18 June 2015

The Real National Debt

Since the financial crisis of 2007-08, Britain’s national debt has ballooned, placing an increasing burden on taxpayers and posing a serious risk to our future prosperity. The normal measure of the national debt, public sector net debt, swelled to around £1.5 trillion by the end of 2014-15. But our real national debt is much, much greater than this.

This paper presents calculations of the UK’s real national debt and charts its growth since 2010. The picture that emerges is highly troubling and underscores the urgency of current attempts at closing the deficit.

The real national debt extends far beyond the Government’s formal measurements. It also includes substantial liabilities in relation to unfunded public sector pensions, unfunded state pensions, the Private Finance Initiative (PFI), nuclear decommissioning and a number of other items including liabilities arising from the bank bail-outs.

Drawing on a wide range of official sources and independent analyses we have calculated the real national debt for every year since 2009-10:

- At the end of 2014-15, the real national debt stood at £8.6 trillion, over £320,000 for every single household in Britain.
- Since 2009-10, the debt has grown by £1 trillion, growing from £7.6 trillion up to £8.6 trillion in 2014-15, equivalent to around five times our GDP.
- Since 2009-10, liabilities arising from financial sector interventions have shrunk by £1 trillion. This means that debt ignoring financial interventions has grown by £2 trillion.
- The official national debt – the one quoted by the Chancellor in his budget – hugely understates taxpayer liabilities. The real national debt is almost six times larger than the official national debt.
- These figures may be underestimates. In addition to the debts we have examined, the public sector has a wide range of contingent liabilities.
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Summary

Our measure of the real national debt is gross debt (total debt) valued at market prices (the market value of the debt). It includes the following items (totals relate to 2014-15):

- The official public sector debt quoted in the budget – £1,484 billion (£1.5 trillion)
- Unfunded public sector pensions – estimated at £1,838 billion (£1.8 trillion)
- Unfunded state pensions – estimated at £4,411 billion (£4.4 trillion)
- RBS/Lloyds debt – £312 billion (£0.3 trillion)
- Other – including local government long-term liabilities, PFI, and nuclear decommissioning – £266 billion (£0.3 trillion)

At March 2015, we calculate the total debt stood at £8,598 billion (£8.6 trillion).

As can be seen below, the contraction of public sector bank balance sheets has led to falling debt arising from bailed-out banks. This shrinkage has masked the rapid growth in other components, principally public sector gross debt and the value of unfunded commitments relating both to state pensions and public service pensions.

Table 1: Composition of real national debt 2009-10 to 2014-15

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*PFI debt relates to estimated capital value. Figures in italics indicate extrapolations from other years in line with nominal GDP
Debt on this scale is without precedent in Britain. The previous peak was during the Napoleonic Wars when the national debt reached over 250 per cent of GDP. True, that was just the official debt, but at the time the government had very few unfunded pension liabilities on top – the official national debt was pretty much identical to the real national debt.

More than a century later, the Second World War pushed our debt almost back to the same level relative to GDP, but again, pension liabilities were very much smaller than today.¹ A real national debt well in excess of five times GDP has taken us into entirely uncharted and dangerous waters.

In case it is thought that our estimates are an exaggeration, it should be noted that we have been deliberately cautious in some of our key assumptions. As already mentioned, we are not including a wide range of contingent liabilities. We also do not include taxpayers’ full contractual liabilities under many long-term commercial contracts (see below).

Importantly we do not include anything for the very real prospect that the government will need to borrow increasing amounts just to fund the growth in future debt interest payments. Investors have been prepared to lend the government large sums for very low (and sometimes negative once inflation is taken into account) returns since the financial crash.² But we do not know how long this will last, or how far and how quickly their required returns will rise.

Finally, we have included nothing to fund the escalating costs of healthcare and long-term care for our ageing population. Yet many argue this is a huge implicit liability, a liability reinforced by the strong NHS spending commitments given by the government. We simply note that according to the most recent government projections, annual expenditure in that area is set to rise from an estimated 7.6 per cent of GDP in 2018-19 to a forecast 10.6 per cent of GDP by 2053-54, an increase of more than one-third.³

The remainder of this note discusses the shortcomings in the current official measure of government debt, explains the basis of our more comprehensive measure and describes how we have calculated our numbers.

¹ For a further discussion of the National Debt through history, see this post on the TaxPayers’ Alliance website - http://old.taxpayersalliance.com/waste/2010/02/debt-trap---lessons-from-history.html
² http://www.telegraph.co.uk/finance/economics/gilts/9006468/Investors-pay-to-lend-money-to-UK.html
³ http://cdn.budgetresponsibility.org.uk/41298-OBR-accessible.pdf#page=83
The current official debt measure and its shortcomings

What do we mean by the national debt?

A standard definition of debt goes as follows:

"A sum of money or other property owed by one person or organisation to another. Debt comes into being through the granting of credit or through raising loan capital."\(^4\)

On that basis, the national debt ought to be the total value of money or property owed by the government to those who have extended it credit or loans in the past: a simple enough definition but as we'll see it is not one that is currently followed in the official definition.

Official definition

Britain’s national debt was defined historically as the gross liabilities of the National Loans Fund; mainly comprising the government’s accumulated unredeemed issues of gilt-edged stock and treasury bills.

But that definition confined coverage to the debts of central government and as the public sector grew larger during the last century, coverage had to be broadened to include the debts of local authorities and public corporations. Whether explicitly or implicitly, all of them were generally reckoned to be ultimately guaranteed by the government, and ought to be included. Moreover, the authorities wanted a definition of the debt that was consistent with the public sector borrowing requirement, now known as public sector net borrowing (PSNB).

So today’s main official measure comprises the consolidated debt of central government, local authorities, and public corporations. And rather than being called the National Debt, it’s called public sector net debt excluding public sector banks (PSND ex). However the Treasury and Office for Budget Responsibility simply refer to this figure as public sector net debt (PSND), so this is how the remainder of this note will refer to this figure.

Public sector net debt excluding public sector banks is calculated in two stages:

First, gross debt according to the convergence criteria set out in the Maastricht Treaty is calculated thus:

\(^4\) Penguin Dictionary of Economics
Central government debt + local government debt – cross holdings of central
government and local government debt = Maastricht debt [general government
gross debt]

Then, the debts of public corporations and the net debt of the Bank of England are added
to Maastricht debt before public sector liquid assets are netted off. So public sector net
debt is calculated as:

Maastricht debt + public corporations debt + Bank of England net debt – public
sector liquid assets

At the end of March 2015, the PSND stood at £1,484 billion, or £1.5 trillion.

Limitations of the official definition

Although the PSND is the most widely quoted figure for UK government debt, and is
presented as a key number in every budget, it is in fact a much narrower definition of
debt than the one with which we started. It is also inconsistent with the debt accounting
conventions used elsewhere in the national accounts.

First, it measures net debt (total debt minus assets) rather than gross (total debt), which
not only reduces the total apparent liability (by £116 billion at end-March 2015) but also
puts it out of step with the conventional treatment of debt in both company and national
accounts. Conventionally, debt is shown gross, with assets being shown separately on the
other side of the balance sheet. Moreover, a net treatment is at odds with the government
debt limit set out under the Maastricht Treaty, which is defined in gross terms.

Second, it measures debt in nominal (i.e. at face value) terms, rather than revaluing it at
the prevailing market prices as is normal practice in the national accounts. At the end of
March 2015, more accurate market pricing would have increased the debt by another
£171 billion.

Thus, under normal national accounting conventions, public sector debt at the end of
March 2015 totalled £1,771 billion rather than the £1,484 billion quoted in the public
sector finance statistics and the budget.

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5 http://www.ons.gov.uk/ons/dcp171778_404738.pdf#page=19
6 http://www.ons.gov.uk/ons/dcp171778_402118.pdf
7 General Government and Non-financial Public Corporations consolidated gross debt minus PSND ex.
tables-in-this-bulletin
But even that higher total is not what most of us would mean by the national debt. And that’s because it excludes several major liabilities owed to those who in one way or another have lent the government money.

What’s missing?

The major liabilities excluded from the official measure of debt are:

- **Public sector pensions**: Most public sector pension schemes are unfunded, and the members of those schemes have in effect lent the government money against the promise of a post-retirement pension.

- **State pensions**: Successive governments have promised to pay at least an inflation-linked state pension, and everyone working is made to contribute to it through National Insurance. As with public pensions the accrued liability, which is unfunded, is debt as we’ve defined it.

- **Private Finance Initiative**: The vast majority of PFI contracts are excluded, even though the contractors have in effect lent the government money to construct the capital facilities concerned.

- **Public sector bank debt**: RBS and Lloyds are still now public sector entities, yet their huge debts have still not been included in PSND.

- **Nuclear decommissioning**: The government has taken on the substantial costs of cleaning up Britain’s nuclear sites. Although this is not quite debt in terms of our original definition – that is, there is no explicit lender on the other side – it is clearly a liability to future payments on account of services consumed in the past; we might think of it as a debt to those who were obliged to accept the nuclear sites being built on their doorstep.

**Contingent liabilities**

In addition to the definite liabilities listed above, the government also has a wide range of contingent liabilities, such as financial guarantees.

The Whole of Government Accounts gives us details of significant risks and uncertainties consolidated across the whole of government. These accounts list quantifiable contingent liabilities at £63 billion in 2013-14, down from £88 billion in 2012-13, primarily due to a reclassification of European Investment Bank callable capital subscription from “possible” to “remote” risk.
In this paper we have not included any contingent liabilities in our totals for the real national debt.

**Basis of our calculation**

In any calculation of the national debt there are a number of conceptual and definitional issues that must be settled first.

**Gross or net?**

As explained earlier, the main official measure of the national debt – the public sector net debt (PSND) – is calculated net of certain liquid assets. The idea is that such assets are both secure and readily realisable, so it’s quite reasonable to net them off against the gross debt before declaring the published total.

We believe that is an unsatisfactory basis for the calculation.

To begin with, taxpayers are on the hook for the government’s gross debt in its entirety. For sure, the Government has substantial assets, just as a bank has substantial assets. And those assets are in a broad sense backing for the liabilities. But just as with a bank, to understand the exposures properly we need to look at the gross liabilities against the gross assets. We always need to look at both sides of the balance sheet in their entirety.

Secondly, the liquid assets the government nets off the PSND are not nearly as secure as they would have us believe. For one thing, they include our foreign currency reserves, which by definition are denominated in foreign currency. And as any novice investor soon learns, assets denominated in foreign currency are much less secure and stable than those denominated in sterling – their sterling value can be extremely volatile.

Just as serious, these liquid assets are by no means always held in rock-solid investments. For example, they include local authority money market funds, some of which were famously placed with Icelandic banks.

We also need to remember that the UK government is the very highest quality credit in the sterling debt market (both because it has tax raising power and, more fundamentally, because it owns the printing press for sterling). So netting off sterling assets invested with anyone else is always going to be an apples and oranges calculation: we are not comparing like with like.

In the case of our recently nationalised banks, it can be argued that their gross debt hugely overstates the real taxpayer liability. Because bank debt is backed by the asset side
of their balance sheets, the real liability is almost certainly much less. Realistically, the liability is confined to possible losses the banks may, or may not, make on those assets.

Clearly, there’s some truth in that argument – it is highly unlikely that the entire asset side of the banks’ balance sheets will turn out to be worthless. Or rather, if it does, we will be in an apocalyptic world in which the UK government will likely not be in a fit state to honour any of its debt obligations.

But again, with these banks in the public sector, taxpayers are on the hook for their liabilities. Yes, there are some assets on the other side, which provide some comfort. But we still live in very uncertain times, and simple old fashioned prudence suggests we should recognise and acknowledge the full extent of our gross liability.

For our calculation of the real national debt we focus on gross debt, with no netting.

**Nominal or market values?**

As already noted, the main official measure of PSND is calculated at nominal (i.e. at face value) values. That is, the debt is not revalued in line with prevailing market prices (it is not “marked to market”).

That is contrary to normal national accounts practice and contrary to international accounting standards for companies. Debt that trades in liquid markets, such as the gilt market, has a clear and agreed current price, and it is generally accepted that fair valuation requires the use of that price in valuing both assets and liabilities.

Our calculation uses mark-to-market current pricing to value the public sector’s traded debt.

**Explicit vs implicit debt**

It is often said that government debt is a spectrum, running from debt that is explicit and certain (such as gilts), through to debt that is implicit and uncertain (such as state pension liabilities). The implication is that the official definition of debt is built on strong foundations, whereas anything beyond that is little more than speculation.

But simply because we may not be able to quantify a liability so precisely is no reason to ignore it. Moreover, the distinction between explicit and implicit liabilities may be more apparent than real. After all, there is a strong and reasonable expectation that the

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Government will not default on its long-standing commitment to pay state pensions, and on the other side, even British governments have in the past defaulted on their explicit debts. What we really need to see is the best estimate of all the government’s liabilities.

Our calculation includes the most important implicit debt, namely the accrued liability to pay state pensions.

Debt, contractual commitments, and PFI

Our original simple definition of debt tells us that debt comes into being through the granting of credit or the raising of loan capital. In other words, it is a backward looking concept, relating to money or services provided in the past.

But the public sector also has forward-looking commitments, where it has entered into a contract to pay for services yet to be delivered. For example, it has several long-term contracts with suppliers of IT services.

Such contracts are not debt in the sense that no money is owed until the service has been supplied. And that won’t happen until sometime in the future. But they clearly represent an enforceable future claim on taxpayers, which gives them an obvious debt-like characteristic.

The issue has particular significance for the treatment of PFI contracts. Should those payments should be included in the calculation of the national debt?

PFI charges are unitary – that is, the public sector customer makes one regular payment to the private sector supplier throughout the life of the contract. But conceptually the charges comprise two underlying elements. The first is the capital cost of providing the facility (the new school or hospital etc) amortised over the term of the contract and including the cost of finance (debt interest etc). The second is a service payment for keeping the facility maintained and operating throughout the future term of the contract.

Given our definition of debt, the natural approach would be to count the capital cost of each project in with our debt figure, but exclude the service element. HM Treasury produce periodic UK Private Finance Initiative summary data reports which state the capital value of PFI contracts. Unfortunately, they have not been stated regularly and so some figures listed in this paper represent numbers for a date within the financial year rather than year-end totals.

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9 The most recent default by HM Government was the forced conversion of War Loan in 1932, cutting its coupon interest from 5% to 3.5%. https://www.bondvigilantes.com/blog/2010/02/02/what-happened-the-last-time-the-uk-defaulted
Calculation details

Our yearly estimates for each component of the debt are set out in table 2 at the end of the report. Our figures relate to public sector consolidated gross debt valued at market prices. We have derived the figures as follows:

Official debt

Data on official debt was sourced directly from the ONS. We used the series *general government and non-financial public corporation consolidated gross debt*. This measures gross public sector debt, and we adjusted the data to market values using the market value adjustment given by the ONS to meet the Maastricht Treaty requirements.

Public sector pensions

The Government publishes regular estimates of unfunded public sector pension liabilities. Unfortunately, these official estimates are not suitable for current purposes because they seriously understate the true liability.

The main problem is their use of a discount rate that is too high. The appropriate discount rate for the government’s index-linked liabilities (which public sector pensions are) is the current yield on index-linked gilts, which is the government’s true cost of funding. However, for at least the last decade, the official estimates have been based on unrealistically high discount rates, which have the effect of artificially reducing the apparent liability.

Instead we have used the estimates provided by Neil Record for *The £1.7 trillion invisible debt mountain*, a paper published by the TaxPayers’ Alliance in 2014. His work highlighted the government’s use of unrealistic discount rates, and shows how much the liability increases if actual market yields on index-linked gilts are used instead. For 2013-14, we ran his model on official pensions liabilities data for that year to estimate an updated figure. Official government estimates for liabilities at the year-end in 2014-15 have not yet been published so we were unable to calculate an estimate in that way. Instead, we increased the 2013-14 estimate in line with nominal GDP.

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State pensions

At one time the governmentpublished annual estimates of accrued state pension liabilities, but these stopped in 2003. Since then there has been just one further estimate from the Government Actuary’s Department (GAD), for March 2005.\textsuperscript{11}

Fortunately, the ONS published one estimate in 2012. We took that figure and adjusted it for nominal GDP growth to estimate figures for other years in the table. Recent changes to the state pension age will have reduced the liability but faster increases than expected in both life expectancy and population growth mean that this estimate could underestimate its true scale.

Private Finance Initiative

As things stand, the ONS only includes the capital costs of some PFI deals. Assets and any associated liabilities are only included if the ONS believes that the public sector bears most of the financial risk.\textsuperscript{12}

The Treasury’s estimated capital value (the total funding requirement for a project as at the date of financial close of individual contracts) of the various facilities built or being built under PFI contracts now stands at £56.6 billion.\textsuperscript{13} If those facilities had been built under the traditional approach, directly funded by government borrowing, all of that would appear in the official measure of government debt. Moreover, because PFI projects are funded by privately raised money, which is always more expensive than gilt funding, it is likely that the overall cost is actually somewhat higher than implied by the £56.6 billion estimated value of the facilities themselves.

Figures for 2010-11 to 2013-14 were taken from HM Treasury’s Private Finance Initiative summary data reports. Figures for 2009-10 and 2014-15 were extrapolated in line with nominal GDP from the 2010-11 and 2013-14 figures, respectively.

Nuclear decommissioning

The future cost of nuclear decommissioning is estimated in the Whole of Government Accounts. Figures for 2014-15 were extrapolated in line with nominal GDP from the 2013-14 figure.

\begin{footnotesize}
\begin{enumerate}
\item http://cdn.budgetresponsibility.org.uk/41298-OBR-accessible.pdf#page=49
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Local authority long-term liabilities

Local authority pension scheme deficits and other long-term liabilities in 2011-12 and 2012-13 were calculated by the TaxPayers’ Alliance in research published 2014 based on local authorities’ own annual accounts. These figures have been extrapolated in line with nominal GDP to provide estimates for other years.

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14 https://d3n8a8pro7vhmx.cloudfront.net/taxpayersalliance/pages/4888/attachments/original/1417620577/councilliabilities.pdf?1417620577
Table 2: The real national debt in detail

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