

FEATURE

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100 years of the Census of Production in the UK¹

SUMMARY

The Census of Production Act 1906 paved the way for the first Census to be taken about economic activity in 1907. To celebrate the centenary of the Census of Production, this article traces its history, focusing on the pressures which have caused it to develop in particular ways. In the first part of its existence, it had a major impact on developments in statistical legislation and methods. The common themes running through the evolution of the Census of Production are examined, how these are driving current developments and what the future is likely to hold.

The Census of Production in the UK started in respect of 1907, under the authority of the 1906 Census of Production Act. This article celebrates the centenary of the Census, and charts some of the interesting and notable developments in its history.

The Census has always been the most important source of business statistics, covering mainly the manufacturing industries. It was originally motivated by a specific policy need on trade tariffs, but soon became the definitive source of statistics on the structure of industry and its contribution to the economy. With the publication of annual National Accounts after the war, it eventually took on the role of providing the definitive benchmark estimates for the output measure of gross domestic product (GDP), and, through supply-use tables, contributed to a greater understanding of supply and demand. It has also been widely used for economic analysis, as a benchmark for smaller, more frequent surveys, and to provide the weights for use in various indices (for example the producer price indices).

More recently, its importance has been underlined by a European Union (EU) Regulation on structural business statistics which ensures that comparable surveys are conducted across the EU. Its current form, the Annual Business Inquiry (ABI), is the centrepiece of UK thinking about the future direction of business surveys.

The beginnings

The early years

The Board of Trade (the equivalent of the modern Department of Trade and Industry) was formed in 1786. An early role was to gather statistics, although they were not regularly published. After 1832 when statistics-gathering work was organised as a separate Department (the first such within the Board of Trade), a statistical yearbook was instituted, which included some information on commercial activities, although the main focus was very much on trade (imports and exports) rather than domestic production.

A resolution was adopted by the House of Commons on 2 March 1886 that 'full and accurate labour statistics should forthwith be collected and published', and this led to the first Census of Wages in 1886, run by the Board of Trade.

There was also a considerable amount of uncoordinated data collection from specific industries and for specific purposes by different departments and ministries. Much of this information has been brought together in Mitchell (1988). The Census of Population also included information on people employed, and additionally on occupation.

The first Census of Production

The first economic census was in 1907, carried out under the 1906 Census of Production Act by the Board of Trade. The impetus for it came from tariff policy – to

enable production levels to be compared with imports. The UK was a latecomer to a census of production – a hundred years later than the USA – and there was deep suspicion from manufacturers. Although the Census Bill was proposed by David Lloyd George and had opposition support from Joseph Chamberlain, there was a concern from individual MPs about manufacturers losing trade secrets. ‘A great invasion of public liberty’; concern that government ‘had got into [its] hands the possibility of prying into the secrets of ... trade and commerce’; ‘sacrificing their liberty to a gang of clerks in Downing Street’; ‘a most important bill of a very far reaching and revolutionary character’ are some of the comments in the parliamentary debates.

The initial Census of Production Bill included wide powers for data collection, but after concessions in its passage through Parliament, the Act severely limited the amount of data that could be statutorily collected. The first censuses focused on statistics of output and employment. Special Advisory Committees were set up to devise a suitable questionnaire for each industrial classification, and these added further, voluntary questions on a range of topics.

The final report of the 1907 Census includes some reconciliation of various different figures, and describes income, output and expenditure together with capital formation, and therefore forms a rudimentary set of National Accounts based on the Census of Production. A more complete estimate of the National Income (a forerunner of GDP), the first to be produced using the output measure, was produced by the then Director of the Census Office, Alfred Flux, also in the final report of the Census. It was only the Census of Production information which allowed this approach to be used.

The quinquennial censuses 1912 to 1935 and the Import Duties Act inquiries

A Parliamentary Order set the next Census for 1912 and determined a quinquennial pattern. The processing of the 1912 Census was, however, still in progress when the First World War intervened, and processing was halted.

There were two aborted attempts to take post-war censuses. Preparations were made for a Census in 1920, but the need for

financial economy led to its cancellation, and an announcement of a Census of Production for 1922 was made, but the preparations were abandoned at an early stage. The next Census of Production to be successfully undertaken was for 1924. The publication of the results also included partial information from the 1912 Census, finally worked up for industries where the lack of follow-up with respondents was not too serious, although the quality of the 1912 estimates remained poor.

The Balfour Committee of 1929 recommended a resumption of quinquennial censuses. The next were held for 1930 and 1935, and the Board of Trade, after initially setting up only a temporary staff, soon gained Treasury approval for a permanent staff. The series was again interrupted by war. Each census was designed afresh from its predecessor, making comparability difficult – for example, exemptions were mostly provided for the smallest businesses, but the size of businesses granted an exemption was different in each census. For 1930, when only businesses employing more than ten people were included, the smaller workload resulted in much quicker production of results, with the first preliminary data appearing in December 1931 and the final reports in 1933 to 1935.

The Import Duties Act 1932, mainly concerned with imposing a 10 per cent tax on imports, also included powers for the Board of Trade to collect information on domestic production of goods which, had they been imported, would have been subject to the tax. The principal differences in the powers in this Act were that:

- breakdowns of production by commodity were no longer restricted to breakdowns in the import and export list
- breakdowns of the cost and quantity of materials and fuel could be collected

The first such census was taken for 1933, on a reduced set of production industries, covering 62 per cent of output and 69 per cent of employment according to the 1930 Census, and again for 1934.

The 1935 Census used a combined approach, with some industries approached under the Import Duties Act and some under the Census of Production Act. There was a further Import Duties Act inquiry

in 1937 (mostly) and 1938 (six additional industries only). Preliminary results for 1937 appeared in the Board of Trade journal, but no final report was produced as processing was interrupted by the Second World War.

The Second World War

During the war, there was a confusion of statistical information, which led the Prime Minister, Winston Churchill, to develop his statistical section into the Central Statistical Office (CSO). The need to make very large changes to the economy for the war very quickly required a great deal of statistical information, which continued to be collected by the various departments of government, but was mediated through the CSO. There were no census publications during this period, but there were initially two digests of statistical information, and later many more, including annual supplements which might be considered the wartime counterparts of the censuses. The increase in statistical requests to businesses which resulted from this caused resentment in many parts of industry, and this continued after the war in a general distrust of proposals for new statistical collections. The first National Accounts were produced in 1941, and their annual publication added to pressure for good statistics after the war.

The annual censuses 1946 to 1969

A new Act – the Statistics of Trade Act (1947)

In June 1945, two committees were commissioned by the Board of Trade, one to review the requirements for the Census of Production, and the other to review the case for a Census of Distribution. The recommendations of these committees were translated into the Statistics of Trade Act (1947), which is the Act under which most statutory surveys of businesses are undertaken in Great Britain (there is separate legislation for Northern Ireland). The Act stipulates that a Census of Production shall be run each year (the only survey required to be undertaken under British law), but also provides powers for the statutory collection of other business statistics.

The committees also suggested a number of changes to the questions which were being asked, including changing from production to sales – which was designed to

make the questionnaires easier to complete. The Statistics of Trade Act contained a schedule of topics which could be included, with much wider topic coverage than the Census of Production Act. The wider scope for questions meant that wages and salaries information was also asked in the Census of Production for the first time in 1946.

Getting restarted 1948 to 1951

The next Census, for 1948, began the line of modern, annual censuses of production, with expanded topic coverage, and classification according to the first Standard Industrial Classification (SIC48) – a classification designed to be used consistently across government departments, many of which had used their own versions until then. Questions on commodity breakdowns of sales and purchases – goods (and later services) bought from other businesses – were asked in 1948, and this enabled the tabulation of results on both an industry and a product basis. Collecting and analysing the commodity breakdowns was burdensome for both businesses and the office processing the survey, so in 1949 and 1950 the Census collected only an aggregate figure, except in a few industries. The one major exception was in Northern Ireland, where the 1949 Census was the first full post-war collection.

The 1951 Census covered an expanded range of topics, and there were quite detailed questions on power equipment, included in the census for the first and only time since 1930, and also new questions on shift working. There was a breakdown of sales by commodity (in value and quantity), and also a breakdown of specified materials purchased.

Sampling

Sampling was already acknowledged as an issue to be considered in 1946, but it was several years before the consideration was serious enough to give rise to action. In planning the 1952 Census ‘it was decided that sufficiently accurate estimates of the main aggregates required could probably be made ... from a sample of establishments’, and this made the cost (both the cost to businesses and the cost to government) substantially smaller than a full census. The sample design essentially set a pattern which was unchanged in 2006. The very largest businesses (measured by employment) are completely enumerated,

with stratification by employment and decreasing sampling fractions with decreasing employment in these size strata. If there were few establishments in an industry, all were included.

It is interesting to quote the paragraph summarising the impact of sampling, which says:

The use of sampling methods inevitably means that precise figures cannot be obtained. The results for industry as a whole are accurate within very close limits, but a rather wider margin of uncertainty attaches to those for individual industries. In spite of this, it was considered that they should be published for these industries – principally the larger ones – where the margin of uncertainty is not too great; but that the results are based on sampling, and are not precisely accurate, should be borne in mind in any use that is made of them.

Once sampling was used, the frame from which the sample was drawn became more important. The frame was based on the responses to the census two years earlier.

Once the sampled businesses have responded, it is then necessary to use the responses to make an estimate for the whole population. In 1952 this was done using expansion estimation, but in 1953 an additional correction factor was introduced, to give the classical ratio estimator, which has been the mainstay of business survey estimation in the UK ever since.

In 1954, for the first time, a table was shown which estimated the activity of smaller businesses which had not been required to complete a detailed questionnaire, by industrial classification. From 1955 onwards, the tables were all adjusted so that they included estimates for businesses below the size threshold, and there were no separate tables for different-sized businesses in general (although size breakdowns of some variables continued to be produced).

Another review

There continued to be adverse reactions to the impositions and costs of the Census, so a further review of the Censuses of Production and Distribution was commissioned and published in 1954. It confirmed the need for the Census (although pointing out that many

businesses did not themselves find the results useful), and made a number of recommendations for reducing the compliance cost, which were largely implemented in the 1958 Census.

There was a general move to make the Census easier for businesses to complete. This was done firstly by including ancillary activities, particularly merchanting (for all industries) and also additional activities in specific industries, such as tree felling in businesses in the sawmilling industry. This meant that businesses were no longer required to divide their accounts. It was also tied up with a further development, which was the production of results by enterprise (one or more firms under common ownership or control, as defined in the Companies Act 1948) as well as on the traditional establishment basis, and this involved changes to the structure of the frame.

Secondly, the exemption limit for the detailed information was raised from employment of 11 or less to under 25, but the unit on which it was calculated was changed to the ‘firm’, which could be several establishments (approximately but not exactly equivalent to local units), but could also be only a part of an enterprise. Nevertheless, fewer businesses were required to respond overall.

Thirdly, the making of combined returns for local units (business sites) in the same industry and in England, Scotland or Wales was facilitated in 1958. This meant that figures needed to be apportioned by the Census Office for any detailed geographical analysis.

Fourthly, only an aggregate question on purchases of materials and fuel was asked in 1958 – not the product breakdown of earlier full Censuses, which it was now planned to collect decennially. Additionally, less product detail of output was collected where detailed monthly or quarterly statistics were available.

A return to a quinquennial pattern

The 1958 Census also started a quinquennial pattern of detailed censuses (covering all units above a threshold without sampling) in 1958, 1963 and 1968, with intervening smaller, sample-based surveys. The main difference in 1963 was in the detail collected, which included a detailed breakdown of purchases into around 2,000 headings (needed as the basis for input-output tables and for weights for the producer price index) and also a range of additional topics.

Since information on capital expenditure and inventories was collected in voluntary monthly and quarterly surveys, any businesses which supplied this information were given a simpler questionnaire asking only for output, or in some cases where there were also sales surveys, not sent a questionnaire at all.

Supplementary surveys were run in 1963 for capital expenditure of 'not yet in production' units (new units which are not yet producing output, but may have substantial capital expenditure in buildings and plant in preparation for beginning production), and for stocks and capital expenditure by parts of businesses excluded from census responses. This allowed stocks and capital expenditure for 1963 to be reworked onto a reporting unit (establishments under common control) basis, and used as the basis of sampling and estimation for the subsequent censuses.

The primary purpose of the smaller surveys between full censuses was as an input to the National Accounts, and also to provide more broadly-based figures which could be used to revise those made using short-period surveys. With these much simplified surveys, the unit was changed to something which would now be called a reporting unit – usually a firm or company, but sometimes a part of such a firm or company if it was engaged in a number of main activities corresponding to different industry groups. These units included all the parts of a firm, whether or not they were classified in the area the survey covered. This change had several statistical advantages, as well as being cheaper – it improved the coverage since, for example, capital expenditure at head offices was automatically included, and it improved the comparability with the annual inquiry into the Distributive and Services Trades, which was already taken on this basis. There was, however, a big disadvantage in that figures for output showed a discontinuity from the main censuses of 1958, 1963 and 1968 (as sales between establishments within a business unit were eliminated, and wholesaling and similar activities were added), and it was not considered possible to make an adjustment to a consistent basis or to provide a link.

In 1964 to 1967 and 1969, very simple censuses were run, asking only for information on inventories and capital expenditure (except in construction and

water supply industries where there were, respectively, one additional and one fewer questions). The threshold for inclusion in the census was effectively raised to employment of 500, although in industries where businesses employing fewer than 500 people made a substantial contribution, businesses below this threshold were sampled.

The annual censuses 1970 to 1997

Further development of industrial statistics

The Estimates Committee was appointed in the mid-1960s to review the whole structure of statistics. Following its fourth report, which contained much of the evidence and recommendations for action, the system of economic statistics in the UK was overhauled, to increase the frequency of the basic information collected in the Census of Production to annual, to speed up the production of the results, to provide more detailed commodity information and to harmonise the concepts used. The new annual census (formally renamed the Annual Census of Production and universally known as ACOP) returned to enumerating all businesses larger than a fixed size threshold each year. The Business Statistics Office (BSO) – a precursor of part of the Office for National Statistics – was formed in part to facilitate running the new system of surveys.

One of the central planks of the new system was a 'Central Register' – a database of all the businesses in the UK with information which could be used for sampling. There was also some reduction in the detail collected through ACOP, since commodity breakdowns of sales were collected through a new quarterly survey, and the commodity breakdown of purchases questions moved to a new quinquennial Purchases Inquiry, first undertaken in 1974. Otherwise, the topic coverage of ACOP was little different from earlier surveys. For the first years of the new survey (1970 to 1972), in fact, a conscious decision was taken by the Census of Production Advisory Committee to keep the content of the Census fixed.

The European Economic Community

International comparison had been noted as a key requirement for Census of Production statistics as early as 1945, although this had initially looked more towards the USA and

the dominions. When the UK joined the European Economic Community (EEC – 'Common Market') on 1 January 1973, however, comparability with European nations became important.

The first effects were felt on the Census of Production for 1973, which was modified to conform with a directive aimed at coordinating the annual structural surveys in EEC member states. The main changes to the 1973 survey were:

- calculation of estimates of gross value added (which are closer to the definition of output required for the National Accounts)
- the introduction of a uniform cut-off of 20 employees (formerly 25) above which all businesses were included. This created a rather odd sequence of employment bands of unequal length – 0 to 10, 11 to 19, 20 and over, and a difference from the quarterly inquiries, which continued with a threshold of 25 employees, occasionally causing difficulties of reconciliation between the two surveys
- introduction of a standard questionnaire (the 'long form') for businesses with employment of 100 or more, and a questionnaire collecting less detail (the 'short form') for businesses with employment of up to 99
- some additional detailed questions were included on the long form relating to labour costs, purchases of services, merchanting, capital expenditure, and taxes (VAT, rates and motor vehicle licences)

Mass imputation (1973 onwards)

As well as changes to the scope and questions in 1973 in line with EEC requirements, there was also a change to the way the estimation system operated. Ratio estimation continued to be employed, but it was made operational through the directly equivalent practice of mass imputation using ratio imputation models. A ratio of the collected variable to the number of employees was calculated, and then applied to the register employment of any non-responding or exempt business to generate estimated values. Estimates for any domain could be easily produced by summing the appropriate combination of real values and estimates for any business in the domain. What was less clear was the

quality of such estimates, which led to its eventual discontinuation in 1995 (when estimates were made by weighting the sample responses with weights derived by ratio estimation).

The results from the 1974 and 1975 ACOPs were published together 'to improve timeliness', and the results of the first Purchases Inquiry were also included. Construction was reintroduced as a full part of the Census in 1974, after operating as a limited survey collecting capital expenditure and stocks from a sample of large undertakings from 1969 to 1973.

Sampling makes a comeback

In 1978 there was a move to use sampling more widely in ACOP. One in two establishments with 20 to 49 employees were sampled in 68 manufacturing industries. At the same time, around 10 per cent of units with 11 to 19 employees were also sampled, to meet a European requirement for a limited range of data from smaller units every five years. This sample of smaller businesses was not repeated in 1979, but the description of the size range changed from 11 to 19 to 10 to 19 as the size ranges were rationalised to be in line with Europe. The sampling of 20 to 49s was, however, repeated, and in 1980 it was extended so that only one in four 20 to 49s and one in two 50 to 99s were selected. Sampling also evolved in the construction industries, with the one in two sample of 20 to 49s extended to these industries from 1979. Further savings were made when the sample of construction businesses with fewer than 20 employees was discontinued in 1980.

In 1979 the first steps in another harmonisation with Europe were taken, as a supplementary volume was produced classified by the new SIC80 classification (although the Census was actually designed and run using SIC68). The new classification was the first to be aligned with the European classification NACE. The Purchases Inquiry, undertaken as a supplement to the Census of Production, was, however, designed using SIC80 classifications. Both the 1979 Census and Purchases Inquiry were vital in reclassifying (as well as rebasing) the National Accounts as they provided the weights for the Index of Production and producer price index, respectively. The 1980 ACOP was run fully on SIC80, but only summary results were produced for 4-digit activity headings (industries), with the detail produced mostly on 3-digit groups of the new SIC.

The Rayner review (Rayner 1981) articulated the view that statistics should be produced primarily for the purposes of

government and, from the 1980 publication onwards, the text prominently mentions the government first in the list of purposes for undertaking a Census of Production. This was, however, altered to give Europe as the first driver in 1983 – probably as a defence against pressure for surveys to be stopped or reduced, since the Census of Production outputs were a requirement under European regulations (which have the force of law). The statutory obligation to undertake a Census (from the Statistics of Trade Act) is also mentioned explicitly for the first time in many years.

A new register was introduced in 1984, based on value-added tax (VAT) information. This improved coverage especially of new 'births', new businesses beginning trading, which were properly identified through the VAT system more quickly than they had been noted before. 1984 also saw a 'benchmark Census' with an increased sample size, returning to the sampling scheme last used in 1979. This was designed to provide better quality information to benchmark the Purchases Inquiry run in the same year, and to provide weights for the Index of Production for rebasing onto 1985=100.

Occasional extra questions were included in ACOP to gather information on topics of interest or policy importance. The 1986 and 1988 Censuses saw three additional questions designed to obtain information on computer employees and the costs of buying or leasing computer equipment. 1991 and 1992 included questions on the cost of pollution control and waste management.

In 1993 a further revision of the classification system was made (to SIC92), to harmonise classifications within the European Union which were moving to the first revision of NACE. This was undertaken at the same time as moving to a new register, the Inter-Departmental Business Register (IDBR) (Perry 1995), which was based on the integration of the two primary administrative sources – VAT and pay-as-you-earn (PAYE) employment information. Apart from the change of classification, this had little direct impact on the running of ACOP, although it did pave the way for later changes.

The 1994 ACOP would have been a 'benchmark' one, with an increased sample size, if the series of more detailed surveys every five years had been continued, but instead it was 'slimline', as part of a general pressure on costs. The way in which ACOP was processed also changed for 1994. The mass imputation approach introduced in 1973 was dropped, and a survey-weighting approach was introduced for the first time,

in keeping with the treatment of ACOP as a sample survey. This made some of the processing more difficult, but meant that the quality of some of the lowest-level aggregates was much more easily seen. The ratio estimation approach was maintained.

Maximum information at minimum cost

The 1990s also saw renewed pressure to keep the costs to business of filling in government forms as low as possible. Although surveys are a very small proportion of the total administrative burden, they did not escape scrutiny, and ACOP was affected through a gradual reduction in sample size (aided by the declining number of businesses classified to manufacturing), and by reductions in the number of questions on the questionnaire.

The 1994 ACOP dropped the collection of information on capital expenditure and employment in local units. This made a substantial saving in compliance costs for businesses. The responses from businesses were then apportioned between the local units according to information from the IDBR on local unit employment, which was updated by the Census of Employment. The quality of the apportionment relied on the completeness of the register, and also on the relationship between employment on the IDBR and the variable collected in the survey (although this approach was not used in construction, mining and energy industries where regional data were not produced). The relationship was mostly good for (survey) employment, with deviations only where there had been changes in local unit structures, but the relationship between capital expenditure and employment has always been acknowledged to be weak except in the largest units.

Integration - the Annual Business Inquiry (1998 onwards)

The ABI was a major development which replaced and integrated quite a number of surveys – the Annual Censuses of Production and Construction, the Purchases Inquiry, the Annual Employment Survey (AES), and the set of six surveys covering the distribution and services sector – retail, wholesale, motor trades, catering, property and (other) services. Putting all these together in a single framework had big benefits for measuring consistently across the economy, for improved coverage by reduced duplication and fewer areas with poor coverage, and also allowed efficiencies from using the same survey structure.

The employment and turnover statistics from the Employment Department and CSO, respectively, were brought together in 1995 and formed part of the new Office for National Statistics; part of the reasoning for this was that a single survey collecting both sorts of information together would be more efficient and produce more consistent estimates. This was the main impetus for the integration of ACOP with the AES. At the same time, the successful introduction of the IDBR, which merged information from the two administrative sources PAYE and VAT, also made it practical to merge the services sector (which had formerly been based on a register derived only from VAT) and the production sector (where the register had been based on employment information). The final driver was from Europe, which extended the structural business statistics regulation (Council regulation 58/97) to cover the service industries. The UK met its obligations under this regulation through the new ABI.

In 1997 the way employment was measured was changed as part of the transition to the ABI – instead of the average employment over the year (defined for convenience as the average of the last week in each month), the employment on a specific date was required. The Census of Employment had had a date in September but, to correspond with the despatch date of the ABI, this was moved to 12 December, with the results adjusted based on information from the Monthly Production Inquiry. The adjustment process was soon dropped, however, leading to a lot of dissatisfaction with the effects of seasonality around Christmas on the employment figures, so the reference date was moved back to the old Census of Employment date of September in 2006.

Another way in which the merger of the surveys was implemented was to institute a two-part questionnaire, one part requesting employment information which could be returned relatively quickly, and one part requesting more detailed financial variables which could typically only be completed when a business had finalised its annual accounts.

A companion survey, the Annual Register Inquiry (ARI) replaced the collection of local unit information undertaken by the AES and formerly ACOP (until 1993), from 1999. The AES itself was run alongside the

ABI in 1998. The local unit information from the ARI is now used to update the business structures on the IDBR, and this information is then used to apportion data to form regional estimates.

The most important changes to the methods employed in the ABI were:

- a move to stratification by country, with oversampling in Scotland and Wales. This gave additional accuracy for estimates in Scotland and Wales, and fulfilled the original requirements from the Statistics of Trade Act
- a change from sampling independently each year to having 50 per cent overlap between samples outside completely enumerated strata (except for businesses with fewer than 10 employees, where there was no overlap, to keep the response burden as low as possible). This improved the quality estimates of yearly change
- a change in the apportionment between regions
- a new outlier adjustment procedure

More details of the transition to the ABI and the survey methods employed are available in Jones (2000). The detail of the methods used for the employment information from the ABI and the transition from the AES are given in Partington (2000, 2001).

Some common themes

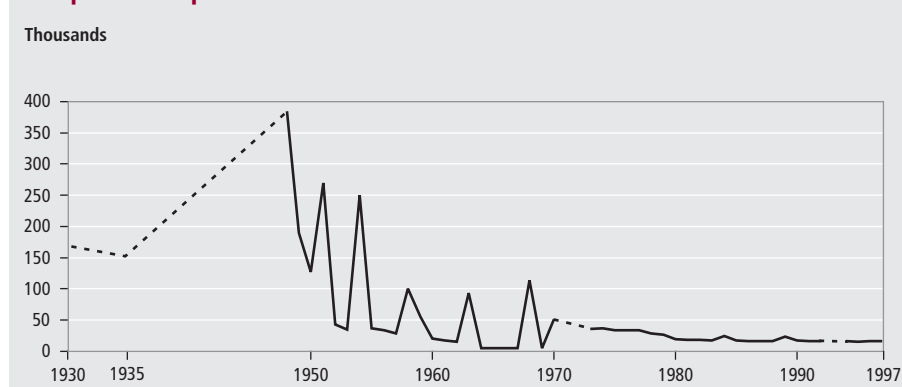
Over the 100 years of development of economic censuses and surveys in the UK, some common themes have emerged:

- increasing concern about compliance costs
- greater use of sampling
- more comprehensive coverage of services
- improved timeliness
- greater integration

The cost to businesses of completing questionnaires has always been a strong consideration in the development of the Census of Production (and indeed in all business surveys). Many of the advances in the procedures and methods have been led by this, including the introduction of sampling; the detailed consultation on questions to be asked; the evolution of the statistical unit to something which corresponds as closely as possible to actual business structures; and the use of models to derive regional data instead of needing to collect it.

The sample size (**Figure 1**) has shown an asymptotic reduction, initially from gradually raising the threshold for inclusion in the census, later from the introduction of sampling, and towards the end from other methodological improvements. This is also slightly confounded with changes to the definition of the unit. What is clear, however, is that there is an asymptote, and that the range of estimates which can be produced cannot be maintained if there are large cuts in sample sizes. Further methodological developments may in time allow small reductions in the sample without adverse impacts on quality, continuing the asymptotic development.

Figure 1
Despatch of questionnaires in the Census of Production¹



Note:

- 1 1997 was the last year when the Census of Production had an independent existence – thereafter it became part of the Annual Business Inquiry.

Improved timeliness has been associated with the reduction in the number of questionnaires despatched, as this reduced the follow-up requirements. Later, technology made significant changes to the speed with which processing could be undertaken, and full advantage was taken in increasing the frequency of the Census of Production to annually, and then in improving the speed with which results were produced. The long-term effect has been to move from requiring five years to produce the final census results (with provisional results published piecemeal up to that date), to the ABI for 2004 where final results appeared 18 months after the reference date (with provisional results after 12 months). Much of this time is used in obtaining responses from businesses, since questionnaires cannot be completed until the year has finished.

There has also been a gradual improvement in the coverage of service industries, leading to the ABI which integrates the production and services collections. Integration is a growing theme, especially the need for more consistent definitions, methods and practices. The driver is not only the users' need for greater clarity and consistency in outputs, but also a producer requirement to achieve efficiencies through common practices. The difficulty has always been the need for investment to implement the changes needed. Most recently the drive for consistency has been underpinned by organisational change: the introduction of the IDBR in 1995 as a common register for all business surveys; the formal separation of data collection as a functional unit in 1999 (although data collection had been separated from results processing a few years earlier); and the setting up of the Sources Directorate in 2003.

From the foregoing, it is clear that the current directions in the development of UK economic surveys are based on themes that have developed during 100 years of operation. An understanding of the historical context helps us to see where pressures are likely to lead in the future, and

what has already worked well without the need to test all the approaches. The gradual evolution of surveys will continue, and it will be interesting to see what will be the main developments as the second century of the Census of Production is entered.

Note

- 1 This article is extracted from a detailed paper on the history of the Census of Production, which is available from the authors on request.

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