

ARTICLE

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Update on ONS's plans for improving the UK's National Accounts

SUMMARY

The Office for National Statistics set out its plans for the modernisation of the UK's National Accounts in June 2008. Since then the programme of work which supports this development has been given sharper focus, following consultation in late 2008 with key stakeholders. This article sets out the background to the modernisation work, describes the current scope and benefits of the new programme, and its key milestones.

Background

The UK's National Accounts published by Office for National Statistics (ONS) in the annual *Blue Book*, together with the Balance of Payments statistics in the *Pink Book*, provide a key source of information to government and others engaged in economic policy. ONS is committed to ensure that the quality of these statistics remains fit for purpose and to continue to improve them, particularly with regard to their transparency and internal coherence.

ONS has been working for some time on system changes to improve the quality of the National Accounts. ONS announced its original modernisation work in April 2007 (Beadle 2007), and updated this in June 2008 (Humphries 2008). A key driver for this work has been the lack of integration of current systems needed to produce the National Accounts.

The current systems for producing individual components of the accounts are still largely independent (see **Box 1**). The process of 'balancing' the three different estimates of Gross Domestic Product (GDP) in particular requires significant manual intervention. This approach can lead to difficulties in ensuring complete coherence between the different approaches to estimation, and a loss of transparency in how the final estimates have been compiled. This is described more fully in Beadle (2007).

The new Central ONS Repository for Data (CORD) is key to the modernisation of the National Accounts as the basis through which integration of currently disparate systems will be achieved. This is the IT platform on which modernised

systems are being built. It was used successfully to support the preparation of estimates published in the *Blue Books* in both 2008 and 2009. However, most of the processing required to compile the integrated accounts and the Balance of Payments still uses other systems. To achieve complete coherence and transparency, work continues to integrate these systems into CORD.

The plans set out in Humphries (2008) left open-ended the question of when complete integration of systems would be achieved, and set out some ambitious goals for methodological improvements to benefit the overall quality of the National Accounts. In late 2008, ONS reviewed progress on these developments and made an assessment of the priorities within the overall programme. This included a period of consultation with key stakeholders on the direction and scope of the work, including discussions with the ONS Board and the UK Statistics Authority who endorsed the approach. This led to the establishment of a new phase of the modernisation work, under a new programme, ENABLE (Effective National Accounts and **BLue** Book to measure the Economy).

The ENABLE Programme

Programme vision

The ENABLE Programme will run to the end of March 2011. The programme will facilitate production of better quality National Accounts for the UK, based on transparent procedures which are efficient, reduce the risk of error and free up resources to add value in the production

Box 1**Current approach to the production of the National Accounts**

ONS produces estimates of Gross Domestic Product (GDP) based on three different approaches using information on production, income and expenditure. The regular quarterly estimates published in *Quarterly National Accounts* and *UK Balance of Payments* statistical bulletins, are based on a range of quarterly surveys and other short term indicators. These are updated each year by the results of more complete annual surveys, with the results being published in the *Blue Book* and the *Pink Book*.

The existing methods reflect the separate development over time of systems and processes for estimating GDP. There are three stages to the GDP compilation process, from short-term indicators, to quarterly GDP estimates and, finally, to annual supply and use estimates. These are not fully integrated into the same framework. This gives rise not only to inefficiencies but also opens up potential inconsistency and incoherence.

The three different approaches to estimating GDP (production, income and expenditure) are based on different survey and administrative data sources, and each produces estimates that, like all statistical estimates, are subject to errors and omissions. Typically, the three measures produce different estimates. So Supply and Use Tables (see **Box 2**) are constructed to show a balanced and complete picture of the flows of products in the economy and show relationships between producers and consumers of goods and services. It is this framework that is used to derive a single and balanced measure of annual GDP. These definitive estimates of GDP are published at the *Blue Book* stage around 18 months after the year in question, when comprehensive information becomes available.

Box 2**Annual Supply and Use Tables**

The Annual Supply and Use Tables display the transactions of all goods and services in the UK economy for a single year in matrix form. Other National Accounts statistics are concerned with the composition and value of goods and services entering final demand (for example, purchases by consumers), and with the outputs and incomes generated by the economic process. But they do not display the inter-industry transactions which link these activities. The Supply and Use Tables provide this linkage and give a firm basis for compiling a consistent single estimate of GDP at current prices.

The production of Annual Supply and Use Tables allows a close examination of the consistency of the National Accounts by linking the components of industries' gross value added, inputs and outputs, and components of final demand within a single framework. Therefore, all components of the production, income

and expenditure measures of Gross Domestic Product (GDP) are reconciled during the production of these tables, giving a single annual estimate of GDP at current market prices.

The Supply Table shows the supply of goods and services, by product and type of supplier, distinguishing output by domestic industries and imports.

The Use Table shows the use of goods and services by product. That is, how the supply of goods within the economy is consumed, through intermediate consumption in the production of the other products, final consumption, capital formation and exports.

Additionally, the tables show the components of Gross Value Added (GVA): compensation of employees; mixed income, gross operating surplus and taxes and subsidies on production.

of the accounts. The programme also supports the implementation of the new international industrial classification which has been agreed within the European Union (NACE Rev 2, which in the UK appears as Standard Industrial Classification (SIC) 2007). Taken together, these developments will yield a number of benefits to users, which are described later in the article.

Scope of ENABLE

The current systems used to produce the National Accounts fall essentially into three types:

1. Local systems: used to process 'raw' data and produce components of the National Accounts, for example, the system which takes survey data for retail sales and household spending and produces estimates of final household consumption expenditure

2. Central systems: which bring together the various components from the local systems and produce estimates of 'unbalanced' GDP (that is, independent estimates of GDP based on production, income and expenditure)
3. Balancing system: to reconcile the three measures of GDP into a single 'balanced' measure.

By March 2011, the ENABLE programme will:

- migrate the current local systems needed to support the annual and quarterly National Accounts onto CORD
- fully integrate these local systems into the central systems on CORD (and provide for the quarterly alignment of the three measures of GDP, see Box 1)

- ensure all systems and outputs are consistent with the new SIC 2007
- migrate the current Public Sector Accounts (PSA) system onto CORD

Taken together, the ENABLE programme will produce a fully integrated system for the production of balanced estimates of GDP, the National Accounts and the Balance of Payments. The programme has specific focused objectives which can be completed within two years, for use in *Blue Book* 2011. This has taken out of scope some ideas set out in earlier articles. In particular, in the next two years it is not planned to develop simultaneous current and constant price balancing on CORD (see Beadle 2007 and Humphries 2008). However, development work on these issues will continue in parallel for possible introduction once the ENABLE objectives have been achieved.

Benefits to users

In essence, the programme entails the integration of currently disparate systems into one process using a single IT platform. In turn, this will:

- provide greater transparency to users for how the estimates have been compiled
- allow ONS to explain better the source of revisions to estimates
- reduce the extent to which judgement is required to adjust estimates, thereby reducing the potential for spurious accuracy, and improving overall coherence between the outputs
- improve the quality of seasonal adjustment through the introduction of X-12-ARIMA (replacing X-11-ARIMA) in the production process. X-12-ARIMA has been used for a long time at ONS to analyse time series during expert annual reviews. Introduction of X-12-ARIMA into the production process will streamline processes, raise internal consistency and promote greater accuracy by offering the possibility for more frequent parameter updates
- improve deflation by replacing Retail Price Indices (RPIs) with Consumer Price Indices (CPIs) where these are currently used as deflators. At the individual product level, RPIs do not allow for 'substitution effects', which tend to overstate inflation and therefore understate increases in volumes. CPIs take better account of these effects and improve the estimates of inflation. Further, the CPIs cover the entire population of the UK including foreign visitors whereas the RPI only includes private households and further excludes households in the top 4 per cent of incomes and those who derive at least three quarters of their income from a state pension. See McLaren (2009)
- verify, and if necessary improve, the methods currently used in local systems as they are rewritten in CORD
- reduce the risk of errors by automating most of the currently manual processes for integrating quarterly and annual estimates
- provide greater opportunities for ONS to add value for users through analysis. This will be achieved both through the development of tools within the integrated platform, and from the greater efficiency of the systems which will provide more time for analysis

Furthermore, updating the estimates onto SIC 2007 will also allow ONS to present the accounts in a framework which more closely matches the current structure of the UK economy.

Finally, while the programme has clear goals for the period up to March 2011, it should also be seen as an enabler for further developments. The fundamental architecture and statistical metadata being developed on CORD are sufficiently open to support considerable future enhancement. In particular, the longer term vision for redevelopment of National Accounts, which includes simultaneous constant and current price balancing of quarterly GDP through the Supply and Use framework, is accommodated in the current design (see Beadle 2007).

Supply and Use Tables in 2011

As described in Box 1 and Box 2 the balanced estimates of current price GDP are derived from an annual process which involves confrontation of various sources of data in a Supply and Use Table (SUT) framework. This process is important for the volume estimates of GDP since it sets the level of current price GDP, which is then price adjusted using expenditure deflators. The modernised systems for producing GDP estimates will have balancing in a SUT framework at the heart of the annual process. The transition to SIC 2007 in 2011 requires a change from the dimensions of the SUT used currently under SIC 2003, which is a matrix of 123 products and 108 industries.

In early 2009, ONS undertook a consultation with users of SUTs and the National Accounts to establish the level of detail which best matched their needs, taking account of the limitations on the quality of the data available for balancing the estimates. The outcome is the decision to balance estimates in 2011 through a SUT with 114 products and 114 industries. These dimensions reflect better the importance of service industries in the UK economy (which currently account for around 70 per cent of economic activity): about half of the products/industries in the new SUT matrix will be in this sector. This compares with the current SUT dimensions, based on SIC 2003, where only 35 of the 123 industries are in the services sector. The production sector, which will cover 55 of the 114 industries in the SUT in 2011, will still be over represented when compared to its contribution to total economic activity (around 15 per cent).

This reflects the importance of monitoring this sector's use of carbon (and the role of the SUT framework in this). The need for additional detail in this sector was reflected in many of the responses received during the consultation.

Plans for the National Accounts Blue Book in 2010 and 2011

The proposed improvements to systems and methods planned in the next two years will have an impact on plans for the *Blue* and *Pink Books* in 2010 and 2011. ONS will publish in the Autumn the intended scope and basis of these publications.

Plans for the production of Input/Output analytical tables

An important by-product of the SUT balancing process is the generation of Input/Output Analytical tables (I/O tables) which provide considerable detail on the flows of goods and services between industries. ONS last published these tables in 2002, for the year 1995.

ONS now plans to produce I/O tables for the year 2005. These tables will be based on SIC 2003 using a matrix of 108 products and 108 industries. The results will be published in 2011. I/O tables will then be produced on a five-yearly cycle, with the first tables on a NACE Rev 2 (that is, SIC 2007) basis being for the year 2010.

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REFERENCES

- Beadle J (2007) 'Modernising the UK's National Accounts', *Economic & Labour Market Review* 1(4), pp 32–8. Available at: www.statistics.gov.uk/cci/article.asp?id=1737
- Dunnell K (2008) 'Measuring the UK economy 2008: the National Statistician's perspective', *Economic & Labour Market Review* 2(10), pp18–29. Available at: www.statistics.gov.uk/cci/article.asp?id=2056
- Humphries S (2008) 'Modernisation of the UK's National Accounts: progress and plans for Blue Book and Pink Book 2008', *Economic & Labour Market Review* 2(6), pp 30–2. Available at: www.statistics.gov.uk/cci/article.asp?id=2010
- McLaren C (2009) 'Changes to the retail sales methodology', *Economic & Labour Market Review* 2(6), pp 66–70. Available at: www.statistics.gov.uk/cci/article.asp?id=2220