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The Business Register and the National Accounts in the UK

Paper submitted by the ONS¹

Introduction

1. Within the UK, the national accounts are compiled from a number of sources but key inputs are the statistical surveys of businesses. The Interdepartmental Business Register (IDBR) provides the sampling frame for these statistical surveys.
2. While the UK operates a decentralised statistical service within central government, the Office for National Statistics (ONS) is responsible for the computation of the national accounts, all of the main business surveys and the management of the IDBR. To ensure communication within the ONS, a National Accounts Surveys Strategy Group (NASSG) has been set up. The key players are the macro-economic, social and business statistics groups. This paper summarises the policies and principles agreed by the NASSG and considers related issues. The issues have wide application in other national statistical offices.

Organisation of national accounts work

3. The compilation of the UK national accounts is a complex exercise. It is helpful here to indicate the key players within the ONS:

¹ John Perry, UK Office for National Statistics

Macro-economic Statistics Analysis Group (MESAG)

National accounts compilation including input-output tables and output measure of gross domestic product (GDP)

Sector and financial accounts

Consumers expenditure

Socio-economic Statistics and Analysis Group (SESAG)

Labour force survey

Labour market trends

Regional accounts

Business Statistics Group (BSG)

Statistical inquiries of businesses (almost entirely by mail questionnaire on a statutory enforceable basis)

Business register (IDBR)

Complex Business Unit (responsible for profiling large complex businesses)

- Enforcement unit (responsible for minimising non-response through prosecution of businesses)

Major sources for the accounts

4. The business register provides the basis for most of the business survey data within the national accounts. There are five major groups of data. The list below indicates (by "*") where sources other than the business register (IDBR) are used:

1. Non-financial corporations - output and sales
 - 1.1 Monthly production inquiries
 - 1.2 Motor vehicle and engine production inquiries
 - 1.3 Prodcom (annual/quarterly manufacturing product sales inquiries, primarily for the EU Prodcom Regulation)
 - 1.4 Direct labour organisations employment and output (construction)
 - 1.5 Annual production, construction, retailing, motor trades, wholesaling, service trades, property and catering inquiries (these form the annual business inquiry which provides data for the EU Structural Business Regulation)
 - 1.6 Short period retail sales and commodity inquiries

- 1.7 Short-period services turnover inquiries for wholesaling and services

- 2. Non-financial corporations - other
 - 2.1 Capital expenditure, other than airlines
 - 2.2 Public corporations
 - 2.3 Stocks (inventories)
 - 2.4 Profits and financial assets
 - 2.5 Producer prices
 - 2.6 Energy
 - * 2.7 Airlines capital expenditure - data from Civil Aviation Authority
 - * 2.8 Trading profits - from administrative returns to Inland Revenue
 - * 2.9 Share register survey - voluntary survey not using business register
 - * 2.10 Capital issues - Stock Exchange database

- 3. Financial corporations
 - 3.1 Other financial corporations
 - * 3.2 Banks - Bank of England, Banking Act 1987
 - * 3.3 Building societies - Building Societies Commission, Building Societies Act 1986
 - * 3.4 Miscellaneous financial institutions - Bank of England voluntary survey

- 4. Households
 - 4.1 Earnings and employment
 - * 4.2 Survey of personal incomes - from administrative returns to Inland Revenue
 - * 4.3 Expenses and benefits - from administrative returns to Inland Revenue
 - * 4.4 National insurance certificates - Inland Revenue sample of PAYE (Pay As You Earn tax) employees
 - * 4.5 Family Expenditure Survey - household survey

- * 4.6 National Food Survey - household survey
- * 4.7 Retail prices index - price collection and central price survey not using the business register
- 5. Rest of the World
 - 5.1 Overseas direct investment
 - 5.2 Overseas trade in services
 - * 5.3 Overseas trade statistics - Intrastat and other HM Customs and Excise export and import documents
 - * 5.4 International Passenger Survey - individuals entering or leaving UK

5. Excluding surveys of households or individuals, almost all data collection is through the IDBR or directly from administrative returns. Although Intrastat (the system for collecting imports and exports within the European Union) is not run from the IDBR, there is a direct link in that both the IDBR and Intrastat use the same administrative source (Value Added Tax). The annual business inquiry was introduced by the ONS in 1997 to replace separate annual inquiries in the industries listed in 1.5 above. It provides comprehensive coverage of all industrial sectors other than agriculture. It also will incorporate the separate annual employment survey. The introduction of this integrated survey has led to a review of the quality requirements and development of a quality strategy as outlined below.

Summary of national accounts requirements

6. In order to present a consistent picture of economic developments, users require data that are:

congruent between data sources

coherent between industry sectors and between variables

continuous over time

presented in a coherent way

7. The following distinction is made between congruence and coherence. Congruence is the requirement that any two measures of ostensibly the same quantity should be equal. It is therefore usually evident whether this requirement is met or not, though sometimes a simple calculation (such as adding quarterly data to compare with calendar year figures) may be involved. Coherence is a less obvious form of consistency, involving an expected relationship between two different quantities (eg output and employment). Coherence cannot always be directly tested by the comparison of figures, but is often assessed on the basis of the methodology used to produce those figures and on the economic story they tell. Both congruence and coherence

apply to both contributor level as well as aggregate level data.

8. The creation of a Business Statistics Group (BSG) that is responsible for all elements of business surveys has been a key part of the national accounts development strategy. Inevitably, although the BSG seeks to meet user requirements for consistency, it comes up against certain constraints which may vary from time to time. In particular, the following constraints may apply:

Resource constraints/priorities

Limits on the compliance burden

Revisions policy

Other quality considerations (eg response rates, timeliness)

9. Whenever a change in methodology or procedure is under consideration, the main customers affected should be consulted. They should also be involved in the planning of the change from an early stage. When such changes are made, a system should be put in place to measure their effects.

10. The only way to ensure exact **congruence** between annual and short-period inquiries is to conduct annual bench-marking. Bench-marking need not always be conducted at the lowest levels of aggregation. Some incongruence within broader congruent aggregates may be acceptable.

11. Short period data collected monthly or quarterly should be transferred into annual computer systems and used to assist in credibility testing and imputation. There should also be feedback from the annual to the short-period inquiries, which should be used for quality improvement, particularly by investigating and correcting persistent discrepancies.

12. Questions should not be duplicated across inquiries without very good reason. One such reason would be a difference in periodicity. The two questions subject to most duplication are turnover and employment. Where duplication of questions between inquiries is considered necessary, common definitions should be used unless there is a clear reason to do otherwise.

13. Revisions at bench-marking can be minimised by use of good quality methodology in the short period inquiries. Methodology policy currently requires the use of representative rotating panel designs for the short period inquiries. Grossing policy is still under review.

14. A single business register should be used for sample selection and grossing in all economic sectors (with reporting structures as set by the Complex Business Unit). **Coherence** can be increased by collecting related variables from a common sample and with common methodology for grossing. In some cases this may suggest use of a common inquiry system with a two-part form (as proposed for the Annual Business Inquiry in 1998). Coherence is also improved by the use of integrated inquiries across all economic sectors. This ensures coherent methodology between sectors and eliminates gaps and duplication which arise when separate inquiries are used for different

sectors.

15. Definitions of variables are important for coherence. Examples of pairs of variables requiring coherent definitions are: turnover/purchases, turnover/stocks, employment/employment costs, turnover/employment.

16. **Continuity** is a key requirement. It is recognised that changes in methodology, while generating improved statistics, will usually create a discontinuity in time series. In order to meet the user requirement for continuous series it is therefore necessary for BSG to commit to the quantification of discontinuities arising from such changes. The method of quantification of discontinuities should be agreed between BSG and its main customers. In some cases the discontinuity may be considered small enough to be ignored. Resources for the quantification of discontinuities should be allowed for in work planning associated with the relevant change.

17. The inquiry analysts (within the BSG) should normally adjust the history of a series to remove discontinuities. In some instances this may not suit all users and in such cases the analyst should provide customers with the relevant information for them to remove discontinuities themselves if they so wish. In the case of index numbers, the analyst should always link across any discontinuity to produce a continuous series.

18. While parallel running is sometimes necessary to quantify a discontinuity, on other occasions analyses directly from the business register can be used. Greater use of register analyses is recommended, especially in dealing with discontinuities caused by reclassifications.

19. Variability in a time series should not normally be smoothed by the analyst. The unsmoothed series should be passed to the customer, allowing the customer to decide what action to take. However, if the variability can be traced to a cause that is known to be spurious, smoothing should be undertaken by the analyst as near to the source of the problem as possible. Examples might include smoothing register counts for irregular patterns of births and deaths, treatment of major outliers, etc. All such smoothing procedures should be documented as part of the inquiry methodology.

20. To assist users in combining data from different sources, a set of standard levels of aggregation (especially by industry and geography) should be developed for the **presentation** of results even when the main customer may not require the full breakdown represented by such standards.

Employment and earnings statistics - specific issues

21. Employment and earnings statistics are important both for the national accounts and for social indicators. The business register (the IDBR) provides the sampling frame for the annual employment survey (AES), which is soon to be formally integrated into the annual business inquiry. The AES collects employee counts from enterprises. There is also some monthly and quarterly collection of employee counts consistent with the AES.

22. As well as asking employers to provide information, it is also possible to ask individuals for information on their employment status and for whom they work (through a Labour Force Survey) . This can generate different estimates of employees and different allocations of employees to industry codes. The wider issue of coherence between these sources is being addressed.

23. Earnings can also be collected from enterprises or from individuals. In addition, it is possible to collect earnings from enterprises as a total wages and salaries figure, as is done for the output and earnings inquiries. It is also possible to collect earnings for a sample of employees through the employer (the New Earnings Survey). Consistency can be achieved through the use of the central business register, the IDBR.

Other statistical inputs to the national accounts

24. Agriculture remains an important contributing sector to the UK economy. Data for this industrial sector are not collected by the ONS but by a separate government department using its own business register. This raises questions about consistency of inputs to the national accounts that are not easy to answer. Most agricultural businesses are self contained and easy to classify but there is sufficient uncertainty at the boundaries, for example farms providing tourist accommodation, to warrant further investigation. Consideration is being given to improving coherence in the national accounts by integration of the business register held by the ONS (the IDBR) and the separate farms register.

25. The direct use of administrative data can also lead to questions regarding consistency. A major input to the national accounts is data collected from PAYE (Pay as You Earn tax). This is also an administrative source used by the IDBR. Direct use of PAYE data can (and does) lead to differences in industrial classification. Administrative data added to the business register go through a process of checking to determine statistical units and their industrial classification. The resulting data would be expected to be more appropriate as an input to the national accounts as the statistical unit would be consistent with the institutional units needed within the national accounts and the industrial classification will be consistent with NACE Rev 1 (the European Union standard). By contrast the administrative systems will have their own units and industrial classification. The approach being adopted is to match the administrative data against the IDBR and to use the industrial classification from the statistical system.

26. Using data from other sources that cannot be matched against a central business register causes further concern regarding consistency and quality. It is for this reason that data from sources such as trade associations are rarely used as an input to the national accounts. Data collected by regulatory bodies, such as the Bank of England, still provide a valuable source, especially within the financial corporations sector. The approach being taken here is to use such administrative data as a source for the IDBR. The main sources remain Value Added Tax and PAYE employers. However, the regulatory data can fill gaps in the business register and sometimes improve

industrial classification. This is particularly true in the financial services such as bank, insurance, pension funds and unit trusts.

Improving economic statistics - the way forward

27. Greater congruence and coherence between data sources is achieved through applying standard definitions and articulating data collection and analysis. Work needs to be done on matching and for this the business register is the tool. The collection of data through a single annual business inquiry supported by an integrated short-period data collection system is essential. Continuity over time is a prerequisite for credible national accounts. Improvements in quality are necessary but discontinuities need careful management.

28. Central to the continuing programme of improvement is the business register that can provide:

- the base for all statistical inquiries for the national accounts;
- a tool for coordination of data collection using consistent industrial classification; and
- a system for integrating statistical inquiry and other data.