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Division on Investment and Enterprise

UNCTAD Training Manual on Statistics for FDI and the Operations of TNCs

Volume II

Statistics on the Operations
of Transnational Corporations



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Note

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Details and percentages in tables do not necessarily add up to totals because of rounding.

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Preface

Many developing countries, including the least developed countries, have attracted only small amounts of foreign direct investment (FDI) despite their efforts at economic liberalization in an increasingly globalizing world. Moreover, FDI inflows are highly concentrated in a small number of countries. It is generally well known that the modest levels of, and disparity in, the distribution of FDI inflows, are due to factors such as a deficient regulatory framework, a poor business environment and opportunities, weak FDI policies and incentives, poor institutional frameworks, limited market access, unfavourable comparative costs and lack of political stability. However, what is less known is that the scarcity, unreliability and inconsistency of data collecting and reporting systems in many developing countries cause severe problems in formulating policies and strategies relating to FDI, which in turn affects their attractiveness as host countries.

Against this background, UNCTAD has prepared this three-volume manual with the aim of helping developing countries to enhance the capacity of their government agencies to compile, analyse and disseminate data on FDI and the operations of transnational corporations (TNCs), based on internationally recommended standards. The manual should enable national authorities to maintain high-quality and up-to-date databases by providing them with concrete and practical guidance on how to collect and report FDI and TNC statistics (volumes I and II) and how to establish an FDI statistical system (volume III). The manual comprises the following volumes:

Volume I: FDI Flow and Stock Data

Volume II: Statistics on the Operations of Transnational Corporations

Volume III: Collecting and Reporting FDI/TNC Statistics:
Institutional Issues

Volume I stresses the importance of collecting data on FDI flows and stocks in line with international definitions and standards. It provides definitions and an overview of the existing standards set or used by international organizations and national compilers. It

then discusses and evaluates different approaches to compiling FDI flow and stock data, identifies data complexities and problems, and presents solutions to each of them. International guidelines on FDI data compilation need to take into account recent practices emanating from globalization, and therefore they need to be constantly updated to reflect current practices (such as mergers and acquisitions) and new requirements. This volume therefore also discusses issues and areas that need further attention.

Data on the activities of foreign affiliates can be an important complement to the FDI data contained mainly in balance of payments (BOP) statistics (volume I). This is the subject of *volume II*. In many cases, this data set conveys a clearer picture of the economic activities of foreign affiliates and their importance to the host economy. Financial and operations data, such as those relating to assets, employment, exports and imports, are important as they enable policymakers to assess the economic impact of FDI and to design policy measures geared to maximizing the benefits of inward FDI for their country. Data on the operations of home-country TNCs are equally important to enable policymakers to monitor the performance of these TNCs' affiliates and assess the integration of their country into the global economy through its outward investment.

Information of such type is more difficult to obtain than BOP-related information. It requires extra effort by statistics agencies, often through surveys of foreign affiliates and TNCs operating in the domestic economy. *Volume II* contains clearly defined instructions and definitions to help officials from relevant institutions in developing countries to compile and process financial and operations data of TNCs in their economies.

Volume III provides an overview of the methodologies being used in the countries where FDI and TNC data are collected and reported. The aim is to examine how the surveys are actually conducted and how the work of various institutions is coordinated. Based on the findings, best practices of standard survey questionnaires are provided. Countries that have no "dedicated" office for reporting FDI statistics are advised to establish such an office. The volume discusses where and how an FDI statistics office could be established, the different sources of FDI statistics, and how their data are reported. It stresses the importance of

coordination and harmonization of reporting and dissemination of FDI statistics.

Volume III also aims to assist developing countries in achieving the development objective of strengthening cooperation within their regions and with other regions in the area of FDI and TNC data collection and coordination through human resources development and capacity-building.

All three volumes of this manual cover the elements required for the country's FDI statistics authorities to collect and report FDI and TNC data effectively. It is hoped that the manual, together with some training, will help developing countries establish FDI and TNC statistical systems that will be able to present useful, timely, accurate and comparable FDI and TNC statistics. Each volume attempts to present relevant issues, identifying problems and providing solutions that are illustrated by concrete examples. Best practices are also suggested. These examples and practices are collected from various countries, including developing countries.

September 2009

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UNCTAD

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Abbreviations

BEA	Bureau of Economic Analysis (United States)
BD3	Benchmark Definition of Foreign Direct Investment, 3 rd Edition, 1996 (of OECD)
BD4	Benchmark Definition of Foreign Direct Investment, 4 th Edition, 2008 (of OECD)
BOP	balance of payments
BPM5	Balance of Payments Manual, fifth Edition, 1993 (of IMF)
ECB	European Central Bank
EU	European Union
Eurostat	Statistical Office of the European Communities
FATS	Foreign Affiliates Statistics
FDI	foreign direct investment
f.o.b.	free on board
GATS	General Agreement on Trade in Services
IIP	international investment position
IMF	International Monetary Fund
INSEE	Institut National de la Statistique et des Etudes
ISIC	International Standard Industrial Classification of All Economic Activities
ITRS	international transactions reporting system
MSITS	Manual on Statistics of International Trade in Services
OECD	Organisation for Economic Co-operation and Development
R&D	research and development
SIRENE	French computerized directory of companies and establishments
SNA	System of National Accounts 1993
SPE	special purpose entities
TBP	technology balance of payments
TNC	transnational corporation
UBO	ultimate beneficial owner
UNCTAD	United Nations Conference on Trade and Development
VAT	value added tax
WTO	World Trade Organization

II.1. The purpose of this volume is to clarify concepts, definitions and methodologies needed to collect and compile information on the operations of transnational corporations (TNCs) – in their respective economies. Its aim is to provide practical guidance on collecting statistics on the operations of home-based as well as foreign-based TNCs. Concrete and useful examples are collected from various countries to illustrate

key points. Chapter I highlights the importance of compiling data on TNCs' operations, and reviews the main issues and concepts relating to foreign ownership and investment. Chapter II discusses the selection and definition of operational variables. Chapter III provides an overview of various data and compilation issues, and Chapter IV offers guidance in designing and conducting surveys of foreign affiliates.

INTRODUCTION

II.2. The rapid global expansion of TNCs through foreign direct investment (FDI) has resulted in their becoming the dominant force in international commerce. In 2001, the world's 65,000 TNCs and their 850,000 foreign affiliates accounted for about two thirds of world trade (UNCTAD, 2002). Their role in international production in the world economy also makes them “the main force in international economic integration”. More and more countries are recognizing the considerable impact that FDI can have on host countries as well as the range of costs and benefits that it can bring (box II.1). As a result, it has become necessary to provide

policymakers with a broader array of statistical measures than has hitherto been available in most countries. The need for such data is being increasingly acknowledged in developed and developing countries, as well as in countries with economies in transition. Major TNCs have also recognized this need, and they have played a leading role in developing new data sources and methodologies.

II.3. Assessing the impact of inward FDI (i.e. direct investment in the domestic economy) and outward FDI (i.e. direct investment abroad by domestic enterprises) requires a considerable amount of statistical information. Data on

Box II.1. Globalization: the impact of TNCs

As of end 2007 there were some 79,000 TNCs engaged in international production, with about 790,000 affiliates abroad. The total FDI stock reached over \$15 trillion in 2007. Value added by TNCs was estimated at \$6 trillion and total sales at \$31.2 trillion, compared to world exports of \$17 trillion. Foreign affiliates accounted for an estimated 11 per cent of world GDP in 2007 compared to 7 per cent in 1990 (UNCTAD, 2008). The value of FDI flows is an obvious measure of the scope of TNCs. However, it is difficult to assess the full impact of FDI flows alone, as FDI figures do not necessarily show the total value of investments by TNCs in instances when affiliates raise funds in domestic or international markets. For example, affiliates of Japanese TNCs raised \$3 billion from local banks alone in 1998, equivalent to 13 per cent of Japanese FDI outflows (UNCTAD, 2002: 14–15). Data on the operations of TNCs and their

Source: UNCTAD, 2008.

affiliates abroad are an additional measure of the impact that TNCs may have on home and host countries. Some figures illustrate the growing importance of TNCs' activities over the past two decades:

- The number of employees in foreign affiliates worldwide is estimated to have been 81.6 million in 2007, compared with 21.5 million in 1982;
- Foreign affiliates generated a gross product of about \$6.1 trillion in 2007, compared with \$0.6 trillion in 1982;
- Total sales of foreign affiliates were about \$31.2 trillion in 2007, compared with \$2.7 trillion in 1982;
- Exports undertaken by foreign affiliates in 2007 were estimated at \$5.7 trillion, compared with \$0.7 trillion in 1982);
- Foreign affiliates held total assets of about \$68.7 trillion in 2007, compared with \$2.2 trillion in 1982.

FDI generated for the balance of payments (BOP) and international investment position (IIP) cover only part of such investment.

II.4. Statistics on the operations of TNCs can complement and enrich the use of BOP statistics. Operational data can convey a

more specific and comprehensive picture of the operations of TNCs and their economic significance. Such data contain a broad array of statistical measures on the production and financial activities of TNCs, thus offering a deeper insight than would otherwise be available. Operational data may

include statistics that measure the impact of direct investment on the labour market, on technology transfer, innovation, and research and development (R&D), on the sources and uses of investment funds, on international trade, and on economic efficiency and competition. They also offer a more diverse set of data for gauging the level of foreign ownership for the economy as a whole, as well as information for specific sectors and, more suitably, at more detailed levels of industrial classification than BOP data.

II.5. Policymakers and analysts need data classified by economic activity and geographic location to fully understand the impact of FDI at both the macro and micro levels. They need to understand the impact of foreign investment on individual industries in order to be able to assess which industries and sectors are most affected, what the levels of FDI concentration are in individual industries (particularly in ones of national importance) and how these levels are changing over time and as a result of government policies and economic and political events. While it is generally difficult to collect very detailed information on activities at the enterprise level, data can usually be

compiled at a more disaggregated level of industrial classification. The need for geographic detail is also quite clear. Not only is it necessary to know the levels of and changes in FDI in general, but it is also important to know which countries the investment is coming from and going to. Apart from the economic implications, there are important administrative needs as well. Such knowledge is important to governments for considering tax, investment and employment treaties or for helping them decide on where to promote trade and investment and to locate foreign trade missions, for example.

II.6. Thus the availability of operational data and additional financial data can greatly enhance the ability of policymakers to assess the economic impact of FDI and to design policies aimed at maximizing the benefits of inward FDI for their country. At the same time, data on the foreign operations of home-country TNCs are also required for monitoring the performance of affiliates and assessing the integration of the country in the global economy through outward investment. Information of this type is often more difficult to obtain than BOP-related information. It requires extra effort by the institutions concerned to compile

such information, often through surveys of foreign affiliates and TNCs in the domestic economy.

II.7. The purpose of this volume is to provide government officials with a set of clearly defined concepts, definitions, approaches and guidelines to enable them to collect and compile information on the operations of home-based as well as foreign-based TNCs. In other words, it addresses both inward and outward FDI and the economic activities of these firms (as shown in figure II.1 on scope of coverage). An important element of this volume is that it provides numerous practical cases and examples of how countries address the various methodological issues in the compilation of operational data or tables.

II.8. Volume II is organized into four chapters:

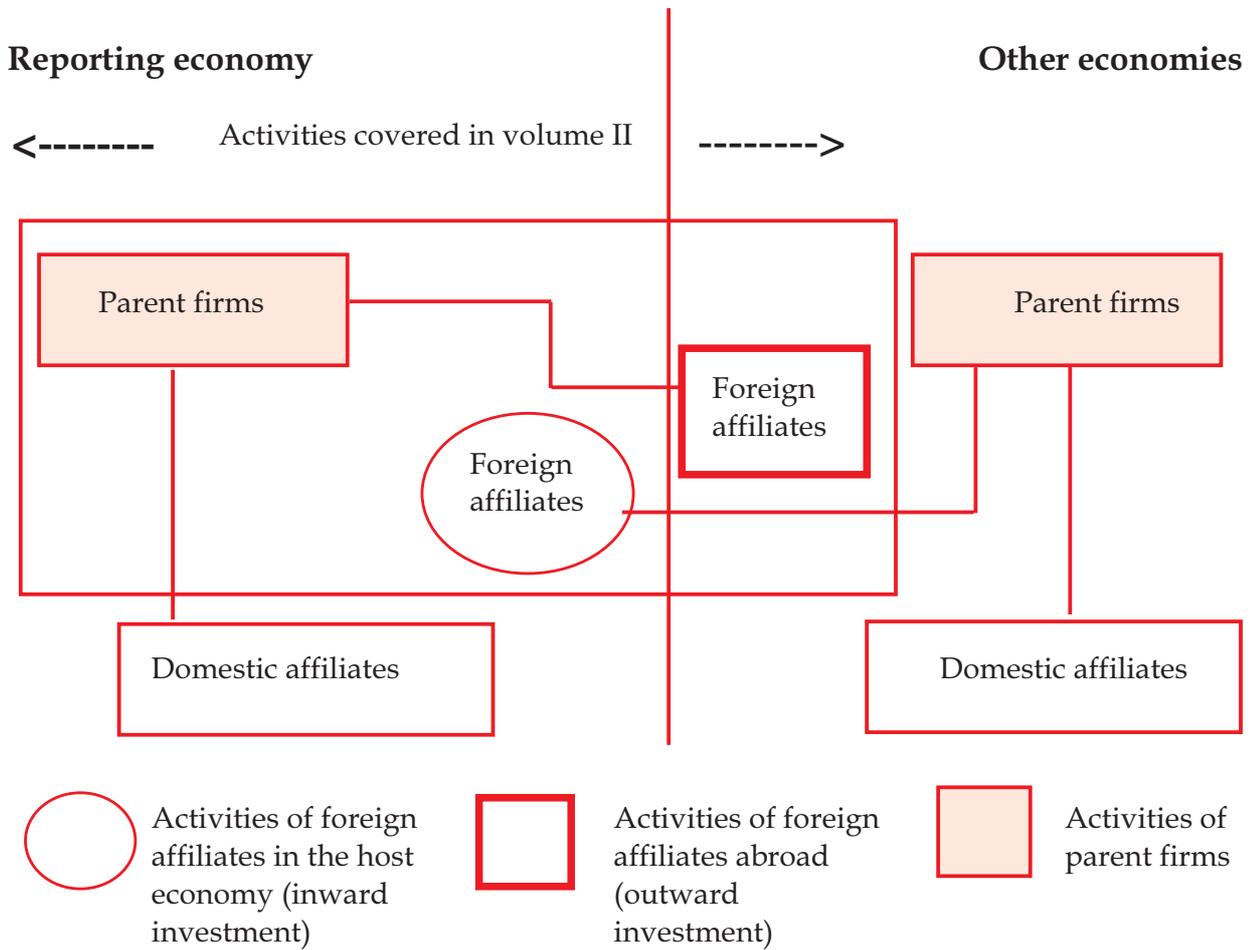
- (a) Chapter I examines the issues and concepts involved in measuring the activities of TNCs and their foreign affiliates. It reviews international standards and the concepts of residence, valuation and timing, and provides a definition of key terms such as TNCs, foreign affiliates and FDI. It examines such practical issues as geographic and economic classification systems, and which statistical unit should be used for collecting statistics on the operations of TNCs: the establishment, enterprise or enterprise group. The chapter also provides guidance on how to handle indirect ownership situations (i.e. the treatment of ultimate beneficial owners versus immediate owners), the attribution of variables, degree of ownership versus foreign control and situations where several investors have direct investment interests.
- (b) Chapter II examines the statistical variables that can be used for measuring the activities of TNCs and their foreign affiliates. Chapter II evaluates and makes recommendations on the many variables that can be used to measure the impact of TNCs' operations in such key economic areas as international trade in goods and services, labour and capital markets, and research and development. It also provides definitions of the main operational variables.
- (c) Chapter III provides an overview of alternative data sources and other compilation issues. It emphasizes the

importance of investigating existing sources of ownership, investment and operational data, including administrative sources and any enterprise and establishment surveys that are already being used for collecting BOP and other statistics. Also covered are techniques for merging data records, consolidated reporting, special considerations affecting certain economic activities such as construction, shipping and insurance, various legal issues, techniques for converting data expressed in foreign currencies, and the need for preparing a development plan and setting priorities.

- (d) Chapter IV provides guidance on designing and conducting surveys of TNCs and their foreign affiliates. It reviews the steps involved, from identification of foreign affiliates and the use of

exploratory surveys to the design of questionnaires and the compilation and publication of the information collected. These steps include setting up and maintaining a register of respondents, designing the questionnaires and surveys, conducting a survey, developing techniques for dealing with non-response and under-coverage, corroborating raw and final data, and storing and processing the data. The chapter also examines possible data collection strategies, including the use of censuses, sampling, benchmark surveys and reporting thresholds. It discusses techniques for obtaining the cooperation of survey respondents, problems or “respondent burden”, protecting the confidentiality of data and alternative techniques for collecting survey data.

Figure II.1. Scope of coverage of volume II



Source: UNCTAD.

CHAPTER I. MEASURING THE ACTIVITIES OF TNCs: CONCEPTS AND DEFINITIONS

II.9. This chapter examines the basic issues involved in measuring the activities of TNCs. It reviews international standards and such important concepts as those of residence, valuation and timing, and provides definitions of TNCs, foreign affiliates and other key terms. In addition, it examines such practical issues as geographic and economic classification systems, which statistical unit should be used to collect statistics on TNCs (the establishment, enterprise or enterprise group), how to treat indirect ownership situations (the treatment of ultimate beneficial owners versus immediate owners), the attribution of variables, degree of ownership versus foreign control and situations where several investors have direct investment interests.

II.10. In essence, statisticians wishing to produce meaningful statistics on the domestic operations of foreign affiliates (inward investment) are faced with two broad tasks. They must identify which domestic enterprises are foreign affiliates and determine what useful data

need to be collected concerning the operations of those affiliates. Similarly, in order to collect operational data on domestic enterprises with affiliates abroad and on those affiliates (outward investment), statisticians must first identify investing firms and then collect the relevant operational data. In other words, it is recommended that countries collect data both on parent firms and their foreign affiliates.

II.11. The concepts used for collecting operational statistics should be consistent with established national and international statistical principles. While statistics on foreign affiliates' operations are of interest in their own right, much of their value stems from the insights they can provide vis-à-vis the national data for the economy as a whole. Operational statistics should provide yardsticks for assessing the impact of FDI on the domestic economy and for evaluating the performance of domestically based TNCs. Operational data should use the same methodology as that used for the national data to enable a comparison of the two

sets of data. It is widely recognized that FDI statistics often suffer from a lack of comparability. This hampers critical economic research, analysis and policy development. It also distorts the views and understanding of the contributions of FDI and TNCs in global economic development. While international efforts are being made to improve comparability of FDI statistics, it is also important that the methodology for collection of operational data is consistent with internationally accepted definitions so as to enrich FDI statistics and to facilitate international comparisons.

A. Defining transnational corporations and foreign affiliates

1. International standards¹

II.12. The methodology for compiling statistics on the operations of TNCs is not as well developed as that used for measuring FDI flows and stocks (see volume I). For most countries, the collection of statistics on the activities of TNCs is a relatively new endeavour. Nevertheless, a growing number of countries are now compiling such statistics as

¹ Many of the major reference documents are available on the Internet.

the need for such data is being increasingly acknowledged both by national and international bodies.

International organizations such as UNCTAD, the Organisation for Economic Co-operation and Development (OECD), the International Monetary Fund (IMF), the World Trade Organization (WTO), the United Nations Statistics Division and the Statistical Office of the European Communities (Eurostat) have played a key role in arguing for this need, and in developing the concepts and methodology necessary for the purpose.

II.13. The concepts relating to foreign investment and foreign affiliation (including the concepts of ownership, residence and valuation), which are recommended for use in operational statistics, are based on concepts developed by the United Nations and the IMF. These organizations initially developed the concepts for use in the System of National Accounts (SNA) and the BOP, but have since elaborated on them. There is now general agreement on all but a few issues.²

² The main issues are whether data should be collected only for majority-owned foreign subsidiaries and branches or also for foreign associates, and whether to ascribe ownership of a direct investment enterprise to its immediate foreign owner or to the ultimate beneficial owner.

The concepts recommended for use in operational variables are to a large extent based on concepts used in the SNA.

II.14. The concepts and definitions used in this volume are based on and consistent with international standards. They are discussed in more detail in the following reference works described below.

- (a) IMF, *Balance of Payments Manual*, 5th edition, 1993 (BPM5). BPM5 establishes the conceptual framework on BOP statistics and the international investment position (IIP). It is the source of many of the concepts and definitions used in the measurement of TNC operations, such as direct investment, residency, valuation and accrual accounting. The new BOP manual (BPM6), which was adopted in 2008 and will be released in 2009/2010, improves on existing concepts and definitions (e.g. economic territory, units, institutional sectors and residence) in light of national experiences.
- (b) IMF, *Balance of Payments Compilation Guide*, 1995. A companion document to BPM5, the primary purpose of this guide is to provide direction on the compilation of statistics on BOP and the IIP. Much of its advice is also of direct relevance to operational statistics. It provides invaluable guidance on data collection and compilation techniques and issues, including a comprehensive review of surveys, administrative records and other data sources. It covers a broad array of issues, including the design of data collection systems and dealing with non-response, security and storage of data, and the publication of final estimates. Another companion publication by the IMF entitled *Balance of Payments Textbook* (1996) presents illustrative examples and applications of concepts, classifications and conventions.
- (c) OECD, *Benchmark Definition of Foreign Direct Investment*, 3rd edition, 1996 (BD3). BD3 offers practical guidance to statisticians “on how FDI should be compiled to meet internationally agreed standards” (OECD, 1996:7). It discusses in detail, the problems of consolidation, special transactions, treatment of holding companies, tax

haven corporations and other special purpose entities, and the recording of specific transactions. It also offers concrete examples of how various OECD countries have resolved measurement issues. In the fourth edition of the *OECD Benchmark Definition (BD4)* chapter 8 (on FDI and Globalisation) provides a brief overview of the methodology of statistics on the activities of TNCs. It further discusses concepts such as ownership criteria, statistical units and the attribution of TNC variables, as well as economic variables for TNC statistics.

(d) United Nations, the European Commission (EC), IMF, OECD, UNCTAD and WTO. *Manual on Statistics of International Trade in Services (MSITS)*, 2002. The primary focus of this manual, as the title suggests, is on trade in services, and in particular on the need for more comparable, detailed and comprehensive statistics on trade in services. Nevertheless, because of the important role played by TNCs in the development and delivery of international trade in services, one chapter of this volume (chapter IV) is devoted to measuring the operations

of foreign affiliates – mode 3 of the four GATS modes of supply (WTO, 1995). It is a useful reference document, which reviews the key issues and definitions involved and makes comprehensive recommendations for the collection of these statistics. A revised MSITS, expected to be published in 2009, updates conceptual frameworks and classifications in conformity with those presented in other updated publications such as *BPM6*, *SNA* and *BD4*. While there are no significant changes from the first edition, the revised version separates more clearly inward and outward Foreign Affiliates Statistics (FATS). The concept of foreign affiliates is used synonymously with “direct investment enterprise”, as defined in *BPM6* and in the first volume of this Training Manual.

(e) OECD, *Manual on Economic Globalisation Indicators*, 2001. This manual provides a core set of indicators which offer an opportunity, using appropriate methodology, to assess the contribution of TNCs, also referred to as multinational firms to the economic activities of

the countries in which they are located. The indicators presented in this manual make reference to the activities of multinational firms in three areas that have driven the process of globalization: international trade, FDI and various forms of technological dissemination. The proposed economic globalization indicators can be divided into three broad categories based on their measurement of the following: (i) the extent and intensity of globalization; (ii) the impact of globalization on economic performance; and (iii) globalization's tie-ins with policies and structural reforms.

- (f) *OECD Handbook on Economic Globalisation Indicators* (2005). This handbook deals with the economic activity of multinational firms. It develops the main concepts and definitions relating to data for their activity, notably the concept of control of an enterprise and identification of the country of the investor that has ultimate control over its activities. Building on national statistical agencies' best practices, pragmatic and operational recommendations are made in order to enhance international comparability

of indicators and basic data. The definitions proposed are consistent with those contained in the fourth chapter of the *MSITS*.

- (g) Eurostat, *Recommendations Manual on the Production of Foreign Affiliates Statistics*, 2007. This manual which serve as a "milestone on the way to achieving EU-wide harmonised foreign affiliate statistics (FATS)." It preceded the FATS regulation (Regulation (EC) No. 716/2007 of the European Parliament and of the Council of 20 June 2007) adopted the same year, which ensured the availability of harmonized FATS data. It provides definitions and guidelines for national compilers, which are the indispensable prerequisites for obtaining FATS to produce meaningful EU-wide aggregates. The manual is not only in line with the rules in the EC FATS Regulation, but also treats the needs and realities that national compilers face in practice (Eurostat, 2007: 3)
- (h) Eurostat, *Balance of Payments Vademecum*, March 2002 and 2008. The 2002 edition is a reference work that describes Eurostat's needs for BOP

statistics. It is intended to help statisticians in EU member countries to meet those needs. Of particular interest for non-EU countries collecting operational statistics are the questionnaires (Eurostat, 2002:147–169) on foreign affiliates' trade statistics, turnover, employment and value added variables, which EU member countries are required to complete. The updated version of the *Balance of Payments Vademecum*, December 2008, reflects, among others, the requirements of the European Parliament and the Council concerning regulations on the structure of foreign affiliates in EC statistics.

- (i) United Nations, *System of National Accounts*, 1993 (SNA). This is under revision. The SNA presents the conceptual framework for many of the operational statistics covered in this volume of the UNCTAD Training Manual. Conceptually, the BOP system is closely linked with the SNA. The two systems share many elements, including identical treatment of such concepts as residence, timing, valuation and the reinvested earnings of direct investment.

II.15. In addition, this present volume draws on concepts and definitions described in the following publications:

- (a) European Central Bank, *European Union: Balance of Payments/International Investment Position Statistical Methods*, May 2007. This is a revised version of an annual publication that provides documentation on the methodologies used by EU member States for compiling BOP and IIP statistics.
- (b) European Central Bank, *Accession Countries: Balance of Payments/International Investment Position Statistical Methods*, February 2002. This describes the methodologies which the 12 accession countries to the EU use to compile BOP and IIP statistics.

2. Existing data sources

II.16. Many national, regional and international organizations publish statistics on FDI and TNC operations. They provide an invaluable overview of the many variables collected, insights into the technical problems that exist, as well as the different approaches used in collecting and publishing such data. Some of these publications also provide

definitions of key terms. These sources include the following:

- (a) OECD, *Measuring Globalisation: The Role of Multinationals in OECD Economies* (currently being updated). The 2007/08 edition comprises two volumes, covering the manufacturing and services sectors respectively. To meet new needs for analysing the globalization process, in 1990 the OECD requested its member countries to collect data on the performance of foreign affiliates in the manufacturing sector. Subsequently, it extended its surveys to cover the manufacturing activities of TNCs abroad and their activities in the services sector in member countries. This publication covers the results of these surveys for up to 17 member countries. It also provides a brief description of the sources and methods used by each country to compile operational statistics, using up to 18 variables.
- (b) UNCTAD, *World Investment Reports (WIR)* are annual publications that provide up-to-date data and analysis on trends in global FDI, along with in-depth examination of selected themes related to TNCs. In addition to the latest data on worldwide inward and outward FDI flows and stocks, a statistical annex presents variables relating to the activities of TNCs.
- (c) UNCTAD, *World Investment Directory* series. This series provides definitions of key terms as well as data on FDI and TNCs' operations in individual countries. In addition to inward and outward FDI flows and stocks, with sectoral and regional breakdowns (and, whenever available, by country and by industry), each volume provides the latest data on the operations of foreign affiliates in the host economy, the operations of TNCs abroad and the operations of parent TNCs. The different volumes in the series also provide tables on the legal frameworks for TNCs and FDI and a list of the largest foreign affiliates and of the largest TNCs in each country (see also box II.12 of this volume). The series comprises the following volumes:
Volume I: Asia and the Pacific, 1992
Volume II: Central and

Eastern Europe, 1992
Volume III: Developed Countries, 1992
Volume IV: Latin America and the Caribbean, 1994
Volume V: Africa, 1997
Volume VI: West Asia, 1997
Volume VII: Asia and Pacific, 2000
Volume VIII: Central and Eastern Europe, 2003
Volume IX: Latin America and the Caribbean, 2004
Volume X: Africa, 2008

- (d) Eurostat, *Foreign-owned Enterprises, Results for Eight Member States*, 2001. This two-part publication provides useful insights into the role of foreign-owned enterprises in eight member States of the EU. Part 1 covers foreign-owned enterprises in these States, and includes information on the location (by country and industry) and source of FDI. Part 2 covers the operations of foreign affiliates, using measures such as productivity and variables on profitability.
- (e) European Union, *Direct Investment Yearbook*. This yearbook presents FDI flow and stock data for the EU member countries as well as for other selected countries. It covers major developments in direct investment in the EU. The annex describes data

compilation methodology and definitions used by the reporting countries. Among other things it covers FDI abroad by EU members, FDI into EU countries and intra-EU direct investment.

- (f) OECD, *International Direct Investment Statistics Yearbook*, 2004. This annual publication provides a complete series of international direct investment statistics in standard format, combining sectoral and geographical breakdowns for FDI flows and stock data for all OECD countries.

3. Key terms

II.17. The following is a list of definitions commonly used to describe the entities involved in FDI.

Transnational corporation

II.18. *Transnational corporations* (TNCs) are incorporated or unincorporated enterprises comprising parent enterprises and their foreign affiliates.³ A parent enterprise is defined as an

³ As defined by UNCTAD. Other organizations, such as the OECD, also refer to TNCs as *multinational enterprises* or *MNEs*.

enterprise that controls assets of other entities in countries other than its home country, usually by owning a certain equity capital stake. An equity capital stake of 10 per cent or more of the ordinary shares or voting power for an incorporated enterprise, or its equivalent for an unincorporated enterprise, is normally considered the threshold for the control of assets. A foreign affiliate is an incorporated or unincorporated enterprise in which an investor that is a resident in another economy owns a stake that permits a lasting interest in the management of that enterprise (UNCTAD, WIR, 2008: 249).

In essence, the term TNC is used to include:

- (i) An enterprise that owns 10 per cent or more of the ordinary shares or voting power in one or more enterprises (its foreign affiliate(s)) located in a country of which it is not a resident, and
- (i) Those foreign affiliates.

This is consistent with the definition of direct investment used in *BPM5*, which states that a direct investment relationship exists when investors own 10 per cent or more of the voting shares or stock of an enterprise

that is a resident of another country. It should be noted that the relationship can only be established through the ownership of voting shares or voting power. The definition of a TNC (and direct investment) does "... not include firms that control assets abroad through various non-equity ties (for example, management contracts, transfer-of-technology contracts, sub-contracting agreements, franchising) and that are linked to other firms through strategic alliances".⁴

Enterprise

II.19. The term *enterprise* refers to a legal entity operating within a country, such as a corporation or an unincorporated branch. "Enterprises may be privately owned and/or controlled, publicly owned and/or controlled, or controlled by residents and/or non-residents. Enterprises may be financial or nonfinancial institutions" (IMF, *BPM5*, paragraph 75).

Foreign direct investment

II.20. "Foreign direct investment (FDI) is a category of investment that reflects the objective by

⁴ See "Definitions and sources" in UNCTAD, *World Investment Reports*.

a resident enterprise in one economy (direct investor) of establishing a lasting interest in an enterprise (direct investment enterprise) that is resident in an economy other than that of the direct investor. Lasting interest implies the existence of a long-term relationship between the direct investor and the direct investment enterprise, and a significant degree of influence on the management of that enterprise. Direct or indirect ownership of 10 per cent or more of the voting power of an enterprise resident in one economy by an investor resident in another economy is considered to be evidence of such a relationship” (OECD, *BD4*, paragraph 117).

Foreign direct investor

II.21. “A foreign direct investor is an entity resident in one economy that has acquired, either directly or indirectly, at least 10% of the voting power of a corporation (enterprise), or equivalent for an unincorporated enterprise, resident in another economy. A direct investor could be classified to any sector of the economy and could be any of the following: (i) an individual; (ii) a group of related individuals; (iii) an incorporated or unincorporated

enterprise; (iv) a public or private enterprise; (v) a group of related enterprises; (vi) a government body; (vii) an estate, trust or other societal organisation; or (viii) any combination of the above” (OECD, *BD4*, paragraph 122).

Direct investment enterprise

II.22. A direct investment enterprise is:

- (i) *In the case of inward investment, a resident enterprise, incorporated or unincorporated, in which non-residents own 10 per cent or more of the ordinary shares or voting power (for an incorporated enterprise) or the equivalent (for an unincorporated enterprise) (OECD, *BD4*, paragraph 124); or*
- (ii) *In the case of outward investment, a non-resident enterprise, in which residents own 10 per cent or more of the ordinary shares or voting power.*

“Direct investment enterprises comprise branches (unincorporated enterprises), subsidiaries (incorporated enterprises that are more than 50 per cent owned by the

direct investor), and associates (incorporated enterprises that are between 10 and 50 per cent owned by the direct investor). The direct investment relationship extends to the direct investment enterprise's subsidiaries, sub-subsidiaries, and associates (unless the direct investment enterprise itself is an associate)" (IMF, 1995, paragraph 685). "Most direct investment enterprises are either: (i) branches or (ii) subsidiaries that are wholly or majority-owned by non-residents or in which a clear majority of the voting stock is held by a single investor or group." (IMF, 1993, paragraph 364).

Associate

II.23. (i) When an investor owns directly at least 10 per cent and no more than 50 per cent of the voting power, it is considered an associate%; (ii) when an investor and its subsidiaries combined own at least 10% of the voting power of an enterprise but no more than 50%, the enterprise is regarded as an associate of the investor for FDI purposes; (iii) when an associate, either as an individual or in combination with its subsidiaries, owns more than 50% of an enterprise, this enterprise is regarded for FDI purposes as an associate of the

higher level investor (OECD, BD4, paragraph 136).

Subsidiary

II.24. "A subsidiary is a direct investment enterprise in which an investor owns more than 50% of its voting power i.e. it is controlled by the investor; (ii) where an investor and its subsidiaries combined own more than 50% of the voting power of another enterprise, this enterprise is also regarded as a subsidiary of the investor for FDI purposes (OECD, BD4, paragraph 135).

Branch

II.25. A branch is an unincorporated enterprise, which is wholly or jointly owned by the direct investor. According to OECD (1996, paragraph 14), "A direct investment branch is an unincorporated enterprise in the host country that:

- (i) is a permanent establishment or office of a foreign direct investor ...; or
- (ii) is an unincorporated partnership or joint venture between a foreign direct investor and third parties; or
- (iii) is land, structures (except those owned by foreign

government entities), and immovable equipment and objects, in the host country, that are directly owned by a foreign resident...; or

- (iv) is mobile equipment (such as ships, aircraft, gas and oil drilling rigs) that operates within an economy for at least one year if accounted for separately by the operator and is so recognized by the tax authorities. This is considered to be investment in a notional enterprise in the host country.”

Affiliate

II.26. The term *affiliate* includes associates, subsidiaries and branches (box II.2). It is used to describe a business enterprise located in one country, when:

- (i) An investor, or group of investors, resident in another country owns 10 per cent or more of its ordinary shares or voting stock, in the case of an incorporated entity; or
- (ii) An investor, or group of investors, resident in another country has an interest of 10 per cent or more in an unincorporated business or branch.

Box II.2. Example of affiliates

A hypothetical German company, AAA GmbH, owns 55 per cent of the voting shares of a French company, AAA (France) S.A., which in turn owns 15 per cent of the voting shares of BBB (Belgium) S.A. AAA GmbH also has an unincorporated branch operation in Latvia in which it has a 50 per cent interest. The French company is a subsidiary of the German company, the Belgian one is an associate and the Latvian operation is a branch. All three are affiliates of the German company as well as affiliates of each other.

4. Other key issues

(a) Concepts of residence, valuation and timing

II.27. The concepts of residence, valuation and timing used in collecting operational statistics should be the same as those used in *BPM5*, which are identical to the SNA concepts. In brief, these concepts are:⁵

- (i) **Residence:** An entity's (or person's) country of residence is determined by its (or his/her) *centre of economic interest*. “An enterprise is said to have a center of economic interest and to be a resident

⁵ For a more detailed description of these concepts, see IMF, 1993, chapters IV, V and VI.

unit of a country (economic territory) when the enterprise is engaged in production of a significant amount of goods and/or services there or when he[/she] owns land or buildings located there. The enterprise must maintain at least one production establishment in the country and must plan to operate the establishment indefinitely or over a long period of time” (IMF, 1993, paragraph 73). The treatment of land and mobile equipment is the same as in BOP statistics.

- (ii) **Valuation:** It is recommended that, “market price be used as the basis of valuation for both transactions and stocks” (IMF, 1993, paragraph 71). Depending on the valuation method, stock figures will differ (table II.1).
- (iii) **Timing:** The time of recording of transactions is governed

by the principle of accrual accounting. Claims and liabilities arise when a change of ownership takes place.

- (iv) **Reference period:** As a matter of principle, all characteristics should refer to the calendar year (Eurostat, 2007: 23).

5. *Statistical unit (enterprise versus local unit)*

II.28. In developing a system for measuring the operations of TNCs, it is important to distinguish between three kinds of statistical units: the *establishment* or *local unit*, the *enterprise* and the *group of enterprises*.

II.29. “[A]n establishment is defined as an enterprise, or part of an enterprise, that is situated in a single location and in which only a single (non-ancillary) productive activity is carried out or in which the principal productive activity accounts for most of its value

Table II.1. Example of different valuations: United States direct investment position, at year-end 2007

(Millions of dollars)

Item	Historical cost	Current cost	Market value
United States direct investment abroad	2 791 269	3 332 828	5 147 952
Foreign direct investment in the United States	2 093 049	2 422 796	3 523 600

Source: United States Bureau of Economic Analysis, Survey of Current Business, July 2008.

added” (United Nations, 1993, paragraph 5.21).⁶

II.30. The term *enterprise* is defined in *BPM5* as, “inclusive of the terms *corporation* and *quasi-corporation* as defined in the SNA. A corporation is a legal entity created for the purpose of producing goods or services for the market. A corporation may be a source of profit or other financial gain to its owner(s). A corporation is collectively owned by shareholders who have the authority to appoint directors responsible for the general management of the corporation... [A] quasi-corporation is an unincorporated enterprise that is operated as if it were a separate corporation with a separate set of accounts. The de facto relationship of a quasi-corporation to its owner is the same as that of a corporation to its shareholders.” In other words, “private enterprises include: (i) incorporated enterprises (e.g. corporations, joint stock companies, limited liability partnerships, cooperatives, or other business associations recognized as independent legal entities by virtue of registration under company and similar

acts, laws, or regulations); (ii) unincorporated enterprises; and (iii) nonprofit institutions” (IMF, 1993, paragraphs 74 and 76). Similarly, public enterprises include both (i) unincorporated government enterprises and (ii) public corporations.

II.31. It is probable that most enterprises in most countries only have one establishment in one location. In other words, in most cases enterprise is synonymous with establishment. However, larger enterprises often have multiple establishments and multiple locations.

II.32. Similarly, many businesses, especially larger ones, organize their activities in a country through a *group of enterprises*, or family of companies. “The *enterprise group* or, as the SNA refers to it, the *family of legal entities* is the operations of a set of legal entities that are resident in one country and connected in a parent-subsidiary relationship. An enterprise group includes entities that are subsidiaries of a non-resident parent company. The enterprise group is the statistical unit preferred by many BOP compilers conducting enterprise surveys ... because many international activities are organized on this basis” (IMF,

⁶ A more detailed discussion of the topic is given in section V, *Establishments and Industries* (United Nations, 1993).

1995, paragraphs 848 and 849). In addition, in some countries, enterprise groups often set up “shell” corporations for tax, marketing or other reasons.⁷

II.33. The issue is addressed at length in the *OECD Benchmark Definition*, which states that “... the OECD considers that inward and outward direct investment statistics should, as a matter of principle, cover all directly and indirectly owned subsidiaries, associates and branches. ... For convenience this approach is referred to ... as the Fully Consolidated System” (OECD, 1996, paragraphs 12 to 18). In *BD4*, the Fully Consolidated System is replaced by the Framework for Direct Investment Relationships (see box I.19 of volume I of this Training Manual).

II.34. The IMF suggests that where BOP data are collected through enterprise surveys, that data should be collected from the enterprise group. However, when the “group covers more than one institutional sector (for example, a group may consist of a bank and non-financial enterprises), arrangements should be made to

collect separate data in respect of each sector. Therefore, the preferred statistical unit is the enterprise group at sector level” (IMF, 1995, paragraph 849). Some countries require reports on direct investment to include all fully consolidated domestic subsidiaries.

II.35. The IMF (1995) further notes, “The use of the enterprise group, rather than the enterprise as the statistical unit often reduces the workload for the compiler and the reporting community.” However, where data are collected from the enterprise rather than the group, statisticians should require respondents to supply information on the structure of the group, its constituent enterprises and the ownership links. This will help them to ensure complete coverage.

II.36. Many of the variables needed for operational statistics can be collected at the establishment or enterprise (or enterprise group) level. Most financial and ownership data are best collected at the enterprise (group) level, and most production-related data at the establishment level. Both units have their advantages and disadvantages from the statistician’s perspective. The economic classification of large

⁷ Keeping track of such shell companies can often be a problem for statisticians, as they are often dissolved when they have served their purpose.

enterprise groups cannot provide the level of industrial detail that is available at the level of individual establishments. A large integrated oil company, for example, may have many hundreds of establishments engaged in activities ranging from the mining to the refining and retailing of oil. It may be classified as a mining enterprise if that is what its principal activity is, and all its activities would then be allocated to mining.⁸ On the other hand, when data (usually production-related) are collected at the establishment level, data for each establishment are recorded under the detailed industry code. This permits the statistician to compile employment and value added data (say) for all of the detailed industries (and geographic locations and other categories) to which these establishments belong.⁹

II.37. It is recognized, however, that many countries may not be able to choose which statistical unit to use, based on their existing statistical systems for compiling operational statistics.

⁸ Statisticians would have no choice about this when compiling most financial and investment data, since they are collected (and usually only available) at the enterprise level.

⁹ See United Nations et al., 2002, paragraphs 4.27 and 4.28.

6. Ultimate beneficial owner¹⁰

II.38. In some cases, it is difficult to determine the country of ownership of a direct investment enterprise. This is particularly so when the enterprise's *immediate foreign owner* is a special purpose entity (SPE) or a holding company, which in turn is owned by a direct investor resident in a third country (sometimes called the *ultimate beneficial owner* or UBO) (box II.3). In such cases, statisticians must decide whether to ascribe ownership to the immediate foreign owner or to the UBO.¹¹

II.39. As far as possible, it is recommended that countries use the UBO unit when compiling operational statistics for inward investment. This treatment "is conceptually preferable for attribution of variables because that [UBO] is the country that ultimately owns or controls, and therefore derives the benefits from owning or controlling, the direct

¹⁰ This is referred to as ultimate controlling parent in *BD4*.

¹¹ Out of 15 countries providing operational data in the OECD's Manual (OECD, 2001) eight (Belgium, France, Germany, Japan, Luxembourg, Norway, Poland and Portugal) use immediate foreign owner, and seven (Finland, Ireland, Italy, the Netherlands, Sweden, the United Kingdom and the United States) use ultimate owner.

Box II.3. Immediate owner versus UBO

The following simple examples illustrate the meaning of the terms immediate owner and ultimate

beneficial owner (UBO) of an enterprise:

Enterprise 1 in country A	Enterprise 4 in country A
Owns 55 % of enterprise 2 in country B	Owns 55% of enterprise 5 in country B
Enterprise 2 in country B	
Owns 55% of enterprise 3 in country C	

In the first case, Enterprise 1 in country A owns 55 per cent of the voting shares of enterprise 2 in country B, which in turn owns 55 per cent of the voting shares of enterprise 3 in country C. This

means that enterprise 1 is the immediate owner of enterprise 2, and UBO of enterprise 3 (through its majority ownership of enterprise 2). Enterprise 4 is both the immediate owner and the UBO of enterprise 5.

investment enterprise” . (United Nations et al. 2002 paragraphs 4.29–4.38). In addition, as noted by UNCTAD in its *World Investment Directory*, “[W]here funds are channelled through holding companies, major problems may be created in the compilation of an accurate geographical or industrial distribution of FDI. That often leads to an overstatement of investments, particularly in the financial sector, in or from financial centres. The ultimate investment’s origins or intentions of the parent company are lost as a consequence” (see also box II.4).

II.40. The issue is a complicated one. As noted by the OECD, “Information by the immediate host or investing country is needed for BOP statistics, and in particular for bilateral estimates. Governments and international bodies are also interested in data on ultimate host or investing country” (OECD, 1996, paragraph 18). The IMF requires that BOP statistics record transactions based on the immediate foreign owner and not the UBO.¹² However,

¹² Citing what it calls the *debtor/creditor principle*, BPM5 recommends that “as concerns the international investment position, data compiled for

Box II.4. Holding companies

“A holding company is a company established to hold participation interests in other enterprises on behalf of its owner. Some holding companies may have a substantial physical presence as evidenced by, for example, office buildings, equipment, and employees. Others may have little or no physical presence and may exist only as shell companies” (OECD, 2008: 233). “Holding companies are engaged in financial services (units that hold the assets of a group of subsidiary corporations and whose principal activity is ownership of the group) and in management (units that oversee and manage other units of the enterprise and undertake the strategic or organizational planning and decision-making role of the enterprise)”. (OECD, 2008, paragraph 376).

considering that information on immediate investors may be available as a by-product of linkages to FDI data, and to facilitate comparisons with these data, countries are encouraged to

stocks of financial assets and liabilities are geographically allocated on the basis of the debtor/creditor principle. Financial claims of the compiling economy are allocated to the country of residence of the non-resident” (IMF, 1993, paragraph 484).

make available some data classified according to the country of the first foreign parent (OECD, 2008, paragraph 410). Furthermore, obtaining sound data on the UBO generally is difficult. The OECD therefore recommends that direct investment flows, earnings and net assets be compiled for the immediate owner, but that the stock of direct investment net assets also be recorded in respect of the UBO. It notes that, ideally, outward FDI earnings should also be recorded in respect of the UBO and that, it would “appear more appropriate” to do this when collecting operating data of affiliates.¹³

II.41. For outward investment, there are two aspects of this issue to be considered:

- (i) Should the compiling country require its resident enterprises to report variables for its affiliate in the immediate host country or for its affiliate in the ultimate host country? (This assumes that

¹³ The OECD, however, recognizes that “it is often very difficult to obtain data on outward investment flows by the ultimate host country”, but that “for inward direct investment it is possible to estimate earnings and the stock of net assets due to the immediate investing country and to reanalyse this by country of ultimate control.”

the resident investor has an affiliate in country A, which in turn has an affiliate in country B.) The MSITS (and this volume) recommend, “that the attribution be to the country of the affiliate whose operations are described by the variables, for that is the country in which the foreign direct investor’s commercial presence exists, and it is the country where the various activities – sales, employment and so forth – tracked by the statistics are carried out” (United Nations et al., 2002 paragraph 4.36).

- (ii) The second issue deals with the treatment of foreign investments of those domestic enterprises, which are themselves foreign-owned. This volume recommends that the compiling country should collect data for all resident enterprises direct investor, regardless of where they are owned. However, in its published statistics it should provide separate breakdowns for the foreign affiliates of domestically and foreign-owned enterprises.

II.42. Statisticians should also seek to identify situations where FDI is held through nominees. In such cases, it is recommended that

they should try to look through the nominee holdings to identify the ultimate beneficial owners.

7. Attribution of variables: the 100 per cent rule

II.43. Statistics on the operations of TNCs are intended to measure the performance of the enterprise as a whole and not just the part which is owned by its direct investors. For this purpose, therefore, it is necessary to attribute all of the activities to the enterprise according to residence of the direct investor, regardless of whether foreigners own 10 per cent or 100 per cent of the enterprise or how transactions have been financed.¹⁴ No adjustment should be made for the percentage of foreign ownership (box II.5).

II.44. In this sense, statistics on the operations of TNCs differ in an important way from statistics on direct investment compiled for the international investment position (IIP) and the BOP. The BOP is concerned with measuring only that part of an economic

¹⁴ For example, when estimating earnings reinvested in a domestic enterprise by foreign direct investors, *BPM5* recommends that only part of the earnings which accrue to the direct investor should be recorded in the current and financial accounts of the BOP (IMF, 1993, paragraph 278).

Box II.5. Full attribution rule

“Ordinarily, FATS variables for a given foreign affiliate are attributed in their entirety to a single country of owner. As descriptors of the operations of affiliates, they are not to be factored down by ownership shares. Nor are the values of the variables to be apportioned between the majority owner and any foreign minority owners.” (United Nations et al., 2002 paragraph 4.37).

“Financial and operating data focus on the overall operations of United States parents and their affiliates. ... The financial and operating data for foreign affiliates are not adjusted for the ownership share of the United States parents. Thus, for example, the employment data include all employees of each affiliate, including affiliates in which the United States parent’s ownership is less than 100 per cent.” (United States, Department of Commerce, 1997: M-17). “100% of values should be allocated to one country even if it does not exercise full ownership” (Eurostat, 2007: 23).

transaction that takes place between residents of an economy and non-residents. Investment by residents in a direct investment enterprise in the host economy does not interest the BOP. For BOP purposes, such a transaction is one between resident investors

and a resident enterprise and the BOP does not (usually), of course, record economic transactions between residents. If a domestic enterprise in which foreigners own 65 per cent of the voting shares exports \$100 million, all of the exports should be treated as the exports of this foreign-owned enterprise, and not just the “foreigner owners’ share” of \$65 million.

II.45. On the other hand, what the users of operational statistics want to know is what proportion of the economy, or of particular economic activities, is controlled or influenced by foreign investors. Analysts need to answers to such questions as what portion of the sales of a particular industry or of industrial R&D expenditures are attributable to foreign-controlled or foreign-influenced enterprises. Dividing the enterprise’s variables according to ownership does not give them the results they require. After all, a direct investor who owns 60 per cent of the equity of an enterprise which has 1,000 employees controls 1,000 employees – not just 600. Of course, in one special case, when compiling data on the source of direct investment enterprises’ capital funds, it is obviously desirable to measure investments by residents as well as those

coming from the direct investor and other foreign and domestic sources.

8. Ownership threshold: degree of ownership versus foreign control

II.46. Another important decision to be made before collecting data on the operations of TNCs is what degree of ownership (or threshold level) should be used to determine which enterprises are foreign affiliates. There are differences in approach between international authorities on this issue: some favour the 10 per cent principle, while others prefer the concept of control based on equity ownership of over 50 per cent. Countries also differ in their views of what threshold of ownership to take as evidence that a direct investment relationship exists. Some countries do not even specify a threshold, relying instead on other evidence including enterprises' own assessments.

II.47. This issue is discussed in the IMF *Compilation Guide* (paragraph 692), which states, "[W]hile somewhat arbitrary, the rule of 10 percent has been chosen to ensure consistent classification of investor/investee relationships across all countries' statistics. In the interests of practicality and

comparability, an objective rule is considered preferable to subjective judgement. Furthermore, as most direct investment enterprises are either branches or subsidiaries that are wholly or majority owned by non-residents, borderline cases are likely to be insignificant."

II.48. The IMF considers that ownership of a 10 per cent stake in the equity of an enterprise will usually give a foreign investor an effective voice in the management of that enterprise – enough for it to qualify as a direct investor. The methodology used in compiling BOP and IIP statistics is of course based on this 10 per cent rule. However, while 10 per cent usually provides the investor with an effective voice in the enterprise's management, it is recognized that it does not give it effective control.

II.49. The OECD uses the concept of a *controlling interest*. The statistical test used to measure this is the existence "of a majority interest (over 50 per cent of shares that carry voting rights on a company's board of management). It is assumed that ownership of more than 50 per cent of the shares in a company gives real control over its management, even though such control may sometimes be exercised with less than 50 per cent of the shares"

(OECD, various issues:10). In addition, MSITS recommends that “the criterion of majority owned ... will be used ... because the concept is very clear and in this way very operational.” (United Nations et al., 2002 paragraph 4.19). The MSITS also recommends that, “FATS [Foreign Affiliates Statistics] should cover those affiliates in which the direct investor (or an associated group of investors acting in concert) holds a majority of the ordinary shares or voting power. However, countries are encouraged to provide supplemental statistics, covering cases in which foreign control may be deemed to be present, even though no single direct investor hold a majority stake” (United Nations et al., 2002, paragraph 4.76).

II.50. On the other hand, as noted in the previous section, operational statistics demand that all of the direct investment enterprise’s variables (whether net worth, earnings or employment) be allocated to the country of the direct investor. This works well in situations where there is only one foreign investor and it has an equity interest of over 50 per cent. Problems arise, though, if there are several direct investors. Potentially there could be situations with as many as 10 direct investors,

each with a 10 per cent interest. There are particular conceptual difficulties in cases where foreign direct investors have minority interests in enterprises controlled by resident investors. In such cases, it would be illogical to attribute all of the enterprises’ variables to the non-resident investors. It is of course implicitly understood that in allocating all of the direct investment enterprise’s variable to the country of the direct investor those variables are counted only once (i.e. that there is no duplication). The main reason for collecting operational statistics is to provide insight into the importance and performance of foreign affiliates compared with other, non-duplicative measures of the economy, such as employment and trade.

II.51. UNCTAD and this volume also recommend that countries use the majority ownership rule when determining which enterprises should be included as foreign affiliates in operational statistics. In essence, this approach allocates all of the enterprise’s variables to the country of the controlling or majority investor.

II.52. At the same time, UNCTAD and this volume recognize that some countries may wish to collect and publish

data based on the 10 per cent rule. The collection and publication of separate data on minority-owned situations is especially important in those countries where the law prohibits non-residents from owning a majority equity stake. In such cases, however, the countries should publish separate breakdowns for the activities of majority-owned affiliates (over 50 per cent owned) and minority-owned affiliates (10 to 50 per cent

owned) (for an example, see box II.6). Producing data on majority-owned foreign affiliates will facilitate comparison with other countries' data, while the data on minority-owned cases will allow further analysis of such situations. Compiling data on minority-owned affiliates will, necessarily, cause some duplication since the variables of those enterprises that have multiple direct investors will be counted more than once.

Box II.6. Majority-owned versus minority-owned

In its annual survey of United States direct investment abroad, the United States Bureau of Economic Analysis collects data for both majority-owned affiliates (those that are more than 50 per cent owned by United States reporters) and minority-owned affiliates

(those that are owned at least 10 per cent but not more than 50 per cent by United States reporters). Different forms are prescribed for each. The table below shows the data by these two types of affiliates (box II.6.1).

Box table II.6.1. Selected data on foreign non-bank affiliates of United States TNCs, 2006

	Total	Majority-owned affiliates ^a	Minority-owned affiliates
Number of affiliates	25 362	23 853	1 509
Total assets (\$ millions)	11 539 657	10 756 346	783 311
Sales (\$ millions)	4 731 350	4 123 547	607 803
Net income (\$ millions)	705 766	644 290	61 476
Compensation of employees (\$ millions)	426 207	384 445	41 762
Number of employees (thousands)	10 935	9 498	1 438

Source: United States, Department of Commerce, *U.S. Direct Investment Abroad: Operations of U.S. Parent Companies and Their Foreign Affiliates*, Preliminary 2006 Estimates.

^a A majority-owned affiliate is an affiliate in which the combined direct or indirect ownership of all United States parents exceeds 50 per cent.

Source: United States, Department of Commerce, 2008a.

Therefore, care must be taken with regard to how such data are presented.

9. Situations where several investors have direct investment interests

II.53. Sometimes statisticians will be faced with situations where an enterprise has more than one direct investor. The most common cases are likely to be joint ventures between a foreign investor and a domestic investor. In other cases there may be multiple foreign direct investors.

II.54. The treatment of joint ventures, where all partners are equal owners of a shared enterprise and there is no clearly dominant investor, is problematic. In such cases the statistician should undertake a thorough review of all the factors that could indicate that one partner exercises a dominant role in an enterprise's management. The following questions could be raised: which partner (if any) appoints a larger share of the board of directors, has the greater influence in the day-to-day running of the enterprise, supplies critical technology, key marketing outlets or vital raw materials etc. MSITS also notes that, "there is often some factor that would lead to the selection

of one country rather than the other. For example, if one owner's interest is held directly and the other owner's interest indirectly, the affiliate generally would be classified in the country of the owner holding the direct interest. As another example, if one of the foreign owners is a government entity, then the country of that government most likely would be considered the country of the owner. Finally, if one of the foreign owners is a holding company or is located or incorporated in a tax haven country, then the country of the other owner would most likely be considered the country of owner." If there is no such a basis for attribution, "the value of FATS variables may be allocated evenly among the foreign countries of ownership" (United Nations et al., 2002, paragraph 4.38). Splitting values in this way should be the exception rather than the rule, and should be limited to cases where an exhaustive investigation has indicated that there is no dominant investor (box II.7).

II.55. Sweden has started to publish data for a new special category of foreign ownership called *split ownership*, which covers situations such as joint ventures where there is no clear controlling shareowner (box II.8). This approach also has some

disadvantages. However, it may avoid some of the problems of interpretation noted above. This volume of the UNCTAD Training Manual considers it to be the preferable treatment, provided exhaustive efforts have first been made to identify a dominant investor.

Box II.7. Example of treatment of a joint venture

If two non-resident investors, a German and a Greek, each has a 50 per cent interest in a direct investment enterprise that has 1,000 employees, it would be less distorting to allocate 500 employees each to two notional enterprises, one controlled by the German and the other by the Greek. If the full values of 1,000 employees were to be attributed to both investors in each of two notional entities, this would give a total of 2,000 employees or 1,000 more than the actual figure.

II.56. There will also likely be some cases where there are multiple “direct” investors, none of whom has a majority interest (although this is probably not too common an occurrence in most countries). In such cases, statisticians should determine if there is evidence that several investors are consistently acting together in such a way as to

control management decisions. As with joint ventures, they will need to look at other factors to determine if any one of the minority direct investors exercises a dominant role in an enterprise’s management. If there is no such evidence and 50 per cent or more of the voting shares are held by residents, they should consider the enterprise to be domestically controlled. If, on the other hand, more than 50 per cent of the shares are held by non-residents, they should consider it to be foreign controlled. In this case, they could follow the Swedish example and create a category for *split foreign control*. This approach would avoid duplication.

Box II.8. Treatment of multiple ownership: Swedish practice

In its report, *Foreign Owned Enterprises 2001*, the Swedish Institute for Growth Policy Studies (ITPS) notes: “More and more frequently the control of a company is split between two or several main shareholders. In this report all enterprises with multiple ownership and nationality (excluding 50 per cent or less voting rights by Swedish owners) are assigned to a special category, split ownership, in the tables on country of origin”.

Source: ITPS website, at: www.itps.nu.

10. Classification by geographic regions

II.57. Statisticians will wish to provide a breakdown of the activities of TNCs by the origin of the investor or destination of the investment. For this purpose, it is recommended that they use the regional and country classification system developed by the United Nations.

11. Classification by economic activity

II.58. Statisticians will also need to provide a breakdown of financial and investment data by economic activity, including the activity of the direct investor and/or the affiliate. For this purpose it is recommended that “countries should as a minimum provide an industrial analysis that corresponds to the ... major divisions in the United Nations’ International Standard Industrial Classification of All Economic Activities (ISIC) (box II.9)... Each country will probably wish to provide a more detailed analysis than this based on its own national industrial classification, but if this can be aggregated to correspond with the ... United Nations major divisions, international

comparability will be greatly enhanced.”¹⁵

II.59. The industrial classification used will usually have to be a broad one, as most direct investors and direct investment enterprises are incorporated companies, not single establishments for which a more detailed industrial classification may be possible. Many large enterprises and enterprise groups are often highly diversified, engaging in a broad range of economic activities. A more detailed classification of these activities is generally neither practical nor meaningful.

II.60. The OECD recommends, “under ideal circumstances, data should be available to compilers to classify both inward and outward direct investment on a dual basis to the industry of the direct investment enterprise and the industry of its direct investor. ... If data for both inward and outward direct investment cannot be compiled on both of these bases, the *Benchmark Definition* recommends that data be compiled at least according to the

¹⁵ The revised fourth edition of ISIC at the 2-digit level is presented in annex 4 of this volume and its use is suggested by *BD4* and *BPM6*.

**Box II.9. Major ISIC divisions
(fourth revision)**

- Agriculture, forestry and fishing;
- Mining and quarrying;
- Manufacturing;
- Electricity, gas, steam and air conditioning supply;
- Water supply, sewerage, waste management and remediation activities;
- Construction;
- Wholesale and retail trade, repair of motor vehicles, motorcycles;
- Transportation and storage;
- Accommodation and food service activities;
- Information and communication;
- Financial and insurance activities
- Real estate activities
- Professional, scientific and technical activities
- Administrative and support service activities
- Public administration and defence; compulsory social security
- Education
- Human health and social work activities
- Arts, entertainment and recreation
- Other service activities
- Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use
- Activities of extraterritorial organizations and bodies

activity of the direct investment enterprise, for both inward and outward direct investment” (OECD, 1996, paragraphs 366,367) (table II.2). It also recommends that the economic activity of the direct investment enterprise be the main activity of the enterprise group (the enterprise and all of its consolidated subsidiaries and associates) for which consolidated figures are given. Where consolidated figures are not given, it should be the main activity of each enterprise.

II.61. If data are collected directly from establishments, it will of course be possible to use a much more detailed industrial breakdown for employment and production data. In principle, it should also be possible to obtain a more detailed breakdown of employment and production-related data even when data are collected at the enterprise level. This would require the enterprise to report separate details for each of its establishments.

Table II.2 Outward FDI stock by industry of investor and by industry of foreign affiliates: case of Singapore, 2006

(\$ million)

Economic activity	By activity of investor	By activity abroad
Total	147 539	147 539
Manufacturing	9 188	33 450
Construction	636	575
Wholesale & retail trade, hotel & restaurant	12 939	9 561
Transport & storage	4 858	5 070
Information & communications	17 209	8 532
Financial & insurance services	93 880	78 764
Real estate, rental & leasing services	3 142	6 401
Professional & technical, administrative & support services	5 381	2 445
Others	308	2 744

Source: Statistics Singapore, *Key Indicators of Singapore's Investment Abroad, 2002-2006*.

CHAPTER II. OPERATIONAL VARIABLES

II.62. The purpose of chapter II is to help countries select the most appropriate variables for measuring the activities of TNCs operating in their economies as well as those of home-based TNCs. It evaluates and makes recommendations on the many possible variables that can be used to measure the impact of TNCs' operations in such key economic areas as international trade in goods and services, labour and capital markets. It provides definitions of key variables.

A. Recommendations for compilation of operational variables

1. Possible measures

II.63. Globally, the importance of TNCs is increasing very rapidly. The delivery of products and services through foreign affiliates is creating new patterns of international trade. In a growing number of countries FDI affects just about every sector of the economy (box II.10) and has significant social, and often political, ramifications. There is a great need, therefore, for new statistical information to measure these activities. Potentially, a

broad range of variables might be relevant.

II.64. A growing number of countries are already compiling a broad range of operational statistics on TNCs. OECD countries, for example, are routinely providing statistics on 18 variables: the number of enterprises and establishments, number of employees, production, turnover, value added, wages and salaries, expenditures on R&D, number of researchers, gross fixed capital formation, total exports and imports, intra-firm trade, gross operating surplus, technological payments and receipts, stock of FDI and capital under foreign influence (OECD, 2002).¹⁶ (see box II.11 for the example of Mexico). The United States also compiles data on production workers (number and hours worked), costs of materials, inventories, depreciable assets, costs of purchased fuels and electrical energy (for manufacturing), hectares of land owned (for inward investment), investment outlays, mergers and acquisitions and productivity. UNCTAD

¹⁶ However, not all of the 17 countries featured in the manual provide data on all variables.

Box II.10. Benefits of FDI

“FDI comprises a bundle of assets, some proprietary to the investor and others not. The proprietary assets are what the literature terms the ‘ownership advantages’ of TNCs. These give TNCs an edge over other firms (local and foreign) and allow them to overcome the transaction costs of operating across national boundaries. Non-proprietary assets – finance, capital goods, intermediate inputs and the like – can be obtained from the market, at least in part. Proprietary assets can only be obtained from the firms that create them. They can be copied or reproduced by others, but the cost can be very high (particularly in developing countries and where advanced technologies are involved). TNCs are naturally reluctant to sell their most valuable assets to unrelated firms that can

become competitors or could leak them to others that have not paid for them (i.e. the proprietary assets).

Of [the] proprietary assets, the most prized is probably technology. But there are others: brand names, skills, and the ability to organize and integrate production across countries or to establish marketing networks. They also include privileged access to the market for non-proprietary assets: TNCs may be able to raise funds, or purchase equipment, on better terms than smaller firms in developing countries. Taken together, these advantages mean that TNCs can contribute significantly to host developing countries – if the host country can induce them to transfer their advantages in appropriate forms and has the capacity to make good use of them.” (UNCTAD, 1999: 316–317).

Box II.11. Compiling statistics on operations of foreign affiliates: Mexico

In collecting statistics on the operations of TNCs, Mexico uses 14 variables: number of enterprises, number of employees, production, turnover, value added, wages and salaries, gross fixed capital formation, total exports, total imports, gross operating surplus, technological payments, technological receipts, FDI stock and capital under foreign influence. Breakdowns for all

of these variables are given for 6 principal industries as well as 20 manufacturing industries, and by a total of 17 major investing countries and regions. The data are compiled by the *Secretaría de Comercio y Fomento Industrial* and the *Banco de México* from an annual survey covering all (majority) foreign-owned domestic firms. The investor’s country is the country of the immediate controller.

Source: OECD, various issues.

provides a comprehensive set of variables, including a list of the largest TNCs (box II.12).

II.65. Other statistics, which could be useful, include data such as on the source and use of investment funds and other measures of competitiveness. Further breakdowns of these variables would also be desirable, such as on the various categories

of trade (at least of goods and services), or on the various categories of R&D.

2. Recommendations

II.66. In practice, of course, it is not possible to compile statistics on everything that is needed. There are many factors to be considered when setting priorities on what to measure. A major concern is the

Box II.12. UNCTAD data on the operations of TNCs

UNCTAD's *World Investment Directory (WID)* series attempts to assemble comprehensive data and information on FDI and the operations of TNCs on a regional basis. The series can be an invaluable source of information for assisting the formulation and monitoring of policies relating to FDI and TNCs at the level of individual countries and regions. Each volume includes an introduction analysing the trends and patterns of FDI in the region, and recent developments in the FDI regulatory framework, based on information contained in country profiles for every country of the region. Also included is a technical introduction on methodological issues related to FDI statistics. Each country profile contains a detailed definition of FDI as well as a brief description of investment trends, investment policy and the legal framework. Inward and outward FDI flows and stocks, along with sectoral and regional breakdowns

(and, whenever available, by country and by industry), are presented. In addition, data on the operations of foreign affiliates in the host economy, the operations of TNCs abroad and those of parent TNCs are included. The series also provides tables on the legal framework for TNCs and FDI and a list of the largest foreign affiliates and of the largest TNCs for each individual country. A bibliography of relevant secondary sources on FDI and TNC data is included in each country profile.

Country profiles are based on data provided by countries to the UNCTAD secretariat. In this connection, data availability, the number of tables and details of data presented can vary across countries. The *WID* has been published since 1992. *WID* volumes are also available on CD-ROM. In addition, individual country profiles can be downloaded from the UNCTAD website at: www.unctad.org/fdistatistics.

considerable resource restraints, which affect both statistical compilers and respondents. Some countries have their own unique economic concerns involving TNCs, and may therefore need to collect data to meet their particular requirements. For example, they may wish to determine what impact TNCs are having on a key industrial sector. To a large extent, decisions will depend on the availability of data. Countries already collecting BOP and IIP data through enterprise survey instruments, for instance, may find it fairly easy to compile related statistics, possibly by modifying existing surveys to some extent. Countries will also need to collect some of the same variables as other countries do in order to compare the performance of foreign affiliates in their economies and the foreign operations of domestically based TNCs against an international yardstick.

II.67. Most countries will probably, at a minimum, wish to collect data that enables them to measure the level of foreign control of the economy and the impact of FDI on key aspects of economic activity. This could include its effects on the labour market, international trade, technological innovation, economic efficiency,

competition and contribution to the economy through labour income, taxes and others.

- (i) *Labour market*: Time series on the *number of employees* of affiliates and *employee compensation* will permit analysts to track the impact of direct investment on employment and the labour market. This would be useful for the purpose of comparing the compensation practices of foreign affiliates and other domestic enterprises.
- (ii) *International trade*: Statistics on direct investment enterprises' total *exports and imports* and on the segment of this trade that is attributable to foreign affiliates (*intra-firm trade*) are critical for an understanding of the role of TNCs in the host country's international trade.
- (iii) *Technological innovation*: Countries will want to know how direct investment is contributing to the development of their economies through its introduction of new technologies and the fostering of R&D activity in light of the increasing importance of technology-intensive R&D. While no simple aggregate measures exist for measuring technological innovation in many countries, statistics on

technology payments and receipts could be used as indicators of this process.

- (iv) *Economic efficiency*: Measures of a direct investment enterprise's labour productivity (e.g. value added per employee), profitability (e.g. earnings as a percentage of net worth) and other indicators can provide insights into changes in economic efficiency resulting from direct investment.
- (v) *Consequences of investment*: Countries will wish to measure the impact of FDI on their economies using *sales* and *output* data. Sales figures are easier to obtain than output figures, and "may present more options for disaggregation". However, "[o]utput is a superior and more refined measure of activity for most purposes and is recommended as the preferred variable for compilation" since it includes changes in stocks while sales does not (United Nations et al., 2002, paragraph 4.48). *Value added* is an especially useful measure as it "includes only the portion of the firm's output that originates within itself". Other financial and investment data collected at the enterprise level, such as data on the *net worth* and total *assets* of direct investment

enterprises can provide useful additional measures. Such data are compatible with existing BOP measures of FDI flows, stocks and earnings. Data reported at the local or establishment level, such as on *employment* and *value added* that are (potentially) available in considerably more detail at the industrial level, will permit analysts to track foreign ownership levels in more narrowly defined, key industries. Further, as shown in table II.3 below, since different variables often suggest different levels of ownership, it is important that several different measures be available. Once a time series has been established, it will of course be possible for analysts to track changes in foreign control over time, or following important changes in domestic economic conditions.

- (vi) *Competition*: Data on the *number of establishments*, together with data on *value added* collected at the establishment level, will allow analysts to identify levels of concentration by industrial sector – a task that requires data in considerable industrial detail. These variables are becoming important indicators to measure the degree of competition among industries.

Table II.3. Percentage of value added and employment in service industries attributed to foreign-owned enterprises, 1998

Variable	Denmark	Netherlands	Finland	Sweden	United Kingdom
Value added	12.2	11.3	11.5	13.2	10.7
Employment	7.2	7.6	9.6	10.9	6.9

Source: European Commission, 2001.

(vii) *Taxes*: Data on *income and corporate taxes* can help determine the contribution made by direct investment enterprises to national revenues.

II.68. In summary, it is recommended that countries should collect at least the

following information from foreign affiliates: sales, output, employment, value added, exports and imports, and the number of branches and subsidiaries in the host economy (including the year of establishment (box II.13)). If resources permit, they should also collect data on R&D expenditures

Box II.13. Criteria for selecting variables

In the *MSITS* (United Nations et al., 2002), several observations are made about the most important variables to be collected in operational statistics. "The most pertinent information of the operations of affiliates may be considered to be that on their sales. Services delivered through transactions between residents and non-residents are measured in terms of sales... and a comparable measure must be available for affiliates in order to measure services delivered through them on a comparable basis." It further notes, "The selection of variables should be based primarily on their usefulness in implementing the GATS and in analysing globalisation phenomena. The

practicalities of data availability must also be considered. With such considerations in mind the Manual recommends that the FATS variables to be collected include at least the following basic measures of foreign affiliate activity: (i) sales (turnover) and/or output, (ii) employment, (iii) value added, (iv) exports and imports of goods and services, (v) number of enterprises... Although not included as priority items, there are other FATS variables of significance, perhaps for certain countries of equal or greater value than some of those previously discussed." These comprise *assets, compensation of employees, net worth, net operating surplus, gross fixed capital formation, taxes on income and R&D expenditures*.

Source: United Nations et al. 2002, *MSITS*, chapter IV.

and R&D employment, taxes on income, net operating surplus, earnings (of which distributed and reinvested), assets, net worth, compensation of employees (i.e. wages and salaries) and technology payments.

B. Definitions of key variables

II.69. The key variables are described below. It should be noted that the definitions of the variables in this section are based on internationally accepted standards.

Sales (turnover)

II.70. “Sales and turnover are

used interchangeably to mean the same thing. “Sales measures gross operating revenues less rebates, discounts and returns. Sales should be measured exclusive of consumption and sales taxes on consumers, and value added taxes” (United Nations et al., 2002, paragraphs 4.48 and 4.50). Sales consist of all goods and services invoiced by an establishment or enterprise during the reporting period. They also include all other charges passed on to the customer, such as for transportation and packaging. The figure used for sales should be after any price reductions, discounts and rebates and credits for returned packaging (box II.14). Other operating

Box II.14. Measuring sales: Examples from Canada and the United States

In its survey of *Capital Invested Abroad by Canadian Enterprises*, Statistics Canada asks respondents to provide information on either *sales* or *gross operating revenue*. It defines sales as “sales of goods and services (net of returns and allowances, sales and excise taxes)” and gross operating revenue “as recorded on the Income Statement of the foreign entities”, noting that it excludes “investment income, realized and unrealized capital gains and losses”.

In its *Survey of United States Direct Investment Abroad*, the United

States Bureau of Economic Analysis also asks respondents to supply data on their affiliates’ *sales or gross operating revenues, excluding taxes*. It instructs respondents to “Report gross operating revenues or gross sales minus returns, allowances, and discounts. Exclude sales or consumption taxes levied directly on the consumer. Exclude net value-added and excise taxes levied on manufacturers, wholesalers and retailers”. It provides additional specific instructions for the treatment of affiliates operating in various financial industries.

Sources: Statistics Canada, survey questionnaire, *Capital Invested Abroad by Canadian Enterprises, 2001*; and United States Bureau of Economic Analysis, *Annual Survey of Direct Investment Abroad – 2001: Instructions*.

income, financial income and extraordinary income should not be included in sales.

Output

II.71. Output is whatever is produced during the period, which is sold or goes into inventory or to own final use. When an enterprise consists of several establishments, its output is the aggregate output of all of its establishments less any of this output that is used as intermediate inputs by these establishments; in other words, it should be a consolidated amount.

II.72. “Output ... consists only of those goods or services that are produced within an establishment that become available for use outside that establishment. When an enterprise contains more than one establishment, the output of the enterprise is the sum of the outputs of its component establishments” (UN, SNA, paragraph 6.38). “For simplicity, the output of most goods or services is usually recorded when their production is completed. However, when it takes a long time to produce a unit of output, it becomes necessary to recognize that output is being produced continuously and to record it as “work-in-progress”. For example, the production of certain agricultural goods or large

durable goods such as ships or buildings may take months or years to complete” (UN, SNA, paragraph 6.39).

II.73. This volume of the UNCTAD Training Manual recommends that output be valued at *basic* prices. It can be valued at either *basic* prices or at *producer’s prices*. The difference between the two is the treatment of subsidies and taxes. *Basic price* measures:

- (i) “the amount receivable by the producer from the purchaser for a unit of a good or a service produced as output, minus any tax payable and plus any subsidy receivable as a consequence of its production or sale”.

Producer’s price also includes:

- (ii) “the amount receivable by the producer from the purchaser for a unit of a good or a service produced as output, minus any VAT or similar deductible tax, invoiced to the purchaser”.

Both basic and producer prices exclude “any transportation charges invoiced separately by the producer”.

II.74. The concept of producer’s price is complicated by the

nature of the valued added tax (VAT). “VAT is a tax on products collected in stages by enterprises... Producers are required to charge certain percentage rates of VAT on the goods or services they sell. The VAT is shown separately on the sellers’ invoices so that purchasers know the amounts they have paid. However, producers are not required to pay to the government the full amounts of the VAT invoiced to their customers because they are usually permitted to deduct the VAT that they themselves have paid on goods and services purchased for their own intermediate consumption or gross fixed capital formation. Producers are obliged to pay only the difference between the VAT on their sales and the VAT on their purchases for intermediate consumption or capital formation hence the expression value

added tax... The producer’s price thus defined is a hybrid which excludes some, but not all, taxes on products. The basic price, which does not include any taxes on the output (but includes subsidies on the output) becomes a clearer concept in these circumstances and, partly for this reason, is the preferred method for valuing the output of producers” (United Nations, 1993, paragraphs 6.205–6.217).

II.75. The difference between the basic price and the producer’s price is illustrated by the hypothetical example in table II.4.

Employment

II.76. The figures reported for employment should include the number of full- and part-time employees on the payroll. The figures should not include contract and temporary employees who

Table II.4. Valuation of output: difference between basic prices and producer prices

Items	Amount (\$)
The amount receivable by the producer from the purchaser for a unit of a good or a service produced as output	
<i>Minus</i> any VAT or other deductible tax invoiced to the purchaser	100 -6.5
PRODUCER’S PRICE	93.5
<i>Minus</i> any other tax payable (such as excise duties)	-27.9
<i>Plus</i> any subsidy receivable	1.9
BASIC PRICE	67.5

are not listed in the enterprise's payroll. Ideally, figures for part-time employees should be reported on a full-time equivalent basis (FTE).¹⁷ For example two workers working half time are treated as the equivalent of a full-time employee (see box II.15 for details). However, where data on a full-time equivalent basis are difficult to obtain, countries should use the number of persons employed whether on full-time or not. According to *MSITS*, "Although FTE employment may provide a better measure of labour input, this measure is not as widely available as numbers of employees and may be difficult to implement consistently in the context of internationally varied employment practices. For these reasons the recommendation of this Manual is that the FATS employment variable be the number of persons employed" (United Nations et al., 2002, paragraph 4.55).

II.77. Because there are wide seasonal fluctuations in employment in some industries, the figures for employment should (ideally) be the average number of employees on the enterprise's

¹⁷ This can be estimated by dividing the total number of part-time hours worked during a period by the average number of hours worked by full-time employees during the same period.

payroll during the reporting period. Averages should reflect the number of employees on the payroll at the end of each pay period or month divided by the number of readings (i.e. by 12 if the readings cover all months, or by 4 if quarterly data are used). If the number of employees during the period is abnormally low or high because of temporary factors such as a strike or factory fire, enterprises should make estimates based on employment during normal operations. Where there are not wide fluctuations, data for the end of the reporting period may be acceptable.

Value added

II.78. *Value added* "measures the value created by production". In essence, it is obtained by subtracting the value of inputs (the cost of materials, fuel and other supplies otherwise called *intermediate consumption*) from the value of an enterprise's gross output. "Gross value added is an unduplicated measure of output in which the value of the goods and services used as intermediate inputs are eliminated from the value of output" (United Nations 1993 paragraphs 6.222 and 6.223).

II.79. In effect, there are two measures of value added: *gross value added*, which represents

Box II.15. Measuring part-time employment

Statistics Canada has developed a simple formula for estimating *full-time equivalent* (FTE) employment. Although developed for R&D employment, it can be used when measuring other kinds of employment too. "R&D may be carried out by persons ... who devote only part of their time to R&D, and the balance to other activities ... To arrive at the total effort devoted to R&D in terms of manpower, it is necessary to

estimate the full-time equivalent of these persons...

FTE = Number of persons who work solely on R&D projects + the estimate of time of persons working only part of their time on R&D.

Example calculation: If out of five scientists engaged in R&D work, one works solely on R&D projects and the remaining four devote only a quarter of their time to R&D, then $FTE = 1 + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} = 2$ scientists."

Source: Statistics Canada, survey questionnaire, *Research and Development in Canadian Industry*, 2000.

value added before deducting fixed assets used up during the production process, and *net value added*, which represents the amount after a deduction has been made for the consumption of fixed capital. The SNA defines *gross value added* as "the value of output less the value of intermediate consumption" and *net value added* as "the value of output less the values of both intermediate consumption and consumption of fixed capital" (United Nations, 1993, paragraph 6.222).

II.80. Ideally, statisticians should use net value added in operational statistics since "the net figure is usually the one that is conceptually more appropriate for analytical

purposes." However, "the gross figure is easier to estimate and may, therefore, be more reliable." "Gross value added can provide information about the contribution of foreign affiliates to host country gross domestic product, both in the aggregate and in specific industries" (United Nations et al., 2002, paragraph 4.58).

II.81. The difference between net value added and gross valued added is illustrated in table II.5, which refers to the value added in 2000 of a hypothetical manufacturing establishment..

Exports and imports

Table II.5. Value added: gross versus net, 2000

(\$ million)

Item	Net value added	Gross value added
Value of output	24 555	24 555
Less intermediate consumption	(9 875)	(9 875)
Less consumption of fixed capital	(2 376)	N.A.
Net value added	12 304	N.A.
Gross value added	N.A.	14 680

II.82. Exports should represent the value of the enterprise's (or enterprise group's) total exports of goods and services, including its exports to its foreign affiliates (see table II.6 for an example from the United States). Imports should similarly cover total imports of goods and services, including those from foreign affiliates. The methodology to be used should follow that prescribed in *BMP5*.

II.83. *Merchandise exports* should include general merchandise, goods exported for processing, repairs on movable goods owned by non-residents, such as ships and aircraft, goods procured in ports (goods sold to non-resident carriers such as ships and aircraft), and non-monetary gold. Repairs on goods are valued at the prices (e.g. fees paid for the repairs) and not the gross value of the goods. Merchandise exports should be valued free on board (f.o.b.) at the frontier of the exporting country (IMF, 1993, chapter X).

II.84. *Merchandise imports* should also include general merchandise, goods imported for processing, repairs on the enterprise's movable goods performed by non-residents, goods procured in foreign ports by those enterprises which are international carriers, and imports of non-monetary gold. Merchandise imports should also be valued f.o.b. at the frontier of the exporting country (IMF, 1993, chapter X).

II.85. *Exports and imports of services* cover the enterprise's exports and imports of transportation and travel services, communications, construction, insurance, financial, computer and information services, royalties and licence fees, other business, and personal, cultural and recreational services. Exports should also include any sales which the enterprise makes to foreign embassies and international institutions located in its country (IMF, 1993, chapters XI, XII, and XIII). Care should be

taken to ensure that the definitions used in operational statistics for the different types of services are consistent with those used in BOP statistics. These definitions are reviewed in detail in *BPM5*. Construction, insurance and leasing require special treatment, which is discussed in chapter IV of *BPM5* (IMF, 1993).

Intra-firm trade

II.86. Intra-firm exports should measure the value of the direct investment enterprise’s sales of goods and services to its foreign affiliates. Intra-firm imports should measure its purchases of goods and services from its foreign affiliates. The concepts used should be those prescribed

in *BPM5* (IMF, 1993). “If possible, these breakdowns should be obtained separately for goods and services. For inward FATS, for example, this would mean disaggregating the affiliate’s exports of goods and services into (i) exports to the parent enterprise, (ii) other exports to the country of the parent, and (iii) exports to third countries. Imports would be similarly disaggregated” (United Nations et al., 2002, paragraph 4.63).

II.87. The valuation of intra-firm trade requires special care (box II.16). The IMF recommends that BOP transactions be valued at market prices for transactions, which it defines as “amounts of money that willing buyers pay to

Table II.6. Measuring trade: excerpt from United States survey form

34. Sales or gross operating revenues, excluding sales taxes a. Column (1) equals item 23 b. Each column of line 34 equals the sum of items 35, 36 and 37.	TOTAL Column (1) equals the sum of Columns (2) through (7) (1) Bil.Mil.Thous \$	Local sales		Sales to U.S.		Sales to other countries	
		To other foreign affiliates of the U.S. Reporter(s) (2)	To unaffiliated customers (3)	To U.S. Reporters (4)	To unaffiliated customers (5)	To other foreign affiliates of the U.S. Reporter(s) (6)	To unaffiliated customers (7)
BY TYPE							
35. Sales of goods							
36. Sales of services							
37. Investment income							

Source: United States, Bureau of Economic Analysis, Form BE-11B (LF), *Annual Survey of U.S. Direct Investment Abroad, 2001*.

acquire something from willing sellers; the exchanges are made between independent parties and on the basis of commercial considerations only” (IMF, 1993, chapter V).

Box II.16. Example of statistics on intra-firm trade

Only a few countries collect statistics on intra-firm trade, and coverage varies significantly among those that do report. For example for Canada, intra-firm exports are related party exports to the United States; for Sweden, intra-firm exports includes exports of goods and services from the parent and other intra-group firms in Sweden to the enterprise group abroad; for the United States, intra-firm exports is defined as the exports shipped to the foreign parent group. It excludes exports of services, while intra-firm imports is defined as the imports shipped by the foreign parent group. It excludes imports of services.

II.88. The IMF (1993) further notes, “Transactions between affiliated enterprises integrated under the same management cannot necessarily be taken as market transactions because of the lack of independence among the parties to the exchange.” (See box II.17 for an example of transfer pricing.) “A transfer between affiliates may be evaluated by

measuring from the relative position of the transfer in the chain of production to the point of actual sale to an independent party. The comparison could be made in terms of costs embodied up to that stage of production. Therefore, a transfer price that does not seem commensurate with the production cost incurred up to that stage is probably not an adequate proxy for a market price. If the transfer price covers the cost of production, it could be accepted as a suitable proxy for a market price even though the

Box II.17. Example of transfer pricing

A hypothetical TNC has two foreign subsidiaries, one in country A and the other in country B. The affiliate in country A assembles wheelbarrows from components supplied by the parent TNC and the affiliate in country B. Among other things, the latter manufactures wheels, which it sells for \$5 each to its affiliate in country A. This price (the transfer price) covers its cost of production as well as packing, shipping, handling and insurance costs. Since the \$5 charge covers the cost of production, it is considered an adequate proxy for the market price, even though the affiliate also supplies identical wheels to a manufacturer of trolleys for \$9 each.

transfer price is different from the price charged for a similar exchange between the affiliate and an independent party” (IMF, 1993, chapter V).

Number of branches and subsidiaries in the host economy

II.89. This should include the names and addresses of all enterprises in which non-residents own more than 10 per cent of the voting shares, directly and indirectly. The information collected should include the year in which each enterprise was incorporated or set up (in the case of branches). In some countries, such as China, enterprises on a contractual basis – rather than on an equity relationship basis – are also considered as foreign affiliates, and these are included in their statistics on operational data.¹⁸

R&D expenditures

II.90. “Research and development by a market producer is an activity undertaken for the purpose of discovering or developing new

products, including improved versions or qualities of existing products, or discovering or developing new or more efficient processes of production” (United Nations, 1993, paragraph 6.142). In the case of inward investment, direct investment enterprises should be asked to report total R&D spending within the host economy during the reporting period (box II.18).

Box II.18. R&D expenditures

R&D expenditures are reported by 13 of the 16 countries that provide operational data in the OECD’s *Measuring Globalisation* (various years). In most cases, the statistics are collected from separate enterprise surveys. In some cases, these surveys are conducted by the national science agency or ministry, or an equivalent. The surveys often only cover R&D expenditures in the manufacturing sector and/or for enterprises that have over certain thresholds of activity. For example, in the case of Germany, data are derived from a survey on the R&D activities of 500 R&D-intensive (majority-owned) foreign affiliates. In 1995, this survey, which is conducted by SV-Wissenschaftsstatistik, accounted for 83 per cent of the total R&D performed in Germany and 75 per cent of all R&D personnel.

¹⁸ In China there are three types of foreign affiliates: equity joint ventures, contractual joint ventures, and wholly foreign-owned enterprises.

Employment in R&D

II.91. Data for the number of researchers should be compiled on the same basis as data for total employment (box II.19). The data should include all employees engaged in R&D. Data for part-time employees (including any full-time employees who work only part-time in R&D) should be recorded on the basis of full-time equivalents if possible (see box II.15).

Taxes on income

II.92. These consist of taxes on corporate income and corporate profits, as well as corporate surtaxes. Such taxes are usually

assessed on the total incomes of corporations from all sources, and not simply profits generated by production (United Nations, 1993, paragraph 8.52). In keeping with the accrual method of accounting used in the SNA, taxes on income should be measured at the time they are due, which of course is not always the time they are actually paid.

Net operating surplus

II.93. An enterprise's (*gross or net*) operating, as in the subheading *surplus (or loss)* represents income from the enterprise's normal operations and does not include any realized or unrealized holding gains or losses (capital gains or

Box II.19. R&D employment

Of the 16 countries reporting operations data in the OECD's *Measuring Globalisation 1999*, only six report employment in R&D: Canada, Finland, Germany, Japan, Turkey and the United States. However the coverage of R&D employment varies by country. The United States, for example, covers all employees engaged in R&D, including managers, scientists, engineers, and other professional and technical employees. The Canadian survey covers professionals engaged in R&D

(scientists, engineers and senior administrators) as well as support staff. It distinguishes between technicians and technologists (defined as "technically trained personnel who assist scientists and engineers in R&D") and other support staff (such as "personnel directly engaged in the R&D program, e.g. machinists and electricians in the construction of prototypes, or clerks, typists, accountants and storekeepers engaged in the administration or clerical support of R&D units").

Source: OECD, 1999; and Statistics Canada, survey questionnaire, Research and Development in Canadian Industry, 2000.

losses). The enterprise's earnings represent:

- (i) The enterprise's net operating surplus;
- (ii) Plus *other current earnings* (such as dividends and rents receivable, and interest receivable less interest payable);
- (iii) Plus *other current transactions* (such as insurance claims and other transfers received);
- (iv) Minus income paid out (i.e. excluding dividends); and
- (v) Minus any *income or corporate taxes payable* during the period.

II.94. Such capital gains or losses may arise "from valuation changes, such as inventory write-

offs; gains or losses on plant and equipment from the closure of all or part of a business; write-offs of intangibles, including goodwill, because of unusual events or developments during the period; write-offs of R&D expenditures, losses on then write-offs of bad debts or on expropriation without compensation; abnormal provisions for losses on long-term contracts; and exchange rate-related gains and losses" (IMF, 1993, paragraphs 285–289). (See table II.7 for an example.) Operational earnings should be calculated after provision has been made for depreciation.

II.95. The methodology used for recording an enterprise's

Table II.7. Example of capital gains and losses

Item	Fiscal year 1999	Fiscal year 2000
Extraordinary gains	17 141	5 620
Gains on the sale of investment securities	-	4 170
Gains on the sale of fixed assets	10 208	1 015
Other	6 933	435
Extraordinary losses	(20 058)	(29 794)
Valuation loss on investment securities	-	(6 167)
Special retirement benefit	-	(5 738)
Losses on the sale of fixed assets	-	(3 175)
Losses on removal of fixed assets	-	(3 075)
Other	(20 058)	(11 639)
Total recurring profit	487	1 485
Net losses before taxes	(2 430)	(22 689)

Source: All Nippon Airways, "ANA announces consolidated financial results," *press release*, 31 May 2000 (quoted on All Nippon Airways Internet site: <http://svc.ana.co.jp/eng/aboutana/press/2000/0000531.html>).

net operating surplus should be consistent with that used in BOP statistics, which in turn should be consistent with that used in the SNA.

II.96. *BPM5* also reviews the concept of depreciation to be used in calculating an enterprise's operating surplus. In principle, depreciation should be measured at the value in terms of the current replacement cost of machinery and equipment and other "...reproducible fixed assets used up (as a result of normal wear and tear, foreseen obsolescence, and accidental damage not made good by repair) during the accounting period." However, it is recognized that often the only data available may be based on historical cost (IMF, 1993, paragraph 286).

Earnings (of which distributed and reinvested)

II.97. The methodology used for measuring the earnings of a direct investment enterprise should also be the same, whether collecting statistics on TNC activities or for BOP. The enterprise's *distributed earnings* represent total dividends payable during the period in the case of incorporated enterprises, and any earnings distributed in the case of unincorporated entities such as branches. The enterprise's *reinvested earnings* can

be calculated by simply deducting its distributed earnings from its earnings.¹⁹

II.98. There is, however, one important difference between the treatment of these items in BOP statistics and in operational statistics. BOP statistics record only the direct investors' share of the enterprise's earnings (total, distributed or reinvested). For operational statistics, all of these earnings must be recorded, including those that accrue or are paid or payable to resident shareholders and portfolio investors (box II.20).

Assets

II.99. The assets of a direct investment enterprise cover all the assets of the enterprise carried on its balance sheet, regardless of how they are financed – whether by the direct investors or from other non-resident or resident sources.

¹⁹ Some key points to remember: In the BOP (as in the SNA) income is measured as it is earned (on an accrual basis) rather than when cash payments are made (on a cash basis), or when due. Net operating surplus (or loss) measures current operations. Non-current forms of income should not be included. Depreciation (measured at replacement cost) and current taxes payable should be deducted. Withholding taxes should not be deducted. Losses should be recorded as negative income.

Box II.20. Earnings: treatment in BOP versus operational statistics

XY Company had total earnings of \$4 million in the year 2001, of which \$2 million was distributed as dividends. Statisticians would record two entries in the BOP's current account: under investment income, direct investment, as well as an entry under direct investment, reinvested earnings in the financial account. Since direct investors owned 70 per cent of the company's equity in 2001, the entries would be \$1.4 million for dividends paid and \$1.4 million for reinvested earnings. However, the full amount would have been recorded in TNC operational statistics: \$4 million for the enterprise's earnings and \$2 million for reinvested earnings.

Net worth

II.100. It is recommended that countries base their definition of *net worth* on the IIP concept, which is: "The net worth of an enterprise is derived from the balance sheet, which shows assets, liabilities and residual net worth (assets minus liabilities). The net worth of an enterprise consists of the issued capital stock of the enterprise, reinvested earnings and other reserves – all of which are owned by the shareholders or in the case of a branch, by the parent enterprise" (IMF, 1995, paragraphs 700-701). When compiling operational data, statisticians are reminded

that they should record the total net worth of a direct investment enterprise, and not just that part accruing to the direct investors (box II.21).

II.101. For outward investment, the net worth of a country's foreign affiliates would be the aggregate net worth of all non-resident enterprises (associates and subsidiaries) in which residents own over 10 per cent of the voting shares. For inward investment, the net worth of FDI would be the aggregate net worth of resident enterprises in which non-residents own more than 10 per cent of the voting shares.

II.102. Valuation of net worth should, if possible, be made on the basis of market prices (box II.22). If this is not possible, and as a last resort, net worth can be estimated using book value based on historical costs.

Employee compensation (or wages and salaries)

II.103. The definition of *compensation of employees* should correspond with that defined by the SNA, (United Nations, 1993, paragraph 7.21) as, "the total remuneration, in cash or kind, payable by an enterprise to an employee in return for work done by the latter during the accounting

Box II.21. Relationship between FDI and other investment

The simplified example below shows FDI and other investment in a hypothetical, non-financial Australian enterprise at 31 December 2001. Based on the information given here, IIP statistics would record FDI in Babylonia as A\$1.7 million at the end of 2001 (based

on the foreign direct investor's ownership of A\$1.2 million worth of the enterprise's equity and of A\$0.55 million of other capital). For operational statistics, however, statisticians would record that the enterprise had assets of A\$20.5 million and a net worth of A\$2.0 million.

Box table II.21.1. FDI and other investment data
(A\$ thousand)

Item	Owned by foreign direct investors	Owned by other investors and creditors	Total
Assets			20 500
Liabilities	550	17 950	18 500
Short-term inter-company	550	-	550
Loans		745	745
Other short-term payables	-	8 450	8 450
Bank loans		8 755	8 755
Mortgages			
Net worth (equity capital and reinvested earnings)	1 200	800	2 000

period". The SNA elaborates, "Compensation of employees has two main components:

Box II.22. Estimating market value of FDI

To obtain market values for the direct investor's equity, compilers in Australia instruct companies to use: (a) current share prices (if enterprise shares are traded) or a recent, relevant transactions value (if one exists), or (b) net worth/net assets (valuation of assets and liabilities at current values with adjustments for intangibles).

Source: IMF, 1995, paragraph 703.

- (i) Wages and salaries payable in cash or in kind; and
- (ii) The value of the social contributions payable by employers."

"Wages and salaries include the value of any social contributions, income taxes, etc., payable by the employee even if they are actually withheld by the employer ... and paid directly to social insurance schemes, tax authorities, etc., on behalf of the employee" (United Nations 1993, paragraphs 7.31-7.32).

II.104. “Compensation of employees should be recorded on an accrual basis; i.e. it is measured by the value of the remuneration in cash or in kind which an employee becomes entitled to receive from an employer in respect of work done during the relevant period, whether paid in advance, simultaneously, or in arrears of the work itself. No compensation of employees is payable in respect of unpaid work undertaken voluntarily, ... Compensation of employees does not include any taxes payable by the employer on the wage and salary bill – for example a payroll tax” (UN, SNA,

1993, paragraph 7.21). This item should include the compensation of so-called “outworkers” if they are remunerated on the basis of the amount of work done, irrespective of the value of the output produced or the profitability of the production process. There is no unique measurement of wages and salaries, which produces different data among countries (box II.23).

Technology payments

II.105. There is no generally accepted definition of technology payments and receipts (box II.24).

Box II.23. Varying definitions of employee compensation of wages and salaries

There are some differences in the definition of salaries and wages used by various countries reported in the OECD’s report on operational statistics. In the United Kingdom, “Wages and salaries represent amounts paid during the year to administrative, technical and clerical employees and to operatives. All overtime payments, bonuses, commissions, holiday pay and redundancy payments less amounts reimbursed for this purpose from government sources are included. No deduction is made for income tax or employees’ national insurance contributions, etc. Payments to working proprietors, payments in

kind, travelling expenses, lodging allowances, etc. and employers national insurance contributions, etc. are excluded”. Turkey defines the item as “annual payments to employees, which include all payments on the payroll and per diems gross of income tax, social security and pension fund premiums. It also includes overtime payments, bonuses, indemnities and payments in kind. It excludes social security and pension contributions paid by the employer.” In Norway, “It comprises salaries and wages in cash and kind, employers’ contributions to private pension and family allowance schemes and social expenses levied by law”.

Source: OECD, 1999.

Box II.24. Technology payments and receipts

The technology balance of payments (TBP) is intended to provide a more refined measure of technology payments and receipts than is provided by the commonly used proxy, royalties and licence fees. According to the OECD (1994), the TBP measures international transactions that involve “patents (purchases, sales); licenses for patents; know-how (not patented); models and designs, trademarks

(including franchising); technical services; finance of industrial R&D outside national territory.” The TBP does not cover international transactions involving the provision of other types of business services (such as financial, management, advertising, legal, insurance, transportation or other commercial assistance), or of films and other recordings, and material covered by design, copyright or software.

Source: OECD, 1996: 112.

Perhaps the most commonly used is the one proposed by the OECD under “technology balance of payments”, which it notes, “registers the international flow of industrial property and know-how” (OECD, 1996: 112).

II.106. It is recommended that countries use the BOP item *royalties and licence fees* as a proxy for this, as is currently done by a number of countries (box II.25). However, this item may include some components that most statisticians would not define as technology payments (for example, payments for copyright could include payments to the authors of non-technical books.) In addition, it does not include payments for R&D services provided by or to non-residents, which are included under *other*

business services in the BOP, nor does it include the design and development of customized computer systems, which are part of *computer and information services*.

Box II.25. Definition of royalties and licence fees

The BOP category of royalties and licence fees, according to the IMF (1993, paragraph 260), “cover the exchange of payments and receipts between residents and non-residents for the authorized use of intangible, non-produced, non-financial assets and proprietary rights (such as patents, copyrights, trademarks, industrial processes, franchises, etc.) and with the use, through licensing agreements, of produced originals or prototypes (such as manuscripts and films)”.

Source: IMF, 1993.

CHAPTER III. DATA AND COMPILATION ISSUES

II.107. Chapter III examines other major compilation and data issues affecting the collection of statistics on the operations of TNCs, except for ones relating to surveys, which are covered in Chapter IV. It emphasizes the importance of investigating existing sources of ownership, investment and operational data, including administrative sources and any enterprise and establishment surveys that are already used for collecting BOP and other statistics. Also covered are techniques for merging data records, consolidated reporting, special considerations affecting certain economic activities, various legal issues, techniques for converting data expressed in foreign currencies and the need for preparing a development plan and setting priorities.

A. Introduction

II.108. Countries should collect data on three entities: home-based TNCs, affiliates abroad of

home-based TNCs and foreign affiliates in the host economy. In addition, some countries may wish to collect data on the affiliates abroad of foreign affiliates in the host economy.

II.109. In other words, statisticians in Babylonia need to collect data on:

- The activities abroad of the foreign affiliates of Babylonia-based TNCs;
- The activities in Babylonia of these Babylonia-based TNCs; and
- The activities in Babylonia of the Babylonian affiliates of foreign-based TNCs.

II.110. Before deciding on what operational variables should be measured and how they should be collected, a thorough review of existing data sources should be undertaken. This chapter provides guidance on how to use existing data sources as an alternative to conducting and supplementing

enterprise surveys. In particular, it discusses the need for setting priorities for data collection, legal issues and other compilation issues not covered elsewhere, notably merging data records, special treatment of certain economic activities, consolidation and valuation problems relating to currency conversion.

II.111. There are two possible approaches to compiling operational statistics. Countries can collect all of the data needed at the enterprise level, including data that are produced at the establishment level. Alternatively, they can use a hybrid approach, collecting ownership, investment and financial information at the enterprise level and operational data at the establishment level. If they follow the latter approach, they must develop a procedure for linking enterprise-based and establishment-based records. Countries should decide which approach to use after determining what data sources exist and after assessing the relative costs of exploiting those sources. If there are no existing sources, it may be appropriate to launch an enterprise-based survey to collect the data needed (discussed in the next chapter).

B. Data sources: ownership, investment and financial activities of enterprises

II.112. To compile statistics on the variables recommended in chapters II and III, countries will need to:

- (i) Identify the foreign ownership characteristics of the enterprise (in other words, whether or not the enterprise is foreign owned and, if so which is the country of ownership);
- (ii) Identify each enterprise in the host economy that is part of a common enterprise group (needed when consolidated reporting is being done for an enterprise group or family of companies);
- (iii) Identify the principal economic activity of the enterprise or enterprise group; and
- (iv) Provide various financial and investment variables on the enterprise or enterprise group such as net worth, sales, exports and imports, employment, and income and corporate taxes.

II.113. Before launching a new enterprise survey to collect these data, countries should explore

existing sources. Initially, they could try existing national statistical systems. Existing sources may already have collected much of the information needed, or, in some cases, may offer a framework or base to which additional or further survey questions could be added. These sources include:

- (i) BOP and IIP surveys,
- (ii) Other enterprise surveys,
- (iii) Administrative sources, and
- (iv) Other data sources.

1. Working with the BOP system

II.114. If a country is already using enterprise surveys to compile BOP and/or IIP statistics, part of the work will already have been done. These surveys will already have identified domestic enterprises in which non-residents own 10 per cent or more of the ordinary or voting stock, and will probably have a system for identifying new direct investments from abroad. They will also probably have a system for recording the ownership characteristics of such enterprises and their principal economic activities, and a register that records their inter-corporate relationships. If so, this will represent a solid basis for collecting data on the operations of TNCs in the host economy.

II.115. If the statistical authorities compile IIP data, that data may include information on the assets, liabilities, equity positions (net worth) and other balance sheet items for TNCs active in the country (inward investment).

II.116. Similarly, the BOP system may entail conducting surveys on outward direct investment. The stock data collected for compiling IIP statistics could be used for compiling TNCs' operational statistics. If stock data are not available, it might be possible to use BOP surveys to identify the target group (residents with affiliates abroad), and perhaps to add further questions in those surveys for collecting the additional data needed.

II.117. If such surveys are not undertaken, the country may wish to develop them taking into account the needs of BOP statistics and the other data requirements of the country. This will reduce the future reporting burden on respondents as well as helping to develop coordinated sets of data on international investment.

II.118. In addition, it may be possible to obtain a significant amount of data on income from enterprise surveys conducted for BOP purposes. This may include

data on income flows generated by FDI, including data on profits and reinvested earnings (box II.26), payments made or received by TNCs for services purchased from or sold abroad (box II.27), and even data on their merchandise trade activities, if such data are collected directly from enterprises. Comparable data should be available for outward investment.

II.119. If a country does not use enterprise surveys to compile BOP statistics, it may be possible to use other existing data sources. Many countries use an international transactions reporting system (ITRS) for producing BOP

Box II.26. BOP enterprise surveys: a possible source of income data

Several countries, such as Canada and the United States, require respondents to IIP surveys to supply copies of their annual financial statements and other financial reports. In addition, BOP surveys usually ask enterprises to provide data on the value of dividends paid to direct investors and their share of reinvested earnings. If statisticians know what percentage of the enterprise's equity is owned by the direct investor, it is fairly easy to estimate the enterprise's total earnings, dividends and retained earnings.

statistics, which may vary considerably from one country to another. However, there is a common element: all ITRS estimate BOP transactions from records of the individual cash transactions between residents and non-residents, which pass through the domestic banking system. (Many countries supplement this source with data on enterprises' accounts

Box II.27. International trade in services: coverage by BOP surveys

The *IMF BOP Compilation Guide* provides a sample survey form (IMF, 1995: 317-325) for collecting data from enterprises on their international transactions in services. It asks for separate details on 15 kinds of services required for BOP purposes, and covers both services obtained from and provided to non-residents. Countries undertaking such a survey will find it a possible source of data on the international service transactions of foreign affiliates operating in their economies. This is provided they can identify which of the enterprises surveyed are foreign-controlled. In practice, the results will depend on what survey techniques are used (i.e. census, sampling, or partial). Special care must be taken when making estimates for international transportation, insurance and construction services, as their measurement involves unique problems and concepts.

with banks abroad, non-cash transactions and stock positions.) Domestic banks use special forms to record their clients' transactions with foreigners. The forms typically list the following information for each transaction: a reference number, the date, the identity of the client, the type of transaction (sale or purchase of foreign exchange), the value and purpose of the transaction and the country with which it was made. In some countries, these forms are completed by bank staff, and in others by the clients themselves. Transactions are coded to record the BOP categories they represent. For example, payments may be broken down into payments for dividends, interest, various types of services, goods purchased and direct investment.

II.120. It would be possible to obtain a substantial amount of data from this source for use in compiling operational statistics, provided that these data have been properly coded, carefully completed and entered into computer databases. It may be possible to aggregate the data for each client by transaction type, including, for example, data on imports and exports of goods and services. Even if all the information needed is not currently available from this source, it would be

possible (working perhaps with the BOP statistics section of the government agency and the banks) to refine the codes to meet more of the data requirements.

II.121. Like any other data source, ITRS has certain drawbacks and can only provide some of the information needed for operational statistics. Most notably, it does not usually indicate which of a bank's clients are foreign affiliates and which have direct investments abroad. Neither does it provide data on items that do not involve international banking transactions, such as affiliates' total sales, assets and employment. However, many countries use questionnaire surveys and other techniques to supplement BOP data collected from international transaction records (box II.28). It would be possible to do this for operational statistics too. This is an alternative well worth considering by countries that already operate an efficient ITRS system. At the very least, ITRS would enable countries to identify domestic enterprises that have large international cash transactions, including foreign dividend payments and receipts. This is a good starting point for identifying major direct investment enterprises in the country as well as domestic enterprises with large direct investments abroad.

Box II.28. Items requested from companies with FDI abroad in survey of capital invested abroad by Canadian enterprises

Descriptive and general information	Information for use primarily in BOP and IIP statistics	Information for use primarily in operational statistics
Canadian parent companies are required to complete a separate set of information on each foreign affiliate and non-capitalized expenditure abroad.	The Canadian reporting company is asked to report only the value of the following categories of the foreign affiliates' equity and debt that are owned or held by itself and its fully consolidated Canadian subsidiaries	Respondents are asked to report the total value of each of the following items as reported on their foreign affiliates' books.
Type of foreign investment (subsidiaries, associates, joint ventures, branches or miscellaneous investments, non-capitalized expenditures)	Common stock (% of issue held: amounts in Cdn \$ '000)	Total long-term liabilities and equity
Identity of each foreign subsidiary, associate or joint venture (reference number; name)	Preferred stock (Cdn \$ '000)	Total assets
Country code	Retained earnings	Net income (loss)
Principal industrial activity	Paid-in or capital surplus	Dividends declared
Exchange rate used to convert financial items to Canadian dollars	Net long-term inter-company debt	Sales or gross operating revenue (Total Cdn \$ '000; % goods (estimate); % services (estimate))
	Book value of long-term investment	Employment (estimate)
	Net short-term inter-company debt	
	Carrying value of the long-term investment in foreign entities	
	All data taken from the foreign affiliate's accounts, except the last item	All data taken from the foreign affiliate's accounts

Source: Adapted from the Statistics Canada survey questionnaire (page 59) in its Survey of Capital Invested Abroad by Canadian Enterprises.

2. Other enterprise surveys

II.122. Another unit within a country's national statistical system may also be conducting an enterprise survey for national accounts or other purposes. They may also be collecting financial data that can be used in compiling

statistics on TNCs' operations, including data on sales, technology payments and receipts, R&D expenditures, and income and corporate taxes. In addition, they may have information on salaries and wages paid and, possibly, partial data on the number of

foreign branches and subsidiaries operating in the host economy. This information may be available for all enterprises and enterprise groups surveyed, but usually it will be necessary to have another means of determining each enterprise's ownership status. Moreover, the survey's manager may be willing to add supplementary questions to his/her questionnaires to obtain the additional data required.

II.123. Countries that conduct surveys of R&D activities usually collect data at the enterprise level. In order to be able to use

Box II.29. Matching R&D and ownership data

Statistics Canada compiles statistics on industrial R&D, classified according to the country of control. Data on R&D expenditures are obtained from an annual survey of enterprises that either undertake their own R&D or provide funding of \$1 million or more. The data can also be obtained from administrative records for those undertaking less than \$1 million worth of R&D. These data are matched with ownership information collected by another survey and recorded in the central business register.

Source: Statistics Canada, *Industrial Research and Development*, October 2001.

this information in operational statistics, it will be necessary to match the ownership records for individual enterprises with the R&D records for these enterprises, or to add questions on ownership to the survey questionnaire (box II.29). In most countries, the number of enterprises undertaking R&D is relatively small and those that do are mostly larger ones.

3. Administrative sources

II.124. In many countries, government ministries and agencies collect large amounts of specialized information needed for fulfilling their various legislated and/or administrative mandates. Some of this information may be of use in compiling operational data. However, it is unlikely that this source will satisfy all of the statisticians needs for enterprise-based data. Access to these data will depend on the willingness of the other agencies to cooperate and the legal provisions controlling the data's use.

The following are some of the most commonly available data:

(a) *Data on the activities of domestic banks*

II.125. Data on domestic banks (and sometimes other financial intermediaries) are often collected

by a national superintendent of banks, by the central bank, or by the ministry of finance.²⁰ They are usually needed to monitor the activities of the banks as well as for statistical purposes. Such data usually include detailed information from the banks' operating (or profit and loss) accounts and balance sheets and information on ownership of the banks' voting shares. In some countries the investment authorities then collect these data from the bank supervisory bodies.

(b) Data on the activities of insurance companies

II.126. Many countries collect data from domestic insurance companies in order to monitor their insurance and investment activities and for statistical purposes (box II.30). The agency responsible for this could be a national superintendent of insurance, the ministry of finance, or the central bank. Such data usually include information

²⁰ Responsibility for bank supervision rests with the central banks in Jordan, Kuwait, Qatar, the United Arab Emirates and Yemen. In Bahrain it is the Bahrain Monetary Authority, in Israel the Supervisor of Banks and in Lebanon the Banking Control Commission.

from the companies' operating (or profit and loss) accounts and balance sheets and information on ownership of their voting shares as well as details of their insurance activities.

Box II.30. Supervision of insurance companies in West Asia

In West Asian countries, responsibility for supervising insurance varies. For example, in Bahrain it is the Ministry of Commerce, in Kuwait the Ministry of Trade and Industry and in Lebanon the Insurance Control Commission.

Source: National websites.

(c) Data on the operations of oil, other mining, transportation and other major industrial companies

II.127. Often the ministries responsible for regulating and monitoring key industries such as oil and gas, other mining, forestry, fisheries and various transportation activities collect detailed sets of data on individual enterprises and establishments involved in their industry sector (box II.31). This information may include key operational variables as well as financial and ownership information.

Box II.31. Example of regulatory agency publishing enterprise data

Natural Resources Canada, a Federal Government Department, annually produces a publication entitled *Mining and Mineral Processing Operations in Canada*. It provides data such as the name, address and telephone number of the operator by province and territory, and the location of the mine or plant, its capacity, processes, products and other details of special interest (such as whether it operates an underground or open-pit mine).

Source: Natural Resources Canada website.

(d) Data on merchandise imports and exports

II.128. Customs authorities usually collect an enormous amount of information on merchandise imports and exports. Since it is generally fairly accurate, is available in computer-readable form and contains a unique company code for each importer and exporter, it may be possible to produce aggregate data for these importers and exporters. At the least, it may help to identify possible foreign affiliates (e.g. in China), which are often very active importers and exporters.

II.129. Most countries use customs documents to compile

statistics on merchandise trade. These documents usually record individual imports of goods coming into a country as well as individual exports, and provide a variety of information for each transaction. For imports this usually includes the name and address of the importer, a description of the import (with its commodity code), the quantity imported, the value of the import and the import's country of origin. Comparable information is available on exports. Often importers and exporters are given unique identification numbers, which makes it possible to aggregate all transactions for individual importers and exporters in order to create a "consolidated enterprise import or export record".

II.130. This is of potential value to compilers of operational statistics in two ways. First, it may enable statisticians to identify the largest trading enterprises, a large proportion of which are likely to be foreign direct investment enterprises or enterprises with foreign affiliates. This would be extremely useful for statisticians for the purpose of compiling a register of potential foreign affiliates and domestic enterprises with direct investments abroad (see chapter IV). Secondly,

when an individual enterprise's import and export records have been matched with foreign ownership records, so that the ownership characteristics of individual enterprises are added to the import/export records, it is possible to produce statistics on exports and imports of foreign affiliates (in the case of inward investment). Usually, it would not be possible to use this technique to produce trade statistics for outward investment or for trade between affiliates. The merging of records for foreign-owned enterprises and establishments is discussed below.

(e) Corporate income tax data

II.131. The income tax departments of most countries collect huge amounts of data, not only on the taxes paid by domestic corporations but also on their financial activities. Often they require reporting companies to file detailed profit and loss and balance sheet information (see box II.32 for a Canadian example). While access to such data is usually scrupulously controlled by law to safeguard the taxpayers, it may be possible to make use of these data in compiling operational statistics, either through cooperation with the tax department's own

statistical branch or through legislated changes to the taxation and/or statistics acts.

(f) Data on the privatization of government-owned assets

II.132. Another potentially useful source of data for those countries that have privatized government-

Box II.32. Use of corporation tax records: Canada

Under Canadian law, Statistics Canada has had access to Canadian corporation tax returns for many years. The financial and other data available, especially for smaller corporations, has enabled it to considerably improve its business registry and to collect financial data for many corporations without surveying them. For example, since 1999, Statistics Canada has used records of R&D expenditures filed with the Canadian tax department by companies funding or doing R&D worth less than \$1 million. The tax authorities have this information because Canadian companies performing R&D can file for a tax credit within 18 months of the expenditure. Access to this information saves Statistics Canada from the need to survey about 10,000 companies.

Source: Statistics Canada, *Industrial Research and Development*, October 2001.

owned enterprises and other assets are the records kept by the agency responsible for the sale of those assets. Such records usually provide detailed information on the buyers, including their nationality or residence, and a detailed description of the assets, purchase price and other relevant information.

(g) Records of the foreign investment review processes

II.133. Many countries have an organized process for reviewing new foreign investments in domestic business, and regulations governing the establishment of foreign-controlled businesses (see box II.33 for examples of some West Asian countries). Such provisions can be an invaluable source of information, even when the review process is an informal one, particularly where foreign investment has been controlled for many years. If no legal or administrative restraints exist, and the responsible government agency has maintained good records, it may be possible to obtain access to a substantial database for identifying foreign investors and their domestic affiliates. In most cases, data available will include a fairly detailed description of the proposed investment (including information on any

business or assets to be acquired) and investment plans and commitments. Investors may also be required to provide periodic reports on their activities. One difficulty in using data from this source, however, is that the information provided on proposed

Box II.33. FDI supervisory bodies in West Asian countries

The following is a list of most countries in West Asia and the responsible agencies that review FDI proposals and/or require the registration of foreign companies:

Jordan: Foreign firms have to register with the Ministry of Industry and Trade. All new investments are subject to an approval process by the ministry. Statistics on FDI flows are based on statistics supplied by the ministry.

Kuwait: Foreign investors in the banking and insurance industries need specific approval from the Central Bank of Kuwait and the Ministry of Trade and Industry respectively.

Lebanon: Each foreign company wishing to do business in Lebanon is required to inform the Ministry of Economy and Trade before registering in the Commercial Register

Saudi Arabia: The Ministry of Industry and Electricity has responsibility for the licensing of FDI.

investments, expansions and so on often differs significantly from the actual investments made.

4. Other data sources

(a) *Industry associations*

II.134. Sometimes industry associations collect data on their member companies, such as information on total sales, assets, economic activity and the name of the foreign parent company (when applicable). Often special industry associations have been set up to promote trade and investment between two countries. Generally, members of such associations include enterprises from both countries that are actively engaged in investment and/or trade with the other country. Lists of the members are often available from these associations, or sometimes from the commercial sections of relevant embassies.

(b) *Free zone authorities*

II.135. Free zones or free trade zones are also a potential source of data (e.g. Philippines and Madagascar). By offering various tax advantages, such zones are often able to attract foreign investment and economic activities. The authorities responsible for administering the zones usually have information

on the enterprises licensed to operate there, their ownership and economic activities. The amount of data available is likely to vary considerably from country to country.

(c) *Stock exchanges and securities commissions*

II.136. In some countries where companies' shares are traded on the stock exchanges or when they make public offerings on their debt instruments, the companies are required to file reports on their financial position to the securities commission. These reports can be a useful source of information on the financial and share ownership, including on inter-corporate relationships. Similar information is often available from publicly traded companies, from stock exchange records, from security and investment dealers, and from the companies' own annual (or periodic) reports. However, this information is only available for a relatively small number of larger companies and the quality of data available may vary considerably from company to company.

(d) *Special registers of foreign companies*

II.137. Various international and regional organizations, such as UNCTAD and the OECD, and

a number of private companies and organizations publish guides and directories listing direct investment enterprises by country of investment, often also providing other variables. For example, UNCTAD's *World Investment Directory* series provides comprehensive data sets on FDI and TNCs, including a list of the largest foreign affiliates in the host economy, indicating their home economy, industry and sales volume. UNCTAD's *World Investment Reports* provide a list of the world's largest TNCs. In addition to the name of the TNC, the list also contains information on industry and the country of headquarters. Other information such as on assets, sales and employment, are also provided for each of these TNCs. In addition, the Internet can be a worthwhile source of information: some websites offer detailed and up-to-date information, especially on a country's largest companies (box II.34).

(e) *Counterpart statistics*

II.138. Statistics compiled by partner countries may also be a source of aggregate data. Major international investing countries, such as members of the EU and the United States, regularly produce statistics on the operations of their foreign affiliates.

Although they do not publish separate data for all countries, it may be possible to obtain this information by arrangement with the responsible statistical agency. However, counterpart statistics are an inadequate proxy for national statistics and should be considered a second-best solution (box II.35). As far as possible, it is recommended that statisticians compile their own statistics on the

Box II.34. Example of an Internet site

One website lists the top 100 companies in Saudi Arabia for 1998. For each company named, some of the data it provides includes turnover, assets, turnover per employee, capital, number of employees and profits (<http://www.arab.net/saudi100/>).

Box II.35. Largest foreign direct investors in West Asia

The largest foreign direct investors in West Asia are from the United States, the EU, Japan and other countries in the West Asian region. Indeed, a significant number of the parents of the leading foreign affiliates (especially in the finance and insurance industries) come from other countries in West Asia. In the absence of data on inward FDI by source in many countries in that region, such information is compiled from counterpart statistics.

Source: UNCTAD, 1997b: xxi-xxxiv.

operations of TNCs. Doing so will enable them to tailor the statistics to their country's specific needs, problems and data sources.

C. Possible existing sources of operational data

II.139. In addition to the sources discussed above, which may provide some of the operational data needed, it is recommended that countries also examine their existing surveys of establishments and collection systems (which use establishment data). Many countries undertake regular surveys or censuses of establishments engaged in manufacturing, mining, services, wholesale and retail trade, transportation and other economic activities. Usually the data collected cover, for instance, output, value added, employment and compensation of employees. The advantage of using establishment-based data is that it enables the user to produce statistics at a much more detailed level of industrial classification than that of enterprise-based data. The economic classification used is generally at least as detailed as the two-digit level of the ISIC. Measures such as value added also provide a clearer indication than financial measures of

the economic impact of direct investment.

D. Linking and merging records

II.140. If a country decides to use administrative data or data obtained from surveys (other than BOP and IIP surveys), it will be necessary to merge the information for individual enterprises and/or establishments from these sources with ownership information obtained from an enterprise survey or other source so as to create a consolidated record for each foreign-owned enterprise or establishment. These records can then be aggregated to produce the desired operational statistics. In order to do this, the ownership information (as well as information on the entity's principal economic activity) for each enterprise or establishment needs to be matched with the operational data for that enterprise or establishment.

II.141. Where an enterprise has several establishments, each establishment should be allocated its parent enterprise's unique identification code. This should be the same code as is entered on the record containing the enterprise's ownership, investment and other financial data. This can be easily done when enterprises and

establishments have been given unique identification numbers, provided that the unique number of the establishment corresponds with its parent enterprise's unique number and when the different data sources use the same identification system (box II.36). Ideally, this coding system should be incorporated into the statistical agency's main business registry. Statistical agencies in some countries are already using their business registers in this way, assigning unique identification numbers to enterprises and

establishments. This allows them to link all data collected at the enterprise and establishment levels. However, even if the agency does not have a system of this sort, there may be other means in national identification systems of linking records. Some countries, for example, use the national identification systems developed for collecting payroll, value added or income taxes or, as noted earlier, national company registration numbers. It is important to determine what kind

Box II.36. National identification system for enterprises and establishments: France

It is best to introduce an enterprise/establishment identification system for linking statistical records when designing the central business register in the national statistics agency. Ideally, the system should incorporate the identification system used in the national enterprise registry. In France, all companies and their establishments are included in a national identification registry named SIRENE (computerized directory of companies and establishments). This directory, which is managed by the French statistical agency, INSEE, allocates a unique identification number

to every company and private individual listed in this database. The directory collects three types of information: identification information (comprising the company's unique identification number and legal status and the establishment's unique identification number, status as head office or not, logo and address), economic classification data (consisting of the main economic activity code, the number of salaried personnel in the company or establishment and company turnover) and statistical data.

Source: National Institute of Statistics and Economic Studies (France), at: <http://www.alisse.insee.fr>.

of system exists in the country to enable the linking of records.

II.142. How the matching of enterprises and establishments might work is illustrated by an example involving a hypothetical enterprise, XYZ Oil and Gas Inc, which has three establishments (table II.8). Each establishment has a unique identification number that incorporates the unique identifier of the parent enterprise. The fact that Cedar Hills Refinery and the other two establishments have “45635” as part of their identification numbers indicates that they belong to enterprise 45635, which is XYZ Oil and Gas Inc. By matching and merging the records of all three establishments of the enterprise with the records of the enterprise, a composite result for XYZ Oil and Gas Inc. can be produced, which shows that it has a total of 667 employees

and a total value added of \$388 million. In addition, the merging process reveals that each of the three establishments is owned by Egyptian direct investors and is part of an enterprise with assets totalling almost \$659 million.

II.143. Using a unique identification system in collecting enterprise statistics also facilitates the linking of two or more different kinds of enterprise records, such as BOP ownership records with records on R&D activities (see box II.37 for an example of the United States).

II.144. Much more work will be needed if the data that are made available by other sources do not use a system of unique identification numbers that link families of establishments to their parent enterprises, or that link different enterprise records. In

Table II.8. Example: matching records

Name/description	XYZ Oil and Gas Inc (Enterprise)	Red Desert Oil Wells (Establishment)	Cedar Hills Refinery (Establishment)	Sweet Water Chemical Plant (Establishment)
Identification number	456345	456345-001	456345-002	456345-003
Principal activity	Manufacture of chemicals	Extraction of crude petroleum	Manufacture of refined petroleum products	Manufacture of chemicals
Foreign ownership, per cent	67.5	NA	NA	NA
Country of ownership	Egypt	NA	NA	NA
Assets (\$ '000)	658 985	NA	NA	NA
Employment (number)	NA	235	157	265
Value added (' 000)	NA	26 000	125 000	237 000

Box II.37. How the link was made: United States experience

The United States Bureau of Economic Analysis (BEA) and the Census Bureau collaborated to combine their records to produce statistics on foreign-owned manufacturing establishments (see volume III for details). This is how they linked their records: BEA and the Census Bureau exchanged their data in order to identify and obtain data for those United States establishments on the SSEL (Standard Statistical Establishment List) that are foreign-owned. The BEA data used for the link cover United States affiliates with total assets, sales, or net income greater than \$1 million; these affiliates account for virtually all the foreign direct investment universe in terms of values. The SSEL is a computerized list of all United States companies and their establishments; it includes names, addresses, and other identification information as well as key economic data obtained from the Census Bureau surveys and from administrative records. Foreign-owned establishments on the SSEL were identified primarily through a computer match of Employer Identification Numbers (EIN's) that are both reported on BEA's surveys of foreign direct investment in the United States and included on the Census Bureau's SSEL. EIN's are identification numbers that companies and their establishments are required to use when filing

Federal and State payroll and income taxes. For enterprises that failed to link in the computer match of EIN's, other identification information, such as names and addresses, was used to match the BEA enterprises to Census Bureau establishments. The data items that are available on the SSEL in Economic Census years are the number of establishments, employment, payroll, and shipments or sales. (United States, Department of Commerce, 1997: M2-3).

In this way, BEA produced detailed estimates for 1992 on all establishments of United States affiliates of foreign companies. FDI data for the manufacturing establishments were extracted from the Census Bureau's census of manufactures. They included value added, shipments, employment, total compensation of employees, employee benefits, hourly wage rates of production workers, cost of materials and energy used, inventories by stage of fabrication, and expenditures for new plant and equipment. Data for the non-manufacturing establishments included estimates of their number, employment, payroll, and shipments or sales. The estimates were presented by detailed industry (classified in over 800 industries as listed in the Standard Industrial Classification four-digit level), by country of the ultimate beneficial owner of the establishment, and by State.

Source: United States Department of Commerce, 1997.

such cases, manual techniques will have to be used to do the linking. In order to link enterprises and establishments, the user would still require information from all establishments, identifying the names and addresses of their parent enterprises or vice versa. Fortunately, most establishment surveys collect this information and most enterprises have only one establishment. When linking enterprise records, it may be possible to simply match the enterprise's name and address. Care will need to be taken to ensure that the enterprises are matched accurately. If two records cover different time periods, difficulties in matching may arise, as enterprises may be evolving either through acquisitions or the closure of plants and other assets. Matching records manually can be painfully slow. Therefore it should be started by compiling data for very large enterprises that account for the bulk of foreign-owned activities (say, with sales in excess of \$10 million or \$25 million), and then expanded later to cover smaller enterprises too. If the system for collecting ownership data is based on the enterprise group or family of companies, the task will be even more complicated because it will, of course, need some technique

for linking establishments to their parent enterprises.

II.145. Another alternative would be to defer the production of operational statistics based on the matching of records until the country's statistical agency has been able to introduce an identification system that (at the very least) covers the data collections that could be matched. To do this, it would be necessary to develop a system that allocates unique identification codes or that bases the statistical system on an existing identification system that might be used by, for example, the national companies registry or the income tax agency. It will also be necessary to modify existing surveys to ensure that the unique identification number is included on the records to be matched.

II.146. However, even in the best-designed systems, it will not be possible to match all records. Enterprises and establishments go out of business, names and addresses change, there may be problems with non-response, or clerical and computing errors may occur, for example. It is therefore necessary to develop procedures for dealing with non-matching records. These might include use of supplementary data sources, such as information from the

companies register, tax records and stock exchange records, as well as directing inquiries to the enterprises or establishments (possibly by fax or telephone) to clarify problems.

E. Other data and compilation issues

1. Consolidated reporting

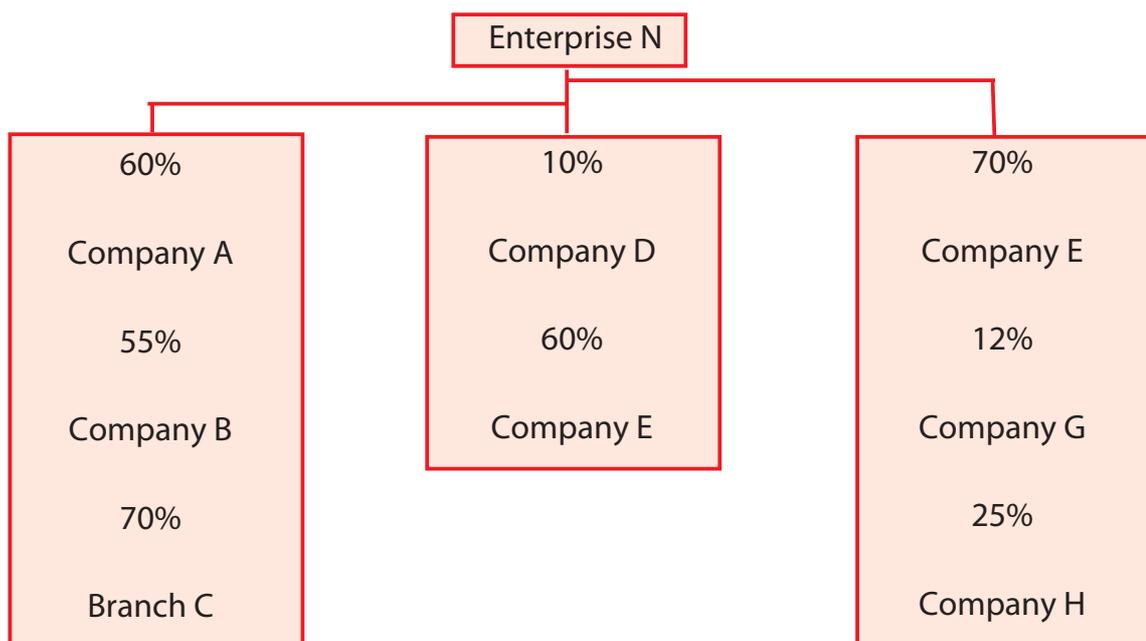
II.147. The rules on consolidated reporting to be used when compiling operational statistics are essentially those described by the OECD. It recommends that FDI statistics “should, as a matter of principle, cover all enterprises in which the direct investor has directly or indirectly a direct

investment interest” (OECD, 1996: 10). This approach is referred to as the fully consolidated system.²¹ It can be illustrated by the example in figure II.2, in which a hypothetical enterprise, N, has the following investments:

II.148. Under the fully consolidated system, A is a subsidiary of N, B is a subsidiary of A and so a subsidiary of N, even though only 33 per cent of B is attributable to N. C is a branch of B and, through the subsidiaries A and B, of N as well. D is an associate of N, E is a subsidiary of D, and thus an

²¹ In *BD4* the Fully Consolidated System is replaced by the Framework for Direct Investment Relationships.

Figure II.2. Consolidated reporting



Source: Adapted from OECD, 1996: 11.

associate of N even though only 6 per cent of E is attributable to N. F is a subsidiary of N and G is an associate of F, and so an associate of N. H is an associate of G, but is not an associate of N. It should be noted that all the enterprises listed, with the exception of H, are affiliates of N and therefore of each other. Direct investment (and operations) statistics based on the fully consolidated system would cover A, B, C, D, E, F and G.

II.149. “If the indirect ownership in subsidiaries, associates and branches is not included, the main effect ... is that total and reinvested earnings can be greatly understated” (OECD: 1996: 11). Failure to include indirect ownership would also lead to an understatement of operational statistics such as employment, exports and imports and value added..

II.150. It should be noted that accounting rules governing the consolidation of the financial transactions of members of an enterprise group (or of a family of companies) vary by country. Parent companies in most countries consolidate the accounts of their subsidiaries, branches and associates according to national accounting rules,

which may differ from the rules recommended by the OECD in its fully consolidated system. If the data collected are provided for a group of enterprises, it is important to know which enterprises have been included in the consolidated return to ensure that all directly and indirectly owned subsidiaries, branches and associates are properly covered. As noted earlier, many BOP compilers conducting enterprise surveys prefer the enterprise group as the statistical unit. Even when data are collected at the enterprise level, it is important to map the enterprise group to ensure that all enterprises are fully covered.

2. Legal issues

II.151. Before launching a survey of enterprises or, in some cases, before obtaining access to certain administrative data, statisticians must be satisfied that they have the necessary legal authority to do so. If appropriate laws do not exist, they must be enacted, or if existing laws are inadequate they will need to be amended.

II.152. Most countries have laws to empower their national statistical agencies to undertake surveys and to conduct other data collection activities. Such laws

legally oblige survey respondents to provide information requested by the statistical agency. They usually prescribe penalties for survey recipients who fail to comply with information demands. The laws also contain provisions aimed at protecting respondents' confidential information and provide penalties for anyone guilty of breaching this confidentiality (box II.38). They usually authorize the publication of statistical aggregates.

II.153. In their national legislation relating to statistics, some countries have incorporated provisions that give their statisticians access to administrative records collected by other government agencies, which would otherwise not be available to them (box II.39). The use of official data in many countries is restricted to the purposes that are authorized by law. This may prevent the use of some administrative data even for statistical purposes.

Box II.38. Example of law governing confidentiality of data: Australia

"The requirement for ABS (Australian Bureau of Statistics) officers not to divulge to unauthorised persons information collected under the Census and Statistics Act is set out in Section 19(1) of the Act as follows:

Secrecy

19. (1) A person who is, or has been, the Statistician or an officer shall not, except –

- (a) in accordance with a determination; or
- (b) for the purposes of this Act; either directly or indirectly, divulge or communicate any information furnished in

pursuance of this Act to any person (other than the person from whom the information was obtained).

(2) A person who contravenes subsection (1) or fails to comply with an undertaking of the kind referred to in paragraph 13 (2) (c) given by the person in relation to information disclosed to the person in accordance with a determination is guilty of an indictable offence punishable on conviction by a fine not exceeding \$5,000 or imprisonment for a period not exceeding 2 years, or both".

Source: Australian Bureau of Statistics, Policy on security of data, cited in United Nations Statistics Department website on Good Practices in Official Statistics, at: <http://unstats.un.org/unsd/goodprac/default.asp>.

Box II.39. Use of administrative records

Countries whose national statistical laws give their statisticians access to administrative records include Anguilla, Armenia, Bulgaria, Canada, the Czech Republic, Germany, Malta, Mauritius, the Netherlands, Poland, Romania, Slovenia, Sweden, the former Yugoslav Republic of Macedonia and Tonga.

The Romanian law stipulates, “In order to complete the requested data and to minimise the response burden of statistical subjects, the official statistical services have access to the primary data of the

administrative records of central and local public administration institutions (balance sheets, tax documents, agricultural registers, commercial registers, population registers, and others) including the individual identification data, observing the principle of statistical confidentiality. The confidential data from the administrative sources will be used for statistical purposes only, without affecting the reason they were originally collected for” (Romanian Ordinance Concerning the Organization of Public Statistics).

Source: United Nations, Statistics Department website on Good Practices in Official Statistics, at: <http://unstats.un.org/unsd/goodprac/default.asp>.

3. Special treatment for certain economic activities

II.154. Special rules govern the treatment of construction activities, ships and other mobile equipment, leasing and insurance companies. These rules follow BOP and SNA guidelines. (The treatment of holding companies was discussed in chapter I.)

(a) Construction

II.155. Care must be taken in the statistical treatment of construction activities performed in one economy by a construction

enterprise resident in another. It is not uncommon for large foreign construction companies to undertake major projects, such as dams, airports, power stations, bridges and large factories, in other countries. These projects often take several years to complete. In many instances, the construction companies perform the work through subsidiaries, unincorporated branches or associates that they already have in the country where the project is located, or that they have set up for this purpose. In such cases, there should be no special problems in

identifying the investment and related activities in operational statistics.

II.156. However, in some instances, they may perform the work directly, not through a branch, subsidiary or associate (see box I.30 in the first volume of this Training Manual). The treatment of such cases in operational statistics will depend on how long the activity takes to complete and the nature of the relationship of the construction enterprise to the economy in which it is performing the work. If an enterprise based in country A undertakes construction work in country B, its activities will generally be treated as:

- (i) An investment, if the construction project lasts more than one year²² and if the construction unit in country B keeps separate and complete accounts for its local activities, pays local income taxes and has a substantial physical presence; or
- (ii) An export of services, if the project takes less than a year

²² The guideline of one year should be treated somewhat flexibly. The treatment of international construction activity is covered in detail in IMF, 1993, paragraphs 380.73 and 78 and OECD, 1996: 21–22.

and the other conditions listed in (a) do not apply.

(b) Enterprises operating ships and other mobile equipment

II.157. Particular difficulties may arise when dealing with enterprises operating mobile equipment, such as ships, aircraft, drilling rigs and platforms, and railway rolling stock, outside their countries of residence (see box I.34 of the first volume of this Training Manual). The treatment of such cases depends on the answers to three questions: (i) Who is the legal owner of the equipment? (ii) Who operates the equipment? (iii) What leasing or chartering arrangements, if any, apply to their activities? This information will help determine the residence of the equipment, how the associated financing and investment activities should be dealt with in operational statistics, and to which country the international services produced by the equipment should be attributed.

II.158. The basic principle governing the statistical treatment of international services generated by enterprises operating ships and other mobile equipment industries is that the services are

provided by operators who may not necessarily be the owners of the equipment. It is often difficult to determine exactly who the operator is, especially in situations involving flags of convenience.²³ Further guidance on this is provided in the IMF's *BOP Compilation Guide*, which stipulates that in the case of "an enterprise with operations taking place in international waters...the activities should be attributed to the economy in which the operator maintains residence" (IMF, 1995, paragraph 210). In addition, the Guide advises, "to record transportation and associated services correctly in the balance of payments, it is necessary to distinguish between the owner of the mobile equipment and the operator of the equipment. Both entities may be the same, but often they are not. In fact, for some items of equipment, a chain of leasing arrangements may separate the legal owner from the operator" and, "The enterprise that controls

²³ The IMF's *BOP Compilation Guide* states, "for a ship flying a flag of convenience, the country of the operator is the country of the company directing the ship's operations, which may not necessarily be the country of registration. If the operator establishes, for tax or other considerations, a branch or subsidiary in another country to manage the operation, the operation is attributable to the country of the branch" (IMF, 1995: 89).

the operation and movement of the equipment is regarded as the operator. The operator is usually responsible for supplying a crew; maintaining equipment in proper working order; and deciding when, and to which location, equipment will be moved".

II.159. It is important to determine the nature of any leasing or chartering arrangements under which mobile equipment operates, as this will determine the residence of the equipment in operational statistics, and how related transactions should be handled. According to the *BOP Manual*, "in cases involving the leasing of mobile equipment to one enterprise by another for a long or indefinite period, the lessee enterprise is deemed to be the operator, and activities are attributed to the country where the lessee is resident" (IMF, 1993, paragraph 80).

(c) *Leasing*

II.160. The concept of leasing used in the balance of payments is quite precise. It distinguishes between financial and operational leasing.²⁴ The leasing of ships

²⁴ On international leasing and chartering arrangements, see the IMF's *BOP Textbook*, paragraphs 107–112, and the IMF's *BOP Compilation Guide*, paragraphs 495–502.

and other transport equipment with a crew is considered to be a transportation service. A financial lease involves a long-term agreement under which the lessee is responsible for the operation, repair, and maintenance of the ship or other mobile equipment. In addition, the lessor is usually (although not always) a financial institution. For BOP purposes, a financial lease is deemed to be a form of financing, and the lessee is considered to be the owner of the equipment thus financed. The lessor (or legal owner of the assets) is considered to be making a loan to the lessee. In an operational lease (where the equipment is leased without a crew), the lessor is considered to be providing a service to the lessee and the value of the service is equal to the lease payments. The ship is not recorded as an import or export when it crosses frontiers and when there is no change of ownership.

(d) Insurance companies

II.161. The treatment of international insurance transactions reflects the complexity of many of these transactions, especially for the foreign branches of reinsurance and life insurance companies. The OECD recommends that “as far as possible, direct investment

for insurance companies be defined in exactly the same way as for industrial and commercial companies, with the exception of their technical reserves (actuarial reserves against outstanding risks, prepayment of premiums, reserve for with-profits insurance, reserve against unsettled claims), which should be excluded from direct investment stocks. Special inquiry forms, however, will be needed for this complex industry” (OECD, *BD3*, 19964: 22–33).

II.162. When measuring imports and exports of insurance services, it is important to understand the concepts used in the BOP. International insurance services consist of freight insurance (insurance on goods being exported or imported), reinsurance and other types of direct insurance, including life insurance (which also covers commercially provided pension and annuity funds) and non-life insurance. The latter includes casualty and accident, health, marine and aviation insurance.

II.163. Under BOP procedures, freight insurance should cover insurance on goods from the frontier of the exporting country up to the frontier of the importing country, if provided by an insurer who is not a resident of the importing country. Exported

goods are valued free on board (f.o.b) at the frontier of the exporting country. In other words the cost of insurance up to the frontier of the exporting country is included in the value of the merchandise exports.

II.164. The value allocated to international insurance services is, in essence, the service charge levied by the insurance company rather than the total premium. Conceptually, the normal service charge that an insurer takes into account in setting the premium during a specific period may not be the same as the net premium (premium minus claims) payable during that period. Therefore net premium represents both a service charge and capital gains or losses from the point of view of the insurer. The normal service charge is usually calculated as an average of the net premium over a period of years.

II.165. Reinsurance comprises the balance of all flows occurring between resident reinsurers and non-resident insurers, and vice versa.

II.166. Two features distinguish life insurance from other insurance: the length of time between payment of premiums and receipt of claims, and the certainty that a claim will occur.

For these reasons, part of the premiums paid may be regarded as savings, and part of claims as withdrawals from savings. The policy may also have a surrender value, which means that the policyholder may have a claim on the life insurance company. For life insurance companies, the estimated service charge is often calculated as the sum of operating costs and profits.

II.167. Laws authorizing the collection of national statistics, and the vigour with which they are enforced, may have a significant effect on a survey's response rates. Recipients of survey questionnaires are more likely to complete and return their forms if they know they have a legal requirement to respond, and if they are assured that their confidential information will be properly protected by the statistical agency.

4. Conversion of data expressed in foreign currencies

II.168. The procedures to follow in converting the values of variables expressed in foreign exchange rates to the domestic currency should be consistent with the instructions for compiling BOP statistics (see section on

currency conversion in the first volume of this Training Manual). Guidance on exchange rate conversion should be included in the instructions given to survey respondents. There is a difference in the treatment of balance sheet items, where measurement is at a precise point in time, and in transactions items, which are measured over a period of time (the reporting period).

II.169. Balance sheet items (such as net worth and assets) should be converted at the closing market rate of exchange on the date of measurement of the data (box II.40). In other words, if the foreign currency value of *net worth* is recorded for 31 December

Box II.40. Conversion of foreign currency

The IMF's *BPM5* recommends that international transactions be converted at the market rates prevailing on the transaction dates. However, few of the variables (such as compensation of employees, enterprise earnings, value added) used in operational statistics involve international transactions. In these cases, it is recommended that the average mid-point rate for the shortest period applicable should be used. Balance sheet data should be converted at the closing market rate at the end of the appropriate period (IMF, 1993, paragraphs 132-133).

2001, the exchange rate used for conversion should be the closing rate for 31 December 2001. The rate used should be the mid-point between the buying and selling rates, so that the service charge (the spread between the mid-point and those rates) is excluded (box II.41).

Box II.41. Example of currency conversion

An enterprise resident in Babylonia has a subsidiary located in the United Kingdom. On 31 December 2001, the British subsidiary had assets of £20 million and during the month of December 2001 it exported £5 million worth of goods and services. It also paid a dividend of £100,000 pounds to its parent company on 15 November 2001. The closing exchange rates for the pound/Babylonian dollar on 31 December 2001 were 1:4.44 (buying) and 1:4.04 (selling). The mid-point rate, then, was 1:4.24 and this was the rate to be used to convert the assets of the British subsidiary into Babylonian dollars; the result would be 84.8 million Babylonian dollars. The average mid-point for December was 1:4.11. This would have to be used for converting the export data. The result would be 20.55 million Babylonian dollars. Since the dividend was paid at a specific point in time, the rate used would be the actual rate prevailing at the time of payment, which was 4.09, resulting in 409,000 Babylonian dollars.

II.170. Many countries choose to publish BOP statistics in a so-called stable unit of account (such as the United States dollar or Special Drawing Rights (SDRs)) as well as in their national currencies. This offers obvious advantages in terms of international comparability. Countries are encouraged to do this also when publishing data on the operations of TNCs.

5. Preparing a development plan and setting priorities

II.171. Once it has been decided what data to collect, what data sources are available and how they are to be used, it will be necessary to prepare a development plan. This plan should cover the steps to be taken to use these sources and to fill any data gaps that exist. Any legal problems must be resolved, and it may be necessary to develop a system for linking and merging records from different sources. A development timetable should be prepared and an estimate made of the resources required. These plans should be as pragmatic as possible.

II.172. A realistic review of the resources that are or will be available for this activity should be undertaken. This review should take into account not just financing and the availability of computer

hardware and software, but also the availability of sufficiently experienced and trained staff. If an enterprise survey is to be used to collect the information needed, this will necessitate trained staff at all levels. For example, the staff will need the skills to use personal computers with off-the-shelf spreadsheet software. If they do not have these skills they will have to be trained, or persons who do have the skills will have to be recruited. Conducting surveys demands careful and detailed management attention.

II.173. If there are resource constraints, these should be clearly acknowledged and priorities set for data development. It is recommended that this be done after consultation with major potential users. There are many options open to countries. They may wish to start development in phases. For example, they could cover the largest enterprises first, or a key sector, such as manufacturing, and then extend coverage to other areas and enterprises later as resources and/or the availability of data permit. Countries should consider starting with the collection of data on inward investment first (this is usually of greater significance for most countries), and collecting outward investment only later

when they have adequate resources and more experience. Similarly, rather than collecting all of the variables recommended above, countries may wish to start with a shorter list, possibly using data that are the most easily obtainable.

II.174. The development timetable should also be realistic, taking into account such issues as:

- (i) Availability of data and the time needed to investigate them;
- (ii) Availability of trained staff, data processing systems and financial resources;
- (iii) Recruitment and training of staff;
- (iv) Administrative, legal or regulatory hurdles (such as the need to obtain approval for the design and use of new questionnaires or to have new legislation adopted);
- (v) The need for extensive discussions with users and potential suppliers of data;
- (vi) The need to familiarize respondents with the purpose and requirements of any planned surveys and to win their support;
- (vii) The design of questionnaires and a sampling frame (if your survey is to be based on sampling);
- (viii) Development and testing of computer processing and storage systems;
- (ix) Development of other systems required for the survey, such as systems for following up on non-response and for corroborating raw and aggregated data; and
- (x) Development of a format for publishing final statistics.

CHAPTER IV. SURVEYING FOREIGN AFFILIATES AND RESIDENT TNCs

II.175. This chapter reviews the steps involved in surveying resident enterprises to collect operational data on TNCs: from the identification of foreign affiliates and the use of exploratory surveys, to the design of questionnaires and the compilation and publication of the information collected. These steps include setting up and maintaining a register of respondents, designing the questionnaires and surveys, conducting the survey, developing techniques for dealing with non-response and under-coverage, corroborating raw and final data, and storing and processing the data. The chapter examines possible data collection strategies, including the use of censuses, sampling, benchmark surveys and reporting thresholds. It also considers techniques for obtaining the cooperation of survey respondents, problems of respondent burden, and alternative techniques for collecting survey data and for protecting the confidentiality of data.

II.176. The process is a complex one, which demands careful planning and implementation. Attention to detail pays off, whether it is in the design of the form itself or in ensuring that it is sent to the right contact person and the right address. The more efficiently these tasks are performed the higher the response rate is likely to be, and the better the quality of the final product.

A. Setting up and maintaining registers of TNCs

II.177. If the country compiles BOP and IIP statistics using enterprise surveys, the responsible statistical agency will almost certainly have a register that could be used for the collection of operational statistics.

II.178. If not, then two registers will have to be developed to serve as the population frames: for surveying foreign affiliates operating in the country (inward investment), and for surveying domestically-based TNCs (outward investment).

1. Register of inward investment

(a) Identifying foreign affiliates in the host economy

II.179. The first step in establishing a register of foreign affiliates is to identify all enterprises that seem to be foreign affiliates and develop basic records for them. Developing a good, comprehensive and timely register can make a critical difference between producing accurate and useful statistics and producing statistics of little value.²⁵ The task of identifying potential foreign affiliates, therefore, should be given high priority.

II.180. When the list is developed, it is necessary to conduct an exploratory survey of these potential foreign affiliates to determine if they are indeed foreign affiliates that should be covered in the main survey. (This

²⁵ It is particularly important when collecting data on new investment (for measuring FDI flows) to identify new players very early on, since a large amount of investment is often made in the first months or years of a new business's establishment. The problem is generally even more urgent when the new direct investment involves the acquisition of an existing domestic enterprise.

exploratory survey is discussed later.)

II.181. The search for potential candidates could start by using data collected for BOP and IIP purposes, especially if the country conducts enterprise surveys to obtain these data. If BOP data are compiled using an ITRS from records of international banking transactions, it may be possible to identify those enterprises which have frequent and/or large transactions. A large number of such enterprises are likely to be foreign affiliates or the domestically based parents of foreign enterprises.

II.182. Many of the possible sources of data for ownership and operational statistics discussed above are also potentially excellent sources of information for identifying foreign affiliates. These include those government ministries and agencies that review or license foreign investment, supervise banks and insurance companies, and regulate and monitor other key industries and business activities. Some examples are the customs authority (which provides information on major importers and exporters), the income tax department (which provides data on enterprises paying non-resident withholding taxes and firms entitled to tax

holidays) and the privatization agency (that provides information on sales of assets to non-residents). Non-government sources include industry associations, stock exchanges, securities commissions and specialized registers of foreign companies. Discussed below are some of the other sources worth investigating.

II.183. Corporation registries: Corporation registration procedures in some countries require that any foreign investment in new corporations must be declared.

II.184. The statistical agency's business register: Most statistical agencies have sophisticated procedures for identifying new businesses. Many undertake a preliminary survey to collect certain basic information about new businesses to determine, for instance, whether they are active, what type of economic activity they are involved in and their correct addresses. Some collect basic information on their ownership (box II.42). If the business registry in the country does not do this, it may be possible to add one or two questions to its questionnaire for this purpose. As noted under the section on *merging records*, there are considerable advantages if the business register also adopts

a system of unique identification numbers for establishments and enterprises.

II.185. Press reports on new foreign investment: The financial press and financial sections of national and local newspapers, specialized trade periodicals, wire services and other information services are often an excellent source of timely information on new FDI (see box II.45 for an example from Australia, and box I.47 in the first volume of this

Box. II.42. Example of a business register with basic ownership information: Finland

Statistics Finland maintains a business register with a total of 248,000 operating enterprises and 276,000 establishments. The information collected on enterprises includes a business identity code, name, address, telephone number, industry, size of the group (employment and turnover), date of establishment, legal form, number of establishments and whether the firm is an importer or an exporter. In addition, the register provides information on ownership type (e.g. foreign, State, municipality or private domestic). Establishment records cover similar but less detailed information.

Source: Statistics Finland website, at: http://www.stat.fi/index_en.html.

Training Manual). The articles will generally indicate the foreign investors involved and their local partners (if known). Such information will often provide useful leads. However, figures quoted are often questionable and will need to be verified.

II.186. Corporation names: Sometimes even an enterprise's name or the trademark it uses may suggest that it is an FDI enterprise or that it has a strong foreign connection. The name of a domestic enterprise may incorporate that of its parent TNC. Examples include such enterprises as Exxon (Al-Khalij) Inc (United Arab Emirates), EC (Bahrain), and ANZ Grindlays Bank PLC (Jordan). Sometimes the wording used in the name may indicate a foreign relationship. For example, National Insurance Co of Egypt (Qatar), the Saudi American Bank and Saudi British Bank (both of Saudi Arabia). Occasionally, even the language used will provide a clue, such as Banque Banorabe (United Arab Emirates) (UNCTAD, 1996).

II.187. Investment promotion agencies: There are a large number of organizations that promote FDI. These include national and local agencies seeking to attract investment to individual countries, cities and regions, as

well as international agencies that encourage FDI especially to developing countries. In addition, governments of many developed countries (as well as some developing countries) have set up agencies that provide insurance to enterprises that undertake FDI in developing countries (box II.43). These various organizations work closely with potential direct investors, and may possess a large amount of information about enterprises that have invested or are considering investing in a region. Many of them may be willing to share some of this information with national statistical agencies. Most of the organizations may be able to provide the list of the direct investors with which they

Box II.43. Investment Promotion Agencies in selected countries

Among the organizations promoting and/or insuring FDI in West Asian countries are: the Inter-Arab Investment Guarantee Corporation, which has its headquarters in Kuwait and the Islamic Development Bank, headquartered in Saudi Arabia. Most countries that are active international investors, such as many European and North American countries, Japan and Australia, provide insurance or other assistance to their enterprises that are direct investors.

have done business, and on their foreign direct invest enterprises. It will be necessary to identify the promotion agencies active in the country and consult them to obtain their cooperation. Such organizations can often provide leads on other information sources too.

II.188. **Insider information:** It is also possible to identify many of the larger TNCs and their affiliates through interviews with persons possessing specialist knowledge of key sectors, such as the oil or finance industry. Such insiders may include officials of key government ministries, industry associations, stock market experts, academics and foreign embassies.

II.189. **Other sources:** It will be necessary to obtain an address for each enterprise to be surveyed. In many cases this can be obtained from the sources discussed above, especially from the national corporations registry (which may also supply the enterprise's unique identification code if there is one), the statistical agency's business register, or tax and various other administrative records, if they are available. There are generally also other sources that are useful for this purpose. These include trade directories, telephone directories (including yellow pages if they

exist in the country), private companies that specialize in supplying mailing lists (usually for direct mailing campaigns, for a fee) and possibly even the post office.

(b) What information should the register contain?

II.190. The register should contain two sets of data:

- (i) Records on suspected or potential respondents; and
- (ii) Records for "active" enterprises that are known to be the domestic affiliates of TNCs.

II.191. There should be a separate record for each active respondent and each potential respondent. This record should at the very least include the name of the enterprise, its unique identification code, its address, the contact officer, telephone and facsimile numbers, its principal economic activity and size. If the national statistical agency allocates a unique identification code to each enterprise, this is the code that should be used. In some countries, enterprises are given a unique code when they are incorporated or set up. It may also be appropriate to use this code. The records should be organized

in such a way that they can be used to generate mailing lists and labels for use in the survey.

II.192. The systems actually used for maintaining the register may vary from country to country. Some countries may wish to maintain a computer-based file containing records for all potential and active respondents,

others may accomplish the same results by keeping a file (on paper or computer) for each respondent, together with a mailing list or lists for the surveys (see table II.9 for an example).

II.193. If the data to be collected are to be based on consolidated reporting for a group of related

Table II.9. Examples of how an enterprise group in Babylonia is recorded

Name, address and identification number of direct investment enterprises	Legal status	Name, address and country of residence of direct investors	Per cent of voting shares owned
<u>Parent of group</u>		<u>Foreign direct investors only</u>	
AAA Manufacturing (Escawa) Inc, 123 Red Desert Boulevard, Babyloniaville 456235-01	Corp	AAA Manufacturing Co, 756 West Cliff Dr, Greenwood, MA, USA	76.3
		YYY Metal Coatings Ltd, Yarrow Road, Melbourne, Australia	11.8
<u>Babylonian subsidiaries & branches (direct & indir.)</u>		<u>Group members & foreign direct investors</u>	
Superior Plastic Manufacturers Inc Ocean Drive, Babyloniaville 456235-02	Corp	AAA Manufacturing (Escawa) Inc, 123 Red Desert Boulevard, Babyloniaville	66.7
BBB Property Development Co 2444 Eucalyptus Way, Hometown 456235-03	Branch	AAA Manufacturing (Escawa) Inc, 123 Red Desert Boulevard, Babyloniaville	50
Babylonian Thermoplastics Inc 981 Mountain View, Belleville 456235-04	Corp	Superior Plastic Manufacturers Inc Ocean Drive, Babyloniaville	85
		ABC Technologie GmbH Ruhrstrasse 245, Duesseldorf, Germany	15
<u>Babylonian associates</u>			
Superior Trading Ltd Old Castle Road, Babyloniaville 456235-05	Corp	Superior Plastic Manufacturers Inc Ocean Drive, Babyloniaville	25

enterprises (enterprise group), the record should describe the enterprise that is the parent of the group. It should also include details of the structure of the enterprise group to which the reporting enterprise belongs. This should consist of the name of each member of the group, its address, legal status, relationship to the group parent (e.g. 55 per cent-owned subsidiary), year of establishment and details of any other resident enterprise in which it owns 10 per cent or more of the equity. Information on the structure of the enterprise group should also be included even when data are collected from individual enterprises. This should be done to ensure that associated enterprises are not missed out from the survey. Similarly, if operational data are to be collected at the establishment level, it will be necessary to record information on each establishment that is part of the group and its relationship to members of the group.

II.194. While such a register is needed as a basis for the survey of FDI enterprises, it could be developed and maintained as part of the statistical agency's overall business register. Some national statistical authorities maintain a common register for all business surveys. The register for TNCs

does not have to be physically separated, and indeed there may be some advantages in developing and maintaining it as part of a common register unless this information can be obtained from BOP surveys or other sources.

2. Register of outward investment

II.195. It will probably be more difficult to identify potential respondents for a survey of domestically based TNCs. However, many of the sources described above will be useful for identifying potential candidates, especially the larger ones. The register should contain a record for each respondent and potential respondent. This record should include the same kind of information on the domestic parent enterprise as that contained in the register of inward investment: the name of the domestic enterprise, its unique identification code, its address, year of establishment, the contact officer, telephone and facsimile numbers, its principal economic activity and size. If the enterprise group is to be the basis for collecting data, the record should relate to the enterprise that is the parent of the group. It will be necessary to conduct an exploratory survey of potential resident TNCs to obtain the basic

information needed to determine if they should be covered in the full survey, unless this information can be obtained from BOP surveys or other sources.

II.196. The register of outward investment does not have to be physically separated from the survey of inward investment or the agency's main register. One of the simplest ways of handling all surveys on firms' operations (including the exploratory survey, if desired) would be to maintain one register for all enterprises

(little more than a mailing list, indicating which surveys are received) backed up by a filing system with records for individual respondents. Alternatively, with the aid of computer technology, it is quite easy to provide all statisticians with online access to more detailed information on each enterprise (see example in table II.10). It is important that the registers and mailing lists be constantly updated to record changes in enterprises' names and addresses, contact information,

Table II.10. Example of possible investment register record

Enterprise name	Babylonian Manufactures Co,
Address	155 Red Desert Boulevard, Babyloniaville
Identification no.	456241-01
Ownership type	Babylonia-based TNC
STATUS	Active
Contact name	M. Siddiqi
Title	Director of accounting
Tel. No.	111-4567
Fax no.	111-4568
Size group (2000 sales)	\$30-35 million
Economic activity (ISIC)	26
Year established	1991
Legal status	Corporation
Survey coverage: Explor.	March 1996
OTC 2	96, 97,
OTC 3	98, 99, 00, 01
OTC 4	98, 99, 00, 01
Former name/date of change	Prestige Engineered Concrete Products Co. August 1998
Former address/date of change	101 Mountain View Rd. Babyloniaville. August 1998

Notes: Before February 1998 company was affiliate of German TNC. It was then bought by Babylonian investor. In August 1998 co-acquired assets of Excel Cement Co and then changed its name and moved its HQ.

the surveys to be received, and the formation or closure of enterprises.

B. Exploratory survey of potential respondents

II.197. If the ownership and investment information needed is not available from existing sources, it will be necessary to launch an exploratory survey to identify FDI enterprises as well as domestically based direct investors. The purpose is to determine whether an enterprise identified as a possible foreign affiliate or a domestic parent of foreign affiliates is indeed one of these. If so, it should be added to the “active” list.

II.198. The exploratory survey should be kept quite simple in order to elicit the maximum possible response and to minimize processing time and costs. In essence, the survey needs to establish:

- (i) If a particular enterprise is a domestic affiliate of a non-resident enterprise;
- (ii) If it is the resident parent of a foreign affiliate or affiliates;
- (iii) Its size (needed for sampling purposes, in setting collection

priorities and thresholds); and

- (iv) The structure of the enterprise group to which it belongs.

II.199. The survey will also help to confirm basic contact information. Where the data needed are already available for an enterprise (especially significantly large one), the enterprise should be included immediately in the full survey, omitting the exploratory stage.

C. Data collection strategy

II.200. Other important decisions to be made with regard to the new survey should include whether to undertake a census, a partial or sample survey, or some combination of these. A census, of course, covers all units of the population and usually provides the most accurate results. However it is the most expensive type of survey that can be undertaken.

II.201. Many countries employ *partial* surveys, which are more economical, and, if properly conducted, they can be fairly accurate. In a partial survey only those enterprises that are above a certain threshold size are required to report. The threshold could be based on size of assets, sales or a similar variable. If the threshold

level is carefully chosen, it should be possible for the survey to cover most FDI enterprises and most domestic parents of foreign affiliates. In many countries, these enterprises are quite large. When countries use partial surveys, they should adopt procedures for measuring all members of the population on a fairly frequent basis. This can be done through appropriate questions included either in an exploratory survey, or through the regular sampling of enterprises that fall below the threshold level, or by benchmark censuses, or a combination of the three (see box II.44 for the case of the United States). This will provide a base for making

estimates for under-coverage due to the use of the partial survey approach. Countries undertaking benchmark censuses generally do them less frequently because they are usually expensive to conduct.

II.202. The use of *sample surveys* is relatively inexpensive. However, the enterprises to be surveyed must be selected according to stringent sampling techniques (box II.45). The statistician's objective should be to keep both the sampling error and the number of enterprises sampled as low as possible. In doing this, the statistician faces two challenges caused by the rules of sampling: the larger the size of the sample, the smaller is likely

Box II.44. Use of benchmark surveys and thresholds: the United States

The United States Bureau of Economic Analysis uses a combination of benchmark surveys (or censuses) and sample-based surveys for compiling its annual statistics on the financial and operating data of United States TNCs (outward investment). It conducted a benchmark survey, for example to obtain complete and accurate data on United States direct investment abroad in 1994. Previously, benchmark surveys were conducted for 3 years in the

series - 1982, 1989, and 1994 - and they will continue to be conducted every five years. In non-benchmark survey years, a sample survey is conducted to derive universe estimates that are comparable with the benchmark survey data. The sample of affiliates for non-benchmark surveys is determined by the size. The sample for the non-benchmark survey covering 1995, for example, consisted of affiliates that had total assets, sales, or net income (or loss) greater than \$20 million.

Source: United States, Department of Commerce, 1997: M-1.

to be the sampling error, and the greater the degree of variation that exists in the activities being measured, the greater is likely to be the sampling error. The degree of variation tends to be higher among larger enterprises. In many countries, statisticians overcome these challenges by employing strata sampling techniques, which work well with heterogeneous populations. In this type of sampling, the universe is divided into strata or subgroups (often based on the enterprise's industry and/or size). Subsequently enterprises are randomly selected from each subgroup. Often, the largest enterprises are fully covered.

Box II.45. Example of sampling: the United Kingdom

The United Kingdom compiles statistics on the operations of TNCs using data from the *annual business inquiry*. Forms are in general despatched to all businesses with 100 or more employees, samples of one-in-four and one-in-two respectively being taken for businesses in the 20-49 and 55-99 employment size bands. Estimates are made for non-responders, unsatisfactory returns and enterprises not selected for the Inquiry.

Source: OECD, 1999: 269.

D. Designing questionnaires and surveys

II.203. Before designing the survey questionnaire, the agency should determine what operational data it wishes to compile, how frequently the data are needed and what classifications should be used. These decisions should be made in consultation with the principal users. Next, the agency should consult with a selection of potential data suppliers from different industries and different sized enterprises to determine the availability of data and their record keeping practices (including timeliness), which could affect their ability to respond. These consultations will provide the insights needed for designing the survey and its questionnaire.

II.204. There are other important issues to consider. If the agency decides to collect both inward and outward investment data, it would be logical to have one main survey questionnaire to cover investments abroad and another to cover investments coming from abroad. The sample questionnaire in annex II.3 covers investments abroad by home-based TNCs. However, it could be easily

modified to include investments abroad by the foreign affiliates operating in the home economy, if it is decided that these data should be collected. Similarly, the sample questionnaire in annex II.2, which is designed to measure inward direct investment, could also be modified to cover the activities of home-based TNCs.

II.205. The agency should also decide whether to have different types of questionnaires to cover different industries. As noted in Chapter III, there are special issues affecting, for example, construction, insurance and some international transportation activities. As a result, there are differences in how certain variables should be measured, and some questions may have to be put differently to entities operating in these industries. There are other factors that also need to be considered. For instance, statisticians may wish to use a reporting threshold to reduce the burden that surveys place on respondents, especially the smaller ones (box II.46). Some countries are able to use administrative data for smaller enterprises, thus eliminating the need to survey them. Sometimes, other data sources may be available for certain industries so that it is

possible either not to survey that industry at all or to reduce the amount of information collected. For example, in the United States survey of direct investment abroad for 1994, United States parents and affiliates in banking were permitted to report less detailed financial and operating data than nonbank parents and affiliates because most of the information on bank parents and affiliates that was needed for policymaking purposes already had to be reported to other United States Government agencies (United States, Department of Commerce, 1997: M-4.) The Bureau of Economic Analysis therefore adopted shorter, specialized forms for bank parents and bank affiliates.

II.206. However, as the IMF notes with respect to BOP surveys, “While there may be many advantages to tailoring BOP forms to particular enterprises, proliferation should be avoided. Too many BOP form types can confuse respondents and processing staff alike, lead to complicated procedures that are difficult to manage, and cause inconsistencies in collection of data” (IMF, 1995, paragraph 894). An alternative to the use of forms tailored to particular industries is to add questions to the main form

Box II.46. Selecting threshold levels

The choice of threshold sizes will depend on such factors as the size and statistical distribution of enterprises or establishments operating in the economy, the level of detail to be published and the sampling technique used. Ideally, the threshold size (and the sample selected) should be determined with reference to census or benchmark information. Only when they have access to such data can statisticians design an optimum system that

ensures high quality results while keeping the number of respondents surveyed to a minimum. The example below classifies a set of hypothetical foreign affiliates by sales size. It can be seen that setting a sales threshold of \$500,000 would enable statisticians to survey over 97 per cent of the universe of enterprises. Data for the enterprises below this threshold would be estimated using techniques already discussed.

Box table II.46.1. Enterprise size range by sales

	Less than \$100,000	\$100,000 to \$250,000	\$250,000 to \$500,000	\$500,000 to \$1 million	\$1 million to \$10 million	Over \$10 million	Total
Number	42	53	198	1 293	165	24	1 775
Sales (\$ '000)	3.8	10.6	82.3	945.4	1 436.9	1 136.1	3 615.1
Size range sales as a percentage of total	0.1	0.3	2.3	26.2	39.8	31.4	100

The choice of variables to be used in the threshold or sample selection will also depend on what is to be measured and what variables are available. Some countries use the sales variable because sales data are often readily available, for example from the government agencies responsible for collecting value added tax (VAT) or other sales taxes. No single variable is perfect when collecting survey

data on such different variables as employment, exports or assets. Some industries are more labour- or capital-intensive than others. Most have different sales-to-asset ratios. At least one country (the United States) tries to overcome this by using a threshold based using several variables. Its survey for 1995 covered affiliates that had total assets, sales, or net income (or loss) greater than \$20 million.

that are specifically addressed to, for example, the insurance industry. In addition, the agency could add industry-specific notes to the instructions that accompany the questionnaire.

II.207. The design and layout of a questionnaire and the wording used in formulating the questions can make a significant difference to the quality of data received and to the survey's response

rate. Designing surveys is an art and there are certain important guidelines that need to be followed to ensure success.²⁶

II.208. The overall appearance of the survey questionnaire and the administration of the survey should emphasize its importance, professionalism and legal authority. It should provide the background information that respondents need to complete it correctly.

II.209. The first page of the form is particularly important, since it gives the respondent the first impression of the survey. This page should convey the following information:

- (i) The form is official (by using the organization's/agency's official name, and its logo if it has one);
- (ii) There is a legal requirement to fill it (by quoting the relevant legal authority under which the organization/agency is operating);
- (iii) The survey is of national importance (by providing a

short statement describing the purpose for which the data will be used);

- (iv) The information collected will be kept strictly confidential (by quoting the appropriate legal provision);
- (v) There is a deadline for the completion and return of the form (by indicating the date of the deadline); and
- (vi) The agency that conducts the survey will answer any questions that respondents may have about the form (by providing the telephone and fax numbers, and if possible a contact name).

II.210. The questions in the form should be arranged in a logical fashion, with related topics being kept together. This will facilitate completion of the form. Because the data being collected covers different types of information – ownership, investment, financial and operational – it is likely that different departments of the enterprise will be involved in completing it. Therefore it will help if these various departments do not have to jump from one section of the form to another to fill out their parts.

II.211. The final section should require respondents to identify

²⁶ The subject of questionnaire design is dealt with at length in Chapter XIX of the IMF's *Balance of Payments Compilation Guide* (IMF, 1995). Most of what it explains is relevant for the collection of statistics on the operations of TNCs.

themselves by requesting the name, title, signature and telephone number. This will expedite follow-up questions that the compiler may find necessary for clarification purposes after completion of the form. It will also help to impress upon the respondents their responsibility for completing it.

II.212. Form designers should be economical in their demands for information. The more questions asked, the greater is the burden for respondents. This in turn will slow down the response to the survey, or result in a lower response rate and therefore increase the statistical agency's processing costs. Agencies should use data from other sources when they are available and reliable, rather than add additional questions to the survey. Initially, questionnaires should be kept quite simple. More detailed questions may be added in subsequent surveys, after respondents have become more knowledgeable about the survey and its objectives. As far as possible, the data requested should be consistent with the records kept by enterprises, even if that means making some adjustments to the data after they have been received.

II.213. The language used in the questions should be carefully

chosen and drafted. It should be clear and unambiguous, and as simple as possible, leaving little possibility for being misunderstood or misinterpreted. Once a survey questionnaire is designed, it is important to test its validity by reviewing it with knowledgeable persons from a variety of backgrounds, such as business people, and representatives of relevant industries and accounting associations. They should be representative of those who will be asked to complete the forms. This should help the surveyor determine if the questionnaires make sense or what changes, if any, should be made to them, and whether administrative arrangements, such as the planned timing of the survey, are suitable.

II.214. Collecting operational data from some industries (such as the international transportation industry), and special types of enterprises (such as holding companies), may require the use of special questions. Rather than overload the main questionnaire with these questions, it may be preferable to add special forms or specially tailored questions to the regular forms sent to such enterprises and industries.

II.215. Sample questionnaires for surveys on inward and outward

investment are presented in annexes II.2 and II.3 respectively. The questionnaire in annex II.2 could be modified slightly to collect data on the domestic operations of home-based TNCs.

E. Alternative ways to collect information from respondents

II.216. Most countries will find that the simplest technique for collecting information from respondents is by mailing to them the printed questionnaires. Certainly, this is likely to be the least expensive and least resource-intensive approach in most cases. However, in some countries, where the postal services are unreliable or slow, other methods of delivering questionnaires and collecting them after completion may be necessary. The alternatives might include hand delivery (this would obviously depend on factors such as costs and geography), or transmission by fax or e-mail. If a large enough number of respondents have e-mail facilities and are willing to use electronic processing, this system may be very attractive (box II.47). However, it may involve a significant capital investment and may only be justified when multiple surveys are involved.

II.217. It is also possible to collect data by telephone interview, although this method is not generally recommended since it can be very expensive in terms of the use of the agency's personnel resources. Use of telephone interviews is recommended when key respondents are late in filing their returns, and it can be an invaluable means of obtaining such data before the survey deadline is passed. If a country

Box II.47. Example of alternative collection techniques: Singapore

The Singapore Statistics Department has set up a secured service called E-Survey, which permits its respondents to submit survey returns via the Internet. The service is available to respondents who have already received survey forms, a company reference number and personal identification number. The system provides instructions on how to use the electronic system, including information on computer system requirements. After respondents have logged on, the appropriate survey form appears on their computer screen. The respondents must first confirm that their establishment's name and address are correct, and only then can the form be completed online with the help of online explanatory notes and validation checks.

Source: Statistics Singapore's website at: <http://www.singstat.gov.sg>

decides to use this approach, it would be necessary to provide the respondents with a copy of the survey form and instructions well in advance of the telephone call so that they can prepare themselves with the knowledge and information needed. Collecting data by personal interview is another technique to consider. As with telephone interviews, this technique would work only if the respondents have a copy of the questionnaire and instructions well in advance. It is also an expensive approach, but it is one that might be considered for statistically significant enterprises that have a poor response record. If personal interviews are used it is important for the official interviewer to be selected for his or her skills of persuasion and knowledge of the survey and its purpose. Careful training of interviewers is recommended.

II.218. Some countries use industry associations, such as bankers' associations, to collect data from member enterprises. However, this technique depends on the willingness of respondents to entrust their confidential information to an association (especially one which comprises their key competitors), and it is unlikely to work well in a situation involving a new survey,

such as this. Use of regional offices of a statistical agency is another option. However, this can also be expensive and time-consuming.

F. Winning cooperation and the reporting burden.

II.219. Before a new survey is launched, it is important that the potential respondents be fully informed about the survey, such as its purpose and its legal authority. The objective should be to win over the respondents and to answer any legitimate concerns or problems they may have, and to help them provide the information that is needed. According to the IMF, "[E]xperience has shown that most lack of co-operation comes from concern over confidentiality, embarrassment, stemming from failure to understand a form, presumption that completion of the form would be overly time-consuming, or poor or negative experiences with other government units" (IMF, 1995, paragraph 198).

II.220. Part of the solution is for statisticians to be sensitive to the problems of potential respondents and to ensure that they are as well informed as possible. This can be done through the distribution of well-written press releases and information sheets and "town hall

meetings” about the survey and its purpose. In addition, the agency should meet with key industry and professional associations, and/or have its senior members discuss the survey. It would help if the agency were to show that it is happy to answer questions and concerns the enterprises may have. It may also wish to organize workshops to train the enterprises’ responsible staff.

II.221. The data collection system should be designed so as to minimize the burden on respondents, and other measures should be taken to address the concerns of small businesses in particular. The reporting burden

affects all enterprises, regardless of size, but it is particularly onerous for small ones, which often do not have the specialized staff or other resources necessary to complete long and complex questionnaires (box II.48).

II.222. In many cases benefits accrue also to the statistical agencies themselves: a lower reporting burden can reduce the amount of processing that agencies must undertake, thereby reducing costs. It can also help in terms of better survey responses. Respondents who know that the statistical agency is careful about keeping its demands for information to a minimum are

Box II.48. Taking care of small businesses: Statistics Canada

“Smaller businesses are less often direct users of statistical information. They also have less resources to complete questionnaires so that their dominant issue is reporting burden. Statistics Canada deals with their concerns by:

- Actively minimizing the reporting burden, particularly on small business, through the use of administrative records, sampling and other means (e.g. abbreviated questionnaires);
- Offering to small business

optional reporting methods (e.g. mail and prearranged telephone interviews);

- Estimating, at least annually, the aggregate reporting burden imposed on businesses, particularly on small businesses and conveying to them the results; and
- Otherwise maintaining active liaison with small business organizations so that they are aware of the measures taken to minimize and control the burden”.

Source: Drawn from a presentation by Ivan Fellegi, Canadian Chief Statistician, to Washington Statistical Society, 1995.

more likely to be cooperative when they are surveyed.

II.223. There are a number of ways to reduce the reporting burden. Firstly, maximum possible use should be made of administrative records, even in cases where this requires changes in the law. Designing a central business register, which uses unique identification numbers for all enterprises and establishments, enables statisticians to link records obtained from different sources (as discussed earlier). This can often preclude the need for additional surveys. Extensive use of sampling techniques also reduces the number of units that must be surveyed (especially smaller ones). Use of reporting thresholds is another way of eliminating a large number of small respondents from a survey. Less frequent surveying (possibly of smaller enterprises only) is another effective technique. Some countries also use shorter questionnaires to survey smaller enterprises.

G. Conducting a survey

II.224. Conducting a survey is demanding and requires careful management with an eye for detail. Considerable attention should be given to the preparation

process, including listing the tasks involved, estimating the manpower requirements and developing a detailed timetable for commencement and completion of the tasks. This timetable may include:

- (i) Finalizing the questionnaire design,
- (ii) Printing of questionnaires,
- (iii) Completion of mailing lists,
- (iv) Stuffing of envelopes and mailing,
- (v) Follow-up on non-responses,
- (vi) Corroboration and querying of raw data,
- (vii) Input and processing of data,
- (viii) Verification of aggregates, and
- (ix) Preparation for publication and release of final statistics.

H. Dealing with non-response

II.225. When launching a new survey, it is imperative that statisticians do their utmost to maximize the response rate. Initial response rates, especially to new surveys, could be below 50 per cent. If this rate is not improved over time, it could adversely affect the survey results.

II.226. The level of response would very much depend on, among others, the amount of

advance preparation that has gone into a survey's design, the quality of the survey form and clarity of its questions, the thoroughness in checking mailing addresses and the prior information provided to the survey recipients. Much will also depend on the survey follow-up. While consideration should be given to techniques to deal with non-responses (box II.49), it is more important that statisticians establish a stringent set of procedures for following up on non-responses. They should start by setting a firm

deadline for reporting (which should be clearly stated on the questionnaire) and by drawing up a schedule in advance to follow up on enterprises that have not responded by the deadline. This follow-up action should be taken quickly (within a few days of the missed deadline), and should be polite but persistent and as convincing as possible. It is good practice to use persuasive staff to conduct telephone reminders. The initial follow-up may be done by letter (if the postal service in

Box II.49. Treatment of non-responses

There are no infallible techniques for dealing with non-responses. Much depends on the quality of the advance preparation for the survey and the way it has been structured. It helps if the survey is based on sampling, as one "advantage of sample surveys is that the impact of non-response is reduced." "Non-responding enterprises are generally treated the same as unselected enterprises and, in effect, are allocated the average activity of related, responding enterprises." Sooner or later, however, statisticians are likely to encounter non-response from enterprises that are too significant to overlook. When all efforts to obtain a response have failed, they will be forced to make estimates.

Source: IMF, 1995: 193.

In doing this there are several techniques they may employ, such as the use of:

- Other sources, if the data needed are available from administrative or other sources;
- Projections, using data reported by the entity for previous periods; and
- Data modelling, using proxy data and/or related data (e.g. payroll taxes collected for a particular industry may help in estimating employment for that industry).

However estimation should not be a substitute for collecting reliable data. Techniques should be frequently reviewed and estimates revised if and when a response is obtained.

the country is efficient), by fax, or, in the case of larger companies, by telephone. It will be necessary in many instances to send out a series of reminders at scheduled intervals.

II.227. Because of limitations of time and resources, priorities should be set. It is sensible to focus more attention on larger, more important companies, since they will have a greater impact on the survey results. They should be reminded that their completed questionnaire is overdue, and it is useful to get them to commit to a date for returning it. It may even be possible to obtain the most important items of data from them over the telephone. For the most important companies, it may be appropriate to escalate the frequency of reminders. This could be done by first sending a fax, then by telephoning the contact person at the enterprise and then, finally perhaps, by having a senior member of the agency's staff telephone a senior officer in the enterprise. However, all cases of non-response, even those involving small enterprises, should be followed up, although in the case of the latter, form letters will usually suffice.

II.228. In the most serious cases it will be necessary to investigate

the underlying causes for non-response. If it is because the responsible official in the enterprise does not understand the questionnaire, cannot provide answers to all the questions asked or does not trust the agency to protect the confidentiality of the information, the agency may be able to solve the problem. In the final resort, it may be necessary to take legal action, provided of course, that the agency has the legal authority to do so.

II.229. A *collection register* should be maintained to enable control of the forms sent out to each enterprise and the follow-up action taken. It may be necessary to quote these records if legal action becomes necessary. The collection register should record which form the enterprise receives, who receives it (name, title and contact telephone and fax number), when the form was sent, due date, follow-up action taken, any notes that are relevant and date received (table II.11). Responsible officers in the statistical section should sign the register when making an entry. The collection record could be computer-based. This register is an important tool in controlling the survey and especially in dealing with a poor response rate.

Table II.11. Example of hypothetical collection register

Company name and identification number	Contact	Forms sent	Date sent	Date due	Follow up		Date received
					Actions/dates	Notes on telephone calls, etc.	
XYZ Oil & Gas Inc - 456345	M. Sidiqi, Manager, International Division	OTC 2	4/2/2002	4/23/2002	Tel 24/4 DB Tel 30/4 DB	Said information from subsidiary in Canada not ready until end of month. Otherwise no problems DB	22/04/2002 DB
		OTC 3	02/04/2002 Extension to 30/5	4/23/2002	DB		03/05/2002 DB
XYZ Pottery Babylonia Inc. - 456210	H. Nasr, Director, Accounting Department	OTC 2	02/04/2002 - Extension to 30/5 RM	4/23/2002	Fax 25/4 RM	Company was taken over last month this will delay receipt of form until first week in May. Provided help with exchange rate conversion DB	07/05/2002 RM

I. Corroborating raw data

II.230. To ensure the quality of the final statistics, it is essential to examine the raw data provided by survey respondents before compiling and publishing aggregate statistics. The following basic checks should be performed to identify reporting errors:

- (i) **Arithmetic:** This is of course the simplest check to make. It needs to ensure that the components add up to the totals shown, and that figures reported for the same item in different parts of the completed form are the same. Many countries use simple

computer programs to edit the raw data for errors in the arithmetic.

- (ii) **Comparison with related data:** A series of ratios should be developed based on data obtained from national accounts, customs authorities, BOP FDI flows and the agency's own surveys to determine if the values reported by individual respondents are reasonable. For example, if data on compensation and number of employees are collected, the figure for compensation could be divided by the reported number of employees to

determine if the average obtained is consistent with the average compensation for that industry.

- (iii) **Consistency with previous reports:** In checking the data reported with the previous report filed by the respondent, if there are big discrepancies, the respondent should be contacted for an explanation.
- (iv) **Large values:** In addition to checking large changes in individual returns, any large values that would have a major impact on the totals should also be verified. Some agencies telephone respondents to confirm that the largest reported values are correct. This is particularly important in doing the first survey, when there are no previous reports or other data with which to compare results.
- (v) **Verify against known external facts:** Many agencies collect "investment intelligence" from newspapers and stock exchange reports, and use the information to corroborate individual records. For example, these sources may have indicated that during the reporting period a large FDI enterprise acquired control of another domestic enterprise

that was previously owned by residents. This information should be kept on the enterprise's file and compared with the data it reports in its survey questionnaire.

J. Corroborating final estimates and confidentiality issues

II.231. Once the agency is satisfied that it has collected all key data, and that individual results are satisfactory, it will need to compile the final estimates. The final figures should include estimates for non-response and under-coverage, and for sample expansion if sampling techniques are used. It is recommended that worksheets be developed for this purpose, and that the techniques used for making these estimates be carefully documented and securely stored when completed.

II.232. It will be necessary to corroborate these final estimates, not only to identify any compilation errors that may have occurred, but also to explain major changes and developments in the statistics and how they have performed vis-à-vis related statistics such as on industrial output, employment and international trade.

II.233. The agency should use the same types of checks that were used

in verifying the raw data. Basic arithmetic checks should ensure that subtotals and components add up to totals. In addition, the current estimates should be compared with estimates for the previous period, validating large period-over-period differences, and especially large values (box II.50). Data should be reviewed in the light of known economic facts. For example, if non-residents took over several of the country's largest enterprises during the current period, this should be reflected in an increase in the values for the foreign-owned sectors affected.

Comparing operations aggregates with related data from national statistical series will also help to verify the operations' figures and explain how the foreign-owned sector has performed vis-à-vis the economy as a whole. For example, if national exports of chemicals have fallen by 20 per cent since the previous period but exports by foreign-owned enterprises in the chemical manufacturing sector have increased by 20 per cent, an explanation should be sought. Similar comparisons should also be made for the other variables being compiled. For instances,

Box II.50. Example of a simple arithmetic check

One simple technique is to use a computer program that identifies period-over-period changes for each variable and each record and then prints out results in

descending order of value. It is particularly useful to do this by economic activity and by country of ownership. The result could then be shown as follows:

Industry/enterprise	No. of employees		Difference
	1999	2000	
Mining and quarrying	12 240	14 560	+2 320
ABC Exploration and Development Inc.	256	2 115	+1 859
XXX Marble Ltd	115	267	152
YYY Stone Quarries Ltd.	148	171	23

It is clear from this that ABC Exploration accounts for 80 per cent of the increase in employment in the mining and quarrying industry between the two years. It is important to contact the

enterprise to verify its figures. If there is an error, the data should be corrected before the final estimates are released. This also gives the agency a better understanding of the final statistics.

changes in employment and in compensation of employees for foreign-owned enterprises should be compared with figures for individual economic sectors and for the economy as a whole.

II.234. One final task before preparing the data for publication is to review the final results to ensure that they do not divulge any confidential information, either directly or indirectly (box II.51). This will clearly happen, for example, if there is only one foreign-owned enterprise in the mining and quarrying sector and the data are published for that sector. In this case, data for

quarrying and mining will have to be combined with data for another sector. In addition, there may be cases where individual records may be divulged indirectly. This would happen, for example, where data are published for a cell, which has only two records, since this would enable either of the two enterprises to calculate the other's information. For this reason, many countries follow the so-called "rule of three" under which they will only release data for a cell if its figures cover at least three records. Data must not be published for an industry or other data cell that is dominated by one enterprise (or establishment).

Box II.51. Suppressing confidential information: the Netherlands

".... [B]reakdown of variables in the case of enterprises more often leads to 'uniqueness' and therefore disclosure risk. Disclosure protection is even more difficult because of the fact that larger enterprises are usually included in all statistical surveys and because general information about these companies is fairly widely known. Another important aspect is, of course, the level of aggregation of data. In simple terms, there is tabular information on the one

hand, and individual records on the other. ... Rules differ from country to country, but the standard rule is often that no information is released relating to three or less enterprises, or information about an industry group in which one company has a very dominant position. To prevent disclosure, information was suppressed (CBS [the Central Bureau of Statistics] used and still uses an 'x' in cells to indicate that information is 'secret') or combined".

Source: de Vries and Nobel, *Statistics, Secrets and Sentiments*, cited under Netherlands: confidentiality, in the United Nations Statistics Department website on Good Practices in Official Statistics, at: <http://unstats.un.org/unsd/goodprac/default.asp>.

II.235. To facilitate this work a system should be devised for identifying the number of records in each of the data cells planned to be published and the share of the totals should be attributable to each record. This could be done using a simple computer program. A sample of a hypothetical worksheet illustrating this is presented below (table II.12). The example shows only two variables, but in practice the worksheet should show all.

K. Publishing the results

II.236. When the final estimates are considered sound, they should be added to the *historic database*, which contains the final estimates for all previous periods, and the statistics can then be published.

II.237. Careful thought should be given to how the operational statistics should be published.

Naturally, if the statistical agency already has an official publication policy it will be necessary to follow that policy. If not, a policy should be developed. There are many factors to be taken into account. These include choice of publication media, periodicity of release of data, level of detail to be released, issues of confidentiality, how to handle the special needs of policymakers, equal treatment of users and changes in methodology.

II.238. The period covered by the statistics will already have been determined to a large extent by the availability of the raw data being used as well as the demands of users and the availability of resources. The periods for which data are available (their periodicity) vary significantly. Balance sheet data are usually only available on a quarterly basis at best, and often only on an annual basis. Merchandise trade data, on the

Table II.12. Suppressing confidential data – sample worksheet

CELL 212 – German-owned enterprises in Industry 29 (Manufacture of machinery and equipment n.e.c.)			
	AAA Babylonia Inc 456941-01	BBB Middle East Co 457002-01	Precision Machinery Inc 456577-01
Sales			
Millions of dollars	13 452	780 037	24 983
%	1.6	95.3	3.1
Employees			
Millions of dollars	103	2 108	190
%	4.3	87.8	7.9

other hand, may be available on a monthly basis. It is recommended that operational statistics be published at least on an annual basis. Where data are available on a more frequent basis, and user demand (including the needs of government policymakers) and resources support it, the agency might consider publishing more frequently than on an annual basis. It may wish to publish some statistics, such as statistics on international trade in goods and services, on a quarterly basis, say, and other operational statistics annually.

II.239. It is strongly recommended that a publication timetable be established and made available to all users so that they know when to expect the data. The target dates for publication will largely depend on the periodicity of the raw data. Most countries publish statistics based on annual data within four to six months of the reference year, and quarterly statistics within two to three months following the end of the reference quarter. The time taken to prepare data for publication will depend to some extent on the amount of detail published. There is some trade-off between detail and timeliness. The more detailed the data to be published,

the longer it will usually take to prepare it for publication.

II.240. There are a variety of media available for the publication or release of official statistics. In addition to printed documents (still probably the most widely used vehicle for the release of official statistics) statistical agencies are increasingly using electronic media as well. These include the publication of statistics on official websites (Internet), the release of statistics on compact disks and diskettes and electronic transfers. If the agency chooses to use printed publications, it may decide to use a special publication just for operational statistics and/or to release the other information in a more general, periodic publication such as its monthly or quarterly bulletin on economic or business statistics if it has one (see box II.52 for the case of Denmark).

II.241. The agency's publication policy should be developed in consultation with the users of the statistics, whether they are government policymakers, academic researchers, or the business and investment community. Some users will need special printouts, while others will want to receive data in a

Box II.52. A dissemination strategy: example from Denmark

The following are some of the main principles in the dissemination strategy of Denmark's statistical agency:

Electronic dissemination is suitable for large amounts of data, and detailed statistics, so all statistical data will be available electronically. Expert users should have easy access to this data so they can further process figures with their own programmes.

- Written dissemination, especially paper publications, should focus on the most important news. An understanding of complex developments within society is enhanced through the use of key figures, graphs and explanatory comments;

- Electronic and paper publications will be co-ordinated. When summary tables and simplified tables appear in paper publications, more detailed tables are available on CD ROM or in Statbank Denmark;
- Users should be able to find the information they require easily. To facilitate this Statistics Denmark will continue to develop its homepage on the Internet with good search facilities and links"; and
- "Frequent user surveys will be carried out, with users being invited to express the level of their satisfaction with our dissemination methods.

Source: Cited under Statistics Denmark: Dissemination and Marketing, in United Nations Statistics Department website on Good Practices in Official Statistics, at: <http://unstats.un.org/unsd/goodprac/default.asp>.

computer-readable format. Some will place priority on receiving data as quickly as possible (and so may welcome the advance release of summary data), while others will be more concerned about receiving as much detail as possible. The effectiveness and success of the agency's statistics will largely be judged on its responsiveness to users' needs and the degree to which it provides users with equal access to its data.

II.242. It is also recommended that the published data include information on the methodology and data sources used in the compilation of the operational statistics. This will help users to understand the quality and limitations of the statistics and how they compare with other data they are using. If constraints of space or time prevent the agency from providing more than a basic description of the conceptual and methodological framework of the

statistics, it may wish to consider other methods of providing the detailed information that users will require. Particular care should be given to notifying users of changes in methodological procedures and sources that affect the continuity of time series.

L. Processing and storing the data

II.243. The computer hardware and software needed for processing and storing the data generated by the collection of operational data will depend on several factors, especially on the quantity of records and data to be processed and stored and the sophistication of the processing to be undertaken. In some cases, it may be possible to do much of the work using a local area network (LAN) based on personal computers (PCs) and off-the-shelf software packages. This may be the case, for example, in developing worksheet tables for which various suitable spreadsheet software packages are available. In other cases, where large quantities of data have to be manipulated, or especially where complex processing is involved, it will probably be necessary to use a mini- or mainframe computer and experienced programmers.

II.244. In any event, the computer processing needs of the new system should be determined in consultation with experienced computer specialists. This review should also take into account the need to store:

- (i) Raw data obtained by a survey, from administrative records or other sources;
- (ii) The registers of inward and outward investment (discussed in chapter IV of this volume), which will contain key information on enterprises that is needed for conducting the surveys;
- (iii) The historical database;
- (iv) Key worksheets used in compiling final estimates; and, possibly,
- (v) The collection register, although a paper register may be chosen instead.

II.245. All of the databases discussed here are valuable assets, which should be carefully backed up by appropriate computer systems. Care should be taken also to securely store the original completed questionnaires. All database issues as well as technical matters are fully covered in volume III of this series of the Training Manual on FDI statistics.

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