8 Crosscutting Issues in Compiling Balance of Payments and International Investment Position Statistics

Introduction

8.1 The preceding seven chapters have focused on various data sources that may be used to compile a balance of payments statement. This chapter examines the compilation process itself: the institutional arrangements to support the compilation of the balance of payments and international investment position (IIP) are described; the broad issues with estimation are discussed; several issues facing the compiler that impact across the accounts are analyzed, including understanding the net errors and omissions term; and the balance of payments recording system is described.

8.2 Subsequent chapters of this *Guide* deal with compilation issues pertaining to particular components of the balance of payments. However, many transactions affect more than one component, and cross-references are made when appropriate.

Design of the Statistical Process

Institutional Arrangements

8.3 As described in the earlier chapters, compiling the balance of payments and IIP statistics involves combining information from a range of data sources. Many of these data sources are the responsibility of official agencies other than the agency in charge of the compilation of balance of payments and IIP statistics. Cooperation between these agencies will be necessary to allow the compilation task to take place efficiently. It is good practice to formalize the cooperation with documented understandings of the data to be made available, the format in which it will be provided, the timing and frequency of provision, and any additional security requirements (e.g., the protection of confidentiality of individually identifiable data).

8.4 The various official agencies that may be involved in capturing data used in the compilation process may include the following:

- Customs authorities for the collection of data used in international merchandise trade statistics, which in turn can be used as the basis for trade in goods and some services
- Statistical agencies for the collection of data through different surveys (e.g., household surveys, enterprise surveys, surveys of services, and other surveys)
- Port authorities for information that can be used as indicators in compiling transportations services
- Immigration authorities for the number of short-term and long-term migrants
- Tourism authorities who may collect information on expenditure of nonresident visitors in the compiling economy and residents traveling abroad
- Insurance regulators to identify insurance businesses for survey purposes or as a source of information on premiums, claims, and reserves
- Banking regulators, supervisory agencies, including those for insurance and nonfinancial companies, and compilers of monetary and financial statistics for data that may be used in the compilation process or to confront against data sourced elsewhere
- External affairs department for information on the operations of embassies

- Taxation authorities for information on withholding and other taxes, and to identify individuals and businesses that may be involved in international transactions or have external assets or liabilities
- The regulator of the international transactions reporting system (ITRS) (if any)
- The central bank for information on the banking sector and reserve assets.

8.5 Official sources external to the agency in charge of compiling the balance of payments and IIP statistics will generally not be sufficient for the compilation of the full range of items of these statements. As a consequence, it will be necessary for the agency to collect data itself. The institutional arrangements for the agency can assist the conduct of successful, high-quality statistical collections.

8.6 The legislation establishing the agency in charge of compiling the balance of payments and IIP statistics can provide for a number of enablers of high-quality statistics. The compiler may conduct a self-assessment of legal and institutional environments, and resources available for the statistical program using as guidance the May 2012 updated Data Quality Assessment Framework (DQAF) for Balance of Payments and International Investment Position Statistics.[1]

8.7 Key to the statistical legislation is the ability of the agency to require selected businesses and individuals to respond to statistical requests. If the agency does not have the legal framework or institutional arrangements to make its surveys compulsory then it needs to rely on reporting on a voluntary basis. Voluntary surveys are exposed to biases, and the lower the response rate, the greater the likelihood of bias in the results. For voluntary surveys, response can be encouraged through good form design; by explaining the purpose and outcome of the collection (in terms of outcomes for business or individuals); by delivery and collection of the forms by enumerators; and by providing incentives (e.g., using a monetary or gift incentive in a household survey). Research on the impact of providing incentives suggests mixed results, with it being unclear as to whether incentives increase response, and whether they have a positive or detrimental effect on the quality of the response.

8.8 Assuring the reporters of the confidentiality of their responses is one the most important prerequisites for improving the response rate and the quality of the responses. The extent to which these assurances generate more and higher-quality responses depends on whether they are enshrined in legislation and the record of the authority in meeting these assurances (and legislative obligations where they exist). Legislative obligations to protect the confidentiality of information provide a better basis for negotiating sharing of information that has been collected by other official bodies. A proof of the confidentiality protection is the dissemination of reported data only as part of larger aggregates, excluding any direct or derived disclosure of individual data.

8.9 The compiling agency can also hold periodic meetings with reporters to discuss reporting issues. This allows reporters to ask questions on data reporting and to better understand how the data reported are used.

8.10 Integrity of the statistics produced by statistical collections can also improve the response rate and the quality of the response. Selected businesses and individuals are more likely to respond, and provide accurate data, if the reporters believe that they are contributing to a high-quality product free from political influence. The independence of the agency in charge of compiling the balance of payments and IIP statistics and the integrity of the release processes contribute to the perception of integrity by the reporter. The work of the agency should not be subject to political influence. The products of the statistical process should be released to all at the same time as access to partial data during the estimation process by a minister's office could create the perception of political interference in the results.

Compilation Process

8.11 As discussed in the previous section, the compilation of the balance of payments and IIP involves bringing together data from a variety of sources. It is possible that some of these sources may overlap, so that

[1]The May 2012 version of the DQAF is an update of the July 2003 version of the DQAF to reflect experience and international statistical developments, particularly updated international methodological standards. It serves as an umbrella for six dataset-specific frameworks, including the framework for the balance of payments and international investment position statistics (see http://dsbb.imf.org/Pages/DQRS/DQAF.aspx).

information for one item in the balance of payments and/or IIP may be available from multiple sources. Compiling the item in question then requires a decision about the relative quality of the different sources, or how the sources may be used in combination.

8.12 One option is to determine the source of higher quality and to use that source as the primary source of data for the items of interest. The compiler may know from discussions with data suppliers, or from errors discovered through data checks, that certain errors are likely to exist. The size of the errors may not be of sufficient concern, or available resources may not permit investigation and correction. Alternatively, analysis of the net errors and omissions item under the use of the chosen source, in conjunction with confrontation with the alternative information, can inform adjustments that should be considered to the data from the primary source. "Possible Issues Faced by the Compiler" provides further discussion of the analysis of the net errors and omissions item. Alternatively, the multiple sources can be brought together within a data model, as described in "Estimation."

8.13 There may be insufficient evidence to determine which source is more accurate. In these cases, the compiler can monitor the differences and, if significant, develop a plan for further investigation. A discrepancy between the two sources may provide an indication of the size of a possible error.

8.14 Balance of payments and IIP data estimates may be compared with data from other sources. For example, data reported by banks in money and banking statistics on the position of external financial assets could be compared with data obtained in an ITRS or an enterprise survey. Existing data sources may be used to derive alternative estimates. From such a comparison, some judgments may be formed as to the accuracy of existing sources.

8.15 One external source that can be used for comparisons is bilateral data from partner economies. Comparison of balance of payments estimates with those for partner economies often reveals differences. The differences may be due to many factors. However, these comparisons may provide some valuable insights on accuracy.

8.16 Single sources of information can also be deficient in attempting to compile items in the balance of payments. This chapter's "Estimation" discusses estimation strategies, particularly where data are available only from subsets of the population of interest or with insufficient timeliness or frequency. Alternatively, single sources can form the basis of the information set used to populate a data model for items in the balance of payments.

Estimation

8.17 With data coming from a variety of sources over which the compiler does not have direct control, it is recognized that the data available for some components may not be adequate. In other cases, data may be available, but not sufficiently timely, requiring existing data series to be extrapolated until the actual data for the reference period become available. This section describes a number of techniques to support using imperfect data in the compilation process, ranging in complexity from simple estimation through to the use of data models and extrapolation techniques.

8.18 When data become available after an initial extrapolation or lower-quality but more timely data has been used, revisions may be required to the initial estimates for the period. The revision process recognizes the challenge for the compiler in trying to deliver timely balance of payments information and ensuring the accuracy of the accounts. This section also discusses revision practices and policies.

8.19 The compilation of balance of payments accounts is subject to a range of data sources, processes, and estimates at different levels of compilation. However, estimates should not be seen as a substitute for collecting reliable data.

Simple Estimation

8.20 Simple estimation involves relatively simple formulas or procedures that may be used to adjust or estimate source series. For example, certain source series may suffer from undercoverage and the compiler may, for balance of payments compilation purposes, apply a ratio or add some amount to the source series. Also, a balance of payments series may be estimated by using an assumed ratio between that series and other balance of payments or economic statistical series.

8.21 For example, a fixed amount (from irregular surveys) may be added to trade in goods for post

parcel; a ratio can be applied to f.o.b. or c.i.f. values to estimate freight insurance; or realization ratios can be applied to foreign investment approvals to estimate direct investment transactions.

Sample Expansion

8.22 Sample expansion is the process of expanding results from a selection of respondents to measure the population as a whole. The use of sampling techniques in balance of payments collections is discussed in Chapter 2. Weighting techniques (the process of applying expansion factors to each sample response) can vary depending on the design of the survey. Results from the sampling units are representative of larger aggregates, for example, sampling from cities that are representative of regions. Ideally, the weight of a sampling unit should reflect the relative size of the aggregate, the region, rather than the sample, the city. Therefore, the sum of the weights over the sample should reflect the population size. If the sampling of cities is with probability proportionate to region size, then the simplest sampling weights are the inverse of the likelihood of being sampled.

8.23 Mathematical statisticians should be consulted if more complex regimes are being considered. These can include poststratified estimation, where the results are expanded by the ratio of the number of units in the sample with particular characteristics to the number of units in the population with the same characteristics. Poststratified estimation is used when the population distribution of characteristics is known, but for individual statistical units, the characteristics are unknown until measured in the survey. Poststratified estimates are more accurate than simple number-raised estimates but can be subject to biases when the subpopulations with certain characteristics are quite small.

8.24 Expansion factors can also be used to adjust for nonresponse in sample surveys. Poststratified estimates automatically include an adjustment for nonresponse. Number-raised estimates can be adjusted by setting the weights to be the inverse of the ratio of the number of responses to the population size, rather than the number of selections to the population size (which is the chance of selection in simple sampling processes). This adjustment effectively imputes a mean response for all nonrespondents, which is a reasonable approach to imputing for nonresponse when no auxiliary information (e.g., past responses) is available.

Data Models

8.25 A third type of estimation involves bringing data from different sources together in a data model. The output of the data model is a particular balance of payments item. For example, estimates of nonresident visitor or other short-term individual traveling abroad expenditure in an economy could be derived by obtaining, from migration statistics, the number of visitors and other short-term individuals traveling abroad, and multiplying this number by estimates of expenditure per capita that were derived from a survey of individuals traveling abroad and other sources. This model could be extended with information on length of stay from official records, and using expenditure per capita per diem. Selection and inclusion of some data model elements depend on the compiler's judgment.[2]

8.26 The development and use of data models can also involve confronting related components of the balance of payments and making adjustments to ensure coherence between these items. For example, there is a relationship between passenger transport credits and travel credits, particularly for relatively isolated economies—the visitors and other short-term individuals traveling abroad making the travel expenditure need to arrive in the economy by some means. To the extent that these transportation services are provided by residents, then this will be recorded as a transportation credit. Similar relationships exist between the volume of trade in goods and freight (with the same caveat that some of the transport services can be provided by nonresidents for exports, or by residents for imports). Rates of return on investment imply a relationship between the various components of investment income and the positions in the same instruments recorded in the IIP, a relationship that can be used to confront and improve the quality of the respective components.

8.27 More complex relationships can exist within the other changes in financial assets and liabilities account in the reconciliation of the IIP. Some of these are discussed in Chapter 3 in the validation of the reconciliation statement in surveys of external assets and

[2]More on estimating different transactions related to visitors and other short-term individuals traveling abroad is presented in *International Transactions in Remittances: Guide for Compilers and Users*, 2009.

liabilities (see "Collections on External Assets and Liabilities" in Chapter 3). Other relationships that may hold are particularly concerned with financial derivatives, especially where these instruments are predominantly forward-type contracts (futures and swaps) used for hedging purposes (e.g., hedging interest rate and foreign exchange risk). The hedging of interest rate risk by an issuer of securities implies that the price change on derivatives should be in the opposite direction to the price change on debt securities, while the hedging of exchange rate risk implies that the exchange rate impacts on financial derivatives should be in the opposite direction to the exchange rate impact across the other functional categories. These relationships should hold separately for assets and for liabilities in the IIP.

8.28 Relationships can extend beyond the balance of payments and IIP to incorporate information in other macroeconomic accounts. Examples include the relationship between capital equipment recorded in trade in goods (noting that the *BPM6* does not require this level of classification in trade in goods) and capital expenditure in the national accounts. Similarly there is a relationship between equity investment income debits in the balance of payments and company profits recorded in the national accounts (depending on the openness of the economy to equity investment, and whether foreign investment is clustered in specific industries that may have different profit characteristics to the broader business population).

Extrapolation and Interpolation

8.29 Data from some sources may not be available on a sufficiently timely basis for compilation of the balance of payments statement. Therefore, the compiler may extrapolate certain balance of payments series from earlier periods. Extrapolation also covers adjustments made to preliminary results from a collection source providing less than complete data. If the data source or data model used by the compiler provides data on a less frequent basis than the periodicity of balance of payments compilation, it will be necessary to interpolate data between measurement periods to obtain sufficiently frequent estimates for the balance of payments.

8.30 Extrapolation techniques can range from the very simple to more complex procedures. The simplest techniques include using the same value as the previous period, or using the same change as occurred between the previous two periods and applying it to the previous period (either as a gross amount or as a percentage change). More complex techniques include drawing information from relevant data models and taking account of seasonality in subannual series. The choice of extrapolation method should be informed by the characteristics of the past series and the range of information available at the time of compilation.

8.31 Similar techniques are used for interpolation, with the added information of having access to data for a period after the period of interpolation. Choices for interpolation include using a constant value change for periods between the start and end point or a constant percentage change. If other, more frequent indicators provide evidence of seasonality in the series to be interpolated, then data models and interpolation techniques should take this into account.

Revisions

8.32 The use of extrapolation techniques implies that there will subsequently be a more reliable value for the item being extrapolated. This is one case where initial estimates are preliminary and subject to revision. Besides replacing extrapolations with data from an insufficiently timely source, there are a number of reasons why initial data may be considered preliminary and subject to revision. For example, more comprehensive and more accurate data may become available from less timely sources than those used for initial estimates, further checking after release may identify errors in the initial data (whether these are errors in the data that was supplied, or errors introduced during in-house processing), respondents revise their previously submitted data, new sources are identified, conceptual improvements are introduced, and so on. Revisions are a normal consequence of the fact that the compiler faces a trade-off between the provision of timely information and ensuring that the highest-quality information is available.

8.33 It is desirable for the compiler to publish information on the impact of revisions to the accounts. In the publication, the compiler could compare initial estimates with later generations of estimates for the same reference periods. The average absolute and actual size of revisions could also be published.

8.34 The compiler should also have a published policy on revisions so that the process of revising data

can be understood and anticipated by users. The revision policy could follow the dimensions and elements, as well as the key points identifying quality features set in DQAF.[3] The policy should cover when revisions will be introduced to publications, for what periods and for what data series, and the type of information that will be published on the causes of the revisions. Revision policies generally apply criteria to the size of revisions and the length of time over which revisions will be made.

8.35 Frequent and large revisions are disturbing to and create work for users. Methodologies should be developed to reduce the frequency of revisions. In other words, more attention should be given to getting the most accurate estimate on the first or second attempt. To achieve this, the compiler should examine causes of revision and whether they could be overcome by, for example, increasing the frequency of collections, collecting the most important classifications more frequently, placing less reliance on infrequent benchmark surveys, speeding up quality control procedures, and improving estimation procedures for nonresponse and partial coverage. To introduce such improvements, greater resources may be required. A cost-benefit analysis may be in order, and user support could be obtained for improvements that would reduce revisions.

8.36 However, the fact that revisions are disturbing to users is no excuse for failing to revise estimates. When revisions are adequately explained, most users understand that they are unavoidable. The balance of payments compiler's objective is to publish the most accurate data possible. Revised data, when more accurate, should be published. A balance of payments compiler who does not revise estimates when he or she learns that published estimates are significantly inaccurate may contribute to development of economic policies that are inappropriate because they are based on incorrect data.

8.37 A useful operational tool for information users about the revision policy is the publication of an advance release calendar regarding the coming publications and their revision schedule. Also, when the revised data are disseminated, a description of main changes due to revisions should also be disseminated. A revisions policy and a release schedule together are important factors in encouraging the trust and confidence of users in the balance of payments statistics. It is also important that the policy and schedule are followed meticulously.

[3]See elements 3.5 and 4.3 in the DQAF for Balance of Payments and International Investment Position Statistics.

Metadata

8.38 Metadata provides information about data. The *Guide* stresses that the International Monetary Fund (IMF) recommends that economies describe source data used in preparing their estimates and the methodological standards that they follow. In addition, the IMF recommends that all economies use the latest international methodological standards—for example, the *BPM6*. Doing so supports comparability of data across economies, as well as the range of economic accounts, and reassures users as to the methodological soundness of the data.

8.39 Economies sometimes deviate from the international statistical standards, usually for practical reasons (such as because they do not have requisite source data to compile data according to the *BPM6*), but also sometimes because they have chosen not to adopt a particular *BPM6* recommendation. In cases where the deviation from the *BPM6* is material, the IMF recommends that economies provide metadata that describes the deviation so users can assess the data against the international benchmark. Obviously, to compare data across economies or across time, it is important that all economies consistently follow the latest internationally agreed statistical standards.

Possible Issues Faced by the Compiler

Unit of Accounts and Multiple Exchange Rates

8.40 Balance of payments accounts could be prepared both in the national unit of account and in terms of an international unit of account, such as the U.S. dollar or euro, where different. The national unit of account is required to compile the external sector of the national accounts and to meet the requirements of many domestic analysts, while the standard unit of account is required for purposes of international comparison—for example, in balance of payments statistics published by the IMF. In many economies, the balance of payments compiler prepares the accounts only in domestic currency. However, for economies

where the exchange rate of the domestic currency is relatively unstable, or uses a foreign currency(ies) for many of its transactions, it is recommended that the balance of payments also be compiled in terms of a more widely used unit of account, such as the U.S. dollar.

8.41 In economies maintaining multiple exchange rate systems, it is essential that balance of payments statistics be compiled, for the purpose of external analysis, in terms of an international currency. It is also necessary for statistics to be compiled in the domestic currency. The existence of multiple exchange rates raises the issue of the rate that should be used for converting transactions denominated in a foreign currency (which will be most balance of payments transactions) into the domestic currency or into the foreign currency that is used as the unit of account.

8.42 It is recommended to use the actual exchange rate for each transaction for currency conversion. The daily exchange rate for daily transactions would provide a good approximation. If daily rates cannot be applied, average rates for the shortest period (e.g., week, ten days) should be used (*BPM6*, paragraph 3.105).

8.43 Table 8.1 presents results from applying four different conversion rate methods to a hypothetical set of transactions—official rates, actual rates used in transactions, the predominant transaction rate, and the weighted average conversion rate. Each rate, apart from the actual rate, represents a unitary conversion rate.

8.44 Table 8.1 shows the application of the actual exchange rate (column "Actual rate") and of unitary exchange rates (columns "Official rate" and "Predominant rate"). It is assumed that an economy has four exchange rates: an official rate (at par with the U.S. dollar), a commercial rate that is offered to commercial transactors (2 units of domestic currency are equal to 1 U.S. dollar), a tourist rate (2.5 units of domestic currency are equal to 1 U.S. dollar), and a parallel (black) market rate (3 units of domestic currency are equal to 1 U.S. dollar). The first three rates are offered by the economy's single bank. It is also assumed that, in the accounting period, the government imports goods valued at US$20 (converted at the official rate); companies export goods valued at US$100 and import goods valued at US$80 (converted at the commercial rate); nonresident travelers exchange US$5 with the bank at the tourist rate and US$3 with parallel market operators at the parallel market rate; and the parallel market operators in turn use the proceeds to buy goods from abroad.

Table 8.1 Impact of Using Alternative Conversion Methods (in domestic currency)

	Official rate		Actual rate		Predominant rate		Weighted average rate	
	Credit	Debit	Credit	Debit	Credit	Debit	Credit	Debit
Exports	100		200		200		195	
Imports by:								
Government		20		20		40		39
Companies		80		160		160		156
Other (parallel market operators)		3		9		6		6
Travel at:								
Tourist rate	5		13		10		10	
Parallel rate	3		9		6		6	
Bank assets		5		33		10		10
Total	108	108	222	222	216	216	211	211

Source: IMF staff.

Note: The official rate is calculated at par; results are equivalent to U.S. dollar values. Actual rates are those quoted in paragraph 8.42; bank assets are calculated at corresponding transaction values or as a residual. (By definition, those are equivalent.) The predominant rate is the commercial rate. The weighted average rate is derived by summing the transactions (excluding bank assets, which are derived residually) at actual rates and dividing by the equivalent sum valued in U.S. dollars.

8.45 From the table, one may see that use of a unitary rate, regardless of the rate chosen, preserves relationships between each of the items. It may be necessary to calculate two unitary rates: one for transactions conducted using official rates, and another for parallel (unofficial) or black market rates. The official unitary rate should be calculated as a weighted average of all official rates used for external transactions (*BPM6*, paragraph 3.107). For example, in the table, travel credits are 8 percent of exports in each case for which a unitary rate is used. However, when actual rates are used, the relationships between items change. For example, when actual rates are used, exports of goods exceed imports of goods—a result that is contrary to the result obtained by either using a unitary rate or recording transactions in U.S. dollars.

8.46 The *BPM6* advocates also that if the parallel market rates exist they should not be ignored in the context of a multiple rate regime. The official and parallel market rates should be handled separately, and transactions in parallel markets should be converted using the exchange rate applicable in that market (*BPM6*, paragraph 3.108).

8.47 Positions in external assets and liabilities in a multiple rate system should be converted at the exchange rate applicable to the specific assets or liabilities at the beginning or end of the accounting period. The different rates used for transactions and positions will create entries in the exchange rate changes in the other changes in assets and liabilities accounts.

8.48 It is important that balance of payments compilers in economies with multiple exchange rate schemes be aware of the impact of using different methods of conversion.[4]

Domestic Use of a Foreign Currency

8.49 Domestic and foreign currencies are defined in Chapter 3 of the *BPM6* (paragraphs 3.95–3.96): "[A] domestic currency is that which is legal tender in the economy and issued by the monetary authority for that economy: that is, either that of an individual economy or, in a currency union, that of the common currency area to which the economy belongs. All other currencies are foreign economies. Under this definition, an economy that uses as its legal tender a currency issued by a monetary authority of another economy—such as U.S. dollars—or of a common currency area to which it does not belong should classify the currency as a foreign currency, even if domestic transactions are settled in this currency . . ."

8.50 The implication of this definition for economies that do not have a domestic currency is that all cash holdings by residents represent an external financial claim on the central bank of the economy issuing the currency in use (and a liability of the issuing economy).

8.51 Information on the claim may be available from the compiler of money and banking statistics (using estimates of narrow money excluding demand deposits).

8.52 The central bank, commercial banks, and exchange bureaus may also have information on their purchase and sale of the currency. These sources would need to be supplemented by surveys of businesses and households for amounts of cash in hand, although experience suggests that surveys of households for "in-pocket" cash can be unreliable.

8.53 The economy issuing the currency may use bilateral data from the economies using their domestic currency to adjust estimates of currency liabilities from other sources.

Residency and Multiple Residency

8.54 The *BPM6* defines the residence of an institutional unit as "the economic territory with which [the unit] has the strongest connection, expressed as its centre of predominant economic interest." In addition, "an institutional unit is resident in an economic territory when there exists, within the economic territory, some location, dwelling, place of production, or other premises on which or from which the unit engages and intends to continue engaging . . . in economic activities and transactions on a significant scale" (see *BPM6*, paragraphs 4.113–4.114).

8.55 In practice, there are a number of situations where the application of this definition may be unclear, particularly where institutional units are highly mobile, have connection to multiple economies, or have a short period of significant activity. This section discusses these situations and their treatment by the compiler.

[4]It may also be important that the balance of payments compiler agree with the national accounts compiler on how the two sets of statistics will be reconciled.

Operation of mobile equipment

8.56 Treatment of the operation of mobile equipment, particularly equipment operating in an economy other than the economy of incorporation of the operator, often poses significant conceptual and practical problems for the balance of payments compiler. The key to correct treatment of this equipment lies in determining the residency of the operator of the equipment. Once residency has been determined, the recording of transactions becomes more straightforward and the compiler can focus on the best methods of collecting necessary balance of payments information.

8.57 Included in mobile equipment in this section are various equipment used in the provision of transport services (aircraft, ships, rolling stock, road transport, and spacecraft) and other equipment used in mining production (drilling rigs and floating production, storage, and offload units). Other transport vehicles (pipelines, electricity transmission infrastructure) are generally located in an economy for sufficient time for a branch to be recognized (although period of time is only one of the criteria for determining whether a branch exists).

8.58 Table 8.2 shows various types of mobile equipment and factors that should be considered in establishing, for each type of equipment, the economy of residence of the operator. The table shows that, in most cases, the operator's economy of incorporation is used. Exceptions occur with equipment operating for extended time periods in economies other than the economy of the operator. If circumstances described in Table 8.2 exist for such equipment, the compiler should consider the equipment to be operated by a branch of the operator that is a resident of the host economy. To ensure (if possible) consistency of treatment for significant operations, the balance of payments compiler should discuss residency assumptions with counterparts in partner economies.

8.59 To illustrate recording of the operation of mobile equipment in the balance of payments, Table 8.3 sets out accounts relating to mobile equipment operated by a resident of economy A. This operator is a branch of a company with a head office in economy B. All transactions, other than the initial provision of equipment, are assumed to involve a bank account in economy A. Table 8.4 shows how these transactions would be recorded in the balance of payments of economies A and B.

8.60 Tables 8.5 and 8.6 show, more comprehensively, information that the balance of payments compiler should collect on mobile equipment and how this information should be recorded in the balance of payments. Table 8.5 shows the treatment of transactions involving mobile equipment operated by a resident of economy A; the resident is assumed to be a branch of a parent company that is located in economy B and has no other operations in economy A.

Table 8.2 Determining the Residency of Mobile Equipment Operators

Type of mobile equipment	Economy of residence of operator
Equipment operating in international waters or airspace	Economy of incorporation of operator; for equipment under financial lease, the lessee is considered the operator. For a ship flying a flag of convenience, the economy of the operator is the economy of the company directing the ships operations, which may not necessarily be the economy of registration. If the operator establishes, for tax or other considerations, a branch or subsidiary in another economy to manage the operation, the operation is attributable to the economy of the branch.
Equipment moving frequently between two or more economies	
Equipment operating for more than one year in the economy in which the legal operator is resident	
Equipment operating for more than one year within an economy other than the economy in which the operator is incorporated	Host economy; if equipment is accounted for separately by the operator and recognized as a separate company by the host economys tax and licensing authorities, the host economy is the operators economy of residence. Otherwise, the economy of incorporation of the operator is, if previously outlined qualifications are met, the economy of residence.

Source: IMF staff.

Table 8.3 Sample Accounting Statement for Transactions Relating to Mobile Equipment

Transaction	Amount
Provision of equipment by parent company	1000
Funds provided by parent and deposited in bank account in economy A	100
Revenue	
Transportation of economy A's exports to economy B	75
Transportation of economy A's imports from economy B	60
Passenger fares—residents of economy B traveling within A	15
Passenger fares—residents of economy A traveling within A	105
Passenger fares—residents of A traveling between A and B	25
Total revenue	280
Expenses	
Fuel purchased in economy A	50
Provisions purchased in economy B	10
Port services in economy A	6
Port services in economy B	4
Depreciation	90
Total expenses	160
Amounts remitted to parent in economy B	170

Source: IMF staff.

Table 8.4 Balance of Payments Treatment of Sample Transactions Shown in Table 8.3

	Economy A		Economy B	
	Credit	Debit	Credit	Debit
Goods				
General merchandise		1010[1]	1010[1]	
Transport services				
Freight	75			75
Passenger				
Other		4	4	
Travel	15			15
Investment income				
Direct investment equity		120[2]	120[2]	
	Net acquisition of financial assets	**Net incurrence of liabilities**	**Net acquisition of financial assets**	**Net incurrence of liabilities**
Direct investment				
Equity capital		1050[3]	1050[3]	
Other investment				
Currency and deposits	6 [=190[5] – 184[4]]		–6 [=184[4] – 190[5]]	

Source: IMF staff.

[1]Consists of the original provision of equipment and the provisions purchased in economy B.

[2]Operating profit (which is less than the amount remitted to parent).

[3]Consists of the initial provision of equipment, the funds provided by the parent, net of amounts remitted in excess of profits.

[4]Consists of payments/receipts for provisions purchased, port services, and amounts remitted to parent.

[5]Consists of funds provided by parent, freight receipts, and passenger fare receipts for internal travel.

Table 8.5 Treatment of Transactions Involving Mobile Equipment—Resident Operator Is a Branch of Parent Enterprise in Economy B (balance of payments of economy A)

	Transaction does not involve operator's bank account in economy A.				Transaction involves operator's bank account in economy A.			
Type of transaction	**Credit**	**Debit**	**Net acquisition of financial assets**	**Net incurrence of liabilities**	**Credit**	**Debit**	**Net acquisition of financial assets**	**Net incurrence of liabilities**
Outright acquisition of equipment from resident of economy A			Appropriate item in financial accounts [increase]	Direct investment—equity capital (B) [increase]	Not applicable			
Outright acquisition of equipment from resident of economy X		Goods—general merchandise (X)		Direct investment—equity capital (B) [increase]		Goods—general merchandise (X)	Appropriate item in financial accounts [decrease]	
Disposal of equipment to resident of economy A			Appropriate item in financial accounts [decrease]	Direct investment—equity capital (B) [decrease]	Not applicable			
Disposal of equipment to resident of economy X	Goods—general merchandise (X)			Direct investment—equity capital (B) [decrease]	Goods—general merchandise (X)		Appropriate item in financial accounts [increase]	
Acquisition of equipment under financial lease; lessor resident of economy A	Not applicable				Not applicable			
Acquisition of equipment under financial lease; lessor resident of economy X		Goods—general merchandise (X)		Other investment—loans (X) [increase]		Goods—general merchandise (X)	Appropriate item in financial accounts [increase]	
Financial lease payments to residents of economy A			Appropriate item in financial accounts [increase]	Direct investment—equity capital (B) [increase]	Not applicable			
Financial lease payments to residents of economy X		Investment income—other investment (X)		Other investment—loans (X) [decrease]Direct investment—equity capital (B) [increase]		Investment income—other investment (X)	Appropriate item in financial accounts [decrease]	Other investment—loans (X) [decrease]

Table 8.5 Treatment of Transactions Involving Mobile Equipment—Resident Operator Is a Branch of Parent Enterprise in Economy B (balance of payments of economy A) (*continued*)

	Transaction does not involve operator's bank account in economy A.				Transaction involves operator's bank account in economy A.			
Type of transaction	**Credit**	**Debit**	**Net acquisition of financial assets**	**Net incurrence of liabilities**	**Credit**	**Debit**	**Net acquisition of financial assets**	**Net incurrence of liabilities**
Operational lease payments to residents of economy A			Appropriate item in financial accounts [increase]	Direct investment—equity capital (B) [increase]	Not applicable			
Operational lease payments to residents of economy X		Other business services—operational leasing (X)		Direct investment—equity capital (B) [increase]		Other business services—operational leasing (X)	Appropriate item in financial accounts [decrease]	
Receipts from carriage of economy As exports to economy X	Transport services—freight (X)			Direct investment—equity capital (B) [decrease][1]	Transport services—freight (X)		Appropriate item in financial accounts [increase]	
Receipts from carriage of economy As imports and other goods belonging to economy A			Appropriate item in financial accounts [decrease]	Direct investment—equity capital (B) [decrease][1]	Not applicable			
Receipts from carriage of economy Xs exports (other than economy As imports)	Transport services—freight (X)			Direct investment—equity capital (B) [decrease][1]	Transport services—freight (X)		Appropriate item in financial accounts [increase]	
Receipts from carriage of economy Xs imports (other than economy As exports) and other goods belonging to economy X	Transport services—freight (X)			Direct investment—equity capital (B) [decrease][1]	Transport services—freight (X)		Appropriate item in financial accounts [increase]	
Receipts from carriage of residents of economy A			Appropriate item in financial accounts [decrease]	Direct investment—equity capital (B) [decrease][1]	Not applicable			
Receipts from carriage of persons from economy X within economy A	Travel (X)			Direct investment—equity capital (B) [decrease][1]	Travel (X)		Appropriate item in financial accounts [increase]	

Table 8.5 Treatment of Transactions Involving Mobile Equipment—Resident Operator Is a Branch of Parent Enterprise in Economy B (balance of payments of economy A) (*concluded*)

	Transaction does not involve operator's bank account in economy A.				Transaction involves operator's bank account in economy A.			
Type of transaction	**Credit**	**Debit**	**Net acquisition of financial assets**	**Net incurrence of liabilities**	**Credit**	**Debit**	**Net acquisition of financial assets**	**Net incurrence of liabilities**
Receipts from carriage of persons from economy X on international routes	Transport services—passenger (X)			Direct investment—equity capital (B) [decrease][1]	Transport services—passenger (X)		Appropriate item in financial accounts [increase]	
Expenses (other than depreciation) in economy A			Appropriate item in financial accounts [increase]	Direct investment—equity capital (B) [increase]	Not applicable			
Expenses (other than depreciation) in economy X		Appropriate item in goods or services (X)		Direct investment—equity capital (B) [increase]		Appropriate item in goods or services (X)	Appropriate item in financial accounts [decrease]	
Amounts deposited by parent enterprise in bank account in economy A	Not applicable						Appropriate item in financial accounts [increase]	Direct investment—equity capital (B) [increase]
Amounts remitted to parent enterprise from bank account in economy A	Not applicable						Appropriate item in financial accounts [decrease]	Direct investment—equity capital (B) [decrease]
Depreciation	Information on depreciation is required to calculate investment income debits							

[1]May be recorded as investment income—direct investment—equity debits if funds remitted to the parent relate to the operating profit of the current or a previous period.

Source: IMF staff.

Table 8.6 Treatment of Transactions Involving Mobile Equipment—Operator Is Resident of Economy B (balance of payments of economy A)

	Transaction does not involve operator's bank account in economy A.				Transaction involves operator's bank account in economy A.			
Type of transaction	**Credit**	**Debit**	**Net acquisition of financial assets**	**Net incurrence of liabilities**	**Credit**	**Debit**	**Net acquisition of financial assets**	**Net incurrence of liabilities**
Outright acquisition of equipment from resident of economy A	Goods—general merchandise (B)		Appropriate item in financial accounts [increase]		Goods—general merchandise (B)			Other investment—currency and deposits (B) [decrease]
Outright acquisition of equipment from resident of economy X	Not applicable						Appropriate item in financial accounts [decrease]	Other investment—currency and deposits (B) [decrease]
Disposal of equipment to resident of economy A		Goods—general merchandise (B)	Appropriate item in financial accounts [decrease]			Goods—general merchandise (B)		Other investment—currency and deposits (B) [increase]
Disposal of equipment to resident of economy X	Not applicable						Appropriate item in financial accounts [increase]	Other investment—currency and deposits (B) [increase]
Acquisition of equipment under financial lease; lessor resident of economy A	Goods—general merchandise (B)		Other investment—loans (B) [increase]		Goods—general merchandise (B)		Other investment—loans (B) [increase]	
Acquisition of equipment under financial lease; lessor resident of economy X	Not applicable				Not applicable			
Financial lease payments to residents of economy A	Invest-ment income—other investment (B)		Other investment—loans (B) [decrease] Appropriate item in financial accounts [increase]		Invest-ment income—other investment (B)		Other investment—loans (B) [decrease]	Other investment—currency and deposits (B) [decrease]

Table 8.6 Treatment of Transactions Involving Mobile Equipment—Operator Is Resident of Economy B (balance of payments of economy A) (*continued*)

	Transaction does not involve operator's bank account in economy A.				Transaction involves operator's bank account in economy A.			
Type of transaction	**Credit**	**Debit**	**Net acquisition of financial assets**	**Net incurrence of liabilities**	**Credit**	**Debit**	**Net acquisition of financial assets**	**Net incurrence of liabilities**
Financial lease payments to residents of economy X	Not applicable						Appropriate item in financial accounts [decrease]	Other investment—currency and deposits (B) [decrease]
Operational lease payments to residents of economy A	Other business services—operational leasing (B)		Appropriate item in financial accounts [increase]		Other business services—operational leasing (B)			Other investment—currency and deposits (B) [decrease]
Operational lease payments to residents of economy X	Not applicable						Appropriate item in financial accounts [decrease]	Other investment—currency and deposits (B) [decrease]
Receipts from carriage of economy As exports	Not applicable						Appropriate item in financial accounts [increase]	Other investment—currency and deposits (B) [increase]
Receipts from carriage of economy As imports and other goods belonging to economy A		Transport services—freight (B)	Appropriate item in financial accounts [decrease]		Transport services—freight (B)			Other investment—currency and deposits (B) [increase]
Receipts from carriage of economy Xs exports (other than economy As imports)	Not applicable						Appropriate item in financial accounts [increase]	Other investment—currency and deposits (B) [increase]
Receipts from carriage of economy Xs imports (other than economy As exports) and other goods belonging to economy X	Not applicable						Appropriate item in financial accounts [increase]	Other investment—currency and deposits (B) [increase]

Table 8.6 Treatment of Transactions Involving Mobile Equipment—Operator Is Resident of Economy B (balance of payments of economy A) (*concluded*)

	Transaction does not involve operator's bank account in economy A.				Transaction involves operator's bank account in economy A.			
Type of transaction	**Credit**	**Debit**	**Net acquisition of financial assets**	**Net incurrence of liabilities**	**Credit**	**Debit**	**Net acquisition of financial assets**	**Net incurrence of liabilities**
Receipts from carriage of residents of economy A		Transport services—passenger (B)	Appropriate item in financial accounts [decrease]		Transport services—passenger (B)			Other investment—currency and deposits (B) [increase]
Receipts from carriage of persons from economy X within economy A	Not applicable						Appropriate item in financial accounts [increase]	Other investment—currency and deposits (B) [increase]
Receipts from carriage of persons from economy X on international routes	Not applicable						Appropriate item in financial accounts [increase]	Other investment—currency and deposits (B) [increase]
Expenses (other than depreciation) in economy A	Appropriate item in goods or services (B)		Appropriate item in financial accounts [increase]		Appro-priate item in goods or services (B)			Other investment—currency and deposits (B) [decrease]
Expenses (other than depreciation) in economy X	Not applicable						Appropriate item in financial accounts [decrease]	Other investment—currency and deposits (B) [decrease]
Amounts deposited by parent company in bank account in economy A	Not applicable						Appropriate item in financial accounts [increase]	Other investment—currency and deposits (B) [increase]
Amounts remitted to parent company from bank account in economy A	Not applicable						Appropriate item in financial accounts [decrease]	Other investment—currency and deposits (B) [decrease]
Depreciation	Not applicable							

Source: IMF staff.

Table 8.6 shows the treatment of similar transactions with regard to mobile equipment operated by a resident of economy B. Both tables show the recording of transactions from economy A's point of view. Where appropriate, the partner economy to a transaction is shown in parentheses. Some transactions shown involve economy X, which is any economy other than A, and can include economy B.

8.61 In both Tables 8.5 and 8.6, transaction treatments are split between those that involve the operator's bank account in economy A and those that do not. In the case of the operator being a resident of economy A, those transactions not involving the operator's bank account in economy A are assumed to involve parent company bank accounts in other economies. These transactions are classified as direct investment, equity capital, unless a debt liability of the operator to the parent company is created. It can be seen that the distinction concerning the involvement of the operator's bank account in economy A affects only financial account entries. The financial aspect of transactions does not affect entries related to the current account.

8.62 Table 8.5 shows that some entries reflecting remitted amounts pertain either to investment income (direct investment—equity) or to the financial account (decreases in direct investment liabilities—equity capital). The reason is that remitted investment income can relate only to operating profits earned in the current or previous periods. Remitted amounts that exceed these profits lead to negative reinvested earnings. In case the remitted investment income is in an excess value that allows it to be considered superdividends, it should be recorded as withdrawals of capital. The calculation of operating profits is discussed in detail in Chapter 13.

8.63 The compiler must determine the collection method that will produce the most acceptable results. It may not be necessary to collect information on all types of transactions shown in Tables 8.5 and 8.6. Some types of transactions can be assumed to be nil or negligible. Much of the information required could come from collections other than a survey of mobile equipment operators. For example, information on imports and exports of goods could come from merchandise trade statistics, and estimates of some services and financial transactions from an ITRS. However, when mobile equipment is considered to be operated by resident companies that are branches of nonresident companies, it will usually be necessary to approach operators to obtain some of the information.

8.64 Occasionally, the compiler may encounter a situation in which it is difficult to determine the residence of a company that operates mobile equipment. For example, the operating company may be registered in two or more economies as a result of special legislation. In such cases, the economy where the head office of the company is located should be considered the operator's economy of residence, and the affiliates in other economies could be considered subsidiaries. Similar problems in determining the residency of the mobile equipment operator could arise when equipment is operated jointly by partners that are residents of two or more economies. In this case, the preferred treatment is to treat the operation of the equipment as a quasi-corporation resident where the equipment is located, with investment from the two partners. See also the discussion ahead on companies that operate seamlessly across multiple economic territories.

Construction activity

8.65 It is quite common for a company resident in one economy to undertake construction activity in another. The first step in determining correct balance of payments treatment for such construction activity (and the information that should be collected) is to establish the residency of the company engaged in the construction work. Paragraph 4.27 of the *BPM6* lists the criteria for the identification of a branch. If these conditions are met, the construction activity should be attributed to a company that is resident in the host economy and involved in a direct investment relationship with a parent company in another economy. If these conditions are not met, the activity should be attributed to a nonresident company (from the point of view of the host economy), and the acquisition by the host economy should be regarded as an import of a service.

8.66 Table 8.7 shows the balance of payments treatment of transactions that are typical of a company engaged in construction activity in an economy other than the one where the company normally operates. Two treatments are shown; the first is in respect of the activity being attributed to a company that is a resident of the host economy (economy A), and the second is in respect of the activity being attributed to a

Table 8.7 Treatment of Construction Activity in Economy A (balance of payments of economy A)

	Construction activity attributed to economy A				Construction activity attributed to economy B			
Type of transaction	**Credit**	**Debit**	**Net acquisition of financial assets**	**Net incurrence of liabilities**	**Credit**	**Debit**	**Net acquisition of financial assets**	**Net incurrence of liabilities**
Provision of equipment by parent company in economy B		Goods—general merchandise (B)		Direct Investment—equity capital (B) [increase]	Not applicable			
Return of equipment to parent company in economy B (valued at depreciated value)	Goods—general merchandise (B)			Direct Investment—equity capital (B) [decrease]	Not applicable			
Acquisition by construction company of goods and services from economy A	Not applicable				Construction in the compiling economy (B)			Other investment—currency and deposits (B) [decrease]
Acquisition by construction company of goods and services from economy X		Appropriate item in goods and services (X)	Appropriate item in financial accounts (X) [decrease]				Appropriate item in financial accounts (B) [decrease]	Other investment—currency and deposits (B) [decrease]
Wages and salaries payable to residents of economy A	Not applicable				Compen-sation of employees (B)			Other investment—currency and deposits (B) [decrease]
Wages and salaries payable to residents of economy X		Compensation of employees (X)	Appropriate item in financial accounts (X) [decrease]				Appropriate item in financial accounts (B) [decrease]	Other investment—currency and deposits (B) [decrease]
Income taxes payable to government of economy A	Not applicable				Secondary income—general government (B)			Other investment—currency and deposits (B) [decrease]

Table 8.7 Treatment of Construction Activity in Economy A (balance of payments of economy A) (*concluded*)

	Construction activity attributed to economy A				Construction activity attributed to economy B			
Type of transaction	**Credit**	**Debit**	**Net acquisition of financial assets**	**Net incurrence of liabilities**	**Credit**	**Debit**	**Net acquisition of financial assets**	**Net incurrence of liabilities**
Amounts deposited by parent company in bank account in economy A		Appropriate item in financial accounts (X) [increase]	Direct Investment—equity capital (B) [increase]			Appropriate item in financial accounts (B) [increase]	Other investment—currency and deposits (B) [increase]	
Interest earned on bank account in economy A	Not applicable				Investment income—other investment (B)		Other investment—currency and deposits (B) [increase]	
Progress payments received by construction company	Not applicable					Other investment—trade credit and advances (B) [increase]	Other investment—currency and deposits (B) [increase]	
Amounts remitted to parent company from bank account in economy A		Appropriate item in financial accounts (X) [decrease]	Direct Investment—equity capital (B) [decrease][1]			Appropriate item in financial accounts (B) [decrease]	Other investment—currency and deposits (B) [decrease]	
Gross value of output produced during period	Information is required to calculate operating profit, which is used in calculation of investment income debits.				Construction services (B)	Other investment—trade credit and advances (B) [decrease]		
Depreciation during period	Information is required to calculate operating profit, which is used in calculation of investment income debits, and the written-down value of any equipment returned to the parent company.							

Source: IMF staff.

[1]May be recorded as investment income—direct investment—equity debits if funds remitted to the parent relate to the operating profit of the current or a previous period.

nonresident company in economy B. It is assumed in both cases that transactions involve a bank account established by the construction company in economy A. The treatment of transactions is presented from the point of view of economy A. When appropriate, the partner economy to a transaction is shown in parentheses. Some transactions shown involve economy X, which is any economy other than A and can include B.

8.67 The treatment and measurement of construction activity in the balance of payments is discussed further in Chapter 12 and Appendix 4.

Companies that operate seamlessly across multiple economies

8.68 Some companies operate seamlessly over more than one economic territory. Such companies, even though they have substantial activity in more than one economic territory, cannot be separated into a parent and branch(es) because they run as a seamless operation and cannot supply separate accounts for each territory. Multiterritory companies are typically involved in cross border activities and include shipping lines, airlines, hydroelectric schemes on border rivers, pipelines, bridges, tunnels, and undersea cables. Similar issues can arise for a societas europaea—that is, a company created under European Union law that is able to operate in any member state. Some nonprofit institutions serving households may also operate in this way.

8.69 It is preferable that a parent and branch(es) be identified separately in the case of a multiterritory company. If possible, companies should be identified in each territory according to the principles for identification of branches. If that is not feasible because the operation is so seamless that separate accounts could not be developed, it is necessary to prorate the total operations of the company into the individual economic territories. The factor used for prorating should be based on available information that reflects the contributions to actual operations (e.g., equity shares, equity splits, splits based on operational factors such as tonnages or wages). The prorating of the company implies that every transaction needs to be split into each component economic territory, a process that may be difficult to implement by the compiler. For example, for the economy of residence, each (apparently) domestic transaction would be split into resident and nonresident components. Equally, companies of those economies outside the territories of the multiterritory company that have transactions and positions with such companies need to make the same split, so as to capture the counterparty claims in a consistent manner. Bilateral agreements between compilers will help to minimize possible asymmetries. This treatment has implications for other macroeconomic statistics, and its implementation should always be coordinated with other statistical interests for consistency. Compilers in each of the territories involved are encouraged to cooperate in order to develop consistent data, avoid gaps, and minimize respondent and compilation burden.

8.70 Analogous treatments can be applied to companies operating in zones of joint jurisdiction—the company will need to be split into companies that are resident in each economy having jurisdiction over the zone, with flows into and out of the company prorated between these companies. Positions and flows between the companies may also need to be developed.

Individuals with multiple residences

8.71 Some individuals have close connections with two or more territories—for example, they have dwellings in more than one territory in which they spend significant amounts of time. For individuals who do not have continuous actual or intended presence in any one territory for one year, the territory of the principal dwelling they maintain is the key consideration. In cases of no principal dwelling, or two or more principal dwellings in different economies, the territory of residence is determined on the basis of the territory in which the predominant amount of time is spent in the year.

8.72 In practice, residence principles are generally not applied to specific individuals, but to broad groups of people. Situations where the principles need to be applied to individuals are generally limited to highly mobile, high-wealth individuals. In these cases, the compiler needs to cooperate to ensure that the residence of these individuals is applied consistently in all of the relevant economies.

Household Sector Transactions and Positions

8.73 Table 8.8 sets out a number of cases for persons who may be involved in balance of payments

Table 8.8 Types of Household Sector Transactions Recorded in the Balance of Payments

Migrating persons, including workers who are residents but not nationals of the economies in which they work	These are persons who, for balance of payments purposes, change their economies of residence when they arrive in the economies where they intend to live for 12 months or more and (if applicable) when they return to their economies of origin. At these times, the transfer of positions in financial assets and liabilities that arises from the change in residence of the individual is recorded as a volume change in the IIP. During the periods that migrating persons stay in the host economy, the compilers in both home and host economies should ensure that any remittances in cash or in-kind they remit to their home economies are recorded appropriately (e.g., as personal transfers, capital transfers, direct investment, or deposits). The compilers should also measure transactions, positions, and income relating to migrating persons' external financial assets and liabilities—including financial claims on, and liabilities to, residents of migrating persons' economies of origin. Migrating persons may make trips abroad during their stay in the host economy, and their passenger fares and travel abroad should be measured on the same basis as passenger fares and travel expenditure of any other resident of the host economy. The treatment of initial and return passenger fares depends upon whether these are paid by migrating persons or their employers. When fares are paid by an employer, the employer's residence determines the economy of residence of the company acquiring the passenger services. When fares are paid by the migrating person, the economy that the migrating person leaves is, by definition, his or her economy of residence and is therefore the economy acquiring the passenger fare service.	For personal transfers, see Chapter 14. For transactions in, and positions of, external financial assets and liabilities, see Chapters 9 and 10. For investment income on external financial assets and liabilities, see Chapter 13. For passenger fares and travel, see Chapter 12. For ITRS methods, see Chapter 4. For surveys of households, see Chapter 3.
Persons who are not residents of the economies where they work	The compilers in both home and host economies should measure: (1) as part of compensation of employees, gross wages and salaries in cash and in kind, including any employers' contributions to insurance, social security, etc. of these workers; (2) as part of travel, any expenditure of the workers on goods and services in the economies of employment; and (3) as part of secondary income, income taxes and social contributions payable to the host economy's government, including social contributions paid by employers.	For compensation of employees, see Chapter 13. For travel, see Chapter 12. For secondary income, see Chapter 14. For ITRS methods, see Chapter 4. For surveys of businesses and households, see Chapter 3.
Persons (e.g., local staff of foreign embassies) who work for entities that are not residents of the economies where the entities are located	The compilers in both home and host economies should measure, as part of compensation of employees, gross wages and salaries, including any employers contributions to insurance, social security, taxes, etc. of these workers.	For compensation of employees, see Chapter 13. For secondary income, see Chapter 14. For surveys of businesses and households, see Chapter 3.

Table 8.8 Types of Household Sector Transactions Recorded in the Balance of Payments (*concluded*)

Students studying in foreign economies	The compilers in both home and host economies should measure: (1) as part of travel, student acquisitions (regardless of whether actually paid for or received in kind) of goods and services, including education services, in the host economy; (2) as part of compensation of employees, any gross wages and salaries, including any employers contributions to insurance, social security, taxes, etc., and any goods and services in kind received by students while working in the host economy; and (3) as part of secondary income, taxes payable to the host economys government, including social contributions paid by employers.	For travel, see Chapter 12. For compensation of employees, see Chapter 13. For secondary income, see Chapter 14. For surveys of businesses and households, see Chapter 3.
Medical patients receiving treatment in foreign economies	The compiler should measure, as part of travel, patient expenditures, including those for medical services, on goods, and on services in the host economy.	For travel, see Chapter 12.
Persons, excluding transport crews, traveling for business or personal reasons	All acquisitions of goods and services for personal use, regardless of whether paid for by the visitor or other short-term individual traveling abroad or provided in kind by residents of the host economy, in the host economy should be recorded as part of travel. Separate data should be compiled for business and other travel. Paid holidays by an employer should be treated as personal rather than business travel. Visitors' and other short-term individuals' traveling abroad international passenger fares should be measured as part of passenger transport services. Travel services may also be acquired by students, health care patients, and persons working in economies other than the ones in which they are residents. The balance of payments treatment of these persons was discussed previously.	For travel, see Chapter 12.
Persons such as transport crews staying in an economy for a short period of time	The compiler should record, as part of travel, the expenditure of these persons on goods and services in the economy visited. The expenditures of crews should be recorded as a part of business travel.	For travel, see Chapter 12.
Persons having external financial assets and liabilities	The compiler should measure transactions, positions, and income relating to external financial assets and liabilities of individuals and households.	For transactions in and positions of external financial assets and liabilities, see Chapters 9 and 10. For investment income, see Chapter 13. For household surveys, see Chapter 3.

Source: IMF staff.

transactions. The table describes the treatment of these transactions in the balance of payments and indicates chapters where information on sources and methods can be obtained. The list of categories in Table 8.8 should not be regarded as an exhaustive statement of household transactions; rather, it is illustrative of the more common household transactions and related balance of payments treatments.

Regional Arrangements

8.74 Currency unions and economic unions play an increasingly important role in the world's economy. Similarly, customs arrangements between economies can present challenges for the balance of payments compiler. This section summarizes the specific features of the compilation balance of payments statistics where regional arrangements exist. Appendix 3 of the *BPM6* provides a detailed discussion of regional arrangements. Appendix 5 of this *Guide* provides information on the related issue of compiling statistics by partner economy.

Currency and economic unions

8.75 For statistical purposes, a currency union is defined as a union to which two or more economies belong and that has a regional central decision-making body, commonly a currency union central bank, endowed with the legal authority to conduct a single monetary policy and issue the single currency of the union. A currency union is established by means of a formal intergovernmental legal agreement (e.g., a treaty). The economic territory of a currency union consists of the economic territory of the Currency Union economies that make up the currency union, plus the currency union central bank. Any other regional organizations that comprise the same or a subset of the same economies are included in the currency union.

8.76 For statistical purposes, an economic union is a union to which two or more economies belong. Economic unions are established by means of an intergovernmental legal agreement among sovereign economies with the intention of fostering greater economic integration. In an economic union, some of the legal and economic characteristics associated with a national economic territory are shared among different economies. These elements include: (1) the free movement of goods and services within the economic union and a common tax regime for imports from economies outside the economic union; (2) the free movement of capital within the economic union; and (3) the free movement of (individual and legal) persons within the economic union. Also in an economic union, specific regional organizations are created to support the functioning of the economic union. Some form of cooperation/coordination in fiscal and monetary policy usually exists within an economic union.

8.77 Like in the case of economic territory of a currency union, an economic union territory consists of the economic territory of the member economies and the regional institutions that comprise the same or a subset of the same economies.

8.78 Net transactions and positions for the currency union or economic union should not be compiled as the aggregation of the national data of the members of the union, plus those of the institutions of the union. This approach would be inadequate because transactions between economies belonging to the union would be included on both sides of the accounts. Furthermore, the compilation would be subject to distortions in case of asymmetric recording of transactions or positions within the union. In this context, compilers within the union should separately identify intra- and extra-union transactions and positions within the accounts.

8.79 There is also a need for increased cooperation and coordination between compilers in different economies within a currency union or economic union. The *BPM6* allows for discretion by the compiler in choice of methods to approximate the concepts defined in the manual (e.g., there are a number of acceptable alternatives for the valuation of equity in direct investment enterprises (DIENT). Compilers within a currency union or economic union should consider coordinating their treatments so that common methods are applied.

8.80 The coordination extends to the recording of large and complex transactions involving multiple economies (e.g., where a large import to one economy is financed from a bank account in a third economy). To the extent that compilers in the member economies treat the transactions differently, imbalances could be created in the accounts for the currency union or economic union as a whole.

8.81 This coordination is not straightforward as national statistical confidentiality rules usually do not allow national compilers to share confidential information with statistical bodies outside their national borders. To facilitate the maintenance and improvement of data quality through data checking, the establishment of an appropriate statistical data confidentiality regime is desirable at least. Such a regime would ideally address the sharing and protection of confidential data both among national compilers and between national compilers and compilers for the

currency union or economic union in order to enable the compilation of consistent and reliable aggregated statistics for the union.

8.82 Other economies outside the union may find it analytically useful to identify certain currency and/or economic unions among their partners. Corresponding data should be equal to the sum of transactions or positions with the economies belonging to the union together with the institutions of the union where appropriate.

8.83 In case the composition of the currency union or economic union changes over time, the compiler may decide either to show time series according to the latest composition of the currency union or economic union, or to show the currency union or economic union according to its composition at each point in time, and to take changes in composition into account in positions as another change in volume.

Customs arrangements

8.84 Regional integration can take the form of customs arrangements between several economies. In general, these customs arrangements, based on a common customs tariff vis-à-vis nonmember economies, do not raise specific balance of payments issues. However, when customs unions generate cross border flows, such as through a revenue-sharing formula, the recording of transactions and positions in the international accounts is affected by the institutional and administrative arrangements of the customs union.

8.85 In order to assess the correct treatment to apply to the cross border flows, the compiler needs to understand whether levying duties is the responsibility of a designated agency or the member economies; and whether the agency has, all members have, or one member has the responsibility of collecting the duties.

8.86 As with economic and currency unions, cooperation between compilers in the various member economies within the customs arrangement should coordinate so that the treatment of the customs arrangement is consistent between the various members.

Analysis of Net Errors and Omissions

8.87 The structure of the balance of payments naturally yields a number of balancing items, including the balance on trade, the balance on the current account, net lending, and so forth. Chapter 14 of the *BPM6* describes the analysis of the balance of payments and IIP and the balancing items incorporated within the presentation of the accounts.

8.88 The compilation of the balance of payments involves bringing together information from a range of sources. Although the balance of payments is, in principle, in balance, imbalances will occur due to imperfections in the source data and compilation. These imbalances make up the net errors and omissions item.

8.89 While net errors and omissions is a residual item, the value of net errors and omissions should be analyzed by the compiler. The size and trends may help identify data problems, such as coverage or misreporting. Patterns in net errors and omissions may provide useful information on data problems. For example, a consistent sign indicates a bias in one or more components. Although net errors and omissions can help point to some problems, it is an incomplete measure because errors and omissions in opposite directions offset each other.

8.90 A large or volatile value of net errors and omissions hampers analysis of the balance of payments. While it is not possible to give guidelines on an acceptable size for net errors and omissions, it can be assessed by the compiler in relation to other items, such as GDP, current account balance, positions data, and gross flows. Statistical discrepancies may also arise in the IIP statement. In principle, the reconciliation statement provides a fully reconciled measurement of the changes between an opening position and a closing position; however, if these components are independently measured, discrepancies may arise because of data imperfections.

Revisions

8.91 Revisions were discussed earlier in this chapter. Revisions that increase the magnitude of net errors and omissions do not necessarily indicate that the overall quality of the accounts is decreasing. It is reasonable to presume that revisions are being made to improve the accuracy of the revised components. A consequence of increasing the accuracy of the components is an improved accuracy of the net errors and omissions remaining in the revised components and that are present in the other components. If the net errors and omissions term has increased, then errors or omissions that previously existed in the items that were revised were masking errors and omissions in other components.

8.92 If revisions over time result in consistently adjusting the net errors and omissions in the same direction (i.e., either usually increasing or usually decreasing), then this provides an indication of persistent biases in the initial data. Efforts should be made by the compiler to identify the source of the biases and remove them. If the bias is inherent in the source data used for preliminary estimates, then analysis of the changes in net errors and omissions over time can inform the introduction of an adjustment that should be made to the initial data. In practice the compiler may often make appropriate adjustments to the results from less reliable data sources to allow for known biases.

Analysis over Time

8.93 As indicated earlier, net errors and omissions of consistent sign over a period of time are indicative of persistent biases in one or more components. To the extent possible, the components should be identified (usually the compiler will have an understanding of deficiencies in source data and where biases might be occurring), and improvements made to the quality of the source, alternative sources identified, or adjustments made to offset the impacts of the biases. If the source cannot be identified, metadata should be provided as to relative quality of credits / net increases in liabilities against debits / net increases in assets to enable users to make their own assessments of where weaknesses may lie.

8.94 Where the net errors and omissions term fluctuates from period to period, this may be evidence of timing differences on volatile items—such as financial accounts items or large, "lumpy" current account transactions.

8.95 Large net errors and omissions that arise in periods of exchange rate fluctuation may suggest problems with methods of currency conversion used to compile the accounts.

8.96 Net errors and omissions that appear to change when the behavior of some items changes may be evidence of relationships that indicate inadequate coverage of certain types of transactions. For example, a positive net errors and omissions item coinciding with an increase in imports may suggest undercoverage of trade credit liabilities.

Recording Transactions in Balance of Payments

8.97 The balance of payments requires that transactions are recorded on a double-entry basis—that is, each transaction is recorded as consisting of two entries and the sum of the credit entries and the sum of the debit entries is the same. The sum of the balances on the current and capital accounts represents the net lending (surplus) or net borrowing (deficit) by the economy with the rest of the world. This is conceptually equal to the net balance of the financial account.

8.98 Transactions can be recorded on a gross and on a net basis. Aggregations or combinations in which all elementary items are shown for their full values are called gross recordings (e.g., all interest credits are aggregated separately from all interest debits). Aggregations or combinations for which the values of some elementary items are offset against the same items that have an opposite sign are called net recordings (e.g., acquisitions of foreign currency are netted against the sales of the foreign currency). The different accounts within the balance of payments can be distinguished according to the nature of the economic resources provided and received as well as their recording of transactions.

8.99 For the current and capital accounts, transactions are required to be reported on a gross basis. The current account shows transactions in goods, services, primary income, and secondary income between residents and nonresidents; the capital account shows credit and debit entries for nonproduced nonfinancial assets, as well as capital transfers.

8.100 In contrast to the current and capital accounts, the financial account registers transactions on a net basis, which are shown separately for financial assets and liabilities (i.e., net transactions in financial assets show acquisition of assets less reduction in assets, not assets net of liabilities). The net recording principle should be applied at the lowest level of classification of financial instruments, taking into account the functional category, institutional sector, maturity, and currency classifications, where applicable. Part F of the *BPM6*'s Chapter 3 provides more information concerning aggregation and netting.

8.101 As data on a gross basis for financial assets and liabilities are useful for analyzing market turnover and market behavior, and for measuring service fees generated (e.g., a small net value may be the outcome of large gross flows), data on drawings and repayments on loans or acquisitions or disposals of other instruments could be made available—where

Table 8.9 Calculation of Financial Account Balance

Financial account (by functional category)	Net acquisition of financial assets	Net incurrence of liabilities	Balance
Direct investment	–5	1	–6
Portfolio investment	–2	–8	6
Financial derivatives	21	13	8
Other investment	15	–4	19
Reserve assets	4		4
Total changes in assets/liabilities	33	2	
Net lending (+)/net borrowing (–) (from financial account)			*31*

Source: IMF staff.

practical—to users on a supplementary basis. The data could be provided comprehensively or only for particular components.

8.102 The balance in the financial account is calculated by subtracting transactions in liabilities from transactions in assets. An example of the calculation of balance on the financial account (net lending/net borrowing) is presented in Table 8.9. Net errors and omissions in *BPM6* are calculated as the balance on the financial account minus the sum of the balances on the current and capital accounts.[5] For example, if the current account balance is *plus* 13, the capital account balance is *minus* 8, and the financial account balance is *minus* 12, then net errors and omissions is *minus* 17 (see *BPM6*, paragraph 2.24). Mathematically, a negative figure of net errors and omissions indicates an overall tendency that:

- the value of credits in the current and capital accounts is too high; and/or
- the value of debits in the current and capital accounts is too low; and/or
- the value of net increases in assets in the financial account is too low; and/or
- the value of net increases in liabilities in the financial account is too high.

8.103 Table 8.10 displays the changes in sign convention from the fifth edition of the *Balance of Payments Manual (BPM5)* to the *BPM6*. In the *BPM6*, gross credit and gross debit entries in the current and capital accounts are recorded with positive signs in the respective column, while in the *BPM5*, all debits were recorded with negative signs. Furthermore, in the *BPM6*, the headings of the financial account have been changed from "credits and debits" to "net acquisition of financial assets" and "net incurrence of liabilities"—that is, all changes due to credit and debit entries are recorded on a net basis separately for financial assets and liabilities.

8.104 Table 8.10 presents a numerical example on the use of signs in balance of payments under the *BPM6* versus *BPM5* convention. In the example, the

[5]The sign for net errors and omissions does not change from the *BPM5* to the *BPM6* presentation.

Table 8.10 Changes in Sign Convention from the *BPM5* to the *BPM6*

	BPM6	***BPM5***
Current and capital accounts	**Both credits and debits** are registered with **positive sign**.	**Credits** with **positive sign** and **debits** with **negative sign**
Financial account	**Increases** in assets and liabilities with **positive signs**, and **decreases** in assets and liabilities with **negative** *signs*	**Increases** in assets and **decreases** in liabilities are debits with negative **signs**, and **decreases** in assets and **increases** in liabilities are credits with **positive signs**.
Financial account balance (so-called "net lending (+)/net borrowing(–)" in the *BPM6*)	Calculated as change in **assets** *minus* change in **liabilities**	Calculated as change in **assets** *plus* change in **liabilities** (credits plus debits)

Source: IMF staff.

following assumptions are made for the reported period of economy A:

(1) Exports and imports of goods 150 and 200 units, respectively

(2) Exports and imports of services 50 and 180 units, respectively

(3) Investment income received 30 units and paid 110 units

(4) Grants for current needs received 70 units

(5) Investment grants received 85 units

(6) Direct investment in equity capital received by resident companies 115 units

(7) Purchase of debt securities issued by nonresidents 30 units

(8) Disbursement of loans from nonresidents 75 units and repayment of principal for loans to nonresidents 40 units

(9) Disbursement by the central bank of 65 units of loan from the IMF used to increase the reserve assets.

Table 8.11 Example of Sign Convention in the *BPM6* versus the *BPM5*

	BPM6			***BPM5***	
	Credit	**Debit**		**Credit**	**Debit**
Current account	*+300*	*+490*	*Current account*	*+300*	*–490*
Goods	+150	+200	Goods	+150	–200
Services	+50	+180	Services	+50	–180
Primary income	+30	+110	Income	+30	–110
Secondary income	+70		Current transfers	+70	
Current account balance ***(credit minus debit)***		*–190*	*Current account balance* ***(credit plus debit)***		*–190*
Capital accounts	*+85*		*Capital accounts*	*+85*	
Capital transfers	+85		Capital transfers	+85	
Capital account balance ***(credit minus debit)***	*+85*		*Capital account balance* ***(credit plus debit)***	*+85*	
	Net acquisition of financial assets	**Net incurrence of liabilities**		**Credit**	**Debit**
Financial account	*+110*	*+215*	*Financial account*	*+815*	*–710*
Direct investment, equity and investment fund shares		+115	Direct investment in reporting economy, equity	+115	
Portfolio investment, debt securities	+30		Portfolio investment, assets, debt securities		–30
Other investment, currency and deposits	+150		Other investment, assets, currency and deposits		–150
	–200			+200	
	+50				–50
	–180			+180	
	+30				–30
	–110			+110	
	+70				–70
	+85				–85
	+115				–115
	–30			+30	
	+75				–75
	–40			+40	

Table 8.11 Example of Sign Convention in the *BPM6* versus the *BPM5* (*concluded*)

BPM6			***BPM5***		
	Net acquisition of financial assets	**Net incurrence of liabilities**		**Credit**	**Debit**
Other investment, loans		+75 –40 +65	Other investment, liabilities, loans	+75 +65	 –40
Reserve assets	+65		Reserve assets		–65
Net lending (+)/ net borrowing(–) ***(net acquisition of financial assets minus net incurrence of liabilities)***	*–105*		*Financial account balance* ***(credit plus debit)***	*+105*	

Source: IMF staff