FOREIGN OWNERSHIP AND EXPORT PROPENSITY: THE SLOVENIAN EXPERIENCE

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Abstract:
This paper discusses the determinants of export propensity of foreign firms in the Slovenian manufacturing sector relative to domestic firms. Using panel framework we show that superior export propensity of foreign firms is significant due to the foreign ownership and that differences in fundamental operational characteristics between domestic and foreign firms significantly affect their export propensity.

Keywords: foreign direct investment, international trade, export propensity, foreign ownership, Slovenia, manufacturing industry.

JEL Classification: D210, F210, F230

1. Introduction

One of the major changes brought about by economic transition has been the adoption of an outward-looking, export-oriented development concept by the former socialist countries of Central and Eastern Europe (CEE), Slovenia being one of them. Another, even more affirmative step in the same direction is the process of integration of CEE countries in the European Union (EU). The primary consequence of these processes for CEE economies and enterprises has been the need to increase their export competitiveness and to become viable and competitive participants in the internal market of the EU. Foreign direct investment (FDI), by bringing in assets which are crucial for export expansion, is an obvious vehicle for increasing CEE countries export competitiveness.

The paper has three objectives. Firstly, to explore export propensity of foreign versus domestic firms in the Slovenian manufacturing sector. Secondly, to determi-

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ne to what extent foreign subsidiaries' export propensity is superior, if yes, due to the factor of "foreign ownership" itself. Does foreign ownership as such, after normalising for all other differences between foreign and domestic firms, matter as far as export propensity is concerned? Thirdly, to define independent variables, i.e. operational characteristics of foreign and domestic firms in the Slovenian manufacturing sector, to which their export propensity is systematically related.

The paper is composed of five sections. The first deals with theoretical considerations of FDI and trade. The second section discusses determinants of and factors related to export propensity of foreign subsidiaries, and establishes theoretical and empirical foundation for the hypothesis. Third section formulates the hypothesis, explains the methodology and data. The fourth section reports the results using the panel framework and the last section summarises the main findings of the paper.

2. Theoretical Considerations of Foreign Direct Investment and Trade

The issue of interlink between trade and FDI has been first recognised by Mundell (1957), who argued that (under certain restrictive assumptions) the free movement of factors of production is a substitute for trade. FDI and activities of multinational enterprises (MNEs) have been definitely brought in the international trade theory by Vernon's (1966) product life cycle theory. Here, FDI and trade are not clear-cut substitutes any more. The character of FDI-trade relation depends on the phase of the cycle; the more to the end of the cycle we go the more FDI and trade become complements. For new theories of trade (see Krugman, 1983; Helpman and Krugman, 1985), which introduced product differentiation and economies of scale, substitutive or complementary character of FDI-trade relation is not a priori defined but depends on a number of additional presumptions (vertical or horizontal FDI, income level of a host country, type of intra-firm transactions, etc.).[1)]

The discussion of FDI-trade relation has overcome the stage of a simplified pro-trade (FDI as a complement to trade) or anti-trade (FDI as a substitute to trade) FDI hypothesis. There is an increasing evidence that FDI and trade can be either complements or substitutes. Two streams of FDI theory are especially relevant for the issue of export oriented FDI and export propensity of foreign subsidiaries. The first is developmental approach to FDI. The common conclusion of numerous variations of this approach[2)] is that export oriented FDI happens when an investing firm (country) begins to lose its competitive edge in a particular production. In such a situation production is relocated to locations with comparative advantage in that particular production. This will, as a rule, be a simple export-platform type of FDI motivated by cheap unskilled labour (sometimes also by environmental considerations).

The second stream relates to the motives for foreign production and the main types of foreign production, where one should distinguish between business management literature and new international trade theory. Business management literature (see Behrman, 1972; Dunning, 1993, etc.) usually classifies FDI in natural resource-seeking, market-seeking, efficiency-seeking and strategic asset-seeking FDI (strategies), while new international trade theorists (see Caves, 1971; Markusen,

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1) As Dunning (1993, pp. 385-386) would put, the impact of FDI on trade "will depend on the interaction between the configuration of ownership, location and internalization (OLI) advantages facing firms and the environment, system and policies (ESP) configuration facing countries."

2) Vernon's (1966) product life cycle theory, Kojima's (1978) trade and anti-trade oriented FDI, Ozawa's (1992) MNE-assisted development, Meyer's (1998) structural change FDI, etc.

1995; Lankes and Venables, 1996, etc.) distinguish between horizontal, market access and vertical, factor cost motivated FDI. Contrary to the developmental approach, both categorisations are very much aware of various kinds of export oriented FDI, i.e. simple assembly, export platform, more or less enclave type, and integrated international (global) production type FDI (e.g. Papanastassiou and Pearce, 1992). Basically both categorisations distinguish between two types of FDI/investing firm strategy/subsidiary position. The first is market-seeking (horizontal) FDI established for the procurement of a local or/and adjacent regional market, and the second is export-oriented (natural resource-seeking, efficiency-seeking, strategic asset-seeking, vertical, sourcing, factor cost differences-seeking) FDI. The latter is determined either by differentials in factor endowments (assembly, rationalised product subsidiaries), or by the advantage of economies of scale and scope, and of differences in consumer tastes and supply capabilities (integrated international production, regional or world product mandate subsidiaries).

3. Determinants of and Factors Related to Export Propensity of Foreign Subsidiaries

The aim of this section is to identify possible determinants of and factors related to export propensity of foreign subsidiaries. In doing that, we will broadly distinguish among investing firm variables; industry variables; foreign subsidiary variables; home country variables, and host country variables.

Investing firm variables. The most frequently quoted investing firm variables include investing firm internationalization strategy and its degree of multinationality. Whether an investing firm applies horizontal or vertical internationalization strategy will be the basic determinant of foreign subsidiary's export performance (see Dunning, 1993; Lankes and Venables, 1996; Andersson and Fredriksson, 1996, etc.), being high in the case of vertical and low in the case of horizontal strategy.[3)] It is also commonly, but not unanimously (see Andersson and Fredriksson, 1996) argued that a higher degree of multinationality leads to more trade, including exports of foreign subsidiaries.

Industry variables. The type of activity in which MNEs are engaged and the nature of activities being undertaken by the subsidiaries importantly codetermine export propensity of foreign subsidiaries. Higher export propensity of foreign subsidiaries is often important due to their concentration in trade intensive industries, globalised industries characterised by a high degree of intra-firm trade, and industries in which a host country has a comparative advantage (see Dunning, 1993; Makhija et al, 1997; Eltetö, 1998; Gatling, 1993).

Home country variables. There are likely to be variations in the extent and pattern of trade transactions associated with FDI according to home countries involved (see Dunning, 1993). This is the very basis of Kojima's (1978) trade and anti-trade oriented FDI. Similarly, Reich (1998) argues that high intra-firm exports from parent companies are characteristics of German and especially Japanese but not for U.S. MNEs.

Host country variables. The influence of FDI on a host country trade depends crucially on its environment/system/policies (ESP) configuration (see Dunning, 1993). Four host country variables which are especially relevant for export propensity of foreign subsidiaries:

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3) "Horizontality" versus "verticality" co-determines a number of other specifities of local/regional market versus export-oriented FDI.

– a large host country market is a major motivation for horizontal, market-seeking FDI. Can one expect vice versa, i.e. that FDI in small countries is more of the export-oriented type? Most of the evidence does suggest that the host country market size is negatively correlated with export propensity of foreign subsidiaries;[4)]

– a higher host country's development level is generally correlated with vertical rather than horizontal FDI (see Helpman and Krugman, 1985; Andersson and Fredriksson, 1996; Papanastassiou and Pearce, 1992). However, in the case of simple factor cost advantages-seeking (export platform type) FDI, foreign investors would tend to go to developing countries (Brouthers et al, 1996; Papanastassiou and Pearce, 1992);

– FDI projects in CEE countries that are in a more advanced stage of transition reforms are more likely to be export oriented and integrated into foreign parents multinational production process (see Lankes and Venables, 1996);

– an appropriate policy environment in a host country is more relevant for export oriented than market-seeking FDI. The export-oriented, outward-looking development concept with more liberal economic policy creates a more congenial environment for export oriented FDI (see IMF, 1985; UNCTAD, 1996; Bhagwati, 1978; Islam, 1995). Liberalization of FDI and trade regime, and economic integration (free access to foreign markets) have proved to be crucial stimulators of export oriented FDI (see Dunning, 1993; WTO, 1996; Andersson and Fredriksson, 1996).

Foreign subsidiary variables. Foreign subsidiary variables are in the focus of our attention because they provide the foundation for the formulation of hypothesis of our model. Theoretical and empirical evidence offer the following foreign subsidiary variables of relevance for their export propensity.

Type of ownership: domestic versus foreign. The issue whether foreign ownership as such, after normalising for all other differences between foreign and domestic firms, matters as far as export propensity is concerned, or to what extent foreign subsidiaries' export propensity is higher (or lower), compared to indigenous firms, due to the factor of "foreign ownership" itself has been tackled by many authors (see Laal and Streeten, 1977; Dunning, 1993; UNCTAD, 1983; Kumar, 1990, etc.). They do not offer an unanimous view on the subject. For Slovenia, we hypothesize that export propensity in manufacturing enterprises is positively correlated with the presence of strategic foreign investors. Firstly, export to sales ratio in manufacturing foreign subsidiaries in Slovenia is 72.3 % as compared to 47.5 % in domestic firms (1998 data) and in most manufacturing industries export propensity of foreign firms is higher than that of domestic firms. Secondly, foreign firms in Slovenia have some substantive advantages over most domestic ones: they have clear corporate governance; they have clear company strategy and resources for its realization; they have undergone major (post-acquisition) restructuring; they are part of a MNEs' network what gives them access to parent companies' ownership specific advantages, including access to foreign markets (see Rojec, 1998).

A higher degree of vertical integration inside MNE, resulted and reflected in the multiplicity of linkages and higher intensity of intra-firm trade, is in principle considered characteristics of efficiency-seeking/vertical FDI. Empirical evidence predominantly confirms a positive link between export propensity and vertical integration

4) Findings of Andersson and Fredriksson (1996), Papanastassiou and Pearce (1992) and Eltetö (1998) support the negative correlation between the host country market size and foreign subsidiaries' export propensity, but Kravis and Lipsey (1982) and Michalet (1997) are not of the same opinion.

and/or intra-firm intensity (see Andersson and Fredriksson, 1996; UNCTAD, 1983; Lankes and Venables, 1996; Eltetö and Sass, 1998).

Level of foreign ownership (equity share). It is widely accepted and empirically tested that foreign investors in export-oriented FDI, in principle, insist more strictly on higher control, materialised in wholly or high majority ownership. The reason is that export supply FDI projects are an integral part of MNEs production network and, therefore, supply security is of great improtance (see Lall and Streeten, 1977; Lankes and Venables, 1996; Eltetö and Sass, 1998).

The size of investment/subsidiary is supposed to be positively correlated with export propensity of a foreign subsidiary. This is because the size is indicative of economies of scale at the plant level, and associated with the international specialization of production and greater exports from subsidiaries (see Andersson and Fredriksson, 1996). The empirical evidence is not conclusive in this case.[5)]

Capital intensity versus low cost unskilled or semi-skilled labour versus skilled labour. Are export-oriented foreign subsidiaries characterized by capital intensity, in the context of economies of scale and scope leading to efficiency-seeking FDI; unskilled/semi-skilled labour intensity, in the context of factor cost differentials stimulating the relocation of labour intensive production to low labour cost locations or by an intensive use of skilled labour in the context of factor cost differences FDI and/or efficiency-seeking FDI (integrated international production)? Existing studies both confirm and deny the positive correlation between each of the three variables and export propensity of foreign subsidiaries.

UNCTAD (1983) for Brazil and Ozawa (1972) for Japanese outward FDI in early 1970s, motivated by restructuring away from pollution-prone industries, found positive correlation between capital intensity and export performance of foreign subsidiaries. On the contrary, Kumar (1990) could not explain export performance of foreign and domestic firms in India by capital intensity.

Low cost unskilled or semi-skilled labour has traditionally been considered as the major motivating factor for export oriented FDI based on factor cost differences. Empirical evidence of a slightly older date (see Hood and Young, 1979; Riedel, 1975; Ozawa, 1972) confirms this view, however, in more recent studies, the role of cheap labour is very much reduced (see European Commission, 1994). Most studies on FDI in CEE countries play down the importance of cheap unskilled labour (see EBRD, 1994; Lankes and Venables, 1996; Eltetö and Sass, 1998).

With a shift towards advanced, flexible production systems and the need to assure quality and reliability, foreign investors in export oriented FDI attach a growing importance to factors such as skilled labour, infrastructure and educational standards (see European Commission, 1994; Kravis and Lipsey, 1982). CEE countries are no exception in that (see Lankes and Venables, 1996; Eltetö and Sass, 1998).

The three determinants of export-oriented FDI are to a certain extent alternative to each other and each of the three propositions could be tested in one direction or another, depending on other factors and the type of export-oriented FDI. While low costs of labour are more important for simple factor-cost oriented FDI, qualification is more important for efficiency-seeking FDI or integrated international production (see Papanastassiou and Pearce, 1992).

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5) The size of Swedish subsidiaries abroad has a significant positive impact on their export propensity (see Andersson and Fredriksson, 1996), and export-oriented foreign subsidiaries in Hungary seem to require a greater capital than market oriented subsidiaries (see Eltetö and Sass, 1998). However, there is almost no difference in the size of local supply and export supply type of foreign subsidiaries from the sample of Lankes and Venables (1996).

The scope of value added. One of the differences between stand-alone subsidiaries in horizontal (market-seeking) integration and vertically integrated (export-oriented) subsidiaries is the scope of activities/functions performed by subsidiaries. Stand-alone subsidiaries are, in general, active in all functions in the vertical chain, while subsidiaries in the vertical integration are confined to processing and assembling imported components, which are then exported (see UNCTAD, 1996). A subsidiary in the vertical integration may, thus, have less scope for own value added activities than stand-alone ventures. This suggests a negative correlation between subsidiary's export propensity and its scope of value added.

Import propensity. A positive correlation between export and import propensity of foreign subsidiaries is somehow a priori. In a system of MNE integrated international production, a vertically integrated subsidiary produces and exports in what it is the most efficient and imports all it needs from subsidiaries which are more efficient in other segments. Vertical internationalization with efficiency-seeking FDI strengthened the international division of labour with increasing exports and imports, in particularly intra-firm (see UNCTAD, 1996; Reuber et al, 1973; Rojec, 1998; Eltetö and Sass, 1998; Lankes and Venables, 1996b).

Production cost considerations. Export-oriented foreign subsidiaries attach greater importance to production cost considerations. According to Lankes and Venables (1996), the most striking difference between local supply and export supply type of foreign subsidiaries in CEE countries, as far as the motivation of foreign investors is concerned, is the importance attached to production costs by export suppliers.

4. Hypothesis, Data and Model

Country specific characteristics of Slovenia, which defines its environment system policies configuration (host country variables) – a small local market, a relatively high level of development (GDP per capita near to that of Portugal and Greece), the advanced stage of transition (accelerated process of adopting EU's acquis communautaire), a liberal foreign trade regime (membership in WTO, European agreement with the EU, the full national treatment in FDI regime, numerous free trade agreements) – speaks in favour of export-oriented FDI in the Slovenian manufacturing sector.

In the framework of this host country's specific situation of Slovenia, our intention is to test whether variation in export propensity (dependent variable) of foreign firms in the Slovenian manufacturing sector is systematically associated with variation in various operational indicators of firms (foreign subsidiary variables). To put it more precisely, we check whether:

– differences in operational characteristics between domestic and foreign firms do have a significantly different impact on their export propensity,

– there are significant differences in operational characteristics between majority-owned and minority-owned foreign firms that lead to a significantly different impact on their export propensity,

– the progress of transition in Slovenia has had any impact on the structural relation between operational characteristics and export propensity of foreign firms (are the changes in export propensity time invariant?).

4. 1 *Hypothesis*

The available data set relates to income statements/balance sheets and foreign trade transactions of foreign and domestic firms. It allows to check for correlation

between differences in fundamental operational characteristics of firms and differences in their export propensity. The dependent variable in our model is export propensity, measured by exports-to-sales ratio (EX/S). The fundamental independent variables, according to theoretical findings and empirical evidence presented in the previous section, are listed below:

a) *Foreign subsidiary/domestic firm variables*:

– extent of foreign control: export propensity is positively correlated with (majority) foreign ownership, measured by foreign equity share (FES);

– size of investment: export propensity is positively correlated with company size, measured by the value of assets of a company (ASS);

– capital intensity: export propensity is positively correlated with capital intensity, measured by fixed assets per employee (ASS/Emp);

– skill intensity: export propensity is positively correlated with skill intensity, measured by labour costs per employee (LabC/Emp);

– labour intensity: export propensity is negatively correlated with labour intensity, measured by the share of labour costs in total costs (LabC/C);

– scope of value added: export propensity is negatively correlated with the scope of value added, measured by the share of value added in sales (VA/S);

– import propensity: export propensity is positively correlated with import propensity, measured by the share of imports in sales (IM/S);

– production costs considerations: export propensity is negatively correlated with production costs, measured by the share of material, service and labour costs in sales (C/S).

b) *Industry variables*:

– import protection in industries: export propensity of firms is negatively correlated with import protection rates by industries, measured by the ratio of paid import duties to the value of imports by industries (IPR);

– export orientation of industries: export propensity of firms is positively correlated with overall export propensity of industries, measured by the exports-to-output ratio by industries (EX/OUT);

– international competitive position of industries: export propensity of firms is positively correlated with RCA ratios by industries (RCA).

4. 2 *Methodology and Data*

We model the impact of operational characteristics of firms on their export propensity using a simple linear multivariant regression form that includes the above listed independent variables. At the same time we also check for:

– differences between domestic and foreign firms, i.e. type of ownership issue (using dummy variable DumF; DumF = 1 for foreign firms),

– differences between majority-owned and minority-owned foreign firms (using dummy variable DumM; DumM = 1 stands for majority foreign owned firms),

– differences between capital and labour intensive firms (using dummy variable DumK; DumK = 1 for capital intensive firms), and

– time differences (using year dummy variable Y_t; $t = 2,\ldots,5$).

We use a common econometric approach for dummy variables in order to check for differences in levels and differences in the slope of the included variables.

We dispose with a database (firm level data) for firms engaged in the Slovenian manufacturing sector for the recent 5 years (from 1994 to 1998). This very comprehensive database allows us to use panel data techniques. In our case, the panel framework proved to be a superior econometric technique in comparison to cross-section analysis. First of all, the panel provides a larger number of data points, it

increases the degrees of freedom and reduces the collinearity among explanatory variables and, hence, improves the efficiency of econometric estimates. Second, following Hsiao (1986) and Egger (2000), panel data enable to analyse a number of important issues that cannot be addressed using solely cross-section or time-series data. The panel framework allows capturing the relationships between variables in the model over a longer period and, hence, identifying the impact of the business cycle phenomenon. Furthermore, it enables us to disentangle the time invariant firm-specific effects which are very important when addressing the issue of relation between export propensity and individual operational characteristics of firms.

The structure of our data set is as follows. From approximately 4,500 firms that are engaged in the Slovenian manufacturing sector, we excluded extremely small firms with less than 10 employees, less than DEM 1 million of fixed assets and less than DEM 2 million of sales annually. The sample we obtained comprises about 860 (1994) to 1050 (1998) firms, of which there are about 100 (1994) to 150 (1998) foreign firms. They produce more than 80 per cent of Slovenia's total manufacturing output. Due to transition restructuring a substantial portion of the selected firms went bankrupt or merged with other firms. On the other hand, a number of new firms entered the manufacturing sector. Hence, in order to obtain a reliable data set and to be able to control for time-specific effects we limited our sample to firms operating in all 5 years. We ended up with a constant number of 635 firms, of which 91 are foreign. Such a panel is usually called a balanced panel, however, it is not completely balanced in our case because of some missing values. Having in mind that each firm in each year represents a single observation, we have a potential of 3,175 observations in the total data set, and a potential of 455 observations in a separate data set, consisting of foreign firms only.

5. Results

In the first subsection the structure of the data set (checking for differences among different sub-samples) is analysed and in the second subsection the results of the estimation using panel data techniques are presented.

5.1 *Structural Analysis of the Data Set*

In the first step, the whole data set is divided into sub-samples of domestic and foreign firms. Table 1, showing mean values of the fundamental operational indicators of firms, reveals significant differences between domestic and foreign firms.

On average foreign firms are superior to domestic ones in almost all fundamental operational indicators. They are larger than domestic firms by one fourth (in terms of assets, not employment), they export a significantly larger portion of their output (+15 percentage points) and they buy significantly more inputs abroad (+26 percentage points). Foreign firms are more capital and skill intensive, they pay higher wages (by some 12 %) and operate with higher profits. Interestingly, foreign firms are not attracted to more protected industries, or to industries with a traditionally higher international competitive position.[6)] The above operational differences between domestic and foreign firms become even wider over time.

6) This is basically because the highest RCA indices in the Slovenian manufacturing are in labour intensive industries, to which, apparently, foreign firms are less attracted.

Table 1
Group Statistics for Domestic and Foreign Firms (Period 1994 – 1998)

Variable[1)]	FDI[2)]	N	Mean	Std. Deviation	Std. Error Mean	Variable[1)]	FDI[2)]	N	Mean	Std. Deviation	Std. Error Mean
EX/S	0	2445	41.6	28.7	0.58	**LabC/C**	0	2717	29.2	13.5	0.26
	1	432	56.7	30.8	1.48		1	455	21.7	13.5	0.63
IM/S	0	1547	23.9	20.8	0.53	**VA/S**	0	2648	36.9	16.7	0.32
	1	259	49.9	48.4	3.01		1	435	30.7	14.4	0.69
FES	0	2720	0.0	0.4	0.01	**Pf/Rev**	0	2648	-1.6	17.4	0.34
	1	455	50.9	34.5	1.62		1	435	1.4	10.1	0.49
ASS[2)]	0	2671	1 024,526.7	2 080,159.5	40,249.43	**C/S**	0	2651	101.5	29.1	0.57
	1	440	1 376,161.5	2 616,456.5	124,734.67		1	435	98.9	11.4	0.55
ASS/Emp[2)]	0	2671	5,194.6	8,519.9	164.85	Emp	0	2720	254.3	423.1	8.1
	1	440	7,146.5	8,453.6	403.01		1	455	236.6	379.6	17.8
WAGE/Emp[2)]	0	2720	1,394.1	559.4	10.73	IPR	0	2720	6.3	6.3	0.1
	1	455	1,589.3	733.4	34.38		1	455	5.9	6.2	0.3
LabC/Emp[2)]	0	2717	1,972.1	861.3	16.52	**RCA**	0	2720	269.7	1,970.0	37.8
	1	455	2,238.8	1,023.3	47.97		1	455	146.6	174.6	8.2
LabC/VA	0	2717	76.5	14.2	0.27	**EX/OUT**	0	2720	48.5	114.8	2.2
	1	455	65.5	17.3	0.81		1	455	59.6	57.9	2.7

1) Bold variable indicates significant differences (at 5 %) between the two samples.
2) FDI = 0: domestic firms; FDI = 1: foreign firms.
Note: All variables in %, except ^{2} (in 000 SIT).

Table 2
Group Statistics for Firms with Foreign Majority and Minority Share (Period 1994 – 1998)

Variable[1)]	DumM[2)]	N	Mean	Std. Deviation	Std. Error Mean	Variable[1)]	DumM[2)]	N	Mean	Std. Deviation	Std. Error Mean
EX/S	0	186	54.0	29.7	2.18	LabC/C	0	195	22.1	13.9	0.99
	1	246	58.8	31.5	2.01		1	260	21.4	13.2	0.82
IM/S	0	93	41.3	38.0	3.94	VA/S	0	188	30.1	13.4	0.98
	1	166	54.7	52.9	4.10		1	247	31.2	15.2	0.97
FES	0	195	17.5	16.5	1.18	**PF/Rev**	0	188	2.7	7.4	0.54
	1	260	75.9	20.5	1.27		1	247	0.4	11.7	0.74
ASS[2)]	0	193	1 160,656.5	1 695,648.5	122,055.45	C/S	0	188	98.1	10.7	0.78
	1	247	1 544,552.1	3 147,663.8	200,281.05		1	247	99.5	11.9	0.76
ASS/Emp[2)]	0	193	6,829.9	8,819.9	634.87	**EMP**	0	195	184.1	222.0	15.9
	1	247	7,393.9	8,165.6	519.56		1	260	276.0	460.5	28.6
WAGE/Emp[2)]	0	195	1,467.0	563.0	40.32	IPR	0	195	6.4	5.1	0.4
	1	260	1,681.1	828.1	51.36		1	260	5.6	6.9	0.4
LabC/Emp[2)]	0	195	2,062.6	753.2	53.93	RCA	0	195	157.7	175.4	12.6
	1	260	2,370.9	1,170.4	72.58		1	260	138.2	173.9	10.8
LabC/VA	0	195	67.3	18.7	1.34	EX/OUT	0	195	59.5	57.6	4.1
	1	260	64.2	16.1	1.00		1	260	59.7	58.1	3.6

1) Bold variable indicates significant differences (at 5 %) between the two samples.
2) DumM = 0: minority foreign share; DumM = 1: majority foreign share.
Note: All variables in %, except ^{2} (in 000 SIT).

In the second step the data set of foreign firms was divided into majority and minority foreign owned firms. As shown in Table 2, there are apparently only slight and mostly insignificant differences between the two types of foreign firms. The first observable difference is that majority foreign owned firms import significantly more inputs (+14 percentage points). They also employ more workers, are more skill intensive, pay higher wages and operate at lower profits.

In the third step we performed cluster analysis to check to what extent the observed differences between domestic and foreign firms can be accounted for by their distribution in different factor intensity groups. Our data allow us to perform a classification into three groups: labour-, capital- and skill-intensive.[7] After a closer examination it turned out that the groups of capital- and skill-intensive firms are very similar in terms of their other operational characteristics, hence, we merged both groups. A first look at the classification of results reveals that 70 % of domestic firms is in the labour-intensive sector. In contrast, 56 % of foreign firms is in capital-intensive sector. At second glance it becomes apparent that labour-intensive firms are by far more export oriented than capital-intensive ones, and this relationship is true both for domestic and foreign firms. Another interesting feature is that labour-intensive industries have a better international competitive position (RCA) and lower import protection rates.

Further analysis clearly indicates that differences in fundamental operational characteristics between domestic and foreign firms are predominantly subject to the type of ownership and far less to their different distribution among different factor intensity sectors. Comparing labour-intensive firms first, it is apparent that foreign firms do not differ from domestic ones in terms of size (both in assets and employment), but they perform significantly different than domestic ones in terms of export and import propensity, wages and labour costs. It is interesting that foreign firms pay higher wages, but have significantly lower ratios of labour costs to value added and to total costs, indicating that foreign firms are more successful in using the factor of labour, i.e. in labour productivity. Looking at the capital-intensive firms only, the story is both similar (higher export and import propensity of foreign firms) and different (foreign firms are larger in terms of assets and employment and they operate with higher profits).

Comparing foreign firms only, no additional differences in fundamental operational characteristics between majority and minority foreign-owned firms that could be accounted for by their different distribution among different factor intensity sectors could be detected.

5. 2 *Estimation Results Using Panel Framework*

We use panel data techniques to test whether variation in export propensity of foreign firms in the Slovenian manufacturing sector is systematically associated with the variation in various fundamental operational characteristics of firms. In the panel framework it is crucial to decide which of the two estimators – fixed effects model (FEM) or random effects model (REM) – to employ. Fixed effects are due to omitted variables that are specific to cross-sectional units or to time periods (see Hsiao, 1986). In our case, firm specific fixed effects may be related to ownership specific advantages in the broadest sense and could not be accounted for variables included in the model. As most of these effects are not random but deterministically

7) Four variables have been used in the classification process: assets/employee, labour costs/employee, labour costs/value added, and labour costs/total costs.

Table 3
Estimation Results for the Panel of Domestic and Foreign Firms

Model	Random effects		Fixed effects		Model	Random effects		Fixed effects	
Variable	Coeff.	*t*-Stat.	Coeff.	*t*-Stat.	Variable	Coeff.	*t*-Stat.	Coeff.	*t*-Stat.
Constant	47.908	17.4			**VA/S**	**-0.207**	**-5.7**	**-0.172**	**-5.0**
DumF	**27.406**	**2.2**	**37.187**	**3.1**	VA/SF	0.392	1.4	0.392	1.4
DumM	-0.574	-0.2	-0.932	-0.4	VA/SFK	-0.409	-1.2	-0.473	-1.5
DumK	-3.513	-0.9	2.523	0.7	**VA/SK**	**0.136**	**2.0**	*0.107*	*1.6*
DumFK	-16.532	-1.1	*-26.545*	*-1.9*	**C/S**	**0.022**	**2.9**	**0.020**	**2.8**
Y2	**2.562**	**2.4**	*1.662*	*1.6*	**C/SF**	**-0.292**	**-2.6**	**-0.324**	**-3.0**
Y3	**4.959**	**4.3**	**3.372**	**3.1**	**C/SFK**	0.169	1.2	*0.218*	*1.6*
Y4	**5.859**	**4.7**	**3.981**	**3.4**	*C/SK*	-0.042	-1.3	*-0.057*	*-1.9*
Y5	**3.252**	**2.0**	1.870	1.2	**EX/OUT**	**0.030**	**2.8**	0.011	1.1
FES	0.026	0.6	0.024	0.6	EX/OUTY2	-0.009	-0.8	-0.005	-0.5
ASS	**2.9E-06**	**5.8**	**1.7E-06**	**2.4**	EX/OUTY3	0.004	0.3	0.005	0.4
ASSF	**-3.1E-06**	**-2.1**	**-2.9E-06**	**-2.0**	*EX/OUTY4*	*0.025*	*1.8*	*0.021*	*1.7*
ASSFK	**3.1E-06**	**2.1**	**2.9E-06**	**2.0**	**EX/OUTY5**	**0.072**	**3.3**	**0.052**	**2.6**
ASSK	**-2.0E-06**	**-4.1**	**-1.6E-06**	**-3.0**	**RCA**	**2.3E-03**	**3.1**	*1.3E-03*	*1.8*
ASS/Emp	**9.1E-05**	**2.6**	3.2E-05	0.9	RCAY2	1.5E-03	1.3	8.2E-04	0.8
ASS/EmpF	3.9E-04	0.7	7.8E-04	1.5	RCAY3	1.8E-03	1.6	1.2E-03	1.1
ASS/EmpFK	-3.5E-04	-0.6	-6.8E-04	-1.3	**RCAY4**	**-1.7E-03**	**-2.0**	-8.9E-04	-1.2
ASS/EmpK	-1.1E-04	-1.2	-6.7E-05	-0.8	**RCAY5**	**-2.2E-03**	**-3.0**	*-1.3E-03*	*-1.8*
LabC/Emp	**-3.9E-03**	**-3.8**	**-7.5E-06**	**0.0**	*IPR*	*-0.147*	*-1.7*	0.037	0.4
LabC/EmpF	**2.8E-03**	**2.0**	-1.2E-03	-0.9	IPRY2	-0.118	-1.4	-0.076	-0.9
LabC/EmpFK	**-3.1E-03**	**-2.0**	-9.3E-04	-0.6	**IPRY3**	**-0.231**	**-2.5**	-0.136	-1.6
LabC/EmpK	**3.2E-03**	**3.4**	**2.0E-03**	**2.2**	**IPRY4**	**-0.401**	**-3.5**	**-0.223**	**-2.0**
LabC/C	-0.013	-0.2	**-0.244**	**-3.3**	**IPRY5**	**-0.309**	**-2.6**	-0.142	-1.2
LabC/CF	-0.333	-0.9	-0.429	-1.3	Dependent variable: EX/S.				
LabC/CFK	0.572	1.2	*0.755*	*1.7*	**Adj. R sq.**	0.880		0.934	
LabC/CK	-0.025	-0.2	-0.056	-0.5	**W/F**	402.8		801.4	
					N	2859		2859	
					Hausman specification test:				
					Chi sq.	771.5			
					Prob.	0.000			

Note: Bold variable indicates significance at 5% confidence level and *italic* variable at 10%.

associated with certain idiosyncratic factors, FEM seems to be the right choice. Nevertheless, Hausman specification test will be used to decide whether the FEM or the REM is the econometrically more appropriate approach.

We ran several differently specified models with regard to the inclusion of factor-intensity and time effects. For each included firm variable we included three different dummy variables in order to control for the type of ownership (DumF), for factor intensity differences in general (DumK) and between domestic and foreign firms (DumFK). The dependent variable, i.e. export propensity proved to vary over time, the same is true for industry related independent variables, while all the firm related independent variables proved to be stable over time. Therefore, we removed the time dummies for these variables. After this conception adjustments we ended up with the model specification as presented in Table 3.

In the panel of all (domestic and foreign) firms, both FEM and REM have been performed. However, highly significant Hausman $\div^2$ statistics reveals systematic differences in coefficients between both models, hence indicating a high importance of firm-specific effects and their correlation with the dependent variable. Therefore, the comments are made only to the results obtained with FEM:

a) *Dummy variables*:

– DumF: higher export propensity of foreign versus domestic firms, as observed in the previous section, is confirmed;

– DumK and DumFK: insignificant coefficients conform to the above prediction that a predominant source of differences in export propensity of firms is not their distribution among different factor-intensive sectors;

– Time dummies confirm that export propensity of firms increased over the observed period.

b) *Firm variables*:

– type of ownership: foreign firms are significantly more export oriented than domestic ones (DumF) confirming the importance of the type of owenrship for export propensity;

– extent of foreign control: foreign equity share (FES) does not have any significant impact on foreign firms' export propensity, and no statistically significant differences in export propensity of majority and minority foreign-owned firms (DumM) were found;

– size of firm is, in general, confirmed to be positively correlated with export propensity. However, this relationship turned out to be significantly negative for labour-intensive foreign firms;

– capital intensity does not have any significant impact on export propensity (neither for domestic nor for foreign firms);

– skill intensity, in general, does not have any significant impact on export propensity, except for capital-intensive firms where this relationship is, as expected, positive;

– labour intensity turned out to be significantly negatively correlated with export propensity for both domestic and foreign firms. This result seems to be in strong opposition with the evidence presented in the previous section. However, it can be explained by two facts: labour-intensive firms are more export oriented than capital-intensive ones, but as the export propensity of firms increases over time (for both domestic and foreign firms) their labour intensity decreases, and foreign firms are less labour-intensive but more export oriented than domestic ones;

– scope of value added is, as predicted, negatively correlated with export propensity. This relationship is unaffected by differences between domestic and foreign firms and by differences in factor intensity;

Table 4
Estimation Results for the Panel of Foreign Firms

Model	Random effects		Fixed effects		Model	Random effects		Fixed effects	
Variable	Coeff.	*t*-Stat.	Coeff.	*t*-Stat.	Variable	Coeff.	*t*-Stat.	Coeff.	*t*-Stat.
Constant	60.854	3.4			VA/S	0.333	0.7	0.337	0.8
DumM	**51.858**	**2.2**	**46.101**	**2.2**	VA/SM	0.325	0.6	0.169	0.3
DumK	-4.453	-0.2	-8.897	-0.5	VA/SMK	-0.320	-0.5	-0.051	-0.1
DumMK	-43.730	-1.5	-25.549	-1.0	VA/SK	-0.447	-0.8	-0.380	-0.8
Y2	4.285	1.1	*5.884*	*1.7*	C/S	-0.063	-0.4	-0.076	-0.6
Y3	5.257	1.3	5.106	1.4	**C/SM**	**-0.458**	**-2.1**	**-0.374**	**-2.0**
Y4	3.954	1.0	4.337	1.3	C/SMK	0.359	1.3	0.178	0.8
Y5	-0.208	0.0	2.845	0.6	C/SK	-0.016	-0.1	0.029	0.2
FES	0.042	0.9	0.021	0.5	**EX/OUT**	**0.048**	**2.0**	0.031	1.4
ASS	2.0E-06	0.8	1.6E-07	0.1	EX/OUTY2	0.034	0.6	-0.006	-0.1
ASSM	-2.9E-06	-1.1	-2.4E-06	-1.0	EX/OUTY3	-0.017	-0.4	-0.024	-0.6
ASSMK	1.9E-06	0.8	9.0E-07	0.4	EX/OUTY4	0.020	0.5	0.008	0.2
ASSK	-3.0E-07	-0.1	9.3E-07	0.4	EX/OUTY5	0.077	1.2	0.016	0.3
ASS/Emp	-5.1E-04	-0.4	4.4E-05	0.0	RCA	9.3E-03	0.8	-1.4E-02	-1.1
ASS/EmpM	1.0E-03	0.7	9.0E-04	0.7	RCAY2	1.7E-03	0.2	5.4E-03	0.7
ASS/EmpMK	-9.6E-04	-0.7	-6.9E-04	-0.5	RCAY3	-2.5E-03	-0.3	-4.5E-03	-0.5
ASS/EmpK	5.3E-04	0.5	-9.9E-05	-0.1	RCAY4	-1.5E-03	-0.2	1.5E-03	0.2
LabC/Emp	-9.6E-05	0.0	-5.2E-04	-0.1	RCAY5	-6.8E-03	-0.8	3.3E-03	0.4
LabC/EmpF	-1.2E-03	-0.3	-1.3E-03	-0.3	IPR	-0.398	-1.2	-0.034	-0.1
LabC/EmpFK	-3.7E-04	-0.1	-2.0E-03	-0.5	*IPRY2*	-0.558	-1.5	*-0.590*	*-1.9*
LabC/EmpK	9.8E-04	0.2	3.4E-03	0.9	IPRY3	-0.268	-0.7	-0.087	-0.3
LabC/C	-0.533	-1.0	*-0.827*	*-1.7*	IPRY4	-0.468	-1.1	-0.114	-0.3
LabC/CF	-0.469	-0.7	-0.337	-0.5	IPRY5	-0.054	-0.1	0.080	0.2
LabC/CFK	0.815	0.9	0.507	0.6	Dependent variable: EX/S.				
LabC/CK	0.555	0.7	0.378	0.6	Adj. R sq.	0.874		0.945	
					W/F	81.3		144.29	
					N	382		382	
					Hausman specification test:				
					Chi sq.	46.3			
					Prob.	0.501			

Note: Bold variable indicates significance at 5% confidence level and *italic* variable at 10%.

– import propensity: the impact of this variable on export propensity could not be effectively tested because the inclusion of this variable into the model always completely violated the estimation procedure. However, the evidence is in line with the prediction that import propensity is positively correlated with export propensity (both increase over time and both are higher in foreign than in domestic firms);

– production costs considerations: for foreign firms export propensity is, as hypothesised, significantly negatively correlated with production costs, while for domestic firms this relationship is significantly positive.

c) *Industry variables*:

– import protection is in general not significantly associated with export propensity of firms. However, the inclusion of time dummies for this variable shows that the relationship, as expected, becomes negative over time (significant in year 4);

– export orientation of industries is in general not correlated with export propensity of firms, but time dummies show that the relationship, as expected, becomes positive and significant over time;

– the international competitive position of industries has, interestingly, no significant impact on export propensity of firms.

In the second step we ran the similarly specified model also on the panel of foreign firms only. However, as results presented in Table 4 show, this model does not seem to be an appropriate way to explain the variation in export propensity of foreign firms in the Slovenian manufacturing sector. With the exception of the cost-to-sales variable, the only significant explanatory variable in the model turned out to be the dummy variable that differentiates between majority and minority foreign-owned firms (DumM).

Evidently, it indicates that there are significant differences in the level of export propensity between majority and minority foreign-owned firms and that there are no differences in the slope of the explanatory variables between the two groups. The variation in various operational characteristics within the group of foreign firms seems to be too modest to allow for any significant relationships with the dependent variable. These results confirm the findings of the previous section, where no significant differences in operational characteristics between both groups of foreign firms have been found.

6. Conclusions

The paper discusses the determinants of export propensity of foreign firms in the Slovenian manufacturing sector relative to domestic firms. Our main objective has been to explore to what extent foreign subsidiaries' export propensity is different, compared to domestic firms, due to the factor of "foreign ownership" itself and due to differences in various fundamental operational characteristics between foreign and domestic firms. A panel framework has been applied to capture the relationships between export propensity of firms and their fundamental operational characteristics over a longer period of time and to disentangle the time invariant firm-specific effects (such as unobserved differences in qualification structures of employees between firms, differences in firm-specific intangible assets, etc., which might be commonly denominated as ownership-specific advantages).

Our estimation results clearly demonstrate three basic facts. First, foreign subsidiaries in the Slovenian manufacturing sector do behave significantly different from domestic firms in terms of the differences in their fundamental operational characteristics. Foreign firms are larger, they export a significantly larger portion of their output and they buy significantly more inputs abroad, they are more capital and skill intensive, they pay more attention to their costs, they also pay higher wages and

operate with higher profits. Second, these differences are predominantly subject to the type of ownership (foreign versus domestic) and far less to their different distribution among different factor intensity sectors. Therefore, foreign ownership as such does matter in a positive sense, as far as export propensity in the Slovenian manufacturing sector is concerned. Third, differences in fundamental operational characteristics between domestic and foreign firms do significantly affect their export propensity. These differences do not only reflect a different attitude of foreign firms towards export orientation, but, furthermore, they seem to be a prerequisite for a successful export oriented business strategy.

On the other hand, our study failed to find any significant differences in operational characteristics between majority and minority foreign owned firms, reflecting a different extent of foreign control. In addition, the model that was successful in explaining the differences in export propensity between domestic and foreign firms turned out to be an inappropriate way to explain the differences in variation in export propensity of both groups of foreign firms.

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