A decade of improvements to economic statistics

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Introduction

At the start of the 21st century, this article reports on the improvements that have been made over the last decade of the 20th century to the national accounts and the inquiries and other sources on which they are based.

A great deal has been achieved during this decade which started with a climate of doubt and criticisms (see box on following page) and ended with the UK accounts recognised as some of the best in the world.

The success of the initiatives listed in this article can be seen in the quality of the statistical outputs which are more timely, more consistent, more complete and subject to less revision. We are more open about the quality adjustments, which are made to make the accounts balance. We have regularly published summaries of revisions and tests for bias in our estimates, showing improvements. Our users recognise this both within government and in our established users groups. One concrete result is that all the reservations put on the accounts in the mid 90s by the European Commission have now been lifted.

The remainder of this article summarises the improvements that have been made. It splits the developments into two phases. The first lasted until the mid 90s, implementing the remedial action needed as a result of criticisms in the Pickford Report. The second phase since the mid 90s built on this foundation, introducing many methodological improvements, making the inquiries more efficient and developing new products.

Improvements flowing from the Pickford Report

The main steps, which allowed action to be taken, were:

- In 1988, an efficiency scrutiny on economic statistics (the Pickford Review) was set up to examine deficiencies in the national accounts. The review team, reporting in May 1989, indicated that the problems were deep seated and pervasive, had multiple causes, and had existed for some time. Recommendations were made but relatively little new money was provided. A major step was the setting up of the new Central Statistical Office (CSO) in July 1989, with greater responsibility for the data input into the national accounts, and with clearer objectives for producing more coherent accounts;

- concerns continued and in May 1990 and November 1991 two funded packages of improvements were announced by the then Chancellors of the Exchequer to address the three concerns listed in the box. The second of these announcements coincided with the launch of the CSO as an Executive Agency;

Implementation of the Pickford Report recommendations led to action in two main areas:

- the business inquiries feeding into the accounts were improved and strengthened. Many became statutory instead of voluntary, structured samples were introduced to include small businesses, frequencies were increased with more quarterly and monthly inquiries and inquiries were extended with extra questions and over extra industries particularly in services;

- national accounts procedures were improved.
In this period the main improvements to the construction and presentation of the national accounts led to the timetables and publications which can still be seen today:

- annual current price input-output balancing. Introduced from 1989, brought more up to date in 1994, with a number of methodological improvements;
- a single measure of GDP for the balanced years;
- early estimate of GDP. An early “3 weeks” estimate of GDP based on output indicators introduced in 1993;
- sector accounts integrated. Fully integrated quarterly accounts including the financial and sector accounts introduced in 1992;
- dividend and interest matrix. Introduced in 1992 and fully integrated into the accounts in 1994;
- reductions in sector balancing items particularly for the personal and overseas sectors;
- more consistent quarterly GDP. Adjustments were introduced so that there was a single estimate of quarterly GDP growth;
- better timing. National accounts were presented at increasing levels of detail around 3, 8 and 12 weeks after the end of the quarter;
- UK Economic Accounts introduced. Comprehensive national accounts were presented in a new publication;
- Quarterly supply side balancing. Introduced in the early 90s to improve the consistency of the accounts ensuring that the supply and demand for broad commodity groups matches. Some balancing work was also done on major commodities including oil, cars and aircraft.

However, to some extent this greater consistency had been achieved by the introduction of statistical adjustments. The improved presentations were very helpful to users and the accounts were more highly regarded but some of the quality problems had perhaps been removed from public view. Further improvements could only be achieved with faster, more frequent and more comprehensive data. This was the focus of the Chancellor’s packages announced in 1990 and 1991. The main initiatives in these packages were:

In the late 1980s the national accounts were subject to considerable criticism in government, in Parliament and elsewhere. The criticism mainly arose because of:

- discrepancies between the three alternative ways of measuring gross domestic product (GDP);
- statistical discrepancies in the accounts of the institutional sectors;
- significant revisions for the two or three years after the period concerned.

All these were seen as symptoms of fundamental problems with the quality of the accounts. Data drawn from the accounts are used to determine economic and fiscal policy and there was considerable unease that this policy might be misinformed.

In the 1990s the European institutions also become significant customers and critics of the accounts, as they became increasingly used to determine UK contributions to the European Union budget and to measure the convergence of economies for Monetary Union under the Maastricht Treaty. Following an audit process a number of “reservations” were placed on the UK accounts requiring quality improvements and corrections to be made.

These concerns led to a number of initiatives, which have enabled programmes of improvements to be undertaken. This article provides an historical perspective. It is mainly restricted to developments, which affect the national accounts, and the business inquiries, which feed into them. The references include articles dealing with improvements to the RPI, whilst initiatives affecting labour market statistics are covered regularly in Labour Market Trends.

Details of the most recent initiatives set in train for the future were described by Tim Andrews in an article in the February edition of Economic Trends.
- Distribution and Service Industries Output. A new set of statutory Quarterly and Monthly Turnover Inquiries (QTIs and MTIs) were introduced and strengthened progressively starting in 1991. The results have been used to improve the output measure of GDP.

- Improvements to Balance of Payments. A range of improvements were made to the components of the Balance of Payments. These included greater centralisation of data collection at the then CSO, more quarterly reporting and a move to a statutory inquiry basis e.g. on direct investment and overseas trade in services, and better integration of information e.g. within the overseas capital account.

- Production industries output. Several of the inquiries were converted from quarterly to monthly frequency to improve the quality of the monthly index of production.

- Output deflation. Starting in 1993 an improved procedure was introduced to ensure that the deflation applied to goods produced for export was consistent with the deflation applied in the calculation of the export of goods figures. (Subsequently the direct collection of key export prices was started and more recently this has been extended to imports.)

- Stock adjustments to output. Additional voluntary monthly and statutory quarterly stock inquiries were introduced. This improved the quality of the IOP and, in particular, improved the reliability and quality of the 3 weeks output based estimate of GDP.

- Company profits. A new statutory Quarterly Profits Inquiry (QPI) was introduced for large non-financial corporations in 1991. Some financial corporation profit inquiries were also strengthened.

- Inventory inquiry. In addition to the improvement mentioned above existing quarterly inquiries were put on a statutory basis with larger samples and an improved sample design.

- Capital expenditure inquiry. Similarly this inquiry was put on a statutory basis with a larger sample from 1991, with a subsequent improvement to sample design.

- Financial assets and liabilities survey. An existing voluntary inquiry into company liquidity was put on a statutory basis in 1993 following an expansion to cover a wider range of assets and liabilities for non-financial companies in 1991.

- Share register surveys. A new sequence of surveys was started from 1989 to determine the beneficial owners of listed ordinary shares from an analysis of information held in share registers. There were large revisions to estimates of overseas and personal holdings.

- Valuation of trade in goods. A trade valuation survey was conducted in 1990/91 to check the accuracy of reported data. Deflation of trade in goods was also improved progressively from 1993 consistent with output deflation reported above.

- Overseas trade in services. An expansion and rationalisation of trade in service inquiries was implemented, mainly on a statutory basis.

- Overseas personal sector transactions. A survey was conducted in 1992/93.

- Offshore centres. A study was undertaken to check that transactions passing through the Channel Islands and the Isle of Man were completely and consistently measured in the balance of payments.

- Financial institution inquiries. Most non-bank financial institution inquiries were transferred into the CSO from the Bank of England and elsewhere, registers were improved with the coverage being made more complete and consistent. Some existing inquiries to pension funds and insurance companies were made statutory as part of the programme of improvement. Later in the 1990s, all the inquiries were thoroughly reviewed in terms of their methodologies.

- Business register. Underpinning much of the above was the start of the development of a much improved business register based on a wider range of administrative sources. (See also entry about the register below.)

- Producer prices. The inquiry was made statutory in 1992 and extended.

- Retail sales and consumers’ expenditure. The retail sales inquiry was made statutory and a new quarterly commodity inquiry introduced. Another major source of data for consumers’ expenditure - the family expenditure survey - was made much faster.
Moving on, building on the foundations

The main steps during this later period were:

- A major study of statistical inquiry procedures completed in November 1993, which led to better co-ordinated, better quality, more timely and more efficient inquiries based on a single business register. Implementation also released substantial efficiency savings (much of these were recycled into product improvements) and reduced compliance costs for businesses;

- Implementation of the revised 1995 European System of Accounts in 1998 used a more rigorous and up-to-date accounting system and created an opportunity for a thorough review of the methodology;

- The current government’s first comprehensive spending review completed in 1997 recognised the need for further improvements, allowing efficiency savings to be recycled into improvements and providing new money to cover the cost of inflation over the three year review period;

- A number of efficiency savings arising from computerisation, data capture initiatives and economies of scale from the creation of the Office for National Statistics in 1996 have been realised, with the money invested in quality improvements and new products.

For the national accounts this later period has been dominated by the introduction of the 1995 version of the European System of Accounts in 1998. This involved:

- Implementation of the up-to-date accounting system required by ESA;

- The rebasing of constant price data on 1995=100;

- An overhaul of all methodologies;

- Taking through all data revisions held back by the ONS revisions policy.

One of the supporting developments has been experimental constant price input-output tables. Introduced in 1998 they provide extra checks and diagnostics on the quality of the accounts.

An administrative database providing information on securities listed on the London Stock Exchange is now used for balance sheets for bonds and shares within the financial accounts, and replaces previous weaker sources from 1990.

There were also major improvements to the conduct of business inquiries covering methodology, organisation and infrastructure triggered by the completion of the study into statistical inquiry procedures at the end of 1993. These were implemented alongside the introduction of the much-improved 1992 Standard Industrial Classification used for the national accounts from 1995.

The implementation of this review brought a range of benefits in terms of methodology and procedures, but also - through the release of major efficiency savings - permitted the introduction of new or extended inquiries. The key aspects of this programme for business inquiries from 1994 until the end of the decade include:

- Standardised register. A single comprehensive business register (the Interdepartmental Business Register) has been introduced, and all surveys are managed from this to reduce the risk of double counting or gaps. This has brought major improvements in terms of coherence, as well as the better management of the form-filling burden on individual businesses. It came into use from 1994, with implementation completed in 1998.

- Management of Business Surveys. All inquiries to businesses were brought together within a single business unit located in Newport to facilitate the implementation of best practice.

- Concentration of Data Collection. From the mid 1990’s, data collection was increasingly concentrated within ‘data validation units’, with a movement from a vertical structure to a more horizontal organisational model. Leaving aside the substantial efficiency gains obtained by ironing out peaks and troughs and by reducing management chains, this permitted a standardisation of methods across the range of business inquiries, for example relating to the treatment of imputation, outliers and estimation.

- Methodological Programme. At the same time, an investment was made in terms of the methodological input. An expanded methodology division was created and a vigorous programme of improved methodology including new statistical designs was implemented over an extended period. This has also resulted for example in the quantification of sampling errors.

- Data Collection Initiatives. The move to larger units for data collection also permitted a revolution in terms of the way data are collected. Innovative means of data collection such as Telephone Data Entry have been implemented where possible, coupled with the imaging and character recognition of paper
forms where still used. This has transformed the process of data capture allowing for greater concentration on data validation and response chasing with associated improvements in the quality of survey results.

- Introduction of PRODCOM. From 1993 a major new inquiry was introduced - the “Products of the European Community”. This new inquiry collects information from manufacturing relating to some 4,000 products and is of major benefit in the compilation of annual supply and make tables within the National Accounts, for providing weighting systems for the Producer Price Index and to meet new European statistical requirements.

- Price statistics. Major developments have been taken forward on a range of price statistics. On producer price indices, beginning in 1996, a major exercise to replace the sample was undertaken (now nearly completed) and a new estimator is to be trialled from June 2000. A range of Corporate Service Price Indices (CSPIs) has been developed since 1995 and are being used to convert the turnover data collected in the QTIs and MTIs to constant prices. A new export price inquiry was established in 1994 to collect data to deflate the trade in goods estimates and the export component of the Index of Production. Finally a new import price inquiry was introduced in 1998 to improve the deflation of trade in goods, capital expenditure, inventories and the input component of the PPI.

- Short-term Employment Surveys. In 1995, ONS assumed responsibility for employment and earnings surveys. This has permitted the integration of short-term employment questions with short-term turnover inquiries, leading to improvements in the coherence of statistics, including those for productivity.

- Annual Business Inquiry. Traditionally, annual structural inquiries had been conducted separately into production and into services, and employment and turnover had been collected separately. A major review was undertaken in 1997 and a complete redesign was implemented which incorporated the former Annual Employment Survey. A new Annual Business Inquiry, conducted at the enterprise level, complemented by an Annual Register Inquiry to local units, has been introduced and the first results for the 1998 inquiries have been published. Benefits include better productivity estimates as well better quality and consistency across the whole economy.

- Complex Business Unit. A Complex Business Unit has been introduced which has the responsibility for visiting major companies to ensure that their statistical returns are consistent and of high quality.

Over the past three years increasing effort has gone into developing new products mostly linked to the accounting framework. These were covered in Tim Andrews’ article1. The main initiatives not already covered above include:

- Environmental accounts;
- New measures of public sector output;
- Improved non-financial balance sheets and estimates of capital stock;
- An expanded range of public sector fiscal indicators;
- Monthly balance of payments estimates;
- Monthly index of services;
- Improvement of average earnings estimates;
- Developments in productivity measures.

**Conclusion - where next?**

We do not see this as a finished agenda. The world is becoming more complex to measure and users expect increasingly sophisticated outputs. There is therefore a long agenda of improvements and extensions to the range of economic statistics being demanded by users, which we are working through. Implementation of ESA is also not complete and we are working on the requirements for better deflation, constant price input-output and annually linked price and volume indicators. If the UK joins European Monetary Union there are likely to be extra demands on the statistics needed to inform European as well as national fiscal, monetary and economic policy making. The devolved administrations are also looking for many improvements in sub-UK data. The end of this decade will probably bring a similarly exciting report of further achievements.
REFERENCES


