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**“Integration of Poland into EU Global Industrial Networks:  
The Evidence and the Main Challenges”**

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# **INTEGRATION OF POLAND INTO EU GLOBAL INDUSTRIAL NETWORKS: THE EVIDENCE AND THE MAIN CHALLENGES**

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## **Abstract**

In this paper, we attempt to identify the achievements of one decade of transformation of the Polish economy in effecting the integration of its manufacturing sector with those of the broader European and global economy, using the automotive industry as an illustrative example. We begin with a broad picture of the current situation in Poland, looking particularly at the motivations of EU-based investors. We then discuss the automobile industry, again examining the motives of foreign investors and the effects of policy on their behavior. Next, we examine the chief public and private actors in the integration process, with a particular focus on their roles in trying to push Poland's integration in the direction of high value added and high innovation. Finally, we briefly discuss the impact of Poland's accession to the EU on industrial networking, and then summarize our conclusions and suggest a research framework for testing the hypothesis (formulated on the basis of our observations of the Polish case) that the market orientation of a given industry, measured by the ratio of the trade balance in that industry to its total domestic output, depends among other things on ownership structure, with the domestically-owned sector tending to use locally developed technologies and the foreign-owned sector tending to transfer in technology from abroad.

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## **1. Introduction**

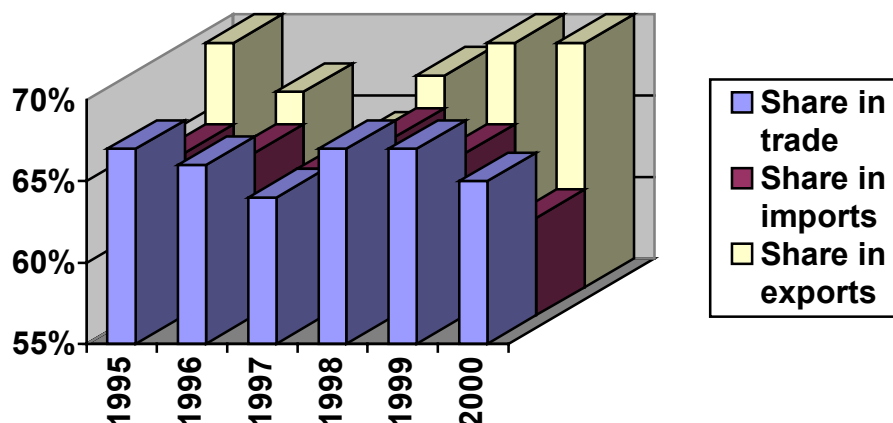
Economic integration is much more than the reduction and removal of trade barriers. It involves links of producers crossing borders that span a range of relationships from the equity-based (foreign direct investment) to the contractual (subcontracting, leasing of production equipment, etc.). The nature and extent of such relationships is a key factor determining a given country's place in the international division of labor. In this paper, we attempt a presentation of the achievements of one decade of transformation of the Polish economy in effecting the integration of its producers with those of the broader European and global economy.

We proceed as follows: In Chapter 2 we present a broad picture of the current situation in Poland with respect to the integration of the country's economy into European industrial networks. In Chapter 3 we turn to the automobile industry, examining production, international trade and FDI patterns to show the directions of developments with respect to the industry's integration into the global economy in the 1990s. In Chapter 4, we examine the chief actors of the integration process (foreign and domestic firms and national and local governments), discussing the role they have played in that process over the last decade. In Chapter 5, we briefly discuss the impact of Poland's accession to the EU on industrial networking, and in Chapter 6, we conclude with a summary and a discussion of some hypotheses that we think worth investigating in further research.

## **2. Trends in foreign trade, foreign investment and specialization**

We begin our discussion with a few key numbers which characterize the degree of integration between Poland and the European Union. We start with the volume of trade. WTO data indicate that inter-regional trade in 2000 among EU countries (measured in terms of exports) was 1,654 billion USD. In the same year exports from Poland to the EU were worth 22 billion USD, representing 70% of all Polish exports. On the other hand, imports amounted to 29.9 billion USD, which represented 61% of total imports and 19% of Polish GDP. These trade share figures are illustrated in Figure 1.

**Figure 1. Trade shares, Poland-EU (1995-2000)**

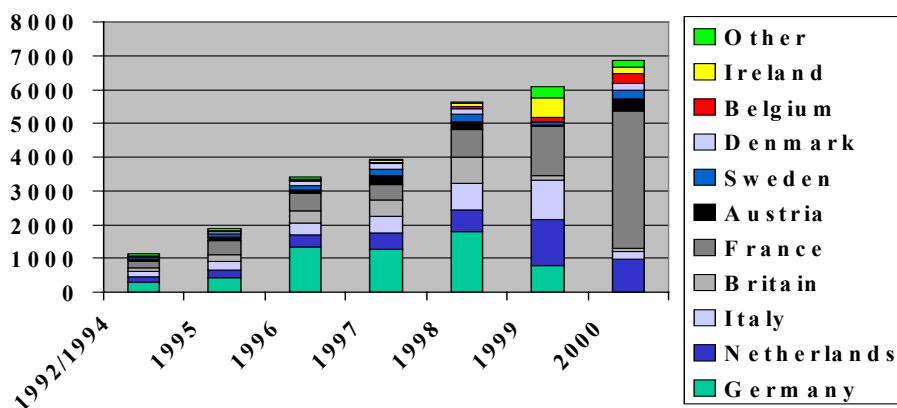


Source: Central Statistical Office, *Yearbook of Foreign Trade 2001*

The last five years have not brought fundamental changes in terms of the balance of trade or geographical orientations. During that period, Poland has fairly consistently sent 70% of its exports to the European Union and received 61-66% of its imports from the EU.

Turning to the question of Foreign Direct Investment (FDI), we note that according to data published by PAIZ (the Polish Agency for Foreign Investment), the flow of FDI into Poland has been impressive since 1994. Of the total stock of FDI in Poland accumulated since 1992 and estimated at 49 billion USD, about 59% is held by companies headquartered in EU member countries (for some of our calculations below, we will assume the EU share to be 65%, due to the fact that statistics may understate the scale of FDI from small EU-based firms). As of the beginning of 2000 the total number of companies with foreign ownership was 13,369 (most of them small companies with fewer than nine employees). Out of that total number, 10,369 companies were reported as having capital originating from EU countries, which would be equivalent to 77% of the total (with companies of German origin equal to 40.7% of the total). The breakdown with respect to individual countries is presented in Figure 2. While Germany has been consistently the key source of FDI to Poland, an increase of FDI from France starting in 1995 brought the country even higher FDI growth, but also sectoral diversification (which we will return to in a moment).

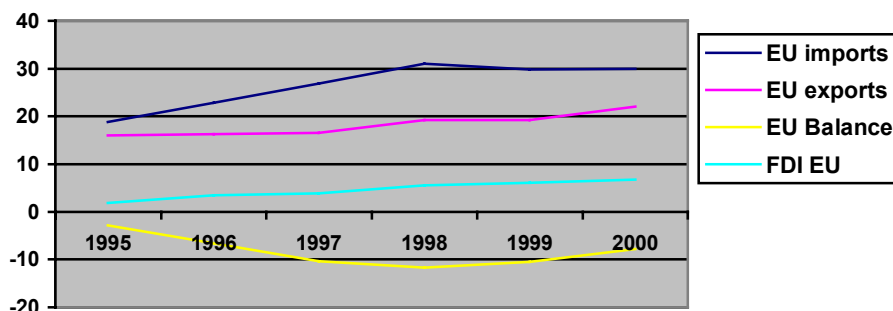
**Figure 2. Foreign Direct Investments in Poland originating from EU countries**



Source: PAIZ data 1998-2000 (1992-1997: own estimates)

Putting FDI and foreign trade together, we arrive at the picture presented in Figure 3 and Table 1. We see that while FDI from the EU has grown rather steadily, Poland's balance of trade with the EU has been consistently negative, but dipped in the mid-1990s to recover somewhat more recently.

**Figure 3. Foreign trade and FDI, Poland-EU (1995-2000)**



Source: Central Statistical Office, *Yearbook of Foreign Trade* 2001

Table 1 summarizes annual percentage changes for trade and FDI between Poland and the EU (in current prices). We see that the balance of trade with the EU started to improve in 1998. Also beginning in 1998, the flow of FDI from the EU to Poland demonstrated steady growth of approximately 10% per year.

**Table 1. EU-Poland trade and FDI year-to-year growth (%; in current prices)**

	1996	1997	1998	1999	2000
<b>Imports</b>	21.8	17.5	15.2	-3.9	0.3
<b>Exports</b>	1.9	1.2	17.0	0.0	14.5
<b>Balance</b>	135.7	57.6	12.5	-10.3	-25.7
<b>FDI</b>	88.9	14.7	43.6	8.9	11.5

Source: Central Statistical Office, *Yearbook of Foreign Trade* 2001, for trade data; Polish Agency for Foreign Investments (<http://www.paiz.gov.pl>) for FDI data

Data reported by Poland's Central Statistical Office as of the end of 1999 present the following picture of the profits of the foreign-owned sector comparing to all enterprises reporting profit and loss figures (see Table 2).

**Table 2. Activity of firms with foreign ownership as of end of 1999**

Type of firms	Number of firms	Employment	Revenues	Gross profits	Exports	Imports	Exports	Imports	
						In millions of PLN*		In millions of USD	
<b>All</b>	48057	4943917	1077210	14830	115080	192780	27400	45900	
<b>Domestic ownership</b>	42152	4042082	736306	6815	64339.8	65805.6	15319	15668	
<b>%</b>	87.7%	81.8%	68.4%	46.0%	55.9%	34.1%	55.9%	34.1%	
<b>Foreign ownership</b>	5905	901835	340904	8015	50740.2	126974.4	12081	30232	
<b>%</b>	12.3%	18.2%	31.6%	54.0%	44.1%	65.9%	44.1%	65.9%	
<b>EU ownership**</b>	3838.25	586192.7	221587.6	5209.75	32981.13	82533.36	7852.65	19650.8	
<b>%</b>	8.0%	11.9%	20.6%	35.1%	28.7%	42.8%	28.7%	42.8%	

\* Calculated at an exchange rate of 4.2 PLN to 1 USD.

\*\* Assuming that EU ownership represents 65% of total.

Source: Central Statistical Office

There are several important observations one can make looking at the above comparison. First (assuming 65% of foreign ownership is held by EU-based companies), 8% of Polish firms reporting their profits and losses are owned by EU-based firms, representing 20% of total revenues and 42% of total imports. Average productivity is more than double that of domestic firms and gross profitability even higher, exceeding 250% of domestic firms' profitability. At the same time, it seems that close to 100% of Poland's negative trade balance can be attributed to foreign firms.

We can gain additional insights about the activities of the foreign-owned sector by looking at structural data on FDI as reported by PAIZ. Only approximately 41% of FDI was directed toward manufacturing (with food and consumer products and the automotive sector representing approximately 10% each). Investments in services accounted for 59%, with 20% of total FDI flowing into financial services, 11% into infrastructure (transportation and telecommunication) and 8% to distribution and sales activities. Given the very diverse sectoral allocation of investments, mostly motivated by seeking local consumer market share (see Section 3.1 below), skepticism as to whether FDI is a significant force driving Poland's integration into EU networks seems justified. It is however, true that the spillover effects in terms of generating

local supplier bases have not been sufficiently studied to offer a conclusive analysis of FDI-induced growth of various Polish industries and their participation in European production networks. This is clearly one of the key research challenges for the future.

Next, we take another angle in the analysis of integration of Poland's economy into European industrial networks and the European division of labor using specialization and integration indices. The specialization index corresponds to the balance of trade in the products of a given industry. Thus, an index with a positive value represents a country's surplus of exports over imports in a given industry. Conversely, de-specialization (indicated by an index with a negative value) reflects a surplus of imports over exports in the given industry. Integration indices are measured by the simple average of specialization indices. Obviously we would expect a higher integration index for smaller economies. (Similarly industry network integration could be expressed as the average spread between specialization and de-specialization on the sub-sectoral level – material, intermediary products and finished good trade – which we will discuss in our automotive sector analysis.) These indices are presented for various Central European economies in Tables 3 and 4.

**Table 3. Specialization indices for various Central European economies**

#	SITC Classification	Poland	Czech Rep.	Slovakia	Hungary	Romania	Bulgaria	Slovenia
	Rather labor intensive							
62	Rubber products	1	4	0	1	1	0	3
63	Wood and cork	5	3	1	1	2	2	7
65	Fabrics	-6	-2	-10	-12	-31	-19	-8
67	Iron & steel	1	1	11	-3	5	18	-2
68	Non-ferrous metals	4	-3	5	2	6	20	7
82	Furniture	11	9	3	2	10	2	21
84	Clothing	13	6	18	16	55	42	15
85	Footwear	1	2	7	4	15	6	1
	Rather capital intensive							
71	Power generation	0	0	-9	43	1	1	-1
72	Machinery specialized	-6	-3	-7	-9	-11	-9	-7
74	Gen. industry machinery	-7	-4	-11	-15	-5	-5	-4
75	Office machines	-4	-7	-2	17	-3	-5	-6
76	Telecommunication	-1	-9	-7	11	-7	-9	-7
77	Electrical machinery	1	-3	-3	-1	-6	-7	15
78	Road vehicles	-2	26	40	-26	-7	-16	11
79	Other transport equipment	2	2	4	1	3	-2	-2

Source: Allen (2001)

**Table 4. Integration indices for various Central European economies**

	Poland	Czech Rep.	Slovakia	Hungary	Romania	Bulgaria	Slovenia
<b>Integration index</b>	0.8125	1.375	2.5	2	1.75	1.1875	2.6875

Source: Own calculations based on Allen (2001)

As we can see in Table 3, smaller economies demonstrate overall higher specialization levels. With the exception of Hungary, which achieved significant positive specialization in technology-intensive industries, all countries of the region demonstrate dominance of specialization in low-technology industries.

Our conclusions are not very favorable for Poland. Outside of furniture and clothing, there is no strong evidence of inter-industry specialization in the trade between Poland and EU. The wood and textile industries' links with the international economy are historically strong and existed prior to the transformation. These industries are relatively labor intensive and to a large extent domestically owned. In contrast in the rather capital intensive sectors we cannot find clear evidence of increased or decreased specialization of Poland vis-a-vis the European Union. The negative numbers in the machinery industries were certainly affected by FDI-driven imports in 1999, while the astonishingly low level of specialization in the automotive sector does not take into account the plausible effects of FDI which could manifest themselves during the coming decade. As we will show in more detail in Section 2 below, the Polish trade balance in passenger cars was negative in 1999, with positive numbers only in trade with Italy (Fiat), indicating that majority of domestic assembly was performed for domestic sales.

### **3. Car industry integration into EU networks**

#### **3.1. Brief overview of domestic sales and production in the Polish car industry**

##### *3.1.1. Sales of new cars in Poland*

In the 1990s the Polish market of passenger cars grew impressively, and in 2000, more than half a million new passenger cars were sold in Poland. If we add Norway, Iceland and Switzerland to the EU countries and additionally consider Poland among this group of European countries, we find (Table 5) that Poland is the eighth largest market for sales of new cars, representing 3% of the market in this group of countries (this means that the Polish market for sales of new cars is larger, for example, than the Austrian, Swiss and Swedish markets and only a bit smaller than the Belgian market).

**Table 5. Registration of passenger cars in Europe**

Rank	Country	Market share	Rank	Country	Market share
1	Germany	22.2%	11	Sweden	1.9%
2	Italy	15.9%	12	Greece	1.9%
3	Great Britain	14.6%	13	Portugal	1.7%
4	France	14.0%	14	Ireland	1.5%
5	Spain	9.1%	15	Finland	0.9%
6	Netherlands	3.9%	16	Denmark	0.7%
7	Belgium	3.4%	17	Norway	0.6%
8	Poland	3.1%	18	Luxemburg	0.3%
9	Switzerland	2.1%	19	Iceland	0.1%
10	Austria	2.0%			

Source: Samar (2000)<sup>3</sup>

<sup>3</sup> Samar is a limited liability company which monitors the car market in Poland.



Despite the sales of more than half a million new passenger cars in 2000, that year saw a significant decrease (of around 25%) in new car sales in Poland in comparison with 1999. Throughout the 1990s, sales of new cars had been growing (from 275,000 in 1994 to almost 700,000 in 1999; see Table 6). And, in spite of the current slowdown, the Polish car market has a bright future. The downturn in 2000 was caused by temporary factors, including the increase of the excise tax in 2000, the current high interest rates<sup>4</sup>, and the worsening condition of the Polish economy (reflecting a worldwide slide into recession)<sup>5</sup>. But the Polish car market is still far from being saturated. Its potential is illustrated by the following figures: In Poland there are 240 cars per 1000 inhabitants, while in the Czech Republic, for example, there are 300 per 1000 inhabitants, and in the EU countries 400-450 cars per 1000 inhabitants. Additionally, Poland has 4.5 million old cars which should be replaced<sup>6</sup>.

### 3.1.2. Domestic production and assembly

Most new cars sold in Poland are produced or assembled domestically. In 1995 around 80% of the new cars sold on Polish market came from factories or assembly plants located in Poland. However, this proportion has decreased over time, and by 2000 it had dropped to the level of 60% (see Table 7). Analyzing the data in Table 6 we can conclude that this decrease was mainly caused by a rapid decrease in sales of cars produced and assembled domestically and a simultaneous increase in the import of new cars. Figure 4 illustrates all these developments graphically.

**Table 6. Sales of new passenger cars in Poland, 1994-2000**

	1994	1995	1996	1997	1998	1999	2000
Local production & assembly	212,895	239,113	314,286	359,277	415,752	505,694	309,513
Import	61,289	59,123	117,943	174,210	149,510	177,267	202,262
Total	274,184	298,236	432,229	533,487	565,262	682,961	511,775

Source: Samar (2000)

**Table 7. Percentage division between domestically produced & assembled cars and imported cars**

	1994	1995	1996	1997	1998	1999	2000
Local production & assembly	78%	80%	73%	67%	74%	74%	60%
Import	22%	20%	27%	33%	26%	26%	40%

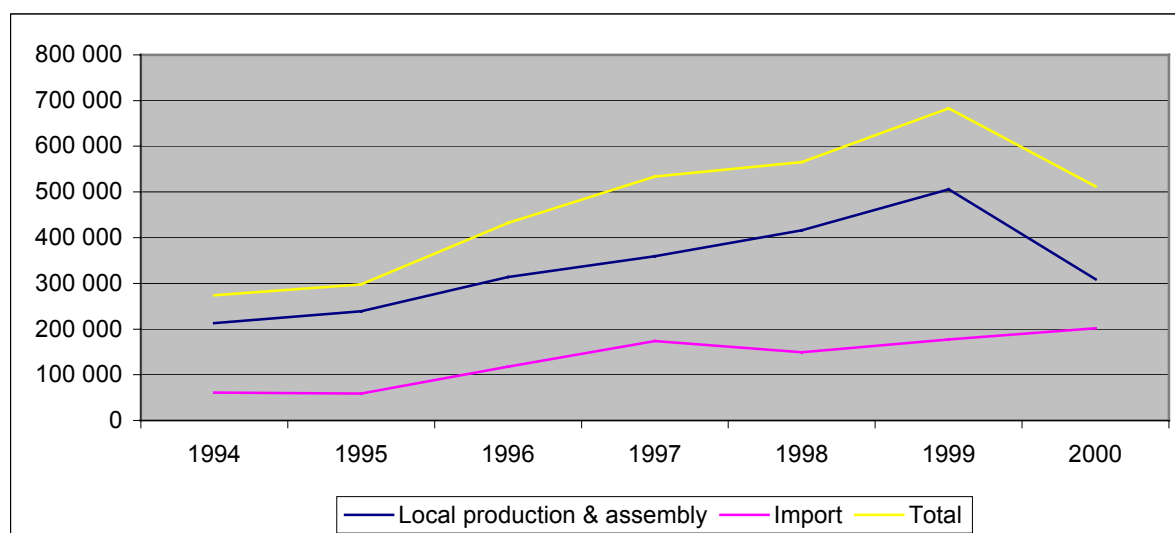
Source: Samar (2000)

<sup>4</sup> As of 1999, 60% of cars purchased in Poland were purchased on credit, and car loans represented over 25% of all consumer loans. See PAIZ (1999).

<sup>5</sup> See Steinbarth (2001).

<sup>6</sup> Ibid.

**Figure 4. Sales of new passenger cars**



Source: Samar (2000)

There are three car producers in Poland: Fiat, Daewoo and GM-Opel (see Table 8). In 2000 these three factories produced around 200,000 cars, representing 39% of the market for new cars in Poland (one year earlier, their market share had stood at 47%).

Fiat controls two car factories in Poland (in Bielsko-Biala and Tychy), which it purchased from the state in the early 1990s<sup>7</sup>. The company is the largest of the domestic car producers, having produced over 96,000 cars and assembled more than 11,000 in 2000. However in 2000, in comparison with 1999, it decreased production by 60,000 cars and produced significantly fewer cars than in the years 1996-1998.

The second largest producer is Daewoo, which produced 85,000 and assembled 22,000 cars in 2000. Like Fiat, it decreased production in 2000, producing 50,000 fewer cars than in 1999. However, in contrast to Fiat, Daewoo produced more in 2000

<sup>7</sup> The company has produced the following models in Poland: Sienna, Fiat 126, 500, and 600, and the Palio Weekend (the latter two models are still in production).

than in 1996-1998. Daewoo carries out production in two plants in Poland: in Warsaw (FSO)<sup>8</sup> and in Lublin (FSC)<sup>9</sup>.

Far behind these two firms is GM-Opel, which produced 17,000 cars and assembled 2,000 cars in 2000. As in the other two cases, this represented a production decline. The plant is a greenfield investment located in Gliwice.

**Table 8. Production and assembly of cars in Poland, 1996-2000**

	1996	1997	1998	1999	2000
<b>Production</b>					
Daewoo	59,566	50,610	68,404	135,633	84,975
Fiat	141,316	134,765	116,929	157,027	96,489
GM-Opel	0	0	1,097	30,210	17,603
<b>Assembly</b>					
Audi	0	145	255	193	72
Citroen	0	0	1,358	3,777	3,205
Daewoo	37,471	75,069	71,892	43,781	22,235
Damis	1,255	215	566	309	0
Fiat	1,479	1,556	34,352	19,322	11,163
Ford	7,450	10,075	17,619	24,564	12,913
Opel	6,188	11,736	21,823	4,009	2,402
Peugeot	200	12	0	0	0
Seat	274	4,465	5,905	3,078	0
Skoda	15,408	24,391	30,949	42,925	38,194
Volkswagen	0	4,223	9,747	10,098	1,675
<b>Production/Assembly</b>					
% of cars assembled in Poland	27.0%	26.9%	15.5%	33.1%	54.9%
% of cars produced in Poland	73.0%	73.1%	84.5%	66.9%	45.1%

Source: Samar (2000)

<sup>8</sup> In 1996 the State Treasury contributed the assets of the liquidated state enterprise FSO to a joint venture with the Korean investor, called FSO-Daewoo. That factory has produced the Lanos, Nubira, Leganza and Matiz, and assembled the Tico and Espero.

<sup>9</sup> In June 1995, FSC signed a joint-venture agreement with South Korean Daewoo Corporation and Daewoo Heavy Industries Corp. Ltd. The new joint venture assembled the Nexia, Musso and Korando. In 1999 it launched production of a modernized version of the Lublin 3 truck.

In 2000, almost 91,000 cars were assembled in Poland. This represented a decline of 60,000 in comparison with 1999 and a decline of almost 100,000 in comparison with 1998. The largest assembly plant (Skoda) produced 38,000 cars in 2000. Daewoo and Fiat were in second and third place, respectively, and fourth place went to Ford, which assembled almost 13,000 cars. The remaining producers assembled fewer than 4,000 cars in 2000. Foreign car companies have clearly been closing and/or reducing the capacity of their assembly units in Poland (Peugeot and Seat have ceased assembling cars in Poland, and Ford and Volkswagen significantly decreased production in 2000).

It is no surprise that the firms with production and assembly plants in Poland have won dominant positions on the market (see Table 9). This indeed appears to be the main determinant of market success.

**Table 9. Best selling brands of passenger cars in 2000**

Brand	No. of units	Market share (%)	Brand	No. of units	Market share (%)
Fiat	130,966	25.59%	Peugeot	19,026	3.72%
Daewoo	119,080	23.27%	Ford	20,163	3.94%
GM-Opel	40,165	7.85%	Toyota	13,670	2.67%
Skoda	39,456	7.71%	Citroen	14,480	2.83%
Renault	29,875	5.84%	Others	62,494	12.21%
VW	22,400	4.38%	Total	511,775	100.00%

Source: Samar (2000)

### 3.2. FDI in the Polish car industry

As noted above, companies which have production or assembly units in Poland have won the dominant position on the market. The main motivation behind these investments was avoidance of import duties and the corresponding opportunity to become price competitive. Another important motive was the opportunity to expand distribution networks. However, the weakness of this motivation, and the limitations of its impact on the Polish economy's integration with the European and global economy, are demonstrated by the fact that as import duties have fallen (see Section 3.4.1), assembly units are gradually being closed (see data for 2000 in Table 8) and imports have increased (see Section 3.3 below).

If we look at car producers on the list of the 50 largest foreign investors in Poland as of the end of 2000, we note that they play a very important role in foreign direct investment in Poland (see Table 10). Fiat, Daewoo and Opel invested almost 4 billion USD, or 8% of all FDI in Poland as of the end of 2000. The largest investor from the car industry, Fiat (simultaneously the second largest foreign investor in Poland as of the end of 2000), had invested 2.1 billion USD (including Polish financial resources). Apart from investments in the two aforementioned car factories in Tychy and Bielsko-Biala, Fiat had also invested in production of parts and accessories (Magneti Marelli Poland S.A., Comau), heavy industry (Teksid Poland S.A.), the energy sector (Fenice) and the financial sector (Fiat Bank Poland S.A., Fiat Finance Poland S.A., Fiat

Towarzystwo Ubezpieczeń S.A. [an insurance company] and Fiat Ubezpieczenia Zyciowe S.A. [a life insurance company])<sup>10</sup>.

**Table 10. The largest investors on Polish market from the car industry as of the end of 2000**

Rank on the list of the largest foreign investors	Name of the investor	Capital invested (millions of USD)	Origin
2	Fiat	1,637.7	Italy
3	Daewoo	1,552.3	South Korea
10	GM Corporation (Opel)	800.0	USA
49	Isuzu Motors Ltd.	193.0	Japan

Source: Polish Agency for Foreign Investments (<http://www.paiz.gov.pl>)

The second largest investor in the car industry and third largest foreign investor in Poland, Daewoo, invested around 1.5 billion USD in the automotive, electrical machinery and apparatus, construction and insurance sectors. It has shares in over 30 companies.

### 3.3. Poland's foreign trade in cars

Poland's trade balance in passenger cars and auto parts and accessories in 1997-2000 was negative. However, during that time the balance improved. In parts and accessories the trade deficit fell from to 1.72 billion USD in 1997 to 741 million USD in 2000. In passenger cars it decreased from 493 million USD in 1999 to 253 million in 2000.

Analyzing Tables 11 and 12 we observe that the trade deficit in auto parts and accessories was three (in some years four) times higher than that in passenger cars during the period in question. On the other hand, this ratio has been declining. We should also note that the greater deficit for parts and accessories was due to the very low level of exports, especially in 1997 and 1998. Tables 11 and 12 show that the value of imported parts and accessories has been decreasing, while the value of imported passenger cars has been increasing. At the same time, both exports of passenger cars and exports of parts and accessories have increased. In the case of cars, exports doubled between 1997 and 2000, while exports of parts and accessories tripled. These facts constitute evidence that assembly activity conducted by foreign companies is being replaced by car imports, while at the same time an increase in exports in recent years has led to an improvement of the Polish automotive sector's balance of trade.

The tables also show that in the years 1997-2000, the main Polish trade partners in passenger cars and auto parts and accessories were EU countries. On average, during this period, imports of cars from the EU countries to Poland amounted to around 83% of total car imports, while imports of parts and accessories from the EU countries constituted 65% of total parts and accessories imports. In 2000, Polish exports of cars and parts and accessories to the EU was around 80% of total Polish exports of these

<sup>10</sup> See the PAIZ web site ([www.paiz.gov.pl](http://www.paiz.gov.pl)).

two categories. However, the share of exports of cars to the EU countries decreased (in 1997 almost 95% of all exported cars were exported to the EU), while the share of exports of part to the EU in total exports of parts and accessories increased. In absolute terms, exports of parts and accessories to the EU increased from 230 million USD to 630 million USD in 1997-2000. The decreasing share of the EU in Polish car exports is due to a significant increase of exports of cars produced in Poland to other Central and Eastern European markets (and not, for example, by a decrease of sales to the EU countries; exports of cars to the EU increased from 728 million USD to 1.15 billion USD in 1997-2000, while the share of exports to CEE countries increased from slightly over 0% to 9% of total car exports during that period).

The most frequent point of origin of cars imported to Poland in 1997-2000 was Germany. Its share in total Polish car imports is over 30% and is increasing continually (from 25% in 1997). Imports from Germany brands such as Volkswagen, Opel, Ford, Audi, BMW, and Mercedes. In 1999 and 2000 the value of imports from Germany doubled. France was the second largest source of imported cars. Poland imported 330 million USD in cars from France in 2000. French producers exporting to Poland include PSA (Citroen and Peugeot) and Renault. The UK is in third position (Poland imported 175 million USD in cars from the UK in 2000, including such brands as Hyundai, Jaguar, Nissan, Mazda, Rover, and Toyota), and Italy in fourth (with 160 million USD in imported cars, up from 55 million USD in 1997).

Poland exports cars mainly to Italy and Germany. The combined share of these two countries in total exports was 66% in 2000 (84% in 1997). Polish producers have also successfully placed their production on Hungarian, French, UK and Dutch markets.

**Table 11. Poland's trade in passenger cars, 1997-2000 (in millions of USD)**

	Imports				Exports				Balance of trade			
	2000	1999	1998	1997	2000	1999	1998	1997	2000	1999	1998	1997
<i>Total</i>	1,714	1,588	1,379	1,102	1,461	1,095	1,010	771	-253	-493	-369	-331
Germany	541	434	336	279	356	263	228	161	-185	-171	-108	-118
France	330	360	341	251	86	30	37	14	-244	-330	-304	-237
UK	175	197	158	138	46	44	56	39	-129	-153	-102	-99
Italy	160	76	72	55	606	480	521	484	446	404	449	429
Spain	109	111	102	177	0	31	21	8	-109	-80	-81	-169
Japan	91	125	158	74	0	0.7	0	0.2	-91	-124	-158	-74
Belgium	68	98	72	28	0	11	10	2	-68	-87	-62	-26
South Korea	60	59	28	53	0	0	0	0	-60	-59	-28	-53
Slovenia	32	0	0	0	12	9	4	0	-20	9	4	0
Slovakia	27	1	0	0	10	6	4	0	-17	5	4	0
Netherlands	27	32	23	15	58	47	37	20	31	15	14	5
Sweden	18	16	10	3	0	0.2	0.5	0.2	-18	-16	-10	-3
Turkey	16	0	0	0	0	0	0	0	-16	0	0	0
Hungary	10	12	12	5	79	58	12	2	69	46	0	-3
Czech Republic	0.2	3	1	0.1	25	12	9	1	25	9	8	1
Romania	0.2	0.5	0	0	0	0	0	0	0	-1	0	0

Source: Central Statistical Office, *Yearbook of Foreign Trade*, 1998, 1999, 2000, 2001

**Table 12. Poland's trade in parts and accessories for motor vehicles, 1997-2000 (millions of USD)**

	Imports				Exports				Balance of trade			
	2000	1999	1998	1997	2000	1999	1998	1997	2000	1999	1998	1997
<b>Total</b>	<b>1,532</b>	<b>2,002</b>	<b>2,206</b>	<b>2,046</b>	<b>791</b>	<b>541</b>	<b>415</b>	<b>322</b>	<b>-741</b>	<b>-1,461</b>	<b>-1,791</b>	<b>-1,724</b>
Germany	423	567	652	485	359	274	188	116	-64	-293	-464	-369
Italy	232	333	330	469	118	108	79	77	-114	-225	-251	-392
Czech Republic	176	185	173	166	30	36	31	25	-146	-149	-142	-141
South Korea	161	414	396	335	3	0	0.1	0.1	-158	-414	-396	-335
Sweden	149	116	167	137	26	11	13	17	-123	-105	-154	-120
Japan	70	23	16	21	1	0	0	0	-69	-23	-16	-21
France	65	69	82	56	35	9	5	2	-30	-60	-77	-54
Spain	63	79	117	94	13	3	3	5	-50	-76	-114	-89
UK	45	51	70	80	29	13	3	0,5	-16	-38	-67	-80
Hungary	26	6	39	31	32	6	10	9	6	0	-29	-22
Romania	20	28	8	0.2	1	0.5	0.5	0.3	-19	-28	-8	0
Austria	15	14	8	8	17	12	4	1	2	-2	-4	-7
USA	15	20	13	8	2	2	2	3	-13	-18	-11	-5
Turkey	13	17	10	10	9	2	0.4	0.2	-4	-15	-10	-10
Belgium	11	14	16	26	26	23	16	10	15	9	0	-16
Netherlands	7	10	10	9	8	7	7	1	1	-3	-3	-8

Source: Central Statistical Office, *Yearbook of Foreign Trade*, 1998, 1999, 2000, 2001



**Table 13. Sales of new passenger cars in 2000, by country of origin and brand**

2000	Austria	Belgium	France	Germany	Hungary	Italy	Japan	Korea	Nether-lands	Poland	Portu-gal	Russia	Spain	Sweden	UK	USA	Total
Alfa Romeo						2,648											2,648
Audi				1,049						72							1,121
BMW				455												6	461
Chrysler Jeep	573			46												243	862
Citroen			8,479							3,205							11,684
Daewoo										107,210							107,210
Fiat		1,418				21,610				107,652							130,680
Ford				3,373						12,913	409					34	16,729
Honda							2,207								3,943		6,150
Hyundai								7,396									7,396
Isuzu							6										6
Jaguar															56		56
Kia								5,090									5,090
Lada												493					493
Lancia						335											335
Lexus							97										97
Mazda							89								134		223
Mercedes				2,249													2,249
Mitsubishi							181	163	1,461								1,805
Nissan							3,655						460		3,921		8,036
Opel				15,984						20,005			4,176				40,165
Peugeot			19,026														19,026
Porsche				19													19
Renault			27,900														27,900
Rover															753		753
Saab														280			280
Seat		1,531									148		9,557				11,236
Skoda										38,194							38,194

**Table 13 (cont'd). Sales of new passenger cars in 2000, by country of origin and brand**

2000	Austria	Belgium	France	Germany	Hungary	Italy	Japan	Korea	Nether-lands	Poland	Portu-gal	Russia	Spain	Sweden	UK	USA	Total
Subaru							175										175
Suzuki					1,703		309						85				2,097
Toyota							6,200								7,470		13,670
Volkswagen				18,435						1,675	118						20,228
Volvo		490							984					204			1,678
Total	573	3,439	55,405	41,610	1,703	24,593	12,919	12,649	2,445	290,926	675	493	14,278	484	16,277	283	478,752

Source: Samar (2000)

Analyzing the balance of trade in passenger cars in 1997-2000, we note that Poland had a significant surplus in trade with Italy (over 400 million USD). Poland also had a trade surplus with the Netherlands, Hungary and the Czech Republic.

Analyzing Poland's trade in parts and accessories for motor vehicles in 1997-2000, we note that the largest Polish trade partner, as in the case of the passenger car sector, is Germany. Italy, the Czech Republic and South Korea were also very significant (the latter two countries mainly export to Poland parts and accessories for Czech and Korean cars assembled in Poland). Despite significant improvement in the trade position of Poland in this industry in recent years, only two countries (Hungary and the Netherlands) had negative trade balances with Poland in 2000, and these were minimal. All Poland's other trading partners had positive balances of trade with Poland.

### **3.4. Fiscal factors affecting Polish car production and trade**

Recent weaknesses on the Polish car market discussed in Section 3.1 resulted in increased imports of old cars from Western countries (210,000 in 2000). In order to reduce the import of old cars and to protect domestic production, the government introduced a progressive excise tax on imported second-hand cars in 2001. Taxation policy of this kind seems to be the only tool used by the government to guide the car market. We will discuss this tendency of Polish public authorities (limitation of policy instruments to fiscal ones), which extends well beyond just the car market, more thoroughly below, in Chapter 4. For now, let it suffice to remind the reader that, as we noted above (in Section 3.2), the flaws of such an approach have become increasingly evident as import duties have decreased.

#### *3.4.1. Customs rates on cars imported to Poland*

As Tables 14 and 15 demonstrate, Poland's tariff policy with respect to automobiles definitely favors the European Union. In 2000, the customs duty on cars imported from the EU and CEFTA countries was 10% (this was lowered to 5% in 2001). By contrast, for imports from countries outside Europe it is 35%. Furthermore, as of 1 January, 2002, in accordance with Poland's agreement with the EU, the preferential customs rate for vehicles imported from the EU will be reduced to zero, as specified in Poland's Association Agreement with the EU.

Currently Poland does not allow the import of cars more than 10 years old and trucks more than 6 years old. However, these restrictions were lifted for cars produced in the EU as of 1 January, 2002.<sup>11</sup>

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<sup>11</sup> See Kublik (2001).

**Table 14. Polish customs rates on imported cars in 2000**

Type of car	Countries outside Europe	EFTA	Czech Republic, Lithuania, Slovakia, Turkey, Estonia	Israel, Latvia, Romania, Slovenia, Bulgaria
Passenger cars - with petrol engine capacity < 3l - with Diesel engine capacity < 2.5l	35%	10%	10%	10%
Passenger cars - with petrol engine capacity > 3l - with Diesel engine capacity > 2.5l	14%	4%	4%	4%
Commercial vehicles, load capacity under 1 ton	35%	10%	10%	15%
Commercial vehicles, with GVW over 5 tons	35%	10%	10%	10%
Motor caravans - new	35%	0%	0%	10%

Source: Samar (2000)

**Table 15. Customs rates in accordance with the EU agreement**

	Passenger cars	Commercial cars
1992	35%	35%
1993	35%	35%
1994	30%	35%
1995	30%	35%
1996	25%	35%
1997	25%	30%
1998	20%	20%
1999	15%	15%
2000	10%	10%
2001	5%	5%
2002	0%	0%

Source: Samar (2000)

### 3.4.2. Excise duties in the Polish car industry

The excise tax on cars was introduced in 1993, with the Act of 8 January, 1993, on VAT and Excise Duty (Dz. U. no. 11, item 50). According to this law all passenger cars are subject to an excise duty. According to the ordinance on excise duties issued by the Ministry of Finance on 16 December, 1998 (Dz. U. no 157, item 1035), all entities which sell cars prior to their being registered in Poland are subject to the excise duty.

In recent years, excise taxes have been raised several times (as part of an attempt to stave off a general fiscal crisis). In an ordinance dated 5 January, 1998, the Finance Ministry applied a 10% excise duty to cars manufactured in Poland the price of which exceeded the equivalent of 7,500 Euro and a 15% duty on imported cars with a customs value in excess of 7,500 Euro. The Ministry of Finance raised the excise duties on cars on 15 December, 1999, and again on 28 March, 2000. An overview of these changes is provided in Table 16.

**Table 16. Polish excise duties on cars, 1998-2000**

	1998		1999		2000	
	Domestic production	Imports	Domestic production	Imports	Domestic production	Imports
Passenger cars with engine capacity ≤ 2.0l	2.0%	2.3%	4.0%	4.2%	6.0%	6.4%
Passenger cars with engine capacity ≤ 2.0l	10.0%	11.1%	15.0%	17.6%	15.0%	17.6%

Sources: Ordinance of the Minister of Finance on the excise tax, 5 January, 1998 (Dz. U. no 2, item 3); Ordinance of the Minister of Finance on the excise tax, 15 December, 1999 (Dz. U. no 105, item 1197); Ordinance of the Minister of Finance concerning changes in the ordinance on the excise tax, 28 March, 2000 (Dz. U. no 21, item 267).

#### **4. Factors underlying Poland’s emerging position in international networks**

In an attempt to understand the developments described in the previous two sections and place them in a broader context, we consider the positioning of Poland in international networks that has been emerging over the last decade or so from the point of view of three types of players: Multi-National Corporations (MNCs), domestic firms, and public authorities (both national and local). We will seek to provide a broad picture of the context within which this process has been taking place, while providing specific examples from the auto industry.

An underlying assumption of the “alignment of network” approach (Kim, von Tunzelmann, 1998; Radosevic, 2000) to the analysis of international networks is that for a full understanding of how international business networks are formed, it is necessary to look at three different types of forces – markets, policies, and enterprise strategies – and how they interact. Consideration of any of these factors in isolation will provide an incomplete or even distorted picture. With this in mind, we now look at how the three aforementioned types actors in Poland have worked over the last decade to integrate the Polish economy into the world economy by means of direct equity investments, trade, and other contractual relationships.

##### **4.1. MNC strategies**

There are three<sup>12</sup> types of MNC strategies which can be observed in Poland:

1. Direct investment to obtain a share in the fairly large local market
2. Exploiting low costs to manufacture low-end products for the world market
3. Exploiting low costs and proximity to perform assembly and then re-import finished products into EU markets

Prime examples of the first type of strategy in the auto industry are the three largest producers in Poland: Daewoo, Fiat and Opel. These producers may also be applying the second type of strategy, but if so this is indirect, as cars produced in Poland for

<sup>12</sup> See Tulder and Ruigrok (1998) for a discussion of various types of foreign investors’ strategies in the Central and Eastern European auto industries.

export are first exported to the home country, and if they are sold on other markets, then they are exported from the home country. The third type of strategy has been quite common, and is found not only in the case of the three aforementioned producers, but also in the case of firms concentrating on assembly (exploiting low tariff costs resulting from domestic assembly). Among these are Ford, Citroen, Peugeot, Volkswagen, and Skoda are worthy of particular mention.

FIAT Auto Poland is a particularly good example of how a single auto producer can combine these types of strategies. This Italian-owned company continued to have about one third of the Polish market into the second half of the 1990s, but exports of the subcompact Fiat 500 (often referred to as the Cinquecento) – manufactured exclusively by FIAT Auto Poland – were also a key element of the company's strategy. In these respects, this case is similar to that of Volkswagen Skoda in the Czech Republic (Tulder, Ruigrok, 1998).

It is particularly important to note that a strategy of taking advantage of (or even developing) local technologies and innovation capacities is conspicuously absent from this list. The sorts of strategies adopted tend to make facilities in Poland “extended work benches” for MNCs investing there, and therefore offer little promise that they will bring about Poland's integration into international innovation networks. Even in the auto industry, the role of domestic engineering in design appears to be virtually non-existent; Polish engineering seems to be used only in such processes as product safety testing and quality control. Many observers have noted a tendency for foreign investors not only to fail to develop local research and development capacity, but actually to *reduce* it by eliminating local R&D facilities, concentrating R&D activities in their home countries (Gorzalak et al., 1995; Kurz, Wittke, 1998). As we discuss below (in Section 4.2), the private sector in Poland has generally put in a very poor performance in the area of R&D investments, and the inflow of FDI appears to have done little or nothing to improve this state of affairs.

#### **4.2. Domestic firm strategies**

With respect to FDI, the role of local firms themselves in attracting investment has been limited in comparison to the role of the state (specifically, the privatization ministry, called the Ministry of Ownership Transformation until 1996 and subsequently the Ministry of the State Treasury). The Polish privatization process has been divided into two main paths: “direct privatization,” generally directed at small and medium-sized enterprises, in which non-commercial methods (primarily leasing to employees at below-market interest rates) have been dominant and the enterprises themselves play a significant role in determining how they will be privatized, and “indirect privatization,” in which – generally speaking – larger firms are privatized by commercial methods by officials of the ministry (and, in some cases since 1996, the Privatization Agency). The enterprises privatized by the direct method were generally much less attractive for foreign investors than those privatized by the indirect method, and the role of foreign capital in direct privatization has consequently been much smaller than in the case of indirect privatization. As a consequence, the role of foreign capital in the Polish privatization process has been determined largely by the state and the foreign investors rather than the domestic enterprises themselves.

Turning to a brief examination of contractually-based relations of Polish firms with foreign partners, we utilize the results of studies of Polish small businesses in three manufacturing industries – wooden furniture, medical instruments, and plastics and synthetics – to form some general conclusions about patterns in Polish international cooperation. Lack of innovativeness makes many Polish small businesses dependent on outward processing traffic arrangements with western European (particularly German) final contractors, which are typically associated with small profit margins and negligible possibilities for investment and technological upgrading. Polish firms tend to be uncompetitive on western export markets, particularly in the most profitable upscale final goods niches, where they are hardly represented at all. However, foreign contacts often serve to upgrade the capital stock. This occurs, for example, by purchasing or leasing equipment (often second-hand) from foreign partners (most frequently German and Italian) who are often helpful in making financing arrangements for the purchase transactions or lease agreements. Nevertheless, it is clear that for the most part these methods of modernizing production equipment are far from sufficing to bring Polish businesses into the forefront of technology; at best they allow them to be reasonable imitators, but never innovators (Dornisch et al., 2000).

Trade relations are of course another very important aspect of integration. It has often been noted that the trade reorientation from the collapsing CMEA markets to markets in the most developed countries (primarily those of Western Europe) at the beginning of the transformation was remarkable in Poland as well as in several of its neighbors in Central Europe (especially the Czech Republic, Hungary, and the Baltic states).

However, the large domestic market generally makes Polish entrepreneurs less energetic in their search for export markets than their counterparts in smaller countries. This is illustrated by Table 17.

**Table 17. Exports per capita, 1999 (USD)**

Poland	710
Hungary	1800
Slovenia	4200
Czech Republic	2200

Source: Ministerstwo Gospodarki

This is one of the factors behind Poland's large, and increasing, negative balance of trade in the 1990s. There is, however, a positive side to that coin as well. Poland's imports do not only serve to satisfy consumer demand, but are also an indication of the extent to which the country is upgrading the largely dilapidated capital stock it inherited from the Communist era by importing capital goods.

Finally, in evaluating Polish firms' capacity to steer the process of integration into European innovation networks, it is crucial to look at their role in what might be called the national system of innovation in Poland. Here the key fact to note is the extremely low rate of expenditure in private industry on research and development activity. Table 18 illustrates the scale of Poland's problem with R&D investment in comparison with a number of other OECD countries:

**Table 18. Research and development expenditures (% of GDP)**

	1965	1970	1975	1980	1984	1994 or 1995	Central government expenditures
Japan	1.27	1.59	1.73	1.91	2.37	2.69	0.63 (1994)
USA	2.91	2.65	2.27	2.38	2.62	2.45	0.99 (1994)
France	2.03	1.93	1.80	1.84	-	2.38 (1995)	1.05 (1993)
United Kingdom	2.35	2.10	2.02	2.19	-	2.19	0.71 (1994)
Germany (Federal Republic)	1.73	2.18	2.38	2.63	-	2.27 (1995)	0.84 (1995)
Poland	-	-	-	-	-	ca. 0.8 (1995)	0.5

Sources: Pietraszewski (1997), Parteka (1997).

As the table shows, the largest portion of the distance between Poland and the other OECD countries is not due primarily to the low level of government R&D expenditures but rather to the low level of private R&D spending by industry. Polish industry's spending on R&D amounts to a mere 0.3% of GDP, as opposed to the OECD average of 1.51% (Pietraszewski, 1997). This has not changed in more recent years, as data from the Central Statistical Office demonstrate. The share of R&D expenditures in GDP rose somewhat in 1999, and the private sector's share rose with it; however, in 2000, the share of expenditures in GDP, and the private sector share in those expenditures, fell back to the levels of 1995 (Central Statistical Office, 2001).

### 4.3. The roles and strategies of public authorities

The role of Polish public authorities in the process of integrating the Polish economy with that of the European Union can be summed up as an unimaginative and defensive one based on reaction to forces brought to bear on those authorities (interest groups) rather than active realization of coherent strategies. Most actions have consisted in attempts to defend existing employment in largely decrepit enterprises whose competitiveness has been severely threatened by the opening of the Polish economy; there has been little or no concentrated effort to create favorable conditions for the development of new, internationally competitive industry. One of the most significant exceptions has been the extensive investment in infrastructure carried out by Polish local governments throughout the past decade.

#### 4.3.1. The national government

The statement of minister of industry in the first non-Communist government of post-war Poland that the best industrial policy is the lack of an industrial policy is very well-known in Poland. This highly ideological approach to the issue of policy led to what one might describe as the formation of policy by default. By this we mean that the industrial policy which (inevitably) emerged in Poland was shaped primarily by the pressures of various interest groups bringing their influence to bear on successive governments rather than conscious strategy choices of those governments.

One of the leading motives in the creation of this "policy by default" has been the perceived need to protect jobs in industries and regions which have been threatened with obsolescence since the opening of Poland's economy over a decade ago. Classic examples include the coal and steel industries, the Warsaw tractor factory URSUS, and the Gdansk shipyard. These enterprises have been protected from the forces of competition by various methods, both implicitly (for example, by including allowing



them to run enormous arrears in the payments of taxes and social security contributions) and explicitly (with import tariffs, etc.). In a fairly large number of localities threatened by extremely high unemployment as a result of local industrial monocultures, the government has (since the passage of appropriate legislation in 1994) created Special Economic Zones, in which investors have been favored by extraordinary tax exemptions as well as exemptions from tariffs on imported components. However, a number of factors call this approach into question. First, it has given rise to serious conflicts with the European Union, which views them as an illegitimate form of state aid. Second, the empirical economics literature on such zones offers no clear-cut answer to the question of their effects on local and regional economic development (measured, e.g., in terms of investment, employment creation, etc.)<sup>13</sup>, and given this ambiguity there seems good reason to suspect that the revenues foregone by local and regional authorities are not offset by any gains that might arise as a result of such policies, and that those lost revenues could have been put to better use in stimulation of private investment (e.g., by the provision of the types of public investment which “crowd in” private investment). In particular, in the Polish case, while there are now approximately 20 such zones in Poland, only five have been assessed as providing benefits in the form of significant investment and job creation; the rest have failed to attract the investment they were intended to stimulate (Balcerowicz, 1999).

Poland lacks anything which could be described as a coherent export promotion policy. In the early years of the Polish transformation, the only policy instrument used for export promotion of any sort was exchange rate policy. It became clear fairly quickly, however, that the export promotion potential of this policy had been exhausted due to the lack of export credit and export credit insurance (World Economy Research Institute, 1994).

However, many of the instruments subsequently introduced for export promotion have little more than symbolic significance (abstracting from the question of whether they are well-designed in the first place). One of them is the export credit subsidy introduced in 1995. In 1999 only 6.7 million PLN were allocated for such subsidies (see Pintera).

The Export Credit Insurance Corporation, founded in 1991, which provides guarantees on export credits provided by banks (known by its Polish acronym KUKI). However, KUKI's role is limited due to the fact that its requirements concerning the minimum size of transactions insured effectively eliminate small businesses from its potential clientele. It is no surprise that while 25% of German exports and 50% of UK exports are credit-based, only 4% of Polish export is financed by sources other than those of the exporters themselves (2.5% by KUKI; see Ministerstwo Gospodarki).

The European Commission has funded the Phare EXPROM program, initiated in late 1993. Administered initially by Polish Chamber of Commerce and later by the Polish Foundation for Small and Medium Enterprise Promotion and Development (which in 2001 became the Polish Agency for Enterprise Development), this program has provided grants for technical assistance, including advertising, participation in foreign

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<sup>13</sup> For a review of the literature, see Wasylenko (1997).

trade fairs, foreign market research, and other activities (World Economy Research Institute, 1994).

An example of a particularly counterproductive policy in the area of integrating Poland's economy with that of Western Europe is that of favoring of Polish investors in privatization. Ostensibly designed to promote the formation of native Polish capital, this policy in fact only enriches Polish arbitrageurs at the expense of the state budget, since Polish investors acquire shares at below-market rates and later sell them to foreign investors. The effects of this policy are well illustrated by the example of Polish investor Jan Kulczyk. In one of his better known arbitrage operations, Kulczyk purchased the Poznan-based beer manufacturer Lech, then issued new shares to South African Breweries (via this transaction SAB became the majority owner of Lech). It is worth noting that Kulczyk is one of the leading members of a lobbying organization – the Polish Business Council – which played a key role in convincing the Polish authorities to adopt the policy of favoring Polish investors (Grzeszak 2000a).

The case of FIAT Auto Poland can serve as an auto industry example of many of the flaws of the national government's policy. The failure of the motor works in the southern city of Bielsko-Biala would have been a disaster for the local economy. FIAT had been associated with the factory for a decade, since the beginning of production of the Fiat 126. As a result, the government felt itself under significant pressure to act quickly save the enterprise, and was willing to make significant concessions to the most interested potential investor – the incumbent (as it were) FIAT. In 1992 an agreement was signed for the privatization of the enterprise, giving FIAT a majority share for a price of one dollar (sic!). In conjunction with this agreement, the government instituted a 35% tariff on the import of small cars which would compete with the Fiat 126 and other product lines from Bielsko-Biala. Granting the firm such a monopoly position led to significant losses for the Polish consumer, as FIAT Auto Poland exploited this position to implement a monopolistic pricing policy (Fornalczyk, 1997; Tulder, Ruigrok, 1998). The policy of concessions designed to preserve existing jobs continues. In 2000, the government decided to create a Special Economic Zone in Bielsko-Biala, due to the fact that production of the Fiat 126 was being discontinued. The government motivated its decision, which gave FIAT Auto Poland a 10-year exemption from the corporate income tax (followed by a 5-year 50% reduction in the same tax) and exemption from the real estate tax, by arguing that it was necessary to ensure an investment in new engine production facilities which would allow for the employment of workers formerly employed in production of the Fiat 126 (Grzeszak, 2000b).

Our final consideration in this treatment of the public sector concerns its role in the national system of innovation. In our consideration of local firms, we noted the low level of spending on R&D in private industry. It is very important to note the existence of 260 state-owned R&D institutes which Polish firms lacking their own R&D facilities could potentially take advantage of. Such institutes (as well as research facilities at universities and polytechnic institutes) could constitute ideal partners for small businesses, which often cannot afford their own laboratories. Nothing could, however, be further from the case in Poland, where cooperation between these institutes and small businesses is practically unknown. Industrial R&D institutes prefer to concentrate on cooperation with their traditional clients, large industrial producers in the state-owned or formerly state-owned sector, and are, moreover,

highly dependent on government grants. Polish universities constitute another resource that could be utilized by private industry. However, they suffer from many of the problems often observed in the West, resulting, for example, from the fact that universities are seldom well prepared for cooperation with business and lack the necessary administrative flexibility, professionalism in drawing up contracts, and general awareness concerning business practices (Quevit, 1997). Moreover, small business owners themselves usually lack both an awareness of what the institutes could possibly offer them as well as financial resources to pay for R&D services. Possibilities for small businesses utilizing similar technologies to pool their financial resources in developing cooperation with the institutes remain unexplored, and the R&D institutes generally fail to engage in marketing or promotional activity on any significant scale.<sup>14</sup>

#### *4.3.2. Local governments*

Many local governments in Poland have been very active in developing policies to support investment in their localities. The types of policies they have implemented have been quite variegated. Probably the most common, and least imaginative approach, is analogous to the creation of Special Economic Zones by the national government and consists in tax incentives. It is questionable, however, whether tax breaks offered by local authorities have more than a marginal effect on investors' decisions on where to locate new plants or actually serve only to deprive local governments of revenues. Some specific examples (drawn from Gorzelak et al., 1999) illustrate the flaws in this approach and how other policies can be more effective in achieving the same goals.

The eastern town of Bilgoraj is very generous with tax breaks, which it has used to stimulate investment by both local entrepreneurs and foreign firms. However, it is clear that these tax breaks were of little importance for the investment decisions; more important factors included the provision by the city of land equipped with the necessary infrastructure and the existence of major clients in the area. The northern town of Ilawa, by contrast, gives almost no tax breaks to firms in the locality and is in fact zealous about collecting as much as it can in tax revenues from them (and seems to be doing a good job of it), and nevertheless has a slightly higher ratio of existing firms to local residents. Ilawa has, however, implemented a policy of public infrastructure investments which have improved its attractiveness for tourists and stimulated the general business climate of the town.

The case of the western rural borough of Tarnowo Podgorne deserves particular attention. By 1998, this borough, bordering on the major city of Poznan, had attracted 300 million USD in foreign investments, one of them being a bus manufacturing facility owned by the German vehicle producer MAN. The mayor of Tarnowo Podgorne emphasizes that although MAN was granted a 5-year exemption from payment of the local real estate tax, the revenue lost was more than regained by local authorities due to MAN's investment in a sewage pipeline for the factory, which also serves the needs of the local population (in its negotiations with MAN, the borough obtained the investor's agreement to construct the pipeline in such a manner as to allow the entire village in which the factory is located to use it).

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<sup>14</sup> This discussion of R&D institutes and universities draws on that found in Woodward (2001).

The literature on the experience of Polish local governments in the 1990s has emphasized their extensive activity in the area of infrastructure investment. Polish local governments typically spent more than 20% of their budgets on investment in the 1990s, thereby accounting for 50% of all public investment spending.<sup>15</sup> As the examples cited above illustrate, this appears to be a much more effective tool for stimulating foreign investment than tax breaks. Another tool whose effectiveness is demonstrated by Tarnowo Podgorne is spatial planning. Whereas most Polish municipalities have experienced serious delays in the preparation of land use plans as required by law, the borough authorities in Tarnowo Podgorne were very early to gather full information about the area and its development opportunities. In Tarnowo Podgorne a new land-use plan was prepared in 1992. It provided for 400 hectares of land along the A2 motorway to be used for economic activity, following the change of their zoning designation from agricultural to non-agricultural. Thanks to the availability of this information, investors can obtain detailed information about available plots of land, their price, the infrastructure with which they are equipped, etc. (Gorzalak et al., 1999).

## **5. EU accession and its impact on industrial networking**

As we observed in Chapter 2, the radical reorientation of Poland's trade in the early 1990s led to the EU's becoming Poland's main trading partner several years ago. And as mentioned in Chapter 2, Poland's accession will already be preceded in 2002 by reduction of tariffs on EU car imports to zero. Thus, from the point of view of elimination of trade barriers, accession will bring nothing new in the auto industry and probably little impact in most other areas of the economy. (As we have noted, the impact of these trade barrier reductions on the level of Poland's integration into production networks is *negative*, in that it has caused a reduction in employment and production in the auto industry within Poland's borders, and this impact is already being felt. Orłowski (2000) presents forecasts for the effects of EU accession on the Polish motor industry, basically confirming our analysis. He forecasts that auto exports will grow, but that imports will grow more. Moreover, during the first 5-7 years following accession, industry costs can be expected to grow by about 5%, which is roughly average for the industries for which Orłowski formulated such prognoses. Among these costs are, e.g., environmental protection, labor costs, and energy costs.)

Indeed, it seems the greatest impact of accession will not be in the liberalization of movement of goods, capital and labor, but rather in (a) Poland's adoption of the *acquis communautaire* and (b) the inflow of greatly increased assistance from the Cohesion and Structural Funds (and possibly direct payments to farmers under the Common Agricultural Policy, although the latter issue has not been resolved yet). The funding from the Cohesion and Structural Funds will make possible very important infrastructure investments which the Polish economy badly needs to improve its competitiveness, as well as (hopefully) aiding more backward regions and sectors (in particular rural Poland and the agricultural sector) to narrow the civilizational gap between themselves and the rest of the country. With respect to the effect of these

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<sup>15</sup> See, for example, Gilowska (1994), Levitas (1999).

developments on the auto industry, we believe that much will depend on the sort of regional development policy adopted by the national and regional authorities. Auto industry production facilities tend to be located in regions of Poland with higher GDP per capita (e.g., the regions of Mazovia [Warsaw – FSO Daewoo], Wielkopolska [Poznan – Skoda], and Upper Silesia [Gliwice – Opel; Bielsko-Biala – Fiat]), and even when they are located in lower-income regions like the Lublin region, they tend to be located in the most developed cities of those regions. Thus, if the regional development policies implemented with Structural Fund monies focus on developing the weakest, peripheral areas, the effect for the auto industry will likely be smaller than if those policies focus on creating and strengthening development centers.

On the other hand, adoption of the *acquis* will mean the appearance of certain competitive disadvantages for large sections of the Polish economy. For example, small businesses will be forced to abide by environmental protection and health and safety regulations which will significantly raise their costs. It is, however, possible that the increased funding from Brussels (especially the infrastructural improvements brought about thanks to Cohesion Fund assistance) and possibly – if the conditions for attracting FDI are improved – increased flows of private capital will at least partially compensate for these new disadvantages.

## **6. Summary, conclusions, and where one might go from here**

There have been significant inflows of FDI to Poland from the EU in the 1990s. However, this burst of investment may be running down, as investment opportunities afforded by the privatization process are running out. Moreover, given the very diverse sectoral allocation of investments, mostly motivated by seeking local consumer market share, skepticism as to whether FDI is a significant force driving Poland's integration into EU networks seems justified.

Focusing our attention on Poland's automobile industry, we note, first, that despite the slowdown in the growth of Polish market for new cars in 2000, it seems to be one of the largest, fastest growing and most promising of Europe's car markets. The recent slowdown was caused by a general downturn in the Polish economy, aggravated by increases in the fiscal burdens on sales of new cars and increase of the exploitation costs (e.g., insurance costs).

We find, further, that most cars sold in Poland are produced or assembled domestically, and that foreign-owned companies which have production or assembly units in Poland have won the dominant position on the market. These units were initially established to a large extent for the purpose of avoiding payment of import duties. However, the weakness of this motivation, and the limitations of its impact on the Polish economy's integration with the European and global economy, are demonstrated by the fact that as import duties have fallen, assembly units are gradually being closed. We can expect that this will lead to a reduction in market share of domestically assembled cars, in favor of imports. We also noted that fiscal instruments, including tariffs and excise taxes, appear to have been the only instruments which the government has used to try to guide the market.

The fact that assembly units are being closed as trade barriers are reduced shows that Polish production facilities – in spite of their much lower labor costs – are generally not competitive. This gives us some valuable insight into the nature of the structural weaknesses of the Polish economy, and consequently into the nature of the main challenges that will face it over the next decade.

Probably the most important insight emerging from this analysis is that cost advantages are not enough. Our preliminary observations indicate that technology transfer and innovation processes are more important for the integration of Polish manufacturing into European production and innovation networks, and in this arena Poland is particularly weak. Further comparative analysis of Poland and the Czech Republic should yield sufficient evidence concerning the role networks play in building and retaining domestic manufacturing facilities and giving them an export orientation.

When we consider the interplay of three types of forces (markets, enterprises and politics) and three types of players (foreign corporations, local firms, and the public sector) in the process of Poland's integration into the European economy, the general picture which emerges is one of weak developments in the direction of full integration (especially into cross-national innovation networks).

Ironically, one of Poland's main strengths turns out to be one of its great weaknesses: its relatively large domestic market, which relieves pressure on both local and foreign actors to look for export opportunities. Another key weakness affecting all three types of players is the low level of investment in research and development activity, which is, generally speaking, aggressively pursued and stimulated neither by the public sector, nor by domestic firms, nor by foreign investors.

The public sector has generally played a rather passive and defensive role, with little active, strategic policy-making and much catering to special interests. The instruments used to promote foreign investment consist primarily of tax privileges and similar concessions. The main exception in this respect is found in the extensive infrastructure investments carried out by local governments over the past decade.

In general, one could say that the most powerful actors – the MNCs and the national government – have been least active in trying to push Poland's integration in the direction of high value added and high innovation, whereas the least powerful actors (e.g., local governments and Polish small businesses) have made the greatest efforts (in relation to their capacities) in this direction. There is, moreover, some evidence (see Dornisch et al., 2000) that Polish small businesses are cooperating with *small* foreign firms in ways (leasing and subcontracting arrangements, etc.) which seem to promise more by way of technology transfer and know-how transfer, but this requires more study.

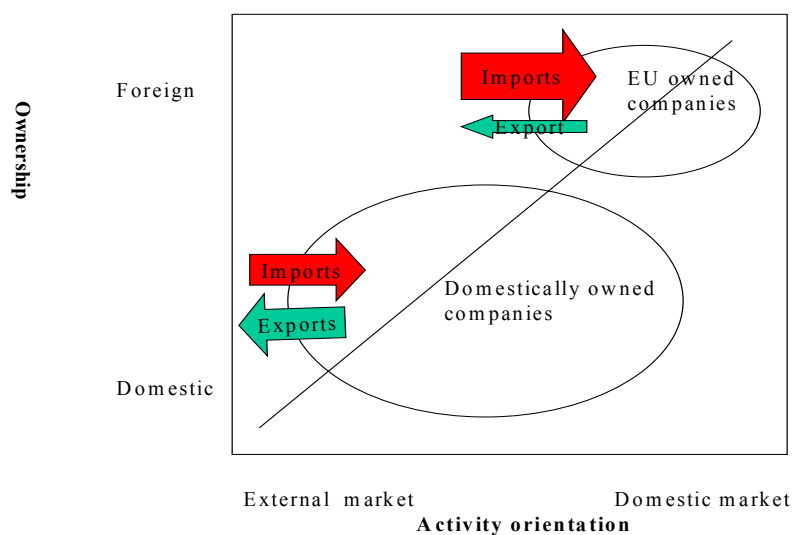
As discussed in Chapter 1, it seems that on the whole foreign-owned companies tend to be net importers (of both finished products and inputs into the production process), while it is domestic companies that provide most of the impetus behind Polish exports. We believe that this trend results from the strategic emphasis placed by foreign investors on domestic market share. In the remainder of the paper, we would like to suggest a research framework for examining more closely the relation between

export vs. import orientation, foreign vs. domestic ownership, and firm-level strategies.

To establish whether there has actually been an increase or decrease of induced intra-industry specialization and consequent formation of cross-border networks in Poland, we would need to construct appropriate measures, collect appropriate data on a lower level of aggregation, and assess in-country network dynamics. While we can formulate the generalization that foreign-owned companies import while domestic companies export, we certainly cannot preclude the existence and importance of other patterns. For countries like Hungary and the Czech Republic, export-oriented FDI certainly seems to dominate in several sectors. The framework illustrated in Figure 5 could serve as a basis for further analysis of the current Polish situation.

We have used the data presented in Chapter 1 to graphically approximate the picture of the Polish economy in year 1999. EU-owned companies represent approximately 20% of the revenues of all companies (reflected in the sizes of the ovals) and tend to be concentrated on gaining local market share, generating up to 43% of total Polish imports and only 28% of exports. The size of imports generated by EU firms exceeded the total size of exports of domestically owned firms by approximately 30%.

**Figure 5. Model of the Polish economy's relation with the EU**



Direct evidence of linkage between ownership and market orientation is obviously available only on the micro level and to acquire it would require access to confidential company data. Indirect evidence can be found, however, by analyzing the relative size of relevant markets, ownership structures and the balance of trade in particular industries. We hypothesize that the market orientation of a given industry, measured by the ratio of the trade balance in that industry to its total domestic output, is a function of the relative size of markets, cost differentials and ownership structure:

$$T_i / Y_i = f(S_i^f / S_i^l, C_i^f / C_i^l, A_i^l / A_i^f)$$

where for a given industry i:

$T_i$  = domestic country trade balance for industry i;

$Y_i$  = total domestic output of industry i;

$S_i^l$  = size of domestic market;

$S_i^f$  = size of foreign market;

$C_i^l$  = average costs of manufacturing domestically;

$C_i^f$  = average costs of manufacturing abroad;

$A_i^l$  = domestically-owned assets and technology

$A_i^f$  = foreign-owned assets and technology

The relationships between market orientation and resulting specialization on one hand and the relative size of markets and relative average costs on the other are fairly straightforward. A country will specialize in a given industry (i.e., will have positive index of specialization and export large proportions of its production) if its local market is relatively large and the cost differential greater than 1. However, the impact of asset and technology ownership is less easy to capture. In fact the structure of asset ownership represents both the result of a historical process of accumulation of capital and – equally importantly – the source and the degree of technological autonomy. The domestically-owned sector will tend to use locally developed or localized technologies, while the foreign-owned sector will tend to transfer in the technology and import components from the sources it uses in the home countries of the investors. Consequently, even when the relative size of the market and positive cost differential would justify the emergence of positively specialized industry, these effects can be overwhelmed by the effect of the technology and asset ownership structure, if, as we hypothesize, this works in the opposite direction in the case of dominant foreign ownership. It is worth noting that the above observations for East Central Europe complement well the conclusions of FDI analysis conducted for South East Asia (Cheng et al., 2001).

On theoretical basis, we consider a network link to exist when we observe a contractual relationship between specified partners which is stable over time (in contrast to one-time transactions between unidentified buyers and sellers). The repetitiveness of transactions over time (implying a certain level of price fixing), combined with sustainability (implying that there is a cost to both parties to stop the relationship), provide the necessary framework for a single network link (Kranton, Minehart, 2001). Networks arise when numerous such linkages are created between firms in a given industry. Networks generate pulling effects (positive effects on average costs in the network) and are generally considered to be conducive to innovation.

Armed with these definitions, we now apply them to the market orientation function specified above and proceed further with categorization of emerging networks. The



function implies that, market sizes and costs being equal, an industry's market specialization, characterized by the ratio of the trade balance to output, is dependent on asset and technology ownership. In other words, with market sizes in two countries being the same and no cost differentials, the flow of goods will be defined by who owns the assets and the technology embodied in those assets. If we expand the same analysis to networks and borrow from the economics of social interactions, we will assume there is an incentive to create linkage with firms of the same national origin (ownership channel). Past experience with suppliers from the investor's home country and commonality of interests and derived value from maintaining the network relationship will favor continuing the use of such suppliers in production/assembly activities abroad. At the same time the technology transfer process requires (at least in the beginning) the cloning of technologies and hence the use of materials and parts with identical specifications (technology channel). This also reinforces incentives to use the same supplier abroad as in the home country.

How might these emerging networks evolve in the future? Our preliminary analysis proposes to look at assets and technology ownership and local network characteristics as the key differentiating elements which will determine a country's ability to successfully integrate into EU and global production networks. Some countries and some industries are in a better position than others. With falling trade barriers and logistics costs as a result of enlargement of the European Union, in domestically owned industries we will see potential amplification of positive specialization and gains in market share for suppliers from Central Europe (with amplified competition between them). For industries dominated by foreign ownership the prognosis is more complex. On one hand, we may see decline of foreign manufacturing in Central Europe, where the benefits of fragmentation do not justify multiplication of sites, and some companies with smaller local market shares will certainly eliminate their manufacturing activities in the region (indeed, as our analysis of the Polish auto market indicates, they are already doing so). On the other hand, we may expect to see foreign suppliers re-focusing on established brands and finished products manufactures and accelerating the de-localization of their eastern manufacturing sites and/or locally owned industry ramping up its technological and commercial capacities to move into the role of local and pan-European suppliers and contract manufacturers (Kierzkowski, 2001). The latter scenario could even lead to a total re-orientation of entire industries, depending on the strength and innovativeness of local supplier networks.

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