

## **Experience of the United Kingdom in Use of Electronic Direct Investment Questionnaire**

A direct investment survey is ideally suited to some form of electronic collection, particularly for outward direct investment. The primary reason for electronic collection is the indefinite number of foreign countries to be covered by any respondent. The number will fluctuate greatly between respondents, and can also fluctuate from year to year (and indeed quarter to quarter) for any particular respondent. Under the FDIR, inward direct investment positions can also cover a large number of countries. So the data collection instrument must be flexible and be able to adjust to the varying quantity of data required. A spreadsheet type of instrument with its ability to hold a large number of columns is well suited to this challenge.

In many countries respondents to all business surveys have indicated for a long time that they prefer to send data via spreadsheets rather than paper questionnaires, particularly large companies. This is particularly true for respondents to direct investment surveys. Many of them may have been supplying their own type of spreadsheet. The risk here is that these may be little more than data dumps requiring large amounts of work by the compiler to interpret the figures supplied. But the move towards electronic data capture is certainly being driven by respondents, and it is likely that respondents naturally wish to return their direct investment data in this way.

A standard spreadsheet can be designed to ensure a consistent and full response. Contributors may not be able to alter the number of columns but the standard delivery can be designed to meet the maximum likely demand for geographic analysis. A larger version can be supplied on an as-needed basis should some respondent exceed this,

The advantages of a spreadsheet questionnaire from the compiler's point view are:

1. it imposes a uniformity of response. For example, in the collection of geographic data, the questionnaire gives a respondent a standard list from which to choose, rather than writing in their own descriptions. This prevents confusion about exactly what the respondent intended.
2. the questionnaire can include a number of built-in checks to validate and ensure the quality of the data entered. The questionnaire will signal to the respondent if a check has failed while they are inputting their data. The respondent is invited to view and correct these errors by clicking on the appropriate box. These checks do not and cannot exist on the paper equivalent.
3. Examples of the types of checks include:
  - i. if a respondent states at the beginning that the data are quoted then the unquoted sections of the form are grayed out - and vice versa.

- ii. if the respondent states that the return is for a subsidiary then the branch elements are  
grayed out - and vice versa.
  - iii. checks for omission of key information, e.g. the accounting period, the number of  
affiliates, contact details.
  - iv. parameter driven tests on the plausibility of the data entered, and consistency checks within the questionnaire,  
for example checking that detailed breakdowns are consistent with aggregates already recorded in the  
questionnaire.
  - v. completeness tests to check for missing data
  - vi. credibility measures, for example if a respondent returns figures in a non-domestic currency they can be asked  
to supply the exchange rate. If this is outside the known fluctuations in the period then a warning message is  
displayed.
  - viii. size checks, for example whether a value suggests it has been reported in  
thousands  
rather than millions of the currency.
4. If the survey is extended to collect direct investment flows as well as the core CDIS data more sophisticated consistency checks and feasibility tests can be included, for example whether closing levels are consistent with opening levels plus flows and balancing items.
5. The electronic questionnaire can also display in read-only format derived variables which are calculated from the base data and used in further direct investment analyses.
6. A major advantage is that the questionnaire can have comprehensive guidance on the concepts and uses of the data to be collected. For example by clicking on a box the respondent can see a diagram of the Framework for Direct Investment Relationships and have the concepts explained with practical examples.
7. The questionnaire can include, or contain links to, tutorial material with worked examples, typical direct investment datasets and explanations about how the statistics are used. This reference material is in a convenient form and closely associated with the actual data collection questionnaire. The respondents can use it in their own time. This can be coordinated with a program of visits to major companies, and used to make sure the companies understand the data we are trying to collect and why they are important.

8. Delivery of the data by the respondent to the compiler must be made secure. For example a Secure Electronic File Transfer system (SEFT) can be designed which provides a security shell around the spreadsheet in a way similar to on-line credit card transactions. The user is sent separately a User ID and Password. They can then access a link and download the spreadsheet into their own system and after completion upload it for collection by the compiling agency. This avoids insecure e-mails and should eventually speed up response. SEFT systems can also apply various checks on the in-coming data, including virus sweeps.