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Manufacturing FDI in New EU Member States – Foreign Penetration and Location Shifts between 1998 and 2002

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Since the late 1990s investors have been faced with new challenges due to changing locational characteristics in the Central European transition countries. Export demand became the main driving force of manufacturing FDI as opposed to local-market penetration in earlier years. In addition, increasing production costs drove investors to relocate or upgrade their subsidiaries.

FDI effects on structural upgrading can be traced by using a combination of various approaches and sources of information: microeconomic, sectoral and macroeconomic. In the microeconomic approach, we rely on findings of case studies showing the close connection between the competence of a subsidiary and its chances for upgrading. At the macro level, changes in the industrial distribution of FDI stocks is analysed. For further industrial characteristics we rely on a database comparing the performance of foreign investment enterprises and domestically owned enterprises.

Shifts of capital, labour and investment of foreign investment enterprises support the existence of a 'flying geese' development model. Transnational companies located low- and low-medium-tech export-oriented subsidiaries in the low-cost Central European transition countries during the 1990s. Later on they moved the subsidiaries further to the East and rarely upgraded these activities in the more advanced countries. Manufacturing FDI in the new EU member states increasingly concentrated in the most internationalized industries such as the automotive industry and electrical engineering, which provide greater opportunities for upgrading and networking. The new EU member states successfully moved from low-tech to medium-high-tech industries, but their performance in the high-tech sector has been uneven and recently also hindered by the crisis in the electronics industry.

Keywords: foreign direct investment, foreign investment enterprise, restructuring of manufacturing industry, new EU member states

JEL classification: F210, F230, L600, O570, P230

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Manufacturing FDI in new EU member states – foreign penetration and location shifts between 1998 and 2002

Introduction

This paper traces the shifts in FDI location in the manufacturing sector of the Central European new EU member states (NMS)[1] and candidate countries (CC)[2] over the period 1998 to 2002. In this period a change in the motivation of investors took place due to new global strategies and changing locational characteristics. Internationalization of production became a major driving force of FDI in the NMS as opposed to local market capturing in earlier years. Shifts took place in the industry composition of FDI and in the specialization of individual countries. Rising production costs as compared with other regions drove investors to relocate or upgrade their subsidiaries. Upgrading was supported by improving institutional circumstances and a by and large positive experience gained by investors in the NMS.

According to the 'flying geese growth model', a catching-up process of industrialization takes place in medium-developed open economies relying on FDI from a nearby lead economy. The aim of this paper is to find evidence for catching-up of NMS and CC by structural upgrading, receiving less sophisticated production segments from more developed countries, notably the EU-15.[3] We do this by combining various approaches and sources of information.

FDI research has been using several paths of analysis in economics and international business. The main sources of information and related approaches can be grouped into three categories:

(i) The microeconomic approach collects and processes firm-level information. This is done either by processing press reports on foreign investment projects[4], or by carrying out case studies and company surveys for research purposes.

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1 The Czech Republic, Hungary, Poland, the Slovak Republic and Slovenia (NMS-5) plus the three Baltic countries Estonia, Latvia and Lithuania.

2 Bulgaria and Romania.

3 The present paper has been prepared in the framework of the research project 'Are the geese flying?: Comparing the industrial restructuring role of FDI in South-East Asian and Central European countries' (Jubiläumsfonds Project No. 9958, financed by Oesterreichische Nationalbank, OeNB). The theory of the 'Flying Geese' has been presented in view of recent literature by Bellak (2004) and statistical evidence for the NMS has been analysed by Damijan and Rojec (2004).

4 See e.g. Locomonitor, www.locomonitor.com This approach provides the most up-to-date information.

(ii) The sectoral approach relies on aggregate company balance sheet data. These are available from the statistical offices, partly reported and partly collected for the purpose of a research project.[5]
(iii) The macroeconomic approach is based on FDI data taken from the balance of payments.[6] This is the most general analysis of direct capital inflows and outflows also regarding their distribution by investing country and targeted industry.

Only a combination of the three approaches can comprehensively explain the movements in FDI. The approach of the present paper is therefore an eclectic one, combining micro- and macroeconomic sources of information, various methods of analysis as well as the approaches of economics and international business. First we look into the results of the microeconomic approach. We discuss the locational and the firm-specific driving forces of recent FDI movements in the NMS-5. Case studies and press reports reveal what kind of change is in its inception and why investors change their behaviour (Chapter 1). While the motivation of changes can best be shown by this approach, the real dimension of changes is not revealed. Chapter 2 provides evidence of industry shifts in the composition of manufacturing FDI. In Chapter 3 we analyse the trends in foreign penetration, showing the industry characteristics in terms of foreign capital, employment, investment activity, as well as by export-oriented and domestic-market-oriented sectors. Chapter 4 presents the evidence of FDI location movements in the textile and clothing industry. An outlook and conclusions are included in Chapter 5.

1 Microeconomic evidence for location shifts of foreign subsidiaries in NMS-5

1.1 Determinants of location choice

The size and specialization of FDI in a host country depends basically on two groups of factors: the characteristics of the host economy – locational factors, and the behaviour of transnationally active firms (transnational corporations, TNCs) – investor-specific factors (Bellak, 2004b). Both groups of factors are imbedded in and thus influenced by developments in the world economy and by technological change. Over time, the locational characteristics of host economies are changing and so are the company-specific characteristics and strategies of TNCs. As a consequence, new types of activities move into a particular location (country, region) while others move out. In mature FDI locations a further question is whether TNCs re-invest their profits there or shift elsewhere. Expansion

[5] wiiw has collected these data for seven CEECs. The latest available data cover the year 2001, in some cases 2002. For an analysis of the wiiw sectoral data see Damijan and Rojec (2004). International organizations also provide similar data: OECD's 'Measuring Globalization' database and Eurostat's 'Foreign Affiliates' database.

[6] The main international sources of data are the *IMF Balance of Payments Yearbook* and the *UNCTAD World Investment Report*. For transition countries a main source is the *wiiw-wifo Database on FDI* (Hunya and Stankovsky, 2004). In these sources the most recent sectoral FDI data available in mid-2004 refer to the 2002 year-end stock.

and upgrading of existing FDI projects becomes more important than attracting new investors.

Locational factors include those host-economy advantages that influence the costs of investment, production and market access. In the transition countries, the advance of transformation to a market economy, the proximity to the main EU markets, cheap production assets and low wage costs had been the main location-specific determinants of FDI during the 1990s. Within the region, a West-East difference emerged in all these respects which by and large showed up in higher per capita FDI in the more Western NMS countries compared to the East and Southeast European countries. The differences among the NMS in terms of the size, sequence and specialization of FDI are smaller than compared to the other regions. The difference between the NMS and Southeast Europe in terms of per capita FDI inflows grew during the 1990s, but it started to diminish after 2000. East and Southeast European countries embarked on higher rates of economic growth, made progress in transformation while maintaining their cost advantages and, as a consequence, also started to attract more FDI than before (Hunya, 2004). Countries opening up to foreign capital and reducing investment risk below a certain threshold always receive FDI up to a certain extent in their local market-oriented industries and services. After the local market has been captured, FDI can only grow in line with that market; further large FDI is only possible in export-oriented projects. The NMS have entered into competition with each other for these export-oriented investment projects based on their locational characteristics.

The firm-specific factors are represented by the assets and knowledge of the TNCs that make them specific, in some respect superior to other firms. This superior knowledge is also necessary to compensate against the extra costs and risks of operating in a foreign environment. Host-country FDI policy may diminish some of the entry and operational costs by providing information, support location search or by giving investment subsidies. All in all, TNCs can combine production factors available at a certain location with a higher rate of return than local firms. They may also split production globally to make best use of specific advantages at different locations.

TNCs are either vertically integrated export-oriented companies or horizontally integrated market-seeking ones. Export-oriented subsidiaries are set up by a vertically integrated multinational company in a host country with the aim to lower production costs as well as seeking, securing and diversifying resources (Narula and Dunning, 2000). Export-oriented FDI involves fragmenting the production process geographically according to the comparative advantages of the foreign location. Important location factors that influence this type of FDI include labour costs, physical resources abundance, infrastructure, trade barriers, currency restriction, and FDI policies. Local market-oriented FDI is set up by horizontally integrated multinationals to penetrate a market, increasing market shares and

minimizing competition risk (Zhang and Markusen, 1999). The determinants of this type of FDI include local market size, the level of human capital, infrastructure, political stability, FDI policy, and cultural barriers. The two types of FDI react differently to the changes in location-specific characteristics.

Export-oriented FDI is more footloose because the locational requirements are less specific. Competition arises among the countries that can provide the same resource at comparable costs at the same production stage. The NMS have similar location advantages for export-oriented FDI, but not exactly the same. Consequently, competition for this type of FDI exists and will be discussed in the following section. NMS do not only compete with each other but also with EU-15 locations, the home countries of the most important investors. In global terms they may be in competition with Asian and Latin American production sites. But much of the production serves regional markets and there is relatively little trade between the main regions of the World (the Triad). Thus FDI in the NMS depends mainly on demand growth in the wider Europe. China attracts FDI being both a growing market and a low-cost production site. If the European economy gets more dynamism, search for new production sites will intensify and NMS may attract more FDI. Local market-oriented FDI, on the other hand, is more imbedded in the host economy, but markets can also be served from abroad and imports can be an alternative to FDI.

The behaviour of investors in a host country changes either due to their own situation and overall market position or due to changes in the characteristics of the host economy. For investors, location factors are exogenous. Changes are perceived as external shocks and their reaction, keeping or leaving a location, depends of firm-specific strategies.

International capital movements became more intensive during the 1990s and suffered a temporary and limited setback after 2000. These developments have been mirrored, with some delay, in the new EU member states.[7] Their transformation process in the 1990s took place in a period of accelerated international capital movements when TNCs were active in shifting production to new locations. First only some transition countries (Hungary and Estonia), later most of them conducted pro-FDI policies of privatization and promoting greenfield investments. As a result, NMS have become open to and highly penetrated by foreign capital. Their economies have become dependent on the development of TNCs and their main export markets. The pattern of further economic growth is connected with their ability to attract additional FDI and the specific strategy of TNCs.

[7] For recent developments of FDI see Hunya and Stankovsky (2004).

1.2 Changes in location-specific characteristics

One and a half decade after the start of economic transformation and the establishment of the first FDI projects, location factors in the NMS look much different from those before. Four major changes that took place in about the year 2000 have had a lasting impact on the amount and characteristics of export-oriented FDI:

- privatization started to come to an end;
- wages increased and currencies appreciated;
- competition for greenfield FDI increased using economic policy tools;
- EU accession became a reality, its impact foreseeable.

By the year 2000, the share of the private sector in GDP had surpassed 70% in the NMS, which meant full privatization in the traditional competitive economic sectors. Greenfield FDI and follow-up investments in foreign subsidiaries became the main sources of FDI in manufacturing. Subsequent investments and restructuring changed the production structure and competence of privatized firms. With the maturity of subsidiaries, the entry mode – privatization or greenfield – loses importance.

Privatization and foreign takeover in the services sector advanced as well. The financial sector and telecoms went private and became mostly foreign-owned. Utilities privatization started later, attracting record amounts of privatization-related FDI; for instance, the Czech Republic sold its transit gas pipeline for USD 8 billion in 2002. This horizontal, market-seeking FDI has been the largest single project in the region so far. The investor will benefit from predictably high revenues from transit fees.

While the advance of transformation reduced transaction costs, production costs increased. Data show a considerable decline in the wage-related competitive position of some Central European countries in 2000-2002. In this period wage growth and currency appreciation was particularly fast in Hungary where average monthly wages in euro terms increased by 49%. In the Czech Republic, euro wages went up by 35% and in Poland by 25%. In 2002 average monthly gross wages reached over EUR 1000 in Slovenia, about EUR 500 in the Czech Republic, Hungary and Poland, and EUR 300 in Slovakia. Back in the mid-1990s, when foreign investors settled in Hungary, average monthly wages in this country had been 15% lower than in the Czech Republic and two times higher than in Romania. In 2002 Hungarian wages equalled the Czech ones and the lead of both countries over Romania and Bulgaria increased to three times.

Hungary stood out in the second half of the 1990s with very high growth of labour productivity. This was mainly due to the restructuring and efficiency effect of foreign investors. Industrial productivity increased by two-digit annual rates between 1995 and 2000, but by less than 5% p.a. in the following two years. This means that the wage cost

increase could not been compensated by rising labour productivity. Between 2000 and 2002 unit labour costs in euro terms rose by about 15% in the NMS-5, but by 30% in Hungary. A clear deterioration of wage-related competitiveness occurred compared to the countries further East. One could expect a rapid relocation of labour-intensive production from the higher-wage countries to lower-wage locations, but the stay-or-leave decision is a complex issue, depending also on investors' specific considerations.

The textile and clothing industry is an example for the behaviour of low-tech industries (see Chapter 4). Location shifts follow shifts in wage costs quite rapidly, which helps to avoid costly upgrading. Investors are mainly interested in low wages and producing standardized goods. More sophisticated industries provide greater opportunity for production differentiation and networking. In their case agglomeration advantages may be more important than wage costs. High-tech industries may stay in locations where they are imbedded in the research and production networks that allow productivity increases beyond wage increases.

Further among the novelties after 2000, FDI policy also underwent important changes. In the first half of the 1990s policy tried to compensate for some of the risks and costs related to the transition to a market economy. Hungary was a pioneer by establishing tax free zones, later industrial parks and providing ten-year tax holidays (for details see Sass, 2004). In the second half of the 1990s tax competition increased as more countries offered tax cuts and location-related subsidies, and established business parks to attract greenfield FDI. The Czech Republic and Slovakia became particularly successful in attracting greenfield investors. Meanwhile the Hungarian promotion policy lost its earlier momentum and the country lost out in several races for large investment projects. The levelling-out of FDI policy and promotion efforts among the major players of the region contributed to a fairly even distribution of new FDI projects among countries.

As will be pointed out in the next section, locally embedded subsidiaries have greater chances of being upgraded and develop. Some countries have realized the importance of not only just attracting new investment, but also keeping existing investors and generating spillovers. The Hungarian government launched a programme in 1998 (redefined in 2000) with the aim to support potential local suppliers with technical and financial help to improve their technical, financial and knowledge background. Similar programmes were later also initiated in the Czech Republic. These programmes were well-intended if not always very efficient. As the car industry was the main target, supplier programmes could not influence TNC decisions in the more mobile industries such as clothing and electronics.

1.3 Firm-specific characteristics and TNC – subsidiary relationship

Changes that affect the development of foreign subsidiaries include, beyond the situation in the host country, also global and home country changes as well as firm-specific conditions. Global changes in the early 2000s comprised the electronics industry bubble and the stock exchange boom and bust, which both had a large impact on the financial ability of TNCs. Another novelty was the start of the outsourcing or relocation of services. Conditions more closely related to the subsidiary but not part of the locational conditions were those linked to the maturing of FDI projects, the competence of subsidiaries and the development of networking.

Most of the research analysing the motivation of foreign investors has looked at their entrance strategy, not the consecutive development strategies. Studying follow-up strategies however has become increasingly relevant with some of the subsidiaries in NMS being established for several years already. Initial investments have amortized, and the factors that had prompted investors to move into a location may have vanished. Investors had to develop new strategies – either stay at the given location or move to a more advantageous one. Either new competences are created at, or shifted to, the subsidiary, or the investment is phased out, sold or moved to another location. The decision does not solely depend on the TNC; the subsidiary will also have its own local strategy, assets and interests.

There is literature showing that the answer to the stay-or-leave question depends on the position of the subsidiary in the TNC's international network, its mandate and competence. The competences acquired or developed by the subsidiary will determine how valuable it is for the TNC. We also have to refer to the fact that local market-oriented subsidiaries may be upgraded more easily than footloose export-oriented subsidiaries.

The established competencies of a firm allow for more or less room to respond to shocks with local means. Dörrenbächer (2002a) based on Schmid et al. (1998) presents a five-grade scale of competences from 'marketing satellite' through 'miniature replica', 'rationalized manufacture' and 'product specialist' to 'strategically independent subsidiary'. Initially, subsidiaries are usually set up with a lower level of competence and close control by the mother company. Higher-level competence and greater independence in decision-making may follow later. The higher the local competence and freedom of the subsidiary, the more it can develop positive responses to outside shocks. The development of new competences, moving the firm upwards on the competence ladder, is a primary objective of subsidiary managers. They may even go in conflict with the headquarters on important issues. The following case studies and surveys illustrate this concept and suggest conclusions for NMS.

Dörrenbächer (2002b) reports on a survey of German investors in Hungary. A share of 70% of the investors were small and medium-size companies, and for half of the investors the Hungarian subsidiary was the only foreign location. Their characteristics are in striking contrast to the general perception of the big and powerful TNC. The typical German investor either bought a Hungarian company and changed some of the machinery there or transferred used production lines from Germany to Hungary. Building new, state-of-the-art factories was rare, just as relying on local innovation. The investors transferred technology, production and organization as a package and dispatched the managerial staff to operate the subsidiary. The technology transferred to Hungary was mostly not the latest but still efficient at the wage cost level of 1992 or 1996. In the absence of modernization these subsidiaries could not be operated efficiently when labour costs increased. Investors that had more than one production site in Hungary modernized just one of their subsidiaries. None of the subsidiaries established at the beginning of the 1990s failed until 1998. But in the following years all assembly-type operations in the sample were closed down or sold.

While subsidiaries can develop new competences, most of them get stuck at a low competence level. The integration of NMS subsidiaries with TNCs is usually limited to one or the other corporate function, and their integration into national networks is even less intensive. Low competence means vulnerability and closure is possible if locational circumstances should require it. Dörrenbächer (2002a) shows examples of German investors in Hungary that developed or streamlined subsidiaries according to local competences. The shoe-maker Salamander came under severe pressure when wages went up and the Hungarian forint appreciated after the year 2000, and closed down all production locations in 2003.

Regarding FDI entering by privatization, Rojec et al. (1995) showed that the competences of the subsidiary were already laid down in the privatization contract. The role of the acquired company in the TNC's international network was established in advance and there was little possibility to move out of a given position. This may also hold true for greenfield investments. The investor sets up the subsidiary for a certain task, and shifting new tasks is always a matter of new evaluations and negotiations. Still, local market-oriented, privatization-related FDI is exposed to more gradual changes (Goldberg et al., 2000). If competences can be improved in the subsidiary, its stability is ensured (Yoruk, 2002a). Success on the local market may also support an export strategy. Rapidly expanding domestic demand allowed Polish clothing firms to diversify their market strategy, while Romanian firms, active in a stagnating domestic market, remained dependent on outward processing contracts (Yoruk, 2002b).

All the above cases highlight those strategies where the investor seeks stability and either avoids drastic changes or closes down the subsidiary when location factors are changing. Another strategy is linked to continuous upgrading and learning at the subsidiary.[8] Familiarity with the local competences can lead to an optimization of the role of a subsidiary. New products may be added and local knowledge and networking utilized. Larger and more integrated investors tend to be of this type. Although generally the number of passive investors – those who do not seek to diversify competences – is greater than that of investors with an upgrading strategy, larger investors more often give a longer perspective to their locations.

Song (2001) considers integration into the host-country economy as the most important factor that decides the mobility of the investment. Companies with a wide range of local links, suppliers, customers and service networks can preserve their location more often than simple assembly lines processing mainly imported components and exporting their products. Locally integrated firms may be given new competences in case of a shock. The TNC will perceive the location as valuable and shift higher value-added production and more productive processes to the subsidiary to counterbalance cost increases. This was the case with some of the Japanese electronics firms when East Asian currencies appreciated. Integrated subsidiaries received higher value added and more complex tasks. The availability of local competences was decisive. Subsidiaries not integrated locally moved out of Taiwan to Malaysia or even the Philippines.

A project led by Gristock (2003) set the target of mapping the 'emerging industrial networks' in CEECs relying on case studies (see e.g. Yoruk, 2002b). In the summary of case study findings, Radoševic (2002) points out that CEE companies have made progress over the past ten years improving their marketing, finance and organizational capacities. But their capabilities have rarely allowed them to go beyond the networking role they were imposed on by their main foreign customers, owners or network providers. Clothing firms are to a large extent locked in an outward processing function. The profit earned on processing is very limited, it provides employment but not enough investment means. Own brands and new products can increase the profit margin, but the freedom to develop may be limited. Polish firms more than Romanian ones have been partially successful in building their own trademarks and organizing domestic suppliers and retailers. Hungarian examples show that, even if the company becomes foreign-owned, its role may still be confined to simple processing.

[8] The concept of globally networked subsidiaries is described by Bartlett and Ghostal (1986). The evolution of affiliates in CEECs is presented in Manea and Pearce (2004).

The electronics industry in NMS, mostly located in Hungary, underwent rapid growth through FDI in the 1990s but problems linked to the global crisis emerged later. Foreign investors established state-of-the-art production subsidiaries, in case of takeovers they restructured the acquired firm. FDI facilitated a rapid initial upgrading of firms and products. But the benefits of this change have been consumed and deeper integration as well as higher-standard production mandates have become necessary. Radoševic (2002) argues that more investment of the same type may lead to a critical mass of investments beyond which clustering and developing a local supplier network becomes inevitable. Subsidiaries would also undergo a differentiation process with some of them achieving higher competences and production mandates. But the global crisis of the electronics industry interrupted the upgrading and differentiation process in the NMS. Flextronics and IBM streamlined production in Hungary by closing down some large production lines. As a positive development, the shrinking of production in component and assembly subsidiaries did not affect the expansion of the few existing R&D facilities. The global recovery of electronics may soon have positive effects on the industry in Hungary and attract more FDI in the future, though less in production lines and more in related services. In fact, both Ericson and IBM have expanded IT services in Hungary; other firms expanded in the Czech Republic and Poland.

The automotive industry has from the beginning developed a regionally more integrated network than the electronics industry. McKinsey's report (2003) points out that there are large cost-saving possibilities for car producers in NMS. Still, there has been no massive relocation of production, only the enlargement investments were based there. National policies usually supported FDI in the automotive industry, but success depended more on the global standing of the investing TNC than on the national environment. The Volkswagen group, including Škoda in the Czech Republic, VW Bratislava and Audi Györ, is the most successful among the investors. But Daewoo, having subsidiaries in Poland and Romania, faced problems as a result of financial difficulties at its Korean parent company. Also Fiat had problems in Italy and was forced to cut production in Poland. The troubles in the latter case were not attributable to the CEE location. Meanwhile also other investors are moving into the region with an eye to producing cheaply for the European market. Toyota and Hyundai are new investors in the Czech Republic and in Slovakia. The car parts manufacturers have usually followed the main assembly investments, local sourcing increased and clustering developed.

In 2004 German companies announced that they would relocate production to NMS on a larger scale unless the costs in Germany were curtailed by government measures. They envisage shifting production and moving more complex and technologically more

sophisticated processes into existing subsidiaries.[9] However, due to the low investment level of many German companies, this relocation of production can only be a slow process. A different case is the Swedish white-goods manufacturer Electrolux, which has closed several West European production sites and moved complete factories to Hungary and Romania.

This chapter gave some characteristic examples of FDI movements recorded on the microeconomic level. We saw increasing activity in terms of location movement after the year 2000. While inflows dominated, outflows, not properly captured by macro-level and sectoral statistics, appeared as well. FDI projects were closed down in the wake of at least three different processes: change in the locational characteristics, mainly due to increasing labour costs in NMS, and changes in the TNCs' strategy due to at least two factors, the global crisis of the electronics industry and the aging of initial investment projects. As to the labour cost increase, several studies concluded that the deeper the integration of a subsidiary into the TNC network and the higher its competence, the better the chances of its survival and development. It is more difficult to identify the impact of another two location-specific changes: EU integration and new promotion policy tools. These factors have certainly contributed to FDI growth in the region but other factors weakened their impact. The next chapter traces the statistical evidence for the shifts in the size and industrial composition of manufacturing FDI. Such statistics do not reflect the rapid company-level movements but draw attention to the overall FDI inflow increase in the period 1998-2002.

2 FDI patterns in manufacturing in 1998-2002

As manufacturing sector FDI increased less rapidly than FDI in the services sector, its share in FDI stocks fell in most countries. The exception was Hungary where manufacturing FDI recovered after privatization-related FDI in the services sector had come to an early end. In absolute terms, manufacturing FDI stocks more than doubled in the Czech Republic, Hungary, Poland, Slovakia and Romania between 1998 and 2002 (Table 1). As of 2002, the highest amount had been invested in Polish manufacturing, EUR 16 billion, followed by the Czech Republic and Hungary with EUR 13 billion each. Romania followed with some distance, reporting close to EUR 4 billion, then came Slovakia with almost 3 billion. The other countries are small in size thus the international

[9] A Spring 2004 survey carried out by Roland Berger Strategy Consultants (Rolandberger.de) among 70 companies in the industrial systems, automotive component supply and electrical engineering industries found that 69% have already located parts of their operation out of Germany but only 13% have gone beyond simple offshoring; 33% however search already for the most suitable location for every corporate function.

Table 1

Share and amount of manufacturing FDI inward stock (total stock = 100)

	Share 1998	Share 2002	Stock EUR bn 1998	Stock EUR bn 2002
Czech Republic	46	36	5.6	13.1
Hungary	38	46	5.7 (excl. reinvestment and loans)	13.6 (excl. loans)
Poland	39	36	7.5	16.4
Slovakia	49	36	0.9	2.7 (excl. loans)
Slovenia	53	43	1.5	1.7
Bulgaria	52 (1999)	33	1.1 (1999)	1.7
Romania (industry)	41	53	1.8 (estimated)	3.8 (excl. loans)

Source: wiiw FDI Database.

significance of FDI there is limited. The leading countries in per capita manufacturing FDI stock are also the Czech Republic and Hungary. Most of the new manufacturing sector FDI went into medium-high-technology industries (Table 2) with significant differences country-wise.

Table 2

FDI inward stock in main manufacturing industries in 2002

	Czech Republic	Hungary	Poland
DM Transport equipment, EUR bn	2.3	3.2	2.3
Share in manufacturing, %	17	24	14
DL Electric and optical equipment, EUR bn	1.9	2.7	0.5
Share in manufacturing, %	14	20	3
DK Machinery n.e.c., EUR bn	0.7	0.8	0.5
Share in manufacturing, %	6	6	3
DF+DG+DH Chemicals, EUR bn	2.0	2.4	3.1
Share in manufacturing, %	16	18	19

Source: wiiw FDI Database.

In the *Czech Republic* FDI reached record-high levels due to privatization-related sales to foreign investors and new greenfield projects. Takeovers in the banking sector, transport and telecommunications as well as greenfield investments in real estate and trade triggered a decline in the share of manufacturing in the FDI stock from 46% in 1998 to 36% in 2002. The amount of manufacturing FDI was EUR 2 billion in 1999 and still a remarkable EUR 1.1-1.7 billion p.a. in each of the following four years. The industry distribution of manufacturing FDI shows a strengthening of the position of medium-tech industries and losses for low-tech industries. The highest amounts were invested in the production of motor vehicles, metals and food. Very low inflow was recorded for the leather and shoe production.

Total FDI stocks doubled in *Hungary* in 2002 compared to 1998. The share of manufacturing increased and became higher than in other countries of the region (46% in 2002). In the services sector, real estate and other business activities became the most important destination followed by trade and financial services. In electricity as well as transport and telecom, however, the invested amount was shrinking: after initial investments in acquisition and modernization no further investments were made. Manufacturing FDI boomed both in new projects and by reinvested earnings in foreign subsidiaries. Within manufacturing, the transport equipment industry held 24%, electrical and optical equipment 21% and the food industry 16% of the FDI stocks in 2002. These shares changed little over the period under review. There was, however, a general shift towards the sectors with higher technology. The most remarkable increase took place in the manufacturing of transport equipment; further rapidly increasing industries were the rubber and plastics as well as the machinery industry, while growth was moderate in the textile, clothing and leather industries.

In *Poland* the peak years of FDI were 1998-2000. Inflows have been on the decline in more recent years due not only to less privatization revenues but also to low FDI in the manufacturing sector. In 2000-2001 only 20% of the inflow went into manufacturing, in 2002 over 30%. Out of EUR 1.2 billion manufacturing FDI inflow in 2002, 28% went into the transport equipment industry and 36% into the chemical industry. In the office machinery and electronics industry, there was a net capital withdrawal following high investments in the preceding years.

In two of the three main FDI target countries presented above, transport equipment production is the industry with the highest share of FDI (Table 2). Hungary is ahead of the others concerning the amount invested. This may change due to ongoing new greenfield investments in the Czech Republic and Slovakia. Also the electrical and optical equipment industry has its main production hub in Hungary while the Czech Republic is a strong second. Poland is different from the mentioned countries in so far as it has a much stronger position in the chemical industry and less FDI in the machinery industries. While in all these countries industries at higher technology level show higher growth rates than industries in the low-tech sectors, there are specific country characteristics of technological composition that do not change rapidly. The impact of the global decline of the electronics industry in 2002 has put an end to structural upgrading of manufacturing. As at the same time a boom of the metal industry set in, industrial structure shifted towards lower value-added branches.

3 Foreign penetration in CEE manufacturing 1998-2001

3.1 The role of foreign investment enterprises

Foreign direct investment has penetrated CEE manufacturing and foreign subsidiaries have become dominant producers and employers in many industries. What is the size of this penetration and what is its impact on industrial structure, employment, investment and exports? These are the questions to be answered in this section. It also looks at the changes in foreign penetration over time and gives a more diverse picture of structural change than FDI stock data.

Foreign affiliates/subsidiaries are special firms whose characteristics influence economic growth, specialization and several other features of the host economy. Subsidiaries usually have a higher technological level than domestic companies and can benefit from the technological advance of transnational companies (TNCs). Their integration into the economy of the host country is usually lower than of domestic-owned companies, they rely more on imported components and services. (For a survey of the foreign-domestic gap in firms' performance see Bellak, 2004b.)

Foreign penetration has been unavoidable and on the whole advantageous for transition countries. The superior technology and knowledge incorporated in foreign affiliates have speeded up the transformation of the former centrally planned economies. Corporate integration into international structures has been necessary for transition country firms to survive under market competition. Restructuring usually speeded up after privatization to foreign owners. Inefficient companies preserved under state ownership usually did not manage to become viable, they had to be liquidated and their assets sold to new ventures. Many domestic private firms newly created or established through privatization found it necessary at some stage to involve a stronger foreign owner. (For the role of FDI in the transition process see Hunya, 2000.)

Foreign penetration has changed the decision-making in firms and brought new challenges to economic policy. Integration into international corporate structures resulted in increasing specialization of production companies and limited their competence. Strategic decision-making has been transferred to headquarters abroad. Subsidiaries were exposed to external shocks from the TNC headquarters. Corporate re-organizations following external decisions may negatively hit otherwise viable subsidiaries. Economic policy has been exposed to unforeseen capital movements, hiring and firing of labour and increased foreign lobbying. Policy has had to adjust to the increasing international imbeddedness of the national economies while it also gave up some competencies in the process of EU accession.

Understanding the shifts in international production specialization is possible by looking at the changes in the foreign penetration of countries and at the industry specialization of foreign affiliates in comparison with domestic firms. The most recent data available on foreign penetration, i.e. the share of foreign investment enterprises (FIEs), in the CEE manufacturing industry cover the years 2001 or 2002. While earlier studies looked at the period 1996-1999 (Hunya, 2000 and 2001), the present paper compares 2001 with 1998 data.[10] The highest level of foreign penetration in terms of available indicators on employment, sales, exports etc. has been reached in Hungary (Table 3). In 1998, foreign penetration in Hungary was much higher than in the other countries; the latter caught up later on, yet without reaching the Hungarian level in 2001.

Table 3

Share of foreign investment enterprises (FIEs) in main indicators of manufacturing companies in selected countries, 1998, 2000 and 2001, in per cent

	Equity capital[1]		Employment		Investments		Sales		Export sales	
	1998	2001	1998	2001	1998	2001	1998	2001	1998	2001
Estonia	36.8	46.3	20.8	30.8	.	.	28.2	36.7	35.2	48.5
Czech Rep.	28.4	54.5	19.2	34.1	41.6	69.3	31.6	53.3	47.5	69.3
Hungary	72.7	67.6	44.9	45.2	78.7	77.9	70.0	72.5	85.9	87.9
Poland	43.2	53.1	26.0	32.9	51.0	64.0	40.0	52.0	52.3	66.2
Slovakia	35.2	55.9	18.5	36.4	50.1	73.1	36.2	59.3	59.0	74.9
Slovenia	21.6	24.6	13.1	17.6	24.3	22.4	24.4	29.3	32.9	36.8
Romania	19.8	54.2	13.7	30.7	35.6	57.8	24.2	48.9	22.4	23.9[2]

Notes: 1) Estonia: own capital; Hungary 1998: own capital; Romania: nominal capital. - 2) Year 2000.

Size coverage: Hungary, Romania, Slovenia: all firms; Estonia and Czech Republic: firms with more than 20 employees; Poland: firms with more than 5 employees.

FIE – Foreign Investment Enterprise: companies with at least 10% foreign equity ownership. Hungary from 2000: companies with at least 10% foreign equity of at least one foreign owner. Estonia: majority foreign-owned firms.

Source: wiiw Database on foreign investment enterprises relying on national sources.

The high early inflow of FDI into Hungary's manufacturing sector materialized in high shares of foreign affiliates by all indicators well before such a process started in other

[10] *wiiw Database on Foreign Investment Enterprises (FIEs)*: This database relies on companies' aggregate balance sheet data. It distinguishes between companies with a foreign share in equity above 10% (foreign investment enterprise) and the rest of the companies (domestically owned enterprises). This size limit coincides with the standard definition of FDI, and covers mostly enterprises under foreign control. Estonia: majority foreign-owned firms.
Source of data: Statistical offices or tax authorities of CEECs.
Countries and company size coverage: Hungary, Romania, Slovenia: all firms; Estonia and Czech Republic: firms with more than 20 employees; Poland: firms with more than 5 employees.
Years covered: 1993-2001, for Estonia 1995-2001, for Romania 1998-2002
Indicators included in the database: equity capital, sales, value added, employment, wages, export sales, profits, investment outlays. May slightly vary by country and year according to availability.
Sectors: ISIC 2-digit manufacturing industries (codes 15 to 37).

countries. When during the first half of the 1990s domestic companies, mainly state-owned, went out of business on a massive scale, the position of foreign affiliates became strong; yet it hardly increased in later years.

In the Czech Republic, Poland and Slovakia foreign penetration experienced a rapid increase after 1998. Later than in Hungary, domestic companies had to restructure and many of them ended up in foreign ownership. The more productive, export-oriented companies have become foreign-owned and their high shares in investment suggest that the trend will continue. Shrinking domestic-sector production and employment contributed to the increase in the share of foreign affiliates. If the increase in foreign penetration continues at the same speed as in 1998-2001, the 2001 level of Hungary may be reached in Slovakia and the Czech Republic by 2004-2005, in Poland a few years later. If this scenario materializes, the latter countries prove to be just latecomers and not principally different. But things may develop differently. It is not yet clear at what point of time and at what level of foreign penetration the saturation observed in the case of Hungary will set in.

Three other countries included in Table 3 show features clearly different from those of the four countries discussed above. *Estonia*, while displaying higher rates of foreign penetration in 1996 than the Czech Republic and Slovakia, experienced a slower increase in later years. In 2001 the rate of foreign penetration was below those of the latter two countries, but still ahead of Slovenia's and Romania's. Low and slowly increasing foreign penetration is characteristic of the *Slovenian* manufacturing. Slovenia did not invite foreign investors and privatized to insiders or domestic owners. Slovenian companies were integrated internationally and had a low competitiveness deficit, which made foreign takeovers dispensable. It can easily be argued that in very small open economies such as Estonia and Slovenia a dominant position of foreign TNCs is just a matter of time. Just a handful of new high-tech subsidiaries being set up in Estonia may reverse the statistical picture. Slovenia, on the other hand, does not enjoy locational advantages that may attract greenfield investments on a larger scale. At the same time local medium-size companies go international and build competitive positions.

Romania is a relatively less developed country compared with the NMS. It started to privatize and attract FDI relatively late. In 1998 it had a lower or similar rate of foreign penetration as Slovenia, but a more dynamic increase later. As FDI inflows accelerated in 2001-2003, penetration rates may have become similar to those of Poland two years earlier. It seems that Romania is slowly joining the club of countries with high foreign penetration in manufacturing.

Foreign affiliates in all seven countries for which data are available and presented in Table 3 have performance indicators superior to domestic companies in terms of labour productivity as well as export and investment propensity. This is partly due to their better

capital equipment and access to foreign multinationals' management, know-how and market position. On the other hand, higher productivity is also due to narrower specialization on assembly and component production using economies of scale. Headquarter functions, R&D and production-related services are rarely found in these subsidiaries. In the following sections, foreign penetration will be measured by different indicators. The first is equity capital, the amount of capital controlled by foreign affiliates. As a second indicator, we shall look at the employment share of foreign affiliates. Then we examine their role in investment activity. Finally we turn to export specialization and the role of foreign affiliates in exports.

3.2 Equity capital by industries in CEECs

The capital incorporated in equity is one of the main indicators showing trends in foreign penetration. It reveals how much of the equity capital present in manufacturing is controlled by foreign investment enterprises and how the distribution of equity changes by industries over time in different countries. It must be noted that this indicator contains subscribed capital plus carried forward profits and losses plus the income of the current year, which can also be a negative sum.[11] Thus this indicator shows not only the size of the foreign sector but also its profitability. It is an overall measure of the significance of FIEs in an economy. We can use this indicator to point to significant differences among countries instead of focusing on general trends.

The share of FIEs in equity almost doubled in *the Czech Republic* within three years, reaching almost 55% in 2001. This is the fastest growth among the countries under survey; it took place first of all by takeover of domestic-owned companies in the capital-intensive sectors and, in the second place, by new greenfield projects in the medium-high-tech sectors. While in 1998 foreign affiliates' equity capital was very concentrated, it became more dispersed in 2001: in 1998 the first three industries accounted for 55% of equity, three years later for only 43%. Two industries stood out both in 1998 and in 2001: non-metallic minerals and motor vehicles. Both are export-oriented industries privatized to foreign owners ahead of other industries. In 1998 the shares of these industries in FIE equity were 22% and 20% respectively; after three years they had declined to 18% and 16% respectively due to other industries catching up in terms of foreign penetration. Further industries with high shares in FIE equity were food processing (13%), chemicals (8%) and the tobacco industry (6%). Both in 1998 and 2001 motor vehicles production and the tobacco industry stand out as almost totally foreign-owned. Among the majority foreign-owned industries in 1998 were also radio and TV sets and non-metallic minerals. In 2001

[11] Data are not available for Estonia and Romania; in the case of Hungary they are available for 2001 only.

another five industries were added: paper and paper products, coke and petroleum, rubber and plastics, fabricated metals, and electrical machinery.

A high rate of foreign penetration or a high share in equity capital was a sign of early foreign penetration, while a rapid increase took place in industries where privatization to foreigners suffered delays. Activities with a significant increase in equity shares in 1998-2001 were: coke and petroleum (from 0% to 6%), paper and paper products (from 3% to 6%) and basic metals (from 2% to 5%). Foreign investors got access to these industries when state-owned enterprises were slated for privatization. As a result of the sequence of privatization, which protected traditional industrial strongholds, the main shift of FDI penetration was not towards high-tech industries but rather towards medium-tech capital-intensive ones. But also some medium-high-tech sectors gained weight: electrical machinery, radio and TV sets and medical, precision and optical instruments, whose combined share increased from 7% to 12%. Their development is not the result of belated privatization but of new greenfield investments.

The early reached high share of FIEs in *Hungarian* manufacturing did not mean that the distribution of FIE capital by industry was not changing between 1998 and 2001. To the contrary, structural change was rapid while the concentration of FIE capital in the first three most important industries increased from 45% in 1998 to 52% in 2001. The ranking of industries with the highest amount of foreign equity capital changed in so far as the food industry lost weight, from 23% to 15%, while the motor vehicle industry increased from 11% to 22%. The food industry investment had come at an early stage of transformation, taking over the viable parts of this large industry, but did not expand much further than domestic demand necessitated. The car industry, on the other hand, was newly established in Hungary after 1990 with several big TNCs moving in and bringing also their suppliers. A significant increase of FIE equity took place also in the high-tech machinery industries. They accounted for 12% of FIE capital in 1998 and for 19% in 2001. This is an important shift, making Hungary the top producer of such products among the CEECs. Hungary was also the country most affected by the subsequent crisis in this sector.

The share of FIEs in the equity of *Polish* manufacturing companies increased from 29% in 1994 to 43% in 1998 and to 53% in 2001. The most dynamic years were 1996-2000. Low-tech and domestic market-oriented industries are more strongly represented in Poland than in the other countries of the region and the pace of structural upgrading is also slower. In the period 1998-2001 significant shifts took place concerning the importance of the four major foreign-invested industries. The major gaining industries were food procession as well as rubber and plastics production; losing industries were chemicals and motor vehicles.

Foreign penetration in *Slovakia* started to grow earlier than in the Czech Republic, but then the increase was slower and by 2001 the share of FIEs in manufacturing equity in the two countries was almost identical, Slovakia still leading marginally. The question arises whether the similar penetration rates had a similar or different pattern by industry. To answer this question we look at the 1997-2001 change in Slovakia and compare it to the change in the Czech Republic in 1998-2001. The different starting years were used in order to have identical overall penetration rates of 28%.

The concentration of FIE equity by industry remained high in Slovakia – the first three industries accounted for a share of 56% in both 1998 and 2001 – as opposed to decreasing concentration in the Czech Republic. In 1997 coke and petroleum was the main foreign-invested industry in Slovakia, an industry which was still state-owned in the Czech Republic at that time. But the huge oil refinery in Bratislava had minority and dispersed foreign owners and got under real foreign control only five years later. In 1997 basic metals production was not yet foreign-owned but in 2001, after the privatization of the East Slovak Steel Works, this became the most important industry, accounting for 20% of FIE's equity. In fact the privatization of these two large companies alone increased the FIE share in Slovakia above the Czech level. Further industries that were of significance to foreign investors were machinery and equipment, chemicals, as well as paper. The production of motor vehicles accounted for only 5% of FIE equity in both years, much less than in the Czech Republic. The share of the high-tech industries (ISIC codes 30-33) in the FIE assets was only 5.5% in 1997 and even lower, 4.3%, in 2001. The declining shares show the absence of greenfield investments in this sector, a sharp contrast to the Czech Republic. Another difference is that labour-intensive light industries have preserved high rates of foreign penetration and increasing shares of FIE equity. FDI did not change but preserved the Slovak industrial structure by taking over and developing its most viable parts. But new greenfield investments undertaken since 2001 are expected to change the FIE structure to the benefit of the automotive sector.

3.3 Foreign-sector employment

This section compares the position of industries with respect to foreign penetration in four countries for which the same detailed foreign penetration data are available (see Appendix tables). Data refer to 2001 except for Romania for which 2002 data are available. At this point of time, in the Czech Republic, Poland and Romania about one third of the manufacturing labour force was employed in the foreign sector, in Hungary that share was 45%. For each country the difference from the country average was calculated and the result presented in Table 4 to show the role of foreign employment. It turns out that the industries below or above the average rate of foreign penetration are identical in almost all countries. There is a kind of uniformity among the countries of a similar level of development and with a similar transformation history. Romania is the only country

diverging from the overall trend, having clearly more foreign employment in the lower-technology industries.

Table 4

Share of FIEs in employment, difference from the manufacturing average, 2001, for Romania 2002

Industry	*Description of foreign penetration rate*
15 Food products, beverages	**Below average**
16 Tobacco	*Above average, except Romania*
17 Textiles	**Below average except Romania**
18 Wearing apparel, dressing	**Below average except Romania**
19 Tanning and dressing of leather	**Below average except Romania**
20 Wood	**Below average except Poland**
21 Paper and paper products	*Above average except Hungary*
22 Publishing, printing	**Below average except Poland**
23 Coke and petroleum	*Above average except Czech R.*
24 Chemicals	**Below average except Hungary**
25 Rubber and plastic	*Above average*
26 Other non-metallic minerals	CZ and Pl above, H and R below
27 Basic metals	**Below average except Romania**
28 Fabricated metals	**Below average**
29 Machinery and equipment n.e.c.	**Below average**
30 Office machinery	**Below average except Czech R.**
31 Electrical machinery and app	*Above average*
32 Radio, TV sets	*Above average*
33 Medical, precision, opt. ins	**Below average except Czech R.**
34 Motor vehicles, trailers	*Above average*
35 Other transport equipment	**Below average**
36 Furniture, manufacturing n.e.c.	**Below average except Poland**
37 Recycling	**Below average**

Source: Based on Appendix Table A5.

The countries under survey have high foreign penetration (measured by the share of FIEs in the employment of the industry) in medium-high- and high-tech industries: electrical machinery, radio and TV sets production and the motor vehicles industry (Table 4). But they have low foreign penetration in other higher-technology industries such as office machinery as well as medical and other instruments (except the Czech Republic). It must be noted, however, that overall employment, thus also foreign employment, is very small in high-tech industries in all four countries. This is not only due to high productivity in this sector but also because FDI is rather low.

Lower than average foreign penetration can be found in the food industry, fabricated metals, machinery n.e.c. and other transport equipment. These are industries which used to have large overcapacities in each country. Production and especially employment has been shrinking due to declining demand and growing import competition. Foreign investors came into these industries only to the extent to which they considered the market potential interesting. Also low-tech industries, such as textiles, clothing and leather, are less than average penetrated by foreign investors, except in Romania.

There are also exceptions to the general trend. Particularly high FIE shares in the employment of an industry indicate that the country specializes in that sector due to tradition and export orientation. For instance, Poland specialized in the wood and furniture sector, which is supported by a high presence of foreign affiliates. Exceptionally low FIE shares in the employment of an industry point to the opposite case – the country does not specialize in this industry internationally. Thus, in the non-metallic minerals sectors, specialization and foreign penetration are significant only in the Czech Republic and in Poland but not in the other two countries. Another reason for low foreign penetration may be incomplete or insider privatization, as in the case of the Romanian tobacco industry.

The analysis of employment changes in 1998-2001 reveals important country differences (Table 5). In a typical transition economy, foreign-sector employment increases while domestic-sector employment is decreasing more rapidly, thus overall employment declines. This was the situation in most countries in the mid-1990s, but in the period under review it applied only to Slovakia and Romania, and to some extent Poland, where the restructuring process and labour shedding of the domestic sector is still going on.[12]

Table 5

Manufacturing employment changes (absolute terms), 1998-2001

	Total economy	**Foreign enterprises**	**Domestic enterprises**
Estonia	0	+	-
Czech Republic	+	+	-
Hungary	+	+	+
Poland	-	0	-
Slovak Republic	-	+	-
Slovenia	0	+	-
Romania	-	+	-

Source: wiiw FIE Database.

[12] In our database of manufacturing companies, overall employment increased also in countries that show a decrease according to the national labour statistics. The latter may be using different size limits and classifying activities instead of companies.

Hungary is the only one among these countries where employment expanded in both the foreign and the domestic sectors. In 1998-2001 employment increased mainly in the high- and medium-high-tech industries such as office machinery, electrical machinery, and radio and TV sets production. Cheap-labour light industries started to lose jobs in both the foreign and the domestic sectors.

The Czech Republic underwent transformation-related restructuring later than Hungary, simultaneously building a more modern industry. There was even room for light industries using low-cost labour to expand employment in 1998-2001. Also Slovakia was in the process of transformational restructuring and foreign takeover during that period. But overall employment in manufacturing fell; the foreign sector replaced only two thirds of the jobs lost in the domestic sector. This is in sharp contrast to Poland, where the domestic sector lost employment on a massive scale and the foreign sector did not create new ones. As discussed earlier, Poland received relatively little FDI compared to its size. Estonia and Slovenia had the smallest degree of foreign penetration among the countries under survey, and the marginal increase of overall employment here was only due to the expansion of the foreign sector. Romania is at a relatively early stage of restructuring with the manufacturing sector experiencing huge employment losses. The foreign sector substitutes only half of the jobs lost in the domestic sector.

By the time of EU accession, the new members had basically passed over the period of rapid restructuring of the formerly state-owned economy and adaptation to market-economy circumstances. The processes described above for the earlier starter Hungary may now characterize other countries as well. This means that the foreign sector no longer grows via privatization, but by new investments and to some degree by taking over private domestic firms. With economic growth consolidating, overall employment may also start growing in manufacturing, but the main source of economic growth remains the improvement of productivity.

3.4 Investment activity in manufacturing and the role of FIEs

Foreign affiliates account for high shares of manufacturing-sector investment activities, higher than their respective shares in equity or sales. Investment is a forward-looking indicator of the future role of FIEs in production, showing that the importance of the foreign sector is growing. It is also interesting to follow the investment share of FIEs over time because this indicator is much less dependent on the shift of companies from the domestic-owned to the foreign-owned sector. By such shifts, the share of FIEs automatically increases in terms of output or employment but not necessarily in terms of investment activity. In fact, ownership changes are usually preceded by low investment in state-owned companies. If capital investments increase after a foreign takeover, this reflects the positive activity of new foreign owners.

In 1998, in Hungary the share of FIEs in investment outlays was already very high, close to 79%. In Slovakia it stood at about 50%, in the other countries below that. In 2001 Hungary still reported the highest level with 78%, but Slovakia had caught up to 73% and the Czech Republic to 69%. The increasing FIE shares in investments indicate that the catching-up process in terms of foreign penetration has not finished yet and the two latter countries are on their way to becoming as much foreign-dominated as Hungary.

For *Hungary*, the 2001 FIE share in investment was lower than the 1998 one. This may imply that, after initial restructuring or greenfield investments, follow-up investments were less intense in the foreign affiliates. Looking at the amount of investments per sales, in 1998 this was 4.7% in the case of domestic enterprises and 7.4% for FIEs. In 2001 both shares were lower, 4.5% and 6% respectively. The decrease is more striking in the case of FIEs. The country may have lost some of its attractiveness, and follow-up investments are not made in the Hungarian subsidiary but at a different location. At the same time, domestic companies increased investments more rapidly than earlier. A catching-up process of the domestic sector started and spillovers may have occurred.

Investments by industry show the direction into which industrial specialization of FIEs is developing. First of all the car industry is gaining in all three countries, as can be seen not only by investments of existing firms but also by new greenfield investments in the *Czech Republic and Slovakia*. In the former country nearly 30% of investments went into the car industry in both 1998 and 2001. In Slovakia the respective share increased from 13% in 1998 to 32% in 2001. Further industries with lively investment activity of FIEs are: radio and TV sets in the Czech Republic, electrical machinery in Hungary and petroleum industry in Slovakia. In Hungary investments in electrical machinery, radio and TV sets and medical instruments had much higher shares in 2001 than three years earlier. It seems that even if closures were planned in individual plants, capacities in these sectors were further developed in the other companies. The share of light industries, textiles, clothing and leather, in FIE investments was declining. Investment data thus confirm that the structural change measured earlier in terms of equity and employment will be lasting.

3.5 Export demand – a main driving force of manufacturing FDI

In this section we seek answers to the following questions:

1) Is there a difference between the domestic-owned industries and the foreign-investment enterprises (FIEs) in terms of export propensity? The question can be answered relying on the indicator ‘export sales per sales’ comparing the two sectors.
2) Does FDI grow more strongly in domestic market-oriented or in export-oriented industries? We put industries into two categories. In the category ‘domestic market-oriented industries’ the indicator ‘export sales per sales’ is below 30%; in the category

'export-oriented industries' this indicator is above 70% in 2001. The rest of the industries produce both for exports and for the domestic market. We look at the amount and change of the amount of FDI in both categories of industries in the period 1998-2002.

3) How does employment feature in the two categories of industries? We compare the employment in the domestic- and the foreign-owned sectors for the two types of industries.

In Hungary domestic-owned manufacturing companies (DEs) exported 22-23% of their production both in 1998 and 2001. The FIEs' export share was much higher than that of DEs, and it increased from 56% in 1998 to 64% in 2001. Among the new EU members the Hungarian industry has the highest share of foreign affiliates in manufacturing production and exports. It also shows the largest gap in terms of export orientation between the domestic and the foreign sectors. This duality developed during the past decade mainly because of new FDI coming to the country.[13]

Turning to the two types of industries in Hungary, export-oriented industries (where FIEs exported more than 70% of their sales in 2001) were the following: wearing apparel, leather, office machinery, electrical machinery, radio and TV sets, motor vehicles, furniture and other manufacturing. Export-oriented industries can thus be found mainly in the final finished-goods producing sectors. This does not mean that subsidiaries are only of an assembly type; they can also be component producers. In the industries with more complex products the production process can be highly segmented between locations in different countries and generate more international trade. Labour cost must have been an important factor forming this specialization as we can find labour-intensive industries here both in the clothing and the electronics sectors.

The domestic market-oriented FIE industries in Hungary, with below 30% export share in sales, were the following: food and beverages, tobacco, publishing and printing, coke and petroleum, and other non-metallic minerals. This list has remained the same over many years; it also comes as no surprise, as in fact these are really products that require closeness to markets, are usually organized on a national basis, have high transport costs or were affected by some kind of trade restriction.

The question is, which of the two groups of industries were more targeted by FDI in the period 1998-2002? The amount of FDI in the domestic market-oriented segment of manufacturing (broadly calculated as DA+DE+DF+DI) was EUR 1.8 billion in 1998 or 31%

[13] Back in 1994 the export propensity of FIEs was much lower: only 30% of the manufacturing production of FIEs was exported, half the share of 2001. At that time the capturing of the domestic market and the available capacities was the main driving force of FDI. But foreign investors also captured some of the larger, and more export-oriented local capacities, thus their export propensity was higher than that of domestic-owned companies, which exported only 20% of output. With time passing, the original entry mode and the original product mandate mattered less and less.

of total manufacturing-sector FDI.[14] Although the FDI stock of this sector doubled over four years, its share shrank to 26% in 2002. The share of the export-oriented industries (in a broader sense comprising DB+DC+DL+DM+DN) was 42% in 1998, amounting to an FDI stock of EUR 2.4 billion; in 2002 its share had increased to 47%, the FDI stock to EUR 6.4 billion. Already in the former year, FDI had been higher in the export-oriented industries than in the domestic market-oriented ones and the difference between the two sectors increased in the following four years. Export-oriented FDI expanded at the same rate at which the domestic market-oriented FDI was shrinking, while the industries serving both markets maintained their position.

Foreign affiliates employed 45% of the manufacturing workforce in Hungary in both 1998 and 2001; the respective number of employed increased from 355 thousand to 370 thousand. The domestic market-oriented industries employed 27% of the FIE workforce in 1998 and 21% in 2001. The share of those employed in domestic market-oriented DEs was 28% and 27% in the two years, respectively. Thus while the foreign sector was reducing labour in the domestic market-oriented industries, the domestic sector maintained it. In the foreign market-oriented industries FIEs employed 36% of their workforce in 1998, and in 2001 already 46%. There were two export-oriented industries, electrical machinery and radio and TV sets, where most of the new foreign-sector jobs were created, 20,000 in each. The other export industries saw no significant employment change. In fact, these two industries are responsible for the whole foreign employment increase between the two years; other industries usually lost employment.

In the *Czech Republic* there is a more balanced foreign–domestic structure in manufacturing than in Hungary. Domestic companies exported 31% of their sales in 2001 (1998: 30%), more than in Hungary; FIEs exported 61% (1998: 58%), almost twice the amount of DEs, but less than in Hungary. In the Czech Republic the gap between the domestic and the foreign sectors has also increased less than in Hungary over the past few years.

Domestic market-oriented FDI in the Czech Republic can be found in the following industries: food products, tobacco, publishing and printing, coke and petroleum; these are the same as in Hungary. These industries attracted EUR 1.3 billion FDI by 1998, that is 23% of the manufacturing FDI; by 2002 stocks had increased to EUR 2.1 billion, equalling 16% of the manufacturing total. The decreasing share points to the limited growth prospects of industries that are predominantly serving the local market.

[14] Stock calculation by industry in Hungary is incomplete for the years before 1999 (subscribed capital), and comprises only the owners' equity for 2002.

Export-oriented industries in the Czech foreign sector are: textiles, wearing apparel, leather, fabricated metals, general machinery, office machinery, motor vehicles, and other transport equipment. This is a higher number of branches than in Hungary, comprising also more of the metalworking-machinery activities as well as textiles. A diversified industrial and export structure is a tradition in the Czech Republic and foreign investors seem to have found good opportunities to keep up export-oriented manufacturing on a wide base. In 1998 these export-oriented industries registered an FDI stock of EUR 1.5 billion, 27% of the manufacturing total. In 2002 the amount was already EUR 4.3 billion and the share had increased to 33%.

Regarding the distribution of employment between the two categories of industries in the Czech Republic, there was hardly any difference between the domestic and the foreign sectors in 1998. In the domestic market-oriented industries both ownership sectors accounted for 14% of the labour force, in the export-oriented industries the foreign sector accounted for 43%, less than the domestic sector. As of 2001, foreign-sector employment had increased in the domestic market-oriented industries but its share declined marginally. In the domestic sector both the number of employed and their share increased in the domestic market-oriented industries. In particular the food and beverages industry boomed, bringing more sophisticated, and a wider range of, products to the market. In the export-oriented industries, in 2001, the foreign sector employed 42% of its workforce, slightly less than three years before; in the domestic sector, 44% worked in the export-oriented industries in both years. These figures show that there was not much movement, especially if compared with Hungary. The lack of difference in the structure of the domestic- and the foreign-owned sectors concerning their shares in the export-oriented and the domestic market-oriented industries is a striking feature of the Czech Republic. Foreign direct investment did not establish new export-oriented industries but penetrated those where the local firms had already been export-oriented, utilizing the available technical skills and production capacities. The main difference between the foreign and the domestic companies is that in DEs the export share of output in export-oriented industries is lower than in FIEs.

Poland is a different case altogether if compared with Hungary and the Czech Republic. Domestic market orientation prevails in the foreign sector, and it is hard to find typically export-oriented industries. Poland being a relatively large country with a diversified industry, the export shares in sales are small: in 1998 manufacturing DEs exported 17% of their production, FIEs 28%; the gap widened to 18% versus 32% in 2001. Even in the latter year, the export share of Polish FIEs was as small as of Czech domestic firms.

At the branch level, there were only two export-oriented industries in Poland: leather and furniture, with more than 70% of the FIEs' production sold abroad in 2001. Seven industries were domestic market-oriented. Considering those industries as predominantly

export-oriented that sold more than 60% of their production abroad (instead of 70%), the list is wider, including also textiles, wearing apparel, electrical machinery, radio and TV sets, and motor vehicles. Some of these industries are new in terms of export orientation. In 1998 the motor vehicle industry sold only less than 30% of its production abroad; three years later that share had doubled.

The amount of FDI in the domestic market-oriented industries (confined in statistics to DA+DF+DG, while DI is not included in the statistics and some other industries are parts of more aggregate groups) was 38% in 1998, and 34% in 2002. For the export-oriented industries (DB+DL+DM, no data available for DC and DN) the respective shares were 22% in 1998 and 19% in 2002.[15] Uniquely among the countries surveyed here, the industries with the highest export shares attracted relatively less FDI than did the domestic market-oriented industries, and both groups lost weight between 1998 and 2002. The industries that gained importance as FDI targets were the wood and paper industry, which exported half of its production in 2001, and the metalworking industries with a 33% export share. Thus the export orientation of FDI in the case of Poland is not confirmed in the way it was for Hungary and the Czech Republic.

The export-oriented industries employed 38%, the domestic market-oriented industries 23% of the FIE workforce in Poland in 2001 – less than in 1998. Chemicals, rubber and plastics, general machinery and electrical machinery were the main foreign-sector industries that gained employment within the three years – industries that sold both abroad and domestically. But most of them became more export-oriented, thus growing export orientation drove the employment increase in the foreign sector. The latter was however certainly not enough as the overall number of people employed in manufacturing FIEs decreased slightly.

4 Location shifts in the textile and clothing industry due to FDI

The NMS' comparative advantage vs. more developed EU incumbents lies in lower production costs, especially labour costs, at comparable productivity. This would make labour-intensive industries move from high-wage ('old') EU to low-wage NMS. At the same time, Central European countries have higher wages than the countries further East. Southeast Europe did not receive much FDI initially because the overall conditions for foreign investment were not favourable. Transactions costs counterbalanced wage costs. But with the institutional environment improving, it was possible to exploit the labour cost advantages. Labour-intensive industries can thus move out of the more advanced higher-

[15] The relevance of Polish statistics is weakened by the fact that several industries, both domestic market and export oriented ones are included in an aggregate residual sector the share of which in the FDI stocks increased from 18% to 20%.

wage NMS and go further East, to Romania, Bulgaria, even Ukraine. In this chapter we look at the change of foreign-affiliate specialization in textiles and clothing in the Czech Republic, Hungary, Slovakia and Romania. The aim is to discover whether there is any difference in specialization between these countries and whether there was any shift of specialization during the period 1998-2001. We look at the share of this industry in various indicators for the domestic and the foreign sectors.

In the *Czech Republic*, in both 1998 and 2001, the textile and clothing industry accounted for about 5-6% of companies' equity and 2% of FIE's equity. Its share in sales declined slightly between 1998 and 2001; the decline in terms of value added was much more serious. These developments indicate an increasing capital intensity of production as well as its shift from vertically integrated production to processing and subcontracting with shrinking local value added. The first reaction to increasing labour cost was thus not relocation but additional capital investment.

In *Slovakia* the share of textiles and clothing in the manufacturing companies' equity was about 2.5% in both years, slightly declining. In the case of FIEs an increase from 0.7% to almost 2% took place. The change was similar for the industry's share in value added. This indicates that the main change was foreign takeover or replacement of domestic companies.

In *Hungary* only about 2% of the equity of foreign and of domestic companies accounted for textiles and clothing in 2001, less than three years before. The shares in sales and value added were also declining. Just as in the Czech Republic, foreign companies are underrepresented in textiles and clothing. Unlike there, however, value added per sales increased in Hungary. This indicates that in Hungary there are more integrated producers with higher domestic value added than in the Czech Republic.

In *Romania* the overall share of textiles and clothing in sales increased from 7.7% in 1998 to 9.3% in 2001. In the case of FIEs there was a decrease from 9.2% to 8.8%. At the earlier date FIEs had been more specialized on this industry than DEs, but later FDI flew also into other branches and the significance of textiles and clothing declined. In terms of value added the significance of this industry was even higher, about 13%. It is important to note that in 1998 the textile industry had two times more employees than the clothing industry.

Textiles and clothing are low-tech labour-intensive industries expected to lose employment (and also FIE employment) in line with increasing labour cost. High labour-cost countries lose out production to lower-cost countries if they provide the same productivity – but they may also increase productivity and move to higher-price market segments in the same industry. This trend is confirmed by the shifts in employment described below. But we need

more field evidence to be able to state whether there is really a shift of companies from one country in the region to another. Labour costs are highest in Slovenia, followed by Poland, the Czech Republic and Hungary. Slovakia and the Baltic countries have lower wags than the other NMS. Romanian wages are just 37% of the Czech and Hungarian ones (see wiiw, 2004, pp. 156-60). Foreign affiliates in textiles and clothing usually represent specialized production or assembly lines working under processing arrangements. If their production costs are rising, they cannot decide for themselves whether to move part of the production abroad or invest in more productive technologies. It is usually the foreign headquarters who choose between two options, to invest in upgrading or to close down the subsidiary.

The textile and the apparel industries together employed around 10% of the manufacturing workforce in the four countries in 2001. The share was somewhat higher in Romania, Slovakia and Hungary (over 12%) than in the Czech Republic (9%). In the period 1998-2001 textile and apparel industry employment increased in Romania, the Czech Republic and Slovakia, while it declined in Hungary. Its share in manufacturing employment decreased in the Czech Republic and Hungary, but increased in Slovakia and Romania. If increasing employment shares and employment numbers are taken as a proof for increasing specialization, Romania and Slovakia are clearly the 'tailors' of the region. The Czech Republic is in a mixed position, as textile and clothing employment increases nominally but its share declines. Hungary is losing out by both indicators. Despite this trend, Hungary had still the highest share of textiles and clothing in manufacturing employment in 2001.

Table 6

Employment in the textile and clothing industry (DB)

	Czech R. 1998	Czech R. 2001	Hungary 1998	Hungary 2001	Slovakia 1998	Slovakia 2001	Romania 1998	Romania 2001
Total number, thousand	92.2	99.0	113.5	94.6	47.0	47.2	362.7	382.9
Of which in FIEs, thousand	13.7	22.6	39.7	37.5	8.5	17.6	73.3	132.0
Share of FIEs in total, %	15	23	35	34	14	37	20	33
Share of DB in total, % manufacturing employment	9.5	9.2	14.4	12.8	11.3	12.4	18.6	23.0
Share of DB in FIE employment, %	7.3	6.1	11.1	9.8	8.5	12.7	27.5	25.8

Source: wiiw FIE Database.

To what extent is textile and clothing employment related to FDI? The share of this industry in FIE employment is lower than in the domestic-owned sector in the Czech Republic and Hungary. In the case of Slovakia and Romania, FIEs have higher employment shares in

this industry than domestic companies. The textile and clothing industry was a preferred target of foreign investors in these countries, at least up to 2001.

Employment in the textile and clothing industry FIEs increased in three out of four countries in the period 1998-2001; the exception is Hungary, which was in the process of being left by foreign investors in this industry. In the Czech Republic, Slovakia and Romania the increase in FIE employment more or less equalled the whole employment increase in this industry. This means that new textile and clothing workplaces were created by foreign investors only. The share of this industry in FIE employment increased only in Slovakia, where it reached the second highest level among the four countries after Romania. FDI in Romania is highly specialized in this industry, which accounts for more than 27% of FIE employment. One may conclude that the level of specialization of FDI in the textile and clothing industry really reflects the relative wage cost of countries. Higher-wage Czech Republic and Hungary are losing this industry while it is on the rise in Slovakia and Romania.

The next issue is to see to what extent foreign affiliates contribute to exports of the textile and clothing industry. In the three countries for which data are available, FIEs have about two times higher shares of exports in sales than domestic companies. FIEs usually export 70-100% of their production. FIEs account for three quarters of textile and clothing exports in Hungary, almost half in Romania, and 40% in the Czech Republic. The share of the industry declined in the exports of Hungary but increased in those of the Czech Republic and Romania. In the latter country as much as 18% of total exports come from this industry. Thus the textile and clothing industry shows a high and increasing export activity in Romania, to a lesser extent also in Slovakia. These countries have lower wages than the other two, the specialization reflects the comparative advantages.

Table 7

Exports of textiles and clothing (DB)
(direct exports reported by manufacturing companies)

	Czech R. 1998	Czech R. 2001	Hungary 1998	Hungary 2001	Slovakia 1998	Slovakia 2001	Romania 1998	Romania 2000
Total exports, national currency billion	7.8	31.9	167.4	253.7	.	.	7703	15218
Exports of FIEs, national currency billion	2.2	12.5	110.4	186.8	.	.	2985	7178
Share of FIEs in exports, %	28	39	66	74	.	.	39	47
Share of DB in exports, %	2.2	5.2	4.5	3.5	.	.	17.4	18.3
Share of DB in FIE exports, %	1.3	2.9	3.4	2.9	.	.	30.1	19.7

Source: wiiw FIE Database.

Looking at the EU-15 imports of textiles and clothing from NMS, it turns out that they increased from EUR 3.8 billion in 1995 to 6.5 billion in 2001, but fell back to 6.3 billion in 2003. It seems that the initial drive to tap low wages is over and there are other, primarily Asian sources that are even cheaper. While in 1995 the NMS-8 delivered 74% of the (extra) EU-15 textiles imports, in 2001 their share fell to 50% and in 2003 to 40%. At the same time, Bulgaria and Romania as well as the CIS gained shares. In terms of individual country, Romania was a particular winner of market shares.

In an early stage when only the more advanced Central European countries received FDI, textiles and clothing moved there from Western Europe. When Romania caught up in terms of business conditions, it became the clear favourite receiving textile and clothing FDI from both the EU-15 and the NMS. Unguru (1999) explains this trend by calculating the revealed comparative advantage and demonstrates how the country increasingly specializes in this industry.

5 Conclusions

The fast increase of FDI in the new EU member states in the 1990s is the result of coinciding favourable investor-specific and location-specific conditions. On the one hand, global FDI grew much more rapidly than global GDP and exports, and TNCs were eager to use the opportunity provided by the opening-up of new markets. On the other hand, the majority of the Central European countries followed in their transformation strategy the mainstream approach with a rapid opening-up to international capital flows and joining the globalization process. They were in need of new capital and technology while providing market access as well as cheap assets and labour for potential investors.

Due to these mutually supporting processes, capturing new markets, privatization and low production costs attracted large amounts of investments. Later on, export demand became the major driving force of manufacturing FDI while local-market capturing attracted FDI in the services sector. Manufacturing FDI increasingly concentrated in the more internationalized industries such as the automotive industry and electrical engineering. Foreign penetration supported the upgrading of industrial structures and improved competitiveness. But the global decline of the electronics industry and a boom in metallurgy have recently shifted the industrial composition of output and FDI towards lower value-added industries in several CEECs.

After 2000, FDI projects were not only newly established but also terminated due to changes in the host countries' locational characteristics and the new investor strategies. At least three different processes were at work: rising labour costs in the more advanced NMS which could not always be compensated by increasing labour productivity, the global crisis of the electronics industry, and finally the ageing of investment projects. After the

technology with which the investor had entered a country had worn down, the question emerged whether to renew it or to give up the production site and move to a cheaper location.

Case-study literature identifies at least two types of TNC strategies. One created low-competence subsidiaries where changing location factors could easily lead to closure. The other strategy was that of the learning subsidiary where technological upgrading, networking and local competences facilitated a dynamic adaptation to new circumstances. The deeper the integration of a subsidiary into the TNC network and the higher its competence, the better its chances of survival and development. Policy may support those TNC strategies which aim at utilizing and developing local competence and upgrading the mandate of subsidiaries.

The individual NMS have attracted manufacturing FDI at different technological levels. The more modern industries concentrate in Hungary and the Czech Republic. While labour-intensive subsidiaries move out, these countries increasingly specialize in higher-technology industries as well as services. TNCs locate there more complex and technologically more sophisticated production processes and services and also some R&D facilities. New car manufacturing facilities are also set up in Slovakia and Poland. FDI in the low-tech industries of textiles and clothing flourishes in Romania. The country distribution and industrial shifts of capital, labour and investment of FIEs support the existence of a flying geese model.

Analysing the share of foreign subsidiaries in the manufacturing industry by various indicators for the period 1998-2001, we may come to the following conclusions. The high early inflow of FDI into the manufacturing sector of Hungary resulted in overwhelming shares of foreign affiliates by all indicators well before such a process started in other countries. When during the first half of the 1990s domestic companies, mainly state-owned, went out of business on a massive scale, the position of foreign affiliates became strong and also greenfield investors moved in. But after 2000 the share of FIEs hardly increased.

Foreign penetration in the manufacturing industry in Slovakia and the Czech Republic, if growing at the same speed as during 1998-2001, may reach the 2001 level of Hungary in 2004/2005, in Poland a few years later. If this scenario should materialize, the latter countries will prove to be just latecomers and not principally different from Hungary. But it is not yet clear at what point of time and at what level of foreign penetration the saturation observed in Hungary will set in. Put differently, there are industries and market segments in which FDI remains low also in the longer run and domestic enterprises keep a large share. The latter can also catch up in terms of technology, join the supplier networks of TNCs or become themselves investors abroad. The narrowing foreign–domestic gap in terms of

labour productivity and the expansion of domestic-sector employment may be the first signs of such spillovers.

Foreign affiliates have superior performance compared to domestic companies in terms of labour productivity as well as export and investment propensity. This is partly due to their better capital equipment and access to foreign multinationals' management, know-how and market position. On the other hand, higher productivity is also due to narrower specialization on assembly and component production using economies of scale. Headquarter functions, R&D and production-related services are rarely found in these subsidiaries.

The NMS show high foreign penetration in medium-high- and high-tech industries: electrical machinery, radio and TV sets production and the motor vehicles industry. They show low foreign penetration in other higher-technology industries such as office machinery as well as medical and other instruments. It must be noted, however, that overall employment, thus also foreign employment, is very small in high-tech industries in NMS. This is not only due to the high productivity in this sector, but also to the small volume of FDI.

Lower than average foreign penetration can be found in the food industry, fabricated metals and other transport equipment production. These are industries which used to have large overcapacities throughout the region. Production and especially employment shrank due to declining demand and growing import competition. Foreign investors came into these industries only to the extent of the local market potential. Other low-tech industries, such as textiles, clothing and leather, are less than average penetrated by foreign investors except in Romania.

In a typical transition economy foreign-sector employment increases while domestic-sector employment is decreasing more rapidly, thus overall employment declines. This was the situation in most countries in the late 1990s, but after 2000 it applied only to Slovakia, Romania and Poland – countries where the restructuring process and labour shedding of the domestic sector were still going on. In Hungary both the foreign and the domestic sectors increased employment, but the foreign sector reduced labour in the domestic market-oriented industries, where the domestic sector maintained it.

Investment outlays by industry in the period 1998-2001 indicate the direction in which industrial specialization of FIEs is developing. The industry with the most lively investment activity of FIEs in all countries was the car industry. FIEs invested also heavily in the radio and TV sets industry in the Czech Republic and in Hungary, while the petroleum industry stood out in Slovakia. The share of low-tech light industries in FIE investments declined, with the possible exception of Romania. Investment data confirm, and project into the

future, that the structural upgrading measured in terms of the changing composition of FDI inflow and foreign-sector employment will continue.

FDI inflow may recover in the future from its 2003 low. There is much room for further export-oriented ventures, deeper networking, service sector outsourcing and headquarter functions. These opportunities can only be utilized when TNCs start investing again on a more massive scale. While EU accession provides better opportunities especially for smaller investors, this fact by itself cannot lead to an upswing of FDI.

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Appendix

Table A1

FDI inward stock by major economic activities, in per cent of total

NACE code		Czech R. 2002	Hungary 2002	Poland 2002	Slovakia 2003	Slovania 2002
A,B	Agriculture, forestry, fishing	0.1	1.3	0.4	0.2	0.0
C	Mining and quarrying	1.4	0.3	0.3	0.8	0.0
D	*Manufacturing*	*35.5*	*45.8*	*35.8*	*37.5*	*43.3*
E	Electricity, gas, water supply	6.9	4.6	2.6	11.7	1.0
F	Construction	1.9	1.1	2.6	0.7	0.1
G	*Trade, repair of motor vehicles, etc.*	*11.9*	*11.1*	*17.1*	*11.2*	*14.5*
H	Hotels and restaurants	1.2	1.1	0.6	0.5	0.4
I	*Transport, storage, communications*	*13.6*	*10.1*	*10.4*	*10.0*	*4.4*
J	*Financial intermediation*	*15.9*	*10.3*	*21.3*	*23.5*	*18.8*
K	*Real estate, renting & business act.*	*9.3*	*11.7*	*7.5*	*3.2*	*15.2*
L	Public administr., defence, social sec.	0.0	.	.	.	.
M	Education	0.01	.	.	.	0.01
N	Health and social work	0.2	.	.	0.4	0.1
O	Other community, social & pers. activ.	2.4	.	.	0.3	0.5
	Other not classified activities	0.0	1.0	1.4	.	1.7
	Purchase of real estate by foreigners	.	1.5	.	.	.
	Total	100.0	100.0	100.0	100.0	100.0
	Total, EUR mn	36,884	29,653	45,738	8,409	3,918
	Total according to IIP, if different, EUR mn		36,297			

Notes:

Czech Republic: equity capital, reinvested earnings, loans.

Hungary: equity capital and reinvested earnings.

Poland: equity capital, reinvested earnings, loans.

Slovak Republic: equity capital, reinvested earnings – in the corporate sector.

Slovenia: equity capital, reinvested earnings, loans.

Table A2

Inward FDI stock in the manufacturing industry, EUR million

NACE code		Czech R. 2002	Hungary 2002	Poland 2002	Slovak R. 2003	Slovenia 2002
DA	Food products; beverages and tobacco	1557.1	2187.5	3577.6	376.1	74.1
DB	Textiles and textile products	399.1	253.2	231.1	36.6	39.8
DC	Leather and leather products	100.9	80.3	.	25.5	35.8
DD	Wood and wood products	170.4	144.9	1904.8	30.1	8.3
DE	Pulp, paper & paper products, publishing & printing	791.8	467.1	.	138.0	258.9
DF	Coke, refined petroleum products & nuclear fuel	253.2	217.9	41.4	351.1	.
DG	Chemicals, chemical products and man-made fibres	948.2	1698.6	2025.1	283.2	544.2
DH	Rubber and plastic products	839.9	511.8	1069.2	94.4	200.9
DI	Other non-metallic mineral products	1675.2	601.9	.	161.0	85.7
DJ	Basic metals and fabricated metal products	1191.7	644.2	874.8	1108.2	105.0
DK	Machinery and equipment n.e.c.	725.9	752.3	495.8	158.5	159.4
DL	Electrical and optical equipment	1857.5	2704.1	539.0	182.8	125.8
DM	Transport equipment	2272.3	3230.0	2280.3	160.4	53.5
DN	Manufacturing n.e.c.	303.3	91.7	.	47.3	4.8
	Other non-classified industries	.	.	3339.6	.	
D	**Manufacturing**	**13086.5**	**13585.5**	**16378.7**	**3153.2**	**1696.2**
	FDI total	**36883.8**	**29653.1**	**45738.4**	**8409.0**	**3918.1**

Notes:

Czech Republic: equity capital, reinvested earnings, loans.

Hungary: equity capital and reinvested earnings.

Poland: equity capital, reinvested earnings, loans.

Slovak Republic: equity capital, reinvested earnings - in the corporate sector

Slovenia: equity capital, reinvested earnings, loans.

Source: National Banks of respective countries according to international investment position (IIP).

Table A3

Share of foreign investment enterprises in the manufacturing industry, per cent

2001	Employment	Sales	Exports
Estonia	30.8	36.7	48.5
Hungary	45.2	72.5	87.9
Slovakia	36.4	59.3	74.9
Slovenia	17.6	29.3	36.8
Employment	**1996**	**1998**	**2001**
Estonia	16.8	20.8	30.8
Hungary	36.1	44.9	45.2
Slovakia	13	18.5	36.4
Slovenia	10.1	13.1	17.6
Sales	**1996**	**1998**	**2001**
Estonia	26.6	28.2	36.7
Hungary	61.4	70	72.5
Slovakia	21.6	36.2	59.3
Slovenia	19.6	24.4	29.3
Export sales	**1996**	**1998**	**2001**
Estonia	32.5	35.2	48.5
Hungary	77.5	85.9	87.9
Slovakia	0	59	74.9
Slovenia	25.8	32.9	36.8

Size coverage: Hungary, Slovenia: all firms; Estonia: more than 20 employees.

Foreign Investment Enterprises (FIEs): companies with at least 10% foreign equity ownership, for Estonia 50%. Hungary 2001: companies with at least 10% foreign equity of at least one foreign owner.

Source: wiiw Database on Foreign Investment Enterprises.

Table A4

Share of FIEs in manufacturing employment by industry, 2001, per cent

	Czech Rep.	Hungary	Poland	Romania (2002)
15 Food products, beverages	22	38	30	27
16 Tobacco	97	95	79	25
17 Textiles	24	33	20	40
18 Wearing apparel, dressing	21	36	33	38
19 Tanning and dressing of leather	17	52	26	45
20 Wood	25	22	34	28
21 Paper and paper products	45	44	53	35
22 Publishing, printing	33	20	45	20
23 Coke and petroleum	31	100	41	56
24 Chemicals	27	58	29	20
25 Rubber and plastic	47	49	47	59
26 Other non-metallic minerals	37	37	40	27
27 Basic metals	28	42	10	54
28 Fabricated metals	30	25	20	20
29 Machinery and equipment n.e.	21	41	18	15
30 Office machinery	86	33	25	31
31 Electrical machinery and app	58	76	54	53
32 Radio, TV sets	66	83	58	54
33 Medical, precision, opt. ins	38	41	26	18
34 Motor vehicles, trailers	70	69	68	36
35 Other transport equipment	8	22	14	31
36 Furniture, manufacturing n.e	23	26	47	17
37 Recycling	18	37	26	24
D Manufacturing	**34**	**45**	**33**	**33**

Source: wiiw Database on Foreign Investment Enterprises.

Table A5

Share of FIEs in manufacturing employment, difference from the manufacturing average, 2001, percentage points

	Czech Rep.	Hungary	Poland	Romania (2002)
15 Food products, beverages	-13	-7	-3	-6
16 Tobacco	63	50	46	-8
17 Textiles	-10	-12	-13	7
18 Wearing apparel, dressing	-13	-10	0	5
19 Tanning and dressing of leather	-17	7	-7	12
20 Wood	-9	-24	1	-5
21 Paper and paper products	11	-1	20	2
22 Publishing, printing	-1	-25	12	-12
23 Coke and petroleum	-3	54	8	23
24 Chemicals	-7	13	-4	-13
25 Rubber and plastic	13	4	14	26
26 Other non-metallic minerals	3	-9	7	-6
27 Basic metals	-6	-3	-23	21
28 Fabricated metals	-5	-20	-13	-13
29 Machinery and equipment n.e.c.	-13	-4	-15	-18
30 Office machinery	52	-13	-8	-2
31 Electrical machinery and app	24	30	21	20
32 Radio, TV sets	32	37	25	21
33 Medical, precision, opt. ins	4	-4	-7	-15
34 Motor vehicles, trailers	36	24	35	3
35 Other transport equipment	-26	-24	-19	-2
36 Furniture, manufacturing n.e.c.	-11	-20	15	-16
37 Recycling	-16	-8	-7	-9

Source: wiiw Database on Foreign Investment Enterprises.

Table A6

Domestic market-oriented and export-oriented industries in Hungary: the role of foreign affiliates (FIEs)

	Hungary	FDI stock, EUR mn		FDI stock	Exp. sale	Exp. sales of FIEs	Exp. FIE share	Exp/sale in FIEs	Employ-ment	FIE em-ployment
		1998	2002	2002 %	2001 %	2001 %	2001 %	2001 %	2001 %	2001 %
	Domestic market-oriented industries									
DA	Food products; beverages and tobacco	1170.1	2187.5	16.1	6.1	4.4	65	20	15.4	13.5
DE	Paper and paper products; publishing and printing	292.1	467.1	3.4	1.5	1.3	65	25	5.3	3.0
DF	Coke, refined petroleum products and nuclear fuel	1.9	217.9	1.6	2.2	2.5	100	16	1.4	3.1
DI	Other non-metallic mineral products	306.4	601.9	4.4	1.2	0.9	62	24	3.9	3.1
		1770.4	3474.3	25.6	11.0	9.1	.	.	26	22.7
	Export-oriented industries									
DB	Textiles and textile products	159.5	253.2	1.9	3.5	3.0	75	80	12.8	9.8
DC	Leather and leather products	43.1	80.3	0.6	0.8	0.7	80	81	2.9	3.4
DL	Electrical and optical equipment	1298.0	2704.1	19.9	42.7	47.1	96	90	18.3	28.2
DM	Transport equipment	825.3	3230.0	23.8	20.9	22.9	90	90	5.6	7.5
DN	Manufacturing not elsewhere classified	44.4	91.7	0.7	1.0	0.8	73	70	3.8	2.2
		2370.3	6359.3	46.8	68.9	74.5	.	.	43.4	51.1
D	**Total manufacturing**	**5706.6**	**13585.5**	100.0	100	100	88	64	100	100

Source: wiiw Database on Foreign Investment Enterprises.

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