A critical assessment of FDI data and policy implications [*]

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The quality of the data available for analyzing foreign direct investment (FDI), particularly in developing countries, does not often meet the required standard for the purpose of rigorous policy analysis. Based on the experience of preparing the United Nations' annual report on FDI, the *World Investment Report*, this paper attempts to identify issues and problems in exploring the development dimension of FDI. The first part discusses issues related to the availability of data and the compilation of statistics on FDI and the activities of foreign affiliates. The second part deals with policy implications and the approaches that could be adopted to improve the current situation.

1. Introduction

Reliable, accurate, timely and comparable data form the basis of the analysis of foreign direct investment (FDI) and sound policy formulation. International comparison of FDI data, however, requires an agreed definition and measurement of FDI and a harmonized procedure for compiling the data. The expansion of the activities of transnational corporations (TNCs) further underscores the need for reliable data on the magnitude and characteristics of their international investment.

Various data can be used to measure and evaluate TNC activities. The most widely used measure is the balance-of-payments (BOP) statistics on FDI flows and international investment position (IIP) statistics on FDI stocks. Other measures of the magnitude of international investment include data on cross-border mergers and acquisitions (M&As), FDI projects related to

[*] This paper is based on ongoing work by staff in the Investment Analysis Branch (IAB) at UNCTAD on the relationship between the quality of FDI data, analytical rigor and implications for policy formulation and implementation. An earlier version, entitled "How Reliable are FDI Data? Lessons from the World Investment Reports" was presented at the 2007 Pacific Rim Conference, Guanghua School of Management, Peking University, 12 January 2007.

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greenfield and expansion investments,[1] and various non-equity forms of internationalization. Furthermore, to assess the economic impact of FDI, it is necessary to consider operations data measuring the activities of foreign affiliates and their parent companies. UNCTAD has been working on FDI statistics for many years and presenting the data in its publications, the *World Investment Reports* and the *World Investment Directories*, among others.[2] This paper is based on the experience of the problems encountered in preparing these publications.

The lack of reliable statistical information in many countries complicates international comparison and makes impact assessment difficult. Inconsistency in the data collection and reporting methods of many countries also create problems in formulating policies and strategies on FDI. While considerable efforts have been made to harmonize the definition and system for collection and presentation of data on FDI and TNC activities, important discrepancies remain, even among developed countries. The objectives of this paper are to contribute to the understanding of the nature of data and associated problems; to clarify methodologies for the compilation of required statistics; and to identify ways in which the current data situation can be improved.

This paper first presents the main types of data that are used to assess the magnitude and impact of FDI on host and home economies. It also discusses the availability, complexity and main advantages and disadvantages associated with different types of data. Then it draws policy implications and considers approaches that could be taken at the national, regional and international levels to address the current data situation.

2. Data on FDI and TNCs' activities

2.1 FDI statistics

The most widely available information on the international expansion of TNC activities is statistics on FDI flows and stocks. FDI is

[1] Greenfield investment is investment in new facilities and the establishment of new entities through entry as well as expansion, while the term "M&As" refers to acquisitions of, or mergers with, existing local firms. In a cross-border merger, the assets and operations of two firms belonging to two different companies are combined to establish a new legal entity, and in a cross-border acquisition, the control of assets and operations are transferred from a local to a foreign company, the former becoming an affiliate of the latter.

[2] It has also established a dedicated website on data on FDI flows and stocks as well as activities of TNCs (www.unctad.org/fdistatistics).

defined as an investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy in an enterprise resident in an economy other than that of the investor.[3] FDI entails a significant influence of the investor on the management of the enterprise resident in another economy. This distinguishes FDI from portfolio investment, which is not aimed at acquiring a lasting interest or control over the invested enterprise. For practical reasons, ownership of 10% of ordinary shares or the voting shares in a firm is the benchmark commonly used to determine the existence of a direct investment relationship (IMF, 1993, p. 86; OECD, 1996, para. 8). While somewhat arbitrary, the 10% threshold has been agreed internationally, and countries are recommended to follow this rule. Of course, there are problems in setting such an arbitrary figure as the precise threshold. Nevertheless, this rule offers the advantage of providing an objective criterion for determining whether a cross-border investment should be considered as FDI.

It should be emphasized that FDI is a BOP concept used to measure cross-border financial flows. It does not measure the true extent or use of investment (in building, lands, machinery equipment) by foreign investors, as reflected in the national accounts of the host economy, for instance. Indeed, while the concepts and definitions of BOP and FDI should be consistent with the international guideline – as set out in the IMF's *Balance of Payment Manual* (IMF, 1993)[4] and the OECD's *Benchmark Definition of Foreign Direct Investment* (OECD, 1996) – they offer limited insight on the real economic role played by foreign affiliates in the host economy. For example, foreign affiliates may finance an investment through local borrowing; this investment is not recorded as FDI flows in the BOP. Thus, trends in FDI often differ from other indicators of economic performance. In the case of the United States, comparisons of FDI outflows with capital expenditures of (majority-owned) foreign affiliates show that trends between the two indicators are far from parallel. In certain economies, such as Hong Kong (China) and Singapore, FDI outflows from the United States always exceed

[3] It should be noted in this context that the country of residence is different from nationality or citizenship.

[4] Two complementary publications have been published by the IMF providing more practical guidance to the understanding of the concepts contained in the *Manual*. The *Balance of Payments Compilation Guide* was published in 1995 to provide more practical direction in the compilation of both BOP and international investment position statistics and the *Balance of Payments Textbook*, published in 1996, was intended as reference material for the BOP courses provided by the IMF. This latter publication also contributes to a better understanding of the BOP issues, providing concrete illustrations and examples.

capital expenditures of United States foreign affiliates; in others, such as Argentina and Brazil, the opposite applies (table 1). The former case demonstrates the fact that FDI flows are a source of corporate finance but do not always translate into actual capital expenditures, and the latter case shows that FDI is only one of funding sources for investment by foreign affiliates.

Not all countries apply the internationally agreed methodology, and different ways of collecting information are still used.[5] Many countries, particularly developing countries, report FDI data compiled for administrative purposes (approving, registering, monitoring investments, granting special incentives etc.), which are not necessarily consistent with the internationally agreed system. For example, data compiled on the basis of the BOP framework are quite different from those compiled for administrative purposes, which are often on approval basis (table 2).

Table 1. Capital expenditures of United States foreign affiliates[a] and outward FDI flows from the United States, 2001–2004
(Millions of dollars)

	2001		2002		2003		2004	
Economy	Capital expenditures[a]	Outward FDI flows	Capital expenditures[a]	Outward FDI flows	Capital expenditures[a]	Outward FDI flows	Capital expenditures[a]	Outward FDI flows
Total world	110 758	124 873	110 275	134 946	109 588	129 352	123 068	257 967
of which:								
Argentina	2 404	- 511	1 029	-1 445	1 042	- 118	1 694	1 091
Brazil	3 335	113	3 364	- 266	2 245	- 290	2 592	1 837
China	1 629	1 912	2 139	875	1 582	1 273	2 781	3 446
Hong Kong, China	514	4 787	507	1 226	669	- 689	741	-
Indonesia	2 253	985	1 599	-	1 190	-		-
Korea, Republic of	712	1 206	670	1 681	718	1 231	1 466	3 598
Malaysia	1 041	17	984	- 609	1 055	416	1 234	-
Mexico	4 936	14 226	4 784	7 656	4 160	3 664	3 675	7 712
Singapore	1 933	5 593	1 275	530	1 267	5 446	1 570	-
Venezuela, Bolivarian Republic of	1 493	461	1 027	150	825	- 462	749	-1 093

Source: United States, Bureau of Economic Analysis; and UNCTAD FDI/TNC database (www.unctad.org/fdistatistics).

[a] Capital expenditures by majority-owned non-bank foreign affiliates.

[5] For example, according to the 2001 IMF/OECD Survey of Implementation of Methodological Standards for Direct Investment (SIMSDI), some countries such as Chile, Indonesia, Israel, Italy, the Philippines and Turkey use a percentage of ownership other than 10%, and others (e.g. Croatia, the Republic of Korea and the Netherlands) add an additional qualification to this 10% threshold, namely effective voice in management (IMF/OECD, 2003).

Table 2. Comparision between BOP FDI inflows and approved FDI inflows
(Millions of dollars)

	China		Indonesia		Korea, Republic of		Malaysia		Singapore	
Year	Actual data	Approval data	Actual data	Approval data	Actual data	Approval data	Actual data	Approval data	Actual data[a]	Approval data[a]
1996	41 726	73 276	6 194	29 610	2 012	3 203	7 297	6 779	1 469	5 710
1997	45 257	51 003	4 678	33 666	2 641	6 971	6 323	4 078	5 723	5 716
1998	45 463	52 102	- 241	13 635	5 072	8 853	2 714	3 329	840	4 676
1999	40 319	41 223	-1 865	10 894	9 883	15 531	3 895	3 230	5 689	4 742
2000	40 715	62 380	-4 550	16 015	9 002	15 250	3 788	5 223	6 341	5 342
2001	46 878	69 195	-2 978	15 208	4 130	11 286	554	4 976	8 708	5 119
2002	52 743	82 768	145	9 966	3 395	9 093	3 203	3 047	1 016	5 031
2003	53 505	115 070	- 597	14 362	4 384	6 469	2 473	4 116	1 693	4 311
2004	60 630	153 479	1 896	10 422	8 980	12 792	4 624	3 459	2 496	4 886
2005	72 406	189 065	8 337	13 579	7 050	11 564	3 965	4 722	..	5 118
2006	69 468	200 174	5 556	..	4 950	..	6 060	..	..	..

Source: UNCTAD, FDI/TNC database (www.unctad .org /fdistatistics).

[a] Data refer to the secondary sector only.

Three components of FDI

Even if data are compiled on the BOP basis, not all countries collect data on each of the three components of FDI: equity capital, reinvested earnings and other capital (mainly intra-company loans). One hundred and fourteen out of 129 countries that provided data for the *World Investment Report 2007* included all three components of FDI flows as required by the international guideline (table 3). All countries that reported FDI inflows statistics in the *Report* included, at least, the equity capital component. Some countries are not able to report reinvested earnings, as the collection of these data – usually from company reports or BOP surveys – is more difficult; even in countries where they are available, they are often reported with a significant time lag. Many countries report other capital, but they do not necessarily collect all relevant debt instruments.[6] Among OECD member countries, only 12 countries covered all such instruments (IMF/OECD, 2003). Recording practices may also change over time, leading to structural breaks in time series data on FDI. For example, before 1996, Japanese data on FDI flows excluded reinvested earnings and German data did not cover short-term intra-company loans. Some countries report overall

[6] Such instruments include bonds and money market instruments, long-term loans, short-term loans, financial leases and trade credits.

Table 3. Availability of FDI flow data, by component, 2006

Inward flows				Outward flows			
Economy reporting all three components of FDI data (114)	Economy not reporting part of the components of FDI data			Economy reporting all three components of FDI data (63)	Economy not reporting part of the components of FDI data		
	Equity capital (0)	Reinvested earnings (11)	Other capital (4)		Equity capital (1)	Reinvested earnings (9)	Other capital (6)
Angola; Anguilla; Antigua and Barbuda; Argentina; Armenia; Australia; Austria; Bangladesh [a]; Barbados [a]; Belarus; Belgium; Belize [a]; Benin [a]; Bolivia [a]; Bosnia and Herzegovina; Botswana; Brunei Darussalam; Bulgaria; Burkina Faso [a]; Cambodia; Canada; Cape Verde a; Chile; Costa Rica; Côte d' Ivoire [a]; Croatia; Cyprus; Czech Republic; Denmark; Dominica; Dominican Republic; Ecuador; El Salvador; Estonia; Fiji; Finland; France; Georgia; Germany; Greece; Grenada; Guatemala; Guinea-Bissau [a] ; Guyana; Honduras; Hong Kong, China; Hungary; Iceland; India; Iran, Islamic Republic of; Ireland; Israel; Italy; Jamaica [a]; Japan; Kazakhstan; Kyrgyzstan; Latvia; Lithuania; Luxembourg; Macao, China [a]; Madagascar; Malaysia; Mali [a] ; Malta; Mexico; Moldova, Republic of; Montserrat; Morocco; Mozambique; Namibia; Netherlands Antilles; Netherlands; New Zealand; Niger [a];Nigeria; Norway; Pakistan; Panama; Papua New Guinea a; Paraguay; Philippines; Poland; Portugal; Romania; Russian Federation; Saint Kitts and Nevis; Saint Lucia; Saint Vincent and the Grenadines; Senegal [a]; Seychelles; Sierra Leone [a]; Slovakia; Slovenia; Solomon Islands; Spain; Sri Lanka; Suriname; Swaziland; Sweden; Switzerland; Taiwan Province of China; Tajikistan; Togo [a]; Trinidad and Tobago [a]; Turkey; Uganda; Ukraine[a]; United Kingdom; United Republic of Tanzania; United States; Uruguay; Vanuatu [a]; and Venezuela.		Albania; Aruba; Bahamas; Brazil; Kenya; Korea; Republic of; South Africa; Thailand; Togo; Trinidad and Tobago; and Tunisia.	Bahrain; Colombia; Nicaragua; and Peru.	Argentina; Australia; Austria; Barbados [a]; Belarus [a]; Belgium; Benin [a]; Botswana; Bulgaria; Canada; Chile; China [a]; Costa Rica; Croatia; Cyprus; Czech Republic; Denmark; Estonia; Finland; France; Germany; Greece; Hong Kong, China; Hungary; Iceland; India; Ireland; Israel; Italy; Japan; Kazakhstan; Korea, Republic of; Latvia; Lithuania; Luxembourg; Macao, China [a]; Malaysia; Mali [a]; Malta; Mexico; Moldova, Republic of; Namibia; Netherlands Antilles; Netherlands; Niger [a]; Nigeria; Norway; Poland; Portugal; Romania; Russian Federation; Senegal ; Slovakia; Slovenia; Spain; Sweden; Switzerland; Taiwan Province of China; Togo [a]; United Kingdom; United States; Vanuatu [a]; and Venezuela.	Bangladesh	Albania; Aruba; Brazil; El Salvador; Solomon Islands; South Swaziland; Thailand; and Uruguay.	Armenia; Bahrain; Fiji; Georgia; Seychelles; and Turkey.

Source: UNCTAD, FDI/TNC database (www.unctad.org/fdistatistics) and information supplemented by IMF BoP June 200 7.
Note: Based on 129 economies for inward flows and 79 economies for outflows.
[a] Data refer to 2005 .

figures, but do not provide information on the breakdown of flows into the three components. Finally, some economies do not collect data on FDI at all. This is the case with a number of Caribbean island economies (e.g. Cayman Islands, British Virgin Islands) and many least developed countries (e.g. Afghanistan, Somalia, Samoa). In such cases, investments in these countries reported by major investor economies are usually used as a proxy.[7] Of greater concern is the patchy coverage of FDI statistics by the developing countries that actually compile FDI statistics.

Although progress has been made in recent years, the scope and quality of FDI data in a number of developing countries remain inadequate for the purposes of policy analysis and formulation.

Gross and net flows

Unlike items in the BOP current account, entries in the financial account (including FDI components) should, in principle, be recorded on a net basis (IMF, 1993, para. 511). This means that divestments, reverse investments (investments by a foreign affiliate in its parent firm), loans given to parent firms by foreign affiliates or repayments of intra-company loans to parent firms should be deducted from new flows of FDI when calculating the overall figure for FDI flows. These transactions should be reflected in both FDI inflows (in the recipient economy) and FDI outflows (in the investor's economy). However, it is unclear to what extent compilers of FDI data actually follow the recommended guidelines. Differing practices in this area represent another source of problems when comparing FDI data across countries. For example, only eight of the 27 OECD countries included in the above-mentioned IMF/OECD survey recorded reverse investment in 2001 (IMF/OECD, 2003, p. 39). Indeed, there are large differences between BOP flows (reported in net terms) and gross flows: in the case of FDI outflows from Japan, the size of divestment (including reverse investment, loans to parents, repayments of intra-company loans to parents) was equivalent to as much as 47% to 72% of gross outward investment (table 4).

Disparity between inflows and outflows

In principle, inward FDI and outward FDI for the world as a whole should balance, but, as a result of differences in the interpretation of the FDI definition and in the compilation and reporting of statistics, they

[7] For example, UNCTAD uses this methodology in the *World Investment Report*. For details, see "Definitions and sources" in UNCTAD (2007).

rarely do. In 2006, for example, countries reported global FDI outflows of $1,216 billion, whereas global inward FDI flows were $1,306 billion (UNCTAD, 2007). In recent years, this imbalance has widened (figure 1). This disparity also reflects difficulties in calculating and recording M&A transactions in BOP statistics. As discussed later, M&As are the primary mode of FDI in some years.[8] As shown in table 5, bilateral discrepancies between FDI as reported by home and host countries can also be significant.

Table 4. Gross FDI and net FDI flows : case of Japanese FDI outflows, 1997-2006
(Billions of dollars)

				Of which:								
	TOTAL			Equity			Reinvested earnings			Other capital		
Year	Net	Gross	Divestment[a]	Net	Gross	Divestment[a]	Net	Gross	Divestment[a]	Net	Gross	Divestment[a]
1997	24.2	46.8	22.6	20.1	30.4	10.3	4.9	4.9	-	-0.7	11.5	-12.3
1998	27.3	55.4	28.1	17.4	33.6	16.2	3.2	3.2	-	6.8	18.6	11.9
1999	25.3	88.4	63.1	22.2	62.7	40.5	0.8	0.8	-	2.4	24.9	22.6
2000	29.6	61.3	31.7	28.9	40.2	11.3	-1.7	-1.7	-	2.4	22.8	20.4
2001	35.3	67.3	31.9	25.2	37.7	12.6	6.4	6.4	-	3.8	23.1	19.4
2002	33.8	81.8	48.1	33.2	45.6	20.7	8.6	8.6	-	0.3	27.6	27.4
2003	31.2	108.5	77.3	22.5	37.9	15.3	4.9	4.9	-	3.7	65.7	62.0
2004	32.2	115.0	82.8	21.8	33.2	11.4	6.2	6.2	-	4.2	75.6	71.4
2005	42.8	100.3	57.5	27.1	38.9	11.7	12.4	12.4	-	3.2	49.0	45.8
2006	49.1	116.9	67.8	28.2	49.8	21.7	16.0	16.0	-	4.9	51.0	46.1

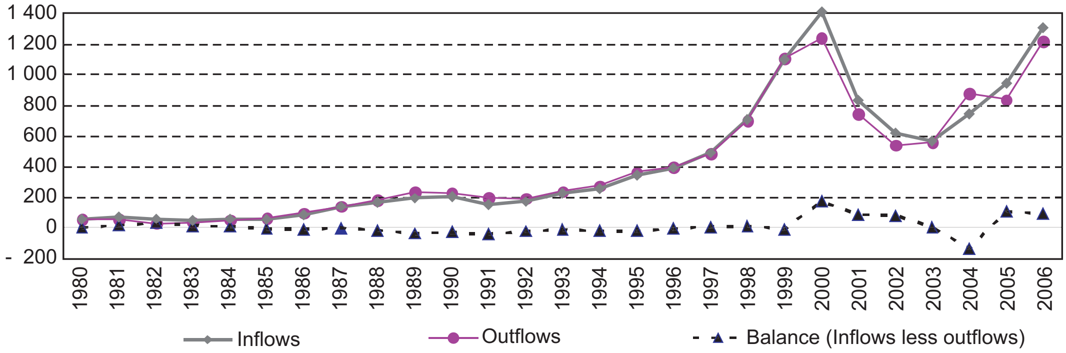
Source: UNCTAD, based on the data from Bank of Japan
[a] Includes reverse investments , loans given to parent firms from foreign affiliates and repayments of intra-company loans to parent firms

FDI Stock

FDI flows provide a useful indicator of the trends in international capital flows undertaken by TNCs. In contrast, FDI stock data are an indicator of the overall importance of foreign companies in individual host economies and the world economy as a whole. FDI stocks – estimated at $12 trillion globally in 2006 (UNCTAD, 2007) – show the value of the share of capital and reserves (including retained profits) in foreign affiliates attributed to the parent firm, plus the net indebtedness of affiliates to the parent firm. Data on FDI stocks are presented in the statistical statement of the international investment position (IIP) of a country, which shows an economy's stock of external financial assets and liabilities at a given point in time. However, some countries report stock

[8] Similarly, growth rates of FDI inflows and outflows do not necessarily move in parallel and sometimes even move in opposite directions (e.g. 1974, 1980, 1981, 1983, 1985 and 2003).

Figure 1. Imbalance between global FDI inflows and outflows, 1980-2006
(Billions of dollars)



Source: UNCTAD, FDI/TNC database (www.unctad.org/fdistatistics).

data based on accumulated FDI flows. This further compounds existing deficiencies of the original data as it does not account for changes in the value of assets. The recent revision of China's data on FDI inward stock illustrates how different methods of collecting data can influence the outcome: its 2003 FDI stock is now valued at $228 billion, compared with about $500 billion before the revision.[9]

Reconciliation of the flow activities in the financial account with the change in stocks made during a defined period is an essential exercise. While the BOP accounts record only transactions, a change of stocks appearing in the IIP can be attributable not only to transactions (financial account flows), but also to valuation changes due to changes in exchange rates and prices, and to other adjustments (such as reclassifications, write-offs, expropriations, unilateral cancellation of debt and measurement errors).

One hundred and two out of some 200 economies covered in the *World Investment Report* reported (inward) FDI stock (UNCTAD, 2007). Even among countries that collect and report stock data, the method of stock valuation differs. For instance, some countries base the valuation on market prices, and others use book values. Such differences make inter-country comparisons more difficult.[10] In this respect, major international organizations – led by the IMF in consultation with ECB,

[9] The revision was made by the China's Ministry of Commerce on the basis of China's own statistical methodology and accounting rules, as well as the following assumptions: FDI inflows into China were mainly greenfield investment that accounted for 95% of total flows, 95% of which was used for fixed assets (UNCTAD, 2005).

[10] For example, the value of FDI inward stock for 2006 in the United States was $1.8 trillion in book value and $3.2 trillion in market prices (United States Department of Commerce, 2007).

Table 5. FDI inflows as reported by host and investing countries, 2005
(Millions of dollars)

Economy	Inflows into Brazil		Inflows into China		Inflows into Germany		Inflows into Mexico		Inflows into Morocco		Inflows into Thailand		Inflows into the United States	
	As reported by Brazil	As reported by the investing economy	As reported by China	As reported by the investing economy	As reported by Germany	As reported by the investing economy	As reported by Mexico	As reported by the investing economy	As reported by Morocco	As reported by the investing economy	As reported by Thailand	As reported by the investing economy	As reported by the United States	As reported by the investing economy
Australia	926	-3.1	..	55	2.5	122.2	..	..	..	..	36.8	83.2	-6022	-29580.7
Austria	6.1	73.4	76.3	139.3	1045.9	1727.4	-0.3	27.4	..	..	4.2	6.2	-1033	195.2
Belgium	685.6	..	53.8	47.3	-3120.2	5607.4	27.8	..	..	..	85.5	..	-744	6454.3
Brazil	..	..	..	..	68.4	..	..	..	..	..	..	..	985	..
Canada	1435.3	..	454.1	..	498.7	..	251.2	..	0.9	..	22.1	..	13762	20556.1
China	7.6	15.1	..	..	203.9	128.7	4.5	3.6	0.1	0.9	6	4.8	274	231.8
Czech Republic	0.3	3.5	..	0.5	31.1	50.7	..	-0.6	..	..	..	..	1	12.6
Denmark	239.9	227.6	100.4	287.8	655.4	204.1	81.8	0.8	..	..	16.8	24.3	1020	312.2
Finland	6.6	-47.3	21.7	99.5	421.6	-539.7	17.9	157.9	..	..	8.4	-51	434	130.6
France	1458.4	1111.8	615.1	864.3	-21812.7	3959.6	394.6	267.4	2202.2	1257.3	35.8	171.6	5291	12337.7
Germany	1269.3	1150.3	1530	3452.2	..	..	341.2	202.7	90.1	-21.1	172.5	177.8	14622	-5391
Hong Kong, China	17.4	..	17948.8	16753.8	88.3	..	..	..	..	..	238.3	334.3	972	115.7
Ireland	125.1	..	9.7	..	5210.7	..	5.1	..	..	..	80.6	..	2564	..
Italy	345.7	..	322	..	25677.8	..	29.9	..	23.7	..	15.4	..	781	..
Japan	779.1	970.1	6529.8	6589	-252.4	276.2	73.7	623.9	..	-1	618.7	2136.6	13889	12338.6
Korea, Republic of	168	141.6	5168.3	2436.7	878	32	48.3	72.4	..	0	38.4	48.3	707	1133.4
Luxembourg	139.1	..	142	..	14653.3	..	157.2	..	..	..	29.1	..	2402	..
Malaysia	..	-6.1	361.4	106.9	79.6	6.1	..	..	..	..	28.7	13.2	97	100.1
Mexico	1661.2	..	..	..	-14.9	..	..	..	..	..	-40	..	142	..
Morocco		..	..	..	1.2	..	..	..	..	..	..	..		..
Netherlands	3207.9	1074.5	1043.6	578.3	8115.7	-732.5	2198	..	24.1	..	41.9	..	5756	4199.6
New Zealand	48.1	..	..	..	14.9	..	..	..	..	..	5.4	..	-134	-50.7
Norway	43.2	..	..	..	159.2	-2.8	..	..	0.1	..	..	..	2693	5597.7
Philippines	..	..	188.9	44.9	9.9	..	..	..	..	..	11.2	0.6	-17	22.1
Portugal	334.6	-529.8	4.1	2.8	230.1	19.4	0.8	-5.6	6	13.7	0.8	..	1	113.2
Singapore	42.3	..	2204.3	..	376.8	..	12	..	..	..	300.6	..	447	..
South Africa	3.7	..	..	..	-12.4	..	..	..	..	..	..	..	-228	..
Spain	1220.4	2221.4	196.9	152.4	812.1	966	1333.5	2451.7	160.5	218.1	6.6	..	2346	2422.5
Sweden	32.9	-95	111.5	145.7	1861.7	697.5	29.3	743.5	17.5	-0.9	33.7	22.5	-352	-2549.3
Switzerland	341.5	534.1	..	685.8	5683.2	6091.5	136.1	84.3	85.1	46.6	..	228.9	4137	13378.8
Taiwan Province of China	3.7	..	2151.7	..	-58.4	..	7.2	..	..	..	137.4	..	298	..
Thailand	0	..	95.9	..	21.1	..	..	..	..	..	..	..	-1	..
United Kingdom	153.3	-267.3	964.8	998.2	-5277.8	34.5	965	263.6	50.9	..	58.2	470.9	34323	32576.5
United States	4644.2	1147	3061.2	1441	-2323	6047	9586.5	7385	24.9	-7	309.8	584	..	..
	19346.5	7721.8	43356.4	34881.4	33929	24695.2	15701.3	12278	2686.2	1506.5	2302.6	4256.3	99413	74656.8

Source: UNCTAD FDI/TNC database (www.unctad.org/fdistatistics).

Eurostat, OECD, UNCTAD and the World Bank – agreed to undertake an internationally coordinated survey of the direct investment position in 2009 in participating countries. When conducted, such a survey would be an important step in improving the collection of FDI stock data.

Different approaches to collecting data

As noted above, countries apply different approaches to collecting FDI flow and stock data. The international transactions reporting system (ITRS), which is a foreign exchange control system operated mostly by central banks, reports international transactions on the basis of forms submitted by enterprises and collected by domestic banks. According to the 2001 IMF/OECD Survey (IMF/OECD, 2003), 25 out of 61 countries use this approach.[11] Typically, the ITRS approach suffers from certain limitations: for instance, a lack of sufficient details on transactions to meet the classification needs of FDI statistics by industry and country; coverage limited to only cash transactions in foreign currencies; exclusion of reinvested earnings; and an absence of information on FDI stock. Enterprise surveys may be seen as an alternative or complementary approach. Other potential sources of FDI-related data include administrative sources such as investment promotion agencies (IPAs), tax revenue offices, security exchange offices and national statistical authorities.

Breakdown by country and by industry

Information on FDI data flows and stocks by country of origin and by industry can be very useful for analytical purposes. Out of 196 countries, for instance, a breakdown of FDI inflows by industry or by country is reported to UNCTAD by 91 and 96 countries respectively in 2006 (table 6). Only a few countries, mainly developed countries, report a complete and detailed breakdown of FDI. The availability of detailed data on outflows as well as inward and outward stocks is even more limited (table 6).

2.2 Data on M&As, greenfield investments and non-equity forms of investment

TNCs can expand into a foreign location in different ways. The two main forms of market entry are greenfield investments and M&As.[12]

[11] ITRS provides information regarding the sale or purchase of the currency used in the transaction, the value of the transaction, the country of the non-resident party and the purpose of the transaction. The ITRS measures *individual* cash transactions.

[12] For definition, see footnote 1.

Table 6. The availability of FDI data from countries providing breakdown by country and by industry, 2006 or latest year available
(Number of countries)

FDI category	Developed countries [a]	Developing countries: Total	Africa	Latin America and the Caribbean	Asia and Oceania	South-East Europe and the CIS	World
Inward flows by country breakdown	32	51	12	16	23	13	96
Inward flows by industry breakdown	31	48	10	19	19	12	91
Outward flows by country breakdown	33	16	4	1	11	6	55
Outward flows by industry breakdown	32	11	2	2	7	4	47
Inward stock by country breakdown	32	46	12	11	23	13	91
Inward stock by industry breakdown	30	44	13	11	20	12	86
Outward stocks by country breakdown	32	15	3	3	9	3	50
Outward stocks by industry breakdown	29	12	3	2	7	4	45
Number of countries in region	34	150	53	40	57	12	196

Source: UNCTAD, FDI/TNC database (www.unctad.org/fdistatistics), based on national sources.
[a] Includes the 1 0 new member states of the European Union.

A firm may also exert influence over activities outside its home economy by way of non-equity forms of investments. Data on greenfield FDI and M&As are usually not separately identified in the BOP statistics. As to non-equity forms of investments, as long as they do not involve cross-border financial transactions (except for reinvested earnings), they are not reflected in BOP statistics. The limited availability of such data can, to an extent, be overcome by the use of some privately published data as complementary sources for information.

M&As

During the past two decades or so, cross-border M&As have assumed a growing importance in global FDI flows. Cross-border M&As were a driving factor behind the dramatic growth of FDI in the 1990s, peaking in 2000 (UNCTAD, 2000) and again in 2005-2006 (UNCTAD, 2006 and 2007), particularly among developed countries. Although M&As involve the purchase of existing assets and companies, the accounting books of the target company will remain unchanged (if no additional capital is provided to the target company) as there is only a change of ownership. An M&A transaction needs to be included in the financial account of the BOP, as long as there is an international transaction of capital. This does not necessarily mean, however, a net addition to the capital stock in the host economy.

Data on cross-border M&As are published mainly by investment banks and consulting firms. A problem with these data is the lack of a common definition of M&As. Another problem is related to the varying nature of the data collected. For example, M&A data can be compiled on an announcement basis or on a completion basis. Nevertheless, despite these differences, the broad trends presented by various data sources are similar.

Comparisons between FDI and cross-border M&A data are not straightforward. For instance, while FDI data are presented on a net basis, M&A data are expressed as total transaction values of individual deals. In addition, cross-border M&A transactions do not necessarily result in international capital flows across borders (UNCTAD, 2000).[13] M&As undertaken through the exchange of shares present additional difficulties to the compilation of these transactions in BOP statistics.[14]

In recent years, some private companies have also started to provide information on FDI related to greenfield and expansion projects,[15] although these databases typically record *announced* FDI projects. Information is obtained from media, industry organizations, investment promotion agencies and market research companies. These data do not necessarily reflect the actual implementation of projects, and the geographical coverage and other methodological aspects vary according to the source. Nevertheless, FDI project information can complement BOP data on FDI by providing detailed information on the companies, industries and locations involved in the transactions. As with M&A data, greenfield and expansion projects data are hard to compare with BOP data as they do not measure capital flows across borders.

Non-equity forms of investment involve a wide range of TNC activities, in particular subcontracting, contractual arrangements (e.g. offshoring, buy-back arrangements, turn-key arrangements, non-equity joint ventures, product-sharing), strategic alliances, including R&D

[13] For example, if a German company acquires a company in the United States and finances the deal with funds raised in the United States capital market, no capital will cross the border and no FDI will be registered.

[14] The mode of exchange of shares is frequently used to finance a mega deal as their sheer size makes cash payment virtually impossible. For example, in the case of the 1998 Daimler-Chrysler deal with a transaction value of $40 billion, there was no direct impact on the BOP of the countries concerned: the inflow of capital (in FDI) that resulted from Daimler's acquisition of Chrysler stock was offset by the outflow of capital recorded in the portfolio investment account that resulted from the distribution to Chrysler shareholders of the stock of the new company, DaimlerChrysler (UNCTAD, 2000).

[15] The OCO Consulting's LOCOMonitor Database and the IBM Business Consulting Services' Global Locations Database are examples.

contracts, franchising and licensing, which can also contribute to the development of host economy. Non-equity forms are common in the services sector, as well as in some natural-resources-related industries (UNCTAD, 2007, p. 160). While some information on these forms of investment can be obtained from data on royalties and licensing fees provided in the BOP statistics,[16] data on the type of arrangement, value, firms involved and, perhaps more importantly, the extent of these types of TNC activities are not readily available.

2.3 Operations data on TNCs' activities

The data discussed above are used to measure the magnitude of FDI, but they do not provide much information about the actual activities undertaken by parent companies and foreign affiliates. Operations data of parent firms and foreign affiliates are required in order to obtain a clearer picture of the importance of TNCs to the host economy. Operations data would include, among others, information on production (sales, value-added), labour (employment, wage rates), trade (exports and imports), innovation activities (R&D expenditures), tax payments. The availability of such information is of particular importance to policymakers for assessing the economic impact of FDI and designing policy measures geared towards maximizing its benefits. At the same time, for home countries, data on the operations of home-based TNCs are important for monitoring the performance of their foreign affiliates and assessing the integration of the country into the global economy through outward investment.

The methodology for compiling statistics on the operations of TNCs is less developed than for measuring FDI flows and stocks. Moreover, relatively few countries collect such data, and it is normally collected through their own enterprise surveys. However, the need for operations data is increasingly acknowledged by both national statistical offices and international organizations. A useful reference document is the *Manual on Statistics of International Trade in Services* (MSITS), which was developed jointly by international bodies, including the IMF, OECD, WTO, the United Nations Statistics Division, the Statistical Office of the European Communities (Eurostat) and UNCTAD (United Nations et al., 2002). It reviews the key issues and definitions involved

[16] Defined as "receipts and payments of residents and non-residents for: (i) the authorized use of intangible non-produced, non-financial assets and proprietary rights such as trademarks, copyrights, patents, processes, techniques, designs, manufacturing rights, franchises, etc., and (ii) the use, through licensing agreements, of produced originals or prototypes, such as manuscripts, films, etc. " (IMF, 1993, p. 40).

and makes comprehensive recommendations for the collection of these statistics.

The concepts related to *foreign investment* and *foreign affiliation* (including, for example, the concepts of ownership, residence and valuation) recommended for use in operations statistics are based the System of National Accounts (SNA) and the BOP developed by the United Nations and the IMF, respectively. They have been further elaborated in the MSITS by the organizations referred to above. There is general agreement on all but a few issues. The main issues still under discussion include 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 ultimate beneficial owner. MSITS recommendations on operational variables are to a large extent based on concepts used in the SNA. The MSITS recommends that countries collect at least the following information on foreign affiliates: number of affiliates, sales, output, employment, value-added, exports and imports.[17]

3. Policy implications

The above review of different sources of data related to FDI and TNC activities illustrates the need to apply the existing international guideline for collecting and reporting FDI data. The international guidelines on FDI data compilation also need to be developed further, taking into account recent changes in TNCs' mode of investment and types of activities in an increasingly globalized and liberalized world economy. Both the IMF and the OECD guidelines are currently undergoing revision and are scheduled to be released in 2008, with a new definition and methodology for collecting data. The Direct Investment Technical Expert Group (DITEG) established by the IMF during 2004–2006 and the Benchmark Advisory Group by the OECD since 2006 have provided technical expert advice on the revision of the IMF's BOP manual and the OECD's Benchmark Definition of FDI, respectively. Both groups, of which Eurostat, the ECB and UNCTAD were members, completed the discussion and made recommendations on a number of issues related to FDI statistics on a BOP basis (appendix 1 for some issues). Some unresolved issues (e.g. special purpose entities,

[17] This is the list of recommended variables in MSITS that "should be based primarily on their usefulness in implementing the GATS and in analysing globalisation phenomena" (United Nations et al., 2002, chapter IV).

directional principles) continue to be discussed by these international organizations in the context of revising the IMF's BOP manual and the OECD's Benchmark Definition of FDI.

Policymakers and researchers require data, classified by economic activity and geographical location, to understand fully the impact of FDI at both the macro and micro levels. They need to assess not only the amount of FDI they receive, but also whether this is the right kind of FDI, given their development objectives. They have to understand the impact of FDI on individual industries in order to assess to what extent exports are promoted and technology enhanced; which industries and sectors are most affected; what the level of concentration is in individual industries; and how these effects change over time. Adequate information is similarly relevant to governments that are considering entering into tax treaties and investment agreements and wish to evaluate their FDI policy efforts from a development perspective.

The availability of operations data and additional financial data would greatly enhance the ability of policymakers to assess the economic impact of FDI and design appropriate policies. However, such information is even more difficult to obtain than FDI data captured in the BOP framework. It requires additional effort, often through surveys of foreign affiliates and parent firms.

To conclude, the quality of FDI statistics is, to a large extent, determined by the comprehensiveness, timeliness, reliability and international comparability of data. To meet these criteria, official compilers need to be familiar with the methodology in use for producing estimates of FDI activity, and various types of institutional support must be available for properly recording and monitoring such activity. Institutional capacity building in the field of FDI statistics has a twofold dimension: one is methodology-related and the other is organization- or institution-related. The former involves appropriate tools and human resource development, and the latter requires a proper institutional or organizational framework to be in place to enable relevant institutions to compile and process FDI data as well as TNCs' operations data.

There are important institutional bottlenecks to address. Some countries do not have a designated body reporting statistics on FDI and TNC activities. In others, different agencies report different series of FDI statistics. In both cases, human resource development is required. There may, therefore, be a need for specialized technical assistance. UNCTAD, for instance, has been helping some developing countries establish systems of data compilation in line with the international guideline. Work on improving data reliability and availability can also be conducted at the regional level. The Association of South-East Asian Nations (ASEAN) provides an interesting illustration of how regional coordination and cooperation can be used in the area of FDI statistics.

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Appendix 1

Objectives and topics discussed at DITEG meetings, 2004–2005

The main objective of the joint IMF/OECD DITEG was to identify conceptual and methodological issues and to make recommendations to the IMF Committee on Balance of Payments Statistics and the OECD Workshop on International Investment Statistics on the issues suggested by DITEG. These issues were:

1. Valuation of (i) direct investment equity and (ii) branches
2. Direct investment – 10% threshold of voting power/equity ownership, employment
3. Indirect investment – fully consolidates system, United States method, or 50% ownership
4. Mergers and acquisitions
5. Reinvested earnings
6. Bring together all direct investment issues (stocks, flows, income, between affiliates) in an appendix to the BOP Manual.
7. Directional principle
8. Reverse investment – classification
9. SPEs, shell companies, holding companies, off-shore enterprises (units, sectorization, residence, transactions)
10. Rules for identification of branches
11. SPEs
12. Inclusion in direct investment of transactions between non-financial direct investment enterprise (foreign affiliate) and affiliated financial SPE

    (i) Country identification (Ultimate beneficial owner/ultimate destination and immediate host/investing country)

    (ii) Geographic classification principles (debtor/creditor or transactor principle)

13. Round tripping
14. Permanent debt between affiliated financial intermediaries
15. Land and buildings owned by non-residents
16. Use of maturity and full instrument split for direct investment
17. Multi-territorial enterprises
18. Application of direct investment to government
19. Bring together all direct investment related issues (transactions in goods and services, income, financial flows, stocks, between affiliates) as an appendix to the BOP Manual
20. Define terms more clearly, including: direct investor; affiliated direct investment enterprise; parent company; majority ownership and control; multinational enterprise; loan guarantees; debt forgiveness
21. Various special cases, including banking activities; (a) transfer pricing between banks; (b) shipping companies; (c) natural resource exploration and construction
22. Other capital (focusing on short-term instruments)
23. Inter-company transactions and amounts outstanding with fellow subsidiaries
24. FDI stock (financial versus economic measurement)
25. Valuation of real estate
26. Accounting methods and international accounting standards
27. Principles for classification by industry (according to direct investor or direct investment enterprise)
28. Greenfield investments
29. Extensions of capital
30. Mutual funds (units, sectorization, residence, transactions)