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## Public debt, public wealth and economic dynamics

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By  
**Dimitri Zenghelis**  
**Annabel Manley**  
**Julia Wdowin**

## Summary

The unprecedented government response to the global pandemic has pushed public debt in many countries to historic highs, relative to output. As the focus shifts from rescue to recovery, there are calls for further spending to enable economic recovery post-COVID-19, even though fiscal deficits are already large, recognising that monetary policy alone cannot continue to support global growth. Additional public investment is needed to boost productive capacity, as well as provide a short-term economic stimulus and absorb private desired saving.

Despite the recognised need for fiscal stimulus, the big increase in borrowing and hence government debt has raised concerns about debt sustainability, and potential limits to the governments' additional room to borrow. Excessive public indebtedness entails risks. Managing the public finances well over the long term reduces vulnerability to future debt crises. So should we be worried, and should governments start to plan the next round of tax increases and spending cuts to restore fiscal health?

This policy brief assesses the arguments for and against fiscal expansion and rapidly rising public debt as a means to invest in comprehensive wealth. It finds that although there are costs associated with increased public indebtedness, for most countries able to borrow in their own currency these do not currently outweigh the benefits. We set out clear evidence that sustainable, inclusive and resilient growth is the best way to address public sector indebtedness over the medium term; and that the appropriate level of debt/GDP depends on the economic context.

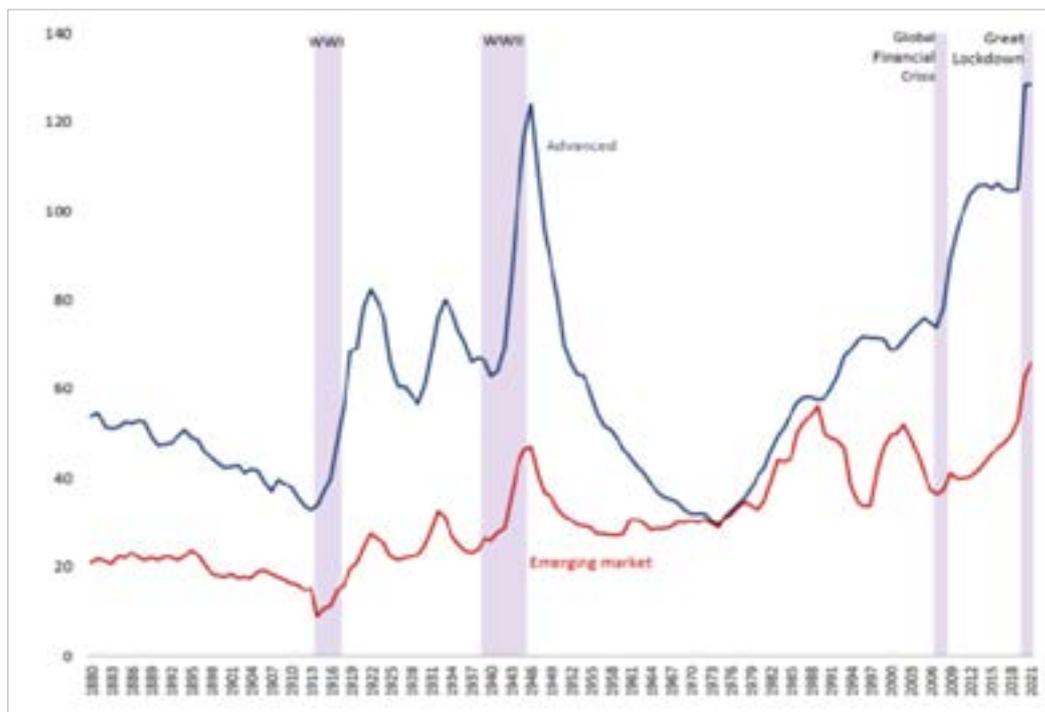
There is no magic ceiling to public debt/GDP. In most developed economies, that level has ample scope to rise to historic highs, relative to the recent norm, without cause for alarm provided the fiscal stimulus is carefully targeted to generate a sustainable long-term growth impact. Indeed, this offers the only secure avenue for bringing debt/GDP down again in the future. By contrast, aiming to balance budgets prematurely after such a major economic shock is likely to prove self-defeating.

### Higher public debt has been necessary to keep the private sector afloat

Governments have had to [step in at scale](#) to support businesses and livelihoods. The pandemic has already prompted an unprecedented global fiscal policy response of [close to \\$12 trillion](#) and, at the time of writing, the disease is not under control. Expansionary policies are also being devised for the recovery phase once the worst of the pandemic has passed. These are founded on the need to invest in public infrastructural capacity to support the new economy.

The scale of spending needed has already led to concerns about repaying enlarged public debt and hence where there is limited 'fiscal space'. Higher public debt is [the appropriate shock absorber](#) to respond to unexpected crises adversely affecting businesses and jobs. As a result [UK](#) and [US](#) public debt in 2020-2021 is expected to rise above the value of annual GDP. Debt ratios are historically elevated and, in many cases, advanced economy public debt now exceeds the World War II peak of around 120% of GDP (Figure 1).

**Figure 1. General government debt, % GDP**



Source: IMF data and short term projections <https://blogs.imf.org/2020/07/10/fiscal-policies-for-a-transformed-world/>

### Fiscal policy will continue to play a more central role

The growing consensus favouring fiscal activism began after the financial crash of 2008. Even before 2008, but most definitely afterwards, the performance of major economies had been disappointing. GDP growth and [productivity growth were slow](#), relative to their long-term trends. Inflation and nominal interest rates were historically low, and most tellingly, so was the real (inflation-adjusted) rate of interest. Real rates near or below zero reflect an excess globally of desired savings relative to desired investment. This indicates that what was needed was [markedly higher investment](#), to absorb the savings, boost demand and increase supply. This surplus of desired private saving is at the heart of the [liquidity trap and net investment shortfall](#) that has plagued the global macroeconomy, which governments [should have been actively correcting](#) since 2008. This is because the necessary investment shows no sign of being driven by the private sector.

The process of deleveraging or reducing debt since the 2008 recession, aging work forces, income inequality, corporate short-termism, growing monopoly power, and the build-up of foreign exchange reserves by some countries are [among the reasons cited](#) for the trend towards greater desired saving and lower productivity worldwide. Greater precautionary saving due to the global pandemic and recession has exacerbated the downward pressure on rates.

At the same time, the global financial crisis highlighted the economic management [shortcomings of fiscal and monetary policy coordination](#). As well as low productivity and wage growth, growing discontent, societal unrest, stagnating or falling standards of living became a feature of the recovery period. Concerns about climate change have been compounded in 2020 by fears about the vulnerability to unexpected shocks like pandemics. All the while,

new technologies, both digital and related to the net zero transition, expose new risks and opportunities threatening old sectors and markets while stimulating others.

After the crash of 2008, central banks were given the primary responsibility for driving recovery. The guiding macroeconomic principles at the time favoured monetary over fiscal policy, on the argument lowering taxes and raising spending were blunt instruments compared with monetary policy, with long and variable lags often rendering them to slow to dampen the economic cycle, and indeed often tended to amplify it. Instead the focus of fiscal policy was [on debt sustainability](#) and the efficiency of the tax and spending system. As a result, fiscal policy was little used at the global level after the first two years following the 2008 crisis.

The increasingly ambitious monetary measures introduced after 2008 were likely to have prevented a far deeper depression. However, they failed (on their own) to generate a sustainable, balanced and resilient recovery. The US, EU and Japan have been in a liquidity trap (short-term policy rates at, or close to, zero) for most of the past 12 years, long before 'COVID-19' became a household word. Productivity growth remained slower than expected. With the knock to confidence caused by the recent pandemic, it is now widely acknowledged by economists that monetary policy alone is unlikely to be sufficient this time. But if governments do respond by borrowing more, what does this imply for debt sustainability and any limits to 'fiscal space'?

### Debt dynamics and 'r minus g'

The prospect of mounting public debt levels, debt servicing costs and debt sustainability are set to become growing concerns over the coming years. Yet debt sustainability depends on whether interest on the amount borrowed can easily be repaid and public debt remains very affordable by historical standards because interest rates are so low. The standard equation for the sustainability of debt dynamics illustrates these favourable dynamics:

$$\text{Change in } dt = -pt + (r - g) * dt-1$$

Where  $d$  is debt/GDP,  $p$  is the primary budget balance (public borrowing after interest payments),  $r$  is the rate of interest and  $g$  the rate of nominal GDP growth.

This formula says that, all else being equal, if an economy grows faster than the rate of interest charged on its stock of debt, then its debt to GDP ratio will fall, as long as the primary budget deficit is balanced or in surplus. This is because the numerator of the ratio, debt, grows more slowly than the denominator, GDP.<sup>1</sup> Similarly, if  $r$  is greater than  $g$ , then the government will need to run a primary budget surplus to prevent debt to GDP from rising; if  $r$  is less than  $g$  it can run primary deficits without debt/GDP rising.

The relative size of growth and interest rates determine the sustainability of debt. In today's circumstances, there are good reasons to believe that the current dynamics are not only favourable now but likely to endure for some time.

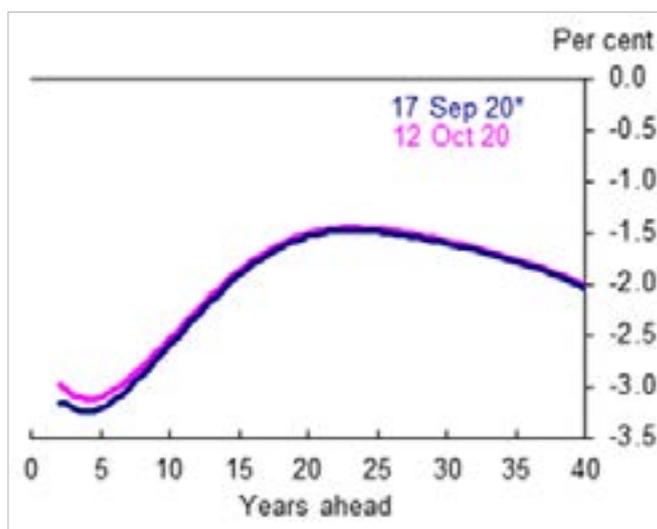
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<sup>1</sup> The equation is derived from the following relationship which describes how debt as a proportion of GDP evolves over time:  
 $dt = (1+r) D_{t-1} / (1+g) Y_{t-1} + b_t$  Where  $D_t$  is government debt at time  $t$

## Interest rates 'r' low and likely to stay low

The genuine worry is that if interest rates rise, public debt will either have to be repaid or rolled over at less favourable rates. Either would serve to act as a destabilising and deflationary influence. Yet the outlook for interest rates looks benign for debt sustainability and it is not unusual for the risk free rate of interest to remain below the growth rate for long periods. Real interest rates on government bonds in advanced economies remain close to zero. This reflects continued low demand by the private sector for funds to invest and an abundant investor appetite for safe public debt. Despite the rise in government borrowing across the world which is likely to continue, financial markets are still accepting negative real returns for a quarter of a century. The UK sold negative-yielding government bonds for the first time in May and financial markets expect them to remain below zero for the rest of the decade (as the forward yield curve in Figure 2 shows). The UK Treasury can borrow money for 30 years for less than 0.9%. The UK has an average maturity on its outstanding stock of debt almost twice as long as other G7 countries at nearly 16 years.

**Figure 2. Forward yield curve for UK gilts**

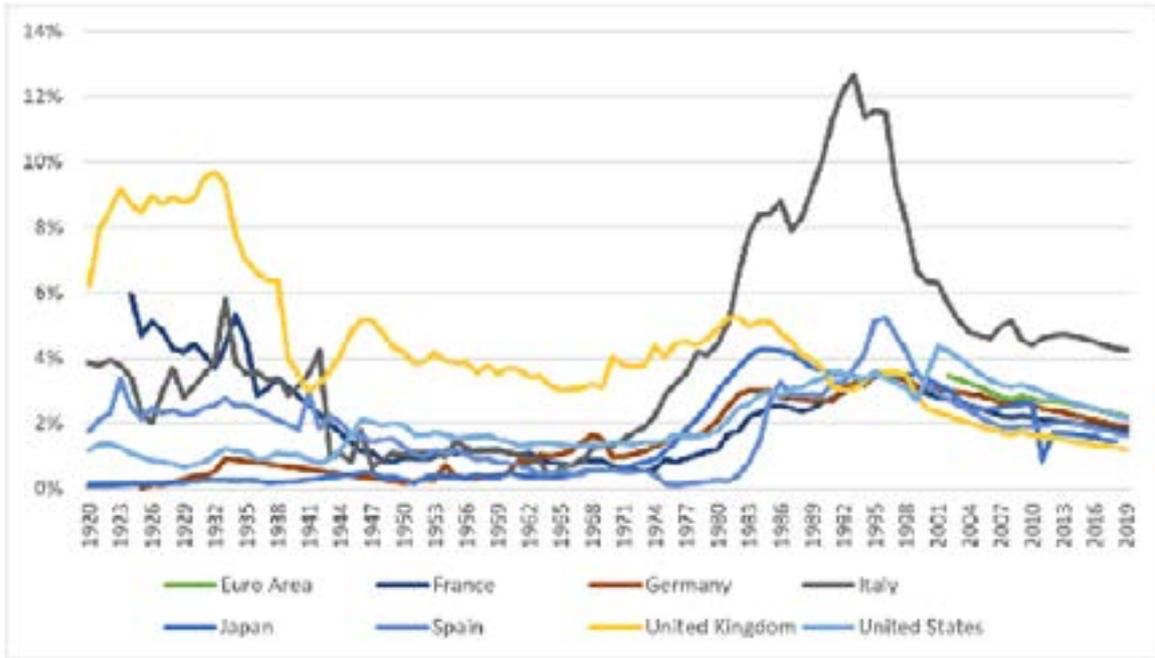


\* Source: [Bank of England calculations](#)

With central banks actively purchasing assets to keep the interest rates depressed, and inflation showing no sign of resuming, debt servicing costs seem likely to stay low. The market for government bonds not only expects a recession as a result of the coronavirus, it also expects real risk-free rates to be below zero for decades - marking a prolonged era of secular stagnation where productivity growth and inflation remain subdued. This suggests that higher public debt could help offset private sector saving behaviour driving the trend towards secular stagnation in Europe and the US.

As a result, debt service costs in most developed economies are low relative to GDP despite high levels of debt. For most developed economies the figure is around 2%. Total government debt as a percentage of GDP was 238% in Japan and 86% in the UK [in 2019](#). Yet debt servicing costs were 1.2% of GDP for both countries.

**Figure 3. General government debt interest payment, % GDP**



Source: IMF, International Financial Statistics, World Bank

### Building forward means fiscal policy which sustains sustainable growth 'g'

With interest rates likely to stay low, at least for the time being, the other important part of the calculation is the extent to which economic growth can help keep debt sustainable. Future growth cannot be guaranteed so there is a risk involved, but at present there are immense opportunities for governments to stimulate growth. If investment funded by public borrowing manages to boost growth in a sustainable manner, this offers the most robust way to keep the level of public debt sustainable. If successful, fiscal activism and [higher public debt could help](#) offset private sector behaviour and potentially reverse the trend towards secular stagnation in Europe and the US. This would raise real interest rates and increase debt servicing costs. But if the government succeeds in stimulating sustainable growth, this still offers the strongest opportunity to keep debt sustainable.

Growth lowers debt/GDP by swelling the denominator. If the recovery plan can restore  $g$ , growth of GDP in nominal terms, to its trend rate of around 4% and  $r$ , the interest rate, to around 2%, then a government economy can run a primary deficit of the order of 2% of GDP while keeping debt/GDP unchanged – or slowly but steadily reduce the debt ratio with a smaller primary budget deficit. If public funds are spent on growth-boosting [public investment in green infrastructure](#), R&D, skills and education, they can further support growth. Adding back interest payments to the primary budget, the medium-term sustainable deficit is of the order or 4% to 5% of GDP.

There is also a prospect that growth will shrink the numerator of the debt/GDP ratio too. For example, targeted investment might have a multiplier of 3, meaning a £3 increase in GDP for every £1 of investment might generate public revenues sufficient to pay off the extra debt. The combined effect on both the numerator and denominator of the debt/GDP ratio explains why, under the right conditions, [borrowing to invest can be so much more sustainable](#) in

terms of public debt management than seeking to target balanced budgets directly.

Empirical estimates suggest that during a severe downturn, fiscal multipliers are substantial. Each pound of public borrowing can ultimately raise GDP by [£2 to £3](#), in the short-term by increasing immediate demand and in the longer term by building the economy’s supply side capacity. Studies from [NBER](#) and the [IMF](#) suggest that [fiscal multipliers](#) associated with government spending range from near zero when the economy is operating close to capacity to about 2.5 during recessions. Another [IMF study](#) found that in the medium run (three years), the average multiplier for the EU is about 1 in normal times, but between 1.6 and 2.8 when interest rates are close to the zero bound, as they are now. The latest IMF Fiscal Monitor ([September 2020](#)) makes a strong case for increased public investment in “[job-rich, highly productive, and greener activities](#)” in spite of growing public debt, and suggests the [current multiplier could be around 2.7](#).

History shows that the most successful and prolonged periods of debt consolidation have occurred during periods of sustained high growth, and low risk free interest rates, whereas alternative approaches have been less successful and often engendered economic and social disruption (Figure 4). From a [political economy perspective](#), not to mention that of good governance, growing out of debt has the additional merit of generating more jobs, boosting productivity and wages and therefore is less likely to be politically damaging. Investment in public wealth generates repayment of public debt.

**Figure 4. Options for reducing the public debt/GDP ratio**

	REAL	NOMINAL
Reduce numerator	<p><b>Austerity</b></p> <p><b>Cut spending/raise taxes</b></p> <ul style="list-style-type: none"> <li>• High cost to the economy and society</li> <li>• Often not effective (because of denominator effect)</li> </ul> <p><i>E.g. 1920s and UK/EU 2010</i></p>	<p><b>Default</b></p> <p><b>Restructure or creditor “haircut”</b></p> <ul style="list-style-type: none"> <li>• Cost to economic reputation</li> <li>• Increased future borrowing costs</li> </ul> <p><i>E.g. Rare in advanced economies that borrow in their own currency</i></p>
Increase denominator	<p><b>Growing the economy</b></p> <p><b>Sustainability raise GDP</b></p> <ul style="list-style-type: none"> <li>• Effective</li> <li>• Positive impact on denominator by raising net public revenues</li> <li>• Positive for economy and society</li> </ul> <p><i>E.g. UK Post-Napoleonic wars 19thC; OECD 1950s/60s; mid-1980s-2008?</i></p>	<p><b>Inflation</b></p> <ul style="list-style-type: none"> <li>• Effective but at economic cost</li> <li>• Hard to restore monetary credibility</li> <li>• Uneven distributional impact on society</li> <li>• Increased future borrow costs</li> </ul> <p><i>E.g. OECD late-1960s - mid-1980s</i></p>

## Rising public debt is essential to support sustainable growth, but not indefinitely

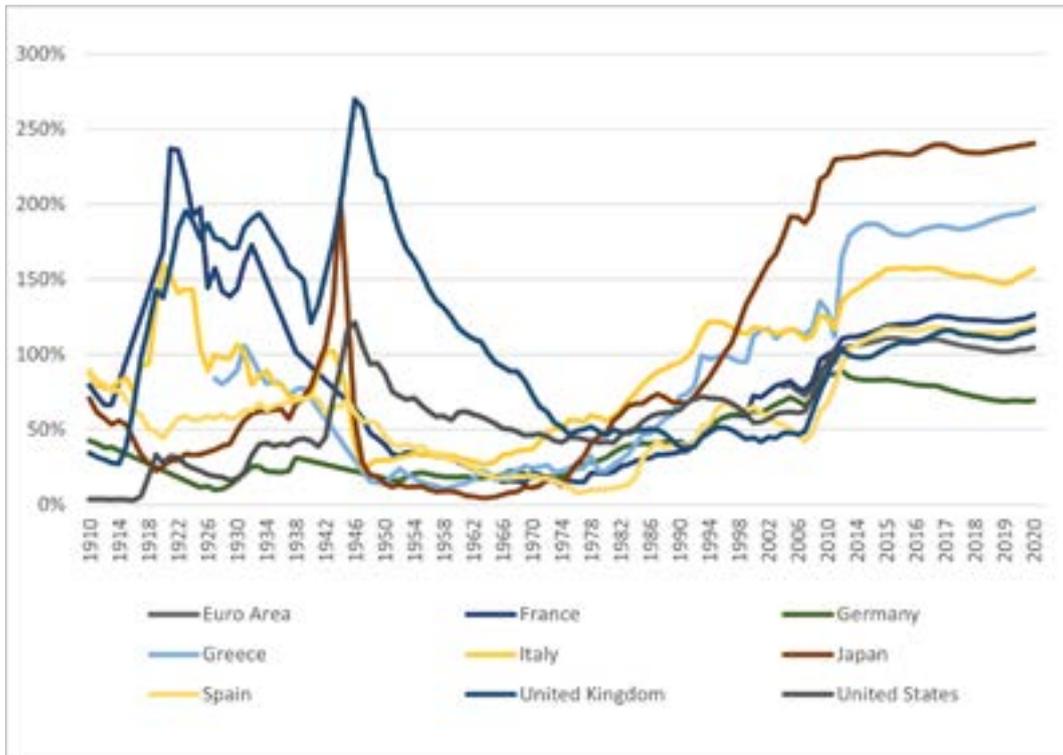
The fact that fiscal multipliers are high and servicing debt interest is currently affordable is important, but does not mean that [public debt ratios can rise forever](#). If fiscal stimulus is successful in restoring growth, debt servicing costs would be expected to rise as real bond yields return gradually towards more normal levels. At the same time, the positive multipliers associated with public borrowing will fall, eventually falling below one when the economy is recovered and operating at capacity - that is, where public borrowing and investment crowds out private activity. In the long-term, high public debt:

- increases the need for [future taxes](#) which are likely to be [distortionary](#), leading to inefficient investment and spending decisions, reducing resources available for investment to expand productive capacity and eroding living standards of future generations;
- reduces fiscal ammunition for future countercyclical policy, especially where interest rates rise sharply;
- increases the risk of debt default and insolvency. Expectations play a key role. If lenders begin to fear that the government may be unable to repay public-sector debt in full or might allow inflation to increase, then the default risk premia and inflation premia on government bonds may rise sharply, [exacerbating the tightening of credit conditions](#) and increasing the cost of public investment;
- is also seen as morally flawed as it reflects efforts to support current consumption at the expense of future generations.

The risk of inflation as a driver of monetary tightening remains ever-present. However such an outcome will have required a reversal of the trend towards excess desired saving as consumption and/or investment pick up. If, on the other hand, it derives from supply constraints, it is possible the monetary authorities may choose to accommodate the inflationary shock for at least a limited period, helping erode the real value of outstanding debt without sharp increases in rates. As baby-boomers move from being the prime saving age cohort to pensioners drawing down their savings, interest rates and taxes may have to rise. Yet these risks seem a long way from the present environment of secular stagnation, and they should not be unduly overplayed.

Some governments and central banks may decide that continued monetisation, whereby borrowing is effectively financed through the printing of money, offers the best opportunity to stimulate the economy and reduce the debt to GDP burden. This approach can raise borrowing costs suddenly, as central banks have to sell the government debt they hold back to the market just as higher interest rates are required to tackle prospective inflation. Low debt-servicing costs are [no guarantee against sudden fiscal crises](#) when financial markets decide debt is not sustainable, as occurred in Greece over the last decade. This testifies to the presence of [multiple expectations augmented equilibria](#), whereby the belief that debt is more risky raises the investor risk premium, increasing the fiscal burden and making debt more risky. High public debt increases vulnerability: the larger the debt, the bigger the economic ramifications of debt mismanagement and the greater this risk of such a tipping point.

**Figure 5. General government debt, % GDP, 1910-2020**



Source: IMF, International Financial Statistics

In short, there is no level nor even a range of the public debt to GDP ratio that is inherently unsustainable, so long as debt can be controlled. It depends entirely on context and circumstance. Japan has sustained public debt at well over 200% of GDP, reflecting demographics and correspondingly high private net saving, without obvious sustainability issues. Debt/GDP levels in the UK have at times since 1700 been much higher than they are currently (Figure 6).

**Figure 6. UK Government debt, % GDP, 1700-2016**



Source: Thomas and Dimsdale (2017)

Long-term sustainability also depends on who holds the public sector debt. Countries incur debt to a range of creditors, including increasingly central banks, private bond holders, banks, other countries and multilateral lenders such as the World Bank. Whereas borrowing from abroad increases the tax burden on future citizens to make interest payments abroad, debt that is financed domestically—as is predominantly the case with a global shock affecting every economy like COVID-19—redistributes domestic wealth. What’s more, in circumstances such as the present, governments are not ‘borrowing from the future’ as the rise in public borrowing is [matched by an almost equal and opposite](#) rise in private saving, and it is those citizens who will be repaid. Figure 7 shows UK private and public net financial balances, but a similar picture holds for all developed economies.

**Figure 7. Sector financial balances (net lending), UK % GDP**



Source: Office of National Statistics, data to first quarter of 2020. Author’s estimates based on [OBR fiscal estimates](#) and trade data for the second quarter of 2020

This reflects the fact that financial assets are not net wealth. Every debtor/liability has a corresponding lender/asset. With many wealthier households being ‘forced to save’ (as spending options such as travel, restaurants, entertainment and holidays are closed to them), [economists](#) expect the household saving ratio to rise from its normal post war range of 5-10% to 20%. The recent rise in public borrowing has been the reciprocal as the public sector mops up the sharp rise in private sector surpluses. A rise in the sums attributable to both creditors and debtors increases leverage and creates financial vulnerabilities when difficult conditions (such as recession, stock market collapse or high interest rates) jeopardise repayment prospects, yet so far the markets are not unduly concerned.

Finally, it is worth stating that the sustainability of public debt depends on the assets it is used to finance. The Wealth Economy approach has argued for reframing fiscal sustainability and debt dynamics in terms of investing in assets that generate sustainable private and public returns. If public borrowing is used to invest in the [productivity of public assets](#), or makes private assets more productive, it [generates returns and tax revenues](#) that allow debt interest to be repaid. The OECD has begun to measure [general government financial wealth](#), but

governments need to go further and adopt the [Wealth Economy approach](#) to measure more comprehensive assets owned by the public sector in order to assess public net worth.

### Investing in a sustainable, resilient and inclusive recovery to lower public debt/GDP

A [fiscal package based on sustainable investment](#) and resource efficiency can generate a durable economic recovery, with strong job creation and, ultimately, higher tax receipts that can deliver public sector debt sustainability. Fiscal and monetary policy will also need to work together to coordinate the appropriate maturity and term structure of public debt which the central bank purchases, and also to steer funds toward the growth of productive sectors, sentiments recently expressed by both the [Chairman of the Federal Reserve](#) in the US and the [Governor of the Bank of England](#).

Properly [managed and implemented](#), such a package can simultaneously help [reduce existing inequalities](#), exacerbated by the pandemic, and improve economic and [social resilience to future shocks](#). Targeted sustainability projects, can also act to decouple economic growth from materials use and greenhouse gas emissions. By making more of the resources we have, this can boost productive efficiency and long-term competitiveness of the economy.

Sustainable investments do well on [key growth based criteria for stimulus investments](#); they can be implemented quickly, are labour-intensive and have high multipliers. A mix of direct investment, policies (including pricing, standards and regulations) and institutional reforms can also [leverage large amounts of private investment](#) by creating [confidence about future demand](#). Private capital will fund most of the investment needed to recover after COVID-19, but it will require clarity and [certainty from government](#) regarding policies and institutions, to align investor expectations and restore confidence. Failure to mobilise the private sector will increase costs to the Government and to consumers.

The [Wealth Economy approach](#) argues for investment in productive, sustainable and resilient physical, [human, social, intangible and natural capital](#) in regions that need it most in order to generate sustainable prosperity. Investment in comprehensive wealth includes locking into low emission infrastructure, securing the skills, jobs and ideas necessary for the 21st century economy, while recognising the need to [enable those affected by change](#) to participate in the new economy.

Fiscal crises can occur at different levels of public debt/GDP, but they tend to be driven by periods of sustained low growth or high interest rates or both. There are costs associated with increased public indebtedness, but these [do not currently outweigh the benefits](#). Governments would be wise to retain a medium term [strategy to contain public debt](#) and ensure that current budgets are balanced over the economic cycle (whereby borrowing is used only to invest). But at present, the key aim is for recovery plans to avoid depression and offset excess desired saving by the private sector at a time when debt remains historically affordable. Renewed public investment is necessary to drive durable and resilient growth. A premature tightening of public budgets is likely to be counterproductive in the long run.

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