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Public Sector Finances, 2012 : Sources and quality assurance procedures

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Abstract

The Public Sector Finances Statistical Bulletin is a monthly National Statistics publication that is produced jointly by the Office for National Statistics (ONS) and HM Treasury. The ONS also publish the Government Deficit and Debt under the Maastricht Treaty bulletin. Both these publications use the same data sources. This note provides summary information on the data sources used and how those data are quality assured.

Summary of Public Finance data sources and quality assurance procedures

The Office for National Statistics (ONS) and HM Treasury publish regular statistics on the public sector finances in the form of a Public Sector Finances bulletin (PSF), the Government Deficit and Debt under the Maastricht Treaty bulletin and associated data releases under the Excessive Deficit Procedure (EDP). In compiling statistics on the public sector finances the public sector comprises three sub-sectors; central government, local government and public corporations. The data sources used to compile estimates of expenditure, income, assets and liabilities for these sub-sectors are mainly compiled from administrative data. However, the data come from different administrative systems and hence have different quality checking processes. While ONS is ultimately responsible for the quality of the statistics used in the PSF bulletin and the EDP releases, the same data sources are used by a number of government departments for their own planning purposes, who therefore have an interest in ensuring the quality of the data.

For central government expenditure the main source of data in the PSF and EDP releases is the government's Online System for Central Accounting and Reporting (OSCAR). The data are entered directly into the system via departments and quality assured by the departments and HM Treasury. These data are used by HM Treasury for its own fiscal planning purposes and by the Office for Budget Responsibility (OBR) for forecasting the government finances. Data summaries from OSCAR are supplied to ONS by HM Treasury. The spending data from OSCAR are modified with a number of adjustments to meet National Accounts requirements; ONS is responsible for ensuring the adjusted data conform to National Accounts concepts. To enable ONS to compile complete measures of debt and deficit for publication in the PSF and EDP releases, a small number

of expenditure items come from sources other than OSCAR. The largest of these, expenditure on debt interest, is computed from a variety of sources – mostly the Debt Management Office (DMO) and HM Treasury finance systems with some smaller contributions from other places including National Savings and Investments (NS&I). Central government subsidies to public corporations are also sourced from ONS public corporation data rather than through the central government collection. Other data comes from bodies such as DMO, HM Revenue and Customs (HMRC) and the Bank of England. ONS or HM Treasury collect these data directly from the source institutions.

ONS processes all the expenditure data through computer systems that have inbuilt error, consistency and revision checks. Summary reports are also produced from these systems for further quality assurance, mainly based on revision and growth rate analysis. Copies of the summary reports are also sent to HM Treasury officials who compare the summary reports to ones produced by HM Treasury systems.

Most central government income is in the form of tax receipts, the vast majority of which are collected by HMRC. HMRC is responsible for checking the quality of these data. HMRC publishes data consistent with the PSF bulletin in its own National Statistics series, so its data collection and quality assurance procedures are subject to the scrutiny of the UK Statistics Authority outside of any use in the PSF bulletin. ONS, on receipt of the HMRC data, check the tax accruals calculations of HMRC and ensure internal consistency within the receipts data. Any large revisions or outliers in the data are identified and discussed with HMRC colleagues. This process is aided by regular monthly quality assurance meetings (fixed on working day 7 of the month) where the latest monthly tax receipts are discussed between officials from HM Treasury, HMRC, OBR and ONS.

Most local government data are annual, relating to financial years. Detailed annual returns of expenditure and income are compiled by local authorities and collected by the Department for Communities and Local Government (DCLG), Scottish Government, Welsh Assembly Government and the Northern Ireland Government. Data for the current year are generally based on local government budgets and are therefore prone to revision once final data are available. Final figures are based on audited resource accounts, which are available for England around eight months after the end of the financial year and somewhat later for the devolved administrations. Quarterly DCLG surveys provide estimates of current expenditure, interest and dividend receipts and council tax receipts.

ONS are provided with local government data by DCLG, the devolved administrations and the Bank of England, on a consolidated basis. The data are collected through statutory surveys (which normally have one hundred per cent return rates) of these central organisations. These surveys apply the same UK fiscal rules as used in central government, and as such the data are essentially ESA95 compliant. Data are checked through an analysis of revisions and growth as well as checking aggregated data. Once the data has been quality assured it is loaded to the ONS relational database system and further tasks, summary reports and consistency checks run within this system.

For public corporations, ONS collects and quality assures quarterly data directly from the eight largest public corporations via survey questionnaires. Data, for financial years, from the remaining public corporations is compiled by ONS from the published annual audited accounts of the public corporations.

Public sector sources and quality assurance procedures

Central government expenditure and income data

Central government's contribution to the public sector borrowing and debt aggregates is compiled by HM Treasury, mainly using administrative data sources. This is efficient because the information can be collected once and then used for all purposes. Central government data are reported on an accruals basis in nearly all cases.

Central government expenditure data

The main source of central government expenditure data is HM Treasury's public spending database, OSCAR (Online System for Central Accounting and Reporting), which collects financial information from across the public sector. Before 2012-13, the HM Treasury database was called COINS (Combined Online Information System). The OSCAR database is designed to monitor spending against the HM Treasury's public expenditure frameworks. Statisticians in HM Treasury ensure that OSCAR maintains its integrity as a data source for the PSF bulletin. As part of the Government's commitment to increased transparency in public spending data, HM Treasury has published the raw data from OSCAR (formerly COINS), underlying the PSF bulletin on a quarterly basis since June 2010.

Central government expenditure data from OSCAR (COINS before 2012-13) go through various stages of refinement during the current financial year and beyond:

- stage one – each month, departments submit to OSCAR a monthly profile of spending for the current financial year. This includes estimates of actual spend for completed months (outturn) and forecasts for future months. The data are entered directly into the system via departments and quality assured by the departments and HM Treasury. As part of the move to OSCAR, mappings to departmental accounting systems were reviewed and improved. In subsequent data supplies, a department can provide updated estimates for any month, which tends to lead to frequent revisions to the published data in the bulletin. Some departments are more likely to revise their data than others, usually as they are:
- arrears reporters – some departments report their expenditure in arrears. The latest data reported in the bulletin through the year are not an estimate of actual spending but rather a forecast; and/or
- subject to special reporting arrangements. Some bodies amalgamated into departmental OSCAR returns provide updated data on a quarterly rather than monthly basis. These are arms length bodies in various departments, NHS Trusts and Foundation Trusts (in the Department of Health's return) along with academy schools (Department for Education).

The expenditure data are entered into OSCAR as accrued values in accordance with the UK Government fiscal framework, which is based on ESA95 concepts and rules. The precise accounting rules that government departments must follow are defined in the Financial Reporting Manual (FReM) and are based on IFRS adapted for the UK public sector. Expenditure data are revised as necessary after the end of the year to align with published audited departmental resource accounts.

The performance of departments in supplying monthly data is assessed according to a range of qualitative and quantitative indicators. Departments are given feedback on their performance.

- stage two – in July following the completion of the financial year, HM Treasury's annual Public Spending National Statistics are published, based on most departments' audited resource accounts. Departments update their full-year expenditure estimates (but not their monthly profile) for this publication;
- stage three – these full year estimates are updated for the autumn update of HM Treasury's Public Spending National Statistics; and
- stage four – in the February following the end of the financial year the winter update of HM Treasury's Public Spending National statistics are published. Usually, this will incorporate the finalised, audited accounts of the devolved administrations along with those of any outstanding departments.

The spending data from OSCAR are modified with a number of adjustments to meet National Account's requirements. These adjustments are made for a number of reasons:

- conceptual framework differences. Although HM Treasury's budgeting system is designed to follow the National Accounts treatment for most transactions there remain a number of differences. Conceptual adjustments bring budgeting data in to line with the National Accounts framework;
- error corrections. Sometimes there are errors in the data that departments load on to OSCAR. Although every effort is made to correct the data on the database itself, in some cases this is not possible within the tight publication timetable and adjustments are made on top of the data instead; and
- use of sources other than OSCAR. Adjustments are necessary where ONS uses data sources other than OSCAR, for example depreciation where ONS uses a perpetual inventory model (PIM) rather than department's own estimates.

As explained above, the data reported monthly to HM Treasury on OSCAR are on an accrued basis to line up with published departmental resource accounts. However, the calculation of accrued debt interest expenditure is more complicated. Debt interest expenditure consists of the sum of four separate components:

- i. coupon payments. The majority of interest payments on UK gilts (coupon payments) are paid out every six months (some are quarterly) from the National Loans Fund (NLF; a large government bank account at the Bank of England). Information on coupon payments comes from HM Treasury's financial management systems. An adjustment is then applied to distribute the coupon payments to the months when they accrued. This spreads monthly payments evenly for conventional gilts (i.e. those with a fixed interest rate). The adjustment is more complicated for the index-linked variety, with the accrued monthly interest payments varying with movements in the retail prices index (RPI);
- ii. uplift on index-linked gilts. The principal of an index-linked gilt is also adjusted in line with RPI. Rather than scoring this capital uplift at the date the gilt is redeemed, the uplift is accrued over the life of the gilt, mirroring movements in RPI;

- iii. amortisation of discounts and premia of issue. Frequently, gilts are not issued at their nominal value. They may have been sold at a discount (or premium), so that the debt issued is less than (or greater than) the nominal value. PSND scores the nominal increase in government liability from the issuance of these gilts. The discounts or premia on top of this are arguably part of the financing cost and under ESA95 are treated like interest accruing. In practice, information on the profit/loss made at gilt auctions is supplied by the DMO and these amounts are then spread evenly over the time before redemption of the gilts; and
- iv. other: There are a number of other small amounts of interest that the government pays out and are scored to PSNB as they accrue. These include interest on Treasury bills, National Savings certificates and short-term borrowing.

A small number of expenditure items come from sources other than OSCAR. The largest of these, expenditure on debt interest, is computed from a variety of sources – mostly the Debt Management Office (DMO) and HM Treasury finance systems with some smaller contributions from other places including National Savings and Investments (NS&I). Depreciation on assets is calculated using the ONS perpetual inventory model. Central government subsidies to public corporations are also sourced from ONS public corporation data rather than through the central government collection. Other data comes from bodies such as DMO, HMRC and the Bank of England.

Certain data used in the National Accounts, EDP and the UK Public Sector Finances are not directly sourced from external sources but calculated by ONS. For example the figures for central government and local government depreciation (and so gross operating surplus) are calculated using the ONS PIM. A team in ONS is responsible for the management of the PIM. Once calculated the PIM data are loaded into the ONS relational database system for use within National Accounts, EDP and the UK Public Sector Finances.

Detailed Central Government expenditure data from OSCAR are received quarterly by ONS. A team in the ONS receives these data and aggregates the data into low-level quarterly time series which can be later aggregated together to calculate the higher-level central government fiscal statistics required by National Accounts, EDP and UK Public Sector Finances. The calculated data series therefore typically identify; the ESA transactional area, the COFOG category, the counterpart sector as well as more specific information about the nature of the transaction.

Data are processed by ESA transactional area using SAS and Excel. The data are loaded to the ONS relational database system and further tasks and consistency checks run within this system. Summary reports are produced from the database system for quality assurance. These summary reports are reviewed by ONS analysts, mainly based on revision and growth rate analysis. Copies of the summary reports are also sent to HM Treasury officials who compare the summary reports to ones produced by their own systems. Any differences are highlighted and the reasons identified. If necessary the data are corrected and the systems re-run.

Monthly data on the issuances and redemptions of government securities (mainly gilts and Treasury bills) are received from the DMO by both ONS and HM Treasury (HMT).

ONS on receipt of the DMO data process it, using a number of different spreadsheets. These spreadsheets calculate key measures such as gilt holdings (at market and nominal valuations) and accrued debt interest. The spreadsheets include a number of consistency and revision checks, which are used to quality assure the data.

As a further check, HMT and ONS independently calculate some of the key statistical aggregates for government securities and compare their results. Any differences are investigated and resolved before the data are loaded into the ONS relational database system for use within National Accounts, EDP and the UK Public Sector Finances.

Central government income data

Most central government income is in the form of tax receipts, the vast majority of which are collected by HM Revenue and Customs (HMRC). Therefore, figures for the majority of receipts in the PSF bulletin are collated and quality-assured by HMRC analysts from their administrative data sources before delivery to HM Treasury and ONS. These processes are equally as involved as those for expenditure and included cross-referencing with HM Treasury's financial systems, but are mainly the responsibility of the authorities collecting the receipts (in nearly all cases HMRC).

HMRC publishes data consistent with the PSF bulletin in National Statistics series so its data collection and quality assurance procedures will be subject to the scrutiny of the UK Statistics Authority outside of any use in the PSF bulletin. The needs of the PSF bulletin and National Accounts are fully embedded into all the receipts monitoring systems. This is in contrast with expenditure data with its multiple accounting frameworks, where the needs of the bulletin are often a secondary (though important) consideration.

The accruals principle for tax receipts used is to record them when the tax liability arises (rather than when the underlying economic activity took place). For the majority of tax receipts this means in practice that a simple time lag is applied to the cash series. For example PAYE cash receipts are lagged by one month as for the most part the government receives PAYE taxes one month after salaries are paid. Similarly, VAT is accrued over the quarter preceding the cash receipt. In some cases (notably corporation tax) an appropriate accrual time is not available in a timely manner and so unaltered cash data are used instead.

As most tax data are time lagged, the published estimates for the latest periods contain significant levels of forecast. For periods older than one quarter, estimates are almost entirely data driven though revisions can still occur particularly after the year end as part of the auditing process.

In addition to the accruals adjustments, to move to a National Accounts consistent basis other adjustments to tax data are made. Most notable are the inclusion of 'imputed' tax and spend items, in particular VAT refunds to public sector bodies.

Other income data collected includes information from:

- non-HMRC tax or levy raising bodies supplied directly to ONS. This includes vehicle excise duty and national non-domestic rates as well as information from utilities regulators etc.;

- HM Treasury sources which covers the majority of dividend and interest receipts as well as the TV licence fee and a number of smaller items; and
- ONS modelling for the gross operating surplus. By convention, the government gross operating surplus is assumed to be equal to depreciation which is derived from ONS models.

Monthly central government tax data are received from HMRC in both cash and accrued terms. ONS on receipt of the data checks the accrued calculations of HMRC and uses checks within spreadsheets to ensure internal consistency within the receipts data. Any large revisions or outliers in the data are identified and discussed with HMRC colleagues. This process is aided by a regular monthly quality assurance meeting (fixed on working day 7 of the month) where the latest monthly tax receipts are discussed between officials from HM Treasury, HMRC, the Office for Budgetary Responsibility (OBR) and ONS.

Once the latest tax receipt estimates have been quality assured they are loaded into the ONS relational database system for use within National Accounts, EDP and the UK Public Sector Finances.

Central government cash data

The majority of the cash data comes from HM Treasury's cash management systems, supplemented with data from the DMO, Bank of England and other sources. Estimates of the central government net cash requirement are produced via a system of balancing a number of central government accounts for which complete balances are produced each month: this includes accounts such as the Consolidated Fund, National Loans Fund, and the Debt Management Account etc.

Within each account transactions are divided into „determinants' of the cash requirement and 'financing' items. Determinants are the income and expenditure associated with government business while financing items are the activities to fund these activities. As the accounts are fully balanced, the sum of the determinants (that is the net cash requirement) equals the sum of the financing items.

Local government expenditure and income data

Most local government data are annual, relating to financial years. Detailed annual returns of expenditure and income are compiled by local government and collected by the Department for Communities and Local Government (DCLG), Scottish Government, Welsh Assembly Government and the Northern Ireland Government. Data for the current year are generally based on local government budgets and are therefore prone to revision once final data are available. Final figures are based on audited resource accounts, which are available for England around eight months after the end of the financial year and somewhat later for the devolved administrations.

Some data are available in-year – the data relating to Central Government grants to local government are collected on OSCAR (see the section on central government expenditure above). Quarterly DCLG surveys provide estimates of current expenditure, interest and dividend receipts and council tax receipts - none of the devolved administrations collect any quarterly data on current transactions. The DCLG data on interest and dividends is supplemented by data from the Bank of

England. DCLG and the Scottish Government collect quarterly returns of capital expenditure. DCLG also collects monthly data for the whole of the UK on the borrowing and lending of local government.

ONS are provided with local government data by DCLG, the devolved administrations and the Bank of England on a consolidated basis. The data are collected through statutory surveys (which normally have one hundred per cent return rates) of these central organisations. These surveys apply the same UK fiscal rules as used in central government, and as such the data are largely ESA95 compliant.

Detailed Local Government data are received throughout the year from DCLG, Bank of England and the devolved administrations. A team in ONS receives these data on a monthly, quarterly or annual basis, dependent on the data source. Data are processed using spreadsheets to conduct revision analysis and growth checks as well as to aggregate the data. Once the data have been quality assured they are loaded to the ONS relational database system and further tasks, summary reports and consistency checks run within this system. The data are then ready for use within National Accounts, EDP and the UK Public Sector Finances.

Where reports on actual spending are not received by DCLG or the Scottish Government, forecast or planned spending estimates may be used. Reports by DCLG to the ONS are made on a consolidated basis for the entities covered by the returns.

Public corporations expenditure and income data

ONS collects quarterly data directly from the eight largest public corporations via survey questionnaires. Data for financial years from the remaining public corporations comes from their published annual accounts. Again, data for public corporations are prone to revision until final, audited, accounts are published.

An exercise is underway currently to establish whether data supplied by public corporations to HM Treasury, as part of the WGA project, can be used to complement the public corporations' published annual accounts.

Central compilation of full central and local government accounts

Once the different business areas involved in the source data for the Government Finance Statistics in the National Accounts and EDP have quality assured the source data and loaded it to the ONS relational database it is ready to be used in the compilation processes for the EDP statistics and UK National Accounts.

Although the source data are the same, the systems to produce the EDP statistics and the GFS in the UK National Accounts are separate. The reason for this is due to the different [revisions \(15.9 Kb Pdf\)](#) policies of the two outputs.

Both central compilation systems are the same in that they use tasks in the ONS relational database system to aggregate the source data to produce a full set of accounts (non-financial accounts, financial accounts and financial balance sheets). The database compilation systems include

consistency checks to identify issues in the data aggregation processes as well as summary reports to allow the identification of:

- missing values
- inconsistent flows and levels
- anomalous discrepancies
- quarters not summing to annuals
- unexplained large revisions
- unexplained large growth rates

At any point in this procedure issues identified might require revisions to data, or less commonly to further queries being directed back to the original data suppliers.

Background notes

1. Details of the policy governing the release of new data are available by visiting www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html or from the Media Relations Office email: media.relations@ons.gsi.gov.uk

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