

Oberlin

Digital Commons at Oberlin

Honors Papers

Student Work

1996

Foreign Direct Investment in Eastern Europe: Applying Traditional Models of FDI to the Transitional Countries of Eastern Europe

Jonathan Austin Kerr
Oberlin College

Follow this and additional works at: <https://digitalcommons.oberlin.edu/honors>



Part of the [Economics Commons](#)

Repository Citation

Kerr, Jonathan Austin, "Foreign Direct Investment in Eastern Europe: Applying Traditional Models of FDI to the Transitional Countries of Eastern Europe" (1996). *Honors Papers*. 530.
<https://digitalcommons.oberlin.edu/honors/530>

This Thesis is brought to you for free and open access by the Student Work at Digital Commons at Oberlin. It has been accepted for inclusion in Honors Papers by an authorized administrator of Digital Commons at Oberlin. For more information, please contact megan.mitchell@oberlin.edu.

Foreign Direct Investment in Eastern Europe:
Applying Traditional Models of FDI to the Transitional Countries of Eastern Europe
J. Austin Kerr
Spring, 1996

Foreign Direct Investment in Eastern Europe:
Applying Traditional Models of FDI to the Transitional Countries of Eastern Europe
J. Austin Kerr

Abstract

An empirical analysis is used to determine whether the factors that normally explain FDI flows to developing countries are also suitable to explain FDI flows to the developing countries of Eastern Europe for the years 1988-1992. It was found that a typical set of explanatory variables which explain FDI flows to non Eastern Europe developing countries very well, is not a useful set of determinants for FDI flows to Eastern Europe. Conclusions are drawn concerning the extent to which these results reflect the current state of political and economic transition taking place in Eastern Europe.

Outline

The paper is divided into nine sections. Section I briefly states the goal of the research at hand. Section II provides background information regarding the recent trends of foreign direct investment (FDI) flows to developing countries, including the developing countries of Eastern Europe. Section III reviews the many benefits FDI inflows bring to developing countries. Section IV explains how FDI inflows to Eastern Europe can aid the region in its transition to a market economy. Section V presents the current situation in Eastern Europe and discusses the region as a potential location for foreign investment. Section VI builds the model that is used to examine determinants of FDI flows via a survey of the literature. Section VII reviews possibly relevant explanatory variables not included in the model and comments on the effects of their absence. Section VIII consists of the data analysis, applying the model constructed in Section VI to developing countries located both in and outside of Eastern Europe. Section IX states the conclusions of the empirical analysis and discusses its implications, as well as suggestions for future research.

For a quick read of the paper, read only sections I, II, VI, VIII and IV which capture the goal, methods, results, and conclusions of the study. Reading sections III, IV, V and VII, however, will provide a better understanding of the study's approach and will give more depth to its significance.

I. Objective

The motive of this paper is to examine whether the factors that normally determine FDI flows to developing countries are suitable to explain FDI flows to the developing countries of Eastern Europe. Understanding whether and how the determinants of FDI in Eastern Europe is different from other developing countries will

assist Eastern European countries in the implementation of policies that create an atmosphere which is more attractive to foreign investors.

II. Recent Trends in FDI Flows to Developing Countries

In the 1970s and the 1980s FDI played a very important role as an engine for growth in developing countries.¹ Global FDI flows have been growing rapidly, increasing from \$47 billion in 1985 to \$139 billion in 1988.² In 1990 global FDI outflows reached \$225 billion - with an outward stock of \$1.7 trillion - opening a new decade of enormous global capital flows.³ In the meantime, the share of private investment in aggregate net resource flows to these countries increased from just 6% in 1980 to 49% in 1993⁴ - mainly due to limited access to other sources of financing.⁵ Clearly, private investment has become one of the most important sources of finance for developing countries. Global FDI inflows to developing countries are expected to reach \$400 billion (in 1990 prices) by the year 2020, increasing their present share of global FDI flows to 50%.⁶

The emergence of the countries of Eastern Europe as host countries to FDI - indicated by the two tables below - is also among the most significant trends in global FDI flows.⁷

Table A.

*Growth of Foreign Investment Registrations in the CMEA Countries
(number of registrations)*

Country	Jan. 1, 1988	Jan. 1, 1989	Jan. 1, 1990	Oct. 1, 1990
Bulgaria	15	25	30	70
Czechoslovakia	7	16	60	500
Hungary	102	270	1,000	2,300
Poland	13	55	918	1,950
Romania	5	5	5	570
Former USSR	23	191	1,274	2,051
Total	165	562	3,287	7,441

Source: ECE database on joint ventures, attained from Hamilton & Adjubei (1991:76)

*Czechoslovakia split into the Czech Republic and the Slovak Republic in 1991.

¹Argawal, Gubitz, Nunnenkamp, 1991:126; Welfens, 1994a:137; Welfens, 1994b:155.

²IMF *Balance of Payments Statistics*, 1995.

³UNCTC, 1992 in Welfens, 1994a:139.

⁴The World Bank, 1994 in Sader, 1995:1.

⁵World real interest rates have increased since the early 1980s and are expected to rise still higher throughout the 1990s. Fry, 1994; Lizondo, 1991:68.

⁶U.N. World Investment Report, 1993:105.

⁷UNIDO, 1990:viii.

Table B.

*Real per capita FDI of Developing Countries in Eastern Europe and Non Eastern Europe (real 1990 dollars per person)**

	1988	1989	1990	1991	1992
Non Eastern Europe	8.553	9.884	10.066	12.148	12.692
Eastern Europe	0.325	4.827	8.157	9.942	16.508

*The countries used to compute these values are those used in the sample regressions later on.

It is clear from Table A that the number of foreign investment registrations in Eastern Europe has accelerated from nearly zero to significantly large amounts. Table B confirms that the overall size of the FDI flows to Eastern Europe has also increased considerably. In fact, Table B shows that FDI flows to Eastern Europe were initially lower than comparable levels in other developing regions but increased at a faster rate to reach levels greater than the rest of the developing world.

III. Benefits of Foreign Direct Investment to Host Countries

Developing Countries are now well aware of the many advantages and benefits of FDI.⁸ As a form of import substitution,⁹ FDI enhances export earnings, relieves foreign exchange shortages¹⁰ and improves future tax receipts¹¹ - which, over the long run, improve the host country's balance of trade and balance of payments accounts.¹² Foreign investors are more able to export than indigenous enterprises because of their international connections.¹³ In fact, several surveys indicate a positive correlation between FDI inflows and the export performance of host countries.¹⁴

In many respects the efficiency improvements brought by FDI are more important than the actual increase in capital stock.¹⁵ In addition to new capital, foreign investors bring the managerial expertise and technological modernization necessary to surviving a competitive global market.¹⁶ FDI can increase competition in the host country as well as the country's competitiveness in the global market, in part, because it supplies

⁸Argawal, Gubitz & Nunnenkamp, 1991:126.

⁹Dobosiewicz, 1992:32; Michalak, 1992:1573; UNIDO, 1990:viii.

¹⁰Fry, 1994.

¹¹Welfens, 1994b:164.

¹²Ibid, 50.

¹³Dobosiewicz, 1992:32; Michalak, 1992:1587.

¹⁴Inotao, 1991:99; Welfens, 1994a:141.

¹⁵Steinherr, 1993:216.

¹⁶Cebula & Schultz, 1993; Damrau, 1992:36; Hamilton & Adjubei, 1991:75; Hunya, 1992:501; Levciik, 1991:15; Lizondo, 1991:76; Michalak, 1992:1582; Sader, 1995:13; Sarcinelli, 1992:17; Schire, 1990; UNIDO, 1990:viii,ix; Welfens, 1994b:146.

higher quality products.¹⁷ The technology transfer brought by foreign investors reduces the entrepreneurial gap between nations, encourages product innovation¹⁸ and even reduces environmental pollution¹⁹ which, overall, stimulates increased productivity.²⁰

FDI also has a direct linkage effect on domestic investment by firms of the host country.²¹ For example, the establishment of an automobile plant by a foreign investor might induce investment in the domestic tire and petrochemical industries.²² The increase in output or expenditure sparked by FDI could produce an accelerator effect on domestic investment as well as employment.²³ In turn, FDI stimulates economic growth and development²⁴ as it did for OECD countries in the 1980s.²⁵ Some researchers have even approximated that a percentage point increase in FDI/GDP would increase economic growth by more than one percentage point.²⁶ Others, however, have argued that there is no historical evidence of sustained growth *predominantly* financed by foreign capital anywhere.²⁷

FDI can become important not only for production, exports and employment, but also as a catalyst for political change - both in the host and parent countries.²⁸ It is commonly believed that FDI and expected future protectionism are linked; that one country investing in another avoids trade friction and, thus, diffuses protectionist sentiment because exports are replaced by local production.^{29,30}

The past three decades have provided an enormous set of empirical research that attempts to explain why some developing countries attract more FDI than others.³¹ The recent increase of FDI flows has not been sufficient enough to overcome the drastic decline of other types of private capital transfers, particularly bank loans to developing countries.³² In the prevailing environment of reduced official aid flows and

¹⁷Dobosiewicz, 1992:33,36; Hamilton & Adjubei, 1991:75.

¹⁸Welfens, 1994a:129,133.

¹⁹Hamilton & Adjubei, 1991:75.

²⁰Baldwin & Venables, 1994:298; Dobosiewicz, 1992:36; Hamilton & Adjubei, 1991:74.

²¹Saltz, 1992.

²²Wai & Wong, 1982:21.

²³Welfens, 1994b:48; UNIDO, 1990:vii.

²⁴Wai & Wong, 1982:20.

²⁵Welfens, 1994b:49.

²⁶Ibid, 139.

²⁷Steinherr, 1993:205.

²⁸Michalak, 1992:1573; Welfens, 1994b:50.

²⁹Rivera-Batiz and Rivera-Batiz, 1994.

³⁰Dobosiewicz (1992:25) believes that foreign investment provides political security, because "having a foreigner with his [or her] factory in the host country is like having a division of troops." While this is a melodramatic way of stating his point, the point is well taken.

³¹Podkaminer, 1996.

³²OECD, 1989:2243.

mounting debt burdens, FDI perhaps represents the most important source of technology and capital.³³

On the FDI-receiving side, changes in government policies of developing countries towards FDI have confirmed and strengthened an apparent trend towards liberalization of regulation on FDI inflows since the early 1980s.³⁴ Developing countries now seek primarily to encourage inward FDI by reducing obstacles, restrictions and requirements, and by offering guarantees and incentives as essential elements of new, liberal investment codes. While this trend constitutes an initial necessary condition for the inflow of FDI, it is by no means a sufficient condition. It may be safely concluded, therefore, that policy reforms on FDI by themselves are unlikely to have much impact on FDI inflows to developing countries. Any noticeable impact must result from a combination of appropriate policies with broader economic, technological and strategic considerations. Because FDI is not evenly dispersed among developing countries,³⁵ it is both possible³⁶ and necessary to examine the degree to which various factors determine FDI.

IV. The Need for FDI in Eastern Europe

Like all developing countries, the ability to attract significant amounts of FDI is widely understood as paramount to how quickly a country in Eastern Europe can grow in a sustainable manner. In Eastern Europe FDI is regarded as one of the main mechanisms that can help stabilize the volatile process of economic transition and the associated political process.³⁷ In order to transform into a market economy the post-communist countries must overcome their tendency for autarky and integrate themselves into the world economy.³⁸

Before this decade the socialist countries of Eastern Europe were not at all significant target host countries of FDI. It was only after 1985 when the isolationist policies of the communist regimes relaxed that possibilities for joint ventures increased considerably in Eastern Europe.³⁹

The radical reversal of the established anti-foreign policies toward FDI can be seen in the rapid increase in the number of foreign investment registrations in the region

³³Balasubramanyam, 1984:721-2.

³⁴Fry, 1994; UNIDO, 1990:x.

³⁵Tsai, 1994.

³⁶Econometrically speaking, there is enough variance among FDI flows to developing countries to allow for the examination of various possible determinants.

Levcik, 1991:16; Michalak, 1992:1576.³⁷

³⁸Levcik, 1991:21.

³⁹Gabrisch, 1993:20; Michalak, 1992:1576.

represented by the table below.⁴⁰ Though the monetary values of each registered investment are small by international standards,⁴¹ the unfolding of the privatization processes will certainly create significant opportunities for foreign investors.⁴²

There is little doubt that foreign capital will play a significant role in the region.⁴³ "According a vice president at the World Bank, the new democracies of Eastern Europe will need at least \$20 billion in capital inflow every year for the next decade if they are to make real progress."⁴⁴ The United Nations Economic Commission for Europe estimates that Hungary, Czech, Slovakia and Poland alone will need \$2 trillion over the next 10 years.⁴⁵ The institute for International Economics claims that \$1.5 trillion is needed per year to raise the amount of productive capital per employee in Eastern Europe to Western levels within ten years.⁴⁶

While these estimates seem extremely high, Eastern European governments generally agree that foreign capital would benefit their economies greatly and hope that FDI inflows continue to accelerate and significantly ease the process of transition from state monopolies to a truly market-oriented economy.⁴⁷ Some countries have even established foreign investment agencies to create the best conditions for attracting FDI.⁴⁸

For Eastern Europe in particular, FDI can act as a spur to the privatization process⁴⁹ - the progress of which is crucial to a successful transition toward a capitalist economy.⁵⁰ Further privatization brings further competition and eventually static efficiency so that producers can adjust output to the marginal-product rule.⁵¹ FDI is needed for privatization to occur more rapidly because the existing capital and savings stock in the Eastern European countries is not sufficiently large to privatize the state-owned assets.⁵²

From a political-economic point of view, the fall in real income, the rise of uncertainty and the fear of unemployment have to be counterbalanced by credible prospects for high future economic growth. The shortage of capital and entrepreneurship

⁴⁰Gabrisch, 1993:20; Hamilton & Adjubei, 1991:76; Michalak, 1992:1579; Sarcinelli, 1992:14.

⁴¹Hamilton & Adjubei, 1991:78,90; Hunya, 1992:507.

⁴²Michalak, 1992:1574.

⁴³Fink, 1993:9; Michalak, 1992:1574; Welfens, 1994b:50.

⁴⁴Vice President Willy Wapenhans. Sarcinelli, 1992:13

⁴⁵UNECE, 1991.

⁴⁶Sarcinelli, 1992:13.

⁴⁷Gabrisch, 1993:31; Michalak, 1992:1576,1586.

⁴⁸Hamilton & Adjubei, 1991:74.

⁴⁹Dobosiewicz, 1992:118; Hunya, 1992:503; Levčik, 1991:25.

⁵⁰Damrau, 1992:34; Hamilton & Adjubei, 1991:74; Lange, 1993:162; Michalak, 1992:1577; Welfens, 1994a:130; Welfens, 1994b:161.

⁵¹Sader, 1995:13; Welfens, 1994a:133.

⁵²Michalak, 1992:1577.

in the formerly socialist countries of Eastern Europe necessitates that these countries use foreign capital as a major alternative source of finance.⁵³ FDI is seen in Eastern Europe as one of the main macroeconomic mechanisms that will help stabilize the volatile process of economic transition as well as the associated political process.⁵⁴

Because foreign investment flows to Eastern Europe have not neared the high needs estimated, developing a model which tries to explain the determinants of FDI will benefit Eastern European countries in their quest to attain more foreign capital. Before examining how a model that explains FDI to other developing countries might also apply to countries in Eastern Europe, it is useful to have a good understanding of the current investment situation in Eastern Europe.

V. The Outlook for Foreign Investment in Eastern Europe

On the one hand, the first stages of the transition to a market economy has created many new opportunities for investments, but on the other, an investment is the result of a decision oriented toward the future and is hence extremely sensitive to changes in background conditions which create additional uncertainties and can cause investors to hesitate. There are risks related to the political situation, to the legal framework, to the macroeconomic conditions, to the prospective market development, to financing and to management and employment.⁵⁵ But there is also potential for high rates of return.

Eastern Europe is still in an inevitable recession,⁵⁶ which makes it more difficult for all firms to realize the originally expected profits and turnovers.⁵⁷ Increasing inflation makes inputs for each enterprise activity more expensive.⁵⁸ Unemployment is extremely high,⁵⁹ and not well understood by people who are accustomed to having "the right to work." Consumption and real income are still far below their initial levels.⁶⁰

The region's infrastructure needs many improvements.⁶¹ Insufficient telephone and communication systems, insufficient railroad and road transport systems limit investors' access to consumers and input materials and make international contacts very difficult.⁶² Telephone and computer ownership in Eastern European countries is a

⁵³Michalak, 1992:1574; Welfens, 1994a:141.

⁵⁴Michalak, 1992:1576.

⁵⁵Fink, 1993:11.

⁵⁶Gabrisch, 1993:46.

⁵⁷Ibid, 27.

⁵⁸Fink, 1993:13; Levcik, 1991:15.

⁵⁹Fink, 1993:9.

⁶⁰Levcik, 1991:21.

⁶¹Welfens, 1994b:54.

⁶²Fink, 1993:13; Lang & Ofek, 1993:6.

fraction of the levels in the West.⁶³ Many communications systems, however, are in the process of modernization.⁶⁴

The commercial banking system is not yet viable⁶⁵ which deters foreign investors who seek domestic credit.⁶⁶ Enterprise debtors often fail to make scheduled payments of principal and interest to creditors.⁶⁷ Both the risk ratings and foreign indebtedness for Eastern Europe are generally very high and have risen for most countries.⁶⁸ The absence of a formalized accounting system that provides reliable and consistent information is also detrimental to potential investors.⁶⁹

The legal systems in Eastern Europe are still transforming and, thus, in a very ambiguous state.⁷⁰ Enforcement of contracts is unavailable in some cases.⁷¹ The flood of both new laws and domestic and foreign applicants seeking to invest has overburdened the state administration, so that licensing and registration procedures take even longer than before.⁷² It can be extremely difficult to get a license for imports of essential inputs for specific production⁷³ - though foreign trade has undergone tremendous liberalization.⁷⁴ Uncertainty and confusion still exist among potential foreign investors about exactly what modes of acquisition are permissible and exactly how privatization in each country is to proceed.⁷⁵ Gabrisch (1993:25) describes the state of the legal systems as a "legal no-man's lands" that might even be seen as having many opportunities for quick profits because of the uncertain market situation and weak legal system.

Property questions remain unresolved.⁷⁶ Even though most Eastern European countries now allow 100% foreign ownership and provide legal guarantees concerning foreign property⁷⁷ foreign investors often do not know whether the partner who leases or sells the land or property to them is actually the owner.⁷⁸

⁶³Hamilton & Adjubei, 1991:89.

⁶⁴Ibid, 90.

⁶⁵Gabrisch, 1993:29; Lang & Ofek, 1993:6.

⁶⁶Damrau, 1992:41.

⁶⁷Begg & Portes, 1993:396.

⁶⁸Gabrisch, 1993:30.

⁶⁹Lang & Ofek, 1993:5.

⁷⁰Schmid, 1992:707.

⁷¹Ibid.,709.

⁷²Gabrisch, 1993:29.

⁷³Fink, 1993:13.

⁷⁴Levcik, 1991:15.

⁷⁵Damrau, 1992:43; Gabrisch, 1993:46.

⁷⁶Froot, 1994:317.

⁷⁷Hunya, 1992:503.

⁷⁸Gabrisch, 1993:31.

Since the newly created political and economic institutions will initially enjoy only weak credibility and government authority has been weakened by the collapse of communism the people of Eastern Europe tend to easily distrust capitalism and capitalist foreign investors.⁷⁹ The move to a dominant private-business sector economy will bring greater income inequality.⁸⁰ Participation by foreign investors in privatization programs therefore has the potential to be politically sensitive, especially if unemployment remains high.⁸¹ Eastern Europe cannot expect foreign investors to be eager to invest without political stability.⁸²

Corporate management abilities in Eastern Europe are inferior by Western standards.⁸³ Decades of living under communism have diffused any sense of entrepreneurial spirit.⁸⁴ There is a shortage of capable and motivated managers who are also proficient in relevant foreign languages.⁸⁵

Yet there are reasons foreign investors should consider locating their investment projects in Eastern Europe over other developing regions. The market structure in Eastern European countries suggests considerable economic advantages for newcomers as opposed to state firms.⁸⁶ The firm structure is dominated by large state firms and is thus sub-optimal, which do not operate very efficiently. Also, many Eastern European countries have become more disciplined with their budgets.⁸⁷ Given the increasing global outflows of foreign capital there is considerable potential of high returns to be tapped in the transforming countries of Eastern Europe.⁸⁸

A number of researchers believe that Eastern Europe has talented but inexpensive labor.⁸⁹ The data in Table C on the next page supports both of these claims.

⁷⁹Welfens, 1994a:132.

⁸⁰Welfens, 1994b:163.

⁸¹Sader, 1995:13.

⁸²Fink, 1993:10; Levcik, 1991:8; Welfens, 1994b:54.

⁸³Welfens, 1994b:165.

⁸⁴Damrau, 1992:34; Sarcinelli, 1992:9.

⁸⁵Gabrisch, 1993:28; Lang & Ofek, 1993:7.

⁸⁶Gabrisch, 1993:25.

⁸⁷Levcik, 1991:15.

⁸⁸Welfens, 1994b:51.

⁸⁹Damrau, 1992:39; Rollo, 1990:107; Lang and Ofek, 1993:1.

Table C.

*Labor Statistics for Eastern Europe and Other Developing Countries.**

	Eastern Europe	Non Eastern Europe
Average real monthly wage (1990 US dollars)	\$189.66	\$194.66
Average percentage of population having passed secondary education	70.90%	45.00%
Average amount of GDP produced per worker (1990 US dollars)	\$4,615	\$3,954

*The numbers listed are cross-country averages over 1987 to 1991.

Table C shows that, while wage levels in Eastern Europe are only slightly lower than wage levels in other developing countries, the skill level of the labor force (proxied by the secondary enrollment level) in Eastern Europe is much higher. The productivity of the labor force in Eastern Europe (represented by the bottom row of the table) appears to be greater as well.

Fink (1993:13) warns, however, that workers employed in foreign-owned enterprises often demand higher wages and the threat of an increasing wage-productivity gap worries potential investors.⁹⁰ Dobosiewicz (1992:28) believes that the better organization schemes already implemented by foreign investors has led to rapid increases in labor productivity which, in turn, have ensured higher rates of return.⁹¹ It may take some time for many workers to adapt to the new procedures and technologies used by competitive firms.⁹²

In summary, Eastern Europe is like other developing regions in that it presents both additional risks as well as some extra significant potential to foreign investors. An empirical analysis will provide insight as to the extent each of the factors discussed above actually affect FDI inflows.

VII. Building a model to explain FDI flows

This section reviews the many possible factors that are thought to help determine FDI inflows to developing countries. The decision of whether each particular variable is included in the model is based on the discussions and results from past studies and the availability of reliable data. The development of the model used to explain FDI flows is derived from a survey of past research literature, which is simultaneously reviewed.

⁹⁰Damrau, 1992:39.

⁹¹Lang & Ofek, 1993:4.

⁹²Dobosiewicz, 1992:28; Gabrisch, 1993:28.

There is no single theory that fully explains FDI flows.⁹³ Instead, there are a number of structural variables that are typically assumed to determine a firm's decision to engage in an investment project in a developing country. It must be kept in mind that although individual investment decisions belong to microeconomic theory, almost all of the explanatory variables in the model are derived from aggregate data.

Every explanatory variable that is used in the model is lagged by one year, which is assumed to be the average length of time between the point when foreign investors *decide* to invest and the *actual* point in time when the engagement of the investment activity occurs.⁹⁴

The rationale explaining how each variable is included is explained below:

Domestic market size: Population and Per Capita Real GDP

The most mentioned determinant of FDI is the size of the market in a country.⁹⁵ In a survey asking why foreign firms decided to invest in Taiwan in 1987, Chen (1992:400) found "expansion of markets" to be the most cited reason.

How to measure market size is a somewhat difficult question. One possibility is to use population. The more people there are who live in a country, the more possible consumers. This measure, however, may be problematic because consumers cannot buy products if they do not have money. Consider India, for example, which has an extremely large population but a relatively small economy.

Another possible measure of market size is Real GDP per capita which has been used by Lucas (1993:396) and Lim (1983:207-209). Clearly, the more people earn, the more they have to spend and the larger the potential market. At first glance, GDP per capita may seem a better measure than population. But it can be argued that population size is still important because if two countries with equal GDP per capita have drastically different population sizes, market seeking firms will be more likely to invest in the country with a larger population.

Another reason why Real GDP per capita is not a perfect measure of market size is that it does not account for savings rates, nor how evenly income is distributed throughout a country. Because Real GDP per capita is merely an average

⁹³Lizondo, 1991:80.

⁹⁴One fortunate result of lagging all of the explanatory variables is that this overcomes the potential problem of simultaneity that would otherwise exist among some of the explanatory variables with the independent variable (per capita FDI).

⁹⁵Coughlin, Terza & Arromdee, 1991; Dobosiewicz, 1992:62; Gabrisch, 1993:24; Hamilton & Adjubei, 1991:73; Hunya, 1992:508; Lizondo, 1991:70; Lucas, Robert E. B., 1993; Michalak, 1993:1576; Moore, 1993; Norman & Motta, 1995:483; de Souza & Stutz, 1994:534; Tsai, 1994; Welfens, 1994b:53.

(Real GDP/Population) it remains possible that all of the GDP is concentrated in one small sector of the population while the rest of the country has very little disposable income.

Therefore, both population and Real GDP per capita are included in the model, for neither is a perfect measure of domestic market size. Both Lim and Lucas found the coefficient of GDP per capita to be positive and statistically significant - as will be the expectation in this model.

Edwards (1990) and Sader (1995:26)⁹⁶ used GDP per capita in their models as a proxy for the return on capital and expected a negative coefficient. They believed that a lower per capita income signifies lower factor costs and would be negatively associated with FDI. Both found the coefficient of GDP per capita to be negative, but insignificant. Edwards concluded that per capita income is not a good enough proxy for profitability because investors will also be attracted to large market size, which allows investors to gain profits from sales within the country rather than producing at a low cost for export only.⁹⁷ The model used in this paper will account for factor costs (including labor costs, labor productivity and the openness of an economy) with other measures that will be discussed later.

One should keep in mind that it is possible that higher profits (via selling to more markets) may not necessarily be the chief objective of an investing firm and that mere enterprise growth, prestige or various indirect forms of profit may be the basic consideration.⁹⁸ One hypothesis found in the literature is that FDI is merely the result of capital flowing from countries with low rates of return to countries with high rates of return but the existence of many countries experiencing large inflows and outflows of FDI simultaneously is not consistent with this notion.⁹⁹ On the contrary, *portfolio diversification theory*,¹⁰⁰ also referred to as *internalization theory*,¹⁰¹ states that rather than merely seeking to maximize profits investors also try to reduce total risk by distributing their direct investments among various countries. It is possible that corporations with a wider international dispersion of their productive activities have smaller fluctuations in their global profits if the returns on activities in different countries are likely to have less than perfect correlation. This theory views foreign direct investment as international portfolio diversification at the corporate level. Lizondo (1991:69) notes, however, that support for portfolio diversification theory is extremely weak.

⁹⁶Sader was merely replicating Edwards model with different data.

⁹⁷Sader, 1995:28.

⁹⁸Dobosiewicz, 1992:65; Froot, 1994:293; Lang & Ofek, 1993:1.

⁹⁹Lizondo, 1991:68.

¹⁰⁰Argawal, Gubitz & Nunnenkamp, 1991:7; Lizondo, 1991:69.

¹⁰¹Lang & Ofek, 1993:1.

Market Growth

The rate at which an economy is growing is very much related to the country's market size. Growth is measured by the annual percentage change in Real GDP. As market seekers, investors are also interested in markets that are growing rather than contracting.¹⁰²¹⁰³ The coefficient of GDP growth is expected to be positive. Studies by Takahashi (1975) and the United Nations Department of Economic and Social Development (1993) found the coefficient of GDP growth to be positive and significant.

Openness

Assuming that most FDI is in the tradable sector, a host country's degree of openness with respect to international trade should also be a relevant factor in the investor's decision.¹⁰⁴ The openness of an economy can be represented by the sum of real imports and exports divided by population. The more open a country, the greater the possibility of exporting FDI-produced goods¹⁰⁵ and importing input factors from other countries.

The coefficient of this openness measure is expected to be positive, for it generally seems logical to expect that those countries that are more open to international transactions would also tend to be more inviting of FDI. In his survey of investing firms Chen (1992:400) found the openness of a country to be one of the main factors firms consider when deciding where to locate investment projects. Various researchers have found the coefficient of openness to be positive and statistically significant.¹⁰⁶

Some literature has argued that import barriers serve as an incentive for FDI because the latter is a medium to jump over protectionist fences. Supportive evidence of import substitution has not been found, however. In a study of German FDI it was found that import barriers in host countries affected German FDI negatively.¹⁰⁷ The same study also found that German FDI did not have a significant influence on imports in the host countries, i.e., neither a growth or a substitution effect.

¹⁰²Lizondo, 1991:70; Tsai, 1994.

¹⁰³The possibility of GDP growth and FDI being determined simultaneously will be avoided because GDP growth, like most of the explanatory variables, will be lagged by one year. The reasoning behind lagging variables will be explained more fully in a later section.

¹⁰⁴Edwards, 1990; Norman & Motta, 1995:452; Sader, 1995:27; Welfens, 1994b:52-3; U.N., 1993:105.

¹⁰⁵Inotao, 1991:100; Lucas, 1993.

¹⁰⁶Argawal, Gubitz, Nunnenkamp, 1991:ix; Sader, 1995:28.

¹⁰⁷Argawal, Gubitz, Nunnenkamp, 1991:12.

It is also worth noting that, among industrialized countries, FDI is typically followed by trade.¹⁰⁸ It seems fair to expect that this pattern would also hold true for developing countries.

Government Size

The government's size relative to domestic economic activity is used as a proxy for each country's stance toward private initiative. This will be measured by G/GDP, where G is government consumption. It is assumed that countries whose governments dominate their economy have greater bureaucracies with more stringent rules over economic activity, resulting in more obstacles for foreign investors to abide by. For this reason a negative coefficient is expected.

It may be the case that this method of measuring the extent to which governments encourage private initiative is not very meaningful, for there is also an argument which supports the expectation of a positive coefficient. One could reason that a country with high Government spending is interested in promoting development by investing in areas such as health, education, or infrastructure (e.g., transportation and communications systems). Unfortunately, more there is no breakdown of data which specifies how government consumption is being spent.

Both Sader (1995:28) and Edwards (1990) expected and found the coefficient on government size to be negative and statistically significant. Because there is uncertainty regarding the expected direction of the coefficient on government size it will be an interesting variable to evaluate.

Gross Domestic Investment

A very good indicator of the general investment climate in a country is the level of Gross domestic investment, per capita. High returns of foreign direct investments will be ensured only if enough investment in the infrastructure has been realized first.¹⁰⁹ Gross domestic investment can also be perceived as the amount of domestic output that a country invests in its people.¹¹⁰ Given that domestic and foreign investments are complementary, the coefficient should be positive - an expectation which indeed has been found to hold true in past research.¹¹¹

¹⁰⁸Ibid.

¹⁰⁹Sarcinelli, 1992:15.

¹¹⁰UNCTAD, U.N., 1993:105.

¹¹¹Argawal, Gubitz, Nunnenkamp, 1991:ix; Sader, 1995:27-8.

Labor Cost

Variables representing factor costs, including the cost of labor, should also be included in the model, considering that the bulk of FDI occurs in the manufacturing sector. Since the 1970s the most common measure for the cost of labor is the average wage level. Many researchers have expected foreign investors to be drawn toward countries with low average wage levels but the relative importance of labor costs for FDI decisions is not as straightforward as it may initially appear.¹¹²

In practice, investors prefer to pay the somewhat higher wage cost in the most developed and favorably situated areas, these being offset by a better infrastructure and the advantages of the presence of other industries.¹¹³ Some of the most recent sources believe that the significance of inter-country differentials in wage levels is diminishing because FDI is becoming more and more capital intensive.¹¹⁴ They contend that the increasing robotization of production processes has generally reduced the importance of low-skilled human labor and thus of low wage costs as an advantage of location in a particular developing country. The result is that FDI will depend more on the availability of high skill levels relevant to specific areas of production, design or management. In short, comparing mere wage levels across countries is not practical if the skill level of labor also differs greatly between countries.

Yet the cost of labor is still important. This paper introduces a new method of measuring labor cost: *average real monthly wages/average skill level*.¹¹⁵ This measure of labor cost can be thought of as the average real price of a unit of labor skill. The coefficient is expected to be negative, for foreign investors will be attracted to countries labor forces that are both inexpensive and highly skilled.

Labor productivity

Though it is rational to equate inexpensive skilled labor as being more productive labor,¹¹⁶ there is a second measure that may better represent the productivity of a country's labor force. Labor productivity can be indicated by *real GDP/the size of the labor force*. This can be understood as the average amount of Real GDP produced by each worker. Both *labor cost* and *labor productivity* are included in the model because labor productivity may resemble attributes of a work force that are unrelated to education,

¹¹²Argawal, Gubitz & Nunnenkamp, 1991:15.

¹¹³Dobosiewicz, 1992:35.

¹¹⁴Dobosiewicz, 1992:35; UNIDO, 1990:ix.

¹¹⁵The average skill level of a country is measured by the total percentage of the population which has completed secondary education, attained from World Data 1994: World Bank Indicators on CD-ROM.

¹¹⁶Baldwin & Venables, 1994.

such as work ethic and discipline and the strength of unions¹¹⁷ - all of which might be a function of how long a country has been living in a market system.¹¹⁸ A positive coefficient is expected because foreign investors are attracted to countries with more productive labor forces.¹¹⁹

Natural Capital

A country's supply of raw materials is also considered an important factor in many FDI decisions¹²⁰ but there is a great deal of difficulty regarding how it can be measured. Serageldin (1995) of the World Bank has recently constructed an index he calls Natural Capital.¹²¹ Though Serageldin admits himself that the index may not be a reliable measure for various reasons, an attempt is made to include it in the model with a positive coefficient expected.

External Debt

The viability of a country's banks can be indicated by the total external debt stocks of the country, measured in real 1990 dollars. Foreign investors often seek short-term and medium-term loans from domestic banks (in local currency) to finance business operations and to relieve the pressures on entrepreneurs caused by unexpected production fluctuations. This enables foreign firms to finance a larger amount of capital formation.¹²² Firms entering developing countries require a substantial amount of resources from the financial system, unlike those firms that are already well established. The further in debt a country, the more difficult it is for investors to attain readily available funds at reasonable interest rates. Furthermore, high indebtedness impairs the country's creditworthiness and jeopardizes its external capital transactions.¹²³ The risk of willful default on external debt may have its counterpart in the risk of expropriation and restrictions on profit and capital remittances in the case of FDI.¹²⁴

¹¹⁷Coughlin, Terza and Arromdee (1991) found unionization rates to be positively correlation with FDI flows.

¹¹⁸Particularly since this study concerns former socialist countries.

¹¹⁹Hunya, 1992:509.

¹²⁰Chen, 1992:400; Hamilton & Adjubei, 1991:87; Michalak, 1992:1584.

¹²¹Serageldin defines natural capital as "natural endowment... the stock of environmentally provided assets (such as soil, atmosphere, forests, water, wetlands), which provide a flow of useful goods and services." His measure was based on calculating four types of assets: land, water, forest, and subsoil assets.

¹²²Wai & Wong, 1982:20.

¹²³Gabrisch, 1993:48; UNIDO, 1990:x; U.N., 1993:105.

¹²⁴Argarwal, Gubitz & Nunnenkamp, 1991:18.

No attempt was made to use the interest rates in these developing countries, for they often do not reflect the scarcity of capital because capital markets are either small or not well functioning.¹²⁵ Effective domestic costs of borrowing are extraordinarily difficult to measure in almost all developing countries because of selective credit policies and disequilibrium in institutional interest rates.¹²⁶ High indebtedness also indicates the difficulty of repatriating earnings and capital due to limited access to foreign exchange.¹²⁷ Therefore, the coefficient on external debt is expected to be negative.

Trend Variable

A *trend* variable was also added to capture the effects of the recent trends of any FDI flows to developing countries between 1988 and 1992. It simply takes on the value 1 for data points from 1988, 2 for 1989,... and 5 for 1992.

The Dependent Variable: Foreign Direct Investment, per capita

Foreign direct investment is comprised of all capital transactions that are made to acquire a *lasting* interest in an enterprise operating in an economy other than that of the investor, where the investor's purpose is to have an effective voice in the management of the enterprise. Direct investment includes items such as equity capital, reinvestment of earnings and other long- and short-term capital.¹²⁸

FDI includes only lasting interests because FDI implies control of a foreign firm.^{129,130} In this way FDI is differentiated from foreign portfolio investment.¹³¹ The assets involved in FDI are less liquid than those attained via portfolio investment; The reversibility of FDI is more costly than the reversibility of portfolio investment.

Studies which have examined the determinants of FDI have weighted FDI by either GDP or population. The model used in this study follows Edwards (1990) and Sader (1995) by using per capita FDI as the independent variable for a couple of reasons. First, this paper intends to explain how developing countries might better attract FDI, in order to ultimately benefit the people of the country. Consider India which has a small

¹²⁵Wai & Wong, 1982:18.

¹²⁶Fry, 1994.

¹²⁷Ibid, p.130.

¹²⁸World Data 1994: World Bank Indicators on CD-ROM. Washington, D.C.

¹²⁹Sader, 1995:23.

¹³⁰The FDI levels recorded by the IMF exclude transactions between affiliated banks and between other affiliated financial intermediaries associated with deposits and other claims and liabilities related to usual banking transactions, and similar claims and liabilities of other financial intermediaries. Put simply, short-term financial flows between banking institutions are excluded. IMF, *International Financial Statistics*, pp. xix.

¹³¹Lozondo, 1991:80.

economy and an enormous population. India does not wish to draw more FDI to merely increase the ratio of FDI to GDP, but rather to gain from the benefits it provides for its the people of India. From a mathematical standpoint it is possible for the ratio of FDI to GDP to increase [or decrease] if FDI flows remain constant and GDP decreases [or increases]. GDP may be a less reliable weight because the GDP of developing countries is more likely to vary significantly form year to year. The aim of the model is not to examine what affects the ratio of FDI to GDP but rather what affects FDI levels alone. Using GDP as the weight leaves open the possibility that the coefficients of the regressions will represent how the explanatory variables affect GDP rather than FDI. This possibility is less likely to occur with population.

The model is as follows, using the above explanatory variables:

$$FDI = \beta_0 + \beta_1MKT_{i,t-1} + \beta_2POP_{i,t-1} + \beta_3GROW_{i,t-1} + \beta_4G_{i,t-1} + \beta_5GDI_{i,t-1} + \beta_6LC_{i,t-1} + \beta_7LP_{i,t-1} + \beta_8NC_i + \beta_9XD_{i,t-1} + \beta_{10}TREND + \epsilon_{it}$$

MKT = market size

POP = population

GROW = market growth

G = government size

GDI = gross domestic investment

LC = labor cost

LP = labor productivity

NC = natural capital

XD = external debt

ϵ = error term

VIII. Missing explanatory variables

There are undoubtedly additional explanatory variables that might initially be considered partial determinants of FDI inflows to developing countries. Unfortunately, reliable data on these variables ceases to exist, particularly for the countries of Eastern Europe and many variables are unable to be measured easily and meaningfully.

Nonetheless, a discussion of those relevant variables which are not included in the model is necessary so that interpretation of the regressions can be more accurate.

Government Incentives

For a number of decades incentives to foreign investors provided by host countries were thought to help explain FDI but recent research has cast a great deal doubt on their effectiveness.¹³² Many developing countries have indeed attempted to attract FDI by offering various fiscal incentives - most often tax concessions on operation costs or profits or tariff exemptions but the literature has suggested that many developing

¹³²Argawal, Gubitz & Nunnenkamp, 1991:128; Balasubramanyam, 1984:722; Gabrisch, 1993:25; Inotao, 1991:102-3; Lim, 1983:211; Lizondo, 1991:78; Lim, 1982: 210; UNIDO, 1990:x.

countries offer tax concessions or other fiscal incentives to compensate for their low resource endowments and labor skills, and to offset other disadvantages and risks inherent in investing in their countries. Several studies based on interviews with managers and of foreign firms as well as studies that have attempted to construct measures of fiscal incentives have found fiscal incentives to be insignificant.

It has even been suggested that the implementation of fiscal incentives by governments of developing countries could even backfire.¹³³ They may result in a vicious circle if privileges granted to foreign investors give rise to hostile feelings against FDI in the recipient countries. The consequences may be a new wave of regulations, intensified efforts to circumvent the restrictions, and finally the retreat of foreign investors.

It appears more promising for developing countries which wish to attract FDI to adhere to the rule that what is good policy for domestic investors is also good policy for foreign investors. In other words, there is little need for the host developing countries to focus on narrowly defined promotion measures to attract FDI. One matter that such countries should consider is that the approval procedure that decides whether foreign enterprises may invest should be as fast and transparent as possible, for it is a crucial element in the FDI decision. Because of the wide-spread doubts regarding the effectiveness of government incentives along with the difficulty of measuring them, no attempt was made to construct a measure for the model in this study.

Infrastructure

One significant but difficult-to-measure determinant of FDI is the quality of a country's infrastructure.¹³⁴ A number of areas fall into this category, including the transportation facilities within a country, the telecommunications systems available, the quality of schools and even the efficiency of the legal system. Simply stated, infrastructure is the level of technology that exists in a country. Single measures of infrastructure quality are difficult to generate but many components are linked to other explanatory variables in the model. A high quality of infrastructure facilities will be reflected in labor productivity, labor cost (the cost of a unit of labor skill), the level of gross domestic investment and even GDP per capita. The inclusion of these measures prevents the absence of a single infrastructure variable from severely hurting the model's explanatory power.

Real Exchange Rates

¹³³Argawal, Gubitz & Nunnenkamp, 1991:128.

¹³⁴Sader, 1995:26; UNIDO, 1990:ix.

Many researchers argue that movements in real exchange rates help determine FDI.¹³⁵ A depreciation of the domestic currency (in real terms) is expected to boost FDI inflows by allowing foreign investors to acquire domestic assets more cheaply.¹³⁶

A very recent model that included the real exchange rate was used by Sader (1995:29) with a sample consisting of developing countries both within and outside of Eastern Europe. Sader termed the real exchange rate as a measure of a country's economic competitiveness. His results showed the coefficient of the real exchange rate (measured in domestic currency per US dollar) to be positive but insignificant. Agarwal, Gubitz & Nunnenkamp (1991:14) provide a good review of other research which has examined how exchange rates effect FDI flows. While many studies have shown that devaluation of the local currency encourages the inflow of FDI, other studies have shown that the opposite effect of devaluation on FDI is also possible.

Unfortunately, reliable data for the real market exchange rate was unable to be attained, particularly for the countries of Eastern Europe. Thus, the inability to include the real market exchange rate in the model will weaken the model's explanatory power to some degree.

Exchange Rate Volatility

The lack of applicable data also prevented the inclusion of *exchange rate volatility* in the model. The volatility of the exchange rate could be indicated by the variance of the exchange rate. Some economists believe this volatility would reflect uncertainty that would hamper FDI inflows.¹³⁷ Others argue that this volatility might be positively correlated with FDI inflows.¹³⁸ The argument is that because trade is negatively affected by exchange rate volatility and many firms may be encouraged to substitute trade with FDI in order to bypass the foreign exchange market, exchange rate volatility may encourage FDI inflows. The variation of the market exchange rate goes unrecorded for most developing countries.

Political Instability

Political instability has been found by a majority of survey reports as discouraging for foreign investors.¹³⁹ The fear is that large and unexpected modifications

¹³⁵Harvey, 1990; Lizondo, 1991:74; Rivera-Batiz & Rivera-Batiz, 1994:234.

¹³⁶Froot & Stein, 1991; Sader, 1995:27; UN, 1993:105; Welfens, 1994b:147.

¹³⁷Harvey, 1990; UN, 1993:105.

¹³⁸Agarwal, Gubitz & Nunnenkamp, 1991:14-5.

¹³⁹Agarwal, Gubitz & Nunnenkamp, 1991:17; Lizondo, 1991:77; Lucas, 1993; UNIDO, 1990:x.

of the legal and fiscal frameworks may drastically change the economic outcome of a given investment.¹⁴⁰ As a concept *political risk* embodies a variety of concerns, ranging from production disruption, to confiscation or damage to property, to threats to personnel, to changes in the macroeconomics environment or the regulatory environment.¹⁴¹

But econometric studies based on cross country data have produced only mixed results.¹⁴² Some researchers have found a negative association between FDI and political instability but others have not been able to find out any such relation between the two variables.

The mixed results may reflect a variety of factors.¹⁴³ Measuring political instability is difficult,¹⁴⁴ in part, because a given political event may give rise to different levels of risk depending on the country of origin of the investment or the type of industry in which the investment was made. Though no attempted measure of political instability was included in the model, the political circumstances of every country in the sample must not be totally ignored.

Privatization

Privatization has been one of the driving forces underlying the rapid increase in FDI in developing countries in recent years, especially in Eastern Europe.¹⁴⁵ Privatization attract FDI directly by the sale of assets to foreigners, and indirectly by attracting further investments from these buyers as well as by attracting completely new investors.¹⁴⁶ A country's strong effort to privatize suggests that it has become more open to private entrepreneurship and that the government is more willing to accept and support private economic activity. Thus, foreign investors can expect an improved regulatory environment. Investors can also expect an improvement in the general profitability of investment projects because market distortions have been reduced through the transfer of inefficiently run state-owned enterprises to the competitive private sector.

It is unfortunate that reliable data on privatization activity is yet to be recorded. The little data that exists for Eastern Europe is especially weak because it

¹⁴⁰Lizondo, 1991:77.

¹⁴¹Lucas, 1993:395.

¹⁴²Agarwal, Gubitz & Nunnenkamp, 1991:17; Lizondo, 1991:77.

¹⁴³These factors are summarized best by Lizondo, 1991:7.

¹⁴⁴Lucas, 1993:395.

¹⁴⁵Levcik, 1991:23; Sader, 1995:vi; Welfens, 1994b:160.

¹⁴⁶Sader, 1995.

excludes all voucher privatization which is the method of privatization employed by Eastern European countries the most.¹⁴⁷

Even if data on voucher privatization were available the outcome of voucher privatization would be uncertain for it is not clear whether investment funds acting as intermediaries will confine themselves just to administrative functions and the improvement of their portfolios, or whether they will actually exercise ownership rights in joint stock companies whose shares they hold.¹⁴⁸ In this sense, voucher privatization is superficial and of limited effectiveness regarding improvements in efficiency. It may moreover lead to the destruction of considerable amounts of equity and to illicit enrichment by insiders and thus discredit privatization in the eyes of the general public.

Some of the effects of privatization levels may be captured in *government size* and even *labor productivity* because an increase in privatization is associated with a reduction in the role of a government in its economy.

Econometrically speaking, the exclusion of a relevant variable is not a problem so long as it is not correlated with any of the explanatory variables that are included in the model. If they the excluded relevant variable is correlated with one of the included explanatory variables the coefficient of the included variable will have some bias. Because this study is not concerned so much with developing a model that can predict FDI flows, bias coefficients are not of major concern. The interest of this paper is simply to determine which variables are relevant in explaining FDI.

VIII. Regression Analysis and Interpretation

Two separate regression were run using the model built in Section VI. First a regression was run for a set of non-Eastern-European developing countries during the years 1988 and 1992.¹⁴⁹ Another regression was run for a set of Eastern European countries over the same years.¹⁵⁰ All of the explanatory variables are lagged by one year.

¹⁴⁷Ibid, 19.

¹⁴⁸Levcik, 1991:24.

¹⁴⁹This data set consisted of 154 observations from the following 31 countries for the years 1988 through 1992 for which data was available: Argentina, Benin, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cote d'Ivoire, Egypt, Ghana, Greece, Honduras, India, Indonesia, Jamaica, Kenya, Malaysia, Mexico, Morocco, Mozambique, Nigeria, Pakistan, Peru, Philippines, Portugal, Sri Lanka, Thailand, Tunisia, Turkey, Venezuela and Zambia.

¹⁵⁰This data set consisted of 39 observations from the following 16 countries for those years between 1988 and 1992 for which there was available data: Belarus, Bulgaria, Czechoslovakia (Czech and Slovak Republics after 1991, Estonia, Georgia, Hungary, Kyrgyz Republic, Latvia, Lithuania, Moldova, Poland, Romania, Slovenia, Russian Federation, Ukraine and Uzbekistan.

A Model for non Eastern European Developing Countries

The results of the regression run for non Eastern European developing countries is presented below with a summary of descriptive statistics.

Table D.

Regression output for non Eastern European countries.

	Coefficient	Standard Error	t-statistic
Intercept	-3.200	8.986	-0.356
MKT	0.013	0.011	1.148 (m)
GROW	9.422	11.990	0.786
OPEN	0.038	0.004	9.835***
GDI	0.008	0.022	0.387 (m)
LP	-0.003	0.003	-1.059 (m)
LC	-2.283	1.738	-1.313*
G	-12.838	60.235	-0.213
XD	-0.011	0.004	-2.412***
NC	0.016	0.105	0.153
TREND	2.044	1.255	1.628*

Adjusted R-squared: 0.797

F-statistic: 60.5

* significant at 10% confidence interval

** significant at 5% confidence interval

*** significant at 1% confidence interval

(m) becomes significant after multicollinear variables are dropped

Table E.

Summary of Statistics for Non Eastern Europe Sample (Sample size: 153)

	Mean	St. Er.	St. Dev.	Variance	Range	Minimum	Maximum
FDI	27.52	3.79	46.91	2,201	270	-5.64	264.49
MKT	1,483.95	112.47	1,391	1.94E7	6,530	78.69	6,609.03
POP	6.38E7	1.19E7	1.48E7	2.19E16	8.64E8	2.30E7	8.67E7
GROW	0.030	0.012	0.152	0.023	1.43	-0.658	0.769
OPEN	935	83	1,030	1.06E6	5,163	58	5,221
GDI	331.38	27.54	340.70	116,079	1,854	27.29	1,881.06
LP	3,954	284	3,518	1.24E7	1.72E4	147	17,312
LC	3.59	0.10	1.29	1.67	7.47	0.04	7.51
G	0.130	0.003	0.036	0.001	0.183	0.039	0.222
XD	897.85	49.36	610.60	372,838	2.69E3	78.09	2,766.94
NC	26.4	1.5	18.6	347.7	69.0	4.0	73.0
TREND	2.97	0.11	1.41	1.99	4	1	5

Population was but dropped from the model because, when it was initially included, its coefficient was extremely small at 0.0000000363 and had a very low t-statistic of 0.285. Dropping *population* caused an increase in the adjusted R-squared.

With an F-statistic of 60.5 the regression as a whole is significant. The model explains a high proportion of FDI with an R-squared of 0.797. Yet only *openness*, *external debt*, *labor cost* and *trend* are statistically significant. The t-statistics of *market size*, *market growth*, *gross domestic investment*, *government size* and *natural capital* are not significant but eliminating any of these variables would harm the explanatory power of the model.

The coefficients of all the variables are of the expected direction, except for *labor productivity*. The negative sign on the coefficient for *labor productivity* is certainly the result of multicollinearity.¹⁵¹ *Labor productivity* is correlated with both *market size* and *gross domestic investment*. The sign on the coefficient for *labor productivity* becomes positive if *market size* is dropped from the model and, if *gross domestic investment* is also dropped from the model, *labor productivity* becomes statistically significant at the 5% confidence level (t-stat.=1.74).

Similarly, *market size* becomes statistically significant at the 5% confidence level (t-stat.=2.13) when both *labor productivity* and *gross domestic investment* are dropped from the model; and *gross domestic investment* becomes statistically significant at the 5% level (t-stat.=2.21) when both *market size* and *labor productivity* are dropped from the model. In short, each of these three variables are significant determinants of FDI but their variances are rather high when all three are included in the model at the same time because of their multicollinearity. It is not possible, however, to state the magnitudes in which each of these three determinants explain FDI.

The variables *growth*, *government size*, and *natural capital* are kept in the model, despite having insignificant t-statistics because dropping all three from the model does not cause a change in the R-squared value or adjusted R-squared value. This implies that these three variables may still be relevant in explaining FDI.

A Model for Eastern Europe

The results of the regression run for the developing countries of Eastern Europe is presented on the following page with a summary of descriptive statistics.

¹⁵¹This is obvious because when *labor productivity* is regressed on FDI alone, its coefficient is positive and strongly significant.

Table F.

Regression output for Eastern Europe.

	Coefficients	Standard Error	t-statistic
Intercept	-3.53	65.17	-0.054
MKT	-0.01	0.01	-0.763
GROW	-82.95	115.92	-0.716
OPEN	0.03	0.02	1.433
GDI	0.04	0.11	0.363
LP	-0.02	0.02	-1.205
LC	-3.48	3.54	-0.9822
G	0.78	305.80	0.003
XD	0.04	0.03	1.288
NC	-0.09	1.15	-0.075
TREND	9.89	10.97	0.902

Adjusted R-squared: 0.072

F-statistic: 1.29

Table G.

Summary of Statistics for Eastern Europe Sample (Sample size: 39)

	Mean	St. Er.	St.Dev.	Variance	Range	Minimum	Maximum
FDI	29.58	11.01	68.79	4,731	362	0	361.52
MKT	2,848.21	287	1,793	3,216,312	8,284	379.42	8,663.40
POP	2.12E7	5.23E6	3.27E7	1.07E15	1.47E8	1.57E6	1.49E8
GROW	-0.075	0.019	0.118	0.0138	0.498	-0.302	0.196
OPEN	1,857.08	176	1100	1.21E6	5,310	365.83	5676.00
GDI	704.07	45.42	283.64	80,451	1,400	61.41	1,461.70
LP	4,615.09	225	1,403	1,969,007	6,792	743.93	7535.44
LC	4.54	1.088	6.797	46.2	38.41	0.0013	38.41
G	0.127	0.008	0.048	0.002	0.191	0.036	0.227
XD	1,180.28	77	481	231,293	2,051	50.58	2,101.11
NC	20.0	2.275	14.208	202	66	4	70
TREND	3.74	0.216	1.352	1.8273	4	1	5

As was done with the previous regression, *population* was dropped from the model because its coefficient was extremely small at -0.0000000032 and its t-statistic was very low at -0.00386. Dropping *population* again caused an increase in the adjusted R-squared value.

The F-statistic of 1.29 signifies that the regression as a whole is insignificant. This is not surprising, considering that none of the explanatory variables are statistically significant - not even at the 10% significance level. Attempts were made at dropping some variables from the model to see if the significance of any of respective

correlated variables would change but no such case was found. Thus, multicollinearity does not seem to be the reason why none of the variables are statistically significant.¹⁵²

The results of the regression on Eastern Europe imply that the model ceases to explain FDI flows between 1988 and 1992 in this region of the world. The next section will discuss possible reasons why the determinants of FDI to non Eastern European developing countries do not also explain FDI flows in Eastern Europe.

IX. Conclusions, Implications and Recommendations for Future Research

From the two regressions presented above it appears that models which typically explain FDI flows to developing countries very well, fail to explain FDI flows to Eastern Europe for the years 1988-1992. The explanation of FDI in Eastern Europe is certainly complicated by a set of unique political and economic circumstances characterizing this region after the collapse of the centrally planned model of industrial development.¹⁵³

One partial explanation for the recent acceleration for FDI into Eastern Europe is that the trend is simply a result of the economic transition that is taking place. Before this time period, the closed borders of the communist governments prevented foreign investors from even considering locating investment enterprises in Eastern Europe. But since these restrictions have fallen along with the communist governments themselves, investors have indeed considered Eastern Europe a viable region to locate investment.¹⁵⁴

How then were the large inflows of FDI able to occur despite the unexpected coefficients on so many of the determinants? It is plausible that the coefficients of *market size*, *market growth*, *government size*, *external debt* and *natural capital* were of opposite sign than expected (and opposite from the respective signs produced by the non Eastern Europe regression) because the accelerating inflow of FDI has coincided with deepening economic depression. The dramatic events which have taken place in Eastern Europe during the last eight years have resulted in *both* economic depression and opening doors to FDI. In other words, the particular situation of the transitional countries of Eastern Europe (which is not fully captured by the variables in the model) provides the predominant explanation of increasing FDI inflows to that region.

It may also be the case that privatization levels have been the main determinant of FDI inflows to Eastern Europe. It is thus encouraged that future studies

¹⁵²Multicollinearity is normally thought to be present when the regression as a whole is significant but each individual explanatory variables are not which is not the case in this situation anyway.

¹⁵³Michalak, 1992:1575.

¹⁵⁴This trend is somewhat exemplified by the positive coefficient of *openness*.

attempt to develop data to represent the privatization levels in the sample and test their importance in determining FDI flows to transitional countries.

Also, the approach of this study is one-sided because it ignores the structure of the supply side of FDI - where FDI is coming from.¹⁵⁵ Knowing which parts of the world are supplying FDI to which parts of the world may reveal interesting trends. Many researchers have found that international investment decisions are increasingly inclined to favor locations that are closer in direct proximity to a firm's home country.¹⁵⁶ Such is the case in Eastern Europe. Parents of almost 70% of Eastern Europe's foreign investment originates from the countries of Western Europe,^{157,158} especially Germany.^{159,160} Japan, the largest contributor of FDI in the world, is almost completely absent in Eastern Europe.^{161,162} The proportion of capital being contributed by the United States is small (approximately 9%) but steadily increasing.¹⁶³ Clearly, the degree of familiarity with the host economy by the foreign investors significantly affects their location choices,¹⁶⁴ whether in terms of language, culture, legal systems, technical standards, customer preferences or the general economic situation.¹⁶⁵

Even if the short-run returns gained by Western European investors in Eastern Europe are relatively low in comparison to expected returns of investment in other developing regions, there may be intangible (or long term) benefits from investing in Eastern Europe. Understandably, Western Europe has a vested interest in promoting stability and development on its Eastern flank.¹⁶⁶ Failure to do so raises the likelihood of vastly increased labor migration to the West, as well as the likelihood of political instability that could be very threatening to national security.¹⁶⁷

The main barrier to better understanding the supply side of FDI is the lack of pertinent data. There are no official data sources that entail a breakdown of the

¹⁵⁵Agarwal, Gubitz & Nunnenkamp, 1991:6.

¹⁵⁶Gabrisch, 1993:24; Moore, 1993; UNIDO, 1990:vi.

¹⁵⁷Damrau, 1992:33; Hamilton & Adjubei, 1991:79; Michalak, 1992:1581; Sader, 1995:18; Welfens, 1994b:165.

¹⁵⁸The Visegrád Countries (Hungary, Poland, and the Czech and Slovak Republics) which border Western Europe are receiving a higher proportion of all FDI flowing into Eastern Europe.

¹⁵⁹Dobosiewicz, 1992:92; Fink, 1993:14; Hunya, 1992:508; Norman & Motta, 1995:484.

¹⁶⁰And the largest investor in Hungary is Austria. Michalak, 1992:1587.

¹⁶¹Dobosiewicz, 1992:91; Michalak, 1992:1582; Welfens, 1994a:50; Welfens, 1994b:141.

¹⁶²Asia is the region supplied mostly by FDI flowing out of Japan. Dobosiewicz, 1992:91; Michalak, 1992:158.

¹⁶³Dobosiewicz, 1992:97; Hamilton & Adjubei, 1991:81.

¹⁶⁴Michalak, 1992:1575.

¹⁶⁵Damrau, 1992:39; Lizondo, 1991:71.

¹⁶⁶Michalak, 1992:1588.

¹⁶⁷Dobosiewicz, 1992:118; Levčík, 1991:27.

sources from which FDI is flowing. Part of the reason is that it is not clear how investment from multi-national corporations should be recorded. Another is that more and more small firms are entering global agreements and their transactions go unrecorded. Nonetheless, when conducting research regarding FDI flows, it is important to at least keep the supply side issues of FDI in mind.

A major implication of both the regression results and the issues of supply-side FDI is that regional differences must be taken into account when attempting to empirically assess the determinants of FDI flows. The recent history and political context of one region (or even of a particular country) may override all other factors that are normally thought to explain FDI. Certain regional differences may be strong enough to warrant that attempts to develop FDI models examine various regions separately. The results from regional studies would better enable governments to make more accurate and effective policy decisions.

Data Sources

International Monetary Fund. *Balance of Payments Statistics Yearbook 1994*, volume 45, part 1. Washington, D.C.

_____ (1995) *Direction of Trade Statistics Yearbook*. Washington, D.C.

_____ (1995) *International Financial Statistics*. Washington, D.C.

_____ *International Financial Statistics: Supplement on Countries of the Former Soviet Union 1993*. Washington, D.C.

Serageldin, Ismail. (1995) "Sustainability and the Wealth of Nations: First Steps in an Ongoing Journey." Presented at the Third Annual World Bank Conference on Environmentally Sustainable Development, September 30, 1995.

United Nations. (1994) *Handbook of International Trade and Development Statistics 1993*. New York.

_____ (1994) *National Account Statistics 1992*. New York.

_____ (1993) *Statistical Yearbook, Fortieth Issue*. New York.

Wiener Institut für Internationale Wirtschaftsvergleiche (Vienna Institute for Comparative Economic Studies). (1995) *Countries in Transition 1995: WIIW Handbook of Statistics*. Vienna.

The World Bank. (1994) *World Development Report 1994*. New York: Oxford University Press.

_____ (1994) *World Data 1994: World Bank Indicators on CD-ROM*. Washington, D.C.

Bibliography

- Argawal, Jamura P.; Gubitz, Andrea; Nunnenkamp, Peter. (1991) *Foreign Direct Investment in Developing Countries: The Case of Germany*. Kieler Studien, Institut für Weltwirtschaft and der Universität Kiel, J.C.B. Mohr (Paul Siebeck) Tübingen.
- Balaasubramanyam, Venkataraman N. (1984) "Incentives and Disincentives for Foreign Direct Investment in Less Developed Countries." *Weltwirtschaftliches Archiv*, Vol. 120, pp.720-735.
- Baldwin, Richard and Venables, Anthony J. (1994) "International Migration, Capital Mobility and Transitional Dynamics." *Economica* 61: 285-300.
- Barro, Robert J. and Sala-i-Martin, Robert. (1991) "Convergence across states and regions." *Brookings Papers on Economic Activity* 1:107-182.
- Begg, David and Portes, Richard. (1993) "Enterprise debt and financial restructuring in Central and Eastern Europe." *European Economic Review* 37: 396-407.
- Beer, Ursula. "Coping with a New Reality." *Cambridge Journal of Economics* 17(3): 281-294.
- Billet, Bret L. (1993) *Modernization theory and economic development: Discontent in the developing world*. Westport, Conn. and London: Greenwood, Praeger, pp. xiii, 143.
- Boot, Anthony. (1992) *Assessing Eastern Europe's Capital Needs*. International Monetary Fund Staff Papers, Vol. 39, No. 4, December, pp. 948-56.
- Branson, William H. (1989) *Macroeconomic Theory and Policy, Third Edition*. New York: Harper & Row.
- Cebula, Richard J. & Saltz, Ira S. (1993) "The Capital Intensity of Technology and Foreign Direct Investment in the Third World." *Economia Internazionale*, Vol. 46, No. 4, November 1993, pp. 345-359.
- Chen, Tain-Jy. (1992). "Determinants of Taiwan's direct foreign investment." *Journal of Development Economics* 39:397-407. North-Holland.
- Coughlin, Cletus C.; Terza, Joseph V.; Arromdee, Vachira. (1991) "State Characteristics and the Location of Foreign Direct Investment within the United States." *Review of Economics and Statistics*, Vol. 73, No. 4, November 1991, pp.675-83.
- Damrau, Dirk W. (1990) *Discovering Investment Opportunities in Eastern Europe: A Framework*. New York: Salomon Brothers, Inc.
- _____ (1992) "The Role of Foreign Investment in Eastern European Privatization: Hungary, Poland, and Czechoslovakia." in Lampe, John R. *Creating Capital Markets in Eastern Europe*. The Woodrow Wilson Center Press.
- Dobosiewicz, Zbigniew. (1992) *Foreign investment in Eastern Europe*. New York: Routledge.
- Edwards, Sebastian. (1990) "Capital Flows, Foreign Direct Investment, and Debt Equity Swaps in Developing Countries." in Sieber, Horst. *Capital Flows in the World Economy*. Tubingen, Germany: J.C.B. Moore.

- Fink, Gerhard. (1993) "A West European Investor's View on Investment Projects in Eastern Europe." *The Journal of East West Studies* 22(1): 9-14.
- Froot, Kenneth A. (1994) "Foreign Direct Investment in Eastern Europe: Some Economic Considerations." in Blanchard, Olivier Jean; Froot, Kenneth A.; and Sachs, Jeffrey D. *The Transition in Eastern Europe*. The University of Chicago Press: Chicago and London.
- Froot, Kenneth A. and Stein, Jeremy C. (1991) "Exchange Rates and Foreign Direct Investment: An Imperfect Capital Markets Approach." *Quarterly Journal of Economics*, Vol. 106, No. 4, November, 1991, pp.1191-217.
- Fry, Maxwell J. (1994) "Foreign Direct Investment, Financing and Growth" in Fischer, Bernhard *Investment and Financing in Developing Countries*. The University of Birmingham: The Birmingham Business School International Finance Group Reprint No. 8.
- Gabrisch, Hubert. (1993, Summer) "Difficulties in Establishing Joint Ventures in Eastern Europe." *Eastern European Economics* 31 (4): 19-50.
- Gillis, Malcolm; Perkins, Dwight H.; Roemer, Michael; and Snodgrass, Donald R. (1992) *Economics of Development, Third Edition*. New York: W.W. Norton & Company.
- Haddad, Mona & Harrison, Ann. (1992) "Are there Positive Spillovers form Direct Foreign Investment?, Evidence from Panel Data for Morocco." Wahsington, D.C.: World Bank.
- Hamilton, Georffrey; Adjubei, Yuri. (1991) "Analysing the First Wave of Foreign Direct Investment to the Countries of Eastern Europe 1987-1990: Structures, Actions and Motives." in Schenk, Monkiewicz and Wass v. Czege (Eds.). *New Dimensions in East-West Business Relations*. Stuttgart: Gustav Fischer Verlag.
- Hufbauer, Gary; Lakdawalla, Darius; Malani, Anup. (1994) "Determinants of Direct Foreign Investment and Its Connection to Trade." *UNCTAD Review*, pp. 39-51.
- Hunya, Gábor. (1992) "Foreign Direct Investment and Privatisation in Central and Eastern Europe." *Communist Economies and Economic Transformation* 4(4): 501-511.
- Husain, Aasim M. and Sahay, Ratna. (1992) "Does Sequencing of Privatization Matter in Reforming Planned Economies?" *International Monetary Fund Staff Papers* 39(3-4): 801-824.
- International Monetary Fund. (1991) *Determinants and Systemic Consequences of International Capital Flows*. Washington, D.C.
- Johnston, John. (1972) *Econometric Methods (Second Ecition)*. New York: McGraw-Hill Book Company.
- Lang, Larry H.P. and Ofek, Eli. (1993) "Why do Firms Invest in Eastern Europe?" *New York University Salomon Center Working Paper Series*.
- Lang, Thomas. (1993) "Training for Economic Transformation: The Labour Market in Eastern Germany." *British Review of Economic Issues*, Vol. 15, No. 37, October, 1993.
- Lange, Thomas. (1993) "Training for Economic Transformation: The Labour Market in Eastern Germany." *British Review of Economic Issues* 15(37):145-168.

- Levcik, Friedrich. (1991) "Economic Transformation in the East: A Critical Appraisal of its Development and Suggestions for a Possible Way Out."
- Lim, David. (1983) "Fiscal Incentives and Direct Foreign Investment in Less Developed Countries." *The Journal of Development Studies* 19(2): 207-212.
- Lizondo, J. Saúl. (1991) "Foreign Direct Investment." in Research Department of the International Monetary Fund (ed.). *Determinants and Systemic Consequences of International Capital Flows, IMF Occasional Paper No. 77*. Washington, D.C., pp.68-82.
- Lucas, Robert E.B. (1993) "On the Determinants of Direct Foreign Investment: Evidence from East and Southeast Asia." *World Development* 21(3): 391-406.
- Mayhew, Ken and Seabright, Paul. (1985) "Incentives and the Management of Enterprises in Economic Transition: Capital Markets are Not Enough." *Oxford Review of Economic Policy* 8(1):105-129.
- Michalak, W.Z. (1993) "Foreign direct investment and joint ventures in East-Central Europe: a geographical perspective." *Environment and Planning* 25: 1573-1591.
- Mitchell, J. (1992) "Creditor passivity and bankruptcy: Implications for economic reform, forthcoming in: C. Mayer and X. Vives, eds., *Financial intermediation in the construction of Europe* (Cambridge University Press, Cambridge).
- Moore, Michael O. (1993) "Determinants of German Manufacturing Direct Investment: 1980-1988." *Weltwirtschaftliches Archiv*, Vol. 129, No. 1, pp. 120-38.
- Murrell, Peter. (1991) "The Effect of (the Absence of) Multinationals' Foreign Direct Investment on the Level of Eastern European Trade." *Economics of Planning* 24: 151-160.
- Norman, George and Motta, Massimo. (1994) "Eastern European Economic Integration and Foreign Direct Investment." *Journal of Economics & Management Strategy* 2(4): 483-507.
- Murrell, Peter. (1991) "The Effect of (the Absence of) Multinationals' Foreign Direct Investment on the Level of Eastern European Trade." *Economics of Planning* 24: 151-160.
- Norman, George and Motta, Massimo. (1993, Winter) "Eastern European Economic Integration and Foreign Direct Investment." *Journal of Economics & Management Studies* (4): 483-507.
- Pindyck, Robert S. & Rubinfeld, Daniel L. (1991) *Econometric Models and Economic Forecasts (Third Edition)*. New York: McGraw-Hill, Inc.
- Podkaminer, Leon et al. (1996) *Transition Countries: Economic Developments in 1995 and Outlook for 1996 and 1997*. WIIW Research Report No. 225. Vienna.
- Rivera-Batiz, Francisco L. and Rivera-Batiz, Luis A. (1994) *International Finance and Open Economy Macroeconomics*. New York: Macmillan.
- Rollo, J.M.C. (1990) *The New Eastern Europe and Western Responses*. London: Pinter.
- Rothschild, K.W. (1993) "Like a Lehrstück by Brecht." *Cambridge Journal of Economics* 17(3):259-266.
- Sader, Frank. (1995) *Privatising Public Enterprises and Foreign Investment in Developing Countries, 1988-93*. Foreign Investment Advisory Service Occasional Paper 5.

Saltz, Ira S. (1992) "The Negative Correlation between Foreign Direct Investment and Economic Growth in the Third World: Theory and Evidence." *Rivista-Internazionale di Scienze Economiche e Commerciali*, Vol. 39, No. 7, July 1992, pp. 617-33.

Sarcinelli, Mario. (1992) "Scarcity of capital and the reconstruction of Eastern Europe: a challenge and role for the EBRD." *Review of the Economic Conditions in Italy* 0(1): 9-24.

Schmid, A. Allan. (1992) "Legal Foundations of the Market: Implications for the Formerly Socialist Countries of Eastern Europe and Africa." *Journal of Economic Issues* 26(3): 707-727.

Schive, Chi. (1990) "The Foreign Factor: The Multinational Corporation's Contribution to the Economic Modernization of the Republic of China." *Studies in Economic, Social and Political Change: The Republic of China*. Stanford: Hoover Institution Press, pp. xiv, 138.

Schumacher, Dieter. (1993) "Lohnerhöhungen, internationale Wettbewerbsfähigkeit und Aufholproze (Wage Increase, International Competitiveness and Catching-up in East Germany)." *Konjunkturpolitik* 39: 121-147.

Shah, S.M.S. and Toye, J.F.T. (1978) "Fiscal Incentives for Firms in Some Developing Countries: Survey and Critique." in Toye, J.F.T. (ed.). *Taxation and Economic Development*. London: Frank Cass.

de Souza, Anthony and Stutz, Frederick P. (1994) *The World Economy, Second Edition*. New York: Macmillan.

Spigler, Iancu. (1975) *Direct Western Investment in East Europe*. St. Anthony's College, Oxford, England.

Steinherr, Alfred. (1993) "Capital Needs in Eastern Countries." *Empirica* 20:205-219.

Tsai, Pan Long. (1994) "Determinants of Foreign Direct Investment and Its Impact on Economic Growth." *Journal of Economic Development*, Vol. 19, No. 1, June 1994, pp. 137-163.

Turner, Philip. (1991) *Capital Flows in the 1980s: A Survey of Major Trends*. Bank for International Settlements, Monetary and Economic Department, BIS Economic Papers, No. 30. Basel.

United Nations Centre on Transnational Corporations. (1992) *The Determinants of Foreign Direct Investment: A Survey of the Evidence*. U.N. Sales No. E.92.II.A.2. New York: United Nations Publications.

United Nations Conference of Trade Development. (1993) *World Investment Report 1993*. U.N. Sales No. E93.11.A.14. New York: United Nations Publications.

UNECE. (1991) *Promoting Foreign Direct Investment in Eastern European Countries*. United Nations Conference for Europe, Trade R.575, Geneva.

UNIDO. (1990) *Foreign Direct Investment Flows to Developing Countries*. New York: United Nations.

Wai, U Tun and Wong, Chong-huey. (1982) "Determinants of Private Investment in Developing Countries." *The Journal of Development Studies* 19(1):19-36.

Welfens, Paul J. J. (1994a) "Privatization and Foreign Direct Investment in the East European transformation: Theory, Options and Strategies." in Casaba, László. *Privatization, Liberalization and Destruction*. Brookfield, Vermont: Dartmouth.

_____ (1994b) "Foreign Direct Investment and Privatization." in Schipke, Alfred and Taylor, Alan M. (eds.) *The Economics of Transition*. Berlin: Springer-Verlag.

Winters, L. Alan and Wang, Zhen Kun. (1994) *Eastern Europe's international trade*. Manchester and New York: Manchester University Press.