Business Structure Database User Guide

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Acknowledgements

Business Structure Database User Guide

1. Introduction

1.1 The Inter-Departmental Business Register

The purpose of the Business Structure Database is to create a version of the Inter Departmental Business Register for research use, taking full account of changes in ownership and restructuring of businesses. The IDBR is the key sampling frame for UK business statistics and is maintained and developed by the Business Registers Unit (BRU) within the Office for National Statistics. The construction of the IDBR relies on administrative systems; specifically Value Added Tax (VAT), employee income tax payments (made by employers through the Pay as You Earn system) and Company Registration (for businesses that wish to operate with limited liability). The IDBR is maintained by matching these sources of commercial and administrative data.

1.2 Limitations of the IDBR for Research Purposes

As noted above, the IDBR is designed as a sampling frame holding the live structure of enterprises. While providing a common reference point for the Business Data Linking (BDL) datasets, the IDBR has several limitations when considered as a research tool in its own right. Firstly, the IDBR is not made generally available to researchers, even to those who have access to Statistics of Trade Act data, due to HMRC data being included. Secondly, the IDBR concentrates on current company structure, not historical links, although there is information on the death codes for local units. Demographic analysis is therefore confined to the current situation and is not concerned with backdated information. Whilst the IDBR implicitly contains information on changes to structure, this information is difficult to unpick. Longitudinal information is important to understand changing demographics of enterprise structures. As such, the IDBR does not identify mergers, takeovers and business sales easily and usefully for researchers

1.3 Aims of the Business Structure Database

The limitations outlined above reflect the fact that the IDBR is designed to assist in the production of surveys. The purpose of the BSD is to provide a version of the IDBR that reflects a wide variety of firm demographics. Specifically, the BSD aims to embody the following characteristics:

- record as accurately as possible the life-span of enterprises, takeovers and mergers

- account for restructuring/changes in enterprises etc

- identify accurately birth and death

- be updateable from the IDBR on a regular basis

- be available for research use, including by the IDBR team

- improve demography statistics and allow historical analysis

- incorporate DTI reference number scheme to link to allow direct linkage from DTI data

Within the IDBR, every local unit, reporting unit, enterprise and enterprise group is given its own, unique reference number when it enters onto the IDBR which remains unique to that business whilst it remains, in the same form, on the register. It is therefore possible to make inferences about business entry and exit from the register by looking at the first and last occurrences of reference numbers on the IDBR. However, it is important to distinguish between register entry/exit and actual entry/exit. It is not currently possible to identify whether a firm has ceased trading or if it has merely undergone a change in structure that leads to their original reference number becoming extinct. An important contribution of the BSD is therefore to provide more detail in terms of defining demographic events than has previously been possible.

## 2.	Business Demography – Units of Analysis

### 2.1	Statistical Units

IDBR units are classified into three types: administrative units, statistical units and reporting units. The administrative units are the VAT traders and PAYE employers. However, in terms of the Business Structure Database, our primary interest is in the statistical units. The IDBR captures the structure of ownership and control of firms and plants and business sites that make up the UK economy using three aggregation categories; the enterprise, enterprise group, local unit which are defined precisely in the EU Regulation on Statistical Units (EEC 696/93) as follows.

Enterprise

   "The enterprise is the smallest combination of legal units that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources. An enterprise carries out one or more activities at one or more locations. An enterprise may be a sole legal unit."

Enterprise Group

   "An enterprise group is an association of enterprises bound together by legal and/or financial links. A group of enterprises can have more than one decision-making centre, especially for policy on production, sales and profits. It may centralise certain aspects of financial management and taxation. It constitutes an economic entity which is empowered to make choices, particularly concerning the units which it comprises."

Local Unit

   "The local unit is an enterprise or part thereof (e.g. a workshop, factory, warehouse, office, mine or depot) situated in a geographically identified place. At or from this place economic activity is carried out for which – save for certain exceptions – one or more persons work (even if only part-time) for one and the same enterprise."

The meaning of these definitions is illustrated in the following example taken from Criscuolo et al (2003). In Table 2.1, Brown is a single firm, operating in a single location, producing goods for a single industry. Brown, being a firm responsible for a

single business activity is referred to as a single plant enterprise. In contrast, Smith and Jones Holdings are a holding company, registered in London. In turn, they own two firms, Smith and Jones, who produce in separate plants. Smith has four plants, Smith North, Smith South, Smith East and Smith West. Jones has a plant, Jones North and an R&D lab, Jones R&D. Smith and Jones Holdings, being responsible for firms with distinct business activities is called an "enterprise group". Smith and Jones are also enterprises. All plants are called 'local units'. To qualify as a local unit, a business entity must only consist of one site at a single mailing address. Consequently, if Jones R&D is located a different site to Jones North, the enterprise Jones would consist of two local units. If Jones R&D was located at the same site as Jones North, the two would form one local unit for the IDBR.

Table 2.1:   Statistical Units of Analysis

Enterprise Group	Brown	Smith and Jones Holding					
Enterprise	Brown	Smith				Jones	
Local Unit	Brown Plant	Smith North	Smith South	Smith East	Smith West	Jones North	Jones R&D
Reporting Unit	A	B		C	D	E	

2.2   Reporting Units

Alongside statistical units, the reporting unit holds the mailing address for the business and is the unit for which businesses report their survey data to ONS. In general, the reporting unit is the same as the enterprise. In some of the more complex cases, enterprises are subdivided into reporting units, and are defined by specifying the appropriate local units from within an enterprise. An example of this within the context of the United Kingdom is the separate classification of local units that are located within Great Britain and Northern Ireland. Note that unlike on the previous CSO business register, local units and reporting units are distinct on the IDBR. In particular a reporting unit is not also a local unit. A reporting unit and a local unit may be co-located but have distinct identities. The local units that form a reporting unit have employment that sums to the reporting unit. There is no residual employment accounted for by the reporting unit itself. In the context of the above example, Brown forms a single reporting unit. Smith chooses to report on three mutually exclusive parts of its enterprise (B, C and D) whilst Jones has decided to combine its local units.

3.   Data Sources

Version 1 of the BSD is constructed from annual snapshots of the IDBR. The IDBR is a live register updated continuously.   VAT traders and PAYE employers are matched to generate the standard European Union "enterprise". The coverage of the IDBR is limited by voluntary registration below the VAT registration threshold and exclusion of employers for whom all their employees are below the income tax threshold. Enterprises that are not registered for VAT AND who do not operate a PAYE scheme will not be included on the register. The register comprises of just over 2 million enterprises, out of an estimated total of 4.3 million. This latter estimate is that published by the DTI Small Business Service using the Survey of Personal Incomes to supplement the IDBR data. However, it is estimated that the enterprises on the IDBR represent 99% of economic activity. Enterprises are combined to form enterprise groups using information from Dun and Bradstreet supplemented by the VAT system.   A limitation of the administrative registration process is a lack of registration of local units. For each enterprise, ONS maintains a list of "local units" through its Annual Register Inquiry.

Snapshots from the IDBR are available at the level of the enterprise and the level of the local unit. The local unit files can be linked to the enterprise files by means of corresponding enterprise reference number that is included for each local unit. The local unit snapshot files contain similar information to that which is available at the enterprise level. The snapshot files include among others the following variables:

- Enterprise reference number (entref)

- Enterprise group reference number (wow)

- Immediate foreign ownership (imm_foc)

- Ultimate foreign ownership (ult_foc)

- Standard Industrial Classification

- Birth date

- Death date

- Employment and employees

- Turnover

- Number of local units (live_lu)

- Number of reporting units (live_ru)

- Postcode

The IDBR snapshot files include both active and inactive enterprises. The definition of the population of active enterprises is those enterprises with turnover and/or persons employed greater than zero and at least one administrative unit linked to the enterprise.

Figure 3.1 shows the number of enterprises contained within the BSD. In 1997 the BSD contains information on 2.1 million enterprises, if which approximately 1.8 million were live. By 2005, the BSD contains information on 2.2 million live enterprises. The retention of information on inactive enterprises on the IDBR results in approximately 3 million enterprises appearing within the BSD during 2005.

Figure 3.1: Enterprises in the Business Structure Database
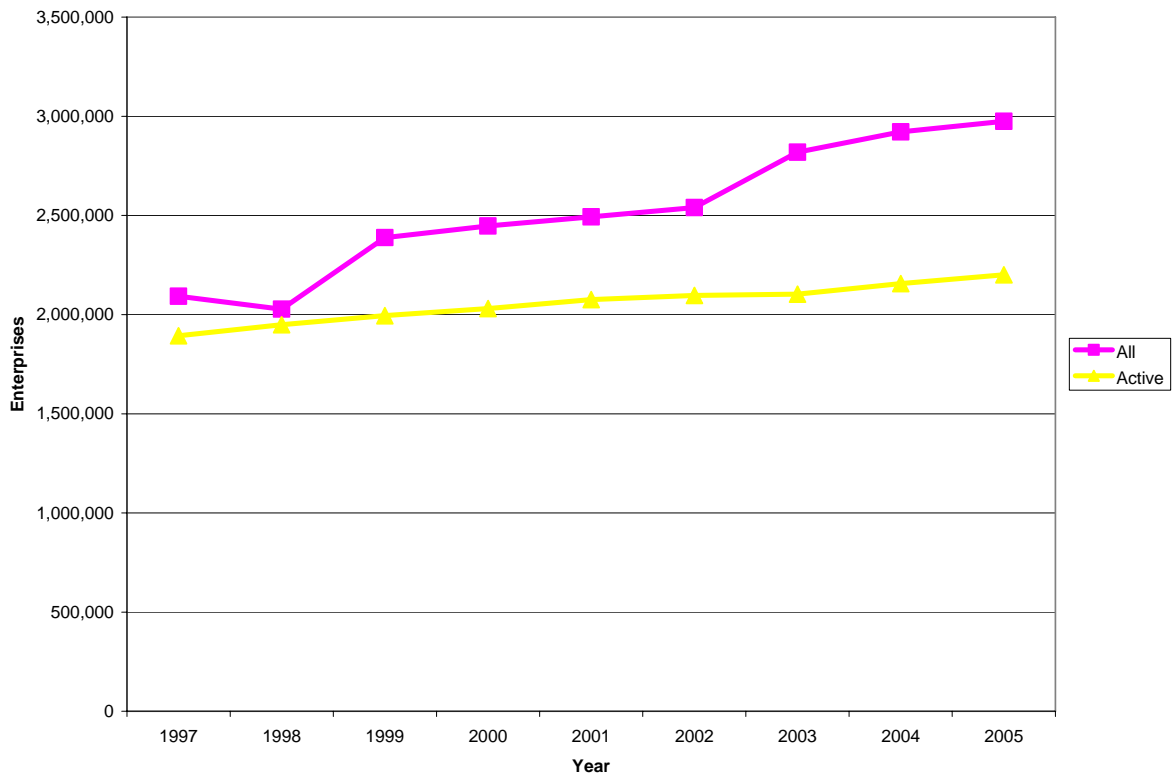
4. Demographic Events

4.1 General Typology

Demographic events are events that impact upon the existence of statistical units and the links between them. As previously discussed, the classification of demographic events reflects the central position of the enterprise in the statistical system. This section describes demographic events concerning enterprises. This section is based upon the general typology of demographic events is provided by Eurostat[1] and is presented in the box below.

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1. CHANGES IN THE EXISTENCE OF COMBINATIONS OF PRODUCTION FACTORS

    1.1 Emergence of combinations of production factors
        1.1.1 Birth of an enterprise group
        1.1.2 Birth of an enterprise
        1.1.3 Birth of a local unit

    1.2 Disappearance of combinations of production factors
        1.2.1 Death of an enterprise group
        1.2.2 Death of an enterprise
        1.2.3 Death of a local unit

2. CHANGES IN THE DISTRIBUTION OF PRODUCTION FACTORS

    2.1 Redistribution of the production factors within one enterprise (over local units)

    2.2 Redistribution of the production factors of more than one enterprise
        2.2.1 Concentration of enterprises
        2.2.1.1 Concentration with no enterprise group involved
        2.2.1.2 Concentration within an enterprise group
        2.2.1.3 Concentration involving more than one enterprise group
        2.2.2 De-concentration of enterprises
        2.2.2.1 De-concentration with no enterprise group involved
        2.2.2.2 De-concentration within an enterprise group
        2.2.2.3 De-concentration involving more than one enterprise group
        2.2.3 Transfer of production factors between enterprises
        2.2.3.1 Transfer of a local unit with no enterprise group involved
        2.2.3.2 Transfer of a local unit within an enterprise group
        2.2.3.3 Transfer of a local unit between enterprise groups
        2.2.4 Restructuring
        2.2.4.1 Restructuring with no enterprise group involved
        2.2.4.2 Restructuring with an enterprise group
        2.2.4.3 Restructuring involving more than one enterprise group

    2.3 Transfer of an enterprise between enterprise groups

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[1] Chapter 12: A General Overview of Demographic Events: Business Register: Recommendations Manual, European Commission (2003)

4.2   Defining Demographic Events at the Enterprise Level

The derivation of demographic events from information contained within business registers is based upon the consideration of 2 key dimensions.

The continuity of the enterprise

Whether an enterprise continues to appear within a business register is important in terms of identifying demographic events. An obvious example is the case relating to the death of an enterprise, where the enterprise loses its identity. However, the takeover of an enterprise will also result in an enterprise losing its identity.   In contrast, the redistribution of production factors does not necessarily imply identity loss if both enterprises continue to trade.

The number of enterprises involved in an event

Both the numbers of enterprises before and after an event are relevant.   For instance, both the birth of an enterprise and the merger of two existing enterprises both results in the emergence of a new enterprise identity.   However, these demographic events differ, among other things, in terms of the number of enterprises involved.

The application of these two criteria makes it possible to derive and define demographic events at the enterprise level in a systematic way. Application of these criteria results in events at the enterprise level as listed below. The terminology is in accordance with that used by Eurostat.

4.2.1   Existential Changes

There are events involving only one enterprise after the event and none before or only one enterprise before and none after.

The **Birth** of an enterprise is the bringing into being of an enterprise where no enterprise existed before and no other enterprises are involved.   Since the enterprises is an organisational unit producing goods or services, a birth amounts to the creation of a combination of production factors.

The **Death** of an enterprise is the opposite to the above. The death of an enterprise amounts to the dissolution of a combination of production factors.

The restriction that these events only involve one enterprise is important in terms of utilising information within the IDBR to identify births and deaths. Within business registers, births and deaths will result in the creation and deletion of identity numbers. However, other events involving many enterprises will may also result in the creation and deletion of enterprise numbers.   An important contribution of the Business

Structure Database is the separate identification of demographic events that would have previously been considered as births and deaths.

4.2.2   Concentration

These are categories of events involving more than one enterprise before the event and one enterprise after the event

Enterprises may integrate to the extent that the number of existing enterprises is reduced, that is, concentration takes place. If two enterprises integrate entirely, the enterprises involved may either lose their identity because they are dissolved beyond recognition in the new organisation or one of the enterprises may remain the same. In the latter case, the other enterprise is generally much smaller; it is merely absorbed by the larger enterprise which largely remains the same.

If both enterprises lose their identity, the event is called a **merger**.
If one of the enterprises keeps its identity, it is called a **take-over**.

In the case discussed it is not possible that both keep their identity, because the number of enterprises would not change.   Similarly, although in the case of concentration the number of enterprises is reduced and that such events may all entail the deletion of records in the business register, mergers and takeovers do not involve the death of units.

It should also be pointed out that as a consequence of a take-over some characteristics of the enterprise that keeps its identity might change. For example, it may enter a different size class or get a different principal economic activity.

4.2.3   De-concentration

These are events involving one enterprise before and more than one enterprise after the event.

The events of de-concentration mirror those of concentration. The counterpart of the merger is the **break-up** and the counterpart of the take-over is the **split-off**.   In a break-up, the enterprise is divided in such a way that none of the new enterprises keeps the identity of the original enterprise. In a split off, the new enterprises are generally much smaller and the identity of the original enterprise is retained by the larger enterprise.

4.2.4 Changes within an Enterprise

These are events that do not involve creations or deletions within business registers.

A **change of ownership** is where a new legal unit is formed to take over the activities of an existing enterprise. An example is where a sole proprietor retires and sells the enterprise to a new entrepreneur. With a change in enterprise group, the same combination of production factors exist before and the event. After the event, the enterprise belongs to a different enterprise group that did not exist before.

Finally, a **trade sale** occurs when part of the activity of an enterprise group is transferred to another enterprise group. After the transfer, both enterprise groups continue to trade. Note that in contrast to divestment, the second enterprise group did previously exist and as such a trade sale is not classified as a deconcentration.

4.3   Defining Demographic Events at the Local Unit

In accordance with Eurostat, three demographic events at the level of the local unit are distinguished; birth, death and local unit transfer. It is acknowledged at the outset that extensions of this typology, for instance with categories of concentration and de-concentration are possible. For example, concentration can occur to adjacent local units if they belong to different enterprises that merge. The link between enterprise events and local events is complex.

4.3.1 Births/Deaths

The birth of a local unit is the emergence of a local unit, which did not exist before, and the death is its disappearance. Since the local unit is the part of an enterprise, situated in a geographically identified place, and the enterprise is a combination of production factors, the birth of a local unit amounts to the creation of a (partial) combination of production factors at a geographically identified place. A death is their dissolution.

4.3.2 Local Unit Transfer

Every local unit is linked to a single enterprise. Therefore, if a link ceases to exist and the local unit is continued (i.e. does not lose its identity), a new link with another enterprise will come into being. Similarly, if a link from an existing local unit to an enterprise comes into being, the link it had with the enterprise of which it was part ceases to exist. Clearly changes of links amount to transfers of local units between enterprises.

Table 4.1: Identifying Demographic Events at the Enterprise Level

	Definition	Number of Enterprises	
		Before Event	After Event
Existential Changes			
Birth	Bringing into being an enterprise where no enterprise existed before and no other enterprises are involved in the event	-	1
Death	Opposite to above	1	-
Concentration			
Merger	Two enterprises integrate entirely – both enterprises lose their identity	n	1
Takeover	Two enterprises integrate entirely – one enterprise retains its identity	n	1
De-concentration			
Break-up	Enterprise is divided in such a way that neither of the new enterprises keeps the identity of the original enterprise	1	n
Split off	Enterprise is divided in such a way that the larger of the original enterprises retains the identity of the original enterprise	1	n
Changes within an Enterprise			
Change of ownership	A new legal unit is formed to take over the operations of the enterprise. [Not a demographic event at level of enterprise]	1	1
Trade sale	Part of the activity of an enterprise group is transferred to another enterprise group. Both enterprise groups continue to trade	1	1

5. Identifying Demographic Events from the IDBR

5.1 Outline of Methodology

To reconstruct a demographic event, one needs to know which enterprises were involved in the event. For birth and death information, this is straightforward. However, for cases relating to concentration and de-concentration, for the creation of joint ventures and for restructuring, it is necessary to register a link **over time** between the enterprises involved. For instance, in the case of a merger the original enterprises have to be linked to the emerging enterprise and in the case of a takeover, the enterprise which is taken over has to be linked to the surviving enterprise (e.g. by a pointer on the record). If such links are recorded, with dates, all events can be reconstructed. This implies that the register has to retain information related to deleted enterprises and information that links enterprises across years.

The IDBR does not register a link over time between the enterprises involved in demographic events. The only mechanism for linking enterprises and local units between successive years of the IDBR is in terms of matching enterprise group, enterprise and local unit reference numbers. In terms of the construction of a Business Structure Database, the question arises as to how the creations and deletions of id numbers within the IDBR can be translated to the identification of definition demographic events. For example, a birth, merger, break-up, split off, joint venture or restructuring would each result in the creation of a register creation. Similarly, the cause of a deletion can be death, a merger, a takeover, a break-up or restructuring. Registrations and deletions are therefore not sufficient to identify demographic events on their own.

A schema of the demographic events that have been identified with information contained within the IDBR is outlined below in Table 5.1. The table refers to demographic events at the level of the Enterprise Group and Enterprise. That is, these demographic events are based upon observed relationships between Enterprise and Enterprise Group reference numbers. However, the principals behind the identification of these demographic events are also applicable at the level of the Enterprise and the Local Unit. The BSD therefore contains information that details demographic events involving a) Enterprise Groups and Enterprises and b) Enterprises and Local Units.

Table 5.1: Identifying Demographic Events from the IDBR:

Event	Description	Changes in IDBR
Enterprise Group Birth	Bringing into being an enterprise group where no enterprise existed before and no other enterprise groups are involved in the event	WOWREF1 created. ENTREF1i…1k created
Enterprise Group Death	Opposite to above	WOWREF1 deleted. ENTREF1i…1k deleted
Takeover	Most of the activity in an enterprise group is absorbed into another enterprise group; the remaining activity is closed or transferred to another group.	WOWREF1 deleted, ENTREF1i…1k transferred to WOWREFN. WOWREFN **DID** exist during t-1
Merger	Two or more enterprise groups combine to form a new one containing most of the activity of the previous units. The source enterprise groups are closed	WOWREF1…..WOWREFN deleted, ENTREF1i…1k-ENTREFNi…ENTREFNk transferred to WOWREF#. WOWREF# did **NOT** exist during t-1
Change of Ownership	A new legal unit is formed to take over the operations of the enterprise group.	WOWREF1 deleted. WOWREF# created. ENTREF1i…1k transferred to WOWREF#
Divestment	Part of the activity of an enterprise group is split off into a new enterprise group. Both enterprise groups continue to trade	WOWREF1 remains, ENTREF1i…1k transferred to WOWREFN. WOWREFN did **NOT** exist during t-1
Trade sale	Part of the activity of an enterprise group is transferred to another enterprise group. Both enterprise groups continue to trade	WOWREF1 remains, ENTREF1i…1k transferred to WOWREFN. WOWREFN **DID** exist during t-1
Break-up	An enterprise group is broken up into two or more enterprise groups. The original enterprise group ceases to exist	WOWREF1deleted, WOWREF#...N created. Some of ENTREF1i…1k identifiable in WOWREF#...N. WOWREF#...N did **NOT** exist during t-1

5.2   Limitations of the Approach

5.2.1   Complexities of Demographic Events

Ideally, demographic events should only be classified into one category of the typology. However, a real life event may not match the definition of any category precisely. For example, it is possible that a business organisation is restructured and at the same time some of the production factors disappear. The derivation of demographic events based upon the analysis of the relationships between reference numbers may not be able to fully capture the complexity of demographic events. Reflecting this, we derived a final demographic event marker to indicate the occurrence of demographic event has occurred (as identified by some change in reference numbers) that does not match any of the detailed definitions of demographic events outlined in Table 5.1. The number of such demographic events is generally small. Abstracting from births and deaths which dominate demographic events, demographic events not elsewhere classified account for approximately 5-10% of the detailed demographic events identified in Table 5.1.

5.2.2   Dynamics of Demographic Events

A further complexity in classifying demographic events relates to the dynamics of demographic events. The demographic events markers derived for the BSD are based upon the continuity of reference numbers and the links between reference numbers between successive annual cross sections of the IDBR snapshot files. Making comparisons between successive annual snapshots may not fully capture events that have taken place during the course of the year. Similarly, the snapshot may have been taken at a time when a group of enterprises were in the process of undergoing some form of demographic change.

5.2.3   Continuity of Reference Numbers

The construction of the demographic variables is based upon an assumed continuity of reference numbers over time and changes in the observed relationships between reference numbers. For our purposes, it is assumed that Enterprise Groups, Enterprises and Local Units are allocated a unique reference number which is retained for the entire period that the Enterprise/Enterprise Group appear within the BSD.

As an administrative register, the IDRB which has generally been more concerned in achieving an accurate picture of business activity at a single point in time rather than achieving continuity over time. For example, abstracting from issues related to the

general continuity of IDBR, all enterprise group reference numbers changed in 1984 and 1997, whilst all local unit reference numbers changed in 1994 (see Criscuolo, Haskel and Martin, 2003). The derivation of demographic event identifiers in this version of the BSD therefore is based upon that period of the BSD that is derived from the IDBR snapshot files; namely 1997-2005.

Even within the IDBR snapshot files, there are problems in terms of deriving demographic event identifiers based upon an assumed continuity in reference numbers.

Firstly, analysis reveals that there are some gaps in the existence of enterprises within the IDBR; i.e. where an entref is observed in t-1 and t+1 but not t. As noted earlier the coverage of the IDBR is limited by voluntary registration below the VAT registration threshold and exclusion of employers for whom all their employees are below the income tax threshold. Therefore, it is possible that enterprises can fall outside the scope of the register for a year. There is, however, no case that the gap for entref is longer than one year. This observation is likely to be related to the Eurostat rule that the enterprise should be treated as dead if it goes missing for more than 1 year. To prevent these missing enterprise reference numbers affecting the construction of demographic event markers, 'ghost enterprises' have been created to fill in the missing observations.

Secondly, Enterprise Group reference numbers are uploaded onto the IDBR from an external source during February each year. As a live register, enterprises that come into existence after February will not be able to be allocated a real Enterprise Group reference number until the following February. To overcome this problem, a dummy Enterprise Group reference number is created. However, during the upload of Enterprise Group reference numbers during the following February, the dummy number will be replaced by a real Enterprise Group reference number. Based upon the methodology for deriving demographic events, the re-allocation of an enterprise from a Dummy Enterprise Group to a real Enterprise Group could result in a change of ownership.

6.   Overview of the Business Structure Database

6.1   Organisation of Files

The Business Structure Database folder contains all the BSD data in a flat file listing. For all years between 1997 and 2005, there exists

- BSD_yy.dta   enterprise level data for year 'yy'
- BSDLU_yy.dta   local unit level data for year 'yy'

where 'yy' denotes the year to which the data relates.

6.2   Variables in the BSD

The variables contained in these files are presented in Tables 6.1. Definitions of these variables are outlined below:

LUREF, **ENT-REF** and **WOWREF** are each used to hold a reference numbers that uniquely identifies the local unit, the enterprise and the enterprise group respectively.

The IDBR snapshot files retain information on inactive enterprises. **INACTIVE** identifies inactive enterprises. When undertaking analyses, users of the BSD may wish to select on active enterprises only.

SIC contains information relating to industrial classification based on SIC92.

Live_LU and **Live_RU** contains information on the number of live local units and reporting units respectively within a particular enterprise.

Employment and Turnover holds the employment totals and turnover derived from administrative data (PAYE returns) used to construct the IDBR. It is noted that those enterprises selected for the ABI have the opportunity to provide employment/turnover information directly in their returns to the ABI. For consistency across enterprises, the information contained within the BSD is based upon register information. It is noted that this will be the only source of information available for a majority of enterprises, particularly smaller organisations who are only sampled for the purpose of the ABI.

Birth and **Death** provide information on the years of birth and death of enterprises and local units.

Deathcode is recorded at the level of the local unit and does not provide direct information about Enterprises, Reporting units or Enterprise Groups.

The available Death Codes are:

0 - Live
1 - Dead - Ceased Trading
2 - Dead - Change of Legal Ownership
3 - Dead - Liquidation
4 - Dead Dropped below threshold
5 - Dead - Dormant
6 - Live - Admin Dead, IDBR Live
7 - Dead - Admin Dead, IDBR Dead
8 - Dead - IDBR Dead
9 - Dead, reason other than 1,2 or 4
E - Dead Employment zero
M - Dead - Merger out
S - Dead - Successor out
T - Dead - Transfer Out

Imm_focc and **Ult_focc** identify foreign owned units and country of ownership. A complete list of codes is provided in the User Guide to the ARD.

Status provides information about the legal status of the enterprise or local unit. The available status codes are:

1	Company
2	Sole proprietor
3	Partnership
4	Public corporation
5	Central government body
6	Local authority
7	Non-profit making body

PAYE and **VAT** are available from 1997 onwards. These markers indicate whether the administrative data within the IDBR is derived from both PAYE and VAT data. Combining these measures provides a 'quality' measure within the IDBR, where good quality indicates that there is a match for the enterprise in terms of it embodying information from both PAYE and the VAT register. In these instances, we can be sufficiently confident that the 2 pieces of administrative information relate to a single source. With unmatched data, there is a danger of double counting.

DEMVAR provides a demographic event identifier. The methodology behind the derivation of the marker is provided in Table 6.1. The derivation of the demographic identifier is dependent upon continuity in enterprise group, enterprise and local unit reference numbers over time. Demographic event identifiers can be derived which depict a) the relationship between enterprise groups and enterprises and b) the relationship between enterprises and local units. Both (a) and (b) have been derived

for within the BSD. That is, demographic event identifiers are available in both the enterprise and local unit files.

The derived enterprise level demographic identifier takes the following values:

1. Birth
2. Death
3. Takeover
4. Merger
5. Change of Ownership
6. Divestment
7. Trade-sale
8. Break-up
9. Demographic event nec (not elsewhere classified)

Within DEMVAR, the markers for birth and death have been derived on the basis of the observed creation and deletion of enterprise reference numbers. It should be noted that the variables relating to year of birth **(BIRTH)** and year of death **(DEATH)** will provide a more accurate measure of existential demographic events for enterprises and local units.

Demvarred is an additional demographic event identifier that indicates whether a local unit has been transferred across enterprise groups since the previous year.

1. Yes
2. No

DTIref incorporates a DTI reference number scheme to link to allow direct linkage from internal DTI data.

Table 6.1 Variables in the BSD Files

	Enterprise	Local Unit
Entref – Enterprise Reference Number	X	X
Luref – Local Unit Reference Number		X
WOWref – Enterprise Group Reference Number	X	X
Inactive	X	X
SIC - Industry	X	X
Live_LU – Number of live local units	X	X
Live_RU – Number of reporting units	X	X
Employment	X	X
Turnover	X	
Birth of Enterprise/Local Unit	X	X
Death of Enterprise/Local Unit	X	X
Death Code		X
Imm_foc – Immediate Foreign Ownership	X	X
Ult_foc – Ultimate Foreign Ownership	X	X
Status – Legal Status	X	X
PAYE – live PAYE indicator	X	X
VAT – live VAT indicator	X	X
Postcode	X	X
Demvar	X	X
Demred – Local Unit Demographic		X
DTIref - Reference Number	X	X

7. Future Developments

This version of the BSD should be considered as a proto-type. Please direct any comments or questions relating to the BSD to the contact named at the front of this user-guide. The BSD is continuing to be developed. Areas of work currently being undertaken include:

- Adding earlier years of data to the BSD.

This information will be derived from the recently up-dated version of the Annual Respondents Database (ARD2). In contrast to the IDBR snapshot files, the fundamental unit of analysis within the ARD is the reporting unit. Extending the analysis back to earlier years will require the aggregation of the ARD to the level of the enterprise.

- Refinement of demographic event identifiers.

The BSD currently identifies demographic events that occur between Enterprises Groups/Enterprises and events that occur between Enterprises/Local Units. What is the most appropriate level of analysis for demographic events? How do demographic events at these 2 levels of business structure relate to each other?

- Validation of the BSD.

The derivation of demographic event identifiers is based upon assumptions regarding the consistency and continuity of reference numbers held in the IDBR. However, there are concerns regarding the validity of these assumptions. Detailed case studies will be undertaken to consider whether the information held within the BSD actually reflects 'real life' events.

Business Structure Database: F.A.Q.

What is the difference between birth and birthdate and death and deathrate?

Birthdate is an exact date in the original BSD dataset, birth is the year of birth of the enterprise derived in the VML by the VML team. This is the same with deathdate and death.

Why does the amount of deaths from a particular year change in ... (unsure how to word) ?

The number of deaths for a given year, e.g. 2002, will rise over the next few releases of the BSD. This is due to time lags in death reporting from administrative data. However, I would expect the number to rise quite a lot in t+1 and t+2, but not as many after that.

Why can I find no companies with a death code of five+ years ago in any edition?

Deaths earlier than t-5 are not included in the BSD releases.

Why do some entrefs in the BSD have missing postcodes, turnovers and employment?

These missing values affect around 1.5% of the sample population for each year until 2007. These enterprises are most likely to be dead, but have not been filtered out by the IDBR team.

Over what period of time are the turnover and employment figures taken from?

Turnover is updated from VAT, which is either averaging of 12 months, 4 quarters or an annual figure. The update takes place in the autumn, based as close as possible to the fiscal year. Sometimes ONS survey turnover is used to gain company's turnover figures; this is based on a calendar year.

The autumn release should relate to the most recent completed fiscal, or occasionally calendar year.

Why do some local unit references begin with an X?

This is when local units are older. They were transferred from the old system before IDBR existed. The X indicated that they were from the old system and from then on, just numbers were used. Most local unit references beginning with an X will now be dead.

Why do a proportion of local units and enterprises have unknown ownership (imm_foc and ult_foc are blank)?

As we gain all our ownership information from Dunn & Bradstreet, sometimes they supply information as unknown if they haven't had a response from the business. The ONS does not allocate any ownership codes itself. If D&B doesn't have information on an enterprise, we leave the ownership code blank. Sometimes, it is assumed that it has to be UK owned as it has activity here and no link to any other country. These enterprises are assumed UK, but no code is allocated.

How do I interpret "000" or "0" cases in the imm_foc and ult_foc foreign ownership variables? Are they assumed GB owned?

These should be interpreted as not known rather than UK owned. We can only assume they are UK owned. Unfortunately, there are a lot of unknown values and as the ONS is provided with the information by Dunn & Bradstreet, there are some cases where information hasn't been provided by a business.

I don't know which codes stand for Great Britain for imm_foc and ult_foc foreign ownership variable in the BSD 1997-2007?

The codes and country names are listed in the Annual Responders Database guide. The code for the UK is 783. This corresponds with the high level of 783 codes reported in the earlier BSD data files.

How can I identity different business activities of an enterprise?

Due to the BSD being at both enterprise and local unit level, you can analyse both the prominent activity of a business (using enterprise or local units) and other, not-

prominent activities (using local units). Using local units allows you to differentiate between activities of the business and allows you to either ignore a particular business activity and look at others or focus on a business activity while ignoring the rest.

What do employment figures represent?

Employment figures are an average of the last four quarters of the financial year for any given firm. If an average cannot be taken, numbers for the last quarter are used.

Are demvar and death variables accurate?

The demvar variable is not accurate and should be used with caution.

Death date should be accurate but may pick up 'dormant' companies that have no responded to VAT returns for 2 years.

Business Demography, 2013

Coverage: **UK**
Date: **27 November 2014**
Geographical Area: **Local Authority and County**
Theme: **Business and Energy**

Headline Figures

- The number of UK business births increased by 28.5% from 270,000 to 346,000 between 2012 and 2013.

- The number of UK business deaths decreased by 6% from 253,000 to 238,000 between 2012 and 2013.

- The total UK business birth rate was 14.1% and the death rate was 9.7%. London was the region with the highest birth rate at 17.9% and the highest death rate at 10.6%

- In broad industry terms, business administration and support services had the highest business birth rate at 20.7% and finance and insurance had the highest death rate at 13.1%

Summary

The starting point for the calculation of business demography data is the concept of active businesses in a reference year. These are defined as businesses that had either turnover or employment at any time during the reference period. New business registrations are referred to as business births and the birth rate is calculated using the number of births as a proportion of the active enterprises.

In 2013 there were 346,000 business births in the UK. The birth rate increased from 11.4% to 14.1% between 2012 and 2013. This was caused by an increase of 28.5% in the number of births between 2012 and 2013. This rise coincides with the new Pay As You Earn (PAYE) Real Time Information (RTI) system, which was rolled out across businesses during 2013. (Please see background note 3 for more details.)

Businesses that have ceased to trade are referred to as business deaths and the death rate is calculated using the number of deaths as a proportion of the active enterprises. The death rate decreased from 10.7% to 9.7% between 2012 and 2013, the lowest death rate in the UK since 2008. This was caused by a 6% decrease in the number of deaths, from 253,000 to 238,000.

Business births and deaths, 2004 - 2013

Figure 1 shows that in recent years the rate of business births per year has usually been higher than the rate of business deaths. This was the case leading up to the 2007 global financial market shock and subsequent economic downturn in 2008/09. Gross Domestic Product (GDP) grew by 2.6% in 2007, before falling by 0.3% in 2008 and by 4.3% in 2009.

As economic conditions worsened, the rate of business births began to fall in 2008 on a trend that continued into 2010, from a high of 12.3% to a low of 10.0%. This is likely to reflect uncertainty around the economic outlook at that time and constrained access to finance as the financial sector adjusted to the global shock.

The death rate of businesses in the UK fell slightly in 2008 before increasing sharply in 2009, rising above the birth rate. One factor behind this initial fall could be that a number of businesses continued to trade in the expectation that economic growth would resume quickly while benefiting from lower interest rates during this period. However, GDP growth did not return until 2010, by which time some of those businesses had ceased trading.

The rate of business births returned to a level higher than the rate of business deaths in 2011. This pick-up followed the economy's emergence from the downturn and is consistent with the strengthening of the labour market since the end of 2011, with the employment rate increasing from its trough of 70.1% in September of that year.

These improvements in business birth and death rates mirrored a revival in broader labour market indicators. The October 2014 Economic Review identified a rise in the number of job to job flows over this period, largely as a consequence of increasing job mobility and a larger number of voluntary moves, both between industries and occupational groups. The improvements also coincided with a marked rise in the number of self-employed workers, which grew sharply from the middle of 2011. These trends may signal increasing employer and employee confidence, which may in turn have been reflected in the rising birth rate and falling death rate of businesses.

The relatively strong performance of GDP in 2011 and 2013 is reflected in the widening gap between the business birth rate and death rate in these years. The most recent data shows that the rate of business births has risen to 14.1%, its highest level since comparable records began in 2004, while the rate of business deaths has fallen to 9.7%, its lowest level since 2008.

Figure 1: Business birth and death rates, 2004 - 2013
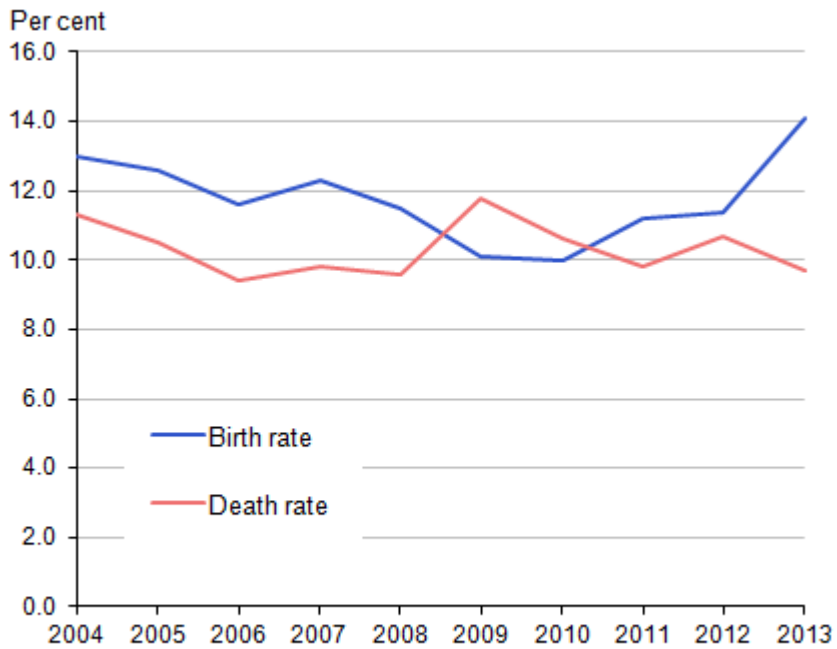
Source: Office for National Statistics

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There were approximately 2.45 million active businesses in the UK during 2013, an increase of 76,000 on 2012. Estimates for 2013 are available in greater geographical and industrial detail from the [tables (1.72 Mb Excel sheet)](#) published on the Office for National Statistics (ONS) website.

Table 1: Business birth and death rates 2004 -2013

Counts given to the nearest thousand

	Active (000s)	Births (000s)		Deaths (000s)	
		Count	Rate (per cent)	Count	Rate (per cent)
2004	2,159	280	13.0	244	11.3
2005	2,183	275	12.6	228	10.5
2006	2,207	256	11.6	207	9.4
2007	2,280	281	12.3	224	9.8
2008	2,326	267	11.5	223	9.6
2009	2,342	236	10.1	277	11.8
2010	2,351	235	10.0	249	10.6
2011	2,343	261	11.2	230	9.8
2012	2,373	270	11.4	253	10.7
2013	2,449	346	14.1	238	9.7

Table source: Office for National Statistics

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Business births and deaths by broad industry group

In 2013 the highest rate of business births occurred in business administration and support, at 20.7%. (The increase in births in this sector was driven by an increase of 12,000 births in business support service activities.) This was followed by professional, scientific and technical, at 17%.

Within the overall number of business births, professional, scientific and technical had the largest number of businesses at 77,000. Within professional, scientific and technical, the largest contributing industry was management consultancy activities, with 29,000 births (this was an increase of 8,000 on the 2012 figure.) There was also an increase of 5,000 births in architectural and engineering activities and related technical consultancy.

The highest business death rate, at 13.1%, was in finance and insurance. This was followed by accommodation and food services, at 12.7%. Within the overall number of business deaths, professional, scientific and technical had the largest number, at 42,000 (of which 16,000 came from management consultancy activities) followed by construction, at 33,000.

Table 2: 2013 Births and death rates by broad industry group

Counts given to the nearest thousand

	Active (000s)	Births (000s)		Deaths (000s)	
	Count	Count	Rate (%)	Count	Rate (%)
Production	158	18	11.4	13	8.5
Construction	309	38	12.4	33	10.6
Motor trades	77	7	9.0	6	8.4
Wholesale	117	12	10.1	11	9.1
Retail	220	27	12.4	22	10.2
Transport & storage (inc. postal)	82	12	15.1	8	10.3
Accommodation & food services	166	25	15.3	21	12.7
Information & communication	200	34	16.8	20	9.8
Finance & insurance	36	6	16.9	5	13.1
Property	95	11	11.1	7	7.0
Professional; scientific & technical	453	77	17.0	42	9.3
Business administration and support services	216	45	20.7	23	10.6
Education	38	5	12.5	3	9.2
Health	104	12	11.4	7	6.9
Arts; entertainment; recreation and other services	180	18	10.0	16	8.7

	Active (000s)	Births (000s)		Deaths (000s)	
	Count	Count	Rate (%)	Count	Rate (%)
Total	2,449	346	14.1	238	9.7

Table source: Office for National Statistics

Table notes:

1. The deaths counts provided in this table are provisional. For more details please refer to the background notes.

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Business births and deaths by UK region

Within the regions, London had the highest business birth rate at 17.9%, followed by the North East (14.7%) and North West (14.7%). Northern Ireland had the lowest birth rate, at 8.7%.

The region with the highest business death rate was London at 10.6%, followed by the North West, at 10.0%. All the regions experienced a decrease in the death rate between 2012 and 2013. The highest number of births and deaths were in London, at 84,000 and 50,000 respectively.

Table 3: 2013 birth and death rates by region

Counts given to the nearest thousand

	Active (000s)	Births (000s)		Deaths (000s)	
		Count	Rate (per cent)	Count	Rate (per cent)
North East	66	10	14.7	6	9.8
North West	240	35	14.7	24	10.0
Yorkshire and The Humber	170	23	13.7	17	9.8
East Midlands	161	22	13.7	15	9.3
West Midlands	192	26	13.4	18	9.6
East	245	33	13.3	23	9.5
London	466	84	17.9	50	10.6
South East	390	51	13.1	37	9.4
South West	210	26	12.2	19	9.1
Wales	90	11	12.6	8	9.1
Scotland	162	22	13.3	15	9.2
Northern Ireland	56	5	8.7	5	9.2
Total	2,449	346	14.1	238	9.7

Table source: Office for National Statistics

Table notes:
1. The death counts reported in this table are provisional. For more details please refer to the background notes.

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Focus on London

London has the highest number of active businesses in the UK and usually has the highest birth rate.

In 2013 London had 19% of active enterprises in the UK, compared with 16.6% before the economic downturn (2007). London experienced the highest birth rate in 2013, an increase of 3.1% percentage points compared with 2012. The increase in birth rate was due to an increase in the number of births across all districts of London, with inner London having a 9,500 increase and outer London having a 9,100 increase.

London may have the highest birth rate (17.9%), but it also has the highest death rate, of 10.6%. This means London has the highest turnover of enterprises (churn rate), which is supported by the survival figures.

London has consistently had relatively low 1 year survival rates in comparison with other UK regions. 89.7% of enterprises born during 2012 survived through to 2013, lower than the 1 year survival rates of the UK as a whole during the same period (91.2%). Similarly, London had low 5 year survival rates, with only 37.1% of business born in 2008 surviving through to 2013, compared with 41.3% in the UK as a whole.

Business survivals

The UK 5 year survival rate for businesses born in 2008 and still active in 2013 was 41.3%.

By region, the highest 5 year survival rate was in the South West, at 45.5%, while the lowest was in London at 37.1%, which mirrors the churn rate seen in the business birth and death data.

By broad industry, some notably high 5 year survival rates include health, with a survival rate of 53.4% and education, with a survival rate of 51.7%. Finance and insurance was the lowest, with only 31.4% of businesses surviving for 5 years.

Survival rates are available from 1 year to 5 year in greater geographical and industrial detail via the [tables published on the ONS website (1.72 Mb Excel sheet)](#).

Table 4: Survival rates for businesses born between 2008 and 2012

Rate %

	Births 2008	Births 2009	Births 2010	Births 2011	Births 2012
1 year survival	92.0	90.8	86.7	93.1	91.2
2 year survival	74.0	73.8	72.5	75.6	..
3 year survival	58.0	59.6	57.1	..	..
4 year survival	48.9	48.9	..	..	..
5 year survival	41.3	..	..	..	..

Table source: Office for National Statistics

Table notes:

1. .. Data not available.

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Background notes

1. To support this release a set of reference tables in greater geographical and industrial detail have been produced and are available on the ONS website (1.72 Mb Excel sheet). However, for various reasons, it is possible to get multiple business registrations at a single address and this can distort data for smaller geographical areas.

2. Estimates presented in this release and the associated published tables are rounded to prevent disclosure. Differences may exist in totals across tables due to disclosure methods used.

3. In 2013 Her Majesty's Revenue and Customs (HMRC) information shows growing numbers of PAYE schemes and a rise in numbers of new scheme registrations. Those that are allied to company registration data have fuelled an increase in numbers of enterprises on the business register. While the growth in PAYE schemes coincides with the introduction of the Real Time PAYE reporting system (RTI), HMRC have indicated there are no technical reasons associated with RTI alone which would have increased the number of enterprises on the register during the period. HMRC have no evidence of behavioural changes in the timing of PAYE scheme registrations through the year.

4. This release is produced from an extract taken from the Inter-Departmental Business Register (IDBR) recording the position of units as at November of the reference year, and excludes central government and local authorities. The data is produced using the guidelines found in the Eurostat/OECD manual on Business Demography.

5. There are two key differences between this release and the statistics produced by Eurostat. Firstly, in this release, an adjustment has been made to the deaths data to allow for

reactivations, which enables more accurate estimates to be published. Secondly, managed-service companies are excluded from this release, but included in the data supplied to Eurostat. These differences are explained more fully in the following notes.

6. Although the statistics in this release are derived from the IDBR, the total stock of active businesses is greater than the UK Business: Activity, Size and Location publication. This is mainly because the definition of an active business is based on activity at any point in the year, whereas UK Business: Activity, Size and Location is based on an annual snapshot at a point in time.

7. More information about how this release relates to other business population statistics and guidance on how to use each product can be found in the Guide to the business population and demographics statistics publications. (196.9 Kb Pdf)

8. In order to publish estimates within a year of the reference period, ONS has made an adjustment to the deaths figures in this release to allow for reactivations. Reactivations occur due to lags in the administrative sources (VAT/PAYE), which mean it is possible that a business that is continuing to trade can appear to cease on the IDBR. If an old VAT scheme is de-registered and there is a delay in the creation and/or matching of the new VAT scheme, it can leave the enterprise without a live administrative source resulting in it being automatically flagged as a death. Additionally, VAT-based units where turnover drops to zero are automatically made dead on IDBR, but will rebirth if turnover is then reported in a later period. These units will appear to move from the active stock into the death counts then come live again as births. In order to prevent distortion in these figures, those businesses that 'reactivate' on the register within two years of death are treated as if they have continued to trade throughout the period.

9. ONS has departed from the Eurostat/OECD manual at this point. The manual recommends waiting for two years after the reference period to allow for reactivations before deaths are calculated. Instead, ONS has estimated the number of reactivations. This adjustment has been applied to all industries, by removing units from the death data. This can lead to different percentage adjustments at the lowest level of aggregation. Since the level of reactivations is subject to some uncertainty, the latest two years in the publication are considered to be provisional and subject to revision. Table 5 shows the adjustments made to the death data for reactivations.

Table 5: Adjustment made to deaths figures to account for reactivation of businesses

Counts given to the nearest thousand

	First Estimate			Second estimate			Final estimate
	unadjusted	estimated reactivations	adjusted	unadjusted	estimated reactivations	adjusted	
2011	244	14	230	233	3	230	230
2012	271	17	255	256	3	253	:
2013	253	15	238	:	:	:	:

Table source: Office for National Statistics

Table notes:

1. This symbol : represents not applicable.

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10. Managed service companies

Managed service companies have been excluded from this release, but are included in the statistics published by Eurostat for Business Demography. ONS excludes these companies from all outputs because they are registered at the address of a service company provider, and therefore distort the geographical location and industry of the businesses, as well as business demography changes. Table 6 shows the number of managed service companies excluded in each year.

Table 6: Number of managed service companies excluded from business demography

Counts given to the nearest thousand

	Active	Births	Deaths
	(000s)	(000s)	(000s)
2005	73	24	8
2006	95	28	12
2007	133	51	33
2008	135	37	54
2009	79	3	47
2010	29	2	12
2011	20	2	5
2012	15	1	3
2013	12	1	2

Table source: Office for National Statistics

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11. Revisions

   The latest two years' estimates on births, deaths and survivals are subject to revision. Revisions would normally be made in the following year's publication.

12. National Statistics are produced to high professional standards set out in the Code of Practice for Official Statistics. They undergo regular quality assurance reviews to ensure they meet customer needs. They are produced free from any political interference.

13. Details of the policy governing the release of new data are available by visiting www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html or from the Media Relations Office email: media.relations@ons.gsi.gov.uk

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EUROPEAN COMMUNITIES (Eurostat)

CONFERENCE OF EUROPEAN
STATISTICIANS

Joint UNECE/Eurostat Seminar
on Business Registers
(Luxembourg, 25-26 June 2003)

DISSEMINATION OF INFORMATION ON BUSINESS REGISTERS IN THE UK

Invited paper submitted by the Office of National Statistics of United Kingdom[*]

Overview

1.   The Inter-Departmental Business Register (IDBR) is the key sampling frame for UK
business statistics. It is maintained and developed by the Business Registers Unit within the
Office for National Statistics (ONS). A large number of outputs (both data and metadata) are
produced and disseminated to a wide range of users. Register data are also used as a source
for information published by various public and private sector organisations. This paper starts
by describing these information flows, and then discusses the issues and constraints
concerning quality, dissemination policy and confidentiality. It also considers possible drivers
for future developments.

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[*] Prepared by John Perry and Steve Vale, Office for National Statistics, United Kingdom.

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Sources and maintenance of the business register

2.   The UK does not have a comprehensive business registration system but instead relies on registration for specific administrative purposes. The main administrative systems are Value Added Tax (VAT), employee income tax payments (made by employers through the PAYE, the "Pay As You Earn" system), and Company Registration (for businesses that wish to operate with limited liability). A register of Intrastat traders is linked to the VAT system. The IDBR is maintained by matching these four administrative sources.

3.   VAT traders and PAYE employers are matched to generate the standard European Union "enterprise". For each enterprise, the ONS maintains lists of "local units" through it annual register survey. Enterprises are combined to form "enterprise groups" using information from Dun and Bradstreet supplemented by the VAT system. For survey purposes, enterprises may report for themselves as a single reporting unit or be split into reporting units defined by lists of local units within the enterprise.
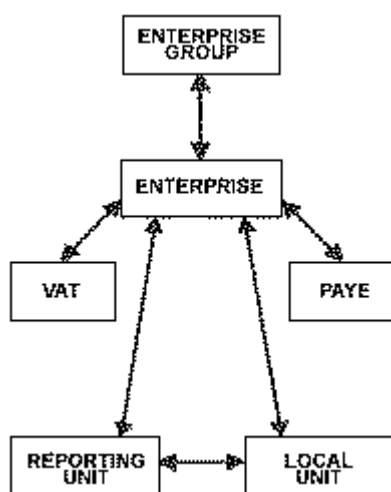
Register data in the public domain

4.   The administrative departments publish some information from their registers. VAT is managed by the Customs and Excise department, who produce some limited analyses of VAT traders (1). Companies House also publishes summaries from its Company Registration system (2). These outputs are limited by the rules governing the administrative systems and may not represent the economic reality.

5.   The IDBR is the business survey frame for government statistical surveys. These surveys generate their own outputs, using the information from the IDBR to produce estimates from samples. The IDBR itself provides a rich source of information relating to business structures, location of business activity and business demography. The advantage of the business register is that it holds information for all units and analyses are available at the time of selection rather than after a delay (up to two years for annual surveys). The

disadvantage is the limited range of data that are held on the IDBR and possible quality problems: the quality of the IDBR is set for sampling purposes and not for analysis.

6.   There are two ways to view the business register:

-       Counting live business units to represent the current situation for business activity;
-       Examining the birth and death dates to reconstruct the business situation at a point in time.

7.   The benefit of the first approach is its immediacy. The disadvantage is that there will always be lags in registration and deregistration that can differ: registration of deaths tends to be slower than registration of births.

8.   The benefit of the second approach is that, with careful estimation, it can produce estimates of the real situation at any point in time and revise these as the information improves. The disadvantage is that there will be some delay in producing the estimates.

9.   The ONS publishes data mainly for enterprises and local units using the first approach: that is from a point in time snapshot of the IDBR. The main tool for disseminating IDBR data in the public domain was, from the early 1970s until 2000, a paper publication, Business Monitor PA1003 "Size Analysis of UK Businesses". During the late 1990s this publication was also made available through the ONS web site. A shift in demand from paper to electronic data has meant that since 2001 this publication has been produced purely as a web based output.

10.   This publication contains detailed information on all VAT registered enterprises in the UK, including cross tabulations by size (employment and turnover), economic activity, legal form and location. Similar tabulations are also available at the local unit level (manufacturing only up to 2002, whole economy from 2003). Data for recent years can be found on the National Statistics web site (3).

11.   In addition to this key publication, the IDBR provides an input to compendia of statistics, mainly at the sub-national level. A good example of this is the ONS Region in Focus publication for the South West (4).

12.   The ONS also produces extracts and analyses for other organisations. The main example of this is the data supplied to the Small Business Service, an agency of the UK Department of Trade and Industry (DTI), to produce estimates of the number of small and medium-sized enterprises, business registrations, de-registrations and survival (5). This uses the second method: that is it takes an extract of units on the business register and, using birth and death dates, creates stock, birth and death estimates for a number of years. For this work, adjustments are made to the estimates for the latest years to reflect the delay in the registration process.

13.   The ONS has also started to provide UK enterprise demography data to Eurostat to be published alongside data from other countries (6). Data are also provided to demonstrate

compliance with the EU Business Registers Regulation through an annual questionnaire, although Eurostat does not yet have permission from Member States to publish the results of this.

14.   The Business Registers Unit also offers a bespoke data service to customers in the private sector, including academics, businesses and individuals, as well as to the UK Parliament. Non-disclosive tabulations of basic register data are provided for a fee based on the time taken to produce and check the required data. In the year to the end of March 2003, just over one hundred customers used this service, generating total revenue for the ONS of almost £38,000.

15.   The demand for data has increased in recent years. To meet this increasing need, for mainly sub-national data, the content of the annual business register publication is being reviewed. More information on local units and a wider range of geographical areas are likely to be included.

16.   The UK government has long recognised the need for data for informed decision-making. Management of its current social policy requires statistics for small areas. To do this, it has funded a programme for the development of "Neighbourhood Statistics". While primarily social, the economic background to the areas is important. This has meant some investment in improving the quality of the business register and the range of small area analyses. Coherence of the statistics for each geographic area is important and a standard geography based on building blocks created from the 2001 population census is being introduced. The range of outputs from the business register will increase during 2004.

Register data used within UK Government

17.   Register data are used in various ways within the public sector in the UK. The IDBR is the sampling frame for official surveys of businesses in the UK. Therefore key outputs are stratified samples, and supporting population data. The de-centralised nature of official statistics in the UK means that there are many different customers in a range of government departments. The key issues concerning these data releases are confidentiality and legality. These are discussed in detail in the section on policy and protocols below.

Data available

18.   The business register holds the information needed for efficient selection and despatch of samples.

> Business Reference - This will be the VAT trader number, employer reference or company number for administrative units, the Dun and Bradstreet number for enterprise groups, and numbers generated within the ONS for enterprises, local units and reporting units. In addition, we hold business references for local units that are used by the businesses themselves in conducting their activities.

Name - This is the legal name of the business, if it is registered at Companies house, the name of the sole proprietor, the names of the partners in a partnership, the name of government bodies and non-profit organisation.

Trading Style - This will be the name by which the business wishes to be known to customers.

Address and postcode - The address complies with the British Standard (BS7666) and the postcode is that allocated by the postal authorities. All postcodes are validated against the postal authority address file.

Legal status - Seven categories of legal status are maintained: company, sole proprietor, partnership, public corporation, central government, local government, non-profit organisation.

Employees - This is the standard ILO definition. It counts each employee as one unit, irrespective of the hours worked within the business.

Employment - This is the sum of employees and working proprietors.

Turnover - This is held as £'000 and is the annual turnover, mainly from the VAT trader system. It is not available for local units.

Industrial classification - This is the UK five-digit implementation of the European standard NACE Rev. 1.1.

Location - This is based on the postcode. A comprehensive range of geographical areas is supported providing flexibility for analysis.

Selection and receipt information - This is held for all business units selected for surveys and provides the basis of selections, overlap control, response chasing and compliance planning and reporting.

Metadata

19.   As well as data, a considerable amount of descriptive metadata is also disseminated. The aim of this is to help users understand and interpret data from the IDBR. A high level overview of the register is presented on the National Statistics web site (7), with links to more detailed information targeted at specific groups of users. Another key document that has been disseminated via the Internet is the National Statistics Quality Review of the IDBR (8). This was produced in 2001, which stated that the quality of the register was good, but also made a number of recommendations to improve quality further. Progress on these recommendations is also reported on the Internet.

20.   Key public sector register users are represented on two committees, the IDBR User Committee, and the higher level IDBR Management Committee. Papers are circulated to committee members to help to keep users informed about register developments, and quality

issues. A monthly report on register quality is prepared and distributed to these committees and other public sector register users.

21.   Detailed information on register practices and procedures are well documented, and have recently been transferred to the new ONS corporate "Standards and Guidance Database". This is available to all register users within ONS, and copies are taken periodically for key customers in other government departments.

Components of quality

22.   The ONS is recognised as a supplier of world-class statistics. It has a well-developed quality framework. In the past two to three years, the ONS has developed a formal approach to presentation of quality. This comprises a programme of National Statistics quality reviews. The review of the business register was among the first in this programme. A quality protocol has been produced, which is linked to the National Statistics Code of Practice.

23.   The components of quality are:

- Relevance;
- Accuracy;
- Timeliness and punctuality;
- Accessibility and clarity;
- Comparability;
- Coherence;
- Completeness.

Each is considered when producing and disseminating data from the business register.

24.   Relevance is demonstrated through the increased demand for outputs. The Business Registers Unit has an active programme of consultation with customers. This includes an annual customer satisfaction survey. The survey results are used to ensure the continuing relevance of the outputs.

25.   The accuracy of the business register is limited to some extent by its administrative data inputs. The Business Registers Unit conducted a major quality survey in 1999, which provided key measures of accuracy of the size of the register, the industrial classification and the employment estimates on the IDBR. The annual register maintenance survey now provides a source for updating those measures. Work is in hand to produce these in Summer 2003 and annually thereafter.

26.   The IDBR is updated daily from its primary administrative source (VAT). Other sources provide a continual stream of updates to the system. The IDBR is quality-assured at the time of monthly co-ordinated selections. Extracts taken at that time provide the basis of a monthly report to users that, although not published, is circulated widely within government departments. This rapid source of information is required in support of the surveys conducted from the register. Other data are provided from the live IDBR at the time of request or from fixed extracts that are taken once a year in April. The systems permit immediate response

through existing extracts or within 24 hours, where specific extracts are required. Responsiveness is, however, limited by staff resources and, in some cases by the need to get approval for release.

27.   Development of web-based outputs, commencing in the mid-1990s through the ONS Statbase product made electronic access possible. The 2000 edition of the annual register publication was made through the web (in addition to paper). Since then, we have extended the range of data and metadata on the web providing free access to data for which charges were previously made. We find that primary users of IDBR outputs rarely require paper, the main exception being public libraries. The majority of users require electronic outputs in a variety of formats (e.g. MS Excel).

28.   By comparability, we mean consistency over time and between analyses for different customers. We apply standard definitions across the extracts and tabulations. Any changes are agreed through a user committee (for ONS customers) and an inter-departmental management committee (for the wider government community). Where a change is required, we measure the impact and provide, where possible, both old and new formats.

29.   To ensure coherence, we check outputs against a range of other sources. For example, we reconcile our ONS register-based estimates with those produced by the DTI Small Business Service from our register data.

30.   Any business register is only as complete as its sources. The IDBR is limited by VAT registration thresholds (currently £56,000 a year) and by exclusion of employers that have all employees below the income tax threshold. The lack of a single business registration system results in a further limitation, as matching of small VAT traders and PAYE employers is imperfect. The register comprises 2 million enterprises, out of an estimated total of 3.75 million but represents 99% of UK economic activity. The DTI Small Business Service publishes estimates of the total population of enterprises with input from the ONS. A limitation of the administrative registration process is a lack of registration of local units. We have developed the annual register inquiry as a tool for maintaining local units across the whole economy (other than for agriculture, which is still covered on the business register only at the enterprise level), and as a consequence we are publishing more complete information on local units.

Legal Issues

31.   The UK does not have a statistical or registration law. For the conduct of its business surveys, it has the Statistics of Trade Act dating from 1947 for Great Britain and an equivalent Parliamentary Order for Northern Ireland. Together these place an obligation on businesses to provide data to government and an obligation on government to protect the confidentiality of the data collected.

32.   The two main administrative sources that provide the input for the business register are also protected by legislation that limits their use to statistical purposes within UK government departments.

33.   The UK has recently introduced a Code of Practice governing the use of data held by the statistics departments. This code makes public the operational rules by which we protect data.

34.   In summary:

-       Disclosive data can only be released to authorised outside bodies and contractors working for government departments.
-       The ONS has set up a microdata release panel to make decisions on whether a release can be made.
-       Release under the Statistics of Trade Act 1947 must be supported by a Ministerial Direction.
-       Where release is permitted, a form must be signed by the recipient, limiting use to names persons.
-       The data will be kept secure.
-       The data will not be disclosed to any third party without the permission of the ONS.
-       Legal sanctions against unlawful disclosure will be imposed.

35.   Data can be sent by any secure media, usually by CD ROM, floppy diskette or paper. The security of email is a major concern. Within UK government departments, a secure email system has been set up, known as the Government Secure Intranet (or GSI). Where a department has such a system in place, individual and disclosive data can be sent by email. Organisations that are part of this system are identified by the inclusion of "gsi" in their email addresses.

36.   Once data have been passed from the ONS to customers, they become the responsibility of the recipient. If confidential data are being passed to a third party under contract, then the ONS has to approve the relevant provisions of the contract before releasing the data.

37.   Categories of users:

-       ONS;
-       Other government departments - business register data for sampling and other statistical purposes;
-       Other government departments - for integration with ONS survey data;
-       Other government departments - for other (administrative) purposes;
-       Local authorities - for planning purposes;
-       Eurostat;
-       Other, business and research, customers.

38.   The Code of Practice provides clear, public guidance for these customers. The ONS has published 13 protocols to support the Code of Practice. Those on confidentiality and release practice are most relevant (9).

39.   To ensure that data are non-disclosive, counts are always rounded to the nearest multiple of 5, and employment and turnover are suppressed if the count is less than twenty, with additional suppression to prevent secondary disclosure if necessary.

Operational issues relating to release

40.   Charges are in line with the ONS charging policy, and are currently £60 per hour (plus VAT where applicable). Additional charges can be made for data that will be published commercially or for resale.

41.   The Business Registers Unit aims to despatch standard analyses within two weeks of confirmation of the requirement. The time-scale for special requests would be subject to discussion.

The register as a co-ordination tool

42.   Data are collected from businesses through a range of surveys, around one hundred in the ONS alone. The register provides the focus for combining data from these sources. Where data are collected from people about their work patterns, through the labour force survey or the population census, it is then possible to relate employee to business.

43.   Creation of a single business number has been under consideration within the UK for some time. Within the UK, the "joined-up government agenda" (guichet unique in French) requires closer working between departments, sharing of data and application of standards. Linked to this, there is a tight timetable for improving electronic communication between government and the business community. This is leading to better access to a wider range of data.

Drivers for future developments

44.   The general increasing demand for information for decision making focussing on better targeting of service provision for the community is resulting in more demands on the business register outputs, as these requirements often cannot be met from sample sources. There is an increasing expectation of immediate delivery of information. The Internet or, within government the secure Intranet, is now the standard that is expected for access. Customers expect greater flexibility and to have interactive tools to produce their own views of the underlying data.

45.   There is a wealth of administrative data that is currently difficult to access and integrate. For statistical purposes, the main driver is currently the government's Neighbourhood Statistics programme. The overall message is one of informed decision-making through joined-up data services. The increasing importance of the global economy is requiring common standards and better access to data from other countries.

References

1.   VAT statistics: http://www.hmce.gov.uk/about/reports/ann-report-stats.htm

2.   Companies House statistics (The Register 52):
http://ws1.companieshouse.gov.uk/frame.cgi?OPT=about

3.   Size Analyses of UK Businesses:
http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=933

4.   Regions in Focus (South West):
http://www.statistics.gov.uk/downloads/theme_compendia/region_in_figures_winter02/South
_West.pdf - tables 3.9-3.13

5.   Small Business Service statistics: http://www.sbs.gov.uk/statistics

6.   Eurostat enterprise demography:
http://europa.eu.int/comm/eurostat/Public/datashop/print-
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7.   NS web site "Nuggets" - http://www.statistics.gov.uk/idbr

8.   IDBR Quality Review:
http://www.statistics.gov.uk/methods_quality/quality_review/commerce.asp

9.   Protocols -
http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=9417&Pos=1&ColRank=1&Rank=
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Further information about IDBR sources, structure and updating for publications

The UK Business and Business Demography Publications use data that is taken directly from the Inter-Departmental Business Register (IDBR).

More detail on methodologies applied to produce these publications can be found within the relevant publications;

UK Business
Business Demography

The following information provides users of these publications with a high level overview of how the IDBR is structured and updated to assist users with making informed decisions about the sources of information held within these publications.

Summary

The UK Business and Business Demography publications are taken from the live IDBR at set points in time, March and May respectively.

IDBR employment data is updated from administrative sources (Her Majesty's Revenue & Customs (HMRC) Pay As You Earn (PAYE) and Value Added Tax (VAT) records) and Office for National Statistics (ONS) Surveys. It is recommended that Business Register Employment Survey (BRES) estimates are used as the main source of employment information for detailed industry and geographical employment comparisons. The only time that IDBR employment should be considered for use is for very small area, or fine cross tabulations, below the level of BRES publication.

IDBR turnover is updated via administrative sources (HMRC VAT and PAYE records) and ONS Business Surveys. It is recommended that the Annual Business Survey (ABS) turnover estimates are used as the main source of turnover information for detailed industry and geographical turnover comparisons. The only time that IDBR turnover should be considered for use is for very small area, or fine cross tabulations, below the level of ABS publication.

For data relating to business births, deaths and survivals, it is recommended that the ONS Business Demography publication is used as the main source of information.

The use of the IDBR classification in publications has to be considered carefully depending on the level of information required. Enterprise level information will provide the activity of most of the employees within the enterprise, i.e. the dominant activity of the employees at the local units, else the administrative source. Local Unit level will provide the activity from the dominant activity of the employees at the associated site.

Introduction to the IDBR

Introduced in 1994, the IDBR, which is the comprehensive list of UK businesses that is used by government for statistical purposes, is fully compliant with the European Union of Regulation on Harmonisation of Business Registers for Statistical purposes. It provides the main sampling frame for surveys of businesses carried out by the ONS and by other government departments. It is also a key data source for analyses of business activity.

The IDBR covers over 2 million businesses in all sectors of the UK economy, other than some very small businesses (those without employees, and with turnover below the tax threshold) and some non-profit making organisations.

Sources of Information

The information used to create and maintain the IDBR is obtained from the five main administrative sources below. These data are provided under various legislation.

1. HMRC VAT - Traders registered for VAT purposes with HMRC
2. HMRC PAYE - Employers operating a PAYE scheme, registered with the HMRC
3. Companies House - Incorporated businesses registered at Companies House.
4. Department for Environment, Food and Rural Affairs (DEFRA) farms
5. Department of Finance and Personnel, Northern Ireland (DFPNI)

As well as the five main sources listed above, a commercial data provider, Dunn and Bradstreet, is used to supplement the IDBR with Enterprise Group information.

In addition the ONS BRES and other surveys supplement these administrative sources, identifying and maintaining the business structures necessary to produce detailed industry and small area statistics. BRES is the only source of local unit (site) information.

Types of IDBR Units and how they fit together.
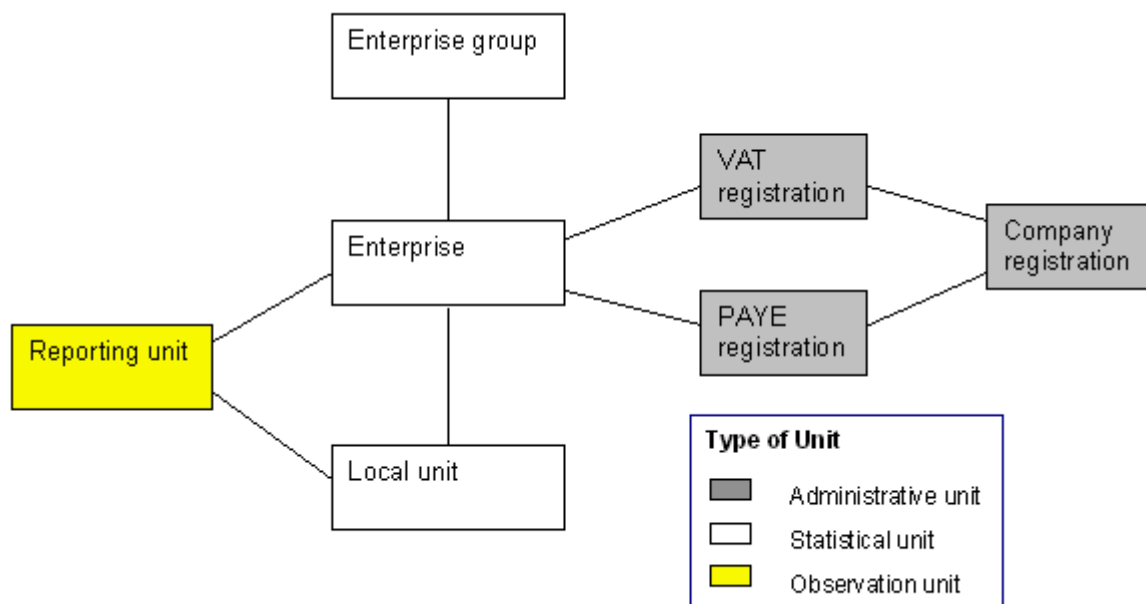
The business units held on the IDBR can be grouped into 3 types:

I. Administrative Units:
   VAT trader and PAYE employer information supplemented with incorporated business data from Companies House.

2. Statistical Units:
   A group of legal units under common ownership is called an Enterprise Group.

   An Enterprise can be defined as the smallest combination of legal units (generally based on VAT and/or PAYE records) that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources. An enterprise carries out one or more activities at one or more locations. An enterprise may be a sole legal unit.

A local unit is an enterprise or part thereof (e.g. a workshop, factory, warehouse, office, mine or depot) situated in a geographically identified place. Local Unit information is collected directly via an ONS Survey called BRES. There is currently no administrative source that provides this level of information.

3. Observation Units:
Reporting Units hold the mailing address to which the survey questionnaires are sent. The questionnaire can cover the enterprise as a whole, or parts of the enterprise identified by lists of local units.

Each type of unit on the IDBR will hold the following information:-

- Name

- Address including postcode

- Birth date

- Death date

- Standard Industrial Classification (UK SIC 2007 and UK SIC 2003)

- Employment and employees

- Turnover*

- Legal status (company, sole proprietor, partnership, public corporation/nationalised body, local authority or non-profit body)

- Enterprise group links

- Country of ownership

- Company number

* Turnover is not available at local unit level.

Linking administrative data and IDBR Units together

VAT information is used to generate an Enterprise and Reporting Unit.

PAYE information is used to generate an Enterprise and Reporting Unit

Company Record Number (CRN) is initially not used, but the data are stored on a table in background in readiness for matching.

As the ONS uses administrative data from different sources to maintain its business register, the possibility exists for a single business to have more than one record created for it on the register, in effect causing duplication of statistical units. Such duplication is more probable for sole proprietorships and, to a lesser extent, partnerships where the business may register its name in one form for VAT and another for PAYE. Eg. Robert Alan Smith may be recorded as Rob Smith, R A Smith, Smith Robert and any one of a number of variants.

Data matching establishes a relationship between two statistical units where these conditions of uncertainty exist. Generally, data matching works best if the data are used as supplied. Editing input

data can cause false matches if the editing assumptions are wrong. This is particularly so for addresses. If two addresses are identical, it is likely that they refer to the same data source. ONS uses a data linking tool to run matching processes that are based on business names and addresses.

Employment Sources and Updating

The main sources of employment on the business register are HMRC PAYE and BRES.   These key sources are described below.

The BRES sample is addressed to approximately 80,000 businesses each year, covering around 500,000 local units.   The BRES design covers all complex and large businesses each year. For example any business with sites in more than one region or industry is covered each year. Additionally, any business with employment of over 100 is covered each year. The employment information requested refers to a reference date in mid September. Data returned via BRES are taken onto the IDBR on monthly basis. Any data that has been validated and is declared 'error free' will be brought forward onto the live IDBR.

DFPNI carry out a Census of Employment (CoE) Survey every 2 years (biennially) and conduct a Northern Ireland BRES (NI BRES) survey in the years in-between which samples approximately 8,000 businesses. Business data returned via these surveys are taken onto the IDBR annually, updating the employment for the Northern Ireland businesses. The reference point for employment for both of these surveys is the first Monday in September in the reference year.

The Short Term Employment Survey (STES) consisting of the Monthly Business Survey, Retail Sales and Construction are also used to update IDBR employment. Where businesses are not selected for BRES, but are selected for one of the STES Surveys, their employment will be updated from the STES return. The reference point for employment will be the latest data returned in the relevant surveys reference month.

HMRC supply ONS with PAYE information for all businesses registered for PAYE that meet the HMRC PAYE threshold.   The employment that is held on the IDBR businesses in these cases, is an average of the last four quarters PAYE returns. If a business has less than four quarters PAYE information, the latest quarter's data is held. There is no employment reference date for the PAYE returns, it is the total number of persons on the payroll within that quarter.

Businesses with no PAYE scheme, but with a VAT record, will have their employment imputed from the VAT turnover, using turnover per head ratios which are updated on an annual basis during November of the reference year.

A set of priority rules are used to determine which data source should be put onto the enterprise/reporting unit where there is more than one data source.

In summary the priority is:

I.   BRES (GB & NI)/ NI CoE.
II.   STES
III.   PAYE
IV.   Imputation from VAT

Application of these rules mean:

I.   All large business employment is updated annually.

II.   Medium size businesses with a recent BRES return, will keep their BRES returned employment for up to 4 years. After 4 years, if the unit is not selected for BRES immediately, those businesses with a PAYE will revert to the latest PAYE figure. Those without a PAYE will revert to an imputed employment, based on the turnover per head ratios.

III.   Smaller businesses , with a PAYE scheme, but not selected for BRES within the last 4 years will be updated by PAYE on a quarterly basis

IV.   Small businesses , not in BRES and not operating a PAYE scheme will have employment updated by an annual imputation , based on turnover per head ratios (calculated by averages from other smaller businesses)

The use of IDBR employment in publications and for employment analysis has to be considered carefully. Generally ONS would recommend using BRES employment estimates for detailed industry and geographical employment comparisons. The only time that IDBR employment should be considered is for use is for very small area, or fine cross tabulations, below the level of BRES publication.

Turnover Sources and Updating

The main sources of turnover information on the business register are VAT and ABS data.   For IDBR purposes the term 'turnover' relates to income received by a business from the 'sales of goods and or services charged to third parties'.

The GB ABS sample is addressed to approximately 62,000 businesses each year.   The ABS design covers all large businesses (250+ employments) with a random sample of smaller businesses used to cover the small/medium size businesses.   The turnover question refers to a reference date which is the calendar year for the reference year. Data returned via ABS are taken onto the IDBR annually in September of each year.

DFPNI conduct their own ABS. Data is returned and taken onto the IDBR annually, updating the turnover for the Northern Ireland businesses. The reference point for this turnover is the same as GB i.e. the calendar year in the reference year.

HMRC supply ONS with VAT information for all businesses registered for VAT that meet the HMRC VAT registration threshold. Despite this threshold, businesses can voluntarily register for VAT below this threshold should they wish to do so. Information from HMRC is provided to ONS over various frequencies (dependant on the trader returns)

Those businesses not selected for ABS and with no VAT scheme, but possess a PAYE record, will have their turnover imputed from PAYE employment, using turnover per head ratios which are updated on an annual basis during November of the reference year.

It should be noted that turnover data is not held at local unit level.

ONS do not clerically update any information received from administrative sources. Any changes to turnover for administrative units come directly via the administrative source. For an enterprise, turnover is the sum of the turnovers of the Reporting Units within the enterprise structure. This is updated automatically.

A set of priority rules are used, to determine which data source should be put onto the enterprise/reporting unit where there is more than one data source.

In summary the priority is:

I.   ABS (GB & NI)
II.   VAT
III.   Imputation from PAYE

Application of these rules mean:

I.   All large business employment is updated annually.

II.   Medium/Small size businesses with a recent ABS return, will keep their ABS returned turnover for up to 2 years. After the 2 years, if the unit is not selected for ABS immediately,

those businesses with a VAT will revert to the latest VAT figure. Those without a VAT will revert to an imputed turnover, based on the turnover per head ratios

III.   Small businesses , not in ABS and not operating a VAT scheme will have turnover updated by an annual imputation , based on turnover per head ratios (calculated by averages from other smaller businesses)

The use of IDBR turnover data in publications and for turnover analysis has to be considered carefully. Generally ONS would recommend using the ABS turnover estimates for detailed industry and geographical turnover comparisons. The only time that IDBR turnover should be considered for use is for very small area, or fine cross tabulations, below the level of the ABS publication.

Classification Sources and Updating

The industrial classification (the activity) of any business held on the IDBR is based upon the UK Standard Industrial Classification of Economic Activities 2007 (SIC 2007).

The SIC 2007 classification system is based upon the European classifications system, NACE (Nomenclature generale des Activities economiques dans les Communautes Europpennes) (Rev 2).The SIC2007 reflects NACE (rev2) except for the extension to 5 digit level which is a UK specific breakdown. For detailed SIC2007 classification descriptions please refer to the ONS Classifications webpage.

The IDBR is populated with classification information from administrative sources supplemented with survey information collected by ONS.   These data sources which already contain an activity classification code in some format are:

I.   HMRC Pay As You Earn

II.   HMRC Value Added Tax

III.   Companies House information

IV.   ONS Surveys

ONS do not clerically update any information received from administrative sources. Any changes to classification for these administrative units come directly via the administrative source.

The allocation of a classification to a business will be based on it's reporting structure. Where an enterprise is unproven (has no local units), the classification will be provided by an administrative source i.e. VAT, PAYE or Companies House.

Where an enterprise is proven (has one or more local units, predominantly collected via BRES) the classification will be calculated from the dominant activity of the attached local units based on employees. i.e. the activity carried out by the greater number of employees.

The dominant activity of a business is driven by the local unit employees (not employment) and is calculated using a 'top down' method on a digit by digit basis for multiple activity enterprises. The methodology considers units based on their SIC section letter then works down 2, 3, 4 and 5 digit level until a clear classification is determined.

A set of priority rules are used, to determine which data source should be put onto the enterprise/reporting unit where there is more than one data source.

In summary the priority is:

1. ONS Surveys
2. VAT
3. Companies House

4. PAYE

The use of IDBR classification in publications has to be considered carefully depending on the level of information required. Enterprise level will provide the activity of most of the employees within the enterprise, i.e. the dominant activity of the local units else the administrative source. Local Unit level will provide the activity from the dominant activity of the employees at the associated site.

Further Information

For information relating to the UK Business and Business Demography publications please contact: +44 (0) 1633 456902 or email: IDBRDAS@ons.gov.uk

For general queries relating to IDBR please contact +44 (0) 1633 455200 or email: idbr.helpdesk@ons.gov.uk

Some issues with enterprise-level industry classification: Insights from the Business Structure Database

Tomas Hellebrandt and Rhys Davies

There has been an ongoing debate as to whether the size of the manufacturing sector in the UK is being understated in official statistics. This paper discusses how the methodology employed to allocate an enterprise to an area of economic activity can potentially disguise the extent to which enterprises are engaged in secondary activities. The methods used to classify single site and multi-site enterprises are discussed. We then consider the reasons why the classification of enterprises may change over time. Such changes may occur due to the use of agency workers, off-shoring, technological changes, demographic events or other factors that could affect the balance of employment between local units or the classification of individual local units.

Finally, we use information from the Business Structure Database in an attempt to quantify the number of people employed in secondary areas of activity. Specifically, we identify the proportion of people who work in complex organisations characterised by local units with different industrial classifications. We identify the proportion of people working in local units whose economic activity differs to that allocated to the enterprise. Utilising this information, we observe the degree to which employment in specific areas of economic activity can be over or under-estimated. The characteristics of enterprises which change their industrial classification are compared to those that don't and an attempt is made to test some of the hypotheses concerning the reasons for change.

The Classification of Single Site Enterprises

The Standard Industrial Classification (SIC) was first introduced into the United Kingdom in 1948 for use in classifying business establishments and other statistical units by the type of economic activity in which they are engaged. The classification provides a common framework for the consistent collection, tabulation, presentation and analysis of data on economic activity. It aligns with the European nomenclature, NACE, although the UK version is more detailed.

In general, ONS classifies enterprises according to their dominant activity at the local unit level. The level of employment at the local unit is used as a proxy measure for the volume of activity being undertaken at that site. For approximately 95% of

manufacturing enterprises that consist of a single local unit which both produces and sells the business' output, the classification of such an enterprise is straightforward. If over half of an enterprise's workers are manufacturing then the enterprise's classification will be manufacturing; if over 50 per cent of the firm's employees were involved in retailing to the public then classification would be distribution and services (retail). However, where the local unit is not homogenous, any secondary activity at the local unit is hidden. For example, a retailer that has an on-site bakery would have its activity as retailing and the production of bread would not be identified.

Eurostat guidelines relating to the development and harmonisation of business registers for statistical purposes[1] define a statistical unit that increases the degree of granularity with which information on the activities of businesses is recorded. Referred to as the 'kind of activity unit' (KAU), the KAU groups all the parts of an enterprise contributing to the performance of an activity at class level (four digits) of NACE Rev 1 and corresponds to one or more operational subdivisions of the enterprise. This unit of observation is not a requirement for national business registers. Given the difficulties associated with enterprises being able to identify KAU and then to provide accurate information for these units such on topics such as the value of production, intermediate consumption, employment costs and investment, KAU is operationalised within the IDBR only for the more complex enterprises.

Even within the 'straightforward' case of a single site enterprise, the allocation of the enterprise to a single area of economic activity could result in secondary areas of the organisation's business (as represented by employment in non-dominant activity) being disguised, where the enterprise does not recognise this as a separate local unit. As with other types of data collected from enterprises, the accuracy with which data on business activity can be recorded will reflect the level of detail with which businesses can realistically be expected to provide accurate information without increasing costs of compliance.

The Classification of Multi-Site Enteprises

Around 5 per cent of larger firms have complex structures, where activities are spread out across a number of local units (LU) which may be in different geographical locations. Importantly these enterprises provide a large amount of manufacturing activity. In such enterprises, the dominant SIC is allocated on a digit-by-digit, top-down basis. Table 1 presents the structure of a hypothetical company comprising of four local units. In terms of classifying this enterprise to a single area of economic activity, it can be seen that at the 2 digit level of SIC, the largest number of employees are working within local units that are classified to SIC 52. Despite Local Unit A being the single largest local unit within this enterprise structure, SIC 52 is larger (in terms of local unit employment) than SIC 33. Within SIC 52, 5211 is larger than 5221 and within this 52111 is larger than 52112. Thus, the dominant SIC is 52110.

Table 1: Enterprise Classification: Example 1

Local Unit	SIC Code	Employment
A	33500	45
B	52111	20
C	52112	10
D	52210	25

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[1] the EU Regulation on Statistical Units (EEC 696/93)

The result is that with the majority of employment in retailing a dominant SIC of retailing is selected and within retailing the same dominance rule applies. Having identified a dominant SIC, up to three secondary SIC codes are identified using the same rule.

The use only of the single dominant SIC code at the level of the enterprise within mixed enterprises, i.e. ones that have a mixture of local units in different sectors will mean that economic activity in non-dominant areas of employment will be disguised. Within the above example, the enterprise is classed as distribution and services even though 45% of its employment is in manufacturing. Table 2 provides a further example of how the actual level of activity within manufacturing could be understated. The dominant SIC code in this case is 52111. The enterprise is allocated to services despite the fact that employment within manufacturing based local units is higher. In this case, manufacturing activities are spread out over a more diverse range of manufacturing industries while its service activities are all within one broad industry.

Table 2: Enterprise Classification: Example 2

Local Unit	SIC Code	Employment
A	33500	40
B	29410	15
C	52111	25
D	52210	20

In this case, the dominant activity is retailing with 52111 chosen and the three other three are designated as secondary.

This is the rule for the enterprise. However, where an enterprise is identified as being large and complex, the enterprise is split into homogeneous parts, called reporting units. These equate, as far as possible, to the concept of the kind of activity unit. Each of these is then treated as an analytical unit for survey purposes. In the example above, four homogeneous reporting units would be created, if the activity of each is large.

Where a set of reporting units is created to provide a split of the enterprise, it is still possible that one or more reporting units are not homogenous in respect of activity. In the first instance, the dominance rule is applied but where there is more information on the activity of the reporting unit itself the classification may be modified both at the reporting unit and for its constituent local units to better reflect its primary activity.

Why might enterprise-level industrial classification change?

The methodology used to allocate SIC codes to enterprises could result in actual levels of manufacturing in the UK being understated in any analysis of enterprises. While ONS surveys use the reporting unit concept, this is not reflected in survey outputs. The profile of this issue is raised when looking at information published by businesses traditionally regarded as manufacturing. For example, the Rolls-Royce website states that 'Rolls-Royce is a technology leader, employing 38 thousand people in offices, manufacturing and service facilities in 50 countries…annual sales total £7.4 billion, *of which 53 per cent are services revenues*. Under the Statistics of Trade Act 1947, the classification of enterprises by ONS is confidential. However, such statements combined with a lack of awareness about how complex enterprises are actually coded to SIC gives rise to the concern that a classification based on a description provided by the company would not necessarily be the same as the classification produced by ONS based upon a classification of local units.

Concern over the under-representation of manufacturing within the UK has also been raised in the context of the growth of atypical forms of employment, in particular the utilisation of agency workers who may not be directly employed by the manufacturing enterprise. A recent article in the Guardian presented several examples of the utilisation of agency workers in manufacturing[2]. It reports that of the 4,700 workers at the BMW Cowley plant in Oxford, 1,200 are agency workers and that of the 23,500 workers employed by Corus steel, between 5 and 10 thousand agency workers are employed across the company.

The utilisation of agency workers may affect the balance of employment within local units of manufacturing enterprises and, in turn, the overall classification of enterprise. The reduction in manufacturing employment on the firm's books may in some cases lead to a change in classification. Moreover, the transfer of employment from manufacturing into services will directly alter the balance between the two sectors, even though the nature of the employment being transferred has not changed. Similarly, change could be influenced by outsourcing of certain activities abroad. A manufacturing firm might outsource some or all of its production to China, for example, while remaining in the retail business in the UK. Once again, manufacturing employment falls relative to service employment which may result in change in classification.

These developments have taken place against a background of technological change that has lead to significant changes in the nature of particular jobs within industries and a restructuring of the way in which work is organised. The wider application of information technology has been of particular importance. The application of IT has lead to the displacement of many clerical and secretarial jobs previously concerned with information processing using paper technology. The application of IT in manufacturing has also lead to the displacement of many skilled workers whose jobs have been taken over by computer controlled machinery. On the other hand, information technology has opened up many new areas in which information services can be provided that were previously not feasible. This has tended to create jobs of a professional, associate professional and managerial nature. Investment in labour saving capital equipment could alter the balance of employment between local units.

Finally, changes in classification at the level of the enterprise could be due to changes to SIC classification of one or more local units. This will alter the allocation of employment to different SIC categories within the enterprise, and may lead to a change in the dominant SIC. Marginal changes in employment in mixed enterprises with a relatively even share of employment across local units could also lead to a change in the derived enterprise level classification. Lastly, changes in industry classification at the enterprise level could be due to restructuring or other demographic events at the local unit level. An enterprise may open a new local unit or close a local unit which shifts the balance of employment and leads to a change in the dominant SIC. Or one enterprise might take over another with the resultant balance of local units leading to a change in classification.

Identifying those Employed in Secondary Areas of Business Activity

The above discussions have highlighted how levels of activity within particular business areas may be disguised if those areas represent secondary activities. Taking a longitudinal perspective, changes that occur either within or between local units could also affect the overall assignment of an enterprise. Such changes may occur due to the use of agency workers, off-shoring, technological changes,

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[2] *Underpaid, easy to sack: UK's second class workforce* Felicity Lawrence, 24th September 2007.

demographic events or other factors that could affect the balance of employment between local units or the classification of individual local units.

To investigate the potential importance of these issues, we utilise data from the Business Structure Database (BSD) is used. The BSD is a longitudinal business database constructed from annual snapshots of the Inter-Departmental Business Register (IDBR). The IDBR is a live register which acts as a sampling frame for UK business statistics. At the time of writing, BSD data was available for the period 1997-2006. For each enterprise, ONS maintains a list of "local units" through its Business Register Survey. The BSD is divided into enterprise files and local unit files. The local unit files can be linked to the enterprise files by means of corresponding enterprise reference number that is included for each local unit.

Enterprises from the 2006 BSD have been classified into three broad sectors: manufacturing (SIC 15 – 37), services (SIC 50 – 99) and other non-service (SIC 01 – 14 and 40 – 45). Each of the three sectors has been sub-divided into three categories: (i) enterprises with a single local unit, (ii) enterprises with multiple local units all of which are within the same sector, and (iii) enterprises with multiple local units which belong to different sectors. Table 3 summarises the data for the 2006, showing the number of enterprises and total employment in the three sectors and how these are distributed among the three sub-categories. There is clearly more employment in the service-mixed category (4.2 million) than in the manufacturing-mixed category (1.1 million), but this in itself reveals little about the size of manufacturing employment in the service sector and vice versa. Exploring these issues in more detail requires the use of the local unit BSD which makes it possible to calculate, for each enterprise, the total local unit employment in each of the three sectors.

Table 3: Single and Multiple Site Enterprises within the BSD

2006	Enterprise	Employment
Manufacturing	159,223	3,324,577
Single site	95.3%	47.6%
Multiple - exclusive	2.8%	18.5%
Multiple - mixed	1.9%	33.9%
Other non-service	393,864	1,915,912
Single site	99.2%	70.3%
Multiple - exclusive	0.5%	8.6%
Multiple - mixed	0.3%	21.2%
Service	1,694,077	22,773,434
Single site	97.0%	36.7%
Multiple - exclusive	2.8%	44.9%
Multiple - mixed	0.2%	18.5%

Table 4 shows for multiple site enterprises with mixed local units, the number of people who are employed within enterprises that have been allocated the same industry classification as the local unit in which they work. In total, 5.7 million people are employed in multiple site enterprises with mixed local units. Of these, 1.1 million are working in enterprises classified as manufacturing. However, examination of the

industry coding at the level of the local unit, indicates that 23 thousand are actually employed in Other Non-Services and 167 thousand are employed in local units within services. Manufacturing employment is therefore overstated by 190 thousand. However, offsetting this it is observed that many people who are employed in enterprises classified as either Other Non-Services or Services are actually employed in local units classified as manufacturing. In this respect, enterprise level classification understates the number of people employed in manufacturing by 99 thousand. Taking Table 4 suggests that manufacturing employment is overstated by about 91000, while other non-service employment is understated by about 43000, and service employment is understated by about 48000.

Table 4: Comparing Enterprise and Local Unit Classification

Enterprise Classification	Local Unit Classification			
	Manufacturing	**Other non-service**	**Service**	**Total**
Manufacturing	935,438	23,312	167,109	1,125,859
Other non-service	14,226	324,625	67,086	405,937
Service	84,817	101,282	4,019,873	4,205,972
Total	1,034,481	449,219	4,254,068	5,737,768

Table 5 shows the level of over/under representation of employment across sectors as identified by the method outlined above. It can be seen that for most of the period, manufacturing has been overstated based upon classification based upon the level of enterprise. While there appears to be a discontinuity in the series during 2003, it is generally the case that manufacturing employment is overstated by between 80 and 100 thousand. However, in the context of the 3.3 million people who are estimated to be employed in manufacturing based upon an enterprise level classification, this figure is insignificant. More generally, it is noted that in 2006, only around 1.4% of mixed enterprises are assigned to a sector which does not correspond to maximum local unit employment for that enterprise.

Table 5: Under/Over Representation of Employment by Sector

	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
M	89,159	94,612	96,222	85,169	82,975	44,272	62,743	78,061	91,378
O	-113,852	-99,693	-111,618	-87,428	-93,256	-65,249	-77,871	-56,655	-43,282
S	24,693	5,081	15,396	2,259	10,281	20,977	15,128	-21,406	-48,096

How Many Enterprises Change their Industrial Classification?

Approximately 18% of all enterprises, accounting for about 28% of employment, change their SIC classification at least once during the period 1998-2006, a period of 9 years. Of this, 2.3% (accounting for around 3.7% of total employment) are changes that result in a re-classification from one of the three broad sectors outlined above to another (e.g. manufacturing to service). The analysis in this and the next section will focus on changes in sector classification. From the perspective of understanding broad changes in the industrial composition of employment, such changes are interesting because they lead to the shift of the whole workforce/output of an enterprise from one sector to another.

Table 4 can be used to compare enterprises that remain within one sector for the entire time they appear in the BSD with those that change sectors. The first four columns show, respectively, the proportion of all enterprises and the proportion of total employment that can be found in a particular category. As noted above, a large majority of enterprises do not change their aggregate classification. Of those that do change, relative to the other categories of enterprises that change sectors, the change from manufacturing to services accounts for a largest proportion of people who are employed at enterprises that exhibit a change in classification. Enterprises in this category tend to be large in terms of their employment (column 5), but on average their employment shrinks significantly over the period they appear in the BSD (column 6), despite the fact that the local unit count remains stable on average (column 7).

Table 4: Characteristics of Enterprises According to Classification Changes

	Ent	Of those who change	Emp	Of those who change	Emp start	Emp change	LU change
Manufacturing							
Constantly in manufacturing	6.81%		12.77%		16.7	-0.5	0.01
Manufacturing to non-service	0.10%	4.3%	0.13%	3.7%	10	2.9	0.05
Manufacturing to service	0.49%	21.1%	1.02%	29.4%	22.5	-7	0.07
Manufact. to non-service to manufact.	0.01%	0.4%	0.03%	0.9%	21.4	15.5	0.48
Manufact. to service to manufact.	0.03%	1.3%	0.26%	7.5%	73	-6.6	0.4
Manufacturing to non-service to service	0.00%	0.0%	0.01%	0.3%	11.6	2.6	-0.04
Other non-service							
Constantly in non-service	15.49%		6.85%		3.6	0.6	0
Non-service to manufacturing	0.13%	5.6%	0.13%	3.7%	5.7	5.5	0.06
Non-service to service	0.47%	20.3%	0.44%	12.7%	8.1	0.9	0.05
Non-service to manufact. to non-service	0.01%	0.4%	0.02%	0.6%	19.9	4.2	0
Non-service to service to non-manufact.	0.03%	1.3%	0.08%	2.3%	21.7	2.8	-0.03
Service							
Constantly in service	75.39%		76.90%		8.2	1.7	0.03
Service to manufacturing	0.52%	22.4%	0.71%	20.5%	8.3	7.8	0.08
Service to non-service	0.42%	18.1%	0.36%	10.4%	5.6	3.7	0.06
Service to manufacturing to service	0.05%	2.2%	0.17%	4.9%	20.7	14.2	0.14
Service to non-service to service	0.05%	2.2%	0.10%	2.9%	15.5	11.3	0.07
Service to non-service to manufacturing	0.01%	0.4%	0.01%	0.3%	16	13.8	0.3

Concluding Comments

The use only of the single dominant SIC code at the level of the enterprise within mixed enterprises will mean that economic activity in non-dominant areas of employment will be disguised. A number of structural changes within the economy have raised concerns that manufacturing employment and output may be understated. Analysis of the BSD has revealed that this is not the case. However, it is revealed that among those enterprises that have changed their industrial classification, these are more likely to be larger manufacturing enterprises that have experienced a reduction in their employment levels.

Introducing the new Business Demography statistics

Summary

- A new National Statistics series is published on 28th November by the Office for National Statistics providing data on business births, deaths and survival rates, called 'Business Demography: Enterprise Births and Deaths'.
- BERR will also publish its' series 'Business start-ups and closures: VAT registrations and de-registrations in 2007' on the same day.
- 2008 will be the final update to the BERR 'Business start-ups and closures: VAT registrations and de-registrations'. From next year users will be directed to the new, more comprehensive, ONS 'Business Demography: Enterprise Births and Deaths' statistics for information on business births, deaths and survival rates.
- This article will explain the key methodological differences between the new series and the existing BERR National Statistic 'Business start-ups and closures: VAT registrations and de-registrations in 2007'

Introduction

A new European Commission Structural Business Statistics Regulation came into force in February 2008, requiring National Statistical Institutes (NSIs) to produce statistics on business births, deaths and survival rates. These statistics will be produced using common definitions and methodology, which will ensure greater comparability across the EU[1]. The new Office for National Statistics (ONS) 'Business Demography: Enterprise Births and Deaths' publication is released for the first time on 28 November 2008, using this common methodology. The Department for Business, Enterprise and Regulatory Reform (BERR) National Statistics publication 'Business start-ups and closures: VAT registrations and de-registrations' is released for the final time on the same day.

In summary, the key difference between the BERR statistics and the new ONS Business Demography publication is the inclusion of PAYE registered units[2]. Therefore the new statistics will additionally include the births and deaths of employing businesses, which are not VAT-registered, providing a more comprehensive view of business start-up activity.

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[1] For full details of the methodology, see Eurostat-OECD Manual on Business Demography Statistics 2007
http://www.oecd.org/document/34/0,3343,en_2649_34233_39913698_1_1_1_1,00.html

[2] The existing BERR Business start up and closures: VAT registrations and de-registrations publication identifies births through their VAT registration, but they can remain in the survival population if they cease to be VAT registered, but have an active PAYE registration. But for practical purposes the publication was described in terms of VAT registrations.

Comparison of trends in ONS Business Demography and BERR Business start-ups and closures series

Chart 1: Numbers of business births and deaths in the UK, 2000-2007.
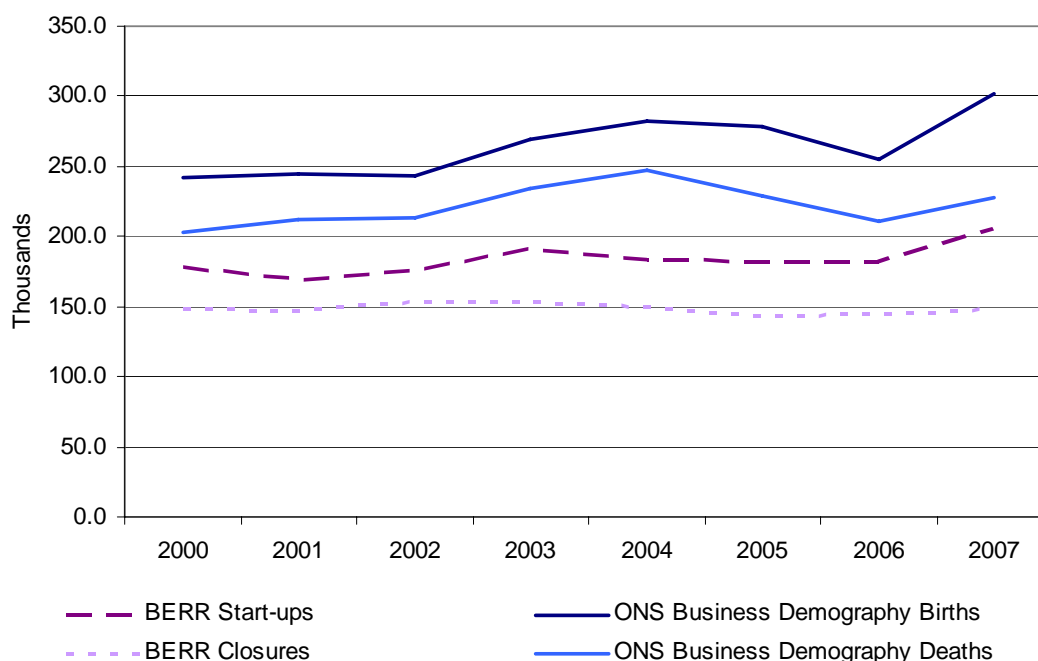
Overall, the ONS Business Demography series shows higher numbers of business births and deaths than the BERR VAT-based statistics (Chart 1). The main reason for the difference is the inclusion of PAYE-registered enterprises in the Business Demography series, which means that, for the first time, businesses with employees who are not registered for VAT will be included in the enterprise births and deaths series. A full description of the differences between the two series is included below.

The same pattern is observed in the rates of enterprise birth and death (Chart 2). The ONS enterprise birth rate (as a proportion of active enterprises) was 13.1 per cent in 2007, compared to 10.1 per cent in the BERR VAT-based series. The ONS enterprise death rate (as a proportion of active enterprises) was 9.9 per cent in 2007, compared to 7.3 per cent in the BERR VAT-based series.

Chart 2: Business birth and death rates, UK, 2000-2007
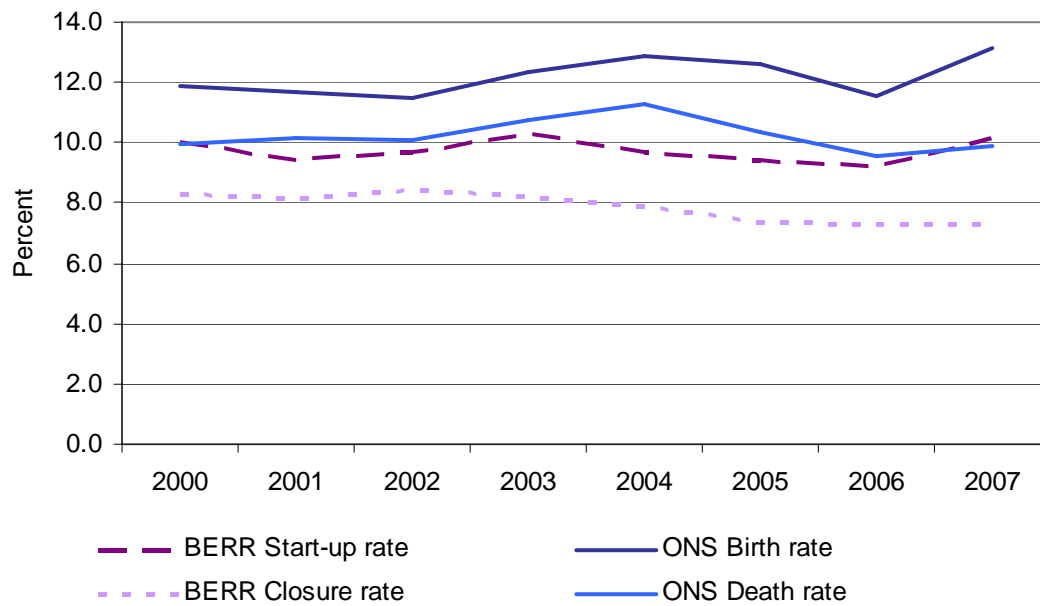
NB: Birth and death rates calculated as births or deaths as a proportion of active stock of enterprises in each year.

It is also noticeable that although the volume and rate of births and deaths in both series follow broadly the same trend, there appears to be a small difference between the series in the timing of the peaks, which occur slightly earlier in the BERR series.

While there are differences between the volumes and rates in the two series, both the ONS and BERR publications show the highest birth and death rates to be in London and the lowest birth and deaths rates to be in Northern Ireland.

Table 1: Business births and deaths by region, 2007.

ONS Business Demography	Active 2007 000's	Births 2007		Deaths 2007	
		Number of births 000's	Birth rate (per cent)	Number of deaths 000's	Death rate (per cent)
North East	62.3	9.0	14.5	6.0	9.6
North West	232.9	31.4	13.5	23.6	10.1
Yorkshire and The Humber	166.4	21.2	12.7	17.0	10.2
East Midlands	157.3	19.2	12.2	14.9	9.5
West Midlands	191.4	24.0	12.6	19.2	10.0
East of England	233.4	28.8	12.3	22.2	9.5
London	388.6	63.9	16.5	45.7	11.8
South East	369.2	44.9	12.1	35.5	9.6
South West	205.6	23.7	11.5	19.0	9.2
Wales	91.0	10.1	11.1	8.7	9.5
Scotland	145.4	19.3	13.3	12.4	8.5
Northern Ireland	57.7	6.0	10.3	4.0	6.9
Total	2,301.2	301.6	13.1	228.2	9.9

BERR Business start-ups and closures: VAT registrations and de-registrations	Active at start of 2008 000's	Start-ups 2007		Closures 2007	
		Number of start-ups 000's	Start-up rate (per cent)	Number of closures 000's	Closure rate (per cent)
North East	52.3	5.8	11.1	3.7	7.1
North West	194.7	20.6	10.6	14.7	7.5
Yorkshire and The Humber	145.2	14.5	10.0	10.8	7.4
Scotland	141.9	14.6	10.3	9.6	6.8
West Midlands	167.1	15.7	9.4	12.1	7.2
East of England	204.7	19.7	9.6	14.7	7.2
London	321.6	41.3	12.8	27.7	8.6
South East	319.9	32.0	10.0	23.2	7.2
South West	191.1	17.0	8.9	12.5	6.6
Wales	87.3	6.8	7.8	5.7	6.5
East Midlands	139.1	13.3	9.5	9.5	6.9
Northern Ireland	66.2	4.4	6.7	3.7	5.6
Total	2,031.1	205.7	10.1	147.8	7.3

The differences observed in these comparison tables and charts in the levels of births and deaths are attributable to the reasons outlined in Table 2 below. It isn't possible to de-compose the difference into these categories, but the largest contribution to the difference is caused by the inclusion of PAYE based enterprises in the Business Demography publication.

ONS Business Demography Methodology

A joint Eurostat/OECD Manual on Business Demography has been produced which defines and sets out the broad methodology that should be used to produce business demography data.

The starting point for demography is the concept of a population of active businesses in a reference year. These are defined as businesses that had either turnover or employment at any time during the reference period. Births and deaths are then identified by comparing active populations for different years.

Births
A birth is defined as a business that was present in year t, but did not exist in year t-1 or t-2. Births are identified by making a comparison of annual active population files and identifying those present in the latest file, but not the two previous ones.

Births do not include entry into the population as a result of mergers, break-ups, split offs or other restructuring.

Deaths
A death is defined as a business that was on the active file in year t but was no longer present on the active file in year t+1 or t+2. In order to produce more timely statistics, the UK method diverges from the Eurostat manual at this point. The Eurostat manual requires a check to be made against the two years following a death to identify and remove any reactivations (i.e. following the Eurostat methodology would mean a delay of up to three years to allow checks to be made before publishing business death data). The UK Business Demography publication contains a preliminary death indicator, which includes an adjustment for estimated reactivations. This estimate is subject to revision. Inclusion of this adjustment allows UK users access to more timely data.

Reactivations occur where a business becomes dormant for a period of less than two years, then re-commences activity in a manner which complies with a definition of continuity. If the definition of continuity is not met, for example, when a business re-commences activity but at a different location and with a different activity, this would be considered as a death followed by a birth. There are a number of reasons why a business may be dormant for a period reflecting the underlying administrative processes.

Reactivations also occur due to lags in the administrative sources (VAT/PAYE) which mean it is possible that a business which is continuing to trade can appear to die on the Inter-departmental Business Register (IDBR). If an existing VAT scheme is de-registered and there is a delay in the birthing and/or matching of the new VAT scheme it can leave the enterprise without a live administrative source which will result in it being assumed dead. Additionally, VAT based businesses where turnover drops to zero are

automatically assumed dead on IDBR, but will re-birth if turnover is then reported in a later period.

The deaths data exclude losses to the population as a result of mergers, break-ups, split offs or other restructuring.

<u>Survivals</u>
A business is deemed to have survived if having been a birth in year t or having survived to year t; it is active in terms of employment and/or turnover in any part of year t+1. A business is considered to have survived if it is active in any part of the survival year under consideration. Survival data is presented for businesses that have survived for up to 5 years

It is important to note that a business that is active in year t could also have been a birth in year t.

Comparison of Methodological Differences

The table below outlines the key methodological differences between the new ONS Business Demography publication, the existing BERR Business start-ups and Closures statistics and, for completeness, the other ONS publication relating to the business stock 'UK Business: Activity, Size and Location'.

The main difference between ONS Business Demography and the BERR VAT – based publication is the inclusion of PAYE only records. Therefore, for the first time, businesses with employees who are not registered for VAT will be included in the enterprise births and deaths series.

The new Business Demography dataset also has a higher number of active businesses than both the BERR VAT-based series and the expanded 'UK Business: Activity Size and Location' publication. This is because the Business Demography methodology takes into account businesses that were active at any time during the reference year, whereas the BERR series calculates stock by adding registrations and subtracting de-registrations from the previous year's stock, and the 'UK Business: Activity Size and Location' publication is based on a snapshot taken from the Inter-Departmental Business Register at a point in time in March.

Additionally, Business Demography includes a group of non-corporate PAYE businesses, which are excluded from UK Business: Activity, Size and Location due to a small risk of duplication. The scope of the UK Business: Activity, Size and Location publication will be reviewed and may be broadened to include these in next year.

Table 2: Key Methodological Differences between main business population publications

	ONS Business Demography	BERR Business Start-ups and Closures: VAT registrations and de-registrations	ONS UK Business: Activity, Size and Location
Coverage	VAT and/or PAYE registered businesses	VAT registered businesses only	VAT and/or PAYE registered businesses (from 2008 onwards) excluding unmatched non-corporate PAYE businesses
Stock	Recognises activity occurring at any point during the year	Live units at a point in time	Live units at a point in time
Timeliness	Annual publication. First publication with 2007 data to be published 28 Nov-08.	Annual publication. Final publication with 2007 data to be published 28 Nov-08	Annual publication. 2008 data published Sep-08
Geography	UK with country, region, unitary authority, county and district breakdowns.	UK-including regional, local authority and parliamentary constituency breakdowns	UK- including regional, local authority and parliamentary constituency breakdowns
Legal Status	Company, Sole Proprietor, Partnership, Public Corporation and Non-Profit organisations	All	All
Industry	SIC 2003, excluding Agriculture (Div 01, 02 & 05), holding companies (SIC class 7415) and public administration (Div 75)	SIC 2003 Divisions 01–93 (private households and extra-territorial activities excluded)	SIC 2003 Divisions 01–99
Exclusions	Excludes Managed Service Companies, although these are included in the data published by	Excludes Managed Service Companies and Official Receivers	Excludes Managed Service Companies

	Eurostat.		
Adjustments	Adjustments are made to the latest two years deaths to allow for re-activations. See section on deaths below for more detail.	Registrations and de-registrations are adjusted (back to 1996) to produce estimates of the final volume of start-ups and closures once late registrations and de-registrations have been received or re-activations have occurred.	None.

Contact

For further details on the BERR 'Business start-ups and closures: VAT registrations and de-registrations' publication, please contact Karen Grierson 0114 279 4439 karen.grierson@berr.gsi.gov.uk

For further details on the new ONS 'Business Demography: Enterprise Births and Deaths' statistics, please contact Andrew Allen 01633 455221 andrew.allen@ons.gsi.gov.uk

References

BERR National Statistics publication 'Business start-ups and closures: VAT registrations and de-registrations 2007' available at: http://stats.berr.gov.uk/UKSA/ed/sa20081128.htm

ONS National Statistics publication 'Business demography: enterprise births and deaths' available at: http://www.statistics.gov.uk/pdfdir/bd1108.pdf

Eurostat/OECD Manual on Business Demography Statistics 2007 available at: http://www.oecd.org/document/34/0,3343,en_2649_34233_39913698_1_1_1_1,00.html

Methods explained

Methods explained is a quarterly series of short articles explaining statistical issues and methodologies relevant to ONS and other data. As well as defining the topic areas, the notes explain why and how these methodologies are used. Where relevant, the reader is also pointed to further sources of information.

Business Structure Database[1]
The Inter-Departmental Business Register (IDBR) for Research

Peter Evans and Richard Welpton
Office for National Statistics

SUMMARY

The Interdepartmental Business Register (IDBR) is a comprehensive database of UK businesses, drawn from administative data sources. This article intially provides a short explanation of the IDBR. The focus of the article is then directed to the development of the IDBR as a research tool by staff at the Virtual Microdata Laboratory (VML). The resulting Business Structure Database (BSD) is now routinely used for academic and government studies.

The IDBR

The IDBR[2] is the sampling frame for surveys of business activity conducted by the Office for National Statistics (ONS) and also by other government departments. The register contains records of over 2 million businesses from all sectors of the economy. The only exceptions are organisations generating turnover below the Value Added Tax (VAT) threshold (currently £68,000 annually) and/or those which do not pay employees via pay-as-you-earn (PAYE) where salaries of £100 per week and over must be paid via PAYE. A business may be included if it pays a salary to an employee of over £100 per week but does not generate sufficient revenue to be registered for VAT, and vice versa.

The IDBR draws upon the following administrative sources:

- HMRC (information about businesses which are registered for VAT or PAYE are provided to the ONS)
- Dunn and Bradstreet (information about business ownership links, provided annually)
- ONS surveys (other surveys supplement the above sources by identifying new, and maintaining existing, business structures)
- Companies House (received quarterly)

Box 1 illustrates the IDBR structure for simple and more complex organisations and the information collected.

The IDBR limits research by a wide audience for two reasons. First, access is highly restricted due to the inclusion of confidential HMRC data. Second, it is difficult to perform historical analyses on these data. The register is updated at regular intervals but a regular referenced set of changes is not maintained. Businesses may experience various demographic events (e.g. mergers and acquisitions) throughout their life, making it difficult to build up a longitudinal picture of businesses over their life cycle. To resolve these issues the BSD is an annual 'snapshot' of the IDBR which is deposited

within the VML for the purpose of micro-data analysis (see **Box 2** for a brief description of the VML). Security controls around access and procedures for using the VML protect the confidentiality of IDBR data. Considerable effort has also been dedicated to improving the micro-data integrity of the BSD, enabling researchers to undertake longitudinal analyses of data from the IDBR.

The BSD

The BSD 'snapshot' is taken every March and includes data on enterprises and local units. Two BSD files are created, and contain observations for enterprises and local units. The consistency of IDBR reference numbers throughout time enables these BSD files to form a panel data set.

Variables

The number of variables found in the BSD is small relative to other data sources. However, the BSD is virtuous by its extensive coverage, since any organisation registered for VAT or PAYE is recorded on the IDBR.

Box 3 provides an overview of the variables contained in the BSD for enterprises and local units.

In addition, the local unit files contain a variable that identifies reasons for inactivity of the unit. Examples include 'ceased trading', 'change of ownership', and 'liquidation'.

Employment and turnover figures are derived from HMRC administrative records - PAYE or VAT returns respectively. The BSD includes a marker identifying origination.

For various research purposes, researchers may use the extensive data available from the Annual Business Inquiry (ABI), including turnover. However, it should be noted that, particularly for smaller firms, turnover figures in the ABI are often imputed. For quality and consistency, all enterprise turnover data in the BSD are derived from at least one of the two administrative data sources.

Descriptive statistics

Not all of the enterprises observed in the BSD are 'active' - defined as an enterprise with at least one local unit for which live data is available. Live data may not be available if a company is not currently trading, or turnover is so low that the company is not liable for VAT. It should be noted that records of inactive enterprises may be kept in the IDBR database for up to two years, until confirmation that an

Box 1
The IDBR structure and information collected

```
Enterprise        ┌──────────┐                          ┌──────────┐
Group             │ Small    │                          │ Massive  │
                  │ Motors   │                          │ Motors plc│
                  └────┬─────┘                          └────┬─────┘
                       │                          ┌──────────┴──────────┐
                       ▼                          ▼                     ▼
Enterprise        ┌──────────┐              ┌──────────┐          ┌──────────┐
                  │ Small    │              │ Family   │          │ Sports   │
                  │ Motors   │              │ Car Co   │          │ Car Co   │
                  │ Ltd      │              └────┬─────┘          └────┬─────┘
                  └────┬─────┘          ┌────────┴────────┐            │
                       ▼                ▼                 ▼            ▼
Local             ┌──────────┐    ┌──────────┐     ┌──────────┐  ┌──────────┐
Units             │ Small    │    │ Duffryn  │     │ Duffryn  │  │ Ferraris │
                  │ Motors   │    │ Cars     │     │ Bikes    │  │ 'R' Us   │
                  │ Newport  │    └──────────┘     └──────────┘  └──────────┘
                  └──────────┘
```
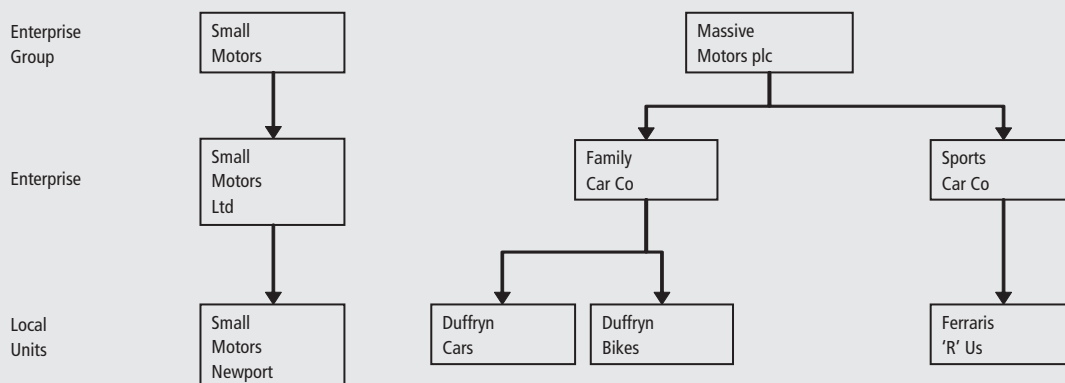
The 'enterprise' can be thought of as the 'company'. Local units are 'plants', for example, a retail outlet or factory. The plant is the source of business activity. It may be a factory that produces finished goods or an accountancy office, for example. The left-hand side shows a single-site enterprise (the enterprise is the local unit). The right-hand side provides an example of a more complex company: the enterprise group 'owns' two companies, Family Cars and Sports Cars. Family Cars controls two local units. These are factories which produce cars and bikes respectively.

The following information is collected at local unit and enterprise level:

- Name
- Address including postcode
- Standard Industrial Classification (SIC) 2003 and 2007
- Employment and employees
- Turnover
- Legal status (company, sole proprietor, partnership, public corporation or nationalised body, local authority or non-profit body)
- Enterprise group links
- Country of ownership
- Company number
- Intrastat marker for goods and services traded (imports and exports) between the EU member states and the UK.

Box 2
The Virtual Microdata Laboratory (VML)

The Virtual Microdata Laboratory (VML) is a depository of economic and social firm data which ONS makes available to researchers, across academia and government, and has already supported a large volume of academic and policy work[3]. It is a secure technical environment adhering to strict disclosure control principles to ensure full confidentiality of all data. Responsibility for running the laboratory rests with the Microdata Analysis & User Support (MAUS) team[4].

Box 3
Variables in the BSD (enterprise level)

Variable	Description
Enterprise reference	IDBR identifier code
Enterprise group reference	Reference of parent organisation
Postcode	Enterprise postcode
Immediate foreign ownership	Foreign ownership marker
Ultimate foreign ownership	Foreign ownership marker
Employment	Employment for enterprise
Turnover	Turnover for enterprise
Standard Industrial Classification	SIC92, SIC03 or SIC07 (depending on year)
Birth date	Year business began trading
Death date	Year business stopped trading
Number of local units	Number of local units making up the enterprise
Number of reporting units	Number of reporting units making up the enterprise
Status	Legal status of the enterprise (e.g. company, partnership, sole proprietor etc.)

enterprise has ceased trading is received. **Figure 1** depicts the total number of enterprises for each year of the dataset, and how many of these are active.

It is clear that the total number of enterprises included in the sample increases over time, significantly so from 2003 onwards. However, the number of active enterprises do not rise in proportion.

Trend growth in the number of enterprises by type of sector is now examined. Using Standard Industrial Classification (SIC) information available for each enterprise in the BSD, we classify enterprises as either manufacturing, service or other non-service organisations (agriculture, mining and energy). **Figure 2** shows the growth rate of each sector, in comparison to the baseline year of 1997, and illustrates the decline of the manufacturing sector and the relatively high level of growth by the service sector which appears to accelerate from 2003.

Further descriptive analysis explores the number of enterprises by sector with respect to the number of local units and employment. **Table 1** reports that the largest proportion of (active) enterprises contain only one local unit. These are single-site enterprises, where all the operations of a particular business are located in the same premises (see Box1). Single site enterprises also account for the largest proportion of employment. By contrast, enterprises with the highest number of local units (typically large nationwide organisations) are fewest in number. However owing to their size, they account for the second-highest proportion of employment in

the IDBR. Enterprises with between 51 and 100 local units account for the smallest proportion of employment.

In addition, the average employment per local unit with respect to the number of local units per enterprise is found to follow an inverted U-shaped curve: average employment per plant is smallest at single-site enterprises, increasing with more local units. However average employment per local unit falls for the very largest enterprises (by local unit count).

Table 2 displays some characteristics for enterprises in each of the three defined sectors. The panel nature of the observations allows a comparison of characteristics in different time periods. For example, in 2007/2008 a greater proportion of enterprises were single site compared to the previous decade, for all sectors. It is also interesting that activity in service enterprises is not as concentrated on a small number of local units compared to enterprises in the manufacturing or other non-service sectors – a higher percentage of service enterprises derives activity from over 1000 local units (these are likely to be large retailers and chains).

Average employment for enterprises in each sector have been calculated. The average employment is relatively small, which is not surprising given that the majority of enterprises are based in one location and, as seen in Table 1, employ small numbers of workers. However, it can be inferred that on average, manufacturers employ more workers. These results may be explained by the fact that manufacturing plants are larger than, for example, small retailers or practices classified as service industries.

Finally, two types of entry and exit rates for enterprises in each sector (using the method adopted by Disney et al (1999)) are presented. The first 'panel' rates refer to movements of enterprises into and out of the BSD panel per se. The second set of rates are calculated using the IDBR enterprise birth years and death years available in the BSD.
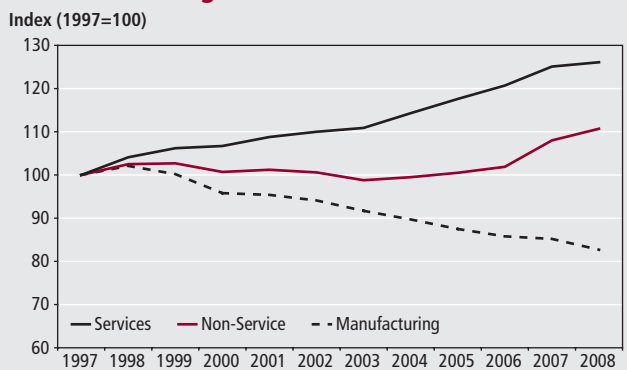
There are two advantages for using the latter method. First, accurate rates may be calculated based on real trading activity by an

Figure 1
Active enterprises by year
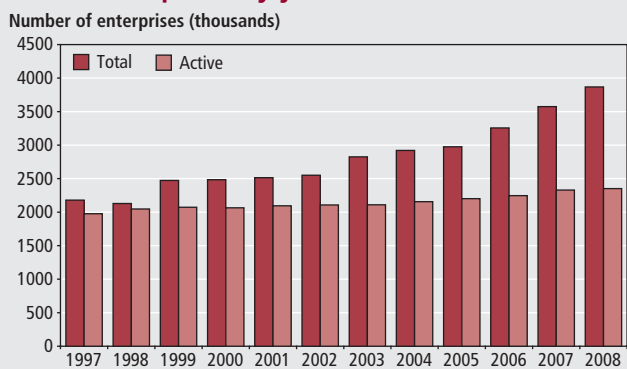
Source: ONS Business Structure Database

Figure 2
Relative sector growth 1997–2008

Source: ONS Business Structure Database

Table 1
Constitution of Enterprises

Number of local units	Average number of enterprises (per cent of total in brackets) 1997–2008	Average count of employment (per cent of total in brackets) 1997–2008	Average employment per local unit, 1997–2008
1	2,075,187 (96.91)	11,202,219 (42.02)	5
2 to 5	57,178 (2.67)	3,522,001 (13.21)	25
6 to 10	4,302 (0.2)	1,302,017 (4.88)	41
11 to 20	2,127 (0.1)	1,291,142 (4.84)	42
21 to 50	1,414 (0.07)	1,558,587 (5.85)	35
51 to 100	497 (0.02)	1,112,781 (4.17)	32
100 plus	670 (0.03)	6,672,331 (25.03)	26
Total	**2,140,705**	**26,661,078**	

Source: ONS Business Structure Database

Table 2
Characteristics of enterprises by sector

| | | | | | Percentages | |
| | Manufacturing | | Non-Service | | Services | |
Period	97/98	07/08	97/98	07/08	97/98	07/08
No. of local units						
1	82.1	86.2	94.5	96.2	73.4	76.6
2 to 5	11.6	8.3	2.3	1.5	7.7	4.8
6 to 10	1.7	1.5	0.5	0.3	1.6	1.3
11 to 20	1.5	1.1	0.6	0.4	1.4	1.3
21 to 50	1.5	1.1	0.6	0.4	2.1	1.8
51 to 100	0.5	0.6	0.3	0.3	1.7	1.5
101 to 500	1.1	1.1	0.9	0.7	5.2	5.5
501 to 1000	0.0	0.3	0.2	0.1	3.1	2.7
1000 plus	0.0	0.0	0.1	0.0	3.8	4.5
Mean Employment	24	20	5	5	14	13
Entry Rate Panel	8.4	8.6	6.3	10.7	8.3	14.7
Exit Rate Panel	10.2	11.6	7.5	11.4	10.6	14.6
Entry Rate	7.5	7	4.7	8.8	8.1	12.5
Exit Rate	9.4	8.8	7.1	7.2	10.2	10.8

Source: ONS Business Structure Database

enterprise, not simply when entry or exit into or out of, or inclusion or exclusion of, a survey occurs. Secondly, calculating an entry rate using the first year of the data series will result in a 100 per cent entry rate, and likewise when calculating an exit rate using the last year of data. This problem can be solved by using the actual recorded year that a company begins or ceases to trade.

In Table 2, the second set of entry and exit rates are smaller than the first, which reflects the fact that enterprises may be entering or leaving the data, but for administrative reasons, valid birth or death dates have not been confirmed and entered onto the IDBR. The entry and exit rates are consistent with the story portrayed in Figure 2. In both time periods, exit rates in the manufacturing sector are higher than entry rates – more enterprises cease to trade than begin, and this highlights the decline in manufacturing. The reverse is true for enterprises in the service sector.

Why use the BSD?

Using the BSD by itself or in conjunction with other data offers the following advantages:

■ The ability to analyse data at the local unit level
■ Historical data allows researchers to examine business structure, performance and behaviour throughout time.
■ Provision of a large sample of enterprises – particularly useful

when concentrating on specific five-digit SIC sectors, when other surveys would only cover a handful of enterprises. The large sample can also be used to construct more accurate entry and exit rates, which are often utilised by industrial and labour economists.
■ Turnover and employment are derived from administrative sources, not inferred. This may be useful when examining smaller organisations which are infrequently targeted by other ONS surveys, such as the Annual Business Inquiry.
■ Possibilities for detailed spatial analysis.

Box 4 provides a brief description of two completed projects using the BSD at the VML.

Current research using the BSD includes analysis of growth rates in Northern Ireland, and turnover analysis of 'creative' industries.

In addition, many researchers use information from the BSD to extend sample size and therefore coverage of business organisations included in other ONS business surveys. An example is linking the BSD to the E-commerce Survey – businesses included in the latter may serve as a counterfactual when examining turnover in the BSD.

Future work on the BSD

It may be possible to define and trace 'demographic events' experienced by organisations throughout time. Based upon Eurostat guidelines (see European Commission (2003)), these include:

■ takeovers
■ mergers
■ change of ownership
■ break-ups

Preliminary work has already been undertaken in this area. For example, using a combination of enterprise references and enterprise group references, the case where an enterprise changes its enterprise group reference number from one period to the next may infer that the enterprise has become part of a new enterprise group (i.e. either because of a takeover or merger). The ability to implement the Eurostat methodology is currently being examined.

It may be possible to extend coverage of the BSD backwards in time, by linking observations to the Annual Respondents Database (ARD) which is primarily formed from the ABI . Such an exercise ought to allow a selected number of enterprises in the BSD which are also in the ARD to be traced back to the early 1990s and beyond.

Box 4
Research using the BSD at the VML

Foreman-Peck J and Nicholls T (2008) 'Mergers and movement: peripherality and the impact of SME takeovers'

This research examines whether takeovers of small and medium-sized enterprises (SME) by larger organisations leads to an increase in productivity. Takeovers and mergers can potentially be identified in the BSD by examining changes to links between organisations. The authors found that takeovers do not lead to an increase in productivity, post acquisition.

Hijzen A, Upward R and Wright P (2008) 'Job creation, job destruction and the role of small firms: firm-level evidence for the UK'

Pioneering research estimating the quantity of jobs created and 'destroyed' by different types of business organisations from 1997 to 2007 (this research is currently being updated with the latest data), and reasons to explain the magnitudes of these rates. For example, analyses are undertaken by business size, exposure to international competition, and the role of job relocation.

Final remarks

The BSD has been created to allow VML users access to IDBR data for the purpose of research. The data can accurately depict the life-span of enterprises, and also the local units associated with an enterprise. Furthermore, changes to company structure can be analysed.

The inclusion of IDBR reference numbers on each observation allows the potential for linking to other data sources held in the secure environment of the VML. This is designed to create new opportunities for research, and increase the impact of research using ONS data.

Notes

1. This work contains statistical data from ONS which is Crown copyright and reproduced with the permission of the controller of HMSO and Queen's Printer for Scotland. The use of the ONS statistical data in this work does not imply the endorsement of the ONS in relation to the interpretation or analysis of the statistical data. This work uses research datasets which may not exactly reproduce National Statistics aggregates.

    We would like to thank Andrew Allen at the IDBR team for helpful advice on the IDBR and continued support to the VML, and also Dr Felix Ritchie, ONS, Rhys Davies and Robert Gilhooly (both formerly of the ONS) for guidance.

2. Comprehensive information about the IDBR may be obtained from:
    www.statistics.gov.uk/idbr
3. Detailed information about the data sets held in the VML can be found at:
    www.ons.gov.uk/about/who-we-are/our-services/vml/about-the-vml/datasets-available/dataset-downloads/index.html
4. Contact the MAUS team at:
    maus@ons.gsi.gov.uk

CONTACT

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Davies R (2006) 'Business Structure Database user guide version 1', Office for National Statistics mimeo.

Disney R, Haskel J and Heden Y (1999) 'Entry, exit and establishment survival in UK manufacturing', Centre for Research on Globalisation and Labour Markets Paper 99/9.

European Commission (2003) 'A general overview of demographic events: business register', Recommendations Manual, Chapter 12.

UK BUSINESS: ACTIVITY, SIZE AND LOCATION

INTRODUCTION

1.   The data contained in the publications are produced from a snapshot of the Inter-Departmental Business Register (IDBR).

| Year	Date of extracts
2004	24 March 2004
2005	18 March 2005
2006	18 March 2006
2007	16 March 2007
2008	21 March 2008
2009	27 March 2009
2010	22 March 2010
2011	28 March 2011
2012	12 March 2012
2013	12 March 2013
2014	14 March 2014

Introduced in 1994, the IDBR provides the basis for the Office for National Statistics to conduct surveys of businesses.

2.   The main administrative sources for the IDBR are VAT trader and PAYE employer information passed to the ONS by HM Revenue & Customs under the Value Added Tax Act 1994 for VAT traders and the Finance Act 1969 for PAYE employers; details of incorporated businesses are also passed to ONS by Companies House. ONS Survey data and survey information from the Department of Enterprise, Trade and Investment – Northern Ireland (DETINI) and the Department for Environment, Food and Rural Affairs farms register provide auxiliary information. Construction statistics formerly produced by the Department for Business Innovation & Skills are now produced by ONS. The IDBR combines the information from the three administrative sources with this survey data in a statistical register comprising over two million enterprises. These comprehensive administrative sources combined with the survey data contribute to the coverage on the IDBR, which is one of its main strengths; an *Economic Trends* article [1] gives further details.

3.   The business units held on the IDBR can be grouped into 3 types:

- Administrative Units:
  VAT trader and PAYE employer information supplemented with incorporated business data from Companies House.
- Statistical Units:
  A group of legal units under common ownership is called an Enterprise Group.
  An Enterprise is the smallest combination of legal units (generally based on VAT and/or PAYE records) which has a certain degree of autonomy within an Enterprise Group.
  An individual site (for example a factory or shop) in an enterprise is called a local unit.
- Observation Units:
  Reporting Units hold the mailing address to which the survey questionnaires are sent. The questionnaire can cover the enterprise as a whole, or parts of the enterprise identified by lists of local units.

IDBR Structure Diagram
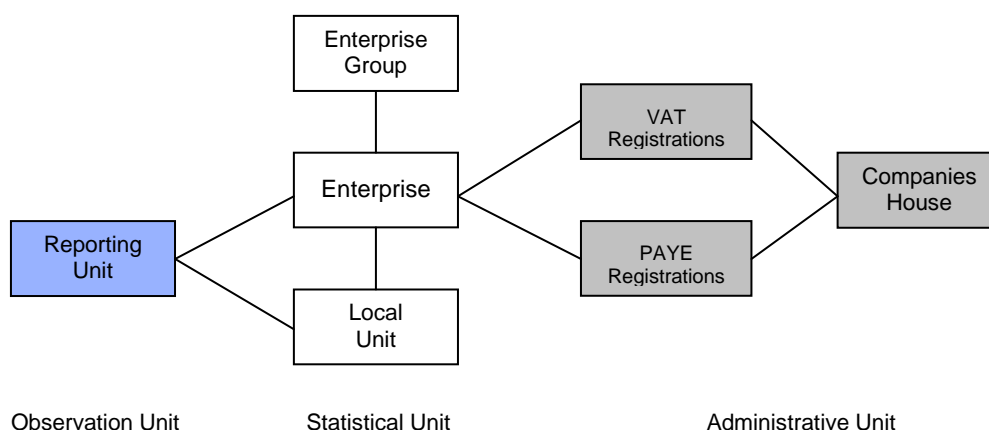
4.   The publication presents analysis of businesses at both Enterprise and Local Unit level.

CHANGES SINCE THE FIRST PUBLICATION IN 1971

5.   From 1971 to 1984 the annual publications [2] provided counts of manufacturing local units (sites) and their aggregate employment based on the Business Statistics Office register. The 1985 publication [3] introduced two significant changes to extend the range of information provided. New tables covering the whole economy recorded VAT-legal units by turnover and the inclusion of local units with employment below 20 extended the coverage of existing tables for manufacturing industries. The 1986 to 1988 monitors were published on the same basis but with the addition of a new table in 1987 providing counts of local units analysed by year. From 1989, geographical analyses have been produced extending the legal unit tables. In the 1992 publication, legal unit tables were expanded to include businesses registered for VAT with a turnover below the VAT threshold.

6.   From 1994, this publication has presented data for enterprises instead of legal units. The enterprise is generally the same as the legal unit but in some cases enterprises are formed from several legal units with close financial links [4]. Thus the number of enterprises is slightly lower than the number of legal units that they represent. Local unit (i.e. a factory or a shop) tables were not included in 1995 because the quality of classification at that level to the 1992 revision of the Standard Industrial Classification, UK SIC(92), was not sufficient for publication but were re-introduced in 1996. The 2003 edition was enhanced and the publication now presents register analyses at enterprise level, by turnover and employment size for all industries. Previously tables by employment size bands covered only the manufacturing sector. From 2003 this publication also includes analyses on all industries at local unit level. Previously only the manufacturing sector was covered. Table B7.4 shows counts of VAT and /or PAYE based enterprises for 2009 to 2013 by SIC 2007.

7.   Counts of legal units registered in each year from 1984 to 1993 and VAT-based enterprises for 1994 and 1995 by VAT Trade Classification are provided in Table B7.1 of this publication. Table B7.2 shows counts of VAT-based enterprises, excluding those with turnover of zero, by broad industry group for 1995 to 2002. For 2003 to 2007 the table excludes those units with turnover of zero where employment is also zero. Table B7.3 shows counts of VAT and/or PAYE based enterprises for 2007 to 2009 by broad industry group UK SIC 2003. Table B7.4 shows counts of VAT and/or PAYE based enterprises for 2009 to 2013 by SIC 2007.

8.   From 2004 to 2013 table numbering was enhanced to provide a more logical order, now commencing with the more detailed local unit level tables. The table numbering follows a standard convention across the tables with the leading character denoting the level of the table; 'A' denotes local unit and 'B' denotes enterprise. Where the table number matches across enterprise and local unit the structure will be the same and the data comparable.

9.   From 2008 the publication was expanded to include PAYE-based enterprises that are not also registered for VAT, extending the scope from the previous VAT-based enterprise tables. The increase in units is most noticeable in the VAT-exempt industries of finance, education, health and public administration.

10.   The 2009 publication saw the introduction of the 2007 revision to the Standard Industrial Classification (UK SIC 2007) in place of the 2003 revision (UK SIC 2003) used previously. To reflect the changes in broad industry group a new table, B7.4, was introduced which shows counts of VAT and/or PAYE based enterprises by broad industry group (UK SIC 2007) for 2009 to 2013.

11.   In 2012 an increase of approximately 31,000 enterprises between 2011 and 2012 was caused by improvements to HM Revenue & Customs computer systems leading to previously excluded businesses being added to the IDBR. These businesses were registered before 2012, so distort the year on year change.

12.   Between 2013 and 2014 HMRC information shows growing numbers of PAYE schemes and a rise in numbers of new scheme registrations. Those that are allied to company registration data have fuelled an increase in numbers of enterprises on the business register. While the growth in PAYE schemes coincides with the introduction of the Real Time PAYE reporting system (RTI), HMRC have indicated there are no technical reasons associated with RTI alone which would have increased the number of enterprises on the register during the period. HMRC have no evidence of behavioural changes in the timing of PAYE scheme registrations through the year.

13.   From 2014 onwards the ONS Data Explorer and Open API tool replaced reference tables, enabling users to access, use and customise ONS data more effectively. This has meant the tables are no longer presented and instead exist as a series of dataset collections. This enables ONS to meet the Government's Open Data and Transparency policy.

CLASSIFICATION

14.   From 2009 the release uses the 2007 revision to the Standard Industrial Classification (UK SIC 2007) in place of the 2003 revision (UK SIC 2003). The UK SIC 2007 is a major revision of UK SIC 2003 with changes at all levels of the SIC. These revisions are motivated by the need to adapt the classifications to changes in the world economy. The revised classifications reflect the growing importance of service activities in the economy over the last fifteen years, mainly due to the developments in information and communication technologies (ICT).

15.   Details of the UK SIC 2007 are available on the National Statistics Classification website and in the following electronic publications:

- UK Standard Industrial Classification of Economic Activities 2007

- Indexes to the UK Standard Industrial Classification of Economic Activities 2007

Information relating to the implementation of UK SIC 2007 and the major differences between UK SIC 2003 and UK SIC 2007, is presented in the August 2008 edition of the Economic & Labour Market Review

To assist with comparison of data a table showing the broad correspondence between the sections of UK SIC 2003 and UK SIC 2007 is included in the publication. Please note that this table presents only the rough one-to-one correspondence between the sections: further additional details are necessary to establish the complete correspondence.

Key differences between UK SIC 2003 and UK SIC 2007 are noted below:

- Section J - Information and communication: This is a major new sector and brings together publishing, motion picture and sound recording industries, broadcasting (radio and TV industries), telecommunications, internet activities, and other news services.
- Section L – Property: Development and selling of real estate, previously in Section K – Property and business services under UK SIC 2003, now moves to Construction under UK SIC 2007.
- Section M – Professional, scientific and technical services: Previously incorporated under "business activities" as part of section K under UK SIC 2003, this is now a new section.
- Section N – Administrative and support services: formerly covered under section K under UK SIC 2003, section N is a new grouping which pulls in units from many parts of UK SIC 2003, for example: employment services, call centres, travel arrangements and reservation services, investigation and security services.

16.   Other significant changes include:

- Recycling moves from Manufacture (UK SIC 2003) to Section E – Water supply, sewerage, waste management and remediation (UK SIC2007). This is grouped with Section D – Electricity, gas, steam and air conditioning supply to form the Utilities grouping.
- Sewage, refuse disposal and sanitation moves from Section O – Other community services (UK SIC 2003) to Section E (UK SIC 2007).
- Repair and maintenance of personal and household goods (UK SIC 2003) moves from the Retail section to the Services sector (UK SIC 2007).
- Holding companies move from the Services sector (UK SIC 2003) to the Finance sector (UK SIC 2007).
- Veterinary services move from the Health sector (UK SIC 2003) to the Professional, scientific and technical activities sector (UK SIC 2007).

17.   A new broad industry group structure has been defined under UK SIC 2007 and is listed below:

Description	UK SIC 2007 Section	Division
Agriculture, forestry & fishing	A	01/03
Production	B, C, D and E	05/39
Mining, quarrying & utilities	*B, D and E*	*05/09, 35/39*
Manufacturing	*C*	*10/33*
Construction	F	41/43
Wholesale and retail; repair of motor vehicles	G	45/47
Motor trades	*G*	*45*
Wholesale	*G*	*46*
Retail	*G*	*47*
Transport & storage (inc postal)	H	49/53
Accommodation & food services	I	55/56
Information & communication	J	58/63
Finance & insurance	K	64/66
Property	L	68
Professional, scientific & technical	M	69/75
Business administration and support services	N	77/82
Public administration & defence	O	84
Education	P	85
Health	Q	86/88
Arts, entertainment, recreation and other services	R, S, T and U	90/99

18.   Section T covers private households and as such is out of scope of the business register and will always show up as zero; however for completeness they are included in the range of classifications for the publication.

19.   Notable changes to the broad industry group under UK SIC 2007 are:

- Hotels & catering have now been relabelled Accommodation & food services.
- The former group Post & telecommunications has been split, with Postal and Courier activities being included in Transport & storage, and the remaining Telecommunications being relabelled Information & communication which now includes film, television and radio.
- Property & business services have been split into 3 new groups: Property; Professional, scientific & technical; and Business administration & support services.
- Public administration is now separated from 'Other services', creating two new groupings.

GEOGRAPHIES

20.   Regional analyses are provided for VAT and/or PAYE based enterprises and local units. Where an enterprise has several local units, the location of the enterprise is generally the main operating site or the head office. For various reasons it is possible to get multiple business registrations at a single address and this can distort data for smaller geographical areas. Previous to 2014 Tables B1.1, B1.2, B1.3, B1.4, B2.1 and B2.2 provide summaries of the location of enterprises, and tables A1.1, A1.2 and A2.1 provide comparable data for local units (See note 8).

21.   From 2005 the geographies presented in the publication for England and Wales relate to Middle Layer - Super Output Area (MSOA) derived from output area, the stable geographic building block now being used to produce statistics. There are 7,193 Middle Layer SOAs in England and Wales (6,780 in England, 413 in Wales) which are constrained by the 2003 local authority boundaries. District, County and Region figures are aggregations of these MSOAs. This methodology is consistent with that used to produce the Neighbourhood Statistics datasets.

22.   For Scotland the geographies relate to 'intermediate zones', a layer equivalent to MSOA. There are 1,235 intermediate zones which are aggregated together to define Council Areas and the region of Scotland. From 2011 Northern Ireland the geographies relate to lower super output areas a geographic hierarchy designed to improve the reporting of small area statistics. There are 890 Northern Irish SOAs (based on Output Areas).

23.   From 2010 the publication includes totals for the new Unitary Authorities introduced in April 2009, along with the former county/district totals to aid comparison:

- The former county of Cornwall and Isles of Scilly and the six former districts within Cornwall and Isles of Scilly, were abolished and replaced by Cornwall unitary authority and Isles of Scilly unitary authority.
- The former county of Durham and the seven former districts within Durham were abolished and replaced by County Durham unitary authority.
- The former county of Northumberland and the six former districts within Northumberland were abolished and replaced by Northumberland unitary authority.
- The former county of Shropshire and the five former districts of Shropshire were abolished and replaced by Shropshire unitary authority.
- The former county of Wiltshire and the four former districts within Wiltshire were abolished and replaced by Wiltshire unitary authority.
- The former county of Cheshire and the six former districts within Cheshire were abolished and split across Cheshire East unitary authority and Cheshire West and Chester unitary authority.
- The former county of Bedfordshire and the three former districts within Bedfordshire were abolished and split across Bedford and Central Bedfordshire unitary authorities.

24.   Previous to 2014 Tables A6.1, A6.2, B6.1, B6.2 and B6.3 were presented by Parliamentary Constituency boundaries, the areas used to elect MPs (Members of Parliament) to the House of Commons. Constituency boundaries are determined by the Boundary Commissions (one each for England, Scotland, Wales and Northern Ireland). From 2010 the boundaries reflect the new areas which became operative on 6 May 2010, the date of the general election. Differences may be identified when comparing statistics for Electoral and SOA areas in England and Wales, even where the boundaries are the same. These are due to different methodologies used in assigning postcode data and are likely to be more prevalent where the postcodes are business PO Boxes. PO Box postcodes are assigned to electoral areas by a 'point-in-polygon' process using widely available grid references which relate to the local Royal Mail sorting office.

25.   In accordance with guidelines on the presentation of statistics by geography the names of the geographic areas are those currently in use and include totals for metropolitan counties for statistical purposes. Further details can be found on the ONS geography web pages.

26.   Detailed notes to assist in comparing geographies with data for previous years are available from the following link Former / Abolished Areas. More comprehensive information on the structure of geographies used by ONS can be found on the National Statistics website under Guidance and Methodology.

TURNOVER

27.   Turnover provided to the ONS for the majority of traders is based on VAT returns for a 12 month period. For 2014 these relate to a 12 month period covering the financial year 2012/2013. For other records, in particular members of VAT group registrations; turnover may relate to an earlier period or survey data. For traders who have registered more recently, turnover represents the estimate made by traders at the time of registration.

28.   The turnover figures on the register generally exclude VAT but include other taxes, such as the revenue duties on alcoholic drinks and tobacco. They represent total UK turnover, including exempt and zero-rated supplies.

VAT THRESHOLDS

29.   Traders may be registered below the VAT threshold or may choose not to de-register should their turnover fall below the threshold. A table of VAT thresholds for each year is shown below:

OPERATIVE DATES		VAT REGISTRATION THRESHOLD (£)	OPERATIVE DATES		VAT REGISTRATION THRESHOLD (£)
19 Mar 1986	- 17 Mar 1987	20,500	01 Apr 2000	- 31 Mar 2001	52,000
18 Mar 1987	- 15 Mar 1988	21,300	01 Apr 2001	- 24 Apr 2002	54,000
16 Mar 1988	- 14 Mar 1989	22,100	25 Apr 2002	- 09 Apr 2003	55,000
15 Mar 1989	- 20 Mar 1990	23,600	10 Apr 2003	- 31 Mar 2004	56,000
21 Mar 1990	- 19 Mar 1991	25,400	01 Apr 2004	- 31 Mar 2005	58,000
20 Mar 1991	- 10 Mar 1992	35,000	01 Apr 2005	- 31 Mar 2006	60,000
11 Mar 1992	- 16 Mar 1993	36,600	01 Apr 2006	- 31 Mar 2007	61,000
17 Mar 1993	- 30 Nov 1993	37,600	01 Apr 2007	- 31 Mar 2008	64,000
01 Dec 1993	- 29 Nov 1994	45,000	01 Apr 2008	- 30 Apr 2009	67,000
30 Nov 1994	- 28 Nov 1995	46,000	01 May 2009	- 31 Mar 2010	68,000
29 Nov 1995	- 26 Nov 1996	47,000	01 Apr 2010	- 31 Mar 2011	70,000
27 Nov 1996	- 30 Nov 1997	48,000	01 Apr 2011	- 31 Mar 2012	73,000
01 Dec 1997	- 31 Mar 1998	49,000	01 Apr 2012	- 31 Mar 2013	77,000
01 Apr 1998	- 31 Mar 1999	50,000	01 Apr 2013	- 31 Mar 2014	79,000
01 Apr 1999	- 31 Mar 2000	51,000	01 Apr 2014	- 31 Mar 2015	81,000

Further details on VAT thresholds can be found on the HM Revenue & Customs website.

EMPLOYMENT

30.   The employment information on the IDBR is drawn mainly from the *Business Register Employment Survey* (BRES). Because this is based on a sample of enterprises, estimates from previous returns and from other ONS surveys have also been used. For the smallest units, either PAYE jobs or employment imputed from VAT turnover is used.

EXCLUSIONS

31.   We will exclude units solely VAT based or solely PAYE based where we estimate the employment to be 20 or more. Approximate numbers which are excluded pending are detailed below.

32.   Composite and Managed Services Companies have been excluded where the address does not represent the location of the activities of these businesses to avoid giving a false impression of growth in these locations. Identification of Composite & Managed Services Companies may be incomplete, inflating business counts primarily in the Professional, Scientific & Technical sector. Approximate numbers which are excluded are detailed below. Further details on Composite and Managed Services Companies can be found on the HM Revenue & Customs website.

Year	1 administrative unit with 20 or more Employment	Composite and Managed Services Companies
2004	3,800	32,500
2005	3,900	47,200
2006	4,400	55,900
2007	4,100	66,200
2008	5,950	83,800
2009	5,010	41,265
2010	5,585	22,450
2011	6,150	14,720
2012	5,665	12,745
2013	5,390	10,760
2014	5,895	9,725

SUPPRESSION OF DATA

33.   Statistical disclosure control methodology is applied to IDBR data. This ensures that information attributable to an individual or individual organisation is not identifiable in any published outputs. The Code of Practice for Official Statistics, and specifically the Principle on Confidentiality, set out practices for how we protect data from being disclosed. The Principle includes the statement that ONS outputs should "ensure that official statistics do not reveal the identity of an individual or organisation, or any private information relating to them, taking into account other relevant sources of information". More information can be found in National Statisticians Guidance: Confidentiality of Official Statistics and also on the Statistical Disclosure Control Methodology page of the ONS website.

COMPARISONS WITH OTHER ANALYSES

34.   Comparisons with earlier publications should be treated with caution due to the changes in criteria highlighted earlier. Historically there are differences between HM Revenue and Customs estimates for VAT-registrations due to timing; the inclusion of solely PAYE based units (for 2008 onwards) and differences in definitions. The exclusion of Composite & Managed Services Companies and the treatment of divisional VAT registrations by the ONS will reduce the total, though the splitting of group registrations into separate enterprises will increase it.

35.   When comparing the UK Business data with the Business Demography data produced by ONS, a higher number of Active businesses will be reported by Business Demography. This is because the Business Demography methodology takes into account businesses that were active at any time during the reference year, whereas UK Business is based on a snapshot of the IDBR at a point in time in March. Additionally Business Demography includes unmatched non-corporate PAYE businesses, which are excluded from UK Business.

PUBLISHED BUSINESS ANALYSES FROM THE IDBR

36.   Published business analyses from the Inter-Departmental Business Register fall into three main categories. These are explained in full below: -

   1.   Other related ONS data

* Business Demography. The Business Demography datasets present counts of enterprise births, deaths and survival by geography and classification. The data is produced using the guidelines found in the Eurostat/OECD manual on Business Demography.

   2.   Eurostat

* Eurostat Business Demography

   3.   Other government departments

* HM Revenue & Customs Annual Report

* Companies House – The Registrar

* Department for Business Innovation & Skills. The Enterprise and Economic Development Analytical Unit at the Department for Business Innovation & Skills, produces an annual National Statistics bulletin entitled:

   Business Population Estimates

   The BPE publication contains a breakdown of the number of businesses in the UK, from small traders with no employees to those with 500 or more employees by size classification. It also shows the contribution to total employment and turnover made by businesses of different sizes, with an industry breakdown. No single source is able to provide estimates of the total number of businesses in the UK. The BPE statistics include an estimate of the number of unregistered businesses, their employment and turnover. This estimate is represented in the zero employee size band.

* Department for Enterprise, Trade & Investment in Northern Ireland (DETINI).

   Inter Departmental Business Register Statistics

   This contains information on businesses and the associated number of employees at a District Council Area and Northern Ireland level. United Kingdom and UK regional comparisons are also shown, as are comparisons with the Republic of Ireland.

- [Scottish Government](#)

  [Scottish Economic Statistics](#)

  This provides an overview of Scottish economic development and prospects examined in the context of UK, EU and global economies. It contains statistics and articles on Scotland's economy.

- [Welsh Assembly Government](#)

  [Stats Wales](#)

  StatsWales is a free-to-use service that allows visitors to view, manipulate, create and download tables from the most detailed official data on Wales.

REFERENCES

(1) Perry J (1995) 'The Inter-Departmental Business Register', in *Economic Trends* 505, November 1995, ONS, HMSO: London

(2) Office for National Statistics *Business Monitor PA1003 – Analysis of UK Manufacturing (Local) Units by Employment Size*, HMSO: London

This was published in respect of 1971 to 1973, 1975 to 1979 and 1982 to 1984. The omission of monitors for 1980 and 1981 reflects the basis upon which the monitors were produced.

For years up to 1979, counts of units and employment relate to the reference year, but for 1982 onwards employment relates to a period two years prior to the reference year (e.g. the 1982 monitor includes employment estimates for 1980).

(3) Office for National Statistics PA1003 Size Analysis of United Kingdom Businesses, ONS: Newport

Published in respect of 1985 to 1996 as a paper document; copies of which are available from the British Library

For years 1997 to date the publication is available on the internet as PDF files with downloadable Excel files.

(4) Regulation (EC) No 177/2008 of 20 February 2008 establishing a common framework for business registers for statistical purposes.

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Former / Abolished Areas

1   Area codes operative from 1 January 2011.
2   County Durham UA comprises the former districts of Chester-le-Street, Derwentside, Durham, Easington, Sedgefield, Teesdale and Wear Valley (abolished 2009).
3   Northumberland UA comprises the former districts of Alnwick, Berwick-upon-Tweed, Blyth Valley, Castle Morpeth, Tynedale and Wansbeck (abolished 2009).
4   Cheshire East UA comprises the former districts of Congleton, Crewe and Nantwich and Macclesfield (abolished 2009).
5   Cheshire West and Chester UA comprises the former districts of Chester, Ellesmere Port & Neston and Vale Royal (abolished 2009).
6   Shropshire UA comprises the former districts of Bridgnorth, North Shropshire, Oswestry, Shrewsbury and Atcham and South Shropshire (abolished 2009).
7   Bedford UA comprises the former district of Bedford (abolished 2009).
8   Central Bedfordshire UA comprises the former districts of Mid Bedfordshire and South Bedfordshire (abolished 2009).
9   Cornwall UA comprises the former districts of Caradon, Carrick, Kerrier, North Cornwall, Penwith and Restormel (abolished 2009).
10 The Isles of Scilly were recoded on 1 April 2009. They are separately administered by an Isles of Scilly council and do not form part of Cornwall UA but, for the purposes of the presentation of statistical data, they may be combined with Cornwall UA.
11 Wiltshire UA comprises the former districts of Kennet, North Wiltshire, Salisbury and West Wiltshire (abolished 2009).

Correspondence between Section Letter UK SIC 2003 and Section Letter UK SIC 2007

	UK SIC 2003		UK SIC 2007
A **B**	Agriculture, hunting and forestry Fishing	**A**	Agriculture, forestry and fishing
C	Mining and quarrying	**B**	Mining and quarrying
D	Manufacturing	**C**	Manufacturing
E	Electricity, gas and water supply	**D**	Electricity, gas, steam and air conditioning supply
		E	Water supply, sewerage, waste management and remediation activities
F	Construction	**F**	Construction
G	Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	**G**	Wholesale and retail trade; repair of motor vehicles and motor cycles
H	Hotels and restaurants	**I**	Accommodation and food service activities
I	Transport, storage and communications	**H** **J**	Transport and storage Information and communication
J	Financial intermediation	**K**	Financial and insurance activities
K	Real estate, renting and business activities	**L** **M** **N**	Real estate activities Professional, scientific and technical activities Administrative and support service activities
L	Public administration and defence; compulsory social security	**O**	Public administration and defence; compulsory social security
M	Education	**P**	Education
N	Health and social work	**Q**	Human health and social work activities
O	Other community, social and personal services activities	**R** **S**	Arts, entertainment and recreation Other service activities
P	Activities of private households as employers and undifferentiated production activities of private households	**T**	Activities of households as employers; undifferentiated goods- and services producing activities of households for own use
Q	Extraterritorial organisations and bodies	**U**	Activities of extraterritorial organisations and bodies

Dataset Collections on Open Data Explorer

Dataset ID	Dataset name
UKBA01	Enterprise/local units by Industry and GB Local Authority Districts (including UK total)
UKBA02	Enterprise/local units by Industry and Northern Ireland Local Authority Districts
UKBA03	Enterprise/local units by Industry and Parliamentary Constituency
UKBB	Enterprise/local units by Industry, Employment size band and Region
UKBC	Enterprise/local units by Industry, Employment size band and Legal status
UKBD01	Enterprise/local units by Employment size band and GB Local Authority Districts (including UK total)
UKBD02	Enterprise/local units by Employment size band and Northern Ireland Local Authority Districts
UKBD03	Enterprise/local units by Employment size band and Parliamentary Constituency
UKBE	Enterprise/local units by Employment size band, Legal status and Region
UKBF01	Enterprise by Turnover size band and GB Local Authority Districts (including UK total)
UKBF02	Enterprise by Turnover size band and Northern Ireland Local Authority Districts
UKBF03	Enterprise by Turnover size band and Parliamentary Constituency
UKBG	Enterprise by Industry, Turnover size band and Region
UKBH	Enterprise by Turnover size band, Legal status and Region
UKBI	Enterprise by Industry, Turnover size band and Legal status

UK Business: Activity, Size and Location, 2014

Coverage: **UK**
Date: **29 October 2014**
Geographical Area: **UK and GB**
Theme: **Business and Energy**

Headline Figures

- The number of VAT and/or PAYE businesses is estimated to have risen by 96,000 (4.4%) between March 2013 and March 2014. This is in line with the performance of the UK economy

- Companies and public corporations' numbers have continued to rise and represent 66.1% of total businesses. The number of sole proprietors and partnerships has continued to decline and now represents 29.9% of total businesses.

- The largest industry group is professional, scientific and technical, with 17.5% of all registered businesses in the UK.

- London has the largest number of VAT and/or PAYE based businesses, with 17.7% of the UK total and has also experienced the largest growth of 7.7% between 2013 and 2014.

Summary

There were 2.26 million enterprises registered for VAT and/or PAYE in March 2014, compared with 2.17 million in March 2013, a rise of around 96,000 (4.4%).

Economic Context

The rise and fall in the number of VAT and/or PAYE businesses (Figure 1) is broadly consistent with the performance of the UK economy over the past five years. The recent economic downturn was the deepest on record, as the UK experienced a peak-to-trough fall in real GDP of -6.0% between Q1 2008 and Q2 2009.

As economic conditions worsened, the number of VAT and/or PAYE registered enterprises started to fall, on a trend that continued until 2011: two years after the trough in GDP. This fall is also

consistent with the sharp reduction in the employment rate, which reached a low of 70.1% in September 2011.

The subsequent pick up in business creation may also have supported the strengthening of the labour market since the end of 2011. In particular, stronger business creation may have followed a revival in confidence in labour market outcomes over this period.

The October 2014 Economic Review identified a rise in the number of job to job flows (the rate at which individuals move from one job to another) over this period, largely as a consequence of increasing job mobility and a larger number of voluntary moves, both between industries and occupational groups. These trends may indicate increasing employer and employee confidence, which may in turn have been reflected in the growing number of registered businesses.

Figure 1: Number of VAT and/or PAYE based enterprises, 2009 to 2014
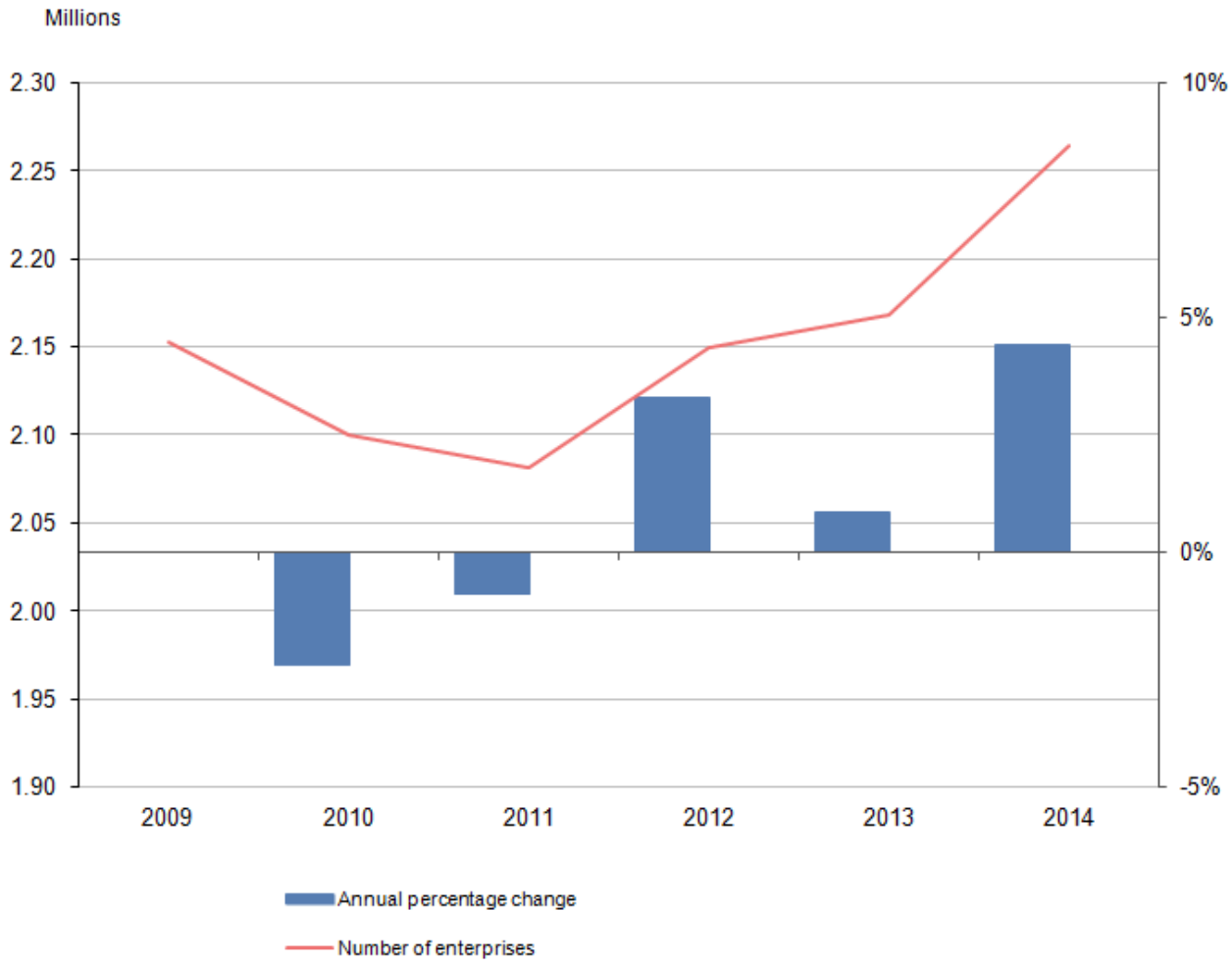
Source: Office for National Statistics

Notes:
1. Approximately 31,000 of the change betwen 2011 and 2012 was caused by improvements to HMRC computer systems leading to previously excluded businesses being added to the IDBR (See background note 7).
2. Between 2013 and 2014 HMRC introduced a Real Time Information system for PAYE (see background note 8).

Download chart

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(26 Kb)

The recovery in the number of registered businesses may also have been driven by a marked rise in the number of self-employed workers. Over the past 40 years, self-employment has generally risen at a gradual rate. However, in recent years it increased sharply, from 13.6% of all employment in May−July 2011, to 14.2% in August−October 2011 and rose to 15.0% of all employment in April −June 2014. This increase in self employment tracks the changes in the number of VAT and/or PAYE businesses over this period.

The high number and growth rate of VAT and/or PAYE businesses of 7.7% in London, compared to the rest of the UK, is also reflected in regional labour market data. The unemployment rate in London for 16−64 year olds fell by 2.3 percentage points in the year to June−August 2014, from 9.0% to 6.7%: the largest fall in unemployment in any of the UK regions.

Business counts by legal form

Between March 2013 and March 2014, there was a 2.2% reduction in the number of sole proprietors and partnerships, while corporate businesses increased by 7.9%.

Figure 2 shows the gradual increase in incorporation and the decline in sole proprietors and partnerships over the last five years, which reflects a range of benefits that can be achieved by using this legal form.

Over this period the new PAYE Real Time Information (RTI) system was rolled out across businesses. Please see background note 8 for more details.

Figure 2: Percentage of VAT and/or PAYE based enterprises by year, 2009 to 2014
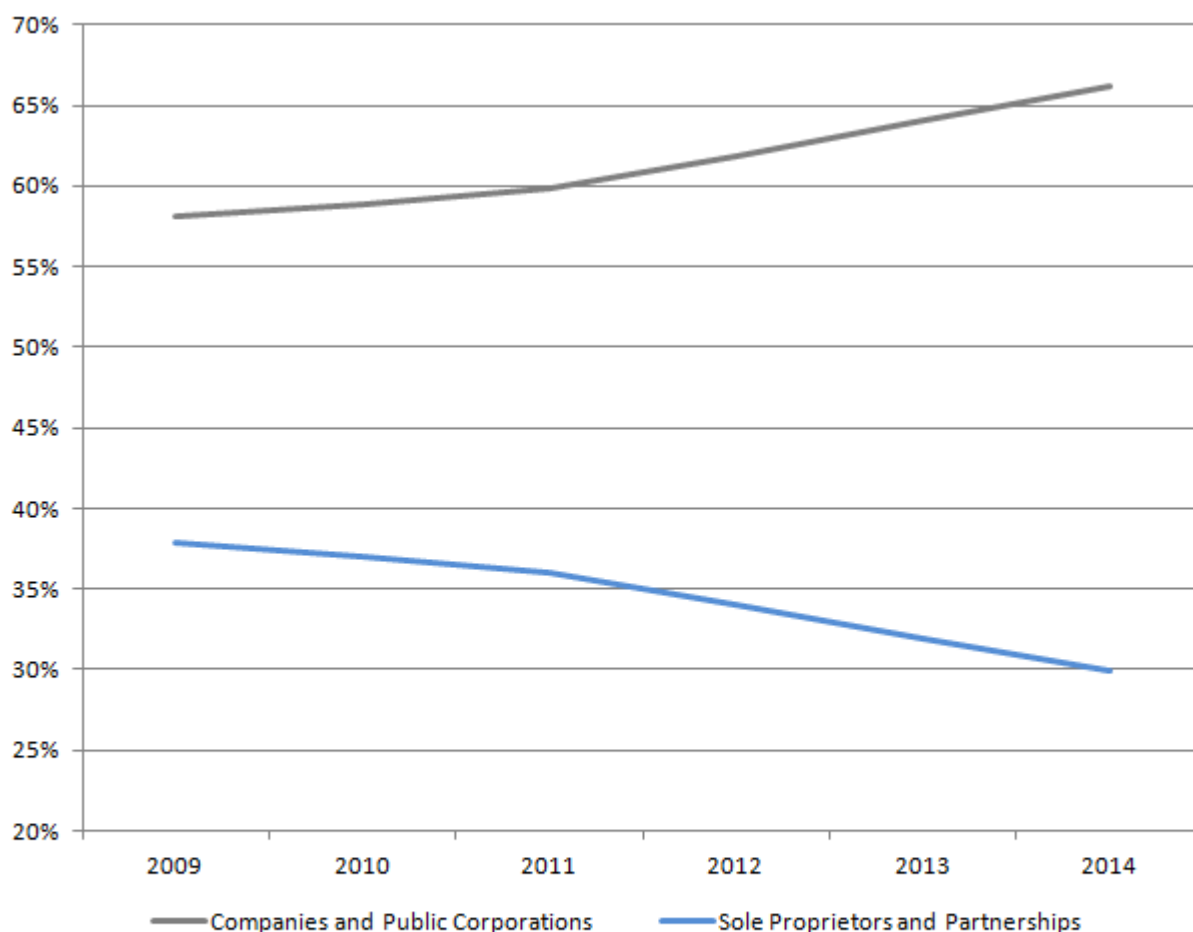
Source: Office for National Statistics

Download chart

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(25 Kb)

- Corporate businesses (companies and public corporations) represented 66.1% of total enterprises, up 2.1 percentage points from 64% in 2013. 42.9% of the corporate business figure is made up of single employee limited companies, which have increased by 42,000 between 2013 and 2014.
- Sole proprietors represented 19.6% of total enterprises, down 1.1 percentage points from 20.7% in 2013.
- Partnerships represented 10.3% of total enterprises, down 0.9 percentage points from   11.2% in 2013.

- General government and non-profit making bodies represented 3.9% of total enterprises, compared with 4% in 2013.

Business counts by broad industry

In 2014, the professional, scientific and technical sector accounted for the largest number of businesses, with 17.5% of all registered enterprises in the UK. Wholesale, retail and repair of motor vehicles was the second largest sector, with 16% of all enterprises registered, although it experienced a decrease in percentage share of UK enterprises, from 16.5% in 2013. The third largest sector was construction, with 11.8% in 2014.

The professional, scientific and technical sector had the largest growth between 2013 and 2014, an increase of 30,000 businesses. This was followed by the information and communication sector which increased by 14,000 businesses in 2014 and business administration and support services which also increased by 14,000.

Table 1: Number of VAT and/or PAYE based enterprise by broad industrial grouping, 2012 to 2014

Count given to the nearest thousand

	2012[1]	%	2013	%	2014[2]	%
Agriculture, forestry & fishing	139	6.5	144	6.6	145	6.4
Production	133	6.2	136	6.3	137	6.1
Mining, quarrying & utilities	9	0.4	10	0.5	11	0.5
Manufacturing	124	5.8	126	5.8	126	5.6
Construction	264	12.3	257	11.9	266	11.8
Wholesale and retail; repair of motor vehicles	361	16.8	358	16.5	363	16.0
Motor trades	68	3.2	68	3.1	68	3.0
Wholesale	104	4.8	103	4.8	104	4.6
Retail	189	8.8	188	8.7	190	8.4
Transport & storage (inc. postal)	67	3.1	67	3.1	72	3.2

	2012[1]	%	2013	%	2014[2]	%
Accommodation & food services	131	6.1	129	5.9	133	5.9
Information & communication	159	7.4	166	7.6	179	7.9
Finance & insurance	46	2.1	46	2.1	45	2.0
Property	77	3.6	80	3.7	84	3.7
Professional, scientific & technical	352	16.4	366	16.9	396	17.5
Business administration and support services	144	6.7	143	6.6	157	6.9
Public administration and defence	4	0.2	5	0.2	6	0.3
Education	33	1.6	35	1.6	37	1.6
Health	88	4.1	89	4.1	96	4.3
Arts, entertainment, recreation and other services	151	7.0	146	6.7	148	6.5
TOTAL[3]	2,149	100	2,168	100	2,264	100

Table source: Office for National Statistics

Table notes:
1. See Background note 7.
2. See Background note 8.
3. Please note that figures are rounded individually therefore the sum of component items may be slightly different to the totals shown.

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(29.5 Kb)

Business counts by UK region

London accounted for the largest number of businesses in March 2014, with 17.7% of the UK total. The region with the next largest share of businesses was the South East, at 15.6%.

Between 2013 and 2014, all regions except Northern Ireland saw an increase in the number of businesses, with London experiencing the greatest increase of nearly 29,000 businesses. London grew by 7.7% between 2013 and 2014 and this accounts for 29.7% of the growth in the UK.

Table 2: Number of UK VAT and/or PAYE based enterprises by region, 2012 to 2014

Count given to the nearest thousand

	2012[1]	%	2013	%	2014[2]	%
North East	56	2.6	56	2.6	59	2.6
North West	206	9.6	207	9.5	217	9.6
Yorkshire and The Humber	150	7.0	151	7.0	156	6.9
East Midlands	145	6.7	145	6.7	152	6.7
West Midlands	171	8.0	172	7.9	178	7.9
East	217	10.1	218	10.1	227	10.0
London	360	16.7	372	17.2	401	17.7
South East	338	15.7	340	15.7	353	15.6
South West	201	9.3	201	9.3	207	9.2
Wales	89	4.1	88	4.1	90	4.0
Scotland	150	7.0	151	7.0	157	6.9
Northern Ireland	67	3.1	67	3.1	67	2.9
TOTAL[3]	**2,149**	**100**	**2,168**	**100**	**2,264**	**100**

Table source: Office for National Statistics

Table notes:
1. See Background note 7.

2. See Background note 8.
3. Please note that figures are rounded individually therefore the sum of component items may be slightly different to the totals shown.

Download table

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Local unit site information

Local units are sites that belong to an enterprise. In March 2014, there were 2.72 million local units belonging to VAT and/or PAYE based enterprises, compared with 2.63 million in March 2013, a rise of nearly 96,000 (3.6%). Out of the 2.26 million VAT and/or PAYE enterprises, only 58,000 (2.6%) operate from more than one site. These operated a total of 516,000 local units.

Table 3: Number of VAT and/or PAYE enterprises and their associated local units, 2014

	Number of local units					
	1	2 - 4	5 - 9	10 - 19	20 or more	Total
Enterprise	2,205,400	46,485	6,580	2,480	2,705	2,263,650
Local units	2,205,400	111,305	41,610	32,780	330,145	2,721,240

Table source: Office for National Statistics

Download table

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(31 Kb)

Background notes

1. UK Business: Activity, Size and Location is produced from an extract taken from the Inter-Departmental Business Register (IDBR) recording the position of units as at March of the reference year. Introduced in 1994, the IDBR provides the basis for the Office for National Statistics to conduct surveys of businesses.

2. To support this release, datasets are available at [NOMIS](#) and ONS Data Explorer in greater geographical and industrial detail. However, for various reasons, it is possible to get multiple business registrations at a single address and this can distort data for smaller geographical areas.

3. From 2014 onwards, the ONS Data Explorer and Open API tool replaced reference tables, enabling users to access, use and customise ONS data more effectively. This has meant the

tables are no longer produced and instead exist as a series of dataset collections. This enables ONS to meet the Government's Open Data and Transparency policy.

4. Estimates presented in this release and the associated datasets are rounded to prevent disclosure. Differences may exist in totals across tables due to disclosure methods used.

5. Although the statistics in this release are derived from the IDBR, the total count of live businesses is less than the Business Demography publication. This is mainly because the definition used in Business Demography of an active business is based on activity at any time in the year, whereas UK Business: Activity, Size and Location is based on an annual snapshot at a point in time.

6. This publication represents all enterprises that are registered for VAT and/or PAYE. The Department for Business Innovation and Skills (BIS) produce the Business Population Estimates Publication. This estimates the total number of UK private sector businesses, including the unregistered business population. It also estimates the total number of businesses in the whole UK economy.

7. Approximately 31,000 of the change between 2011 and 2012 was caused by improvements to HM Revenue & Customs (HMRC) computer systems leading to previously excluded businesses being added to the IDBR. These businesses were registered before 2012, so distort the year on year change.

8. In 2014 HMRC information shows growing numbers of PAYE schemes and a rise in numbers of new scheme registrations. Those that are allied to company registration data have fuelled an increase in numbers of enterprises on the business register. While the growth in PAYE schemes coincides with the introduction of the Real Time PAYE reporting system (RTI), HMRC have indicated there are no technical reasons associated with RTI alone which would have increased the number of enterprises on the register during the period. HMRC have no evidence of behavioural changes in the timing of PAYE scheme registrations through the year.

9. Approximately 9,725 Composite and Managed Services Companies have been excluded where the address does not represent the location of the activities of these businesses to avoid giving a false impression of growth in these locations. Identification of Composite and Managed Services Companies may be incomplete, inflating business counts primarily in the Professional, Scientific and Technical sector. Further details on Composite and Managed Services Companies can be found on the HMRC website.

10. National Statistics are produced to high professional standards set out in the Code of Practice for Official Statistics. They undergo regular quality assurance reviews to ensure that they meet customer needs. They are produced free from any political interference.

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12. Details of the policy governing the release of new data are available by visiting www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html or from the Media Relations Office email: media.relations@ons.gsi.gov.uk

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This document is also available on our website at www.ons.gov.uk.

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