FOREIGN DIRECT INVESTMENT AND PROCESSED FOOD TRADE

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FOREIGN DIRECT INVESTMENT IN CENTRAL AND EASTERN EUROPEAN FOOD INDUSTRIES: AN EXPLANATION OF DIFFERENCES BY FIRM-SPECIFIC CHARACTERISTICS

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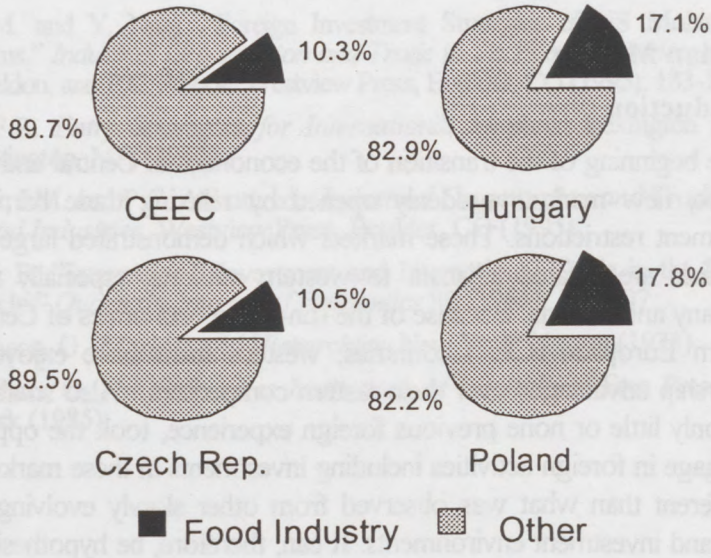
Introduction

At the beginning of the transition of the economies in Central and Eastern Europe, new markets suddenly opened by relaxing trade barriers and investment restrictions. These markets which demonstrated large growth potentials are located adjacent to western markets, especially those in Germany and Austria. Because of the run-down economies of Central and Eastern European (CEE) countries, western firms have enjoyed large ownership advantages over their eastern competitors. Also smaller firms with only little or none previous foreign experience, took the opportunity to engage in foreign activities including investments in these markets. This is different than what was observed from other slowly evolving foreign trade and investment environments. It can, therefore, be hypothesized that the process of eastward internationalization is proceeding differently than the pattern mainly observed elsewhere.

In this rather different market environment the following question can be raised: which factors influence a firm's decision on the mode of market entry into CEE countries, trade or FDI? The question is relevant to both Western and Eastern policy makers since a number of different foreign investment promotion programs have been established in several CEE countries. FDI is seen as an essential component to facilitate and accelerate the transition from centrally planned economies to market based systems. It provides the needed capital and, moreover, the necessary know-how to increase quality and quantity of local production. However, the expected boom of investments did not occur. The inflow of foreign capital by direct investments, joint ventures, and foreign take-overs has only taken off in a few countries (EBRD 1994, 123). This is not different in the food industries where market conditions for product demand and for the availability of raw product supply are much better than for many other sectors. The share of FDI in the food industry is about 10 to 17 percent

(see figure 1). Only in selected food industries can a limited number of large projects of multinational enterprises (MNE's) and only a few single initiatives of small and medium sized enterprises (SME's) be observed.

Figure 1. Share of FDI in the Food Industry



Sources and Notes:

CEEC: "Food" includes food & beverage production, agribusiness. *East European Investment Magazine* database. Based on the number of completed, failed, announced and tentative projects in the period 1991 to March 1994, as reported in the Press. in: EBRD 1994, 123.

Hungary: Newly registered FDI 1992 -1993. In the 1989-1991 period the share is lower: 9.9 %. Hungarian Statistical Office; in: MEYER 1994, table A8.

Czech Rep: Czech Agency for Foreign Investment; November 1994. Investment period 1990 - September 1994. (1992: 17.6%; 1993: 6.2%)

Poland: Research Department of State Agency for Foreign Investment, Poland. List of major foreign investors in Poland (more than US$ 1m equity and loans, not including commitments), September 1994. Investment period 1991 to 1993, with a few investments earlier, (Unilever`s and Epstein`s share of US$ 40m each for food processing).

The objective of this paper is to identify factors that determine the share of FDI in the food industries of CEEC (CEE countries). This study uses the Dunning's Eclectic Theory of International Production to identify factors that may have some influence on the probability of western food manufacturing firms investing in CEE countries (Dunning 1988). After a short review of previous findings within this framework of analysis, the paper first describes the data, and

then lists the set of hypothesized factors before the results are explained. The conclusion contains a policy implication.

Previous Findings

One approach for the explanation of FDI is Dunning's eclectic theory of international production. Dunning distinguishes between three contextual or structural variables which have an influence on the set of advantages affecting any particular international activity, the so-called *OLI* configuration. "These are those which are specific to particular *countries*, to particular *types of activities* (or industries) and to particular *firms* or *enterprises*" (Dunning 1988, 29) -- in short -- country-specific factors (CSFs), industry-specific factors (ISFs), and firm-specific factors (FSFs), respectively.

With respect to FDI into CEE food markets, although without referring to Dunning, CSFs have been analyzed by De Frahan and Paris (1993). The authors examined FDI in the food sectors of Hungary, Poland, and (what was) Czechoslovakia during the period June 1990 to December 1992. They identified the following country-specific market entry conditions that influenced the inflow of FDI by large agri-food companies:

(a) a relatively liberal economic policy environment,
(b) a relatively well-functioning institutional and legal system,
(c) a relatively well-developed infrastructure suited to the food industry, and
(d) technological and management skills apparent in the workforce and business sector.

All of these factors are more or less subject to the economic and political transition in these countries. This progress of transition has substantially reduced the differences between these countries with respect to those factors. The latest literature and firm surveys show that these conditions are met in all four Visegrad countries, leaving the Slovak Republic maybe a little behind (EBRD 1994). The four countries now account for more than two-thirds of total FDI poured into the CEE region. For the other CEE countries, there is some evidence that De Frahan and Paris'es findings may also be valid; for example, if one looks at investment barriers drawn from firm surveys reviewed by the EBRD (1994, 130f). With the exception of Russia,

they received far less FDI. For Russia, its large market size may partially override the four un-fulfilled factors above.

ISFs have been looked at by Boeckenhoff and Moeller (1993) applying Dunning's approach. Using the example of Hungary, the authors showed how industry-specific characteristics can explain the variation of FDI among different food industries. Their results revealed that foreign direct investment occurred more in industries with

(a) a high importance of multinational enterprises in the industry,
(b) where the host markets were highly monopolized, so that a significant market share could be acquired immediately,
(c) the importance of favored access to relevant markets was not high, i.e. the investor could rely on international input and output markets, and
(d) where the value added chain in the host country was or could be coordinated easily by the foreign entrant, i.e. quality and quantity requirements could be met.

According to both research results, CSFs and ISFs could explain some variation of FDI among countries and among industries, respectively. There still remains some variation within the industry that is unexplained. Examples are FDI in the meat sector in Russia and Ukraine and FDI in the wine industry in Hungary -- none of these two markets belong to a country-industry combination with a high probability for FDI, according to the studies quoted above. This leads to the hypothesis that Dunning's third contextual variable, FSFs, also account for some variation. So far, the author is not aware of any attempts that have been made to look for FSFs in the CEE context. Thus, the focus of the following analysis is to show how the probability of particular enterprises to engage in CEE production varies according to their underlying management and organizational strategies. The analysis will attempt to find an answer to this question by analyzing firm-specific characteristics and their relation to determinants of foreign direct investment into CEE food manufacturing industries.

Connor (1983, 400) reviewed selected cross-sectional studies. With respect to a general context (non-CEE), the studies identified the following FDI probability-factors with a positive sign relevant to FSFs: firm size, R&D intensity, advertisement expenditures, firm diversification, profits, and growth. Firm size and R&D intensity were also found by Wagner and Schnabel (1992) as determinants of German

FDI. Their evidence from micro data also included a positive significance of the firm's experience in export.

All of the factors above are included in Dunning's set of hypothesized FSFs (Dunning 1988, 31). The emphases lie on ownership and location advantages. They are listed in the analysis section. With respect to internalization advantages, the food manufacturing industries are a special case. Firstly, R&D expenditures and the rate of innovations are much lower than in other industries (Marion 1984, 270; Connor 1988, 65). Secondly, licensing of processes and products, i.e. patents, play a relatively small role in restricting entry into food manufacturing industries (Connor, et al. 1985, 237). Much more important are trademarks and trade names. Their use is mainly in highly differentiated consumer goods industries like tobacco and spirits. Unfortunately, the extent and development of licensing trademarks and trade names is largely unknown (Connor 1989, 33). However, surveys show that many firms themselves tend to exploit their benefits from product and process innovations as a strategic advantage in the competition process (Scherer and Ross 1990, 628-629). Their advantages in the competition process is derived from global marketing strategies with higher control over the production and marketing process. These strategies also seem predominant among German food manufacturers in Central and Eastern Europe. A firm-specific analysis of I advantages can be dropped if the sample firms reveal that they did not consider licensing as a feasible entry mode. And this turned out to be the case.

Data

The necessary data on firm-specific information cannot be collected from statistical data bases. Information on SMEs is even less publicly available. It was therefore decided to collect the required data via a phone survey.

The sample of food manufacturers that were invested in CEEC was identified from (a) press reports, (b) membership lists from certain associations linked with CEE activities, (c) naming by CEE foreign investment agencies, or (d) the Chamber of Commerce as having reported CEE activities - including the group of non-investors. No official recording of FDI by individual firms is available.

In the end; the sample contained 32 firms, all of which had CEE activities, and 19 of which had CEE investments. It is unknown what percentage of total German food manufacturing firms investments in CEECC are accounted for by these 19 firms. However, due to an affiliation with an industry-sponsored research institute, the response rate within the sample was more than 80 percent. But still, German firms are generally very reluctant in giving firm-specific information. Only a little detailed coding of the responses into four or five categories served to reduce missing values to below 10 percent. The interviewees were more willing to give a category answer than a single number.

The sample consists of 7 producers of meat and processed meat, 4 of which were investors; two breweries; two baking powder and kindred goods producers; and two canning firms, one of each being an investor; and of the rest each coming from a different food industry. Eight had investments in Poland, seven in Hungary, six in Russia, three in the Czech Republic, three in Romania, and two in the Ukraine; all including double-counting. The persons that were talked to in the sample were either responsible for the firm's export activities; belonged to the board of directors; or as in two cases, headed the public relations department.

Analysis

The factors as they were mainly taken from Dunning and the measurement and coding used in this study are listed below. Responses of the interviews can be found in table 1. The variable notation corresponds with the listing.

Dependent Variable	Variable	Code Sign
• Investment activities in CEE countries (*0* = No FDI; *CZ* = Czech Rep.; *HU* = Hungary; *PL* = Poland; *RU* = Russia; *RO* = Romania; *UA* = Ukraine)	**FDI**	(*0*, *Country*)
Ownership Factors		
SIZE		
• Turnover 1994 [DM] (*1*=<50 mill; *2*=50-300 mill.; *3*=300 mill.-1 bn.; *4*=>1 bn.)	**TURN94**	(*1...4*)
• Employees: (*1* = <50; *2* = 50 - 200; *3* = 200 - 1,000; *4* = >1,000)	**EMPL**	(*1...4*)

	Variable	Code	Sign
EXTENT OF PRODUCTION, PROCESS AND MARKET DIVERSIFICATION			
• Number of products and product groups (*1* = One Product; *2* = One Product Group; *3*=Two and More Product Groups; *4*=Two and More Lateral Groups)	**DIV-PRD**	(*1*...*4*)	
• Home Country Market Share of best product (*1* = <1%; *2* = 2 to 5%; *3* = 6 to 20%; *4* = >20%)	**MS-G**	(*1*...*4*)	
EXTENT OF INNOVATION AND MARKET ORIENTATION			
• Number of product innovations during the last 3 years. (*1* = <5; *2* = 1; 5 to 10; *3* = 11 to 20; *4* = >20)	**INN-PRD**	(1...4)	
• Number of process innovations during the last 3 years. (*1* = <5; *2* = 5 to 10; *3* = 11 to 20; *4* = >20)	**INN-PRC**	(1...4)	
• Share of R&D expenditure in total cost (*1* = <1%; *2* = 1 to 5%; *3* = 6 to 10%; *4* = >10%)	**R&D**	(1...4)	
• Share of advertising expenditure in total revenue (*1* = <1%; *2* = 1 to 5%; *3* = 6 to 10%; *4* = >10%)	**ADV**	(1...4)	
... AND VALUATION OF SECURITY/STABILITY OF INPUTS AND MARKETS			
• Degree of vertical integration of upstream home sector	**VI-UP**	(1...4)	
• Degree of vertical integration of downstream home sector	**VI-DN**	(1...4)	(-)
• Degree of vertical integration of upstream CEE sector	**VI-UP-H**	(1...4)	
• Degree of vertical integration of downstream CEE sector (*1* = None; *2* = Partially; *3* = Majority; *4* = Only)	**VI-DN-H**	(1...4)	(+)
ECONOMIES OF JOINT PRODUCTION			
• Number of plants	**P-LOC**	(#)	(+)
• Advantage of multi-plant production (*-1* = Disadvantage; *0* = Neutral; *1* = Advantage)	**P-LOC-A**	(-1,0,1)	
OWNERSHIP STRUCTURE			
• Form of ownership (*F* = family-owned; *C* = Cooperative (-); *S* = Shareholder Company; *A* = Corporate Affiliate)	**OWNSH**	(for C)	(-)

Location Factors

MANAGEMENT STRATEGY TOWARDS FOREIGN INVOLVEMENT			
• Vision of management (countries with FDI in 5-10 years) (1 = none; 2 = a few; 3 = some; 4 = almost all; 5 = all) 0	**VIS-5-I**	(1...5)	(+)
• Vision of management (countries with export in 5-10 years) (1 = none; 2 = a few; 3 = some; 4 = almost all; 5 = all)	**VIS-5-X**	(1...5)	
• Adopted internationalization sequence Activity for μ years: IXμ = Indirect Export (-); DXμ = Direct Export; JVPμ = Joint Venture with Production; JVSμ = Sales-Joint Venture; ACPμ = Acquisition with Production;	**INT-SQ**	(for IXμ)	(-)

Variable	Code	Sign

CPμ = Contractual Production;
GIμ = Greenfield Investment.

AGE AND EXPERIENCE OF FOREIGN INVOLVEMENT

- Years of export activity — **XYR-F** (years)
- Years of export activity to CEE countries — **XYR-C** (years) (+)
  (10 = 10 and more years)

POSITION IN PRODUCT CYCLE

- Position of product for the CEE markets — **PRD-CYC** (1...4)
  (1 = Launch; 2 = Growth; 3 = Maturity; 4 = Decline)

CULTURAL NEARNESS AND RELATIONSHIPS (Psychological)

- Relationship, experience with, and language of other culture — **PSY-NRN** (1...4) (+)
  1 = No Relationship;
  2 = Long and Frequent Travel Experience;
  3 = Foreign Language Speaker in Firm;
  4 = Strong Personal Relationship

REGIONAL OFFICE AND MARKET ALLOCATION

- Number of countries with foreign business activities — **ALLOC-F** (1...4)
- Number of countries with foreign business activities in CEE — **ALLOC-C** (1...4)
  (1 = None; 2 = One; 3 = 2 to 5; 4 = >5)
- Largest market share in western foreign country — **MS-F** (1...4)
  (1 = <1%; 2 = 2 to 5%; 3 = 6 to 20%; 4 = >20%)

GEOGRAPHICAL STRUCTURE OF ASSET PORTFOLIO

- Stakes in other countries — **PORTF** (0...3) (+)
  (0 = None; 1 = One; 2 = 2 to 5; 3 = >5)

Other Factors

MOTIVE FOR FDI

- Motive — **MOTIV** (M, MN, R)
  (M = Host Country Market Based;
  MN = Host Country Market and Neighboring Markets Based;
  R = Resource Based)

RESULTS

Due to the variable coding and the small sample size, no statistical or mathematical analysis has been applied to the data set. A close look at the data in combination with additional information which the author collected while conducting the phone interviews himself, lead to the results marked with (+) and (-) in the list above. Consequently, the findings need to be considered as rather exploratory.

Generally, the main motivation for CEE investments has been stated as being market directed, both for host country markets and for markets neighboring the host country. Two firms stated access to

resources as the main investment reason, one of which was a canned vegetable producer and the other a frozen fish producer.

Among the ownership advantages neither 'firm size' nor 'firm diversification and extent of innovation and market orientation' seem to show correlation with the distribution of FDI and non-FDI firms. The number of more innovative or market oriented firms is not higher among the investors' than in the non-investors' group. This finding supports the hypothesis that such marketing factors are not as necessary in CEE markets as they are in western markets. In other words, also less innovative and less market oriented firms have advantages in CEE markets.

The trade group contains more firms that have higher integrated downstream home sectors. They are apparently more afraid of being unable to ensure the required qualities and quantities in a case of foreign investment. In contrast, more firms in the FDI group apply themes of downward vertical integration in their CEE host countries, although they do not run such themes in their German markets. While the German markets for output are perceived to be rather secure, this observation indicates the need for higher vertical coordination of CEE output markets for local production. In the absence of regulating institutions, firms need to internalize these functions.

The less developed local CEE food manufacturing industries do not seem to generate sufficient demand for intermediate food products. This may be the reason why a firm that supplies intermediate products does not find itself in the FDI group. A further indication is sugar where the ratio of intermediate to final sales is the reverse in CEE markets in comparison to the West. In the latter, intermediate products account for almost three quarters of the output.

None of the three cooperatives in the sample have FDI operations in CEE countries. Although the number of surveyed cooperatives is rather small, there is no German cooperative known to the author that would fall into the FDI group. This might be a hint to that cooperatives have internal structural barriers to FDI.

Not accounting for cooperatives, sample firms with a larger number of plants and a higher self-estimated advantage of multi-plant production tend to have a higher probability of FDI in CEE countries. Such firms have a higher affiliation to plant locations because of transport costs or origin requirements. Their ownership advantages can be better exploited

by local production in the foreign country than by export into CEE countries.

With respect to location advantages, the group with FDI contains more firms that have longer experience in trade, especially CEE exports, and organized this trade in the majority of cases as direct exports or direct imports. They devoted their attention to the CEE markets and were able to collect more and better information. Whereas firms without CEE investments explained that they needed to concentrate their management capacity mainly on their domestic markets and treat CEE exports as irregular -- yet usually welcome -- side effects. Export strategies prevail especially in firms that have been experiencing a growing domestic market and have established major new investments in East Germany. The large majority of the FDI group operated at least two FDI projects in different countries, developing multinational strategies.

The other two location factors that seem to differentiate pure-trading from foreign direct investing food firms relate to attitudes: first, the vision of the interviewed firm representative about the number of CEE countries where the firm would have invested within a period of five years from now and, second, the cultural nearness to the CEE country shown by the degree of the personal relationship one or more influential firm representatives had developed to CEE cultures.

Summarizing the distinguishing firm-specific factors found in the survey, a typical German food manufacturer with a high probability of FDI in a CEE country could have the following characteristics: It is a non-cooperative enterprise of virtually any size, that operates more than one different plant in different selected locations and produces standardized final consumer goods and not just in high-priced market segments. The German market is almost stagnant (at least not growing), and while entry into other EU markets or increasing the share in them is very difficult, since the product is not sufficiently differentiated; other EU competitors threaten their home markets. The typical firm has actively been conducting business activities with one or more CEE countries for several years, i.e., exports were promoted directly with exclusive representatives in the foreign markets. The top management has been directly involved in market development or supported the CEE export management. One or more influential managers have developed an understanding of the foreign culture, either through extensive traveling or via a strong personal relationship like speaking the language or having come as a refugee or

immigrant from the region. The CEE market for the firm's exported products is growing, and in that country with both the closest links and a sufficiently large market potential they have looked for a joint venture partner.

If the management of the thereafter established CEE operation is culturally sound, it is expected that the initial success will lead managers to adopt the successful CEE marketing strategies for other investments. Large multinational food enterprises generally qualify for all of the characteristics above and follow this strategy most strictly.

Conclusion

The firm survey data indicate that the FSFs explaining the variation of German FDI in CEE food markets are not the same as those observed in 'standard' investment scenarios. The main differences are that smaller, less innovative and less market oriented firms get the opportunity to diversify geographically while their home markets are stagnant or shrinking. On the other hand, eastern business experience and personal factors like vision and cultural nearness have an explanation value for the firm's foreign investment decision into CEE markets.

This result has an impact on the design of FDI promotion programs for food industries. They should focus more on experience values. An example is to select those firms with a high probability of FDI according to market segment characteristics and form of ownership and then address the decision makers' attitudes toward prioritizing CEE markets. This could be done by direct support in market treatment and information collection in the host-country, which may create positive experiences, and increase cultural awareness to develop a personal relationship to the respective CEE culture and/or country.

The results show that the FSFs of Dunning's *OLI*-paradigm -- like the ISFs as shown in the earlier study by Boeckenhoff and Moeller (1993) -- may also be applied as a framework of analysis to an eastward internationalization situation. Besides the relatively small sample size and likely interviewer bias, the findings are consistent and do not contradict with theory.

With this study, attempts have now been made to apply all three groups of contextual variables identified by Dunning in the analysis of FDI into CEE food industries. Further research would need to follow and draw

the separate results together to derive an overall explanation. The three studies cannot be used since all three studies are derived from different data sets with respect to kind, i.e. countries and firms, and time of observation. There may only be very little compatibility, and results will be very hypothetical at this point, which shows the need for further data collection. It should focus on all three variables, CSFs, ISFs, and FSFs, and aim at a larger sample size to be controlled for each of the three. It should also include other FDI home countries besides Germany.

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Table 1: Survey Data of 32 German Food Manufacturing Firms, March 1995

Case	FDI	TURN94	EMPL	DIV-PRD	MS-G	INN-PRD	INN-PRC	R&D	ADV
1	0			3	4	3		2	
2	0	4	4	2	2	1			1
3	0	4	4	3	4	3	1		
4	0	3	3	2	2	1	1	1	3
5	0	3	4	4	3	1	1	1	1
6	0	3	3	2	4	2	2	2	1
7	0	2	2	2		3	1		
8	0	2	3	3	4	2	2	1	2
9	0	2	2	2	3	1	2	1	1
10	0	2	2	2	3	2	1		2
11	0	2	3	2	3	2	2	2	2
12	0	1	2	2		1	1	2	1
13	0	1	2	2	2	2	1	2	2
14	PL, HU	4	4	3	3	2			2
15	HU	2	2	2	3	1	1	1	1
16	RU	2	2	2	4	1			3
17	PL			2		1	1	1	1
18	PL	4	4	3	4	2	2	3	3
19	RO	4	4	4	3	2	1	2	3
20	RU	4	4	4	2				
21	RU	4	4	2	2				
22	UA, RU	4	3	2	2	1	2	1	1
23	HU, CZ	4	4	4	4	1	1	2	1
24	PL, RO	3	3	4	3	1	1	1	1
25	HU, PL	3	3	3	4	2			3
26	HU	3	4	3	2	2	1	2	3
27	UA, CZ	3	3	2	3	1	1		4
28	RU	2	2	2	3	2	1	1	1
29	PL	2	4	3	2	2	2	2	2
30	HU	2	3	2	2	2	1	2	3
31	CZ, HU, PL	3	2	2	4	1			1
32	PL	1	2	3	2	2	1	2	2

Table 1. continued

Case	VI-UP	VI-DN	VI-UP-H	VI-DN-H	P-LOC	P-LOC-A	OWNSH	VIS-5-I	VIS-5-X	INT-SQ
1	2	2		1	2	0	A	2	4	IX3
2					6	0	C	1	1	DX10
3	2	2		1	2	0	C	1	5	IX1, DX2
4	2	1		2	4	0	A	1	2	DX2, JVS5
5	4	1		1	5	1	C	1	3	IX3
6	3	2		2	7	-1	S	1	5	DX10
7	1	1			1		F	1	3	IX1
8	2	2		1	1	0	F	2	2	DX1, IX1
9	1	1		1	1	0	F	1	3	IX5
10	1	1		1	2	-1	F	2	4	IX5
11	1	4		2	1	-1	A	2	5	DX4
12	2	4			1	-1	A	2	2	IX1
13	1	1		1	1	-1	F	2	4	IX5, DX4
14	1	1			2		F	4	5	DX, GI2
15	3	1	2	4	1	1	F	2	3	VP5, AKP5
16	3	1			1	-1	F	3	3	IX3, GI2
17	1	1	1	1	1		A	2	5	IX1,VX2
18	2	1	2	2	2	-1	F	3	3	DX3, JVP2
19	2	2	3	3	5	0	S	2	3	IX2, DX1, JVP2
20	1	1	2	3	5		A	2	2	DX10, JVP2
21	1	1	4	3	4	0	A	2	2	DX10, JVP2
22	1	1	3	3	15	1	F	3	5	DX10, JVP2
23	3	1	2	1	15	1	S	3	5	DX2, ACP4
24	1	1	2	2	6	0	A	3	5	DX2, JVP3
25	1	2	2	3	1	-1	F	3	3	DX2, JVP4
26	2	1	4	1	1	-1	A	3	3	DX10, ACP4
27	1	1	1	1	3	-1	S	4	4	DX1, ACP4
28	4	1	4		1	-1	F	2	4	CP7, JVP3
29	1	2	1	2	1	0	S	2	2	DX3,JVP2
30	2	1	2	1	6	1	F	2	1	ACP3
31	2	1	3	2	4	0	A	4	5	DX5 + PJV3
32	2	1	2	1	1	-1	F	2	3	JVP4

Table 1: continued

Case	XYR-F	XYR-C	PRD-CYC	PSY-NRN	ALLOC-F	ALLOC-C	MS-F	PORTF	MOTIV
1	10	3	3	1	4	2	•	1	
2	10	10	4	1	3	2	1	1	
3	10	3	3	1	4	1	2	0	
4	10	8	4	1	4	3	3	0	
5	10	3	3	1	4	3	2	0	
6	10	10	3	1	4	4	4	0	
7	3	1	2	1	3	1		0	
8	10	2	3	1	3	1	1	0	
9	5	5	3	4	4	4	3	0	
10	10	5	2	1	4	3	1	0	
11	10	4	3	1	4	4	4	0	
12	1	1	4	1	1	1	1	0	
13	10	5	3	1	4	3	2	0	
14	10	5	2	2	4	4	3	3	MN
15	10	10	4	1	4	3	1	1	R
16	10	4	3	2	2	2	1	2	M
17	10	3	3	1	4	4	4	1	MN
18	10	6	3	4	4	4	2	2	MN
19	10	5	4	2	4	3	2	2	M
20	10	10	4	1	2	2	2	1	M
21	10	10	4	2	4	3	2	1	M
22	10	10	4	2	4	4	2	2	M
23	10	10	3	2	4	4	4	2	MN
24	10	4	3	1	4	3	2	2	MN
25	10	5	3	2	4	4	3	2	MN
26	10	10	3	2	4	3	2	2	MN+R
27	10	6	2	1	4	4	3	3	MN
28	10	10	3	1	3	3	1	1	R
29	10	6	3	2	3	3	1	1	M
30	0	0	3	1	1	1	1	1	M
31	10	6	3	2	4	4	2	3	M
32	10	1	3	3	4	3	1	1	M

Notes: CZ = Czeck Republic, HU = Hungary, PL = Poland RO = Romania, RU = Russia, UA = Ukraine. Source: Own survey