



UK Government debt post Corona¹

Policy options to reduce the debt-to-GDP ratio without austerity

Introduction

Having spent the last decade consolidating the public finances after the Great Financial Crisis, the British government now finds itself in the position of potentially having to do it all over again as a result of the Corona crisis.

At the beginning of this year the government was confident enough to announce that the decade of austerity was finally over, then the Corona (Covid-19) crisis struck and economic activity collapsed. As elsewhere, the government's policy response was unprecedented and will have prevented even bigger economic damage.

Once the immediate crisis is over and the economic recovery established though, the government needs to ask itself what it wants to do with the national debt, which will have risen sharply as a result of the economic collapse and the policy response. Who will pay and when? Will it issue, for example, perpetual bonds and make the new debt permanent? Or will the government try to reduce the share of debt in GDP again, say, to pre-Corona levels? And if the latter, over what time horizon? The answers to these questions are as much of a political as economic nature.

This note presents projections, which illustrate the fiscal challenges ahead. It presents some rough estimates of the fiscal tightening required to bring debt-to-GDP back to pre-Corona levels. It suggests that a fiscal tightening of around 3-4 percent of GDP might be required to achieve this objective over the coming decade. It concludes by showing what this tightening might mean in terms of tax rates.

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The economic and public finance outlook pre Corona

In mid March 2020 - just two weeks before the country went into the economic and social lockdown in response to the Corona pandemic - the UK government presented its budget. The government forecast the economy to grow by 1.1 percent this year, followed by 1.8 percent in 2021 and then 1.5 percent in 2022. The unemployment rate would edge up only marginally over the coming years, from 3.8 percent in 2019 to 3.9 percent in 2022, while public-sector net borrowing would remain below 3 percent of GDP over that period. As a result public-sector net debt, the government's preferred measure of debt, would be on a downward trajectory as a share of GDP (see Table 1).

	2019	2020	2021	2022
Real GDP growth (%)	1.4	1.1	1.8	1.5
Nominal GDP growth (%)	3.3	3.1	3.8	3.7
Unemployment rate (%)	3.8	3.8	3.8	3.9
Public-sector net borrowing (% of GDP) ^a	2.1	2.4	2.8	2.5
Public-sector net debt (% of GDP) ^a	79.5	77.4	75.0	75.4

^a Fiscal years (2019-20 etc.)
Source: HM Treasury (2020a).

The Corona crisis: the deepest recession in living memory

Within weeks of the March 2020 budget, the UK economy and world economy more widely suffered the worst economic collapse in living memory, if not in centuries.

In its May Monetary Policy Report, the Bank of England (BoE) published an “illustrative” scenario for 2020 to 2022. In this scenario the BoE assumes that GDP would fall by 14 percent this year (compared with a 4 percent drop in 2009 during the Great Financial Crisis), followed by a rebound of 15 percent next year and then a return to more or less normal of 3 percent growth in 2022. In that scenario the unemployment rate would double this year to 8 percent before falling again and returning to pre-crisis of 4 percent in 2022. In mid June the Office for National Statistics reported that GDP had dropped by 20 percent between March and April (ONS, 2020).

Given the very high degree of uncertainty, the BoE also discusses a number of key sensitivities around this scenario. The risks are generally more on the downside, with long-term “scarring” of the economy considered a possibility.

An unprecedented policy response

As in most other developed countries, the government and central bank in the UK responded to the crisis in an unprecedented way.

The government announced a raft of measures, including (but not limited to) increased spending on public services (in particular health care), self-employed income support, tax deferrals, direct grants to businesses, business rates holidays, and most prominently the “furlough” scheme supporting the labour market during the crisis.

The Office for Budget Responsibility (OBR, 2020) has estimated that these measures will cost around £120 billion in terms of increased spending (half of this on the “furlough” scheme) and £18 billion in terms of reduced tax revenue (£12 billion in net terms). These estimates, published in June, are significantly lower than estimated earlier.

Meanwhile, the Bank of England lowered its interest rate to 0.1 percent, the lowest ever, reduced the counter-cyclical buffer to 0 percent, and increased its holdings of UK government bonds and sterling non-financial investment-grade corporate bonds by £300 billion to a total of £745 billion.

Illustrative economic and public finance projections up to 2030

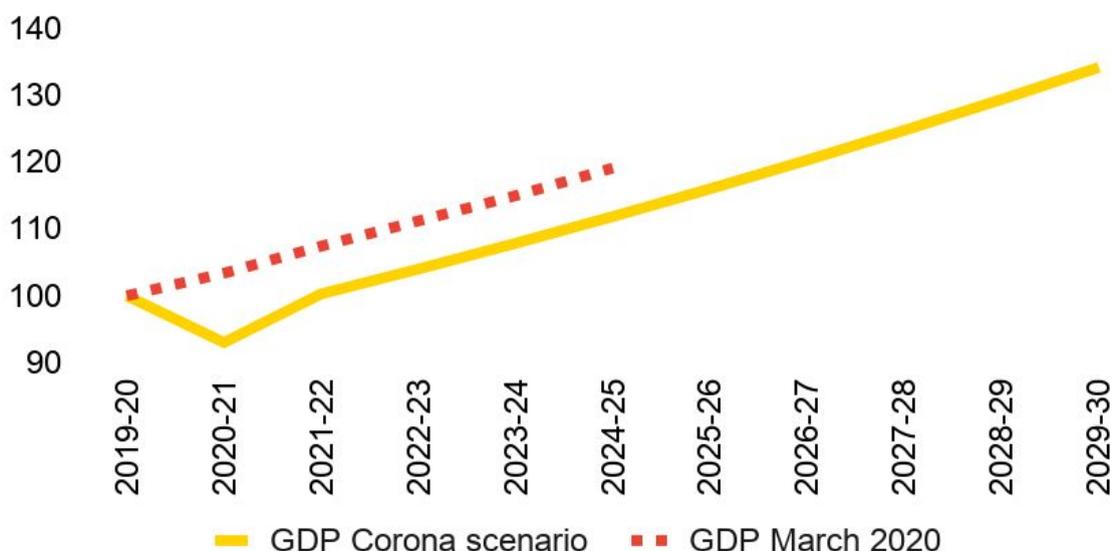
This section presents illustrative economic and public finance projections based on a number of assumptions, which are set out in more detail in the annex.

Baseline

The baseline projections assume that GDP grows in line with the average forecasts of independent forecasters compiled by HM Treasury in 2020-21 and 2021-22. They predict the economy to shrink dramatically in 2020-21 (by an average of -7.9% in real terms) and then to rebound strongly (+6%) in 2021-22 - a more or less “v-shaped” recovery. From 2022-23 onwards it is assumed that nominal GDP grows at the same rate as the average growth rate during the period 2010-19. This implies that there will be no “catch up” in later years. It does imply though that the economy is projected to return to a pre-Corona growth path, which is not certain given circumstances (Chart 1).

Chart 1: Gross Domestic Product

(nominal, 2019-20 = 100)



Sources: HM Treasury, author's own calculations.

On the spending side, the baseline projections assume that current policies - as expressed in the forecasts for Total Managed Expenditure (TME) excluding debt interest up to 2024-25 - remain unchanged. The exceptions are Corona-related measures (see above), which are added in 2020-21. For 2021-22 it is assumed that these measures are half as much as in the previous year - beyond that no further Corona-related measures are included.

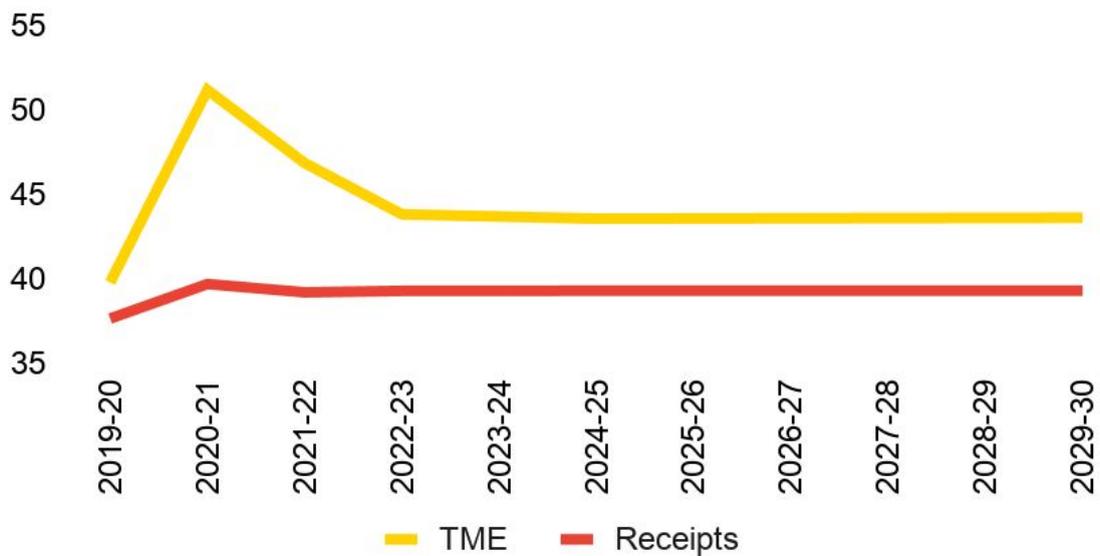
On the revenue side it is assumed that receipts from income tax, national insurance contributions (NICs) and value-added tax grow in line with the economy. This is because these revenue items are generally closely related to economic activity, e.g. VAT receipts directly depend on private consumption, which makes up the largest part of GDP.² All other receipts are assumed to be the same in nominal terms as forecast in the March 2020 Budget. From 2025-26 onwards it is assumed that primary spending and receipts will grow in line with the economy. The annex provides a more detailed discussion of the assumptions and data sources used.

Using these assumptions, spending and revenue both increase as a share of GDP in 2020-21, largely reflecting the dramatic decline in GDP. The share of spending in GDP rises by more than that of revenue. This reflects, first, the additional Corona-related measures (which were predominately on the spending side) and, second, the close relationship between income tax, NICs, VAT and GDP. With the economy rebounding in 2021-22, the shares decline again and then stabilise. See Charts 2 and 3. The annex shows TME and receipts in nominal terms.

² Note that the government's "furlough" labour-market programme will have weakened this close relationship as it has supported income and paid corporate NICs. Income tax and NICs receipts are thus likely to have fallen by less than the decline in GDP would suggest.

Chart 2: Total Managed Expenditure and Receipts

(share of GDP)



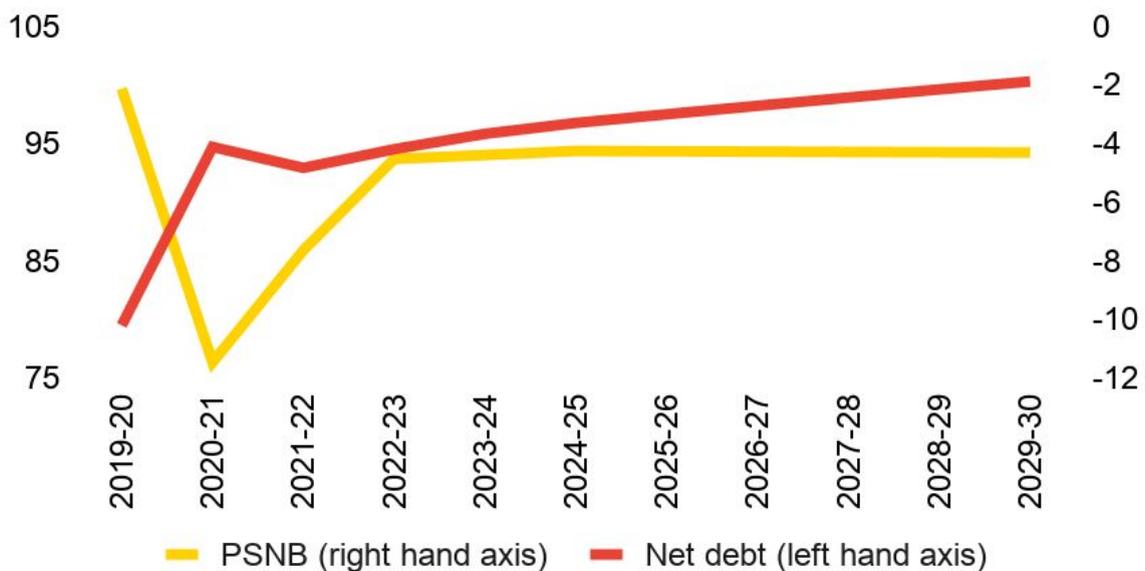
Sources: HM Treasury, OBR, author's own calculations.

Reflecting the sharp increase in TME in 2020-21, public-sector net borrowing rises to around 11.5% of GDP before converging towards 4% of GDP in later years.

In the baseline illustrative projections net debt jumps from around 80% of GDP in 2019-20 to nearly 95% in 2020-21 and then edges up slowly, reflecting the primary deficits in later years. As a result of the assumed very low debt interest rate, the debt path does not explode though.

Chart 3: Public-sector net borrowing and net debt

(share of GDP)



Sources: HM Treasury, OBR, author’s own calculations.

Table 2 summarises the key growth assumptions and results of the public-finance projections in this scenario.

Baseline Corona scenario				
	2020	2021	2022	2030
Nominal GDP growth (%)	-7.0	7.8	3.8	3.8
Unemployment rate (%)	n/a	n/a	n/a	n/a
Public-sector net borrowing (% of GDP) ^a	-11.5	-7.6	-4.5	-4.3
Public-sector net debt (% of GDP) ^a	94.7	92.9	94.5	100.3

Source: Author’s own calculations based on HM Treasury (2020b).

Variants

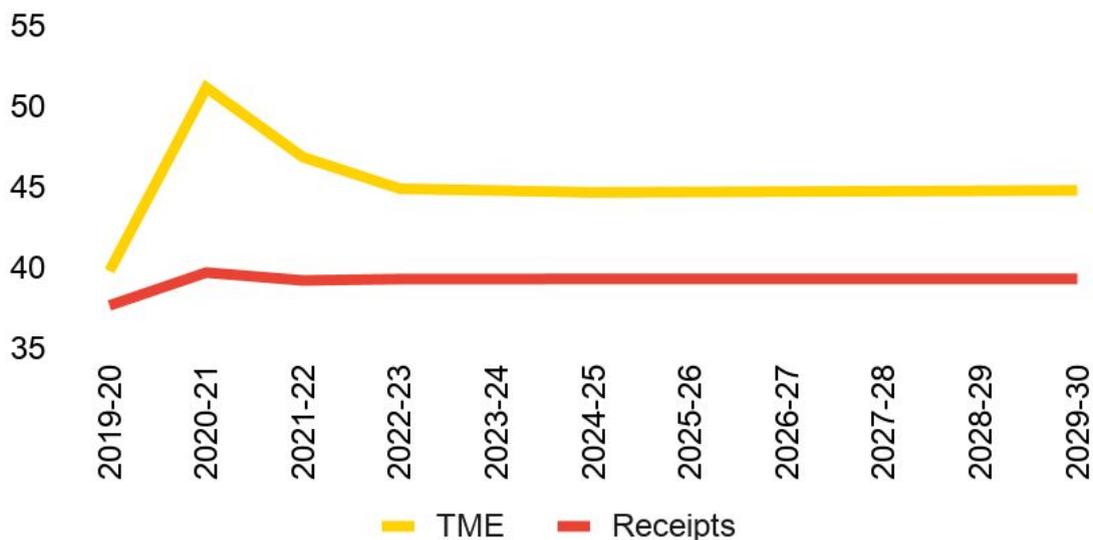
A number of variants could be considered, including those capturing different types of economic recovery. For example, the economic recovery might turn out to be more drawn out than currently assumed. This has been referred to as a “u shaped” or “tick-shaped” recovery. As is the case in the baseline, a weaker recovery in 2021-22 might lead to somewhat faster growth in subsequent years as households increase spending above trend to compensate for lost consumption earlier. Similarly with investment in the corporate sector.

Given these uncertainties regarding behavioural changes, we focus here on spending measures. In particular we assume that TME will be £25 billion - around 1 percent of GDP - higher in 2022-23 as a result of higher government spending on Universal Credit and health care. The former is an automatic stabiliser and can be expected to fall as the economy recovers and unemployment declines, the latter is a discretionary policy choice. Ultimately the increase in spending could be entirely on health care. This seems justified and reasonable - and could even be on the low side - given the repercussions of the Corona crisis and the OBR's projected increases in health-care spending as a result of population ageing and non-demographic cost drivers (OBR, 2018). For comparison, in the March 2020 budget, the government planned to spend £178 billion on health in 2020-21.

In subsequent years it is assumed that this additional spending rises in line with nominal GDP growth and so remains constant as a share of GDP. Charts 4 and 5 show the evolution of spending and revenue, and public-sector net borrowing and net debt in this variant scenario.

Chart 4: Total Managed Expenditure and Receipts (variant)

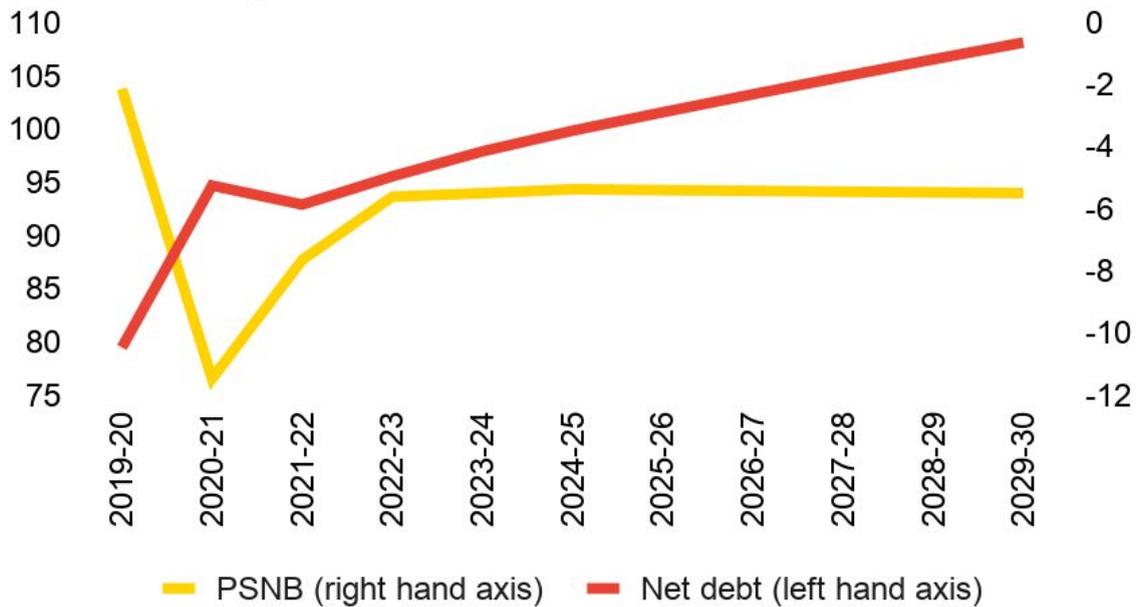
(share of GDP)



Sources: HM Treasury, OBR, author's own calculations.

Chart 5: Public-sector net borrowing and net debt (variant)

(share of GDP)



Sources: HM Treasury, OBR, author's own calculations.

Sensitivity to debt interest rate

While net debt rises as a share of GDP, the trajectory is not explosive. This mainly reflects the fact that debt interest rates - at around 1.5 percent - are very low.³ The table below shows how sensitive the debt to GDP trajectory is to the debt interest rate. Assuming a 250bps increase in interest rates from 2022-23 onwards leads to a near 20 percentage point increase in the net debt to GDP ratio by the end of the decade. While it is unlikely that interest rates will increase that much given the depressed economic conditions and outlook, it is still a good reminder how crucial interest rates (or more precisely the interest-growth differential) are in driving debt dynamics (see Table 3).

³ The figure presented is derived from debt interest payments as a share of previous year's stock of debt. Debt interest rates for new issuance is even lower.

Table 3: Net debt to GDP ratio (percent)			
Sensitivity to debt interest rate (in alternative scenario)			
	2020-21	2024-25	2029-30
Baseline	94.7	99.9	108.2
+100bps	94.7	102.6	115.6
+250bps	94.7	106.8	127.7

Sources: HM Treasury, OBR, author's own calculations.

Policy options to reduce government debt

There is a vast body of academic literature on the sustainability of public debt.⁴ This note does not contribute to this debate but merely asks the question what the government could do to reduce the net debt to GDP ratio by 2029-30 to its pre-Corona level of 80 percent. In the public finance literature this analysis is called “fiscal gap” analysis (EY, 2016). This is just one of many policy options available to the government - given the severity of the crisis, it could, for example, also aim to reduce the debt over a longer period or - indeed - not at all. In that case it could issue perpetual bonds, which pay a coupon but do not have a maturity date.⁵

The March 2020 budget signalled that the current government has moved on from previous austerity policies. Indeed, given the economic and social consequences of the Corona crisis, it is unlikely that any government would pursue a policy of austerity going forward.

The policy options will thus have to be found on the revenue side. For simplicity it is assumed that taxes rise in 2022-23 and that this increase is then maintained in terms of share of GDP in subsequent years.⁶

Required tax increases to reduce the debt-to-GDP ratio

Charts 6a and 6b shows the debt-to-GDP paths in the baseline and variant scenarios based on additional revenue measures. In the former case, a 3 percent of GDP increase in 2022-23 is required (and thereafter maintained) to reduce the ratio back to 80 percent by the end of the decade. In the variant scenario the required increase is 4 percent of GDP, reflecting the higher spending in this scenario.

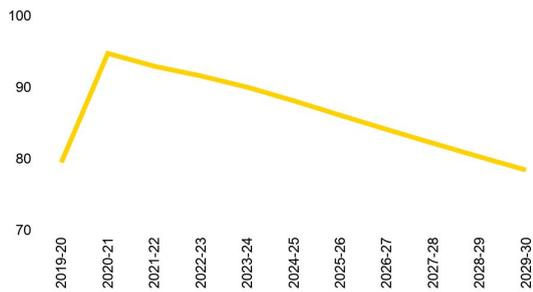
⁴ For a recent overview see Debrun *et al* (2019).

⁵ George Soros has, for example, suggested that the European Union uses perpetual bonds to finance its climate change and Corona relief initiatives. See Soros (2020).

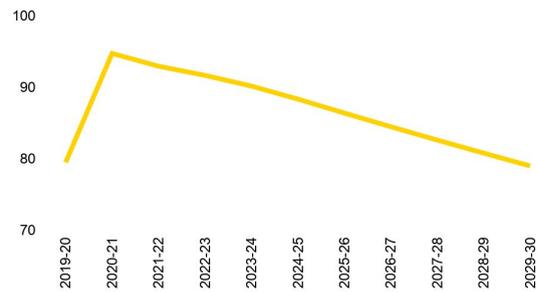
⁶ Different profiles are feasible, including frontloading (in other words making a bigger contribution to the debt reduction early on) or backloading (starting with a small contribution to the debt reduction, which is then gradually increased). The chosen profile will depend on political considerations and economic circumstances.

Charts 6a and 6b: Net debt
(share of GDP)

Baseline with 3 pp increase in tax revenue



Variant with 4pp increase in tax revenue



Sources: HM Treasury, OBR, author's own calculations.

Policy options

What does the required increase in receipts as a share of GDP translate into in terms of tax? We look at the four single largest revenue items, namely income tax, value-added tax, national insurance contributions and corporation tax. They make up around two-thirds of all government revenue.

As the required increases in tax revenue are too large to be absorbed by just one type of receipt, a combination of tax increases will be required, including those not considered here and new types of taxation. Further reducing tax relief on pension contributions, which would reduce revenue lost, could also be part of such an effort. Table 4 shows the required increases evenly spread over the four main revenue categories.

Table 4: Government receipts
(share of GDP)

	2020-21	Baseline (+3 percent of GDP)	Variant (+4 percent of GDP)
Income tax	9.0	9.75	10.0
Value-added tax	7.0	7.75	8.0
National insurance	6.5	7.25	7.5
Corporation tax	2.5	3.25	3.5

Sources: HM Treasury, OBR, author's own calculations.

For comparison, tax relief on pension contributions amounted to £37.2 billion in gross terms and £19 billion in net terms (i.e. less income tax liable on payments from pension schemes)

in 2017-18, while tax relief on NICs stood at £16.5 billion. Reducing the generosity of pension and/or NIC tax relief could thus contribute to reducing debt as a share of GDP over the coming decade.

Table 5 shows *rough estimates* of the tax rates required to achieve the increases.

	2020-21	Baseline (+3 percent of GDP)	Variant (+4 percent of GDP)
Income tax			
- Basic	20	21.5	22
- Higher	40	43	44
- Additional	45	48.5	50
Value-added tax	20	22	23
National insurance			
- Employer	13.8	15.4	15.9
- Employee	12	13.4	13.8
Corporation tax	19	25	27

Sources: HM Treasury, author's own calculations.

Table 5 shows that given the existing shares of the different taxes in GDP, the required increase in tax rate varies markedly to achieve a three-quarter or one percent of GDP increase in revenue.

Concluding comments

The Corona crisis has led to the deepest economic downturn in living memory. Even if the economy recovers strongly next year and then returns to a pre-Corona growth path, the crisis will have thrown the public finances of course for many years to come.

In this paper we showed that the Corona-related measures and the sharp contraction in 2020-21 will lead to a sharp jump in the debt to GDP ratio. Over the course of this decade the ratio would then edge up further. Any increase in spending - either through the automatic stabilizers in the form of universal credit or as a result of discretionary policy decisions (say, on health care) would lead to a further increase in the debt to GDP ratio. Given very low debt interest rates, the trajectory would be steady rather than explosive.

Assuming that the government decides to return the net debt to GDP ratio to pre-crisis levels within a decade, the fiscal stance would have to be tightened by around 3 to 4 percent of GDP just to deal with the fallout of this crisis. The paper shows what this would mean in terms of tax rates for the four major revenue items. Of course, over the course of the decade many new challenges will arise - not least from the fact that the baby boomers will have moved out of employment and into retirement - and policy choices will have to take into account social, electoral and economic circumstances. A whole range of measures would

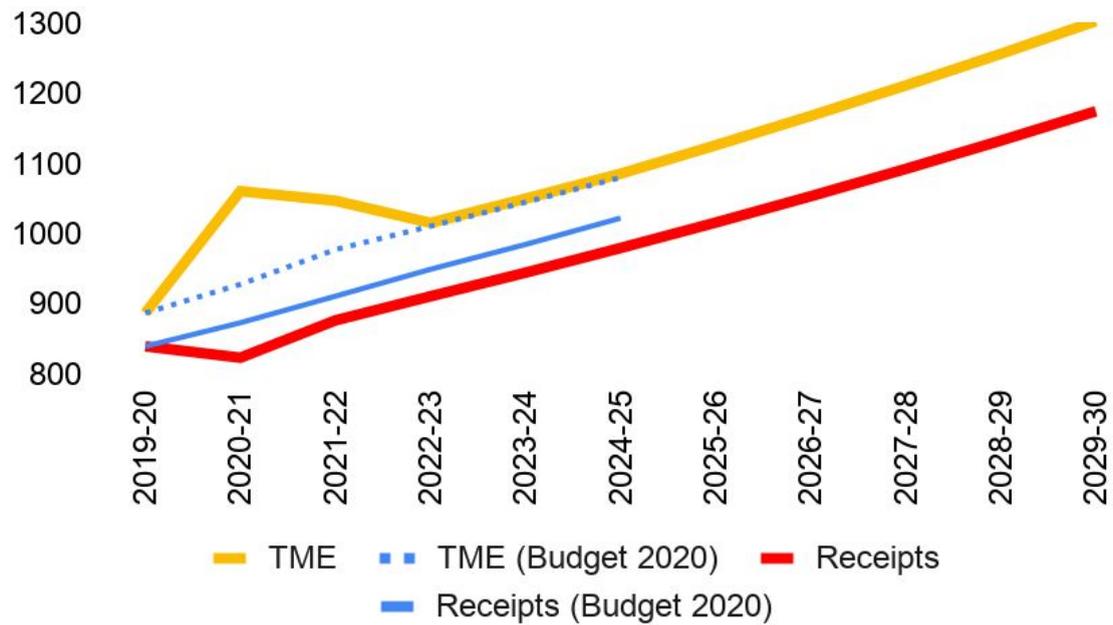
probably be used to consolidate the public finances, from slowing spending increases, for example by abolishing the triple lock state pension guarantee as has been suggested by some commentators (SME, 2020), or by raising taxes across the board and by introducing new forms of taxation, for example those that help the government achieve its climate change targets.

That said, as stated earlier, the government might just expect future generations to pay for it.

Annex

Total Managed Expenditure and Receipts

(£ m)



Sources: HM Treasury, OBR, author's own calculations.

Assumptions, data sources and references

Assumptions

Nominal GDP: For 2019-20 the actual was taken from OBR EFO. For the years 2020-21 and 2021-22 nominal GDP is calculated using the average of independent forecasts as published by HM Treasury. Given that no nominal GDP growth rate is published, this was approximated using the real GDP growth forecasts and CPI forecasts. From 2022-23 onwards, it is assumed that nominal GDP growth is 3.7% per year - the average growth rate between 2010 and 2019.

Total Managed Expenditure: Up to 2024-25, nominal Total Managed Expenditure (TME) *excluding* debt interest payments is taken from the March 2020 Budget. Beyond 2024-25, it is assumed that TME *excluding* debt interest payments grows in line with GDP. For 2020-21 Corona-related measures as published by the OBR on 4th June are added (£120bn). For 2021-22 it is assumed that these measures are half as much as in 2020-21 (£60bn). From 2022-23 onwards no additional costs are assumed in the baseline scenario. In the other scenarios these are as specified in the discussion.

Net interest rates: This is derived from net interest payments as a percentage of net debt in the previous year as published by the OBR.

Nominal Receipts: It is assumed that income tax, national insurance contributions and value-added tax grow in line with GDP throughout the period. Up to 2024-25 all other nominal receipts are assumed to remain unchanged from those published in the March 2020 budget. Beyond that, these too are assumed to grow in line with GDP.

Debt interest payments: These are calculated using net interest rates (see above) and net debt in the previous year as projected in the scenario.

Public-sector net borrowing and change in public-sector net debt: The change in public-sector net debt is the sum of public-sector net borrowing, financial transactions, valuation effects and ONS statistical changes (OBR EFO, page 136). It is assumed that these differences remain unchanged up to 2024-25 as published. From 2025-26 it is assumed that the difference is zero.

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