response to the covid-19 pandemic mean that balance-sheets have ballooned. The ECB hoovered up large quantities of public and private-sector bonds. The Fed gobbled up corporate bonds, municipal paper and bank loans to firms of all sizes. Enacted economic rescue bills in the US passed in 2020 protect against losses of up to \$454bn. The Bank of Japan suffered a large hit to its ¥30trn (\$270bn) portfolio of equity funds when stocks plunged in 2020 [21].

Losses at central banks, though, are different from those at private banks. A commercial bank that is in the red might lose the confidence of its creditors, including its depositors, which could place it at risk of bankruptcy. Central bank depositors, by contrast, have nowhere to go: (There are exceptions: in Lebanon the central bank accumulated large foreign-currency liabilities that could not be met through printing money) [21].

But generally speaking, central banks cannot go bust, and economists largely agree that negative net worth is no impediment to setting monetary policy. In practice, however, a central bank with negative capital would invite much scrutiny. A central bank is ultimately part of the government, and in some respects its liabilities resemble government debt. Treasuries can be required to compensate for central bank losses. Paying the bills by printing money is not a good look. Losses would expose the fragility of central bank independence [21].

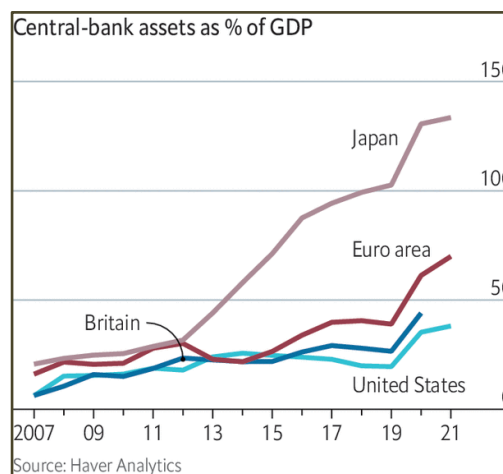
Perhaps the solution is to acknowledge that central banks now work more closely with governments. Years of financial tumult and falling interest rates have forced them to do more, and to cooperate with fiscal authorities. Rather than fret that losses erode their independence and enable reckless fiscal policy, it may be time to recognise that governments have a role to play in stabilising the economy too – and demand that they do it properly [21].

A central bank's power stems from its ability to create reserves from thin air so as to buy assets or lend to borrowers. The use of the balance-sheet involves choices: which assets to buy, and how much. Central banks are guided by their legal mandates,

using their clout to defuse risks to the financial system and meet their inflation targets. But their actions create winners and losers. After the GFC the Federal Reserve was castigated for bailing out Wall Street over Main Street. The ECB was attacked for being slow to act as a lender of last resort to the euro area's heavily indebted southern members [22].

The power of central banks was on its fullest display during the pandemic. As countries began locking down in spring 2020, an enormous shock reverberated across the financial system. Desperate for cash, investors dumped even safe Treasuries. Corporate-credit markets dried up. Central banks reacted strongly and rapidly. Between March and June 2020, writes Athanasios Orphanides of the Massachusetts Institute of Technology, the Fed created as many reserves as it had in its first 100 years [22].

As unparalleled as the scale of this intervention was its scope. The Fed introduced nine emergency-lending schemes, backstopping financial markets worth about \$24trn and supporting bank lending to firms. It bought Treasuries, first to stabilise the bond market, then to lower borrowing costs (another round of QE, see chart central bank assets). The assets of central banks in the US, Britain, the euro area and Japan rose during the pandemic by more than \$10trn. More than a dozen emerging markets, including India, Indonesia and South Africa, bought government bonds [22].



As inflation surged in 2022, net purchases under QE began ending. Yet the consequences of these interventions will endure, not least by creating expectations that central banks will always come to the rescue if trouble hits. Vast stockpiles of government bonds have left monetary policy uncomfortably enmeshed with the public finances. Both considerations could make central banks less willing, or less able, to act forcefully to fight inflation [22].

Central banks became “corporate safety-nets”. The Fed bought commercial paper from companies, backed bank loans across the economy and even backstopped municipal debt. The Fed's actions were its deepest involvement in the corporate-credit market since the 1930s. The ECB extended loans to banks. The Bank of England lent directly to firms. The ECB, having run out of monetary firepower even before the pandemic, had already resorted to subsidised loans. For some central bankers this was uncomfortable. The PBOC is “a lending machine”, says Alicia Garcia Herrero of Natixis, an investment bank. In the middle of a trade war, it told banks how much to lend to the private sector [22].

Credit support might be seen as just part of the regular toolkit. The safety-net for investors may also feed the belief that central banks will always step in at the merest hint of trouble. Such moral hazard may just encourage investors to take greater risks. “The whole point of the Dodd-Frank Act in 2010 was to keep the Fed from intervening again,” says Mr Rajan. “But in 2020 it



did everything and more. How do you get markets not to believe that you'll do it again and again?" [22]

### Evolution of monetary policy changes after 2000

An important change in monetary policy and central banking is related to transparency in communication. Prior to the GFC, central bankers thought their job was best done in secrecy. A few reckoned the public could not be trusted to understand the finer points of monetary policy; others felt that catching markets unawares maximised the impact of a change in policy. In the 1980s central bankers rarely saw fit to inform the public of their near-term goals or even about past interventions. When called upon to speak in public, they did so with a practised opacity. Alan Greenspan, chairman of the Fed from 1987 to 2006, was an expert in "mumbling with great incoherence" [10].

In the 1990s, economists came to see transparency as a way to amplify rather than diminish the power of monetary policy. A better understanding of what a central bank is up to, they reasoned, should help investors anticipate its actions, thereby avoiding destabilising lurches in markets. That, in turn, should help central banks keep the economy running smoothly [10].

As a first step, central banks clarified their policy goals by setting explicit targets for inflation, an innovation adopted by the Reserve Bank of New Zealand in 1990 which many have since followed. Next central bankers began revealing more about their assumptions and deliberations. The Bank of England in 1998 was required to explain its decisions, via the publication of minutes of its meetings and a detailed inflation report. In 1999, the Bank of Japan pioneered the tactic of "forward guidance", when it promised to leave its interest rate at zero "until deflationary concerns subside" (by 2020 they still had not). Clear communication can be extraordinarily powerful. When Mario Draghi, president of the European Central Bank, declared in 2012 that he would do "whatever it takes" to save the euro, market sentiment abruptly reversed [10].

Central bankers tend to muck up their communications in three critical ways. First, they often obscure their message with lots of unhelpful noise. More information is better, but only to the extent that it makes future policy actions more predictable. Between meetings, Fed officials barnstorm around the country giving speeches, but their individual assessments of the economy are often a poor guide to the thinking of the monetary-policy committee as a whole. This sort of ambiguity reduces both the power and the precision of Fed policy [10].

Economists at the Federal Reserve Bank of Chicago (2012) described a second common flaw with forward guidance that can be even more damaging than cacophony. They distinguish between "Delphic" guidance—economic forecasts—and the "Odyssean" sort—a pledge to behave in a certain way (so named because one example might be promising to resist the siren song of rate increases even if inflation picks up). Some forward guidance could be read either way: the statement that rates are likely to remain low for a long time could mean that the central bank expects growth to be too weak to justify rate rises, in which case investors have good reason to stay pessimistic. But it could also represent a commitment not to raise rates even as growth accelerates, lifting expectations of future inflation and providing an incentive to borrow and invest in the present. A failure to distinguish between the two risks steering markets in the wrong direction [10].

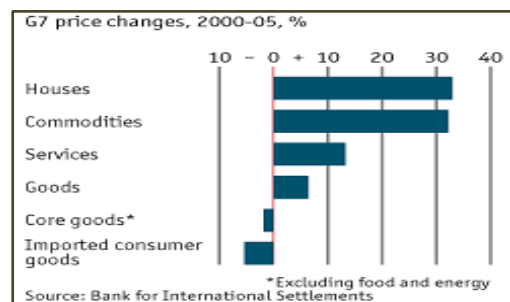
As the Fed started tightening (after loosening in response to the financial crisis), it risked making a third mistake: being vague about how many times it intended to raise rates to avoid upsetting markets. Research by Jeremy Stein (a former Fed governor) and Adi Sunderam, both of Harvard University, suggests that markets see through attempts to serve big rate rises in small doses and begin reacting strongly to small rate shifts

(thereby inducing still more caution in central bankers and more market overreaction). That does not mean that central bankers should raise rates steeply in one go, or commit to a particular path for hikes, when they are unsure how the economy as a whole will react. Rather, they should combine guidance about their preferred trajectory for interest rates with a clear statement about what would and would not trigger deviations from that plan [10].

It is only natural for central banks to be a little tentative in their initial experiments with a relatively new technique such as forward guidance. In general things would work better if they were more coherent and more forthright. Indeed, the effort to speak more clearly might help monetary-policy committees to think more clearly [10].

Globalisation has also had an effect on monetary policy through its effect on general prices. Competition from emerging market economies arguably began to hold down inflation worldwide since around 2000 and remained subdued until 2006. In developed economies, notably the US, just prior to the GFC, inflation was well below what most economic models would predict given strong growth, rising oil prices and easy monetary conditions. This may have been partly the result of better monetary policy, which lowered inflationary expectations, but more likely explanation is that globalisation made the central banks' job of holding down inflation much easier [11].

Monetary pedants argue that in the long run inflation is determined by monetary policy. Globalisation can affect only relative prices. Thus, China was pushing up commodity prices, but pulling down the cost of labour-intensive manufactured goods (see chart G7 price changes). If central bankers aimed for a particular inflation target, then falling prices of consumer durables would be offset by rising prices elsewhere, leaving the inflation rate unchanged [11].



However, globalisation could make such targets easier to achieve, at lower interest rates than would otherwise be necessary. This can happen in several ways. Most obviously, the opening up of China, India and the former Soviet block exerted downward pressure on inflation by increasing competition from these lower-cost producers. The average price of US imports from emerging Asia fell by over 25% in the decade from 1995 [11].

The increase in the global labour force also curbed workers' bargaining power, and hence wage costs. More generally, the expansion in global supply brought about by the emerging economies reduced price pressures at any given rate of growth and so reduced the cost of fighting inflation. By helping to tame inflation, globalisation may have bolstered the credibility of central banks, thus reducing inflationary expectations. Lastly, globalisation reduced the sensitivity of inflation to changes in the amount of domestic economic slack [11].

Economists at the Bank for International Settlements, Claudio Borio and Andrew Filardo, confirmed that inflation rates in developed economies had become less sensitive to the domestic output gap (the difference between actual and potential GDP), whereas global economic conditions became more important. In a closed economy, when production outpaces potential output, inflation rises. In an open economy, an increase in demand can be met by imports, so it has less of an effect on inflation [11].

This makes a nonsense of traditional closed-economy models used to forecast inflation, which assume that firms set prices by adding a mark-up over unit costs, with the size of the margin depending on the amount of slack in the domestic economy. It also explains why inflation was relatively low even though domestic capacity utilisation had been rising rapidly and unemployment had been falling in most developed economies: at a global level there was still ample economic slack [11].

Some economists questioned the link between globalisation and lower inflation. For example, the IMF's April 2006 *World Economic Outlook* concluded that the decline in real import prices caused by globalisation had little lasting effect on inflation rates. However, this ignored the potentially larger indirect effects of increased international competition. Cheaper goods from China did not just reduce the prices of imports, but the prices of all goods sold in competing domestic markets. Competition from emerging economies holds down inflation not just in traded goods but also in non-traded ones, by restraining wages [11].

Don Kohn, former vice-chairman of the US Federal Reserve, argued that the entry of China and India into the global trading system had probably only a mild disinflationary effect. By running CA surpluses, these economies added more to global supply than to demand, so their net effect on the rest of the world was disinflationary. Mr Kohn noted that if their exchange rates rose and domestic demand increased, eliminating CA surpluses, then these effects could be reversed [11].

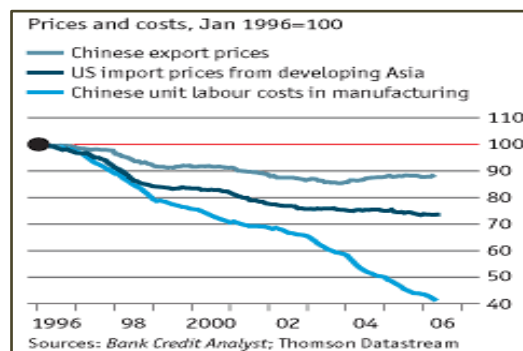
Still, even if emerging economies as a group had run a CA deficit, the increasing integration into the world economy of lower-cost producers would have continued to hold down wages and prices in a growing number of industries. So long as goods remained much cheaper in emerging economies, the rising market share of these countries would help to reduce inflation in the developed world. International trade in services was also likely to accelerate. The IMF calculated that if trade integration in business services were to reach the levels in manufacturing, prices for these services would fall by 20% relative to average producer prices [11].

None of this meant that globalisation killed off inflation. Indeed, the rise in the US's inflation rate to over 4% in 2006, should have rung alarm bells much sooner. Capacity constraints and hence inflationary pressures would eventually make themselves felt in the world economy, just as they always have done at national level [11].

Some commentators thought that this had been beginning in 2006 when there was a flurry of reports suggesting that China was running out of cheap labour, and that wages and export prices were rising. China, it was argued, began exporting inflation, not deflation. Such concerns were overblown. Several cities increased their minimum wage by an average of 20% in 2006, but many manufacturers were already paying above the minimum. There were also reports of labour shortages in China, but mainly for managers and skilled workers. The rapid pace of average wage growth was due to productivity gains rather than labour shortages. Average urban wages rose by more than 10% a year in the decade to 2006, but productivity in manufacturing grew faster still, so unit labour costs fell (see chart prices and costs). China's productivity gains partly reflected a shift in the mix of its exports towards higher-value goods. In these new sectors the country drove global prices down, but the shift to more expensive products misleadingly made it look as if export prices stopped falling [11].

Arthur Kroeber of Dragonomics, a Beijing-based economic-research firm, dismissed concerns of China exporting inflation. Chinese export prices did pick up in 2004-05, but they fell again in 2006. US import prices from Asia also fell. Moreover, he

said, it was hard to see how China could export inflation when it had overcapacity from its excessive investment [11].

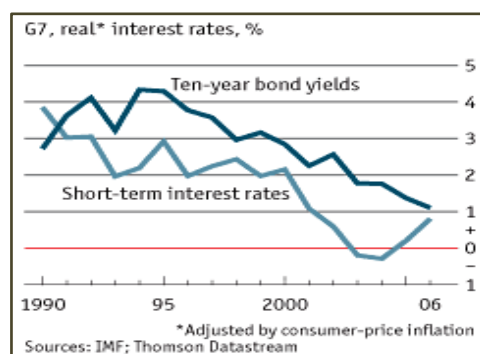


In any case, focusing on China's export prices alone tells only part of the story. As China increasingly penetrated world markets and provided competition for more workers in the developed world, the downward pressure on their wages would persist until all its surplus rural labour was absorbed [11].

In a way, the debate about whether globalisation reduces inflation misses the point. The real question is whether the opening up of the emerging economies allowed central banks in rich countries to hold interest rates much lower while still meeting their inflation goals. This raises two more questions. First, do low interest rates have undesirable side-effects? And second, what happens when the cost of borrowing eventually returns to normal levels [11]?

Globalisation may have helped to hold down inflation, but it also raised some new dilemmas for central banks. Most notably, should they cut interest rates to stop inflation falling below their usual target in response to a boost to global supply—which is how they would deal with falling inflation caused by a slump in demand—or should they accept a target rate of inflation below 2% [12]?

Real interest rates from the mid-1990s to mid-2000s remained lower for longer than at any other time during the past half-century. Despite tightening by some central banks, average real short-term rates and bond yields in the developed economies were well below normal levels (see chart, interest rates). Most commentators concluded that a new era of cheaper money had arrived [12].



Yet globalisation might have been expected to raise, not lower, the world's natural rate of interest (ie, the rate that is consistent with long-run price stability and also ensures that saving equals investment). In theory, the long-term real equilibrium interest rate should be equal to the marginal return on capital. The opening up of emerging economies increased the ratio of global labour to capital, raising the return on capital, so real interest rates should have risen, not fallen [12].

Another way to look at this is that real interest rates should be roughly the same as the trend rate of GDP growth (a proxy for the return on capital). If greater global economic and financial integration leads to a more efficient use of labour and capital,

economic growth will be faster, which again means that real interest rates should rise. So why had they been so low [12]?

Analysts put forward two main explanations for the low level of real bond yields prior to the GFC. The first was that high saving (in relation to investment) by Asian economies and Middle East oil exporters caused a global saving glut, pushing down yields. These economies ran large CA surpluses, and much of that money had been piled up in official reserves, particularly in US Treasury securities, as central banks intervened in the foreign-exchange market to prevent their currencies from rising [12].

A second explanation for low bond yields is that excess liquidity pushed up the prices of all assets, including bonds. The global money supply grew at its fastest pace since the 1980s. This excess liquidity had not pushed up conventional inflation (thanks largely to cheap Chinese goods), but fed into a series of asset-price bubbles around the world [12].

Both developed and emerging economies contributed to the flood of liquidity. Central banks in rich countries held interest rates abnormally low to offset disinflationary pressures from emerging economies. At the same time, to prevent their currencies rising, emerging economies also held interest rates low and engaged in heavy foreign-exchange intervention, which inflated their money supplies [12].

Both of these explanations for low interest rates—the saving glut and the excess liquidity—involve emerging economies; either through their impact on developed economies' inflation and hence monetary policy, or through their foreign-exchange intervention. In that sense, global monetary conditions were increasingly influenced by policies in Beijing as much as in Washington, DC. During 2005-06, emerging economies accounted for four-fifths of the growth in the world's monetary base [12].

Bill White, chief economist at the Bank for International Settlements, suggested that central banks' inflation targets may have been too high, given the big boost to global capacity from China's and India's re-emergence. Ben Bernanke, the chairman of the US Federal Reserve, argued that when the Fed slashed interest rates to 1% in 2003, it was trying to prevent harmful deflation. However, deflation need not be what it was in the 1930s, a vicious circle of deficient demand, falling prices and rising real debt. Historically, most deflations have been benign, caused by technological innovation or the opening up of economies (ie, positive supply shocks), and were accompanied by robust growth. During the rapid globalisation of the late 19<sup>th</sup> century, flat or falling average prices went hand in hand with strong growth in output. The world in 2006 had much more in common with that period than with the 1930s [12].

With hindsight, the deflation that the Fed was fretting about in 2003 was largely benign, caused by cheaper goods from China and by the IT revolution. However, the Fed was so determined to prevent deflation of any kind that it cut interest rates to unusually low levels. This, argued Mr White, could have long-term costs because persistently cheap money encouraged too much borrowing, too little saving and unsustainable asset prices. The risk is that if central banks leaned against benign deflation, they would unwittingly accommodate a build-up of imbalances. Ironically, these could cause a bout of bad deflation as they unwind (something that did happen in 2007) [12].

The problem is that most central banks based their policy analysis on Keynesian-style economic models in which deviations from their inflation goal are assumed to reflect excess or inadequate demand, requiring a change in monetary policy. However, supply shocks such as globalisation can cause deviations in inflation that require a completely different policy response. A more relevant model might be one based on the Austrian school of economics, developed in the late 19<sup>th</sup> century, when economic conditions were more akin to that in

the mid-2000s. In Austrian models the main result of excessively low interest rates is not inflation but overborrowing, an imbalance between saving and investment and a consequent misallocation of resources. That sounds like the US of 2006-07 (just prior to the GFC)[12].

Mr White argued that if central banks focussed solely on price stability, they might allow ever bigger financial imbalances to build up. This is why they need to watch a wider range of indicators beyond inflation, including the growth in credit, money, saving rates and asset prices. They should be prepared to raise interest rates in response to clear evidence of financial imbalance, even if it meant undershooting inflation targets [12].

The other risk of holding interest rates too low for too long is that inflation can suddenly rise. This is what happened in the US in the mid-2000s (and again in 2022), where the inflation rate rose above 4%, prompting the Fed to push interest rates higher in 2006. If the low bond yields were also largely due to excess liquidity, then rising short-term rates could have pushed yields much higher than the markets expect. At some point rates will rise to their higher equilibrium level. The likely consequence is a severe weakening or a slump in housing markets around the globe and a sharp slowdown in consumer spending [12].

Central banks were slow to grasp the fact that the rapid integration of emerging economies into the global market system required a rethink of monetary policy. The failure to recognise benign deflation created by positive supply shocks meant that excessively loose monetary policy could fuel not only financial bubbles but also bigger CA imbalances [12].

#### Asset price bubbles and inflation targeting

In the 2000s, prior to the GFC, there was widespread targeting of inflation among central bankers (i.e., adoption of formal targets for inflation). The monetary policy debate had turned to how to respond to asset-price changes while targeting inflation. A central banker would say their main job, delivering economic and financial stability, is to maintain price stability, e.g., keeping the rate of consumer-price inflation low and stable. Yet experience has shown that price stability does not guarantee financial stability. The booms and busts in stockmarkets in Japan in the 1980s and the US in the 1990s both occurred at times of low inflation. A small but growing band of economists began suggesting that inflation targeting is not enough because shares and housing prices are not included in measures of inflation. Hence, sometimes central bankers may need to raise interest rates to curb sharp rises in the prices of assets, such as equities and property, so as to prevent painful consequences when bubbles burst [28].

Critics of the US's Federal Reserve (including *The Economist*) argued that, in the late 1990s, it should have raised interest rates sooner. Alan Greenspan, former Fed chairman, offered the fullest defence of why central banks should not react when asset prices climb rapidly. First, he argued, you can never tell a bubble from a more justified increase in asset prices. Second, interest rates are a blunt tool. A small rise in rates may have no effect; an increase big enough to pop an incipient bubble could cause a recession. Mr Greenspan thought it was safer to wait for a bubble to burst by itself and then to mop up its after-effects by easing monetary policy, aggressively if need be. This gave rise to the "Greenspan put" giving investors the impression that he would cut interests to stop stockmarket routs [28].

Critics retorted that uncertainty about whether there is a bubble or not was no excuse for inaction; central bankers always have to deal with uncertainty. Second, lowering interest rates when asset prices tumble (as the Fed did) but not raising them when they soar creates a moral hazard that makes speculative bubbles more likely. And third, even if a rate increase does cause a recession that may be better than the alternative. The longer a bubble is allowed to inflate, the more it encourages the build-up

of other imbalances, such as excessive debt or overinvestment. The result may be a longer economic downturn [28].

These imbalances should be the real concern of central bankers. Indeed, the debate about monetary policy and asset prices moved from the question of whether central banks should prick bubbles. Framing the issue that way, argue Claudio Borio and Philip Lowe<sup>6</sup>, of the Bank for International Settlements, is not helpful, because of the difficulty of identifying bubbles. It is better to think in terms of the sort of imbalances that tend to generate future financial distress. Only when a boom in stock or house prices is combined with a big increase in debt is economic and financial stability threatened. When asset prices collapse, debts still loom large. The case for tighter monetary policy (i.e., raising interest rates) is therefore far stronger when a surge in asset prices goes hand in hand with rapid credit growth—as happened in the US in the 1990s [28].

Cecchetti, a former chief economist of the New York Fed, and Wadhvani, member of the Bank of England's monetary policy committee, argued<sup>7</sup> argued that by adjusting interest rates in response to asset-price misalignments—even when inflation remains on track—central banks can reduce the long-term volatility of both inflation and output. The authors do not suggest that central banks should target asset prices, but rather that, if asset prices seem out of kilter with fundamentals, they should take that into account in setting monetary policy. If, say, a rise in share prices reflects a jump in productivity growth, a central bank need not fret. However, a bubble, as with Japanese shares in the late 1980s or in US technology shares in the late 1990s, suggests that a central bank should raise interest rates even if inflation is on target [29].

The concern with asset-price bubbles is not so much their inevitable collapse, but that the imbalances they foster may later wreak economic havoc. Soaring share prices encourage overinvestment and excessive borrowing by households and firms. These imbalances can turn a mild downturn into something nastier, causing inflation to undershoot or, worse, to turn to deflation, as in Japan [29].

The classic argument is that central banks have no more information than is available to the private sector, so they cannot spot a bubble for certain. Still, judging whether or not a rise in share prices is justified by stronger productivity growth is not so different from deciding whether potential growth has increased to estimate the size of the output gap—a standard input in all inflation forecasts [29].

Prior to the GFC, central bankers were publicly united in their opposition to using monetary policy to curb rapidly rising asset prices. Some changed their tune. In 2002, Mervyn King, the deputy governor (and governor-designate) of the Bank of England, accepted that conventional inflation targeting might not be enough. Monetary policy, he admitted, may sometimes need to be tightened in response to economic imbalances caused by rising asset prices, even if inflation is well within its target range. For example, if surging house prices foster a consumer spending and borrowing boom, this raises the risk that consumption will fall sharply in future, which could result in a prolonged undershooting of the inflation target. If inflation falls too far, it might be impossible to cut real interest rates enough to spur demand. An early rate increase could avert all this [28].

Central bankers already took account of rising asset prices when forecasting inflation: if a rapid increase in share prices threatened to cause a consumer spending boom and higher consumer-price inflation, a central bank would raise interest rates. However, the conventional wisdom was that central

bankers should ignore swings in asset prices and reject the idea that they should prick bubbles directly [29].

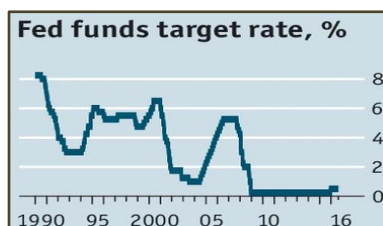
Mr King was one of the brightest central bankers and a long-time fan of inflation targeting. Were central bankers to abandon inflation targets, just as over the years they dumped money-supply targets and the gold standard? Far from it. Mr King argued that inflation targeting could cope with policy dilemmas about asset prices. The solution was to look at inflation over a longer period than usual. Normally, central bankers take aim at inflation up to two years ahead. An asset-price boom can create imbalances that, if left unchecked, might cause inflation to fall outside its target range at a more distant date. So there is a trade-off between deviations of inflation from target over the next year or two and deviations from target later. It may sometimes make sense to raise rates now, and accept that inflation will undershoot its target in the short run, to avoid undershooting by rather more later [28].

Otmar Issing, a member of the executive board of the European Central Bank (ECB), also argued that short-run deviations from inflation targets may be desirable in order to preserve long-run price stability. Indeed, this is one justification for the ECB's much-criticised special focus on monetary growth, within its inflation-fighting framework. Paying particular attention to the money supply (and so to credit), believes Mr Issing, could help to stop the emergence of serious financial imbalances [28].

The trickiest issue was how a central bank would explain why it is lifting interest rates when inflation is low. If in the late 1990s the Fed's chairman, Alan Greenspan, had announced that he was raising rates to hold down share prices, a public outcry would have ensued. Bubbles are popular. Understandably, central bankers prefer to let them burst in their own good time [29]. However, central banks can no longer ignore surging asset prices by insisting that monetary policy should focus only on consumer-price inflation. Swings in asset prices can have big long-term consequences for inflation. Some central bankers realised they could not afford to be so short-sighted [28].

In the 2000s, the rich world's central banks were working in a different context from the 1990s, when the inflation-targeting doctrine was formed. Then, it seemed that inflation would spend as much time above target as below it. And the "natural real rate of interest"—the inflation-adjusted price that balances the supply of, and demand for, savings in a full-strength economy—was as high as 3.5%. But inflation had been below the central bankers' target for years. And the underlying real natural rate of interest has fallen to 1% or lower, probably because population ageing has boosted saving even as lower expectations of growth have cut investment [16].

This mattered because low inflation and a low natural interest rate limit the effectiveness of central bankers' traditional policy lever: setting short-term interest rates. Since nominal interest rates are the sum of real rates and inflation, the rich-world central banks could not, under the regime of the early 2000s, expect their policy rates to rise much higher than 3% (the 2% inflation target plus a 1% real rate). That would leave very little room to cut when the next recession strikes (see chart, Fed funds rate) [16].



<sup>6</sup> Borio and Lowe, [www.bis.org/publ/work114.htm](http://www.bis.org/publ/work114.htm); King, [www.bankofengland.co.uk/speeches/speech181.pdf](http://www.bankofengland.co.uk/speeches/speech181.pdf); Issing, [www.ecb.int/key/02/sp021205\\_1.pdf](http://www.ecb.int/key/02/sp021205_1.pdf)

<sup>7</sup> "Asset Prices in a Flexible Inflation Targeting Framework", by S. Cecchetti, H. Genberg and S. Wadhvani.

Fear of future impotence was the main cause of the misgivings over a low inflation target in the early 2000s. There were other drawbacks with the regime. First, a target for annual inflation gives the central bank no leeway to make up for periods during which inflation has been too high or too low. If central bankers could credibly promise that they would allow a burst of catch-up inflation, they might be more successful at boosting too-low inflation today. Second, when supply shocks such as a sudden rise or fall in the oil price send inflation and economic growth in opposing directions, central bankers face a tricky choice of which to respond to [16].

How might these problems be fixed? One possibility is simply to raise the inflation target to, say, 4%. Credibly enacted, that ought to alleviate the risk of impotence. If investors and consumers believe inflation will reach 4%, nominal interest rates should eventually rise to 5% or so even if real rates stay low. But rich-world central banks have undershot their targets for so long they may struggle to persuade the public to expect higher inflation. And a higher target would still leave central banks with a dilemma when economic growth and inflation diverge. Neither would it make up for big misses [16].

A more radical option is to move away from targeting inflation altogether. Many economists (and this newspaper) see advantages in targeting the level of nominal GDP, the total amount of spending in the economy before adjusting for inflation. A nominal-GDP target would allow for temporary variations in inflation. Downturns would be tempered by an expectation of protracted stimulus later on to make up lost ground. In better times, a rise in real GDP would provide the lion's share of the required nominal-GDP growth and inflation could drift lower [16].

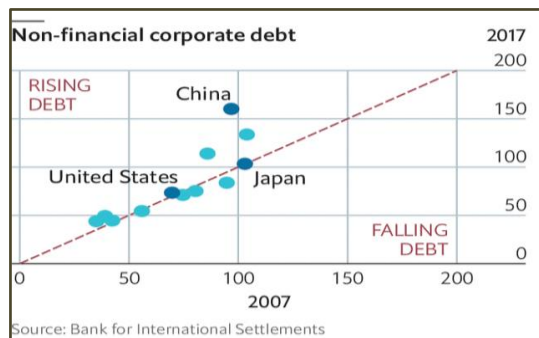
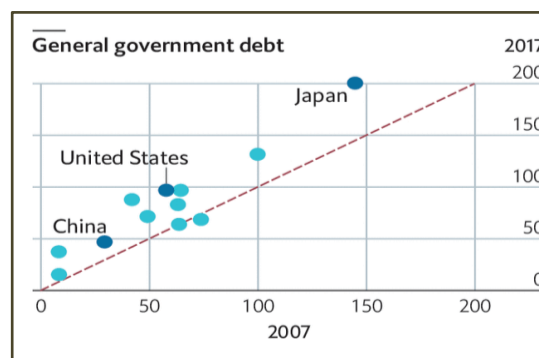
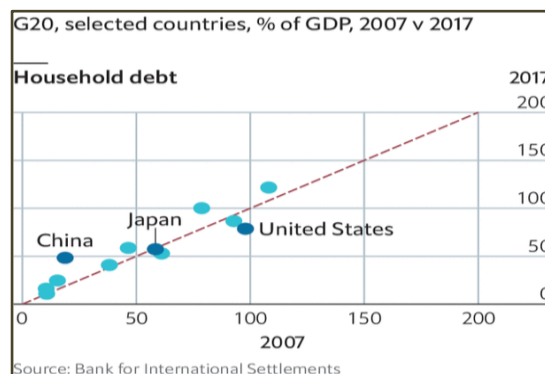
Changing targets is not something policymakers should do lightly; their credibility depends on stability. And, like every regime, a nominal-GDP target has its drawbacks, not least that few non-economists have ever heard of the concept. It will not be easy to build a consensus for it. The 2% inflation target seemed ill-suited to the rich world in the 2000s. Doubling it would be an improvement, but targeting nominal GDP would be better still [16].

*Economist*, "New policy responses: Try this", Special report, The World Economy, 13 Oct 2018, p. 9-11.

Politicians and central bankers have been remarkably complacent in preparing to combat a recession in a low-rate world. Proposals fall into a few different categories. Many economists reckon it is important to try to salvage central banks' traditional role in stabilisation by adjusting monetary-policy targets. The problem is the zero lower bound on nominal interest rates. The economy responds to the real rate of interest, which is the nominal rate (the one observed in the market) adjusted for inflation. For example, if the nominal rate is 4% and inflation is expected to be 3%, the real rate is roughly 1%. The higher inflation is, the less likely economies are to hit the zero lower bound, because a zero nominal rate corresponds to a lower real rate.

In the 1980s and 1990s, most economists concluded that a 2% rate of inflation struck the right balance between containing prices rises and avoiding the zero lower bound. Yet from the 1980s, the real rate of interest needed to keep economies from falling into a slump fell ever lower. According to work by Kathryn Holston, Thomas Laubach and John Williams, of the Federal Reserve, this "equilibrium real rate" has fallen from about 3% in the US and Europe to below 1%. The cushion that 2% inflation provided between zero and the nominal rate thus proved to be too small.

There are a number of ways to fix this problem. One would be simply to raise the rate of inflation targeted by central banks. Some economists have mooted this as a possibility. Olivier Blanchard did so in 2010, as chief economist of the IMF. Laurence Ball, of Johns Hopkins University, has also advocated for a 4% inflation target. With a higher background level of inflation, nominal interest rates would be higher on average and the zero lower bound would bind correspondingly less often. On the other hand, firms and households would have to deal with a higher rate of inflation all the time. Where central banks have a strict price-stability mandate, raising the target might require a change in the law.



An alternative would be to target a trend-level of inflation rather than a rate. Should inflation fall below target during a slump, a level-targeting central bank would promise to allow faster-than-normal, "catch up" inflation in the future, to return the economy to trend. The expectation of that faster growth in future should boost animal spirits and help drag the economy out of a slump. The downside to a level target occurs when inflation accidentally rises too high. Central banks would in such cases need to deflate the economy back to the trend level, which would mean inducing a painful slump. To avoid that necessity, Ben Bernanke, now a fellow at the Brookings Institution, proposed in 2017 that the Fed should temporarily adopt a level target when the economy runs into the zero lower bound on interest rates. Then, the Fed could promise to return the price level to its pre-recession trend, making up for the shortfall induced by the recession, at which point it would revert to targeting an inflation rate.

Others reckon that inflation is the wrong target altogether. Monetary economists have long used nominal GDP (NGDP).

or simply the total money value of all income or spending, as a proxy for aggregate demand. There are advantages to targeting NGDP instead of inflation. Inflation-targeting central bankers must try to guess whether an acceleration in spending will lead to an acceptable rise in real output or an unacceptable increase in inflation. A central bank targeting NGDP can remain agnostic on such questions. Further, for firms and households considering investment decisions or grappling with large debts, stable growth in incomes matters more than stable growth in prices. During the Great Recession, NGDP fell faster and more sharply than inflation. Though prices were relatively stable, households found themselves forced to pay bills with incomes much smaller than they had anticipated.

While the Fed could argue that such a target fits within its dual mandate to promote both price stability and maximum employment, the ECB, charged with keeping prices stable above all else, has less freedom. Governments might set other targets of their own. Mr Blanchard and Adam Posen, of the Peterson Institute for International Economics, proposed in 2015 that Japan consider adopting an official incomes policy. The government could direct firms to raise wages by 5-10% a year. The resulting sharp rise in wages (and prices) could free the economy from its zero-rate trap, though firms may respond by curtailing recruitment.

Of course, monetary policy need not carry the burden of recession-fighting alone. Prior to the financial crisis, mainstream macroeconomists were sceptical about the need for government borrowing to lift an economy out of slumps. It was assumed central banks could do the job, and fiscal stimulus would often come too late, too inefficiently and at too high a cost to government debt burdens.

The crisis upended this thinking. Whereas many analyses of government spending prior to the crisis concluded that \$1 in government spending contributed less than \$1 to GDP (or had a multiplier of less than one), estimates of the effect of fiscal stimulus and austerity during and after the crisis routinely found multipliers in excess of one: a dollar spent (or cut) had a disproportionately large effect on output. Most dramatically, an IMF analysis in 2013 by Mr Blanchard and Daniel Leigh estimated that fiscal consolidations after the crisis were associated with multipliers substantially larger than one, and thus placed a serious drag on growth. The upshot of this work is, first, that fiscal stimulus is an important tool for fighting recessions. And, second, the fiscal costs of borrowing during slumps might be significantly less than previously thought. In 2012 Lawrence Summers of Harvard University and Brad DeLong of the University of California, Berkeley, argued that, if prolonged unemployment threatens to reduce an economy's long-run growth potential, then fiscal stimulus at the zero lower bound might well pay for itself. More recent work by Alan Auerbach and Yuriy Gorodnichenko, also of Berkeley, suggests that government borrowing during periods of economic weakness does not tend to raise long-run indebtedness or borrowing costs, even for countries with large existing debt burdens.

That still leaves the question of how to use fiscal stimulus. Given a prolonged slump, concerns about the timeliness of government spending become less pressing. Indeed, Mr Summers has argued since the crisis that near-zero interest rates may represent a new normal, requiring sustained fiscal stimulus, including support for investments in infrastructure and other public goods.

In a paper summarising a broad set of analyses of stimulus programmes Jason Furman, a former economic adviser to President Barack Obama at Harvard University, identified several key lessons from the crisis. While discretionary stimulus programmes—like the large, one-off legislative

packages enacted in 2009—are economically effective, political systems seem to lose their appetite for such programmes rather quickly. A more sustainable approach would lean more heavily on automatic stabilisers: programmes which mechanically add to spending and reduce taxes when economic trouble strikes, without the intervention of a parliament. Large social safety nets already provide some automatic support during downturns: deficits grow as tax revenues decline and payments for unemployment benefits and other emergency outlays increase. This natural stabilisation is one significant reason that the post-crisis downturn was less severe than the Depression. More such features could be added, however. Taxes on labour could be linked automatically to the level of unemployment. In more federal systems, like America's, central-government support for constrained local governments could also rise automatically as local economic conditions deteriorate.

There is always the possibility of greater radicalism. Milton Friedman, a Nobel-prizewinning economist, argued that printing money could never fail to boost the economy. If necessary, the central bank could simply shower fresh banknotes on the economy as (he joked) from a helicopter. While a large tax cut funded by QE would accomplish something similar, governments could authorise central banks to manage cash handouts themselves.

### Monetary policy after recovery from the GFC

In Sep 2017 the Fed announced that it was putting QE into reverse. Rather than sell its assets, it would stop reinvesting all the proceeds as its securities matured. The permitted monthly “run-off” would gradually rise until it reached \$30bn for Treasury bonds, and \$20bn for MBSs (mortgage-backed securities) and housing-agency debt (see chart, maturations and redemption of Fed reserve assets). The process would not be entirely predictable. Treasuries mature on a known date, but how fast the MBS portfolio would shrink would depend on how many Americans moved house or refinanced their mortgages (which depended on interest rates) [30].

The Fed was expected to shed its entire mortgage portfolio eventually. Few economists think it should meddle in housing markets in the long term. But how much of its Treasury holdings it sold depended on where the Fed wanted its balance-sheet to end up [30].

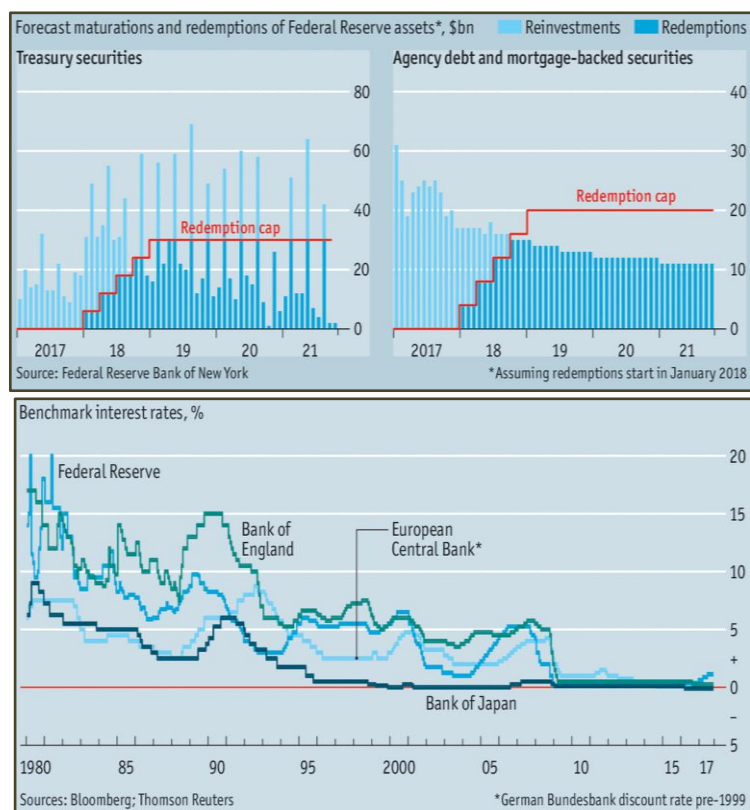
Exactly how QE worked—and hence the effects of unwinding it—remained a little mysterious. The consensus, however, is that asset purchases brought down long-term interest rates, and that the first programme, which began in 2009, had the biggest impact. So as the balance-sheet shrinks, this effect might be expected to go into reverse and interest rates would rise [30].

However, there were three reasons to doubt this. First, economists speculated that some or even all of QE's potency came from its influence on traders' expectations for short-term rates. For example, when markets threw their so-called “taper tantrum” in mid-2013, after then-chairman Ben Bernanke said that asset purchases would be reduced, they were agitated in part by the prospect of faster interest-rate rises. In 2017, however, there was little scope for the markets to change their assumptions about the path of rates. The Fed clearly signalled its intentions in advance. Once balance-sheet reduction started, it would “run quietly in the background”, according to Janet Yellen, Bernanke successor at the Fed. In any case, markets in 2017 viewed interest-rate rises and balance-sheet reduction as alternatives rather than complements, according to Daan Struyven of Goldman Sachs [30].

Second, markets were relatively stable as the Fed signalled its balance-sheet strategy. Perhaps earlier QE announcements had

an unusually large impact because markets were dysfunctional at the time; in 2017, by contrast, traders could shrug-off balance-sheet policy [30].

central bank's ability to fulfil its promise to deliver catch-up inflation [31].



The constraints facing central banks suggested better hopes for the second way forward—greater reliance on fiscal policy. This was the theme of a contribution to the conference from Olivier Blanchard and Lawrence Summers, crisis veterans from the IMF and the US administration, respectively. Before the crisis, economists used to dismiss fiscal policy as a recession-fighting tool. Stimulus was clumsy, slow and, given the control exercised by central bankers, unnecessary. But with interest rates near zero, stimulus might be the most effective way to boost demand—so long as the central bank is willing to play along. Recent history, however, suggests that it could certainly not be relied upon to do so. In 2013, the Fed announced it would begin reducing its asset purchases, despite low and falling inflation and an unemployment rate above 7%—conditions which might elicit a fiscal stimulus from an anxious government. More government spending in such cases, if deemed likely to raise inflation, might simply prompt a central bank to move forward its timetable for tightening. That would dampen—and perhaps offset entirely—the effect of the fiscal stimulus [31].

So fiscal and monetary policy would have to be closely co-ordinated—amounting, in all likelihood, to a loss of central-bank autonomy. A central bank that stood by as fiscal stimulus pushed inflation above its target has in effect relinquished its independence. Just how troubling a loss of independence would be is intensely debated. Messrs Blanchard and Summers are themselves at odds on it: Mr Summers is open to relaxing independence; Mr Blanchard worries that politicised central banks might have been too timid during the GFC, just as many governments turned too quickly to austerity. Other economists cite a more common fear: that governments would inevitably push for too much monetary stimulus, accelerating inflation [31].

Finally, the run-off would be gradual. Even if the Fed hit its redemption cap every month, it would take eight years to offload all its mortgage-backed securities. This is important if, as many traders believed, it was the flow of central-bank transactions more than its stock of assets that determines prices. (If it is the stock—which economists emphasise—that matters more, then the eventual impact on MBS markets looks unavoidable, since the Fed owned 21% of the market [30].)

Central-bank independence was an institutional response to the inflation of the 1970s, just as government business-cycle management was a response to the Depression. But the rules that underpinned the conditions of the 1970s seem no longer to apply. For a decade (more, in Japan) inflation and interest rates have limped along at historically low levels, even as government debts ballooned and central banks created piles of new money. That presents a significant problem for prevailing institutions, but also for conventional macroeconomic wisdom [31].

Ten years on, despite exhaustive debate, economists could not agree on how to handle a world with low inflation and low interest rates. In the next recession, the “zero lower bound” (ZLB) on interest rates will almost certainly bite again. When it does, central banks will reach for crisis-tested tools, such as QE and promises to keep rates low for a long time [31].

In the 1970s, an intellectual shift within economics took place in tandem with the change in policy practice. The discipline could explain why predictable monetary policy set by independent central banks was preferable to a government's attempts to spend its way to full employment. Yet things need not unfold that way this time. With economists at odds as future ZLB episodes loom, the example of the 1930s might be more apt. Then populist politicians struck out in unorthodox new directions, for better and occasionally much worse. It was only later that experts could settle on a coherent narrative of the crisis and recovery. That is not the ideal way forward. Yet it may be the only option available [31].

Broadly, economists see two possible ways out, both aired at a conference run by the Peterson Institute for International Economics, a think-tank. One is to change monetary strategy. Ben Bernanke, chairman of the Fed during the crisis, proposed a clever approach: when the economy next bumps into the ZLB, the central bank should quickly adopt a temporary price-level target. That is, it should promise to make up shortfalls in inflation resulting from a downturn. If a recession causes below-target inflation for a year, the central bank could promise to tolerate above-target inflation until prices reach the level they would have attained without the slump [31].

If credible, that promise should buck up animal spirits, encourage spending, and drag the economy back to health. Raising inflation targets would reduce the frequency and severity of ZLB episodes. However, it would force households to accept higher inflation all the time, rather than just in the aftermath of a severe downturn. A permanent price-level target, for its part, would force central banks to respond to an inflation-increasing blow to the economy—such as a big natural disaster—with rate rises, piling on pain in such cases. Less clear is whether a central bank could fulfil its promise. The Fed failed to hit its 2% inflation target for five years, after all. Mr Bernanke's proposal would do little good if markets doubted a

The BoE's Monetary Policy Committee (MPC) celebrated its 20th birthday in Dec 2017. In its first decade, growth was steady and inflation close to target. We — along with our peers — thought we had this central banking business cracked. Nemesis arrived in the shape of the GFC. Rates have been rock bottom ever since and central banks' balance sheets have ballooned. Banking regulations are being tightened. And macro-

prudential policy is still a work in progress. Central banking has never looked more daunting [32].

The past couple of decades have witnessed a remorseless fall in the real rate of interest consistent with macroeconomic equilibrium — the “natural” rate. The causes are still a matter of debate. Some point to higher savings, others to the impact of slow productivity growth on investment. Balance-sheet repair has surely been important, too. While central banks can set any policy rate they want in the short run, if they are to achieve their objectives over the long term it must converge to the sum of the natural rate and their target inflation rate. Criticism from politicians that central banks’ policies are penalising savers and driving up asset prices misses the point: the decline in interest rates ultimately reflects forces that central bankers are powerless to change [32].

Does the current state of affairs represent a new normal? Some rebound in the natural rate may be in the offing. The global demographics are at a turning point, with a substantial fall in the share of the middle aged relative to the elderly in prospect. And the former are the big savers, while the latter typically run their savings down. Moreover, a pick-up in the demand for funds to invest may materialise as new technologies such as artificial intelligence and nanotechnology come to fruition [32].

But any resulting rise in the natural rate seems likely to happen gradually. Central banks will need to set policy against the background of a low natural rate for some while yet. That means more episodes when policy rates are near their lower bound. Further large-scale asset purchases may be needed [32].

Broadly speaking, the monetary arrangements introduced in 1997 have served us well. Two aspects are worthy of note. The distinction between monetary and fiscal policy has become increasingly blurred. And the distributional consequences of monetary policy have become increasingly contentious. Monetary policy has fiscal consequences even in normal times, but issues are starker when large quantities of government bonds or private sector assets sit on the central bank’s balance sheet. Even small changes in the yield curve have significant consequences for the public finances. Fiscal considerations become more prominent if the central bank buys risky private credits. And purchasing equities is potentially even more contentious since it involves the acquisition of control rights. For these reasons, the fiscal authorities need to own the fiscal consequences of the central bank’s asset purchase decisions. Happily, the BoE’s Asset Purchase Facility meets that requirement, with the Treasury holding the economic interest, even though the MPC decides the amount of assets to buy. Moreover, whenever the MPC wants to increase the stock of assets there is an exchange of letters with the chancellor [32].

Adding distributional concerns to the MPC’s objectives would be worrying. It is one thing for the MPC to use its “constrained discretion” to limit output volatility. It is quite another to refrain from cutting interest rates or undertaking asset purchases to protect one segment of society at the expense of another. That goes to the heart of politics; such decisions should not be delegated to technocrats. If the government of the day is unhappy about the side effects of the monetary policies necessary to maintain macroeconomic stability, then it is better for them to take mitigating fiscal action. And, if a government is really set upon the need for a different monetary policy, it should do so directly and openly by invoking the monetary policy override clause [32].

**Which emerging economies have the most monetary and fiscal wiggle-room?**

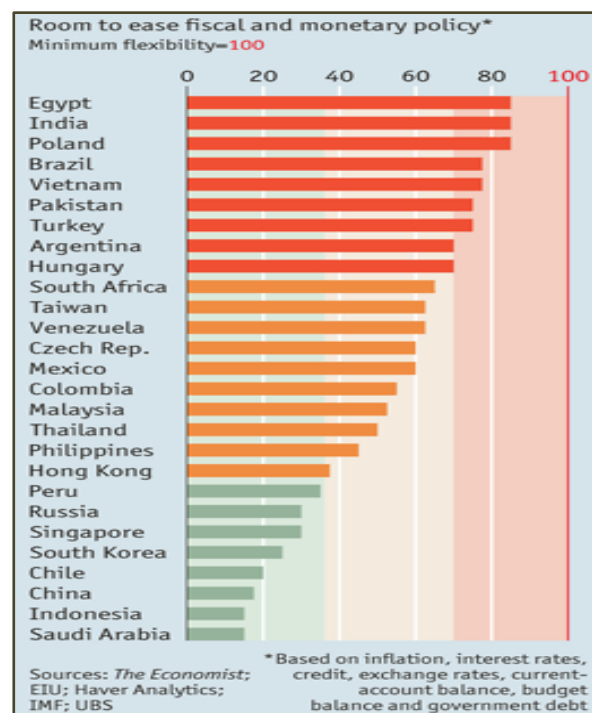
An analysis in 2012 by *The Economist* ranked 27 emerging economies according to their monetary and fiscal wiggle-room. Five indicators are used to assess each country’s

ability to ease monetary policy, and two indicators for fiscal policy. The five indicators of monetary policy are:

- (1) **Inflation**. Categorizing by the range of inflation rates.
- (2) **Excess credit**. This is the gap between the growth rate in bank credit and nominal GDP over the past year.
- (3) **Real interest rates**. Categorizing by the range in real rates.
- (4) **Exchange rates**. Currency movements against the dollar.
- (5) **Current account balance**. If global financial conditions tighten, it would be harder to finance a large current-account deficit, and so harder to cut interest rates.

The fiscal-flexibility index combines government debt and the structural (ie, cyclically adjusted) budget deficit as a % of GDP. The average of these monetary and fiscal measures produces our overall “wiggle-room index”. Some governments had much more scope to loosen policy than others. Countries are coloured in the chart according to our assessment of their ability to ease: “green” means it is safe to let out the throttle; “red” means the brakes need to stay on. The index offers a rough ranking of which economies are best placed to withstand another global downturn. It suggested that China, Indonesia and Saudi Arabia had the greatest capacity to use monetary and fiscal policies to support growth. Chile, Peru, Russia, Singapore and South Korea also had a green light.

Whereas most rich countries had little or no room to cut interest rates or to increase public borrowing, emerging markets as a group still had lots of monetary and fiscal firepower at their disposal. That room for maneuver served developing countries well during the downturn of 2008-09: monetary and fiscal easing was more effective in boosting demand than it was in the rich world, thanks to healthier private-sector balance-sheets.



“Free Exchange: Shake it all about,” *Economist*, 28 Jan 2012.

### Macroeconomic policy and the pandemic

Perhaps the most important policy lesson of the GFC was that the policy response needed to be decisive and big to convince markets and households that policymakers were serious about countering the effect of the economic contraction. Signaling, if done right, might mean less actually has to be done. For



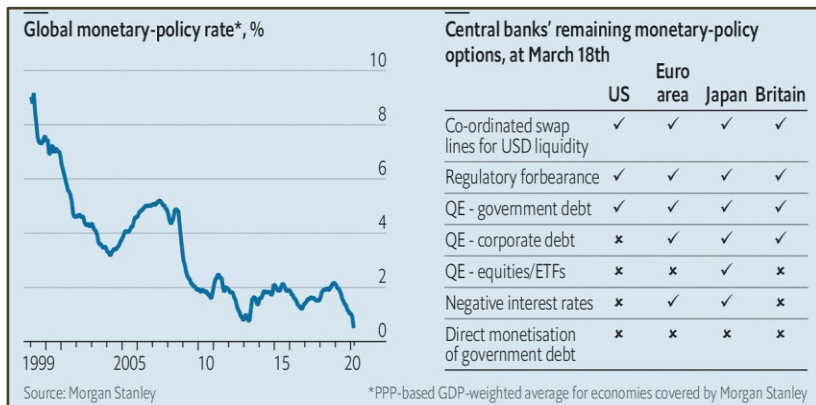
example, a pledge to bail out banks might prevent savers from withdrawing their deposits, preventing a bank run [33].

The pandemic raised an important question about whether the macroeconomic effect was a supply shock, removing workers from their places of employment and components from factories, which makes stimulus ineffective, or whether it was a lack of demand caused by people deciding not to spend. Either way, policy action needed “to prevent the supply disruption triggering a doom loop” of weaker supply leading to lower spending.

The pandemic squeezed both supply and demand. Lockdowns halted essential supplies and a wide range of purchases, especially entertainment and travel.

Households and business would run out of money, and the non-financial corporate sector had gorged itself on indebtedness. As lenders of last resort, the central banks had to ensure liquidity by keeping the cost of borrowing low and financing credit supply, directly and indirectly. But central banks cannot deliver solvency or underpin household incomes or insure businesses against the collapse in demand. As the borrower and spender of last resort, government had much to do [34].

Monetary policy was limited (see chart, global monetary policy) and countries took to fiscal policy action. In addition to expanded health care expenditures, government provided cash injections to business. Germany announced that small and medium-sized companies with up to 250 employees could receive between €5000 and €30000. The EC relaxed state-aid rules to allow governments to channel help to ailing companies. A second part of the fiscal response was about helping people from unemployment or suffering a drastic



drop in income. Cash transfers were a part of the economic response to the virus [33].

In Denmark firms that risked losing 30% or more of their workforce would see the government pay 75% of the wages of employees who would otherwise have been laid off. Norway’s government beefed up unemployment benefits, guaranteeing laid-off workers the equivalent of their full salary for the first 20 days [33].

The bare minimum was generous sick pay and unemployment insurance, including for freelance workers, for the period of the crisis. If this was too difficult, government could just send a cheque to everybody. This might not be enough if the costs of mass bankruptcy and depression were to be avoided. The most direct way to provide insurance would be for the government to act as a buyer of last resort. If government fully replaced the demand that evaporated, then each business could keep paying its workers and maintain its capital stock, as if it were operating as usual [34].

In the early 2000 the gap in the average GDP growth rates of the best- and worst-performing rich countries was five percentage points. In 2008-12, in the recession that followed the GFC, the gap widened to ten points [35].

The recession from the pandemic would be no different. Three factors were thought to separate the bad economic outcomes from the dire ones: a country’s industrial structure; the composition of its corporate sector; and the effectiveness of its fiscal stimulus. The Economist has used indicators of these to rank, roughly, the exposure of 33 rich countries to the downturn. Some, such as those in southern Europe, appear far more vulnerable than the US and northern European countries (see chart, OECD countries vulnerability) [35].

Vulnerability score* Rank out of 33, 1=most vulnerable	Jobs that cannot be done from home, %	Retail, transport and hospitality, % of GDP	Fiscal stimulus† % of GDP
(1) Greece	68	23	1.0‡
(3) Spain	68	24	1.2
(5) Italy	65	21	1.2
(15) France	62	18	0.7
(23) Japan	67‡	22	10
(28) Sweden	56	18	2.2
(29) Germany	63	16	4.4
(31) Britain	56	17	3.1
(33) United States	58	16	6.9

\*Average score of five indicators: employment in small firms; ability to work from home; size of retail and leisure sector; fiscal stimulus; focus on job protection †Spending/revenue measures ‡The Economist estimate  
Sources: “How many jobs can be done at home?” by J. Dingel and B. Neiman; OECD; IMF; World Bank; UBS; Goldman Sachs; The Economist

Take industrial structure first. Lockdowns slam countries that depend on labour-intensive activities. Those with large construction sectors, such as many central European countries, looked more vulnerable. So did those that rely on tourism—it accounts for one in eight non-financial jobs in southern Europe. Conversely, those with large mining industries, which require less labour, were expected to do better. Here Canada looked relatively insulated [35].

Industrial structure influences the share of people who can work from home, avoiding the worst disruption of the lockdowns. In a 2020 paper published by Jonathan Dingel and Brent Neiman of the University of Chicago they estimate that fully 45% of jobs in Switzerland could plausibly be done from home. The Swiss, working in industries such as finance, can do their job on a laptop. In Slovakia, less than a third of jobs could be

performed remotely because so many were in manufacturing [35].

The shape of the corporate sector is the second consideration. Economies with a large share of small firms are more likely to be scarred by long shutdowns. Small firms tend to have few if any cash buffers, making it hard for them to survive a drought in revenues. A survey by researchers at the University of Chicago, Harvard University and the University of Illinois finds that a quarter of small firms in the US do not have enough cash on hand to last even a month. Nearly half of Italians and Australians work for firms with fewer than ten employees, compared with a fifth in the UK and an even lower share in the US [35].

A third factor is the nature of fiscal support. Rich countries deployed stimulus on an unprecedented scale. Even by the most conservative estimate, these packages are more than twice as large as in 2008-09. But the size of the stimulus varies widely across countries. Most tallies find that support in the US and Japan was the most generous, as a share of GDP; investors, who

see their assets as a haven, are happy to provide the necessary funding. Yet some euro-area governments with high debt levels were more cautious, perhaps constrained by the fear that, as members of a currency union, they enjoy only a partial backstop from the central bank. The average fiscal boost in France, Spain and Italy, as a share of GDP, was about half of that provided in Germany [35].

The design of the stimulus, though, matters as much as its size. Broadly speaking, rich countries have taken one of two approaches to preserving living standards. Some are concentrating on supplementing household incomes. The US sent cheques to families and making unemployment benefits far more generous; Japan offered handouts to the needy. By contrast, policy in northern Europe and Australia aimed mostly to maintain employment by subsidising wages. Government pledges to protect jobs are normally a bad idea. They prevent workers moving from failing sectors to up-and-coming ones, slowing the recovery [35].

The pandemic forced a re-evaluation of the social contract, in particular, how risk should be divided among individuals, employers and the state. The covid-19 fiscal stimulus packages made even the interventions of the global financial crisis seem small. The expansion of the welfare state has been the greatest in living memory. Government bail-outs of citizens, rather than banks, could mark a new chapter in its history [36].

When covid-19 struck and economies locked down, entire industries faced obliteration. Since the start of the pandemic countries have announced over \$13.8trn (13.5% of global GDP) in total emergency funding, more than four times the support provided during the financial crisis. Rich countries have done almost all the spending (see map). Only in 1945, as Europe was rebuilt after the second world war, was government debt as a share of GDP so high. Emerging economies have never borrowed as much [36].



The shape of the welfare state has been transformed, too. Established principles such as means-testing (welfare only for the poorest), social insurance (only for those who paid in) and conditionality (only for those who do something) went out of the window. Governments wrote near-blank cheques for everything from job guarantees to food. Some simply sent cash.

As the pandemic abates and economic recovery beckons, how much of this expansion will last? The shift in risk in 2020 came after decades during which risks such as living longer than expected, or being replaced by an algorithm or foreign worker, were gradually offloaded from governments and employers onto individuals. And just as a flood increases demand for flood insurance, the millions reliant on the state for the first time are demanding stronger safety-nets. There was a huge increase in the number and generosity of safety-net measures. Discontent was rising before the pandemic [36].

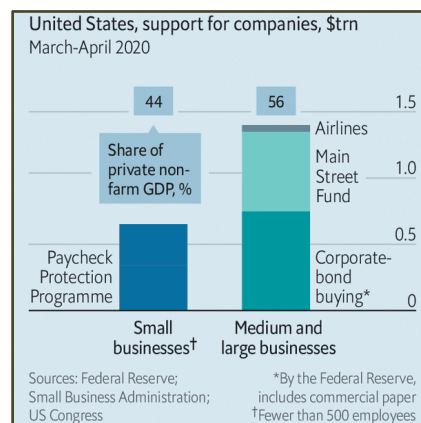
The IMF estimated that by January 2021 rich economies had increased total direct spending by almost 13% of GDP, about half of it on supporting workers and households. Countries that typically spend a lot on social protection spent comparatively less on emergency funding (see chart, additional safety-net spending). Support for employment, such as wage subsidies or furlough schemes, was most popular in Europe (including Britain). In the OECD, a club of mostly rich countries, over one in five employees had their job rescued by such programmes [36]. The fastest ways for businesses to cut costs is to lay off workers temporarily. Europe did this. The UK and the EU all had temporary unemployment schemes that allowed firms to cut staff hours, sometimes to zero. Workers received benefits in lieu of most of their salary. When lockdowns were lifted, they would still have their old jobs. That limited disruption to both livelihoods and their employers' prospects [37].



In the US smaller firms were supported under a \$659bn Paycheck Protection Programme (PPP), a scheme designed to help small firms keep employees on their payroll during the pandemic. Big firms had facilities of their own to tap, the "Main Street Lending Fund, totaling \$600bn in funds to firms with up to 10,000 employees. The Fed set aside another \$750bn to buy corporate bonds [38].

While the support might have appeared more generous than the cash set aside for small firms (see chart, US support for companies), the big company schemes differed from PPP in that they were loans that had to be repaid. PPP funds could be kept so long as the firms retained their workers. The big firms also had conditions. Airlines had to keep staff until October 2020, cut executive pay and halt shareholder payouts until late 2021. The more generous the aid, the more strings

were attached [38].



Governments have spent about the same on supporting households through bolstered unemployment benefits, child benefits and cash transfers. In the US, which has favoured such spending over wage subsidies, the \$600 weekly increase in unemployment insurance meant two-thirds of recipients earned more on the dole in the first months of the pandemic than they had when they were working. Claims soared: nearly 33m were made in the third week of June, compared with 2m in the last week of February, just before the pandemic struck, and 12m in the peak week of the financial crisis. In the UK the government increased universal credit, the main welfare programme before the pandemic, by £1,000 (\$1,290) a year. Some 6m people claimed it in January 2021 compared with 2.6m February 2020. Britain, like others, snipped some of the strings attached to such benefits and broadened eligibility [36].

Many doled out cash. The Trump administration sent cheques for \$1,200 and then \$600 to most adults in 2020. President Joe Biden distributed another \$1,400, taking the price tag of the policy to \$920bn. In Japan every citizen received ¥100,000 (\$930) [36].

The pandemic also underscored the importance of speed to welfare. Analysis by McKinsey, a consultancy, suggests that the magic “troika” of reaching lots of people, quickly and with little fraud was possible only for countries with advanced financial infrastructure, meaning widespread use of digital payments, digital IDs and—crucially—relevant data, such as tax returns, linked to these IDs. Singapore, which has all three, was able to send wage subsidies to eligible employers automatically. Other countries had to make trade-offs between speed and fraud, or between scope and successful delivery, says Anu Madgavkar of McKinsey. Canada decided to prioritise speed and ask questions later (later asking recipients to prove their eligibility) [36].

Government debt is piling up to record highs. Tax revenues have fallen. Governments worry that overgenerous benefits are themselves a disincentive to taking paid work and can lock people into a “welfare trap”. Yet even before covid-19, public opinion had been moving in favour of the state, and employers, taking more of the risk away from individuals. In 1987, 30% of Britons thought welfare recipients did not deserve benefits; by 2019 this had fallen to 15%, according to the annual Social Attitudes survey. The proportion who think benefits are too high and discourage work has fallen from 59% in 2015 to 35%. In the US only 56% of people surveyed in 2009 by Pew, a pollster, were in favour of the Obama administration’s \$800bn stimulus package, whereas 88% supported the Trump administration’s \$2trn covid-19 package in 2020. “It’s rather extraordinary how there’s been all this spending, even sending people cash, and the public has basically accepted it,” says Rachel Lipson, at Harvard University [36].

The pandemic may have shifted the mood from targeting towards universalism. Some claim that, taken to their logical conclusion, the lessons from covid-19 will lead countries to roll out UBI. Direct cash transfers, perhaps even universal ones, could become a standard part of governments’ emergency tool-kits. But no country is seriously contemplating a full-blown ubi scheme. More likely is a renewed appreciation of governments’ role in pooling and underwriting risks, in particular those that insurers call “uninsurable”. The pandemic has demonstrated the extent to which governments can smooth shocks. In April 2020 when Americans received their stimulus cheques, spending by low-income households shot up by 26 percentage points, to near pre-pandemic levels, according to research by Raj Chetty of Harvard University and colleagues. Several economists argued that the pandemic showed why the generosity of benefits should be pegged to the state of the economy, with welfare acting as a shock absorber when times are toughest [36].

## Monetary policy in China

The modernisation of monetary policy is in its own way a monumental project for China. Since 1990, the central bank’s conduct of policy had two defining features. It focused on the quantity, not the price, of money. And it relied on inflows of foreign cash to generate new money. Both features are slowly changing, bringing China closer to the norm in developed markets, an essential transition for an increasingly complex economy [24].

Interest rates used to be of secondary importance in China. Regulators instead used quotas to dictate how much banks lent and in effect fixed their deposit and lending rates. This made sense when China was in the early stages of moving away from a planned economy. Crude targets were still needed. But as a bigger, rowdier financial system took shape, these targets became less relevant. With the emergence of a large bond market, myriad non-bank lenders and new investment options for savers, banks now face more competition for deposits and in building up their loan books [24].

Zhou Xiaochuan took the helm of China’s central bank in 2003. China had then recently become a member of the WTO and its economy was smaller than the UK’s. His presence helped forge the monetary environment for China’s growth, dragging the financial system out of the mire of central planning by advocating a more market-based economy [25].

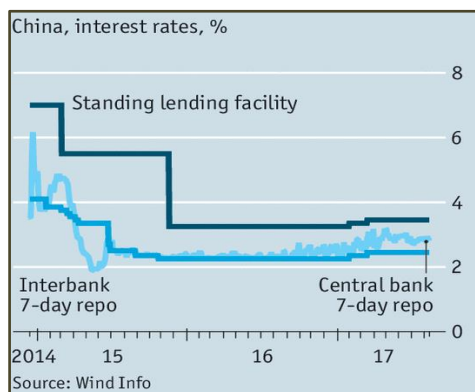
He helped design the “bad banks” that freed Chinese banks of their failed loans and paved the way for a boom. His first big move as central banker was in 2005 when he unpegged the yuan from the dollar. China’s currency remains tightly managed, but it has not stood still. It rose by a third against the dollar in the decade after unpegging. He steered China towards a system in which banks set interest rates themselves, rather than merely following government diktats. He oversaw the creation of a vibrant exchange for “medium-term notes”, a bond market in all but name [25].

He wanted to open China’s financial system to the world, believing that only with true competition would it be possible to curb wasteful investment. The internationalising of the yuan was the vehicle for this. While politically, the idea of a more powerful currency was attractive, economically it proved complex because it required China to open its sheltered financial system to more risks. When cash flooded out of the country in 2016, the central bank retreated, imposing stronger capital controls [25].

Some argue he pushed too hard for market forces, especially in his drive to internationalise the yuan. Others claimed he did too little to cure China’s financial ills. Debt levels soared on his watch, a threat to stability that the government is trying to reduce. Neither criticism is fair because the project to make the yuan global was never about just the currency. Opening the capital account would reveal financial shortcomings in China and press the government to crack on with reform. As for the debt explosion, Mr Zhou could do little to restrain it given that the government was committed to ambitious growth targets. The central bank had to provide supportive monetary policy [25].

The central bank in late 2015 gave banks freedom, in theory, to set their own lending and deposit rates. It also eliminated mandatory loan-to-deposit ratios and put less stress on credit quotas. However, this opened a gap. It had relinquished its former controls without new ones in place. The answer has been to create a policy rate, much like benchmark short-term interest rates in the US and Europe. The central bank has tried to create an equivalent anchor in China’s financial system: the seven-day “repo” rate (the bond-repurchase rate at which it lends to banks) [24].

To do so it established a band around the seven-day rate, with a lower bound for lending to banks flush with cash and an upper bound for those in need. To cap rates at the upper bound, the central bank also started accepting a wider array of collateral. Since mid-2015 this has worked. The central bank has kept the seven-day rate within the corridor and nudged it up as the economy has gathered pace (see chart, China's interest rate). In Aug 2017, in its annual review of China's economy, the IMF passed a tentative verdict: "The conduct of monetary policy increasingly resembles a standard interest-rate-based framework [24]."



Complementing this shift has been the central bank's creation of a range of liquidity-management tools. Since 2013 it has opened a baffling plethora of new lending windows: short-term liquidity operations, standing lending facilities, medium-term lending facilities and pledged supplementary lending. All added up to the same thing: conduits to inject cash at different rates and for different durations or, by letting them expire, to withdraw cash [24].

Their importance has been clear during 2015-17 as capital outflows eroded the value of China's foreign-exchange reserves. This placed pressure on domestic liquidity, since China had relied on cash inflows to generate money growth (issuing new yuan to buy up the dollars streaming in). After initial hiccups, the central bank more than made up for the loss of dollars at home by using its various tools (see chart, money created by central bank). As a result, it has been better able to manage cash levels on a daily basis. High volatility in money-market rates, once a regular occurrence, has all but vanished [24].



Nevertheless, both policy shifts are works in progress. With state-owned banks and companies still counting on government support in the event of trouble, interest rates have less signalling value than in a freer market. The central bank, for its part, continues to use administrative controls to influence lenders. And its success in managing liquidity has been greatly helped by China's tightened grip on its capital account over the past year. Without that, money growth at home might have fuelled more capital outflows. It is, in other words, a gradual approach to reform, in which sense the invocation of China's first emperor is unfortunate. His rule was transformative but violent

and short-lived. Slower monetary-policy shifts, in contrast, have much to recommend them [24].

China's broad money supply as tripled in the decade to Mar 2020. A ruckus about how to finance the 2020 fiscal deficit brought out China's own inflation hawks – those warning that moves by the People's Bank of China (PBOC) to purchase government bonds directly would spell trouble with inflation. The question of deficit financing arose because of the sheer amount of public spending needed in China [26].

In May 2020, the finance ministry announced that the central and provincial governments would collectively issue 8.5trn yuan (\$1.2 trn) in new bonds, nearly twice as much as in 2019 and equivalent to about 8% of GDP. That threatened to push bond yields higher, raising the cost of financing just as the central bank tried to keep it down [26].

Those arguing against monetizing the debt noted that China had space to cut interest rate, which were about 2.75% at the time. Others were concerned with inflation, asset bubbles and a loss of faith in sovereign credit, or simply that it would violate China's central bank law. This restraint was viewed as odd outside China. There government continued to save many state-owned enterprises from defaulting. For Chinese economists it was precisely this backdrop that worried them. Deficit monetization would erase the "last line of defense" in managing public finances. Opponents of deficit monetization won the day and interest rate cuts were pursued as were reductions in bank reserves to expand the money supply. Bond purchase by the PBOC were mentioned at that time. But in reality, monetary lines were easily blurred in China too. In 2007 the PBOC evaded the ban on monetary financing by arranging for the finance ministry to sell 1.35trn yuan in bonds to state banks which it then immediately bought from the bank [26].

With the GFC and the onset of the Covid-19 pandemic, most central bankers in mature economies bought trillions of dollars in assets, mostly government bonds, to keep economies and financial systems from freezing. This reflected the severity of the economic shock and the constraints on monetary policy. In contrast, the PBOC refrained from expanding its balance-sheet. Yet it remained ever more determined to guide money flows. Since 2014 10 separate targeted tools were introduced to that end and tweaked constantly. There have been credit facilities for small businesses and farmers, new money for the construction of affordable housing, adjustments to banks' required reserves if they lent to favoured sectors, plus caps on loans to risky industries from property to steel [27].

The pandemic illustrated the merits of targeted monetary policy. Back-stopped by central-bank facilities, Chinese banks deferred loan repayments for millions of companies and issued credit to those on frontlines, such as makers of medical supplies. Other countries in the rich world did this, but in China the point of targeting goes beyond emergency relief. The PBOC said structural policies were like "drip irrigation" for the economy, helping channel financial support towards technological innovation and environmental protection. The attraction of structural monetary policy for China is that, in theory, it tackles a dilemma at the heart of the financial system: credit growth needed to sustain rapid economic growth. But overall debt levels are very high, particularly among state-owned companies. By explicitly encouraging banks to lend to less-indebted firms in promising sectors, policymakers have a set of three objectives: generating more growth, with less debt, while also modernizing the economy [27].

A close look at the data raises questions about the efficacy of targeting. The overall shape of the economy has changed little. The liability-to-asset ratio for state firms – a measure of their indebtedness – is only slightly lower than it was in 2016, when the PBOC ramped up its structural policies. Moreover, small firms account for only a quarter of overall bank lending. Little

has changed over the years. Without targeting, perhaps the imbalances would have been even worse, but it is hard to escape the conclusion that the practice has had a marginal impact on financial flows [27].

*Economist*, "Monetary policy in Africa: The winding road", 26 Jan 2019, p. 63.

In the 1980s, a fifth of countries south of the Sahara endured average annual inflation of at least 20%. This decade only the two Sudans have (Zimbabwe's rate is tricky to measure). Runaway prices are now the exception, not the rule.

African countries took different routes to orthodoxy. Inflation is rarely a problem for the 15 in west and central Africa with currencies pegged to the euro. They have imported central-bank credibility from Europe. Elsewhere, monetary policy was reformed in the 1990s under the guidance of the IMF. Governments gave more independence to central banks. Some let exchange rates float. And they stopped printing so much money. In the 1990s central banks in sub-Saharan Africa printed money worth 12% of GDP a year to help finance governments; by 2015 that had fallen to 3%.

African central bankers still have a harder task than their rich-world counterparts. Two-fifths of the consumption baskets used to calculate inflation in the region consist of food; for rich countries the average is 15%. When rains fail, food output declines and prices surge. Shocks come from abroad, too, when currencies tumble or import prices spike. High inflation often used to stem from macroeconomic indiscipline. Now, though inflation is in single digits, its trajectory can be harder to control. Pricey power and inefficient farms make inflation hard to cut, says Ernest Addison, the governor of the Bank of Ghana.

Supply shocks also create a nasty trade-off for monetary policy. In the rich world volatility is often caused by shifts in demand. If the government spends more, that both stimulates output and leads to higher prices. In Africa, by contrast, frequent squeezes on supply mean that inflation and output move in opposite directions. A drought may push up prices while shrinking production. That can mean central banks have to tighten when the economy is in a trough.

In most of Africa, markets for stocks and bonds are small. Only a fifth of firms have access to a bank loan or formal credit. Monetary policy therefore has a limited impact on financial conditions, and takes effect slowly. It works partly by nudging banks to lend more (or less). An IMF study finds that this effect is only half as strong in Uganda as it is in advanced economies.

Many countries in the region still set targets for growth in the money supply. But financial innovations such as mobile money mean that the rate at which money changes hands has become unpredictable, snapping the link between monetary aggregates and inflation. Central banks often miss their targets, in ways that can be hard to decipher. They might do better to focus on an explicit inflation target, using interest rates as their main tool. That is easier to communicate to the public, so has more effect. Some countries, including Ghana and Uganda, have already made this switch.

Some worry that too narrow a focus on prices could stifle development. The typical inflation target in Africa is around 5-8%. Yet studies find that inflation starts to drag on growth in poor countries only when it hits 15-20%. Some economists therefore urge a more flexible approach that places greater weight on other objectives, such as job creation.

Take the example of Uganda, which has a notoriously hawkish central bank. In 2011, as commodity shocks and an election pushed inflation to 25%, it raised its main interest rate by ten percentage points. Traders shut up shop; businesses laid off workers. The bank was using a hammer to kill a mosquito, says Ramathan Ggoobi of Makerere University Business School. But high inflation helps nobody, retorts Adam Mugume, the head of research at the Bank of Uganda. Constraints such as bad roads and rain-dependent farms limit economic growth to around 6%; above that, the economy overheats and inflation rises.

Debate about central-bank objectives is healthy. In other ways, however, politics is less helpful. One problem is new laws, such as a cap on commercial-lending rates imposed by the Kenyan parliament in 2016. The move infuriated the country's central bank, which complains that monetary policy has become less effective as a result. Another political headache is banking supervision, which is typically done by central banks. The Bank of Uganda is mired in lawsuits and official probes after some controversial bank closures. Politics also intrudes in a third way: public debt. Many countries' borrowing has risen sharply in the past decade. Last year the region's median fiscal deficit was 3.5%, including foreign grants. That revives pressures to turn on the printing presses.

### China's post-pandemic unwinding of fiscal stimulus

In addition to China being the first country to experience the pandemic, it was the first to open its lending and spending taps in the face of the coronavirus economic downturn. After the first quarter of 2021, is the first to start to close them, giving others a partial preview of what the end of stimulus would look like [39].

China required less stimulus because its workers went back to factories and offices much earlier. But a few general conclusions could still be drawn about its return to more normal monetary and fiscal policies. Most notable was its gradualism. The budget announced for 2021 targeted a smaller fiscal deficit in 2021, around 3% of GDP, down from 2020's 3.6%. Factoring in other quasi-fiscal measures such as spending by government-linked companies, China's true fiscal deficit would be about 12% of GDP, compared with 2020's record 15%, according to Morgan Stanley, a bank. While this would be a retrenchment, it was still higher than the 2019 deficit [39].

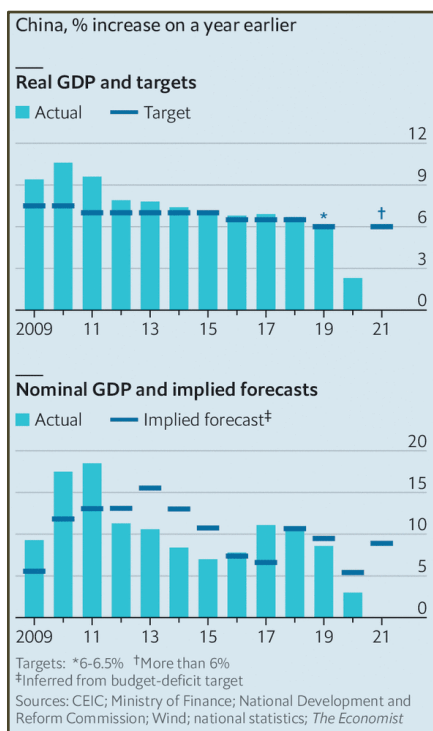
The central bank was also cautious. It withdrew liquidity to guide up market interest rates and to slow the growth in bank lending. But the price and quantity of credit remained more generous than before the pandemic struck. The aim was to avoid a sharp turn in policy orientation. With 2021 marking the start of a new 5-year plan, an important part of the policy process in China, officials promised the launch of big infrastructure projects, which could help offset the end of the coronavirus stimulus [39].

However gradual the tightening, the way forward could be bumpy. Tightening elsewhere, the US in particular, sent signals to the market that pushed up Treasury yields in the US. In January 2021, China experienced something similar when its central bank was far stingier in its open-market operations than expected, leading to a spike in overnight borrowing rates. Stocks fell sharply, recovering when the central bank eased up. Officials may only have wanted to sound out warnings because the banking regulator also warned of bubbles in the China's property market and global financial markets [39].

This put the government in a slightly awkward position. The announcement of the budget coincides with its GDP target. With growth rates projected higher than the government's target rate, this could signal to the markets that the unwinding could be harsher than expected. If the budget were more aligned to the

projected growth rate of 9% of GDP, it might signal that the government was not serious about ending stimulus [39].

In March 2021 China's government set an economic-growth target of "more than 6%", a bar it will clear with ease (see chart, real and nominal GDP targets). More interesting is what can be inferred from its new budget. It says the fiscal deficit will be 3.57trn yuan, or 3.2% of GDP, in 2021. That suggests nominal GDP is expected to reach 111.6trn yuan (over \$17trn) in 2021, ignoring any rounding—an annual growth rate of 8.9% before adjusting for inflation. From 2012 to 2019, China's real growth met its targets with suspicious precision. But nominal growth often fell short of the pace implied in the budget. Perhaps inflation was unexpectedly weak. But it is odd for inflation to undershoot when real growth does not. Another possibility is that statisticians understate the rise in prices so as to overstate the rise in output. If so, China's "real" growth is not as real as it claims to be [40].



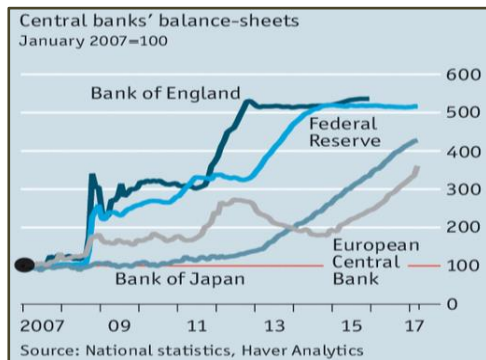
## References:

- [1] *Economist*, "Economics focus: The red and the black", 24 Mar 2001, p. 84.
- [2] *Financial Times*, "Fiscal policy should not be decided by simple rules", by M. Wolf, 17 Oct 2014, p. 9.
- [3] *Economist*, "Free exchange: Prudence and profligacy", 12 Sep 2015, p. 69.
- [4] *Economist*, "Economics focus: Fiscal flexibility", 25 Nov 1999, p. 100.
- [5] *Economist*, "Stimulus v austerity: Sovereign doubts", Schools brief, 28 Sep 2013, p. 68-9.
- [6] *Economist*, "Government spending: The great embiggening", 20 Nov 2021, p. 21-3.
- [7] *Economist*, "Schools brief: Monopoly power over money", 18 Nov 1999, p. 115-16.
- [8] *Economist*, "Quantitative easing: QE, or not QE?", 14 Jul 2012, p. 58-9.
- [9] *Economist*, "Economics focus: A blunt tool", 28 Jun 2001, p. 70.
- [10] *Economist*, "Free exchange: Sibyl faulty", 11 Jun 2016, p. 68.
- [11] *Economist*, "Weapons of mass disinflation", Special report on the world economy, 14 Sep 2006.
- [12] *Economist*, "Unnatural causes of debt", Special report on the world economy, 14 Sep 2006.
- [13] *Economist*, "The history of central banks: Battle of three centuries", Briefing on the history of central banks, 29 Apr 2017, p. 55-57.
- [14] *Economist*, "Distraction disease", special report on central banks, 23 Apr 2022, p. 3-4.
- [15] *Economist*, "Buttonwood: The third regime", *Economist*, 7 Jan 2017, p. 55.
- [16] *Economist*, "Monetary policy: When 2% is not enough", 27 Aug 2016, p. 8-9.
- [17] *Economist*, "Economics focus: Jackson's Holes", 27 Aug 2009.
- [18] *Economist*, "Economic focus: On target?", 30 Aug 2001, p. 64.
- [19] *Economist*, "Free exchange: The desperation of independents", 6 Aug 2016, p. 58.
- [20] *Economist*, "Free exchange: Many hats", 13 Mar 2021, p. 66.
- [21] *Economist*, "Free exchange: Unprofitable argument", 9 May 2020, p. 61.
- [22] *Economist*, "Emergency response: Balance-sheet manoeuvres", special report on central banks, 23 Apr 2022, p. 4-6.
- [23] *Economist*, "Social issues: One-stop policy shops", special report on central banks, 23 Apr 2022, p. 6-8.
- [24] *Economist*, "Chinese monetary policy: Dynastic equilibrium", 19 Aug 2017, p. 55.
- [25] *Economist*, "Chinese economy: No ordinary Zhou", 3 Feb 2018, p. 62.
- [26] *Economist*, "Monetary policy in China: The thin red line", 30 May 2020, p. 62-3.
- [27] *Economist*, "Free exchange: Targeting practice", 13 Feb 2021, p. 67.
- [28] *Economist*, "Economics focus: Still bubbling", 18 Jan 2003, p. 66.
- [29] *Economist*, "Economics focus: More bubble and squeak", 20 Apr 2002, p. 80.
- [30] *Economist*, "The Federal Reserve: Switching to autopilot", 16 Sep 2017, 63-4.
- [31] *Economist*, "Free exchange: The low road", 21 Oct 2017, p. 74.
- [32] *Financial Times* "Central banking has never looked more daunting", by C. Bean (former deputy governor of the BOE), 4 Dec 2017, p. 9.
- [33] *Economist*, "The economic emergency: Experimental treatment", Briefing on the pandemic, 21 Mar 2020, p. 18-20.
- [34] *Financial Times*, "The virus is an economic emergency too", by M. Wolf, 18 Mar 2020, p. 1.
- [35] *Economist*, "The recession in rich countries: Picking off the weak", 18 Apr 2020, p. 52.
- [36] *Economist*, "Shelter from the storm", Briefing on the future of the welfare state, 6 Mar 2021, p. 16-8.
- [37] *Economist*, "Bailing out small business: Averting nightmare on Main Street", 2 May 2020, p. 56-7.
- [38] *Economist*, "Bailing out large firms: Big bucks", 2 May 2020, p. 57.
- [39] *Economist*, "China's economy: Taper test", 6 Mar 2021, p. 64.
- [40] *Economist*, "Lies, damned lies and implied lies", 13 Mar 2021, p. 63.
- [a] *Economist*, "Government debt: Putting on weight", Brief on government debt, 12 Sep 2020, p. 59-60.
- [b] *Economist*, "Stimulus v austerity: Sovereign doubts", Schools brief, 28 Sep 2013, p. 68-9.
- [c] *Economist*, "The dangers of debt: Lending weight", Schools brief, 14 Sep 2013, p. 66-7.
- [d] *Economist*, "Tax reform: Fishing for funds", 17 Feb 2018, p. 30-31.
- [e] *Economist*, "The saviour state: Bail-outs for everyone!", 1 Oct 2022, p. 63-4.

### Find a place or drop

When the credit bubble finally burst in 2007 and 2008, monetary policy had to be rethought again [15]. Central banks were forced to take extraordinary measures: pushing rates down to zero (with some having to follow this up with negative rates) and creating money to buy bonds to drive down longer-term borrowing costs (or QE: see chart central bank balance sheets) [13] [15]. As governments tightened fiscal policy from 2010 onwards, it sometimes seemed that central banks were left to revive the global economy alone [13].

Their response to the crisis brought back old criticisms. In an echo of past claims, QE has been attacked for bailing out the banks rather than the heartland economy, for favouring Wall Street rather than Main Street. Some Republicans want the Fed



to make policy by following set rules: they deem QE a form of printing money. The ECB has been criticised both for favouring northern European creditors over southern European debtors and for cosseting southern spendthrifts [13].

And central banks are still left struggling to cope with their many responsibilities. As watchdogs of financial stability, they want banks to have more capital. As guardians of the economy, many would like to see more lending. The two roles are not always easily reconciled [13].

Perhaps the most cutting criticism they face is that, despite their technocratic expertise, central banks have been repeatedly surprised. They failed to anticipate the collapse of 2007-08 or the euro zone's debt crisis. The Bank of England's forecasts of the economic impact of Brexit have so far been wrong. It is hard to justify handing power to unelected technocrats if they fall down on the job [13].

Financial-market trends have played out against the backdrop of these two policy eras. Equities did very well for 20 years under the Bretton Woods regime, but started to falter in the mid-1960s, well before the system's collapse. Perhaps investors already took fright at signs of inflation; bond yields had been trending upwards since the end of the Second World War. In the era of globalisation a great equity bull market began in 1982 but declined in 2000-02 with the bursting of the dotcom bubble [15]. That was a portent of the bigger crisis of 2007-08. Both showed how investors could be prey to "irrational exuberance" and push asset prices to absurd levels. Just as rising bond yields in the 1960s presaged the inflationary battles of the 1970s, so falling bond yields in the 1990s and 2000s foreshadowed struggles with deflation and slow growth [15].

Financial markets seem to expect that political turmoil would indeed lead to another change of economic regime. Since the US election of 2016, the MSCI World equity index rallied and the Dow Jones Industrial Average hit record highs. Valuations reflect this optimism. In the early 1980s price-earnings ratios were in single digits. In contrast, the S&P 500 now trades on an historic price-earnings ratio of 25. Another contrast with the 1980s is that, back then, short-term interest rates were at double-digit levels and equity valuations were able to climb as rates fell. That cannot happen now [15].

So what kind of economic regime are investors expecting? They seem to be cherry-picking the best bits from the previous two regimes—the tax cuts and deregulation of the 1980s with an expectation that (as under Bretton Woods) fiscal, rather than monetary, policy will be used to smooth the ups and downs of the cycle [15].

But the populist revolt is, in large part, a reaction against the free movement of capital and labour that has made so many financiers rich. A much bleaker outcome is possible, whereby rising nationalism leads to trade wars and an ageing workforce makes it impossible for the rich world to regain the growth rates of past decades. Change is coming. But rather than resembling the 1980s, the new regime could look more like the 1930s [15].

All of which leaves the future of central banks uncertain. The independence granted them by politicians is not guaranteed. Politicians rely on them in a crisis; when economies recover they chafe at the constraints central banks impose. If history teaches anything, it is that central banks cannot take their powers for granted [13].