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FOREIGN DIRECT INVESTMENT SPILLOVERS IN DOMESTIC MARKETS. THE CASE OF THE ROMANIAN MANUFACTURING INDUSTRY

I. Foreign direct investment and spillovers. A brief theoretical review

Foreign direct investment (FDI) is a form of investment that involves a long-term relationship and reflects the lasting interest and control by a resident entity in one economy of an enterprise resident in another (UNCTAD, 1999). Much FDI is carried out by multinational corporations (MNCs). Spillovers refer to a wide range of effects, and in our case to FDI effects on the domestic market. In this paper I will deal with FDI spillover effects on competition (own affiliates and local companies), technology transfer, and the labor force.

FDI theory widely accepts three major sets of motivations for a company's international expansion: market-seeking, when the company targets higher sales in foreign markets; efficiency-seeking, when the company takes advantage of various resources available in foreign markets; and competition-driven, when FDI appears as a reactive behavior. Market-seeking FDI is normally undertaken by "horizontal" companies, meaning companies that more or less produce the same goods and services abroad as they do at home; efficiency-seeking FDI is normally undertaken by "vertical" companies, meaning companies that fragment production geographically into stages, based on factor intensities. The knowledge capital model blends these two approaches, assuming that knowledge is geographically mobile and that joint inputs are introduced to geographically separate production facilities (Ekholm, Markusen 2002).

The eclectic paradigm (Dunning, 1993) explains foreign investment decisions and host country policies towards foreign affiliates by means of a complex framework, including company ownership (of technology,

trade marks, capital, etc.), company internalization (of production processes on a global scale), and host country location advantages (a mix of infrastructure, resources, labor force skills and costs, fiscal policy, etc.). In a contribution to the eclectic paradigm, Voinea (2001) describes three types of business environments that may result from a host country's policies on FDI. When a host country uses positive discrimination (various types of market power inducements) in favor of a MNC, it creates an anti-competitive environment for all other (potential) investors. In this case, ownership advantages may not be the result of innovation, but of the market power inducements granted by the state in the process of direct sale. Subsidies lessen the net cost disadvantage of multinational production and, therefore, decrease the strength of innovations under FDI (Glass, Saggi 2002); positive discrimination is precisely this type of subsidy. FDI carriers are consequently less stimulated in the direction of innovation and integration in international networks of production and distribution.

Table 1. Impact of host country policies on technology transfers by MNCs

Host-country policies	Positive discrimination	Pro-competitive	Restrictive
Resulting business environment	Anti-competitive	Pro-competitive	Hostile
Technology transfer	Perverse incentives against innovation; monopoly rents from market power inducements	Incentives for transfer of new technologies	Counter-incentives to technology transfer

Foreign direct investment may come either in the form of an acquisition or greenfield investment (starting from zero). The distinction has been made in recent literature (Meyer, Estrin, 1998) between conventional acquisition and brownfield investment (building further on more parent company resources). Greenfield FDI is more likely to promote competition as it increases the number of players on the market; while an acquisition, especially if it does not later upgrade to brownfield FDI, either replaces or eliminates a local player – to mention only the direct effect.

International expansion, especially in oligopoly-style industries, is increasingly substituted in favor of international relocation. It is worth mentioning here that foreign investment in transition economies in fact tends to concentrate on international market sectors dominated by large oligopolistic companies (Kogutt, 1996), such as in automobiles, food processing, tobacco, and cement. In Romania, these industries are already dominated by foreign capital.

It has been suggested that European integration is leading to a cross-country hierarchy in the relocation of business operations (Cantwell, Iammarino, 2001). If this is the case, then FDI is merely the means by which local competition becomes a part of the global game. Again, this is valid, especially in oligopoly type industry.

A lot of recent studies were devoted to the issue of international production relocation in labor-intensive industries, such as footwear manufacturing (Lorentzen, 2003) or textiles. However, fragmentation of production processes and relocation of relatively labor-intensive segments of the value chain is no longer restricted to these industries and is now extending to more technologically advanced industries, e.g., transport equipment (Nunnenkamp, Spatz 2002). *Ceteris paribus*, FDI does not aim to interfere with international specialization patterns; its more immediate preoccupation is with improving the local and/or global competitiveness of their carriers within the existing specialization framework. Addressing the issue of specialization engenders the need to distinguish between the intra-industry trade of horizontally and vertically differentiated goods. In the case of horizontally differentiated goods, the traded goods are differentiated by characteristics other than quality; horizontal IIT is driven by scale economies and imperfect competition. In the case of vertically differentiated goods, traded goods are differentiated by quality (as reflected in price differences); vertical IIT is induced by the different factor endowment. Vertical specialization, in quality-based differentiated goods, implies that competitive positions are gained through cutting costs and employing cheap labor. The basis for product differentiation is price, not innovation.

At the level of individual companies, the impact of FDI can be twofold:

- direct, on the foreign affiliate itself, through technological transfer and increased allocative and productive efficiency;
- indirect, on the other companies operating in the local economy, either horizontally or vertically, through imitation, competition, cooperation, and learning. (Kokko 1992).

In order to benefit from the indirect effect of the FDI, the technological advance of the foreign affiliate should be recoverable by the local companies (Dunning 1993), meaning either that local companies already possess a certain technological standard, or that the industry in which the investment appears is not high technology-intensive. In addition, I will consider the type of investor as being decisive for the nature of FDI spillovers on the domestic market. In Romania, the case of SIDEX, for example, in which the foreign buyer is a global player in its industry, is strikingly different from the case of Romtelecom, in which the foreign buyer is nothing but a rent-seeker (see section II of this paper). Recent international literature has moved in the direction of conceptualizing such empirical observations, finding that foreign ownership in itself is not a determining factor for the performance gaps between foreign and local companies; instead it is the multinationality of a company that turns out to be more important.

Meyer (1998) designs a framework to mirror transformation of local enterprises under FDI pressures. The choices, depending on their initial competitive position, are of:

- defensive adaptation (size decrease, productivity increase);
- strategic reorganization (new products, new company limits);
- organizational changes (competitive culture based on cost-advantage analysis).

In the same vein, Richet (2001) explains that local companies that were present on the market before FDI started may find themselves in one of the following situations:

- de-specialization and subsequent re-specialization on a narrower production range (size economy), in search of the minimal scale of efficiency;
- outsourcing of activities, favoring subcontracting either by dividing up former trusts or facilitating the entry of new operators;
- re-capitalization in order to finance investment needed for their modernization and expansion.

II. FDI spillovers: mixed evidence from transition economies

Table 2. FDI stock as a percentage of GDP, %

	1995	1998	2001
Albania	8.3	12.6	19.1
Bosnia and Herzegovina	-	2.4	10.2
Bulgaria	2.6	11.7	29.5
Croatia	1.9	11.3	33.1
Macedonia	0.6	4.8	24.0
Moldova	6.5	15.0	41.2
Romania	2.7	10.7	19.4
Serbia and Montenegro	-	4.7	11.0
SEEC-8 average	2.2	8.7	21.6
Czech Republic	14.1	25.2	47.2
Hungary	26.7	39.4	45.4
Poland	6.2	14.2	22.1
Slovakia	6.8	13.1	29.3
Slovenia	9.4	14.1	18.1
CEEC-5	11.5	20.1	30.5

Source: Hunya (2002)

Inward direct investment flows in Eastern European economies have followed the trends predicted by the path dependency argument. Earlier starters in the reform process received more FDI than did laggards. The privatization method was also important (e.g., in Hungary direct sales were most frequent, while in Poland MEBO was predominant and FDI flows in Romania surged when direct sales method was preferred).

Productivity of foreign affiliates is in theory believed to be superior to that of domestic companies, at least in countries with less intensive capital, know-how and management practices. Empirical evidence is available, *inter alia*, from UNCTAD (2002) for countries including Ireland, Portugal, China and Malaysia, Holland and Spain (1998), and for transition

economies such as the Czech Republic, Hungary, Poland, Slovakia, and Slovenia. Counter evidence is also available – Patibandla and Sanyal (2002), for example, found no evidence that foreign investment increased company-level productivity in India. In Romania, Damijan, Majcen, Knell and Rojec (2002) found that foreign ownership contributed to the average growth rate of companies by 1.1 percentage points – the highest level among EU candidate countries. An earlier study of Romania (Munteanu *et al.*, 1998) indicated that the labor productivity and investment ratios are higher in foreign owned companies than in domestic companies.

The issue of causality can nevertheless be raised: it could be suggested that foreign companies tend to establish themselves in high productivity industrial sectors. In support of this idea, table 3 shows a certain degree of similarity among transition economies in terms of the sectors that recorded relative productivity gains.

Table 3. Relative productivity gains, average annual change, 1995-2001*

	Bulgaria	Czech Rep.	Hungary	Poland	Romania	Slovakia	Latvia
<i>D. Manufacturing industry</i>	3.6	7.7	14.3	9.4	7.5	8.2	6.6
DA. Food and beverages and tobacco industry	-1.3	-4.4	-9.0	-3.7	3.9	-4.7	-3.6
DB. Textile and clothing	-3.1	-4.9	-7.7	-3.6	-4.5	-10.1	-0.4
DC. Leather and footwear	-4.5	-16.2	-12.0	-2.4	-1.8	0.0	-3.5
DD. Wood processing, excl. furniture	4.4	-2.5	-10.4	-3.5	-5.7	-1.8	-1.5
DE. Pulp and paper	-6.0	-2.4	-1.2	-0.3	-4.8	2.6	-1.1
DF. Refined petroleum	-0.9	-1.7	-10.2	-2.7	-2.5	-2.6	-
DG. Chemical industry	1.6	-1.4	-10.9	-0.6	-2.8	-1.2	-2.3

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DH. Rubber and plastic products	-0.8	1.2	-10.3	0.5	-7.2	-2.3	-11.7
DI. Other non-metallic mineral products	4.6	-0.5	-7.2	0.0	1.1	-2.8	8.4
DJ. Metallurgy, incl. basic metals and fabricated metal products*	4.1	-5.5	-5.9	-0.4	0.4	-6.3	0.9
DK. Machines and equipment	0.5	5.2	-6.2	2.0	6.0	1.0	-4.5
DL. Electrical and optical equipment	5.7	12.7	19.5	5.2	1.1	1.7	14.6
DM. Transport equipment and means of transport	-3.5	4.7	15.8	6.4	4.1	21.9	-1.8
DN. Manufacturing, incl. furniture	7.7	1.0	-7.5	-0.2	6.9	2.2	1.8

*for average productivity in the manufacturing industry D; productivity is calculated using output data

Source: adapted from Hunya (2003)

However, these sectors may have been underdeveloped before FDI penetration. Gorg and Strobl (2001) show that transnational companies came to Ireland in sectors that did not exist beforehand, such as electronics and pharmaceuticals; they argue that the massive loss in manufacturing employment in the domestic sector was not a negative effect of TNCs operating in the same sectors, but rather the result of the decline in importance of indigenous employment-intensive industries. On the other hand, assuming that the sectors in which foreign capital is present are not downsizing, and that local companies existed beforehand, foreign companies may end up with a higher market share and hence a higher share of production by crowding out local companies unable to face competitive pressures in the short run (Smarzynska 2002).

Regarding the net effect of FDI expansion (or relocation) and reorganization of domestic companies, the theory predicts that labor productivity gains will in the long run translate into wage raises, price cuts, consequent increases in demand, and thus increases in the demand for labor (IPTS, 2002). However, this may be valid only for well established markets and growing sectors.

As I see it, productivity gains in accession countries are translated, in the first stage, into drastic redundancies due to initial over-staffing of state owned companies. This first stage may be completed with the accession of the first wave of new EU members, but relocation of that labor force to other industrial sectors has proved only partially complete; furthermore, other transition economies, where FDI started late, still find themselves in the redundancies phase. In these economies, productivity gains do not automatically translate into welfare gains for the following reason:

- Wages increase by only a proportion of productivity gains, as low unit labor costs are a very significant aspect of competitiveness (more important than innovation, for example). This is particularly true of efficiency-seeking FDI, but also for local companies trying to survive.

- Initial prices were below world market levels (in tradables); the Balassa-Samuelson model predicts price increases hand in hand with economic progress (catching-up).

- Recessionist cycles, currency depreciations, episodes of increased fiscality – to mention just a small number of determinants – have partially changed the structure of domestic consumption but have left its volume either somewhat stagnant overall (this is especially true for countries like Romania and Bulgaria) or with a recent history of ups and downs. Furthermore, an increase in domestic consumption does not mean an increase in domestic employment; quite the contrary, an increase in foreign employment may be stimulated if the local demand is driven by imported goods. This is particularly valid in countries that have experienced consumption oppression and irrational allocation of productive resources, as was the case in former communist economies.

Another proxy for spillovers, apart from productivity gains, is the dynamics of technology transfer. Damijan, Majcen, Knell and Rojec (2002) used a large panel of data from eight economies and found that:

- FDI represents an important channel for technology transfer in the Czech Republic, Estonia, Poland, Romania and Slovenia. According to

the Global Competitiveness Report 2002-2003 (see figure 5), Hungary is performing very well in this regard. However, the technology transferred through FDI to Romania and Bulgaria is not the latest technology (figure 5) and companies operate with previous generations of process technology (figure 1).

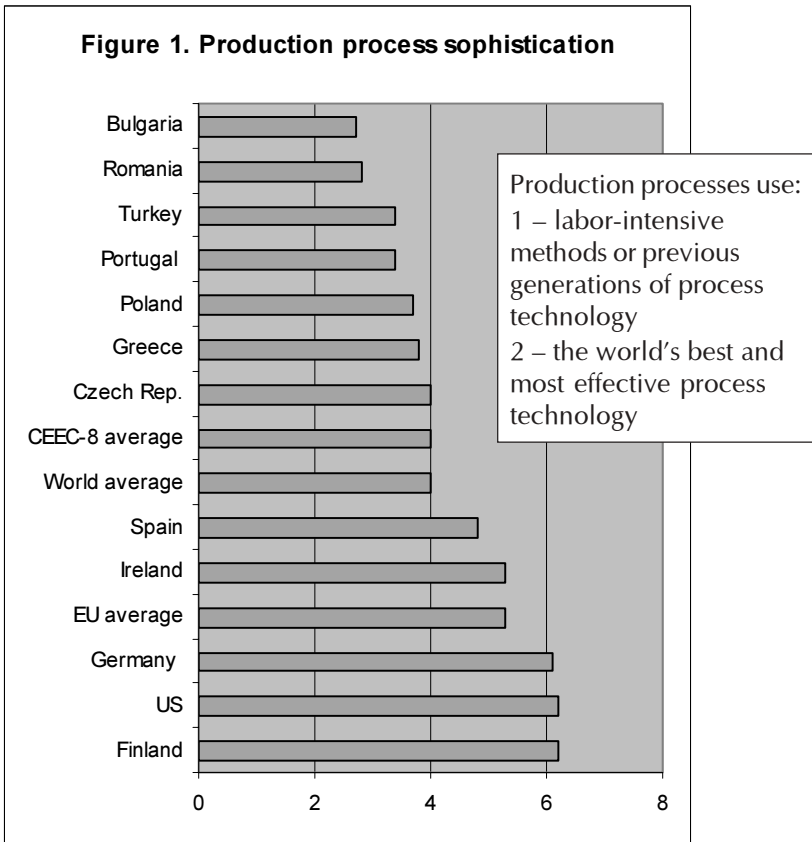
- R&D activity is concentrated in foreign companies in Bulgaria, Czech Republic, Estonia, Romania and Slovakia. Interpreting GCR result (figure 2), as the CEEC-8 average is below the world average, companies in Eastern Europe obtain technology more through licensing or imitating foreign technology than by conducting independent formal research. Also, their spending on R&D lags way behind R&D spending in the EU (figure 4).

- Romania appears to be the only accession country analyzed in the paper that recorded positive spillovers of FDI for domestic owned companies. However, after the authors controlled for sectoral differences and absorptive capacity, negative spillovers were found in Romania, as well as in Bulgaria and Poland. This finding fits with earlier studies (Djankov and Hoekman, 1998; Konings, 2001) that identified negative spillovers of FDI on domestic companies in the Czech Republic, Romania, Bulgaria and Poland. As far as Romania, Bulgaria and Poland are concerned, these results could be the result of the high costs of importing foreign technology (figure 6).

According to GCR, the combined effects of import tariffs, license fees, bank fees and the time required for administrative procedures significantly increase these costs. To cope with FDI, domestic companies need to acquire foreign technology at the same time as restructuring their activities. Given the high additional costs and the absence of adequate means of financial intermediation (credit restrictions in economies with a recent history of high inflation), local companies simply cannot afford the costs, while foreign owned companies obtain financing either intra-company or from foreign capital markets.

An interesting result was obtained by Ekholm and Markussen (2002); they observed that Swedish affiliates in CEEC trade more than affiliates in other locations (e.g., Western affiliates), but that the share of exports from the CEEC which go back to Sweden is quite low. This result, which partially accords with the evidence depicted in figure 3, was interpreted to suggest that the CEEC affiliates are specialized in down-stream assembly activities.

The GCR results confirm that, at least at the European level, there exists a relatively stabilized, cross-country hierarchy of specialization with the following shape: the core EU states – part of the EU “cohesion” countries (Ireland and Spain) – the first wave of EU accession countries (CEEC-8)¹ – the other part of the EU “cohesion” countries (Portugal and Greece) – the second wave of EU accession countries (Romania, Bulgaria, and Turkey).



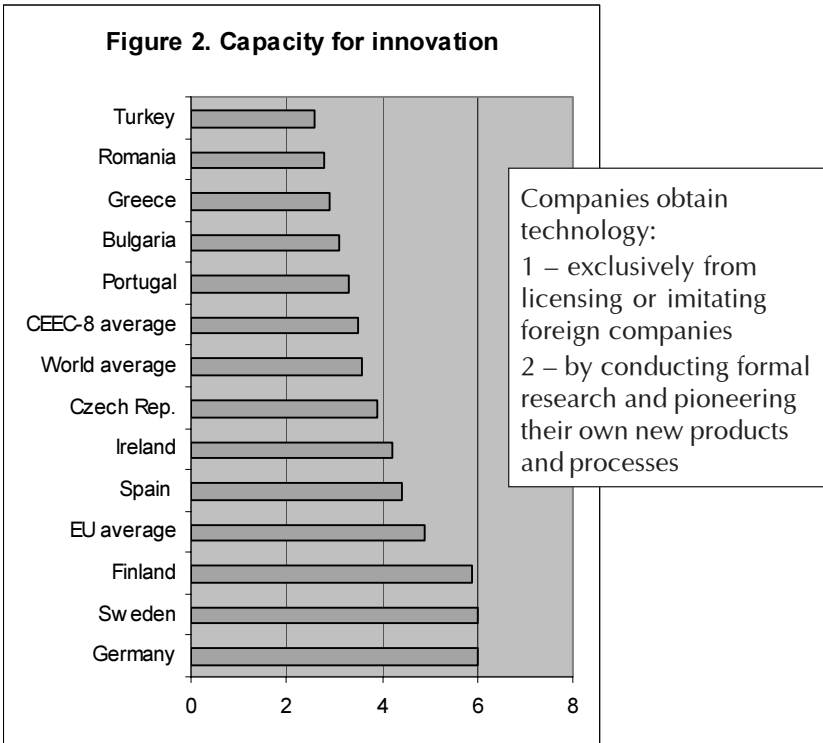
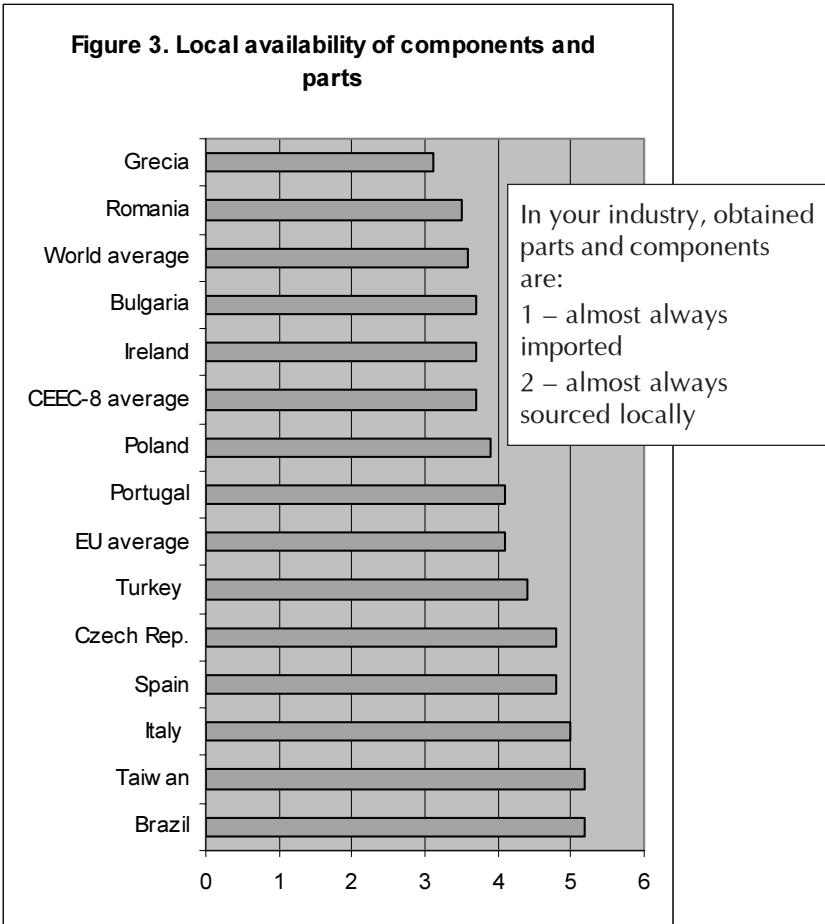


Figure 3. Local availability of components and parts



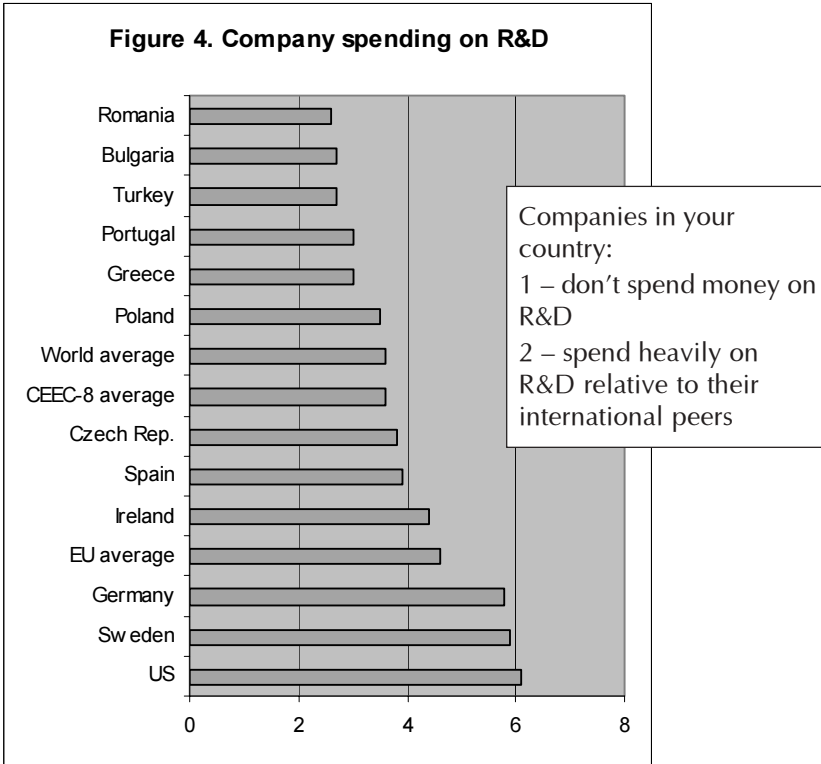
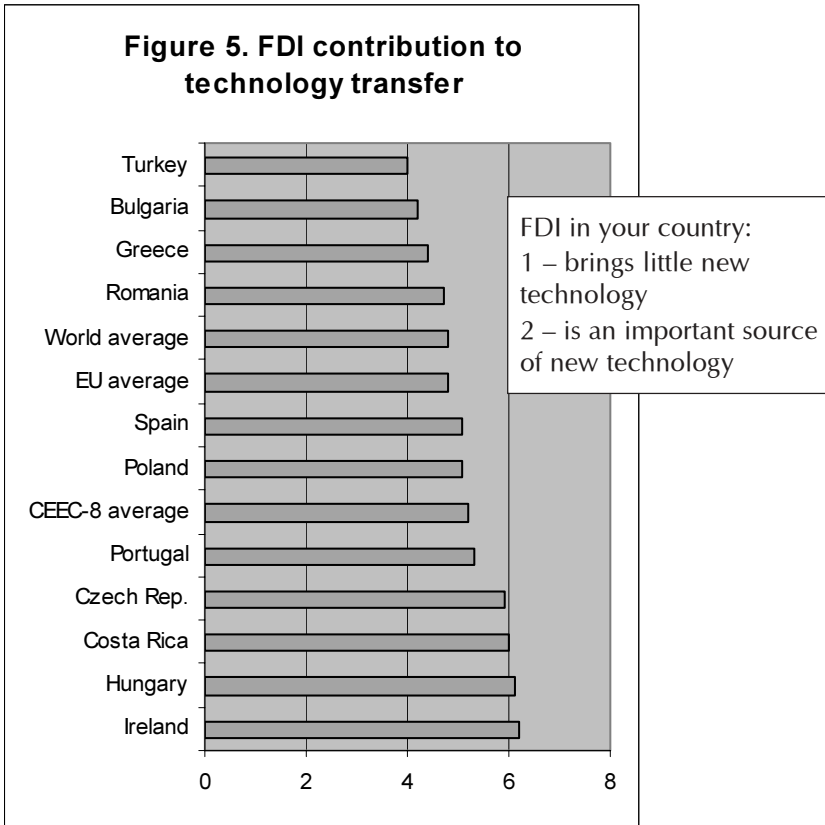
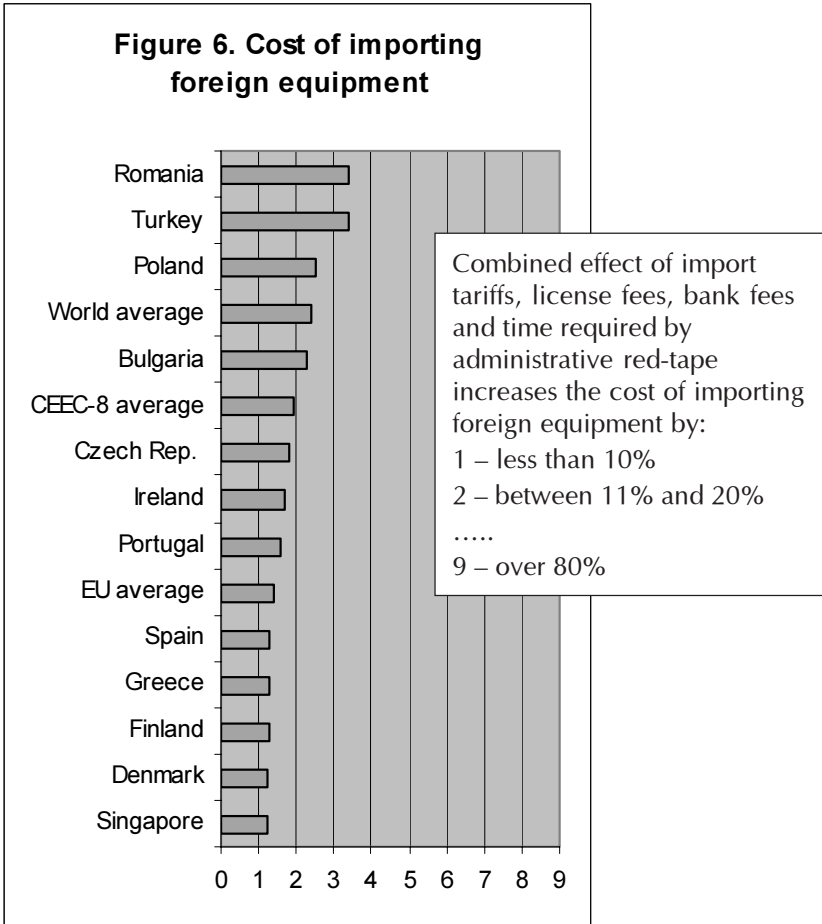


Figure 5. FDI contribution to technology transfer





Source for figures 1 to 6: *Global Competitiveness Report 2002-2003*

III. FDI spillovers in Romanian manufacturing

III.1. FDI presence in manufacturing and some consequences

There was an overwhelming need for foreign direct investment in an economy (EBRD, 2001) in which the savings rate, the domestic investment rate, and the non-governmental credit ratio to GDP were, and still are, the lowest of the EU candidate countries. However, FDI never fully covered the current account deficit and, except for two very unusual years of high debt servicing and net negative speculative flows, it never represented more than one third of all capital inflows to the Romanian economy.

Table 4. FDI evolution in Romania

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
FDI, mil. USD	37	73	87	341	417	263	1224	2040	1007	1051	1154	1090
FDI, % GDP	0.1	0.3	0.3	1.1	1.1	0.7	3.4	4.9	2.9	2.9	3.0	2.6
FDI, % current account deficit	3.6	4.6	7.4	79.6	23.5	10.2	57.5	68.7	78.1	77.1	49.1	71.2
FDI, % net foreign capital inflows	1.9	3.4	6.0	12.7	26.0	7.3	36.2	89.4	123.7	26.7	27.8	21.6

Note: the balance of payments data presented here do not correspond to Trade Registry data, as the latter only account for share capital. When reporting FDI, Romanian statistics do not account for reinvested profit although most other countries in the region do, meaning that Romanian FDI figures are higher in reality.

Source: computed from National Bank of Romania data

Half of the aggregated FDI stock in Romania was accumulated in the period 1997-1999, an episode of second transformational recession (Daianu, 1998). That recession was signaled by plunging domestic demand and booming unemployment, and this entitles us to reason that investment undertaken at that time was not made in search of the domestic market (since that was in decline), but in search of resources that could be exploited by export led operations.

The prevalence of direct sales as a method of privatization in that period was probably linked to the “hunger” for foreign currency at the time. Foreign-controlled enterprises were probably the main beneficiaries of this method, as they had the best bargaining capacities due to their regional/global reach. Evidence shows that in many cases in Romania foreign acquisitions were complemented by positive discrimination. “First-comers” were given the opportunity to impose entry barriers on other investors. What may once have been seen as a case of successful privatization may deter future FDI.

Voinea (2001) provides a detailed description of just such a situation in the cement business. Four of the largest five companies on the Romanian cement market (where there is a 95% degree of concentration) were sold to foreign investors through direct sales between December 1996 and March 1998; at that time the industry was considered a case of successful privatization. However, there were indications as early as 1998 that price fixing had been agreed upon among foreign investors. Later, the cement market went through a phase of reorganization. The single remaining local company of significance was acquired by one of the initial foreign investors, which also bought another of the first four companies to be privatized. Three producers have remained on the market; from an initial oligopoly structure at a national level, the market currently resembles a collection of sub-national (region-based) monopolies. Price fixing seems to continue, and further problems could arise from the fact that the same three foreign investors in Romania are the de facto controllers of all Eastern European markets. Five years after approval of Lafarge’s acquisition of Romcim (the largest foreign acquisition in manufacturing at the time), the Competition Council formally decided to open an investigation into the alleged anti-competitive practices on the cement market.

The effects of market power inducements nonetheless depend on the characteristics of the foreign investors. In the case of SIDEX, for example, the fiscal incentives granted by the state will be paid off in only three

years, meaning that three years after privatization, the state budget will observe a net positive effect (table 5).

Table 5. Net direct effect of the SIDEX acquisition by ISPAT on the public budget

Gains, mil. USD		Losses, mil. USD	
Acquisition price	70	Liabilities written off	770
Yearly losses under state ownership	300	Interest rate for postponed social security contribution payments (3 years postponement)	15
Aggregated for 3 years	900	Compensatory payments paid by the state for redundancies (until November 2004)	47
Total	970	Total	832
Net effect	Positive starting with the third year after acquisition		

Note: Interest rate considered to be mid 2003 market average of 15%; payments were based on the number of jobs lost (11,000) and net average wage. However, while the compensatory payments are likely to be paid from the RICOP program of the World Bank, I consider them a loss anyway because they represent an opportunity cost (other projects could have been supported instead).

Source: author's estimations

The investor profile was decisive in the SIDEX case: a global player in the industry that was looking to gain a competitive advantage over global competitors by taking over emerging markets. In Romania, LNM obtained a bunch of fiscal facilities, debt swaps at discount rates, and a global advantage by avoiding the US surcharge on imported steel. Other investors obtained similar market power inducements, but failed in most cases to create a more competitive product and to increase overall welfare. OTE (Greece) – Romtelecom, in telecommunications, and Noble Ventures (US) – CS Reșița, in metallurgy, are notorious cases in point. Both investors obtained numerous facilities and incentives, but the final result was disappointing. CS Reșița is now back under state control, while OTE is producing rising operational losses and was even fined by the Competition Council for monopolistic behavior. An explanation of why

the latter deals underperformed might be the fact that the foreign investors in these cases had no global reach. They were, at the best, regional or niche players; their managerial experience of reviving distressed companies was limited, and their international network not sufficiently expanded. Thus, the incentives and facilities obtained in Romania gave them a local competitive advantage, but not a global competitive advantage, and they exploited this advantage in a way that was detrimental to innovation and consumer welfare.

In the Romanian manufacturing industry, foreign investment accounts for almost one third of total turnover (29.1% in 2001) and for more than one third of social capital (34.8% in 2001). From 2001 onwards, the following sectors enjoyed above average foreign capital contributions: the food industry (DA), non-metallic mineral products (DI), metallurgy (DJ), machines and equipment (DK), electrical and optical equipment (DL), and transportation (DM). As for other sectors, such as textiles (DB), footwear (DC) and furniture (DN), which aggregated account for more than 55% of Romanian exports to the EU, the lower prevalence of FDI indicates the wide-scale use of subcontracting practices (mainly lohn) through intermediaries.

Table 6. Turnover share of majority owned companies in manufacturing sector

	1995	1998	2001
D. Manufacturing industry	4.90%	11.50%	29.10%
DA. Food industry, incl. beverages and tobacco	5.44%	13.54%	32.15%
DB. Textile and clothing	5.50%	13.50%	21.05%
DC. Leather and footwear	2.40%	10.50%	20.40%
DD. Wood processing, excl. furniture	5.20%	6.80%	16.50%
DE. Pulp and paper	10.75%	13.02%	22.22%
DF. Refined petroleum	0.00%	0.00%	0.00%
DG. Chemical industry	4.60%	19.70%	27.90%
DH. Rubber and plastic products	3.80%	14.50%	26.50%
DI. Other non-metallic mineral products	20.40%	21.80%	38.20%

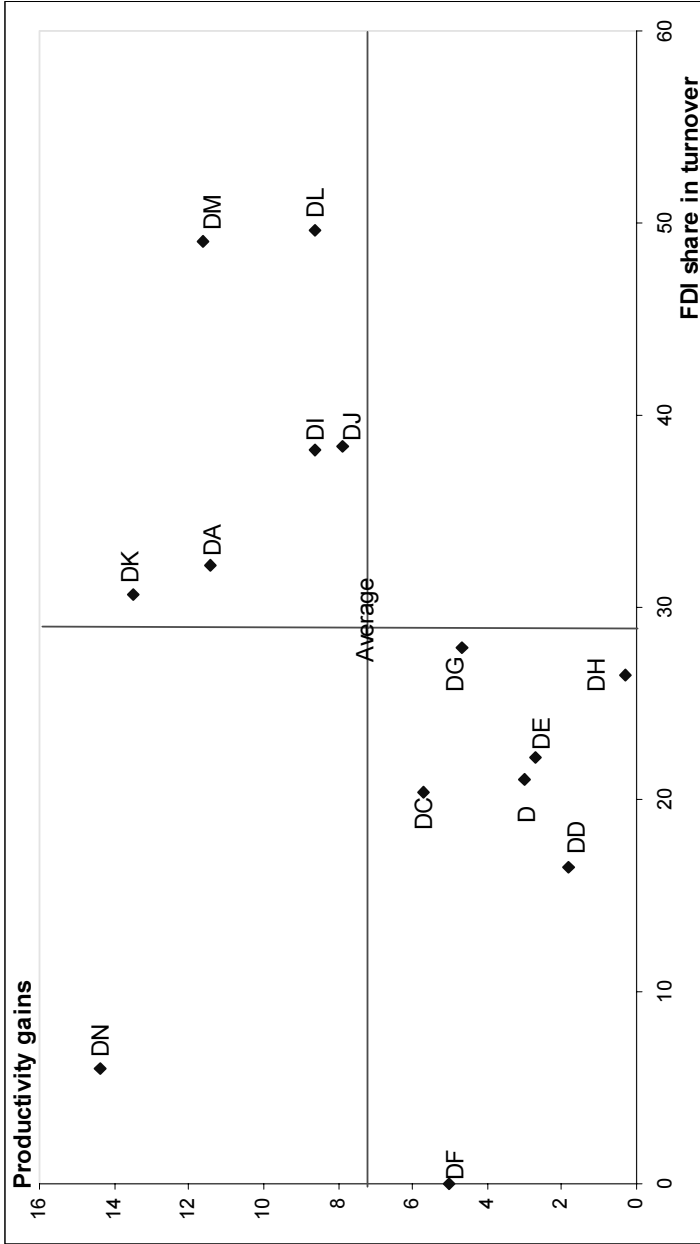
DJ. Metallurgy, incl. basic metals and fabricated metal products	0.76%	4.78%	38.35%*
DK. Machines and equipment	2.24%	9.33%	30.64%
DL. Electrical and optical equipment	28.56%	27.92%	49.65%
DM. Transport equipment and means of transportation	10.97%	12.69%	49.05%
DN. Manufacturing, incl. furniture	1.60%	6.20%	6.00%

* does not account for the takeover of SIDEX, that became operational at the end of 2001

Note: Data refer only to majority owned firms (over 50%) that have social capital in excess of 50,000 USD (this amount represents the country average social capital per newly established company with foreign participation).

Source: computed from the database of the National Office of the Trade Registry

Figure 7. FDI penetration (2001) and productivity dynamics (2001 vs. 1995), %, by manufacturing sectors



Source: based on data in tables 3 and 6

One conclusion that clearly arises from figure 7 is that manufacturing sectors with above average foreign capital penetration also show above average productivity gains.

These productivity gains are partly due to job cuts. Between 1995 and 2001 there was a drop in employment by 3.6% in the food industry, 13.8% in metallurgy, 23.1% in mechanical machines and equipment, and 3.8% in the electrical equipment industry. These dynamics should not be surprising in sectors with significant foreign capital penetration. As mentioned earlier, a large proportion of FDI to date was effected through privatizations: the restructuring that follows privatization normally leads to job cuts, at least in the early stages. The increase in unemployment in the same time interval indicates that only a proportion of the employees made redundant found new jobs in other sectors. The most significant increase in employment has been in the textiles and clothing industry, which is heavily labor-intensive and has below average foreign capital penetrated, and this evolution is the opposite of what happened in the economies of the first wave of EU accession. A proportion of the jobs lost in countries such as Hungary and Poland was relocated to Romania (Voinea, 2003), and the reduction in exports from the labor-intensive industries of these countries was reflected in a corresponding surge in Romanian exports. This validates the observation that the restructuring of Romanian industry did not necessarily follow the path of convergence towards EU production structures (Păuna, Păuna 2000).

Wage increases remained lower than productivity increases, and as a consequence unit labor cost decreased,² both at the aggregated level of the manufacturing industry (from 0.19 in 1998 to 0.12 in 2002) and in the labor-intensive industries (from 0.37 in 1998 to 0.18 in 2002). Decreasing unit labor costs contributed to the competitiveness of Romanian exports mainly in the period 2000-2002 by compensating for certain negative factors, such as the real appreciation of the leu against the euro and the dollar, and the less favorable economic situation in the European Union.

III.2. How did Romanian owned companies perform?

What happened to the Romanian companies that remained under Romanian ownership? To answer this question, I have taken two representative sectors of the economy in which there is an above average foreign presence: the food and beverages and tobacco industry, and the

machine and equipment industry, respectively. From these two sectors, I have constructed a sample of local companies using the database provided by the secondary stock exchange, the over-the-counter market: the Rasdaq. I chose only to select companies that met the following conditions: they each had over 50,000 Euro in share capital and a minimum of 50 employees; they were established prior to 1998; they had had majority Romanian capital (state and/or private) in 1998 and still had majority Romanian capital at the end of 2001; they had been traded at least once on the market in the period 1998-2001; and they were still operational and not restricted from stock exchange trading operations as of the end of the first half of 2003. As of 1998, the sample accounted for approximately one quarter of the turnover and employees in each of the two sectors selected. The data in table 7 indicate that the massive increase in foreign penetration in the two sectors analyzed (food and beverages and tobacco, and machines and equipment) coincided with a sharp drop in both nominal and in relative terms in the share of employment and turnover of domestic companies. The reduction in the number of employees was more severe than the drop in turnover and this had the consequence that, by taking turnover per employee as a measure of productivity, domestic companies enjoyed slight increases in productivity; however, these increases were much lower than the average for said sectors.

Table 7. Turnover and employees, sample of Romanian domestic companies and total sector, selected manufacturing sectors, 2001 vs. 1998

Food and beverages and tobacco		1998	2001
Turnover	Total sector (bn ROL)	11803	40400
	Sample domestic (bn ROL)	2863	2327
	Sample/sector	24.26%	5.76%
	Foreign companies/sector	13.54%	32.15%
Employees	Total sector (no. persons)	105305	136912
	Sample domestic (no. persons)	23761	14694
	Sample/sector	22.56%	10.73%

Turnover/employee	Total sector (mil. ROL/person)	112.1	295.1
	Sample domestic (mil. ROL/person)	120.5	158.3
Machines and equipment		1998	2001
Turnover	Total sector (bn ROL)	10221	9829
	Sample domestic (bn ROL)	2416	1760
	Sample/ sector	23.64%	17.91%
	Foreign companies/sector	9.33%	30.64%
Employees	Total sector (no. persons)	182895	125902
	Sample domestic (no. persons)	52217	32649
	Sample/sector	28.55%	25.93%
Turnover/employee	Total sector (mil.ROL/person)	55.8	78.1
	Sample domestic (mil. ROL/person)	46.2	53.9

Note: data expressed 1998 current prices; the data for 2001 were deflated by the index of production prices for each sector

Source: *National Institute for Statistics (INSSE) and own calculation*

The following efficiency indicators refer to the gross operating result and gross financial result, both as shares in turnover (table 7). 1999 was a year that saw restructuring in both sectors and not only for the domestic companies. It should be mentioned here that, under pressure from external imbalances, the then government implemented a package of reform-oriented measures including cutting subsidies and closing a number of companies. However, the overall performance of the sectors improved after 1999, while the domestic companies in our sample continued to reduce not just their turnover and their number of employees, but also their gross operating results. Comparing 2001 with 1998, it appears that domestic companies reduced their financial losses, while recording large decreases in gross operating profit. This was accompanied by a drastic cut in turnover and employees.

Table 8. Operating and financial results, sample of Romanian domestic companies and total sector, selected manufacturing sectors, 1998-2001

Food and beverages, and tobacco		1998	1999	2001
Gross operating surplus/turnover	Total sector	10.87%	5.10%	7.18%
	Sample domestic	7.96%	5.86%	1.68%
Profitability (gross financial result/turnover)	Total sector	1.54%	-7.40%	0.25%
	Sample domestic	-4.91%	-9.18%	-3.78%
Machines and equipment		1998	1999	2001
Gross operating surplus/turnover	Total sector	9.46%	8.80%	10.40%
	Sample domestic	5.78%	2.26%	0.73%
Profitability (gross financial result/turnover)	Total sector	-3.37%	-9.90%	-0.37%
	Sample domestic	-2.00%	-2.95%	-2.20%

Source: own calculations (for the sample); adapted (aggregated to CAEN form) from "Enterprises Results and Performances in Industry and Constructions" published yearly by the National Institute for Statistics (for total sector, years 1998 and 2001); Marin (coord.), 2001 (for total sector, year 1999)

Bearing in mind that total sector data also include this underperforming sample of domestic companies, the foreign companies recorded increased gross operating profits (in both sectors) for the same time interval, while managing either a decrease in profitability (in food and beverages and tobacco) or a reduction of financial losses (in machines and equipment). This was accompanied by a surge in turnover and the turnover per employee ratio of foreign companies.

The behavior of Romanian companies seems to fit the "defensive adaptation" definition by Richet (see section I of this paper) or, as I would call it, downsizing adjustment. They did not have the financial means to re-organize and compete on an equal footing with foreign investors; instead, they attempted to reduce their losses and occupy a small market niche (section II also offers explanation of the high costs of importing foreign equipment). Foreign companies, on the other hand, were able to

borrow the necessary resources (and this is seen in the evolution of their financial results) – either intra-company or abroad – and transfer technology, which led to higher operating profits.

At this level of data, it is not possible to say whether or not domestic companies would have followed the same route of downsizing adjustment in the absence of FDI. Based on the brief analysis above, however, it can be concluded that the effect of FDI on their own affiliates was positive, while the spillover effects of FDI on domestic companies in the sectors analyzed were, where they existed, rather negative. On the other hand, this says nothing about the impact of FDI on new locally owned companies. It might be that a positive spillover can be identified, but the data should also account for the years 2001 and 2002 and I found no regression study that incorporated those data and I also could not find the data. In the absence of new data to account for at least two years of strong growth and a clear correction for sector distribution, the results for FDI spillovers in Romania will be biased by the low volume of FDI before 1998 and the generally unfavorable macroeconomic conditions between 1997 and 2000.

III.3. What kind of FDI-induced specialization?

The sectors with above the average foreign capital penetration appear on the winning side, as shown in figure 8: metallurgy shows upward IIT, while the food industry, machines and equipment, and transportation all show upward RCA³ and IIT.⁴

Table 9. Revealed comparative advantage, Romania's foreign trade with the EU, sectors with above average foreign capital penetration, SITC-2 classification

	Food industry	Metallurgy	Machines and equipment	Transportation
RCA 1993	-1.21	0.77	-1.42	-0.84
RCA 2001	-1.02	0.34	-0.44	-0.83

Source: authors' calculations

Table 10. Intra-industry index, Romania's foreign trade with EU, sectors with above average foreign capital penetration, SITC-2 classification

	Food industry	Metallurgy	Machines and equipment	Means of transportation
IIT 1993	0.34	0.80	0.28	0.45
IIT 2001	0.48	0.90	0.71	0.72

Source: authors' calculations

The increase in intra-industry specialization (seen in the dynamics of the intra-industry index, which in Romania for machines and equipment reached levels comparable with those in candidate and cohesion economies) is associated with technology transfer, most usually within the intra-company trade.

Table 11. Intra-industry index, EU trade with selected economies, SITC-1 classification, 2000

	Romania	Hungary	Poland	Czech Rep.	Bulgaria	Slovenia	Ireland	Portugal	Germany
Group 7. Machines, equipment and transportation	34.7	34.4	32.0	56.4	22.0	37.6	36,8	23,3	69.3

Note: by contrast with the formula used for table 8, here the result has been multiplied by 100. It can therefore take values from 0 to 100.

Source: adapted from Caetano and others (2002)

Figure 8. Performance and specialization in Romanian foreign trade, by product groups, SITC-2 classification, 2001 vs. 1993

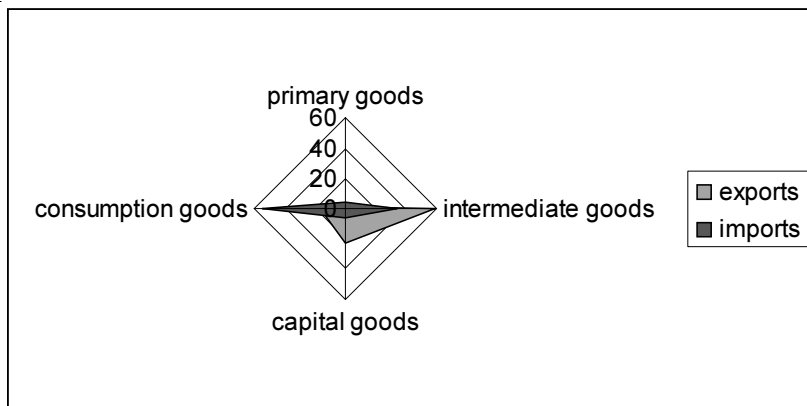
	IIT upward	IIT downward
RCA upward	<ul style="list-style-type: none"> - food ind., incl. beverages and tobacco (gr. IV) - mineral products (gr. V) - machines and equipment (gr. XVI) - means of transportation (gr. XVII) - optical, medical instrumental (gr. XVIII) 	<ul style="list-style-type: none"> - unprocessed wood (gr. IX)
RCA downward	<ul style="list-style-type: none"> - vegetal products (gr. II)* - pulp, paper (gr. X) - cement, glass (gr. XIII) - metal products (gr. XV) - furniture (gr. XX)* 	<ul style="list-style-type: none"> - animal products (gr. I) - animal, vegetal oils (gr. III) - chemical products (gr. VI) - rubber products, plastic (gr. VII) - leather, furs (gr. VIII) - textiles and clothing (gr. XI)** - footwear (gr. XII)**

Note: * IIT downward since 1998; **IIT upward since 1998

The increase in specialization reflected by IIT says little by itself of whether this intensification of intra-industry trade coincides with local production integration in international production networks. An early attempt to answer this question (Kaminski, Ng 2002) discovered by employing data for 1998 and a high level of disaggregation that 52 of the 60 best performing Romanian export products do not have a double revealed comparative advantage (for exports and imports alike), interpreting this as showing that the products are only assembled in Romania. Recent data (Caetano *et al.*, 2002) shows that Romania has the lowest share of intermediary goods imports among all EU candidate countries, though it stands on more comparable terms with respect to exports of intermediary goods. The extremely large spread between exports and imports of intermediary goods thus appears as a revealing indicator

for the lack of integration of Romanian products in the international networks of production and distribution; the name of the game is fragmentation (assembly operations with low added value), rather than integration.

Figure 9. Structure of foreign trade, by production stage, 2000

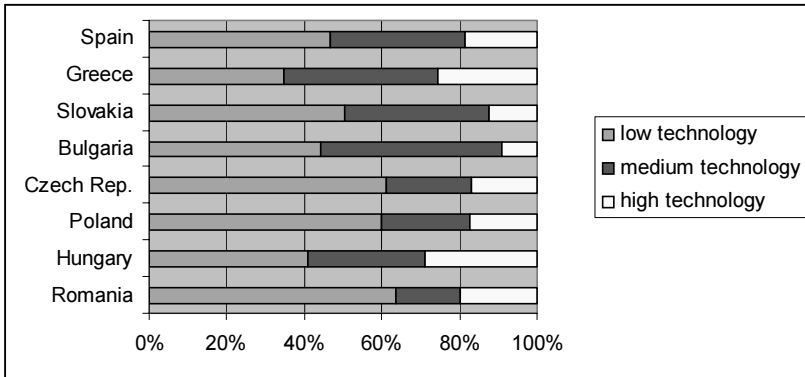


Source: computed from Caetano et al, 2002

60% of Romanian exports are thus intermediary goods - mainly parts and components. Daianu et al (2001) describes this foreign trade paradox as the situation in which Romania imports high value added goods in order to contribute to the exporting of low value added goods. Even in the machines and equipment group, which at a first glance appears to be technology-intensive, Romania nonetheless appears to be specialized in the production and export of parts and components (for machines and equipment), which are more labor-intensive than technology-intensive.

The trend in Romanian foreign trade in the past decade was to trade in more vertically differentiated goods, in which cheap, low quality products remain predominant. While a slight increase in superior quality exports is observable (table 12), the foreign trade structure still remains one of the most unbalanced among the candidate and cohesion economies from the price-quality perspective.

Figure 10. Technology level of exports



Source: computed from table 13

Table 12. Export classification by price-quality range, % in total exports

	1993			2000		
	Inferior (low technology)	Medium	Superior (high technology)	Inferior (low technology)	Medium	Superior (high technology)
Romania	78.3	8.9	12.5	63.7	16.4	19.7
Hungary	52.4	23.5	23.9	41.1	30.2	28.9
Poland	73.6	18.1	8.1	59.8	22.6	17.5
Czech Rep.	70.6	16.1	13.0	61.1	21.9	16.9
Bulgaria	62.9	21.2	12.8	44.3	46.4	9.1
Slovakia	73.8	15.9	8.9	50.5	36.9	12.6
Greece	28.9	35.3	30.2	34.0	38.8	25.2
Spain	47.4	34.9	14.7	46.1	34.6	18.3

Note: the unit value of exports and imports is considered a proxy for the quality of exports and imports. Based on the ratio of export unit value (XUV) to import unit value (MUV), each product can be classified in one of the following three ranges: inferior ($XUV < MUV$ by more than 15%); superior ($XUV > MUV$ by more than 15%); medium (all other cases)

Source: Caetano et al (2002)

The above remark was based on a simple reviewing of the strategies applied in Romania by foreign investors that are major players in their respective global markets. The LNM Group, which took over the troubled steelmaker SIDEX, has managed to boost efficiency by cutting one third of employees and changing its export strategy while maintaining a production orientation towards flat products that are considered of lower quality and less added value than long products. In terms of global LNM strategy, its affiliates in emerging markets (Romania, Kazakhstan, and Mexico) focus on flat products, while its affiliates in developed economies (US, Germany, and France) focus on long products. For its part, Renault, the buyer of carmaker Dacia, transfers technology and stimulates innovation with the aim of producing a new Dacia model for emerging markets only, i.e., inferior in quality to the Renault models sold in Western markets.

These two examples are significant in that they portray two large foreign investors (together FDI and the investment commitment add up to almost 1 bn USD from a total FDI stock accumulated in Romania of 8.5 bn USD) operating in two industrial sectors identified in this paper as “winners” in the sense that they enjoy above average FDI penetration, relative productivity gains, and an upward intra-industry specialization trend. Increased efficiency and technology transfer, both linked to the exogenous type of growth resulting from the direct effect of FDI, have not changed the competitive advantages that would have given impetus to the catching up process. In similar vein, Ciupagea (2002) observed that in its current stage of economic development, Romania represents a peripheral state for an enlarged EU with an economic structure that resembles that of the “cohesion economies”. This structure complements the production structures within the European Union more than being integrated within the core of EU specialization.

Final remarks

This paper represented an attempt to investigate FDI spillover effects on competition, technology transfer and specialization, and (to a lesser extent) labor market dynamics, with a focus on the Romanian manufacturing sector. The main findings are summarized in table 13.

The evidence from transition economies, including Romania, indicate that a large part of the FDI that has existed until now came as the result

of privatizations; the direct sales method of privatization, which is used in many countries, is likely to offer the foreign investor market power inducements that have negative consequences for post-privatization competition and lead to the creation of static ownership advantages that do not encourage innovation, especially in oligopoly type markets.

This paper provides a summary of the evidence, and provides evidence of its own, to document the existence of positive direct FDI spillovers in EU accession economies, inclusive Romania. Foreign capital companies benefit from large productivity gains in a number of manufacturing sectors; FDI also represents an important channel for technology transfer, and R&D activity is concentrated in foreign capital companies.

Negative spillover effects on domestic companies nonetheless occur in terms of indirect effects. Domestic companies that had been in the market before the arrival of FDI were forced to resort to defensive adaptation; their turnover and number of employees were cut severely in order to minimize losses, which resulted in decreased operating profits.

Although the sectors with above average FDI penetration recorded highest productivity gains and increased intra-industry trade, the contribution of FDI to growth was more of an exogenous nature. Productivity gains occurred partly due to job cuts; alternative jobs were created in labor-intensive industries with below average foreign penetration. The restructuring that was stimulated by FDI has not meant convergence towards EU production structures. Rather it has been complementary. That production in Romania has adhered more to the logic of vertical specialization (fragmentation) in quality-based differentiated goods implies that competitive positions are gained by means of cost cutting and use of cheap labor.

Table 13. FDI Spillovers in the Romanian manufacturing sector, a synthesis

		Spillovers in the short term	Spillovers (net) in the medium term
Entry mode	Privatization by the direct sales method in which positive discrimination is granted	<ul style="list-style-type: none"> - Job cuts - Better management - Increased efficiency 	<ul style="list-style-type: none"> - Crowd-out local producers and establish market cartels between foreign capital companies, especially in oligopoly-type

			sectors with increasing returns of scale - Introduce entry barriers to potential foreign competitors - Perverse incentives against innovation; monopoly rents from market power inducements
	Greenfield	- Job creation - Incentives for transfer of new technologies	- Increased competition on domestic product market - Business-enhancing effect for companies in the same sector if the technology gap is not too large, or for companies in other sectors acting as suppliers, through backward and forward linkages - Increases competition on domestic labor market
Manufacturing sectors	Food and beverages, machines and equipment, metallurgy, electrical and optical equipment, transportation	- Increased productivity and turnover of their own affiliates	- Negative spillovers on already existing local producers. They are forced into defensive adaptation, with reduced market share and profit; some move into new niche -market segments, becoming suppliers for foreign affiliates

Profile of investor			- Positive spillovers on competition from bringing in potential foreign competitors and suppliers
	Global player	- Transfer of technology and know-how to own affiliate	- Fiscal incentives pay off - The local plant is introduced into the global system of production and distribution of the foreign investor - Positive spillover effects on downstream markets, as foreign suppliers follow the global player
	Local/regional player	- Enhanced possibility of transfer profits abroad - Operate a short-term profit-maximizing strategy	- Fiscal incentives likely not to pay off - In the best case, a global investor will eventually buy the company, if it operates in an oligopoly or increased return on scale sector
Type of specialization	Horizontal specialization	- Mixed evidence	- Local companies in downstream industries can act as suppliers; - If technology gap is low, it can have positive spillovers on competition
	Vertical specialization		- Local competition becomes part of the global competition on specific product markets

NOTES

- 1 Cyprus and Malta are not covered by GCR.
- 2 Unit labor cost is calculated as follows:
 $ULC = W / (P/N)$, where W -gross wage, P - value of production, N -number of employees
- 3 Revealed comparative advantage is calculated based on the formula:
 $ACR_i = \ln [(x_i/m_i)/(X/M)]$
where x_i and m_i represent exports and imports respectively from product group i , while X and M are total exports and total imports, respectively. In this understanding, a product has RCA if its coverage ratio exceeds the average foreign trade coverage ratio.
- 4 The Intra-industry index, known as the Grubel-Lloyd index, is calculated based on the formula:
 $IIT_i = 1 - [(x_i - m_i)/(x_i + m_i)]$
meanings as above. This index can take values from 0 to 1; the closer to 1, the higher the specialization. The level of disaggregation employed here (two figures product groups) may determine higher IIT values; such an effect is, however, non-discriminating among product groups.

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