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Methodological Problems of FDI Statistics in Accession Countries and EU Countries

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P R E F A C E

This paper is part of the project "EU-Enlargement - The Impact of East-West Migration on Growth and Employment" (Flowenla), carried out on behalf of the EU Commission by the HWWA as leading partner in cooperation with five other international institutes (Bocconi University – CESPRI, University Surrey, University Parma, Vienna Institute of International Economic Studies WIIW, Hungarian Academy of Sciences - Institute of Economics Budapest) and several subcontractors. The project pursues an integrated approach by analysing the effects expected to result from EU enlargement on migration, FDI and trade and ultimately on national labour markets. Within the project, a comprehensive theoretical framework is developed as a basis for empirical analyses and policy implications. The empirical fundament of the theoretical analyses is a set of data bases on FDI, migration patterns and skill-composition of domestic and immigrated labour force. Illustrated by FDI data, this paper points out possibilities and limits of interpreting official international statistics of selected accession countries and EU members. In spite of considerable progress in the international harmonization of definitions and compiling methods, methodological differences must be kept in mind in assessing the effects of FDI development.

Hamburg, June 2003 Konrad Lammers

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ABSTRACT

Foreign direct investment (FDI) is a crucial indicator for a country's integration into the global division of labour and its general level of development. Empirical analyses of integration processes however require an extensively harmonized procedure to compile and disseminate FDI data. This paper focuses on the question whether and to what extent a comparability of FDI data can be taken for granted.

In the recent past, comparability of FDI data has improved a lot: According to IMF surveys in 2001 and 1997, the Applicant Countries (ACs) in particular were rather successful in complying with the international standards. However, a lot of problems remain, especially concerning the inclusion of indirectly owned direct investment enterprises, the comprehensive coverage of FDI components, the reporting of reverse investment and the measurement of stock data. For certain established EU countries the problem of international holding companies causes further complications. Moreover, harmonization in recent years does not necessarily mean respective ex post adjustments. So international comparisons should focus on the very recent years of more successful harmonization and always keep in mind, that deviations might, to a high extent, be due to statistical and methodological reasons.

I INTRODUCTION

Foreign direct investment is a crucial indicator for a country's integration into the global division of labour and its general level of development. International comparisons however require at best an exact statistical measurement of FDI or at least an extensively harmonized procedure to compile and disseminate FDI data. This paper focuses on the question whether and to what extent a comparability of FDI data of Accession Countries[1] among each other and of ACs and EC countries can be taken for granted.

For many years international organisations - in particular IMF and OECD - and national statisticians have been working on the improvement of the comparability of FDI data by settling on agreements on common standards and monitoring the proliferation of these common rules. The ACs not having been confronted with the statistical problems of collecting FDI data until in the nineties had to cope with severe problems up to the most recent years. On the other hand, established EC countries have cut their own path in developing individual systems of defining, compiling and disseminating FDI data for decades. Hence they may be highly reluctant to adjust to unified international rules. Therefore, it should be kept in mind, that not only ACs may not or not fully match OECD/IMF recommendations. Against this background, the paper compares the methodological peculiarities of three established EC member countries - namely Austria, Ireland and the Netherlands[2] - with the performance of the ACs. A more detailed knowledge about this issue can help to use FDI data as an indicator for the stage of convergence of the ACs, underlying determinants the future prospects. Rash and incorrect conclusions and recommendations can thus be avoided.

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1 The term Accession Countries (ACs) is used synonymically with "Applicant Countries" and "Candidate Countries" (CCs) and comprises the ten countries that will most likely join the EC in 2004 (Poland, Hungary, Czech Republic, Slovak Republic, Slovenia, Estonia, Latvia, Lithuania, Cyprus and Malta) plus Bulgaria, Romania and Turkey.

2 The choice of these 3 countries seems a bit arbitrary. Considering the small size of the ACs it seemed to make sense to focus on small EC members of average economic importance. The degree of harmonization of their FDI statistics was no special feature of selection.

II GENERAL REMARKS ON THE INTERNATIONAL COMPARABILITY OF FDI DATA

The benchmark for analysing differences in FDI definition, data sources and collection methods should be the OECD Benchmark Definition of Foreign Direct Investment Third edition (OECD 1996), which is consistent with the IMF Balance of Payments Manual, Fifth Edition, BPM5 (IMF 1993).

OECD/IMF recommendations mainly refer to

- definition of FDI in general and of single FDI components
- completeness of reported FDI statistics
- data sources and measurement problems
- periodicity and timeliness of data compilation and dissemination
- revision policy.

These basic items imply a lot of detailed requirements as regards geographical and industrial breakdowns, principles of consolidation of subsidiaries and associates etc. Moreover, there are prescriptions concerning the definition and composition of Direct Investment Income. In this paper, however, we only deal with FDI in its narrower sense and neglect FDI income with the exception of reinvested earnings as a part of FDI stocks and flows. Furthermore, we disregard the problem of timeliness being of considerable importance for the compilation of international statistics, but not substantially influencing the medium-term and long-term comparability of FDI data.

III THE MOST CRUCIAL ISSUES IN FDI STATISTICS

a Definition of FDI

In general Foreign Direct Investment is "a category of international investment made by a resident entity in one economy (direct investor) with the objective of establishing a lasting interest in an enterprise resident in an economy other than that of the investor (direct investment enterprise)" (OECD 1999, Appendix IV, p. 88). This "lasting interest" implies a long-term relationship between direct investor and enterprise and distinguishes FDI from portfolio investment. Moreover, a "lasting interest" means that there should be a noticeable influence on the management of the direct investment enterprise.

IMF and OECD assume that a share of 10 % of the nominal capital owned by a foreign investor will ensure this noticeable influence; absolute control is not required. Compliance with this guideline is an important prerequisite for harmonisation and comparability. Many countries have already adjusted their FDI definition to this threshold or intend to do so. It is applied to stocks and flows as well as to inward and outward investment. However, is not easy to discover, which countries have implemented the 10 % rule to what extent and since what particular point of time, because methodological details of the compilation of national FDI statistics are mostly hidden in footnotes.

In this connection - as well as for other methodological issues, too - the SIMSDI-Survey[3] proves to be a very helpful and informative supplement to national statistics and information. In 1997 and 2001, an examination of the statistical measurement of FDI has been carried out by IMF and OECD in their member countries. The questionnaire was answered by 96 countries and the result was a comprehensive survey on methodological standards and data collection methods applied by countries in all parts of the world. In 1997 individual results were published only for OECD countries, whereas findings for all other countries were released only on the aggregate level of regional groups (OECD 1999). In 2001, however, a detailed survey was published covering the results of those 56 countries not insisting on data protection (IMF and OECD 2002).

Eight of the altogether 13 ACs are included in the 2001 IMF/OECD metadata. These are the Czech Republic, Estonia, Hungary, Latvia, Poland, the Slovac Republic, Slovenia and Turkey as well as the EC countries Austria, Ireland and the Netherlands. Analysing the 1997 survey, comparable tables were released only for then-OECD members among the AC- respondents Czech Republic, Hungary and Poland and for Austria, Ireland and the Netherlands. In this paper the results of these 8+3 countries will be presented in detail for the particular methodological issues, while the methodological particularities of the remaining five AC countries can only be summarized - as far as they are available.

3 Survey of Implementation of Methodological Standards for Direct Investment (SIMSDI)

Table 1 depicts adherence to the 10 per cent threshold by the responding ACs in the 2001 Survey. Interpreting the results it must be kept in mind that this range of countries might not imply a representative random sample of all ACs. One may even act on the assumption, that those countries responding the questionnaire and permitting to publish individual results might presumably belong to the group of countries with the greatest efforts to adapt the international harmonisation rules. In a later chapter of this paper this assumption will be submitted to a more careful examination.

Table 1: Application of the 10 percent threshold to identify the Foreign Direct Investor (Inward and Outward FDI; Transaction Data)

	Inward and Outward FDI, Transaction data
Czech Republic	✓
Estonia [a]	✓
Hungary [b]	✓
Latvia	✓
Poland[b]	✓
Slovak Republic	✓
Slovenia[c)]	✓
Turkey	x
Austria	✓
Ireland	✓
Netherlands	✓

a In Estonia the 10 % benchmark has been applied since the beginning of 2000, instead of 20 % as previously used; **b** Prior to 1997 Poland and Hungary used the criterion of an effective voice in management, when the investor does not own 10 per cent or more of the enterprise; **c** In Slovenia for transaction data the 10 % threshold has been used since 1999; between 1997 and 1999 the percentage ownership defining FDI was 50 %.
Source: IMF (2003a)

As demonstrated by Table 1, all included countries - except Turkey - nowadays apply the 10 % threshold. In Turkey all enterprises with foreign ownership are treated as FDI, regardless of the percentage ownership by non-residents.[4] In contrast to the SIMSDI results, the Netherlands - according to more detailed IMF information - do not systematically apply the 10 per cent rule, but assess direct investment according to effective control (IMF 2003e, p. 1). In several cases in the past, higher thresholds had been used (see table footnotes). Partial non-compliance with the 10 % rule in bygone years may cause only minor problems for the comparability of FDI data of ACs, because in these

4 Moreover, Turkey applies different treatments for incorporated and unincorporated FDI enterprises.

countries - other than in highly developed industrial countries - minority investments are not common practice. Normally investors aim at the full control over an acquired enterprise and an ownership of less than 50 % will, therefore, be an exception. However, a change in the identification threshold - in Germany e.g. from 1990 till 1998 a theshold of 20 % and before that time of 25 % - can have considerable consequences for the comparability of FDI statistics in EC countires, if former data cannot be revised retroactively.

A second definition problem is the identification of FDI enterprises abroad and in a reporting country. As regards this subject, SIMSDI metadata display no major differences. All ACs included do without the application of a threshold to identify FDI enterprises. Only Poland uses a threshold of 500 USD participation in equity capital for FDI abroad.[5] However, since 1997 FDI data from Poland include estimates for enterprises below this threshold.[6] Probably more countries than declared in the SIMSDI report still use thresholds: In Austria a value threshold of 1 million Schilling (72.000 €) in shareholding is used to identify direct investment enterprises. In the Netherlands there exists a value threshold of 0,5 million Euro to identify direct investment enterprises. A further example is Germany, where reporting of stocks is obligatory only if the balance sheet total of the direct investment enterprise exceeds one million DM (Deutsche Bundesbank 2002a, pp. 71).

One of the most difficult problems in reporting FDI data is the coverage of indirectly owned enterprises in the definition of FDI enterprises. IMF/OECD postulate the application of the Fully Consolidated System (FCS) (OECD 1999, p. 32). According to the FCS,direct investment enterprises do not only comprise directly owned firms but also enterprises of which the affiliate owns at least 10 percent. Once the 10 per cent link is achieved, certain other enterprises related "down the line" to the first enterprise are also defined as direct investment enterprises.[7]

5 According to the WIIW/WIFO database the threshold applied in Poland amounts to USD 1 million. See *Hunya/ Stankovsky* 2002, p. 20).

6 See *Math* (2001).Fo an updated version see *Math/Müller* (2002).

7 See IMF/OECD (1997), question 2.1.3., p. 27. A detailed description of the FCS is given in Annex One. The same questionnaire was used in survey of 1997 and 2001.

Indirect links can exist to

- subsidiaries (a foreign investor owns more than 50 percent)
- associates (a foreign investor owns between 10 % and 50 %)
- branches (unincorporated enterprises wholly or jointly owned by a nonresident investor).[8]

The FCS stipulates to include in the FDI definition

- all branches of a direct investment enterprise,
- the associates of subsidiaries, and
- the subsidiaries of associates.
- Only associates of associates are no direct investment enterprises.

Moreover, relationships among several indirectly owned direct investment enterprises themselves have to be taken into account: Direct investment enterprises considered to be in a direct investment relationship with a direct investor ("fellow" subsidiaries) are also considered to be in direct investment relationship with each other.

It is not surprising that only a few countries fully apply the FCS (see table 2). The FDI definition given by the FCS is very pretentious and is making high demands on the countries' data collection systems. For transaction data only Estonia and Ireland stick to the FCS. Most countries partially follow the FCS rules. No attention at all to the FCS is given by Hungary, Slovenia and Turkey.

8 For a detailed definition of subsidiaries, associates, and branches see *Falzoni* (2000), p. 4).

Table 2: Treatment of Indirectly-Owned Direct Investment Enterprises: Transaction Data

Respon-ding ACs	Countries that include all kinds of transactions between "fellow" subsidiaries		Countries that apply the FCS					
			not applied		partially applied		fully applied	
	inward	outward	inward	outward	inward	outward	inward	outward
Czech Republic	x[a]	x[a]	-	-	✓	✓	-	-
Estonia	✓	✓	-	-	-	-	✓	✓
Hungary	x	x	✓	✓	-	-	-	-
Latvia	✓[a]	✓[a]	-	-	✓	✓	-	-
Poland	✓[b]	✓[b]	-	-	✓	✓	-	-
Slovak Republic	x	x	-	-	✓	✓	-	-
Slovenia	x	x	✓	✓	-	-	-	-
Turkey	x	x	✓	✓	-	-	-	-
Austria	x[c]	x[c]	-	-	✓	✓	-	-
Ireland	✓[d]	✓[d]	-	-	-	-	✓	✓
Nether-lands	x[a]	x[a]	-	-	✓	✓	-	-

a Equity and capital transactions are included, earnings data excluded; **b** Only income on debt and other capital transactions are included; **c** Transactions involving other capital and earnings are excluded; **d** In practice, the Central Statistics Office of Ireland cannot guarantee that the data are reported as requested in all cases.
Source: IMF (2003a)

A comprehensive recording of links between "fellow subsidiaries" is made only by very few countries: Only Estonia and Ireland perfectly comply with the IMF/OECD - recommendations - the latter just formally, but has to admit that some firms might give inaccurate answers. Hungary, the Slovac Republic, Slovenia and Turkey entirely neglect financial relations to fellow subsidiaries. All other reported countries exclude parts of these transactions. Therefore, it has to be stated that ACs and "old" EC members as well have severe problems in meeting the IMF/OECD demands regarding the inclusion of linked enterprises "down the line".

b Reporting of position data

Stock data are much more important and more apt for assessing the economic situation, development and competitiveness of a country than flow data. Due to the basic stock value they equalize short-term extreme figures, resulting from uncommon sectoral, political or other effects. Nevertheless, up to now the main interest of compiling and reporting institutions was directed towards flow data being part of the Balance of Payments statistics. During the last decade, however, this has changed considerably, mainly due to the initiative of the IMF.

Position data are reported as part of the International Investment Position (IIP), showing external assets and liabilities of an economy at a particular point of time. In 1995, the standardized[9] publication of IIP data[10] was started by the IMF. In July 2002, the IMF's data base contained IIP data for 80 countries.[11]

Whereas in the 2001 survey nearly all applicant countries (except Turkey and Cyprus, furthermore the EC country Ireland) declared to record position data, Table 3 indicates that in the last decade the situation was quite different .

Since 1998, the majority of responding countries compile and disseminate stock data. Exceptions are Malta, Cyprus and Turkey, the latter having recently announced to publish FDI position data starting from the year 2000. A special case is Ireland, where up to 2002 stock data on equity capital, reinvested earnings and other capital were compiled but not disseminated. The OECD FDI yearbook e.g. does not list any stock data for Ireland. In December 2002 a new series of Ireland´s International Investment Position has been presented beginning with the reference date of December 1998. This IIP statistic is claimed to comply largely with the international standards for compilation and presentation[12].

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9 on the basis of the Fifth edition of the Fund´s Balance of Payments Manual (BPM5), published in 1993.

10 IMF (1999/2001). IMF members are required to report IIP statistics to the Fund under Article VIII, Section 5 of the Articles of Agreement.

11 See IMF (2002), p. 3.

12 Published in the Internet under http://www.cso.ie/publications/finance/iip.pdf

Apart from differences in definition and partly missing stock data, any comparison and development assessment of FDI data has to bear in mind that countries apply varying measurement and compiling methods (see below).

Table 3: FDI Position in the reporting country as contained in the International Investment Position Data 1993 - 2000 recorded by the IMF and in national sources

	Information about FDI Position (Yes = ✓ , No = -)							
	1993	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
Bulgaria	-	-	-	-	-	✓	✓	✓
Cyprus	-	-	-	-	-	-	-	-
Czech Republic[a]	✓	✓	✓	✓	✓	✓	✓	✓
Estonia	-	-	-	✓	✓	✓	✓	✓
Hungary[b]	-	-	-	-	✓	✓	✓	✓
Latvia	-	-	✓	✓	✓	✓	✓	✓
Lithuania	-	✓	✓	✓	✓	✓	✓	✓
Malta[c]	-	-	(✓)	(✓)	(✓)	(✓)	(✓)	-
Poland	-	✓	✓	✓	✓	✓	✓	✓
Romania	✓	✓	✓	✓	✓	✓	✓	✓
Slovac Republic	-	✓	✓	✓	✓	✓	✓	✓
Slovenia	-	✓	✓	✓	✓	✓	✓	✓
Turkey[d]	-	-	-	-	-	-	-	-
Austria	✓	✓	✓	✓	✓	✓	✓	✓
Ireland	-	-	-	-	-	-	-	-
Netherlands	✓	✓	✓	✓	✓	✓	✓	✓

a Up to 1997 without Reinvested earnings and Other Capital; **b** According to the OECD FDI Yearbook Hungary does not publish data on the stock of resident direct investment abroad. According to national sources however, Hungary has recorded stock data derived from accumulated flows since 1993 (National Bank of Hungary, 2003); **c** Malta has not reported any stock data to Eurostat (Lovino 2002a, p.8) and to IMF´s Balance of Payments Statistics Yearbook. Moreover, the country did not subscribe to the IMF´s Special Data Dissemination Standard (SDDS) and, therefore, did not make a commitment to meet the SDDS specifications. On the other hand Malta´s International Investment Position has been published in the IMF´s International Financial Statistics Yearbook with stock data from 1994 to 1999; **d** Up to now there were no stock data for Turkey available. But according to national sources the Central Bank of Turkey has published FDI Position Data abroad and in Turkey since 2000.[13]
Sources: IMF (1999/2001) and national sources

13 Posted on the website http://tcmb.gov.tr/die/rc/rciipdata.pdf

c Comprehensive coverage of transactions

FDI data should - according to IMF/OECD recommendations - encompass:

- equity capital, including listed voting stocks (shares), unlisted voting stocks, other non-voting stocks (including participating preference shares) and equity investment in kind,

- reinvested earnings, i.e. the direct investor´s share (in proportion to direct equity participation) of earning not distributed, as dividends by subsidiaries or associates and earnings of branches not remitted to the direct investor (*Falzoni* 2000, p. 4),

- other capital transactions, i.e. intercompany debt transactions beween direct investors and direct investment enterprises and between two direct investment enterprises that share the same direct investor. Other capital transactions cover short- and long-term loans, trade credits, financial leasing, financial derivatives and bonds as well as money market instruments.[14]

Tables 4 and 5 show degree of compliance with the IFM standards of completeness of reporting countries.

As for **equity capital** and "listed and unlisted shares" resp. (Table 4), there are no problems: All registered ACs and EU countries compile these equity capital categories. A similar result applies to "other non-voting stocks". Only in Latvia these are not collected. "Non-cash acquisitions" like the provision of capital equipment, however, is not recorded in the Czech Republic, Hungary, and Turkey.

Reinvested earnings (RIE) have long been a severe problem in harmonising FDI data. The pictures drawn are quite different, if flows are compared including or excluding reinvested earnings, because for some countries RIE exceed flows in equity and other capital (Eurostat 2001, p. 107). In 1992 the Godeaux-Report (IMF 1992) - an early IMF-survey of statistics of international capital flows - showed that only half of the industrialized countries compiled reinvested earnings data. The Godeaux Report regarded this failure as the most important

14 Not included are guaranteed loans and insurance company technical reserves. The latter are all the same recorded by Ireland and the United States.

Table 4: Equity capital and reinvested earnings items covered in FDI data of ACs

Country	Equity Capital				Reinvested Earnings (RIE)
	Listed shares	Unlisted shares	Other Non-voting stocks[a]	Non-cash Acquisitions of Equity	
Czech Republic	✓	✓	✓	x	✓
Estonia	✓	✓	✓	✓	✓
Hungary	✓	✓	✓	x[b]	✓[2)]
Latvia	✓	✓	N.A.	✓	✓
Poland	✓	✓	✓	✓	✓
Slovak Republic	✓	✓	✓	✓	✓
Slovenia	✓	✓	✓	✓	✓
Turkey	✓	✓	✓	x	x
Austria	✓	✓	✓	✓	✓
Ireland	✓	✓	✓	✓	✓
Netherlands	✓	✓	✓	✓	✓

a including participating preference shares; **b** According to national sources Hungary does not include non-cash acquisitions of equity and reinvested earnings in FDI statistics. Beginning in 2004 new data collection systems will enable Hungary to capture these FDI components by statistics (Magyar Nemzeti Bank 2002).
Source: IMF (2003a)

Table 5: Direct Investment Other Capital: Items covered in FDI Data of ACs

Countries	Other Capital					
	Long-term Loans	Short-term Loans	Financial leasing	Trade credits	Financial derivatives	Bonds and money market instru-ments
Czech Republic	✓	✓	x	✓	NA	NA
Estonia	✓	✓	✓	✓	NA	✓
Hungary	✓	✓	x	✓	x	✓
Latvia	✓	✓	✓	✓	✓	✓
Poland	✓	✓	✓	x	x	x
Slovak Republic	✓	✓	✓	✓	✓	✓
Slovenia	NA	NA	NA	NA	NA	NA
Turkey	NA	NA	NA	NA	NA	NA
Austria	✓	✓	x	x	x	✓
Ireland	✓	✓	✓	✓	✓	✓
Netherlands	✓	✓	x	✓	x	x

Source: IMF (2003a)

source of global discrepancy.[15] The reason was that REI do not give rise to foreign exchange transactions that would flow through the banking system. Countries using central bank statistics as their primary source of FDI data, will therefore not dispose of data on reinvested earnings (*Falzoni* 2000, p. 6). The first SIMSDI Survey 1997 indicated that at this time 80 percent of documented OECD countries and 70 percent of all reported countries together included REI in their FDI statistics. The 2001 updating of the SIMSDI report states (see Table 4) that nearly all included ACs have compiled REI data with the only exception of Turkey and the old-established EC countries. Furthermore all these countries recorded REI in accordance with the international standards in the period in which they were earned.

Other capital transactions (see table 5) had - like RIE - not been compiled by all countries following the IMF/OECD recommendations in the last years. In fact, for long-term loans the majority of countries conform to the international rules. (Admittedly the survey gives no specific information about whether the same definition of long-term has been used everywhere: it can mean loans of over one year or loans of over five years (*Falzoni* 2000, p. 6)). Short-term financing between affiliated enterprises, however, was - as reviewed in the Godeaux-Report - recorded by only a minority of the countries included in the survey sample. The 1997 survey stated an improvement, nevertheless many countries still assigned short-term flows to the "other investment" component of the financial account.

In the 2001 IMF-Survey (see Table 5) the situation is different: Most countries record long-term and short-term loans correctly. However, the other forms of Other Capital are treated variably: The Netherlands e.g. do not include bonds, financial leasing and financial derivatives; Slovenia does not compile Other Capital data at present; Turkey classifies the whole category of "Other Capital" in the Balance of Payments statistics under "Other Investment" thus not counting them among FDI. Only Latvia, Slovakia and Ireland are completely conform to the IMF/OECD recommendations. The Survey clearly shows, that the inability to include all kinds of debts does not only hold true for young countries with less statistical experience, but is spread rather equally among all responding countries.

15 For a general analysis of the "asymmetry problem" see Eurostat (2001), p. 124.

Even if the recording countries stick to international standards, the recording of intra-company debt may cause problems of asymmetry. If a direct investor decides to invest in his subsidiary abroad by borrowing in the subsidiary´s local market, there will exist - according to the IMF/OECD definition - no FDI transaction, because the flow will not show up in the Balance of Payments statistics. But the transaction will be recorded as FDI, if the collection system of the host country is based on a survey system (Falzoni 2000, p. 6 and Eurostat 2001, p. 124).

d Data sources and measurement problems

For compiling FDI data three main data sources are used:

- The International Transactions Reporting System (ITRS) is the traditional instrument for collecting BoP data. It measures individual BoP transactions passing through domestic banks and through foreign bank accounts of enterprises.

- Enterprise surveys directly collect data on FDI activities from enterprises.

- Exchange control or investment approval authorities release information about FDI as a by-product of the FDI approval process.

Secondary sources are partner country information, company reports, chambers of commerce etc.

Tables 6 and 7 demonstrate the prevalence of various data sources in ACs and selected EC countries according to the IMF survey 2001. As to transactions data, half of the countries use enterprise surveys and the other half respectively applys the ITRS respectively. Only the Czech Republic relies on Investment Approval Authorities, more precisely on the information that firms are obliged to report related to the Balance of Payments. Secondary sources are only used by Latvia and the Slovac Republic on a big scale, in parts by Austria and Ireland.

Table 6: Primary data sources for FDI Transactions Data[a]

	Enterprise Surveys	International Transaction Reporting System (ITRS)	Exchange Control or Investment Approval Authorities	Bilateral Sources	Other (Published Sources, Press, Reports etc.)
	yes = ✓ ; no = -				
Czech Republic	-	-	✓	-	-
Estonia	✓	-	-	-	-
Hungary	-	✓	-	-	-
Latvia	✓	-	-	-	✓
Poland	-	✓	-	-	-
Slovak Republic	✓	-	-	-	✓
Slovenia	✓	✓	-	-	-
Turkey	-	✓	-	-	-
Austria[b]	✓	✓	-	-	-[c]
Ireland	✓	-	-	-	-[c]
Netherlands[b]	✓	✓	-	-	-

a referring to most timely transactions data. Estonia, Hungary, Latvia, Slovenia, Turkey, Ireland and the Netherlands do not give any information about data sources used for most comprehensive transactions data; **b** Surveys are used for data on reinvested earnings; **c** Press (and trade association) reports are used for cross-checking data.
Source: IMF (2003a)

Regarding position data, enterprise surveys are the clearly prevailing data source: Hungary (and in part Austria and the Netherlands) are the only countries that predominantly rely on the ITRS.

Table 7: Primary data sources for FDI Position Data

	Enterprise Surveys	**Interna-tional Transaction Reporting System (ITRS)**	**Exchange Control or Investment Approval Authorities**	**Bilateral Sources**	**Other (Published Sources, Press, Reports etc.)**	**Use of Per-petual Inventory Method**
	yes = ✓ ; no = -					
Czech Republic	-	-	✓	-	-	✓[a]
Estonia	✓	-	-	-	-	-
Hungary	-	✓	-	-	✓	✓[b]
Latvia	✓	-	-	-	✓	✓[c]
Poland	✓	-	-	-	-	-
Slovak Republic	✓	-	-	-	-	-
Slovenia	✓	-	-	-	-	-
Turkey[d]	NA	NA	NA	NA	NA	NA
Austria	✓	✓(e)	-	-	-	✓[e]
Ireland	NA	NA	NA	NA	NA	NA
Netherlands	✓	✓	-	-	-	✓

a According to new sources (European Central Bank, p. 77), only quarterly data are derived using the accumulated flows method. Annual data are compiled on the basis of a direct investment database established by the Czech National Bank; **b** ITRS and perpetual inventory method applied by the National Bank of Hungary; **c** perpetual inventory method used for only parts of the data; **d** No position data available (see above); **e** ITRS and perpetual inventory method are used for the measurement of investment in real estate only.
Source: IMF (2003a)

The countries´ choice of data collection methods can be decisive for the comprehensiveness of their FDI statistics and the ability of the compilers to implement the recommended international standards. Each type of source has its special advantages and deficiencies (see Table 8).

Table 8: Advantages and disadvantages of main sources of information on FDI

Advantages	Disadvantages
International Transactions Reporting System (ITRS)	
ITRS is normally used anyway for the collection of other BoP data like exports and imports. Therefore the costs of designing and implementing alternative systems can be avoided. Banking records easiliy provide a considerable part of FDI information.	In general, only cash transactions are measured. That implicates that parts of FDI components esp. reinvested earnings and intercompany indebtedness are not included without a special arrangement and must be furnished using supplementary sources. Position data are not readily provided by an ITRS.
Enterprise Surveys	
Enterprise surveys can be designed according to the special requirements of FDI statistics. In particular, enterprise surveys are apt to provide stock data and intracompany debts.	It may be difficult to compile a comprehensive list of enterprises with direct investment transactions. This problem refers escpecially to non-cash transactions. Moreover, non-business real estate investment will not be included. If the survey only contains a sample of the most important FDI enterprises, an extrapolation (Hochrechnung) can lead to unreliable results. The sampling procedures may vary from country to country.
Information from Approvals	
Information is often readily available as a by-product of an approval process or reporting obligations.	Approval and actual event of FDI will often not coincide. There can be significant timelags and the timeliness of dissemination of data can, therefore, not be guaranteed. The range of information obtainable may be limited because the objectives of approval processes will normally not correspond with FDI data requirements. Information on nonequity transactions, reinvested earnings and inter company debt transactions is generally limited or not available at all. Information on stocks of investment valued at market price is typically not available. Outward investment data are not available and must be taken from supplementing sources resp., because most investment approval authorities are concerned only with direct investment in the reporting economy.

Sources: IMF (1995, pp. 22 and pp. 153; OECD (1999), *Bertrand* (1999, p. 8).

The 1997 survey had revealed that, as a general practice, most of the countries used ITRS for compiling FDI transactions. The vast majority of the countries that compiled FDI stocks on the other hand relied on enterprise surveys for such data (*Bertrand* 1999, p. 5). The 2001 SIMSDI survey, however, shows that now most countries use a variety of information sources and rely more than before on enterprise surveys, being more easily adapted to the special requirements of FDI statistics.

Table 7 (last column) gives another example for differing information sources with serious consequences for the comparability of national data. Some countries - the Czech Republic, Hungary, Latvia[16] and in part Austria - use the Perpetual Inventory Method to calculate position data. The Perpetual Inventory Method is the process of deriving stocks from flow data and is normally applied by countries relying mainly on the ITRS. Via this method the value of the FDI stock is assumed to being equal to the value at the beginning of the period plus the net value of transactions during this period.[17] There are several systematic reasons why the acculumation of FDI flows generally does not equate the changes in stocks.[18] The crucial point of this method, however, is that the compiler must have a base value for FDI stocks at the beginning of the period and that there exists no clear-cut procedure for estimating this initial value. Stock data derived from flows and such compiled using enterprise surveys should,therefore, not be compared with regard to their absolute values, but rather as to their movement over time.

Regarding position data, there should be mentioned a further basic measurement problem: Stocks can be evaluated at book value or at market prices, i.e. stock prices as of the respective date. IMF and OECD recommend market values for two primary reasons: "First, if inconsistent valuation bases were used, it would be very difficult to make comparisons between direct investment and other financial investment as shown in the BOP and the IIP. Second, market valuation provides the most meaningful measure of the economic value of resources available to, or transferred between, economies." (IMF 1995, p. 152). But as can be seen from table 9, valuation principles are very different in the ACs.

16 Partly in these countries the Perpetual Inventory Method is substituted or supplemented by other methods.
17 For a detailed definition see OECD (1999), p. 23.
18 For a detailed analysis see *Stephan/Pfaffmann* (2001), p. 199.

Table 9: Primary Method Used to Value Assets in FDI Position Data

	Inward Position Data			
	Market Values		Book Values	
	Equity Capital	Other Capital	Equity Capital	Other Capital
	yes = ✓ ; no = x			
Czech Republic	x	x	✓	✓
Estonia	✓	x	x	✓
Hungary	x	x	✓	✓
Latvia	x	x	✓	✓
Poland	x	x	✓	✓
Slovak Republic	✓	✓	x	x
Slovenia	x	x	✓	✓
Turkey[a]	NA	NA	NA	NA
Austria	✓[b]	✓	✓[b]	✓
Ireland	-[c]	-[c]	✓[c]	✓[c)]
Netherlands	-	-	✓	✓

a No position data available (see above); **b** The Austrian National Bank´s surveys are in general based on book values. For equity capital both book values and and market prices are disseminated. If market prices additionally are given, they will be stock exchange prices or, failing that, estimates based on a model to determine the capitalized value of potential earnings (Österreichische Nationalbank 2002, tables 5.1. and 5.2.); **c** Position data are compiled, but not disseminated.
Source: IMF (2003a)

Market prices are used only by Estonia (but not for other capital), by the Slovak Republic and - in addition to normally used book values - in Austria. All other countries prefer book values. By the way, the situation in EU countries altogether is very heterogeneous: In Germany stocks are recorded at book value, whereas e.g. in Italy valuation is based on market prices for listed securities and on book values in all other cases (Eurostat 2001, p. 109 and p. 111). The dominance of book values contrary to the IMF/OECD principle follows from the fact that it is rather easy to take book values from balance sheets of direct investment enterprises normally based on historical costs. In addition to the above mentioned systematic aspects, book values have the disadvantage of considerably influencing the amount of the FDI stock because of age structure of the foreign capital stock: The older a capital stock, the more severely underrated it is. A comparison between an old and a young economy will thus lead to biassed results (*Stephan/Pfaffmann* 2001, p. 207).

e Reverse investment

Reverse investment ranks among the most complicated problems of recording FDI data. It refers to the acquisition of a financial claim by the direct investment enterprise on its direct investor. The channel of this transaction thus runs in a direction opposite to the basic FDI relationship.

In registering reverse investment, there has to be distinguished between two forms: In the first case the financial claim is lower than 10 per cent of the associates' equity capital, and in a second case it will exceed 10 per cent of the equity capital.

In the first case reverse investment - following the IMF/OECD-recommendations - should be recorded according to the so-called *directional principle*: That means that

- if a direct investor domiciling in the USA borrows from the affiliate located in Germany, seen from the angle of Germany, FDI in the reporting country[19] will be reduced. German liabilities will decrease; claims will increase;

- if a German affiliate acquires equity shares in the US investor, the application of the directional principle means that German inward-FDI will decrease by decreasing liabilities or rising claims.

In the second case, when the loan or participation exceeds 10 %, a new direct investment relationship is established and, therefore, two FDI relationsships result. The acquisition of a share in the foreign investor by an affiliate to the amount of e.g. 15 % of the foreign investor´s equity capital does, therefore, ***not*** result in a reduction of inward FDI by 15 %, but in the establishment of a new outward-FDI relationship of 15 %, in addition to the former inward-FDI relationship. That is the application of the asset/liability-principle, stipulating that all assets are recorded as direct investment abroad and all liabilities as direct investment in the reporting economy.

The consequence of IMF´s distinguishing between the two forms of reverse investment leads to the application of two different principles of recording international capital transactions depending on the amount of reverse investment. This makes the recording

19 = inward FDI

of reverse investment very demanding, so that it is not amazing to find various discrepancies from the rule (see table 10-13).

Table 10: Reverse Investment: Acquisitions of equity shares less than 10 % of the equity capital : Transactions data

Country	**Acquisition of capital by a direct investment enterprise in its direct investor recorded as**			
	FDI inward according to the directional principle		**FDI abroad according to the asset/liability principle**	**Portfolio investment (i.e. not FDI)**
	Increase in Claims on Direct Investor	**Decrease in Liabilities to Direct Investor**		
Czech Republic	-	-	-	✓
Estonia	NA	NA	NA	NA
Hungary	-	-	-	✓
Latvia	✓	-	-	-
Poland	NA	NA	NA	NA
Slovak Republic	✓	-	-	-
Slovenia	-	-	-	✓
Turkey	-	-	-	✓
Austria	-	-	-	✓
Ireland	✓	-	-	-
Netherlands	-	-	✓	-

a FDI relationship is established in one direction only; **b** Results for position data are predominantly identical, except for Turkey and Ireland, which up to 2001 did not disseminate stock data.
Source: IMF (2003a)

Table 11: Reverse Investment: Provision of a loan less than 10 % of the equity capital

Country	Provision of a loan by a direct investment enterprise to its direct investor recorded as			
	FDI inward according to the directional principle		FDI outward according to the asset/liability principle	Other investment (i.e. not FDI)
	Claims on Direct Investor	Liabilities to Direct Investor		
Czech Republic	-	✓	-	-
Estonia	✓	-	-	-
Hungary	-	-	-	✓
Latvia	✓	-	-	-
Poland	NA	NA	NA	NA
Slovak Republic	✓	-	-	-
Slovenia	-	-	-	✓
Turkey	NA	NA	NA	NA
Austria	✓	-	-	-
Ireland	✓	-	-	-
Netherlands	-	✓	-	-

Source: IMF (2003a)

Table 12: Reverse Investment: Acquisitions of equity shares more than 10 % of the equity capital (Two FDI Relationships Established) : Transactions data

Country	Acquisition of capital by a direct investment enterprise in its direct investor recorded as			
	FDI inward according to the directional principle		FDI abroad according to the asset/liability principle	Portfolio investment (i.e. not FDI)
	Increase in Claims on Direct Investor	Decrease in Liabilities to Direct Investor		
Czech Republic	-	-	✓	-
Estonia	NA	NA	NA	NA
Hungary	-	-	✓	-
Latvia	-	-	✓	-
Poland	NA	NA	NA	NA
Slovak Republic	-	-	✓	-
Slovenia	-	-	✓	-
Turkey	-	-	✓	-
Austria	-	-	✓	-
Ireland	-	-	✓	-
Netherlands	-	✓	-	-

Source: IMF (2003a)

Table 13: Reverse Investment: Provision of a loan more than 10 % of the equity capital

Country	Provision of a loan by a direct investment enterprise to its direct investor recorded as			
	FDI inward according to the directional principle		FDI outward according to the asset/liability principle	Other investment (i.e. not FDI)
	Claims on Direct Investor	Liabilities to Direct Investor		
Czech Republic	-	-	✓	-
Estonia	NA	NA	NA	NA
Hungary	-	-	✓	-
Latvia	-	-	✓	-
Poland	NA	NA	NA	NA
Slovak Republic	-	-	✓	-
Slovenia	-	-	-	✓
Turkey	-	-	-	✓
Austria	-	-	✓	-
Ireland	-	-	✓	-
Netherlands	-	-	✓	-

Source: IMF (2003a)

Tables 10 and 11 refer to transactions to the amount of less than 10 % of the equity capital. They relate to the acquisition of capital and the provision of a loan by a direct investment enterprise to its direct investor resp. The directional principle must be applied, in both cases of reverse investment, following the IMF/OECD rules.

In reality, however, the directional principle is not used continuously. Seven out of the responding countries follow the recommendations in recording **loans** awarded by an associate to its direct investor. But Hungary and Slovenia record them under "other investment" not being counted among FDI. Poland and Turkey do not regard the problem as relevant for their countries. In the case of an **acquisition of shares** of the direct investor, only three countries, namely Latvia, Slovakia and Ireland, employ the directional principle. The Netherlands apply the asset/liability principle while the majority of respondents group these transactions into portfolio investment and thus not into FDI .

Tables 12 and 13 allude to the second form of reverse investment. Equity shares or loans exceeding 10 per cent of the equity capital will establish a new FDI relationship and should be recorded according to the asset/liability principle. In this case most reporting countries do comply with the rule: Only the Netherlands cling to the directional principle for the acquisition of shares, and Slovenia and Turkey include loans granted by the affiliate under "other investment" thus excluding them from FDI statistics.

IV ASSESSMENT OF DATA COMPARABILITY

A comprehensive view on the process of harmonizing the methods of compiling FDI statistics leads to differing conclusions: According to the evaluation of IMF and OECD, the results of SIMSDI 2001 clearly show, that there are areas where noticeable progress was made in implementing the international recommendations (OECD 2001, p. 3). Mainly cited examples for improvement are the use of the 10 percent rule, the compilation of reinvested earnings, the coverage of the sub-component "other capital", the inclusion of non-cash acquisitions of equity as well as the comprehension of special types of FDI enterprises.[20]

Regarding the comparability of FDI data among ACs as well as to established member countries a lot of problems is still remaining.

The **10 per cent rule** is now applied by a vast majority of countries; in the past, however, many countries had applied higher thresholds. In these cases, adaption to the international recommendation has led to a shifting between FDI and portfolio investment, resulting in an increase in the amount of FDI compensated by a decrease in portfolio investment. If there are no ex post adjustments, the rise of FDI in a country having only lately adopted the 10 % definition will be too steep compared with a country having applied the 10 % rule from the beginning.

Even if the 10 per cent criterion is adhered to, there may be problems of comparability in detail: The **application of threshold values** in identifying direct investment enterprises or in registering transactions is handled in different ways and there is often no information about the thresholds actually applied. Moreover, inclusion - or not - of unincorporated firms in reporting FDI often remains unclear.

20 These are foreign-owned real estate, Special Purpose Entities and off-shore enterprises. We did not discuss these special problems, because so far they are of minor importance for ACs.

The Survey shows many varieties of countries not/partly/fully **applying the FCS**. If a country fully implements the FCS this will in principle raise the number of included direct investment enterprises and thus the amount of FDI transactions. The same holds for including transactions between "fellow subsidiaries". On the basis of the Survey results however, it is difficult to assess the impact of a single country´s application of the FCS on its amount of FDI, because there are many national nuances of deviating from the FCS.

The **coverage of FDI components** also poses severe problems of comparability, especially in the comparison of time. Table 14 gives evidence of differences in the inclusion of the main categories of FDI components for the ACs and selected other eastern and EC- countries up to 1998.

Table 14: Reported components of FDI in selected European countries, 1991-1998[a]

	Equity capital	Reinvested earnings	Other capital
Albania	1992-1998	-	-
Bulgaria	1990-1998	1998	1997-1998
Croatia	-	-	-
Czech Republic	1993-1998	-	-
Hungary	1991-1998	-	1996-1998
Poland	1990-1998	1990-1998	1991-1998
Romania	1991-1998	-	-
Slovakia	1994-1998	1995-1998	1995-1998
Slovenia	1992-1998	-	-
Macedonia	1996-1998	-	1996-1998
Estonia	1992-1998	1992-1998	1992-1998
Latvia	1992-1998	1996-1998	1996-1998
Lithuania	1993-1998	1995-1998	1995-1998
Armenia	1993-1998	1997-1998	1995;1998
Belarus	1993-1998	1997-1998	1996-1998
Georgia	1998	-	-
Russian Federation	1997-1998	1998	1997-1998
Ukraine	1994-1998	-	-
Austria	1991-1998	1998	1998
Ireland	1998	1991-1998	1991-1998
Netherlands	1991-1998	1991-1998	1991-1998

a Year for which data are reported
Sources: United Nations (2001, p. 195) and IMF (1999/2001)

In the years before 1998, there were considerable differences in defining FDI transactions and containing elements of FDI. These differences existed not only among ACs and other transformation countries, but also among ACs and incumbent EC-countries. Main deviations existed in reporting of reinvested earnings and of intercompany loans and the resulting breaks in series. For countries like Austria and Ireland that means a considerable underestimation of their FDI. In most ACs in fact reinvested earnings and intercompany loans had been rather small before 1998 due to the relatively recent establishment of direct investment enterprises. There were exceptions, however: In Hungary e.g. non-reported reinvested earnings are supposed to have reached 1,3 per cent of GDP in 1997 (United Nations 2001, p. 195).

A special problem is the unsatisfactory harmonisation of **reverse investment**. There is a considerable confusion in reporting reverse investment (see Tables 10-13). ACs as well as established EC countries apply the asset/liability and the directional principle in an incorrect way or do even group reverse investment into portfolio investment or "other investment" thus excluding it from the FDI statistics. The first case has as consequence a shift between inward and outward FDI, while the net amount will remain constant. A comparison between inward or outward FDI data of countries dealing with reverse investment in different ways will then lead to biassed results. In the second case even a comparison of net values of FDI is impossible. The reverse investment problem is not at all marginal: Reverse investment can add up to large sums. In Germany e.g., reverse investment in 2001 amounted to € 23 billion, which reduced German direct investment abroad to a net amount of € 48,3 billion (Deutsche Bundesbank 2002b, p. 45).

A further source of misleading comparisons of FDI data is the **measurement problem**. The existence of two valuation principles - market prices and book values - in parralel makes a comparative analyses of two countries very disputable: As *Bellak* (1999, pp. 24) demonstrates, a revaluation - i.e. a switch from one valuation principle to the other - of its FDI stock can turn a country from a net debtor into a net creditor.

In spite of all these problems, one can reach the conclusion that in the recent past the comparability of FDI data has improved a lot: According to the SIMSDI-survey in 2001 and compared with the results of 1997, the ACs in particular were rather successful in complying with the international standards. Obviously, they have taken their chance of a new start and established their methodological and organisational system of compiling and disseminating FDI according to the IMF/OECD/Eurostat recommendations.

WIIW[21] and WIFO[22] in Vienna, jointly maintaining the most comprehensive database on FDI in CEECs[23], also see at large "a clear trend for increasing accuracy and broadening coverage" (*Hunya/Stankowsy* 2002, p. 44) in spite of numerous problems in practice.

However, in view of the depicted deficiencies in the past and of the fact that the results of SIMSDI give evidence that the decisive progress took place between 1997 and 2001, a comparison of FDI data should focus on the recent years. This holds not only for analysing FDI of ACs among themselves. On the contrary: Including old EC countries leads to some further difficulties. Methodological peculiarities which have only limited consequences for the comparability of AC´s statistics, may become very important for ingenious EC members and can seriously effect the results because of less important mutual linkages of these countries and lower interdependence of direct investment enterprises in those countries.

FDI statistics of EC countries raise one further question not yet relevant for ACs but about to complicate a comparative analysis of economic properties of FDI. This is the problem of international holding companies, which means that the registered office of the group headquarter differs from the location of the actual direct investor and decision-maker. Netherland, for example, is a favoured location for international holding companies and its outward FDI data are said to be heavily overestimated.[24]

Altogether, with any comparative analysis of FDI data - be this among ACs or between ACs and other transformation countries or "old" EC countries - it should be kept in mind that deviations might, to a high extent, be due to statistical and methodological reasons. The intensity of this problem is demonstrated by the everlasting issue of asymmetry.

21 Vienna Institute for International Economic Studies
22 Austrian Institute of Economic Research
23 Central and East European Countries
24 If e.g. direct investment stocks in Germany at end-1999 from Netherland are assigned to the country of the ultimate beneficial owner rather than that of the primary foreign investor the stock of FDI accounted for by investors from the Netherlands falls by more than half from € 45 billion to € 21 billion. See Deutsche Bundesbank (2001), p. 65 and p. 68.

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