Covid-19 and the public finances: 10 more years of austerity?

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Institute of Political Economy, Governance, Finance and Accountability
Covid-19 and the public finances

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Presentation outline

1. Definitions
2. Public debt dynamics
3. Public sector solvency
4. Forecasting the impact of Covid-19 on the public finances
5. Policy implications
6. References and further reading
The public finances

Government departments and other public sector organisations spend and receive money. Like any other organisation, they are subject to accounting regulations governed by international reporting standards.

Unlike other organisations, the public sector as a whole (and particularly central government) has a large degree of control over its income.

In addition, when the public sector spends more than it receives it either borrows from the private sector or creates new money. This is because part of the public sector liabilities are commercial bank deposits held at the central bank, and another part is legal tender (e.g. banknotes).
Public sector liabilities, 2017-18

<table>
<thead>
<tr>
<th>Liability</th>
<th>£ bn</th>
<th>% GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government debt liabilities</td>
<td>1,347.4</td>
<td>63.4%</td>
</tr>
<tr>
<td>of which: gilts</td>
<td>1,122.0</td>
<td>52.8%</td>
</tr>
<tr>
<td>of which: bills</td>
<td>68.7</td>
<td>3.2%</td>
</tr>
<tr>
<td>of which: NS&amp;I</td>
<td>156.7</td>
<td>7.4%</td>
</tr>
<tr>
<td>Other financial liabilities</td>
<td>752.8</td>
<td>35.4%</td>
</tr>
<tr>
<td>of which: bank deposits</td>
<td>558.1</td>
<td>26.2%</td>
</tr>
<tr>
<td>of which: banknotes</td>
<td>73.3</td>
<td>3.4%</td>
</tr>
<tr>
<td>Public sector pensions</td>
<td>1,865.3</td>
<td>87.7%</td>
</tr>
<tr>
<td>Other</td>
<td>613.7</td>
<td>28.9%</td>
</tr>
<tr>
<td>Total public sector liabilities</td>
<td>4,579.2</td>
<td>215.3%</td>
</tr>
<tr>
<td>Public sector net debt</td>
<td>1,752.8</td>
<td>82.4%</td>
</tr>
</tbody>
</table>

*(GDP centred end March, liabilities from WGA, PSND taken from NA)*
## Public sector net debt, 2017-18

<table>
<thead>
<tr>
<th>Liability measure</th>
<th>£ bn</th>
<th>% GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Public sector consolidated gross debt</td>
<td>1,759.0</td>
<td>82.7%</td>
</tr>
<tr>
<td>B PSND (ex public sector banks ex BoE)</td>
<td>1,563.0</td>
<td>73.5%</td>
</tr>
<tr>
<td>C BoE contribution to net debt</td>
<td>189.8</td>
<td>8.9%</td>
</tr>
<tr>
<td>D PSND (ex public sector banks)</td>
<td>1,752.8</td>
<td>82.4%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Asset measure</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>E Public sector total liquid assets</td>
<td>196.0</td>
<td>9.2%</td>
</tr>
</tbody>
</table>

*(GDP centred end March, figures from national accounts)*
Public debt dynamics

Let $d$ denote some measure of the public debt as a % of GDP, $s$ denote the primary surplus as a % of GDP, $r$ denote the effective interest rate, $g$ denote GDP growth, $b$ denote government debt liabilities as a % of GDP, and $m$ denote monetary liabilities as a % of GDP. Then,

\[ \dot{d} = -s + (r - g)d \]

\[ d = b + m \]

\[ r = r_b \left( \frac{b}{d} \right) + r_m \left( \frac{m}{d} \right) \]
Public debt dynamics

It follows that public sector liabilities as a % of GDP stabilise at $d^*$,

$$d^* = \frac{s}{r - g}$$

If $r > g$ then the government has to run a positive primary surplus to ensure a positive finite $d^*$, but if $r < g$ then the government can run a primary deficit. In the latter case,

"The choice of borrowing versus taxation depends exclusively on distributional criteria and on the relative efficiency costs of debt versus tax financing. In spite of a positive share of public spending in national income, taxes need never be levied and may indeed be negative for ever" (Buiter, 1985, pp. 33).
Public sector solvency

Using our formula for the stable ratio of liabilities to GDP, $d^*$, it follows that the maximum sustainable ratio of liabilities to GDP is given by,

$$d_{\text{max}} = \frac{s_{\text{max}}}{r^e - g^e}$$

What is a reasonable value for the maximum sustainable (or long run) primary surplus?

"All it takes is to consider as credible any public commitment to generate sufficiently high primary surpluses at some point in (and possibly very far into) the future. Hence, the final call on solvency is a mere judgment on a government’s credibility." (Debrun et al., 2018, pp. 6).
Effective interest rate minus GDP growth
Historical debt-GDP ratios
Hypothetical sustainable debt ratios

Using our formula for the maximum sustainable debt to GDP ratio, it is possible to calculate approximate sustainable ratios based on hypothetical combinations of the primary surplus and growth-correct interest rate:

<table>
<thead>
<tr>
<th>$r - g$</th>
<th>1%</th>
<th>2%</th>
<th>3%</th>
<th>4%</th>
<th>5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1%</td>
<td>100%</td>
<td>200%</td>
<td>300%</td>
<td>400%</td>
<td>500%</td>
</tr>
<tr>
<td>2%</td>
<td>50%</td>
<td>100%</td>
<td>150%</td>
<td>200%</td>
<td>250%</td>
</tr>
<tr>
<td>3%</td>
<td>33%</td>
<td>67%</td>
<td>100%</td>
<td>133%</td>
<td>167%</td>
</tr>
<tr>
<td>4%</td>
<td>25%</td>
<td>50%</td>
<td>75%</td>
<td>100%</td>
<td>125%</td>
</tr>
<tr>
<td>5%</td>
<td>20%</td>
<td>40%</td>
<td>60%</td>
<td>80%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Forecasting the public finances

Now we know the definition of public sector net debt, we know the basic public finance identities, we have an idea of how the public finances and interest rates have behaved in the past, and we have a plausible range for sustainable debt ratios (assuming $r > g$ in the long run).

To forecast the impact of Covid-19 on the public finances we can use the macroflow model, which is available (with explanatory notes) here:

https://www.ippr.org/research/publications/inside-the-black-box

http://macroflow.org/forecasts/uk/2020-05-corona/
Observations on post-crisis solvency

1. The growth-corrected interest rate is likely to be negative for some time.

2. Even if it becomes positive, debt ratios of 100% - 150% of GDP do not imply public sector insolvency -- far from it!

3. Given that the UK public debt has exceeded 100% of GDP for sustained periods of time in the past, it stretches credulity to suppose that the government cannot credibly commit to the primary surpluses required to stabilise public debt at >100% of GDP in the twenty first century.

4. Moreover, interest costs are likely to be kept low by quantitative easing.
Policy implications

1. A New Keynesian approach would allow the public debt to rise to whatever level necessary to deal with the crisis, and then allow it to decline very slowly - a ballpark figure would be a half-life of around 20 years.

2. A Post Keynesian approach would emphasise the importance of budget deficits to achieving full employment, and would either argue that debt will take care of itself in the long run, or would recommend a similar approach to New Keynesians (despite a different theoretical starting point).

3. In a policy sense there is not that much dividing the various Keynesian approaches -- the main difference is whether fiscal policy should attempt to target full employment or some supply-side determined "natural rate"
4. So the government could stabilise debt ratios at the type of level they will end up at, if our forecasts are in the right ballpark.

5. If debt ratios end up at the higher end of our forecasts, when the economy is *fully* recovered it would make sense to return to a (small) primary surplus *if* the growth-corrected interest rate becomes positive.

6. If, however, the growth-corrected interest rate stays negative, the primary deficit just needs to be reduced to a level consistent with a (slowly) declining debt ratio. Note that in both cases the total deficit can still be negative - a balanced budget is not necessary for a falling debt ratio, and an unbalanced budget is *necessary* for a stable debt ratio if $g > 0$. 

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References

Article and book references:


Data references:

Further reading

On the New Keynesian approach to public debt:


On the 'weak-form functional finance' approach to public debt:


Further reading

On the 'strong-form functional finance' approach to public debt:


On the 'credibility' of the government and public policy:


On maximum sustainable debt ratios: