

## **METHODOLOGY**

### **1. Introduction**

Scottish Corporate Sector Statistics (SCSS) provides information about the **number of enterprises operating in Scotland**, broken down by various groupings including industry, company size, local authority area, and country of ownership. The publication includes all enterprises that operate in Scotland regardless of where the enterprise is based. This allows a more comprehensive understanding of the Scottish business environment than is possible via other business data sources which only allocate enterprises to Scotland if they have their UK base in Scotland.

### **2. Use**

The SCSS results are used by the Scottish Government to inform government policies. Some of the many other users of SCSS include local authorities, the enterprise networks, academics and consultants. A consultation on the use made of SCSS, carried out in the Spring/Summer of 2010, showed that the results are used extensively to inform sectoral policy and regional/local economic development. For more details on the consultation, and the resulting changes made to this publication, please look at the following document:

[http://www.scotland.gov.uk/Topics/Statistics/Browse/Business/scotstat/finding\\_sreport](http://www.scotland.gov.uk/Topics/Statistics/Browse/Business/scotstat/finding_sreport)

### **3. Overview of Methodology and Sources**

The estimates have been constructed using data from the [Inter-Departmental Business Register \(IDBR\)](#), the [Labour Force Survey \(LFS\)](#), the [Family Resources Survey \(FRS\)](#) and Self Assessment (SA) data. The IDBR provides the number of enterprises registered for VAT and/or PAYE in Scotland. However there is a substantial number of very small enterprises which have no employees and are therefore not included on the IDBR. A modelling procedure that combines data from the IDBR with estimates derived from the LFS, FRS and SA data is used to estimate the number of unregistered enterprises. The principles of the model were developed by economic consultants working with the Department of Trade and Industry and Eurostat.

### **4. Key Terms**

- An **enterprise** is the term used to refer to a company or business.
- A **business site** refers to each individual shop, factory, restaurant etc that is part of an enterprise. This is also known as a local unit.

e.g. A large supermarket chain is considered to be one 'enterprise'. Each individual store that forms part of this supermarket chain is known as a 'business site'.

## 5. About the Estimates

The purpose of the publication is to provide information about the number of enterprises but the estimates also include information about enterprises' employment and turnover. The function of these data is to act as 'auxiliary variables' that can be used to (i) classify enterprises by employee/turnover size band and (ii) calculate shares of employment and turnover across industrial sectors, local areas, company sizes etc. The nature of the underlying processes used to update these variables on the IDBR means that direct comparisons made using the absolute values are less reliable. (See Section 6.4 to 6.6)

The 2011 publication contains some methodological changes. For the first time, all data has been published using the Standard Industrial Classification (SIC) 2007 only. Furthermore, a number of changes have been made to the methodology used to estimate the number of unregistered enterprises. The impact of these changes on the unregistered enterprise estimates contained in the publication is relatively low. Detailed information about these changes is available in the ['Methodology Changes' information note](#).

The following data is available on the Scottish Corporate Sector Statistics website:

### Standard Industrial Classification 2007

Total enterprises	2010 – 2011
Total registered enterprises	2000 – 2011
Registered enterprises by industry	2008 – 2011

### Standard Industrial Classification 2003

Total enterprises	2000 – 2010
Total registered enterprises	2000 – 2011
Registered enterprises by industry	2000 – 2010

Enterprises are counted only once in Scotland-level estimates (Tables 1, 2 and 3) or once each in each of the local authority areas they operate in (Tables 5-7). Estimates of the number of business sites in each local authority area are provided in Table 8. (See Section 11)

The estimates do not include turnover information for financial and insurance enterprises as it is not available on a comparable basis.

The figures for unregistered enterprises are estimated primarily using data from a sample survey (LFS), which is subject to sampling error. Year on year comparisons between the number of unregistered enterprises (the smallest size band in Tables A-E) should therefore be treated with some caution.

## **6. Registered Enterprises**

### **6.1 Source**

The Inter-Departmental Business Register (IDBR) is maintained by the Office for National Statistics (ONS) and is a database of all registered enterprises operating in the UK i.e. enterprises that are registered for VAT and/or PAYE. It covers 99% of economic activity in the UK. Those excluded are small soletraders or partnerships with no employees and an annual turnover of less than the VAT threshold.

When an enterprise registers/de-registers for VAT/PAYE with HMRC, this information is fed through to the IDBR. The reporting of de-registrations, however, can be subject to a number of time delays. For example when an enterprise closes there may be a delay before HMRC are informed. Closure of the VAT record may then be delayed until all liabilities are settled. There may also be lags in recording PAYE data.

### **6.2 Time Period Covered**

The estimate of registered enterprises is based on a snapshot of the IDBR taken in March of each year (prior to 2005 the November snapshot was used). A Scottish extract provides a count of the IDBR enterprises that were “live” at the snapshot date. However, due to the time lags that often occur in recording de-registrations, an enterprise which had ceased trading by March but had outstanding business with HMRC may still be included on the IDBR at the time the extract is taken. Whilst this introduces some error into the data, this lag impacts on each year so the extracts are consistent over time.

### **6.3 Scope**

All tables in Scottish Corporate Sector Statistics (excluding Table A and Table 4) focus on the private sector - that is companies, sole traders, partnerships, public corporations/nationalised bodies and not for profit organisations - and exclude central and local government. This differs from the ONS publication “UK Business: Activity, Size and Location” which includes the public sector. Further information about other sources of business information is available in the information note [UK Business Data Sources](#).

## **6.4 Employment**

Prior to 2009, the employment information held on the IDBR was mainly drawn from the Business Register Survey and the employment part of the Annual Business Inquiry (ABI/1). The use of these sources caused a considerable time lag in the employment data, so that in each March extract, the majority of employment information was two years out of date i.e. employment estimates in Scottish Corporate Sector Statistics 2009 were mainly based on data from 2007. For some enterprises, however, the employment data was more lagged than this.

The Business Register and Employment Survey (BRES) replaced and integrated the BRS and ABI/1 in 2009. For businesses that are surveyed by BRES, the regional and local estimates of employment are more accurate because, rather than producing data by an apportionment model, they are obtained directly from data reported at site level. Employment data is now updated on the IDBR on a monthly basis rather than annually, as updates are made as completed surveys are returned. This means that, at any point in time, employment data on the IDBR will be as accurate and up to date as possible, based on the survey returns that have been received at that time.

However, it also means that year on year comparisons made using point in time extracts of the IDBR will be less accurate as businesses are unlikely to return their forms at precisely the same time each year.

The most up to date employment information in Scottish Corporate Sector Statistics 2011 tends to be based on data from BRES 2010 (which asks businesses for their level of employment as at September 2010). For some enterprises the employment data will be more lagged than this.

It is important for users to be aware that time lags exist in the employment estimates in every year. However, the difference between the March 2009 and March 2010 extracts were particularly influenced by the change in BRES reporting.

Because BRES (and previously BRS/ABI1) is based on a sample of enterprises, estimates from previous returns and from other ONS surveys are also used to update employment on the IDBR. For the smallest enterprises, either PAYE jobs or employment imputed from VAT turnover is used.

Note that the employment estimates refer to the number of employee jobs rather than the number of individual employees. A person who has more than one job will be counted once in each company they work for. Furthermore, no distinction is made between full-time and part-time employees – both count as one employee.

## **6.5 Turnover**

On the IDBR, turnover for the majority of registered enterprises is based on VAT returns for a 12 month period. For 2011 these relate to a 12 month period ending in December 2009, or January/February 2010, depending on the reporting pattern of the trader. 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 estimates made by traders at the time of registration. The turnover figures on the IDBR generally exclude VAT but include other taxes, such as the revenue duties on alcoholic drinks and tobacco.

## **6.6 Making Comparisons**

The main purpose of Scottish Corporate Sector Statistics is to provide information about the number of enterprises which were operating in Scotland at the time of the IDBR snapshot in March but the estimates also include information about enterprises' employment and turnover. Sections 6.4 and 6.5 explained that these variables are updated on the IDBR via numerous sources and at different times. This makes it difficult to obtain accurate employment/turnover estimates on the IDBR because the figures for each enterprise may not relate to the same point in time.

For this reason, it is not advisable to compare employment and turnover estimates over time. Instead, the employment/turnover data should be considered to be 'auxiliary variables' that can be used to compare shares across industrial sectors or to determine how shares have changed over a period of several years.<sup>1</sup>

However, comparisons of enterprise counts can be made. As the IDBR is a live register that is continually updated each time an enterprise registers/de-registers for VAT/PAYE, it can be taken as a reliable estimate of the number of enterprises in operation at any point in time. Since Scottish Corporate Sector Statistics is always based on a March extract of the IDBR, comparisons of enterprise counts from year to year can be considered reliable.

## **6.7 Exclusions**

Enterprises with no UK activity or dummy enterprises created to help with clerical procedures are excluded. Enterprises which have zero employment and zero turnover are also excluded as they are holding companies whose activity is recorded elsewhere or are enterprises not contributing to the economy at the time of the estimates.

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<sup>1</sup> More detailed comparisons can be obtained via [BRES](#) (for employee jobs) or [Scottish Annual Business Statistics](#) (for turnover).

There were a few instances where several registrations for a single company (usually VAT registrations) occurred at the same address. This may be a result of a legal loophole created as a result of changes in legislation. The Office for National Statistics now exclude these from their publications as the figures would overstate the actual number of businesses in existence and their associated employment in local area tables. Please note the tables up to and including 2001 have not been amended to reflect these changes.

## **6.8 Reclassifications**

### Latest Reclassifications

Colleges of Further Education were re-classified by the Office for National Statistics to the public sector in October 2010 for the purposes of National Accounts. The change transferred 35 enterprises from the business sector to the public sector. This reclassification has not been applied to previous years' tables.

### Historic Reclassifications

Primary Care NHS Trusts and all remaining NHS Trusts were re-classified by the Office for National Statistics to the public sector in 2001 and 2003 respectively. This was done to bring the 2003 Standard Industrial Classification in line with international guidelines for National Accounts. The change transferred 54,200 and 95,530 jobs from the business sector to the public sector in 2001 and 2003. This has led to a discontinuity between tables as tables previously included this employment.

## **7. Unregistered Enterprises**

A large number of very small firms are excluded from the IDBR because they are small soletraders/partnerships with no employees and an annual turnover of less than the VAT threshold. This section describes the method used to estimate the number of unregistered enterprises in Scotland.

### **7.1 Estimation**

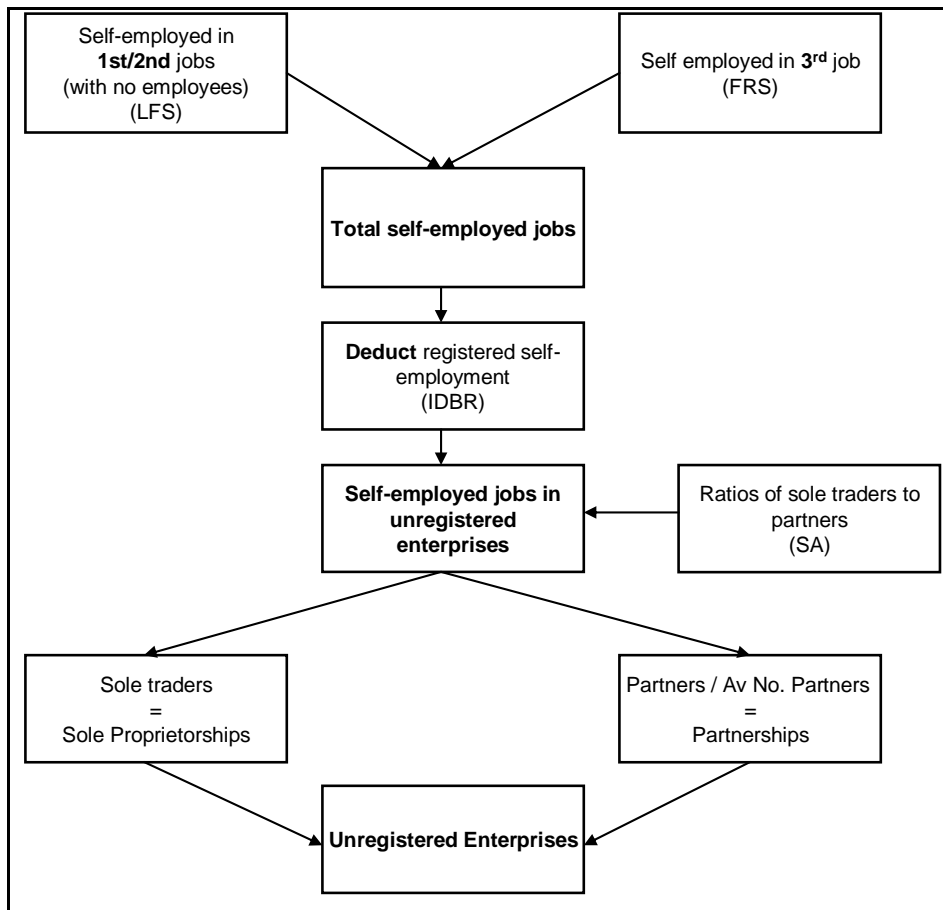
The Labour Force Survey (LFS) provides data on the number of people who are self-employed in their first or second jobs (with no employees). A new methodology has been introduced in SCSS 2011 which enables a better estimate of the self-employed to be obtained by reclassifying people who have misclassified their employment status. More information on this improvement can be found in the ['Methodology Changes' information note](#).

The LFS figure for second jobs is augmented by data from the Family Resources Survey (FRS) on people who are self-employed in a third job, to obtain an estimate of the total number of self employed jobs (with no

employees). This estimate is compared to the level of self-employment that is already registered on the IDBR in enterprises (sole traders/partnerships) with no employees. As many self-employed people are not required to pay VAT or register for PAYE, the figure from the LFS/FRS is generally higher.

The difference between these two figures (self-employed jobs in unregistered enterprises) is the starting point for estimating the number of additional sole traders and partners with no employees. The ratio between sole traders and partners is different in each industry and is obtained via HMRC Self Assessment (SA) data. Until 2011, the Survey of Personal Incomes (SPI) was used for this purpose but delays with updated data and more stringent disclosure control processes meant that it was necessary to use a different source. Please see the [‘Methodology Changes’ information note](#) for more information about the effects of using SA data.

**Diagram 1: Estimating Unregistered Enterprises**



The ratios are used to derive the number of unregistered sole traders and partners in each industry and hence the number of sole proprietorships and partnerships.

Note that each of the sample surveys above are subject to sampling error. For example a yearly estimate of 10,000 taken from the Labour Force Survey has

a 95% confidence interval of +/- 3,900. For this reason, year on year comparisons between the number of unregistered enterprises (the smallest size band in Tables A-E) should be treated with some caution.

## **7.2 Time Period Covered**

The estimate of unregistered enterprises is driven by the self employment estimates from the Labour Force Survey. The LFS data that is used covers the period April to March, i.e. the estimate of unregistered enterprises for 2011 is derived from LFS data covering April 2010 to March 2011.

The FRS data used to estimate the number of people self-employed in a third job relative to those who are self-employed in a second job is based on a three year rolling average percentage. The 2011 estimates are based on FRS data from 2007/08, 2008/09 and 2009/10.

Self Assessment data as at 2009/10 were used to obtain the ratio of sole traders to partners for the 2011 estimates.

## **7.3 Turnover**

Turnover in unregistered businesses will generally be lower than that of registered businesses of the same size, as turnover in the former would usually be below the VAT threshold. Turnover for the unregistered enterprises is imputed from turnover per head of registered sole traders and partners with zero employees in each industry division and then scaled down by a factor of a half. For a few 2-digit industry divisions, this still leaves average annual turnover per unregistered business above the VAT threshold. In these cases, the unregistered turnover is reduced to the VAT threshold for that year.

## **8. Industrial Classification**

The industrial sectors presented in the tables are defined by the UK Standard Industrial Classification (SIC). This is used to classify business establishments and other statistical units by the type of economic activity in which they are engaged.

### **8.1 Assigning Enterprises to Industrial Sectors**

Enterprises may have business sites operating in several industrial sectors. The enterprise as a whole is assigned to one sector based on the sector and then division in which the majority of its Scottish employment is found. A change in the balance of employment across sites can therefore lead to some enterprises changing their sector between years.

Table 8 provides sector classification at business site level rather than enterprise level.



The classification for this publication follows the standard coding scheme. Some titles have been shortened to make them more readable. The tables generally exclude central and local government (as defined by the legal status of the enterprise). The small number of enterprises that provide support services to public administration are, for these tables, included within the sector 'Other community social and personal services'. Extra territorial organisations and private households with employees are excluded.

## **8.2 Revision of Standard Industrial Classification**

In January 2008, the Standard Industrial Classification underwent a major revision to enable it to more accurately reflect the structure of the modern economy and SIC 2003 was replaced by SIC 2007. The revision was motivated by the need to adapt the classification to changes in the world economy. The revised classification reflects the growing importance of service activities in economies over the last fifteen years, mainly due to the developments in information and communications technologies.

Due to the revision, business units on the 2008-2010 IDBR extracts were dual coded to SIC 2003 and SIC 2007 which enabled the registered part of the SCSS publication to be produced on both classifications so that users could familiarise themselves with the new system. SCSS 2010 was the last time data was presented on a SIC 2003 basis. The ongoing quality of the 2003 classification on the IDBR, so long as dual coding is in place, will become progressively less reliable over time because it is no longer being maintained as rigorously as SIC 2007. **SCSS 2011 (and all future editions) is based on the SIC 2007 classification only.**

The Scottish Corporate Sector Statistics 2011 tables provide data on registered enterprises for 2008 to 2011 on a SIC 2007 basis. Tables for unregistered enterprises (and hence total enterprises) are available on a SIC 2007 basis for 2010 and 2011. Time series data on total registered enterprises has also been made available from 2000 to 2011. Data on the old SIC 2003 basis is still available on the Scottish Government website.

### **Standard Industrial Classification 2007**

Total enterprises	2010 – 2011
Total registered enterprises	2000 – 2011
Registered enterprises by industry	2008 – 2011

### **Standard Industrial Classification 2003**

Total enterprises	2000 – 2010
Total registered enterprises	2000 – 2011

Registered enterprises by industry	2000 – 2010
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## 9. VAT Thresholds

Operative Dates	VAT Registration Threshold
01 Dec 1997 – 31 Mar 1998	£49,000
01 Apr 1998 – 31 Mar 1999	£50,000
01 Apr 1999 – 31 Mar 2000	£51,000
01 Apr 2000 – 31 Mar 2001	£52,000
01 Apr 2001 – 24 Apr 2002	£54,000
25 Apr 2002 – 09 Apr 2003	£55,000
10 Apr 2003 – 31 Mar 2004	£56,000
01 Apr 2004 – 31 Mar 2005	£58,000
01 Apr 2005 – 31 Mar 2006	£60,000
01 Apr 2006 – 31 Mar 2007	£61,000
01 Apr 2007 – 31 Mar 2008	£64,000
01 Apr 2008 – 30 Apr 2009	£67,000
01 May 2009 – 31 Mar 2010	£68,000
01 Apr 2010 – 31 Mar 2011	£70,000
01 Apr 2011 -	£73,000

Further details on VAT thresholds can be found via the following link – [HM Revenue & Customs](#).

## 10. Size Bands

In the tables (with the exception of Table 8), enterprises are classified by employee size bands on the basis of their total UK employees. The rationale behind this approach is that the size of the overall enterprise determines its behaviour as an economic agent. An enterprise with a large number of employees in the UK as a whole is likely to behave like a large enterprise, regardless of its level of Scottish employment. An [information note](#) about the effects of using size bands based on UK rather than Scottish employees is available on the Scottish Corporate Sector Statistics website. [http://www.scotland.gov.uk/Topics/Statistics/Browse/Business/Corporate/size\\_bands](http://www.scotland.gov.uk/Topics/Statistics/Browse/Business/Corporate/size_bands)

Table 8 contains data on the number of business sites and is classified by the total number of employees at each site.

Companies with only one employee (who is also the employer) are treated as a self-employed person working in a firm with zero employees unless the enterprise is part of an enterprise group. As these companies provide no employment for others it is more consistent to classify them as enterprises with no employees.

## 11. Public Sector

Public sector enterprises are involved in more varied activities than the majority of those in the private sector, so Table 4 accounts for this by counting each enterprise once in each sector it has activity in. This helps to provide a more realistic impression of public sector activity in each industry. However, in order to provide accurate figures at Scotland level, each enterprise is counted only once in the total, therefore the table components do not equal the overall total.

As discussed in Section 6.8, Colleges of Further Education were reclassified to the public sector in October 2010, hence Table 4 contains an increase in the number of enterprises in SCSS 2011.

Public sector employee jobs estimates at the local authority area level are available via the ONS publication [Business Register Employment Survey](#). These estimates are based on data from the Annual Business Inquiry.

## 12. Geographical Analyses

The geographical analyses use a postcode index file from the Office for National Statistics. Unregistered enterprises are not included in the geographical analyses.

Tables 5-7: These tables split the data by local authority area. They include each enterprise once in each local authority it operates in, irrespective of how many business sites it has in each area. As in Table 4, each enterprise is only counted once in the total for Scotland, hence cells in the enterprise column of the tables do not sum to the overall total due to double counting.

Note that only enterprises are double-counted in these tables – enterprises' employment and turnover, where provided, are accurately assigned to the local authorities they operate in therefore the sum of these columns do equal the overall totals.

Table 8: Table 8 presents data on individual business sites within each local authority. This is a straightforward count of the number of sites located in each local authority. Note that in this table the employee size bands are based on the number of employees at each site.

In a recent Scottish Corporate Sector Statistics [User Consultation](#) conducted in 2010, users stated that they would like data to be made available at sub-local authority level. Data on the total number of business sites at intermediate-zone level are now available on [Scottish Neighbourhood Statistics](#) broken down by broad industrial sector for 2007 to 2011.

### **13. Statistical Disclosure Control**

The confidentiality of all data held on the IDBR is protected by the Code of Practice for Official Statistics and by specific legislation. The disclosure of data relating to individual undertakings without consent is prohibited under the Statistics of Trade Act 1947, the Value Added Tax Act 1994 and the Finance Act 1969. In accordance with these requirements, measures have been taken to ensure that no information about individual enterprises or local units are disclosed. All figures in this publication have been rounded to avoid disclosure, and where necessary additional measures have been taken to protect confidentiality.

The number of enterprises/business sites are rounded to the nearest 5, employment is rounded to the nearest 10 and turnover is rounded to the nearest £million.

The statistical disclosure control process was updated in SCSS 2010. Previously, a minimum threshold rule was applied, whereby the employment and turnover values associated with enterprise counts below a certain threshold were suppressed. To avoid disclosure by deduction, additional cells were also suppressed. In SCSS 2010 the minimum threshold was lowered and an additional dominance rule was introduced. The dominance rule identifies and suppresses cells where a small number of enterprises account for the majority of the associated employment or turnover. The overall effect of these changes is that more information is included in the tables but greater protection is provided for enterprises which dominate their respective industry or local area.

### **14. Revisions Policy**

#### ***14.1 Revisions Policy for Unregistered Enterprises***

LFS self employment data is the basis for the estimate of unregistered enterprises. ONS reweight the LFS data according to the latest population estimates on an annual basis. As a result, we will revise the unregistered time series to take account of the reweighted LFS data.

#### ***14.2 Revisions Policy for Registered Enterprises***

In general, the figures for registered enterprises should be final and should not be revised in future, since they are based on a snapshot in time from the IDBR which cannot change. However sometimes, when quality assuring the data for the latest year, errors in terms of the industry classification applied to businesses may come to light in which case we may correct the erroneous business classifications in previous years. Where these corrections lead to revisions to previously published data, we will flag this up in the revised tables using an R flag and provide a footnote on the reason for the revision.

There were no such revisions in 2011.

## **CONTACT DETAILS**

If you have any enquiries relating to Businesses Statistics then please contact us at:

### **Email**

[industrystatistics@scotland.gsi.gov.uk](mailto:industrystatistics@scotland.gsi.gov.uk)

### **Telephone**

0300 244 6813

### **Fax**

0300 244 1300

### **Post**

Scottish Government  
Business Enterprises and Energy Statistics  
Office of the Chief Economic Adviser  
5 Atlantic Quay  
150 Broomielaw  
Glasgow  
G2 8LU

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