



**CONFERENCE ON STRENGTHENING SECTORAL POSITION AND  
FLOW DATA IN THE MACROECONOMIC ACCOUNTS**

Jointly organized by the IMF and OECD

February 28–March 2, 2011

IMF Headquarters 2 (HQ2)  
Conference Hall 1 & 2 (lobby level)  
1900 Pennsylvania Ave NW, Washington, DC, 20431

**Developing Financial Statistics for Policy**

To be presented in Session 4 by Peter Patterson

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## **Developing financial statistics for policy**

*IMF Conference on Strengthening Sectoral Position and Flow Data in the Macroeconomic Accounts, Washington DC, February 29 – March 2, 2011*

The financial crisis presented new challenges to policymakers in managing financial risk and uncertainty, and in understanding the mechanics of the credit boom and the securitisation instruments upon which it was built.

This in turn has placed new responsibilities on national statistical institutes to provide policymakers and analysts with the tools they require to understand the mechanics of the credit boom, and asset and debt inflation more generally. ONS must therefore keep pace with financial innovation in its measurement of gross value added by the financial sector, and in the sectoral balance sheets.

This paper describes the current production of financial accounts and financial balance sheets in the UK. It describes the initial response of the ONS to the financial crisis, recognising that in a number of areas, statistical coverage has failed to keep pace with the rapidly changing behaviour of the financial sector. It sets out some of the existing challenges, before going on to consider future developments.

### **What we do now – description of UK sector accounts**

Before looking at some of the project's recommendations, it is necessary to outline briefly the sector accounts that are currently compiled for the UK economy.

The sector accounts are published annually in the Blue Book (BB) and quarterly in UK Economic Accounts (UKEA). There are slight differences in coverage.

In accordance with guidelines from ESA95, UKEA covers changes in assets and liability positions of five different types of financial institutions:

- a) Central bank
- b) Banks and building societies (recently combined in a single group because building society data were potentially disclosive)
- c) Other financial intermediaries and financial auxiliaries
- d) Insurance companies and pension funds.

Detailed data divide assets and liabilities by maturity period. Maturities of less than one year are categorised as short-term, whilst those in excess of one year are regarded as long run. Assets and liabilities are further reported according to their sub-categories. For banks for example, the following sub-categories are reported:

- a) currency and deposits
- b) securities other than shares
- c) loans
- d) shares and other equity.

Some assets and liabilities, such as loans, are further divided into different periods of maturity and details are provided about the counter-party.

Blue Book has similar coverage to UKEA, with minor differences. The financial corporations sector covers four major groups of financial institutions:

- a) *Monetary financial institutions* - central bank, banks, and building societies
- b) *Other financial intermediaries* - institutions that collect savings and allocate them to investment projects, but have liabilities others than currency and deposits. These include leasing corporations, security and derivative dealers, and venture capital companies.
- c) *Insurance companies and pension funds* - including corporations involved in financial intermediation as a consequence of the pooling of risk.
- d) *Financial auxiliaries* - involved in activities related to financial intermediation but not themselves intermediaries.

There is in addition a derivative account, but coverage is limited to reported annual positions.

In both publications, the balance sheet data is unconsolidated - i.e. transactions of assets and liabilities between sub-sectors of the same sector and between institutional units of the same sub-sector are eliminated.

There is additionally considerable detail of UK sectoral transactions with the rest of the world in the ONS Pink Book "UK balance of payments", including the financial account and figures on the international investment position.

Data presented in the Blue Book and UK Economic Accounts publications meet the requirements of the SNA and ESA, but offer only limited understanding of the impact of the financial sector on economic activity and risk transmission. The low frequency of data - annual or quarterly - restricts users' ability to trace behaviour in a timely manner. Data coverage is focused on high level aggregates. Information on sub-positions and maturity period and on the destination of loans - to PNFCs, to households and to other financial corporations - is not reported. Furthermore coverage has not kept pace with the rapid pace of innovation in financial products, or with the evolution of complex institutional structures that are intertwined with shadow banking activity.

### **Developing financial statistics for policy**

A project was launched in the autumn of 2008 to address how ONS can best fulfil its role of serving the information requirements of policymakers, recognising that some catching up was necessary to reflect the rapid pace of innovation in financial markets in recent years. The aim of the project was to review how ONS statistics and analyses were already recording the credit boom and financial innovation of recent years, and what improvements might be possible in future in order to record the continuing effects of the financial crisis and the effects of government interventions.

It also aimed to raise the profile of sector accounts more generally in macroeconomic analysis and in particular, looked at how to record the continuing effects of the financial crisis and the effects of government interventions. The major focus of the work was, and has continued to be, on financial balance sheets and financial transactions.

An analysis of the gaps in recording of assets and liabilities, largely arising due to the opacity of the unregulated, or "shadow banking system", led to a list of recommendations to be taken forward in partnership with the Bank of England, HM Treasury and the Financial Services Authority (FSA).

The UK national accounts capture the majority of financial activity, and of holdings of financial assets and liabilities across all sectors. However, there are gaps which fall in areas where the products and the transactions are complex and in many cases opaque:

- the recording of transactions in structured financial products, such as derivatives and hedge funds, and
- the activity and holdings of securities dealers, venture capital companies, private equity funds and special purpose entities.

ONS also recognised that there were shortcomings in some of its surveys of financial corporations (other than banks and building societies):

- the quarterly surveys of financial flows (transactions) suffer from incomplete coverage, inconsistency of data requested across survey forms, small sample sizes
- the annual surveys of balance sheet data do not cover securities dealers, or the managers of hedge funds and private equity funds, and
- some data on the financial balance sheets of private non-financial corporations (PNFCs) are covered by a quarterly survey, the Financial Assets and Liabilities Survey (FALS), but this collects much more data on assets than on liabilities.

Survey deficiencies should be addressed as part of a more wide-ranging strategy to improve the coverage and data quality of ONS surveys. With particular reference to the financial sector, the strategy includes:

- investigation of new registers to improve coverage of the financial sector
- improvement of the reconciliation between quarterly and annual data
- assessment of the potential use of administrative data especially regulatory data from the FSA, and
- review of the financial surveys carried out in other countries where balance sheet, flows and revaluation data are collected on a single quarterly survey form

The recommendations of the “Developing financial statistics for policy” project were

*Recommendation 1 - ONS should publish, after consultation with other stakeholders, the analysis it has done on gaps in definition and coverage of reporting on financial services, products and entities as a basis for future joint work.*

This work is to be published shortly, and will highlight gaps in the coverage of new financial institutions, principally in the “shadow banking sector”, and of new financial instruments such as derivatives. The work also highlights the need for more granularity of information in order to understand the levels of risk exposure, and better information on network risks arising from the interconnectedness of financial institutions which has an important bearing on the potential systemic impact of economic and financial shocks.

*Recommendation 2 - A forum for active cooperation with the Financial Services Authority (FSA), Bank of England and HM Treasury and other stakeholders should be developed, with a view to filling the gaps, and improving existing data.*

This group met for the first time in November 2010 for a broad exchange of views. ONS is now considering how to take the work forward using a highly collaborative approach.

*Recommendation 3 - Data on derivatives should be incorporated into the National Accounts at the earliest opportunity.*

Data on derivatives in the banking sector for the most recent years have been incorporated into the 2010 *Blue Book*, with data for earlier years to be taken on this year. Information on securities dealers' transactions in derivatives was collected for the first time in 2009 and will also be included in the 2011 *Blue Book*.

*Recommendation 4 - A review of bonds transactions should be carried out, focusing on the reconciliation of data between the income and capital account and measures in the financial account.*

A review of the current sources and methodology for bonds transactions has been completed. It identified improved data sources for debt securities, corrected sector misallocations for some companies, and developed a method using general indices of bond prices to convert the data from a nominal (or book) valuation to a market one. It also concluded that information on bank and building society debt securities of differing maturities should be consolidated into a single transaction line for UK debt securities. These changes will be implemented in this year's Blue Book.

*Recommendation 5 - Estimates of the gross trading profits of fund managers should be improved, given that they are thought to have been underestimated since the cessation of the Fund Management survey in 2000.*

This workstream has resulted in an improved methodology for the gross trading profits (GTP) of unit trust and investment trust companies. It also improved estimates of expenditure by households on investment in unit trusts by bringing the methodology into line with that used in the calculation of financial corporations' GTP, providing consistency across the different estimates of gross domestic product (GDP). The Investment Management Association (IMA) are also undertaking their own project looking at the gross value added of fund managers. Further work is required on fund managers' GTP.

*Recommendation 6 - Estimates of the gross trading profits from asset finance activity should be broken down by asset type, which in turn will improve the validation of finance leasing data.*

The output from the Asset Finance survey has been extensively revised and improved to report more closely the results of the survey. In addition, a review of the survey methodology was undertaken and made a number of recommendations which will be implemented when appropriate – perhaps alongside changes to the survey questionnaire that are needed in order to meet the requirements of ESA10.

*Recommendation 7 - A top-to-bottom account for banks should be developed to improve quality assurance and sectoral balancing.*

ONS is moving towards a policy of using the information collected by the Bank of England in its surveys of the monetary and financial institutions (MFI) sector as the primary source of banking data, rather than using counterparty or modelled information. For the 2010 *Blue Book*, this led to a significant improvement to the account for banks that arose from using Bank of England data on interest paid and interest received. A system has been developed that creates a top-to-bottom account for validation purposes but this needs further testing before it can be used more widely.

*Recommendations 8 and 9 -*

*8. A volume measure of the output of hedge fund managers is needed, given that they are estimated to make up around 6 per cent of fund management activity.*

*9. The quarterly output of financial advisors and mortgage brokers is not currently measured and potential data sources should be investigated.*

Investigation of whether volume indicators existed for hedge fund management activities, mortgage brokers and independent financial advisors concluded that current methods provide adequate coverage of division 67 of SIC 2003 (Activities auxiliary to financial intermediation). However, the review yielded a number of recommendations that could improve the quality of the statistics. It also made clear that one of the biggest improvements in quality to the measurement of this division would come from obtaining improved price deflators as new Services Producer Price Indices (SPPI) are developed.

No suitable output indicator currently exists for hedge fund managers but they have too low a weight in gross value added to justify further investigation at the current time. Hedge funds themselves may potentially be more important for the Financial Account and Sector Accounts than for the quarterly GDP(O) measure.

For mortgage brokers, a potential output indicator has been identified (at a cost), but it cannot be used without a corresponding value indicator or a suitable price deflator. Very little data exists for independent financial advisors that could be used in the quarterly GDP(O) estimation. These issues will be considered alongside other improvements to the quality of GDP at an appropriate time.

*Recommendation 10 - ONS's work on improving its price indices for deflating banking sector output should be revisited and use of the current deflator (based on earnings) reviewed.*

Subject to resources, a work programme will be established aimed at extending the use of existing SPPIs as deflators in the National Accounts. However the development programme does not currently include further work on the banking sector.

*Recommendation 11 - Development of the Securities Dealers' survey should be treated as a priority, including finding solutions to existing data discontinuities and conceptual difficulties with deflation.*

Data changes will be implemented from 2011 *Blue Book*. More extensive changes to the questionnaire will be necessary to reflect changes arising from ESA10.

The survey questionnaire was changed to include data on derivatives in line with that collected from the banking sector by the Bank of England, while changes to the use of survey results have been identified to permit the inclusion in the accounts of the additional information on derivatives. The survey will also be changed to facilitate the collection of information required for ESA10 changes.

The remaining recommendations relate to the ONS' objective of increasing transparency by highlighting the shift in risk and uncertainty from private to public sector balance sheets. They include:

- Separate publication of data for the public financial corporations sub-sector – including the large banking groups re-classified as public sector institutions from October 2008 following Government capital injections.
- Progressive moves towards comprehensive coverage of public sector assets and liabilities – for instance wider measures of public sector debt, including pension liabilities, PFIs, contingencies and guarantees.
- Development in collaboration with Eurostat tables of total pension liabilities in line with the 2008 SNA/ESA10 requirements.
- Support for the production of a set of Generational Accounts for the UK to allow analysis of the long term impact of the government interventions in the financial sector, on tax rates and spending possibilities for future generations.
- review the content of the *Financial Statistics* publication.

### **Current challenges with producing UK financial accounts**

The key challenges facing the ONS in producing its current set of financial accounts include the following:

There are large *statistical discrepancies* between the income and capital account and the financial account. These are most marked between the rest of the world (RoW) and financial corporations – unsurprisingly in view of the difficulty in identifying all RoW assets.

In order to meet the statistical discrepancy limits and "balance" the accounts, figures for financial companies and the rest of the world may be subject to large *balancing or coherence adjustments*. These adjustments attempt to account for errors and omissions that inevitably exist within the accounts. Balancing adjustments are typically applied to the financial accounts rather than the income and expenditure accounts, as the latter is regarded as being of higher quality. This may

They are now much larger than is desirable, and may somewhat alter the picture painted by the original data sources. The need for such adjustments most likely reflects missing data for hedge funds, other private equity companies and derivatives for securities dealers. Potential sources of errors and omissions between financial corporations and the rest of the world include securities dealers' double counting of the BIS data, under-recording of UK banks' transactions with the rest of the world, and incomplete information on derivatives trading.

A programme of work is necessary to investigate the imbalances and to identify a range of improvements. The SNA and ESA do not show sector accounts with sector balancing items, and the unbalanced picture provides useful information. This would give a particular picture of the position. On the other hand, a fully balanced set of accounts would in turn provide a more coherent and consistent but rather different picture.

Discrepancies also arise because of the use of different (and inconsistent) data sources – e.g. for assets and liabilities.

Some data sources, eg gilts, do not produce plausible estimates when validated against information on total reported assets and liabilities for other sectors, including the residual sector (households).

*Lack of coverage* is often an issue, perhaps because the data is simply not available, e.g. hedge funds, SPVs, or because ONS does not collect it because it is not currently included in the published accounts, e.g. BoE data for other accounts payable.

Globalisation poses a key challenge – for instance because companies often operate in a different territory from the one in which they are registered. This is particularly widespread among financial services companies.

With the recent rapid growth in financial innovation, existing *allocation methods* may no longer be robust. For instance, ONS' current methodology assumes that the bulk of the UK non-bank deposits with overseas MFIs is attributable to private non-financial companies. However this has raised user concerns as this device may not have kept pace with the rapid growth of hedge funds that probably account for much of the recent growth in this category.

Among the specific financial accounts transactions that have been identified as being in greatest need of review are:

- Quoted and unquoted shares (F514/5)
- Bonds issued by other UK residents (F3326) – recently completed, as discussed above
- Sterling and foreign currency deposits with UK Banks (F2211/2), in conjunction with Sterling loans by UK banks, foreign currency loans by UK banks, Sterling loans by UK building societies (F4111/2/3) and Deposits with rest of the world MFIs (F229).
- Other loans by UK residents (F424)
- Financial derivatives (F34)
- Outward and inward direct investment loans (F4211/2)

- Trade credits and advances (F71)
- Other accounts receivable/payable excluding trade credits (F79)

However such transaction reviews are time consuming and resource intensive if conducted thoroughly, and ONS currently has little spare resource to devote to this.

### Future developments and challenges

The demand for improved financial statistics is gaining considerable momentum, both domestically and internationally, and this is likely to develop further momentum. Some additional coverage will be required by SNA08 and ESA10. In addition international institutions, such as the IMF, OECD and more recently the G20, are understandably looking for improved means of economic surveillance in order to anticipate, and hopefully forestall, the prospect of another financial crisis.

This will pose additional challenges to NSIs in meeting these demands, while offering the opportunity to improve the quality of existing statistical coverage at the same time.

In comparison with SNA 1993, three new financial sub-sectors are included in SNA08, and financial instruments are broken down into further detailed categories to 'reflect the innovation in the financial sectors since the promulgation of 1993 SNA'.

Three new sub-sectors are introduced and the definition of the existing sectors will be changed, as summarised below.

SNA 1993	SNA 2008
1. Central bank	1. Central bank
2. Other depository institutions	2. Deposit taking institutions except the central bank
	3. <i>Money market funds (MMF)</i>
	4. <i>Non-MMF investment funds</i>
3. Other financial intermediaries, except insurance corporations and pension funds	5. Other financial intermediaries, except insurance corporations and pension funds
4. Financial Auxiliaries	6. Financial auxiliaries
	7. <i>Captive financial institutions and money lenders</i>
5. Insurance corporations	8. Insurance corporations
6. Pension Funds	9. Pension funds

In terms of instruments, the following changes are envisaged:

1. The 2008 SNA adds '*inter-bank positions*' and other transferable deposits under the currency and deposit category (F2) instrument category.
2. Shares and equity has been renamed as 'equity and investment fund shares', but more importantly sub-categories are expanded to: *listed sharers, unlisted shares, other equity, investment fund shares/units, and money market funds share/units*.
3. The 2008 SNA re-classifies the 'insurance technical reserves' to 'insurance, pension and standardised guarantee schemes'. Now the sub-positions cover: *life insurance and annuity entitlement, pension entitlements, claim of pension funds on sponsors, entitlements to non-pension benefits, and provisions for calls under standardised guarantees*.



4. The financial derivatives and employee stock option category now includes: i) *financial derivatives*, ii) *options*, iii) *forwards*, iv) *credit derivatives*, v) *margins* and vi) *employee stock options*.

Further new reporting requirements arise from the introduction of BPM6 - as well as the G20 data gaps initiative – which will see improved coverage of international financial flows and the measurement of the international investment position.

### **Flow of funds**

In order to extract the maximum value from any new information collected, it is essential to consider that information in the context of a rigorous framework that ensures the consistent treatment of assets and liabilities across all sectors of the economy. A flow of funds (FoF) framework provides a natural adjunct to the existing national accounts data compiled by ONS, and is articulated by the provisions of fully articulated balance sheets for each sector of the economy.

The additional rigour stems from the principle that the movement of all funds must be accounted for. This implies that total sources of funds in the economy as a whole must equal total uses of funds, upholding the macroeconomic principle that saving must equal borrowing. Furthermore, this identity must also apply within each sector and for each instrument.

In addition, by identifying the sectoral counterparty to each transaction, flow of funds should enable the authorities to identify more easily the risk of failure.

The US Federal Reserve produces an extensive set of FoF accounts which identifies some 30 sectors of the US economy and identifies transactions in 40-50 different instruments. For each individual sector and instrument, flow and level tables are published for each quarter, as well as a matrix showing the uses and sources of funds throughout the economy. The data are also presented in time series form.

It is unlikely that the high level of sectoral and instrument detail in the US FoF accounts can be replicated for the UK, even if it were desirable. The current UK national accounts framework identifies sectoral financial accounts that fully articulate the net acquisition of financial assets and financial liabilities by nine sectors, as follows:

1. Households and NPISH (Non-profit institutions serving households);
2. PNFCs (Private non-financial corporations);
3. Central government;
4. Local government;
5. Public corporations;
6. Rest of the world;
7. MFIs (Monetary financial institutions);
8. Insurance corporations and pension funds;
9. Other financial intermediaries and financial auxiliaries.

The non-financial sectors presented in the US FoF have close counterparts in the UK's financial accounts. However in the financial account, the UK does not give detailed counterparty information, and hence does not produce a flow of funds matrix showing whom-to-whom transactions, just the sector allocations of assets and liabilities.

In addition, the financial sector coverage in the US is much more disaggregated than the three-sector coverage provided by the financial accounts in the UK.

The current instrument coverage available in the UK is also limited in comparison with that in the US. The UK financial accounts are split into five categories of instrument:

1. Currency and deposits
2. Securities other than shares
3. Loans
4. Shares and other equities
5. Two miscellaneous items (insurance premiums and returns, and other accounts payable or received).

In addition, there may be a requirement to separate NPISH and households as separate accounts.

Engagement with key users has suggested that the current instrument coverage is broadly sufficient for the purposes of macro-prudential policy, although it would be necessary to identify the counterparty for each type of transaction. The time and effort required to extend the instrument coverage may be too great to make it worthwhile. However the separate identification of loans secured on commercial real estate would be useful additional information.

There is a clearly identified user need for a more detailed sectoral breakdown than is currently available. If it is feasible, users would like to de-compose the OFI sector into a number of sub-categories, such as:

1. Money managers
2. Hedge funds
3. Exchanges, clearing houses and other forms of market infrastructure.

Users have also expressed the wish to be able to distinguish domestic and foreign-owned banks – for instance with residency determined by a threshold level for UK deposits.

Once the desired level of sector and instrument detail has been determined – and this will course need to be consistent with future ESA10 and other reporting requirements - the next step is to determine the level of information that is currently available, and thence the additional statistical needs. This will include full counterparty information, not used or not available in the UK's financial accounts, which are just sector allocations of assets and liabilities rather than full flow of funds statements.

Following that, it will be necessary to identify the means of obtaining the additional information required – whether from existing sources (including regulatory data where it exists and can be made available), from new surveys, or by modelling and estimation. The feasibility of acquiring and processing new information on this scale has to be examined carefully. And the additional compliance burden as a result of collecting data for a full set of flow of funds accounts must be considered.

### **Future developments**

The ONS is about to launch a project designed to investigate the feasibility of making significant improvements to its coverage of financial statistics reflecting many of the points discussed above, and leading on to subsequent implementation.

As well as meeting future international reporting requirements, this is aimed at improving existing statistical coverage as well as extending it. It will incorporate the benefits of activity that is already under way, such as work by the Bank of England to improve data on securitised instruments and SPVs. More fundamentally it should include full flow of funds accounts to the extent that data collection and estimation permits.

ONS will seek the assistance of other interested bodies – particularly the Bank of England, FSA and HM Treasury. This will allow ONS to benefit not only from the guidance of experts who are closely involved with the financial sector, but also from the use of contacts and networks to open the way to existing sources of information to which ONS does not currently have access.

This is an important and potentially large-scale project. But it will face a number of major hurdles, including:

- NSIs have to be forever mindful that the collection of detailed financial data imposes a substantial *compliance burden* on respondents (even though we're only asking for either levels or flows, not both). The additional compliance burden as a result of data requirements for a full set of flow of funds accounts must be considered.
- The value of new surveys may be impeded by difficulties in creating a *register of respondents* in the unregulated sectors where survey data may typically be required.
- *Confidentiality and disclosure* issues are always high on the agenda of NSIs, and these issues may be acute in relation to some parts of the financial sector given the potential requirement for more detailed data collection.
- ONS faces a severe squeeze on its budget, as a result of which it will be possible to dedicate only *limited resources* to this work in the first instance. It is likely to be necessary to seek external funding for a large part of this development work.

ONS  
25 February 2011