RESEARCH NOTES

Indicators of foreign direct investment in the countries of Central and Eastern Europe: a comparison of data sources

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This article compares and evaluates four major sources of data on foreign direct investment in the countries of Central and Eastern Europe. The sources are the data sets established by the following international organizations: the International Monetary Fund, the Organisation for Economic Co-operation and Development, the United Nations Economic Commission for Europe and the Division on Transnational Corporations and Investment of the United Nations Conference on Trade and Development. The data sets are compared in terms of the types of indicators of foreign direct investment included, the time periods covered, the comparability of the indicators and the utility of the data sets for a variety of analytic purposes. The principal conclusions are that no single data set by itself is adequate for most analytic tasks and that the data sets generally complement each other.

Introduction

Statistics on foreign direct investment (FDI) in the countries of Central and Eastern Europe are in much demand by public sector officials, private sector

* Professor, School of Business Administration, Georgetown University, Washington, D.C., United States. I am grateful for the cooperation of numerous officials in the following organizations: the European Bank for Reconstruction and Development, the International Monetary Fund, the Organisation for Economic Co-operation and Development, the United Nations Economic Commission for Europe and the United Nations Conference on Trade and Development. I am also indebted to the Center for International Business Education and Research and the Center for Business Government Relations at Georgetown University for grants that supported the research. Dorothy Sykes, Henry Sage and Lawren Richards provided excellent assistance. Two anonymous reviewers also offered several useful points of information.

analysts and scholars. Although these groups of users have different analytic needs for such data, they all necessarily rely on data produced by several international organizations. Because there are important differences among the data sets produced by those organizations, however, it is important to understand the strengths, the limitations and the complementary nature of these sets. This article provides a comparative assessment of the data on FDI in Central and Eastern European countries from four international organizations: the International Monetary Fund (IMF), the Organisation for Economic Co-operation and Development (OECD), the United Nations Economic Commission for Europe (ECE), and the United Nations Conference on Trade and Development Division on Transnational Corporations and Investment (UNCTAD-DTCI).[1]

Before discussing these data sources for Central and Eastern Europe, the article briefly considers key conceptual and methodological issues associated with FDI data in general. Since these data issues pertain to all countries in varying degrees, it is important that the data on FDI in Central and Eastern Europe be understood in the context of more general FDI data problems.

The definition of foreign direct investment

Numerous shortcomings of FDI data, regardless of the source or recipient country, are widely acknowledged.[2] One set of problems stems from the basic definition of FDI. Although there is a widespread acceptance of IMF and OECD definitions of FDI at a conceptual level, the actual data collection

[1] The Division on Transnational Corporations and Investment was formerly the Transnational Corporations and Management Division of the United Nations Department of Economic and Social Development (1992-1993) and the United Nations Centre on Transnational Corporations (1974-1992). The article excludes several other sources of FDI data on Central and Eastern Europe, such as the European Bank for Reconstruction and Development (EBRD), the Institute for International Finance, universities, consulting organizations and a variety of commercial directories. Although these alternative sources provide some distinctive information, they also obtain much of their data from the data sets discussed in this note and/or from national Government agencies, which are themselves the sources of most of the data reported by the international organizations. In addition, in the case of the Institute for International Finance, the data are only available to the consortium banks that own them. A useful, brief description of commercial sources of information can be found in Linda Bilmes, "Business in the privatised East", *Financial Times*, 22 June 1993. Most of the items cited in that review, however, concern legal and other policy information rather than FDI data.

[2] See, for instance, Kinniburgh and Ribeiro (1986, pp. 16-19), Brewer (1991, appendix 1, pp. 48-51) and the section on methodology included in each volume of the UNCTAD-DTCI *World Investment Directory*.

and reporting processes are inconsistent across countries, as well as over time for some countries.

The IMF's definition of FDI explicitly endorses the more elaborate benchmark definition of OECD; thus, in both instances, emphasis is placed on the investor's desire to have a "lasting interest" and "a significant degree of influence" in the management of an enterprise in a country other than the investor's home country.[3] The key features of (relatively) long-term, continuing interest and substantial degree of managerial control distinguish FDI from international portfolio investment. An operational and statistical issue is raised by the distinction between FDI and portfolio investment, namely, the percentage of ownership that should be used as a threshold (10 per cent) below which investments are treated as portfolio investments and above which they are treated as direct investments. In practice, countries use different thresholds, with 10 per cent being the most common among developed countries (e.g. the United States), but 25 per cent also being used by some countries (e.g. Germany). Although this inconsistency across countries is disquieting in the abstract, it matters relatively little in empirical terms since there are actually very few cases of foreign ownership between 10 per cent and 25 per cent.

There is a second issue, however, that is problematic in empirical as well as conceptual terms, namely, the components that are included in the definition of FDI and in the collection of data. There are four components of FDI: equity, reinvested earnings, long-term capital and short-term capital. The latter two refer to flows such as long-term loans and short-term trade credits between parent firms and their foreign affiliates. Although the role of offshore financial affiliates can complicate the data collection process, the basic notion that such financial relationships between parent firms and their foreign affiliates are integral parts of the larger FDI relationship is straightforward and widely accepted; thus, such relationships should be included in the data on FDI flows. In actual practice, however, there is considerable variability across countries in the inclusion or exclusion of each of these components. In fact, nearly all countries omit at least one component, and many countries omit two components from their FDI data. This inconsistency across countries, of course, makes cross-national comparisons of the levels

[3] OECD (1992a, para. 4-5) and IMF (1993, para. 359-360). The IMF *Balance of Payments Manual* is more widely used since it applies to developing, as well as developed countries.

of FDI flows problematic. This problem is addressed here in connection with Central and Eastern Europe.[4]

A third problem with the FDI data is that they are inadequate for measuring the international production activities of transnational corporations (TNC). Because FDI data are principally based on balance-of-payments concepts of international flows and collected within the context of each country's balance-of-payments statistics reporting procedures, they do not reflect the multitude of TNC operations, except for the specific categories of transactions included in the four components. Thus, the value of the output produced by foreign affiliates, for instance, and other indicators of international production are not reflected in the FDI data discussed here.[5]

Broad features of data sources

Traditionally, the most widely used FDI data, irrespective of region, are those produced by IMF, OECD and UNCTAD. For the countries in Central and Eastern Europe, the data produced by ECE must also be considered. These organizations have different purposes, experiences and mechanisms for collecting FDI data. IMF, for instance, is principally concerned with FDI inflows and outflows as items in the balance-of-payments statistics and pays particular attention that those data be compatible with other items in the current and capital accounts. OECD has been especially concerned in recent years with the harmonization of the FDI data collection processes of its members. UNCTAD-DTCI has been more concerned with providing a comprehensive picture of the FDI position of each country by including geographical and industrial breakdowns and indicators of international production in addition to the balance-of-payments data. ECE, on the other hand, has been particularly concerned with reporting up-to-date data and projecting FDI in the near and medium-term.

The FDI data of IMF are published annually in the *Balance of Payments Statistics Yearbook* and are available on computer tape on a monthly

[4] The reinvested earnings component of FDI flows is particularly problematic. It is the most difficult component to measure because the data are not collected from foreign exchange records, but are based on surveys of firms. As a result, this component is often omitted from national FDI data.

[5] Data on the activities of TNCs reported in the *World Investment Directory* of UNCTAD-DTCI do capture, to a certain extent, the absolute and relative magnitudes of international production activities.

basis.[6] Because they are updated frequently, they offer the advantage of being current. For a few countries in Central and Eastern Europe, these data series extend far back in time, thus allowing time-series analyses. For most of the countries in Central and Eastern Europe, FDI data have only recently begun to be reported by IMF.

OECD has also been collecting and reporting FDI data for many years.[7] In some of its documentation, OECD provides data on the regional distribution of *inward* FDI in developing countries and Central and Eastern Europe as reported by the principal developed member countries. Hence, the FDI data reported by OECD offer the advantage of relying principally on the advanced statistical systems and data collection methods of developed countries. There is, therefore, a reasonable presumption of greater accuracy in OECD data on these grounds. At the same time, however, this approach does not take into account FDI originating from developing countries. Since this has become an especially prominent feature of FDI in Asia, OECD data systematically underestimate inward FDI for countries in that region.[8]

In recent years, UNCTAD-DTCI has been publishing an ambitious set of volumes containing FDI data, legal information on investment regimes, corporate data on TNCs, country definitions of FDI and accompanying commentary in the *World Investment Directory* (UNCTC (1992); UN-TCMD and ECE (1993); UN-TCMD (1993); UNCTAD-DTCI (1994)).[9] In combination, those publications will eventually provide the most comprehensive data and information on FDI for the world as whole, for each region and for most individual countries. The volumes of the *Directory* include data on both inward and outward FDI stocks and flows for each country on a time-series basis, extending as far back as 1970 for many countries. They also provide a variety of distributions for each country in terms of sectors and industries, nationality of the parent firms for inward FDI, nationality of the foreign affiliates for outward FDI and indicators of the relative importance of TNC ac-

[6] IMF data reported here are from the balance-of-payments statistics tape retrieved on 21 May 1993.

[7] A comprehensive report of the coverage of these data is presented is OECD (1993a); see also Witherell (1984) for an earlier description of OECD's FDI data collection. In its current FDI data system, the data reported for FDI in Central and Eastern Europe are based on responses to questionnaires sent to the member countries.

[8] For information on intraregional FDI in Asia, see UNCTC (1992, table 8, pp. 19-20); Asian Development Bank (1991, pp. 44-48) and International Monetary Fund (1992, p. 172).

[9] The forthcoming volumes are *Africa and West Asia* (volume V) and *Global Trends* (volume VI).

tivities based on home and host country economic variables, such as GDP and employment. Whereas the wide-ranging scope of these data sets is a major strength, the *Directories* quickly become out-of-date.

In addition to the three international organizations mentioned above, ECE has developed a data bank on FDI in the Central and Eastern European countries.[10] Special emphasis has been placed on collecting data on approved as well as registered projects; thus the data bank is oriented more towards anticipated FDI flows. The ECE obtains its information from a combination of sources in the host countries and publications containing announcements of projects. In fact, UNCTAD-DTCI has made extensive use of these data in the *World Investment Directory,* volume II, *Central and Eastern Europe,* which was produced together with ECE.

While there is a great deal of interest in FDI data on approved or registered projects for the Central and Eastern European countries, these data have their own distinctive shortcomings. In particular, they only indicate formal notifications of intentions; an unknown percentage of such formally approved or registered projects will probably never materialize. Over time, experience may provide approximate proportional relationships between approved or registered and implemented projects so that plausible projections of the latter can be made on the basis of the former.

It is possible to compare the magnitudes of actual FDI flows in the past with the values and numbers of registered projects. Thus, in table 1, the dollar values of cumulative FDI flows as of 1992 and the registered projects in terms of both value and number are indicated. In terms of both the value of recent actual FDI flows and the value of registered projects, the predominant position of Hungary is clear. Following Hungary, the relatively large amounts for both the former Czechoslovakia (mostly the Czech Republic) and Russia are also apparent, though their rankings as the second and third largest recipient countries are reversed for the registered number of projects versus the value of flows. Poland ranks a close fourth on both scores.

The differences in the rankings of the countries in terms of the value of registered projects versus the number of registered projects are evident in the second and third columns of table 1. The large number of small projects in Romania and the relatively small number of large projects in Russia repre-

[10] The ECE data have been used extensively in a detailed study reported in UNIDO (1992).

Table 1. Foreign-direct-investment flows and value of registered projects

(Thousands of dollars and number)

Country	Cumulative flows, as of 1992	Value of registered projects	Number of registered projects
Bulgaria	300[a]	180	1 300
Former Czechoslovakia	1 100[b]	1 960[f]	6 400[f]
Czech Republic	..	1 700	3 400
Slovak Republic	..	260	3 000
Hungary	3 900[b]	3 435	14 069
Poland	680[c]	1 800	10 000
Romania	502[d]	646	23 453
Slovenia	..	920	1 800
Belarus	..	..	850
Estonia	..	177	4 012
Latvia	..	95	2 800
Lithuania	..	100	2 300
Russia	800[e]	2 875	3 500
Ukraine	..	500	1 380

Sources: OECD (1992b, table 14, p. 69) and ECE (1993).

[a] October 1991.

[b] June 1992.

[c] January 1992.

[d] September 1992.

[e] October 1992.

[f] Sum of separate figures in source for the Czech Republic and the Slovak Republic.

sent opposite extremes and reflect the substantially different tendencies in terms of FDI project size and magnitudes of flows in those two countries. In Romania, tax incentives for firms with 10 per cent or more foreign ownership have attracted a large number of non-resident Romanian foreign investors into small businesses. In Russia, by contrast, FDI has been dominated by a small number of very large projects in the extractive sector.

Comparison of individual features

- ***Values of annual flows.*** In table 2, the annual flows reported by IMF, OECD and UNCTAD-DTCI for the years 1989 through 1991 are indi-

Table 2. Comparisons of annual flows reported for 1989-1991 by the International Monetary Fund, UNCTAD Division on Transnational Corporations and Investment and the Organisation for Economic Co-operation and Development

(*Millions of dollars*)

Host country	1989	1990	1991
Bulgaria			
IMF	–	4	..
UNCTAD-DTCI	..	74.1[a]	..
OECD	–	–	–
Former Czechoslovakia			
IMF	257	207	600
UNCTAD-DTCI	85.0[b]	315.0[c]	..
OECD	256	180	640
Hungary			
IMF	-	-	1 462
UNCTAD-DTCI	296.0	421.0	..
OECD	215	569	1 361
Poland			
IMF	11	89	291
UNCTAD-DTCI	91.1	270.0	..
OECD	100	252	348
Romania			
IMF	–	–	40
UNCTAD-DTCI	..	112.4	156.3
OECD	..	112.4	156.3

Sources: International Monetary Fund (1993); UN-TCMD and ECE (1993); OECD (1992); and unpublished data from the Polish Investment Company, the State Bank of Czechoslovakia, the National Bank of Hungary and the Romanian Development Agency.

[a] From 16 October 1989 to 31 December 1989.

[b] From 1 January 1989 to 15 October 1989.

[c] From 16 October 1989 to 31 December 1989.

cated for comparison.[11] There are some notable discrepancies in the FDI data reported by these sources.[12] A striking observation is that IMF does not report FDI data for Hungary prior to 1991, which, presumably, should be available in light of the values reported by both OECD and UNCTAD-DTCI. Apart from that, for the period 1989-1990, there is no apparent pattern in the discrepancies, although, for some countries and years, a given source may report a value higher (or lower) compared with that of the other sources. Despite the inconsistencies in the *absolute* values, *ordinal* level comparisons across countries and over time are consistent. Furthermore, the available absolute values for 1991 tend to be similar across sources, though several missing data prevent firm conclusions on this issue. For the former Czechoslovakia, Hungary and Poland, both IMF and OECD report similar figures.

- Beginning in 1991, the near convergence of IMF and OECD data for Hungary, Poland and the former Czechoslovakia is reassuring. For the period prior to 1991, extreme caution and the use of a combination of all three sources are warranted. Careful examination of the data and judgement tailored to the particular country-year data points of interest are required.

  Overall, because of its relative comprehensiveness in terms of both country coverage and time-period coverage, OECD data are the best for most analytic tasks that involve the use of actual flows. It should be remembered, however, that OECD data have been based on reports from source (developed) countries. If FDI flows from developing countries into Central and Eastern Europe become sizeable, then the OECD data would systematically underestimate FDI flows into that region.[13]

- **Stock data.** Stock data are usually based on historical (book) value accounting calculations that do not reflect inflation or other sources of

[11] Separate data are now available for the Czech Republic and the Slovak Republic. However, since most of the data reported in this article refer to the period prior to the dissolution of Czechoslovakia, most references in the article are to the former Czechoslovakia.

[12] This is also the case for the FDI data reported for other countries. An example for Germany is provided in Thomsen and Woolcock (1993, p. 19). They report, for the second half of the 1980s, that the data reported by Germany indicate a net German *outflow* of FDI to the United States of $1.2 billion, while comparable United States data indicate a net *inflow* into Germany from the United States of $9.4 billion. The discrepancy of $10.6 billion ($9.4 billion + $1.2 billion) can be accounted for by the difference in coverage in the individual components of FDI flows, as discussed here, as well as in Brewer (1993).

[13] There is already some FDI in the region from India, the Republic of Korea and Taiwan Province of China.

Table 3. Comparison of foreign-direct-investment stocks reported by UNCTAD Division on Transnational Corporations and Investment and the Organisation for Economic Co-operation and Development

(*Millions of dollars*)

Host country	UNCTAD-DTCI[a]	OECD[b]
Bulgaria	300	300
Former Czechoslovakia	480	1 100[c]
Hungary	2 089	2 300
Poland	670	670
Romania	288[d]	230
Russia	3 735[e]	800[f]

Sources: International Monetary Fund, balance-of-payments tape, retrieved in May 1993; OECD (1992b, p. 69).

[a] As of the end of September 1991, unless otherwise indicated.

[b] As of October 1991, unless otherwise indicated.

[c] As of January 1992.

[d] As of 17 January 1972.

[e] As of the end of 1990.

[f] As of October 1992.

change in the FDI market value.[14] For Central and Eastern Europe, stock data are typically estimated as cumulative flows. The estimates of FDI stocks for four of the six countries in table 3 are close or even identical. On the other hand, the discrepancies for the former Czechoslovakia and Russia are substantial and cannot be attributed solely to the differences in the years to which the stock figures pertain. Further, the stock of FDI for the former Czechoslovakia reported by UNCTAD-DTCI is relatively low, while that reported by OECD is relatively high; the opposite relationship prevails for Russia.

Conclusion

Despite recent improvements in data collection procedures, FDI data for the countries of Central and Eastern Europe have the inherent limitations

[14] Although rarely done in practice, flow data can be adjusted for the effects of price changes. Three examples of price-adjusted analyses (for other than Central and Eastern European countries) are Julius (1990), Bachman (1991) and Brewer (1993).

that are typical of these data, such as inconsistencies across countries in the reporting of FDI components, time-lags in the publication of data and implausible values for some years. These data sources are nevertheless individually and collectively useful for many analytic needs.

However, no single data source is by itself adequate for most analytic tasks. In fact, the data sets generally complement one another. Whereas the OECD data tend to be the best for the analysis of actual FDI flows, the ECE data tend to be the best for the analysis of prospective FDI flows. In addition, the IMF and UNCTAD-DTCI data sets have distinctive advantages. The latter are often best suited for a detailed historical analysis of FDI patterns, while the former facilitate an analysis of recent trends in the individual components of FDI.

Beyond these conclusions, there are a variety of policy suggestions to Governments. In particular, the countries of Central and Eastern Europe should make an effort to report actual, as opposed to approved or registered, FDI flows. In addition, countries with high inflation or highly unstable exchange rates should report FDI flows in dollars (or some other hard currency) rather than in local currency. Finally, more data beyond those on flows based on balance-of-payments accounting concepts should be collected and reported in order to provide a more comprehensive picture of the production activities of TNCs. ■

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