Office for National Statistics

Article

Wider measures of public sector debt: December 2018

An update to previous wider measures of government debt articles.

Contact:
Fraser Munro
fraser.munro@ons.gov.uk
+44 (0)1633 456402

Release date:
21 December 2018

Next release:
To be announced

Table of contents

1. Executive summary

2. Introduction

3. Measures of debt

4. ONS statistics on public sector debt

5. Wider obligations and potential liabilities

6. Recent developments in the presentation of statistics on public sector debt

7. Conclusions

1 . Executive summary

This article updates an article on the wider measures of public sector net debt published by Office for National Statistics (ONS) in December 2017. That article, in turn, updated a series of previous articles, which discussed different measures of public sector debt. This article compares the coverage and composition of different measures of public sector and general government debt available from the UK National Accounts, public sector finances (PSF) statistics. It goes on to discuss wider contingent liabilities and obligations, which are not included within the national accounts framework, but which are published separately by ONS or within HM Treasury's Whole of Government Accounts, or in the Office for Budget Responsibility's (OBR) Fiscal Sustainability Reports.

Like the first article in this series, published in 2010, along with other publications from the OBR and the Institute for Fiscal Studies (IFS), this article also draws attention to the matter that government and public sector balance sheets include both liabilities and assets. Thus a wider, more complete, consideration of both assets and liabilities, both existing and possible future, is required to provide a balanced view of the economic health of the public sector. This wider form of analysis has since been adopted by the OBR, Institute for Fiscal Studies (IFS) and others, and is reflected in the developing work by HM Treasury in its Balance Sheet Review project.

2 . Introduction

Monitoring levels of public sector debt is a core aspect of government's management of fiscal risk. In its July 2018 publication Managing Fiscal Risks: Government response to 2017 Fiscal Risks Report (PDF, 1.3MB) , HM Treasury refers to government's fiscal rules, which include the following elements, among others:

- a long-term objective to return the public finances to balance by the middle of the next decade
- a near-term target to reduce cyclically-adjusted public sector net borrowing to below 2% of gross domestic product (GDP) by financial year ending 31 March 2021
- a supplementary near-term target for public sector net debt as a percentage of GDP to be falling in financial year ending 31 March 2021

Public sector net debt (PSND), as published in the monthly public sector finance (PSF) statistics, has been an important fiscal measure for the UK government. Indeed, 'Managing Fiscal Risks', paragraph 2.39, states:

"The only means of permanently restoring the UK's fiscal resilience is to reduce the debt-to-GDP ratio. There is no consensus on what constitutes a 'safe' level of debt. However, analysis by academics, international financial institutions, and the OBR's own fiscal stress test suggests that the UK's current debt-to-GDP ratio of 85.4% of GDP leaves the public finances vulnerable to shocks. While the UK's debt-to-GDP ratio remains a significant distance from estimates of its 'debt limit', it is above estimates of 'debt thresholds' which risks undermining economic activity and constraining government's ability to stabilise the economy in the event of a shock".

So, while PSND remains a core element of UK fiscal management, as explained in previous Office for National Statistics (ONS) articles in this series, PSND provides only a partial picture of the public sector balance sheet, given that its definition does not encompass all financial liabilities or all financial assets of the public sector.

This article highlights other available measures of debt and/or financial obligations that are available, for example, public sector net financial liabilities (PSNFL), introduced in 2016 – see ONS Autumn statement: supplementary fiscal aggregates: 2016, and compares these different measures in terms of their coverage and composition. The article is intended to be introductory in nature and directs readers to other related, but more detailed, documents, including related articles published by the Office for Budget Responsibility (OBR) and Institute for Fiscal Studies (IFS).

ONS has published a series of articles on wider measures of public sector debt, including Wider measures of public sector net debt, 2017, Wider measures of public sector debt, 2015, Wider measures of public sector debt, December 2011 (PDF, 155KB), wider measures of public sector debt, July 2010 and September 2010 update. This article is an update to the 2017 article on wider measures of public sector debt, supplementing the information found in the PSF statistical bulletin and in the national accounts with information on wider public sector obligations and contingent liabilities, which are outside of the national accounts framework.

The article is structured as follows:

- a comparison of different measures of public sector and government debt
- more information on the different debt measures published by ONS
- an introduction to wider measures of debt outside of the UK National Accounts and PSF; this section includes information on:
    - pensions
    - public private partnership (PPP) schemes
    - other contingencies, provisions and guarantees
    - ongoing and future developments, including alternative presentations of statistics on public sector debt such as those published by the IFS and the International Monetary Fund (IMF) in its publications on Government Financial Statistics (GFS)

Published alongside this article is a set of five tables, which provide summary information on:

- government guarantees
- off-balance sheet public private partnerships (PPPs)
- non-performing loans
- liabilities of government-controlled units not part of general government
- participation of government in the capital of corporations

These tables must be published annually by all EU member states in accordance with Article 14 of the European Commission directive EC2011/85 (PDF, 748KB), which forms part of a wider set of legislation, known as the "six-pack", aimed at promoting credible, effective and transparent budgetary frameworks within EU member states. This is the fifth time that we have published these tables.

Statistics provided by EU member states are published by Eurostat, on its website under the heading Government contingent liabilities and potential obligations.

Further reference metadata on the history of these supplementary statistics, the purpose of their collection, collection and dissemination methods, and other matters is also published on the Eurostat website. The Eurostat website explains, for example, that these supplementary statistics:

- are not part of the general government (Maastricht) debt as defined in [Council Regulation (EC) No. 479/2009 (PDF, 757KB)]

- cover the general government sector and its sub-sectors

- are generally consolidated across government in the case of guarantees and non-performing loans; i n the case of the liabilities of public corporations, non-profit institutions serving households, and the rest of the world, which are controlled by general government, the statistics are not consolidated at the group level, which could lead to a degree of double-counting of some liabilities

- regarding guarantees, the statistics do not include government guarantees issued under the European Financial Stability Facility Framework agreement, derivative-type guarantees meeting the European System of Accounts: ESA2010 definition of a financial derivative, deposit guarantees and comparable schemes, or government guarantees issued on events for which occurrence is very difficult to cover via commercial insurance (for example, earthquakes, large-scale flooding and so on)

- regarding liabilities relating to PPPs recorded off-balance sheet of government, the liability figures are estimates based on a "adjusted capital value", reflecting the debt impact in the case that government needed to take over the PPP assets during the course of the contract

- regarding liabilities of government-controlled entities classified outside of general government, the liabilities reported may be based on the business accounts of the relevant corporations

- regarding non-performing loans, the figures relate to loans for which payments of interest or principal are past due by 90 days or more, or interest payments have been capitalised, refinanced or delayed by agreement, or where there are other good reasons to doubt that payment will be made in full

- may be compared across countries, either on a geographical basis or over time, only on a limited basis, and explains (see paragraphs 15.1 to 15.3 of the reference data document) the reasons why this is the case

3 . Measures of debt

The previous article in this series notes that, between March 2011 and March 2017, all but one of the different measures of debt and/or financial liabilities (expressed in financial terms) rose, more or less steadily, over the period. The exception had been public sector net debt including the public sector banks (PSND). This decreased between March 2011 and March 2017, partly reflecting government's sales of Lloyds Banking Group (LBG) shares, leading to LBG being reclassified outside of the public sector from April 2014. This reduced PSND and partly reflected the significant reductions in the balance sheet liabilities of Royal Bank of Scotland (RBS) and LBG (as measured under the European System of Accounts (ESA) framework) over the period.

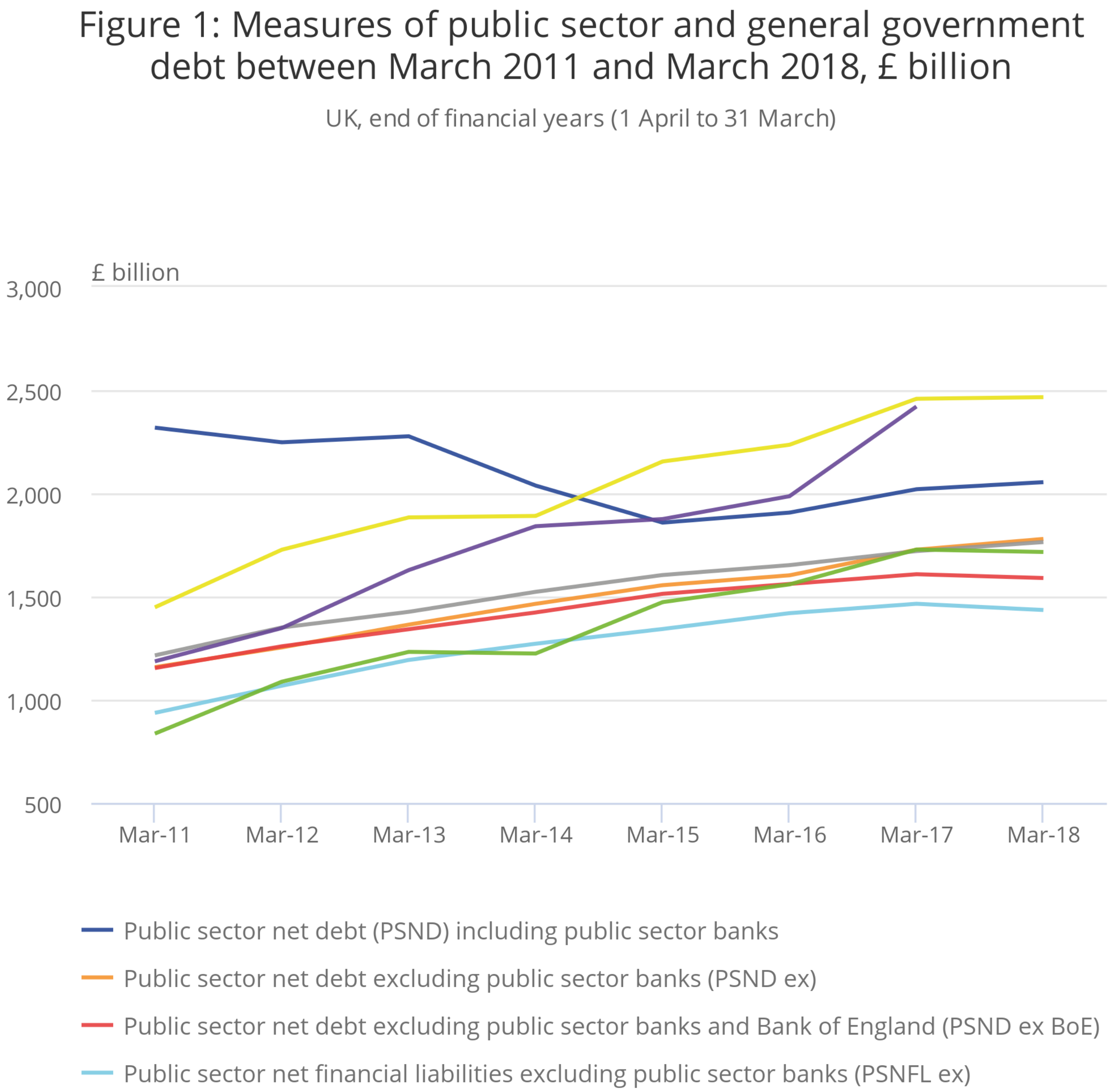
Figures 1 and 2 in this article present comparisons of the same measures of public sector and general government debt and/or financial liabilities over the period March 2011 to March 2018, expressed in £ billion, and as a percentage of gross domestic product (GDP), respectively. Note that the Whole of Government Accounts (WGA) lines in Figures 1 and 2 end at 31 March 2017, as the last published set of WGA were for the years to 31 March 2017.

Figure 1, which is expressed in financial terms, continues to show a rise in some debt measures and, for others, a fall in the year to 31 March 2018.

Figure 2, however, indicates that, when the different measures of debt or liabilities included in the chart are expressed as a percentage of GDP, there was an observable decrease in all of the major public sector measures in the financial year to 31 March 2018.

Figure 1: Measures of public sector and general government debt between March 2011 and March 2018, £ billion

UK, end of financial years (1 April to 31 March)



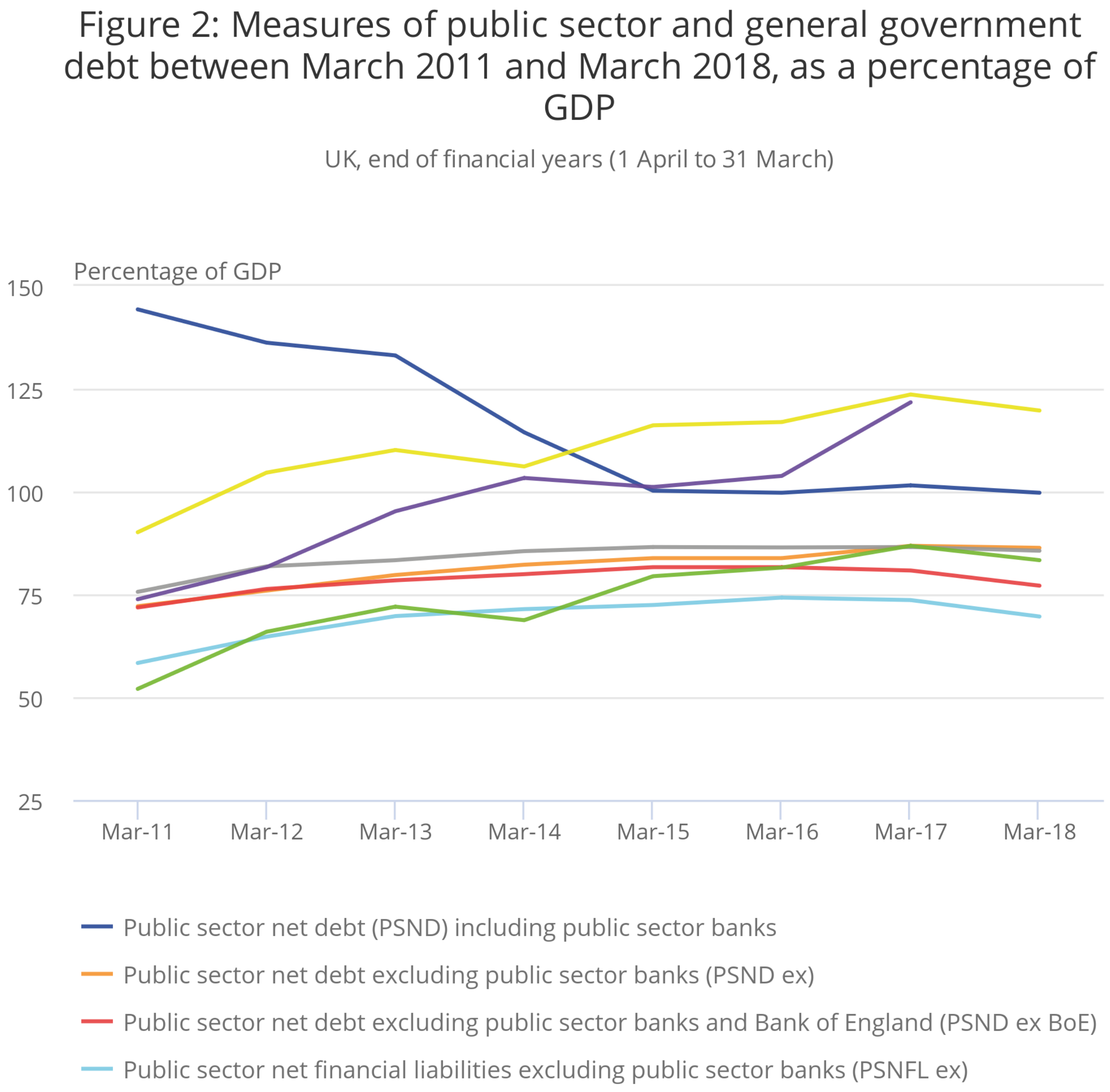
Source: Office for National Statistics and HM Treasury

Notes:

1. PSND means Public Sector Net Debt.
2. BoE means Bank of England.
3. GG means general government.
4. PSNFL means Public Sector Net Financial Liabilities.
5. WGA means Whole of Government Accounts.

Figure 2: Measures of public sector and general government debt between March 2011 and March 2018, as a percentage of GDP

UK, end of financial years (1 April to 31 March)



Source: Office for National Statistics and HM Treasury

Notes:

1. PSND means Public Sector Net Debt.
2. BoE means Bank of England.
3. GG means general government.
4. PSNFL means Public Sector Net Financial Liabilities.
5. WGA means Whole of Government Accounts.

The eight measures included in Figures 1 and 2 all represent alternative presentations of the public sector balance sheet and their sources are shown in Table 1.

Readers will note that the term “debt” is being used here in a broad sense, in that some of the measures included here are not “pure” measures of debt as such. This reflects, to an extent, the fact that a more complete appraisal of public sector financial position can be achieved only by considering both liabilities and assets of the public sector.

Table 1 provides information on the sources of these various measures.

Table 1: Sources for different measures of debt

Measure	Title	Source
A	Public sector net debt including public sector banks (PSND)	Public sector finances [ONS and HM Treasury]
B	Public sector net debt excluding public sector banks (PSND ex)	
C	Public sector net debt excluding Bank of England (PSND ex BoE)	
D	Public sector net financial liabilities (PSNFL)	
E	General government consolidated gross debt, "Maastricht Debt" (GGGD)	UK government debt and deficit as reported to the European Commission [ONS]
F	General government unconsolidated total gross financial liabilities	The Blue Book (UK annual National Accounts) [ONS]
G	General government unconsolidated financial net worth	
H	Whole of Government Accounts (WGA) public sector net liabilities	Whole of Government Accounts [HM Treasury]

Source: Office for National Statistics

It is important to appreciate that each of these measures is compiled for a specific purpose and that each provides a perspective on the net or gross liabilities of the public sector that are relevant to that purpose. As such, these measures complement rather than contradict each other.

Office for National Statistics (ONS) statistics on public sector debt are compiled in accordance with the ESA 2010 statistical framework, whereas the whole of government accounts data are produced in line with the accounting standards set out in the International Financial Reporting Standards (IFRS) as adapted and/or interpreted for the public sector by the independent Financial Reporting Advisory Board (FRAB). While these two frameworks are similar conceptually, there are important differences, which are discussed further in Section 4.

A summary of the coverage of the eight measures included in Table 1 is provided in Table 2.

Table 2: Composition and coverage of different measures of debt

Debt measure (description given in Table 1)	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**
Liabilities included:								
Bonds (debt securities)	Y	Y	Y	Y	Y	Y	Y	Y
Loans	Y	Y	Y	Y	Y	Y	Y	Y
Deposits and currency	Y	Y	Y	Y	Y	Y	Y	Y
Equity				Y		Y	Y	Y
Accounts payable				Y		Y	Y	Y
Derivatives				Y		Y	Y	Y
Provisions								Y
Public Service Pensions				[1]		[1]	[1]	Y
Other				[2]		[2]	[2]	
Assets included to net off liabilities:								
Liquid financial assets	Y	Y	Y	Y	Y		Y	Y
Illiquid financial assets				Y			Y	Y
Non-financial assets								Y
Coverage:								
Sector[3]	PS	PS	PS	PS	GG	GG	GG	PS
Accounting framework	ESA	ESA	ESA	ESA	ESA	ESA	ESA	IFRS

Source: Office for National Statistics

Notes

1. Includes liabilities for funded general government employer pension schemes but not for unfunded public service employer pension schemes. Back to table
2. Includes all liabilities recognised under ESA which include liabilities related to insurance, standardised guarantees and special drawing rights. Back to table
3. PS = Public Sector; GG = General Government. Back to table
4. ESA = European System of Accounts; IFRS = International Financial Reporting Standards. Back to table
5. Excluding public sector banks. Back to table
6. Excluding public sector banks and the Bank of England. Back to table

The following sections include more detail on each of the eight measures as well as other available data and publications on the liabilities of the UK public sector.

4 . ONS statistics on public sector debt

Public sector net debt (PSND) and public sector net financial liabilities (PSNFL)

PSND is an important fiscal aggregate that provides a measure of fiscal health. It is calculated as the public sector consolidated gross debt less liquid assets. The composition and derivation of PSND was described in [Wider measures of public sector debt, July 2010](#).

Estimates of PSND, both including (PSND) and excluding public sector banks (PSND ex), are available monthly within the [Public sector finances statistical bulletin](#), which is published jointly by ONS and HM Treasury . Following consultation, the PSND ex measure was redefined in September 2014 to exclude all transactions and balance sheet positions related to public sector banks. Previously, it had excluded those transactions and positions identified as temporary effects of the financial crisis. The “ex” measures of public sector net debt and net borrowing are important as these are the measures used by HM Treasury for fiscal planning and by the Office for Budget Responsibility (OBR) when forecasting and evaluating the fiscal plans.

Although PSND has long been used as a fiscal target, it does not capture all of government’s financial liabilities and assets. For this reason, the government’s 2016 Autumn Statement, in November 2016, included two new supplementary fiscal aggregates to provide commentary on the state of the public sector balance sheet as well as to give context for the main fiscal metric of PSND. The two new supplementary fiscal aggregates introduced were:

- public sector net debt excluding public sector banks and the Bank of England (PSND ex BoE)
- public sector net financial liabilities excluding public sector banks (PSNFL ex)

The composition of both these new supplementary fiscal aggregates was set out in [our Autumn Statement article](#) in November 2016. PSNFL ex is of particular interest as it includes all non-contingent financial liabilities and assets of the public sector.

Valuation matters

As explained in the November 2016 ONS article, there are important differences in the derivation of fiscal measures found in the PSF statistics (for example, PSND ex, PSNFL) and public sector measures derived from the national accounts themselves (for example, public sector net financial worth, PSNFW). The main difference as regards public sector debt is that, for PSF purposes, the government debt liabilities in the form of government bonds (“gilts”) are recorded at face (or redemption) value, whereas, within the national accounts, gilts are valued at market value.

The 2016 ONS Autumn Statement article explained that:

“In general, any difference between market and face value for deposit and loan liabilities will be small but there can be a significant difference between the market and face value of gilts and other debt securities. Latest Office for National Statistics (ONS) estimates indicate that the market value of government debt securities in issuance at the end of March 2016 was nearly £300 billion higher than the face value of those debt securities.

The market value provides information on what a creditor could realise in any particular month by selling their assets. It takes into account a large number of factors including the perceptions of repayment risk, market interest rates, the liquidity of the market and the risk aversion of the potential purchasers. By contrast face value provides information on what a debtor owes, only reflecting what will need to be repaid at maturity. In the context of government debt and fiscal sustainability measures, debt securities are most commonly recorded at face (or nominal) value as this more closely reflects the financing requirements of government. Movements in the market value of gilts can be difficult to interpret, sensitive as they are to external circumstances and market perceptions. The market value can fluctuate significantly from month to month with no, or little, change to the face value of the debt. For these reasons PSNFL ex includes the liability of debt instruments (such as gilts and loans) at face value. This approach is also consistent with the recommendations of the 2013 Review of PSF statistics. This Review recommended maintaining international comparability where possible … Within the European Union, the Maastricht debt and deficit aggregates are used to measure and compare the fiscal position of countries. Maastricht debt records all component debt liabilities (deposits, loans and debt securities) at face value. The face value approach to PSNFL ex debt liabilities therefore promotes comparability and transparency between the 2 different fiscal frameworks".

Maastricht Treaty's Excessive Deficit Procedure

The general government consolidated debt (or Maastricht debt) is published quarterly in our statistical bulletin, UK government debt and deficit as reported to the European Commission, and monthly in the PSF statistics. The debt measure is defined within the Protocol on the Excessive Deficit Procedure, annexed to the Maastricht Treaty, and related European legislation. All EU member states are obliged to report their Maastricht debt at least twice a year and it is used by the European Commission to monitor member states' levels of government debt; it is also used widely for purposes of international comparisons.

Maastricht debt has two major differences from PSND (or PSND ex), which are:

- Maastricht debt covers only bodies within general government while PSND includes the debt of all public sector bodies, including the Bank of England and other public corporations (while PSND ex excludes some public corporations, as described earlier)
- Maastricht debt captures only liabilities while PSND nets off some assets and is derived as financial debt liabilities less liquid assets (where liquid assets comprise official reserve assets and other cash or cash-like assets)

International comparisons

UK fiscal measures relating to the public sector, such as PSND, PSNFL have been established and defined by, and for use within, the UK. At the EU level, however, the Maastricht debt measures, which relate only to the general government sector, are published and provided to Eurostat. They in turn publish these statistics across EU member states and in aggregate, along with other data on government expenditure, revenue and deficit (that is, net borrowing), both in terms of the national currency and as a percentage of gross domestic product (GDP). These deficit and debt statistics (PDF, 492KB) are published generally on a calendar year basis although the UK provides its data also on a financial year basis.

Public sector liabilities and assets included in the national accounts

PSND and Maastricht debt concentrate on specific categories of liability (those relating to debt securities, loans, deposits and currency) and exclude wider liabilities. However, the national accounts framework includes other non-contingent liabilities that have already been accumulated, such as liabilities relating to trade payables, derivatives and equity.

A wider measure of debt available from the national accounts is therefore the total financial liabilities (as defined by the European System of Accounts, and so not including most accounting provisions). This article presents, for comparative purposes, the general government unconsolidated total gross financial liabilities but the equivalent figure for the unconsolidated public sector (excluding Bank of England and public sector banks) is also available in the UK National Accounts, The Blue Book.

A further measure relating to public sector assets and liabilities, available from the national accounts, is financial net worth, which is calculated as total financial assets less total financial liabilities. A negative public sector financial net worth indicates that the public sector has greater liabilities than assets.

Financial net worth is closely related to the supplementary fiscal aggregate, PSNFL ex. The first difference is that financial net worth follows a market valuation for all assets and liabilities whereas, for PSNFL ex, government bond liabilities are recorded at face value, as is the case for PSND and Maastricht debt. The second difference is that financial net worth is unconsolidated across the general government sector, whereas PSNFL ex is a fully consolidated aggregate at the public sector level.

5 . Wider obligations and potential liabilities

Section 4 summarised our statistics on the public sector's financial position. National accounts-based statistics do not include contingent or potential (but not certain) future obligations, therefore they are not included in the estimates of net worth, public sector net debt (PSND) or general Maastricht debt. However, information on such matters is important in forming a broader view of the public sector's financial position.

In 2014, Office for National Statistics (ONS) published, for the first time, high-level estimates of the value of some of government's contingent liabilities. The data were released as Experimental Statistics and covered the following five areas:

- government guarantees
- off-balance sheet public private partnerships (PPPs)
- non-performing loans
- liabilities of government-controlled units not part of general government
- the participation of government in capital of corporations

As part of an annual cycle these tables have been updated and are published alongside this article.

This section provides some further information and background on wider financial liabilities. More detailed information is also available from HM Treasury's Whole of Government Accounts (WGA) and the Office for Budget Responsibility's (OBR) Fiscal Sustainability Report (PDF, 1.7MB).

Other related, though unofficial, perspectives on the current state and possible future management of the broader public sector balance sheet are available in articles published by other, non-government bodies, for example, in Sections 3 and 6 of the Institute for Fiscal Studies' (IFS) Green Budget, 2018.

The wider UK government's liabilities and obligations will be considered, in three broad categories:

- pensions
- PPP, including public finance initiative (PFI) schemes
- contingencies, provisions and guarantees

Pensions

Pension liabilities are one of the largest obligations that are not included in public sector debt statistics as reported in the UK National Accounts and the public sector finance (PSF) statistics. UK public sector pension obligations include those related to:

- employment-related unfunded schemes
- employment-related funded schemes
- State Pension

Employment-related unfunded schemes

Most pension schemes offered by government, as the employer, are unfunded. “Unfunded” means that pension benefits are paid out of current income as and when they become due; such schemes are commonly known as “pay-as-you-go”. They are not underpinned by a fund which generates investment income for pension payments, although it is possible for such schemes to have a ring-fenced account for liquidity purposes.

They may also have a “notional fund” used for setting contributions and benefits with reference to the assets that might have accumulated had surplus contributions been invested. The largest schemes falling into this category are those for the National Health Service, for teachers, for the Civil Service, for the Armed Forces, and for the police and fire-fighters. In compliance with the European System of Accounts: ESA 2010, pension entitlements (stocks) of government unfunded schemes are not recorded in the core national accounts. Therefore, the associated obligations are not included in national accounts measures of net debt, net worth or total financial liabilities.

By contrast, the Whole of Government Accounts (WGA) do include pension liabilities for both funded and unfunded pension schemes where government is paying the pension as an employer, such as in the case of the Civil Service Pension Scheme’s pension liabilities.

The liability of each unfunded public sector employer pension scheme is reproduced in Table 3 (from WGA publications).

Table 3: Unfunded pension net liability by scheme as reported in Whole of Government Accounts UK, financial year ending 31 March 2011 to financial year ending 31 March 2017

£ billion

	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Unfunded schemes (gross)							
Teachers (UK)	222.8	233.3	258.5	288.1	316.9	311.9	398.3
NHS (UK)	292.3	282.6	325.1	391.6	452.2	443.8	591.8
Civil Service	145.0	155.1	176.5	193.2	214.8	205.8	257.0
Armed Forces	100.6	105.6	118.1	129.6	154.6	145.2	191.8
Police	93.8	101.6	118.0	123.0	145.2	130.3	157.5
Fire	19.8	21.1	22.9	25.5	28.9	26.0	31.0
Other unfunded	19.9	20.0	53.2	54.8	60.5	57.4	69.6
Total	894.2	919.3	1,072.3	1,205.8	1,373.1	1,320.4	1,697.0

Source: Whole of Government Accounts (WGA)

Employment-related funded schemes

Funded schemes have an identifiable, segregated fund with contributions paid in to build up the assets of the fund, and with the assets used to fund benefit payments.

In the national accounts, pension funds are considered autonomous financial corporations. As such, they are classified outside the general government sector. In most cases, such financial corporations will be administering pensions (often from multiple employers, both private and public sector) accepting the responsibility for any shortfall in the funds in return for the right to keep any excess funds. In such a case, the financial corporation will be both the administrator and the manager. No liability is then borne by government.

In some cases, however, government is seen to bear the ultimate liability for the provision of pension benefits and is treated as a pension manager. In such cases, the financial corporation performs only the role of the pension administrator, an agent that undertakes the day-to-day administration of the scheme. In the national accounts, neither the assets of the fund held to meet future pension liabilities nor the liabilities themselves are part of the government sector; however, the liability for any underfunding rests with government and is included on the government balance sheet. National accounts include the liability for any such scheme's deficit in the calculation of general government net worth and total financial liabilities but exclude it from the calculation of public sector net debt and general government gross debt (Maastricht debt).

As with unfunded schemes, funded schemes provided by government as the employer are included in WGA total government liabilities.

The net liabilities (assets minus liabilities) of funded schemes are reproduced in Table 4 (from WGA publications). It should be noted that the valuation approach to liabilities of funded pension schemes differs between WGA, which follows business accounting standards, and national accounts, which follows statistical accounting rules. Therefore, the liabilities shown in Table 4 are not the same as those recorded in the national accounts or public sector finances.

Table 4: Funded pension liability by scheme as reported in Whole of Government Accounts
UK, financial year ending 31 March 2011 to financial year ending 31 March 2017

							£ billion
	2010-11	**2011-12**	**2012-13**	**2013-14**	**2014-15**	**2015-16**	**2016-17**
Funded schemes (net)							
Local government	57.7	78.4	90.5	85.6	106.5	92.0	117.7
Other funded	9.1	10.1	8.8	10.5	13.7	12.3	20.0
Total	66.8	88.5	99.3	96.1	120.2	104.3	137.7

Source: Office for National Statistics

State Pension

The State Pension (basic and additional state pensions) is a social security benefit provided to retirees, subject to them meeting the qualifying criteria. In this regard, State Pensions are fundamentally different from the forms of public sector pensions underpinned by the employment relationship.

The State Pension is an unfunded benefit. Consequently, the pension liabilities are considered potential future obligations and are not recorded in the UK National Accounts or public sector finances. As with other similarly uncertain liabilities, the liability relating to State Pensions is not included in the estimates of net worth, public sector net debt or general government debt.

As with national accounts, the State Pension is not included in the WGA measure of public sector net liabilities. An estimate for government's State Pension obligations is, however, published occasionally by ONS in a supplementary table on pensions – see next section of this article.

Supplementary table on pensions

In Blue Book 2014, we introduced substantial improvements to the recording of pensions. These improvements reflected the requirements of ESA 2010, which superseded the previous ESA 95 guidance. We have continued to improve the data sources and methods used to compile pensions data and, in September 2017, the PSF statistical bulletin incorporated improvements to funded public sector employee pension schemes. The improvements to pensions recording, which were to be implemented in the national accounts in Blue Book 2018, were described in a dedicated article.

The national accounts and PSF statistics capture only a subset of all transactions and stocks related to public sector pensions. Of particular note is that, in compliance with ESA 2010, the stocks of liabilities associated with unfunded pension schemes are not recorded on the public sector balance sheet.

Estimates of such unfunded liabilities are nonetheless available in a single table, in the form of the supplementary table for accrued-to-date pension entitlements in social insurance. We first published this table for 2010 on an experimental basis, but in March 2018 we published a revised and updated table for the period 2010 to 2015. The 2018 publication (Table 29), which covered all UK pensions providers, not just government, highlighted that:

- at the end of 2015, total accrued-to-date gross pension liabilities of UK pension providers in respect of employment-related (workplace) pensions and State Pensions were estimated at £7.6 trillion, up from £6.6 trillion at the end of 2010 (not adjusted for inflation)
- the 2015 total included £5.3 trillion of pension entitlements (279% of GDP) that were the responsibility of central and local government, of which:
  - the largest part was £4 trillion of entitlements to unfunded State Pensions, which are received by most households in retirement (213% of GDP)
  - unfunded defined benefit workplace pension entitlements for public sector employees were estimated at £917 billion (49% of GDP)
  - funded defined benefit workplace pension entitlements for (mainly) public sector employees were worth £334 billion (18% of GDP)

It is important to note that the ONS statistical estimates provided here cannot be compared directly with the WGA pension figures provided in Tables 3 and 4, because of conceptual and methodological differences in the estimates' production. The March 2018 ONS article accompanying its revised supplementary table on pensions (Table 29) explains that such differences include:

- the discount rate: Table 29 uses a stable discount rate (3% real, 5% nominal) and the estimates for defined benefit pension schemes where government is the pension manager are converted onto this basis; by contrast, the WGA sources data from the accounts compiled by central government bodies and local authorities, which vary from year to year and (particularly for local authorities) use different rates as advised by their own actuaries at the time of compiling the accounts
- gross and net liabilities: Table 29 shows gross pension liabilities, whereas the WGA presents information for net pension liabilities; net is the same as gross in the case of unfunded pension schemes where there are no assets; but for funded schemes such as the Local Government Pension Scheme (LGPS), the net figures represent the deficit (assets minus liabilities)
- scope of accounts: the two approaches are similar in terms of which public sector employee schemes are included in the accounts, but for the Local Government Pension Scheme (LGPS), police and firefighters' pension schemes, the WGA approach excludes the obligations in respect of private sector employees who belong to public sector employee schemes; Table 29 follows the "pension manager" approach, where the government is seen as ultimately responsible for pension liabilities in respect of all employees who are members of the schemes in Columns E and G
- State Pensions: the WGA information does not include estimates of obligations with respect to State Pensions

PPPs and PFIs

Public private partnerships (PPPs) are operated or funded through a partnership between the public sector and the private sector. PPP contracts involve private sector bodies providing public sector infrastructure and/or services. Judgments must be made about which entity (public or private) accounts for the associated assets and finance lease liabilities. Early PPP contracts in the UK used the private finance initiative (PFI) model structure. In more recent years the details of the structure of PPP contracts has evolved through various models including "PF2", non-profit distributing ("NPD") and other models.

The Budget 2018 (also see Balance sheet review section) announced that government would no longer use PF2 for new projects and that a new centre of best practice in the Department of Health and Social Care (DHSC) would be set up in an effort to improve the management of existing PFI contracts (other than in the devolved administrations).

Wider measures of public sector debt, July 2011 described the history, and challenges, of PPP and PFI reporting. In the national accounts, a PPP is recorded off the government balance sheet only where the non-government partner bears most of the risks (which include construction, demand, availability, financing and guarantees) and is entitled to receive almost all the current benefits from the assets. The rules are complex, but where a PPP is classified as "off-balance sheet" there is no debt liability recorded in the government balance sheet and so no direct impact on national accounts and PSF debt measures. Although government will be making regular payments to the non-government PPP partner and, as with any other expenditure, these payments will require government financing and so will indirectly impact future debt levels.

Where a PPP is classified as "on-balance sheet", the capital costs of the scheme will be recognised as a financial (imputed) loan liability (that is, a finance lease liability) for government and this liability will increase public sector net debt. The regular payments made by government over the lifetime of the PPP cover service, interest payments and capital costs.

The imputed finance lease liability represents the government liability for future capital payments and so it reduces over time as capital payments are made.

The fundamental statistical guidance for recording PPP contracts is presently provided in ESA 2010 and Manual on Government Deficit and Debt – Implementation of ESA 2010, 2016 edition. More detailed guidance on the classification and recording of PPP assets has been provided in the EPEC Guide, published by Eurostat and the European Investment Bank's (EIB) European PPP Expertise Centre (EPEC).

Currently, most UK PPP contracts are recorded off the government balance sheet for statistical purposes. As at end-March 2018, the UK National Accounts and PSF debt measures included approximately £6 billion in finance lease liabilities relating to on-balance sheet PPPs. By contrast it is estimated by ONS that, were off-balance sheet PPPs (under statistical guidance) to be recorded on the government balance sheet, this would lead to an approximate further £28 billion of PPP liabilities at the same point in time.

A time series for these figures is provided in the tables published alongside this article.

The Whole of Government Accounts (WGA), published by HM Treasury, also includes some PPP contracts as on-balance sheet and others off-balance sheet. The WGA applies International Financial Reporting Standards (IFRS) accounting guidance, as interpreted or adapted under the guidance of the Financial Reporting Advisory Board (FRAB). IFRS focus, in the context of PPPs, on which party is judged to have effective control over the scheme. The result of this different approach is that nearly all PPP assets and liabilities are included in the WGA as on-balance sheet for government.

The most recent (financial year ending 31 March 2017) WGA stated that (for PFI contracts):

- PFI assets are recognised on the Statement of Financial Position where the government controls or regulates the services, to whom they are provided, the price, and any significant residual interest in the asset at the end of the contract
- as at 31 March 2017, there were 715 current PFI and PF2 projects; 699 projects were operational and 16 were in construction; of these projects 631 were signed before May 2010 and have a capital value of £50.6 billion (86% of the total); there were only four PF2 projects in the portfolio at that time
- the net book value of PFI assets included in the Statement of Financial Position ("balance sheet") was £39.3 billion as at 31 March 2017 (financial year ending 31 March 2016: £38.8 billion)
- the PFI liability for the present value of capital amounts payable was £39.3 billion at 31 March 2017 (financial year ending 31 March 2016: £39.2 billion)

The financial year ending 31 March 2017 WGA also included details of:

- the imputed finance lease charges for on-balance sheet PFIs, at end-March 2017, which stood at £42.8 billion, net of interest (£40.5 billion at end-March 2016)

- the obligations for future periods' minimum service charges, which amounted at end-March 2017 to £89.3 billion (£95.2 billion at end-March 2016)

Contingencies, provisions and guarantees

A provision is an assessment of future expenditure arising from past events. Under ESA 2010, national accounts do not usually record the creation or movement in provisions, but it does record any associated expenditure in the period in which it occurs. UK National Accounts and PSF statistics treat most provisions as contingent liabilities and so do not include them in measures of debt.

The WGA records provisions in the balance sheet and so includes them in its measure of the public sector net liabilities. The major public sector provisions are related to nuclear decommissioning and claims for alleged clinical negligence. Other provisions include a wide range of provisions across all parts of the public sector. These include provisions in relation to injury benefits, medical costs, criminal injuries compensation, legal costs, compulsory purchases, claims in respect of structural damage and diminution of value of properties affected by transport schemes, and compensation for termination of employment.

Table 5 reproduces provisions and charges recorded in the WGA.

Table 5: Provisions for liabilities and charges as reported in Whole of Government Accounts
UK, financial year ending 31 March 2011 to financial year ending 31 March 2017

							£ billion
	2010-11	**2011-12**	**2012-13**	**2013-14**	**2014-15**	**2015-16**	**2016-17**
Nuclear decommissioning	60.9	64.3	69.9	77.4	82.9	181.7	184.9
Clinical negligence	17.5	19.4	23.6	26.6	29.3	57.6	66.6
Other types of provisions	29.7	29.6	37.5	50.6	63.1	66.2	70.7
Total	108.1	113.3	131.0	154.6	175.3	305.5	322.2

Source: Office for National Statistics

The tables published alongside this article provide supplementary information on government guarantees and non-performing loans.

More widely, the WGA includes information on a range of contingent obligations and guarantees that are not included in the statement of financial position (so are not included in the WGA liabilities figure). These are not included in the balance sheet because they are associated with events that are considered possible but not sufficiently probable (or quantifiable) to be included in the balance sheet. More information on these and other potential obligations is provided in the WGA and in the OBR's Fiscal Sustainability Reports.

6 . Recent developments in the presentation of statistics on public sector debt

Alternative presentations of public sector debt statistics

IMF and GFSM developments

A July 2018 Office for National Statistics (ONS) article, Looking ahead – developments in public sector finance statistics presented a range of developments taking place in ONS public sector finance statistics. Among these planned changes was the intention to add a set of tables compiled under alternative international statistical standards, in particular the International Monetary Fund's (IMF) recommendations for statistical presentation under its Fiscal Transparency Code (PDF, 250KB), an international code for disclosure of information about public finances. The Code comprises a set of principles built around four pillars: fiscal reporting; fiscal forecasting and budgeting; fiscal risk analysis and management; and resource revenue management.

In July 2016, the IMF conducted a fiscal transparency evaluation, in which the UK scored highly, reflecting the "underlying strength of fiscal institutions and ongoing efforts to improve transparency of public finances". A report of the evaluation and recommendations for the UK was published by the IMF in November 2016. There were two recommendations related to fiscal reporting that ONS has been working to address:

- Recommendation 1.1b: Expanding the coverage of data on stock positions of all public sector assets and liabilities in the public sector finances (PSF), which would allow policy-makers to more effectively manage the available assets and take into account the long-term implications of current policy decisions
- Recommendation 1.1c: Adding a set of tables to the PSF, compiled under alternative international statistical standards; this would allow the PSF to include statistical data produced under a framework that is closer to international financial reporting standards (IFRS), for example, regarding the recognition of civil servants' pension entitlements and PPP (public private partnerships) arrangements, two of the largest reconciliation items between the national accounts and the Whole of Government Accounts (WGA)

ONS has largely addressed the former recommendation through its introduction of the public sector net financial liabilities (PSNFL) fiscal aggregate, which includes coverage of public sector financial assets, and work continues to improve the quality of the underlying data.

In addressing the latter recommendation, we plan to increase our compliance with the International Monetary Fund (IMF)'s government finance statistics framework (see the Government Finance Statistics Manual 2014: GFSM 2014 (PDF, 4.5MB)), the focus of which is general government and the broader public sector and which is followed by the majority of countries in the world. Data, including that for the UK, are published in the IMF Yearbook.

PSF statistics are based on national accounts concepts and rules derived primarily from European System of Accounts: ESA 2010, which in turn is based on the System of National Accounts: SNA 2008. As such, the PSF statistics are already comparable at an international level, particularly with other EU member states.

Whereas GFSM 2014 is based largely on SNA 2008, and so is consistent with ESA 2010, some differences exist due to the analytical purposes of each framework. Regarding public sector debt, the main area of divergence relates to social protection, mainly employment-related pensions. GFSM 2014 requires the liability for all unfunded employment-related pension schemes to be included in the core statistics, whereas ESA and SNA allow these to be excluded from the core accounts and reported in supplementary tables – see earlier.

A further difference related to pensions is in the recording of social contributions and social benefits. ESA and SNA record these as revenue and expense while GFSM 2014 records these as either revenue and expense or transactions in liabilities. Consequently, it is likely that estimates of public sector net borrowing (PSNB) under these frameworks would differ.

Additionally, guidance on the statistical recording of public private partnerships (PPPs) is much more prescriptive in ESA 2010 and the associated Manual on Government Deficit and Debt, than in GFSM 2014 and SNA 2008, particularly the guidance on whether the assets of the PPPs should be on or off the government balance sheet. Following the IMF's recommendation, we are considering the most appropriate recording of UK PPPs under GFSM 2014.

OBR's Fiscal Sustainability Report

The Office for Budget Responsibility's (OBR) Fiscal Sustainability Report 2018 (FSR) (PDF, 1.7MB) provides additional information on the health of the public sector finances but, unlike the PSF statistics and the national accounts, which focus on the fiscal impact of past public sector activity, the FSR has a strong focus on the future sustainability of the public sector finances. While drawing attention to the high degree of uncertainty involved in making projections of public sector finances into the future, the OBR advises that this uncertainty cannot be used as an excuse for ignoring the challenges that lie in the future.

The FSR notes that national accounts balance sheet measures do not include contingent liabilities though, for those that are quantifiable, the Whole of Government Accounts (WGA) include estimates. The latest (financial year ending 31 March 2017) WGA include £84 billion (4% of GDP) of quantifiable contingent liabilities, at end-March 2017 (£104 billion at end-March 2016), which are costs that could arise in the future, but where the probability of each of them in isolation doing so is estimated at less than 50% (so they are not included in the headline total of liabilities).

This £20 billion reduction compared with the previous year was, the FSR explains, more than explained by a £30.4 billion fall in HM Revenue and Customs's contingent liability associated with tax litigation cases, reflecting the cessation of litigation in some cases and revised cost estimates for some ongoing cases, partially offset by a £9.8 billion increase relating to clinical negligence liabilities, due to the use of a lower discount rate to calculate compensation claims.

The FSR also notes that:

- unlike public sector net debt (PSND), and public sector net financial liabilities (PSNFL), the WGA balance sheet also includes the value of tangible and intangible fixed assets – for example, the road network and the electromagnetic spectrum respectively; these were estimated at £1,181 billion or 59% of GDP at the end of March 2017, having increased by £51 billion since the previous year's WGA

- there are significant limits to what information public sector balance sheets alone can provide about fiscal sustainability, particularly because of their retrospective focus

- that the significance of the fact that both public sector finances (PSF) statistics and the WGA balance sheet both show the public sector's liabilities outstripping its assets should not be overstated, given that, across countries and time, this has usually been the case

- there are limitations of the fiscal aggregates published within the PSF statistics, and the FSR suggests that a broader approach, such as public sector net worth, might be more useful (in line with the suggestions made in the first articles in this ONS series); in this respect, the FSR suggests that public sector net worth (PSNW) is a broader balance sheet measure that compares the public sector's liabilities with all its assets, including the non-financial and illiquid financial assets excluded from PSND, noting that public sector net financial liabilities (PSNFL) sits between these measures

- notes criticisms of PSND (and PSNW and PSNFL) as measures of public sector financial health in that they exclude potential future liabilities relating to pensions, PPPs, and so on

- notes some advantages of WGA compared with the narrow and the backward-looking national accounts, including the broader picture painted by the WGA in terms of contingent liabilities

HM Treasury developments – the 'Balance Sheet Review'

HM Treasury's Managing Fiscal Risks: Government response to 2017 Fiscal Risks Report (PDF, 1.3MB) , Chapter 6, reflects the need to consider more comprehensively the public sector balance sheet when managing fiscal risks. It states, for example, that:

“In the private sector, financial statements cover both flows (revenue and expenditure) and stocks (assets and liabilities). This ensures that financial decisions are informed by a comprehensive picture of the financial position and performance of the company and decision makers are held to account for the impact of their decisions on the company’s long-run value.

“By contrast, public sector financial reporting and forecasting has typically focused on government borrowing and the stock of government debt. However, … in the UK, borrowing is only one of a range of determinants of the change in government debt which is also affected by transactions in other parts of the balance sheet – especially since the financial crisis of 2008-09. Moreover, the financial balance sheet is usually only a subset of the array of assets and liabilities typically held by governments … Taking a more comprehensive view of the government balance sheet can help to provide a more complete picture of the sustainability of the public finances and promote greater accountability for the management of public wealth”.

In this context, the Budget 2018 included information on HM Treasury’s planned work on a ‘Balance Sheet Review’ (BSR) aimed at improving the returns on the government’s assets and reducing the costs of its liabilities.

It explained (paragraph 1.50) that:

“… the government … holds £1.9 trillion of assets and £4.3 trillion of liabilities, which it has a duty to manage for the benefit of current and future generations, and that the IMF had recently highlighted the benefits of improving the management of public balance sheets which could yield up to 3% of GDP annually”.

The Budget 2018 provided an update on the government’s progress in the following areas:

- balance sheet reporting – including the government’s commitment to complying with the IMF’s Government Financial Statistics Manual, which requires regular statistical reporting of the entire balance sheet, starting in spring 2019
- intangible assets – including how the government is aiming to achieve a better financial, economic and social return on its intellectual property and other intangible assets
- Private Finance II (PF2): the Office for Budget Responsibility (OBR)’s Fiscal Risk Report had identified private finance initiatives as a source of significant fiscal risk to government; the Budget 2018 announced that government would no longer use PF2 for new projects and that a new centre of best practice in the Department of Health and Social Care (DHSC) would be set up in an effort to improve the management of existing PFI contracts (other than in the devolved administrations)
- reducing inflation exposure, where government aims to reduce its inflation exposure through reducing the proportion of index-linked gilt issuance in a measured fashion over the medium-term
- property: government is launching its first-ever geo-spatial Digital National Asset Register to enable better management and commercialisation of its £420 billion of property assets
- debt owed to the government: government aims to improve its recovery of over £20 billion of overdue debt through new performance management measures and continued central support
- contingent liabilities: HM Treasury introduced, in 2017, stricter new controls over the issuance of guarantees and other contingent liabilities; the BSR is exploring options to improve incentives and secure appropriate compensation for the taxpayer when providing insurance to the private sector
- asset sales and loans: HM Treasury aims to introduce stricter disclosure requirements for asset sales and revised budgetary treatment for financial transactions (for example, loans) and to publish new guidance on both in December 2018; in addition, the BSR aims to improve the management of government departments’ individual balance sheets; HM Treasury aims to publish the final conclusions from the BSR at Spending Review 2019

While several of the items mentioned in the BSR are not, of course, directly related to the level of public sector debt, however defined or measured, the coverage of the BSR, which encompasses both assets and liabilities, reinforces the notion that, to manage “public sector wealth” requires consideration of the past and future of the broader public sector balance sheet.

7 . Conclusions

As discussed in earlier versions of this article, public sector obligations fall into a spectrum ranging from clearly measurable and time-bound liabilities through to remote and unquantifiable contingent obligations. The former will generally be included within balance sheets; the latter rarely. Where a specific obligation falls on this spectrum it is often strongly debated and views change over time.

The main focus here has been on public sector debt, whereas a full understanding of the economic health of the public sector also requires a consideration of public sector assets. Some of these assets, including non-financial assets and financial assets, are already included in public sector balance sheets in the national accounts. Some or all public sector financial assets are included in the derivation of more recently developed PSF statistics, such as public sector net financial liabilities (PSNFL).

The assets and liabilities mentioned in the core part of this article constitute assets and liabilities in the economic (or financial reporting) sense, in that they generally represent balances of economic wealth, or obligation, respectively, which result from past actions and that are relatively certain and measurable. Readers of statistical publications may have more broad interpretations of “assets” and “liabilities”, including the fiscal implications of possible future public sector expenditure and income generation. We have also noted, in Section 5, the Office for Budget Responsibility (OBR)’s view of the limited use of public sector balance sheets, given their retrospective focus, in this context.

This article has presented a range of measures already published across a range of sources – UK National Accounts, public sector finance (PSF) statistics, Whole of Government Accounts (WGA) – and prepared on various bases and assumptions. As cautioned in previous articles in this series, care should be taken when aggregating or comparing such different data sources and the data provided by this article should be used in this context.