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FOREIGN INVESTORS' ACTIVITIES IN EASTERN GERMANY MOTIVATIONS AND STRATEGIES

by
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Abstract

The paper analyses foreign investors' activities in East Germany in the context of privatization. Based on FDI theories it attempts to explore their motivations and strategies by investigating their home countries as well as their target industries. About 5 p.c. of all privatized enterprises have been acquired by foreigners. Their share in planned investment and planned employment results to be markedly larger. Foreign investors are predominantly originating from those countries which have longstanding economic relations with West Germany. The main part of foreign investment goes into manufacturing industries; into booming as well as into ailing industries. The availability of well-qualified labour appears to be of major importance for nearly all investments while contracting favourable terms of sale and taking advantage of public investment support are especially important for commitments in ailing industries. Germany's EC-membership generates further incentives such as to take advantage of the EC regulatory framework. Using East German production sites as bridgeheads to serve markets in Central Eastern Europe has been a strong motivation in the beginning but meanwhile has lost importance. Comparing foreign to West German investors, by and large their decisions seem to be driven by the same determinants.

1. Introduction[1]

The activities of multinational enterprises, especially their foreign direct investments (FDI), are considered as factors substantially contributing to economic growth and development. In its "World Investment Report 1992" the United Nations Centre on Transnational Corporations estimates that on a global scale the flows of capital related to FDI were about 225 billion US-$ in 1990 and that the stock of FDI reached a magnitude of 1 700 billions US-$ at the end of that year. Besides the high volume of both flows and stocks, FDI activities are revealing considerable dynamics. From 1986 to 1990 they grew annually by 25 per cent on average, much faster than world trade did during that period. Mostly the inflow of FDI contributes to modernize a country's capital stock via improving enterprises' production technologies and it transfers intangible assets such as management know-how and corporate identity. The economies of Eastern and Central Europe, which are in the process of transforming into market-oriented systems are strongly interested in the transfer of external resources by means of FDI. They expect foreign investors to bring in both capital and entrepreneurship such as to substantially contribute to restructure and modernize their economies' productive potential.

By now, Eastern Germany has gathered experience in economic transformation for about two and a half years - including experiences with the attitudes foreign investors are revealing towards the chances and risks specific to the scenario of a transforming economy. It is the subject matter of this paper to take a closer look on foreign investors' motivations and to explore when and where they assess chances to be greater than risks. The analysis will focus on foreign investors' participation in privatizing East German enterprises, a process which mainly is guided by the Treuhand Agency. So far this institution has been and presently still is the main route of entrance for foreigners willing to invest in East Germany. Though, as privatization progresses there is a growing number of cases in which investors undertake initiatives of their own and which are not covered by data from the Treuhand Agency. [2]

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[1] An earlier version of this paper was presented at the ACE-Workshop "Entrepreneurial Possibilities Developing in Central East European Countries and the Enactment of Their Economic Reforms" held on 10-14 September 1992 in Balatonalmádi. I am grateful for comments and critique I received from the participants of the workshop as well as from my colleagues Klaus-Dieter Schmidt and Jürgen Stehn.

[2] Until August 1992 for example, 33 investors from the US had acquired 48 East German companies while more than 120 US investors had been said undertaking initiatives on their own, either by establishing franchise companies, by founding subsidiary companies or by making greenfield investments.

Treuhand data are covering the time period from spring 1991 until autumn 1992 and are available on a monthly basis. They have to be interpreted very carefully as due to the relatively short period of time and the relatively small number of cases which are covered single large investment projects can easily dominate and bias the overall picture. Besides this, vaguenesses may arise in cases where one investor acquires several companies, in cases where a group of several investors acquires one company and in those cases where companies are acquired without contracting further investment or employment commitments. Some of these cases will be dealt with explicitly. Nevertheless, the data supplied by the Treuhand Agency allow to analyse foreign acquisitions both with respect to investors' home countries and with respect to their target industries.

With realizing economic unification East Germany has begun to compete for internationally mobile investment capital. Among others, also East and West Germany have become important competitors in this respect. Contrasting the flows of FDI into East Germany - measured by investment commitments - to those into West Germany will reveal if and how foreigners are differently assessing investment opportunities in these two different regions. Such differences can be attributed to the transformation specific scenario in East Germany reflecting the burdens inherited from the socialist period as well as the chances opening up for the future.

Comparing the inflow of foreign capital into East and West Germany involves methodological problems. Treuhand data on foreign acquisitions cannot easily be compared to Bundesbank data first, because data from these two sources are based on fundamentally different concepts of "investment" and second because Treuhand data cannot be properly assigned to time periods. While the Bundesbank reports effective annual flows of capital, Treuhand data represent accumulated investment commitments, i.e. the sum of all investment volumes which have been planned and promised when privatization deals have been negotiated. Parts of these promised investments have already been effected, other parts will be effected in the future. Some investments may not be effected at all, while others may even be increased. Furthermore, promised investment volumes are only one of several elements in the privatization contracts. They are in a trade-off relationship with employment commitments and sales prices, thus reflecting different concepts of restructuring. In order to handle these difficulties and to construct a sensible means of comparison, for West Germany annual flow data from 1987 to 1990 have been aggregated to a measure which may be called a "consolidated flow indicator". These data for West Germany shall be contrasted to those for East Germany, namely the stocks of investment commitments which have been negotiated from May 1991 until October 1992. As rough as this comparison may be, it allows at least to get an idea of basic structural differences.

2. Theoretical Framework

For about more than three decades by now economists have been concerned with the phenomenon of FDI and have devoted a lot of effort trying to identify its determinants.[3] Foreign direct investment is defined as capital investment across national boundaries effected with the intention to control the use of the assets acquired. Mostly, FDI is undertaken by multinational companies via either acquiring or founding subsidiary companies abroad. Economic theory has to explain the phenomenon of FDI both with respect to the volume of flows and stocks and with respect to their country and sectoral specific pattern. Additionally it has to explain under which conditions FDI as one out of three available strategies to serve a foreign market appears to be superior to exporting and licensing. Pursuing these purposes a large number of approaches has been elaborated. The following analysis will be based upon three of them. In order to explain the volume of FDI, the rate of return hypothesis and the irreversibility approach will be discussed.[4] The country and sector specific patterns of FDI will be explained in the framework of ownership, location and internalization advantages as it has been set up by Dunning's eclectic approach to FDI.

a) The Rate of Return Hypothesis and the Irreversibility Approach to Investment Behaviour

The rate of return hypothesis has been derived from traditional investment theory. It assumes that enterprises are pursuing profit maximization as their primary objective and that they are doing so by increasing their investment expenditures until expected marginal returns and marginal costs of capital are equalized. Based on this assumption FDI is explained as a function of international differences in the rates of return on capital investments. Enterprises are responding to such differences by choosing those countries for their investments where they expect them to generate the highest returns.

International differences in return on capital are reflecting different marginal productivities of this factor. The main source for such differences are internationally different scarcities resulting from different relative capital endowments. Economies in transition, like the East German one, typically have inherited an outdated capital stock and they

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3 Agarwal (1980), Stehn (1989) and Stehn (1990) are surveying and critically commenting upon both traditional and more recent approaches to FDI.

4 As for East Germany cross border capital movements can only be observed since the beginning of 1991, a separate analysis of flows and stocks is not yet meaningful.

are said to be constrained by scarcity of capital while being relatively richly endowed with land and/or labour force.[5] Under these circumstances the rate of return hypothesis would predict strong inflows of capital - either in form of FDI or in form of portfolio investment - from industrial market economies into the transforming economies of Central Eastern Europe and East Germany. So far however strong inflows of capital into these economies could not be observed. There is capital flowing eastward, but it is doing so quite reluctantly. Therefore, with respect to Eastern Europe the explanatory power of the rate of return hypothesis appears to be very limited. Its underling assumption though, namely that enterprises expect their foreign capital investments to be profitable, is not invalidated by this judgement.

The main reason for which the rate of return hypothesis falls short explaining FDI is that it does not take account of market imperfections. Would markets be perfect free trade would be the efficient means to pursue international economic activities. FDI only occurs in the presence of one or another type of market imperfections. Consequently FDI theory has to be a theory of imperfect market. Risks have to be considered as a major source of market imperfections and risk considerations are crucially important for investors' decisions if, when and where to invest. A fruitful contribution to explain investors' attitudes towards risk is the irreversibility approach which assumes that

- investment expenditures are largely irreversible; that is they are mostly sunk costs that cannot be recovered and that

- enterprises have an option to delay investments; that is they can postpone them and wait until more information is available. The value of the option to wait is determined by the probability with which future information may contribute to reduce risks. Only in cases where investors are striving for pioneer profits and/or are intending to preempt their competitors, the option to wait is of no value to them.[6]

Transforming economies like the East German one are not only offering transformation specific investment opportunities but they are also exhibiting a specific level and profile of risks which considerably differs from the structure of risks in industrialized or in developing market economies. The main contention of the irreversibility approach is that in the presence of risks investors are either abstaining from making commitments or

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5 Siebert (1990).

6 Pindyck (1991).

that they prefer to postpone them as long as they perceive the risk to be too high, if assuming that in the course of time it will be reduced. The irreversibility approach contributes to explain the presently rather modest flow of foreign capital into transforming economies by identifying them as locations with a high risk profile by international investors' judgement.

b) The Eclectic Approach to Foreign Direct Investment

The eclectic approach to FDI attempts to synthesize and to integrate the large number of traditional approaches which have been elaborated in the past. It identifies ownership advantages, locational advantages and internalization advantages as the three major motivations for FDI. Ownership advantages are to be conceived as temporary firm-specific competitive advantages a firm has vis-à-vis its foreign competitors. They mainly originate from intangible assets such as superior knowledge in terms of production technologies, management know-how or marketing skills as well as brand names or access to cheap funds. If ownership advantages are large enough to overcompensate for the additional cost of operating in a foreign market, then firms may feel invited to become internationally active - either by trade, by licencing or by FDI. They will opt for FDI only if they can identify locational advantages of the potential host country against their home country and against other potential host countries.

Locational advantages may originate first from different factor endowments as they are considered by traditional trade theory which is based on the assumption of perfect markets and second - in the context of imperfect markets - from

- a country's economic system and legal framework which predetermines the degree of political and economic stability as well as the structure of incentives and constraints eocnomic agents are facing,
- factors such as the quality of infrastructure or agglomerational advantages which are important determinants of production costs
- factors such as barriers to trade or the availability of marketing and service networks which are important determinants of sales perspectives.

Internalization advantages mainly originate from economizing transaction costs, especially with respect to the cost of internationally transferring and using intangible assets such as technological knowledge.[7] International licencing is often insufficient such that the costs of enforcing property rights to intangible goods are prohibitively high. Mostly this is the case for non-standardized production technologies and for technological knowledge, management know-how and other skills to which property rights are not codified but incorporated in an enterprises' employees. Intangible assets to which property rights cannot be enforced are public goods. Private costs are diverging from social costs such that the market mechanism fails to set prices efficiently. This market failure translates into high transaction cost. Firms which are operating internationally can avoid to incur them by founding or acquiring subsidiaries abroad such as to use and to transfer intangible assets on markets which are internal to their organisation. Besides enforcing and protecting property rights an additional incentive to undertake FDI results from the fact that intangible assets are often worth more when applied to a larger scale of operations. Thus, FDI motivated by the possession of intangible assets can be expected to vary both by enterprise size and by industries depending on their relative intensity of research and development.

The configuration of each ownership, location and internalization advantages as well as the enterprises' response to them will vary according to firm specific characteristics as well as to industry and country specific characteristics. For the purpose of this paper it appears convenient to consider the home country's economy, namely the East German one, industry by industry. This allows to explore which opportunities each industry may offer to potential investors and which firm-specific advantages on part of those foreign investors who actually made their commitments may have promised to be profitably combined with them. For the time being data on FDI into East Germany do not permit to carry out a strict empirical test of hypotheses. Nevertheless, the procedure sketched above allows to draw first conclusions on the ownership, location and internalization advantages which may be the driving forces behind the presently observed foreign investment activities (Table 1).

The eclectic approach derives the existence of each kind of advantage as a necessary condition and the simultaneous existence of advantages of each kind as a sufficient condition for FDI to be the superior strategy of international economic activity. On this point though, the eclectic approach has been criticized by Stehn (1989) who argued that locational advantages of a foreign country are a both necessary and sufficient condition

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[7] In the context of FDI theories the concept of internalization refers to substituting international trade in intangibles, i.e. trade on markets which are external to the internationally trading enterprise, by transactions and coordination mechanisms which are internal to the thence multinational enterprise. This differs from the concept of internalization as it is conceived in welfare economies.

Table 1 - Synthesis: Determinants of Foreign Direct Investment

	Firm resp. industry specific determinants		Country resp. industry specific determinants	
	Investor's company	Investor's target company	Investor's home country	Investor's host country
Inflow of FDI	(multinational conglomerates)	**intangible assets** know-how of home markets know-how of Eastern European markets further CMEA-specific know-how **real estate**	(reciprocal FDI)	**portfolio hypothesis** national risk profile (political and institutional framework) **output and market size hypothesis** market size growth expectation **product cycle hypothesis** wage cost advantages **currency area hypothesis** low cost of finance
Outflow of FDI	**intangible assets** production technoloy (R&D) management know-how corporate identity **portfolio hypothesis** attitude towards risks **behavioural hypothesis** risk aversion accidental events (external) vested interests (internal) **oligopolistic reaction hypothesis** home market structure domestic competitive situation **liquidity hypothesis** low cost of finance	(multinational conglomerates)	**portfolio hypothesis** national risk profile (political and institutional framework) **output and market size hypotheses** lack of growth potential **product cycle hypothesis** high cost of immobile factors **currency area hypothesis** high cost of finance	(reciprocal FDI)

for FDI to occur. This is to say that FDI may be undertaken even without firm specific advantages on part of the foreign investor if locational advantages in the potential host country are large enough to (over)compensate for the cost of producing abroad - given that the internationally producing enterprise possesses firm-specific competitive advantages in its relevant sales markets which may be its home country markets as well as third countries' markets. Serving third countries' markets, for example markets in Central Eastern Europe, especially in the CIS, from production sites acquired or established in East Germany represents the building of so-called bridgeheads. This may be a relevant motivation for the flow of FDI into East Germany as all investment there - both foreign and domestic - is subject to large scale public support; a support which is given on the very purpose to create and to enhance locational advantages such as to attract as much investment as possible.

Excursus: Internalization as A General Theory of Foreign Direct Investment

The above sketched considerations on internalization advantages have experienced an interesting enlargement. Rugman (1980) argues that basically all existing theories of FDI can be considered as subsets of a general theory of internalization. He attempts to synthesize the traditional approaches to FDI by identifying the recognition of imperfections in goods and/or factor markets as their common denominator. Such imperfections prevent free trade to occur and the internalization approach explains the creation of internal markets by means of FDI as the enterprises' efficient response to them. Those imperfections can result both from government induced regulations as well as from market failure and they can lead to both firm specific and country specific advantages. Prime example for the creation of internal markets as an efficient response to external markets' failure is foreign direct investment undertaken in order to cope with imperfections in the international market for knowledge and information. Enterprises which are founding or acquiring subsidiary companies abroad can overcome these imperfections by internally using and transferring the knowledge they have produced - incurring the cost of research and development - on an international scale without disclosing it to competitors at a zero price. Thus the strategy of FDI appears to be an efficient means to exploit firm specific advantages created by research and development.

The internalization approach appears to be of special interest for explaining the flow of FDI into transforming economies as it explicitly points to the importance of market imperfections as determinants of FDI. Markets in transforming economies have to be considered as emerging rather than as existing, well-established institutions. They are not yet working smoothly but are besetted with imperfections. These imperfections may invite investors to use them as sources for competitive advantages and future profits.

The major kinds of imperfections one has to think of in the context of privatization in East German are first, monopolistic industrial structures inherited from the socialist system and second, a high degree of intervention - both on part of national and on part of European institutions - into the process of privatization and restructuring.

3. Analyses of Foreign Investors' Activities in Eastern Germany

a) Overview

Foreign investors have had a slow start in Eastern Germany. Although some early starters had already invested 15 Mill. DM at the end of 1990, it was only in the course of 1991 that foreign investors' activities began to develop on a larger scale (Table 2). In the context of privatization foreigners are acquiring about 5 per cent of East German enterprises. Their shares in promised investment and employment though are higher, ranging from 8 per cent to 9 per cent. This mainly reflects that foreigners have been much less involved in the early stages of privatization, especially in the so-called "small privatization" where retail stores, restaurants and other small service enterprises have been sold off. Until the end of November 1992 foreigners acquired 540 East German enterprises partly or entirely. The promised to invest 17.4 bill. DM and to employ about 120,000 people. When analyzing foreign acquisitions in the context of privatization from the perspective of FDI the information of only planned investment is not sufficient to obtain a complete picture of the foreign capital flows related to privatization. Rather, this information should be complemented by information on the sales prices the foreign buyers agreed to pay. This information though is not available. But as in the course of time the overall sales price agreements have been accounting for roughly one fifth of the overall agreements on planned investment volumes it can be assumed that on the whole this order of magnitude will also hold with respect to foreign acquisitions.[8]

The level of foreign participation which has been reached so far is certainly due to the active and increasingly intensive acquisition policy the Treuhand Agency has installed. With only few exceptions, invitations for tenders are announced internationally and international investment houses are involved. In the Treuhand's Berlin headquarters two special departments are in charge of foreign investors' concerns and a net of 11 Treu-

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8 Until end of October 1992 the overall proceeds of privatization amounted to 36.2 bill. DM, the total volume of investment commitments amounted to 157.6 bill. DM.

Table 2 - Foreign Investor's Participation in Privatization (April 1991 - November 1992)

Per end of month	Privatized Enterprises or parts of enterprises(a)			Planned investments(b)			Planned employment(b)		
	Total	Foreign investors		Total(c)	Foreign investors		Total (Number of persons)	Foreign investors	
	(Number)	Number	P.C.	(Bill. DM)	Bill. DM	P.C.		Number	P.C.
April 1991	1 596	33	2.1	55.0	< 1 (d)	< 1.8	342 000	.	.
May	2 150	81	3.8	62.6	2.5	4.0	474 571	32 400	6.8
June	2 583	97	3.8	65.3	4.0	6.1	525 984	37 700	7.2
July	2 986	115	3.9	67.8	4.4	6.5	552 570	42 000	7.7
August	3 378	156	4.6	70.4	6.4	9.1	578 387	55 300	9.6
September	3 788	176	4.6	85.2	6.5	7.6	719 763	56 745	7.9
October	4 337	210	4.8	96.9	7.7	7.9	793 030	64 056	8.1
November	4 777	223	4.7	105.0	8.0	7.6	857 792	69 532	8.1
December	5 210	248	4.8	114.2	10.5	9.2	930 262	91 975	9.9
January 1992	5 584	268	4.8	117.0	9.7	8.3	967 270	91 268	9.4
February	6 068	322	5.3	120.7	10.5	8.7	1 013 085	95 840	9.5
March	6 579	347	5.3	128.8	10.8	8.4	1 078 295	99 277	9.2
April	7 092	366	5.2	133.6	11.0	8.2	1 122 135	100 596	9.0
May	7 613	390	5.1	138.5	11.6	8.4	1 169 983	106 626	9.1
June	8 175	412	5.0	144.0	12.0	8.3	1 220 000	110 691	9.0
July	8 781	437	5.0	148.2	13.4	9.0	1 260 000	115 082	9.1
August	9 338	462	4.9	151.3	13.3	8.8	1 288 300	117 100	9.1
September	9 988	508	5.1	155.3	13.4	8.6	1 316 800	111 600	8.5
October	10 403	523	5.0	157.6	14.3	9.1	1 331 900	113 300	8.5
November	10 669	540	5.1	165.1	17.4	10.5	1 362 700	120 000	8.8

(a) Number of sales approved by the Treuhand-Agency's Administrative Board. - (b) Precommitments, not necessarily identical with finally negotiated commitments. - (c) Including 30 bill. DM for modernizing power plants and networks. - (d) Including selling prices.

Source: Treuhand Agency [a] 1992.

Table 3 - Commitments of Foreign Investors by Home Countries (November 1992)

Country	Privatized enterprises or parts of enterprises (a)			Planned investments(b)			Planned employment(b)		
	Number	P.C.	Ranking	Mill. DM	P.C.	Ranking	Number of persons	P.C.	Ranking
France	61	11	4	5 500	32	1	21 000	18	1
Switzerland	98	18	1	900	5	6	14 700	12	4
Great Britain	73	14	2	1 500	9	4	15 000	13	3
USA	57	11	5	2 800	16	2	12 500	10	5
Austria	67	12	3	600	3	7	12 000	10	6
Canada	6	1	8	1 800	10	3	16 600	14	2
Netherlands	49	9	6	1 000	6	5	7 400	6	7
Italy	24	4	7	600	3	7	3 600	3	8
Sweden	23	4	7	100	1	9	3 500	3	8
Denmark	23	4	7	400	2	8	2 700	2	9
Others	59	12	x	2 200	13	x	11 000	9	x
Total	540	100	x	17 400	100	x	120 000	100	x

(a) Number of sales approved by the Treuhand Agency's Administrative Board. - (b) Precommitments, not necessarily identical with finally negotiated commitments.

Source: Treuhand Agency [b] 1992.

hand offices has been established in foreign investors' most important home countries.[9] These organizational devices are complemented by manifold public relation activities.

b) Analyses by Foreign Investors' Home Countries

In the context of privatization the most important source countries of FDI into East Germany are France, Switzerland and Great Britain (Table 3).[10] French investors have promised the highest volume of both planned investment and planned employment. Swiss investors are leading by number of acquisitions and British investors are following on place three when all three criteria are considered jointly. These countries, while leading in terms of promised investments, promised employment or numbers of acquisitions, are at the same time those from which most large single investors - large as measured by number of companies acquired - are originating (Table 4). Comparing tables 3 and 4 may give some idea of how strongly single investors can be driving and influencing the process of privatization.

Table 4 - Home Countries of Large Single Foreign Investors (November 1992)

Home Country	Number of Investors who Acquired Three or More Companies	Number of Companies Acquired by These Investors
Great Britain	6	50
France	3	30
Austria	2	24
Switzerland	3	28
USA	3	17
Sweden	1	9
Belgium	1	6
Netherlands	1	4
Denmark	1	4
Luxemburg	1	3

Source: Treuhand Agency [b] 1992.

Looking at the relative importance of FDI source countries for East and West Germany by country groups gives the impression that the source country structure for East Germany is still changing because it is still sensitive to single large privatizations (Table 5). On the whole, foreigners investing in East Germany are originating from those coun-

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9 Austria, Belgium, France, Great Britain, Italy, Japan, Netherlands, Sweden, Switzerland, Spain, USA.

10 This ranking has proved to be quite stable for several months now.

tries which since long are important economic partners for West Germany. This appears to be quite plausible as investors from these countries will predominantly be those who in general are appreciating the German framework of economic and political conditions. Above this, they have more and better - or at least relatively easier access to - information about East Germany than investors from other countries have. Advantages in terms of easier access to information directly translate into information cost advantages which then may lead to an earlier starting and a faster running of capital flows from these countries.

Table 5 - Foreign Direct Investments in East and West Germany by Source Countries (Country Groups)

Home Countries (Country Groups) (a)	Shares of FDI inflow into East Germany(b) until June 92	October 92	November 92	West Germany 1987-1990
EC-member countries	51	42	52	40
Other European countries	11	12	9	25
Non-European countries	14	31	26	28

(a) For East Germany only commitments from investors of the ten largest home countries are included. - (b) Accumulated investment commitments.

Source: Deutsche Bundesbank 1992; Treuhand Agency [b] 1992.

In a growing number of cases, investors who made a first commitment came once again in order to acquire a further company and to make subsequent commitments. This kind of fade-in strategy to enter a foreign market results from the investors' attitudes towards risks as it is explained by the irreversibility approach. Enterprises attempt to avoid sunk costs as well as to miss the chance of an investment which only temporarily appears too risky due to lack of information. If additional information becomes available - information with as positive sign of course - risk is reduced; lower risk then encourages investors to make their commitments. And the most reliable information an investor can ever get is the information he acquires by his own experience. Thus the process of privatization via FDI can gain momentum and develop dynamically.

Considerations on risk and information can also contribute to explain why the speed of privatization with respect to both foreigners - and Germans - has not yet slowed down, contrary to the expectations and assessments many observers have expressed. The main difference in selling East German enterprises to foreigners rather than to Germans results from higher informational requirements in the case of foreign investors and just in its early stages privatization has been obstructed by lack of information and transparency. The Treuhand Agency was lacking knowledge of number, nature and location of the enterprises scheduled for privatization. Additionally, she had to devote part of her resources to organize herself and to design the procedures of privatization. Only during the course of time this initial lack of information and transparency could be cured. The procedures of privatization became more transparent and wider known, the agency itself acquired reputation of being a reliable partner in negotiations and, what appears to be at least equally important, potential investors could observe and gather information about the fate and performance of enterprises after their privatization had been effected. On the whole, privatized enterprises are doing quite well, better certainly than those which have not yet been privatized.[11] Furthermore, potential investors meanwhile may have gathered more and better information on the assets which are still in the Treuhand portfolio, i.e. scheduled to be privatized as well as information about their competitors' potential entrance in the East German market.

The explanations given above obviously do not hold with respect to Japanese investors. They so far have been exhibiting an extraordinary reluctance towards activities in Eastern Germany and, by the way, towards investment into other countries of Central and Eastern Europe, too. This results from their specific attitudes in choosing FDI host countries. The choice of host countries for Japanese FDI seems to be much more determined by Japan's home country characteristics, especially national attitudes, as in the case of other FDI source countries. On principle, Japanese do not go first - neither into a transforming economy nor into any other. Rather than to strive for pioneer profits in a new market place, they avoid the unknown environment, giving precedence to others while themselves opting for and investigating long-term business opportunities. Japanese investors are apparently assessing risks and obstacles higher than other investors do. This highly risk-averse behaviour can be considered as an illustrative example of the contentions made by the irreversibility approach to FDI.[12] Besides high risk aversion on part of potential Japanese investors, business climate in both Japan and Europe is cooling down. This discourages Japanese investment anyhow and it lowers the relative attractiveness of Europe, including East and West Germany, as host countries for FDI. In contrast, the dynamic markets of South-East Asia, just on Japan's doorstep are

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11 Schmidt (1992).

12 For a closer investigation into Japanese investors' attitudes towards East Germany see Brander et.al. (1992). In principle, Japanese enterprises appear to be strongly interested in becoming active in Eastern Germany. But for the time being, they prefer first, to establish representative offices rather than fully-fledged subsidiaries, second, to engage in service and distribution rather than in production and third, to serve the East German market from West German and other European production sites rather than to set up new plants in East Germany.

offering very appealing investment opportunities. The countries of this region have become important competitors to European places in attracting foreign capital.

c) Analyses by Foreign Investors' Target Industries

Flows of FDI into Eastern and Western Germany

Despite all shortcomings of the data base a comparison of FDI inflows between East and West Germany by target industries reveals significant and clear cut differences (Table 6). These differences may be ascribed to different host country characteristics as foreigners are perceiving them for the two economically different regions of Germany.[13] On the whole, foreign investors are mostly investing into manufacturing industries when acquiring an East German Treuhand enterprise while preferring service industries when "going West". This may largely be ascribed to the sectoral structure the Eastern economy inherited from socialist planning, a structure which has been characterized by a strong dominance of the industrial sector, reflecting that the development of industry has been fostered at the expense of trade and services. The Treuhand Agency's portfolio and the agenda of privatization are predetermined by these inherited structures. Most investors, especially those from abroad, are entering the East German economy via the route of privatization they are bound to choose their ventures among what is at sale on part of the privatization agency. Foreigners are active in booming industries such as quarrying, construction and food processing as well as in ailing industries such as chemicals, steel and machinery. Furthermore, they are active in industries such as agriculture and food processing which do not appear to be important target industries for FDI into West Germany. In general, the factors determining foreign investors' preferred target industries, as they will be explained below, can be assumed not to be ex-

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[13] All investment flows into East Germany are subject to general investment support which consists of grants, premiums and special depreciation allowances. These various kinds of support can be accumulated and in single cases they may even mount up to 50 per cent of the total investment volume. As these investment supports are regional specific but indifferent with respect to both investors' home countries and individual industries, they can be expected to generally attract the flow of capital into East Germany while leaving unaffected its industry specific allocation. The structure of investors' home countries though may be affected due to the high informational requirements which are concomitant to the huge and partly even confusing body of public support.

clusive to them but to be of similar relevance for the investments West Germans are undertaking in East Germany.[14]

Table 6 - Foreign Direct Investment in East and West Germany by Industries

Industry	East Germany		West Germany	
	Planned Investments (a)		Inflow of Foreign Direct Investment (b)	
	Mill. DM	P.C.	Mill. DM	P.C.
Agriculture, Forestry and Fishing	2 546	14.6	67	0.2
Energy and Water Supply	635	3.6	-94	-0.3
Manufacturing	10 218	58.7	2 042	5.5
thereof:				
Chemicals	3 551	20.4	-2 335	-6.3
Quarrying, Ceramics and Glass	1 862	10.7	-23	-0.1
Steel, Ferrous and Non-Ferrous Metals, Foundries etc.	871	5.0	110	0.3
Machinery	527	3.0	919	2.5
Transport Equipment	1 794	10.3	1 261	3.4
Electronics	263	1.5	366	1.0
Precision Engineering and Optical Products	15	0.1	20	0.1
Food Processing	1 335	7.7	383	1.0
Construction	504	2.9	-9	0
Trade	720	4.1	4 684	12.6
Services	2 074	11.9	26 834	72.0
Others	717	4.1	3 054	8.1
Total	17 414	100.0	37 279	100.0

(a) Investment commitments as contracted from April 1991 - November 1992. - (b) 1987 - 1990.

Source: Deutsche Bundesbank 1992; data provided by the Treuhand Agency 1992.

Agriculture and forestry

In East Germany foreign investments into agriculture and forestry are accounting for roughly one fifths of the inflow of foreign funds while in West Germany they are negligible. This can be explained with home and host country specific factors on the one hand and firm specific factors of the investor on the other hand. Until October 1992

14 A major exception to this similarity concerns the investment strategies of venture capital funds. While Anglo-Saxon funds are mostly striving to acquire majority shares up to 100 p.c. in order to actively guide the acquired enterprise's business policy, German funds ("Kapitalbeteiligungsgesellschaften") are preferring to acquire only minority shares, leaving the majority to qualified managerial staff.

thirteen foreign investors have acquired thirteen East German agricultural enterprises each of them highly specialized on producing grain, seeds, fruit, poultry, cattle, etc. Eleven out of these thirteen foreign investors originate from EC-member countries. Joint EC-membership of FDI home and host country thus accounts for the major part of FDI into agriculture. Certainly it is not only joint membership itself but EC agricultural policy which induces such investments. Subsidies and guarantees granted in the context of EC agricultural policies are generating considerable market imperfections, namely shelter against world market competition, thus opening up promising profit and rent seeking opportunities. These opportunities are especially appealing as they can be enlarged by further country and firm specific factors. Foreign investors' possibilities of expansion and growth at home can be assumed to be quite limited, if not even exhausted. This holds especially for the Netherlands where "agricultural land" as a natural resource is not only scarce in quantitative terms but also expended by long-term intensive cultivation. In contrast and complementary to land scarcity in investors' home countries, agricultural areas are available in Eastern Germany. These areas are not only available but also attractive due to large average size of the individual lots. While in West Germany smallholding farms are dominating, the East German economy has inherited veritable agricultural factories. Their average size is far above Western European averages and allows to realize substantial economies of scale. Advantages of protection due to EC agricultural policies plus economies of scale due to large size can be enlarged further when combining them with investor specific advantages: the dowry Westerners are bringing into these ventures consists, besides financial capital, of high-grade intangible assets namely advanced know-how both with respect to agricultural production techniques and with respect to marketing of agricultural products.

Energy and water supply

Foreign investment into the industry of energy and water supply mainly refers to gas and, on a smaller scale, to water supply. Predominantly, these investments are induced by both country and industry specific factors. First and as a basic feature, energy and water supply are important elements of a country's infrastructure and provide intermediate inputs for all other parts of the economy. Second, in East Germany this industry needs comprehensive modernization first with respect to switching towards energies which are both available at lower costs and causing less environmental pollution and second with respect to improving energy distribution. As far as gas is concerned, in East Germany formerly only one quarter of total gas consumption was based on natural gas while three quarters relied on artificial gas (gasworks gas and coke oven gas) whose production costs are more than twice as high as those of natural gas. Conversion to natural gas is not only a task by itself but it also entails installing new distribution networks as the old ones cannot be adapted for the distribution of natural gas. In these fields foreign investors can fruitfully bring in their know-how of natural gas specific technologies and distribution. These knowledge-specific advantages can be combined with firm-specific advantages by those investors who have direct access to natural resource endowments as it is the case for investors from Norway, France (access to Algerian gas deposits) and the CIS. Furthermore, foreigners are profitably involved in locally supplying gas and water.

Manufacturing

So far the bulk of foreign direct investment into Eastern Germany, about roughly 50 per cent, has gone into manufacturing industries. This share is ten times as high as the respective share of FDI flows into West German manufacturing. Industries of special relevance are chemicals, steel, ship building, food and construction. As far as investments into East German chemicals, steel and ship building are concerned they will for a considerable part be induced by generous public support - in terms of sales price reduction, release of old debts or in terms of concessions on behalf of environmental damages - potential investors can expect from the Treuhand Agency and other public bodies. This support, which can go far beyond general investment support granted uniformly for all investments into the East German economy, is mainly lent in order to secure employment in these industries.

Investments in chemicals appear to be mainly driven by investor-specific know-how of modern production technologies, i.e. intangible assets which investors expect to profitably transfer to and employ in East German production sites. While these firm specific advantages can quite easily be identified, country specific factors to induce FDI into chemicals are virtually absent: the East German chemical industry is plagued by an outdated capital stock, by heavily contaminated production sites, by large capacity overhang and - what makes it a politically sensitive sector - by considerable overmanning. Lack of country specific advantages has to be compensated by policy created advantages. This may be illustrated by one of the greatest deals in chemical privatization, namely the sale of the Leuna and Zeitz refineries which crucially hinged upon providing exclusive access to the Minol motorway gas stations to the investor (Elf Aquitaine, France, jointly with Thyssen, West Germany). Only giving this as a "golden handshake" was an incentive strong enough to attain a 4,000 Mill. DM investment commitment for a new plant in Leuna. Presently, the refinery there is thus far from operating profitably that it cannot be restructured. Without establishing a new plant it would not be possible to maintain and secure employment in this region.

As far as privatization of steel industry is concerned the main driving forces behind foreign - and West German - investment flows are market distortions. The European steel industry is plagued by considerable capacity overhang and at the same time exposed to strong world market competition. It belongs - like agriculture, textiles, coal mining, chemical fibres and automobiles - to the "sensitive sectors" in which public support is subject to the EC commissions subsidy control. The commissions approval to public subsidies is made conditional on capacity reduction both in terms of production capacities and in terms of employment. This strongly influences the process of privatization as the commission determines the parameters "capacity intensity" and "subsidy volume" on the industry level while the Treuhand Agency has to negotiate them for each enterprise individually. For potential investors this creates the incentive to realize a "first-mover-advantage" in the early stage of privatization, trying to negotiate relatively high subsidies concomitant with only relatively small capacity reductions - at the expense of those competitors which may come later and then will face strategic barriers to market entry.[15] Reacting to this incentive can be considered as a variant of oligopolistic reaction which as a firm specific determinant of FDI works jointly with the location specific advantages represented by public subsidies on part of the national authorities. Obviously, incentives of this kind have been the driving force behind the first large deals in the East German steel industry. The sale of the Hennigsdorf and Brandenburg steel works to the Italian Riva group is the case in mind (Table 7). Foreign investment into East German shipyards by the Norwegian Kvaerner may be explained by arguing along similar lines (Table 8). Investor specific know-how and oligopolistic market structure hold for firm specific advantages while national economic policy towards shipbuilding creates locational advantages and additionally, the EC commission's approach to subsidy control creates incentives to oligopolistic reaction.

The constellation of FDI determinants in construction, quarrying and food processing, however, is quite different. First, in these industries the business climate is presently much more favourable than in most other industries. Second, these industries are strongly connected to regional markets and third, parts of these industries are subject to market regulation by means of quotas. This shall be illustrated for the privatization of cement and sugar producers.[16] Both of them are characterized by high transportation costs which makes them dependent on regional markets and both are characterized by barriers to market entry due to regulation. In the case of cement such barriers are

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15 Krüger (1992).

16 Härtel et. al. (1991).

erected by restrictive environmental conditions which are prohibitive to market entry via greenfield investments. In the case of sugar barriers to market entry are erected by production quotas for sugar beets in the context of EC agricultural policy. For producers facing these barriers an acquisition in East Germany actually represents an almost unique possibility to "buy" additional quotas and to expand. Obviously though, these incentives are driving not only foreign investors but are also working strongly on West German producers. They had quickly designed a syndicate approach to completely take over the East German producers of cement and sugar. Foreign investors were only able to get a look into these industries after intervention of the Federal Cartel Office.

Table 7 - Privatization of East German Steel Enterprises

Enterprise(a)	Investor (Home Country)	Date of Acquisition	Approval of the EC Commission to a) Merger b) Privatization	Potential Investors (Number)
Hennigsdorf	Riva (Italy)	15 January 1992	a) June 1992 b) 15 April 1992	-
Brandenburg	Riva (Italy)	16 January 1992	a) June 1992 b) 15 April 1992	-
Ilsenburg	Preussag Stahl (West Germany)	5 March 1992	a) September 1992 b) presently examined	-
Riesa	Feralpi (Italy)	5 March 1992	a) only real estate b) presently examined	-
Maxhütte	Arbed (Luxemburg)	9 April 1992	a) presently examined b) presently examined	-
EWS Freital	Boschgott-hardshütte (West Germany)	23 October 1992	a) presently examined b) presently examined	-
EKO	-	-	-	-(b)
Finow	-	-	-	3
Gröditz	-	-	-	1

(a) Information on output, employment and subsidies presently not available. - (b) Krupp (West Germany) withdrew from the nearly completed sales contract. EKO now shall be transformed into a holding in which the state government will have the majority.

Source: Adapted from Krüger (1992).

In nearly all industries some FDI projects are motivated by using East German production sites as bridgeheads for serving markets in Central and Eastern Europe. Such a strategy intends to make use of the longstanding trade relations among former CMEA countries via internalizing the know-how of Eastern markets which is incorporated in the staff of the acquired East German enterprises. This eastward orientation though increasingly turns out to be a high risk strategy, especially if envisaged sales markets are in the former Soviet Union. Trade with enterprises in the republics of the former Soviet Union has broken down dramatically and nothing promises a short- or medium-term re-

Table 8 - Privatization of East German Shipyards

Location of Enterprise	Construction Capacity (P.C.) (a)		Working Places (P.C.)		Subsidy Quotas (P.C.) (b)	Privatization		
	1990	1995	1990	1995		Date of Decision	Investor (Home Country)	Potential Investors (Number)
Wismar	16	30	18	25	35.7	17 March 1992	Bremer Vulkan AG (West Germany)	-
Warnow	25	26	17	26	35.8	17 March 1992	Kvaerner a.s. (Norway)	-
Peene	0	11	11	11	23.9	17 March 1992	Hegemann Group (West Germany)	-
Neptun	18	0	23	0	0	-	-	1
Stralsund	34	26	23	31	(c)	-	-	2
Boizenburg	7	7	5	7	(c)	-	-	3
Roßlau	1	0	4	0	(c)	-	-	1
Note:								
Capacity in absolute terms	545 041 (d)	34 482 (d)	327 000 (e)	7 250 (e)	-	-	-	-

(a) Output eligible to subsidy support. - (b) According to the EC approval of 20 July 1992. - (c) Not yet decided. - (d) Compensated Gross Tons (CGT). - (e) Number of Working Places.

Source: Adapted from Krüger (1992).

covery. Thus the "bridgehead"-argument loses much of its appeal for the remaining parts of the privatization process. Rather, Eastern European countries may even become serious competitors for East Germany in attracting foreign capital. Given that they succeed to ensure a stable political and legal framework they can compete with the advantage of low cost for qualified labour in the long and medium run. Notwithstanding this sceptical assessment of the bridgehead-argument, in single cases CMEA-specific know-how on part of East German enterprises may open up sound medium-term business perspectives, as for example in the case of that East German company which exclusively, i.e. as a monopolist, has been in charge of maintaining East German nuclear power plants based on Soviet nuclear technologies. The foreign buyer of this enterprise can reasonably expect that those power plants will be kept in operation for some further three or four years, a time span during which demand for the services he offers is basically guaranteed.

Flows of FDI into East German trade and service industries appear to be relatively weak compared to their relative importance for trade and services in West Germany. For West Germany the trade sector offers perspectives to foreign investors mainly in wholesale trade and in establishing distribution networks for their domestically produced exports into Germany. This so far seems to be only of minor relevance in East Germany. With respect to retail trade foreign participation results to be low because the most attractive bits of this industry have been sold off to West German investors in the course of the small privatization program.

Though differences of FDI flows into services are significant, the comparability between East and West German service industries is restricted due to various statistical and empirical problems. First, the category of "services" is a residual which comprises very heterogeneous subcategories. One of them, namely purchase of real estate, is dominating the picture for West Germany while the activities of investment and holding companies which presumably are highly important are not completely reported by official statistics. In East Germany foreign activities in the service sector are focusing on planning, engineering and consulting services. This holds for firm-specific advantages in terms of know-how on part of the foreign investor. Furthermore, broker activities related to real estate seem to offer promising businesses, hinting to country-specific advantages in terms of availability of immobile factors.

FDI flows into East German industries are exhibiting further peculiar features which show up when relating planned investment and planned employment by industries (Table 9). As a first example, investment commitments in services appear to be surprisingly high in relation to employment commitments there. This puzzle resolves when knowing that foreign investment into services is dominated by one single large British investor (Thames Water Plc. London). Totally, he acquired 26 East German enterprises, 23 of which are classified as service enterprises. The activities of nearly all these 23 enterprises are related to environmental concerns: water supply including preparation and cleaning, disposal of sludge and other wastes and both general and industry specific environmental protection technologies. These activities are by their very nature much more capital intensive than service activities in general. Transport equipment is another industry where considerations on capital intensity are pointing to the activities of one single large investor, namely the acquisition of the two Eisenach car factories by General Motors via its West German subsidiary of Opel. Similarly, the deal of privatizing Leuna, Zeitz and Minol is strongly pushing the statistics reporting on investment and employment commitments.

Table 9 - Capital Intensity of FDI Projects in Eastern Germany by Industries

	Investment per employee (1000 DM) (a)	
Industry	June 1992	November 1992
Agriculture, Forestry and Fishing	147	146
Energy and Water Supply	255	258
Manufacturing	182	185
thereof:		
Chemicals	165	439
Quarrying	174	162
Steel, Ferrous and Non-Ferrous Metals, Foundries etc.	103	121
Machinery	46	51
Transport Equipment	26	311
Electronics	51	61
Precision Engineering and Optical Products	40	42
Food	138	176
Construction	29	23
Trade	121	271
Services	239	214
Average	109	145
(a) Calculated by accumulated investment and employment commitments.		

Source: Data provided by the Treuhand Agency 1992; own calculations.

The findings which have been elaborated by analyzing foreign investment activities in a sectoral break-up may be illustrated and complemented by presenting the results of a poll which the German Institute of Economic Research (DIW) has realized in summer

1992 among 4,800 East German manufacturing enterprises.[17] Consistent with the information Treuhand data are conveying, the share of foreign owned enterprises still appears to be modest, though the extent to which foreign owned enterprises contribute to employment is significantly higher than their share in numbers (Table 10).

Table 10 - Ownership Structure in East German Manufacturing (Percentage Shares)

State of Ownership	Enterprises: in all manufacturing(a)	Enterprises: in private ownership	Employment: in all manufacturing(a)	Employment: in privately owned enterprises
In Treuhand ownership	19	x	55	x
In private ownership(b)	81	100	45	100
of:				
East Germans	71	87	23	51
West Germans	8	10	17	38
Foreigners	2	3	5	11

(a) According to the poll sample. - (b) Including both privatized and newly established enterprises.

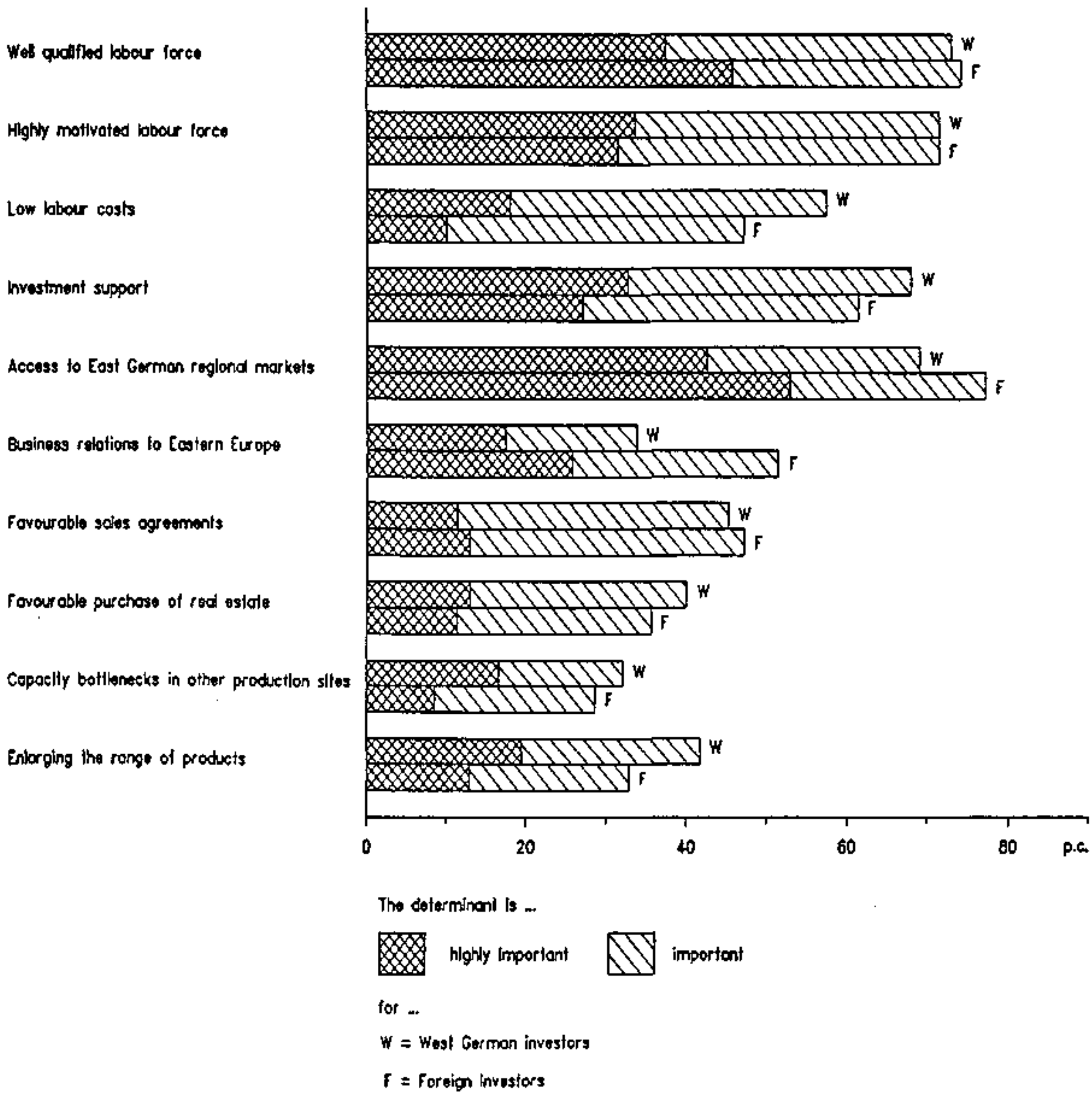
Source: DIW, IfW (1992).

According to the poll results, the motivations of West German and foreign investors to make commitments in East Germany appear to be quite similar (Figure 1). The availability of well-qualified and highly motivated employees results to be the strongest motivation. As nearly equally important appears to be access to East German regional markets. The availability of public support has a higher ranking than the - only temporary - advantage from relatively low labour costs. Three of the enlisted investment motivations, namely access to East German regional markets, business opportunities in Eastern Europe and favourable sales conditions seem to be more important for foreigners than they are for West Germans. At least with respect to taking advantage of business opportunities in Eastern Europe, i.e. the building of bridgeheads, it may be doubtful, if investments which have been effected for this reason will turn out to be profitable and it may be equally doubtful if further investments will be driven by this reason. Enterprises' turnover expectations for 1993 are a first proof of this scepticism (Tables 11 and 12). Foreign owned firms are expressing even larger pessimism with respect to East European markets than enterprises in East and West German ownership do. Foreign owned enterprises are expecting net reduced turnover for 1993 while firms owned by West Germans still expect a modest and firms owned by East Germans even expect a

[17] DIW, IfW (1992).

strong increase. In 1992 foreign owned firms predominantly have been targeting East German regional markets on which they intended to realize about half their sales this year and which they expect to grow by about 20 p.c. in 1993. With respect to Western foreign markets on which in 1992 foreign owned firms expected to realize only 13 p.c. of their sales they have expressed the most optimistic growth expectations (+41 p.c.). While in 1992 regional markets appeared to be equally important for firms owned by both foreigners and West Germans, in 1993 these markets seem to become more important for foreigners than for West Germans.

Figure 1 - Determinants of West German and Foreign Investments into East German Manufacturing Enterprises



Source: DIW, IfW 1992.

Table 11 - Sales Expectations of East German Manufacturing Enterprises for 1992 (a)

State of ownership	Expected share of sales in the respective region (p.c.)			
	East Germany	West Germany(b)	Eastern Europe	Other Countries
Treuhand enterprises	42	28	21	9
Private enterprises	60	25	8	7
thereof:				
in East German ownership	68	23	5	4
in West German ownership	53	30	9	8
in foreign ownership	51	20	16	13
All enterprises	51	27	14	8

(a) Results from a poll among East German manufacturing enterprises. - (b) Including West-Berlin.

Source: Deutsches Institut für Wirtschaftsforschung, Berlin; Institut für Weltwirtschaft, Kiel, 1992.

Table 12 - Sales Expectations of East German Manufacturing Enterprises for 1993 (a)

State of ownership	Changes against 1992 (p.c.)				
	East Germany	West Germany(b)	Eastern Europe	Other Countries	Total
Treuhand enterprises	13	12	-1	46	12
Private enterprises	17	37	13	34	23
thereof:					
in East German ownership	18	30	32	65	23
in West German ownership	15	41	8	8	21
in foreign ownership	22	36	-9	41	26
All enterprises	16	24	2	41	18

(a) Results from a poll among East German manufacturing enterprises. - (b) Including West-Berlin.

Source: Deutsches Institut für Wirtschaftsforschung, Berlin; Institut für Weltwirtschaft, Kiel, 1992.

4. Conclusions

Privatization in East Germany has cast off the touch of being a closed-shop event. The degree of foreign participation, though fairly modest in the beginning, has risen considerably. By now foreign investors' shares in the number of acquired enterprises as well as in the promised volumes of employment and investment seem to have reached a higher and stable level. Foreign investors have proved to be sensitive both to market signals and to policy created incentives. Investment opportunities are not yet exhausted and further large foreign acquisitions, e.g. in microelectronics and in brown coal mining, are forthcoming. Besides and beyond importance measured in merely quantitative terms the main merit of foreign participation in privatization is to introduce the element of external competition. Already the mere threat of foreigners entering the East German market forces potential domestic investors have to move much more dynamically. The higher intensity of competition resulting therefrom improves the process of privatization with respect to speed as well as with respect to the efficiency properties of its results.

Appendix

Table A1 - Regional Allocation of Foreign Investors' Activities (October 1992)

Region	Number of Acquisitions	Planned Investment (Mill. DM)	Planned Employment (Number of Persons)
Mecklenburg-West Pomerania	60	1 300	9 300
East Berlin	61	1 900	17 800
Thuringia	61	2 600	10 700
Saxony-Anhalt	75	1 600	12 700
Brandenburg	105	4 700	43 300
Saxony	161	2 300	20 000
Total	523	144 000	113 800

Source: Treuhand Agency [a] 1992.

Table A2 - Number of Foreign Acquisitions by Investors' Home Countries and Target Industries (November 1992)

Target Industry \ Home Country	F	CH	GB	USA	CDN	A	NL	I	S	DK	B	L	Others (a)	Total	Note: Planned Investment (Mill. DM)(b)
Agriculture, Forestry and Fishing	0	1	1	1	1	1	4	2	1	1	0	0	1	14	2,546
Energy and Water Supply	2	1	7	0	0	1	0	0	0	0	0	0	2	13	635
Manufacturing	28	53	25	40	3	20	29	14	11	10	6	6	18	263	10,218
thereof:															
Chemicals	7	7	0	4	0	1	4	5	1	1	2	0	4	36	3,551
Quarrying, Ceramics and Glass	12	15	11	1	1	4	3	2	1	0	1	2	3	56	1,862
Steel, Ferrous and Non-Ferrous Metals, Foundries etc.	2	6	4	3	0	3	3	5	0	1	1	1	1	30	871
Machinery	2	14	5	15	2	6	6	0	2	1	0	0	5	58	527
Transport Equipment	2	1	1	5	0	1	1	2	0	1	0	0	2	16	1,794
Electronics	0	4	4	1	0	3	1	0	0	0	1	1	2	17	263
Precision Engineering and Optical Products	2	1	0	1	0	0	0	0	0	0	0	1	0	5	15
Food Processing	1	5	0	10	0	2	11	0	7	6	1	1	1	45	1,335
Construction	17	17	5	0	0	13	1	1	1	2	0	2	1	60	504
Trade	3	8	1	5	0	6	1	2	3	1	1	0	0	31	720
Services	7	10	28	7	1	11	7	1	1	6	5	0	5	89	2,074
Others(c)	4	8	6	3	1	15	7	5	6	4	3	1	7	70	717
Total	61	98	73	56	6	67	49	25	23	24	15	9	34	540	17,414
				(d)				(d)		(d)			(d)		
Note: Planned Investment (Mill. DM) (b)	5,475	933	1,462	2,786	1,820	0,595	1,035	0,590	0,108	0,410	(e)	(e)	2,200	17,414	

(a) Australia, Brazil, CIS, Greece, Guatemala, India, Indonesia, Iran, Ireland, Israel, Japan, Lichtenstein, Malaysia, Norway, Oman, Sinagpore, Spain, Turkey. - (b) Investment commitments as contracted from April 1991 - September 1992. - (c) Including other manufacturing industries. - (d) Data not entirely consistent with those provided in table 3. - (e) Included in the category of "Others".

Source: Treuhand Agency [b] 1992; own calculation.

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