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**THE ROLE OF COUNTRY, INDUSTRY AND  
FIRM SPECIFIC EFFECTS ON THE  
AUTONOMY OF A MULTINATIONAL  
CORPORATION'S SUBSIDIARY IN  
CENTRAL AND EAST EUROPEAN  
COUNTRIES**

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## **Abstract**

This paper examines the country, industry and firm specific effects on the autonomy of multinational corporation's subsidiaries across business functions in Estonia, Hungary, Poland, Slovakia and Slovenia. The novelty of the paper is in the deeper opening of the multidimensionality of the autonomy. Using the method of principal component four factors of autonomy are obtained: technology, marketing, management and finance. To analyse the country, industry and firm specific effects on the autonomy the analysis of variance (ANOVA) and multivariate analysis of variance (MANOVA) is used. Multivariate analyses helped us to show that autonomy of foreign subsidiaries is positively dependent on the level of economic development level of the host country. Also, subsidiaries in high technology intensity sectors are more closely engaged in corporate networks and are less autonomous.

**KEYWORDS:** subsidiary strategy, MNC subsidiary autonomy, multidimensionality of subsidiary autonomy, Central and East Europe

**JEL classification:** F23, O30, O57

## **Introduction**

Integration of Central and East European (CEE) countries into the European Union has accelerated the process of integration of firms from CEE countries into international production and technological networks. The inflow of foreign direct investments (FDI) has played a significant role in this process and foreign investors' involvement in the creation of subsidiaries in host countries has been accompanied by the transfer of knowledge and material assets.

Previous studies have attempted to explain variations in subsidiary autonomy, which can be divided into: multinational corporation's (MNC) characteristics; subsidiary characteristics; and environmental factors (See Björkman 2003). Usually, studies of MNC characteristics look at the size of the MNC and the effect of parent nationality on the subsidiary. The results for the impact of MNC characteristics have been mixed and there is no clear understanding about it. On the other hand the studies of subsidiary characteristics are richer and show a little more consistency than those of MNC characteristics. The most recent literature overview and discussion of gaps in research in this area has been given by Young and Tavares (2004). Much less has been analyzed

concerning the impact of environmental factors on autonomy, especially the host country role in providing opportunities for the subsidiary to develop external networks and increase autonomy through capability building.

The aim of this paper is to analyse the country, industry and firm specific effects on the autonomy of multinational corporation's (MNC) subsidiaries across business functions in five CEE countries. Research questions presented in the paper are based on the literature that focuses on subsidiary development and the multidimensional nature of subsidiary autonomy in MNC management research. The empirical analysis of the paper is based on a survey carried out in 433 firms from five CEE countries under the European Union's Fifth Framework Project 'EU Integration and the Prospects for Catch-Up Development in Central and Eastern European countries (CEEC): The Determinants of the Productivity Gap'.

This paper is structured as follows: the first section deals with the theoretical framework, including the development of research hypothesis. In the second section, the research method and data are described. This is followed, in the third section, by the empirical analyses of the autonomy of subsidiaries using principal component factor analysis and multivariate analyses (ANOVA and MANOVA) along all business functions and variables for country, industry, firm size and foreign ownership. Finally, conclusions about the heterogeneity of autonomy of subsidiaries will be drawn and future research plans are discussed.

## **Research framework**

### *The autonomy in the multinational corporation's subsidiary management research*

The research on MNC subsidiary management has evolved considerably over the last few decades. The interest of the research originally lay on the strategy and structure of the multinational corporation itself (see for example, Bartlett and Ghoshal 1986) as well as exploring headquarter-subsidiary relationships (see Brand and Hulbert 1976, Otterbeck 1981, Gates and Egelhoff 1986, Hedlund 1981, Roth and Morrison 1992). Later, a shift towards setting-up subsidiary-specific research questions is more often seen, whether theoretical or empirical discussions are concerned. Subsidiary roles received an increasing attention during the 1990s (see the recent overviews of the literature by Paterson and Brock 2002, Birkinshaw 2001, Young and Tavares 2004). In the current subsidiary development studies, specific topics such as drivers of subsidiary development, subsidiary-specific assets, subsidiary initiatives and changes in mandates are increasingly becoming a major focus of the research

(see for example, Birkinshaw and Hood 1998a, b). Subsidiary autonomy is one of the contemporary issues in the latter strand of research and the focus is increasingly “*on the local environment and the idea that the subsidiary can develop the organisation itself even in the absence of headquarter support*” (Paterson and Brock 2002, p. 147).

The main shift towards an increasing respect for subsidiary autonomy in the literature took place in the mid 1980s with the emergence of the subsidiary role stream. Harzing (1999) defines this period as the one where the principal change was in seeing multinational organisations more as international networks or heterarchies. The focus of the research fell more on subsidiary management and looking in detail at various strategic roles of subsidiaries in an entire network. The literature considered differences in roles within a single country (see for example, Jarillo and Martinez 1990, Taggart 1997) and across countries for a single MNC (see for example, Gupta and Govindarajan 1991). Ghoshal and Bartlett found links between autonomy and the ability to diffuse innovations through networks (1988, pp. 384–385). The more recent literature has considered subsidiary roles with different levels of autonomy (see for example, Gupta and Govindarajan 1991, Jarillo and Martinez 1990, Birkinshaw 1996, Taggart 1997).

The authors of the subsidiary development stream have attempted to balance headquarter’s (HQ) control and global integration with the need for national responsiveness (Paterson and Brock 2002, p. 147). Subsidiary development research has increasingly emphasized the endogenous nature of autonomy. This allows for the increasing influence of subsidiaries in serving corporate networks, as well as establishing external links with local partners. However, the autonomy is assumed to be both a cause and an expected result of subsidiary development and beneficial to the whole corporation (see for example, Forsgren et al 1992, Birkinshaw and Morrison 1995, Taggart 1997, Taggart and Hood 1999, Birkinshaw and Hood 1997). Therefore, progress towards the strategic autonomy of a multinational subsidiary tends to be reciprocal, not unidirectional (only assigned by the parent or only determined by subsidiary management).

The concept of the autonomy of MNC subsidiary is perceived in the literature in a number of ways. The current paper will follow the definitions given by Taggart (1997) and also Björkman (2003) in concentrating on the decision-making process between the parent and local branch, and measuring it across business activities or functions. The subsidiary autonomy is presently seen in the range of different value-adding business functions such as R&D, production, marketing etc., though more often just the distinction between strategic and operational decision within a value-adding activity is followed.

However, other elements of autonomy may be identified, too. For instance, Birkinshaw distinguishes between the types of subsidiary initiative, namely local market, global market and internal market initiatives (2000, pp. 22–30).

Autonomy *per se* is inadequate. First, it is associated with a positive motivation of subsidiary management. Granting the MNC subsidiary greater autonomy may encourage the subsidiary to promote initiatives (Young and Tavares 2004, p. 229). The greater the extent of subsidiary motivation and autonomy, the better is the ability of the subsidiary to form appropriate external network linkages with other companies and institutions in its own local environment (see for example, Cantwell and Mudambi 2005, Birkinshaw et al 1998, Andersson and Forsgren 2000). In its turn, the greater the local embeddedness of the subsidiary, the higher the likelihood that it will acquire a competence creating mandate (Cantwell and Mudambi 2005, p. 11). Thus, the link between subsidiary capacity development and the concept of embeddedness tends to be very close. It is emphasized by the scholars that it is not strategic independence *per se* that is important, but the manner in which freedom is used by the subsidiary in the context of competence-creating mandates (Ibid.).

Successful use of autonomy requires also power. By Brooke's definition, power "refers to the attributes or resources, which enable the authority to be exercised" (1984, p. 58). Birkinshaw and Ridderstråle associate power with "influence over people's behaviour and decision outcomes" (1999, p. 153). Sources of power, in turn, include subsidiary competencies/ resources including external relationships (see for example, Andersson and Forsgren 1996, Andersson and Pahlberg 1997, Prahalad and Doz 1987). Autonomy predominantly requires resources of different kinds including the managerial, technological or financial ones (Young and Tavares 2004, p. 216). A multinational subsidiary might be given more autonomy because it is in a better position than headquarters or other entities to serve the corporation (Taggart et al 2002, p. 14). As autonomy will in turn also favour collaboration and resource accumulation, the increase in autonomy could be expected to be, *ceteris paribus*, a cumulative process (Zanfei 2000, p. 525).

### *The multidimensional nature of the multinational corporation's subsidiary autonomy*

A number of previous studies have attempted to explain the variations in subsidiary autonomy, though the research tradition here is not very long. The autonomy of multinational subsidiaries according to business functions is a rather complicated area of research, which has produced conflicting views (for

a detailed discussion see, Björkman 2003, Young and Tavares 2004). The majority of studies have typically divided autonomy into strategic and operational autonomy across all business functions (see for example, Garnier et al 1979, Hedlund 1981, Young and Tavares 2004, Edwards et al 2002, Björkman 2003).

Hedlund (1981) stressed the idea that headquarters centralise issues of a strategic nature and leave operational issues in the hands of the subsidiary. More specifically, Hedlund found that finance is the most strategic issue, while most operational issues are about the organisation and the personnel. A similar point had been made earlier by Garnier et al (1979) who studied a total of 51 American firms operating in Mexico. But in addition they discovered that subsidiary autonomy tends to be highest in marketing issues. Manufacturing and organisation issues tend to flow between finance and marketing areas on the autonomy scale (Björkman 2003, p. 4). Results from the Young, Hood and Hamill study (1985) of 152 foreign subsidiaries in the UK indicated that decision areas that were most centralised were primarily financial (target return on investment, dividend and royalty policies), together with marketing decisions concerning markets supplied and entering new foreign markets, research and development (R&D) and technology choices. The research findings of Vachani (1999) on a basis of a data from a questionnaire survey of 63 multinational subsidiaries (randomly chosen from Dun and Bradstreet in 1990) suggest a greater autonomy for marketing and personnel decisions than for R&D and finance. Hence, subsidiary autonomy as between financial, marketing, manufacturing and other decisions varied a great deal. Most probably the least autonomy is experienced in financing and technology decisions.

Edwards et al (2002) explained this outcome rather convincingly by stating that integrated issues are highly centralised whereas locally responsive issues are more decentralised. Financial issues are highly integrated and relevant to the whole MNC. Marketing is often directed towards the local market and hence marketing issues could be decentralised. Personnel management is dependent on local legislation and consequently requires local operation, which gives higher autonomy to the subsidiary in these matters. Edwards et al carried out a survey among 527 subsidiaries of multinational subsidiaries in Malaysia. Other authors such as Martinez and Jarillo (1991) and Harzing (1999) noted that local-market-oriented subsidiaries tend to have greater autonomy. In general, subsidiaries have greater autonomy over decisions where they have superior information.

The conclusion drawn from the preceding discussion is that the functional autonomy of subsidiaries seems to be lowest in strategic issues such as finance

and technology issues and highest in operational areas including domestic marketing and personnel management. Thus, if the subsidiary has reached a power position in the MNC, where it has obtained high autonomy in strategic issues, the subsidiary should have strong subsidiary-specific advantages and perform better than its counterparts. Taking into consideration very divergent results (sometimes contradicting) of the observations it might be implied that a division into strategic and operational autonomy used in common might be too simplified an approach to cover the different aspects of the autonomy. The novelty of the current research is to go into the internal structure of the subsidiary across all business areas while not predetermining the strategic and operational business functions. The first hypothesis is the following:

Hypothesis 1: The autonomy of MNC subsidiaries is multidimensional across business functions

*Country-specific determinants of the autonomy of the multinational corporation's subsidiary*

The environment plays a role in the creation of capabilities of subsidiaries and allows obtaining subsidiary-specific advantages. The literature, mostly conceptual in nature (see for example, Cantwell 1989, Andersson and Forsgren 1996, Narula 2003), shows that the more developed the country in which the subsidiary is located in the sense of demand and the existence of potential sourcing partners and level of the national innovation system, the higher the likelihood is that the subsidiary could develop an extensive external network, improve different capacities, and finally gain more autonomy. The firm capabilities are dependent on the strengths of the local context.

While environmental influences on subsidiary autonomy acquire tremendous importance in the initial role of multinational subsidiary, the number of studies about them is surprisingly limited. The major part of studies produced by Rugman, Verbeke and others mainly convey conceptual ideas about the subsidiaries' roles and driving forces of subsidiary development (see for example, Birkinshaw and Hood 1998b, Birkinshaw, Hood and Jonsson 1998, Taggart 1997, Rugman and Verbeke 2001). On the other hand, studies of subsidiary autonomy tend to be limited in their understanding of the nature of autonomy (see the previous discussion of studies about subsidiary functional autonomy). However, recent research on subsidiary management has been already more intense in introducing environmental effects into subsidiary autonomy research.

The majority of the existing empirical papers on the subject deal with the development of subsidiaries and their links with headquarters in the advanced market economies. Significantly less research has been undertaken into the subsidiaries of MNC that are operating in emerging economies or in transition economies. In the relatively early study of Garnier (1982) analysing subsidiaries of US multinational manufacturing corporations located in France and Mexico, factors external to the corporation such as the local environment were estimated to play a limited role in subsidiary autonomy (p. 893). Rather the factors internal to the MNC (characteristics of the multinational corporation, management's global philosophy and the subsidiary itself) were found to be predominantly predicting the degree of autonomy. The authors explain that neither France nor Mexico could be considered as really risky environments for MNCs, which would lead the contextual factors then to be safely ignored or the scales measuring the environmental effects could overlook them.

By contrast, Garnier et al (1979) using only the Mexican data propose factors both internal and external to the multinational group to be effecting changes in subsidiary autonomy. Similar results were received from a survey in Canada, which highlights the fundamental role played by parent firm investments as well as the subsidiary's local environment via external organisations in the development of subsidiary capabilities (Frost, Birkinshaw and Ensign 2002). Gates and Egelhoff (1986) emphasise the specific influence of a dynamic environment on leading MNCs to decentralise decisions in the host economies (p. 85). Drawing parallels with the emerging and transforming markets, which are economically fast-growing, though structurally volatile, the local managers are more favoured to take decisions compared to their counterparts in other more stable countries. The external networks of subsidiaries in these countries are quickly changing, providing bases for much more rapid change in the capacities and also in their role in internal (corporate) networks (Hoskisson et al 2000). This is especially true where the MNC's internal network mainly consists of subsidiaries that are located in countries with a stable economic environment.

It is beyond the current study to compare different entities of the same MNC across five CEE countries as well as to estimate subsidiary autonomy in comparison to CEE and other more stable developed countries. But even in our case the five CEE countries are rather different according to the length of the transition period, FDI inflow, domestic market, etc. The autonomy of the multinational subsidiary is assumed to take different shapes depending on the economic level of the target economy as well as differing across various



business functions. As a result of this argument, it is reasonable to assume the following hypothesis.

Hypothesis 2: MNC subsidiaries are relatively more autonomous in more developed Central and East European transition countries

*Industry-specific determinants of the autonomy of the multinational corporation's subsidiary*

Industry characteristics tend to appear as one bundle of determinants changing the nature of multinational subsidiary autonomy and development. The main reasons behind this argument lie in the multifarious nature of industries, whether the subsidiary is located in high-, low- or medium-technology sectors, as well as the industry structure and its life cycle. The two latter components are to a large extent dependent on the development level of a country where the subsidiary is performing. In the 'frontier-sharing' countries (see for example, Narula 2003), high technology, knowledge-based industry sectors are dominating, in opposition to the situation in catching-up economies, where production from low- and medium-tech industries is the main force responsible for the economy. However, in the research as well as among policy-makers considerable efforts are made to encourage the integration between these two technological extremes, referring to the non-existence of a "black and white" world.

Subsidiary autonomy tends to enhance the creation of tight partnerships with local organisations. The greater the autonomy of the subsidiary, the bigger the likelihood that it is embedded in the local environment. The research on innovation management research widely highlights the importance of communication, both internally within firms and taking place externally taking place with other organisations for ensuring successful innovation in a firm (see for example, Dosi 1988, Rothwell 1992, Dodgson and Rothwell 1996, Dosi et al 2000, Lindqvist et al 2000). In these circumstances, stronger and systematic local cooperation between firms within a certain industry group and in partnership with other industries might stimulate foreign firms to gain from the production network structures. The presence and development of competitive local clusters should in turn give more decision-making power to local entities of multinational corporations.

The present research has proved the heterogeneous nature of the autonomy of multinational subsidiaries across industry sectors. Gates and Egelhoff (1986) saw centralisation of decision-making between the head-office and subsidiaries differing significantly according to the primary industry group in which the MNC operated (p. 83). Over the dimensions of subsidiary autonomy, this

argument received greater support for marketing centralisation. As has already been learnt from the autonomy pattern across business activities, the marketing area is more often related to local knowledge and skills than financing or technology issues (see Edwards et al 2002). This fact tends to be valid also in the industry context. Martinez and Jarillo (1991) and Harzing (1999) referred to the greater autonomy of subsidiaries among market-oriented subsidiaries. Gates and Egelhoff (1982) added that there is a greater variance between industries concerning local marketing decisions than concerning local manufacturing or financial decisions (p.83).

Other studies on industry effects over subsidiary autonomy relate to the topic of industrial clusters and the question of subsidiary embeddedness initiated at the beginning of the present discussion. In the high-technology industries, corporate or internal embeddedness in the forms of intense, close and frequent relationships with suppliers, customers and R&D units might be expected to play a more important role than in low-technology industries. If this were the case, it would be reasonable to predict that in these industries the autonomy of subsidiaries is lower, though depending on the opportunities provided by the local industry. Based on the literature in question, one might assume that the behaviour of high-tech subsidiaries in industrialised developed countries and in the catching-up countries may differ. Birkinshaw and Hood (2000, p. 141) found that subsidiaries of leading-edge industries<sup>2</sup> located in industrialised countries were more autonomous, highly embedded in the local cluster as well as more internationally oriented than subsidiaries in other industrial sectors. Similar results were obtained by Frost et al (2002) in Canada (see the previous discussion about country-specific effects on subsidiary autonomy). It is obvious that these subsidiaries can provide appropriate knowledge and skills for the whole corporation.

Conversely, in the context of catching-up economies this argument might not be supported. Or, in other words, technologies used in the classical science-based industry sectors there are not typically the last word in the sense of technology development. On the other hand, following an argument of von Tunzelmann and Acha (2005) innovation activities are not only taking place in science-based or high-technology industry sectors. Innovation activities in low-tech industry sectors as well as the integration of high- and low-tech industry sectors are getting more attention in both the research and the policy-making process. Similarly, not only technology knowledge is needed for the subsidiary to survive. It may be concluded that the autonomy of the multinational

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<sup>2</sup> According to Porter (1990), leading-edge industries capture all those clusters in which the share of world cluster exports is more than double the average for the country.

subsidiary tends to be greater in sectors of superior knowledge depending on the geographical location of a local unit. In the context of transition economies, the following hypothesis can be advanced.

Hypothesis 3: MNC subsidiaries are relatively more autonomous in manufacturing industries with bigger value-added contribution compared to other industries in Central and Eastern Europe transition countries

*Firm-specific determinants of the autonomy of the multinational corporation's subsidiary*

Autonomy and performance of multinational subsidiaries is assumed to be a function of both location and firm-specific contexts (see Cantwell 1989). The capabilities of local entities of multinational corporations tend to determine the scope of their autonomous role (see for example, Bartlett and Ghoshal 1986, Jarillo and Martinez 1990, Roth and Morrison 1992, Birkinshaw and Morrison 1995, Birkinshaw 1996). The more superior the knowledge that is acquired by the multinational subsidiary, the more independent in relation to the head-office, it will become. Knowledge accumulation has a heterogeneous nature and each firm follows its own technology path. The accumulation of knowledge as well as specifically the autonomy of the multinational subsidiary tends to be influenced by various firm-level variables. Among other influencing factors, building up an appropriate level of autonomy Brooke in his pioneering work on subsidiary autonomy includes the size of a firm, experience (age), and ownership structure as well as resources and capabilities (1984, pp. 296, 331). Moves to greater autonomy favour small size, divided ownership, on the other hand also specialised resources and initiatives by the subsidiary's management.

The impact of the size of the multinational subsidiaries on autonomy has produced mixed results. The size of the subsidiary might have a curvilinear (Hedlund 1981, Brooke 1984) or a mixed (Gates and Egelhoff 1986, Young et al 1985, Taggart and Hood 1999) effect on subsidiary autonomy. In the former case the subsidiary has a lower level of autonomy at its foundation, then gains autonomy until a certain size and afterwards starts to lose autonomy again. Young et al (1985) found that autonomy was lower in large subsidiaries and those with significant levels of exports to other group facilities. Taggart and Hood (1999) obtained conflicting results in studying subsidiary development patterns in 177 German and Japanese manufacturing subsidiaries in the British Isles. Their observation proved a positive relationship (nevertheless not statistically significant in this case) between employment and autonomy, but negative association (statistically significant) between sales and autonomy. This contradictory outcome raises the question about the appropriate measurement

of a subsidiary's size. Young and Tavares refer to the local entities with highest sales, which might be the most vertically integrated within the MNC and thereby the least autonomous (2004, p. 217).

In the early study by Garnier et al (1979), the percentage of the subsidiary's capital held by the parent was introduced as playing a role in the latter's decision to decentralise (p. 89). Their results found that larger foreign involvement in a firm did not favour the autonomy of a subsidiary. A similar conclusion has been reached by Garnier (1982) and Gates and Egelhoff (1986).

Based particularly on the previous empirical research on subsidiary autonomy, it is assumed that the subsidiary would also experience more freedom also if it is large in size or more experienced in terms of age. Although the empirical results about firm-specific features of multinational subsidiary autonomy are sometimes contradictory, these claims can be tested in the context of transition economies. The following hypothesis was built up in establishing the firm-level factors of the autonomy of MNC subsidiary.

Hypothesis 4: Large MNC subsidiaries are relatively more autonomous in comparison with small and medium-sized MNC subsidiaries

## **Research method**

### *Sample description and representativeness*

The following analysis is based on the database created as the result of the work in the EU Fifth Framework Project: 'EU Integration and the Prospects for Catch-Up Development in Central and Eastern European countries (CEEC): The Determinants of the Productivity Gap'. A special survey for Foreign Investment Enterprises (FIEs) was undertaken in 2001-2002. The target group was manufacturing enterprises with foreign ownership in Estonia, Hungary, Poland, Slovakia and Slovenia. The return rate was 19.7% or 433 questionnaires. The largest number of responses (35.5% of all) came from Poland, followed by Hungary with 18%, Slovakia 16.6%, Slovenia 16.6% and Estonia 11.5% of responses. By industries, the biggest share in the total sample of responses is in electrical and optical equipment branch (16.4% of total), followed by metals and metal products (14.1%), food, beverages and tobacco (10.2%), non-metal mineral products (9.0%), chemicals and man-made fibres (8.5%), rubber and plastic products (6.9%), clothing and textiles (6.5%). Of all the firms in the sample only 14.5% are minority foreign owned (see detailed info about sample in Männik et al 2004).

The representativeness of the sample was analysed from the size, ownership and industry position. Distribution of the firms by size is rather well balanced

(see comparative tables and detailed explanations in Männik et al 2004). Only the structures of Polish and Hungarian sample differ from other countries. The share of firms with more than 500 employees is around 25% in both countries. Small firms with less than 100 employees are prevailing in Estonia. The size of a country obviously has a major role in firm size. A comparison of mean ranks of the number of employees in the sample of FIEs by using the Mann-Whitney test (see Majcen et al 2003) shows statistically significant differences in individual countries from the total sample average in the case of Slovenia and Hungary. Slovenian firms are significantly smaller and Hungarian firms significantly larger than total sample firms. A comparison of manufacturing sectors shows a significantly higher than average number of employees per company only in food, beverages and tobacco and transport equipment. In all the other manufacturing sectors there are no statistically significant differences in the number of employees.

The sample is also quite well balanced in the distribution between industries and by the share of foreign ownership (see Table 4 in Männik et al 2004). Poland is the most strongly represented both by the number of firms and employment, which is in accordance with Poland's high share from the total stock of FDI in manufacturing. Slovenia and Estonia are moderately overrepresented and Hungary slightly underrepresented. In addition representativeness could also be evaluated comparing the number of firms included in the sample with the total number of firms with FDI in individual countries. From that point of view, sample firms represent 4.9% of all FIEs in the analysed countries. The highest share (23.8%) is in Slovenia, followed by Estonia with 12.4%, Poland with 3.5% and Hungary with 2.1%.

As the following analysis also requires some proxy about the development level of these five sample countries and differences between the types of the industry sectors (see explanation in the next section), the value added (in % of total value added in Table 1) and the productivity level is shown by the countries and industry groups (see Table 2). The structure of manufacturing industries of the countries analyzed in the paper is very different. The role of high-tech industries in the producing added value manufacturing varies from 9.6% in Slovenia down to 1.8% in Estonia and 1.6% in Slovakia. At the other end, the low-tech sectors were giving 58 % of added-value in Estonia or 44 % in Poland. Comparing those five CEE countries with EU15 then the structure of added-value in manufacturing sector in Slovenia and Hungary are much more converged toward EU.

**Table 1: The role of industry sectors in the creation of the total manufacturing value added (in % of total value added)<sup>3</sup>**

INDUSTRY GROUP	Slovenia (2001)	Hungary (2001)	Slovakia (1999)	Estonia (2001)	Poland (2000)	EU15 (2000)
High-Tech	9.6	8.4	1.6	1.8	2.4	13.7
Medium-high Tech	29.5	29.7	27.1	13.1	24	30.9
Medium-Low tech	25.2	26.8	20.5	21.2	29	24.4
Low tech	35.7	34	31.2	58.2	44.4	31.0
Not identified	0	1.1	19.6	5.7	0	0
<b>TOTAL</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: Authors calculations based on UNIDO Statistical database

(<http://www.unido.org/geodoc.cfm?cc=POL>) and Slovenian National Statistics; Eurostat 2003

The following Table 2 presents a brief overview about the productivity of manufacturing industries of the analyzed countries based UNIDO database. It should be taken into consideration that all results are converted into USD. However even this comparison indicates clearly that Slovenia and Hungary are leading by the added value per employee in all categories of industries. The result is also in compliance with the level of GDP per capita. Slovenian PPP based GDP per capita formed 74% of the EU average in 2002, Hungary 57%, Slovakia 47%, Estonia 42% and Poland 39% (Eurostat 2003).

**Table 2: Value added per employee in the manufacturing industries of five accession countries (in. thsd. USD annually)**

INDUSTRY GROUP	Slovenia (2001)	Hungary (2001)	Slovakia (1999)	Estonia (2001)	Poland (2000)
High-Tech	18849	14750	5290	6897	20508
Medium-High Tech	23485	30446	8395	10198	13360
Medium-Low Tech	18210	18383	8029	9746	14954
Low Tech	15870	10128	6970	7334	12063
TOTAL	18993	18753	7687	8263	13451

Source: Authors calculations based on UNIDO Statistical database

(<http://www.unido.org/geodoc.cfm?cc=POL>) and Slovenian National Statistics

<sup>3</sup> According to OECD classification high-tech sectors are following industries: 24.4, 30, 32, 33, 35.3; medium-high-tech: 24.0-24.3, 24.5-24.7, 29, 31, 34, 35.2, 35.4-35.5; medium-low-tech: 23, 25, 26, 27, 28, 35.0-35.1; low-tech: 15, 16, 17, 18, 19, 20, 21, 22, 36, 37 (NACE industry codes, 2003 European Innovation ...)

Interesting results are obtained from Table 2, which indicate that medium-high industries are with much higher productivity than high-tech industries. In the case of Hungary, the difference is 2.1 times and in Slovenia 1.2 times. A similar pattern was also found in Slovakia and Estonia. Poland was the only country, where the high-tech sectors were with the highest productivity. Another interesting result concerns the wider dispersion of productivity levels between low, medium-low and medium-high tech industries in Slovenia and Hungary. In other countries there were only minor differences in productivity levels.

Analysed countries are different when considering the speed with which they created themselves as attractive locations to the FDI inflow. Slovenia enjoyed a very early inflow of FDI as in 1990 the value of FDI was already 666 mill. US\$ (UNCTAD 2004). Hungary was another country, which in the early 1990s started to attract FDI. An extremely rapid increase took place between 1990 and 1994, when the value of FDI in Hungary increased 21 times from 569 up to 11919 mill. US\$ (UNCTAD 2004). On the other hand Estonia and Slovakia received first FDI only in 1991 and the rapid growth started only during the second half of 1990s.

#### *Analysis method and variables*

In the current paper the autonomy of subsidiaries is measured by business functions. In the survey companies were asked about the decision making process between the local affiliate and the parent company. The question asked was: Which business functions are being undertaken: a) on your own only, (b) mainly on your own, (c) mainly by your foreign owner, or (d) by your foreign owner only? From the survey answers were received about 13 business functions: product development, process engineering, determining the product price, supply and logistics, accounting and finance operations, investment finance, market research, distribution and sales, after sale services, advertising, marketing, operational management, strategic management of planning. Answers to questions were later standardised so that 0 indicated full autonomy in decision-making (taken on your own only) and 1 complete lack of autonomy.

The analysis was carried out in three stages. Because the business functions used in survey were closely interrelated it was necessary to use methods, which allowed the creation of statistically independent factors describing the internal structure of autonomy. Therefore the first stage of analyses involved principal component factor analysis to group 13 business functions. Proceeding from the latter approach, we received four new statistically independent factors. After analysing the factor scores four factors were identified: FACTMARK – related

with the following business functions: determining the product price, market research, distribution and sales, sale services, advertising, marketing; FACTTECH - including product development, process engineering, supply and logistics; FACTMAN – including operational management, strategic management or planning and FACTFIN – including accounting and finance of operations, investment finance (see Table 3).

**Table 3: Rotated Component Matrix of the principal component factor analysis**

Business functions	F1 FACTMARK	F2 FACTTECH	F3 FACTMAN	F4 FACTFIN
Product development	0.381	<b>0.769</b>	0.165	0.033
Process engineering	0.026	<b>0.865</b>	0.220	0.115
Determining product price	<b>0.657</b>	0.395	0.243	0.179
Supply and logistics	0.381	<b>0.518</b>	0.153	0.400
Accounting and finance operations	0.136	0.078	0.095	<b>0.903</b>
Investment finance	0.234	0.168	0.383	<b>0.545</b>
Market research	<b>0.877</b>	0.169	0.138	0.048
Distribution, sales	<b>0.868</b>	0.118	0.070	0.187
After sales services	<b>0.836</b>	0.120	0.075	0.138
Advertising	<b>0.875</b>	0.152	0.215	0.144
Marketing	<b>0.866</b>	0.153	0.237	0.142
Operational management	0.067	0.248	<b>0.794</b>	0.259
Strategic man. or planning	0.382	0.187	<b>0.783</b>	0.059

Note: F1 FACTMARK describes 49.977% of total variance (cumulatively 49.977%), F2 FACTTECH 12.548% (cumulatively 62.524%), F3 FACTMAN 7.485% (cumulatively 70.009%), F4 FACTFIN 5.790% (cumulatively 75.799%) based on initial eigenvalues.

In the second phase, analysis of variance (ANOVA) and on the third stage multivariate analysis of variance (MANOVA) were used to identify significant differences among the four groups of the factors and to distinguish country, industry, firm size and foreign ownership features in CEE manufacturing subsidiaries. In addition to the question presented above, general information about the industry type, firm size, share of foreign ownership and year of registration of the company as a foreign investment enterprise was also asked for in the survey and was used in the current research. In relation to factor groups four dummies, for country (variable: DCOUNTRY), industry type (DACTIVITY), firm size (DEMPLOY) and foreign ownership (DEQUITY) were used as categorical dummies in the ANOVA and MANOVA tests.



Industries were grouped into four types of sectors: high-tech, medium-high-tech, medium-low-tech and low-tech using 3-digit NACE level classification of manufacturing industries according to OECD classification (see footnote 5). By size firms were divided into two groups: small and medium size enterprises (below 250), and large enterprises (250 and more employees). Foreign ownership was distinguished by minority (below 50%) and majority (equal and above 50%). The ANOVA test was performed individually for each categorical variable and the MANOVA test in a compound way (all variables taken into the test) across all four factors. The tests were controlled for univariate normality of the dependent variables (FACTTECH, FACTMARK, FACTMAN, FACTFIN) and a post-hoc procedure (Bonferroni, Tamhane's T2 tests) was processed to get the appropriate answers for distinguishing significant differences between pairs of variables. Concerning the normality test the first and two latter factors showed similarities with normal distribution. The FACTMARK is positively skewed showing too many locally independent affiliates in the five CEE countries. This departure might to create problems in further analysis. But it has to take into consideration that there is no test for multivariate normality and we could not make any serious conclusions on biases from normality tests. It is usually argued; if even all variables passed the univariate test that would not guarantee that multivariate normality would also be satisfied.

## **Results and discussion**

Using the method of principal components, four business function factors relating to autonomy were obtained (technology, marketing, management, finance). It supports our first hypothesis about the multidimensional nature of the multinational corporation's subsidiary autonomy. This finding enables us to analyse more precisely the country, industry and firm specific determinants on the four different aspects of autonomy and to abandon from the general notion of autonomy.

After the procedure of receiving appropriate scores for four factor groups first, ANOVA and then MANOVA testing were performed. Through the ANOVA test we see differences in mean ranks individually for each categorical variable in relation to four factor groups allowing analyses of different aspects of subsidiary autonomy (Table 4). Due to the standardisation of the original data before applying ANOVA the means in the table 4 have following interpretation - the higher the mean value the lower the autonomy of subsidiaries. Results from the table 4 clearly indicate to the big differences between autonomy level of subsidiaries depending on country, industry, size or ownership.

**Table 4: Means for categorical variables by four group of functions (ANOVA)**

<b>Categorical variable</b>	<b>FACTTECH</b>	<b>FACTMARK</b>	<b>FACTMAN</b>	<b>FACTFIN</b>
<b>Country:</b>				
Slovenia	0.31	0.34	0.25	0.18
Poland	0.40	0.26	0.45	0.29
Hungary	0.37	0.33	0.34	0.22
Slovakia	0.37	0.50	0.39	0.31
Estonia	0.35	0.32	0.37	0.37
Total average	0.37	0.34	0.38	0.27
<b>Industry:</b>				
High-tech	0.43	0.39	0.37	0.25
Med-high-tech	0.39	0.37	0.40	0.28
Med-low-tech	0.36	0.30	0.38	0.26
Low-tech	0.33	0.33	0.37	0.28
Total average	0.38	0.35	0.38	0.27
<b>Firm size:</b>				
SME	0.37	0.32	0.37	0.27
Large	0.36	0.37	0.39	0.26
<b>Foreign share:</b>				
Minority	0.21	0.16	0.22	0.14
Majority	0.40	0.37	0.41	0.29

Statistically significant differences in mean ranks provided by ANOVA were found in the case of countries, firm size and foreign ownership, but not in the case of industries. Therefore in Table 5 the industry row is omitted as the differences in means between factor components turned out not to be statistically significant. Consequently our third hypothesis about the autonomy being industry specific was not supported, but the second, fourth and fifth hypotheses were supported. Performing later MANOVA test it turned out that differences in industries are statistically significant combining country and industry categories (see later analysis).

**Table 5: Statistically significant means for categorical variables by four group of functions (ANOVA)**

Cat.variable	FACTTECH	FACTMARK	FACTMAN	FACTFIN
Country		F-stat: 7.617 p-value: 0.000	F-stat: 10.234 p-value: 0.000	F-stat: 9.273 p-value: 0.000
Firm size		F-stat: 3.843 p-value: 0.051		
Foreign ownership	F-test: 37.279 p-value: 0.000	F-stat: 24.778 p-value: 0.000	F-stat: 38.128 p-value: 0.000	F-stat: 27.288 p-value: 0.000

### *The autonomy - country features*

Our analysis allows us to look more deeply into the impact of country specific determinants on the autonomy as the latter is represented by four different aspects. ANOVA test proved that only differences in marketing, management and financing received significant means ranks in the comparison of five analysed countries (see above Table 5). It means that autonomy in the field of technology and production (FACTTECH) between analysed countries is not significantly different. But in other three aspects of autonomy, multinationals behaving differently depending on the countries.

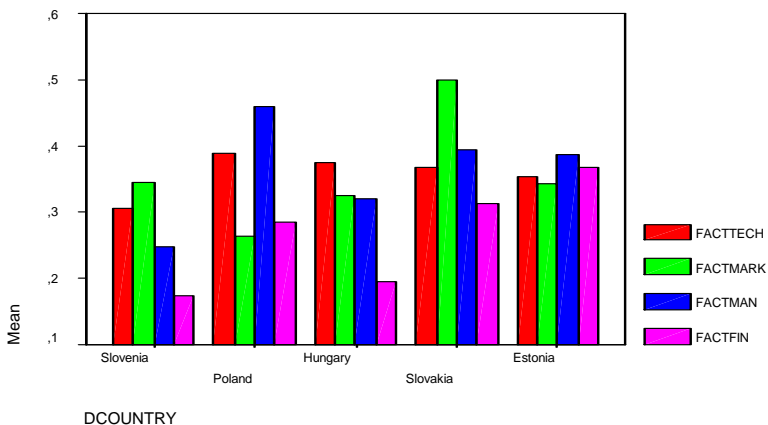
On the following Figure 1 the means of four factors representing different aspects of autonomy in five countries are compared. On the vertical axes the increase in the mean value indicates reduction of the subsidiary autonomy. The highest level of autonomy by all four aspects covered was that in Slovenia, followed by Hungary. This outcome is in line with the second hypothesis that subsidiaries located in the less developed transition countries have limited opportunities to develop extensive external networks and therefore their own lower level of autonomy. By the sophistication of domestic demand, development of local suppliers and also national innovation system Slovenia and Hungary are leading countries among transition economies, which is reflected in the much higher autonomy granted by foreign mother companies to the subsidiaries located in those countries.

Another result was that FACTFIN shows on average the highest autonomy (0.27 in Table 4) in subsidiaries of five CEE countries compared with other component factors. This is a surprising result and partly contradicts our hypothesis 1 about the functional autonomy of subsidiaries being the lowest in strategic issues including finance and highest in the operational areas including domestic marketing and personal management. The most autonomic subsidiaries by FACTFIN are clearly in Slovenia (0.18) and Hungary (0.22). Subsidiaries in these countries are the most autonomous also by the

management component. This is already more in line with our hypothesis 2 and shows that in these two countries the local capacity and development level of country environment have favoured autonomy of local subsidiaries. Estonian subsidiaries having the lowest financial autonomy (0.50) also support the hypothesis 1.

Comparing other countries, the management autonomy is lowest in Poland (see Fig.1 or value 0.45 in table 4). It appears that marketing autonomy is relatively similar across all countries except in Slovakia, which has extremely low autonomy in this area (0.50). It is shown that subsidiaries in Slovakia have a very high dependence on the parent company in terms of marketing and it may be associated with the role of Slovakian subsidiaries in the corporate internal network. Slovenian subsidiaries are highly export oriented and produce intermediate products, which requires close corporate links. In Poland, with a much bigger local market compared to the other four CEE countries and a greater orientation of subsidiaries to the domestic market, the local subsidiaries have received the highest autonomy in marketing, whilst the management autonomy has the lowest scores in all of the countries.

**Figure 1: Comparison of means of countries across four factor groups by ANOVA (the lower value indicates higher autonomy).**



This outcome indicates that the functional autonomy of subsidiaries is the highest in the operational areas including domestic marketing. It is an interesting result, which may indicate to the complexity of management in the subsidiaries in Poland, but also signal about the still low level of management

skills in these subsidiaries, which did not allow giving more autonomy to local subsidiaries. In this respect combination of high autonomy in marketing and low autonomy in management in Poland reflect the role of subsidiary power in obtaining more autonomy.

In general results at the country level showed that differences in autonomy between the more and less developed CEE countries are statistically significant. In Slovenia and Hungary as more developed countries, the foreign affiliates are more autonomic, preferably in strategic functions (finance and management). Estonian and Slovakian foreign subsidiaries have the lowest autonomy and particularly in Estonia the autonomy is equally low by four components. Therefore we can support the hypothesis 2.

The firm size performed statistically significant role using ANOVA on the autonomy of subsidiaries only in the case of marketing (see Table 5). Analysis shows that larger subsidiaries are more dependent on the parent firm (mean rank 0.37 for large firms, 0.32 for SMEs in table 4) in terms of marketing decisions. This leads to the preliminary conclusion that the marketing autonomy in subsidiaries decreases in relation to firm size. It may indicate that bigger subsidiaries are more vertically integrated into corporate networks and their export propensity is higher.

Analysing the degree of foreign ownership in relation to the autonomy of subsidiaries gave rather expected and straightforward results. ANOVA tests gave statistically significant mean scores for all (technology, marketing, management and financing) factor clusters. In all factor groups the majority owned foreign subsidiaries had lower autonomy. For example in the minority owned subsidiaries the mean for marketing autonomy was 0.16 against 0.37 in majority group or 0.14 for autonomy in finance in minority owned firms against 0.29 in majority group (see Table 4).

### *The autonomy - industry features*

Previous analysis showed the distinctions between subsidiary roles in all types of autonomy by only measuring all variables individually. In order to understand the influences of variables on the subsidiary role, integrated analysis was executed. Table 6 presents results of analysis with three categorical and four dependent variables (component factors describing different aspects of autonomy). MANOVA tests resulted in significant differences in mean ranks again for country and firm size dummies (see Table 6). Although management autonomy showed some departures from the first results (F-statistic is significant only at a 10% level).

**Table 6: Statistically significant means for categorical variables (country, industry, firm size) by four group of functions (MANOVA)**

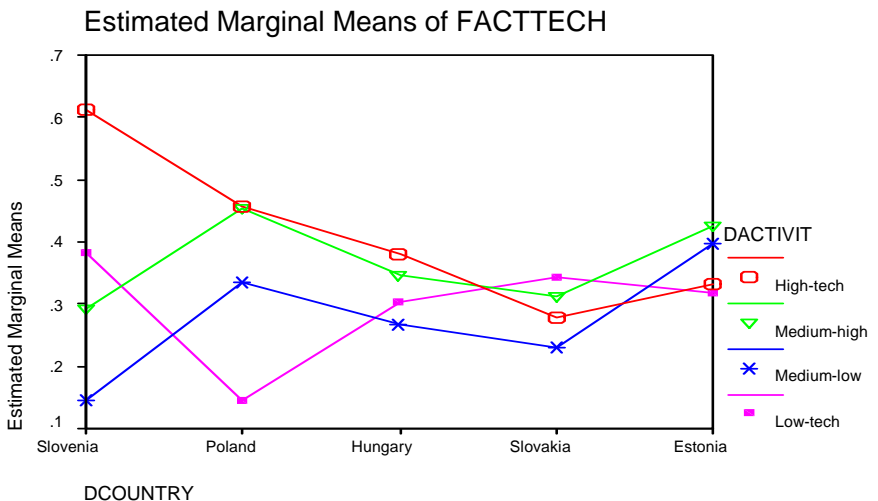
Integration between cat. variables	FACTTECH	FACTMARK	FACTMAN	FACTFIN
Country		F-stat: 7.188 p-value: 0.000	F-stat: 2.243 p-value: 0.064 (sign.10% level)	F-stat: 5.035 p-value: 0.001
Firm size		F-stat: 5.223 p-value: 0.023		
Country * Industry	F-test: 3.133 p-value: 0.000		F-stat: 2.051 p-value: 0.020	
Firm size * Industry	F-test: 3.932 p-value: 0.009			
Country * Firm size * Industry	F-test: 1.880 p-value: 0.054			

By interpreting results about the role of industry on the autonomy of a subsidiary we discovered through ANOVA that difference of means ranks were not statistically significant. Now using integrated analyses combining industry and country categories industry sectors start to play a significant role in terms of subsidiaries autonomy by technology and management autonomy (p-value 0.000 in case of technology, p-value 0.020 in the case of management) and firm size in terms of technology autonomy (p-value 0.009) of subsidiaries (Table 6).

Technology factor (FACTTECH) related to activities in product development, process engineering, supply and logistics significantly determines the autonomy of a subsidiary in five countries. In order to analyse this interesting result in a more detailed way the following Figure 2 presents estimated marginal means of factors in five countries in relation to industries. Figure 2 shows that autonomy of subsidiaries by FACTTECH is most industry dependent in Slovenia and Poland. The Slovenian subsidiaries have the biggest variation in autonomy by four types of industry sectors. Referring to the earlier results, of all the countries Slovenia had the highest autonomy in strategic business functions, especially in relation to management and financing. The combined country and industry analyses revealed that high-tech sector subsidiaries of Slovenia should despite appropriate level of skills in management and financing rely on corporate networks and be satisfied with lower autonomy than in other industry sectors. In the area of technology and production (FACTTECH), their autonomy is the lowest in the high-tech and low-tech sectors and highest in the

medium-high- and medium-low-tech sectors. The low autonomy in high-tech subsidiaries supports our discussion by defining hypothesis 3 about subsidiaries from high-tech industries being more closely engaged in corporate networks and having lower autonomy than subsidiaries in low-tech industries. But Slovenian results indicated that autonomy of subsidiaries by industries had a curvilinear character as next to the high-tech also low-tech industry subsidiaries had low autonomy. This result could be explained by the low negotiation power of these subsidiaries reflected in the low productivity level in this group (see Table 2). The important role of productivity level as the proxy for strong negotiating power of a subsidiary is further supported by the fact that medium-high- and medium-low-tech sectors had the highest productivity level.

**Figure 2: Estimated marginal means between country and industry dummies by component factor FACTTECH**

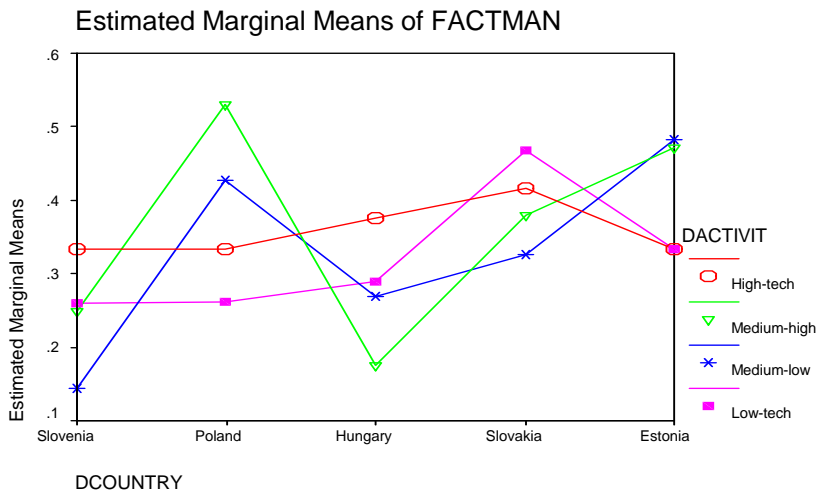


Contrary to other countries Polish subsidiaries in the low-tech sector are much more autonomous. It may indicate that technology used is rather simple and standardised, which requires little intervention from the mother company. In addition from the earlier analyses we concluded that Polish subsidiaries had high autonomy in marketing and low autonomy in management. Consequently Polish low-tech industry high autonomy reflects its strong domestic market orientation. A final conclusion from this analysis is that autonomy is highly

industry specific and reveals also the importance of subsidiary power (in our case measured as productivity) on autonomy.

Looking at the managerial autonomy (see Figure 3) the largest diversities in autonomy across four areas of business functions are in Slovenia and Poland and in comparison with all industry groups inside medium-high-tech and medium-low-tech subsidiaries by five countries. From Figure 1 it already became evident that Poland diverges from others in terms of very low management autonomy. Now Figure 3 more clearly reveals that in general managerial decisions are made by the parent companies and particularly in medium-tech sectors. In the case of Poland the reason for very low autonomy in the field of management is explained by the medium –tech as the prevailing industry type.

**Figure 3: Estimated marginal means between country and industry dummies by component factor FACTMAN**



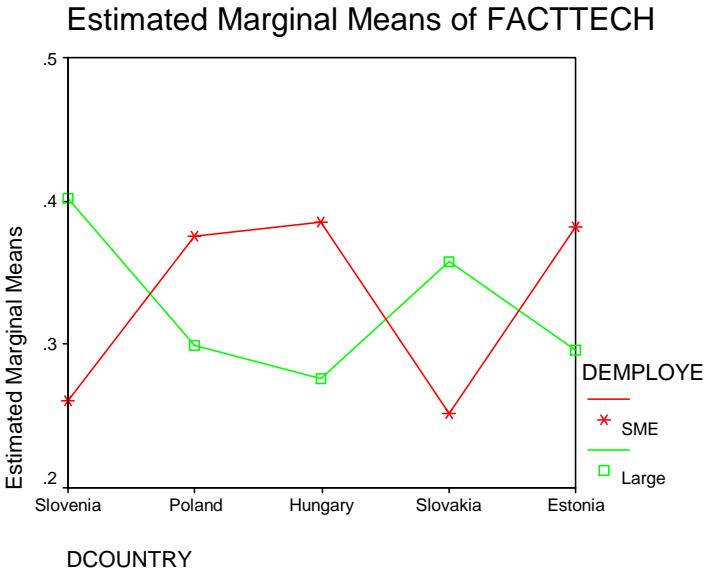
Summarising results of previous analyses of country and industry effects the level of economic development level is positively related with autonomy, especially in medium-tech sectors, which are the most productive sectors in all analysed countries.

**The autonomy – firm level features**



Based on the descriptive analysis and MANOVA tests there are some different patterns in terms of firm size. It turned out that firm size in combination with country and industry variables significantly determines statistically significantly the role of subsidiary in the five countries in the level of technology autonomy (see FACTTECH in Table 6). Estimated marginal means between country and firm size dummies by factor component FACTTECH are presented in Figure 4. Among large subsidiaries in Slovenia and Slovakia the autonomy in technology area is smaller compared to other countries. Polish, Hungarian and Estonian subsidiaries indicate quite a similar pattern with larger firms being more autonomous. From the sample description was found that within the Polish and Hungarian sample there were more large firms compared to other countries; also in the Slovenian sample firms were significantly smaller and in the Hungarian sample firms significantly larger than total sample means.

**Figure 4: Estimated marginal means between country and firm size dummies by component factor FACTTECH**



Combining country, industry and size categories hypothesis 4 could be supported that more autonomous subsidiaries become visible in the case of large firms and specifically in terms of technology autonomy. In previous

analyses (see Table 5) we found that firms' size statistically significantly and positively influences autonomy only in marketing (FACTMARK). Now adding to the size also country and industry variables the technology component became the only statistically significant aspect of autonomy of subsidiaries (see Table 6 last row).

Hungary, which has significantly larger companies in the sample, has the highest autonomy and Slovenia, which has smaller companies, has the lowest autonomy in a sample about technology (see also descriptive analysis). In Poland one can also see a relatively high independence from the parent company among large firms. Estonia is a specific case with small firms prevailing in the sample. Small firms have less autonomy in technology than bigger firms. In Slovakia and Slovenia hypothesis 4 could not be supported, as there are smaller firms more independent compared to large firms. Combining our previous findings with these results allows us to expect that Slovenian high-tech subsidiaries are small and have low technological autonomy, but on the other hand are autonomous in all other three components of autonomy. In conclusion the hypothesis 4 was only partly supported as the more autonomous subsidiaries exist among large firms only in Poland, Hungary and Estonia. In Slovenia and Slovakia the smaller firms have higher autonomy.

## **Conclusions**

The current paper analyses the country, industry and firm specific effects on the autonomy of multinational corporation's subsidiaries across business functions. The novelty of the paper is in the deeper opening of the multidimensionality of the autonomy. It is largely argued that the impact of multinational corporations on the local economy is subsidiary-dependent. The subsidiary role-plays the endogenous role in expecting positive spillovers from FDI to the local environment.

The autonomy of the subsidiary depends critically on the existing capacities and their evolution. On the other hand subsidiary autonomy depends about the role of corporate and external networks. Consequently the more developed the country is where the subsidiary is located the higher the likelihood is that subsidiary could develop extensive external network, improve different capacities and finally gain more autonomy.

The empirical analysis of the paper is based on the survey data carried out during 2001-2002 in 433 manufacturing firms in Slovenia, Poland, Hungary, Slovakia and Estonia. This analysis concentrates on the functional autonomy of the subsidiaries, measuring the autonomy by the decision-making process

between the parent and local unit across four factor clusters (received through principal component factor analysis): technology, marketing, management and financial autonomy. Analysis revealed significant differences in the subsidiary autonomy by countries, industries, and firms. Subsidiaries from the more developed CEE countries Slovenia and Hungary had the highest scores for the autonomy, especially in terms of management and financial autonomy. But in the technology dimension the autonomy of subsidiaries was still very low. More productive manufacturing industries had more autonomous subsidiaries only in the case of more developed countries such as Slovenia and Hungary. By industry types the most autonomous subsidiaries were in medium-high-tech and -low-tech industries. The high tech industries had low level of autonomy by all four factors. More autonomous subsidiaries exist among large firms only in Poland, Hungary and Estonia. In Slovenia and Slovakia the smaller firms have higher autonomy.

Autonomy is a heterogeneous subject as we could see differences among four types of functional autonomy in the current analysis. The role of a subsidiary is above all country, industry and firm size specific. Hungarian subsidiaries appear to be most autonomous. They are bigger and more concentrated in technology intensive sectors. Slovenian subsidiaries are smallest, but they have high autonomy in finance, management, and marketing. Only in technological areas do they have low autonomy. Comparing technology and production orientation the Hungarian subsidiaries seem to be more technology focused and Slovenian ones more production focused. Slovenian subsidiaries have the highest autonomy in medium-high-tech and medium-low-tech sectors. The size of firm does not play so great a role in low technology sectors, even in terms of technology autonomy.

Polish subsidiaries are mostly local market oriented. Compared to the other four countries, they had the highest autonomy in marketing and the lowest autonomy in management. Local market-orientation could give a higher marketing autonomy to local subsidiaries. From another side, low managerial skills require support from foreign owners.

In Estonia and Slovakia the foreign subsidiaries are less autonomous taking into account all factors. Contrary to the Slovenian pattern among different industries, Estonia has the highest dependence on the foreign owner in medium-tech industries. The main difference between Slovakian and Estonian subsidiaries becomes visible in firm size. In Estonia larger firms are more autonomous; in Slovakia smaller firms more autonomous. Slovakian subsidiaries are very much dependent on their parents in marketing.

Technology autonomy appears to be the most critical factor of subsidiary strategies in all countries, both in terms of industry and firm size. Even in Hungary and Slovenia where the development level of the economies is higher compared to other three countries. Technology autonomy does show significant patterns in combination with country, industry and firm size effects.

### **Business implications and future research**

The discussion about business implications of the subsidiary autonomy will lead us to the question about the host country effects of the foreign subsidiary. The higher autonomy of the subsidiary itself not necessarily means that the impact on the local economy is positive. To the host country it is much more important how the capacities and resources of subsidiary are developing and how closely it is linked to the host country industrial clusters. The host country should be interested in developing national innovation system, creating human capital and use other economic policy tools upgrade the business environment.

At the firm's level the management need to combine the different areas of the autonomy to gain most from the relation with the headquarter locating in some foreign country. There is the question of adapting appropriate tacit knowledge and also material assets to local specifications and of contributing to its own innovation potential (or absorptive capacities) through developmental works. In this development stage of countries and firms it might be reasonable to have low rates of autonomy in some fields with shortages of specific knowledge (e.g. management in Poland) and higher rates of autonomy in selected fields with already appropriate tacit knowledge (e.g. marketing in Poland). For example in the case of CEE countries analysed the lower rate in technology autonomy is assumed to contribute more intensively to co-operation with the headquarters, and it may be useful also to the host country.

We conclude that from the perspective of technology and knowledge transfer through FDI and the innovation potential, neither excessive dependence on the headquarter nor complete autonomy from the headquarter is beneficial, especially in CEE countries today. Excessive dependence impedes the potential for increasing its own absorptive capacity and excessive independence might leave the local unit in a circle of "internationally uncompetitive" knowledge. Therefore depending on the shortage of the knowledge the managements in subsidiaries should be more or less active in relationships with the headquarters. The relatively low technology autonomy in CEE countries is supposed to contribute to the knowledge and technology transfer.

As the next step in the research we are planning to relate the multidimensionality of the subsidiaries' autonomy with their performance

indicators (export share and productivity, improvements of technology and quality). This type of relationship is rarely analysed and could provide interesting results also from the host country effects point of view.

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