

Information paper

Summary Quality Report for Foreign Direct Investment Annual Surveys Releases

1 Introduction

This report is part of a rolling programme of quality reports being introduced by the Office for National Statistics (ONS). The full programme of work being carried out on [Statistical Quality](#)¹ is available on the ONS website. Summary Quality Reports are overview notes which pull together key qualitative information on the various dimensions of quality as well as providing a summary of methods used to compile the output.

This report relates to Foreign Direct Investment (FDI). FDI Surveys, conducted by ONS, measure the flows of investment, earnings from investment and the international investment positions for UK businesses' affiliates abroad (outward) and conversely foreign businesses' affiliates in the UK (inward).

These data and information are primarily required for measuring the UK's Balance of Payments and the UK's international investment position.

2 Summary of Quality

2.1 Relevance

The degree to which the statistical product meets user needs for both coverage and content.

Foreign Direct Investment refers to investment that adds to, deducts from, or acquires a lasting interest in an enterprise operating in an economy other than that of the investor; the investor's purpose being to have an "effective voice" in the management of the enterprise. For the purposes of the statistical survey, an effective voice is taken as equivalent to a holding of 10 per cent or more of the ordinary shares or voting power for any incorporated subsidiary or associate enterprises or the equivalent for unincorporated branch enterprises (this internationally recognised definition is taken from the International Monetary Fund's (IMF) [Balance of Payments Manual version 5 \(BPM5\)](#)²).

Balance of Payments investments consist of Foreign Direct Investments, Portfolio Investments and Other Investments. Investments in which the investor does not have an effective voice in the management of the enterprise (ie they hold less than 10 per cent of the ordinary shares or voting power) are mainly portfolio investments; these are out of scope of the FDI Surveys. The other components of balance of payments investments are "other investment" and "reserve assets"; these cover investments where no ownership is held. These are also out of scope of the FDI Surveys. Definitions of all of these types of investment are available in the IMF's [\(BPM5\)](#)² publication mentioned above.

Data for the banking sector are collected by the Bank of England; all other sectors are covered by ONS surveys. The banking surveys collect information from all banks, whereas ONS surveys are based on samples and cover all other industries. This Summary Quality Report concentrates on these sample surveys which are statutory surveys, collecting information under the [Statistics of Trade Act 1947](#)³. Detailed Standard Industrial Classification (SIC) information is available on the [Standard Industrial Classification \(SIC\)](#)⁴ webpage.

The surveys are conducted using questionnaires which are generally sent to the head of the enterprise group within the UK, and which request consolidated information for the group as a whole. The survey is divided into two parts: one measures FDI by UK groups abroad (outward survey) and the other measures FDI in the UK by foreign groups (inward survey).

Change in measurement:

During 2009 the IMF and Eurostat introduced a set of data requirements as part of the Coordinated Direct Investment Survey (CDIS). The purpose of these new data requirements is to provide comprehensive and comparable data across countries' inward and outward direct investment positions. The FDI Surveys already collect sufficient business accounting data to meet most requirements for CDIS. ONS will therefore take part in CDIS by making amendments to the existing FDI questionnaires rather than introducing a new survey.

The new questions that are being introduced to the FDI questionnaires are to make sure that the data ONS collects from this survey comply with these new data requirements. These changes represent the first steps towards the introduction of the IMF's BPM6 and the OECD's new Benchmark Definition of FDI (BD4). They will also help ONS to meet its ongoing objective of improving the quality of FDI data.

<http://www.ons.gov.uk/about/surveys/a-z-of-surveys/foreign-direct-investment-fdi/index.html>⁵

Change to industrial classifications:

Changes to the SIC⁴ e.g. from SIC 2003 to SIC 2007 will also be implemented to the FDI annual 2009 and 2010 quarterly surveys. It is envisaged that the quality of data will be unaffected as a result of this change.

Data from the FDI Surveys are used by a wide range of users. The key users are:

- Balance of Payments and National Accounts
- Other Government Departments eg
 - [Department for Business Innovation and Skills \(BIS\)](#)⁶
 - [Her Majesty Treasury \(HMT\)](#)⁷
 - [Department For International Development \(DfID\)](#)⁸
 - [Her Majesty's Revenue and Customs \(HMRC\)](#)⁹
- [Eurostat](#)¹⁰
- [Organisation for Economic Cooperation and Development \(OECD\)](#)¹¹
- [United Nations Committee on Trade and Development \(UNCTAD\)](#)¹²

Additional users are UK and foreign academics and students, UK and foreign Embassies and Trade Missions, businesses, UK and foreign press and the general public.

What It Measures	Financial information relating to transactions between parent companies and their affiliates. Headline data components are Investment Flows, International Investment Positions (ie Stocks or Levels) and Investment Earnings.
Frequency	Annual
Sample Size	Outward survey approximately 1,400 enterprise groups Inward survey approximately 2,500 enterprise groups
Period Available	The current FDI database holds full country/industry aggregate data from 1972 to the current published year for both the inward and outward FDI Surveys. Limited country and industry level data are available for the years 1958 to 1971
Sample Frame	Historical standalone FDI register supplemented by the Inter Departmental Business Register (IDBR) - a comprehensive list of UK businesses, and a key source of data for analyses of business activity. Outward sampling frame approximately 4,000 enterprise groups Inward sampling frame approximately 22,000 enterprise groups

Sample Design	<p>The FDI population samples are selected by stratified random sampling using previously returned International Investment Positions values (Net Book values)</p> <p>The additional IDBR sample (known as the WorldBase sample) is selected using stratified random sampling on 'number of foreign subsidiaries' for outward FDI and 'UK turnover' for inward FDI. Within each survey the FDI and IDBR samples are mutually exclusive</p>
Weighting	Each respondent in the stratified sample is used to represent a number of similar businesses using business Net Book values.
Estimation	After imputation, to provide full estimation for the entire population at detailed data levels, non-sampled businesses are imputed for, using the same methods described above for non-respondents
Imputation	<p>Large non-responders are manually constructed using data sources from the matching quarterly survey or their published accounts in preference to imputed data based on sectoral variations. Otherwise the data is imputed.</p> <p>All non-responders are imputed for individually using period on period ratio imputation. Imputation links larger than 1.7 are taken as 1.7, and those smaller than 0.3 are taken as 0.3, where there are previous data values available. Where previous data is not available average returned values are used</p>
Outliers	Any respondents with atypical or extreme returns are treated as outliers and are excluded from the average value calculations. The top and bottom 5 per cent of enterprise group returns are excluded as outliers from the average value calculations

2.2 Accuracy

The closeness between an estimated result and the (unknown) true value.

Quality measures relating to accuracy

Sampling Error

Sampling error is the error caused by observing a sample instead of the whole population. While each sample is designed to produce the 'best' estimate of the true population value, a number of equal sized samples covering the population would generally produce varying population estimates.

Sample surveys are employed rather than censuses because the census process is too lengthy and costly to be viable for these surveys.

To provide an estimate of the sampling error, standard errors are published in the [MA4 Business Monitor](#)¹³ for the earnings, flows and positions variables for both the Inwards and Outwards surveys. A lower standard error indicates a more precise estimate. To aid comparison, the standard error is also expressed as a percentage of the total value. This quantity is called the coefficient of variation and it allows the standard errors to be put into context.

Non Sampling Error

In addition to sampling error, there is also the potential for non-sampling errors that cannot be easily quantified. For example, undetected deficiencies may occur in the survey register and errors may be made by the respondents when completing the survey questionnaires. Low response rates may introduce bias if respondents are not fully representative of those selected in the sample.

Paper and electronic data collection questionnaires are despatched to businesses in March/April after the end of the reference year. Two written reminders are subsequently sent to non-responding groups and are followed by telephone, fax and electronic mail reminders to try to minimise non-

response and thereby any non-response bias. There is also the possibility of using the legal powers of the Statistics of Trade Act to force response, though ONS prefers to work together with businesses to produce the necessary information.

Response rates are analysed on a week by week basis for quarterly and annual rounds. The number of questionnaires received and cleared after validation are documented as well as by proportion of Net Book Value received.

Returned information is run through a series of checks to identify any errors. These include tests to ensure that all questions are completed, that the responses to individual questions are consistent within the questionnaire as a whole, and that the return is consistent with historical data from the business.

Another aspect of accuracy is reliability. This refers to the closeness of the initial estimated value(s) to the revised estimated value(s). An indication of reliability of the key indicators in this release can be obtained by monitoring these revisions. Please note: FDI is subject to the standard ONS revisions policy.

Revisions to annual data are produced and are published on the ONS web page.
<http://www.statistics.gov.uk/statbase/Product.asp?vlnk=9614>¹⁴

The FDI revisions, response rates and estimated standard errors are available in the Basic Quality Information in the [Foreign Direct Investment Statistical Bulletin](#)¹⁵. For other FDI accuracy information see: [FDI Surveys web source document](#)¹⁶

2.3 Timeliness and Punctuality

Timeliness refers to the lapse of time between publication and the period to which the data refer. Punctuality refers to the time lag between the actual and planned dates of publication.

The Annual FDI Statistical Bulletin publication is published 12 months after the reference period (in December of the following year), and a more detailed [MA4 Business Monitor](#)¹³ publication 14 months after the reference period (February).

For more details on the Foreign Direct Investment Survey Statistical Bulletins, the [UK National Statistics Publication Hub](#)¹⁷ is available online and provides twelve months advanced notice of release dates. In the unlikely event of a change to the pre-announced release schedule, public attention should be drawn to the change and the reasons for the change should be explained fully at the same time, as set out in the [Code of Practice for Official Statistics](#)¹⁸

2.4 Accessibility and Clarity

Accessibility is the ease with which users are able to access the data, also reflecting the format(s) in which the data are available and the availability of supporting information. Clarity refers to the quality and sufficiency of the metadata, illustrations and accompanying advice.

The annual survey data are published initially in a [Foreign Direct Investment Statistical Bulletin](#)¹⁵ which is freely available from the National Statistics website (text and spreadsheet versions).

More detailed data are available in the [MA4 Business Monitor](#)¹³ which is freely available from the National Statistics website (text and spreadsheet versions).

Limited country and industry level data for the years 1958 to 1971 are available from historical Department of Trade and Industry (DTI) paper publications. These publications are:

- 1958 to 1967, DTI Board of Trade Journal extracts; and
- 1968 to 1971, DTI Trade & Industry extracts

Further queries can be addressed to the Foreign Direct Investment public enquiry team at:
fdi@ons.gov¹⁹

2.5 Comparability

The degree to which data can be compared over time and domain.

Since 1997 various changes have occurred in the coverage of the survey. The [European System of Accounts \(ESA\(95\)\)](#)²⁰ definitions were introduced with the 1997 MA4 Business Register allowing comparison across the European Union. The changes were as follows:

- i) Prior to 1997 for the measurement of direct investment, an effective voice in the management of an enterprise was taken as the equivalent of a 20 per cent shareholding. Since 1997, this is now 10 per cent
- ii) The Channel Islands (Jersey, Guernsey etc.) and the Isle of Man have been excluded from the definition of the economic territory of the UK. Prior to 1997 these islands were considered to be part of the UK. Their data are published under the UK Offshore Islands title in the data tables within the [MA4 Business Monitor](#)¹³
- iii) Interest received or paid was replaced by interest accrued in the figures on earnings from foreign direct investment. There is deemed to be little or no impact arising from this definitional change on the estimates

The FDI international investment position data have only been collected annually since 1987. Prior to that date these data were only collected via a triennial census survey.

A further change caused by the move to [ESA\(95\)](#) is that withholding taxes payable on direct investment earnings are now measured. Earnings were shown gross of these taxes in the [Balance of Payments 2004 Pink Book](#)²¹. However, for the purposes of this business monitor, earnings are calculated net of tax until 2006. From the 2006 Survey these tax data are included in the earnings figures. New FDI register sources available from 1998 have led to revisions to the figures from that year onwards. These give an improved estimate of the population satisfying the criteria for Foreign Direct Investment.

The definitional changes were introduced from 1997 only, the new register source changes were introduced from 1998, and the earnings tax changes from 2006. The data prior to these years have not been reworked in the [MA4 Business Monitor](#)¹³. For clarity, the breaks in the series are identified separately in Chapter 1, tables 1.1 to 1.3.

2.6 Coherence

The degree to which data that are derived from different sources or methods, but which refer to the same phenomenon, are similar.

The ONS FDI Survey is the only source of UK FDI data that complies with FDI international definitions.

The FDI team also carry out quarterly surveys covering the same survey populations. The results from these surveys are published in the quarterly [Balance of Payments Statistical Bulletin](#)²².

There are key differences in the coverage between the annual FDI Surveys and the quarterly FDI Surveys, as the balance of payments compilers have access to sources of data that have been unsuitable for use in the annual surveys due to their lack of geographic detail. For example, data on private investment in property in the UK or abroad, and investment by UK Public Corporations abroad. However, due to new sources of suitable data, these data have been included in the published annual data from the 2005 survey year.

Also, the [Mergers and Acquisitions Survey](#)²³, which provides data for the annual and quarterly FDI Surveys, treats the data it collects differently from the datasets published in either FDI Survey. FDI covers all transactions above a 10% ownership threshold whereas Mergers and Acquisitions covers only those transactions where majority ownership is involved (ie where the 50% ownership barrier is crossed during a transaction. Minority deals (above or below the 50% ownership barrier) are not published by the Mergers and Acquisitions Survey but would be included in the FDI Survey. Also the FDI Surveys would only report those deals, or parts of deals, funded directly by parent

companies and exclude any deals, or parts of deals, funded by locally raised funds (either in the UK for inward FDI or abroad for outward FDI).

3 Summary of Methods Used to Compile the Output

Coverage

FDI data are measured by industrial sector, sub components of the main data components, and the country of the immediate foreign parent investor (inwards FDI) or the country of the immediate foreign affiliate (outwards FDI).

Further details of the coverage of the FDI Surveys are covered in Appendices A, B and C in the [MA4 Annual Business Monitor](#)¹³

Sample Design

The FDI population samples are selected using previously returned International Investment Positions values (Net Book values). All respondents with an absolute Net Book Value of more than £50 million are selected automatically and the rest of the sample are selected by stratified random sampling using Net Book values.

The IDBR sample (WorldBase sample) is selected using 'number of foreign subsidiaries' for outward FDI and 'UK turnover' for inward FDI. The largest 100 are selected for each survey and the rest of the sample is selected using stratified random sampling using the relevant stratification variable. The IDBR foreign links information is updated annually using information from Dun & Bradstreet's "WorldBase"® publication.

Data collection instruments for the FDI Surveys are:

- Statutory paper questionnaires
- Secure Electronic File Transfer (spreadsheets)

Statistical disclosure control methodology is applied to Foreign Direct Investment 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](#)²⁴, 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 Statistician's Guidance: Confidentiality of Official Statistics and also on the [Statistical Disclosure Control Methodology page](#)²⁵ of the ONS website.

4 References

	Title of Reference	Website location
1	Statistical Quality Programme	http://www.statistics.gov.uk/about/data/methodology/quality/default.asp
2	IMF Balance of Payments BMP5	http://www.imf.org/external/pubs/cat/longres.cfm?sk=157
3	Statistic of Trade Act 1947	http://www.england-legislation.hmso.gov.uk/RevisedStatutes/Acts/ukpga/1947/cukpga_19470039_en_1
4	Standard Industrial Classification	http://www.statistics.gov.uk/statbase/Product.asp?vlnk=14012
5	FDI Survey	http://www.ons.gov.uk/about/surveys/a-z-of-surveys/foreign-direct-investment--fdi-/index.html
6	Department for Business Innovation and Skills	http://www.bis.gov.uk/
7	Her Majesty's Treasury	http://www.hm-treasury.gov.uk/
8	Department For International Development	http://www.dfid.gov.uk/
9	Her Majesty's Revenue and Customs	http://www.hmrc.gov.uk/index.htm
10	Eurostat	http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home
11	Organisation for Economic Cooperation and Development	http://www.oecd.org/home
12	United Nations Committee on Trade and Development	http://www.unctad.org/Templates/StartPage.asp?intItemID=2068
13	Foreign Direct Investment surveys MA4 Business Monitor	http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=9614&Pos=6&ColRank=1&Rank=272
14	Revisions to Annual data	http://www.statistics.gov.uk/statbase/Product.asp?vlnk=9614
15	Foreign Direct Investment Statistical Bulletin	http://www.statistics.gov.uk/pdfdir/fdi1209.pdf
16	Foreign Direct Investment Surveys web source document	http://www.statistics.gov.uk/StatBase/Source.asp?vlnk=179&Pos=&ColRank=1&Rank=1000
17	UK National Statistics Publication Hub	http://www.statistics.gov.uk/hub/index.html
18	Code of Practice for Official Statistics	http://www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html
19	FDI Contacts	fdi@ons.gov
20	European System of Accounts	http://circa.europa.eu/irc/dsis/nfaccount/info/data/esa95/en/esa95en.htm
21	Balance of Payments Pink Book	http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=1140&Pos=6&ColRank=1&Rank=272
22	Balance of Payments Statistical Bulletin	http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=1118&Pos=1&ColRank=1&Rank=272
23	Mergers and Acquisitions	http://www.ons.gov.uk/about-statistics/methodology-and-quality/quality/qual-info-economic-social-and-bus-stats/quality-reports-for-business-statistics/index.html
24	Code of Practice for Official Statistics	http://www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html
25	Statistical Disclosure Control Methodology Page	http://www.statistics.gov.uk/about/data/methodology/general_methodology/sdc.asp

Last updated: May 2010