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Survey and Analysis of Foreign Direct Investment in the Republic of Croatia

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CROATIAN NATIONAL BANK

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Alen Škudar
Croatian National Bank
alen.skudar@hnb.hr

The opinions presented in the paper are those of the author and are not necessarily identical to those officially held by the Croatian National Bank.

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Alen Škudar

Summary

This paper analyses foreign direct investments in the Croatian manufacturing sector and attempts to determine the effects of such investments on host companies, whether they are newly-established or acquired. The assessment of the effects has been carried out on the basis of analysis of movements in their revenues (production/sale), capital, employment and productivity in the 1998-2002 period. The obtained results have been compared with the movements in the identical indicators for other domestic companies in the manufacturing sector. It has been assumed that companies that have received foreign direct investments are superior to other domestic companies, in terms of technology and organisation, due to which they should grow faster. This primarily refers to newly-established companies, whereas somewhat more modest performance is expected in the initial period in companies that have been acquired, due to the required reorganisation and restructuring. The experience in transition countries of Central Europe shows that movements in revenues (production/sale), employment and capital of these companies should form the J-curve – decline, followed by a gradual recovery and reaching of increasingly higher levels relative to the period prior to the acquisition. The results confirm the assumptions to a large extent, in the case of movements in revenues, capital and productivity. Positive effects on employment are yet to be seen. Companies that have received foreign direct investments are mainly more successful than domestic companies. However, foreign direct investments have not so far played as important role in the Republic of Croatia's manufacturing sector, as it is the case in the Central European transition economies.

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Key words: foreign direct investment, Republic of Croatia

Contents

1 Introduction	1
2 Effects of Foreign Direct Investment Inflows: Overview of Literature and Experience in Transition Economies	2
3 Analysis of Foreign Direct Investment in the Republic of Croatia, 1998-2002	5
3.1 Group of Acquired FDI Companies.	7
3.1.1 Capital	7
3.1.2 Revenues (production/sale).	9
3.1.3 Employment	11
3.2 Newly-established Companies	13
3.3 Productivity	16
3.3.1 Productivity Growth	16
3.3.2 Productivity Ratios.	18
3.4 Spillover Effect	19
5 Conclusion	21
References	22
Appendix	23

Survey and Analysis of Foreign Direct Investment in the Republic of Croatia

Alen Škudar

1 Introduction

Foreign direct investments represent a stable source of capital for the host country, facilitate financing of a possible current account deficit, but they could play an even more important role in the economy, as a channel for transferring technology and managerial knowledge, as well as in spreading the positive effects on the rest of the economy.¹ The role of these investments in a host country's growth and development has been confirmed by several empirical studies, especially in underdeveloped economies. In the last ten years, foreign direct investment inflows had an important role in productivity growth, production, employment and exports of the Central European transition economies. This survey represents an analysis of foreign direct investments in the Croatian manufacturing sector,² attempting to determine the effects of these investments on the companies that have received them, whether they are newly-established or acquired. The assessment of the possible effects has been carried out on the basis of analysis of movements in their revenues (production/sale), capital, employment and productivity in the 1998-2002 period. The obtained results have been compared with the movements in the identical indicators for other domestic companies in the manufacturing sector. Data for the survey were selected on the basis of the Fina database (revenues, capital, employment), whereas the Croatian National Bank's foreign direct investment database helped to identify the companies that have received foreign direct investments. The sample consists of 11,772 manufacturing companies, of which 153 are in foreign direct ownership (FDI companies). FDI companies are divided into 5 groups, depending on whether they are newly-established or acquired, and on the period when it occurred. It has been assumed that FDI companies are superior to other domestic companies, in terms of technology and organisation, due to which they should perform better and grow faster with respect to sale, capital and employment. This primarily refers to newly-established companies, whereas somewhat more modest performance is expected in companies that have been acquired, due to the required reorganisation and restructuring. The experience in the Central European transition economies shows that movements in revenues (production/sale), employment and capital of these companies should form the J-curve – decline in the initial period after the acquisition, followed by a

1 Spillover effect.

2 It includes NCEA sections from 15 to 37.

gradual recovery and reaching of increasingly higher levels relative to the period prior to the acquisition.

The analysis starts with a summary of empirical studies related to the foreign direct investment effect on the host country's economy, especially in the case of the Central and South-East European transition economies. An overview of foreign direct investments in Croatia is also presented in this chapter, followed by an analysis of foreign direct investment effect on the Croatian manufacturing sector, with a short analysis of the spillover effect.

The results confirm the assumptions to a large extent, in the case of movements in revenues, capital and productivity. However, positive effects on employment are yet to be seen. FDI companies are mainly more successful than domestic companies. However, foreign direct investments have not so far played as important role in the Republic of Croatia's manufacturing sector, as it is the case in the Central European transition economies.

2 Effects of Foreign Direct Investment Inflows: Overview of Literature and Experience in Transition Economies

Apart from representing a stable and long-term source of capital, foreign direct investments serve as a channel for transferring contemporary technology and managerial and organisational knowledge. In addition, by means of foreign direct investment, domestic economy is integrated into international capital and trading flows. A study of Klein, Aaron and Hadjimichael (2001) proves that foreign direct investments stimulate economic growth in developing countries and that transfer of new technology and knowledge is the key factor. The results of the similar study by De Mell (1996) show a statistically positive relation between foreign direct investments and economic growth in the selected Latin American countries. However, according to Blomström, Lipsey and Zejan (1992) foreign direct investments affect positively the economic growth only of those developing countries that have crossed the minimum economic development threshold. The authors conclude that the positive effect of foreign direct investments on economic growth depends on the level of revenues (development). The conclusion of Borensztein, De Gregorio and Lee (1995) is similar. According to them, foreign direct investments affect positively the economic growth of the countries with a minimum level of human capital development (education level), whereas according to Blomström and Kokko (1996) – the higher the level of domestic companies' technological progress (i.e. the ability to acquire new technologies), the more positive the effects.

Positive effects of foreign direct investments are not exclusively a result of greenfield investments.³ Cross-border mergers and acquisitions (M&A) that include subsequent investments in new technologies and business reorganisation

³ Investment through newly-established company (new business project).

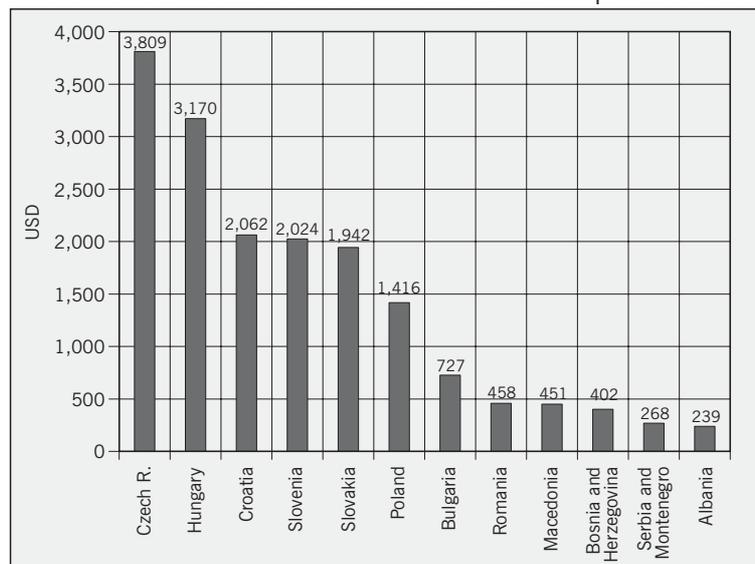
may have equally favourable effect in the long run, especially in transition economies with outdated production capacities. The role of foreign direct investments as a channel of technology and managerial and organisational knowledge spillover is particularly stressed in the recent literature, as well as their indirect impact on competition, productivity and investment activity of other companies (spillover effect). These effects are more significant for the transfer of technology and productivity on the overall economy than formal arrangements of technology transfers (Kinoshita (1998), Blomström and Kokko (1996), Dunning (1993)).

In the Central European transition economies, foreign direct investments have had an important role in domestic industry restructuring, they have increased productivity and made the key sectors of the economy more competitive for exports (Urban (2000), Barell and Holand (2000)). Foreign direct investments are mainly concentrated in the production sectors with above-average productivity, profitability and exports orientation, leading to a reallocation of resources from the sector of industry with small or no comparative advantages to the industrial sectors with significant comparative advantages relative to the EU member states (Rojec, 2000). A successful restructuring of the economy results in increased labour productivity, which is characteristic of Hungary that first started to receive foreign direct investments. In the 1992-1997 period, workers' productivity more than doubled, and profitability tripled (Kaminski and Riboud, 2000). Similar thing happened in the Czech Republic and Poland, but these countries started to receive larger amounts of foreign direct investments only at a later stage. On the other hand, as regards less developed transition countries, e.g. Bulgaria and Romania, there are fewer empirical evidence of a positive effect of foreign ownership. Such results may be accounted for by the fact that reforms in these countries were slower and foreign direct investments started to arrive much later and in a smaller extent than in the Central European countries (Konings, 2000).

Privatisation or subsequent acquisitions of the former state-owned companies often result in layoffs for the purpose of production rationalisation and closing down of unprofitable segments of a company. However, in the case of a successful company restructuring a growth in production and employment is expected. In the 1992-1997 period, restructuring process in Hungary led to a reduction in employment by 37%. However, that period was followed by a rise in employment, FDI companies accounting for 75% of newly-created jobs, mainly in favour of more educated and skilled workers (Kaminski and Riboud, 2000). Movements in production and employment in the years of restructuring result in the J-curve. Initially, companies record production and employment fall, followed by a full recovery and transition to the next stage where the production and employment hit the level above that recorded prior to the beginning of restructuring.

The latest data on foreign direct investments per capita in transition countries of Central and South-East Europe show that Croatia's rank is relatively high among the countries that have been granted full membership in the EU or are presently more serious candidates for EU membership than Croatia. The fact is that according to this indicator, Croatia considerably falls behind the Czech Republic and Hungary, but is ahead of Slovenia and Slovakia, and considerably

Figure 1 Cumulative Foreign Direct Investments per Capita in the 1993-2003 Period for Central and South-East European Countries



Source: Data from the central banks of the reported countries (foreign direct investments), International Financial Statistics, Volume LIV, No. 5, May 2001 (number of inhabitants).

ahead of Bulgaria and Romania. Nevertheless, the structure of Croatia's investments is not encouraging, so that the effects of investments are not evident, as it is the case in the Central European countries. Acquisitions of the existing companies predominate, while significantly less investments have been made with an aim of starting up new production activities (greenfield investments). Greenfield investments account for only about 16.6% of direct equity investments, mainly in service industries. Greenfield investments in the manufacturing sector mostly relate to smaller projects. Exports-oriented investments are few. However, such companies have become the main exporters in the Central European transition economies, and more importantly, ensured the spillover effect on other sectors of the economy, stimulating productivity growth and competitiveness of the economy as a whole.

Table 1 shows FDI companies' shares in certain indicators in the Hungarian, Czech and Slovakian manufacturing sector at end-1996. Even at that time, FDI companies already had an extremely important role in the economy of these countries, particularly in Hungary, where foreign direct investments started to be received as early as in late 1980s. In addition to a large share in capital, sale and

Table 1 Shares of FDI Companies in Manufacturing Sector for Hungary, the Czech Republic and Slovakia in 1996, in %

	Hungary	Czech Republic	Slovakia
Capital	67.4	21.5	19.4
Production/Sale	61.4	27.6	21.6
Exports	77.5	42.1	–
Employment	36.1	16.0	13.0

Source: WIIW (2000).

exports, it should be noted that in all the observed countries the share in these indicators is considerably larger than the share in employment, which indicates a higher level of productivity of FDI companies relative to the rest of the economy. Table 2 shows similar data for Croatia in the 1998-2002 period.⁴ According to 2002 data, the FDI companies employed 9.3% of workers, accounted for about 15% of the manufacturing sector total capital, for 15.7% of revenues, and for 23.7% of exports. The shares of these indicators were already twice as high for the Czech Republic in 1996 than for Croatia in 2002.

Table 2 Shares of FDI Companies in Manufacturing Sector for Croatia, in %

	1998	1999	2000	2001	2002
Capital	9.5	11.9	12.5	13.9	15.0
Revenues	10.4	10.9	12.5	14.3	15.7
Exports	17.7	18.1	17.3	21.9	23.7
Employment	7.7	7.7	7.9	8.5	9.3

Sources: Fina and CNB database.

3 Analysis of Foreign Direct Investment in the Republic of Croatia, 1998-2002

The goal of the analysis is the assessment of foreign direct investment effects on the Croatian manufacturing sector, primarily on companies that have received FDI. Their performance in terms of revenues (production/sale), capital, employment and productivity are observed in the 1998-2002 period and compared with indicators of other domestic companies in the manufacturing sector (companies in majority domestic ownership). Data for research were selected on the basis of the Fina database (revenues, capital, employment), whereas the Croatian National Bank's foreign direct investment database helped to identify the companies that have received foreign direct investments. FDI companies are divided into 5 groups, depending on whether they are newly-established or acquired, and on the period when it occurred. The group of companies in majority domestic ownership actually represents the remaining part of the manufacturing sector and serves for comparison with a formed group of FDI companies.

FDI companies are basically divided into two groups. The first group consists of newly-established companies, i.e. companies established entirely (greenfield) or partially with foreign capital (at least one of the foreign owners must hold an interest of 10% or more), and the other group consists of domestic companies that were acquired in the privatisation process or subsequently. The initial business conditions are different for each group. The acquired companies already have a certain level of capital and hold certain markets but are often burdened

⁴ On the basis of Fina data - 11,772 companies, of which 153 FDI companies were identified from the CNB database of foreign direct investments.

with problems requiring reorganisation and restructuring of the entire company or its segment. The experience in transition countries of Central Europe shows that the restructuring period is characterised by a fall in employment, sale and/or production, followed by a gradual recovery and reaching of increasingly higher levels relative to the period prior to the acquisition (J-curve). It is assumed that acquired domestic FDI companies should record similar movements. Therefore, they are divided into 3 groups depending on the period when the acquisition occurred. For the group of companies that were acquired before 1996, it is assumed that by the beginning of the observed period (1998) a larger part of restructuring was completed, and that these companies should record growth in production/sale, employment and profit/capital in the observed period. The second group encompasses companies that were acquired in the 1997-1998 period and which, at the beginning of the observed period, were about to start the process of introducing changes, so that a fall in production and employment, as well as a gradual recovery at the period-end should be expected. For the group of companies that were acquired in 1999 and 2000, the post-acquisition period is too short. However, it is interesting to compare their performance with the performance of other companies within the sector, in terms of their performance prior to the acquisition. More specifically, it is assumed that foreign investors acquire the most attractive, productive and profitable companies and that this is one of the reasons for their superiority compared to other domestic companies.

In contrast to capital, revenues and employment, it is assumed that productivity of the acquired companies should grow faster immediately after the acquisition, mostly as a result of layoffs in inefficient segments of a company. Nevertheless, time and the required scope of reorganisation depend on many factors related to the condition of an individual company prior to the acquisition, as well as on the intentions and capability of its new owners after the acquisition. Many companies were very profitable and productive even prior to the acquisition, with no need for deeper organisational changes.

In most of the acquired FDI companies in the sample, foreign investors own majority shares or equity participation. Very few participate with less than 50% in equity and none of them with less than 20%.⁵ The same holds true for newly-established companies. They are divided into 2 groups: companies established by 1998 and companies established in the 1999-2000 period. It should be noted that for the purpose of the study, FDI companies whose majority owners are foreign investment funds are excluded from the sample, since they do not reflect the goal of foreign investors, which is participation in business operations and management of the company the investment is made in.

Since the sample consists of companies that vary in size and therefore affect differently the groups' results, the average growth within every group is analysed, in addition to movements in the observed indicators at the entire group level. The average growth is calculated as a simple arithmetic mean of the growth in every

5 The qualifying criterion for direct equity participation is a minimum 10% interest. However, all the foreign owners of companies in the sample have a minimum 20% interest.

company in a group, which offsets the dominating influence of the biggest companies. Tables 1-5 in the Appendix show basic data on the sample of each of the formed groups – number of companies, structure by sections, amount of capital, revenues and employment, and their percentage growth relative to the beginning of the period at the individual section level.

3.1 Group of Acquired FDI Companies

3.1.1 Capital

Figures 2 and 3 show total capital growth and the average growth in the 1998-2002 period for each of the three groups of the acquired FDI companies and for the group of companies in majority domestic ownership⁶ (indexed to 1998 as the base year). Figures are very similar, which implies that big companies' domination does not affect crucially the group's results, i.e. misinterpretation of the results for the group as a whole.

For the group of FDI companies acquired by 1996, both curves are almost identical until 2001, indicating moderate and stable annual growth in capital by 3-6%. Most of the companies in that group were also relatively successful prior to the acquisition, with no need for deeper structural changes, earning profit during the entire period and reinvesting a larger part of it. Capital growth is a result of stable profit, and recapitalisations are rare in the observed period. A sudden flattening of total capital curve in 2002 is a result of several uncommon cases of capital withdrawal (reduction in owner's equity and payout to owners in sections 24 and 26 – Table 1 of the Appendix) which neutralised profit, i.e. growth in capital of other companies. However, the slope of the average growth curve in the last year is almost identical to that in the previous two years. Since the previously mentioned capital withdrawals refer to relatively big companies, their influence on total capital of the group is more pronounced than on the average growth. If these cases are excluded, total capital also continues to grow at a similar pace as in the previous years, or even somewhat faster (by 7.5%).

Although most of the 27 companies in the group earn stable profits and base their capital growth on them, several companies recorded losses during the entire period observed (sections 25 and 29 – Table 1 in the Appendix). Although the number of such cases is small, they show that inflow of foreign capital in a company does not necessarily imply better performance, at least not in the short run.

Capital of the group of companies acquired in the 1997-1998 period is on the decline in the initial period after the acquisition due to operating losses, particularly of big companies in the group, so that the negative slope of the total capital curve is steeper in the first year than that of the average capital growth curve. In the following year, losses of big companies are reduced and a large portion of other companies earn profit, so that both curves start rising. The curve of the average capital growth rises faster, since relatively smaller companies adjust more

⁶ Companies in majority domestic ownership imply a group of domestic companies, where none of the foreign owners, if there are any, participates with more than 10% in equity.

easily and do not require such a deep restructuring, thus starting to earn profit faster. In 2001, total capital grows rapidly as a result of recapitalisation of several big companies (section 26 – Table 2 in the Appendix). In the final year, recapitalisations are very rare, capital growth almost exclusively resulting from retained profit of companies. Most of the companies start earning stable profit. Both curves reach the assumed J-shape. The J-shape can largely be accounted for by big companies with large losses in the beginning and subsequent recapitalisations. However, if they are excluded from the sample, both curves retain the similar shape, with a somewhat smaller fall in the initial period and a slower growth in the following periods.

Figure 2 Total Capital Growth for the Groups of Observed Companies, 1998 = 100

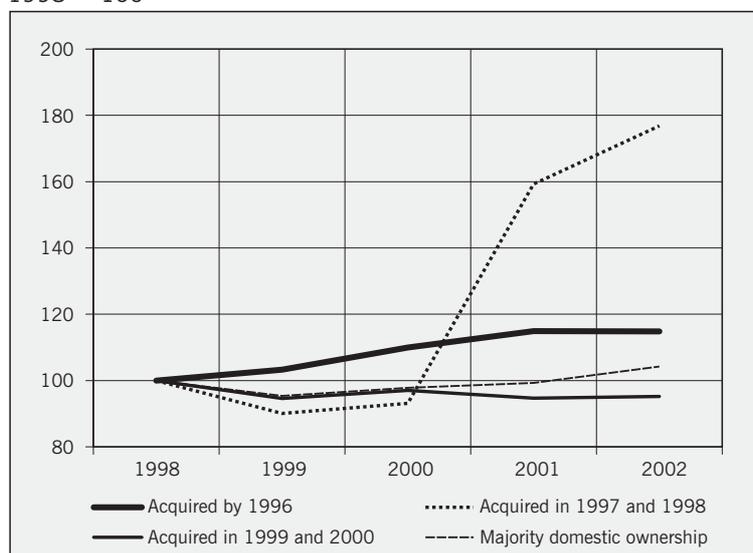
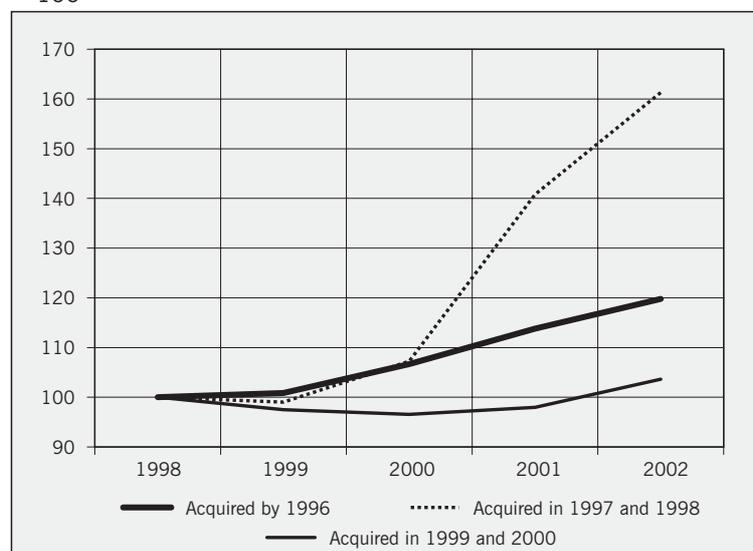


Figure 3 Average Capital Growth for the Groups of FDI Companies, 1998 = 100



Capital of almost all sections is at a higher level in 2002 relative to 1998. Individually, only 3 out of 20 companies in the group have a lower level, showing a growth tendency, so that their capital curve gradually approaches to J-shape. Two of those three companies were only partly acquired by end-1998, which could be one of the reasons for a slower reorganisation.

Capital of companies acquired in the 1999-2000 period mainly stagnates, both prior to and following the acquisition. Post-acquisition stagnation results from inherited losses and reorganisation on the one hand, and recapitalisation by owners on the other. Consequently, the resulting line of the group's total capital is almost horizontal. Nevertheless, most of the companies that incurred losses in the beginning show better performance in the last year or two. The average capital growth curve starts rising rapidly in the last two years, again indicating that smaller companies, as a result of their flexibility, start to perform better at an earlier stage. Since the group consists of relatively small companies, compared to the companies acquired by 1998 (except for several big companies in section 15 – Table 3 in the Appendix), the total capital curve is also expected to start rising. In addition to investments in the privatisation process, which predominate in the previous groups of acquired companies, several cases of subsequent acquisitions of already privatised companies or newly-established companies in the previous years are recorded in this group. Furthermore, the group is characterised by several cases of extremely unsuccessful privatisations (sections 19 and 35). More specifically, in the post-acquisition period, these companies did not go through the restructuring process successfully, recorded increasingly larger losses and could end up in bankruptcy.

Capital of the group of companies in majority domestic ownership holds more or less steady during the entire period, recording a more significant growth only in 2002.

3.1.2 Revenues (production/sale)

Total revenues of all groups of companies in the manufacturing sector, including companies in majority domestic ownership, grow at a rather high rate during the entire observed period (much faster than capital). The average revenue growth curves do not differ significantly, except that their slope is even steeper, emphasising faster growth in revenues of smaller companies which have weaker effect on total revenues of the group. None of the observed FDI companies has recorded a decline in revenues in the initial period after the acquisition, which would correspond to the assumption of a lower production/sale due to company restructuring. Most of the acquired companies seem to have been relatively successful even prior to the acquisition and held significant markets. On the other hand, it seems that new owners of companies have not carried out such deep company restructuring and changes that would lead to initial slowdown in business activities.

Revenues of the group of FDI companies acquired by 1996 grow moderately during the entire period, similar to capital growth, but the growth rate is somewhat higher (6-14% annually). The average revenue growth curve is almost linear

and its slope is slightly steeper. A stable growth in revenues of these companies is expected, since these are relatively successful companies, with safe and stable markets, acquired at the initial stage of privatisation. Unfortunately, data for the period before 1996 are not available, so that the results cannot be compared with the growth rate prior to acquisition. However, since the revenue growth curve for this group is very similar and only slightly steeper than the revenue curve for the group of the remaining manufacturing companies, it is evident that innovations within companies (technological, organisational) have not been so significant as to enable penetration to the new markets and a larger increase in production/sale. Manufacture of electrical machinery and manufacture of wood recorded revenue growth of more than 100% in the observed period (Table 1 in the Appendix).

Revenues of the group of FDI companies acquired in 1997 and 1998, grow at an exceptionally high rate (20%) as early as in the first period after the acquisition; in the following year they grow even faster, only to slow down slightly in 2001 and 2002. The average revenue growth curve is almost linear and steeper, similar to that for the previous group of companies. All the sections record revenue growth (Table 2 in the Appendix), and on individual basis, only 3 out of 20 companies in the sample record a slight fall. Interestingly, companies with large operating losses also record significant growth, which implies that they are burdened with excessive costs and are facing a need for restructuring. Business reorganisation results in a gradual elimination of losses and increasingly larger profits.

As much as 7 out of 20 companies in this group belong to the section of manufacturing of other non-metallic mineral products (concrete-elements plants, brickyards, cement plants, etc.) the revenues of which grow very fast and significantly influences total results of the group. Nevertheless, the majority of other sections/companies record similar, or even faster, increase in revenues (Table 2 in the Appendix), so that a predominant influence of this section does not cause misinterpretation of results.

Figure 4 Revenue Growth for the Groups of Observed Companies, 1998 = 100

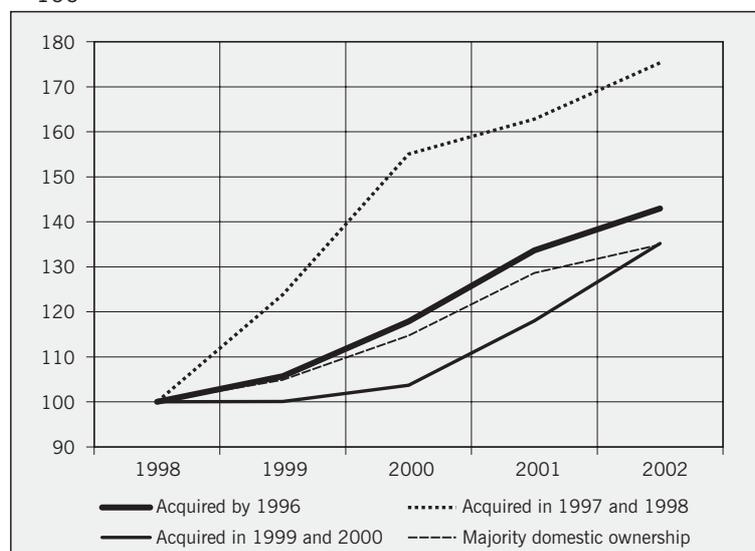
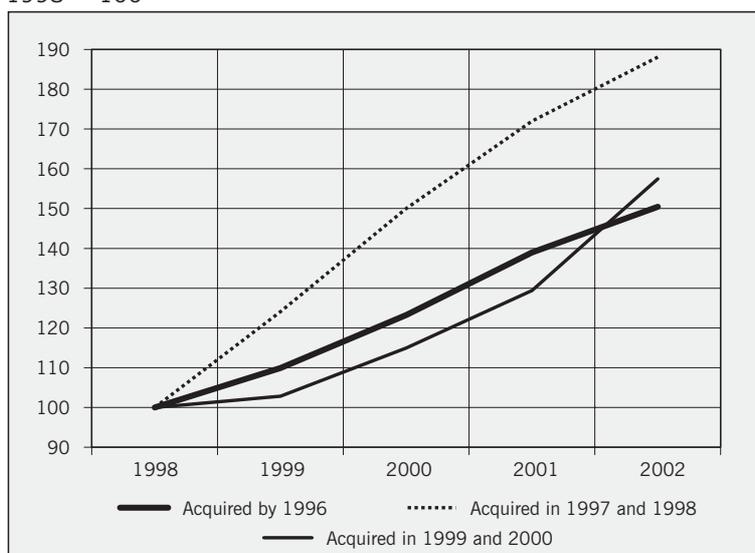


Figure 5 Average Revenue Growth for the Groups of FDI Companies, 1998 = 100



Both curves for the FDI companies acquired in the 1999-2000 period are exponential, indicating increasingly faster growth, especially following the acquisition. Nevertheless, the average revenue growth curve rises faster in all years, implying again that relatively smaller companies grow faster than larger ones, as regards this indicator. Furthermore, revenues of most of the relatively large companies in the group stagnate during the entire period observed, even after the acquisition (the only exception is the section of manufacture of electrical machinery and apparatus and partly, manufacture of food products and beverages where a very large revenue growth is recorded, particularly after the acquisition). The fact that smaller companies are more flexible also holds true, since most of them start earning significantly higher revenues in a very short period after the acquisition. Manufacture of office machinery and computers records almost a fourfold increase in revenues in the observed period, but it should be noted that these are not privatised, but rather newly-established companies in the previous years, which have been acquired subsequently.

3.1.3 Employment

Employment analysis shows completely different results from those of capital and revenues. Employment in all the groups of companies falls below the level of employment at end-1998 (Figure 6). The group of FDI companies acquired by 1996 and the group of companies acquired in the 1997-1998 period start to record a slight recovery in 2000 and 2001, respectively, announcing a positive trend in the future. Companies that were acquired last (in 1999 and 2000) record the poorest results. Their employment continuously decreases, but at increasingly lower rates. Employment of the remaining domestic companies in the manufacturing sector fluctuates the least.

In the group of companies acquired by 1996, only the already mentioned sections with the above-average revenue growth recorded the employment growth as

well – manufacture of electrical machinery (18%) and manufacture of wood (48%). Since the group consists of relatively successful companies, recording revenue growth and stable profit, it is evident that there was a redundancy problem prior to the acquisition. The owners attempt to resolve this problem gradually, as a result of which employment stagnates or declines, despite a significant revenue growth. The same holds true for the group of companies acquired in 1997 and 1998; operating losses despite large revenues indicate excessive costs and a need for company restructuring. In view of the fact that these companies were acquired at a later stage, the restructuring process is still under way. One of the indicators is employment reduction which is not a result of decreased activities of a company (production/sale), but rather of excessive costs. The rising curve of employment movements in the last period, as well as the fact that a large number of companies reduces losses and starts earning profit, indicate that employment could start rising faster and the curve could reach the assumed J-shape. Furthermore, manufacture of fabricated metal products, and manufacture of machinery and equipment already managed to reverse the downward trend at end-2002 and increase employment considerably, above the 1998 level.

Employment for the group of companies acquired in the 1999-2000 period is on the constant decrease. Since these companies were acquired at a later stage, their restructuring period has just started. A few sections managed to attain a higher level of employment at the end of the observed period relative to its beginning, but the increase is relatively insignificant. The only exception is manufacture of office machinery and computers (Table 3 in the Appendix), with almost double employment. It remains to be seen in the forthcoming years whether a slowdown in employment reduction in the last year implies a reversal of the downward trend.

The figure of the average employment growth for the group of the observed companies differs significantly from the figure of total employment (Figure 7). All

Figure 6 Movements in Total Employment for the Groups of Observed Companies, 1998 = 100

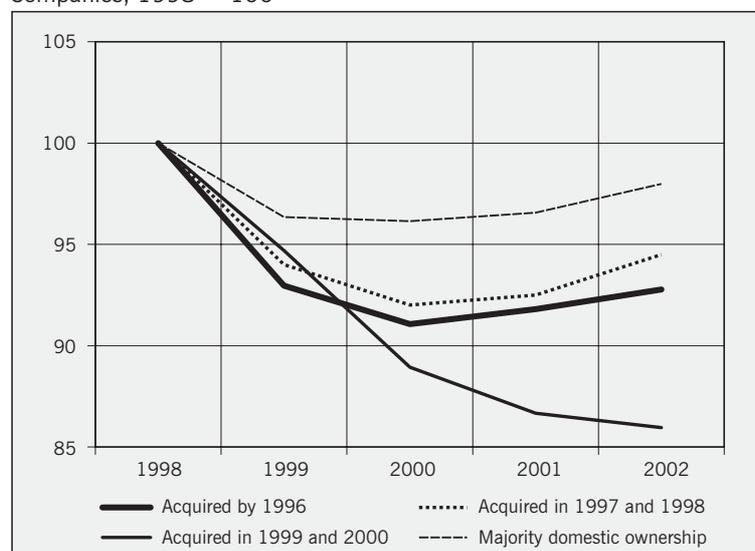
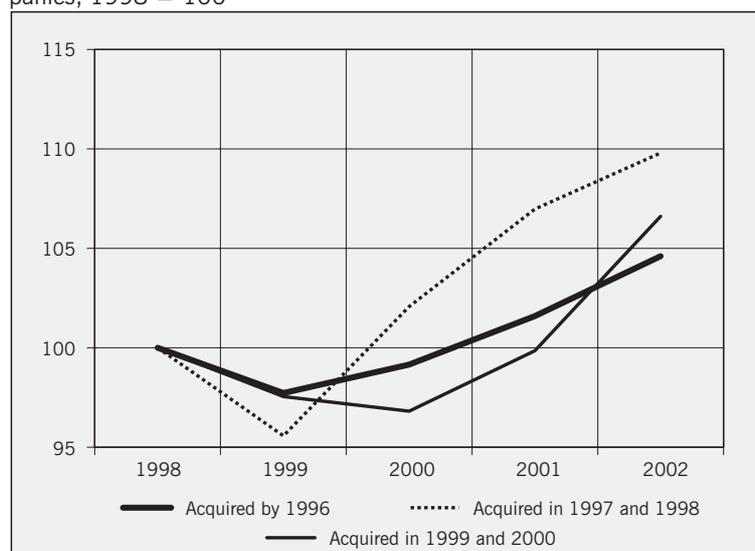


Figure 7 Average Employment Growth for the Groups of Observed Companies, 1998 = 100



the groups of FDI companies record employment reduction in one or two initial periods, followed by a gradual increase. At end-2002, the average employment growth for each group of the FDI companies ranged between 5% and 9%. Such results are in accordance with the expectations, since the analysis of capital and revenue shows that smaller companies are more flexible, they reorganise and adjust much faster, so that a more rapid growth in the segment of employment was to be expected. Nevertheless, as a result of their size their influence on total results of the groups is relatively limited.

3.2 Newly-established Companies

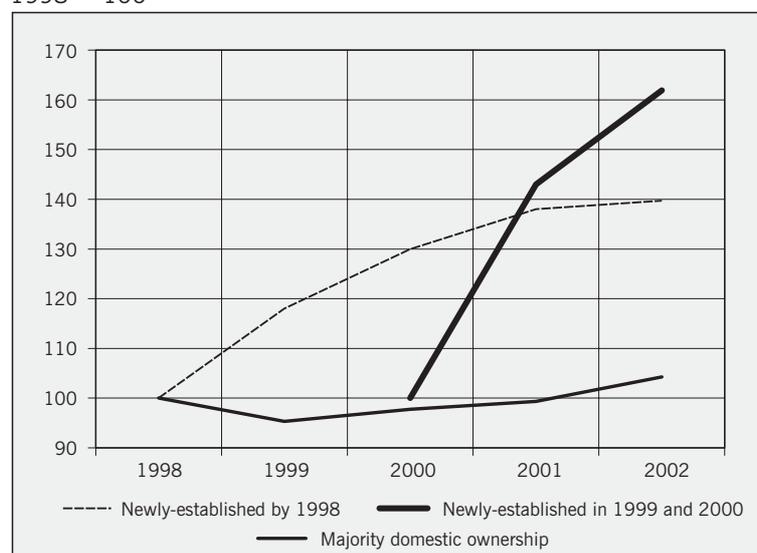
Newly-established manufacturing FDI companies are divided into two groups – manufacturing companies established by 1998 (40 companies) and those established in 1999 and 2000 (37 companies). Companies in both groups are equally distributed by sections (Tables 4 and 5 in the Appendix).

These companies record significantly faster growth in any of the observed indicators in the observed period compared to the other formed groups of companies. Most of the newly-established companies are characterised by a rapid capital growth in the initial years after the establishment. The initial capital, required by law to establish a company, is usually considerably lower than the capital necessary for its operation, so that owners' recapitalisations in the following years are common. However, needs for large recapitalisations are reduced in time and companies rely more often on their own retained profit. As a result of less frequent recapitalisations, capital usually grows at a lower rate in the following period than right after the establishment. For the group of companies established by 1998, a 20% capital growth is recorded in the first following year, whereas the subsequent growth is recorded at increasingly lower rates. In the last year of the observed period, capital growth entirely relates to retained profit, and since the profit of these

companies is still not that high and stable, the growth rate of capital is somewhat below the growth rate of the groups of acquired FDI companies. For the companies acquired in the 1999-2000 period, in the first two years after the establishment capital moves as for the previous group. The growth in the initial period is extremely large since more serious operations, including recapitalisations, of most of the companies in the sample started in 2001. The average capital growth within the groups is very similar to that of total capital, so that these curves are not shown.

Revenues of companies established by 1998 grow faster than revenues of the acquired companies in all the groups, by approximately 20% annually. Revenue growth is very stable during the entire observed period. Revenues of the second group of newly-established companies grow extremely fast in both years after the establishment – in the first year, approximately twice as fast and in the second year even faster. However, manufacture of wearing apparel contributes most to that increase, accounting for more than 50% of revenues of the sector in 2002 and recording exceptionally large revenue growth in both of the observed years. If that section is excluded from the group, revenue growth of the remaining companies is much slower – 32% in the first year and 55% in the second.

Figure 8 Movement of Capital for the Groups of Newly-established FDI Companies and Group of Companies in Majority Domestic Ownership, 1998 = 100^a

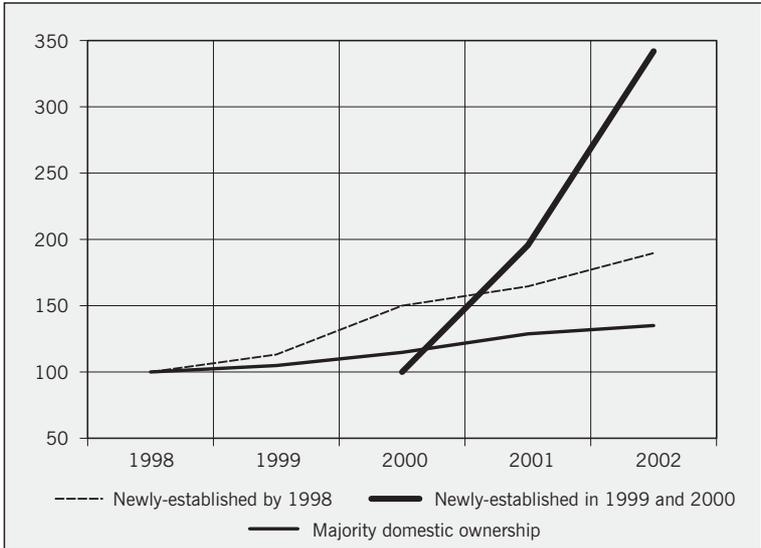


^a For companies established in 1999 and 2000, the base year is 2000.

In contrast to the other groups of the observed companies, employment of the groups of newly-established FDI companies grows significantly during the entire period observed. The growth rate in the first years after the establishment is very high, since a company only starts its operations, whereas employment subsequently grows at an increasingly lower rate. Employment growth for the FDI companies established by 1998 thus amounts to about 5% in the last period.

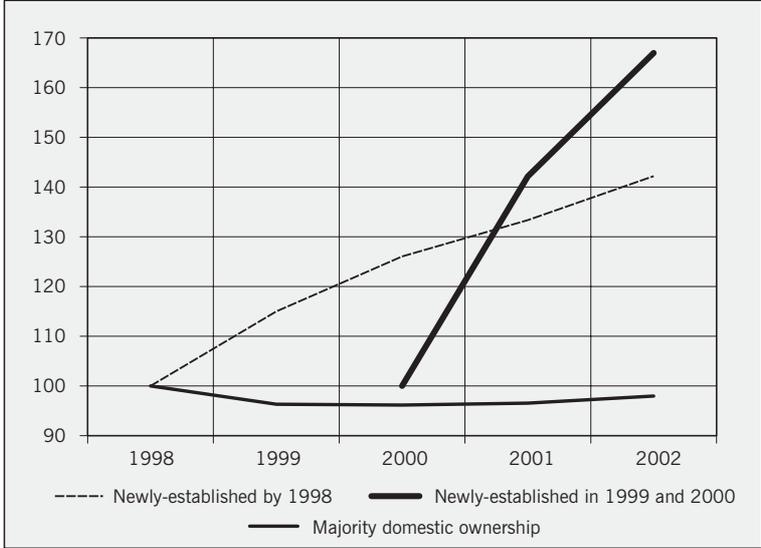
Regardless of the fact that these are relatively small companies, an increase of 42.3% compared to the beginning of the observed period implies 864 new jobs in the manufacturing sector. For the group of companies established in the 1999-2000 period, this percentage is even higher – 80.1%, i.e. 1095 new employments in even a shorter period. The largest contribution to this growth is made by manufacture of wearing apparel and manufacture of textiles, which account for almost 40% of new jobs in these companies. The section of manufacture of motor vehicles, trailers and semi-trailers should also be noted, accounting for about 23% of the increase in employment (Tables 4 and 5 in the Appendix).

Figure 9 Movements in Revenues for the Groups of Newly-established FDI Companies and Group of Companies in Majority Domestic Ownership, 1998 = 100^a



^a For companies established in 1999 and 2000, the base year is 2000.

Figure 10 Movements in Employment for the Groups of Newly-established FDI Companies, 1998 = 100^a



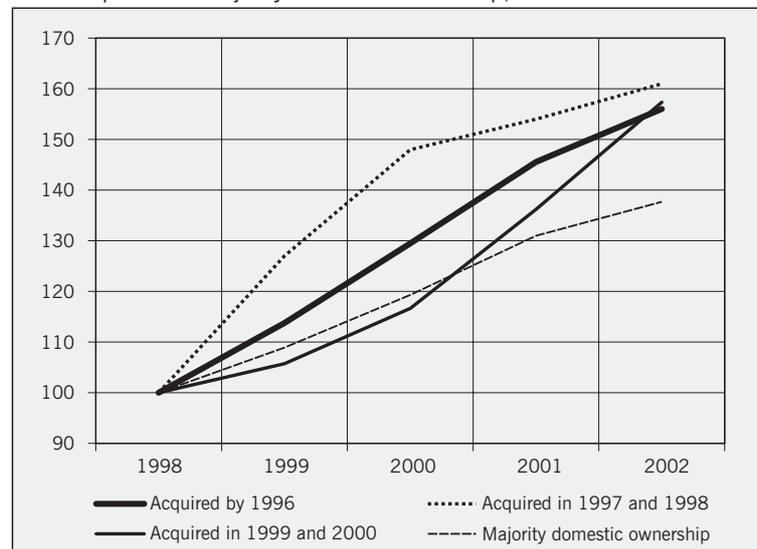
^a For companies established in 1999 and 2000, the base year is 2000.

3.3 Productivity

3.3.1 Productivity Growth⁷

All the groups of companies record productivity growth in the entire period observed, including the group of companies in majority domestic ownership. Their ratio of revenues to the number of employees is 37.7% higher in 2002 compared to 1998, as a result of a simultaneous revenue growth and employment reduction. The annual productivity growth is equally distributed, ranging from 7% to 11%. The growth can mostly be accounted for by manufacture of refined petroleum products, manufacture of rubber and plastic products and manufacture of other transport equipment, accounting together for almost two thirds of revenue growth in the manufacturing sector.

Figure 11 Productivity Growth for the Groups of Acquired FDI Companies and Companies in Majority Domestic Ownership, 1998 = 100



Productivity of the FDI companies acquired by 1996 grows faster than productivity of domestic companies in all four years, with an annual growth between 10% and 14%. Since these companies were relatively successful even prior to the acquisition, it is difficult to determine the contribution of a change in the ownership structure to a faster growth in productivity relative to other domestic companies. Productivity growth is equally distributed over the years, and it is not much faster than the growth in the group of companies in majority domestic ownership. Accordingly, these results together with the data on movements in capital, revenues and employment indicate that there have not been especially significant technological or organisational changes in these companies that would more clearly demonstrate the superiority of FDI companies.

⁷ Productivity is expressed as a ratio of revenues to the number of employees.

Manufacture of radio, television and communication equipment and apparatus records more than double growth in productivity in the observed period, but to a great extent as a result of layoffs. On the other hand, manufacture of electrical machinery and equipment also records above average productivity growth, with a simultaneous employment growth of 18%. Productivity growth of the other sections is approximately at the entire group level.

A group of companies acquired in the 1997-1998 period records a significant growth in productivity in the first two observed periods, primarily due to an exceptional growth in revenues, but also a fall in employment, particularly in the first period. The above-average growth in the group was recorded by the sections of manufacture of other non-metallic mineral products and manufacture of pulp and paper, which also dominate the group by their number and size. They earn almost three quarters of revenues and employ about 70% of workers in this group, thus significantly influencing the group results. The average productivity growth curve for the group (Figure 12) is almost completely identical in the first two periods, after which it does not slow down, but rather continues to rise at almost the same pace, since productivity growth of relatively small companies in the group is much faster. Manufacture of machinery and equipment is a very successful section with the above-average productivity growth, along with increased employment.

The productivity curve of FDI companies acquired in the 1999-2000 period is very similar to the revenue curve, except for a somewhat higher growth rate, corresponding to a gradual fall in employment. Productivity growth in 1999 and 2000 is below or at the level of productivity growth of other domestic companies, but after the acquisition, it starts rising at the fastest rate among all the observed groups of companies. Such a growth may equally be accounted for by revenue growth and employment reduction, characterising the first years after the acquisition. Manufacture of pulp and paper recorded more than double productivity growth in the observed period, primarily as a result of a large revenue growth.

The curves of the average growth in productivity within the formed groups are very similar to total growth curves. The already mentioned group of companies acquired in the 1997-1998 period recorded a significant growth, while the curve for the companies acquired by 1996 is slightly more flattened, indicating a somewhat larger increase in productivity of relatively larger companies within the group (Figure 12).

Productivity of the first group of newly-established FDI companies (by 1998) grows faster than the group of companies in majority domestic ownership only in the first period (Figure 13). The lines are almost completely parallel in other years. However, productivity growth of domestic companies is based, to a large extent, on a reduction in the number of employees, in contrast to this group of companies that at the same time records a significant growth in employment as well (about 43% in the period). An exceptionally large growth in productivity of the group of FDI companies established in the 1999-2000 period can mostly be accounted for by manufacture of wearing apparel, a section which dominates by

Figure 12 Average Productivity Growth for the Groups of Acquired FDI Companies and Companies in Majority Domestic Ownership, 1998 = 100

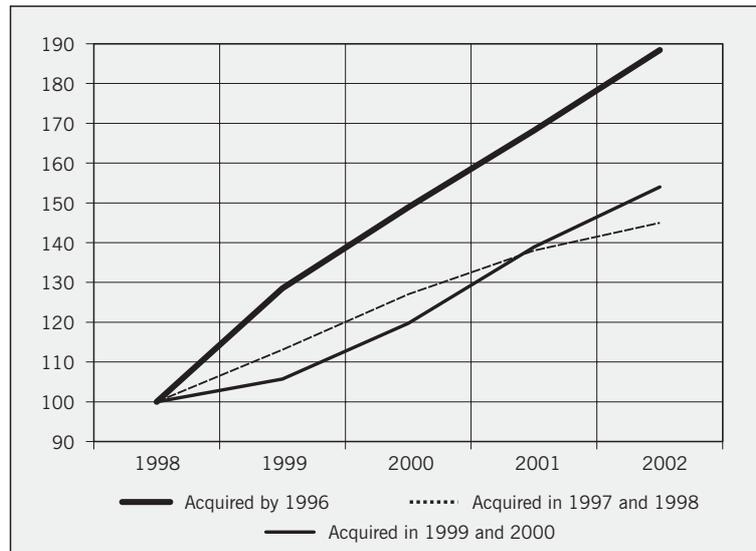
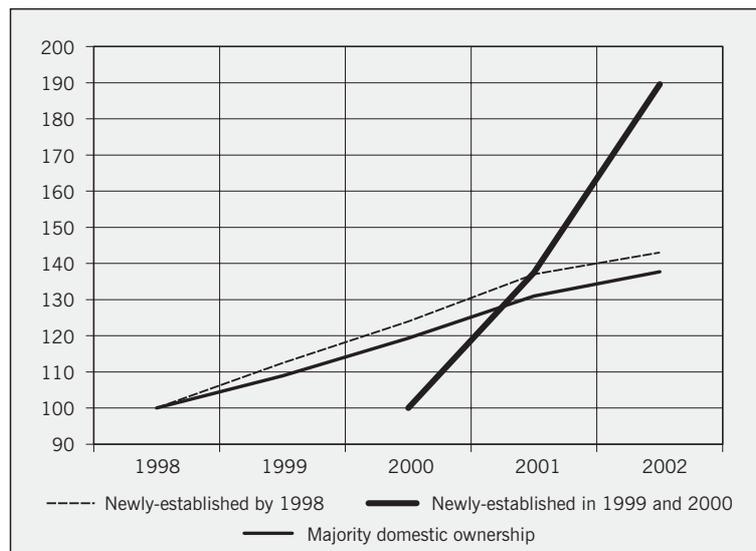


Figure 13 Productivity Growth for the Groups of Newly-established FDI Companies and Companies in Majority Domestic Ownership, 1998 = 100^a



^a For companies established in 1999 and 2000, the base year is 2000.

its level of revenues. If this section is excluded, the productivity growth curve for other companies in the group is almost parallel to the other two curves in Figure 13.

3.3.2 Productivity Ratios

Table 6 in the Appendix shows the productivity ratios in the manufacturing sector for individual groups of acquired FDI companies and group of companies in majority domestic ownership. The ratio is composed of the value of revenues per employee for the years when FDI companies were acquired by foreign investors. The analysis from the previous chapter shows that productivity of the acquired FDI

companies grows faster than in the rest of the economy. However, the question is whether these companies' productivity was above-average even prior to the acquisition and that was the very reason for attracting foreign investors. It is assumed that foreign investors were attracted by relatively successful companies and that thus productivity of these companies should have been higher relative to the rest of the economy.

The companies are classified into the four-digit NCEA sections. In view of unavailability of data on productivity in the acquisition year for the FDI companies acquired by 1996, the ratio includes the value of revenues per employee from 1998. Table 6 in the Appendix shows that in every of the 19 economic activities where FDI companies are present, the productivity ratios are higher. They range from 1.23 in manufacture of industrial gasses to 4.6 in manufacture of other non-metallic products. Most of the ratios (in 15 sections) ranges from 1.5 to 3.

The ratios for the companies acquired in the 1997-1998 period also use values for 1998, in this case, the year of acquisition or the first year following the acquisition. For this group of FDI companies, the ratios are no longer so favourable, i.e. they are above 1 in 8 out of 15 sections.

For the group of companies acquired in the 1999-2000 period, the results are even less favourable. These companies were more productive at the time of their acquisition than the group of domestic companies in only 11 out of 27 observed sections. As regards the economic activities within the section of manufacture of food products and beverages (15), the ratios are highest for companies acquired by 1996 and then their average decreases with every other group of companies. All other sections with companies for comparison experience similar situation. There are several possible reasons for such results. First, revenues per employee for FDI companies acquired by 1996 and partly in the 1997-1998 period refers to 1998, when companies were already for some time in foreign ownership. Since it has been shown that productivity growth for these groups of companies is larger than productivity growth in the rest of the economy (the previous chapter), the ratios are probably slightly more favourable than they would be in the acquisition year. The second reason refers to the fact that in the first rounds of privatisation, the most attractive and successful companies were acquired, i.e. the most productive ones, and in the subsequent years those less successful, with more problems and often below the average productivity of the sector.

3.4 Spillover Effect

FDI companies mostly record above-average productivity growth, but the question is what is the effect of foreign capital on other companies in the sector or outside the sector. Such effects on the manufacturing sector are really difficult to assess in view of a relatively short period of presence of the majority of FDI companies and relatively scarce data on a possible establishment of business relations of FDI companies with other domestic companies, i.e. the involvement of domestic suppliers. Companies in domestic ownership record a significant productivity growth in individual sections, but it is difficult to assess to what extent this is really

a result of FDI companies' presence in the sector. It can be assumed that the positive effect of competition in most of the manufacturing sections is almost insignificant. The majority of investments are carried out through privatisation or subsequent acquisition of the existing companies, and there are very few cases of greenfield investments which would attempt to capture domestic market share, thus spurring competition. In addition, vertical foreign direct investments (of exports type) predominate in the manufacturing sector. This can be explained by the fact that the Croatian market is too small for establishing the production plants that would supply the domestic market. Most of the production of the FDI companies in the manufacturing sector is thus intended for exports.

The trade sectors have been marked by increased competition due to the inflow of foreign direct investments. A large number of foreign branches for the purpose of wholesale and distribution of products, as well as retail chain stores have been established in the recent years. Fiercer competition has resulted in a favourable effect on consumers by the expansion of sale programmes, improved goods quality and margin reduction. However, productivity of companies in domestic ownership has also increased. According to the data on companies in the sample, domestic companies' productivity in the sector of retail trade increased by 21.9% on average in the 1998-2001 period. Similar effect has been evident in the sector of telecommunications, since the second GSM operator entered the Croatian market several years ago. Prices of mobile phones and call rates fell rapidly, and the number and quality of services provided by the operators have been on a constant increase.

It is difficult to assess a favourable influence on domestic companies, in terms of establishing business relations with FDI companies. Unfortunately, there are no data on the FDI companies' tendency to engage domestic suppliers and to what extent these companies purchase the required goods and services abroad. Nevertheless, FDI companies in Croatia that are strictly vertical and that are a part of the production chain of a multinational corporation and are dependent on the imports of the necessary raw materials and materials from a related foreign company currently do not exist in Croatia or are very rare. Therefore, FDI companies are more likely focused on domestic suppliers due to import costs, at least in the cases where they exist and meet the quality requirements, since these are mainly acquired companies that had their suppliers network prior to the acquisition. In view of the fact that greenfield investments in the manufacturing sector are still very rare, spillovers through backward linkages due to increased involvement of domestic suppliers presently do not exist. A spillover through backward linkages is possible only after the main precondition has been met – start up of a new production or production growth of the existing FDI companies that would use domestic supply capacities.

Technology transfer through foreign direct investments in Croatia is discussed in a survey by Griffith, Kiessling and Dabić (2002) carried out on a sample of 80 foreign branches in Croatia. The results of the survey show that there is readiness and competence of foreign owners for transferring technology to Croatia, but also that domestic authorities should have created better precondi-

tions. The respondents mainly express their dissatisfaction with customs, tax and foreign exchange system related to the technology transfer, institutional framework for stimulating its transfer, as well as with co-operation between the economic research centres and faculties in the actual transfer of technology into use.

The respondents indisputably express a need for more advanced technology, but they also demonstrate a lack of competence for its acceptance. Only 19% of them is acquainted with the methods and forms of transfer, and only 34% believe that their company employs adequately trained staff (managers, legal advisors or engineers) for the efficient transfer and technology application. As much as 55% expects problems in incorporating and managing technology transfers.

The results of the survey show that, despite a need for new technologies, there is a large number of obstacles to their effective application. A lack of confidence in the quality of one's own human resource corresponds to similar surveys of other transition economies. Foreign owners should compensate for a lack of required knowledge by engaging their staff and by organising training and professional programs for domestic employees.

Conclusion

All the groups of the acquired FDI companies show a faster growth in revenues and capital than the group of other domestic manufacturing companies. A part of the observed companies has undergone a period of decelerated growth in revenues and capital reduction due to restructuring losses, which is followed by a rise in revenues and capital. Productivity also grows faster. The same holds true for the newly-established companies. A major portion of FDI companies' retained profit is reinvested (approximately two thirds), which thus confirms the on-going interest of investors in operation of a company in which investment has been made. However, these companies have not so far achieved the expected growth in employment, with an exception of individual cases.

The foreign direct investment effect on the Croatian manufacturing sector is still not so strong as to significantly influence the growth in individual macroeconomic indicators (production, productivity, exports), as it has been the case in the Central European transition economies. The fact is that Croatia has not received so few investments, but that their structure is in favour of service sectors rather than the manufacturing sector. The largest portion of investments refers to telecommunications, banking and trade. In addition, investments made in the manufacturing sector mainly refer to the privatisations and acquisitions of the existing companies, which are also relatively successful with no need for deeper restructuring. Acquisitions of companies requiring capital, technologies and new organisational structure are less frequent and greenfield investments in the manufacturing sector mostly relate to smaller projects. Such a foreign direct investment structure poorly affects the development of the Croatian manufacturing sector. Although this paper does not present a quantitative analysis of the spillover effect, the received investments' structure itself implies that the effect is very limited and

that the benefits arising from foreign direct investments presently refer only to a small number of companies that have received them. Nevertheless, there are some indications of larger greenfield investments in the future, which should certainly be stimulated by the Croatia's candidacy for EU membership.

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Appendix

Table 1 Sample of FDI Companies Acquired by end-1996

NCEA	Section	Number of companies	Capital		Revenues		Employment	
			Balance as at 2002 (in million HRK)	Increase relative to 1998 (%)	Balance as at 2002 (in million HRK)	Increase relative to 1998 (%)	Balance as at 2002	Increase relative to 1998 (%)
15	Manufacture of food products and beverages	4	1,759.5	12.4	2,280.3	17.3	2,310	-3.4
20	Manufacture of wood and of products of wood, except furniture	1	47.1	26.4	77.2	141.1	256	48.0
24	Manufacture of chemicals and chemical products	4	551.0	20.3	418.1	29.4	456	-5.4
25	Manufacture of rubber and plastic products	1	24.1	-17.5	96.0	12.8	84	-2.3
26	Manufacture of other non-metallic mineral products	6	847.5	-6.6	1,140.5	68.0	1,386	-3.5
28	Manufacture of fabricated metal products, except machinery and equipment	2	71.7	31.7	192.8	29.6	394	-17.2
29	Manufacture of machinery and equipment	1	8.3	-48.5	143.6	2.1	552	-4.0
31	Manufacture of electrical machinery and apparatus	6	641.4	35.4	2,309.4	117.3	3,114	18.4
32	Manufacture of radio, television and communication equipment and apparatus	1	1,042.7	36.9	1,444.2	27.9	1,109	-45.8
36	Manufacture of furniture, manufacturing	1	3.5	27.0	16.8	45.0	31	-24.4
Total		27	4,988.4	14.8	8,119.1	42.9	9,692	-7.2

Table 2 Sample of FDI Companies Acquired in the 1997-1998 Period

NCEA	Section	Number of companies	Capital		Revenues		Employment	
			Balance as at 2002 (in million HRK)	Increase relative to 1998 (%)	Balance as at 2002 (in million HRK)	Increase relative to 1998 (%)	Balance as at 2002	Increase relative to 1998 (%)
15	Manufacture of food products and beverages	3	19.3	20.8	107.6	113.7	59	-2.1
17	Manufacture of textiles	1	9.0	-3.5	12.0	21.9	40	-3.1
20	Manufacture of wood and of products of wood, except furniture	1	6.0	12.9	1.2	78.0	28	-4.5
21	Manufacture of pulp, paper and paper products	3	573.7	6.5	834.6	48.9	287	-39.7
25	Manufacture of rubber and plastic products	1	6.3	-10.3	6.1	11.7	35	-20.5
26	Manufacture of other non-metallic mineral products	7	1,963.4	120.4	1,382.1	86.8	2,468	-15.3
27	Manufacture of fabricated metal products, except machinery and equipment	1	7.1	87.0	16.6	145.4	78	66.0
29	Manufacture of machinery and equipment	2	52.1	208.6	123.3	129.0	250	58.2
31	Manufacture of electrical machinery and apparatus	1	11.0	9.6	16.0	99.8	31	-5.7
	Total	20	2,647.9	76.8	2,499.6	75.3	3,215	-13.8

Table 3 Sample of FDI Companies Acquired in the 1999-2000 Period

NCEA	Section	Number of companies	Capital		Revenues		Employment	
			Balance as at 2002 (in million HRK)	Increase relative to 1998 (%)	Balance as at 2002 (in million HRK)	Increase relative to 1998 (%)	Balance as at 2002	Increase relative to 1998 (%)
15	Manufacture of food products and beverages	5	432.8	1.7	891.2	23.9	2,237	3.2
19	Tanning and dressing of leather; manufacture of luggage, handbags, footwear and the like	1	15.0	-50.5	23.0	-28.8	353	-52.6
24	Manufacture of chemicals and chemical products	1	1.0	-97.6	71.8	-3.5	66	-9.6
25	Manufacture of rubber and plastic products	5	64.9	-5.7	100.3	3.2	251	-31.2
26	Manufacture of other non-metallic mineral products	4	113.5	34.8	68.1	7.6	64	-70.2
28	Manufacture of fabricated metal products, except machinery and equipment	3	19.8	-8.6	29.7	16.3	156	-18.8
29	Manufacture of machinery and equipment	2	136.1	-11.4	68.9	104.6	327	-18.0
30	Manufacture of office machinery and computers	3	31.0	55.1	92.7	363.6	125	98.4
31	Manufacture of electrical machinery and apparatus	2	100.6	22.1	354.4	113.3	290	0.3
35	Manufacture of other transport equipment	2	10.3	-76.3	33.6	-18.7	176	-31.3
36	Manufacture of furniture, manufacturing	1	12.0	-68.0	20.3	-15.8	312	-3.5
	Total	29	925.0	-4.8	1,753.9	35.2	4,357	-14.0

Table 4 Sample of Newly-established FDI Companies by end-1998

NCEA	Section	Number of companies	Capital		Revenues		Employment	
			Balance as at 2002 (in million HRK)	Increase relative to 1998 (%)	Balance as at 2002 (in million HRK)	Increase relative to 1998 (%)	Balance as at 2002	Increase relative to 1998 (%)
15	Manufacture of food products and beverages	5	57.7	27.8	67.3	60.5	205	12.6
18	Manufacture of wearing apparel; dressing and dyeing of fur	5	24.7	52.9	53.3	76.6	504	27.9
19	Tanning and dressing of leather; manufacture of luggage, handbags, footwear and the like	1	20.4	24.9	15.8	69.2	158	14.5
20	Manufacture of wood and of products of wood, except furniture	4	62.3	30.6	158.6	82.2	510	23.5
24	Manufacture of chemicals and chemical products	3	46.5	32.0	46.5	67.9	77	14.9
25	Manufacture of rubber and plastic products	3	38.3	64.6	168.0	106.5	88	20.5
26	Manufacture of other non-metallic mineral products	5	138.0	62.4	174.9	117.8	118	11.3
27	Manufacture of basic metal	1	32.9	27.4	46.5	84.1	212	75.2
28	Manufacture of fabricated metal products, except machinery and equipment	4	50.5	31.0	100.4	98.0	268	22.9
29	Manufacture of machinery and equipment	2	10.2	43.7	46.4	60.6	87	33.8
31	Manufacture of electrical machinery and apparatus	1	11.3	75.2	82.5	71.0	166	39.5
32	Manufacture of radio, television and communication equipment and apparatus	1	3.6	78.3	32.0	68.2	20	17.6
34	Manufacture of motor vehicles, trailers and semi-trailers	2	80.9	27.6	186.3	114.9	496	313.3
36	Manufacture of furniture, manufacturing	2	3.6	28.1	13.2	100.7	75	19.0
37	Recycling	1	8.9	55.0	21.0	74.7	22	22.2
	Total	40	592.8	39.7	1,212.6	89.7	3,006	42.2

Table 5 Sample of Newly-established FDI Companies in the 1999-2000 Period

NCEA	Section	Number of companies	Capital		Revenues		Employment	
			Balance as at 2002 (in million HRK)	Increase relative to 2000 (%)	Balance as at 2002 (in million HRK)	Increase relative to 2000 (%)	Balance as at 2002	Increase relative to 2000 (%)
15	Manufacture of food products and beverages	3	51.2	97.2	140.8	41.1	113	29.9
17	Manufacture of textiles	2	51.0	240.0	126.1	152.1	433	477.3
18	Manufacture of wearing apparel; dressing and dyeing of fur	3	79.2	692.4	903.7	1,029.6	345	832.4
20	Manufacture of wood and of products of wood, except furniture	2	31.9	6.2	5.2	934.3	63	133.3
21	Manufacture of pulp, paper and paper products	3	73.9	10.2	91.2	42.7	241	23.6
24	Manufacture of chemicals and chemical products	2	20.5	68.9	47.5	277.8	48	41.2
25	Manufacture of rubber and plastic products	3	12.9	83.7	10.6	68.3	79	83.7
26	Manufacture of other non-metallic mineral products	4	70.8	8.9	77.5	229.6	337	51.8
28	Manufacture of fabricated metal products, except machinery and equipment	4	13.6	103.9	67.8	72.9	224	37.4
29	Manufacture of machinery and equipment	3	9.1	153.5	55.1	40.3	52	100.0
31	Manufacture of electrical machinery and apparatus	2	8.3	98.7	24.8	395.8	102	27.5
32	Manufacture of radio, television and communication equipment and apparatus	2	44.0	10.0	8.3	314.6	60	122.2
35	Manufacture of other transport equipment	1	5.1	7.6	6.5	57.3	34	61.9
36	Manufacture of furniture, manufacturing	3	79.4	61.4	109.3	71.9	495	18.1
	Total	37	538.6	61.9	1,674.2	241.9	2,626	80.4

Table 6 Productivity Ratio of Acquired FDI Companies and Domestic Companies in Majority Domestic Ownership

NCEA	Economic activity	Acquired by 1996	Acquired in the 1997-1998 period	Acquired in the 1999-2000 period
1511	Production and preserving of meat	–	–	1.11
1551	Operation of dairies and cheese making	–	–	0.77
1581	Manufacture of bread; manufacture of fresh pastry goods and cake	–	–	0.78
1582	Manufacture of rusks and biscuits; manufacture of preserved pastry goods and cakes	–	–	0.68
1585	Manufacture of macaroni, noodles, couscous and similar farinaceous products	–	0.83	–
1587	Manufacture of condiments and seasonings	–	–	0.70
1591	Manufacture of distilled potable alcoholic beverages	–	1.07	0.83
1596	Manufacture of beer	1.60	–	1.13
1598	Production of mineral waters and soft drinks	2.49	1.40	–
1740	Manufacture of made-up textile articles, except apparel	–	2.65	–
1930	Manufacture of footwear	–	–	1.07
2010	Sawmilling and planing of wood; impregnation of wood	1.89	–	–
2111	Manufacture of pulp	–	0.53	–
2121	Manufacture of corrugated paper and paperboard and of containers of paper and paperboard	–	1.50	–
2125	Manufacture of other articles of paper and paperboard	–	–	0.69
2411	Manufacture of industrial gasses	1.23	–	–
2416	Manufacture of plastics in primary forms	–	–	1.21
2430	Manufacture of paints, varnishes and similar coatings	2.48	–	–
2466	Manufacture of other chemical products	3.39	–	–
2521	Manufacture of plastic plates, sheets, tubes and profiles	–	–	2.82
2522	Manufacture of plastic packing goods	–	0.85	0.62
2523	Manufacture of builders' ware of plastic	–	–	1.58
2524	Manufacture of other plastic products	2.00	–	1.02
2613	Manufacture of hollow glass	4.08	–	–
2615	Manufacture and processing of other glass	–	0.71	–
2625	Manufacture of other ceramic products	–	1.68	–
2640	Manufacture of bricks, tiles and construction products	2.69	2.34	1.43
2651	Manufacture of cement	1.25	0.63	–
2652	Manufacture of lime	4.25	2.40	0.75

2661	Manufacture of concrete products for construction	–	–	0.86
2682	Manufacture of other non-metallic mineral products	4.60	–	–
2754	Casting of other non-ferrous metals	–	1.05	–
2811	Manufacture of metal structures and parts of structures	–	–	0.85
2830	Manufacture of steam generators, except central heating hot water boilers	–	–	0.74
2862	Manufacture of tools	–	–	1.06
2873	Manufacture of wire products	1.79	–	–
2874	Manufacture of fasteners, screw machine products, chain and springs	–	–	0.55
2911	Manufacture of engines and turbines, except aircraft, vehicle and cycle engines	1.84	–	–
2912	Manufacture of pumps and compressors	–	–	0.52
2940	Manufacture of machine-tools	–	–	0.79
2956	Manufacture of other special purpose machinery	–	0.39	–
2971	Manufacture of electric domestic appliances	–	0.28	–
3002	Manufacture of computers and other information processing equipment	–	–	0.61
3110	Manufacture of electric motors, generators and transformers	2.50	–	3.12
3120	Manufacture of electricity distribution and control apparatus	2.64	–	2.62
3162	Manufacture of other electrical equipment	2.75	–	–
3220	Manufacture of television and radio transmitters apparatus for line telephony and line telegraphy	1.58	–	–
3230	Manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods	–	–	–
3511	Building and repairing of ships	–	–	–
3611	Manufacture of chairs and seats	–	–	0.72
3612	Manufacture of other office and shop furniture	1.66	–	–

Notes

The following Surveys have been published since 2000:

No.	Date	Title	Author(s)
S-1	March 2000	Banking Sector Problems: Causes, Solutions and Consequences	Ljubinko Jankov
S-2	April 2000	Banking System in 1998	
S-3	December 2000	The Lending Policies of Croatian Banks: Results of the Second CNB Bank Interview Project	Evan Kraft with Hrvoje Dolenc, Mladen Duliba, Michael Faulend, Tomislav Galac, Vedran Šošić, and Mladen Mirko Tepuš
S-4	December 2000	What Has Been the Impact of Foreign Banks in Croatia	Tomislav Galac and Evan Kraft
S-5	September 2001	Currency Crises: Theoretical and Empirical Overview of the 1990s	Ante Babić and Ante Žigman
S-6	April 2002	An Analysis of the Operation of Building Societies in the Republic of Croatia	Mladen Mirko Tepuš
S-7	April 2002	Ten Years of Transition Central Banking in the CEE and the Baltics	Warren Coats and Marko Škreb
S-8	May 2002	Fiscal Consolidation, External Competitiveness and Monetary Policy: A Reply to the WIIW	Evan Kraft Tihomir Stučka

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Formulae must be legible. Indices and superscript must be explicable. The symbols' meaning must be given following the equation where they are used for the first time. The equations in the text referred to by the author should be marked by a serial number in brackets closer to the right margin.

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