Environmental aspects of German direct investment in developing countries

New challenges for environmental and foreign policies

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Occasional paper no. 7

Report as part of UNCTAD /CBS Project:

Cross Border Environmental Management

in Transnational Corporations

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Background

Globalization – generally taken to mean the process of growing international economic interrelations and the tendency towards expanding business activities to a worldwide scale – has been accompanied by a significant rise in foreign direct investment (FDI) over the past 15 years. Nowadays, transnational corporations' (TNCs) turnover exceeds the volume of international trade on the whole. It can also be attributed to this development that the relative share of developing and newly industrialized countries in world production has notably increased. From an ecological point of view, the integration of environmental aspects into FDI seems to be of growing importance. In 1997, in order to extend the understanding of the environmental implications of TNC activity in developing countries, the Danish International Development Agency commissioned the United Nations Conference on Trade and Development (UNCTAD) and the Department of Intercultural Communication and Management in Copenhagen Business School (DICM/CBS) to conduct research into TNC environmental practices. The project is called "Cross border Environmental Management in Transnational Corporations". Besides case studies on environmental practices of Danish and German TNCs with affiliates in China, India and Malaysia, the study will include context studies referring to the different host and home countries concerned.

Abstract

This paper surveys the most important pieces of information concerning the German industry's international relationships and their environmental significance. First, facts about the internationalization of the German industry are summarized. Second, an overview is given of the impact of environmental regulation on the international sourcing of German industry. The surveyed studies investigating the connection between environmental regulations and competitiveness show that there is no significant correlation between stringent regulations and economic success in the case of Germany. Furthermore, low environmental standards are not an important factor in German companies' location and investment decisions. However, it remains unclear whether TNC behavior leads to a transfer of environmentally sound technologies and whether they can contribute to sustainable development in host countries with relevance to foreign investors. Third, German standpoints on international environmental agreements are examined.

Table of contents

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I. Introduction

Germany likes to see herself as an environmental forerunner and environmental awareness is high amongst Germans. This is manifested, for example, in the fact that national environmental expenses have considerably risen over the years, reaching the highest level in 1992 and remaining relatively stable since.[1] In the 1970s and 80s, Germany's manufacturing industry spent 214 billion DM on environmental measures with about half of this amount going towards air pollution control. In 1991, spending on the environment amounted to 1.74% of German GNP, with Germany thus taking second place after Austria in this respect.[2] However, environmental problems no longer rank as prominently as they did only a few years ago. This is particularly due to the high unemployment rate and the problems arising from German unification.[3]

Environmental protection is also one of the aspects that German official development assistance (ODA) focuses on. The ongoing process of globalization, and in particular the huge increase in cross-border direct investment by transnational corporations (TNCs), has given new impetus to debates on sustainable development and has meant new tasks for German environmental policy.

In this paper, the implications of globalization for environmental and development issues will be examined from a German perspective and Germany's international business relations, in particular those with developing countries, will be presented. Subsequently, Germany's environmental commitment will be examined, concluding with an overview of, how German government and business initiatives

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[1] IW (1998a), table 105.
[2] Röpenack (1993), p. 137.
[3] BMU (1996).

are dealing with the problem of integrating environmental and developmental aspects with foreign direct investment.

II. The internationalization of German industry

a. Economic structure

In terms of GNP, Germany ranks third in economic power, with the US occupying first place and Japan second. In fact, Germany accounts for more than a quarter of European GNP is realized here.[4] As far as GNP per capita is concerned, Germany ranks as number seven.[5] Its particular business structure is characterized by a close partnership of business and banking in which banks provide long-term, low-cost financing.[6] Due to the high level of wages, Germany is predestined to be a site for highly specialized refined products. Other sectors, such as coal-mining and ship-counstruction, can only withstand international competition with heavy subsidies.[7]

1. Dominant industries

The German economic structure is that of a highly developed, post-industrialized economy, which means it is characterized by a dominance of the tertiary sector. There exist a great variety of lines of industry.[8] 63.3% of salary earners work in the service sector, including trade and traffic, financial services and others. The processing industry and building trade account for 32.2% of the employees, the primary sector only for 4.1%.[9] Regarding each sector's contribution to GDP, the primary sector accounts for no more than 1.1%, the secondary sector for 33.5% and services for 65.4%.[10] The public spending ratio and the tax ratio remain on high levels - at 48.0% and 45.2% respectively in 1997.[11]

In regard to growth in different sectors, recent years have witnessed remarkable increases in gross value added within the tertiary sector and in particular within the financial sector (banks and insurance companies). These increases are the result of recent national and international deregulation efforts. In the retail and transport sectors, only small increases were recorded. This seems to be due to weak domestic economic performance.[12]

Between 1990 and 1993, high technology sectors made up 13.8% of German GNP, which corresponds to the top position internationally.[13] Within the German industry, three general trends can be noticed:

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[4] BMWi (1999c), p. 1.
[5] Baratta (1998), column 1000.
[6] Schmidt (1995), p. 8.
[7] N.N. (1998e), p. 173.
[8] BDI (1999b).
[9] IW (1998a), table 16.
[10] Schäfers (1998), p. 64.
[11] BMWi (1998a), table 8.5 and 8.6.
[12] SRW (1997), ref. no. 104.
[13] BMWi (1998a), p.117.

- the increasing economic influence of the financial sector (in contrast to the manufacturing sector);
- growing interdependencies among the different sectors and internationally;
- and accelerated privatization waves, which has led to previously state owned companies to become listed on the stock exchange.[14]

2. Size of typical companies

The German economy is characterized by many small and medium-sized companies. In 1993, only 2% of German companies had more than 500 employees. However, these companies employ 44% of the total labor force[15] and they account for the largest fraction of the total turnover.[16]

Table 1: German companies and employees according to company size

Sector	Total number of companies	Percentage of firms with less than 10 employees	Percentage of firms with at least 10 but less than 20 employees	Percentage of firms with at least 20 but less than 500 employees	Percentage of firms with at least 500 employees	Total number of employees	Share of firms with at least 500 employees in total employment
Agriculture and forestry	28,195	89.5	7.2	3.4	0.0	137,958	0.0
Supply/distribution (energy/water) and mining	3,010	61.2	11.0	24.0	3.8	485,183	83.2
Manufacturing industry and construction	518,159	74.6	13.7	11.4	0.0	10,446,539	40.2
Tertiary sector (trade, transport, telecommunications, financial institutions, other services)	1,548,489	91.5	5.4	3.1	0.0	10,846,158	27.0
Total	**2,097,853**	**87.2**	**7.4**	**5.2**	**0.0**	**21,915,838**	**34.3**

As a general trend, it can be observed that the concentration of German industry is continuing. Statistics show that in many lines of industry, the 3 largest companies (or 10 respectively) were able to considerably increase their relative share of turnover from 1977 to 1991.[17] The trend towards concentration has not stopped yet.[18]

[14] Schäfers (1998), p. 117.
[15] Gaebe (1998), p. 131.
[16] IW (1998a), table 62.
[17] Monopolkommission (1994), p. 100.
[18] Monopolkommission (1998), p. 164.

b. Historical overview of the internationalization of German industry

Germany joined the GATT in 1951 and was one of the six states to found the European Economic Union in 1957.[19] For years now, Germany has been the world's second largest economy in terms of exports as well as imports.[20] In 1995, German exports accounted for 18.6% of worldwide automotive exports, 14.7% of global chemical exports and 13.3% of global exports of machinery and means of transport equipment.[21] In 1997, exports amounted to 27% of total GNP[22] and constituted the most important source of German economic growth.[23] For particular industries, such as the aircraft and space industries or the automobile industry, the share of exports amount to 60% of turnover.[24]

Corresponding to Germany's export orientation, German capital export clearly outweighs capital import. In regard to direct investment, which is defined by the aim of a long term economic activity in the host country, the outflows amounted to 121.5 billion DM in 1998, the inflows merely to 23.5 billion DM.[25] In regard to foreign stock, there were four German TNCs among the world's 20 largest investors and all in all nine among the top 100, most of them in the automotive or chemical industry. However, ranked according to UNCTAD's "transnationality index", which takes into account the ratio of foreign assets, sales and employment to total quantities, only one German TNC was among the top 20.[26] According to estimates, 9% of global FDI flows came from Germany in 1998.[27] At present, German companies hold shares in about 20,000 affiliates abroad.[28]

1. Main trading partners

Trade relations mainly take place with other EU member states; in 1996, more than 57% of total exports were to countries in the EU. Germany's most important trade partner in 1997 was France, followed by the USA, the United Kingdom, the Netherlands and Italy.[29] Germany itself is the most important trade partner for France, the Netherlands, Italy, the United Kingdom, Belgium, Luxembourg, Austria, Sweden, Denmark and Finland.[30] This illustrates the international importance of Germany's economic power.

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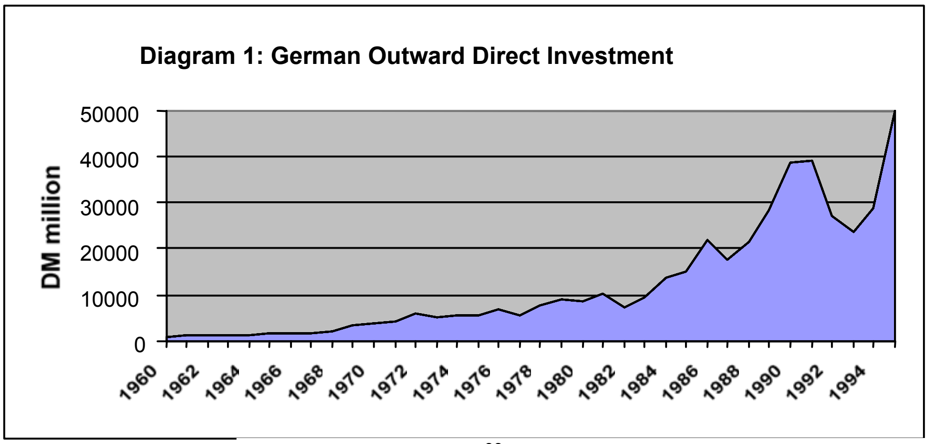
[19] Schäfers (1998), p. 116.
[20] Statistisches Bundesamt (1999a), p. 1.
[21] Schäfers (1998), pp.66-67.
[22] Statistisches Bundesamt (1999d), p. 1.
[23] BMWi (1998b), p. 4.
[24] BMWi (1998b), p. 5.
[25] DBbk (1999), p. 38 and p. 39.
[26] UNCTAD (1997), pp. 36-38.
[27] N.N. (1998a), p. 1.
[28] BDI (1999a).
[29] Statistisches Bundesamt (1999b), p.1, and (1999c), p. 1.
[30] Statistisches Bundesamt (1999a), p. 1.

2. Trends in German foreign direct investment

Since 1976, a mandatory registration of FDI flows has been carried out by German authorities.[31] Between 1985 and 1995, German direct investment outflows increased 3,5 times, exceeding inflows by far. As to the host countries of German direct investment outflows, only 5% of direct investment took place in Asia, but this was nevertheless more than half of German direct investment outside the OECD.



In 1997, net outflows amounted to 51.5 billion DM. In 1998, net outflows amounted to 97.9 billion DM.[32] With regard to the recent drastic increase in outflows, it has to be taken into account that this is largely due to single large projects.[33] For example, investment in South Korea increased from 351 million DM in 1997 to 1,808 million DM in 1998.[34] The increase can be attributed to BASF taking over a part of Daesang Corp, an investment amounting to as much as 1 billion DM.[35]

Large transactions are one of the reasons why direct investment flows fluctuate so much, but it can also be observed that German outflows are influenced by the business cycle. Among other things, fluctuations reflect the prolonged stimulation of economic activity was caused by German unification.

Table 2: Quarterly fluctuations in the development of German direct investment outflows

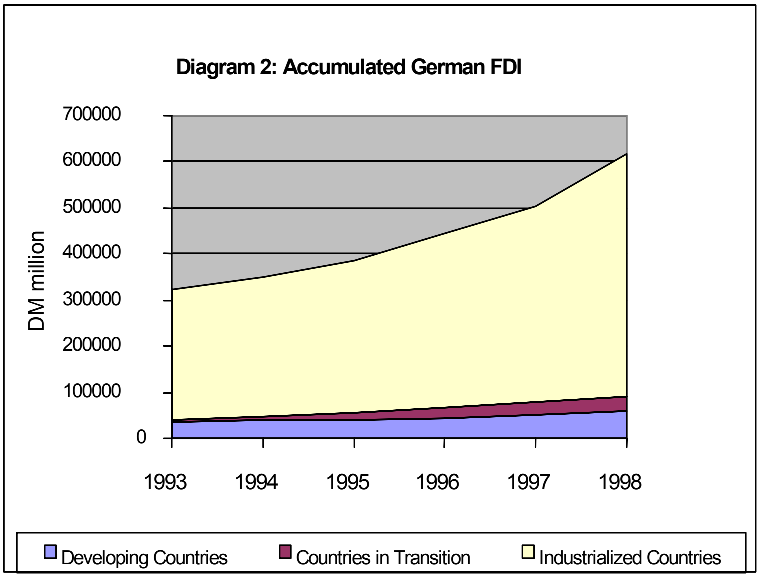
	I/1996	II/1996	III/1996	IV/1996	I/1997	II/1997	III/1997	IV/1997	I/1998	II/1998	III/1998	IV/1998
DM million	10,336	6,456	11,053	16,622	15,736	9,150	16,013	16,611	13,846	19,723	17,081	70,826

Source: DBbk (1999), p. 38.

[31] Schreyger (1994), p. 37.
[32] DBbk (1999), p. 38.
[33] N.N. (1998), p. 1.
[34] DBbk (1999), p. 47.
[35] N.N. (1998b), p. 1.

3. The role of SMEs in German foreign direct investment

SMEs' strength lies in external trade. A study commissioned by the German Federal Ministry of Trade and Commerce revealed that only 1% of German SMEs has invested abroad (compared to 19% of large companies), and that their degree of internationalization[36] amounts to 7% (compared with 36% for large companies). Nevertheless, German SMEs account for one third of the German stock of foreign direct investment. Taking into account foreign trade as well as foreign direct investment, it has been argued that German SMEs are internationalized to a greater extent than the SMEs in most other countries.[37]



Source: DBbk (1998), pp.16-25, and (1999), pp. 40-45.

Empirical evidence indicates that market access is the most important investment motive for SMEs. They often "follow in the wake" of large companies to which they are suppliers, or they try to back up their established position on foreign markets by producing on the spot.[38] As far as the market-entry strategy is concerned, SMEs tend to establish new enterprises instead of acquiring already existing ones.[39]

In comparison to large German enterprises, SMEs are mainly committed to invest in Eastern Europe and, to a lesser extent, also in Asia. Amog the SMEs investing abroad, 22% invest in Asia. Nevertheless, the total capital flows to Asia are rather modest.[40] About 2% of SMEs' FDI stock is allotted to Asia.[41] According to the assessment of the HWWA, a renowned German economic research institute, German SMEs underestimate their investment opportunities in Asia and overestimate the obstacles to investment.[42]

4. The largest German TNCs

The following table displays the largest German TNCs in1996.[43]

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36 Internationalization includes all the companies' regular activities, such as foreign trade and foreign investment, on at least one foreign market.
37 HWWA (1996), p. 21-29.
38 BMWi (1996), p. 9.
39 BMWi (1996), p. 10.
40 BMWi (1996), p. 11.
41 BMWi (1996), p. 7.
42 BMWi (1996), p. 15.
43 UNCTAD (1998), pp. 36-38. It has to be mentioned that there have been important mergers since (notably Daimler-Benz and Chrysler).

Table 3: Large German TNCs

Ranking by foreign assets	Company	Line of industry	Ranking by trans-nationality index	National ranking by turnover
1	Volkswagen Group	Automotive	6	2
2	Bayer AG	Chemicals	1	9
3	Hoechst AG	Chemicals	2	7
4	Daimler-Benz AG	Automotive	8	1
5	Siemens AG	Electronics	7	3
6	BASF AG	Chemicals	4	8
7	BMW AG	Automotive	5	6
8	Robert Bosch GmbH	Automotive	3	11
9	Mannesmann AG	Engineering/tele-communication	9	13

Sources: UNCTAD (1998), p. 36-38, and IW (1998a), table 60.

With 9 German TNCs ranking among the world's largest, Germany is one of the 5 most important TNC home country. The investment behavior varies considerably between the different TNCs; while Volkswagen Group's foreign assets are reported to have shrunk by about one third between 1995 and 1996, Hoechst was able to increase foreign sales during that same period by some 40%.[44] Judged by foreign direct investment stocks, Germany came fourth in the 1990s after the US, Japan and the UK.[45]

5. Sectoral trends in German foreign direct investment

In the 1970s, most German TNCs belonged to the chemical or electrical engineering sector. In the period from the early 1960s to 1980, the share of services in German foreign direct investment rose from 15% to 23.5%, whereas the share of the manufacturing industry decreased from 75.5% to 69.9% at the same time.[46]

[44] UNCTAD (1998), p. 40.
[45] Hübner (1998), p. 241.
[46] Beyfuß/Kitterer (1990), pp.20-22.

Table 4: Sectoral structure of German direct investment abroad

Rank	Line of industry	DM million	Share in per cent	Number of companies	Share in per cent
1	Trade	37.751	20.5	7.026	42.4
2	Chemicals	30.767	16.7	1.164	7.0
3	Electrical engineering	13.179	7.2	692	4.2
4	Financial institutions	12.739	6.9	311	1.9
5	Road vehicle construction	12.737	6.9	322	1.9
6	Holding companies	112.169	6.6	519	3.1
7	Banks	12.120	6.6	243	1.5
8	Mechanical engineering	7.037	3.8	936	5.7
9	Insurance companies	6.597	3.6	242	1.5
10	Real estate business	5.051	2.7	681	4.1

Source: Beyfuß/Kitterer (1990), p. 23 (data referring to 1988).

In recent years, investment outflows of insurance companies and companies in the automotive industry have considerably increased.[47] At present, only one third of direct investment is cross-sectoral, with the dominating portion of direct investment representing horizontal integration. Yet within the manufacturing sector the different lines of industry are developing in somewhat contrary ways.[48]

Transfer pricing in German TNCs

Through transfer pricing TNCs may:

- generate costs at sites with a high tax level and revenues in tax havens.
- BMW is said to have paid 545 million DM to German tax authorities in 1988. Only five years later, despite increasing profit and stable dividends, the group reported losses in Germany and recovered 32 million DM as tax refunds.
- In 1994/95, Siemens paid less than 100 million DM taxes in Germany, with profit amounting to 2.1 billion DM. In the following year, no taxes were paid at all.

Source: Werkstatt Ökonomie (1992), p.57.

Between 1991 and 1994, a tendency towards intra-sectoral integration could be observed in the automotive and the mechanical engineering sectors; on the other hand, horizontal integration was becoming less important within the chemical industry.[49] In 1988, one fifth of German foreign direct investment was made by investors in the chemicals sector. However, trade beat chemicals in the sectors invested in.[50] In spite of this, the chemicals sector is the only sector of German industry, which can be characterized as "globalized".[51]

[47] Beyfuß/Kitterer (1990), p. 20.
[48] Beyfuß/Kitterer (1990), pp.20-22.
[49] Hübner (1998), pp.264-265.
[50] Beyfuß/Kitterer (1990), pp. 20-22.
[51] Härtel/Jungnickel et al. (1996), p. 27.

Sectoral shifts in the importance of direct investmentin the 1990s

Between 1990 and 1997, total net transfers increased by about 20 billion DM. There have been some remarkable shifts in the respective relative importance of the different lines of industry:[1]

- The share of holding companies in direct investment outflows has risen from a mere 9.9% to 21.4%, so that they now represent the second most important line.
- The importance of electronics has considerably lessened, with their share amounting to 12.0% in 1990 and only 3.0% in 1997.
- Banks ranked first with a share of 22.5% in total FDI net transfers in 1997, whereas in 1990, they only accounted for 12.9%.
- On the contrary, insurance companies had a share of 16.6% in 1990 and fell to 7.8% by 1997.
- Direct investment in road vehicle construction has risen over the years, but the relative share fell from 9.4% in 1990 to 6.8% in 1997.
- The chemical industry's development kept in line with the general increase in FDI, so that the relative share did not change much.
- Other sectors remain of lesser importance.

Table 5:German direct investment outflows (by industry in million DM)

Sector	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Agriculture & fishing		3	7	3	2	-9	5	3	0	-1	4	20	7
Mining & quarrying		835	685	359	220	224	1,467	-78	-77	-362	-72	-33	34
Manufacturing		10,698	6,016	9,599	9,055	16,420	15,331	12,422	9,590	10,549	20,055	12,126	17,719
Construction		32	83	55	110	289	160	77	447	269	206	368	127
Electricity, gas & water								241	882	113	1342	313	716
Trade & repairs		340	163	409	973	842	715	1,326	1,398	515	1,899	1,808	1,958
Hotels & restaurants								-6	86	-7	18	5	43
Transport & communication								399	930	518	1,813	1,446	359
Financial activities	1,018	2,678	2,348	3,741	10,445	13,427	12,925	5,242	5,346	6,822	11,171	13,024	15,637
Real estate & business activities								6,305	5,051	6,061	11,404	9,929	11,843
Other services		1,498	3,849	3,890	640	768	919	1,090	760	2,150	3,497	2,306	2,225
Unallocated	11,052	2,013	1,250	1,370	6,420	6,510	7,444	3,478	911	1,255	4,251	3,155	6,842
Total	**12,070**	**18,097**	**14,401**	**19,426**	**28,284**	**38,726**	**39,191**	**30,499**	**25,324**	**27,882**	**55,588**	**44,467**	**57,510**

Sources: OECD (1997), p. 118, and OECD (1998), p. 136 (data for 1997 are provisional).

c. German direct investment in developing countries

1. Historical overview

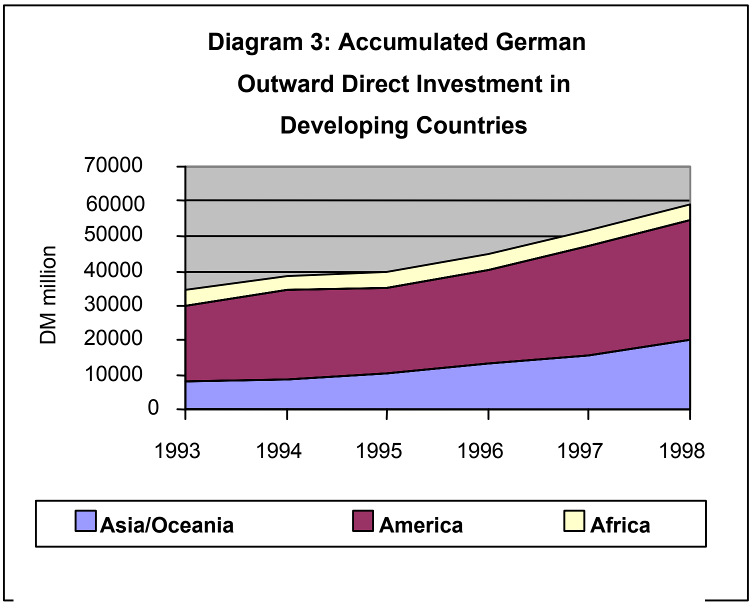
Up to 1960, one third of German outward direct investment went to developing countries. since then, developing countries' share continuously decreased until the late 1980s. From the beginning of the 1990s, a slight shift in favor of developing countries (above all Asia) can be observed. Nevertheless, developed countries remain the by far most important investment destinations.[52]

Table 6: Historical overview in German FDI to developing countries

Year	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Total	101.9	109.2	123.5	145.6	147.8	151.5	156.8	185.5	206.9	231.8	262.7	287.9	321.4	349.6	375.8
Share of developing countries including countries in transition	18.4 (18%)	19.4 (17%)	20.6 (17%)	25.1 (17%)	21.5 (15%)	19.7 (13%)	19.5 (12%)	23.0 (12%)	22.2 (11%)	20.6 (9%)	28.2 (11%)	33.2 (12%)	40.5 (13%)	47.9 (14%)	51.0 (14%)

Sources: Statistisches Bundesamt (1987), p. 579, (1992), p. 698, (1995), p. 698, (1997), p. 706.

Trade and investment relations with developing countries only account for a minor part of total German external economic relations. There seems to be a close correlation between the destination of exports and the host countries of German direct investment.[53] In 1997, 75.1% of German exports went to Western industrialized countries, with 74.3% of German imports originating from these.[54] As for (primary and secondary) direct investment, only 14.6% of total outflows went into developing countries and countries in transition in 1998.[55]



Source: DBbk (1998), pp. 20-25, and (1999), pp. 40-45.

This ratio has only slightly increased since 1993, above all due to the more favorable investment climate in Eastern Europe.[56] Among those, Hungary, the Czech Republic and Poland have become important destinations over the past few years. With regard to developing countries, most German direct

[52] Hübner (1998), p. 169.
[53] Hübner (1998), p. 265.
[54] IW (1998a), table 41.
[55] DBbk (1999), pp.40-45.
[56] DBbk (1998), pp.16-25.

investment has flowed into the Americas, with Brazil and Mexico being the most important locations by far. Asian developing economies accounted for about 30%, with Hong-Kong in first place and Malaysia and India coming in second and third. Less than 10% of German direct investment were made in Africa in 1996 and most of this went to South Africa.[57]

2. Main countries and regions

In general, market access is the main motivation for German foreign direct investment in OECD countries. The motives behind investment in developing countries and countries in transition are more varied. Nearly 60% of German direct investment into developing countries is made in Latin American economies of high spending power (such as Argentina, Brazil, and Mexico).

The Cayman Islands are of interest to German TNCs because of the favorable tax and investment regime.[58] With regard to Asia, Hong Kong and other fast developing economies account for the main share of German investment.

However, there is no indication that developing countries are gaining in importance as host countries for German TNCs. Although the risks arising from political instabilities in such countries have been considerably reduced by a multitude of bilateral investment treaties[59], the relatively low investment in developing countries is more pronounced for Germany than for other developed countries.[60]

Table 7: Most important non-OECD hosts to German investors

Countries in transition		Developing countries	
Country	**German outflows in DM million**	**Country**	**German outflows in DM million**
Hungary	6,242	Brazil	13,739
Czech Republic	5,241	Mexico	3,876
Poland	3,228	Cayman Islands	2,863
China	2,903	South Africa	2,700
Russia	1,073	Hong Kong	2,676
Slovakia	829	Argentine	2,543
Slovenia	338	Malaysia	1,514
Romania	210	India	1,076
Ukraine	204	Chile	850
Croatia	199	Columbia	725

Source: DBbk (1998), p. 18-25 (data referring to 1997).

[57] DBbk (1998), pp.16-25, and DBbk (1999), pp. 40-45.
[58] Hübner (1998), p. 268.
[59] IÖW (1998), p. 127.
[60] Hübner (1998), p. 268.

3. Main industries

As the economic structure of developing countries differs from that of industrialized countries, it is clear that there are also differences between the two with regard to the industry composition of foreign investment.

While the primary sector only was of importance in the 1960s, the industry composition today of German investments into developing countries is characterized by the following aspects:

- the share of the processing industry is outstanding (57.2% of direct investment in developing countries in comparison to 38.7% of total direct investment outflows),
- the share of automotive production is considerably greater (14.1% in comparison to 6.3%),
- the share of the chemical industry is also significantly greater (18.7% in comparison to 13.7%),
- the share of trade and repairs is smaller (10.5% in comparison to 15.6%),
- the share of banks is greater (14.2% in comparison to 10.2%), whereas other financial institutions and insurance companies are represented less (only 6.2% in comparison to 18.2%),
- the share of holdings is also smaller (2.5% in comparison to 6.0%).[61]

4. German programs to facilitate foreign direct investment

The Federal Government seeks to create a stable framework for German foreign direct investment. Therefore, Germany has signed 120 bilateral treaties (the vast majority of which has been with developing countries)[62] promoting and protecting foreign investment. These agreements grant comprehensive legal protection to investors in developing countries and countries in transition.[63]

What is a bilateral investment treaty?

The most important components of bilateral investment treaties (BITs) are:

- definitions of the concepts "capital investment", "yield on capital investment", and "party investing",
- warranty of national treatment and most favored nation treatment concerning investment,
- warranty of free transfer of capital and yield on capital investment,
- warranty of right of ownership, including compensation in terms of value in case of expropriation, and warranty of possible recourse to the courts,
- agreement on international arbitration in case of disputes between home country and host country. Source: BMWI (1999b)

The investment treaty between Germany and Pakistan dating from November 1959 was the first agreement of this kind worldwide.[64] Investment treaties facilitate the opening of new markets, especially to SMEs, and represent a necessary

[61] DBbk (1998), p. 40 and p. 45.
[62] IÖW (1998), p. 127.
[63] BMWI (1999b).
[64] IÖW (1998), p. 127.

prerequisite for Federal guarantees to protect German capital invested abroad against political risks.[65]

At the national level, there are in particular two institutions that offer grants to support foreign direct investment in developing countries, namely the German Society for Investment and Development (DEG) and the Reconstruction Loan Corporation (KfW).[66]

The German Society for Investment and Development (DEG) contributes to financing investment in developing countries and countries in transition by:

- participating with equity,
- granting long-term loans for which security is provided through the assets of the company in the host country,
- taking over risks arising from the possible insolvency of foreign governments.

In addition, the DEG advises companies on the planning and realization of investment projects.[67]

The Reconstruction Loan Corporation (KfW) promotes investment projects, in particular SME projects, through the following programs:

- A program for small to medium-sized business granting partial financing loans of up to 10 million DM at a favorable rate of interest; furthermore, they grant a partial indemnity against liability,
- BMZ's establishment and technology program granting loans of up to 2.5 million DM at a favorable rate of interest. The loans are paid out of federal budget funds to SMEs investing in developing countries,
- KfW's environmental program granting loans of up to 10 million DM at a favorable rate of interest for environmentally friendly investment.[68]

Besides the above-mentioned institutions, there are numerous other institutions offering advice and/or finance to companies willing to invest abroad:[69]

- Chambers of commerce and industry abroad (AHKn), delegate offices and German industry's agencies abroad,
- Federal agency for information on external trade (BfAI), supported by the Federal Ministry of Economics (BMWi),
- German Centres (DIHZ) situated abroad (supported by the Landeszentralbank, the main offices of the Bundesbank in the different Länder),
- C&L Deutsche Revision AG,
- Hermes Kreditversicherungs AG,

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[65] BMWI (1999b).
[66] BMWi (1999a).
[67] BMWI (1999a).
[68] BMWI (1999a) and BMWi (1997), p. 15, and BMWi (1998b),pp. 84-85.
[69] BMWi (1997a), pp. 7-9, and BMWi (1997b), p.p 2-14.

- Statistical Federal Office,
- Federal Office for Economics (BAW),
- Federal Export Office (BAFA),
- Federal Administration Office,
- Federal Office for Finance,
- Federal Cartel Office,
- German Patent Office,

The information offered to companies willing to invest abroad thus has to be gathered from a multitude of different institutions. This fragmentation of competent institutions is a serious obstacle, especially to SMEs.

d. German standpoints on trade and investment liberalization

Due to the outstanding importance of trade and investment for Germany, trade and investment liberalization is an important goal both for politicians and representatives of trade and industry. The Federal government stresses that it "supports the activities of those German companies that aim to open up and maintain foreign markets".[70] Deregulation of international trade and investment has been the objective of the various trade and investment agreements, which Germany has signed.[71] Whereas up to the 1970s, the demand for public control of TNCs was encouraged, nowadays direct investment is widely regarded as an essential impulse to economic development and job creation.[72] Nevertheless, growing outflows has given rise to concerns that Germany is losing its global competitiveness.[73]

Since World War II, Germany has constantly promoted European integration. In taking an active part in the OECD and WTO, Germany has, over the past few years, increased its commitment towards globalization, and argued that global free trade and international competition increase national wealth. Increasingly, business is encouraged to take up relations with developing countries despite the long time horizon such projects require.[74]

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[70] BMWi (1999d), p. 1.
[71] N.N. (1998c), p. 126.
[72] IÖW (1998), p. 11.
[73] Hübner (1998), p. 244.
[74] BMWi (1998b), pp.50-57.

Table 8: German trade relations with non-OECD countries

Year	Countries in transition		Developing countries	
	German imports in DM million	German exports in DM million	German imports in DM million	German exports in DM million
1980	17,493	19,399	69,557	51,723
1985	26,310	27,883	71,794	66,629
1990	29,601	27,475	66,193	65,040
1995	69,871	66,103	73,818	93,833
1997	83,298	94,925	91,523	109,728

Source: BMWi (1998a), p. 99-101 (data for 1997 are provisional).

Because of German history, political and business relations to Eastern Europe are more important than for other EU member states. Such trade relations have intensified over the past few decades.[75], and according to the German Foreign Office, there were about 20,000 joint ventures between German companies and Eastern European partners by 1997.[76]

All in all, Germany's economy is heavily dependent upon external business relations. In spite of vague fears that the unemployment rate will rise as a result, Germany continues to promote free trade. The government's press release on the coming into force of the agreement on financial services according to the 5th GATS (General Agreement on Trade in Services) protocol is a recent example of Germany's attitude towards liberalization: "The agreement obliges the 70 signatory states to open their markets among themselves (...). To German financial institutions (...), this agreement offers further opportunities for growth and employment. Open markets for financial services are moreover also of primary importance for investment and for the growth of global trade."[77]

e. Summary

German industry appears to have a strong orientation towards external trade and investment. Over the past few decades, foreign direct investment has increased and it is likely to become an important factor for German industry in the ongoing process of globalization. Despite efforts to improve Germany's attractiveness as an investment destination, direct investment inflows have declined. The long-term economic consequences of the fact that outflows clearly outweigh inflows are not yet clear. External trade and investment relations to developing countries remain on a low level. Generally, liberalization is regarded as positive for the German economy. It will depend upon the motives for foreign direct investment of German investors and the global framework conditions whether this assessment will be justified in the future.

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75 IW (1998a), table 41.
76 AA (1999).
77 BMWi (1999e).

III. Environmental regulation and TNCs

a. The nature of environmental regulation in Germany

1. The evolution of German environmental regulation

The first acts explicitly aimed at environmental protection were passed in the 1970s. The first German national environmental program was launched in 1971, following an ad-hoc program in 1970.[78] This phase of German environmental policy can be called "legislative" and it was followed by an "administrative" phase.[79] At present, the following tendencies can be observed:

- a tendency towards condensing and refining environmental regulation,
- a tendency towards ecological development in environmental regulation,
- a tendency towards harmonizing environmental regulation,
- a tendency towards applying "indirect strategies",
- a tendency towards promoting or adopting supra- and international strategies.[80]

Environmental regulation in Germany has three objectives:

- to ensure conditions fit for human beings and non-detrimental to their health,
- to protect soil, air and water as well as flora and fauna from harm due to human action,
- to reduce and eliminate existing environmental damage.

The underlying idea behind German environmental regulations is in accordance with the Rio declaration the principle of sustainability. It aims to ensure that options for the development of future generations and the diversity of wildlife species and eco-systems are kept open and enlarged.[81]

Three basic principles are applied in German environmental policy: the principle of precaution, the polluter-pays principle and the principle of co-operation. The latter means that the objectives of environmental policy should be integrated in other policy areas.[82] The protection of natural living conditions has become a national objective set out in the German Constitution.

Up to now, German environmental regulation has not been compiled in an Environmental Statute Book, although efforts have been made to counteract the

[78] Storm (1998), p. XI.
[79] Storm (1998), pp. XV-XVI.
[80] Storm (1998), pp. XVI-XXI.
[81] Storm (1998), p. XXi
[82] Storm (1998), pp. XIII-XIV.

fragmentation of German environmental legislation and its lack of coherence.[83] On the national level, there are some 30 laws relating to the environment.[84] Due to the German federal structure, legislative competence is divided between the Federal Government and the governments of the states (Länder), which can also pass acts on the environment.

The compilation of all environmental laws into one single Statue Book could enhance the enforcement of regulations.[85] A draft for such a compilation was drawn up by an expert committee between 1992 and 1997. Passing such a Statue Book is one of the objectives of Germany's new Federal government and its two governing parties, SPD (the Socialist Party for the Federal Republic of Germany) and Bündnis90/Die Grünen (the Green Party for the Federal Republic of Germany).[86] Germany's Federal Minister of Environment, Jürgen Trittin, expressed the opinion that this would be advantageous to trade and industry, as it would speed up bureaucratic procedures. However, he expects opposition to the Environmental Statue Book from other ministries.[87] All in all, it still remains a controversial issue whether a consolidation of environmental laws is actually possible.[88]

At present, the ecological tax reform proposed in the coalition agreement[89] of the new German government, is being debated.

2. Intensity of regulation

As mentioned above, German environmental regulation is continuously being condensed and refined; therefore, environmental law is constantly being made more concrete. On the one hand, this can have positive effects on industry, by adding to improved legal certainty.[90] On the other hand, the growing intensity of regulation might represent an environmental drawback. This can happen if the licensing process causes a delay in the application of modern technology with less environmental impact.[91]

According to the Heritage Foundation in Washington, Germany's economy is regulated more intensely than that of any other industrialized country. This statement concerns labor law, environmental regulation as well as stipulations on consumer protection and health.[92] The German industry has often criticized this regulatory situation. A member of the Viag AG board (a large German group mainly concerned with energy, telecommunications, aluminium, packaging and chemicals) recently pointed out that there are more than 10,000 different laws, regulations and administrative stipulations in Germany, creating an enormous intensity of regulation. He stated that this leads to inefficiency and to problems for SMEs in coping with the

[83] Battis (1992), p. 171, and Storm (1998), p. XV.
[84] Storm (1998), p. XV.
[85] Storm (1998), p. XIX.
[86] Bundesregierung (1999a), p. 1.
[87] BUND (1999b).
[88] Schmidt (1998), p. 277.
[89] SPD (1999), pp. 11-12.
[90] Blazejczak et al. (1993), p. 71.
[91] Storm (1998), p. XVI.
[92] IW (1998b), p. 4.

legal aspects of environmental protection and he called for a wider use of the cooperation principle.[93]

3. Regulation in particular sectors of interest

In the early years of environmental regulation, protection against environmental risks and precautions against environmental damage were central objectives. In the 1980s and especially in the aftermath of German unification, the problem of contaminated sites became the focus of public attention.[94] High costs for German industry arose in particular from the air pollution laws. This led to concerns that German industry would avoid those standards by relocating industrial plants to countries with less stringent environmental laws.

Environmental agreements as a new instrument for environmental protection?

In Germany, deregulation is a commonly discussed topic. Deregulation is often proposed in reaction to the growing intensity of regulation. Commitments undertaken voluntarily by industry are chiefly discussed as alternative means for the protection of the climate and with regard to waste management, but also for the prevention of water pollution. In most cases where there are such environmental commitments, industry itself sets the environmental objectives it wants to fulfil. Political decision-makers and administrative authorities then approve these commitments informally and renounce more restrictive legal measures which would involve higher costs for industry. Such agreements are based on the assumption that they lead to relatively fast achievement of the stated objectives while minimizing the costs of achieving them.

Since the 1970s, more than 80 such environmental agreements have been concluded, most of them involving just one industry; in many cases the chemical industry. Yet the question of whether this instrument is also ecologically efficient remains a highly controversial issue. *Source: IW (1999).*

As an example of an environmental regulation from the 1990s which had considerable effects on cost structure of the German industry can be mentioned the act on waste management (the so-called Kreislaufwirtschafts- und Abfallgesetz, abbreviated hitherto as ”KrW-/AbfG”), which was passed in 1994.

- The waste management act existing before 1994 was based on the following characteristics:
- There were three concepts of ”waste”, a subjective, an objective and an extended one.
- The regional administrative bodies were in charge of waste disposal.
- Waste prevention took no explicit precedence over waste disposal.
- Recycling was preferred in cases where it was possible and reasonable from an economic point of view and where secondary markets existed.

Instruments applied were administrative (labeling obligations, production restrictions, regulation of plant operations) or economic (waste fees imposed by regional administrative bodies, imposed deposit fee systems).

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[93] Schürmann (1998), p. 30.
[94] Storm (1998), p. XV.

Table 9: Pollution abatement investment in German industry (in million DM)

Year	Waste management	Wastewater treatment	Noise reduction	Air pollution prevention
1975	290	1.530	340	2.160
1980	300	1,280	340	1,840
1985	390	1,270	310	4,410
1990	860	2,080	310	4,280
1994	620	1,370	180	2,310

Source: IW (1998a), table 105.

The new act from 1994 aims to save natural resources and dispose of waste in an environmentally friendly way. The underlying concept of waste is an extended one, i.e. all movables which the respective owner wants to dispose of, or is obliged to dispose of, are included in this concept The new act explicitly states the precedence of prevention over recycling and disposal. Exceptions are possible, if dictated by considerations on technical feasibility, environmental protection and economic reasonableness. The concept of recycling is not restricted to physical recycling, but also includes energetic recycling. It is decided from case to case which of these possibilities will be applied, depending on the respective environmental impact.

The manufacturers' product liability has been extended in the act and they are now obliged to:

- produce re-usable, long-lasting goods which can be disposed of in an environmentally friendly way,
- give priority to recycled waste and secondary resources as input factors,
- label products containing contaminants in order to ensure their proper disposal,
- take back their products after use and to dispose of them in an environmentally friendly manner.

After the KrW-/AbfG was passed several product-related agreements within particular industries came into force, for example concerning vehicles and batteries as well as electrical appliances. In some cases, industry tried to prevent a binding regulation by committing themselves to voluntary agreements, in other cases they sought to ease the financial consequences of the act.

The regulation on end-of-life vehicles

In 1992, the car industry faced the threat of drastic waste measures by the federal government. In 1995 after intensive discussions, a "Voluntary Commitment to enter into the recycling economy" was signed by the car industry. According to the draft bill, the manufacturers would have had to pay for the disposal of old disused cars, whereas the industry's proposal intended to charge the last owner for these costs. In 1996, after some modifications, the automotive industry's proposal was adopted.

Germany's involvement in environmental protection can be illustrated by the fact that German companies lead in certifications according to the Environmental Management Audit Scheme (EMAS). Three out of four companies that have participated in this voluntary scheme are situated in Germany. In the European Union, all in all more than 1,500 facilities have been certified so far.[95]

b. Environmental concerns related to FDI in developing countries

1. Loss of competitiveness and industrial flight

The German Federal Environmental Agency has drawn up the table displayed on the next page to contrast possible negative and positive environmental effects of globalization.

Table 10: Possible environmental effects of globalization

Arguments referring to environmental effects of globalization	
Possible negative effects on the environment	**Possible positive effects on the environment**
lowering of social and ecological standards in consequence of the increasing competition (pollution haven hypothesis)	tendency towards a harmonization of environmental standards
more and more relocations of production into countries with low environmental standards (industrial flight hypothesis)	more efficient resource use
increased global economic growth	increase in product competition
increase in international flows of transportation	
accelerated development of regions with a low density of population	abolition of subsidies detrimental to the environment

Source: UBA (1997), p. 128.

Empirically, the industrial flight hypothesis and the pollution haven hypothesis have been refuted by various studies;[96] only a few studies, however, directly refer to German direct investment and the majority of those studies were carried out in the 1970s or the early 1980s.

Among the first German studies examining the industrial flight hypothesis was Knödgen (1979, 1982). Her findings based on a survey of 150 German companies suggest that environmental regulation played a minor role in the companies' decisions to invest abroad. Most companies assume that differences in environmental regulation will disappear in the course of time.[97] Another study from the late 1970s, which aimed at ascertaining the differences in motives between German direct investment outflows and inflows into Germany, concluded that environmental control costs had no effect on investment decisions. The study was based on interviews with 1,199 affiliate companies of 42 TNCs.[98] Other studies

[95] IW (1998d).
[96] e.g. Leonard (1984 and 1988).
[97] Knödgen (1979 and 1982).
[98] Jungnickel/Krägenau (1977).

from the 1970s and 1980s also reached the conclusion that environmental regulation is not an essential factor in the investment decisions of German TNCs.[99]

More recent surveys indicate that the conclusion of former studies are still valid. In a 1996 survey conducted by the German economic research institute IW it was found that host countries' lower environmental standards were the least important criterion for German companies' investment decision.[100] This can be explained along the line of Sorsa (1994), who argues that during the period from 1970 to 1990, Germany seems to have been successful in maintaining the international competitiveness of its environmentally sensitive industries in spite of increased expenditure due to environmental regulation. According to Sorsa's study, other factors are likely to have exerted more influence upon trade patterns. Trade statistics do not reveal a significant correlation between higher environmental standards and the competitiveness in environmentally sensitive goods.[101] On the contrary, "chemicals and metals industries have the highest environmental control expenditure in manufacturing in Germany, yet it has maintained its comparative advantage in these industries and it has lost markets in others"[102], for example fertilizers. Sorsa ascribes this in part to private benefits resulting from higher environmental standards, for example through the development of new markets. According to Sorsa, environment-related investments account for close to 10% of total industrial investment in many German sectors.[103]

Based on interviews and a press scan, Walter concludes that there is "no great amount of evidence" of industrial relocation internationally for environmental reasons.[104] Bayer, Hoechst, Veba and BASF are quoted as examples of companies that looked for alternative sites abroad after having had difficulties obtaining construction and operating licenses for new plants in Germany. This is mainly attributed to delays in obtaining official authorization rather than environmental regulation. Moreover, the companies mentioned above did not turn to developing countries, but to other highly developed OECD countries, in particular to Belgium.[105]

In a study designed to test the hypothesis that strict local environmental regulation induces investment abroad, Bouman developed a model that describes a company's decision on the location of capital. Referring to short-term reactions within the German manufacturing sector, the regressions in most cases reveal that abatement costs do have an effect on capital outflow which significantly differs from zero, but nevertheless is rather small.[106]

Blazejczak et al. (1993) examined the attractiveness of Germany as an investment location, by analyzing direct investment flows in the 1980s. The influence exerted by environment-related aspects on industrial location is considered to be

[99] Baumann (1977) and Halbach (1980).
[100] IW (1996), p. 5.
[101] Sorsa (1994), p. 29.
[102] Sorsa (1994), p. 10.
[103] Sorsa (1994), p. 24.
[104] Walter (1982), p. 89.
[105] Walter (1982), p. 92.
[106] Bouman (1998), p. 65.

relatively small.[107] Instead of a locational disadvantage, Germany is even judged to have a comparative advantage in the production of goods that aim to protect the environment.[108]

Empirical research thus indicates that a stringent environmental regulation does not necessarily impair a country's international competitiveness. In some cases, even a positive correlation between environmental regulation and industry location seemed evident. This suggests that international competitiveness cannot be significantly raised by lowering environmental standards.

Overall, empirical evidence indicates that German foreign direct investment is triggered by market access and only rarely by environmental costs. In cases where production relocation has to be attributed to cost aspects, wages and the tax burden seem to be at the fore and environmental costs only play a minor role.[109]

2. Corporate conduct in developing countries

Yet, despite the above-mentioned results, it remains unclear whether TNCs promote high environmental standards by applying equal criteria at all their sites or whether they take advantage of legal differences between the different countries.

As far as German companies are concerned, only little research in this particular field has been conducted so far. Many companies publicly state their commitment to sustainable development and stress that environmental protection does not necessarily conflict with globalization. Some company representatives even talk of "comprehensive responsibility"[110], but it appears that a global application of German standards takes place only in rare cases.

[107] Blazejczak et al. (1993), p. 21.
[108] Blazejczak et al. (1993), p. 173-174.
[109] IW (1995), p. 5.
[110] Deckstein (1998).

Boehringer-Ingelheim GmbH – worldwide environmental policy

By their own account, Boehringer-Ingelheim bases environmental protection measures on the principle of precaution in accordance with scientific principles, the state of technology and environmental legislation. All employees are required to regard environmental protection as their objective and to ensure legal compliance. Company guidelines or regulations which go beyond legal rules must also be observed.

The company's environmental policy is based on the concept of sustainable development and the guiding principles of the chemicals industry's Responsible Care program. Boehringer-Ingelheim spends about 70 million DM per annum on its Environmental Protection and Safety management system. Capital investment in this field represents about 9% of corporate total capital expenditure.

Boehringer-Ingelheim's worldwide environmental protection activities are coordinated by the Environmental Protection Committee.[1] They reported that they decided at a very early stage to apply standard principles both in the home country and in other countries where they operate plants, thus meeting the recommendations of UNCED. In 1995, the company drew up an input/output inventory to measure energy and material flows into and out of all sites worldwide.

Sources: UNCTAD (1993), p.20ff,; Boehringer-Ingelheim (1999a, 1999b, 1999c)

Worldwide commitments by other German multinationals

BSH Bosch und Siemens Hausgeräte GmbH is a group with 35 industrial locations all over the world and all in all 33,000 employees. This company included environmental protection in its corporate objectives in 1989 and fixed an internationally standardized environmental policy in 1994.[1] BSH banned CFCs Europe-wide in 1994. For 1999, the group is planning to renounce these chemical substances at their sites in China and Brazil.

Wella, a large German group in the cosmetics sector, has fixed in environmental guidelines that "the integration of environmental protection into all corporate activities"[1] is regarded as indispensable. The guidelines are worldwide binding, but do not state clearly defined measures. Affiliate companies of Wella can be found in 123 different countries.

Sources: BSH (1998), p.20, Deckstein (1998), Wella (1998).

c. Summary

Three important conclusions can be drawn from the above analysis. First, although German environmental regulation is intense, there is no evidence that strict environmental standards lower Germany's competitiveness. Second, for most companies and industries, (lower) environmental standards are not a relevant factor in the site selection process. Third, although several German TNCs have stepped up their efforts towards high environmental performance worldwide, it is not clear how widespread such practices are.

IV. The political economy of TNCs and the environment

a. German initiatives on environment and development issues in general

The BMZ (Federal Ministry of Economic Cooperation) states in its concept of development assistance that cooperation with developing countries is of growing importance to Germany as it contributes to make the future of all human beings more secure and as projects and programs have effects on the overall situation of German trade and industry and on employment in Germany.[111] Germany's assistance to developing countries has three main objectives: to combat poverty, to protect the environment and natural resources, and to improve education and professional training.[112] Germany's new Federal government has enhanced the status of the BMZ by increasing its authority.[113] Within the next few years, the budget is to be raised continuously.[114] German official development assistance has continuously decreased over the past few years. In 1997, ODA had dwindled to 0.28% of GNP. This ratio of ODA to GNP exceeds the shrinking OECD average (0.22%) but falls below EU average (0.33%).[115] It has to be noted though that in the mid-1980s, German ODA was 0.45% of GNP.[116] The new Federal government also expresses commitment to integrating development and ecological objectives into the criteria which the IMF and the World Bank apply.[117]

Germany considers world conferences a very useful policy instrument for tackling global problems.[118] By signing various binding environmental agreements (such as the Montreal Protocol on Substances that Deplete the Ozone Layer in 1987, the United Nations Framework Convention on Climate Change and the Convention on Biodiversity in 1992 and the Convention to Combat Desertification in 1994), Germany has joined a new generation of international agreements dealing with global environmental problems and aiming at sustainable development. Germany has offered assistance to developing countries to put the conventions into action.[119] Debt for nature swaps is another instrument to promote environmental protection in developing countries adopted by Germany and relevant bilateral agreements have been made, for example with Ecuador and Bolivia.[120]

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[111] BMZ (1996), p. 2.
[112] BMZ (1996), p. 5.
[113] Wieczorek-Zeul (1999), p. 1.
[114] BMZ (1999b), p. 1.
[115] BMAA (1999).
[116] UNDP (1998), p. 196.
[117] SPD (1999), p. 90.
[118] BMZ (1997a), pp. 15-16.
[119] BMZ (1995), p. 39.
[120] BMZ (1995), p. 83.

1. Germany and MEAs

There are, several examples of German leadership with regard to its international environmental commitment. For example, the establishment of the Global Environmental Facility (GEF) can be attributed to a Franco-German initiative. This fund, which is administrated by the World Bank, UNDP and UNEP, was created in connection with the Rio UNCED conference in 1992 to finance poor countries' efforts to contribute to global environmental protection. Germany also took an active part in the GEF restructuring in 1994.[121] At present, about 10% of the GEF resources are provided by Germany.[122]

Both Germany's environmental policy and development aid are governed in coherence with the concept of Sustainable Development and Germany has accepted the principles stated in the Rio Declaration and Agenda 21. The Montreal Protocol on Substances that Deplete the Ozone Layer was actively supported by Germany as a member of the Executive Committee of the Montreal Fund. Germany has ratified the Convention to Combat Desertification as well as the United Nations Framework Convention on Climate Change (UNFCCC) and the Convention on Biodiversity.[123] In order to accelerate the implementation of measures fixed by the latter, Germany has offered its support to developing countries. Up to 1995, 5 million DM of technical assistance had been provided to developing countries for this purpose.[124]

Germany participated in the preparations of the 3rd conference of signatories to the UNFCCC in Kyoto in 1997. The Protocol passed binding obligations for the reduction of emissions of greenhouse gases in industrialized countries.[125] The 4th conference of signatories in Buenos Aires in 1998 dealt with the details of the implementation of "flexibility" mechanisms ensuring emissions trading, but the results achieved were only modest.[126] It can be assumed though that a process has been initiated to transfer emission-prevention technology to developing countries.[127]

Germany's share in the fund set up in accordance with the Montreal Protocol amounted to more than 10% in May 1998.[128] Recently, the new Federal Government has allocated 2 million DM in addition to the 64.4 million DM already allocated.[129] For the implementation of the UNFCCC in developing countries, Germany provided 10 million DM on a voluntary basis.[130]

In spite of high environmental awareness, not everyone agrees that German environmental performance is optimal. Critics of Germany's environmental performance draw among other things attention to following weaknesses:[131]

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[121] BMZ (1995), p. 39.
[122] BMZ (1999c), p. 1.
[123] BMZ (1995), p. 41.
[124] BMZ (1995), p. 42.
[125] UBA (1999b).
[126] WWF (1999) and N.N. (1999a).
[127] SRW (1998), ref. no. 483.
[128] BMZ (1998a), p. 178.
[129] Wieczorek-Zeul (1999), p. 3.
[130] BMZ (1995), p. 41.
[131] Mies (1999), pp. 2-3.

- the reduction of carbon dioxide emissions according to the UN Framework Convention on Climate Change was delayed,
- the introduction of taxes on carbon dioxide emissions was put off in anticipation of EU taxation,
- the traffic sector was ignored in the national program on climate protection in order not to harm Germany's automotive industry,
- programs promoting alternative energy sources were phased out.

2. German environmental assistance to developing countries

Germany advocates the integration of the environmental dimension into the different policy fields, the promotion of specific programs and projects on environmental protection in partner countries, and the combat of global environmental risks by means of development policy.[132] The BMZ regards the protection of the natural basis for life in accordance with agenda 21 as being equally important as economic efficiency. All German development assistance projects are subject to an environmental impact assessment.[133]

Table 11: German development assistance commitments

	1996 (actual value)		1997 (target value)		1998 (target value)	
	DM million	per cent	DM million	per cent	DM million	per cent
Total assistance commitments	3,910.8	(100.0%)	3,965.0	(100.0%)	3,445.0	(100.0%)
Share allocated for environmental objectives in general	1,023.5	(26.5%)	1,094.5	(30.6%)	819.9	(9.6%)
Share allocated for rain forest protection in particular	222.9	(5,8%)	261.5	(7.3%)	261.3	(8.8%)

Source: BMZ (1998a), p. 222.

[132] BMZ (1997a), pp. 5-6.
[133] BMZ (1998b), p. 45.

Table 12: German ODA projects dealing with the protection of the rain forest

Project description	Funds have been granted since	Volume of funds granted since in DM million
Project-related forestry measures	1985	4.1
Support of international programs on rain forests	1988	17.7
Promotion of research on rain forests	1989	10.7
Program on the extension of development assistance with regard to rain forest ecology	1990	11.9
Safeguarding of rain forest reserves	1991	7.4
Translating the Convention on Biodiversity into action	1993	8.5
Practical test of the sustainability criteria for forestry	1994	1.7
Development of a concept for the promotion of agricultural undertakings in areas bordering on tropical reserves	1995	2.2

Source: BMZ (1997b), p. 28.

The number of projects dealing with biodiversity has risen considerably since the Rio Conference and amounted to more than 150 in 1997. The BMZ allocated about 1.5 billion DM for such projects.[134] Projects to combat desertification have been subsidized by German development assistance since the mid 1980s. In 1997, the volume of funds spent on such projects by the BMZ amounted to almost 2.3 billion DM.[135] Further funds are provided by the BMZ for projects which aim at integrating environmental aspects into agriculture, water and energy supply and distribution, and sustainable urban development.[136]

[134] BMZ (1997a), p. 44.
[135] BMZ (1997a), p. 56.
[136] BMZ (1997a), pp. 60-83.

b. Initiatives directly targeting business

1. German standpoints on international environmental agreements

The new German Federal government stated in the coalition agreement between the two governing parties that "Germany will support demanding environmental objectives in international environmental agreements" and advocates international agreements to prevent environmental dumping.[137]

According to the Kyoto Protocol, the European Union has committed itself to an 8% reduction in greenhouse gas emissions (basis: 1990 or 1995 respectively) up to the period 2008-2012.[138] Germany's share of carbon dioxide emissions amounted to 4.1% in 1995. The emissions fell between 1990 and 1995 from 982 to 884 million tons, and reductions achieved so far are primarily the result of the restructuring of East Germany's industry and the decrease in brown-coal combustion in the aftermath of German unification.[139]. Germany's new Federal government has expressed the will to reduce carbon dioxide emissions by 25% with reference to 1990 by 2005.[140] However, such a reduction is likely to have serious repercussions on the overall economic development.[141]

2. German views on integrating the environment into trade and investment agreements

The new Federal government has expressed the will to promote the implementation of environmental standards worldwide. The Federal minister of development assistance declared that: " By contributing to a more marked integration of social and ecological criteria into multilateral trade agreements, we contribute effectively to the shaping of global economic relations according to the spirit of sustainable development. Such economic relations are useful to both the developing countries and to us."[142] The new Federal government is committed to the international promotion not only of environmentally friendly products, but also of environmentally friendly production processes.[143]

The public debate in Germany on a Multinational Agreement on Investment (MAI) was highly controversial. The MAI aimed at creating a liberal investment regime which would take binding effect internationally, however it failed and currently the WTO is considering whether it should initiate negotiations on an investment agreement. In that regard, the new Federal government states in the coalition agreement that ecological and social criteria should be integrated into international economic regimes such as WTO, and not solely be left to national

[137] Bundesregierung (1999a), p. 3.
[138] UBA/Statisches Bundesamt (1998), p. 19.
[139] UBA/Statistisches Bundesamt (1998), p. 20.
[140] Bundesregierung (1999b), p. 1.
[141] IW (1998c).
[142] BMZ (1999a), p. 1.
[143] BMZ (1999a), p. 1.

legislative bodies to stipulate ecological and social standards for investment and trade.[144]

The German trade unions' standpoint on MAI

According to a statement on the MAI issued by the German Trade Union Federation (DGB),[145] the Federation and its member trade unions support the numerous efforts of TUAC and IBFG for a qualitative amendment to the MAI draft and a provision for social and environmental standards.

The DGB demands among other things

- the integration into the MAI of a provision which prevents the other MAI statements from being interpreted or applied in a way that obstructs, even if only indirectly, the maintenance or the further development of labor, social and environmental standards on a national, regional or international level;
- the integration of the OECD Guidelines for Multinational Corporations into the MAI;
- the creation of a national authority for supervision and arbitration ensuring the observance of the OECD Guidelines and the social and environmental standards which are to be integrated into the MAI and international control through the ILO and the OECD;
- a binding clause interdicting governments to offer a lowering or an abolition of labor, social and environmental standards as an investment incentive;
- a provision ensuring that existing and future social and environmental standards on the EU level be unaffected by the MAI.

The DGB criticizes the one-sided orientation of TNCs' interests in the MAI draft and fears that developing countries will have to enter into the MAI to maintain their attractiveness for FDI, which would force them to revoke even retrospectively ("roll-back-principle") possible national legal stipulations aimed at promoting their industrial development, the rights of original inhabitants or the protection of national natural resources and the national environment.

The DGB, however, acknowledges the great opportunity for specifying binding social standards which an international agreement on investment would offer.

The DGB stresses the importance of internationally binding regulations by which governments are committed to force TNCs to apply the same standards in the host country as in the home country, given that the latter are more demanding than the former.

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144 SPD (1999), pp. 90-91.
145 DGB (1998).

The German Industry's standpoint on MAI

The Federal Association of German Industry (BDI) has a positive attitude towards direct investment and to the MAI. Due to its heavy investments abroad, German industry has a special interest in the success of the negotiations.[146] For them, an international agreement should provide as much liberalization as possible. Among the positive effects of a MAI the BDI appreciates the greater legal certainty for investors, the high level of investment protection, the identical treatment of national and foreign investors, and the introduction of new measures in favor of more liberalization.[147]

The BDI objects to including the OECD Guidelines for Multinational Enterprises into the MAI, as the mixing of voluntary guidelines and binding provisions would, in their view, only confuse investors.[148] The BDI approves of "indicating in the MAI preamble that investors should pay as much attention to environmental protection as possible", but it fears that individual countries will restrict foreign investment under the pretext of ecological considerations. In the BDI's opinion, this would be tantamount to protectionism.[149]

The BDI had the opportunity to lobby at an early date, participating in a working group concerned with the MAI and established by the German Federal Ministry of Economics in 1995. NGOs were, in contrast, not represented.[150]

Whereas an internationally binding regime for investment is advocated in principle by German authorities and German business and trade, NGOs in particular have criticized the lack of social and environmental provisions in the draft.

The German NGOs standpoint on MAI

In an open letter, numerous German NGOs (for example the BUND, i.e. the German section of Friends of the Earth, and WWF Germany) addressed the Federal government as well as Bundestag and Bundesrat, criticizing the general orientation of the MAI and in particular the lack of binding regulations on social and environmental standards. In this letter, the Federal government was asked to put a stop to the MAI for the time being so that probable effects could be thoroughly analyzed and discussed in public. The exclusion of LDCs was disapproved of, and *Bundesrat* and *Bundestag* were called upon not to ratify the MAI in its at the time draft version.[151] In November 1998, another open letter followed, signed by more than 60 German NGOs. In this letter, Germany was encouraged to take France as an example and abandon the OECD negotiations.[152] The BUND emphasized that more importance should be attached to the well-being of human beings than to the power of TNCs.[153]

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[146] BDI (1997).
[147] IÖW (1998), pp. 86-87.
[148] IÖW (1998), p. 88.
[149] Kaiser (1998), p. 3.
[150] WEED (1998), p. 31.
[151] IÖW (1998), pp. 91-92.
[152] WEED (1999), p. 1.
[153] BUND (1999a).

In 1998, at many universities, for example in Berlin, Bochum and Regensburg,[154] students formed discussion groups on the MAI and its effects and organized demonstrations against the draft.

German NGOs highly recommend the convocation of a "World Conference on Investment and Sustainable Development" to ensure that all countries, in particular developing countries, participate in the elaboration of the MAI with equal rights.[155]

The joint international NGO statement on the MAI, describing the MAI draft as "unacceptable" was signed by the following German organizations:[156]

- Forum Umwelt und Entwicklung (Forum Environment and Development),
- Naturschutzbund Deutschland (German Nature Conservation Federation),
- WEED (World Economy, Ecology & Development Association);
- later also by GERMANWATCH.

To sum up the arguments, German NGOs in general fear that the environmental consequences of trade and investment liberalization result in, an increase in the overexploitation of natural resources, that higher environmental standards will be impeded due to the so-called standstill principle, and that environmental laws will be thrown overboard if an agreement such as MAI will be passed.[157]

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154 FU Berlin (1999), p. 1.
155 WEED (1998), pp. 34-35.
156 Germanwatch (1999), p. 5.
157 WEED (1998), p. 22.

3. Germany's use of environmental development assistance to improve corporate performance

As a prerequisite for efficient and environment-oriented business activities, the BMZ considers framework conditions to be essential for promoting investment and liberalizing trade.[158] Globalization is judged to be "a chance and a challenge" for development cooperation.[159]

How to improve corporate conduct
– measures applied within Germany's development assistance

Since Rio, German development assistance has resorted to various instruments in order to improve corporate environmental performance.[1]

In 1996, a pilot scheme on the promotion of environmentally orientated management (called P3U) was launched. This project addresses SMEs in developing countries, as these are contributing to a considerable extent to environmental damage in view of their large number and the out-dated technology they often use.

Another project aims at establishing a regional association to reduce environmental damage caused by SMEs in East and South East Asia.

In the framework of German technical development cooperation, 13 detailed case-studies on industrial environmental protection were drawn up by the International Network for Environmental Management (INEM).

In cooperation with German Chambers of commerce and industry abroad, foreign institutions and consultants, the DEG analyzes and promotes the introduction of modern environmental technology in several Asian countries as well as in Turkey and Zimbabwe. Moreover DEG offers advice to companies investing in developing countries.

More than 2.8 billion DM has been spent on financing environmental investment in developing countries. The focus is put on grants for SMEs, flue gas desulphurization plants and modernization of power plants as well as on regenerative energy resources and environmentally friendly short-distance traffic systems.

Through the Chambers of commerce and industry, SMEs are advised with regard to the efficient use of energy and water etc.

The BMZ supports the establishment of auditing institutions and the training of auditors in environmental management according to ISO or EMAS standards.

Special lines of credit for environmental investment are granted.

The Carl-Duisberg-Gesellschaft (CDG), a German non-profit organization, contributes to enhancing the training of foreign specialists and executives by imparting environmental management concepts to representatives of private companies in developing countries.

4. German rules and regulations for foreign investors

As mentioned above, the conclusion of numerous bilateral investment treaties has contributed to creating legal certainty for German foreign direct investment abroad and for foreign direct investment in Germany. There is no specific FDI regime in Germany[160]and an international regime for investment has not yet been put into force. As a result, besides the BITs there are only voluntary guidelines for the

[158] BMZ (1997a), p. 21.
[159] BMZ (1998b), p. 1
[160] UNCTAD (1998), p. 56.

conduct of German TNCs in host countries, in particular the OECD Guidelines for Multinational Enterprises.[161]

Thus, Germany has adopted the OECD voluntary guidelines for Multinational Enterprises. These include a chapter on the environment, demanding MNEs to take "due account of the need to protect the environment and avoid creating environmentally related health problems". In Germany, companies do not tend to publicly promote their adherence to these principles, but in some respects, many of them comply with the guidelines by "providing information regarding the potential impacts on the environmental and environmentally related health risks" caused through them, "introducing a system of environmental protection at the level of the enterprise as a whole including, where appropriate, the use of environmental auditing" etc.[162]

Some German NGOs have signed a code of conduct for TNCs called "ICFTU/ITS Basic Code of Labour Practice",[163] but in this, no reference to environmental issues is made.

Only in rare cases have German-based TNCs adopted a code of conduct for themselves or agreed to a code of conduct elaborated by NGOs. In the codes of conduct already drawn up, environmental concerns are not at the fore.[164] It does not seem likely that a general code of conduct will be adopted by German industry in the near future unless it is driven by internationally binding regulations.

Corporate conduct – code of conduct by the German mail-order company Otto

In early 1997, Otto, a large German-based mail-order company, established a code of conduct including stipulations on child labor, minimum wages and waste products being dumped in water. They integrated clauses into their contracts, demanding particular requirements with regard to the use of chemical substances. Otto carries out a kind of audit when starting to cooperate with a company. Suppliers are called upon to comply with local legislation. In the past, violation of these conditions has led to the termination of the business contract.

Source: N.N.(1999)

c. Summary

Germany can be regarded as a proponent of MEAs and she directs a considerable part of development assistance to projects which aim at environmental protection. However, German TNCs' corporate conduct in developing countries is not a topic of particular interest to the German population. There are neither binding regulations for cross-national investment nor generally accepted rules. However, quite a few initiatives for development cooperation can be given as examples of how Germany is trying to provide incentives for appropriate corporate conduct. Up to now, German companies have not made serious efforts towards developing general guidelines for environmental and labor standards to be applied in developing countries.

[161] IÖW (1998), p. 49.
[162] Lillerud (1998), p. 5.
[163] N.N. (1999b).
[164] N.N. (1999).

V. Conclusion

External trade and foreign direct investment are central to the German economy. Foreign direct investment in particular is likely to become more important for Germany's industry. Therefore, it is not surprising that both the German government and the representatives of trade and industry agree on the further promotion of free trade and on international agreements on investment to provide favorable conditions for external economic relations.

However, environmental concerns also rank prominently on the political agenda. Protection against environmental risks, prevention of environmental damage and the restructuring of the economy towards sustainable development are also important goals not to be undermined by the liberalization of trade and foreign direct investment. Germany has shown its commitment to the settlement of global environmental problems by actively participating in numerous multilateral environmental agreements and by providing a considerable share to ODA to developing countries which seek to improve their environmental performance.

The conflicts between the economic and environmental objectives that might come into existence are intensively debated in Germany. Important topics in the debate are, for example, whether environmental regulations can be further tightened without creating economic distress, whether TNCs help or hinder the transfer of environmentally sound technology to developing countries and whether international agreements are necessary to incorporate environmental concerns into international trade and investment. Based on the studies surveyed in the previous sections, several conclusions can be drawn: *First*, although German environmental regulation is intense, there is no evidence that strict environmental standards lower Germany's competitiveness. The increased openness of the German economy did not lead to industrial flight of companies along a wide front. *Second*, for most companies and industries, (lower) environmental standards are not a relevant factor in the site selection process. Fears that FDI might lead to a "race to the bottom" or a general lowering of environmental standards cannot be supported by the empirical studies. *Third,* empirical studies of TNC's efforts concerning international environmental performance are virtually non-existent. A major challenge in regard to examining how German TNCs integrate environmental considerations thus remains.

Annex I: Total German FDI listed by regions and countries

DM million	1986	1987	1988	1989	1990	1991
Belgium-Luxembourg	676	796	1,311	2,986	5,253	4,675
United Kingdom	1,325	1,105	1,649	5,261	6,040	3,063
Switzerland	849	393	952	303	2,372	1,344
France	884	1,098	1,043	2,578	2,316	5,272
Italy	1,367	627	1,229	753	1,599	1,274
Netherlands	2,259	664	1,036	1,742	3,752	2,256
Denmark	60	82	82	88	125	154
USA	10,977	8,385	9,844	6,441	5,342	5,059
Japan	253	169	268	358	677	523
EU	8,651	5,650	8,533	17,659	26,760	27,766
OECD	21,915	16,052	20,751	27,400	37,738	36,380
Non-OECD	-33	1,344	472	1,065	772	1520
NAFTA	11,709	9,296	10,390	7,759	7,301	5,852
ASEAN countries	76	56	144	-35	140	222
World	21,884	17,399	21,227	28,539	38,726	39,191
Africa	-216	176	88	114	138	-56
Latin America, Caribbean*	-99	730	-93	557	341	1,321
Near & Middle East	103	170	143	149	47	19
Asian countries*	269	224	432	233	333	648

DM million	1992	1993	1994	1995	1996	1997
Belgium-Luxembourg	6,865	4,767	1,381	2,835	1,285	8,145
United Kingdom	3,765	1,852	3,948	10,624	6,733	4,808
Switzerland	1,359	910	1,456	1,807	863	4,546
France	3,081	1,887	2,091	4,890	1,401	4,713
Italy	1,170	1,134	782	3,464	1,262	3,096
Netherlands	2,370	4,009	1,777	8,211	-369	1,944
Denmark	689	-284	19	1,091	648	298
USA	3,148	1,569	4,266	6,748	9,497	13,533
Japan	326	69	651	513	2,421	-238
EU	21,885	18,273	14,560	34,606	20,458	24,957
OECD	29,115	22,677	22,832	45,778	34,883	46,410
Non-OECD	1,474	2,903	5,050	9,810	9,584	11,100
NAFTA	3,574	731	4,701	6,862	9,162	15,880
ASEAN countries	285	189	634	1,647	1,228	990
World	30,499	25,324	27,882	55,588	44,467	57,510
Africa	427	358	-98	334	539	153
Latin America, Caribbean*	295	822	1,678	3,165	1,552	3,326
Near & Middle East	56	418	-394	417	-352	579
Asian countries*	452	753	1,690	2,767	3,444	2,680

* = Excluding countries recorded under the OECD area.

Source: OECD (1998), p. 139-140 (provisional data for 1997).

Annex II: German FDI in China, Malaysia and India

Introduction

More than half of German FDI which did not flow into OECD member states went into Asian countries, above all China. This can basically be explained by the fast economic growth of many South East Asian countries over the past 10 years.

The financial crisis affecting a number of East and South East Asian economies can be given as a reason for the smaller increase in FDI in Asia and the Pacific in 1997 in comparison to former years. Still, FDI rose by about 8% in 1997.[165]

In these countries, the balance of payments has deteriorated in recent years. One reason for this is that FDI are interpreted as capital imports. As they often serve to expand and modernize the existing production capacities, in many cases they lead to further imports, especially of modern technology. A deficit in the balance of payment puts the investors into a state of uncertainty and thus may slow down the process of economic expansion. The deceleration of economic growth which has been observed in South East Asia since 1995 has induced the further deterioration of the trade balance[166]

Table: Direct investment flows between Germany and particular Asian countries

German direct investment outflows by country in DM million													
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
China	62	16	22	80	17		115	233	112	483	630	1145	1230
India	33	11	18	29	28	9	6	11	108	149	297	280	164
Malaysia	4	-3	-34	25	29	82	62	102	46	144	55	126	377
German direct investment inflows by country in DM million													
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
China	-	1	2	3	22	-10	-	-1	17	-7	-6	5	4
India	1	7	1	-7			-3	3	4	-5	17	5	-
Malaysia	3	2	-	-		-		-	167	-219	-	6	9

Sources: OECD (1997), p. 120-123, OECD (1998), p. 137-140.

[165] UNCTAD (1998), p. 197.
[166] UNCTAD (1997), p. 85-87.

China

Since 1992, China has been one of the most important host countries for FDI among developing countries. This can partly be attributed to China's size, but also to economic factors such as low unit labor costs and high growth rates of more than 10% p.a. between 1990 and 1996.

More and more FDI flows into the manufacturing industry. This indicates that Chinese suppliers continue to gain international competitiveness. In the course of this development, further capital exports owing to transfer payments of profits can be expected. This might entail a deterioration of the Chinese balance of payments which, up to now, has shown a surplus. As explained above, this could imply negative effects on the investment climate and thus induce a reduction in FDI inflows. Negative effects on the FDI inflows are also likely to arise in the foreseeable future from high inflation and the ever increasing wages which the cyclical overheating has brought about, from deficits in infrastructure, in particular concerning energy distribution, as well as from lacking legal certainty in China.[167]

In recent years, the rate of FDI growth into China has slowed. Although the financial crisis in Asia has not directly affected China, its indirect repercussions are not clear yet. Taking into account the overall situation, it has to be expected that FDI inflows will decline. As inflows contribute to a large stock already accumulated, investment from abroad will continue to play an important role for China in the foreseeable future.[168]

According to Chinese statistics, German companies invested about 1.7 billion US-$ in China between 1978 and 1996, which corresponds to a share of 1% of German companies in Chinese FDI. In contrast, the German central bank registered German direct investment in China worth 2.9 billion DM. Within the first six months of 1997, German investment rose by 137%, i.e. 517 million US-$. In spite of Germany having little impact on direct investment in China overall, it is one of the biggest investors in certain sectors such as automotive, electronics and chemicals.[169]

A survey (covering companies which together account for more than half the volume of German direct investment in China) revealed that most would again invest in China in spite of the problems involved. However, only 67% would choose the same location again and only 61% the same type of enterprise. More than half of the companies were satisfied with the development in turnover and 48% had even already reached the break-even point of their investment. In cases of failures, the companies stated false expectations and diverging objectives between the German and the Chinese partners as a reason.[170]

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[167] Geissbauer/Siemsen (1996), p. 56, and p. 10.
[168] UNCTAD (1998), pp. 202-203.
[169] OAV (1998), p. 132.
[170] OAV (1998), p. 132.

The involvement of German companies in China is focussed on the environmental sector. Their experience with similar environmental problems in the Eastern part of Germany represents an important competitive advantage. Wastewater treatment technology and clean air devices are sectors which offer the most promising market chances for German industry in China.[171]

Malaysia

With a growth rate of more than 9% p.a. since 1990, Malaysia is one of the fastest developing countries in South East Asia. The TNCs' interest in getting the companies which are located there under control through FDI has grown parallel to the economic development. Nowadays, Malaysia represents one of the most important host countries for FDI among developing countries.[172] German companies in general have stuck to their commitment to Malaysia, although it is one of the countries most affected by the financial crisis in Asia.[173]

Malaysia is the most industrialized country among ASEAN member states,[174] but its economic development is limited to very few industries. The large share of electrical and electronic goods in Malaysia's export value (more than 50%) implies a clear dependency on fluctuation in world demand for such commodities. Furthermore, it is problematic that the share of imported intermediate products in the finished product amounts to 78% in terms of value. Malaysia's value added is thus relatively low. In addition, the high level of employment contributes to reducing the comparative advantages gained by low labor costs. In this situation, FDI can step up the country's competitiveness through technology improvement and intensification as well as through product diversification. FDI can also help in the expansion of industries processing resources which are in abundant supply in Malaysia and thereby contribute to an increased value added.

Malaysia's most pressing environmental problems are waste, waste water disposal and air pollution. Environmental damage in some cases represents an obstacle to German FDI in Malaysia, but it can also be an advantage to German industry, as Malaysia's demand for environmental technology is likely to increase in the years to come. At present, a direct shareholding of German companies in Malaysian projects is obstructed by Malaysian legal provisions.[175] These provisions have their roots in the Malaysian fear of a "sell-out" to foreign investors.[176]

India

The marked increase in FDI in South East Asia can to a considerable extent be ascribed to the growing importance of FDI in India, which rose in 1995 by 47% and

[171] bfai (1998), p. 10.
[172] UNCTAD (1997), p. 90.
[173] DAV (1998), p. 59.
[174] Krebs (1998), p. 70.
[175] Krebs (1998), p. 70.
[176] N.N (1998d), p. 106.

in 1996 by a further 34%. In this way, FDI exceeded portfolio investment in India for the first time. The attractiveness of India for (in particular South East Asian) TNCs has been induced by a corresponding attraction policy of the Indian government after 1991. Before this, India was a planned economy which had little external relations. The newly-established market economy still remains delicate, and Indians still distrust foreign interference because of bad experience during colonial times.

The investment climate is impaired by poverty, a low educational level and poor infrastructure.[177] Positive effects on FDI come from the legal system, following the British example, which ensures legal certainty for investors to a certain extent.[178]

According to estimations, German direct investment outflows to India amounted to 290 million DM in 1997.[179] Increasing investment flows into India are expected in chemicals and pharmaceuticals. As for infrastructure, there is some reserve. Investors are currently waiting for the realization of the large projects which have been announced.[180]

Joint ventures in the environmental sector are most common between Germany and India in the fields of the production of biological pesticides and environmentally friendly textile cleaning. All in all, German investors takes third place after the US and the UK.[181]

[177] Geissbauer/Siemsen (1996), p. 22.
[178] Geissbauer/Siemsen (1996), p. 56.
[179] DAV (1998), p. 182.
[180] DAV (1998), p. 183.
[181] bfai (1997), p. 7.

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