Managing the UK Economy in times of the Climate Emergency

Briefing Paper

Emma Dawnay
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GREEN HOUSE THINK TANK

About the author

Emma Dawnay, a Cambridge science graduate, has a passion for economics, having experienced first-hand the dot-com boom/bust whilst being taught traditional economics. She has worked at the New Economics Foundation, and she is a member of the board of Monetäre Modernisierung, the Swiss NGO which instigated a national referendum on how money should come into circulation. Since 2019 she has been a core member of Green House. Emma is a keen environmentalist and believes we will only be able to tackle our environmental crises if we correctly understand the economic drivers of human activity.

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Executive summary

To have the best chance of successfully transitioning to an economy which is not dependent on fossil fuels, the economic system which drives human activity must be reorganised. The 'needs' of financial markets must become subordinate to the 'needs' of physics to maintain planetary conditions compatible with human civilisation. The mainstream consensus on how a national economy should be managed has little theoretical underpinning; rather, it has evolved with the massive growth in financial markets. The shortcomings of the mainstream consensus have been highlighted by non-orthodox economists for decades, but now more than ever this consensus needs to be reassessed as it is limiting our response to the climate emergency as well as causing unnecessary austerity and hardship. This briefing aims to explain descriptively how a national economy works, how the current consensus is limiting what we can achieve, and how the UK economy could be managed differently.

The key insights

The UK state can afford to obtain and maintain a good level of public services as well as to build infrastructure for transitioning to a low carbon economy:

1 It is always possible for the UK government to find money so long as it has its own sovereign currency (rather than, for example, having the euro). The availability of money does not depend on the tax intake or on the government being able to sell bonds.

2 Actual limits on what can be achieved depend on the number of healthy workers and the available resources for energy, materials and space. In the short term, further limitations include the number of *skilled* workers, available machines, and organisations set up and ready to provide the goods or services.

3 The downside in over-investing in public services or projects is that workers and resources are not available for private businesses to employ/use.

Good regulation around banking promotes a thriving economy:

4 A thriving economy needs small and medium sized enterprises to be able to easily access funds. This is especially true in times of upheaval where regulations or resource limitations are changing the way goods and services are produced and delivered – as will be true for the transition to a low carbon economy.

5 Measures introduced to increase the financial robustness of banks can, counter-intuitively, destabilise the economy by dis-incentivising banks from providing bank loans to businesses.

Some financial instabilities are problematic, others less so:

6 The build-up of too much private debt (particularly debt associated with non-productive assets) can lead to a problematic financial crisis, with banks potentially failing. Whereas, a build-up of national debt or a large government deficit is not inherently problematic.

7 A financial crisis that disrupts transactions between businesses and individuals (such as payment of salaries) would cause massive and immediate problems so must be averted at all costs, including by bailing out banks if necessary. Stricter regulation

for shadow banks or (more drastically) changing to a Sovereign Money system with a publicly run clearing system would prevent this issue.

8 Inflation does not prevent an economy from thriving, but different segments of society may be adversely affected by inflation (or deflation).

Alternative policies can promote a fairer economy:

9 In inflationary times, a cost-of-living crisis must be avoided for the least well-off in society by ensuring their incomes rise in tandem with their necessary outgoings.

10 In the case where there is a shortage of a key product (e.g. food staples), rationing is the pragmatic response - otherwise the product may become unavailable due to hoarding, or prohibitively expensive.

11 The problem of inflation in house prices – resulting in housing becoming increasingly unaffordable – is partly due to the fact that banks create new money when they give mortgages, which pumps up the housing market. This could be prevented by only allowing banks to act as intermediaries between savers and borrowers (by pooling people's savings and using these to offer mortgages).

Input from a broader range of economic schools of thought can improve policymaking:

12 A broader variety of methods for economic modelling and forecasting should be used for policymaking than is the case today. These should include: modelling the stocks and flows of money in an economy, modelling the economy as a complex adaptive system, and using the double-entry bookkeeping techniques. In general, models should include banking, as what banks create money for strongly influences which sectors will prosper, and how much money and debt banks create will affect financial stability.

13 Taxation and/or the issuing of government bonds can be tools to suppress or delay demand to prevent an inflationary wage–price spiral.

14 Taxation can direct people's spending – for instance, away from fossil fuels into low carbon products. The carbon fee and dividend policy, for example, could be used to direct spending away from carbon without disadvantaging the least well-off in society.

These key insights challenge mainstream beliefs about the economy and naturally lead to alternative economic policies. However, in deviating from mainstream norms, a government must be prepared for potential adverse reactions from financial markets. Participants in these markets prioritise profits above all else. There is no inherent reason to expect the sum of their unrestrained actions to steer governments – and people more generally - towards maintaining the conditions necessary for human civilization to thrive. On the contrary, mounting evidence suggests the opposite is the case.

Contents

Introduction

This briefing starts with a description of economics at a very fundamental level which would be agreed by mainstream and non-mainstream economists alike. This includes the limits to what can be achieved, money, and how banks and the central bank currently work. It then looks at the 'aims' a government should reasonably have when trying to control a national economy and points out these are necessarily value driven. It continues with a summary of current beliefs about how a national economy should be managed – the current economic paradigm – and how this has changed since the 1970s. The next section details the shortcomings of this current economic paradigm, and how alternative approaches might enable these problems to be overcome. This is followed by detailed sections on the key topics of how a government might find the funds it needs, on what exactly inflation is and how it should be handled, and on the use of the interest rate. A final section is included on the importance of using different economic modelling techniques and listening to different opinions to have the best chance of managing the complex economic system to drive human activity in a sustainable direction. The sources section includes references to the works of non-mainstream economists which have strongly influenced this work. An appendix has been included to show the level of agreement between non-mainstream economists and the key insights of this briefing.

Economics basics

This section goes back to fundamentals and economic definitions which would be agreed by non-mainstream economists and mainstream economists alike.

The limits to what a society can achieve

What a society can achieve will depend on the availability of people, material resources, space and energy. There is also a time element – for example, it may take time to train people for certain tasks or to build up the technological know-how, or to acquire the material resources. There is an absolute limit to what is available when thinking about a closed economy as a whole: when all available resources are working at full employment/usage, another project can only be carried out if resources are taken off an existing project. In such an economy the 'opportunity cost' of having more people working in the state sector is that fewer people are available to work in the private sector.

In an economy open to trade, material and energy resources may be sourced internationally. In an economy open to immigration, human resources may additionally be sourced internationally. The UK currently has an open economy, though regulations on immigration are strictly enforced.

What is money?

It is surprisingly difficult to define what money is. It has no intrinsic value, but it has value as people 'trust' that it will be accepted in return for goods or services and to pay taxes. It directs how resources are employed in an economy. Ann Pettifor makes the argument that for a country to have a trusted currency, it needs good justice system to ensure contracts are upheld, a good banking system, a good accounting system that is regulated, and good tax collection systems.[1]

1 Pettifor, A (2019) *The Case for the Green New Deal*. Verso Books.

How banks work

There is much misunderstanding about how banks work:

- Banks do *not* act as intermediaries between borrowers and lenders: banks do not use people's savings to lend to other people.
- Banks do *not* use a 'money multiplier'.[2]

What banks actually do is create money when they give a loan[3] – for example, a mortgage on a house. The creation of money through banks giving loans means money is created hand-in-hand with debt (and money actually disappears from circulation when it is used to pay back a loan).[4] Banks have created all the bank-account money circulating in the UK economy; of the money in general circulation, the Bank of England has only created the bank notes and coins. The only criteria a bank will use when deciding whether to offer a loan is whether the person or business is likely to be able to pay it back, whether they'll keep up with interest payments and how 'risky' the loan is deemed to be under current prudential banking regulations (as riskier loans require the bank to have a higher capital buffer, so are less profitable). To 'de-risk' the loan they will often ask for collateral such as property.

A bank, like any firm, is insolvent (or bankrupt) if the total of its assets[5] becomes less than the total value of its liabilities,[6] which can happen if people default on their loans or if the market price of its financial assets drops.[7] A bank (like any firm) can avert bankruptcy if it raises funds by selling new shares. When the government 'bailed out' the banks in the financial crisis in 2008, what they actually did was to buy new shares.

2 A 'money multiplier' is an incorrect theory that is in some textbooks. It goes: person A deposits £100 in a bank – the bank has to keep, say, 3% as reserves, so may lend out £97 to person B; person B now deposits this in the bank; the bank now must hold an extra 3% of the £97 pounds, but can lend out £94 to person C; and so on.

3 See Bank of England publication: McLeay, M, et al. (2014) 'Money creation in the modern economy'. *Quarterly Bulletin* 1. pp.14–27.

4 For a bank, a mortgage or loan made to a firm or individual is an asset – it is of value to the bank as in the future it can expect a stream of income from interest payments as well as the repayment of the original value of the loan. On the other hand, 'money' in people's bank accounts is a liability – people could withdraw this (usually with no notice) and the bank may have to pay interest on it. When someone takes out a mortgage to buy a house, the bank gets a new asset (the mortgage), and a new liability (as the person selling their house receives the newly created funds, which they put in their bank account). So a new asset and corresponding liability on the balance sheet of the bank have been created hand in hand. Likewise the house buyer now has a debt, and the house seller has newly created money. The opposite occurs when the mortgage is repaid. To start with the house-owner has funds in their bank account (a liability for the bank) and the bank has the asset (the mortgage). The house-owner pays back the mortgage using the funds, so the corresponding asset and liability simply disappear.

5 Assets for banks include loans; mortgages; 'central bank reserves' – a type of money that only flows between banks and the central bank (never in the wider economy); financial assets (e.g. government bonds); and cash.

6 Liabilities for banks include customers' deposit accounts (i.e. money in people's bank accounts) – and it is these liabilities that must be less than the assets for a bank to be solvent. 'Capital' also turns up on the liabilities side of the balance sheet, to make the assets and liabilities balance. Capital includes the initial investment that the founders paid into the business, any extra funding from selling more shares, and any profits retained, all less any losses. A bank's capital acts as a buffer against losses: so long as the capital remains positive the bank is solvent. However, banks are required by prudential banking regulations to hold a certain amount of capital as a buffer to make bank runs less likely.

7 This can happen, for example, if people default on their mortgages or business loans, or if the value of the financial assets the bank holds falls, as happened with the Silicon Valley Bank when the value of US government bonds fell.

If people or firms hear a rumour that a bank might go bankrupt, it is in their interest to withdraw their money from the bank[8] whilst they still can (causing a bank run) – thus making the bank more likely to go bankrupt.[9]

The book *Where does money come from?* gives a good, introductory description of how the banking system together with a central bank works.[10]

How central banks work

Central banks, such as the Bank of England, function in a different way to banks. Central banks deal mainly in a different currency to the wider economy: 'central bank reserves' or 'central bank money'. This currency flows between banks and the central bank and is used to settle accounts between banks. Central banks used to use this currency to buy and sell financial assets in the open market to influence 'the' intrest rate,[11] but today 'the' interest rate is simply the rate that the central bank pays on the reserve accounts held by the banks.[12] Banks also use this currency to buy hard cash (banknotes) from the central bank. The general public has no access to this currency. Whilst central banks also publish a balance sheet, unlike other organisations they can't go bankrupt, and they can have 'negative equity'.[13] Currently the 'central bank reserves' that are an asset for banks are classed as liabilities for the central bank, but this classification is disputed.[14]

The Bank of England is wholly owned by the UK government, although it is run independently based on legislation enacted by parliament (see Box 1, p.13, on the mandate it has).

Objectives for managing our economy

Every government will have aims as it manages its national economy. These will necessarily be value driven – a fact often overlooked when economics is discussed. This briefing assumes the following aims to be reasonable to hold:

- Providing public services and investing in public infrastructure:
  - Enabling public services for health, education, justice, defence, etc., to function well enough so all sections of society feel able to participate in economic activities and feel broadly fairly treated
  - Investing in public infrastructure, in particular infrastructure necessary for a transition to a zero-carbon economy

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8 When a customer withdraws cash, the bank's assets reduce (by the amount of cash) and the bank's liabilities reduce (by the decrease in the amount in the customer's account). If the bank gets low on cash (or central bank reserves, if customers are simply transferring funds to another bank), it might have to urgently sell financial assets to raise funds, but often such a fire sale of assets mean they must be sold at a loss, thus the value of the assets side of its balance sheet can sink quickly.

9 In the UK the government promises to pay the first £85,000 (at time of writing) for individuals and businesses (see the FSCS website here) – but it is unclear how quickly this could be accessed, and it is not nearly enough to cover potential losses for many businesses.

10 Ryan-Collins, J, et al. (2012) *Where does Money Come From?* New Economics Foundation.

11 See ' The interest rate', p.43 for an explanation of 'the' interest rate.

12 This was changed after the 2008 financial crisis. See 'Quantitative easing', p.25, for more detail.

13 Wigglesworth, R (2022) 'Are central banks going bankrupt?'. *Financial Times*.

14 Kumhof, M, et al. (2020) 'Central Bank Money: Liability, Asset, or Equity of the Nation?' (CEPR Discussion Paper No. DP15521). *SSRN*.

- Providing the conditions for a thriving economy:
    - Enabling the firms that provide society with valuable goods and services to thrive
    - Enabling people to find meaningful occupations
- Ensuring stability of the financial system:
    - Avoiding instabilities, such as the financial crisis of 2007/8 when more firms went bankrupt than usual resulting in people losing their jobs and in some cases their homes (as people couldn't keep up with mortgage payments). Some major banks nearly went bankrupt. Had this happened people would (at best) no longer have been able to use their bank accounts for a while, or at worst could have lost money in their bank accounts.[15]
    - Maintaining a robust basic transaction system, so people and firms have confidence they can make and receive payments. This system might have failed in the financial crisis had Gordon Brown not intervened, with some big banks such as RBS being hours away from having to close their doors.[16]
    - Preventing hyperinflation of the national currency (when people choose to use a foreign currency instead of the national currency)
- Ensuring levels of perceived economic unfairness remain acceptable:
    - Preventing people having financially precarious lives
    - Ensuring housing costs are not so high that a given segment of society can't afford them (which is currently an issue for many younger people)
    - Averting a cost-of-living crisis for people on lower incomes: everyone should be able to exist with dignity
- Working sustainably:
    - Keeping economic activity within the boundaries of what the planetary system can withstand without disadvantaging future generations or people in other geographic locations.[17]

A government may well choose to have further aims such as:

- To not let inequality rise beyond certain levels
- To have a certain amount of resilience in the provision of services (i.e. not providing services in the most economically efficient (cheapest) way, but rather having some over-capacity 'just in case' of an adverse event)

15 Above the amount guaranteed by the state (see footnote 9).

16 Brown, G (2010) *Beyond the Crash: Overcoming the First Crisis of Globalisation*. Simon & Schuster.

17 This is an important point made by many non-mainstream economists, perhaps the most influential being Kate Raworth in her book *Doughnut economics*. This briefing doesn't investigate the hard-science based factors limiting what human activities can do from a planetary/ecological perspective, but rather the false (as it is argued here) limits and regulations a government supposedly 'must' abide by to provide financial stability even if they prevent it from spending and regulating to ensure human activities don't overstep planetary boundaries.

- To be more resilient and be prepared for adverse events such as another pandemic, by having a certain amount of national self-sufficiency of key goods such as food.

All of the above aims are different to the typical aim politicians have of maximising gross domestic product (GDP – the amount of goods and services produced and consumed in an economy). With this typical aim in mind, economics theory has been used to show that if people are fully rational and have fixed preferences, then free markets will give an optimum situation of social welfare being maximised – in this situation one person couldn't become better off without making someone else worse off – thereby justifying a free-market approach.[18] However, this briefing does not accept maximising GDP as an aim, nor does it accept that a free-market approach is necessarily optimum.

The current economic paradigm

Over time, a set of beliefs about how the economy should be managed have evolved. These are not based on fundamental evidence-based theories,[19] and they are likely to change over time. The following describes the current paradigm:

- Fiscal policy (government tax and spending) and monetary policy (money supply and interest rates) can be and should be managed separately, with the government tasked with the former, and the central bank tasked with the latter.
- Having a large national debt is a problem as it will 'burden our children', so governments should aim to run a balanced budget[20] over a certain time period as stated in their 'fiscal rules'.[21]
- Inflation, even only a little above a target, is a problem. Deflation, when it is occurring, is also seen as a problem.
- Central banks should be independent with a mandate to target inflation (usually about 2%) and financial stability (see Box 1, p.13). In the UK the Bank of England only became independent in 1998, with the mandate of holding inflation at about 2%. (This has been perceived to be a highly successful policy[22] for keeping inflation low – though the huge increase in globalisation at this time is also likely to have kept prices in check).

18 This is known as welfare economics. For more details see Investopedia Team (updated June 2024) 'Welfare Economics Explained: Theory, Assumptions, and Criticism'. *Investopedia*.

19 Diesendorf, M, et l. (2024) 'Sustainability scientists' critique of neoclassical economics'. *Global Sustainability* 7. e33.

20 When a government raises enough taxes to cover its outgoings, this is known as running a balanced budget. If a government raises less than this amount – so its outgoings are more than the tax income – it is known as running a deficit. In this case the national debt will increase each year by the amount of the annual deficit. If the government raises more taxes than its outgoings, it is known as running a surplus, and the national debt will reduce by the amount of the annual surplus each year.

21 See King, A (2024) 'What are fiscal rules and how have they worked in the UK?'. *Economics Observatory*.

22 In the current paradigm, the thinking is that central bank independence has resulted in inflation being tamed by enabling the 'hard' decision of raising interest rates to be taken, rather than by MPs, by central bankers (civil servants) who, unlike MPs, will not lose their jobs at the next election. The supposedly credible threat that they would take such decisions is meant to influence people's behaviour in such a way so that they may not have to take the decision. For example, if firms believe that the central bank will hold inflation at 2% then they won't offer their employees more than a 2% pay rise, thus making the prospect of meeting the 2% inflation target more likely.

BOX 1. CURRENT MANDATE OF THE BANK OF ENGLAND

At the moment the Bank of England acts independently from the government with a primary mandate to hold inflation at 2%. It also has a mandate to support government policy regarding growth and employment, and to ensure financial stability. The tools they use to do this include:

- Setting the Bank of England interest rate and amounts of quantitative easing (QE) or quantitative tightening (QT). This is done by the Monetary Policy Committee.
- Undertaking 'emergency' market operations to maintain financial stability, such as buying assets to ensure liquidity in markets
- Prudential regulation of banks and financial firms with the aim of ensuring they could weather financial storms.

The government can't directly influence the Bank of England by, for example, asking it to do more QE or not to raise interest rates too much. However, the government can change the mandate they give the Bank of England.[23]

Under the current mandate that the Bank of England has, it can be argued that climate crises pose risks to the financial system, so it would be within the current mandate for the Bank of England to purchase 'green' financial assets,[24] or to require 'green' collateral from banks; however, these ideas have not been implemented.

- Capital markets should be open (i.e. money should be allowed to flow freely across borders without any restrictions).
- Banking should continue to function as now. However, this is particularly badly understood (see section above).
- Governments should not interfere in financial markets, as 'free' financial markets will result in the most efficient allocation of capital.
- Nations will be wealthier if they don't have any barriers to international trade (such as customs duties), and the UK, like most nations, is a member of the World Trade Organization (WTO).
- Where it isn't possible to get firms to invest in necessary infrastructure, then private funds can be mobilised to make investments (e.g. in green energy infrastructure) by governments de-risking the investments.[25]
- Encouraging individuals to save more helps firms to invest more (in, for example, better machines).[26]
- A build-up of private debt is irrelevant.

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23 Some argue that this means the 'independence' of the Bank of England is a myth. See, for example, Murphy, R (2020) 'Mythbuster: The Bank of England is independent'. *Funding the Future*.

24 See, for example, Vase, P (2019) 'Greening the Financial System: Tilting the Playing Field: The Role of Central Banks'. *Climate Bons Initiative*.

25 'De-risking' means that the state takes on some of the risk of the project, thereby making the project financially viable for the private sector to provide funding.

26 Savings invested, for example, in the stock market will put up share prices of companies by a miniscule amount. If such a company wants to raise new funds for a new project, the theory is that it will be cheaper for them with a higher share price. In practise this is likely to be irrelevant for their investment decisions.

- Stability of the financial system can be ensured through macro-prudential regulation.[27]
- An economy can be usefully understood by using mathematical models based on the idea that an economy can be in a nearly stable state where the supply and demand for goods and services is almost balanced, and the supply of money can be balanced with demand for money using the interest rate.

This paradigm is widely held, with all the richer, global north nations managing their economies by it (with the notable exception of China which does not have open capital markets and has enacted exchange rate controls, as well as strongly influencing which industry sectors should grow).

How the UK economy was managed before this current paradigm

It's often forgotten that this current paradigm is very recent. For example, in the 'golden era' of growth in the UK economy in the 1950s and 1960s, things were very different:

- Fixed exchange rates were defended by the Bank of England that worked together with the Treasury, rather than as an independent institution. Together they aimed to control inflation and exchange rates through the use of exchange controls and credit controls.
- Floating exchange rates were introduced in 1971–73.
- Capital controls were in place in the UK until 1979.
- Banks were not allowed to give mortgages until 1970 – before that only building societies could do this (which they did by using the savings from some customers to fund the mortgages for others).
- State ownership of firms was common, as were state subsidies to 'grow' favoured industries and protectionist policies to protect home firms from cheaper foreign imports (by applying customs duties).
- Many alternative economic models were used to describe and control the economy, most famously those of John Maynard Keynes.
- The UK had its highest ever debt as a percentage of GDP at the end of the second world war, which was a boom time for the economy with high levels of growth and employment.

For more discussion on how economic paradigms have changed, see Dialogue 3 in *Angrynomics*,[28] where Eric Lonergan and Mark Blyth discuss how economics has gone through three versions (here described as paradigms) over the last hundred years: each version had a flaw leading to a build-up of a problematic outcome over time, then a fairly abrupt changeover to a new version of economics.

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27 For example, the Basel rules for banking specifying how much capital a bank must hold (see 'Basel III: international regulatory framework for banks'. *BIS*), the idea being that if banks hold more capital then they will be less prone to becoming insolvent in an economic downturn. An explanation of these rules is given here: Gratton, P (2024) 'Basel III: What It Is, Capital Requirements, and Implementation'. *Investopedia*.

28 Lonergan, E, and M Blyth (2020) *Angrynomics*. Agenda Publishing.

Shortcomings of the current paradigm, with possible remedies

Government spending is unnecessarily limited

The current paradigm is that governments should aim not to run deficits, or at least should aim to balance the outgoings with income over a period of several years (since 1997 the UK government has adopted 'fiscal rules' to which they aim to adhere to[29]), which clearly puts a limit on public spending. Despite this aim, running a deficit is the norm for all wealthier countries and fiscal rules are often broken. Many politicians claim that running a deficit is 'burdening our children' – thereby turning deficit spending into a something which is morally wrong – and that adhering to the fiscal rules is the correct course of action for a 'fiscally responsible' government. This results in governments imposing austerity (cutting back public services) or tax increases, as well as investing less in public infrastructure at a time when decarbonisation and climate adaption projects are needed. However, this position is strongly contested by most non-mainstream economists (see Box 2 p,17). Looking at UK national debt since 1855 (Figure 1), it can be seen the highest debt as percentage of GDP occurred after the second world war – all at a time when we built the NHS as well as a huge number of publicly funded new homes. Government debt is not the same as private debt, as the government owns the Bank of England and we have a sovereign currency, the pound.
A large government debt has no clear effect on growth, employment or wealth – either for us now or for our children in the future.

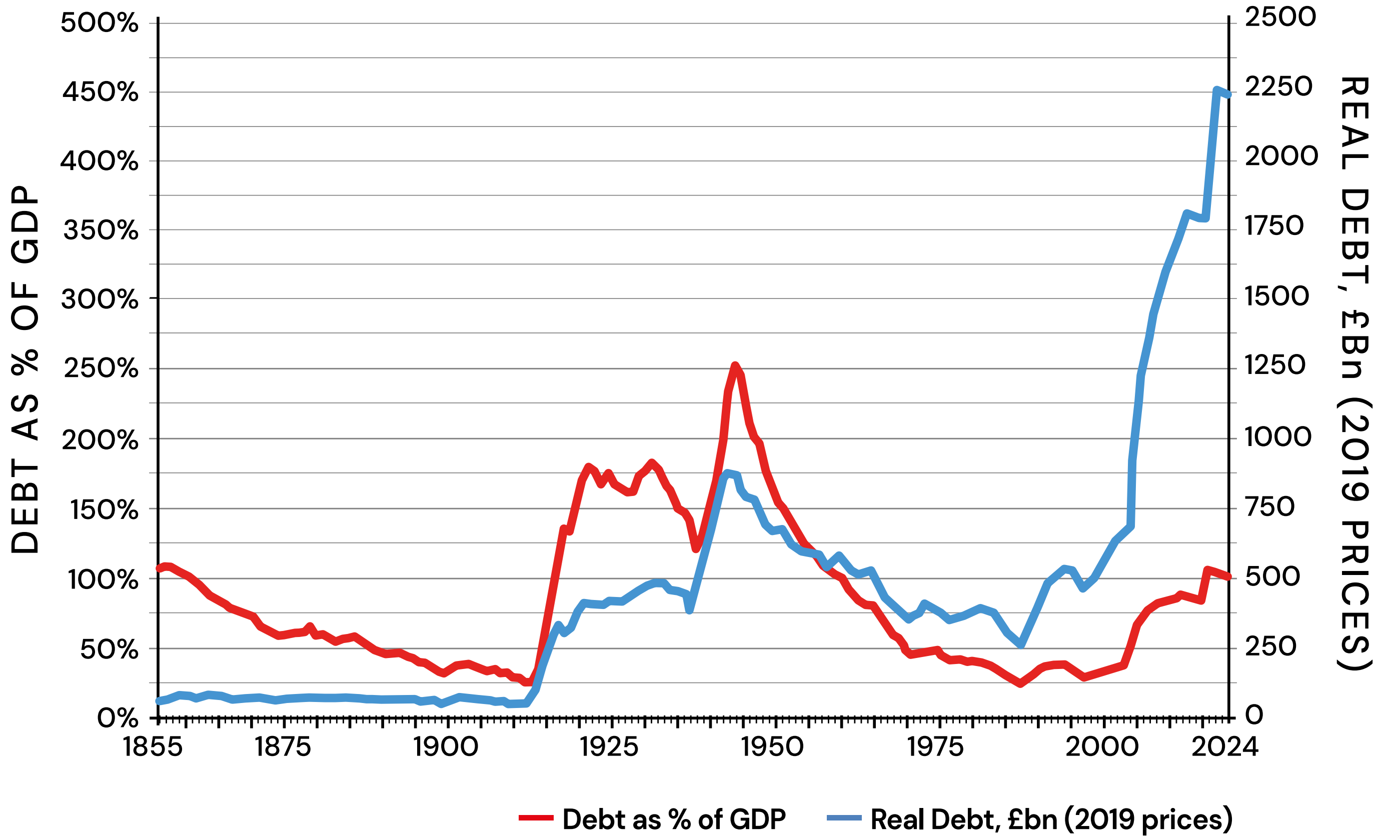

Figure 1. Historical levels of UK government debt (source: ukpublicspending.co.uk[30])

29 Pope, T, et al. (2020) 'Current UK fiscal rules'. *Institute for Government.*
30 Data from ukpublicspending.co.uk. compiled by Christopher Chantrill

Proponents of the current paradigm also take the view that the spending capacity of democratically elected governments is limited to what can be raised from taxes and government bond sales without destabilising financial markets. Many non-mainstream economists[31] are arguing that these limitations are unnecessary, and they do not have a sound evidence-based theoretical grounding. The ultimate limitations depend only on the physical resources needed (the number of workers with the right skills as well as the material, energy and space requirements). This is often recognised in wartime, when the question is how many people can be trained as soldiers, not whether the government has the funds to pay for them.

The current paradigm means that the reaction of government to a recession is likely to exacerbate the recession.[32] In a recession, firms will lay off workers as their expectation of selling goods and services falls, and GDP and the tax intake will also fall – however, public spending is likely to rise (as the people losing their jobs are likely to need help such as out-of-work benefits), so public spending as a percentage of GDP will rise. With misguided fiscal rules, the government will then raise taxes or enact austerity measures – both of which are likely to further reduce demand – thereby furthering the recession. The central bank is likely to realise that increasing demand should help stabilise the economy, and is therefore likely to reduce interest rates to try to achieve this (see 'The interest rate', p.43). It has been argued that this fiscal response of the government is pulling in the opposite direction from the response of the central bank, and that it would make much more sense to have a coordinated response from both.[33]

The remedy to this shortcoming is to realise governments can spend more. For ways on how the government could find the funds for increased spending, see the section on 'How public spending is currently funded, and how it could be funded' (p.24).

Believing that government spending is severely limited has caused governments to try to encourage private investors to invest in public projects or provide public services. This briefing shows that this, in general, results in more expensive projects, or poorer service provision – see 'Getting private firms to invest in key projects can be difficult or costly' (p.21).

Prioritisation of 'taming' inflation can unnecessarily cause hardship and distracts from more important issues

In the current paradigm, the assumption is made that inflation must be tamed even if 'the medicine' for taming inflation causes businesses to go bankrupt and people to lose their jobs. At the moment the main policy to combat inflation is for the Bank of England to raise 'the' interest rate. The mechanics of this are described in 'The interest rate' (p.43), where it is argued that this policy can make it difficult for the economy to thrive.

In the section on 'Inflation' (p.34), the argument is made that inflation per se is not a problem so long as people on low incomes see their income rising with their necessary outgoings.

It should be noted that some policies to reduce climate damaging emissions are likely to be inflationary (in particular, increasing fossil fuel prices), as are severe adverse weather events which cause shortages of goods (including food).

31 For example, almost all of the authors mentioned in the 'Sources' section.

32 See, for instance, Koo, R (2018) *The Other Half of Macroeconomics and the Fate of Globalization*. Wiley.

33 Jacobs, M, et al. (2023) *In Tandem: The case for coordinated economic policymaking*. Fabian.

BOX 2. MYTH: THE NATIONAL DEBT WILL BE A BURDEN ON OUR CHILDREN

The national debt is not like a household debt as it *never* needs to be paid-back, and it can always be rolled-over.[34] (If a household could be in complete control of their bank manager to such an extent that it could always demand another loan, for any amount it wanted, under any circumstances, completely on its own terms – then the national debt could be likened to such a household debt.) The interest that has to be paid on the national debt does, however, come out of future public spending. In this briefing it is argued that this interest never needs to be unduly burdensome (and, indeed, the system could be changed to eliminate this cost entirely).

Some non-mainstream economists argue that the current main purpose of the national debt is to provide the private sector with a safe way of investing savings rather than to fund public spending.[35]

Banks have the wrong incentives to support a thriving economy

In the current paradigm, banks have stringent prudential banking regulations imposed on them with the aim of increasing systemic financial stability.[36] However, these rules don't encourage banks to carry out their key function in an economy of lending to small and medium sized businesses (SMEs), which rely almost exclusively on bank loans.[37] (It should be noted that SMEs employ about 60% of the UK workforce and provide more than half of all turnover in the UK). Larger firms also use bank loans, but have other options open to them such as raising capital by selling shares, or by issuing bonds.[38] It is absolutely key for a well-functioning economy that banks lend to firms for projects – as this helps growth in the industries of the future. However, under the current paradigm banks are strongly incentivised to lend against collateral (usually property[39]), or to give mortgages, and SMEs claim it is difficult for them to access funds.[40] Presumably it is easier (so more profitable) for banks to lend mortgages: a tick box form is enough to work out if the borrower is likely to be able to make the interest payments, and the value of the property is well known. It is much harder work to go into the details of a small firm wanting to buy a new machine which they claim would grow their business. Such a loan is also more costly for banks in other ways: if a loan is considered riskier (which is the case for business loans without collateral), then the bank must hold more capital as a buffer to cover it in case the loan goes bad (the amount being set by the prudential banking regulations).

The build-up of private debt, not public debt, leads to financial instability

In the current paradigm, the focus is on public debt and the effects of private debt are neglected, but it is a build-up of private debt that causes financial crises. In boom-times people tend to take on more debt to fund consumption, firms to fund production, and financial firms to fund financial asset purchases – the effect being a spiralling up of debt until the debt becomes unaffordable. Then people start to cut their consumption, firms' profits drop (as they sell fewer goods), firms lay off workers to reduce their costs, even fewer goods are purchased, and the spiral unwinds. This unwinding can cause great hardship and political instability (and in such times it can be assumed that it would be extremely difficult to bring in tough measures to mitigate or adapt to global

34 Van Lerven, F (2021) 'Public debt – the untold story'. *New Economics Foundation*.
35 See, for example, Murphy, R (2023) 'Why we need a national debt'. *Funding the Future*.
36 The prudential arm of the Bank of England has the responsibility of ensuring the stability of the banking system and compliance with the Basel banking regulations (see footnote 27).
37 See Nyamushonongora, K, and O Spencer (2023) 'A quick dive into SME finance'. *Bank Underground*.
38 Ibid.
39 The collateral for financial firms is usually financial assets, which usually have a market price.
40 Binham, C (2018) 'Banks "reluctant to lend" to small businesses, MPs told'. *Financial Times*.

heating). This is described by Ray Dalio in a very informative animated video[41] and by Richard Vague in his book, *The Paradox of Debt*.[42]

Such a boom/bust cycle can be exacerbated for economies with a large financial sector, such as the UK economy. Financial innovations have resulted in an evermore complex web of financial contracts alongside the development of entities such as 'special purpose vehicles' (SPVs) which are limited companies[43] and hold only financial assets (which are debts belonging to other entities). This has given rise to the shadow banking sector, which, unlike the banking sector, is not regulated. When asset prices drop (economies are always prone to cycles), some SPVs may face insolvency (especially as they are usually highly leveraged[44]) and resulting bankruptcies can then cause other financial firms to fail – and a wave of domino failures can course its way through the financial sector, potentially causing an existential threat to big banks and pension funds (even when the initial source of the instability is in another country). This is effectively what happened in the 2000s: SPVs were used to create mortgage-backed securities in the USA, and the spiral of debt fuelling the house price boom led to the global financial crisis in 2007/8, and the recession in the real (non-financial) economy in the UK that followed. Currently something similar appears to be happening with private equity (see Box 3), and only time will tell if this becomes the trigger for the next financial downturn.

How could the build-up of private dept in an economy, with related higher chance of a financial crisis, be prevented?

One solution that has been proposed by Jonathan McMillan[45] is to change the accounting rules such that not only banks but *all* firms – including SPVs – are heavily regulated unless the value of their '*real assets*' is more than the value of their liabilities, where 'real assets' (typically machinery, real estate or intellectual property) are defined as assets that do not appear as liabilities on the balance sheet of another firm. This would capture the shadow banking entities, and therefore financial firms might choose to act as intermediaries between savers and borrowers to avoid the extra burden on compliance for such entities.

Another solution would be to introduce a Sovereign Money reform (see Box 4, p.20), again resulting in banks becoming intermediaries between savers and borrowers.

During a financial crisis (to prevent it spiralling further out of control), Steve Keen recommends that (a) the central bank buys government bonds from financial institutions at face value, (b) the deposit guarantee should be made limitless, and (c) the Treasury should be allowed to run up an overdraft at the central bank.[46] Such a crisis would also be a good time to consider more drastic long-term changes, such as introducing a Sovereign Money reform.

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41 Dalio, R (2013) 'How The Economic Machine Works' [YouTube].

42 Vague, R (2023) *The Paradox of Debt: A New Path to Prosperity Without Crisis*. University of Pennsylvania Press.

43 Meaning the legal owners are not responsible for paying the company's debts should it file for bankruptcy

44 Leveraged means they have been bought with borrowed funds – like a house bought with a large mortgage. If the value of such a house sinks, the owner might end up with negative equity (the value of the asset is smaller than the debt owed), and likewise if the value of the underlying financial assets in an SPV sinks, the SPV might become insolvent – though this might not become apparent unless the SPV is forced to sell ('realise') the assets.

45 McMillan, J (2024) *Capitalism and the Market Economy*. Zero/One Economics.

46 Keen, S (2023) 'A Simple Solution to the Banking Crisis That No Country Will Implement'. *Brave New Europe*..

BOX 3. PRIVATE EQUITY

'Private equity' (PE) firms take over and manage companies with private funds.[47] These PE-owned companies (examples include Thames Water and Boots the Chemist) do not have their shares traded in public stock markets, and therefore don't have to comply with the reporting requirements for public limited companies. This makes public scrutiny of such companies (which employ 2 million people in the UK) difficult. They are typically acquired using leveraged buyouts,[48] which burdens them with substantial debt while shielding the PE firm from liability. This model enables PE firms to extract wealth through, for example, asset stripping,[49] using complex ownership structures to exploit tax loopholes,[50] dividend recapitalizations,[51] and management and advisory fees. This is at the expense of the acquired company's stability, employees and community, as these practices can lead to layoffs, business closures and diminished service quality – which can include socially significant sectors like healthcare, education, and infrastructure. On the financial side, the Bank of England has identified 'vulnerabilities in the PE ecosystem could amplify shocks and disrupt the stable provision of finance to the real economy'.[52] All in all, it's another case of heads the financial PE firm wins, tails society loses.

The current financial system depends on economic growth to function well

In the current system, almost all of the money circulating in the economy for transactions is effectively on loan from private lenders (i.e. investors) who expect repayment of their loans with interest. This has led to high levels of public and private debt in the economy. In Positive Money's report 'Escaping the Growth Dependency'[53] it is argued that it is impossible to reduce this debt without growing the economy or risk having economic downturns (with employees losing their jobs) – a situation which is detrimental to society and is likely to lose subsequent elections in democratic countries. This is perhaps why almost all politicians seem to promise never-ending economic growth. However, many non-mainstream economists point out that infinite growth on a finite planet is impossible – see, for example, Tim Jackson's book *Prosperity without Growth*.[54]

Alternative systems have been proposed whereby the government provides the currency for everyday transactions, which would reduce the 'drive' to grow the economy to service debts. One of these is a Sovereign Money system, in which the central bank creates all the money in an economy, and banks can only act as intermediaries between savers and borrowers. This is further explained in Box 4. Another system is whereby the government borrows money into existence without selling debt to private investors (see 'Run up an overdraft at the Bank of England', p.30).

47 Haves, E (2022) 'Regulation and practices of private equity'. UK Parliament .

48 For the complexity of how this is achieved see: Aliaj, O, et al. (24 July 2024) 'How private equity tangled banks in a web of debt – Complex layers of leverage could pose a threat to the global economy'. *Financial Times*.

49 Including the practise of raising capital by selling real estate, then renting it from the purchaser. For example a shop premises can be sold, but then the company has the long-term liability of paying a rent for the shop.

50 Coppola, F (2024) 'Thames Water: Where has all the money gone?' Coppola Comment [Substack].

51 Where the PE-owned company takes on debt to pay dividends.

52 Bank of England Financial Policy Committee (2024) 'Financial Stability Report'. *Bank of England*.

53 Positive Money (2018) 'Escaping Growth Dependency' (and a summary of this report by Anne Chapman from Green House Think Tank).

54 Jackson, T (2017) *Prosperity without Growth, 2nd edn*. Routledge.

BOX 4. SOVEREIGN MONEY

Changing to a Sovereign Money system would mean changing the whole financial system so it isn't primarily based on debt, as it is now. The new digital 'Sovereign' money would have many of the same qualities as coins do currently (such as they don't lose value if a bank goes bankrupt). Banks would no longer be able to create credit, instead they'd have to act as intermediaries between savers and borrowers. After the changeover point (when the Bank of England would effectively buy all existing debt from banks with the new Sovereign money) the amount of any extra money to be introduced into the UK economy would be overseen by a monetary authority with a particular mandate (e.g. enabling financial stability and facilitating government policy). This money would need to be directly spent or lent into the economy. It could be spent into circulation either by giving it to the government to spend, or it could be given directly to citizens as a citizen's income (note this is about how new money enters the economy, not what total government spending should be). A portion would also be lent into circulation by the Bank of England, lending it to banks to enable them to lend it on to people or firms wanting loans (though the main idea under a Sovereign Money system is for banks to use people's savings to lend to people needing loans). The monetary authority would have to choose how much should be spent rather than lent into the economy to best fulfil its mandate (in theory, if all the money was lent, not spent, into the economy, the system would work pretty much as it does now).

Such a Sovereign Money reform was first proposed in 2000 by James Robertson and Joseph Huber,[55] and the latter has worked extensively on this topic.[56] This system is technically the same as the Chicago Plan suggested after the financial crash in the 1930s,[57] although the accounting is done differently. How the reform could work in the UK has been detailed by Positive Money.[58] A similar system went to a national referendum in Switzerland in 2018,[59] which was supported by Martin Wolf, the chief financial commentator from the FT.[60] However, other alternative economists such as Richard Murphy, are against a Sovereign Money reform on multiple grounds, perhaps the most significant being that sterling would lose credibility and people would start using other currencies instead.[61] Interestingly, such a Sovereign Money reform has backers in the UK on both the political left (e.g. the Green Party) and right (e.g. former MP Steve Baker), but not the political centre.

This reform would be a huge upheaval for the financial sector and the build-up to the 'changeover day' could even destabilise the current outgoing system. However, it would bring in many advantages[62] including:

- simplification of the current system to make it work like most people believe it currently works (with banks being intermediaries between borrowers and savers).
- The possibility of a thriving economy without economic growth
- Stability of the financial system
- The possibility for a large bank or other financial organisation to go bankrupt without destabilising the whole financial system and therefore requiring billions of pounds of public bailouts (as happened in 2008)

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55 Robertson, J, and J Huber (2000) *Creating New Money: A monetary reform for the technological age*. New Economics Foundation. [Online here.]

56 See Joseph Huber's website: https://sovereignmoney.site/.

57 See Kumhof, M, and J Benes (2012) 'The Chicago Plan Revisited'. *IMF*. Fans of double-entry bookkeeping will prefer the Chicago Plan to Sovereign Money.

58 See https://positivemoney.org/ in general, and details of the reform in Jackson, A, and B Dyson (2012) *Modernising Money: Why Our Monetary System is Broken and How it Can be Fixed*. Positive Money. [Online here.]

59 Dawnay, E (2017) 'The Background to the National Referendum on Sovereign Money in Switzerland'. *Vollgeld Initiative*. (Disclaimer: the author of this briefing is on the board of the organisation who brought about the Swiss Sovereign Money initiative).

60 Wolf, M (2018) 'Why the Swiss should vote for "Vollgeld"'. *Financial Times*.

61 Murphy, R (2018) 'Why Positive Money is wrong'. *Brave New Europe*.

62 Rangeley, M (2016) 'Interview with Dr Emma Dawnay on the Swiss referendum on monetary reform'. *The Cobden Centre*.

BOX 4. SOVEREIGN MONEY - CONTINUED...

- Most of the banking regulations and macro-prudential regulations becoming redundant
- The possibility of directing new money coming into the economy where it is most needed (e.g. green infrastructure projects).

The second point is perhaps the most important when tackling the climate emergency: the current system functions more smoothly when the economy is growing..[63]

Alternatives to the drastic 'changeover day' include a gradual increase in issuance by the central bank of Central Bank Digital Currency (CBDC)[64] – a form of Sovereign Money which could be introduced alongside the current system (which is already being considered by many central banks including the Bank of England) – or a change in accounting rules such as those proposed by McMillan (see p.18).

Getting private firms to invest in key projects can be difficult or costly

Under the current economic paradigm, getting private money to fund green projects is considered key to financing the transition to a low carbon economy. This paradigm also assumes that government-run projects are generally poorly managed, that governments find funding hard to come by (a premise not supported in this briefing), and that private finance is awash with funds looking for investment opportunities. With these (false) assumptions in mind, the accepted solution is that the state must encourage private firms to invest in necessary projects by 'de-risking' investments: for instance, by guaranteeing a private firm an income from the investment for a certain length of time.

Getting private finance to enable public infrastructure projects has a mixed history. In the 1990s in the UK, the Public Finance Initiative (PFI) enabled hospitals, schools and public buildings to be built. The costs of these were kept off the government's accounts, though contracts were signed committing different government bodies such as the NHS to interest and loan repayments for decades, at interest rates significantly higher than those of government borrowing. The Treasury Select Committee in 2011 'has not seen any convincing evidence that savings and efficiencies during the lifetime of PFI projects offset the significantly higher cost of finance',[65] and the government stopped using PFI in 2018. A similar idea called 'blended finance' is currently being advocated to get private finance to lend to projects in developing countries, but it comes with many strings attached and can even result in it being harder for the country to take steps towards a green transition.[66]

The counter argument to this is that government is not good at running large public works projects, so this extra cost for privately funded projects will be more than offset by efficiency gains from oversight by the private financing firms. However, the non-mainstream economist Marianna Mazzucato argues strongly against this viewpoint: her books *The Entrepreneurial State*[67] and *The Big Con*[68] put forward both that governments have been highly successful at running projects

63 Positive Money (2018) 'Escaping Growth Dependency' (and a summary of this report by Anne Chapman from Green House Think Tank).

64 See Bikas, K, and Z Livingstone (2020) 'Money we Trust: Designing Cash's Digital Counterpart'. *Positive Money*.

65 Treasury Committee (2011) 'Committee publishes report on Private Finance Initiative funding'. *UK Parliament*.

66 See Gabor, D (2021) 'The Wall Street Consensus'. *Development and Change* 52:3, pp.429–459.

67 Mazzucato, M (2018) *The Entrepreneurial State: Debunking Public vs. Private Sector Myths, 10th anniversary edn*. Penguin Books.

68 Mazzucato, M (2024) *The Big Con: How the Consulting Industry Weakens our Businesses, Infantilizes our Governments and Warps our Economies*. Penguin Books.

(especially entrepreneurial ones) and that it is key that the state develops the expertise to run important projects, or else it becomes 'infantilised' and therefore unable to successfully outsource such projects.

Where the government can create markets to incentivise private firms to provide *easily measurable* goods or services, publicly steered private investment can work well: the government promising to pay a particular price for electricity has resulted in many large wind farms being built.[69] However, where the goods or services are more difficult to measure – for example, hip transplants, children's foster services, prisons, or even managing waste water – it is far harder to write a contract driving ever better service provision, and the private firms are likely to only invest the absolute minimum required by the contract to provide and improve the service (to keep costs down and therefore increase profits). This has the likely effect over time of providing a worsening service that is less resilient in the case of shocks. Should the service fail altogether, the government will have to step in and pick up the pieces, so the government always ultimately carries the risk.

Daniela Gabor and Benjamin Braun have further detailed the problems with the approach of trying to get private funds to fund a green transition,[70] and they see 'a big green state' as a potential way to fund the transition necessary.

'Free markets' have not resulted in allocating funds to what the public values, such as the NHS

Under the current paradigm, an efficient allocation of funds will occur when governments don't interfere with markets. Over the last 50 years growth in the finance sector (and financialisation in general[71]) in the UK has resulted in huge amounts of money being pumped into evermore complex financial instruments (see, for instance, Box 3, p.19). Many non-mainstream economists argue that this brings little benefit to society in general, whilst making the financial system more prone to crises.[72] At the same time, as already mentioned above, banks have found it easier to lend mortgages than to lend to businesses. They have been further incentivised to be 'risk-averse' and lend where the borrower can put up collateral (which, of course, is always the case with a mortgage, and for financial assets other financial assets can be used). The result has been a huge increase in the prices of financial assets and housing, giving investors in these assets a high 'return on investment'. However, these investments have mostly not resulted in things that benefit society (e.g. new factories or hospitals), so they are not doing the 'text-book thing' that would be to efficiently allocate capital to the projects that create the goods and services which society most values.[73]

69 Although even this has its problems: Brett Christophers (2024, *The Price Is Wrong: Why Capitalism Won't Save the Planet*. Verso) has argued that the cost of renewable energy coming down will not spur a transition to renewables, as this does not imply renewable energy projects will be more *profitable* than other opportunities open to private firms – and often they are less profitable.

70 Gabor, D, and Braun, B. (2025) 'Green macrofinancial regimes'. *Review of International Political Economy, 1–27.*

71 Here 'financialisation' is used to mean giving financial values to assets such as mortgage-backed securities and even natural assets (e.g. forests, for carbon sequestration) and then being able to trade such assets in financial markets. This has resulted in a huge growth in money circulating in financial markets compared to the real (i.e. non-financial) economy, together with a far less stable financial system. See further discussion of financialisation in the penultimate section of Mearman, A (2022) 'Finance-based transition solutions: approach with caution'. *Green House Think Tank*.

72 See, for instance, Ha-Joon Chang's book where he recommends that no new financial 'instrument' should be allowed without being carefully vetted by the state to ensure it won't have a destabilising effect on the financial system (Chang, H-J (2011) *23 Things They Don't Tell You about Capitalism*. Penguin Books).

73 Arguably, funnelling investments into financial assets harms society by rising the value of such assets. As these are owned by wealthier people, this increases inequalities and makes housing (real estate assets) less affordable.

Richard Werner has argued that where newly created money first enters the economy is where it will have most impact.[74] On this basis, newly created money should be guided into desired growth areas rather than being 'left to the market'.

Taxes are not required to raise funds, but have other purposes

Under the current paradigm, the belief is that funds raised from taxation are primarily required for a government to be able to pay for things. This was already rejected after the second world war by the New York Fed Chair,[75] but unfortunately this seems to have been forgotten. Now, non-mainstream economists (and, in particular, proponents of modern monetary theory) are still fighting against this belief – including Stephanie Kelton, who, in her book *The deficit myth*[76] argues that rather than fund government activities, taxes are needed to:

- **Control inflation** – tax effectively sucks money out of the economy so reduces demand in the economy.
- **Maintain value in the currency**, as the currency is required to settle tax bills.
- **Reduce inequality**[77] either by taxing someone with a higher income, wealth or inheritance at a higher rate than someone less well off, or by using taxes raised for transfers to less well-off people.
- **Encourage or discourage certain spending** – such as encouraging spending on electric vehicles or discouraging polluting activities (e.g. spending on fossil fuels) or unhealthy activities (e.g. smoking).
- **Support the government's goals for the economy** – for example, by giving tax breaks or subsidies to industry sectors the government wants to encourage.
- **Legitimise government activity** by forming a social contract whereby the government provides various services in exchange for the public paying taxes.

While taxes do also raise funds for public spending,[78] there are alternative ways to achieve this. Having a clear objective when implementing a tax—beyond simply raising funds—helps ensure that it is effectively targeted.

It should be noted that the guidance in this briefing is for the UK economy. The freedom local politicians have to carry out local projects is restricted to the funding they can raise, as they are limited by central government policy on how much debt they are allowed to take on as well as how much local tax they can raise (but see 'Set up publicly owned banks', p.32).

74 Werner, R (2005) *New Paradigm in Macroeconomics: Solving the Riddle of Japanese Macroeconomic Performance*. Palgrave Macmillan.

75 Thorndike, J (2024) 'New York Fed Chair In 1945: "Taxes For Revenue Are Obsolete"'. *Forbes*.

76 Kelton, S (2020) *The Deficit Myth: Modern Monetary Theory and How to Build a Better Economy*. Hatchette.

77 It should be noted that less well-off people depend more on public services (such as public transport, public provision of education, health, etc.) than richer people, so the provision of such services also reduces inequalities.

How public spending is currently funded, and how it could be funded

This section covers all the different ways a government could potentially raise funds for public spending, including the mechanics of how it is actually done at the moment. It also looks at the consequences and pro and cons of each.

The different options a UK government has to raise funds are shown in the infographic in Figure 2 on pages 26 & 27 and are described below, covering both how funds are raised at the moment (a to c) and alternative methods (d to k).

Options for governments to raise funds: How the system currently works

a. *Raise taxes*

Raise funds from taxation, then spend these funds.[78] This is the 'balanced budget' that many people, especially politicians, believe is a good thing. It is politically extremely difficult to raise enough money by taxation. Most people can't afford to pay much more tax, and the rich, who could pay more, are sometimes significant donors to political parties so wield great political influence, making it difficult for governments to raise taxes.[79] However, if the political obstacles could be overcome, taxation could be used to reduce inequalities whilst raising funds.

b. *Sell bonds (without 'upsetting' markets)*

When not enough taxes can be raised, the currently accepted way to fund the shortfall is by the government selling bonds.[80] HM Treasury estimates government outgoings (spending and interest payments, etc.) and government receipts (mainly taxes) and asks the Debt Management Office (DMO)[81] to raise any extra funds required for government spending by selling government bonds (including gilts, treasuries and to a much lesser extent NS&I certificates).[82] As this is done by selling into the open market, the interest rates must reflect or exceed open market rates, or no one would buy them. However, it can be strongly argued that there will always be a market for government bonds with short maturities so long as the interest they pay is more than the Bank of England rate,[83] and, further to this, the DMO can somewhat influence the interest rate of longer maturity bonds by managing their supply.[84]

This method can work well when market interest rates are low, but might seem costly if interest rates are high because payments of the interest over the lifetime of the bond must come out of future government spending. It is sometimes argued that a government deficit

78 Proponents of Modern Monetary Theory (MMT) argue that it is technically the other way round: funds must be spent into circulation before they can be taxed, and that the tax is removing money from circulation again.

79 However, the tax system could certainly be improved to reduce inequality and increase tax revenue by, for instance, introducing a wealth tax similar to that of Switzerland's. See also Richard Murphy's 'Taxing Wealth Report 2024' in which he claims there is much scope for increasing and improving the current taxes we have (Murphy, R (2023) 'Launching the Taxing Wealth Report 2024'. *Funding the Future*).

80 Proponents of Modern Monetary Theory (MMT) argue this is not technically how it works; see footnote 82 for a correct detailed description.

81 Established in 1998, see the UK Debt Management Office (DMO) website here.

82 For more details see Berkeley, A, et al. (2022) 'The self-financing state: An institutional analysis of government expenditure, revenue collection and debt issuance operations in the United Kingdom' [Working Paper Series (IIPP WP 2022-08)]. *UCL Institute for Innovation and Public Purpose*.

83 Ibid., section 5.1.

84 Some investors will have a preference to buy bonds with longer maturities. If the DMO chooses not to sell new long-maturity bonds into the market when existing ones reach maturity, there is likely to be a shortage in the market so the price is likely to rise – meaning the effective interest rate will be lower than what it otherwise would have been.

which enables government spending on capital projects (which give a pay-back) is therefore justified, whereas a deficit for operational expenses should be avoided (see Box 5, p.29). However, this whole argument is based upon the Bank of England independently setting interest rates with the aim of controlling inflation – which is put into question in this briefing. If the government chose to manage inflation differently (by changing the mandate given to the Bank of England), government bonds could be sold with low interest rates.

Unexpected ‘unfunded’ spending or tax cuts (i.e. when, under the current system, more borrowing becomes necessary) can result in markets – at least temporarily – being ‘spooked’ and demanding higher interest rates for bonds (see Box 6, p31, on Liz Truss’s mini-budget). Expectations that this spending might be inflationary can result in exchange rates shifting and the UK pound dropping in value in relation to other currencies. Realistically this puts a limit on borrowing if ‘upsetting markets’ is to be avoided.

c. *Quantitative easing (QE)*

Currently quantitative easing (QE) is not technically an option for a UK government, but one open to the Bank of England in order to fulfil its mandate – however, it is included here for completeness as some of the options below depend on a similar mechanism. Furthermore, QE doesn’t directly supply the government with funding, but it makes it easier for the government to sell bonds as described above.

QE was first used after the 2008 financial crisis and then again during Covid-19. Everything happens as in (b) above, and then the Bank of England buys back government bonds (and possibly some corporate bonds[85]) from the private financial sector (effectively with ‘printed’ money[86]). The newly created money is now in the bank accounts of the private financial firms which sold the bonds. It has the effect of reducing open-market interest rates,[87] thereby making the cost of loans potentially cheaper for bank customers. At one stage about a half of all government bonds (i.e. national debt) were owned by the Bank of England, but this level is now much lower.

The interest paid on these bonds (from the government to the Bank of England) flows back to government coffers, so Bank of England owned government bonds should be excluded when calculating the cost of financing the national debt. However, the increased amount of central bank reserves on the asset side of the banks’ balance sheets[88] do add an extra financing cost to the government. These central bank reserves currently earn interest paid by the government to the bank which owns them (at the standard Bank of England rate, rather than at the interest rate for bonds traded on the open market). Before 2009 the central bank reserves held by banks didn’t earn any interest. This was changed to aid the implementation of monetary policy in the aftermath of the financial crisis,[89] but now that interest rates are much higher and the

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85 When the Bank of England buys assets other than government bonds, it aims to do so in a ‘market neutral’ way. This has the effect of benefitting fossil fuel firms (as they are big market players) and it will reduce the interest rate they need to pay on their bonds.

86 With QE, the total amount of money circulating in the economy rises when bonds are bought from the non-bank sector. If the bonds are simply bought from banks, no extra money is injected into the economy.

87 Typically bonds with longer maturities are purchased. An increased demand for these bonds increases their price, which has the effect of reducing the interest rate for these longer maturity bonds.

88 The Bank of England will effectively buy the bonds from, say, a pension fund, using newly created central bank reserves. The result will be that the pension fund’s bank will get these new central bank reserves (an asset) and the pension fund will get a new deposit credited to its bank account (a liability for the bank). For more details see the section on quantitative easing in Ryan-Collins, J, et al. (2012) *Where does Money Come From?* New Economics Foundation.

89 Before 2009, banks needed to borrow central bank reserves to settle accounts between each other, and the Bank of England could set interest rates by acting in this market for central bank reserves. After QE was enacted, the banks were awash with central bank reserves so the Bank of England needed a different technique to enact monetary policy.

METHODS OF RAISING FUN

Sovereign Money reform: Money is ‘spent’ or ‘lent’ into existence by a state institution, as opposed to the current situation where normal banks ‘lend’ money into existence. The government could choose to ‘spend’ money into existence on green projects. The reform would be a big change which would make the whole financial system more stable, but strong resistance from the finance industry would be likely.

Central Bank Digital Currency (CBDC): This is a digital currency which is simply issued by a central bank. The government must spend or lend CBDC into existence, thereby providing the government with an extra stream of funding.

CBDC with stricter regulation of financial entities: A disadvantage of CBDC compared to a Sovereign Money reform is that it’s introduction would not enhance financial stability. However, if it was introduced with regulation such that all financial entities (e.g. shadow banks) were regulated like banks, then financial stability would be enhanced.

Public banking: Such banks could be started with the goal of financing green or local projects which private banks wouldn’t usually consider due to low profitability, high risks, lack of collateral or unusually long pay-back times. They would need to be compliant with all the banking regulations and could only finance projects with an expected positive financial return.

Taxation: Getting the rich to pay higher taxes is politically difficult, but has an upside of reducing inequality.

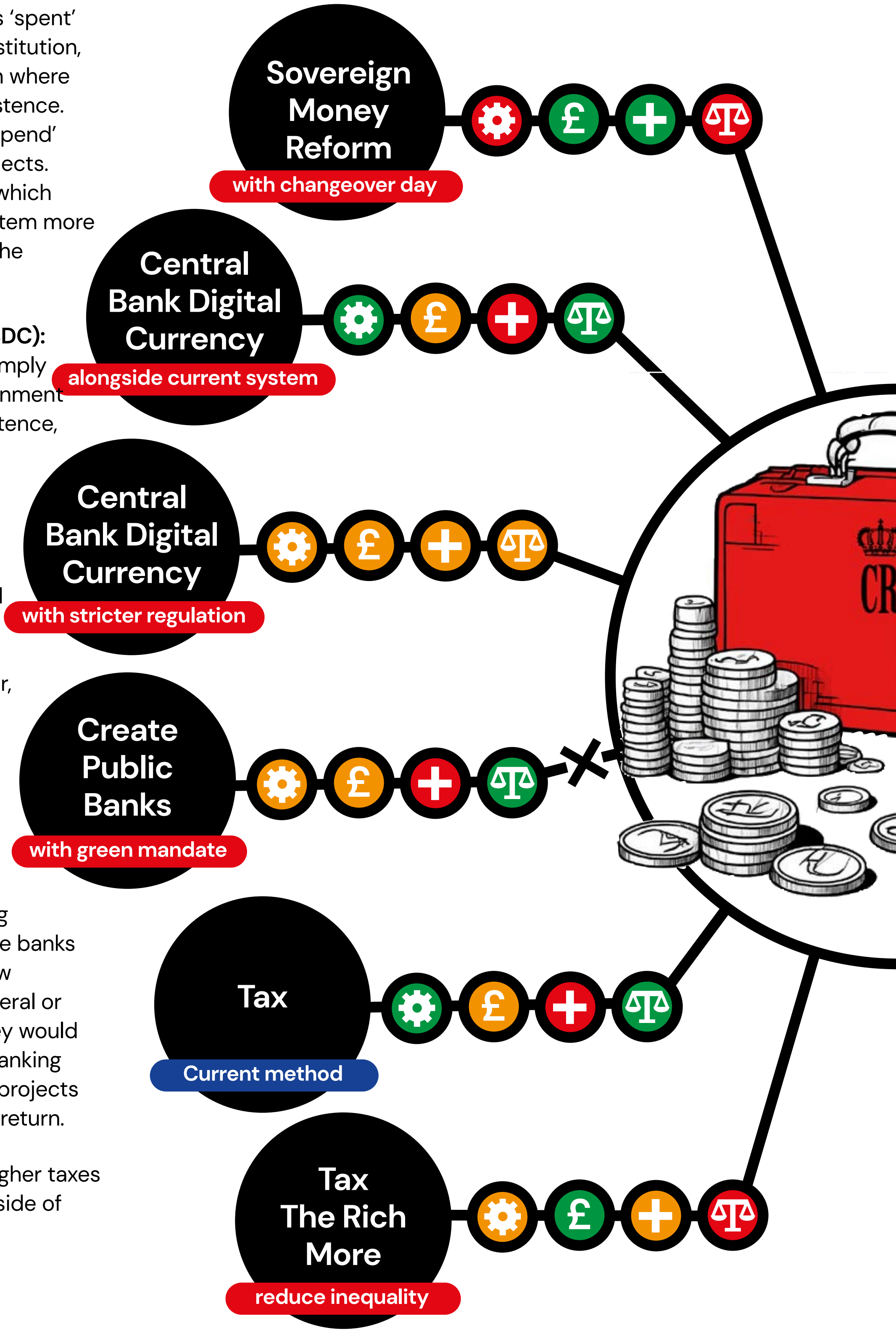
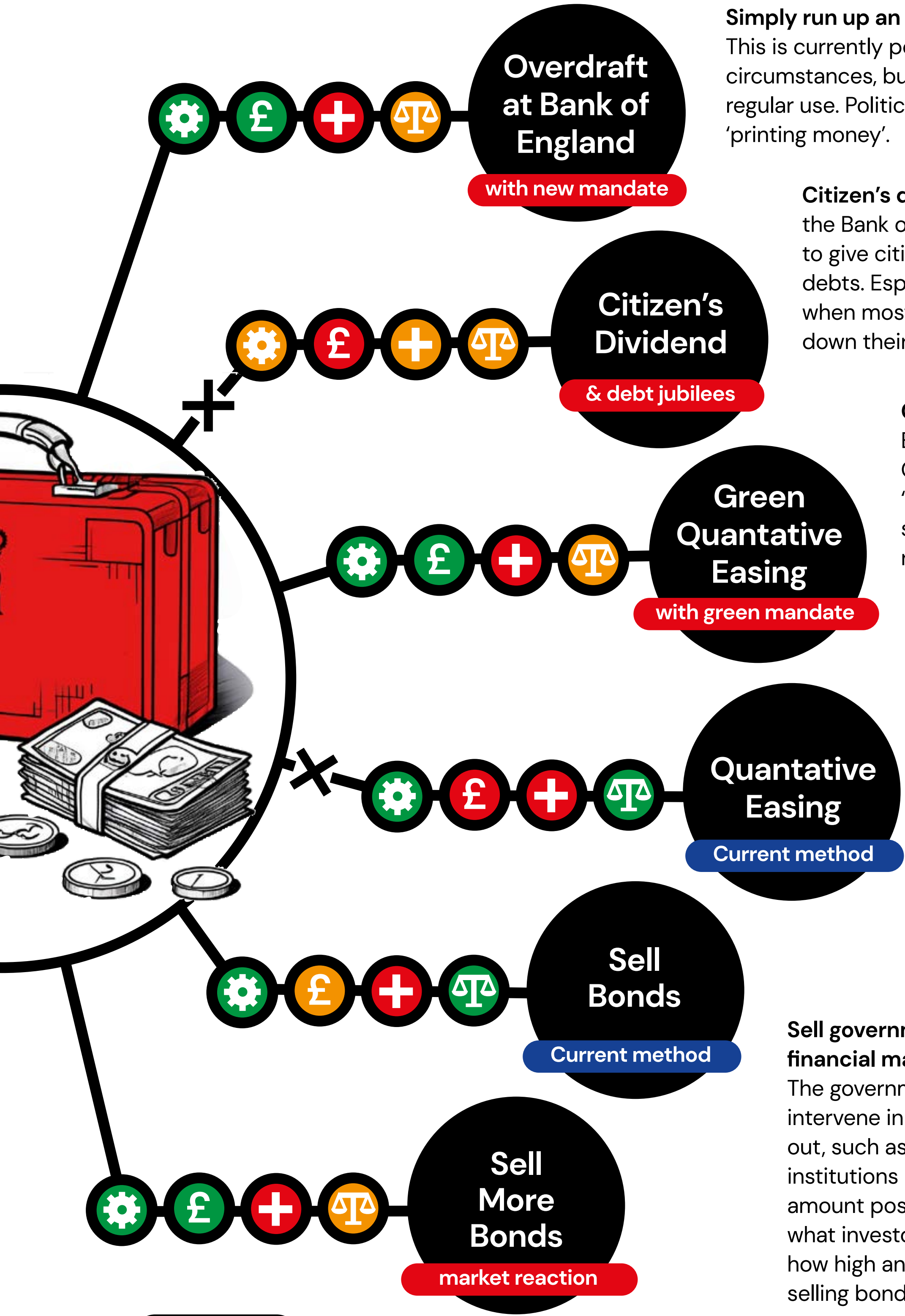


Figure 2 Methods the UK central government has for raising funds and supporting public spending

This figure shows the different methods available to the UK government to raise funds and to support public spending more generally. Each method is given with an idea of how difficult it would be to implement, how much money it could raise, whether it has other direct benefits (such as enhancing financial stability or reducing inequality), and how acceptable it is likely to be politically. The estimations of these are likely to be contentious so should only be taken as a rough guide.

DS FOR PUBLIC SPENDING



Simply run up an overdraft at the Bank of England: This is currently possible in exceptional circumstances, but may need new laws for regular use. Political opponents will worry about 'printing money'.

Citizen's dividend/debt jubilee: Mandate the Bank of England to buy 'people's bonds' to give citizens money or pay down their debts. Especially useful after a financial crisis when most people choose to save or pay down their debts rather than spend.

Green QE: Mandate the Bank of England to buy 'green bonds'. Opponents may worry about 'printing money', but perhaps less so than the government simply running up an overdraft.

Quantitative easing (QE): This does not supply the government with funds for spending, but can make it easier for government to sell bonds with longer maturities.

Sell government bonds (without upsetting financial markets): This is the current standard method. Prime Minister Liz Truss discovered the limits to this with the unfunded tax cuts in her mini-budget.

Sell government bonds accepting 'upsets' in financial markets:
The government would need to stand by to intervene in markets in case of potential fall-out, such as pension funds or other financial institutions potentially failing. Ultimately the amount possible to raise will be limited by what investors will buy (which will depend on how high an interest rate the government risks selling bonds at).

KEY:

- Easy/Large/Acceptable
- Limited/Medium/Some
- Hard/Low/Resisitance
- implementation
- Funding
- Added Benefits
- Political Acceptance
- No Direct Funding for Central Government

amount of central bank reserves has greatly increased, the banks are reaping a windfall, so there are strong reasons for reducing the amount of interest that must be paid on these.[90]

QE has disadvantages. The new money does not get spent directly into the real economy so QE does not directly support businesses.[91] However, it increases the prices of government bonds in the open market, which means the market interest rate will sink, with knock-on effects: When interest rates are already low, the effective real interest rate can be reduced to zero or below. Having such low interest rates (or 'cheap money') is likely to mean people will borrow more to buy assets such as property and stocks and shares (the borrowing costs being almost nothing), which mean asset prices are likely to rise.[92] This raises inequality in society because people who already own assets (i.e. rich people with houses and stocks and shares) see their wealth increasing.

In the current paradigm, there is the belief that QE should only take place in exceptional circumstances, and that the Bank of England should aim to sell the bonds they've bought back into the financial markets at the earliest possibility. Consequently, the Bank of England is now selling some of the bonds it bought as QE, which is known as quantitative tightening (QT). QT will have precisely the opposite effect of QE: prices of bonds will fall, interest rates will rise, therefore people would be expected to borrow less with the knock-on effect that asset prices are likely to fall. Enacting QT when interest rates are higher than they were when the initial QE was undertaken causes the bonds (which have now reduced in value) to be sold at a loss. In the UK this is charged to the government adding to the deficit, which is not the case in all countries.[93] If the Bank of England simply held the bonds until they expire, no loss would be incurred.

Some people thought the massive amount of extra money brought into circulation up to 2016 (£445 billion) would necessarily cause inflation; however, as it was injected into the financial sector it appears to have only inflated asset prices in the financial sector (e.g. share prices and real estate prices), and had little effect on the real economy (the prices of goods and services). QE was further increased to £845 billion during the Covid-19 pandemic when the government's outgoings ballooned with furlough payments, which they first financed through selling bonds. This QE kept interest rates low when otherwise they would probably have risen. At the end of the Covid-19 restrictions, many people had saved these payments and there was a pent-up demand, for example, for eating out at restaurants which could not be supplied (due to lack of staff), which did then add to inflation. For more, see sections 'Inflation' (p.34) and, on the way the bank rate is currently used to try to control inflation, 'The interest rate' (p.43).

A more detailed analysis of QE (including diagrams of balance sheets) and the QE alternatives mentioned below can be found in the Positive Money report 'A Guide to Public Money Creation'.[94]

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90 Van Lerven, F, and D Caddick (2022) 'Between a rock and a hard place'. *New Economics Foundation*. And note the ECB has stopped paying interest on minimum reserves – see their press release from 2023 here.

91 There is a theory that a false understanding of money and banking led people to believe that introducing QE would directly enable banks to lend more to businesses, which is not the case.

92 Any asset which has a valuation based on discounted cash flow (e.g. assets earning a fixed income in the future) will also rise in value if long term interest rates sink.

93 The Federal Reserve in the US uses a mechanism called a "deferred asset". Instead of charging a loss to the US Treasury, the loss is deferred and subsequently set against future income from interest payments on US government bonds.

94 Van Lerven, F (2016) 'A Guide to Public Money Creation: Outlining the Alternatives to Quantitative Easing'. *Positive Money*.

BOX 5. IS FUNDING INVESTMENT DIFFERENT FROM FUNDING OPERATIONAL SPENDING?

Investment is different to ongoing spending because the investment buys a useful asset or improves an existing asset. In theory the asset gives a return and could be sold again. If an organisation invests in a wind turbine it gains (if all goes well) an operational turbine which generates electricity for next 25+ years. Similarly, if a home-owner invests in insulating a building, they then have an improved building which uses less energy to heat. In industry these are referred to as capital expenditures (CapEx). This is very different to, say, funding a nurse's wages for a year, where at the end of the year there is nothing extra of value which could be sold. This would be called operational expenditure (OpEx).

It is often assumed that it is acceptable to invest in CapEx through debt, whereas OpEx expenditures should be paid for out of income streams. In a business, investing in CapEx can give higher income streams in the future, whereas OpEx expenditures just run down the firm's funds. If you borrow to build a wind turbine, the income from electricity generated should more than pay back the loan-interest over its lifetime (if it's a good investment), whereas if you want to employ more teachers, this doesn't directly deliver an asset or income stream to fund interest or repay the debt.[95]

Politically it may therefore be easier to raise the national debt for CapEx projects than ongoing OpEx expenditures, as this makes sense to businesspeople. In some cases, governments might find it easier to raise funds, rather than by using general bonds, through using hypothecated bonds (i.e. bonds for a particular purpose, e.g. Renewable Energy Bonds), which may attract a different interest rate than standard government bonds.

In theory there is nothing to stop governments running a deficit for OpEx (other than people's beliefs that it isn't a good idea). The limit is having enough people who can do the necessary work. For example, certain specialists could either be employed to build a new hospital machine or to maintain an old one – but there is a trade-off if there are not enough of such specialists to do both. Mainstream economists may argue otherwise: they'll say that if the spending has a smaller rate of return than GDP growth (true for all OpEx as well as low-return CapEx spending), then the growth in debt as a percentage of GDP will rise, all else being equal. However, a rise in the national debt is not fundamentally a problem as the government can always raise the funds it needs, as argued in this briefing. Further, all else is not equal, and a good provision of public services through OpEx spending is likely to have a highly positive impact on people in general, and therefore the economy. It is also likely to make otherwise unpalatable policies possible (such as increasing a fuel tax in a cost-of-living crisis).

Alternative ways for the government to pay for things

The implementation of most of the following measures will require good coordination between the Treasury, the Bank of England and other government departments. A reasonable question to ask is whether the current set-up of these different institutions is optimal to 'fight the war' on climate. This even extends to whether the Bank of England should remain independent – though much could be achieved by changing the mandate given to the Bank of England to, for instance, prioritise support for government climate policy.

d. *Sell government bonds accepting 'upsets' in financial markets*

As in (b) above, but selling more and living with the 'market reaction', and potentially having to sell bonds with very high interest rates. The Bank of England might need to intervene to calm market reactions if financial stability is threatened.[96] The ultimate limit would be when the sale of government bonds fails (investors chose not to buy the bonds). This could occur if, say, international investors were frightened that the extra government spending might be inflationary and therefore the value of sterling might fall significantly over the lifetime of the

95 Arguably, with a better educated population, the future GDP of the country may be higher, leading to a greater tax intake.

96 The Bank of England intervened in bond markets after Liz Truss's mini-budget (see Box 6, p.31). It did this by buying long-term gilts which prevented their price spiralling downwards (and interest rate spiralling upwards).

bond. As argued in (b) above, there will always be an incentive for banks to hold government bonds over central bank reserves (with same short maturity), so in theory this would only be a problem for bonds with long maturities (which could be mitigated to some extent by the DMO reducing the supply of such bonds).

e. *Run up an overdraft at the Bank of England*

Spend new money into circulation using the government's overdraft facility at the Bank of England, known as the Ways and Means facility.[97] The cost to the government of doing this could be zero, but currently there would be extra interest (at the Bank of England rate) that would need to be paid to the banks on the new central bank reserves created.[98]

This has not been the normal method of financing government spending since about year 2000, though it is still used in crises. Nearly £20 billion was made available to the government in the 2008 financial crisis, and the facility was again made available at the beginning of the Covid crisis in 2020.[99] Currently this overdraft is considered to be for exceptional use only, and that it should be paid down as soon as possible by the government selling bonds to raise the funds. Allowing it to be used routinely again may require a new mandate for the Bank of England and new laws. These would probably be a good idea anyway to ensure reasonable conditions are met.

Other descriptions of this method of financing government spending include 'direct monetary financing', 'helicopter money' or 'printing money'. Opponents to this idea (who will include many mainstream economists) will shout '*Zimbabwe*!' (which had hyperinflation after printing money to pay foreign creditors– see 'Inflation' (p.34) for more discussion on this).

After the financial crisis of 2008 when the UK economy was struggling due to lack of demand and when inflation and interest rates were near 0%, Adair Turner, the former chairman of the Financial Services Authority, made a strong case for helicopter money.[100]

The disadvantage of unexpectedly using this method to pay for government spending is that it is likely to 'shock' the market and may well have the knock-on effect of increasing market interest rates and devaluing the pound compared to other currencies – though these effects may well only be transitory.

Opponents of this will also argue that there is nothing to stop politicians effectively 'printing' money to fund their pet projects (ones which are likely to get them re-elected, even when such projects are at the expense of other geographic areas or long-term sustainability). They'd have a point. Reasonable 'checks and balances' would need to be introduced to prevent this. A further criticism made by Ann Pettifor[101] is that it would make the system less transparent and less democratic: the government having to go to investors to ask them to buy bonds ensures that the value of government debt is well known.

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97 This is effectively what proponents of modern monetary theory propose. See, for instance, Kelton, S (2020) *The Deficit Myth: Modern Monetary Theory and How to Build a Better Economy*. Hatchette.

98 See footnote 90 for proposal of paying less interest on central bank reserves.

99 Bank of England (2020) 'HM Treasury and Bank of England announce temporary extension to Ways and Means facility'.

100 Turner, A (2015) *Between Debt and the Devil: Money, Credit, and Fixing Global Finance*. Princeton University Press.

101 Pettifor, A (2019) *The Case for the Green New Deal*. Verso Books.

BOX 6. LESSONS FROM PRIME MINISTER LIZ TRUSS'S UNFUNDED TAX CUTS[102]

At the time when Liz Truss's chancellor, Kwasi Kwarteng, announced the mini-budget with large unfunded tax cuts (i.e. increased deficit), both the Fed and the Bank of England had just increased interest rates by unprecedented amounts, and the Bank of England had also announced that they'd start selling bonds as part of QT. During the mini-budget the pound fell on international markets, and the market interest rate on long-term bonds rose unexpectedly. This immediately caused havoc for mortgage providers, causing hundreds of mortgage products to be temporarily removed from the market – and thereby directly affecting people outside of the finance sector.

Over the following days it then became apparent that the pension funds had been doing some fancy investing that was going wrong.[103] Their primary aim had been to hedge against small moves in interest rates, because these had massive effects on the calculation on whether their funds covered their future liabilities. However, to do this they had speculated (borrowed), and as they had not imagined that interest rates could possibly reach 3.5% or so (after a decade of near zero rates), they had unwittingly taken on interest rate risks. The risk was that this type of investing required 'mark to market' which meant they had to sell funds to meet immediate liabilities –the only quickly available funds being bonds – and selling bonds (when everyone is selling at the same time) further raises interest rates. These interest rates then started spiralling out of control until the Bank of England stepped in and started buying bonds to stop the spiral.[104] This – the media enjoyed telling us – was Liz Truss 'crashing the economy'. Liz Truss felt she was forced to U-turn on her policies and her position as PM became untenable. Political parties may have learnt the 'wrong' lesson from Liz Truss's debacle: that government spending without a plan to first raise enough taxes is impossible. Liz Truss and Kwasi Kwarteng could not have been expected to foresee the problems with the pension funds in particular; but in a system with huge amounts of leverage, it should not have been a surprise that such problems could occur.

THE GENERAL LESSONS THAT SHOULD HAVE BEEN LEARNT

When changing government spending policy away from current norms:

- Get officials in the Treasury, the Bank of England and other key state institutions on board with the necessity of the change
- Expect adverse market reactions and have the Bank of England stand by ready to act to ensure financial stability
- Communicate very clearly what is needed and why, and that the Bank of England is ready to 'do what it takes' should any financial instabilities come to light
- If it becomes clear that some people will be become strongly disadvantaged by the change in policy (such as homeowners who cannot afford huge increases in their mortgage payments), bring in short-term measures to help these groups.

f. *Green QE*

Create money and spend it directly on green projects. The Bank of England would need a new mandate to buy a certain amount of new green bonds. A green government 'bank' or 'fund' (such as the relatively new UK Infrastructure Bank) could be allowed to issue the green bonds (which could even be zero-interest bearing and perpetual) which the Bank of England would

102 Note: this box should not be taken as endorsing Liz Trus's actual policies (which consisted mainly of tax breaks for the rich) in any way whatsoever.

103 For more detail see Alasad, Z 'The Great British Pension Fiasco' (2025) Green House think tank (forthcoming)

104 Note that Bank of England rates are now much higher – it seems likely that the pension funds would have become unstable sooner or later anyway.

then buy (the Bank of Japan has recently done something similar[105]). The money raised could then be spent on green projects (see Richard Murphy's proposal for more detail[106]). This is, in effect, the government 'printing' new money which would be introduced into the economy for funding green projects.

A radical extension of this would be to use the funds raised to nationalise fossil fuel companies,[107] then to take direct control of them (and turn them into something useful, such as carbon capture companies, or close them down).

g. *Citizen's dividend and debt jubilees*

This is similar to green QE (and both have been referred to as 'people's QE'), but in this case the money would be given to everyone (each citizen),[108] with no condition that it should be repaid. Such a citizen's dividend might be particularly useful to get money circulating in the economy again after a financial crisis. This could be funded by 'people's bonds' issued by the government, which the Bank of England would be mandated to buy, or by allowing all citizens to have an account at the bank of England which would simply be credited.

An extension to this would be to have a one-off people's debt jubilee. When levels of private debt in an economy become very high, it is difficult for people to invest for the future (in training) or take financial risks, which creates an inertia to change. Steve Keen has suggested a one-off direct payment to citizens could reduce levels of private debt[109] – which, as well as enabling a dynamic flexible economy, would greatly increase people's wellbeing. Michael Hudson has extensively studied early human civilisations and found that debt jubilees were often used to create stable economies and prevent rising inequality (which otherwise typically occurs as an elite money-lending class develops by taking farmers into debt-bondage after a bad harvest). [110]

h. *Set up publicly owned banks*

These would need to have a banking licence in the same way as other banks, but they could be given a particular mandate – for example, to promote the economy and sustainability in a particular geographic area. Advocates claim there are many advantages to public banking.[111] The public bank of North Dakota is a successful example of such a bank.[112] This is the only method of raising money that could potentially be implemented by local governments.[113] Activities of the banks would be limited by general banking regulations (which, this briefing argues, need to be changed to support more lending to local firms) and would need to be financially viable (so public banks could only support projects with a pay-back), but they would not be driven by the profit motive in the same way as banks that are private firms.

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105 The Bank of Japan has offered $18 billion in zero interest loans to banks that extend funding for green projects (not technically exactly the same way as QE works): Kihara, L (2021) 'BOJ offers to pump $18 bln into green finance scheme'. *Reuters*.

106 Murphy, R (2015) 'How Green Infrastructure Quantitative Easing would work'. *Funding the Future*.

107 Green, F, and I Robeyns (2022) 'On the Merits and Limits of Nationalising the Fossil Fuel Industry'. *Royal Institute of Philosophy Supplements* 91, pp.53–80.

108 Coppola, F (2019) *The Case For People's Quantitative Easing*. Polity.

109 Keen, S (2017) *Can We Avoid Another Financial Crisis?* Polity, and an interview with him: Somerset Webb, M (2016) 'Steve Keen: Avoid the next financial crisis with People's QE and a debt jubilee'. *MoneyWeek*.

110 Hudson, M (2018) *…and Forgive them their Debts: Lending, Foreclosure and Redemption from Bronze Age Finance to the Jubilee Year*. Islet.

111 See https://publicbankinginstitute.org/ for general information on public banking.

112 See the Bank of North Dakota's webpage here.

113 However, the costs of setting up such an institution and complying with all the banking regulations are likely to be prohibitive.

i. *Go over to a Sovereign Money system*

This system requires the state to spend or lend money into circulation (see Box 4 on p.20 for details). This spending and/or lending could be used to directly fund government projects and outgoings.

As well as this, in the months after the 'changeover day' (when the Sovereign Money reform is implemented) there would be a massive one-off boost to government finances. This is because the amount of money in circulation shrinks when existing loans (made before the changeover day) are repaid, so the government would have to replenish the amount of money in circulation by spending or lending new money into the economy.

The downside of implementing a Sovereign Money reform is that the introduction of such a system is quite drastic: it requires a changeover day,[114] and the lead up to this could be destabilising for the outgoing system (for example, if people were worried and took their money out of the bank as a precaution, then the banks could go bust[115]).

j. *Bring in Central Bank Digital Currency (CBDC) without a full changeover to a Sovereign Money system*

CBDC would have many of the same qualities as coins, but with the convenience of being digital. People would store their CBDC in digital wallets, rather than bank accounts, and, unlike money in bank accounts, it does not have to be introduced hand-in-hand with debt.[116] CBDC could be 'spent' by a government into existence, without the government having to take out a loan. While CBDC is a type of Sovereign Money, this scenario differs from the Sovereign Money reform described above: CBDC would be brought in alongside the current system. This would make the implementation much easier, but it would not have all the advantages of a full Sovereign Money system (it would not break the dependency the economic system currently has on economic growth, nor prevent the financial instabilities caused by banks lending too much to private institutions with the government potentially having to bail out banks).

The Bank of England is currently actively researching CBDC,[117] along with several other central banks. A drawback compared to cash might be privacy, with people being uncomfortable about the State potentially knowing all their transactions.[118] Further to this there is the potential for the State to be able to program the CBDC so it could only be spent on certain items – or even block an owner if they were considered an 'enemy of the State' (which, depending on 'the State', might include climate protesters, for example) – so it would need to have strict regulations protecting privacy and ensuring universal access for all.

A refinement of a Sovereign Money reform has been suggested by Geoff Crocker:[119] bring in a partial Sovereign Money reform (probably by using CBDC), the amount of debt-free money being issued to citizens being exactly at the level of the gap between the amount it would cost to buy all of the goods and services that an economy produces and the aggregate wages received by the workers. (This gap has been increasing over the last 40 years, as evermore of the

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114 This is when the 'plumbing' behind the banking and finance systems would need to be switched over to the new way of doing things, which would require extensive and systemic IT updates.

115 This particular risk can be reduced by getting the Bank of England to confirm it would support the banks, and communicating this well.

116 CBDC is effectively the same as offering bank accounts to everyone at the Bank of England

117 See Bank of England (updated 2024) 'The digital pound'.

118 In practise this is probably no different from the current situation: bank account details may be requested by DWP, etc.

119 Find a review here by Emma Dawnay for Crocker, G (2020) *Basic Income and Sovereign Money: The Alternative to Economic Crisis and Austerity Policy*. Palgrave.

profits flow to the asset owners, not the workers.) However, although such a system might be fairer and provide more financial stability, it would not provide the government directly with extra spending capacity (though indirectly the government might have lower social security payments).

k. ***Bring in Central Bank Digital Currency (CBDC) together with stricter regulation for financial entities***

McMillan has suggested a system whereby all corporate entities (such as shadow banks) that have liabilities which appear as assets on the balance sheet of another firm are regulated as strictly as banks (see p.18 for more details). As this would be quite onerous, and as digital technology is so advanced, many financial institutions might prefer to act solely as intermediaries (thereby avoiding the regulation). In a system using CBDC (see point above), such regulation could gently drive an economy towards there being very little private debt and almost all the 'money' in the economy being CBDC. The reduction of private debt would greatly reduce the likelihood of a financial crisis, and the introduction of CBDC would give the government a huge boost in spending power.

What is the limit to government spending?

Even accepting that a government can always find the funding it needs, there is still a limit as to what it can achieve. For example, once all the people skilled to do a particular job are fully employed, more money can't achieve more output (and is likely to be inflationary). Of course, if the wages of these people rise, it may encourage more people to become trained – but this takes time. There may also be material constraints from supply chains and bottlenecks in production; energy constraints if the energy infrastructure can't supply what is needed; and space constraints if land is not available.

Other downsides to government spending

If people are fully employed in the public sector, they are necessarily not available for the private sector. In crises such as wartime it is normal for a very large proportion of the population to effectively work in the public sector (many private firms change their production lines over to make armaments, etc.). This is not a problem apart from the fact that if more people are being paid at the same time as fewer consumer goods are being produced, then this is likely to be highly inflationary (see Box 9, p.42).

Another downside which applies to some of the methods of raising funds is that they can increase inequalities. As already mentioned, QE and the lowering of interest rates had the effect of boosting asset prices, which benefited the wealthy. Also, selling government bonds at interest is giving private actors a safe investment so they can 'make their money work' and get an income simply by being wealthy.

Inflation

Most of the alternative methods of raising government funds will immediately be met with the question: 'What about inflation?'. To answer this, this section goes into detail on what inflation is, whether it is always bad for the economy, what causes it, whether it leads to hyperinflation, and the effects of public spending and taxation on it. It also looks at whether inflation could ever be useful.

The current method of controlling inflation – through the Bank of England setting interest rates – is explained in the following section on interest rates (p.43).

Inflation of what?

The Office for National Statistics (ONS) measures a basket of around 700 goods and services considered representative of the UK economy to get 'the' level of inflation. There are different measures of this: the retail price inflation (RPI – no longer recommended for use); consumer price inflation (CPI); and the Consumer Prices Index including owner occupiers' Housing costs (CPIH),[120] which is currently the UK's lead measure of inflation. We do not routinely consider other types of inflation which might be useful for informing policy decisions, such as:

- House price inflation[121]
- Inflation of goods and services to meet people's basic needs (rent, essential food and heating, but not luxury goods)
- Inflation relevant to people on different deciles of income (the ONS does this analysis sometimes[122])
- Inflation of carbon prices (could be seen as a good inflation)
- Inflation of UK goods and services (excluding imported goods and services)
- Inflation in different sectors (e.g. food, clothing, housing, construction, services, etc.).

How much does inflation matter for the real economy?

An unexpected change in inflation is likely to have winners and losers. If inflation unexpectedly rises, people or organisations with a fixed income (e.g. most wage earners at the moment, people with fixed private pensions) and people or organisations with cash will lose. People or organisations with a debt which has a fixed interest rate (some mortgages, car purchase loans, etc., and also much of the government's national debt), and people or organisations with outgoings at a fixed level (e.g. wage bill of firms, rent payable for property) benefit. People or organisations with inflation-linked income and outgoings are neutral.

An expected significant inflation (e.g. in the 1980s when inflation had been significant for a while) causes no issues in the economy apart from the 'label costs' of shops that have to stick on new price tags regularly, as prices increase. This is because all incomes and outgoings 'expect' inflation, so wages and benefits are annually increased in line with inflation as standard, and mortgages take account of expected inflation, etc.

Economists have found no detrimental effect of high levels of inflation (up to possibly 20%) on the growth prospects of a country.[123] The opposite, deflation, is seen as a problem as people postpone spending, causing the economy to contract. Nevertheless, most people are frightened by inflation (as they assume their income will not keep up with prices), and most mainstream

120 See Office for National Statistics (revised 19 Dec 2024) 'Consumer Price Inflation (includes all 3 indices – CPIH, CPI and RPI) QMI'.

121 CPIH includes costs associated with the 'consumption' of the 'service' a house provides us, not the price of the asset.

122 Office for National Statistics (2022) 'Inflation and cost of living for household groups, UK: October 2022'.

123 See 'Thing 6' in Chang, H-J (2011) *23 Things They Don't Tell You about Capitalism*. Penguin Books.

BOX 7. UK INFLATION OVER THE LAST 160 YEARS

The UK had up to 25% inflation in the 1970s. By the later 1980s, inflation was expected and varied between around 4% and 8% (see Figure 3), so it wasn't in general a problem for employees (public sector or otherwise) as their salaries were increased by inflation as standard. Pay increases were measured above inflation. However, the experience of many richer pensioners in the 1970s was very negative as they had a fixed rate private pension so their living standards in their old age were severely reduced.

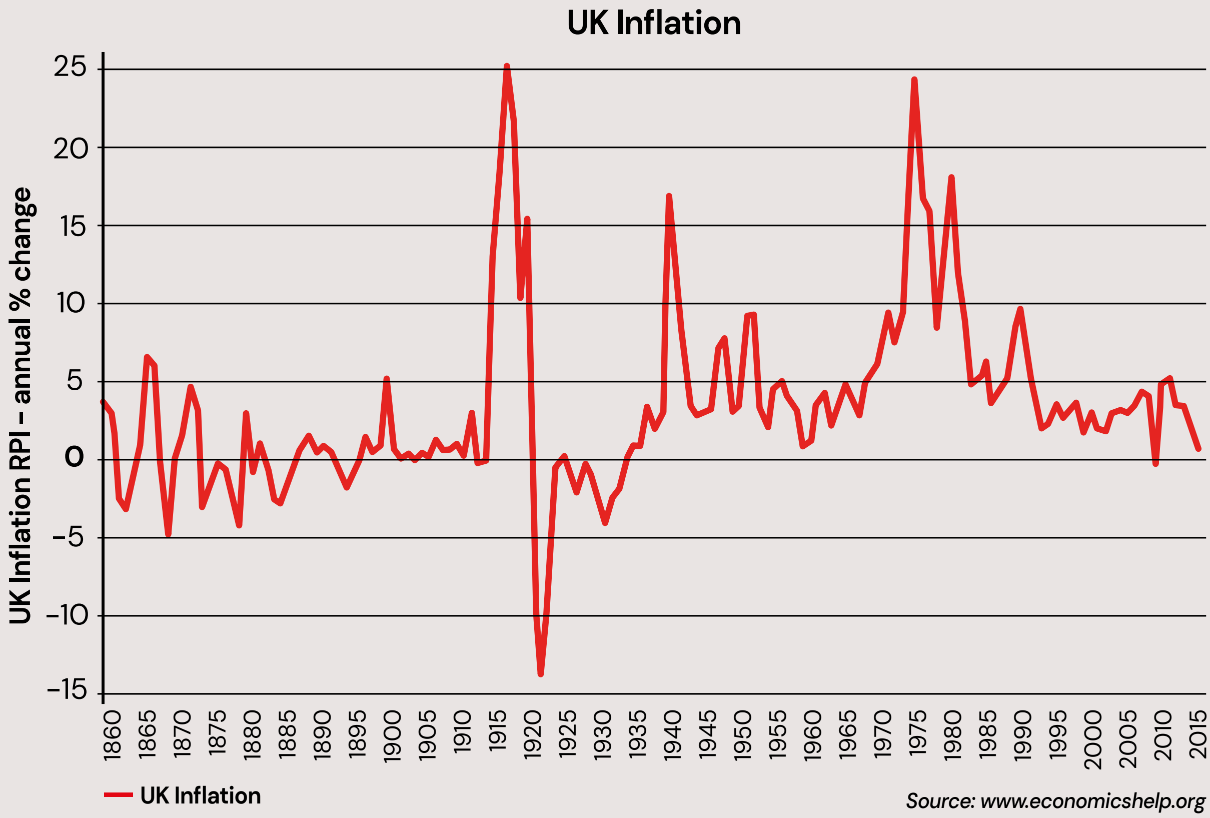

Figure 3. Graph of UK inflation, 1860–2015 (source: Economicshelp[124])

economists believe inflation is bad and must be 'fought'. Politicians have currently given the Bank of England the mandate of price stability with a 2% inflation target, come what may. The idea that the Bank of England will achieve this, even if it has to take politically unpopular measures, is meant to make the 2% target so likely that workers won't start demanding higher than 2% pay rises (as they might if they expected inflation to be higher). The Bank of England has the primary mandate to try meet the inflation target, so if the actions of the Bank of England cause businesses to fail and unemployment to rise – so be it – despite the hardship that this would cause.

Of course the mandate given to the Bank of England could be changed so it can respond more flexibly to inflation, depending on what is causing the inflation (so if it is caused by an external price shock, it wouldn't necessarily have to raise interest rates).

The detrimental effects of unexpected inflation are most felt by the least well-off in society, and recent inflation has caused the so-called 'cost-of-living crisis'. There is a strong argument for increasing the income[125] of this group in line with inflation – even if it prolongs the inflationary

124 Pettinger, T (2022) 'History of Inflation in UK'. *Economicshelp*.

125 For less well-off people: social security benefits, tax credits, minimum wages and incomes of public sector workers should keep up with a measure of inflation that is representative of their necessary outgoings (rent, energy for heating, food, etc.).

period. Unless there are continuing shortages of goods, the wage–price inflation spiral will diminish over time, with prices settling to new levels.

If there is an ongoing shortage of essential goods (and it is possible that food may become scarce as climate catastrophes wipe out crops around the globe), then inflation of these goods will spiral upwards, as rising prices won't result in more of these goods being produced. The fair response to such a situation would be rationing. This was introduced in the UK in WW2 because simply allowing supply and demand to set prices would have resulted in profiteering and pricing the poor out of being able to buy food staples. Rationing was seen as fair, and it enabled big changes to the economy in a short time.[126]

What causes inflation?

By definition, inflation is caused by the rising prices of the 700 goods and services in the 'basket' measured by the ONS. It is worth looking at why these prices rise. Some goods – often commodities – are traded on global markets (e.g. oil and wheat); the price of these goods will alter with the conditions (e.g. how good the world harvests were) and what traders believe about the future. Indeed, there are 'futures markets' in commodities which are subject to speculation with huge swings in prices which have very little to do with the costs of producing the goods.[127]

Many goods and services are not traded in this way; rather, somebody somewhere has decided to set the price, usually to try to maximise the profits for their firm (see Figure 4).

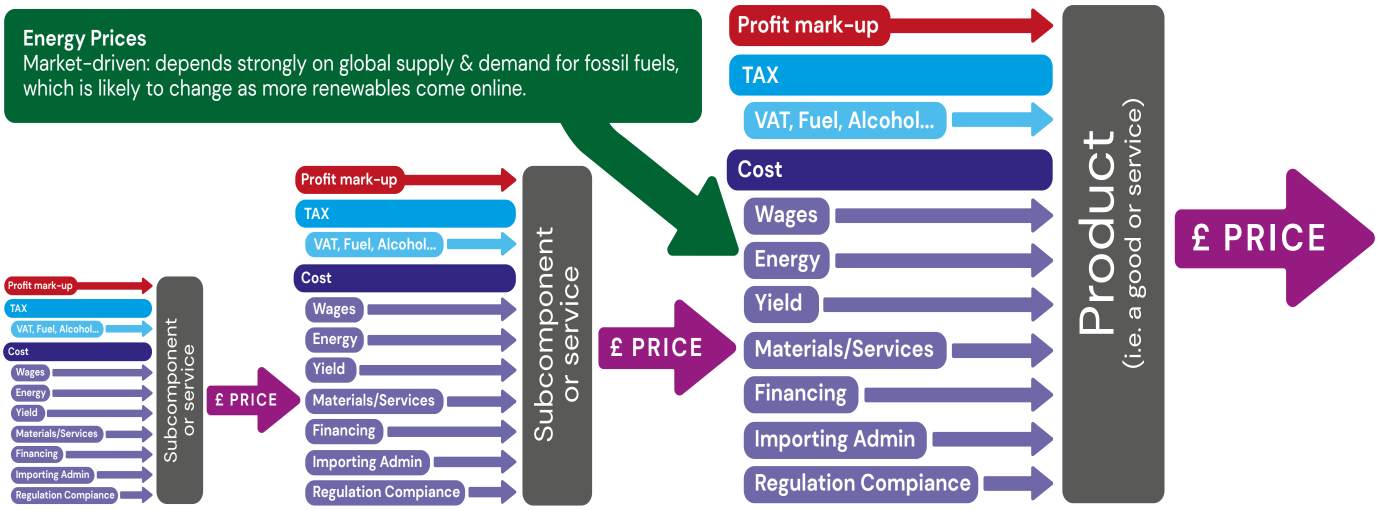

Figure 4. Drivers of prices

The determinants of a product's price are often simplified to just profits and wages (with taxes forgotten), as all the non-wage costs end up flowing to *people* in the form of either wages or profits further back up the supply chains. Raw materials are seen as being provided by nature for free and having no 'cost' except for, in the example of mining, the wages of the workers needed to mine them and the profits going to the mining firm and landowner for allowing mining to take place.

Recently we've seen relatively high inflation for the first time in decades. This is (or isn't) due to the following:

126 Rapid Transition Alliance (2019) 'When everything changed: the US & UK economies in World War II'

127 There is a strong argument that these commodity markets would better serve society with more government intervention, see Weber, I , et al, (2024) 'Buliding a Buffer Against Food-Price Shocks'. *Project Syndicate*.

Wages: A story often told is that workers demanding an increase in wages (perhaps by unionising and striking) is the cause of inflation. This may have been true in the 1970s, but in practice the profits flowing to the owners of firms has been rising over the last few decades, and workers' wages have stagnated. The inflation we've recently had was not initially caused by wage rises, and subsequent wage rises have lagged behind inflation.

Profit mark-up: Normally a firm in a well-functioning market can't increase the profit mark-up on its products as buyers would choose cheaper products from other manufacturers. However, we have many firms operating in less-than-ideal markets (without real competition), and many of them have recently increased their mark-ups 'under cover' of the surprise inflation that we've had. This can be seen in the increase in company profits compared to their costs.

If, for any reason, there is a shortage of a product then it is possible for the profit mark-up on this product to be hugely increased. This is often thought of as morally wrong – as it has not involved higher costs to make the product – and is described as profiteering. Citizens sometimes expect intervention from their government to prevent such profiteering. In wartime, products such as food were rationed to prevent profiteering (and to ensure their availability to everyone, including less well-off people). However, we appear to defer to 'the market' when thinking about commodity prices: when we stopped buying oil and gas from Russia after it invaded Ukraine, we didn't perceive the other oil and gas firms as 'profiteering' when energy prices shot up – they were just selling their goods at 'the market prices' (which happened to be hugely higher). Shareholders of these firms have seen their investments go up in value as well as receiving higher dividends. There is a very strong argument in favour of applying windfall taxes in such situations.

Energy: Manufactured products all have an input of energy, so the rise we had in energy costs have fed through into all products (as well as the costs of goods upstream in their supply chains). For example, greatly increased energy prices have been responsible for an increase in fertiliser prices (making fertiliser is highly energy intensive), which has had a knock-on effect on farm prices and food prices.

Yields: Increasing weather abnormalities are likely to reduce the yields of agricultural products (as well as other goods and services if areas suffer from weather disasters), so businesses will need to increase prices to remain profitable.

Costs of input materials and services: These input costs will go up if any of their factors increase (profit mark-up, tax, costs). A further factor is the exchange rate if inputs are bought from abroad: if the pound sinks, then the cost of imported inputs in pounds will increase. A shortage of some products manufactured in China due to Covid-19 shutdowns resulted in an increase in production prices for UK firms using those products.

Costs of financing: For smaller businesses in the UK, raising funds for new projects will probably be through bank loans, which are dependent on the Bank of England interest rate (see 'The interest rate', p.43), and the willingness of a bank to lend money. A problem after the 2008 financial crisis was not that interest rates were too high, but that many banks chose not to lend (or renew ongoing loans) as they wanted to 'repair their balance sheets' and this is what caused businesses to go bankrupt.[128] Larger firms also have the option of raising funds through selling equity (i.e. bringing new shares to financial markets). A backdrop of rising interest rates and/or falling share prices can therefore increase costs, leading to price rises. An unfortunate side effect of the costs of financing is that they reduce the incentives that the private sector has for investing in renewable energy.[129]

128 Koo, R (2018) *The Other Half of Macroeconomics and the Fate of Globalization*. Wiley.

129 See footnote 69.

Cost of admin for importing goods: Brexit has resulted in an increase of the costs and risks related to importing goods (especially food, which could go bad if it's held up in customs).

Insufficient supply or excessive demand?

Another way economists tend to look at inflation is through the lens of supply and demand. Too much money chasing a fixed amount of something (e.g. house prices when banks are willing to lend ever larger mortgages) is a demand-led inflation (also known as 'demand-pull'). A lack of supply (supply shock) also causes inflation – Covid-19 lockdowns in China reduced supply of certain goods in Europe, increasing prices.[130]

Doesn't inflation lead to hyperinflation?

Hyperinflation (sometimes defined as run-away inflation when prices rise at more than 50% per month) is a problem, but extremely rare. As a rule, high inflation does not drift into hyperinflation. Rather, hyperinflation typically happens after some sort of shock when a country has debts (or necessary costs) in a foreign currency. After the shock, the only way the country can pay these external debts (or costs) is to 'print money' – but the newly printed money only devalues the home currency further. Citizens with savings, as well as investors (nationals or foreigners), see their currency depreciating in value, so they rush to exchange it for some other currency, which exacerbates the problem and causes further depreciation of the home currency (capital flight), which spirals downwards in value. Another cause of the initial shock can be when a country strongly relies on the export of a raw material (e.g. oil) to be able to import key necessary goods, and then the price of the raw material drops significantly[131] (or for some reason it is unable to sell the raw material[132]). The domestic currency drops in value, leading to inflation in prices of the key imported goods – and then the country resorts to printing money to try to continue to pay for these key goods and everyone scrambles to sell the depreciating currency and buy a more stable one (often the US dollar).

For hyperinflation to occur, people and businesses must be strongly motivated to use another currency for their transactions. From this point of view, there must be another particular currency which is easily available and preferable. For countries with smaller economies that already use US dollars to trade on international markets, the US dollar is often unofficially adopted in times of hyperinflation.

The UK has a sovereign currency so would not suffer inflation to repay debt (or pay interest on debt), as the national debt is in UK pounds. The UK is also not dependent on the export of one raw material.[133] The prospect of people choosing to use another currency (e.g. US dollars) for transactions instead of pounds sterling and the UK economy becoming similar to that of Zimbabwe is unimaginable.

To combat hyperinflation a country could impose capital controls (see Box 8) and/or introduce rationing of key imported goods.

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130 Huw Pill from the Bank of England gave a speech on this (he takes the stance that inflation must be fought, but of course he's working to the Bank of England's current mandate of targeting 2% inflation); Pill, H (2023) 'UK monetary policy outlook - speech by Huw Pill'. *Bank of England*.

131 This happened in Venezuela, which was heavily dependent on oil prices.

132 For example, when sanctions are imposed against a country that is deemed to be behaving badly.

133 However, the UK is fairly dependent on selling financial services. If the financial services industry were to sharply shrink resulting in much less foreign money flowing into the UK, then the pound would sink, but it is unimaginable that this would result in hyperinflation. It would result in UK firms being more competitive globally, so exports could be expected to increase.

BOX 8. UTILISING CAPITAL CONTROLS

If times get extremely difficult and individuals and firms are converting their money into a foreign currency, capital controls should be considered to stop capital flight, and potentially manage exchange rates. These could include limiting the amount of cash each person/organisation can withdraw from their bank accounts and limiting (or heavily taxing) transfers into foreign currencies. In Europe the last time capital controls were imposed were in Greece in 2015,[134] and they were not completely lifted until 2019.[135] (In this case the crisis came about as Greece looked like it might drop out of the euro, and the European Central Bank had said it would no longer support Greek banks, which risked runs on Greek banks and the Greek finance system collapsing).

The mainstream economic view is that capital controls are detrimental to the economic development of countries. There is substantial counter evidence to this: China has always had strong capital controls yet has seen massive economic growth over decades. Another example can be seen in the 1990s' financial crisis in Southeast Asia: Indonesia, Thailand and South Korea accepted the IMF 'medicine' of keeping financial markets open, yet Malasia resisted this and introduced capital controls – which resulted in Malasia having less hardship and a faster economic recovery.

What would be the effect on inflation if our government drastically increased its spending by letting the national debt increase?

The answer to this question depends on where in our economy the money flows to.

- If it was used to pay down debts (credit cards or otherwise), it would have no effect on inflation.
- If it was put into savings rather than spent, there would be no effect on inflation. (This could be encouraged – see Box 9, p.42.)
- If it went to people who chose to consume many more goods, but no more goods were available then prices would rise (i.e. there would be inflation). However, if firms could quickly respond to the extra demand (by increasing the supply of e.g. restaurant meals), inflation would quickly fall again, and there would be growth in the economy.
- If it went to people who chose to buy more imported goods (e.g. electronic goods), all else being the same the pound would sink, thereby raising the prices of these imported goods, and therefore inflation.[136] (However, these rising prices would help our manufacturers of those goods become more competitive on world markets, so in the longer term the pound could recover).
- If it went to richer people, it wouldn't have much effect on inflation as richer people can buy the things they want anyway.

However, people's beliefs can also affect what happens, especially in the short term. If actors in financial markets believe that an unexpected increase in public spending will cause inflation, their reactions can cause the pound to drop in value,[137] therefore raising the prices of imported goods – and consequently inflation. However, these 'false' but self-fulfilling beliefs tend to be transitory.

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134 Phipps, C (2015) 'Greek debt crisis: the key points of Athens bank controls'. *The Guardian.*

135 Hope, K (2019) 'Greece fully lifts capital controls'. *Financial Times*.

136 This is further explored for developing countries in Oberholzer, B (2023) 'Moving Forward When There Are No Dollars: A Guide to Public Investment in Face of the Balance-of-Payments Constraint'. *Review of Political Economy*.

137 Foreign investors in UK financial markets may worry that inflation will reduce the value of sterling over time, and therefore UK investments become relatively less attractive than investments from other countries. This effect is exacerbated if they believe the unexpected increase in government spending signals a weakness in the UK economy.

How would a Universal Basic Income affect inflation?

Citizen's Income or Universal Basic Income is likely to affect inflation in pretty much the same way as increased government spending (see above). However, if it caused a shortage of workers (due to people opting not to work) then it could be inflationary due to the remaining workers being able to demand higher wages (note: there is no evidence for people doing less work – people usually do more training and get better jobs).[138]

What is the effect of tax on inflation?

Increases in income tax will reduce the amount of disposable income that people have in their pockets, which is likely to reduce the demand for non-necessary goods, thus reduce inflation or be deflationary. Increasing taxes on the rich (wealth or income) would, if it has any effect, likely only reduce asset prices and real estate prices.

Increasing VAT would have the effect of immediately increasing prices and therefore inflation, but if people cut back on what they purchased then this effect would be reduced.

A carbon tax would have similar effects to the rise in energy prices and subsequent inflation that the UK experienced after the start of the war in Ukraine.

Inflation can deflate the national debt

For those who believe a high level of national debt is a problem (which most non-mainstream economists do not, it should be noted), unexpected inflation has the 'benefit' that it can reduce the national debt. This happens if the government has long term fixed-interest bonds: in this case the value of this debt will decrease in real terms. There are arguments[139] that in the current world situation, governments such as the USA and UK are almost bound to run up high debts, and eventually they'll almost certainly want to decrease these debts by printing money to cause inflation, and for the value of the debt to sink.

Could inflation be useful? The carbon fee and dividend policy

A carbon fee and dividend policy (where carbon is taxed when it comes out of the ground or crosses national borders, with the proceeds being distributed equally to citizens[140]) would be inflationary in a similar way to rising energy prices, but this should be seen as a 'good' inflation which does not need to be 'fought' as these specific changes in prices would motivate people to buy goods associated with lower carbon emissions, and therefore firms to develop more of such products. Less well-off people (who have lower carbon footprints) would be net 'winners' from this policy as the dividend would more than compensate them for the increase in prices, so it would not be necessary to increase pay levels or benefits with this policy.

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138 Crocker, G (2020) *Basic Income and Sovereign Money: The Alternative to Economic Crisis and Austerity Policy*. Palgrave.

139 See Dalio, R (2022) 'Principles for Dealing with the Changing World Order' [YouTube].

140 Citizens' Climate Lobby (no date) 'Carbon Fee & Dividend'.

BOX 9. HOW TO PAY FOR THE WAR

In 1940 John Maynard Keynes wrote the highly readable book *How to Pay for the War*[141] where he addressed the problem that the war would be inflationary (in a way which would be unfair to the working classes) unless careful policy measures were taken. His argument was that people would be required to work more hours (for the war effort) for which they would need to be paid, and at the very same time there would be fewer goods available to buy – meaning that the extra money people earnt could not be spent without being inflationary. His main policy recommendation was that people should have to put some of their earnings into savings that they would not be allowed to spend until after the war was over[142] (as well as raising taxes to reduce spending). He did also accept rationing of key items was necessary to ensure that everyone had enough, but rather than increasing the number of goods rationed he was in favour of reducing people's spending power to reduce the demand for goods, thereby giving people a free choice as to what to buy. He was against excessively increasing taxes on company profits as he felt this would be a dis-incentive for companies to produce as much as possible. He also addressed the balance of trade: simply importing without exporting would be unsustainable as the UK would use up its foreign reserves (e.g. holdings of US dollars) and then be dependent on the goodwill of international lenders to buy goods internationally.

Keynes noted the total production would be limited by the number of workers and machines available, and the goods produced must then be distributed between:

- The war effort
- Consumption
- Exports (needed to get foreign reserves in order to import goods).

An increase to any of these would necessarily come at the expense of the others. Keynes reinforced the idea that it was not about the government being limited by the amount of funds they could raise by making the point that a taxation on the assets of the rich (a capital levy) would not help enable more output; only a reduction in their current consumption would help.[143] He also made the point: 'A government, which has control of the banking and currency system, can always find the cash to pay for its purchase of home-produced goods'.[144]

A similar situation played out in the USA during the second world war: soldiers and munitions workers were being paid, but fewer goods were available to buy. Authorities were worried about inflation, with too much money chasing too few goods. Their answer was to sell 'war bonds': people were encouraged (through newspaper ads) to buy these bonds to help the war effort. In this way, their 'spare' money was sucked out of circulation rather than spent, thereby reducing inflationary pressures.[145]

141 *How to Pay for the War: A Radical Plan for the Chancellor of the Exchequer* is a book by John Maynard Keynes, published in 1940 by Macmillan and Co., Ltd. [Online here.]

142 Ideally these war-savings should become available for people to spend in the first post-war slump.

143 However, he did think a capital levy raised after the end of the war could be useful to reduce the national debt.

144 Keynes, J (1940) *How to Pay for the War*. Macmillan and Co., p.66.

145 U-S-History.com (no date) 'U.S. War Bonds'.

The interest rate

What is 'the' interest rate or 'bank rate'?

'The' interest rate is the one set by the Bank of England. It is paid by the Bank of England on the banks' deposit accounts held at the Bank of England.[146] It acts as a lower limit for all bank lending interest rates (and variable mortgage rates), which tend to increase when the interest rate is increased (though they can be slow to respond when the interest rate is reduced). It also normally acts as an upper bound to the interest rate that banks are likely to offer on savings accounts.

What does the Bank of England aim to achieve by changing the interest rate?

It aims to fulfil its primary mandate of keeping inflation of the standard basket of goods and services close to 2%. However, it should also 'support' government policy in other areas of the economy (such as economic growth and employment) as well as overseeing the stability in financial markets. It is unclear how it resolves conflicts between these mandates. For example, when inflation is far off its target (as was in early 2023, with inflation about 10%), should it increase the interest rate even if this risks a recession and/or a financial crisis?

How does the Bank of England attempt to control inflation by changing the interest rate?

The theory goes (not all economists agree): if borrowing money becomes more expensive (with a higher interest rate), then firms will be less likely to borrow to expand (e.g. build that new factory) and people less likely to borrow (e.g. to buy that new car), so firms and people will be buying fewer goods – so where too much money was previously chasing too few goods, increasing the interest rate should reduce this, thereby reducing pressure on prices to rise. In practise this is not always the case. Firms and people are likely to take on more debt almost regardless of the interest rate when they perceive the economy to be going well, and not when they perceive it to be going badly. Likewise when the economy is buoyant people expect pay rises and to be able to find jobs easily, so they're happy to take on more debt. Interest rates have been shown to be lagging – not leading – price levels, thereby showing they can't be causing the change in prices.[147]

If there's inflation which is not due to the economy being overly buoyant, but due to some external shock (such as the surge in energy prices after Putin invaded Ukraine), then it can be argued the 'medicine' of increasing the interest rate is wrongly targeted.[148] The rate rises are likely to be harmful for borrowers, who are already suffering from the inflationary shock. Rate rises are also likely to stifle business activity: for example, investors are unlikely to fund a new solar energy installation if the expected return on investment (say, 5%) is similar to the market interest rate on government bonds – whereas the investment would have been attractive when government bonds were only offering around 1%. Rate rises may even trigger a recession and higher unemployment. Arguably, a far better solution would be to ride out the inflationary wave, which will subside after the shock works its way through the system – a policy followed by Japan (see Box 10), but not by the Bank of England.

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146 The funding to pay for this interest comes out of government accounts, see 'Quantitative easing', p.25, for more details.

147 Werner, R (2005) *New Paradigm in Macroeconomics: Solving the Riddle of Japanese Macroeconomic Performance.* Palgrave Macmillan.

148 See many of Richard Murphy's blog posts, for example Murphy, R (2021) 'An increase in interest rates would be an act of class warfare'. *Funding the Future.*

BOX 10. HOW JAPAN MANAGED THE INFLATION AFTER THE RISE IN GLOBAL ENERGY PRICES

By the early 2020's Japan had had a decades-long problem of deflation, and had been trying to generate inflation. It also had a huge national debt by international standards, being over 200% of GDP (though much of this was owned by the Bank of Japan).

When the global energy prices rose following the Russian invasion of Ukraine, this caused inflation in Japan to rise sharply – to over 4% by the start of 2023. Rather than increasing the interest rate to combat inflation, the bank of Japan did nothing, and held the interest rate at *negative* 0.1% up to and during 2023. Despite not raising the interest rate, inflation slowly dropped.

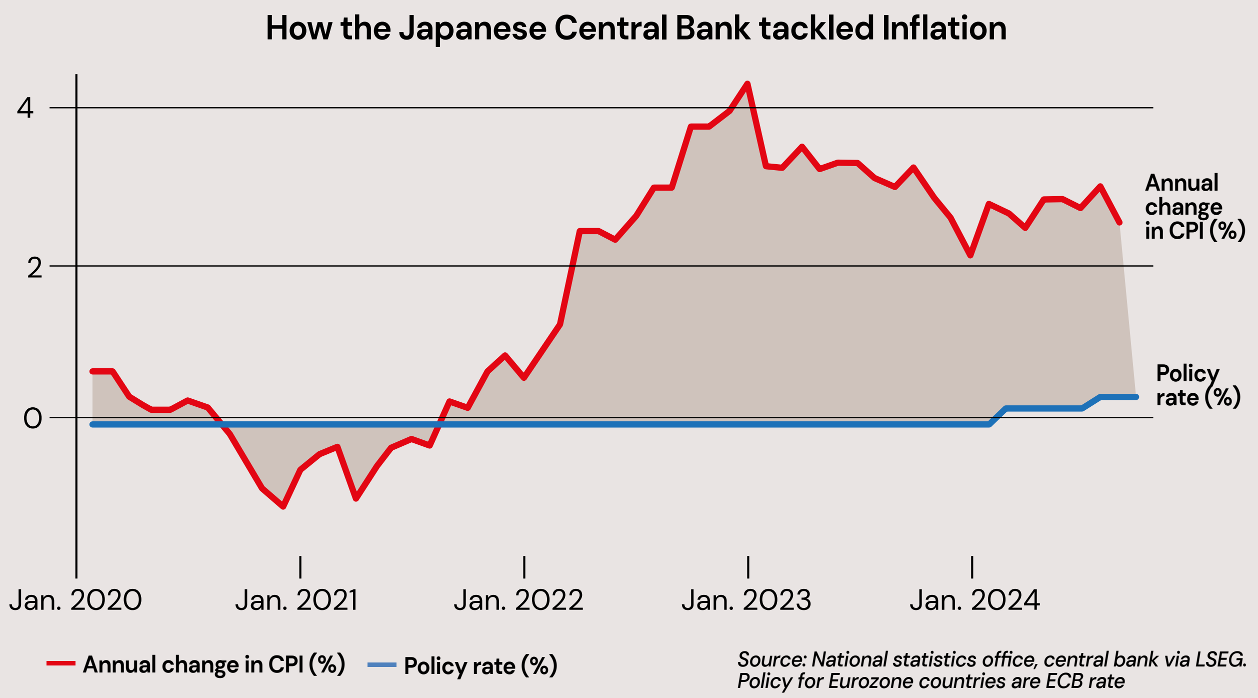

Figure 5. Interest rates and inflation, Japan 2020–2024 (source: *Financial Times*[149]**)**

Given the increases in inflation in 2022 were largely due to the external shock of global energy prices rising, there was a risk that the Bank of England may cause a recession in trying to get inflation down to 2%.[150] The large increase in the interest rate in the UK in 2022/23 from 0.5% to 5.25% after a decade of low rates – and at a time of inflation in energy prices and food – was very difficult for house owners with variable rate mortgages, or those already with high levels of debt (e.g. credit card debt). The reduction of spending from this group of people may have reduced inflationary pressures in general (as there will be less demand for goods), but at what cost? If too large a proportion of society are forced to spend much less it will cause a recession (as, for example, otherwise profitable businesses like restaurants will have fewer customers), with related job losses and further financial hardship.

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149 Romei, V, and A Smith (updated 18 Dec 2024) 'Inflation and interest rates tracker: see how your country compares'. *Financial Times*.

150 Indeed, the effects of this rise in interest rate still might cause a recession, especially as businesses now have higher financing costs which they may not be able to pass on to their customers.

Is the Bank of England really free to set interest rates?

The Bank of England can simply set the bank rate,[151] but it doesn't set the market rates at which government bonds of different terms are bought and sold,[152] though these tend to be influenced by the bank rate and expectations of future bank rates. It can also influence these market prices through enacting QE or QT. With open markets (i.e. no capital controls) it is impossible for a central bank to control exchange rates and interest rates at the same time. Foreign central banks changing their bank rates (e.g. the Fed in the USA, or by the ECB for the Eurozone) will have an effect both on the value of sterling in international markets and the market price of UK government bonds.

Final word

This report is strongly influenced by the works of the economists and thinkers mentioned in the sources section below – most of whom would describe themselves as heterodox or non-mainstream. There is broad criticism that the economics discipline is too focused on a particular type of mathematical model (dynamic stochastic general equilibrium), and that it would benefit from a diversity of perspectives, including insights from: complexity science (often with experts from biology or ecology); double-entry bookkeeping, especially to understand the effects of banking on the economy (with experts from accountancy); financial 'plumbing' (e.g. IT experts in financial firms); and stock and flow models of money in the economy (often with experts from physics or engineering).

Economics is not like physics. We can be certain that humankind is the cause of global heating. Yet we cannot be certain that any particular economic decision will or will not have the intended outcome, especially as macroeconomics describes a complex system which reacts not only to flows of money, but also to information. Indeed, the very discussion of a new economic paradigm could result in a different outcome, with the financial markets reacting to this information. Despite this, we can be certain that the physical limitations to what we can achieve will depend on the people, energy and materials available. If the economic system is not able to direct these resources to give our human civilisation the best chance of continuing to exist, the economic system needs to be changed: unfortunately we can't change the laws of physics.

151 Although it is considered hard for a central bank to set negative interest rates, as people will choose cash in preference to bank account money.

152 It could, if it chose, act in the bond markets and thereby directly influence the interest rates for traded bonds. The Bank of Japan has done this with its yield curve control policy since 2016 (Bank of Japan (2016) 'New Framework for Strengthening Monetary Easing: "Quantitative and Qualitative Monetary Easing with Yield Curve Control"').

Sources

What follows are very brief introductions about the authors and organisations that have been influential in the thinking behind this briefing, together with selected works. The sections are divided into: key sources; introductory sources; economics and environment; public spending; money and debt; Sovereign Money and Modern Monetary Theory.

Key sources

Steve Keen (an economics professor) has written and blogged extensively on why mainstream economics is misguided. He has concentrated on modelling the economy as a complex system built up from simple macroeconomic definitions of key economic variables, and has developed a visual modelling tool, Ravel (previously called Minsky), to run these models.

Keen, S (2011 [2002]) *Debunking Economics: The Naked Emperor Dethroned?* Zed Books

(2017) *Can We Avoid Another Financial Crisis?* Polity

(2021) *The New Economics: A Manifesto*. Polity

Richard Murphy (a chartered accountant) has written, blogged (https://www.taxresearch.org.uk/Blog/) and posted extensively on economic and tax reforms. As an accountant he gains insights from double-entry bookkeeping and argues that modern monetary theory, rather than being an alternative way of thinking, is mostly just an accurate description of how the current system works (whilst highlighting the fallacy that 'there's not enough money').

Murphy, R. (2015) *The Joy of Tax*. Bantam Press

(2011) *The Courageous State*. Searching Finance.

(2021) 'Money for nothing and my Tweets for free'. The Finance Press.

Yanis Varoufakis (an economics professor, former finance minister for Greece, and political activist) has written a great introductory book on economics, *Talking to my daughter about the economy*, as well as more academic texts. He is very critical of the way the Troika (European Commission, the European Central Bank and the International Monetary Fund) insisted on harsh austerity for Greece against the democratic wishes of the Greek people.

Varoufakis, Y (2017) *Talking to My Daughter About the Economy: A Brief History of Capitalism*. Bodley Head.

James Robertson (a former civil servant) and **Joseph Huber** (a sociology professor) wrote the seminal text *Creating New Money* in 2000. This spawned movements around the world forming after the 2008 global financial crisis with the goal of transforming the financial system to a Sovereign Money system, including Positive Money in the UK, the International Movement for Monetary Reform, and Modernising Money in Switzerland (with whom the author of this briefing is associated) which brought the Swiss referendum on monetary reform in 2018.

Robertson, J, and J Huber (2000) *Creating New Money: A monetary reform for the technological age*. New Economics Foundation.

Introductory sources

Ray Dalio (former CEO of the world's biggest hedge fund Bridgewater Associates) has made some well explained videos including the excellent 'How The Economic Machine Works' and 'Principles for Dealing with the Changing World Order'.

Ha-Joon Chang (Professor of Economics, SOAS) has written some very accessible books on economics including *23 Things They Don't Tell You about Capitalism*.

Chang, H-J (2011) *23 Things They Don't Tell You about Capitalism*. Penguin Books.

Mark Blyth (Professor of International Economics, Brown University) and **Eric Lonergan's** *Angrynomics* looks at how the economic paradigm has changed over time, and the effect the current economic paradigm has on politics. Blyth has also written the more serious book on austerity.

Lonergan, E, and M Blyth (2020) *Angrynomics*. Agenda Publishing.

Blyth, M (2013) *Austerity: The history of a dangerous idea*. Oxford University.

The New Economics Foundation (https://neweconomics.org/) is a think tank which publishes articles which are well researched and explained, and cover many of the topics in this briefing (as well as others).

Economics and the environment

Tim Jackson (Professor of Ecological Economics and Director of the Centre for the Understanding of Sustainable Prosperity (CUSP), Surrey University) wrote the highly influential (and readable) book *Prosperity without Growth* in 2009, as well as many other texts on economics.

Jackson, T (2017) *Prosperity without Growth, 2nd edn*. Routledge.

Kate Raworth (Professor of Environmental Change, Oxford University) has written the book *Doughnut Economic*s which describes the way economic activity must keep within planetary limits whilst ensuring that all of humanity should have enough.

Raworth, K (2017) *Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist*. Random House Business.

Jason Hickel (Professor of Anthropology) has written the book *Less is More: How degrowth will Save the World* which argues that we need degrowth, and how we might go about it. He's also written an excellent book on how 'development' for global south countries isn't working.

Hickel, J (2021) *Less is More: How Degrowth Will Save the World*. Windmill Books.

(2017) *The Divide: A Brief Guide to Global Inequality and its Solutions*. William Heinemann.

Public spending

Marianna Mazzucato (Professor in the Economics of Innovation and Public Value, University College London) has written widely on how public spending can be better than private entrepreneurial enterprise.

Mazzucato, M (2024) *The Big Con: How the Consulting Industry Weakens our Businesses, Infantilizes our Governments and Warps our Economies*. Penguin Books

(2021) *Mission Economy: A Moonshot Guide to Changing Capitalism*. Allen Lane

(2018) *The Entrepreneurial State: Debunking Public vs. Private Sector Myths, 10th anniversary edn*. Penguin Books

(2019) *The Value of Everything: Making and Taking in the Global Economy*. Penguin.

Money and debt

Josh Ryan Collins, **Tony Greenham**, **Richard Werner** and **Andrew Jackson's** book *Where does Money Come From?* is an excellent technical introduction to how the banking system works, including examples and explanations of the balance sheets of banks and the central bank.

Ryan-Collins, J, et al. (2012) *Where does Money Come From?* New Economics Foundation.

Richard Werner (Professor of Banking and Economics, University of Winchester Business School) wrote a book *New Paradigm in Macroeconomics: Solving the Riddle of Japanese Macroeconomic Performance* which shows how conventional thinking in economics couldn't explain the boom and bust in Japan (2005). He subsequently championed the idea of local banks to support local businesses https://local-first.org.uk/), as well as co-authoring *Where does Money Come From?*

Werner, R (2005) *New Paradigm in Macroeconomics: Solving the Riddle of Japanese Macroeconomic Performance*. Palgrave Macmillan.

Adair Turner (previously chair of Financial Services Authority) wrote an insightful book after the global financial crisis where he blames too much bank credit (i.e. private debt) pumped into non-productive assets as a cause of the financial crisis, and afterwards low interest rates for increasing inequality and government austerity for prolonging the downturn.

Turner, A (2015) *Between Debt and the Devil: Money, Credit, and Fixing Global Finance*. Princeton University Press.

Richard Koo (chief economist of the Nomura Research Institute) wrote the book *The Other Half of Macroeconomics and the Fate of Globalization* in which he argues the policy of reducing interest rates to boost economic activity is impotent when private individuals and firms all want to save (as was the case after the 2008 global financial crisis). Under such circumstances government spending is the only way to keep the economy going.

Koo, R (2018) *The Other Half of Macroeconomics and the Fate of Globalization*. Wiley.

Martin Wolf (chief economics commentator for the Financial Times) wrote the book *The Shifts and the Shocks: What we've learned – and have still to learn – from the financial crisis* which gives a more mainstream analysis of the global financial crisis. He sees it was due to a build-up of global imbalances causing cheap credit to flood financial markets, which were too lightly regulated. He comments that bankers, knowing that their banks will get bailed out, are effectively highly paid civil servants. Martin Wolf also wrote in support of the referendum on Sovereign Money in Switzerland.

Wolf, M (2015) *The Shifts and the Shocks: What we've learned – and have still to learn – from the financial crisis*. Penguin.

(2018) 'Why the Swiss should vote for "Vollgeld"'. *Financial Times*.

Ann Pettifor's (political economist) book *The Production of Money: How to Break the Power of Bankers* argues that private bankers, through their control of the money creation process, have a disproportionate power over the economy and that governments should create more of the money we use for social and environmental aims (mentioning 'green QE' and a QE for the people). In her book *The Case for the Green New Deal* she makes the environmental case more strongly and argues that the transition to a low carbon economy will require massive public investments as well as policies to reduce inequality, for which the government should use their power to create money, rather than rely on private finance, which is profit driven and can be too slow and inefficient.

Pettifor, A (2017) *The Production of Money: How to Break the Power of Bankers* 2017. Verso Books.

(2019) *The Case for the Green New Deal*. Verso Books.

Richard Vague (businessman and venture capitalist) has written several books on debt and financial. A general theme is that a build-up of private debt rather than public debt can be a problem, but private debt has also been a big enabler of economic development.

Vague, R (2023) *The Paradox of Debt: A New Path to Prosperity Without Crisis*. University of Pennsylvania Press.

(2014) *The Next Economic Disaster: Why It's Coming and How to Avoid It*. University of Pennsylvania.

Frances Coppola (worked in IT in banking; finance and economics blogger) is a writer and blogger (https://coppolacomment.substack.com/). Working in IT enabled her to obtain a deep understanding of how money and debt actually flows in the financial system as IT supplies the 'plumbing' for banking,

Coppola, F (2019) *The Case For People's Quantitative Easing*. Polity.

Michael Hudson (professor, financial analyst, government advisor) has written and blogged (https://michael-hudson.com/) extensively about debt and financial systems, both in the ancient past and today.

Hudson, M (2024) *Temples of Enterprise: Creating Economic Order in the Bronze Age Near East*. Islet.

(2015) *Killing the Host: How Financial Parasites and Debt Bondage Destroy the Global Economy*. Islet.

David Graeber's (anthropologist) book *Debt: The First 5,000 Years* is a fascinating account of how debt came into existence before money, and how debt and debt forgiveness has been at the centre of political debates for centuries.

Graeber, D (2014) *Debt: The First 5,000 Years*. Melville House.

Sovereign Money and CBDC

Joseph Huber, as mentioned at the start of this section ('Key sources'), together with James Robertson, was key to kicking off the debate that the current financial system should be reformed and that a Sovereign Money system would be superior in many ways. His website (https://sovereignmoney.site/) has many articles on how the current money system works and how a Sovereign Money system would work.

Huber, J (2023) *The Monetary Turning Point: From Bank Money to Central Bank Digital Currency (CBDC)*. Palgrave Macmillan.

(2016) *Sovereign Money: Beyond Reserve Banking*. Palgrave Macmillan.

Positive Money (https://positivemoney.org/) was founded by **Ben Dyson** in 2010 and has published detailed technical reports and books on how a Sovereign Money system would work.

Dyson, B, Hodgson, G, and van Lerven, F (2016) 'Sovereign Money, an Introduction'. *Positive Money*.

Jackson, A, and Dyson, B (2012) *Modernising Money: Why Our Monetary System is Broken and How it Can be Fixed*. Positive Money.

Michael Kumhof (Bank of England) has co-written several technical articles including 'The Chicago Plan Revisited' with **Jaromir Benes** where their models show such a reform would be beneficial for society (the Chicago Plan being closely related to a Sovereign Money reform).

Benes, J, and Kumhof, M (2012) 'The Chicago Plan Revisited'. *International Monetary Fund*.

Kumhof, M, et al. (2020) 'Central Bank Money: Liability, Asset, or Equity of the Nation?' (CEPR Discussion Paper No. DP15521). *SSRN*.

Kumhof, M, and Noone, C (2021) 'Central bank digital currencies – Design principles for financial stability'. *Economic Analysis and Policy* 71, p.553–572.

Jonathan McMillan (financier) has written on how a change to accounting rules could make the financial system more stable by reducing the incentive for banks to create debt funding for financial assets.

McMillan, J (2014) *The End of Banking: Money, Credit, And the Digital Revolution*. Zero/One Economics

(2024) *Capitalism and the Market Economy: Bringing back together what banking pulls apart*. Zero/One Economics.

Geoff Crocker (industrial strategist) explains how Sovereign Money (without a full monetary reform) could be used to avoid growing inequalities.

Crocker, G (2020) *Basic Income and Sovereign Money: The Alternative to Economic Crisis and Austerity Policy*. Palgrave.

Modern Monetary Theory

Stephanie Kelton (Professor of Economics and Public Policy, Stony Brook University) is a leading authority on MMT.

Kelton, S (2020) *The Deficit Myth: Modern Monetary Theory and How to Build a Better Economy*. Hatchette.

The Gower Initiative for Modern Money Studies (https://gimms.org.uk/) has many articles on MMT and its implementation.

Appendix:

HOW WIDELY ACCEPTED ARE THE KEY INSIGHTS?

Most of the people whose work is cited in this briefing were asked if they agreed with the key insights. From the small number who replied together with what can be inferred from the published work of the others, the table on the following pages shows what confidence can be assigned to each of these insights.

The confidence levels are:

- Very high – meaning all economists agree, including mainstream economists.
- High – meaning almost all non-mainstream economists cited in this briefing agree.
- Middle/high – about 60%–80% of non-mainstream economists cited in this briefing agree.
- Middle – about 40%–60% of non-mainstream economists cited in this briefing agree.

From the table it is clear that almost all of the key insights would be disputed by most mainstream economists, but they are supported by most non-mainstream economists.

It can also be seen that many of the cases where the confidence level is only 'middle' are due to proponents of modern monetary theory seeing a Sovereign Money reform as unnecessary and too drastic, or proponents of a Sovereign Money reform seeing some of the solutions advocated by modern monetary theorists as being irrelevant under a Sovereign Money system.

KEY INSIGHT	CONFIDENCE LEVEL	COMMENT
The UK state can afford to obtain and maintain a good level of public services as well as to build infrastructure for transitioning to a low carbon economy:		
1. It is always possible for the UK government to find money so long as it has its own sovereign currency (rather than, for example, having the euro). The availability of money does not depend on the tax intake or on the government being able to sell bonds.	Middle/high	Disputed, particularly by some proponents of a Sovereign Money reform[153] and more mainstream economists, as they worry it would be inflationary
2. Actual limits on what can be achieved depend on the number of healthy workers and the available resources for energy, materials and space. In the short term, further limitations include the number of skilled workers, available machines, and organisations set up and ready to provide the goods or services.	Very high	
3. The downside in over-investing in public services is that workers and resources are not available for private businesses to employ/use.	High	
Good regulation around banking promotes a thriving economy:		
4. A thriving economy needs small and medium sized enterprises to be able to easily access funds. This is especially true in times of upheaval where regulations or resource limitations are changing the way goods and services are produced and delivered – as will be true for the transition to a low carbon economy.	High	Mainstream thinking currently prioritises prudential financial regulation over business lending
5. Measures introduced to increase the financial robustness of banks can, counter-intuitively, destabilise the economy by dis-incentivising banks from providing bank loans to businesses.	Middle/high	
Some financial instabilities are problematic, others less so:		
6a) The build-up of too much private debt (particularly debt associated with non-productive assets) can lead to a problematic financial crisis with banks potentially failing.	High	All non-mainstream economists cited in this briefing hold this view
6b) A build-up of national debt or a large government deficit is not inherently problematic.	Middle/high	Some proponents of a Sovereign Money reform think this may be a problem
7a) A financial crisis that disrupts transactions between individuals and businesses (such as payment of salaries) would cause massive and immediate problems so must be averted at all costs, including by bailing out banks if necessary.	Very high	
7b) Stricker regulation for shadow banks or (more drastically) changing to a Sovereign Money system with a publicly run clearing system would prevent this issue.	Middle/high	Disputed, particularly by proponents of modern monetary theory who see a Sovereign Money reform as too drastic a change

153 As it would be unnecessary under a full Sovereign Money reform. Such a reform would hand the government a massive spending boost, as money would need to be spent into circulation.

KEY INSIGHT	CONFIDENCE LEVEL	COMMENT
8. Inflation does not prevent an economy from thriving, but different segments of society may be adversely affected by inflation (or deflation).	Middle	Quite a few non-mainstream economists, like mainstream economists, see inflation as a major problem
Alternative policies can promote a fairer economy:		
9a) In inflationary times a cost-of-living crisis must be avoided.	High	Everyone agrees this is a problem, but most mainstream economists argue inflation must be tamed at all costs, even if the side-effect is a cost of living crisis
9b) … for the least well-off in society by ensuring their incomes to rise in tandem with their necessary outgoings.	Middle/high	Mainstream economists would argue that this prolongs inflation, which must be 'fought'
10. In the case where there is a shortage of a key product (e.g. food staples), rationing is the pragmatic response - otherwise the product may become unavailable due to hoarding, or prohibitively expensive.	High	Unthinkable scenario for mainstream economists
11a) The problem of inflation in house prices – resulting in housing becoming increasingly unaffordable – is partly due to the fact that banks create new money when they give mortgages, which pumps up the housing market.	High	Other solutions (build more houses) dominate mainstream thinking
11b) This could be prevented by only allowing banks to act as intermediaries between savers and borrowers (by pooling people's savings and using these to offer mortgages).	Middle/high	Seen as too drastic by some, and a land value tax is favoured by some alternative economists
Input from a broader range of economic schools of thought can improve policymaking:		
12. A broader variety of methods for economic modelling and forecasting should be used for policymaking than is the case today. These should include: modelling the stocks and flows of money in an economy, modelling the economy as a complex adaptive system, and using the double-entry bookkeeping techniques. In general, models should include banking, as what banks create money for strongly influences which sectors will prosper, and how much money and debt banks create will affect financial stability.	High	Almost all non-mainstream economists find the current paradigm means economic analysis is too narrowly focused on equilibrium ideas
13. Taxation and/or the issuing of government bonds can be tools to suppress or delay demand to avoid an inflationary wage-price spiral.	High	
14. Taxation can direct people's spending – for instance away from fossil fuels into low carbon products. For example, the carbon fee and dividend policy could be used to direct spending away from carbon without disadvantaging the least well-off in society.	High	

Find out more by visiting:

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To face the climate crisis, we must rethink economics. This briefing describes how the UK economy works based on the works of many non-mainstream economists. It dispels the current economic orthodoxy of fiscal rules and taming inflation, shows banking is key for a thriving economy, and gives different options for funding public spending.

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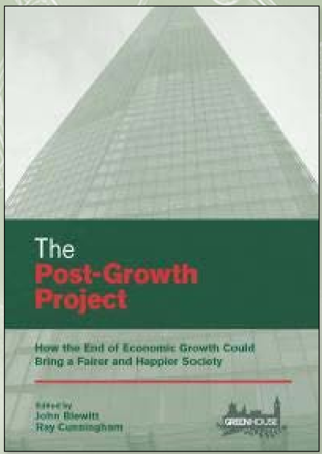

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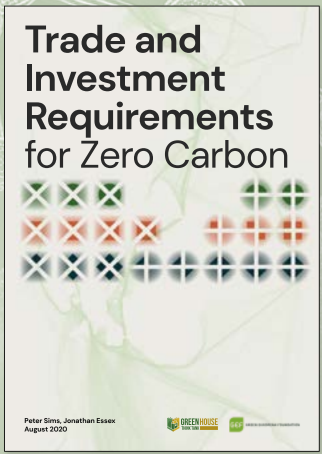

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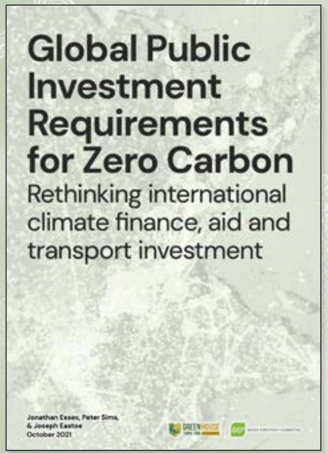

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