

**Standard Report
on
Methods and Quality (v1)**

For

**BOP AND RELATED RESULTS
COMPILATION**

This documentation applies to the reporting period:

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1 Overview

The Balance of Payments compilation system consists primarily of a quarterly survey operation which is complemented by the use of internal CSO data on merchandise trade and tourism as well as administrative data from public bodies and miscellaneous data collected from a variety of sources along with some minor additional estimation.

The data collection, capture and processing arrangements are designed to meet not only a number of balance of payments related statistical requirements but also some significant national accounts and financial accounts demands.

Data collection is statutory and providers are required to supply information under the Statistics (Balance of Payments and Financial Accounts) Order of 2005 issued under the Statistics Act of 1993. The collection system is a multi-survey operation. Financial service enterprises are required to supply transactions data during the reference period on services sold or purchased, income receipts and payments and transfer receipts and payments and also balance sheet data. Equivalent data are required from manufacturing and non-financial services enterprises. Transaction/position data vis-à-vis Irish residents are also collected for national and financial accounts purposes. Geographical and sectoral information is also reported. In order to reduce the reporting burden, companies having lower levels of activity report on the same basis annually.

Quarterly information on merchandise trade and travel statistics are obtained from the relevant compiling divisions within the CSO. Administrative data from government departments (or their agencies) and from the Central Bank and Financial Services Authority of Ireland (CBFSAI) are also used.

Apart from the quarterly data obtained from direct collection, internal CSO or external administrative sources, ancillary information to assist with the compilation of results is also used. This largely consists of: Irish Stock Exchange listings; currency exchange and interest rates; CBFSAI statistics; and any other relevant statistical information from industry association or other sources.

New arrangements have been put in place, in co-operation with the CBFSAI, for the collection and compilation of statistics for banks and investment funds. The new system was tested during 2007 through dual collection of data on the old and new basis. The system has been in operation since 2008 and has significantly reduced the burden on respondents as one return now meets a number of requirements for CSO and CBFSAI. This development is in line with our commitment to minimize the burden on data providers. The new collection system is also designed to meet the ECB's requirement to collect Portfolio Investment statistics on a security by security basis. It is intended that arrangements for collection of Portfolio Investment data on this basis will be extended to other categories of financial enterprises in due course.

Qualitative information useful for statistical register purposes is obtained from the CSO Central Business Register (CBR) and from other sources. In addition, information from the Department of Finance, the CBFSAI and the Companies Registration Office (CRO) is used in the maintenance of the financial services enterprises section of the register. Individual company data from the internal CSO merchandise trade statistics database, along with any useful information from newspapers, periodicals, etc., are used as inputs into the statistical register system.

The results, which are of a macro-economic nature, are published nationally by CSO in statistical release form on a quarterly and annual basis as follows:

- Quarterly Balance of Payments
- Quarterly External Debt
- Annual International Investment Position
- Annual Resident Holdings of Foreign Portfolio Securities
- Annual Foreign Direct Investment

- Annual Exports and Imports of Services.

The results are also available on CSO's website (www.cso.ie) and in summary form on the CSO databank (Database Direct).

Various results tables are also supplied to the EU Commission (Eurostat) and to the European Central Bank (ECB) as statutorily required. In addition, a variety of tables are supplied to the IMF and to OECD.

The results are used for a variety of purposes depending on particular user requirements. Nationally, the figures are used in conjunction with the National Accounts results to assess Ireland's economic performance. They are also used to assess investment trends in relation to the type and magnitude of foreign investment into Ireland as well as investment abroad by Irish residents. In addition, individual industry bodies and public and semi-state bodies assess foreign trade patterns and developments.

The international organizations use the figures for similar purposes but the ECB has a particular interest in them for assessing and developing monetary policy for the euro area. Eurostat and the ECB use national data to compile aggregate statistics for the EU and euro areas respectively.

2 General Information

2.1 Statistical Category

Primary statistical surveys combined with internal CSO data and data obtained from administrative records and from other miscellaneous sources.

2.2 Area of Activity

Balance of payments (BOP), external debt (ED), international investment position (IIP), foreign direct investment (FDI) and exports/imports of services.

2.3 Organisational Unit Responsible, Persons to Contact

BOP and related statistical compilation in the CSO is the joint responsibility of two divisions within the Directorate Macroeconomic Statistics. These are the Balance of Payments and Financial Sector (BOP&FS) Division and the Balance of Payments Analysis and Dissemination (BOPA&D) Division. The BOP&FS Division is responsible for data collection and processing. This involves the maintenance of the survey management system (SMS), the conduct of the surveys, data capture and processing. The BOPA&D Division is responsible for the analysis, publication and dissemination of the results internally in the CSO, nationally and internationally.

Queries should be directed to the following contacts:

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2.4 Objectives and Purpose; History

Quarterly BOP data compilation in Ireland is based on statutory CSO statistical surveys, combined with administrative data, and is closely integrated in the CSO with the compilation of the national accounts. The statistics produced are used to monitor Ireland's economic performance and as an input into CSO's preparation of the national accounts aggregates GDP (Gross Domestic Product) and GNI (Gross National Income). They are also used by the ECB and Eurostat for the preparation of the necessary European statistical aggregates and for monitoring economic performance nationally and for the EU and Euro areas.

Following a complete overhaul of the collection and compilation system in the latter half of the 1990s the collection of data was greatly expanded, particularly for financial enterprises including those operating in the International Financial Services Centre (IFSC). The compilation methodology was altered where necessary to adhere as closely as possible to the international statistical recommendations concerning BOP related statistics, particularly to the IMF's BOP Manual 5th Edition, 1993 (known as BPM5). This resulted in the present quarterly BOP series being introduced for the reference year 1998. Within this overall compilation framework, annual IIP statistics were first published nationally by the CSO in 2002. In 2003, a new quarterly series on External Debt statistics (which are closely related to the IIP liability data) was published. In addition, annual national statistical releases were introduced giving further geographical detail on Foreign Direct Investment (flows and stocks) and on Irish Resident Holdings of Foreign Portfolio Securities. Greater geographical detail was introduced for both quarterly BOP and annual IIP data in 2004.

The results are also supplied to Eurostat, the ECB, IMF and OECD and presented according to each organisations specific requirements in terms of frequency, content and analytical detail.

As economic and financial globalisation develops and as statistical requirements change, the compilation system is modified and developed as necessary and appropriate to reflect the resulting changes.

While the CSO is the official compiler of the statistics referred to, over the years there has been very close ongoing liaison and co-operation between the CSO and the Central Bank and Financial Services Authority of Ireland (CBFSAI) concerning compilation of the quarterly and annual results, as well as monthly estimates for ECB purposes. This co-operation primarily centres on statistics relating to financial enterprises and it continues to deepen with developments both nationally and at European level.

2.5 Periodicity

The basic survey process has a quarterly frequency but enterprises having lower levels of activity are surveyed annually to minimize response burden.

2.6 Client

The balance of payments and related statistics are compiled for use by both national users and by the international organizations (primarily Eurostat, ECB, IMF and OECD). Eurostat and the ECB have statutory bases for requiring the supply of the data.

2.7 Users

National users: The CSO, Department of Finance, CBFSAI, economic commentators, the media, third level educational institutions, the public at large.

International users: Eurostat, ECB, IMF, OECD, World Bank, UN.

2.8 Legal basis

The Statistics (Balance of Payments and Financial Accounts) Order of 2005 made under the Statistics Act of 1993 is the primary legal basis for collecting the required data from providers. The Ministerial Order which was introduced in March 2005 updated the previous Order and specifies in broad terms the kind of

information which is required. It allows for the collection of data by various means, both from transactors and from agents conducting transactions on behalf of customers. It essentially provides for a comprehensive data collection system concerning balance of payments related statistics as well as national accounts and financial accounts related information, including the acquisition of information on the transactions and activities of entities acting on behalf of clients.

In addition, the European Communities (Statistics) Regulations, 1999 were introduced in June 1999 in order to permit the CSO to meet obligations under Council Regulation (EC) No 2533/98 of 23 November 1998 concerning the statistical requirements of the European Central Bank (ECB). The ECB has a statutory basis - ECB Guideline ECB/2004/15 of 16 July 2004, as amended by Guideline ECB/2007/3 of 31 May 2007 - for the compilation and supply of the BOP and related data it requires. Related to this, its formal instrument - ECB Recommendation ECB/2004/16 of 22 July 2004, as amended by ECB Recommendation ECB/2007/4 of 31 May 2007 - applies to the CSO. Also, Regulation (EC) No 184/2005 of the European Parliament and of the Council of 12 January 2005, as amended by Regulations 601 and 602/2006 of 18 April 2006, specifies the EU Commission (Eurostat) requirements concerning balance of payments, international trade in services and foreign direct investment statistics.

3 Statistical Concepts, Methods

3.1 Subject of the Statistics

The statistics produced and published tend to be broadly described as balance of payments and related statistics. As such, they cover the following specific statistical outputs:

- Balance of Payments
- International Investment Position
- External Debt
- Foreign Direct Investment
- Resident Holdings of Foreign Portfolio Securities
- Exports and Imports of Services

Balance of Payments

The *balance of payments* (BOP) is a statistical statement of the economic transactions of an economy with the rest of the world in a specific time period. A *transaction* is defined as an economic flow that reflects the creation, transformation, exchange, transfer, or extinction of economic value and involves changes in ownership of goods and/or financial assets or liabilities, the provision of services or the provision of labour and capital. The BOP statement is presented as three distinct accounts: the *Current Account*, the *Capital Account* and the *Financial Account*. The transactions data comprising the BOP statement are categorised according to the nature of the transaction (e.g. involving goods, services, income, current or capital transfers, acquisitions or disposals of non-produced non-financial assets, or involving different types of investment). Despite its name, the BOP is now more concerned with *transactions* than with *payments* as was the case internationally up to the end of the 1980s. International transactions recorded in the BOP may not involve the transfer of money, and some are not paid for in any sense. The inclusion of these transactions, in addition to those matched by actual payments, constitutes a principal difference between a BOP statement and a record of foreign payments. The conceptual and theoretical basis of the BOP is such that BOP statistics are compatible with national accounts requirements.

International Investment Position

Closely related to the flow-oriented BOP framework is the stock-oriented *international investment position* (IIP). Compiled at a specified date, the IIP is a statistical statement of (i) the value and composition of the stock of an economy's financial assets, or the economy's claims on the rest of the

world, and (ii) the value and composition of the stock of an economy's liabilities to the rest of the world. Also encompassed in principle are land, other real property and other immovable assets which are:

- physically located outside the economic territory of the compiling economy and owned by residents of that economy; or
- physically located inside the economic territory of the compiling economy and owned by residents of other economies.

In addition, monetary gold and special drawing rights (SDRs) owned by the monetary authority i.e. the Central Bank and Financial Services Authority of Ireland are included.

The difference between the two sides of the balance sheet (the net position) measures that portion of the economy's net worth attributable to, or derived from, its relationship with the rest of the world. A change in stocks during any defined period can be attributable to transactions (i.e. BOP flows), to revaluations reflecting changes in exchange rates, prices, etc. or to other adjustments (e.g. reclassifications, corrections, uncompensated seizures).

The IIP and the Financial Account of the BOP are closely related. The same data sources and methods of compilation are used in producing the resulting statistics.

External Debt

The External Debt (ED) statistics are essentially obtained as a subset of the IIP data. External Debt refers to those financial liabilities of an economy which are accounted for by investments by non-residents in financial instruments other than equity or financial derivatives.

Foreign Direct Investment

Direct investment reflects the objective of a resident entity in one economy to obtain a lasting interest in an enterprise resident in another economy. In line with international standards (IMF/OECD), a "10% ownership criterion" is applied to holdings of equity in order to infer a direct investment relationship. Based on this criterion, a direct investment relationship can exist between related enterprises, regardless of whether the linkage involves a single chain or a number of chains. It can extend to a direct investment enterprise's subsidiaries, sub-subsidiaries and associates. Once the direct investment has been established, all subsequent financial flows between the related entities are recorded as direct investment transactions, regardless of the financial instrument used, except in the case of transactions between financial intermediaries (e.g. between affiliated banks and similar monetary financial institutions (MFIs) where direct investment transactions are confined to those of a permanent capital nature.

Direct investment statistics (covering equity and other capital) are not presented on an assets/liabilities basis as for other types of investment but are presented instead on a 'directional basis' in order to indicate whether the source of investment influence is located abroad or in the compiling economy. If the direct investor is a resident of the compiling economy, then the investment is categorised as *direct investment abroad*; if a non-resident, then it is categorised as *direct investment in the compiling economy* (i.e. Ireland).

Portfolio Investment

The statistics labelled as *Resident Holdings of Foreign Portfolio Securities* refer to the balance sheet stock of foreign financial assets held by Irish residents at the end of an annual calendar reference period. As such they form another subset of the IIP data in which they are broadly identified on the assets side of the statement under the category *portfolio investment*. Portfolio investment is a type of investment involving the purchase or sale of (i) equity securities and (ii) debt securities in the form of bonds and notes and

money market instruments, except for those falling into the category of either direct investment or reserve assets. *Bonds and notes* are securities issued with an initial maturity of more than one year while *money market instruments* are securities issued with an initial maturity of one year or less. Financial instruments classified to portfolio investment are usually traded in organised markets. The annual statistics produced on Irish resident holdings of portfolio assets show the country of issuer of the securities involved.

Exports and Imports of Services

The annual statistics published are derived from the BOP data collected and show the value of imports and exports of a variety of services categorized according to the country/region of residence of the counterpart.

General aspects

The outputs outlined above form part of the overall body of statistical information used to describe and monitor Ireland's economic and financial interactions with the rest of the world and its economic performance generally. In order to meet these and other requirements, the statistics are collected and compiled in line with the recognized international standards. In particular, the IMF's Balance of Payments Manual (5th Edition) – known generally as BPM5 – is used as the fundamental standard. For goods exported to or imported from non-residents the figures are compiled using the 'change of ownership' criterion and not that concerning their physical movement across national borders. In general, for all types of transaction, recording is in principle made on an accruals basis i.e. when the event giving rise to the transaction is booked in the accounting books of the parties involved. Valuation is required on a market price basis but for some transactions e.g. loans, book value may be used and for non-listed direct investment companies own funds at book value (OFBV) can be used to value foreign direct investment stocks. In general, the economic and financial transactions, as well as the financial stock positions, are recorded using the internationally recognized *debtor/creditor* principle. The *debtor* is the foreign counterpart customer or client for whom a financial obligation to an Irish resident is created when, for example, that resident invests abroad or exports goods or services. The *creditor* is the foreign counterpart customer or client to whom a financial obligation by an Irish resident is created when (for example) that resident imports goods or services or acquires investment financing from abroad.

3.2 Units of Observation/Collection Units/Units of Presentation

The unit of observation is primarily the enterprise. The unit of collection is either the observation enterprise or an entity acting on behalf of the observation enterprise or a number of such enterprises. The results are macro-economic in nature and are published for the economy of Ireland as a whole but with a variety of analytical breakdowns (by type of transaction, by type of investment, by type of financial instrument, by type of institutional sector involved, etc.).

3.3 Data Sources

Most of the data are collected directly via the Balance of Payments surveys. These are supplemented by quarterly information on merchandise trade and travel statistics obtained from the relevant compiling divisions within the CSO. Since 2008 the data required from licensed banks (credit institutions) and from investment funds (including money market funds) to meet BOP, IIP and external debt requirements are being collected quarterly by the CBFSAI under its legislation as well as European legislation. The data are supplied by the CBFSAI to CSO for statistical compilation purposes. Administrative data from government departments (or their agencies) and from the CBFSAI are also used. Apart from the quarterly data obtained from direct collection, internal CSO or external CBFSAI and administrative sources, ancillary support information to assist with the compilation of results is also used. This largely consists of: Irish Stock Exchange listings; currency exchange and interest rates; CBFSAI statistics; and industry association or any other relevant statistical information.

The statutory quarterly collection system requires transaction data on services, income and transfers. Transaction and position data (along with the reconciliation items) are required for assets and liabilities. Sectoral and geographical details are also provided. In order to reduce the reporting burden, companies having lower levels of activity report on the same basis annually.

Transaction/position data vis-à-vis Irish residents are also collected for national and financial accounts purposes.

3.4 Reporting Unit/Respondents

All resident companies, resident branches of foreign companies or individuals who are engaged in:

- (a) the provision of goods, services or financial instruments to non-residents;
- (b) receipt of goods, services or financial instruments from non-residents;
- (c) acquisition or disposal of a financial claim on non-residents;
- (d) incurrence or redemption of a financial liability to non-residents;
- (e) payment of income to non-residents;
- (f) receipt of income from non-residents

are relevant to the surveys.

3.5 Type of Survey/Process

The Balance of Payments surveys are effectively a census of all relevant financial entities and also cover a sample of relevant manufacturing and non-financial service companies. The survey results are supplemented with other internal CSO data (i.e. merchandise exports/imports and tourism statistics) as well as administrative data from public sources (CBFSAI, NTMA, government departments) and other miscellaneous data.

3.6 Characteristics of the Sample/Process

3.6.1 Population and Sampling Frame

A register of relevant entities is maintained by Balance of Payments Division. Qualitative information useful for statistical register purposes is obtained from the CSO Central Business Register (CBR) and from other sources. In addition, information from the Department of Finance, the CBFSAI and the Companies Registration Office (CRO) is used in the maintenance of the BOP financial services enterprises section of the register. Individual company data from the internal CSO merchandise trade statistics (exports/imports) database, along with any useful information from newspapers, periodicals, etc., are used as inputs into the BOP statistical register system.

3.6.2 Sampling Design

All Irish companies or Irish branches of foreign companies which are involved in the provision or receipt of financial services to/from non-residents as well as those who are engaged in manufacturing or the supply of nonfinancial services and which have significant interaction with non-residents are covered by the surveys. For financial enterprises, complete coverage of all enterprises having economic or financial transactions with non-residents is aimed at. In all, about 4,000 financial enterprises are covered over the course of a year. For non-financial enterprises, a selection of about 400-500 enterprises is made from CSO's statistical register sources, the focus being on the larger enterprises. In monetary terms, the results from this sample cover approximately 90% of the trading and investment activities of non-financial enterprises.

3.7 Survey Technique/Data Transfer

Hard (paper) copies of the forms are issued each quarter to relevant entities. Soft (electronic) copies of the forms are available on the CSO website. The soft versions can be completed and returned electronically to CSO. Most respondents return the data electronically. This data can then be loaded automatically to the BOP database. For those respondents who return information in hard copy the data has to be keyed manually into the database.

3.8 Questionnaire (including explanations)

The statutory quarterly collection system for non-financial services enterprises requires transaction data on services, income and transfers. Transaction and position data (along with the reconciliation items such as valuation changes) are required for assets and liabilities. The transaction details (i.e. services and income items and instrument breakdowns) necessary to meet BPM5 requirements are distinguished. Sectoral and geographical details are also provided. The same information is required of financial enterprises but the forms have been customized to reflect the differing types of financial activity (e.g. fund management, life/non-life insurance, treasury activity, banking and other financial services). See http://www.cso.ie/surveysandmethodologies/survey_balanceofpay.htm

3.9 Participation in the Survey

The surveys are carried out under the Statistics (Balance of payments and Financial Accounts) Order, 2005 (Statutory Instrument S.I. No. 124 of 2005) made under the Statistics Act, 1993. Participation in the survey is mandatory.

3.10 Characteristics of the Survey/Process and its Results

Information is obtained from survey and other sources on Ireland's economic and financial interactions with the rest of the world. The information is primarily collected quarterly for the preceding calendar quarter. The raw data obtained cover transactions in monetary terms concerning Ireland's:

- sales of goods and services, distinguishing export and import trade
- income generated including flows of income (profits, dividends, interest) into Ireland from investment abroad as well as similar flows of income abroad from Ireland
- current and capital transfers into Ireland and from Ireland covering largely EU receipts and payments, charitable aid, non-life insurance cover
- investment into Ireland and from Ireland categorized by functional category into *direct investment*, *portfolio investment*, *financial derivatives*, *other investment*, and *reserve assets*.

This information is broken down by country of residence of the counterpart to the transaction.

Balance sheet data are also collected for the same functional categories of investment listed for transactions.

The results published and disseminated are essentially an aggregation of the raw data collected. Some minor estimation or derivation is also undertaken to avoid additional reporting burden. This mostly covers the geographical attribution of investment income as well as the calculation of insurance service exports and insurance transfers.

3.11 Classifications used

The statistics published and disseminated are broken down to show a range of analyses.

In terms of geographical breakdown, the quarterly BOP figures show regional (e.g. EU/Non-EU; Euro-area/non-Euro-area) detail. In the annual releases this level of detail tends to be repeated but with additional individual country breakdowns as well as some larger geographical aggregation (e.g. continents). The definitive source of the geographical list used is the ISO3166 classification of countries.

The statistics on Foreign Direct Investment are also presented to show a broad economic activity breakdown which is based on the EU NACE Rev. 1 classification.

The IIP statistics are analysed to show a breakdown by institutional sector, the sectors distinguished being: monetary authority (i.e. Central Bank and Financial Services Authority of Ireland); general government; monetary financial institutions (i.e. credit institutions and the like); and other sectors.

3.12 Regional Breakdown of Results

The statistics compiled and published refer to Ireland as a single regional unit. International statistical standards do not require a breakdown of the results for regions within Ireland.

4 Production of the Statistics, Data Processing, Quality Assurance

4.1 Data Capture

For BOP survey operations, the CSO operates an integrated computer processing system (Bopfacts) using Sybase relational database technology. A standard processing approach applies to all quarterly surveys and administrative data. The system was designed to streamline the entire operation. Where data are returned in electronic form, they are imported through a bulk loading process into the database. Any forms received in hard copy are keyed manually into the database.

4.2 Coding

Country and currency codes are assigned automatically in Bopfacts. Other codes (e.g. economic activity, institutional sector) are obtained automatically from the Balance of Payments register (SMS).

4.3 Data Editing

On receipt in the CSO, all quarterly (and annual) returns in paper form are manually checked for obvious reporting errors. If no errors are apparent, the data are keyed into the Sybase database (Bopfacts) and undergo various automated consistency and plausibility data checks. Where data are returned in electronic form, they are subjected to a similar checking procedure once imported into Bopfacts. If the data fail the more important checks, the CSO contacts the company concerned to query the data and make any necessary corrections.

4.4 Imputation (for Non-Response or Incomplete Data Sets)

Estimates are made for partial or complete non-responses using either automated or manual imputation procedures. These estimates are based on previous returns made by the entity or on returns made by similar entities. Data available from Revenue, CBFSAI and CRO is also used in making these estimates. This facility is largely applied only to non-returning smaller companies surveyed, as the larger companies are pursued until the data are supplied.

4.5 Grossing and Weighting

Profits of the relevant manufacturing and non-financial service companies not covered by the BOP surveys are estimated from Census of Industrial Production and Annual Services Inquiry returns. These are geographically allocated according to the overall country breakdown for the relevant BOP survey, and are added to the results of the surveys. Imports and exports of services are handled similarly.

4.6 Computation of Outputs, Estimation Methods Used

All data are converted to single euro within Bopfacts. Apart from the analyses available within the processing system, further analyses are undertaken using SAS software. Once verified and further processed as necessary, the data from all surveys are summarised to produce the results. The outputs required by various users are generated from the database in the form of comma separated files (i.e. csv files). These are then used to prepare the tables for national publication and also to provide the data required by the ECB, Eurostat, IMF and OECD.

4.7 Other Quality Assurance Techniques Used

Prior to publication, some further manual checking is also carried out on the consistency of the BOP/IIP results with information available elsewhere, e.g. financial trade data, production statistics and profits data. More in-depth data quality checks are conducted annually against data available to the National Accounts Division. Apart from this general checking, the Data Consistency Unit (part of National Accounts Division) of the CSO carries out checks on the consistency of quarterly and annual data returned by individual large manufacturing and non-financial services companies to various divisions within the CSO including the BOP Division. The Data Consistency Unit liaises on an ongoing basis with these divisions and with any company concerned to determine the reasons for any significant discrepancy or inconsistency. In an ongoing effort to improve data quality the Data Consistency Unit operates a programme of company visits and liaison so that the CSO becomes aware as early as possible of any material change in companies' operational, accounting or reporting practices affecting the data returned. BOP personnel often participate in these visits and also make visits independently as and when specific BOP problems need to be resolved.

As regards financial enterprises, the quality analyses undertaken by the CSO involve comparison of its results with aggregate data available from other sources. These include representative associations for insurance companies, pension funds, collective investment institutions (CIIs e.g. mutual funds, UCITS), government departments, etc. In addition, the CSO and the CBFSAI undertake a detailed reconciliation of aggregate money and banking statistics and BOP/IIP statistics for Monetary Financial Institutions (i.e. credit institutions and money market funds) each quarter. Work is also ongoing between the two organisations to reconcile differences between aggregate BOP/IIP data and regulatory data relating to CIIs and other financial intermediaries (OFIs).

5 Quality

5.1 Relevance

These statutory inquiries are conducted to meet the requirements of Regulation (EC) No 184/2005 of the European Parliament and of the Council of 12 January 2005 on community statistics concerning balance of payments, international trade in services and foreign direct investment (as amended by Regulation Nos 601/2006 and 602/2006) and the ECB Guideline ECB/2004/15 (as amended by ECB Guideline ECB/2007/3) on the statistical reporting requirements of the European Central Bank in the field of balance of payments and international investment position statistics.

As a result of its role in monitoring Ireland's economic performance, the Department of Finance is interested in all aspects of the BOP. The main focus of the Department of Enterprise, Trade and Employment is on industrial development in the manufacturing and services sectors. This Department and Forfás, an agency operating under its aegis and involved in attracting foreign direct investment to Ireland, are particularly interested in the direct investment aspects of the BOP, as well as in the data on merchandise and services. Data are also used by stockbrokers, analysts in the field of economic and social research as well as universities. The National Accounts Division also uses BOP results internally within the CSO.

The CSO supplies data to international organisations such as the ECB, the European Commission (Eurostat), the IMF and the OECD.

5.2 Non-sampling effects

5.2.1 Quality of data sources used

Most of the data are collected directly via the Balance of Payments surveys. These are supplemented by data from other divisions within CSO, administrative data from other government departments and from the CBFSAI. These data sources are considered to be reliable.

5.2.2 Register coverage

Every effort is made to ensure the register coverage is complete. The CSO's Central Business Register (CBR) is the source for non-financial enterprises while information from CBFSAI, Department of Finance, Companies Registration Office and Revenue is used to ensure coverage of relevant financial enterprises.

5.2.3 Non-response

For financial enterprises the response rate for the quarterly surveys is close to 100% while that for non-financial enterprises is over 90%. For the annual surveys the response rate is approximately 68% at the time of first publication. This increases to over 78% at the time of first revision.

5.2.4 Measurement errors

The BOP survey forms were designed in consultation with industry representatives. Nevertheless large multi-national companies provide early estimates on a best effort basis. These are subject to revision and definitive data are provided when final audited accounts become available. The revisions can be substantial at times. Changes in company structure can also affect data quality.

5.2.5 Accuracy and Reliability

Following a Eurostat initiative (see Section 6) CSO has recently introduced measures of accuracy and reliability for its BOP related statistics. The relevant assessments for 2007 have been applied only to the BOP and FDI results. It is intended that these measures will also be applied in due course to other BOP related statistics.

The quantitative analysis of quality for Balance of Payments and International Investment Positions items focuses on the size of revisions, their direction and the reliability of trends.

5.2.5.1 Size of revisions

For the gross BOP items of the current account the Mean Absolute Percentage error (MAPE) is used as an indicator for the size of revisions.

The MAPE is defined as follows:

$$MAPE = \frac{1}{N} \sum_{t=1}^N \left| \frac{X_f^t - X_i^t}{X_i^t} \right|$$

Where,

X_i^t = the initial estimate for BoP item X in reference quarter t

X_f^t = the last available estimate for the same BoP item in reference quarter t

N = the number of quarters

It should be noted that when the value of X_i^t is close to zero the MAPE might potentially reach very high levels although the absolute size of revision might be relatively small. Where the value of X_i^t is not small a persistently high value of MAPE for an item should warrant further investigation.

The following table presents the results of the MAPE calculations for the major BOP items for 2008 (with comparisons for 2006 and 2007). To assist in interpretation of these data a further column (EU 27), which shows the upper bound of the MAPE for 75% of the EU 27 countries in year 2008, is included.

BOP Item	MAPE Ireland			EU 27*
	2006	2007	2008	2008
total current account credits	5	5	2	5
total current account debits	5	5	2	6
goods credits	2	1	2	2
goods debits	1	5	5	4
services credits	6	5	2	8
services debits	3	1	3	7
income credits	13	12	3	32
income debits	8	10	3	33
transport credits	0	14	19	13
transport debits	0	1	1	12
travel credits	2	2	1	16
travel debits	1	0	2	14
other services credits	6	5	2	13
other services debits	3	1	4	6
current transfers credits	14	5	6	21
current transfers debits	20	2	2	16
compensation of employees credit	10	2	0	12
compensation of employees debit	34	5	7	12
direct investment income credit	6	13	11	124
direct investment income debit	2	4	10	110
portfolio investment income credit	7	2	4	7
portfolio investment income debit	16	14	2	18
other investment income credit	27	28	2	13
other investment income debit	12	12	8	13

**75% of EU 27 countries have a MAPE less than or equal to this value*

It is widely acknowledged internationally that the BOP Financial Account flows tend to be very volatile. The MAPE is therefore not considered to be a suitable measure to assess revisions for Financial Account components. The Absolute Total Discrepancy (ATD) is used instead.

The ATD is defined as follows:

$$ATD = \sum_{t=1}^N |X_f^t - X_i^t|$$

Where,

X_i^t = the initial estimate for BoP item X in reference quarter t

X_f^t = the last available estimate for the same BoP item in reference quarter t

N = the number of quarters

The following table presents the results of the calculations for the major BOP Financial Account items for the reference periods 2006, 2007 and 2008. Figures are given for Foreign Direct Investment (FDI), Portfolio Investment (PI) and Other Investment (OI).

Absolute Total Discrepancy (€ millions)	Initial vs last estimate		
	2006	2007	2008
Net FDI flows abroad	6731	8223	2453
Net FDI flows to Ireland	15270	6287	6458
Net PI assets	12483	3088	30036
Net PI liabilities	31508	19005	4432
Net OI assets	31084	23352	12422
Net OI liabilities	21412	17919	32929

Source: Balance of International Payments

For the assessment of **FDI positions** neither the MAPE nor the ATD is used internationally. The table below presents the values for inward and outward FDI initial and final estimates in reference years 2006, 2007 and 2008.

Foreign Direct Investment (€ million)	2006		2007		2008	
	outward	inward	outward	inward	outward	inward
First estimate	93,619	118,900	99,084	131,411	123,368	120,954
Second estimate	91,669	118,824	101,936	138,362		

Source: International Investment Position release

Conclusion: The above analyses suggest that the size of revisions is broadly acceptable in the context of international (EU) comparisons.

5.2.5.2 Direction of revisions

Over time, it is expected that both positive and negative revisions will occur. If the revisions are systematically positive or negative, it is necessary to analyse the underlying reasons for this, e.g. a lack of coverage in early estimates, and there should be an attempt to correct any systematic bias. The table below shows the number of quarters revised upward as compared to the number of quarters for which data has been revised.

BOP items	Number of quarters revised upwards/revised		
	2006	2007	2008
total current account credits	4/4	4/4	4/4
total current account debits	4/4	4/4	3/4
goods credits	0/4	3/4	2/4
goods debits	4/4	4/4	4/4
services credits	4/4	4/4	4/4
services debits	3/4	2/4	4/4
income credits	4/4	4/4	4/4
income debits	4/4	4/4	2/4
transport credits	0/1	4/4	4/4
transport debits	3/4	4/4	3/3
travel credits	4/4	1/3	0/4
travel debits	2/4	2/3	2/4
other services credits	4/4	4/4	4/4
other services debits	3/4	2/4	4/4
current transfers credits	4/4	3/4	3/4
current transfers debits	4/4	1/4	3/4
compensation of employees credits	0/4	4/4	1/1
compensation of employees debits	4/4	4/4	4/4
direct investment credits	3/4	4/4	4/4
direct investment debits	0/4	3/4	1/4
portfolio investment income credits	4/4	3/4	4/4
portfolio investment income debits	4/4	4/4	2/4
other investment credits	4/4	4/4	1/4
other investment debits	4/4	4/4	4/4
net outward FDI flows	2/4	2/4	2/4
net inward FDI flows	1/4	3/4	1/4
net PI assets flows	3/4	1/4	2/4
net PI liabilities flows	4/4	4/4	2/4
net other investment assets flows	4/4	1/4	3/4
net other investment liabilities flows	3/4	2/4	1/4

Conclusion: The table above suggests that there is understatement of total current account credits and debits in years 2006, 2007 and 2008 in the initial estimates. Further information i.e. a longer time series, is needed to establish whether there is a systematic downward bias in the estimation procedure. CSO intends to investigate this over time and to take any corrective measures necessary to minimise any such bias.

5.2.5.3 Reliability of trends

Users of BOP statistics expect the first estimate (X_i) for a given period to be a correct indicator of the direction (upward or downward) of the time series. That is, if the first estimate indicates an upward trend in e.g. goods credits, it is expected that the revised data will confirm this trend.

This is assessed by the *Directional Reliability* indicator which is calculated as follows:

$$Q = \frac{n_{11} + n_{22}}{N}$$

Where,

- n_{11} equals the number of cases where the positive trend indicated by the initial estimate is confirmed by a positive trend indicated by the last available estimate;
- n_{22} equals the number of cases where the negative trend indicated by the initial estimate⁶ is confirmed by a negative trend indicated by the last available estimate⁷.
- N is the number of quarters

Ideally, a 100% directional reliability is expected. The higher the Q-value, the higher the directional reliability.

BOP Item	Directional reliability (%)		
	2006	2007	2008
total current account credits	75	100	100
total current account debits	75	100	75
goods credits	50	50	100
goods debits	100	100	100
services credits	75	75	100
services debits	100	100	75
income credits	100	75	100
income debits	75	100	100
transport credits	100	75	100
transport debits	100	100	100
travel credits	100	100	100
travel debits	100	100	100
other services credits	100	100	100
other services debits	100	75	100
current transfers credits	75	75	75
current transfers debits	50	100	100
compensation of employees credit	75	100	100
compensation of employees debit	50	100	100
direct investment income credit	75	75	100
direct investment income debit	75	75	50
portfolio investment income credit	100	75	100
portfolio investment income debit	100	75	100
other investment income credit	75	100	50
other investment income debit	100	100	75
net outward FDI flows	75	100	75
net inward FDI flows	100	75	75
net PI assets flows	100	100	50
net PI liabilities flows	100	75	100
net OI assets flows	100	75	100
net OI liabilities flows	100	100	100

Conclusion: the directional reliability is good overall.

5.3 Timeliness and Punctuality

5.3.1 Provisional Results

The quarterly BOP and External Debt results are first published three months after the end of the previous reference quarter. The detailed annual IIP, Resident Holdings of Foreign Portfolio Securities, FDI and Services Exports/Imports results are first published between September and December of the year following the reference calendar year. As such, they are consistent with the calendar year BOP data published beforehand at end-June.

Quarterly and annual results sent to Eurostat, ECB, IMF and OECD follow broadly the same dissemination frequency. In addition, the quarterly transmissions to the ECB include IIP results compiled on a very provisional basis.

5.3.2 Final Results

Under normal circumstances, the nationally-published quarterly BOP results and the related calendar year results are first revised at end-June of each year when the first quarter's results are published. They are revised for a second time one year later. At that point these results are normally considered final.

The nationally-published detailed annual results are normally revised once and are then considered final. Following the publication of the annual IIP data, the quarterly External Debt data are then revised. These quarterly data are normally revised once again following revision of the IIP data; at that point they are considered final.

A very similar revision and results finalisation policy applies to the data sent to Eurostat, ECB, IMF and OECD.

Figures, particularly those of a quarterly frequency, may be occasionally revised more often than described if a very significant revision is required or following introduction of significant methodological changes.

5.4 Coherence

The BOP Current Account and BOP Financial Account are compiled by the CSO to integrate and be compatible with the National Accounts and the Financial Accounts also compiled by the CSO. As such, the consistency of the various types of data from large multi-national enterprises available to the CSO (e.g. production, turnover, exports/imports, profits) is checked and balanced in order to ensure that the accuracy and reliability of this information is as well based as possible. This information as well as balance sheet transactions and stocks are also checked against the companies' audited accounts when they become available later. For financial enterprises, the balance sheet data supplied to the CSO are compared in with data obtained from the Central Bank.

5.5 Comparability

The statistics are compiled to meet, to the greatest extent possible, the recognized statistical standards recommended in the IMF's Balance of Payments Manual (5th Edition). As such they are regarded as being methodologically sound and therefore comparable over time and between those countries subscribing to the standards. However, the BOP Current Account components can be affected by quarterly seasonal factors. To date the results have not been seasonally adjusted as the international standards have so far not required such treatment - but it is likely that they will do so in the future. The BOP Financial Account and the IIP transactions and stocks statistics – as well as the FDI and portfolio security statistics tend to be quite volatile in both magnitude and direction. Sudden changes in trends and patterns can therefore occur depending on actual or anticipated events occurring in local and global financial markets. This can make statistical comparability over time and across countries quite difficult.

5.6 Accessibility and Clarity

5.6.1 Assistance to Users, Special Analyses

The various results are published nationally in hard-copy statistical release format as well as on the CSO website (www.cso.ie). Selected extracts from the results are posted on the CSO's data dissemination database *Database Direct*.

Each statistical release presents the relevant statistical tables along with an opening commentary on the main results. In addition, the *background notes* provided at the end of the release give the reader quite detailed information on the methodological basis underpinning the results and any connections with other related statistics. The quarterly BOP results and the quarterly National Accounts (National Income and Expenditure) results are generally published simultaneously. A media briefing is held to assist media interests as well as economic commentators, research institutions, government departments and other users of the statistics. In addition, the CSO assists users generally by way of written, telephone, or e-mail contact as well as through arranged appointments to meet personal callers.

The published BOP and IIP results provide data back to 1998, the year of introduction of the current series. In the case of related statistical series retrospection is generally provided back to 2001 but the series of annual geographical results for imports and exports of services was introduced for 2004.

5.6.2 Revisions

Under normal circumstances, the nationally-published quarterly BOP results and the related calendar year results are first revised at end-June of each year when the first quarter's results are published. They are revised for a second time one year later. At that point these results are normally considered final.

The nationally-published detailed annual results are normally revised once and are then considered final. Following the publication of the annual IIP data, the quarterly External Debt data are then revised. These quarterly data are normally revised once again following revision of the IIP data; at that point they are considered final.

A very similar revision and results finalization policy applies to the data sent to Eurostat, ECB, IMF and OECD.

Figures, particularly of a quarterly frequency, may be occasionally revised more frequently than described if a very significant revision is required or following introduction of significant methodological changes.

5.6.3 Publications

5.6.3.1 Releases, Regular Publications

National Statistical Releases (see [CSO - Releases and Publication : Balance of Payments](#)):

- Balance of International Payments (Quarterly)
- External Debt (Quarterly)
- International Investment Position (Annual)
- Resident Holdings of Foreign Portfolio Securities (Annual)
- Foreign Direct Investment (Annual)
- Service Exports and Imports (Annual)
- Statistical Yearbook of Ireland

Eurostat:

- European Union International Trade in Services
- European Economic Statistics
- European Union Foreign Direct Investment Yearbook
- European Union Economic Data Pocketbook

ECB:

Only Euro area aggregate statistics are provided

IMF:

BOP Statistical Yearbook

OECD:

- Economic Outlook
- Main Economic Indicators
- Review of FDI: Ireland
- BOP - Current Account for OECD countries and major non-member economies

5.6.3.2 Statistical Reports

[None]

5.6.3.3 Internet

<http://www.cso.ie/statistics/balanceofpayments.htm>

CSO Database Direct link:

<http://www.cso.ie/px/pxeirestat/database/eirestat/Balance%20of%20Payments/Balance%20of%20Payments.asp>

5.6.4 Confidentiality

The confidentiality of individual data collected for compilation of BOP and other related statistics is protected under the provisions of the Statistics Act, 1993 and, where relevant under European legislation i.e. Council Regulation (EC) No. 322/97 of 17 February 1997 on Community Statistics and Council Regulation (EC) No. 2533/98 of 23 November 1998 concerning the collection of statistical information by the European Central Bank (ECB).

Aggregated statistical results which are published nationally may include analytical statistical elements which are statistically confidential and which therefore have to be suppressed. Such confidential data can arise where there are small number of contributors (enterprises) to a particular piece of information or in other cases where one or two contributors are very dominant. The information is suppressed in a way that renders it undisclosed either directly or indirectly by derivation.

In supplying aggregated statistical information to Eurostat and the ECB certain elements of the information may be confidential. The European legislation referred to above obliges EU member countries to provide this information so that the two organizations can compile EU and Euro-area aggregate BOP and IIP statistics. Both organizations are obliged to protect the confidentiality of data under the above legislation.

6 Additional documentation and publications

6.1 Eurostat quality reports for BOP related statistics

In line with Regulation (EC) No 184/2005 referred to earlier, EU Member States are obliged to provide the EU Commission (Eurostat) with reports concerning the quality of the results compiled. These reports were introduced for the 2006 data and are an annual requirement. As for other Member States, the CSO provides the necessary information to produce the reports required.

6.2 European Central Bank (ECB) – Description of BOP statistical compilation

The European Central Bank (ECB) publication *European Union Balance of Payments / International Investment Position Statistical Methods* (also known as “the BOP Book”) published on the ECB’s website in May 2007 provides information on the concepts underpinning the compilation of the statistics covered and also provides information supplied by each Member State on its national compilation system. Ireland’s system is described in Chapter 4 Section 7. Please see the link:

http://www.ecb.int/pub/pdf/other/bop_052007en.pdf

to access this information.

6.3 StatCentral

The link <http://www.statcentral.ie/viewstats.asp?type=Balance%20of%20Payments> gives access to the entry on StatCentral (Ireland's portal to official statistics) for the BOP-related statistics described above.