ECN320 SRP for session 7. 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), the national debt level, and the nation's net asset/liability position.

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) and the public goods/services to be provided; 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 2nd half of the 20th 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 [1].

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 [1]. 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 [2]. 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 [1].

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 [1].

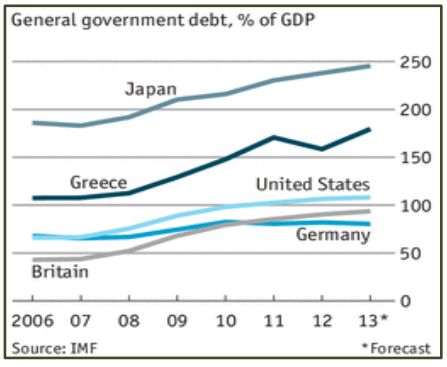
Debates about the proper role of fiscal stimulus became less urgent in the decades after the second world war, as robust economic growth eased worries that demobilisation might bring a return of Depression-like conditions. Faith in Keynesian orthodoxy was further shaken by the economic developments of 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 [1].

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 [1]. Fiscal stimulus through spending or tax cuts was an obsolete relic [3]. 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 [1].

The 2000s, however, saw a problem with this approach coming into view. In normal times, central banks try to spur growth by adjusting interest rates to discourage saving and encourage borrowing. Since 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 [1]. 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 prevented people from borrowing despite low interest rates. More government borrowing and spending (or taxing less), Keynesians reckoned, would put excess saving to work [4].

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 [2].

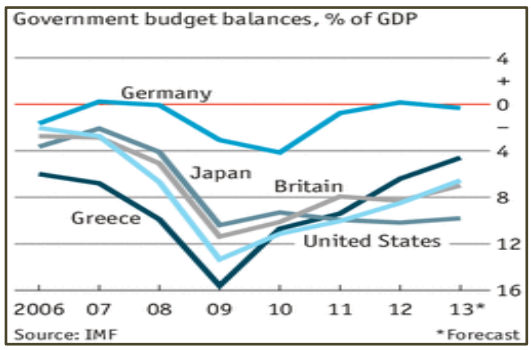
Yet fiscal stimulus is needed most when governments already have extra costs to bear. From 2007 to 2010 rich countries saw the ratio of their gross sovereign debt to GDP spike from 74% to 101% on average. UK public debt jumped from just 44% of GDP to 79%, while the US's leapt from 66% of GDP to 98%. 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) [4].



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) [4].

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 bailouts 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 bailouts combined [4].



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 [1].

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 [1].

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 [1].

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 [1].

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 [1].

If Japan could continue to borrow with that level of debt, it might seem that countries with lower levels should also be fine. But this ignored the fact that if interest rates stagger back from the floor, burdens a lot smaller than Japan's might become perilously unstable. There was no immediate account for why this might be likely. But that did not mean it would not happen. Governments must 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 [1].

Given this background risk, governments ideally ought to make sure that new borrowing does the 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 [1].

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 has been 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 [1].

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 [1].

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 [1]?

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 [1].

The new macroeconomic consensus was that government borrowing and spending can be an important part of stabilising an economy, especially when interest rates are low enough to allow governments to manage this task at minimal cost. 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 the 2020s have shown that countries should prepare for any low-probability disaster [1].

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 [5].

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 [5].

Germany's debt brake

In 2025, a consensus was forming on the view that Germany's "debt brake" was no longer serving the country well. The debt brake is a blunt instrument placed in the constitution in 2009 that limited the federal government's annual deficit to 0.35% of GDP, after adjusting for the economic cycle. It prevents the 16 states from borrowing at all. [Germany's debt levels rose after the reunification with the East and revenue collection was hit with the GFC. The debt brake was enacted because Germany's debt to GDP ratio exceeded the EU threshold.]

In the 2020s, Germany's debt brake was seen as flatlining economy, holding down revenues while spending demands mounted. It was too tight a constraint on the economy. The country was seen as needing hundreds of billions for infrastructure, decarbonisation and education. The geopolitical situation also required extra spending on defense. The brake had to be lifted.

Germany's public-debt stock at 64% of GDP and falling, was lower than that of most of its peers. Hence, the call for reform of the debt brake was to allow for higher investment.

Economist, "Germany's fiscal policy: Easing the straitjacket", 25 Jan 2025, p. 21.

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 [5].

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 [5].

After the GFC 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 [6]?

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 [6].

The IMF 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 G7 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 [6].

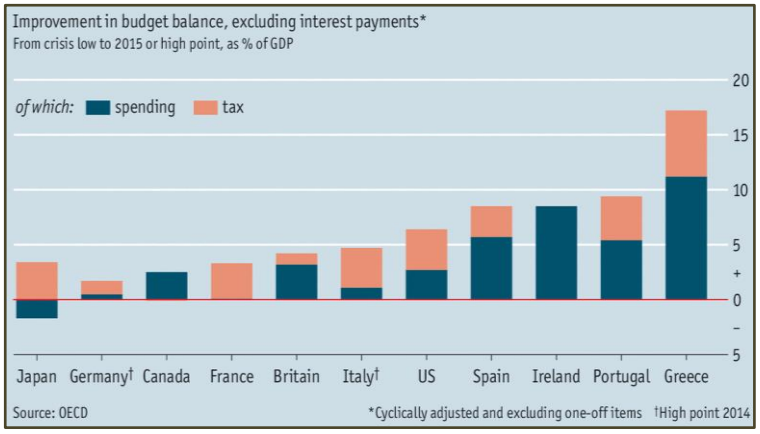
Simon Wren-Lewis of Oxford and Jonathan Portes of the National Institute of Economic and Social Research were rightly critical of fiscal austerity when short-term interest rates were near zero, though they support the UK government's five-year rolling- deficit target (as well as the creation of the Office 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 [6].

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 [6].

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 changes 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 [7].

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) [7].



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 [7].

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 [7].

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) [7].

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 [7].

From any perspective, however, the belt-tightening in response to the GFC looked 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 [7].

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 were entitled to condemn the PIIGS' past excesses and the pace of structural reform, but they could not denounce them for doing too little on the public finances [7].

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[1]. The institutional framework around monetary policy should be extended to fiscal policy. To understand why, consider the arguments in favour of central-bank independence [8].

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

[1] "Is government too political?". *Foreign Affairs*, Nov. 1997.

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 [8].

This idea was adopted by the Business Council of Australia[2] 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 [8].

Prior to the GFC, 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 [8].

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 [8].

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 [8].

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 is the unwinding of them. In an economy displaying signs of financial excess, a tax cut delivered by an independent tax agency might be safer than looser money [8].

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 [8].

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 [4].

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 [4].

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 [4].

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 [4].

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 [4].

Moreover, 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

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

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 [4].

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 [4].

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 [4].

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 [4].

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 [4].

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 [4].

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 [4].

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 [4].

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.

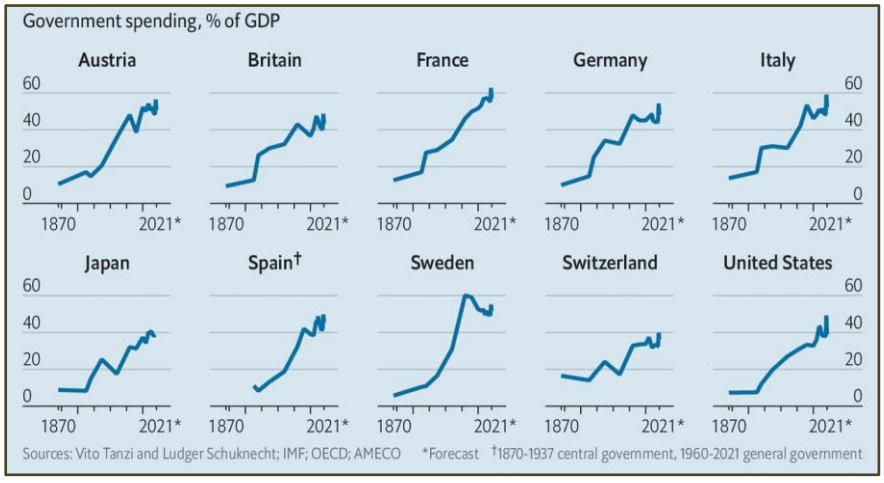
With this kind of fiscal rule, a government can truly run a counter-cyclical fiscal policy, allowing moderate deficits in bad times, which are compensated by fiscal surpluses in the good. The best way to accumulate surpluses is by implementing sovereign funds which normally invest their resources abroad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

Economist, Felipe Larraín, Minister of Finance, Chile, in Letters to the Editor, 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 [9].

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 [9].



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

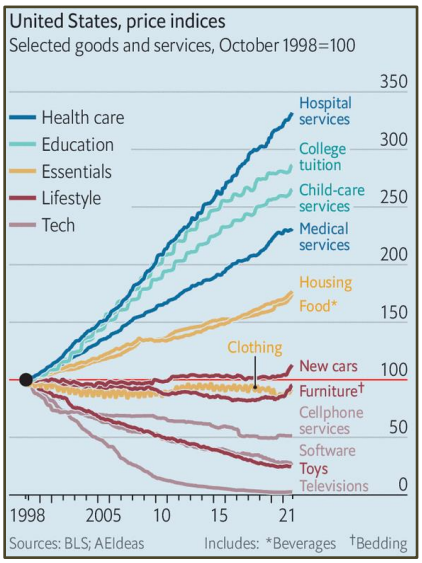
than doubled since 1970. The total word count of Germany's laws is 60% larger today than it was in the mid-1990s [9].

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 [9].

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 [9].

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 [9].

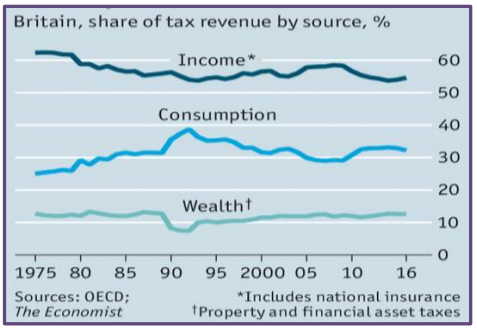
Finally, much government spending is in areas where labour-productivity growth is slow, notably the provision of education and health care (see chart, US price indices). As the real wages of doctors, nurses and teachers go up at a rate set by other parts of the economy, so does spending. What is more, 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 [9].



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 [10]?

Taxes on income 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 [10].



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 [10].

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 [10].

Consider higher taxes on consumption. Extra levies on socially damaging activities such as unhealthy eating and pollution such as the UK's "sugar tax" introduced in April 2018, raised 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 [10].

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 [10].

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 [10].

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 [10].

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 [10].

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 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" [11].

Several events have shaped the new era. First is the GFC. 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 [11].

When covid-19 arrived, bailouts 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. 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 [11].

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 [11].

Next is the transition to greener energy and the rising geopolitical tensions which have emboldened governments to be more hands-on. It is the return of fiscal activism with governments spending more and also taking a more prominent role in managing the economic cycle. More interventionist government requires a rethink of fiscal policy. Sharply rising borrowing costs have made it more difficult for countries already heavily indebted to use the bond markets to finance yet more spending. Taxing the incomes of younger workers to pay for healthcare and pensions of older citizens is unlikely to be politically sustainable for much longer. Persuading the voting public to allow taxes to rise is also a challenge [12].

The need for greater government spending is focused on three areas: defence, demographics and climate change. Greater reliance of fiscal policy, however, means that macroeconomic policy will become more political. Whereas central banks rely on a limited toolkit to maintain financial stability and control inflation, fiscal policy presents choices, such as who and what to tax and where to spend [12]. President Biden's green subsidy plan and industrial policy (the Inflation Reduction Act and the Chips Act) involved handouts amounting to billions in subsidies and tax credits at a cost of 10% of GDP. These subsidies are being matching in the EU and other mature economies.

With inflation and higher debt levels central banks have had to focus on taming inflation. Increased debt levels ad higher interest rates make it harder and more expensive to borrow in the financial markets.

The cumulative effect of several 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 bailouts, 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) [11].

Despite a renewed willingness of governments to use fiscal policy, Mian et al. (2021)[3] 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 [13].

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 [13].)

This logic suggests that though supersized deficits may be appropriate now, the US cannot run them forever. Doing so would cause debt to rise, potentially out of the Goldilocks zone and into riskier territory. And the longer the US 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 country's fiscal freedom.

China's fiscal policy

In 2023 China's economy grew faster than expected thanks to the country's abrupt exit from covid-19 controls. But later that year the economy recovered more slowly than hoped. Retail sales, investment and property sales all fell short of

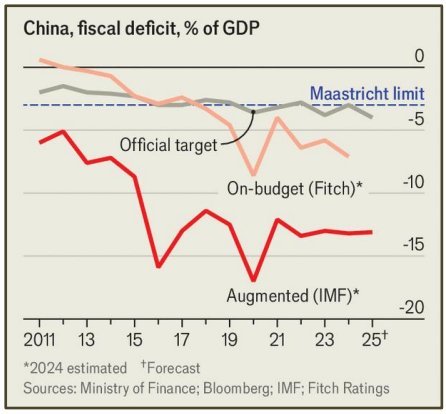
[3] Mian, A. L. Straub and A. Sufi, "A Goldilocks theory of fiscal policy". NBER Working paper, July 2021. https://www.tcd.ie/Economics/assets/pdf/Seminars/20212022/goldilocks-theory-of-fiscal-policyLudwigStraub17Nov21.pdf

expectations. The unemployment rate among China's urban youth passed 20% [14].

Recovery was expected to have an inflationary effect in the world economy, but instead prices began to fall in China. Much of the slowdown was traced to its property market. Despite the government making it easier for indebted property developers to raise money to complete delayed construction projects, property sales remained weak as households remained unwilling spenders [14]. The housing crisis in China caused property prices to fall and consumers to tighten their belts. The central government signalled that it would take measures to reflate the economy, but most macropolicy was aimed at loosening monetary policy.

The government was unwilling to provide fiscal stimulus to households. Rather than extra spending on pensions or consumer giveaways, the government chose a more limited route through extended tax breaks on electric vehicles that helped boost car sales. But broadening such handouts was viewed by officials as being frivolous or profligate. If the government was going to spend or lend, it wanted to create a durable asset for its trouble, such as investment in green infrastructure or intercity transport [14].

By 2025, China's budget deficit had exceeded the rule of thumb 3% of GDP for the previous five years and the official target was set to increase the deficit to 4% of GDP (see chart, China's fiscal deficit). Consumers were offered subsidies on new smartwatches, phones and tablets, and the scheme was extended to dishwashers, rice cookers and other consumer goods (but without the large-scale fiscal stimulus to household and private firms as implemented in the West). [15].



Nevertheless, the finance minister stated that the government had plenty of fiscal "room". Was he right? One reason to worry is that the official deficit covered only a fraction of public borrowing. There are three other accounts to consider: social insurance, land-financed infrastructure spending, and transactions with state-owned enterprises. The deficit in 2024 was estimated to be 7.1% of GDP by Fitch, a ratings agency, when these accounts were included [15].

Local governments borrowing through "financing vehicles" to invest in public infrastructure and other state-related ventures. The IMF thinks that China's deficit in 2025 could reach 13% of GDP and its debt could reach 129%. China's public finances also face longer-term strains with an ageing population. The share of GDP devoted to pension spending will increase. The erosion of China's government revenues also appears persistent. The declined even before the pandemic. China has yet to find a source of revenue to replace land sales, which suffered since the property slump. Thus, some argue, the fiscal space China has is a myth [15].

A government's room to borrow and spend partly depend on what else is going on in the economy. Households and private actors in China's economy were in retreat, reluctant to spend and all too eager to accumulate safe financial assets instead. That left the economy short of demand and prone to deflation. The rest of the economy's eagerness to save, not spend, has also made it extraordinarily cheap for the central government to finance itself. The rest of the economy, in other words has made plenty of room for the state to extend itself. The demand for government bonds is helped by China's capital controls, making it harder for domestic investors to seek safe havens abroad [15].

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 [16].

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 [16].

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 [16].

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 [16].

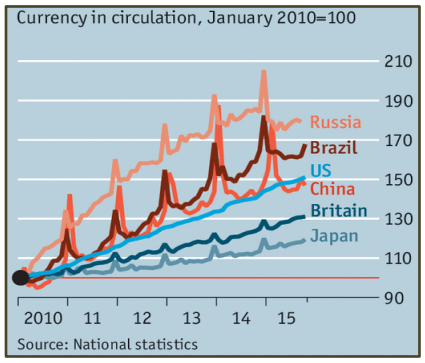
A second option is an exchange-rate target. A country with a poor record of controlling inflation can peg its currency to that of a low-inflation economy. In effect, this allows it to piggy-back on the low-inflation country's credible monetary policies. Many developing countries fix their currencies 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 [16].

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 [16].

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 [16].

Seasonality in money demand

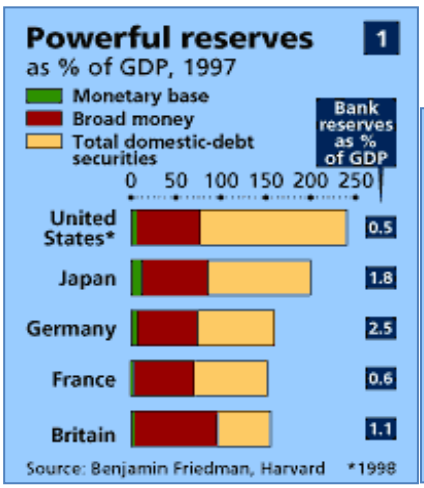
At the end of the year as retail sales pick up for the holiday season, banks need to stock up on cash. Demand for cash peaks in December, as consumers withdraw money to pay for gifts and holiday travel (see chart). In the weeks leading up, banks stash extra cash in their vaults to meet the additional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

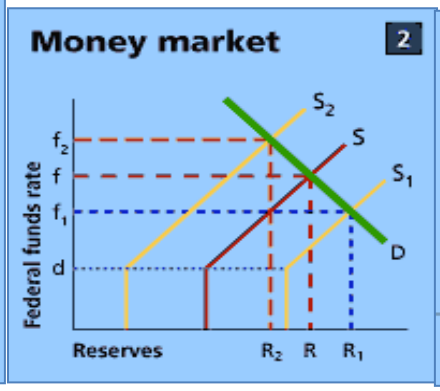


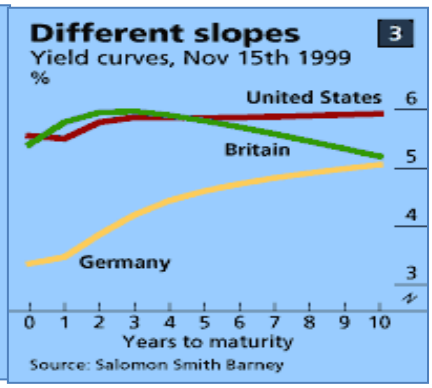
In rich countries, where card payments have become common, cash in circulation tends to jump by less than 5% in December; in Japan it hardly rises at all. In emerging economies such as Brazil and Russia, where cards are rarer, it increases by more than 10%. In China, where new year falls between mid-January 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 the bonds 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 [16]. ["Quantitative easing", as it became known, was pursued by other major central banks after the GFC.]







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 [16].

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 [16].

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 [16].

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 S2. Because banks' demand for reserves exceeds supply, the federal funds rate is bid up (from f to f2) 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 S1, and the rate falls from f to f1 [16].

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 [16].

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 [17].

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 [17].

If, for example, investors believe the Fed is raising rates pre-emptively 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 [16].

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 [16].

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 [18].

Central banks' monopoly on supplying cash and bank reserves is relatively new phenomena. In the 19th 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 [16].

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 [18].

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 [18].

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 [18].

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 [18].

Boivin and Giannoni[4] 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 [18].

The rise of the central bank

In May 1997, the British government gave the Bank of (BoE) 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 [19].

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 [19].

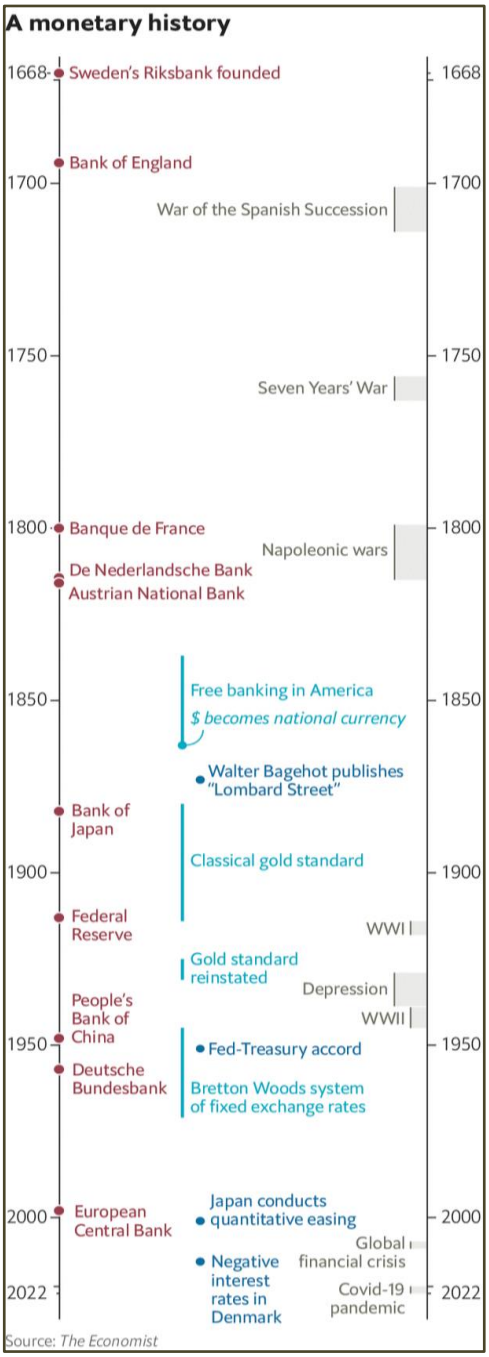
Such debate is almost as old as central banking itself. Over more than 300 years, the power of central banks has ebbed and flowed as governments have by turns enhanced and restricted their responsibilities in response to economic necessity and intellectual fashion. Governments have asked central banks to pursue several goals at once: stabilising currencies; fighting inflation; safeguarding the financial system; co-ordinating policy with other countries; and reviving economies [19].

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

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

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 [19].

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 [20]). 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 [19].



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 [19].

Paper money was a more useful medium of exchange than gold or silver, particularly for large amounts. Private banks might 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 [19].

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 BoE 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 [19].

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 [19].

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 [19].

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 BoE 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 [19].

The idea was not universally accepted; a former governor of the BoE 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 [19]?

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 [19].

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 [19].

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 [19].

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 [19].

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 [19].

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 [19].

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 [19].

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 the US 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 [19].

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 [19]. The era of the Bretton Woods system of fixed exchange rates and capital controls lasted from 1945 to 1973 [21]. Like the gold standard, the system depended on governments' willingness to subordinate domestic priorities to the exchange rate [19]. 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) [21].

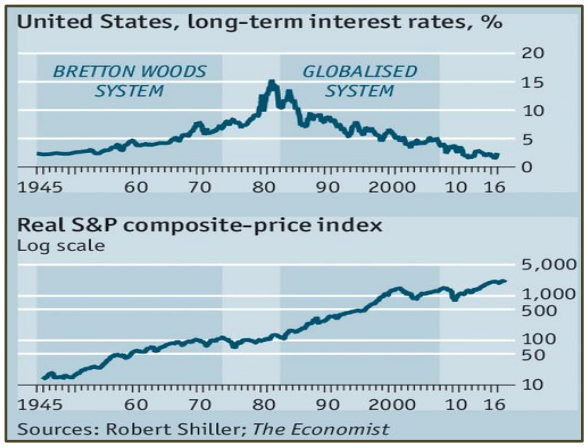
This crisis gave central banks the chance to develop the powers they hold today. Politicians had shown they could not be trusted with monetary discipline: they worried that tightening policy to head off inflation would alienate voters. Milton Friedman, a Chicago economist and Nobel laureate, led an intellectual 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 [19].

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 [21].

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 [21].

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 [19]. 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 [19].

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 [24]. 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 [22].

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. [23].

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 [23]. 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 [23].

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[5] 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 [23].

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 [24].

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 [23]. This era suffered its defining crisis in 2007-08, spelling its "end" [21].

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 [24].

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.

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

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) [24].

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 [24].

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 [24].

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 [25].

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 [25].

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. After the GFCs rates fall to extraordinary depths (see chart, left panel, bond yields). This striking trend, which once looked like a macroeconomic triumph, threatened to marginalise central banks. It steadily eliminated the room central banks had to cut their 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 [25].

The remaining tools available to central banks represented 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 [25].

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 creates 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 [25].

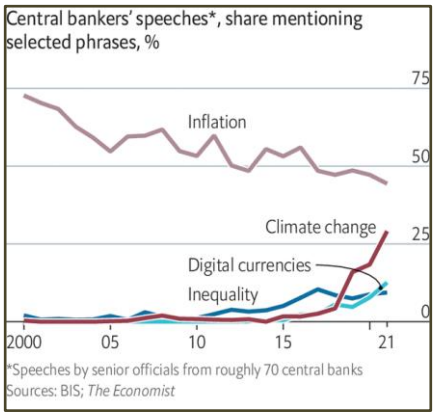
The relationship between central banks and governments has grown complicated. To manage the GFC and the covid-19 pandemic, central banks intervened in a range of financial markets, in some cases buying corporate bonds and equities. To stimulate economies and keep markets functioning they hoovered up 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 [26].

<u>Loss of autonomy: monetary policy's social objectives</u>

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 [26]. 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 [27].



In the US progressives have called on the Fed to tackle racial gaps in employment, income and wealth [27]. 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 [26]. 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 [27].

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 [26]. 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 [27].

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 [26].

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 [27].

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 [27].

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 [27].

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 [28].

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 [28].

Not just because central banks have bought vast quantities of public debt to shore up economies. The have also come closer to disbursing implicit subsidies on their own account [27].

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 Y30trn ($270bn) portfolio of equity funds when stocks plunged in 2020 [29].

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) [29].

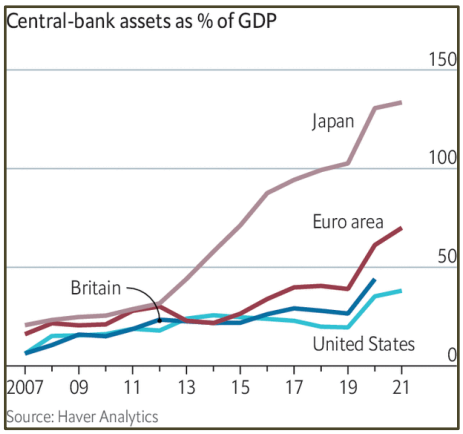
But generally speaking, central banks cannot go bust, and economists largely agree that negative net worth is no impediment to setting monetary policy. In practice, however, a central bank with negative capital would invite much scrutiny. A central bank is ultimately part of the government, and in some 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 [29].

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 [29].

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 [28].

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 [28].

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 [28].



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 [28].

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 [28].

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?" [28]

References:

[1] *Economist*, "Government debt: Putting on weight", Brief on government debt, 12 Sep 2020, p. 59-60.
[2] *Economist*, "The dangers of debt: Lending weight", Schools brief, 14 Sep 2013, p. 66-7.
[3] *Economist*, "Stimulus v austerity: Sovereign doubts", Schools brief, 28 Sep 2013, p. 68-9.
[4] *Economist*, "Stimulus v austerity: Sovereign doubts", Schools brief, 28 Sep 2013, p. 68-9.
[5] *Economist*, "Economics focus: The red and the black", 24 Mar 2001, p. 84.
[6] Financial Times, "Fiscal policy should not be decided by simple rules", by M. Wolf, 17 Oct 2014, p. 9.
[7] *Economist*, "Free exchange: Prudence and profligacy", 12 Sep 2015, p. 69.
[8] *Economist*, "Economics focus: Fiscal flexibility", 25 Nov 1999, p. 100.
[9] *Economist*, "Government spending: The great embiggening", 20 Nov 2021, p. 21-3.
[10] *Economist*, "Tax reform: Fishing for funds", 17 Feb 2018, p. 30-31.
[11] *Economist*, "The saviour state: Bail-outs for everyone!", 1 Oct 2022, p. 63-4.
[12] *Financial Times*, "Big government is back. Who pays for it?", by E. Agyemang and C. Giles, 6 Sep 2023, p. 15.
[13] *Economist*, "Free exchange: What are the limits to government borrowing?", 5 Jun 2021.
[14] *Economist*, "Double dip: Vanishing growth", 24 Jun 2023, p. 58-9.
[15] *Economist*, "Debt, deficits and depressed consumers: Can China afford to keep spending?", 11 Jan 2025, p. 46-7.
[16] *Economist*, "Schools brief: Monopoly power over money", 18 Nov 1999, p. 115-16.
[17] *Economist*, "Quantitative easing: QE, or not QE?", 14 Jul 2012, p. 58-9.
[18] *Economist*, "Economics focus: A blunt tool", 28 Jun 2001, p. 70.
[19] *Economist*, "The history of central banks: Battle of three centuries", Briefing on the history of central banks, 29 Apr 2017, p. 55-57.
[20] *Economist*, "Distraction disease", special report on central banks, 23 Apr 2022, p. 3-4.
[21] *Economist*, "Buttonwood: The third regime", *Economist*, 7 Jan 2017, p. 55.
[22] *Economist*, "Monetary policy: When 2% is not enough", 27 Aug 2016, p. 8-9.
[23] *Economist*, "Economic focus: On target?", 30 Aug 2001, p. 64.
[24] *Economist*, "Economics focus: Jackson's Holes", 27 Aug 2009.
[25] *Economist*, "Free exchange: The desperation of independents", 6 Aug 2016, p. 58.
[26] *Economist*, "Free exchange: Many hats", 13 Mar 2021, p. 66.
[27] *Economist*, "Social issues: One-stop policy shops", special report on central banks, 23 Apr 2022, p. 6-8.
[28] *Economist*, "Emergency response: Balance-sheet maneuvers", special report on central banks, 23 Apr 2022, p. 4-6.
[29] *Economist*, "Free exchange: Unprofitable argument", 9 May 2020, p. 61.