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FDI Subsidiaries and Industrial Integration of Central Europe: Conceptual and Empirical Results

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FDI Subsidiaries and Industrial Integration of Central Europe: Conceptual and Empirical Results

Boris Majcen, Slavo Radosevic, and Matija Rojec

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Diskussionspapiere
Discussion Papers

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Suggestions and comments on the research results presented are very welcome.

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Foreword

The authors of this discussion paper participate in the international collaborative EU RTD project 'EU Integration and the Prospects for Catch-Up Development in CEECs - The Determinants of the Productivity Gap'. On behalf of a team of some 15 scientists from the UK, Estonia, Poland, the Slovak Republic, Hungary and Slovenia, engaged in the research presented here, the three authors have compiled this comparative paper by use of the common empirical data set generated by field work. The project is coordinated by the IWH.

The research presented here represents the first analysis of field work data generated by use of a questionnaire in a selection of Central East European countries, targeting subsidiaries of the largest Western foreign direct investors in the region. Within the project, the role of this workpackage is to determine the sources and channels of productivity growth transferred by foreign direct investors and other forms of international and national production networks (*e.g.* spillovers). The research focuses exclusively on the local subsidiaries of foreign investors and the role it plays both in respect to productivity growth in its own plant and in respect to the host economy. The mechanisms assessed hence focus on control and governance between firm-plants (in particular between the foreign parent and its subsidiary). Those include in particular production, organisation, strategic management, and finance linkages between the parent company and the subsidiary, and between the subsidiary and other establishments in the host economy. In that respect, research combines growth and international business studies approaches.

The main objectives of research include the mapping of the existing technological, value added and productivity positions of local subsidiaries, the mapping of the development of individual business functions at the subsidiary level, and how these functions have been distributed between the subsidiary, the foreign parent and other companies of the multi-national company and the host economy.

The field work was conducted in Estonia, Poland, the Slovak Republic, Hungary and Slovenia between autumn 2001 and spring 2003 and comprise of returned questionnaires of slightly more than 430 subsidiaries. The database therefore represents a substantial and valuable source for contemporary research on the determinants of economic development in EU accession states.

This research has been partially financed by the EU Commission, in the Key Action on Improving the Socio-economic Knowledge Base, contract no HPSE-CT-2001-00065. The authors are solely responsible for the contents which might not represent the opinion of the Community. The Community is not responsible for any use that might be made of data appearing in this publication. All research proceedings of this project can be revisited on the project internet-site: www.iwh-halle.de/projects/productivity-gap.htm

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1 Introduction

In the course of intensifying integration of Central Europe (CE) into the economic region of the EU, firms in CE are gradually being integrated into international production and technological networks. By early 2000, the degree of integration of CE in international production networks is comparatively very high, especially in relation to their GDP. Strong direct presence of FDI has important direct effects on growth in CE countries. However, the problem is much more complex when it comes to technological catch-up and long-term productivity growth via FDI. Econometric research on spillovers shows inconclusive results, which is partly a reflection of methodological deficiencies of this research approach (see Gorg and Greeneway, 2002). This paper is based on research that has taken alternative strategy. We try to understand the contribution of FDI to growth and productivity of the CE by analysing technological positions of FDI subsidiaries in their parent companies' networks. FDI are micro – macro phenomenon and its growth and productivity effects on host economy take place through local subsidiaries. In that respect, our paper provides empirical basis for new conceptualisation of FDI and MNCs as differentiated network of subsidiaries (Bartlett and Ghoshal, 1989). However, our primary interest lies in the effects of subsidiaries positions and upgrading on growth and productivity in host economy. In that respect, our empirical work follows the approach outlined by literature that is focused on developmental subsidiaries and on linkages between international business and endogenous growth theories (Ozawa and Castello, 2001). Paper reports on results of research based on 433 subsidiaries in five CE economies (Estonia, Hungary, Poland, Slovakia and Slovenia). Subsidiaries are analysed based on several attributes (product scope; given and enhanced mandates; autonomy of subsidiaries, *etc.*). Mapping of subsidiaries' technological, production and market positions across several countries and a large number of firms should give us a reliable picture of the technological contributions that FDI are making to local economies and the role that they occupy in international industrial networks.

Section 2 of the paper reviews literature, which is of relevance for our research. Section 3 outlines our conceptual approach. Section 4 explains the sample and its features. Section 5 reports on the results of research based on descriptive analysis. Section 6 (to be written) explores econometrically some of these relationships. Section 7 develops conclusions and interprets results in the context of the broader literature (also to be written).

2 Literature review

The subject of industrial integration has been of concern to literature on foreign direct investment (FDI) and growth, and the international business literature. In this section,

we critically interpret the main issues from this body of knowledge from the perspective of our research topic.

2.1 Literature on FDI and growth

This stream of literature analyses this link through analysis of the costs and benefits of FDI, through estimates of spillovers and, at micro level, through linkages between growth and types of FDI. Several estimates of the direct costs and benefits of FDI were undertaken during the 1970s (see Helleiner, 1989 for an overview). However, all of these are bedevilled with numerous conceptual and measurement problems and have often been confined to only one aspect of FDI - costs and benefits of licences. Today, in CE estimates of direct costs and benefits are made by direct comparison of performances of domestic and foreign investment enterprises (FIEs)[1] (Hunya, 2000, Rojec, 2000). The dynamic effects of FDI are taken into account by estimating spillovers or benefits to domestic firms for which no direct compensation is made. This is done either by collecting circumstantial evidence on linkages or by statistical testing of the relationship between productivity of domestic firms and productivity of FIEs.

The underlying assumption of this stream of research is that spillovers are positively related to the extent of linkages. However, the actual connection between linkages and spillovers has not been studied. This means that the mechanisms that generate positive or negative spillovers remain unknown.

The conclusion from this literature is that high growth rates and large inflows of FDI tend to go together (UNCTAD, 2000). However, causation mechanisms are not clear at the macro level, as they are very context specific. The positive effects of FDI are likely to increase with the level of local capability and competition while the results regarding indirect effects of FDI are inconclusive. There is no general policy advice for maximising spillovers as they are sector specific and are function of industry, market, and technology factors (see Blomström and Kokko, 1997, De Mello, 1997, Damijan et al, 2001, and Radosevic, 1999a for a review of literature).

Spillover-type research on FDI and productivity does not look at the process by which productivity is generated but only at the determinants, which usually are not those that operate in reality but are ad hoc statistical proxies. Empirical research on the effects of FDI in CE (Holland et al., 2001; Hunya, 2000, 2000b; Resmini, 2000; Konings, 2001; Meyer, 1998) shows that:

a) FDI are concentrated in a few countries but are dispersed across industries and geographical sources;

[1] In the text we use terms both terms, *i.e.* FIEs and foreign subsidiaries interchangeably.

b) In terms of employment, with the exception of Hungary where they operate as a complement, FDI act as a buffer (substitute) for large employment decreases in CE;
c) FDI are deepening trade linkages by having disproportionately high shares in export and imports;
d) The direct effects of FDI are the significantly higher productivity of acquired companies/greenfields than of domestic firms. FIEs are the main profit generators in CE with higher relative shares in investments and R&D than domestic firms;
e) In terms of industrial and market structure FDI play a dual role as restructuring agents by building new sectors (electronics, automotive), and as market seekers (food). They are involved in branches that have relatively stable and promising or growing domestic markets but are not entering (at least not until recently) into collapsing branches with shrinking domestic market (steel, petro-chemicals);
f) The effects of FDI are still localized on acquired or newly erected plants. The extent of spillovers from FDI is still very limited, non-existent or even negative.

A reasonable conclusion is reached by Holland, Sass, Benacek and Gronicki (2000) who point out that "FDI inflows have improved the overall growth potential of the recipient economies, but primarily through productivity improvements within the foreign affiliates themselves, rather than through increased capital investment, or technology spillovers to domestic firms".

2.2 International business literature

The international business literature is one of the major sources of theoretical and empirical evidence on industrial networks. However, the link between international business and growth is not developed in this literature. This is not surprising as the micro–macro link is methodologically the most complex issue in economics. Yet, it seems obvious that inclusion in the global economy of a host country may differ, depending on the organisational type of MNCs that enter a country (hierarchy/heterarchy; closed/open; leaders/followers). This link has been discussed in broad terms by Ozawa and Castello (2002) and has been conceptualised via the concept of development subsidiary, *i.e.* subsidiary that may act as a mechanism for technological accumulation and clustering in host economy (Birkinshaw, 1996; Birkinshaw and Morrison, 1995) Ozawa and Castello (2002) try to link the international business and endogenous growth literature by pointing to international business based sources of endogenous growth. The literature on subsidiary development is focused on the process through which MNC subsidiaries enhance their resources and capabilities and, in so doing, add increasing value to the MNC as a whole. A review of this literature shows that:

a) National subsidiary types and their positions are related to the host country and regional attributes;

b) The nature of the organisational type of the MNC plays a role in the opportunities and modalities of integration of a country at the production network level;
c) The organisational types of MNCs are not straightforwardly related to the frequency of 'developmental subsidiaries', and
d) The organisational structure is secondary to the management of decision-making processes within the multinational firm.

A growing part of the international business literature is concerned with non-equity relationships or networks. This growth reflects fragmentation of the value chain across the global economy and the changing boundaries of firms. The position of firms in the value chain rather than internalization issues (which formerly dominated traditional economics literature on MNCs) has come onto the research agenda. A simple procurement or vertical integration dichotomy cannot explain the existence of network forms of organisation. Despite high degrees of uncertainty, frequency and asset specificity firms in network relationships do not integrate. The source of firm market power is far less the result of physical and other assets and much more the outcome of inter-firm relationships (Holmstrom and Roberts, 1998). This moves the focus of analysis from individual firms to the mezzo level, *i.e.* to supply chains, clusters of firms and other emerging organisational forms.

The problem of the multilevel nature of economic integration is taken account of by the work on competitiveness which links micro aspects, many of which come from international business, with sector or country specific variables (see Zinnes *et al.*, 2001; Porter *et al.*, 2002). Therefore, we may expect that the traditional exclusively micro-orientation of the international business literature will develop a more realistic although more complex research agenda. For the first steps in conceptualising this new research agenda see Casson (2000).

Unlike the literature on FDI, the empirical work on CE from an international business perspective is much less amenable to generalisations. This literature shows that the diversity of modes of integration of CE into the global economy runs not only across but also within sectors and is strongly shaped by the individual strategies of foreign investors. For example, Tulder and Ruigrok (1998) show that the shape of international production networks in the European car industry largely runs along the lines of four strategic groupings: frontrunner (Volkswagen, General Motors, Fiat and Renault), follower (PSA, Ford), peripheral (Suzuki, Daewoo) and (voluntary) lock out (BMW, Toyota, Nissan, Daimler Benz) networks. This demonstrates the role of individual firms in shaping patterns of industrial networks. Industrial networks, which individual firms are part of, have a significant impact on the nature of success of the strategies that firms pursue. Equally, individual firms are able to shape the patterns of adjustment of a large number of firms with whom they are in cooperation or competition. The models of operation of foreign firms in CE are diverse. As industry studies show, they range from operations where CE functions as a low cost base, to those where CE operates largely as

a complementary production base. In the upper range of business models we find the establishment of new production models as in the case of VW/Skoda (Dorr and Kessel, 1997; Brezinski and Fluchter, 1998), or integrated affiliates as in the case of GE/Tungsram and ABB (Barham and Heimer, 1998; Radosevic, 2002a). However, the most widespread operation seems to be where CE enterprises operate as extended workbenches or localizers (Lankes and Venables, 1996). The opportunities opened by the European integration lead to interesting new business models of CE firms, which are based on extensive use of subcontracting and alliances. A good example of this is Hungarian Videoton (Szalavetz, 1997; Radosevic, and Yoruk, 2001).

In summary, empirical estimates of spillovers give an indication of the possible effects of FDI but do not specify the mechanism by which spillovers occur. The international business literature provides evidence on detailed mechanisms by which companies grow and integrate into global networks but it does not address linkages to host country growth.[2] The biggest limitation of spillover type of research is (i) the lack of firm level data and (ii) inability to understand what lies behind the results, *i.e.* what exactly generates spillovers or their absence. Spillovers type of research on FDI and productivity does not look at the process of how productivity is generated but at the determinants, which usually are not those that operate in reality but ad hoc statistical proxies.

Alternative approach is case studies analysis of investments within international business literature. Detailed case studies, if used as the single research tool, are time consuming, are not representative, and are difficult to compare due to a variety of idiosyncratic factors. However, case studies can provide good understanding of mechanisms of productivity increases at micro-level.

3 Our conceptual approach

We try to overcome the limits of aggregate econometric approach as well as weaknesses of case studies. Our level of analysis is mezzo. We collect data on several hundred firms in several countries. This sample is enough large to undertake econometric analysis while at the same time maintaining advantages of having information collected at the firm level.

Our focus is explicitly on local subsidiary as mechanism by which FDI affects productivity growth in host economy. Subsidiary role determines mechanisms by which

[2] Vernon's (1966) product life cycle theory, Ozawa's (1992) theory of Japanese FDI expansion supply driven cycle, and Dunning's Investment Development Path (Cycle) (IDP) and its revision in Dunning and Narula (1996) employ a limited number of variables, and do not stand up to large empirical scrutiny. However, they are relevant for individual countries or industries.

linkages between domestic and global economy are generated and mechanisms of control of these linkages. In that respect, we combine growth and international business studies perspectives. The MNCs networks are differentiated networks in which each subsidiary is controlled through different mechanisms according to its role in MNC. Yet, large sample enables us to generate insights on countries and sectoral differences regarding the position of subsidiaries and their relationship to other organisations.

The literature on subsidiary development is of recent origin and is focused on the process through which MNCs subsidiaries enhance their resources and capabilities, and in so doing add increasing level of value to the MNC as a whole (for a review and conceptual analysis of subsidiary evolution see Birkinshaw and Hood, 1999). Literature on subsidiary strategy has advanced our understanding how MNE operate. White and Poynter (1984), Bartlet and Ghoshal (1989), Young, Hood and Dunlop (1988), and Birkinshaw and Hood (1998) contributions have generated much more realistic understanding of how MNEs operate. Heterogeneity of subsidiaries role has led to understanding of MNEs as differentiated network of subsidiaries (Bartlet and Ghoshal, 1989) 'which operate as 'quasi firms' (Tavares, 1999) while MNE can be treated as 'interorganisational network' (Roth and Morrison, 1992, p.141)'(Tavares, 2001).

Our focus is on the positions of the CE subsidiaries and on changes in their resources and capabilities and on its implications for the host economy. This means that our perspective is host country and we are concerned with the productivity effects on host economy via upgrading of local subsidiaries. In that respect, our concern departs from focus of international business literature, which looks at the MNE network. We are interested in micro basis of growth and hence our perspective could be defined as Porterian (Porter et al, 2002). The closest to our perspective is the approach of 'developmental subsidiaries' in regional development context as developed by Young, S., Hood, N. and Dunlop S. (1988). Our perspective is national and is focused on subsidiary autonomy and its resource development (Penrose, 1959). Our research is based on large-scale questionnaire survey rather than on case studies. Hence, we are interested in indicators of autonomous behaviour of subsidiary *i.e.* in outcomes rather than in the process of building up of autonomous behaviour or internal, corporate venturing like in the case Burgelman (1983). Unfortunately, we have to abstract from the drivers of subsidiary evolution like gaps between subsidiaries' capabilities and their charters (Birkinshaw and Hood, 1999). As literature on subsidiary development suggests we also assume that 'the subsidiary is semiautonomous entity capable of making its own decisions but constrained in its action by the demand of head office managers and by the opportunities in the local environment' (*ibid*, 1999, p. 780.).

On empirical level our objective is to:

a) Map the existing strategic position or autonomy of local subsidiaries and evolution of their mandate;

b) Map the scope of control of individual business functions at subsidiary level, and how these functions have been distributed between subsidiary and other entities of MNC.

Specifically, we try to explore the following four research questions:

1) What are the initial roles that CE subsidiaries occupy within MNCs networks?
2) What are the relationships of CE subsidiary with headquarters and relationship with other subsidiaries?
3) What are the relationships with the local companies and local environment?
4) What are changes in the role and activities of subsidiary over time in terms of value added scope and scale? (Subsidiary development)

Our conceptual model is based on two forms of upgrading of position of subsidiaries and on several dimensions of integration of subsidiary into MNC network.

Subsidiary can upgrade its position trough:

- Functional extension (sales, manufacturing, finance), *i.e.* by adding new mandates or functions
- Lines of business extension (for example, colour TV and AV equipment), *i.e.* by extending scale of the existing mandate through sales and exports or new lines of business (products).

Upgrading of subsidiary occurs through several dimensions each of which captures different aspect of upgrading. Dimensions of upgrading and integration are[3]:

- Product flows (export, import, or local sales or purchases in total sales)
- Knowledge flows (changes in control of R&D, patents and licences function)
- Capital flows (changes in equity)

These dimensions can be analysed in terms of (i) their intensity and, (ii) direction (from HQ to subsidiary; from subsidiary to HQ; from subsidiary to subsidiary, *etc.*)

Figure 1 summarises our conceptual approach. Upgrading of subsidiary can be analysed in terms of introduction of new functions (scope) as well as expansion of the existing functions (scale). Subsidiary can grow without expanding or changing mandate but this increase is increase in scale (horizontal axis), not in the scope of activity (vertical axis).

In continuation we discuss the relevance of this model for productivity growth in CE and propose several hypotheses. First, following Szalavetz (2000) we distinguish

[3] Randay and Li (1998) in Birkinshaw and Hood (1998) show that each flow is somewhat independent from others.

between static and dynamic modernization effects of FDI. Static modernization effects are those, which are designated by parent company in order for subsidiary to achieve production capability. This is reflected in autonomy over operational functions and should results in similar efficiency as in the parent company. As long as there is not change in autonomy of other functional areas increase in sales and exports is interpreted as expansion within basically unchanged mandate. Dynamic effects are when subsidiary expands the range of functions under its control (functional upgrading). Subsidiaries take up responsibility for additional corporate functions and increase their local value added (*ibid*, p. 358). Increase in number of lines of businesses (product diversification) cannot be interpreted unambiguously. In the case of local market oriented FDI, increased number of lines of businesses (lines of products) denotes diversification within unchanged functional autonomy.

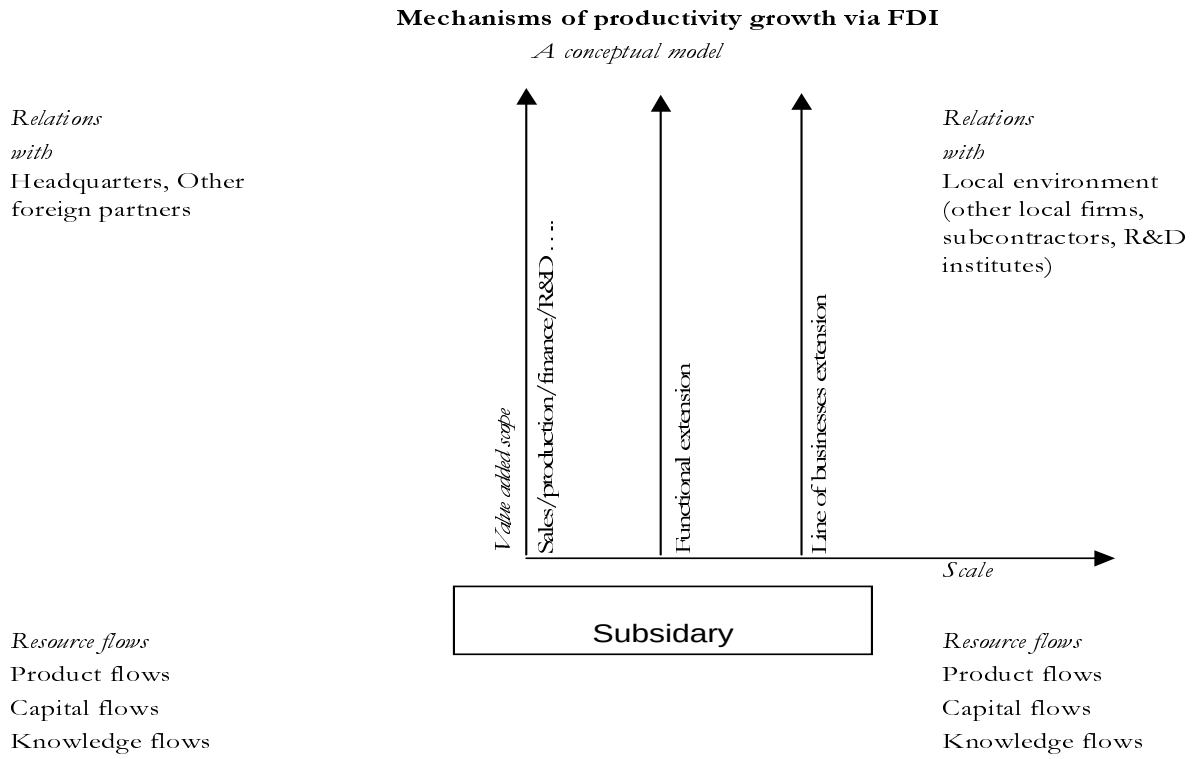

Figure 1: Conceptual approach

Second, differences between countries and sectors in autonomy of subsidiaries reflect differences in inherited capabilities from the socialist period as well as differences in the tasks designated to them by parent company. CE countries differed in the extent to which their enterprises were only production units and the extent to which they were business organizations. The more subsidiaries had to be specialized within the MNC

network the narrower will be the range of business functions that they control. Equally, the range of inherited capabilities could determine the degree of functional control.

Third, increased autonomy of subsidiary in the corporate function portfolio develops from operational to marketing and then to strategic autonomy, which shows dynamic effect of industrial integration. Szalavetz (2000) points out that 'the quality of the transferred technology depends not only on the recipient's absorption capabilities but also (or maybe even more) on its marketing capabilities' (p. 369). However, this probably greatly depends on market orientation of subsidiary. For exporters, shift from production only subsidiary with autonomous control of marketing functions is very difficult. Marketing for exporting requires significant upfront costs but also much larger margins. For local market seeking FDI marketing function is essential part of mandate. However, for exporters we may expect that production is the only corporate function that is acquired. This situation of CE subsidiaries is similar to partial participation or production only participation of local firms from emerging markets in the transnational value chains (Craig and Douglas, 1997). Marketing capabilities are linkage capabilities and thus are crucial for breaking dependence on parent company.

Fourth, responsibility for strategic functions, especially product development and strategic management, are much more difficult to acquire. Autonomy in this area denotes quite autonomous subsidiaries, which can potentially operate as centres of excellence within MNC network. Given this hierarchy of functions we may expect that the subsidiaries will be least likely to initiate changes in organization of business function and most likely in sales or product portfolio.

4 Methodology and sample

The above conceptual framework has been tested via 2 pages 'Questionnaire for foreign investment enterprises' (see attached questionnaire). Questionnaires were sent to 2,203 FIEs from Estonia, Hungary, Poland, Slovakia and Slovenia. 433 questionnaires were returned what gives 19,7% response rate. The response rate was the highest in Slovenia (34.4%), followed by Slovakia (30.2%), Estonia (30.0%), Poland (18.8%) and Hungary (10.6%). Obviously, in the smaller countries it has been easier to practice a more targeted, proactive approach to the interviewees, than in Poland and Hungary with much higher number of FIEs. The sample of 433 interviewed FIEs is presented in tables 4.1 to 4.11. The major characteristics of the sample are: (i) Poland has the highest share of FIEs in the sample in terms of the number of FIEs, as well as in terms of their employment, (ii) significant differences exist among the analysed countries as far as sectoral distribution of FIEs is concerned, (iii) representativeness of the sample in terms of the number of firms is relatively low, but it is quite high in terms of employment; representativeness among countries is rather diversified, (iv) most of the FIEs included in the sample are medium sized; the share of larger firms is higher in the case of Poland and Hungary, what is due to bigger country size, (v) most of sample FIEs were

established in 1993 or before, (vi) majority-foreign owned companies by far prevail, (vii) the share of FIEs producing intermediate products is much higher than those producing final products. Further on, we present a more detailed presentation of the sample FIEs.

Distribution of sample FIEs. Out of 433 FIEs, 135 (35.5%) are from Poland, 80 (18.5%) from Hungary, 78 (18.0%) from Slovakia, 72 (16.6%) from Slovenia and 50 (11.5%) from Estonia (see Table 4.1). All 2-letter NACE manufacturing sectors are presented in the sample. The highest proportion of sample FIEs is in DL – electrical and optical equipment (16.4%) and DJ – basic metals and products (14.1%), followed by DA – food, beverages and tobacco (10.2%), DI – non-metal mineral products (9.0%), DG – chemicals and man-made fibres (8.5%), DH – rubber and plastic products (6.9%) *etc.* There are significant differences among the countries as far as sectoral distribution of sample FIEs is concerned (see Table 4.2)

Distribution of employment of sample FIEs. In terms of employment, FIEs from Poland dominate with 70.3% of total employment of the sample FIEs. The share of employment of Hungarian sample FIEs is 13.7%, of Slovenian sample FIEs 8.1% and of Estonian sample FIEs 7.8%. Comparison of the shares of individual countries in terms of employment and in terms of the number of FIEs is biased by the lack of data on FIEs employment for Slovakia. Nevertheless, it is more than obvious that (in terms of employment) sample FIEs from Poland are much larger in size than sample FIEs from other countries (see Table 4.3). The highest proportion of the sample FIEs employment is in DJ - basic metals and products (37.9%), followed by DL – electrical and optical equipment (13.6%), DG – chemicals and man-made fibres (8.6%), DM – transport equipment (8.4%), DA – food, beverages and tobacco (7.8%) *etc.* As in the case of number of FIEs, sectoral distribution of FIEs employment differs pretty much among the countries (see Table 4.4).

Representativenes of the sample. Adequate representativeness of the sample is an important factor of the relevance of the results of empirical analysis. On one hand, sample FIEs represent only 4.9% of all FIEs in the analysed countries; the highest proportion of 23.8% being in Slovenia, followed by Estonia with 12.4%, Poland with 3.5% and Hungary with 2.1%. However, on the other hand, employment of sample FIEs represents no less than 22.6% of total FIEs employment in the analysed countries; as much as 53.3% in Estonia and 50.8% in Slovenia, 29.5% in Poland and 7.9% in Hungary. The data on representativeness offer the following conclusions: (i) although overall representativeness of the sample in terms of the number of FIEs may not seem high, this does not hold for the representativeness in terms of employment, which is quite high; (ii) representativeness by countries differs considerably. Representativeness in Slovenia and Estonia is rather high, especially in terms of employment which exceeds 50%, while it is much lower in Poland and especially Hungary; (iii) representativeness by manufacturing sectors differs less than by countries, but still range in a broad interval (see Tables 4.5 and 4.6).

Table 4.1: Distribution of sample firms by countries; for 2-letter NACE rev. 1 manufacturing sectors and total

NACE 2	Estonia*		Hungary		Poland		Slovakia		Slovenia		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
DA	9	20.5%	14	31.8%	16	36.4%	3	6.8%	2	4.5%	44	100.0%
DB	7	25.0%	8	28.6%	5	17.9%	5	17.9%	3	10.7%	28	100.0%
DC	0	0.0%	2	33.3%	0	0.0%	2	33.3%	2	33.3%	6	100.0%
DD	5	38.5%	2	15.4%	1	7.7%	4	30.8%	1	7.7%	13	100.0%
DE	4	28.6%	1	7.1%	3	21.4%	4	28.6%	2	14.3%	14	100.0%
DF	4	80.0%	1	20.0%	0	0.0%	0	0.0%	0	0.0%	5	100.0%
DG		0.0%	7	18.9%	16	43.2%	6	16.2%	8	21.6%	37	100.0%
DH	2	6.7%	9	30.0%	10	33.3%	4	13.3%	5	16.7%	30	100.0%
DI	4	10.3%	4	10.3%	20	51.3%	6	15.4%	5	12.8%	39	100.0%
DJ	5	8.2%	6	9.8%	21	34.4%	13	21.3%	16	26.2%	61	100.0%
DK	1	2.7%	5	13.5%	12	32.4%	8	21.6%	11	29.7%	37	100.0%
DL	5	7.0%	16	22.5%	29	40.8%	10	14.1%	11	15.5%	71	100.0%
DM	0	0.0%	4	16.7%	14	58.3%	1	4.2%	5	20.8%	24	100.0%
DN	4	33.3%	1	8.3%	6	50.0%		0.0%	1	8.3%	12	100.0%
Unknown		0.0%		0.0%		0.0%	12	100.0%		0.0%	12	100.0%
D - total	50	11.5%	80	18.5%	153	35.3%	78	18.0%	72	16.6%	433	100.0%

* DF+DG together

Table 4.2: Distribution of sample firms by 2-letter NACE rev. 1 manufacturing sectors; for individual countries and total

NACE 2	Estonia*		Hungary		Poland		Slovakia		Slovenia		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
DA	9	18.0%	14	17.5%	16	10.5%	3	3.8%	2	2.8%	44	10.2%
DB	7	14.0%	8	10.0%	5	3.3%	5	6.4%	3	4.2%	28	6.5%
DC	0	0.0%	2	2.5%	0	0.0%	2	2.6%	2	2.8%	6	1.4%
DD	5	10.0%	2	2.5%	1	0.7%	4	5.1%	1	1.4%	13	3.0%
DE	4	8.0%	1	1.3%	3	2.0%	4	5.1%	2	2.8%	14	3.2%
DF	4	8.0%	1	1.3%	0	0.0%	0	0.0%	0	0.0%	5	1.2%
DG		0.0%	7	8.8%	16	10.5%	6	7.7%	8	11.1%	37	8.5%
DH	2	4.0%	9	11.3%	10	6.5%	4	5.1%	5	6.9%	30	6.9%
DI	4	8.0%	4	5.0%	20	13.1%	6	7.7%	5	6.9%	39	9.0%
DJ	5	10.0%	6	7.5%	21	13.7%	13	16.7%	16	22.2%	61	14.1%
DK	1	2.0%	5	6.3%	12	7.8%	8	10.3%	11	15.3%	37	8.5%
DL	5	10.0%	16	20.0%	29	19.0%	10	12.8%	11	15.3%	71	16.4%
DM	0	0.0%	4	5.0%	14	9.2%	1	1.3%	5	6.9%	24	5.5%
DN	4	8.0%	1	1.3%	6	3.9%		0.0%	1	1.4%	12	2.8%
Unknown		0.0%		0.0%		0.0%	12	15.4%		0.0%	12	2.8%
D - total	50	100.0%	80	100.0%	153	100.0%	78	100.0%	72	100.0%	433	100.0%

* DF+DG together

Table 4.3: Distribution of employment of sample firms by countries; for 2-letter NACE rev. 1 manufacturing sectors and total

NACE 2	Estonia*		Hungary		Poland		Slovakia		Slovenia		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
DA	2093	12.2%	4500	26.3%	10153	59.3%	n.a.	0.0%	362	2.1%	17108	100.0%
DB	6520	56.1%	3100	26.7%	1172	10.1%	n.a.	0.0%	822	7.1%	11614	100.0%
DC	0	0.0%	1600	57.6%	0	0.0%	n.a.	0.0%	1177	42.4%	2777	100.0%
DD	1710	73.8%	300	12.9%	30	1.3%	n.a.	0.0%	277	12.0%	2317	100.0%
DE	1114	28.1%	200	5.0%	2302	58.0%	n.a.	0.0%	355	8.9%	3971	100.0%
DF	275	23.4%	900	76.6%	0	0.0%	n.a.	0.0%	0	0.0%	1175	100.0%
DG		0.0%	5500	29.1%	12633	66.8%	n.a.	0.0%	771	4.1%	18904	100.0%
DH	1071	14.5%	2400	32.5%	1736	23.5%	n.a.	0.0%	2185	29.6%	7392	100.0%
DI	249	2.4%	1300	12.3%	8655	82.0%	n.a.	0.0%	348	3.3%	10552	100.0%
DJ	996	1.2%	1600	1.9%	78610	94.2%	n.a.	0.0%	2225	2.7%	83431	100.0%
DK	9	0.1%	800	8.4%	5993	63.3%	n.a.	0.0%	2667	28.2%	9469	100.0%
DL	2465	8.3%	5600	18.8%	17855	59.9%	n.a.	0.0%	3910	13.1%	29830	100.0%
DM	0	0.0%	2100	11.3%	13963	75.2%	n.a.	0.0%	2505	13.5%	18568	100.0%
DN	704	24.0%	500	17.0%	1530	52.1%	n.a.	0.0%	204	6.9%	2938	100.0%
D - total	17206	7.8%	30200	13.7%	154632	70.3%	n.a.	0.0%	17808	8.1%	219846	100.0%

* DF+DG together

Table 4.4: Distribution of employment of sample firms by 2-letter NACE rev. 1 manufacturing sectors; for individual countries and total

NACE 2	Estonia*		Hungary		Poland		Slovakia		Slovenia		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
DA	2093	12.2%	4500	14.9%	10153	6.6%	n.a.		362	2.0%	17108	7.8%
DB	6520	37.9%	3100	10.3%	1172	0.8%	n.a.		822	4.6%	11614	5.3%
DC	0	0.0%	1600	5.3%	0	0.0%	n.a.		1177	6.6%	2777	1.3%
DD	1710	9.9%	300	1.0%	30	0.0%	n.a.		277	1.6%	2317	1.1%
DE	1114	6.5%	200	0.7%	2302	1.5%	n.a.		355	2.0%	3971	1.8%
DF	275	1.6%	900	3.0%	0	0.0%	n.a.		0	0.0%	1175	0.5%
DG		0.0%	5500	18.2%	12633	8.2%	n.a.		771	4.3%	18904	8.6%
DH	1071	6.2%	2400	7.9%	1736	1.1%	n.a.		2185	12.3%	7392	3.4%
DI	249	1.4%	1300	4.3%	8655	5.6%	n.a.		348	2.0%	10552	4.8%
DJ	996	5.8%	1600	5.3%	78610	50.8%	n.a.		2225	12.5%	83431	37.9%
DK	9	0.1%	800	2.6%	5993	3.9%	n.a.		2667	15.0%	9469	4.3%
DL	2465	14.3%	5600	18.5%	17855	11.5%	n.a.		3910	22.0%	29830	13.6%
DM	0	0.0%	2100	7.0%	13963	9.0%	n.a.		2505	14.1%	18568	8.4%
DN	704	4.1%	500	1.7%	1530	1.0%	n.a.		204	1.1%	2938	1.3%
D – total	17206	100.0%	30200	100.0%	154632	100.0%	n.a.		17808	100.0%	219846	100.0%

* DF+DG together

Table 4.5: Share of sample FIEs in all FIEs - Number of firms, by countries and by 2-letter NACE rev. 1 manufacturing sectors

NACE 2	Estonia*	Hungary	Poland	Slovakia	Slovenia	Total
DA	36.0%	3.2%	3.4%	n.a.	13.3%	4.7%
DB	8.9%	2.0%	1.2%	n.a.	17.6%	3.1%
DC	0.0%	1.8%	0.0%	n.a.	33.3%	3.6%
DD	11.9%	1.1%	0.4%	n.a.	11.1%	2.5%
DE	11.8%	0.3%	0.9%	n.a.	6.7%	1.8%
DF	33.3%	33.3%	0.0%	n.a.	0.0%	20.0%
DG	0.0%	4.7%	7.3%	n.a.	36.4%	9.5%
DH	7.7%	3.5%	2.5%	n.a.	19.2%	4.2%
DI	17.4%	2.4%	6.0%	n.a.	25.0%	7.2%
DJ	16.7%	1.1%	3.6%	n.a.	29.6%	5.1%
DK	3.6%	1.3%	3.2%	n.a.	33.3%	4.5%
DL	11.9%	3.7%	7.6%	n.a.	25.0%	7.9%
DM	0.0%	3.9%	5.7%	n.a.	29.4%	6.4%
DN	10.0%	0.5%	1.7%	n.a.	11.1%	2.1%
D	12.4%	2.1%	3.5%	n.a.	23.8%	4.9%

* DF+DG together

Table 4.6: Share of sample FIEs in all FIEs - Employment, by countries and by 2-letter NACE rev. 1 manufacturing sectors

NACE 2	Estonia*	Hungary	Poland	Slovakia	Slovenia	Total
DA	85.2%	8.8%	12.8%	n.a.	23.0%	12.7%
DB	74.6%	7.9%	2.8%	n.a.	46.8%	12.8%
DC	0.0%	12.3%	0.0%	n.a.	47.2%	13.2%
DD	63.9%	6.0%	0.2%	n.a.	77.6%	8.3%
DE	62.6%	1.7%	6.8%	n.a.	14.9%	7.9%
DF	22.3%	6.9%	0.0%	n.a.	0.0%	5.4%
DG	0.0%	19.6%	42.0%	n.a.	39.0%	31.5%
DH	151.9%	15.0%	5.5%	n.a.	61.2%	14.3%
DI	14.4%	9.3%	22.9%	n.a.	32.3%	19.3%
DJ	125.0%	4.2%	244.3%	n.a.	48.9%	110.5%
DK	1.2%	2.4%	20.0%	n.a.	50.7%	13.5%
DL	38.1%	6.3%	27.5%	n.a.	65.8%	17.9%
DM	0.0%	9.5%	20.8%	n.a.	64.3%	19.7%
DN	22.8%	6.3%	3.4%	n.a.	80.3%	5.3%
D	53.3%	7.9%	29.5%	n.a.	50.8%	22.6%

* DF+DG together

Distribution of sample FIEs by number of employees is a proxy for the *distribution of FIEs by size*. Sample FIEs range from very small firms with less than 10 employees to large firms with more than 1,000 employees, most of them being small and medium sized firms. 39.6% of sample FIEs have 100 or less employees, 40.0% between 101 and

500 employees, while 20.6% more than 500 employees. As expected the share of sample FIEs with more than 500 employees is much higher in Poland and Hungary, than in other three countries. Vice versa, the share of sample FIEs with 100 or less employees is much higher in Estonia, Slovakia and Slovenia than in Hungary or Poland. The size of a country obviously has a major role in that (see Table 4.7). Comparison of mean ranks of the number of employees in sample of FIEs by using Mann-Whitney test, however, show statistically significant differences of individual countries from total sample average in case of Slovenia and Hungary. Slovenian sample FIEs are significantly smaller and Hungarian sample FIEs significantly larger than total sample FIEs. Comparison of manufacturing sectors shows significantly higher than average number of employees per company only in DA – food, beverages and tobacco, and DM – transport equipment. In all the other manufacturing sectors, there are no statistically significant differences in the number of employees.

Table 4.7: Distribution of sample FIEs by number of employees; %

No. of employees	Total	Slovenia	Slovakia	Hungary	Poland	Estonia
up to 10	6.5	9.72	7.89	1.18	7.84	4.26
11 - 50	19.9	29.17	26.32	12.94	16.34	19.15
51 - 100	13.2	12.50	17.11	10.59	10.46	21.28
101 - 200	16.4	19.44	13.16	16.47	14.38	23.40
201 - 500	23.6	15.28	19.74	34.12	26.14	14.89
501 - 1000	10.2	8.33	7.89	15.29	9.80	8.51
more than 1000	10.4	5.56	7.89	9.41	15.03	8.51

Age of sample FIEs. Table 4.8 exhibits distribution of sample FIEs by the year of their establishment. Most of sample FIEs were established in 1993 or before; the respective percentage for total sample is 61.3% (31.0% was established before 1990), for Slovenia 59.4%, for Slovakia 58.7%, for Hungary 77.6%, for Poland 60.1% and for Estonia 75.1%. Mann-Whitney test shows statistically significant differences among countries as far as their age is concerned. Slovak FIEs are on average older, while the Hungarian ones younger than total sample FIEs. No such statistically significant differences were found for different manufacturing sectors.

The picture with regard to the distribution of sample FIEs according to the year of their establishment as FIE is rather different. This demonstrates that a number of sample FIEs were created via acquisitions of firms by strategic foreign investors or via joint ventures of firms with strategic foreign investors. In total 34.0% of sample firms were established as FIEs already before 1990, the respective percentage being 47.1% in Hungary, 15.3% in Slovenia, 4.2% in Estonia, 2.6% in Poland and 0% in Slovakia. Altogether, 57.4% of sample firms are FIEs already for ten years or more, *i.e.* they were established as FIEs in 1993 or before. The share of such FIEs is the highest in Hungary (77.6%) and Estonia (58.3%) (see Table 4.9). There are statistically significant differences among countries as far as their age as FIE is concerned. Polish sample firms have been established as FIE

on average before the total sample firms, while vice versa is true for Hungarian, Estonian and Slovenian FIEs. As far as different manufacturing sectors is concerned, statistically significant difference was found only for DC – leather and leather products, where sample firms have been on average established as FIE later if compared to total sample.

Table 4.8: Distribution of sample FIEs by year of establishment

Year of establishment	Share (%)					
	Total	Slovenia	Slovakia	Hungary	Poland	Estonia
before 1990	31.0	39.9	39.5	47.1	34.6	25.0
1991	6.7	9.7	9.6	8.2	5.9	4.2
1992	11.2	5.6	5.5	8.2	11.1	16.7
1993	12.4	4.2	4.1	14.1	8.5	29.2
1994	7.3	11.1	11.0	2.4	4.6	14.6
1995	6.9	6.9	6.9	2.4	5.2	4.2
1996	6.0	8.3	8.2	3.5	7.2	4.2
1997	7.1	4.2	4.1	8.2	9.2	0.0
1998	4.6	9.7	9.6	2.4	4.6	0.0
1999	2.8	0.0	0.0	2.4	4.6	0.0
2000	3.9	1.4	1.4	1.2	4.6	2.1
2001	0.2	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Table 4.9: Distribution of sample FIEs by year of establishment as FIE

Year of establishment	Share (%)					
	Total	Slovenia	Slovakia	Hungary	Poland	Estonia
before 1990	34.0	15.3	0.0	47.1	2.6	4.2
1991	4.4	2.8	6.4	8.2	2.0	0.0
1992	8.3	6.9	10.3	8.2	3.9	20.8
1993	10.7	6.9	16.7	14.1	3.9	33.3
1994	7.3	11.1	7.7	2.4	3.3	20.8
1995	9.2	13.9	17.9	2.4	3.9	8.3
1996	6.3	11.1	9.0	3.5	2.0	4.2
1997	6.8	11.1	10.3	8.2	2.6	0.0
1998	4.6	9.7	6.4	2.4	3.3	0.0
1999	3.9	5.6	3.8	2.4	3.9	4.2
2000	4.1	4.2	11.5	1.2	2.0	4.2
2001	0.2	0.0	0.0	0.0	0.7	0.0
2002	0.2	1.4	0.0	0.0		0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Foreign equity shares in FIEs. Majority foreign-owned FIEs, with more than 50% foreign equity share, definitely prevail in the sample. Of all the sample FIEs, only 14.5% are 50% or less foreign owned. It does not seem that there are any relevant differences in

this regard among the countries concerned (see Table 4.10). Mann-Whitney test of mean ranks shows only for Slovenia statistically significant and lower average foreign equity share than for total sample. As far as differences among manufacturing sectors are concerned, sample FIEs in DE – paper, publishing and printing proves on average to have statistically significant and higher foreign equity share than total sample. Vice versa is true for DG – chemicals and man-made fibres.

Table 4.10: Distribution of sample FIEs by foreign equity share

Foreign equity share	Share (%)					
	Total	Slovenia	Slovakia	Hungary	Poland	Estonia
10 - 50%	14.5	14.5	10.3	16.5	15.2	6.3
51 - 99%	29.0	29.0	20.5	20.0	35.1	27.1
100%	56.5	56.5	69.2	63.5	49.7	66.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

Type of products produced by sample FIEs. The questionnaire distinguishes between intermediate goods and final products. FIEs may also produce both. Intermediate goods prevail in all the countries. There is only 14.3% of total sample FIEs that produce only final products, the share in Slovenia (23.6%), Hungary (22.4%) and Slovakia (19.2%) being much higher than in Poland (5.4%) and Estonia (6.3%) (see Table 4.11). These differences do not seem to be confirmed by the Mann-Whitney test, which shows statistically significantly different average structure of FIEs products only for Slovenian FIEs. Manufacturing sectors with statistically significantly different average structure are DA – food, beverages and tobacco, DB – textiles and textile products, and DD – wood and wood products.

Table 4.11: Distribution of sample FIEs by type of product

Type of product	Share (%)					
	Total	Slovenia	Slovakia	Hungary	Poland	Estonia
Intermediary good	48.2	50.0	43.8	40.0	54.4	47.9
Final products	14.3	23.6	19.2	22.4	5.4	6.3
Both	37.5	26.4	37.0	37.6	40.3	45.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

5 Descriptive analysis

5.1 Autonomy of subsidiaries

Data enable us to find out whether individual business functions are undertaken only/mainly by subsidiary or only/mainly by foreign parent company. Autonomy of business functions of subsidiaries is than grouped into operational, marketing or strategic autonomy. Table 5.1 shows average control of individual functions by subsidiaries across five countries, in aggregate and grouping of functions.

Table 5.1 shows that subsidiaries have the biggest autonomy in operational functions (accounting and finance, supply and logistics, operational management, and process engineering) and the smallest in strategic functions (determining product price, investment finance, product development and strategic management). Marketing autonomy is intermediate. Analysis of autonomy of business functions shows that the biggest autonomy in all countries is in accounting and finance. Within operational management related functions process engineering is the least autonomous in all countries. This may be expected given that the process engineering involves technological improvements and thus certain degree of technological mastery. Autonomy in product development is much smaller in all countries when compared to process engineering. In fact product development is the least autonomous of all functions. Among marketing functions after sales services and distribution activities are the most autonomous while market research is the least in control of subsidiaries.

Table 5.1: Autonomy of business functions of FIEs

Business functions	Autonomy indicator*					
	Total**	Slovenia	Slovakia	Hungary	Poland	Estonia
Operational management	0.253	0.111	0.199	0.212	0.370	0.262
Process engineering	0.353	0.278	0.245	0.396	0.426	0.338
Supply & logistics	0.247	0.194	0.278	0.237	0.268	0.232
Account.& financial operations	0.145	0.083	0.140	0.124	0.165	0.220
Operational autonomy	0.250	0.167	0.216	0.242	0.307	0.263
Distribution, sales	0.306	0.319	0.454	0.323	0.201	0.366
Advertisement	0.336	0.333	0.460	0.340	0.282	0.310
After sale services	0.256	0.305	0.362	0.270	0.181	0.232
Marketing	0.373	0.403	0.515	0.352	0.295	0.379
Market research	0.391	0.463	0.563	0.376	0.287	0.352
Marketing autonomy	0.332	0.365	0.471	0.332	0.249	0.328
Determining product price	0.363	0.315	0.490	0.335	0.355	0.310
Investment finance	0.389	0.269	0.475	0.307	0.412	0.506
Product Development	0.501	0.454	0.643	0.490	0.475	0.447
Strategic management and planning	0.500	0.398	0.580	0.468	0.532	0.482
Strategic autonomy	0.438	0.359	0.547	0.400	0.444	0.436

* Indicators are calculated by giving individual answers the following weights: 0=only FIE, 0.33=mainly FIE, 0.66=mainly foreign parent, 1=only foreign parent. The nearer is indicator to 0 the higher is the autonomy of FIEs themselves and vice versa. ** Weighted average.

There are some statistically significant differences across countries in all business functions except in supply and logistics. The usual ordering of FIEs functional autonomy, the highest being in operational functions, the lowest in strategic functions, with marketing functions in between is present in three of the analysed countries (Slovakia, Hungary and Estonia). For Poland, marketing autonomy is more frequent than operational autonomy. This may be result of the market size and market seeking nature of FDI in Poland. This is also confirmed by Mann-Whitney test, according to which in all marketing functions except advertisement, Polish FIEs show statistically

significant and higher autonomy than average for total sample FIEs, while in some operational functions (operational management and process engineering) the situation is the opposite. On the other hand, Slovak FIEs show statistically significant and lower autonomy in all marketing functions.

It thus seems that market orientation also influences subsidiaries' autonomy. The more subsidiary is oriented towards local market we may expect that it will have bigger autonomy in terms of marketing functions and partly in terms of operational autonomy. Poland seems to fit quite well this pattern. The more subsidiary is export oriented we may expect that it will have lower strategic and marketing autonomy. Again, Slovakia pretty well reflects this situation. Indeed, when we look at data on FIEs sales structure Slovak FIEs have the biggest export orientation, while Polish FIEs are the most local market oriented. Mann-Whitney test tends to prove this as statistically significant. However, both factors operate in interdependence and only econometric testing can confirm these hypotheses.

For Slovenia, strategic autonomy is nearly the same as marketing autonomy. Indeed, in investment finance and strategic management and planning, Slovenian FIEs show statistically significant and higher autonomy than total sample average. Slovenian FIEs also have significantly more than total sample average autonomy in some operational functions (operational management, accounting and financial operations). This is also true for Slovakia in operational management and process engineering. However, marketing and strategic autonomy is the smallest in Slovak FIEs, which exhibit statistically significant and lower autonomy than total sample average in all marketing and strategic functions. All this may suggest that Slovenian subsidiaries are the most autonomous while Slovakian are the least autonomous. How do we interpret these differences in functional autonomy across five CE countries? Differences may be explained by the nature of inherited capabilities and by market orientation of subsidiaries. The more developed are firms' capabilities we may expect that subsidiary should be more autonomous. If we take as proxy for subsidiaries' technological capabilities the importance of their own R&D, and patenting activities than Slovenian subsidiaries give significantly higher importance to their own R&D activities when compared to the Slovak. Slovak subsidiaries ascribe higher importance to quality control assistance by parent companies when compared to Slovenian which suggest that they are dependent strongly production oriented subsidiaries.

When control of functions is compared across manufacturing sectors, the following main features appear. (i) The first is that there are no statistically significant differences among sectors as far as operational functions is concerned. (ii) Second, there are only four sectors, which in fact show really statistically significant differences from total sample averages. (iii) Third, practically all the sectors, which prove to be significantly different than total sample average in terms of marketing functions are also significantly different in strategic functions. (iv) Fourth, the sense of the difference goes always in the

same direction. Sectors which have significantly higher than average autonomy in marketing functions also have significantly higher than average autonomy in strategic functions, and vice versa. Sectors with significantly lower than average autonomy in marketing and strategic functions are DC – leather and leather products, DD – wood and wood products and DM – transport equipment. The only sector with significantly higher than average autonomy in marketing and strategic functions is DA – food, beverages and tobacco. This suggests that levels of autonomy in marketing and strategic functions are linked and that market orientation of subsidiaries is very much industry specific as well as country specific. Food, beverages and tobacco industry in CE is mainly much local market oriented and higher than average autonomy in market and strategic functions corresponds to that orientation. Transport equipment industry *i.e.* mainly automotive industry has very low marketing and strategic autonomy which suggest that the CE subsidiaries in this industry are mainly production oriented subsidiaries.

5.2 Market orientation and structure of suppliers

Market orientation of subsidiaries is very important variable for understanding autonomy of business functions as well as patterns of upgrading. It also indicates the integration of FIEs in their foreign parent companies networks. In overall, sample FIEs export 51.8% of their sales. However, there are big country differences in that respect. We have three countries with distinctively export oriented FIEs; *i.e.* Slovenia with 72.9% exports to sales ratio, Slovakia with 64.4% and Estonia with 59.8%. On the other hand, we have Poland where 67.1% of sales is sold on domestic markets. Hungary with 52.1% exports to sales ratio is somewhere in between. Export orientation is closely related with sales to foreign parent company. Slovenian and even much more so Slovakian FIEs sell most of their total sales to their foreign parent companies (Slovenian FIES 37.1% and Slovakian FIEs 47.5%). Slovakian FIEs export almost three times as much to foreign parent companies than to other foreign buyers. This confirms that Slovakian, but also Slovenian subsidiaries are most often production oriented dependent subsidiaries. In the case of Poland, Hungary and especially Estonia much lower proportion of exports goes to foreign parent companies. In the case of Estonian FIEs, 30.6% of sales go directly to other foreign buyers and only 29.2% to foreign parent companies themselves. Orientation of Polish subsidiaries towards local market is consistent with the strong marketing autonomy of Polish subsidiaries. In all countries, sales to other local subsidiaries of foreign parent are very limited. In Slovenia and Slovakia, they are almost non-existent (see Table 5.2.1). It is also true that it is not very probable that MNCs have more than one subsidiary in small countries like Slovenia, Slovakia or Estonia.

Mann-Whitney test confirms some of the above differences among countries as far as FIEs marketing orientation is concerned. Slovak FIEs show statistically significant and higher than total sample average sales orientation to foreign parent companies and lower sales orientation to domestic buyers. Similarly, Slovenian FIEs show statistically

significant and higher orientation to other foreign buyers (but not to foreign parent companies) and lower sales orientation to domestic buyers. Quite the opposite is situation for Polish FIEs, which show statistically significant and lower sales orientation to foreign parent companies and other foreign buyers, but higher sales orientation to domestic buyers. It is, therefore, obvious that Slovak and Slovenian FIEs are significantly more export oriented, while Polish FIEs are significantly more local market oriented.

Table 5.2.1: FIEs sales structure; %

Countries	Sales to			
	Other domestic buyers	Foreign parent	Other foreign buyers	Other domestic subs.of foreign parent
Total*	44.6	30.5	21.3	3.3
Slovakia	31.7	47.5	16.9	2.5
Slovenia	28.1	37.1	35.8	0.5
Hungary	43.3	27.7	24.4	3.5
Poland	62.6	20.8	12.0	4.5
Estonia	35.9	29.2	30.6	4.4

* Weighted average

There are also statistically significant differences in marketing orientation among FIEs in different manufacturing sectors. Exports and local market oriented sectors can be identified. Sectors DB – textiles and textile products, DC – leather and leather products and DM – transport equipment are significantly more oriented to sales to their foreign parent companies, while sectors DA – food, beverages and tobacco, DE – paper, publishing and printing and DI – non metal mineral products are significantly more than total sample average oriented to local market sales.

Structure of suppliers is another variable for understanding autonomy of business functions of FIEs as well as of FIEs integration in their foreign parent companies networks and in the local economies. Contrary to the situation on the sales side, where foreign parent companies prevail, in supplies other domestic suppliers with 34,4% of total supplies and other foreign suppliers with 28% have more important role than foreign parent companies with 27.6%. It seems that FIEs have more autonomy in supplies than in sales. All in all, FIEs purchase more supplies from abroad (55.6%) than at home. Of course there are quite some differences among individual countries. The share of imported supplies is the lowest in FIEs from Hungary (49.9%) and Poland (51.8%), and higher in Estonia (54.9%), Slovenia (58.1%) and Slovakia (68.8%). The shares of foreign parent companies supplies is the highest in Poland and Slovakia (see Table 5.2.2). One can not avoid the conclusion, that FIEs from those countries, whose sales are the most local-market oriented (Poland and Hungary), are also more local-market oriented as far as supplies is concerned. More exports is obviously linked to more imported supplies and vice versa. Also, size of the country is relevant here. Smaller countries do not offer smaller possibilities only for sales but also for supplies.

Mann-Whitney test seems to confirm these differences among countries. Thus, Slovenian and Slovak FIEs source significantly more supplies than total sample average from other foreign suppliers (Slovenia) or from foreign parent companies (Slovakia) and significantly less from domestic sources (Slovakia). On the other hand, Polish FIEs source significantly less from other foreign suppliers, and Hungarian FIEs significantly less from foreign parent companies and more from domestic suppliers. The only surprise in this pattern might be that Slovenian FIEs source significantly more from domestic suppliers.

Table 5.2.2: FIEs purchases structure, %

Countries	Purchases from			
	Other domestic suppliers	Other foreign suppliers	Foreign owner	Other domestic subs. of foreign owner
Total*	34.44	28.0	27.6	7.2
Slovakia	1.62	36.08	32.70	23.01
Poland	40.47	17.83	33.98	6.66
Estonia	36.57	30.10	24.84	5.43
Slovenia	41.3	34.6	23.5	0.5
Hungary	45.29	32.03	17.88	1.18

* Weighted average

As far as differences in suppliers structure among manufacturing sectors is concerned, Mann-Whitney test in part reflects the pattern in sales structure. Sectors, which export significantly more to foreign parent companies or other foreign buyers (DB – textiles and textile products, DC – leather and leather products, DM – transport equipment), source significantly less locally; sectors, which exports significantly less to foreign parent companies or other foreign buyers (DA – food beverages and tobacco) source significantly more locally. Other sectors which source significantly more from foreign parent companies and significantly less locally are DL – electrical and optical equipment, DN – furniture and other manufacturing, while sector DH – rubber and plastic products sources significantly more locally and significantly less abroad.

5.3 Effects of industrial integration on local subsidiaries

Questionnaire enables us to get some idea of the magnitude and types of changes in local subsidiaries since they became FIEs. The changes were classified into five categories, changes in value of sales, changes in exports, changes in productivity level, changes in technology level and changes in quality level. The analysis put forward two main features of the magnitude of changes in sample FIEs (see Table 5.3).

First, FIEs estimate that the intensity of changes is very similar for productivity, technology and quality. Moreover, differences in improvements in these three categories are statistically not significant across five countries (With the exception of Slovenian FIEs where magnitude of changes in the quality changes has been significantly lower

than in total sample average). This lack of differentiation in magnitude of changes suggests that technological improvements in CE are still very much focused around quality, training and organisational improvements, *i.e.* around production capability. Nevertheless, there are some statistically significant differences across manufacturing sectors. Magnitude of productivity changes in DB – textiles and textile products has been significantly higher than total sample average, while vice versa is true for DG – chemicals and man-made fibres. DD – wood and wood products and DG - chemicals and man-made fibres have experienced significantly lower than average magnitude of changes in quality.

Table 5.3: Magnitude of changes since the registration of a company as FIE*

Countries	Value of total sales	Share of exports	Level of productivity	Level of technology	Level of quality
Total**	0.50	0.45	0.56	0.55	0.56
Slovenia	0.61	0.57	0.57	0.51	0.46
Hungary	0.59	0.39	0.61	0.56	0.56
Poland	0.46	0.35	0.54	0.58	0.58
Estonia	0.69	0.46	0.56	0.56	0.56
Slovakia	0.26	0.57	0.54	0.51	0.60

* Magnitude of changes ranges from -1=considerable reduction, -0.5=reduction, 0=no change, 0.5=increase and +1=considerable increase. ** Weighted average.

Second, changes in sales and exports are somewhat lower in intensity, especially as far as exports are concerned. Lower magnitude of changes in exporting suggests that maybe FIEs were exporters already before take-over. Higher experienced increase of sales when compared to exports may also suggest that subsidiaries have actually strengthened their local market orientation. Mann-Whitney test suggests significantly higher than total sample average magnitude of change in sales for Hungary and Estonia and significantly lower for Slovakia. Slovak FIEs are the only ones, which recorded significantly higher than average magnitude of changes in exports. There are no significant differences among manufacturing sectors as far as magnitude of changes in sales is concerned. Magnitude of changes in exports has been significantly higher than total sample average in DJ – basic metals and products, and significantly lower in DA – food, beverages and tobacco and DI – non metal mineral products.

5.4 Competence profile of subsidiaries

Key sources of competitiveness of subsidiaries are quality control (0.836 on the scale between 0=not important and 1=extremely important) and management capabilities (0.778), followed by trained labour force (0.698) and further behind by R&D and licences (0.532). This further reinforces view that CE subsidiaries base their market position on developed production, much less on technology capabilities. This is the most visible in case of Hungary where the difference in the importance of quality vs. R&D as sources of competitiveness is the biggest. Among the analysed countries, Polish

and Slovenian subsidiaries consider R&D/licences as relatively the most important source of their competitiveness (see Table 5.4). In Polish case this may be expected given local market orientation of Polish subsidiaries. In the Slovenian case it my be linked to greater autonomy of Slovenian FIEs in strategic management and planning, and product development. This pattern seems to be confirmed by Mann-Whitney test, showing R&D/licenses as significantly more important than total sample average area of competitiveness in the case of Polish FIEs and vice versa in the case of Hungarian FIEs. For Hungarian FIEs quality control is significantly more important than total sample average area of competitiveness, while for Estonian FIEs this is true for trained labour force.

Table 5.4: Areas of competitiveness of FIEs

Areas of competitiveness	Importance*					
	Estonia	Slovenia	Poland	Slovakia	Hungary	Total**
Quality control assistance	0.801	0.861	0.811	0.822	0.895	0.836
Management	0.765	0.767	0.791	0.770	0.780	0.778
People and training	0.791	0.726	0.676	0.679	0.675	0.698
Patents, licences, R&D	0.536	0.576	0.579	0.520	0.419	0.532

* Importance of areas of competitiveness ranges from 0=not important, 0.25=little important, 0.50=important, 0.75=very important, 1=extremely important. ** Weighted average.

Statistically significant sectoral differences in various areas of FIEs competitiveness are quite few. There are no statistically significant differences in quality control, probably because it is very important for all the sectors. For DB – textiles and textile products and DN – furniture and other manufacturing R&D/licensing is significantly less important area of competitiveness than on average for the sample, what is to be expected. On the other hand, training for DE – paper, publishing and printing, and management for DH – rubber and plastic products and DI – non-metal mineral products are significantly more important areas of competitiveness than for total sample average.

5.5 Internal and external sources of competitiveness

Competitiveness of subsidiaries may be due to their own activities or due to reliance on foreign parent or other external organisations. Data allow us to trace whether the key sources of competitiveness are internal or external to subsidiary. Table 5.5 shows areas of competitiveness by sources of this competitiveness. If we take 0.5 (on the scale between 0=not important and 1=extremely important, *i.e.* equivalent to important source) as threshold level of importance of a source a few conclusions can be drawn. (i) First, subsidiary's (FIE's) own activities and relationship to foreign parent company are the most important sources of their competitiveness in all four areas (quality control; management, training, R&D/licences). (ii) Second, only in quality control subsidiaries are significantly dependent on value chain partners (local and foreign suppliers and buyers). (iii) Third, other local subsidiaries of foreign parent company and other organisations are not important source of competitiveness for subsidiary in any area.

This reinforces conclusions about dyadic or in this case value chain driven determinants of productivity for subsidiaries.

Table 5.5: Sources of individual areas of competitiveness of FIEs*

Sources	Quality control assistance	Management	People and training	Patents, licences, R&D
Total - all countries**				
Own company	0.82	0.79	0.72	0.50
Foreign parent	0.61	0.66	0.5	0.57
Other foreign buyers	0.55	0.35	0.29	0.31
Other foreign suppliers	0.51	0.3	0.26	0.3
Other local subsidiaries	0.23	0.21	0.19	0.16
Other local buyers	0.52	0.36	0.3	0.28
Other local suppliers	0.52	0.32	0.29	0.28
Other organisations	0.35	0.32	0.35	0.31
Slovenia				
Own company	0.83	0.77	0.75	0.60
Foreign parent	0.62	0.47	0.62	0.63
Other foreign buyers	0.64	0.30	0.33	0.38
Other foreign suppliers	0.60	0.25	0.28	0.35
Other local subsidiaries	0.11	0.06	0.09	0.09
Other local buyers	0.50	0.30	0.31	0.30
Other local suppliers	0.55	0.25	0.27	0.30
Other organisations	0.33	0.41	0.36	0.32
Slovakia				
Own company	0.81	0.76	0.72	0.43
Foreign parent	0.72	0.73	0.57	0.60
Other foreign buyers	0.63	0.53	0.35	0.27
Other foreign suppliers	0.61	0.49	0.38	0.31
Other local subsidiaries	0.35	0.31	0.27	0.18
Other local buyers	0.56	0.44	0.32	0.23
Other local suppliers	0.62	0.47	0.40	0.27
Other organisations	0.40	0.42	0.38	0.37
Hungary				
Own company	0.91	0.81	0.73	0.40
Foreign parent	0.49	0.61	0.37	0.48
Other foreign buyers	0.52	0.21	0.16	0.20
Other foreign suppliers	0.45	0.16	0.11	0.18
Other local subsidiaries	0.13	0.11	0.08	0.07
Other local buyers	0.48	0.25	0.14	0.15
Other local suppliers	0.47	0.20	0.15	0.17
Other organisations	0.26	0.28	0.31	0.23

...continued overleaf

Sources	Quality control assistance	Management	People and training	Patents, licences, R&D
Poland				
Own company	0.81	0.78	0.68	0.56
Foreign parent	0.70	0.61	0.55	0.60
Other foreign buyers	0.33	0.45	0.30	0.33
Other foreign suppliers	0.30	0.39	0.26	0.30
Other local subsidiaries	0.31	0.33	0.31	0.26
Other local buyers	0.38	0.55	0.35	0.36
Other local suppliers	0.32	0.49	0.33	0.33
Other organisations	0.27	0.42	0.35	0.36
Estonia				
Own company	0.77	0.77	0.75	0.39
Foreign parent	0.61	0.51	0.55	0.44
Other foreign buyers	0.62	0.36	0.44	0.34
Other foreign suppliers	0.66	0.33	0.35	0.38
Other local subsidiaries	0.15	0.09	0.14	0.05
Other local buyers	0.52	0.40	0.42	0.26
Other local suppliers	0.55	0.33	0.37	0.26
Other organisations	0.24	0.28	0.28	0.18

* Importance of sources ranges from 0=not important, 0.25=little important, 0.50=important, 0.75=very important, 1=extremely important. ** Weighted average.

Country specific patterns of sources of competitiveness show the following two differences when compared to average aggregate pattern. (i) First, Slovenia's, Slovakia's and Estonia's pattern is the most similar to the aggregate one. We should remember that their subsidiaries are the most export intensive, which makes them in quality control dependent on foreign parent but also on foreign suppliers and buyers. However, in quality control they are also relatively strongly dependent on local buyers and suppliers. This dependence is not so strong as from foreign partners but is still above 0.5. Again, this may be due to strong export orientation of their subsidiaries, which are forced to meet export quality requirements and thus are dependent on quality of their partners. (ii) Second, Poland and Hungary are the least dependent on their value chain partners. More local market oriented nature of their subsidiaries led to situation that for quality control they are more dependent on local suppliers/buyers than on foreign. Unlike Hungarian, Polish subsidiaries are strongly dependent on foreign parent in all areas of competitiveness. Hungarian subsidiaries are relatively less dependent on foreign parent and consider their own quality control as by far the most important source of their competitiveness.

Country differences are important in terms of balance between external and internal sources of competitiveness. Moreover, we can observe country specific patterns of dependencies of companies on external vs. internal sources of competitiveness. Mann-Whitney test of differences among the countries shows statistically significant differences from total sample averages for Hungary in 22 out of 32 possible pairs of

areas and sources of competitiveness, for Estonia in 10, for Poland and Slovakia in 9 and for Slovenia in 7.

Hungary, obviously stands out as a rather specific in terms of sources of competitiveness. The pattern for Hungary is that FIEs themselves are significantly more important for quality control but less for R&D/licenses. Foreign parents are significantly less important in quality control and training. Other foreign buyers from and sellers to Hungarian FIEs are significantly less important source in all areas of competitiveness, except in quality control. The same is true for domestic buyers and sellers of FIEs. In Hungary, FIEs themselves seem to be even more important for quality control than on average for the sample, and vice versa goes for foreign parents. This has to do with higher importance of local market in the case of Hungarian FIEs. Hungarian FIEs also lean more than sample FIEs on average on their buyers and sellers as far as quality control is concerned.

In Poland, FIEs themselves are less important source of quality control and training than sample FIEs on average. Contrary to the situation in Hungary, foreign buyers and sellers are less important source of quality control, but domestic buyers and sellers are significantly more important than in the total sample average. Obviously, domination of local market in Polish FIEs sales structure makes its actors the main criteria for quality.

Mann-Whitney test does not provide a clear common pattern of significant differences in sources of competitiveness for FIEs from the smaller three countries Estonia, Slovakia and Slovenia. The only real difference is that foreign buyers and sellers seem to be significantly more important source of competitiveness for them than on average for total sample FIEs. This has to do with higher export orientation of FIEs from these three countries.

Analysing significance of differences by different sources of competitiveness shows the following: (i) for FIEs themselves as a source of competitiveness, there are some significant differences in all the countries except Slovakia, (ii) for foreign buyers and sellers Slovakia, Hungary and Estonia show significant differences, (iii) for domestic buyers and sellers only Hungary shows some significant differences, (iv) while for foreign parent companies there are very few significant differences among countries. Given the high importance of foreign parent in all areas of competitiveness for subsidiary the latter suggests that the CE subsidiaries in all countries are strongly and similarly dependent on foreign parents.

Differences among manufacturing sectors in their sources of competitiveness are very few. Mann-Whitney test shows some statistically significant differences from total sample averages only in: (i) DA – food, beverages and tobacco, where foreign parents are significantly less important source in all areas of competitiveness, (ii) DB - textiles and textile products, where domestic buyers and sellers are significantly less important

source, and (iii) DI – non metal mineral products, where FIEs themselves are significantly more important source of competitiveness.

5.6 Financial integration

Similar to competence flows, CE subsidiaries are in terms of financial flows dependent on their own retained earnings (average mark 0.692 on the scale between 0=not important and 1=extremely important) and on foreign parent company (0.618). Despite significant country differences, retained earnings and foreign parent company are the two most important sources of finance for all of them. The situation is somewhat different only in Hungary where domestic sources, either banks or other firms, are more important source than foreign parent company (see table 5.6). This corresponds to relatively smaller reliance of Hungarian subsidiaries on foreign parent companies as source of competitiveness. Some correspondence between competence flows and financial flows can also be observed in correlation between reliance on foreign parent company as a source for quality control and foreign parent company as source of finance. Correlation coefficient between these two variables for five CE countries is 0.77. Reliance of subsidiaries on foreign sources other than foreign parent is the biggest in Poland. This may reflect relatively the highest costs of local finance for Polish firms.

Mann-Whitney test sheds some additional light on country differences in sources of finance for FIEs. For Hungarian FIEs, other domestic sources are significantly more important source of finance than on average, while other foreign sources significantly less. For Slovak FIEs, retained earnings are significantly more important source of finance than average, while vice versa is true for other domestic sources. For Polish FIEs, retained earnings are significantly less important and other foreign sources significantly more important.

Table 5.6: The importance of various sources of finance of FIEs*

Country	Retained earnings	Foreign owner company	Other domestic sources (banks, other firms, *etc*...)	Other foreign sources (banks, other firms,...)	Other domestic subsidiaries of foreign owner
Slovakia	0.801	0.632	0.395	0.247	0.088
Hungary	0.732	0.528	0.627	0.168	0.048
Slovenia	0.699	0.562	0.462	0.285	0.035
Estonia	0.681	0.656	0.468	0.287	0.041
Poland	0.613	0.672	0.478	0.324	0.215
Total**	0.692	0.618	0.488	0.270	0.112

* Importance of sources ranges from 0=not important, 0.25=little important, 0.50=important, 0.75=very important, 1=extremely important. ** Weighted average.

There are very few statistically significant sectoral differences in FIEs sources of finance. Retained earnings are significantly more important source than average in DH – rubber and plastic products, foreign parent company is significantly more important than average in DE – paper, publishing and printing, other domestic sources are significantly

more important than average in DA – food, beverages and tobacco, while other foreign sources are significantly less important than average in DA – food, beverages and tobacco.

5.7 Upgrading activities

In this section, we analyse upgrading activities of CE subsidiaries. The analysis is composed of two issues, who initiates changes in FIEs, and how the future mandate of FIEs will evolve. In particular, our data enable us to analyse, who initiates what kind of upgrading and what is the likely change of the subsidiaries' mandate. We distinguish between functional upgrading (organisation and business functions), product diversification (number of lines of businesses) and sale upgrading (sales and exports).

Table 5.7.1: Who gives initiative for changes*

Countries	Organization and business functions	Number of lines of business	Sales and exports
Total**	0.38	0.48	0.43
Slovenia	0.37	0.43	0.43
Slovakia	0.38	0.61	0.54
Hungary	0.30	0.46	0.46
Poland	0.44	0.50	0.39
Estonia	0.33	0.31	0.31

* Indicators are calculated by giving individual answers the following weights: 0=only FIE, 0.33=mainly FIE, 0.66=mainly foreign parent, 1=only foreign parent. The nearer is indicator to 0 the more initiatives have been undertaken by FIEs themselves and vice versa. ** Weighted average

Table 5.7.1, on who is the initiator of changes in FIEs, ranges initiatives indicator between 0=FIE itself and 1=foreign parent. The nearer is indicator to 0 the more initiatives have been undertaken by FIEs themselves and vice versa. The table suggests several conclusions. (i) First of all, in all three aspects (organisation and business functions, number of lines of businesses, and sales and exports) FIEs themselves are more frequent initiator of changes than foreign parent companies. In overall, local subsidiaries thus seem to have a high degree of autonomy within their charter; initiatives indicator varies from 0.31 (lines of businesses in Estonia) to 0.61 (lines of businesses in Slovakia). (ii) Second, in all the countries, except Slovakia, FIEs are more important initiator of changes than foreign parent companies. On average foreign owners are relatively the most frequent initiator of change in Slovakia and the least frequent in Estonia. Mann-Whitney test confirms these differences of Slovakia and Estonia from total sample average as statistically significant. It is difficult to interpret these differences as they may reflect industry differences, which are significant for sales and for number of lines of businesses. (iii) Third, foreign parents most frequently initiate changes in terms of product diversification (number of lines of businesses), then in terms of decisions regarding sales and exports. Foreign parents are the least involved as initiators of changes regarding organisation and business functions. This latter may

suggest that subsidiaries have certain degree of autonomy to expand on their mandate irrespective of their current charter. However, as foreign parents initiate more frequently changes regarding products and sales/exports, changes in organisations and business functions are more likely to be changes only within the existing charter of subsidiary. (iv) Fourth, there are only very few statistically significant differences among manufacturing sectors in terms of who is the initiator of changes. These differences are as a rule in sales and exports and are present in DA – food, beverages and tobacco, where foreign parents have significantly lower initiative for changes than on average in total sample, while the situation in DC – leather and leather products and DM – transport equipment is the opposite. This may have to do market orientation of this sectors.

Table 5.7.2: Development of future mandate of FIEs *

Countries	Sales and exports	Number of other business functions undertaken independently	Number of lines of businesses
Total*	0.414	0.383	0.506
Slovenia	0.667	0.319	0.472
Slovakia	0.474	0.455	0.500
Hungary	0.321	0.205	0.238
Poland	0.331	0.503	0.704
Estonia	0.349	0.279	0.395

* Indicators are calculated by giving individual answers the following weights: +1=increased mandate of FIE, 0=unchanged mandate, -1=decreased mandate of FIE. The nearer is indicator to +1 the more the future mandate of FIE will increase and vice versa for -1. ** Weighted average.

Table 5.7.2 reveals directions in which FIEs expect their future mandate will evolve. On average the FIEs from all the countries in all the areas expect that their future mandate will increase; the highest increase is expected in the number of business lines (0.506), followed by sales and exports (0.414) and finally by the number of business functions to be undertaken independently by FIEs (0.383). There are significant country differences in terms of the expected increase of their current mandate. On average, Hungarian and Estonian FIEs expect lower increase of their mandate than FIEs from other three countries. The lowest increase of mandate is expected by Hungarian FIEs in business functions (0205) and in lines of business (0.238), and by Estonian FIEs in business functions (0.279). The highest increase is expected by Polish FIEs in number of business lines (0.704) and business functions (0.503), by Slovenian FIEs in sales and exports (0.667) and by Slovak FIEs in number of business lines (0.500). Mann-Whitney test confirms the above country differences and shows statistically significant differences from total sample average for Slovenian FIEs in sales and exports (higher than average increase of mandate), for Poland and Hungary in organisation and business functions and in lines of businesses (higher than average for Poland and lower for Hungary), and for Estonia in lines of businesses (lower than average). However, these differences are not significant across industries, which suggests that perhaps market orientation of

subsidiaries, which is a country specific variable, remains the key intervening variable regarding prospects for changes in mandate.

It is difficult to interpret these differences and why Hungarian and Estonian FIEs expect lower increase if their mandate than those from Slovakia, Poland and Slovenia. It seems that Slovenian subsidiaries will continue to evolve as exporters but which are capable for functional upgrading. Given that Slovenian subsidiaries rank the best in terms of the role of R&D this proposition may have some basis. Polish subsidiaries expect the most often increases in terms number of lines of businesses. Given their dominantly local market orientation this further product diversification may be consistent with that orientation.

5.8 Conclusions

In this section, we examined the key features of industrial integration of the CE at subsidiary level. Following our four research questions (see section 3) we examined integration of local subsidiaries and patterns of their upgrading by exploring the degree of their autonomy, market orientation, and competence profile, sources of finance and effects and patterns of subsidiaries' upgrading.

Subsidiaries have the biggest autonomy in operational functions (accounting & finance, supply and logistics, operations, and process engineering) and the smallest in strategic functions (determining product price, investment finance, product development and strategic management). Operational and strategic autonomy is the biggest in Slovenia while operational autonomy is the smallest in Slovakia. There are some indications that levels of autonomy in marketing and in strategic functions are linked. We explain differences in functional autonomy across five CE by the nature of their inherited capabilities and by market orientation of subsidiaries.

In terms of market relationships, the CE subsidiaries are in dyadic relationships with very limited local networking. These dyadic relationships are confirmed by data on sources of purchases from other domestic subsidiaries of foreign parent. However, local purchases of inputs as well as local sales are strong due to frequent local market seeking nature of FDI.

Industrial integration through FDI led to big increases in productivity, technology and quality. Moreover, differences in improvements in these three categories are statistically not significant across five countries.

Key sources of competitiveness of subsidiaries are quality control and management capabilities, followed by trained labour force and further behind by R&D and licences. This confirms the view that CE subsidiaries base their market position on developed production, much less on technology capabilities. The most important source of

competitiveness for subsidiaries are their own activities, foreign parent and in quality control value chain partners.

Local subsidiaries seem to have a high degree of autonomy within their charter, as they are those that most often who initiate changes. However, within that pattern Slovakia, Hungary and Estonia subsidiaries do not expect changes in their mandates while Polish and Slovenian expect changes, which will further reinforce their market orientations.

6 Literature

Bartlet, C. A. and Ghoshal, S. (1989) *Managing Across Borders: The Transnational Solution*, Boston: HBS Press.

Birkinshaw, J. and Hood N. (eds) (1998) *Multinational Corporate Evolution and Subsidiary Development*, London, Macmillan.

Blomstrom and Kokko, (1998) Multinational corporations and spillovers, *Journal of Economic Surveys*, Vol. 12, No. 3, pp. 247-277.

Burgelman, R.A. (1983) A process mode of internal corporate venturing in the diversified major firm, *Administrative Science Quarterly*, Vol. 28, pp. 223-244.

Craig, C.S. and S.P. Douglas (1997) Managing transnational value Chain – Strategies for Firms from Emerging Markets, *Journal of International Marketing*, Vol. 5, No. 3, 1997, pp. 74-84.

De Mello, R. Lutz, Jr., (1997) Foreign direct investment in developing countries and growth: A selective survey, *Journal of Development Studies*, Vol. 34, No. 1, October, pp. 1-34.

Damijan, Jože P., B. Majcen, M. Rojec, M. Knell (2001) *The Role of FDI, R&D Accumulation and Trade in Transferring Technology to Transition Countries: Evidence from Firm Panel Data for Eight Transition Countries*, Working Paper No. 10, Ljubljana: Institute for Economic Research.

Gorg, H. and Greenaway, D. (2002) *Foreign direct investment and intra-industry spillovers*, UNECE, Geneva, www.unece.org/ead/ffd.htm.

Helleiner, G.K. (1989) Transnational Corporations and Direct Foreign Investment, in Chenery, H. and Srinivasan, T.N. (eds.), *Handbook of Development Economics*, Vol. II, North Holland, pp. 1442–1480.

Hunya, G. (2000) *Integration through Foreign Direct Investment*, Edward Elgar, Cheltenham, pp. 130-149.

Ozawa, T. and Castello, S. (2001) *Multinational companies and endogenous growth: An eclectic – paradigmatic approach*, Working Paper No. 27, May, Economics series, East – West Center, Honolulu, pp.19.

Penrose, E.T. (1959) *The theory of the growth of the firm*, Oxford, England, Basil Blackwell.

Porter, M.E. and Sachs, J.D. and Cornelius, P.K. and McArthur, J.W. and Schwab, K. (2002) *World Competitiveness Report 2001-2002*, New York: Oxford University Press.

Radosevic, S. (1999) *International technology Transfer and Catch-Up in Economic Development*, Edward Elgar, Cheltenham

Rojec, M. (2000) Restructuring and efficiency upgrading with FDI, in Hunya, G. (2000) *Integration through Foreign Direct Investment*, Edward Elgar, Cheltenham, pp. 130-149.

Roth, K. and Morrison, J. (1992) Implementing global strategy: characteristics of global subsidiary mandates, *Journal of International Business Studies*, Vol. 23, No. 4, pp. 715-735.

Szalavetz, A. (2000) Adjustment of Hungarian engineering companies to the globalising corporate network, in Bara Z. and L. Csaba (2002) *Small Economies' Adjustment to Global Challenges*, Aula Publishing Ltd, Budapest, pp. 357-376.

Tavares, A.T. (1999) *Modelling the Impact of Economic Integration on Multinational's Strategies*, University of Reading Discussion Papers in International Investment and Management, No. 254.

Tavares, A.T. (2001) *Strategic Management of Multinational Networks: A Subsidiary Evolution Perspective*, Paper presented at the 6th International Symposium on International Manufacturing, 9th - 11th September 200, GLOBAL INTEGRATION, (The Symposium Proceeding, Institute for Manufacturing, University of Cambridge.

UNCTAD (2000) *World Investment Report 2000*, United Nations, New York and Geneva.

Young, S., Hood, N. and Dunlop, S. (1988) Global strategies, multinational subsidiary roles and economic impact in Scotland, *Regional Studies* Vol. 22, No. 6, pp. 487-97.

White, R. and Poynter, T. (1984) Strategies for foreign owned subsidiaries in Canada, *Business Quarterly*, (Summer), pp. 59-69.