
Original Article

Backward FDI linkages as a channel for transferring technology and building innovation capability: The case of Slovenia

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Abstract Backward linkages of foreign subsidiaries with their local suppliers prove to be one of the main channels of knowledge spillovers via foreign direct investment. This paper analyses the potential of backward linkages of foreign subsidiaries in Slovenia for the transfer of technology and for the innovation capability-building of their local suppliers. Based on a survey of foreign subsidiaries in Slovenia, we aim to investigate the mechanisms of knowledge spillovers via linkages of foreign subsidiaries with local suppliers in Slovenia. This enables us to trace the development of the technological and organizational capability of local suppliers in order to meet the growing demands made by foreign subsidiaries. This firm-level analysis is complemented with an analysis of the national innovation policy to see whether the measures introduced to support innovation are in fact helping local business to improve its technological capability and are thus providing additional stimuli for innovation.

Les effets de liaison amont entre les filiales étrangères et les fournisseurs locaux s'avèrent être les principaux vecteurs de transferts de connaissances via les IDE. L'article analyse les effets potentiels de liaison amont de filiales étrangères en Slovénie, en ce qui concerne les transferts de technologie au regard de la construction de capacités d'innovation de leurs fournisseurs locaux. A partir d'une enquête auprès de filiales étrangères en Slovénie, nous étudions les mécanismes de transferts de connaissances à travers les effets de liaison avec les fournisseurs locaux en Slovénie. Ce qui nous permet de suivre le développement des capacités technologiques et organisationnelles des fournisseurs locaux, dans le but de satisfaire les exigences croissantes des filiales étrangères. L'analyse au niveau de la firme est complétée par une analyse de la politique nationale d'innovation afin de vérifier si les mesures destinées à promouvoir l'innovation aident réellement les entreprises locales à améliorer leurs capacités technologiques et si elles constituent, par conséquent, une incitation supplémentaire à l'innovation.

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Introduction and the Conceptual Framework

Several analyses have explored and confirmed the beneficial role of foreign direct investment (FDI) in the restructuring of new EU member states' (NMS) economies (Meyer, 1998; Holland *et al.*, 2000; Hunya, 2000; Rojec, 2000; Konings, 2001; OECD, 2002; Damijan and Rojec, 2004, and so on). However, the actual impact of FDI varies across the NMS due to differences in the size and in the sectoral composition of FDI. Although Slovenia has attracted a very small share of FDI relative to some other NMS, the empirical evidence reveals that in both absolute and relative terms FDI has been a relevant mechanism for increasing innovation activity in the economy. Table 1 shows that

Table 1: R&D expenditures and innovation activity of Slovenian firms by type of ownership, 1996–2002 (in per cent)

	<i>N</i>	<i>R&D/sales</i> (<i>innovative firms</i>)	<i>R&D/sales</i> (<i>non-innovative firms</i>)	<i>Fraction of</i> <i>innovative firms</i>
<i>All firms</i>				
1996	1454	1.5	0.026	21.7
1998	1777	1.6	0.003	23.0
2000	2518	6.0	0.021	21.2
2002	2564	6.5	0.015	20.6
<i>Domestic</i>				
1996	1148	1.4	0.027	18.6
1998	1371	1.5	0.003	19.5
2000	1923	7.1	0.023	17.5
2002	1935	6.4	0.004	17.3
<i>Foreign</i>				
1996	306	1.8	0.023	33.3
1998	406	1.9	0.003	34.7
2000	595	4.1	0.012	32.9
2002	629	6.6	0.055	30.5

Source: Statistical Office of the Republic of Slovenia; own calculations.

the fraction of innovative firms among all firms is much higher with foreign subsidiaries than with domestic firms.

The transfer of knowledge and innovation via FDI occurs directly through flows between a foreign parent company and its foreign subsidiaries, and indirectly via spillovers from foreign subsidiaries to domestic firms. Spillovers may be vertical (inter-industry), where local companies are either suppliers or buyers of foreign subsidiaries, or horizontal (intra-industry) the result of an imitation process, increased competition within a specific sector, the movement of labour, and so on. The subject of this paper is only one of the possible channels of vertical spillovers, that is, backward linkages, meaning the engagement of domestic suppliers by foreign subsidiaries. The fact that the entry of a multinational enterprise (MNE) may stimulate the development of host-country upstream industries supplying parts or components was recognized a long time ago (Markusen and Venables, 1999).

The substantial body of empirical literature on FDI spillovers, which has developed in the last nearly 30 years, has produced mixed empirical results. The econometric analyses have found positive, neutral as well as negative spillovers from foreign affiliates to domestic firms. The evidence suggests that there can be FDI spillovers, but they do not occur everywhere to the same degree. There is also no strong consensus on the associated magnitudes of FDI spillovers, or on the causality (see, for instance, Rodrik, 1999; Blomström *et al*, 2000; Görg and Strobl, 2001; Keller and Yeapl, 2003; Görg and Greenaway, 2004; Keller, 2004, pp. 58–65; Knell and Rojec, 2007).

It is only relatively recently that empirical studies of FDI spillovers have taken explicit account of the differentiation between vertical and horizontal spillovers. The overwhelming conclusion of these studies is that horizontal intra-industry spillovers are less likely to take place than vertical spillovers. With rare exceptions – Smarzynska and Spatareanu (2002) for Romania – these studies mostly suggest positive vertical spillovers

for the host countries. Thus, Blalock (2001) finds positive productivity spillovers from FDI in upstream industries in Indonesia; Schoors and van der Tol (2001) find positive vertical spillovers in Hungary; Kugler (2006) finds FDI knowledge spillovers between but not within industries of the Colombian manufacturing sector; Smarzynska (2003) finds positive backward FDI spillovers but no horizontal spillovers in Lithuania; for 10 advanced transition countries, Damijan *et al* (2003) find that vertical spillovers are much more important than horizontal spillovers and Halpern and Murakozy (2006) find positive vertical and negative horizontal FDI spillovers in Hungary. In short, MNEs seem to be keen to protect the outflow of information to avoid local competition (horizontal spillovers); yet they are also interested in increasing the capabilities of their local suppliers (vertical spillovers through backward linkages) to better fulfil their requirements in terms of the quality of the products/services supplied.

Lall (1980) identified the following forms of interaction between MNEs and their local suppliers that can increase the productivity and effectiveness of enterprises in a recipient country: (i) assistance to future suppliers in setting up production capabilities; (ii) demand for products/services of high quality, with reliable and timely delivery, while providing technical help and information on product improvement and innovation¹; (iii) providing training and consultancy in management and organization and (iv) assistance in finding additional buyers, including subsidiaries of the same company in other countries. Smarzynska (2003) reiterates some of 'Lall's' channels and identifies new ones. Increased demand for intermediates due to the entry of foreign subsidiaries in the market leads to improved economies of scale for local suppliers. On the other hand, MNEs that take over local companies can decide to procure from abroad, and thus cut the previous links between local companies and increase the level of competition in the intermediates' market.

Research on existing FDI spillovers mostly fails to identify the exact mechanisms through which FDI facilitates knowledge spillovers. The aim of this paper is to investigate the mechanisms of knowledge spillovers via linkages between foreign subsidiaries and local suppliers (procurement structure, practices and policies of foreign subsidiaries) in Slovenia. Following the introduction, we present a questionnaire survey of 122 foreign subsidiaries in Slovenia, and analyse the structure and trends in supplies, the level of autonomy in supply policy, factors determining the choice of suppliers and the importance of host-country policy measures for increasing the share of local suppliers to foreign subsidiaries. In the subsequent section, we examine the decision-making process regarding the subsidiary's independence in procurement and in the later section, the elements of the process to select suppliers. In the penultimate section, we are especially interested in whether economic (or other) policy influences the structure of local procurement in any way. Our assumption is that, because backward linkages could increase the technology/productivity capabilities of local supplier firms, the policy should encourage the local procurement and cooperation of local firms with foreign subsidiaries. The last section concludes. The results of the analysis are expected to provide insights into the extent and structural characteristics of backward FDI spillovers in Slovenia, along with their contribution to the technological and innovation capacity of local enterprises.

The Procurement Structure of Foreign Subsidiaries

We analyse the procurement structure on the basis of a questionnaire survey of 122 foreign subsidiaries in Slovenia. The survey was implemented during the second half of 2004. The

surveyed sample represents 5.6 per cent of the total population of foreign subsidiaries in Slovenia (2175 at the end of 2004). Their share in total sales and employment of foreign subsidiaries in Slovenia is, however, much more significant: 19.1 per cent in sales and 29.6 per cent in employment. The surveyed subsidiaries are, thus, on average more labour-intensive than foreign subsidiaries in Slovenia in general.² The foreign investors/owners come from 21 countries: most from Austria (37) and Germany (26), followed by Croatia (12), Italy (9), the Netherlands (9), Sweden (5) and Switzerland (5). The main activity of the sample enterprises is distribution (40.2 per cent) (motor vehicles sale, retail and wholesale trade), followed by manufacturing (30.9 per cent). As many as 100 of the surveyed enterprises are 100 per cent wholly foreign-owned, and in only eight of them was the foreign equity share lower than 50 per cent. Total employment in the sample firms accounted for 18 668, or an average of 155.6 employees per firm. Size distribution shows that the majority of the enterprises belong to the category of small firms with 10 to 49 employees (31.7 per cent), middle-sized firms with 50 to 249 employees account for 20 per cent and large firms for 10.8 per cent. The average share of exports in total sales amounts to 31.7 per cent. Of total exports, on average 37.2 per cent go to the parent company abroad (Bank of Slovenia, 2005). There is a significant difference between manufacturing and service firms: the former are mostly export-oriented, whereas the latter focus on the Slovenian market. This is understandable due to the much lower tradability of services compared to manufacturing, but also to the dominance of distribution companies in our sample of service companies that tend to serve the local market.

We examine the structure of the procurement of products and services of the sample foreign subsidiaries by the origin of supplier. We attempt to establish whether the structure has changed since the entry of the foreign investor, and whether the share of local suppliers has grown. This can, on the one hand, indicate the level of integration of foreign subsidiaries in Slovenia into their parent companies' network and, on the other, the level of integration of local suppliers in the subsidiary's business. The latter, particularly, is a key determinant of the technology/knowledge spillovers from foreign to local firms.

The structure of the surveyed sample with a dominant share of distribution companies places some limitation on our analysis and conclusions. It is only in the manufacturing and retail trade foreign subsidiaries where one can analyse the impact of FDI on local suppliers of material inputs. In the case of other distribution firms (in the area of motor vehicles' retail trade and wholesale trade), and firms from other service sectors, the engagement of local suppliers is more or less limited to the procurement of service inputs. Our conclusions related to the suppliers of material inputs thus pertain mostly to the manufacturing firms (and retail trade firms), whereas conclusions related to the suppliers of service inputs are relevant for all the sample firms.

The data in Table 2 reveal a high share of local suppliers in foreign subsidiaries' procurement in Slovenia, which is probably the most striking feature of the procurement structure. At the time of entry, nearly 44.9 per cent of the total procurement of foreign subsidiaries comes from domestic suppliers. Parent companies hold second place with 35.7 per cent, and other foreign companies account for 12.9 per cent. Other foreign subsidiaries play a minor role as suppliers of only 6.5 per cent on average. The procurement structure undergoes significant change over time on account of the decreased share of the parent companies, which seems to mostly go to other suppliers from abroad. The most significant change is noticed in the number of firms that have been receiving inputs exclusively from foreign parent companies, a drop from 20.5 per cent at entry to 14.0 per cent at present. On the other hand, the share of local suppliers has increased only marginally

Table 2: Procurement structure of material inputs by suppliers at entry and at present

	<i>Foreign parent company</i>		<i>Foreign subsidiary of parent company</i>		<i>Other foreign companies</i>		<i>Local companies</i>	
	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>
<i>At entry</i>								
0	52	46.4	92	82.1	76	67.9	32	28.6
0.1–5.0	4	3.6	5	4.5	7	6.3	6	5.4
5.1–10.0	4	3.6	5	4.5	2	1.8	7	6.3
10.1–20.0	7	6.3	2	1.8	4	3.6	6	5.4
20.1–30.0	2	1.8	1	0.9	5	4.5	6	5.4
30.1–40.0	2	1.8	0	0.0	4	3.6	6	5.4
40.1–50.0	2	1.8	1	0.9	1	0.9	2	1.8
50.1–60.0	2	1.8	1	0.9	2	1.8	3	2.7
60.1–70.0	2	1.8	0	0.0	5	4.5	3	2.7
70.1–80.0	4	3.6	0	0.0	2	1.8	4	3.6
80.1–90.0	7	6.3	0	0.0	1	0.9	4	3.6
90.1–99.9	1	0.9	0	0.0	2	1.8	5	4.5
100	23	20.5	5	4.5	1	0.9	28	25.0
Total	112	100.0	112	100.0	112	100.0	112	100.0
Average share (%)	35.7	—	6.5	—	12.9	—	44.9	—
No reply	10	—	10	—	10	—	10	—
<i>At present</i>								
0	52	45.6	89	78.1	60	52.6	21	18.4
0.1–5.0	9	7.9	8	7.0	10	8.8	7	6.1
5.1–10.0	6	5.3	5	4.4	10	8.8	10	8.8
10.1–20.0	7	6.1	4	3.5	3	2.6	7	6.1
20.1–30.0	3	2.6	0	0.0	4	3.5	10	8.8
30.1–40.0	2	1.8	2	1.8	2	1.8	9	7.9
40.1–50.0	0	0.0	2	1.8	5	4.4	4	3.5
50.1–60.0	5	4.4	1	0.9	5	4.4	3	2.6
60.1–70.0	3	2.6	1	0.9	6	5.3	2	1.8
70.1–80.0	4	3.5	0	0.0	6	5.3	4	3.5
80.1–90.0	6	5.3	0	0.0	1	0.9	8	7.0
90.1–99.9	1	0.9	0	0.0	1	0.9	5	4.4
100	16	14.0	2	1.8	1	0.9	24	21.1
Total	114	100.0	114	100.0	114	100.0	114	100.0
Average share (%)	30.0	—	5.6	—	18.1	—	46.3	—
No reply	8	—	8	—	8	—	8	—

Source: Own calculations based on the survey.

to 46.3 per cent. This indicates that since the entry of foreign investors, domestic suppliers have not improved their position, which is somewhat surprising and contrary to our expectations. We had expected that, once a foreign investor recognizes the capabilities of the local suppliers, this would lead to increased integration in their supply network.

A closer analysis reveals the following situation: over time the share of local procurement is lowered, particularly in those firms that were, at the point of entry of foreign capital, exclusively buying from local suppliers (a drop in the share from 25.0 to 21.1 per cent). On the other hand, the share of foreign subsidiaries with no local procurement has declined from 28.6 per cent at the entry point to 18.4 per cent at present. The latter seems

to indicate that a number of those foreign investors, who were initially the most reluctant to engage domestic suppliers, do gradually change their view.³

The survey also looked at the procurement of services where an even greater preference for local suppliers was found (see Table 3). Foreign subsidiaries buy on average nearly 70 per cent of services from local suppliers. This share has not changed in a significant way since the entry of foreign investors.⁴ What has happened is a drop in the number of foreign subsidiaries that do not buy services locally: from 16.5 per cent at the time of entry to 11.9 per cent today. This shows that local service suppliers were able to secure their relations with the foreign subsidiaries. On average, the share of services supplied by foreign parent companies has dropped from 19.8 to 17.8 per cent, whereas the share of other subsidiaries

Table 3: Structure of the procurement of service inputs by type of suppliers, at entry and at present

	<i>Foreign parent company</i>		<i>Foreign subsidiaries of parent company</i>		<i>Other foreign firms</i>		<i>Local firms</i>	
	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>
<i>At entry</i>								
0	70	60.9	93	80.9	85	73.9	19	16.5
0.1–5.0	11	9.6	7	6.1	8	7.0	1	0.9
5.1–10.0	3	2.6	2	1.7	9	7.8	3	2.6
10.1–20.0	2	1.7	5	4.3	4	3.5	3	2.6
20.1–30.0	3	2.6	1	0.9	2	1.7	2	1.7
30.1–40.0	2	1.7	2	1.7	1	0.9	2	1.7
40.1–50.0	7	6.1	0	0.0	3	2.6	5	4.3
50.1–60.0	0	0.0	0	0.0	2	1.7	3	2.6
60.1–70.0	0	0.0	0	0.0	0	0.0	2	1.7
70.1–80.0	2	1.7	2	1.7	0	0.0	9	7.8
80.1–90.0	0	0.0	2	1.7	0	0.0	13	11.3
90.1–99.9	0	0.0	0	0.0	0	0.0	11	9.6
100	15	13.0	1	0.9	1	0.9	42	36.5
Total	115	100.0	115	100.0	115	100.0	115	100.0
Average share (%)	19.8	—	5.9	—	5.7	—	68.6	—
No reply	7	—	7	—	7	—	7	—
<i>At present</i>								
0	65	55.1	91	77.1	81	68.6	14	11.9
0.1–5.0	18	15.3	6	5.1	9	7.6	4	3.4
5.1–10.0	1	0.8	4	3.4	10	8.5	6	5.1
10.1–20.0	8	6.8	6	5.1	6	5.1	1	0.8
20.1–30.0	3	2.5	1	0.8	3	2.5	3	2.5
30.1–40.0	0	0.0	3	2.5	2	1.7	5	4.2
40.1–50.0	8	6.8	1	0.8	1	0.8	5	4.2
50.1–60.0	1	0.8	1	0.8	2	1.7	2	1.7
60.1–70.0	0	0.0	1	0.8	1	0.8	4	3.4
70.1–80.0	1	0.8	1	0.8	1	0.8	8	6.8
80.1–90.0	2	1.7	1	0.8	0	0.0	20	16.9
90.1–99.9	0	0.0	1	0.8	1	0.8	7	5.9
100	11	9.3	1	0.8	1	0.8	39	33.1
Total	118	100.0	118	100.0	118	100.0	118	100.0
Average share (%)	17.8	—	7.1	—	7.7	—	67.4	—
No reply	4	—	4	—	4	—	4	—

Source: Own calculations based on the survey.

Table 4: Structure of the procurement of foreign-owned firms^a in selected NMS (in per cent)

Country	Procurement from			
	Foreign parent company	Other foreign suppliers	Other domestic subsidiaries of foreign parent company	Other domestic suppliers
Total ^b	27.6	28.0	7.2	34.4
Slovakia	32.7	36.1	23.0	1.6
Poland	34.0	17.8	6.7	40.5
Estonia	24.8	30.1	5.4	36.6
Slovenia	23.5	34.6	0.5	41.3
Hungary	17.9	32.0	1.2	45.3

^a433 firms.^bWeighted average.Source: Majcen *et al* (2003).

and of other foreign companies has increased (from 5.9 to 7.1 per cent and 5.7 to 7.7 per cent, respectively). This indicates that only a marginal change in the structure of the procurement of services has occurred.

To better comprehend the role of local suppliers in the procurement of foreign subsidiaries in Slovenia, we should compare this with either the structure of procurement of local firms or the structure of procurement of foreign subsidiaries in other NMS. The first comparison reveals that, in 2004, the share of imports in manufacturing firms' sales was 29.5 per cent for domestic firms and 44.8 per cent for foreign-owned firms, indicating that domestic firms have a significantly higher share of local procurement than foreign subsidiaries. In comparison with the procurement patterns of foreign subsidiaries in some other NMS (Table 4), the share of local suppliers in Slovenia is slightly lower than that in Hungary, about the same as in Poland and higher than in Estonia and Slovakia. This places Slovenia somewhere in the middle of the NMS. But if we consider that the economy of Slovenia is much smaller than those of Hungary or Poland and is thus predetermined to have a higher share of imports, the statement concerning the high relative share of local inputs in the case of foreign subsidiaries in Slovenia seems correct.

Overall, the structure and trends in the procurement of intermediate goods and services of the surveyed foreign subsidiaries in Slovenia show a relatively high share of local suppliers. Further, it is noted that this share has remained relatively stable since the entry, and this is contrary to our expectations. This may also point to the limited capability of local suppliers to meet the requirements of foreign-owned firms and thus to absorb knowledge spillovers. One possible source of this limitation is the relatively low level of current R&D and innovation activity in local firms in Slovenia, which by itself would affect their ability to benefit from knowledge spillovers. We will examine this more closely in the next sections, but first we look at how independent foreign subsidiaries are in their procurement patterns.

Foreign-Owned Firms' Autonomy in the Selection of Suppliers

One of the important determinants of the share of local procurement is the level of autonomy of foreign subsidiaries in the process of selecting suppliers. Our assumption is

Table 5: Autonomy of foreign subsidiaries in the selection of suppliers of products and services

	<i>Procurement of products</i>		<i>Procurement of services</i>	
	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>
Firm has no influence	17	14.7	7	5.9
Firm has limited influence	19	16.4	12	10.1
Firm has significant influence	35	30.2	40	33.6
Firm has full autonomy	45	38.8	60	50.4
Average estimation ^a	2.9	—	3.4	—
Total	116	100.0	119	100.0

^aCalculated on the basis of the following weights: 1 – no influence; 2 – limited influence; 3 – significant influence; 4 – full independence.

Source: Own calculations based on the survey.

that the higher autonomy of subsidiaries should lead to a higher share of local suppliers. MNEs have very different policies when it comes to procurement, where much also depends on the nature of the input (strategic versus standardized less important one). The increased internationalization of production process including off-shoring has resulted in a complex network of subsidiaries, with each involved in the production of a segment of a product and acting as an internal supplier to another subsidiary. This reduces the room available for the independent selection of local suppliers.

Table 5 shows a varied response concerning the impact of foreign subsidiaries on the selection of suppliers. Most foreign subsidiaries have either a significant impact on the selection of suppliers or are even completely independent in the procurement process. The latter is especially true of the procurement of services (as many as 84 per cent of the surveyed companies, in comparison to the procurement of material inputs, with 69 per cent of all firms). As expected, due to their nature, in particular their non-storability and the need for the interaction of the supplier and the customer, several services have to be procured locally. Only 14.7 per cent of the surveyed firms have no influence on the selection of suppliers of inputs, and even fewer on the procurement of services (5.9 per cent). On the other hand, as many as 38.8 per cent of surveyed firms enjoy complete autonomy in the selection of suppliers of products, and 50.4 per cent of firms in the case of procuring services. This would suggest that the lack of foreign subsidiaries' independence in the selection of suppliers is not an obstacle to higher share of local procurement.

Additional interviews with some of the surveyed firms about their position in the procurement process confirm the relatively high autonomy of foreign subsidiaries in Slovenia.⁵ The following are the examples of procurement procedures in the interviewed foreign subsidiaries:

- (1) The inputs are strongly dictated by the end buyers, who explicitly insist on inputs from a particular supplier. The replacement of a supplier by a local one was only marginally successful. Often in such cases the suppliers' network is quite stable, since the process of introducing a new supplier would be complex and lengthy, also involving the final buyers.
- (2) The firm is fully integrated in the global procurement network of the parent company. Annual conferences at the level of the parent company discuss the procurement policy and procedure for the entire group. The purpose of such a

policy is to lower the prices and secure the desired level of quality at the level of the group. All firms in the network have the task of securing the competitiveness of procurement with regard to quality, price and delivery, as well as of developing partnership relations with the suppliers and broadening the suppliers' network. The parent company develops a specific system for evaluating the quality of the suppliers. In accordance with this system, the suppliers are ranked in different categories. Often, the task of the Slovenian subsidiary is to implement a global procurement policy in Slovenia and successor countries of former Yugoslavia. This includes the selection and development of relations with suppliers from this area and market research for potential new suppliers. It also requires the continuous monitoring of the quality of suppliers. The subsidiary is under constant pressure to reduce input prices and therefore it is in its interest to select the best suppliers that can follow this trend.

- (3) The firm is completely integrated in procurement at the level of the parent company where procurement for the entire group is negotiated and coordinated. A Slovenian subsidiary only coordinates procurements in Slovenia if that has been agreed on with the parent company. Even in this centralized approach, local subsidiaries are encouraged to negotiate their terms of purchase with the central procurement to secure their benefits.
- (4) The firm suggests potential suppliers, but the final decision is coordinated at the level of the parent company. Overall, there is a tendency to increase the autonomy of the subsidiaries in the area of procurement as long as the least expensive yet quality inputs are found. Key determinants of the suppliers' network are quality, price and reliability. All suppliers' contracts are reviewed annually. Even though there is a high level of competition among the suppliers, a switch to a new supplier is relatively difficult, since it takes between one to two years to 'develop' them into a good supplier. While the firm is constantly on the lookout for potential new suppliers, the decision to change would require several well-founded reasons. The entry of a foreign investor often resulted in cheaper inputs, particularly due to a constant search for more price-competitive inputs on the one hand and, on the other, to an improved bargaining position that is achieved by becoming a member of the larger (more influential) MNE.
- (5) Although relatively independent in its procurement, the firm still coordinates changes in the suppliers' network with the parent company. Key determinants in the selection process are again the quality, price and delivery terms, with quality being a prerequisite to beginning negotiations in the first place. The constant revision of the suppliers' contracts is practiced, as well as a regular search for potential new suppliers. For each strategic input, in principle the firm tries to work with at least two suppliers.
- (6) The firm has its own fully independent procurement network. Within the parent company, subsidiaries in different countries compete as to the efficiency of their procurement, and each subsidiary tries to find the least expensive and reliable suppliers. One goal of the group's procurement process is to secure a stable supply of strategic inputs from different sources to avoid the dominance of a few large MNEs in the supply market.

From these various encounters, we can conclude that foreign subsidiaries do not have a standardized set of suppliers that are allowed/selected by their parent company. On the

contrary, the subsidiaries are constantly encouraged to search for new and better suppliers, on the assumption that quality and price are the main determinants. In the next section, we look in more detail at the process of selecting suppliers, which could explain why local procurement has remained relatively stable since the point of entry of the foreign investor.

The Selection Determinants for Procuring Products and Services

One of the initial decisions a company has to make is that which inputs it should produce itself and which should it procure in the market. Should it decide on its own production, then in the case of an MNE two more options are available: to produce at the headquarters or to transfer the production to a foreign subsidiary. A parallel process is possible in the case of procurement: should it buy its inputs locally or import them? The final choice depends on a complex set of factors. In the case of strategic inputs, the company may prefer to produce these locally to maintain a higher level of control. The same argument is valid in the case of inputs that are novel or in the early development phase: here it is important to prevent potential knowledge/technology spillovers. The issue of imperfect contracts or market imperfections, resulting in higher costs of contract sanctions, may also divert the company from outsourcing/off-shoring strategic inputs. With its network of affiliates, MNEs have an even a wider range of options available for designing their suppliers' network.

We are particularly interested in that part of the procurement of foreign subsidiaries in Slovenia that does not include the parent company's network. In fact, this is a significant share of total procurement. According to our survey, 64.4 per cent of material inputs and 75.1 per cent of services are obtained from outside suppliers. We have grouped the determinants of suppliers' selection process into five categories: price, quality, reliability, flexibility and proximity of the supplier. As seen in Table 6, the selection is based on a complex set of determinants. The supplier needs to meet the quality and price terms, while also providing an adequate level of reliability and flexibility. In the case of the suppliers of material inputs, as many as 89.4 per cent of responses suggest that price is an important or very important factor, and for quality the share is 94.6 per cent, for reliability it is 95.6 per cent and for flexibility 89.4 per cent. As regards the selection of the suppliers of services, these shares are even higher. The assessment of the importance of an individual determinant does not vary much, but it seems that quality is the most important determinant in the procurement of products. The share of those who believe this determinant is very important is 79.6 per cent (see Table 6). This suggests that foreign subsidiaries first look at the quality of the inputs that can be supplied. Only if the quality is sufficiently high do they start with negotiations on the price and delivery terms. The least important factor seems to be the proximity of the location of the potential supplier for the procurement of materials or services.

The analysed determinants of the procurement selection process can be taken as an assessment of Slovenian suppliers' capability. The interviews with different foreign subsidiaries in Slovenia shed additional light on some of the crucial determinants of this capability. One of the key determinants of the supplier capability of Slovenian enterprises is their technological capability. This can be illustrated by the findings of Majcen, Rojec, Jaklic and Radosevic (2005), who on the basis of a survey of 72 foreign manufacturing subsidiaries found significant differences in the procurement structure in relation to the level of their technological sophistication of production (see Table 7 for details). Local suppliers are much more important in low- or low-medium-technology-intensive sectors than in medium-high or high-technology-intensive sectors. The low technological

Table 6: Importance of selected determinants in the choice of suppliers of products and services

	<i>Price</i>		<i>Quality</i>		<i>Reliability</i>		<i>Flexibility</i>		<i>Proximity</i>	
	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>
<i>Procurement of products</i>										
Determinant is not important	5	4.4	5	4.4	5	4.4	4	3.5	16	14.2
Determinant is less important	7	6.2	1	0.9	0	0.0	8	7.1	42	37.2
Determinant is important	40	35.4	17	15.0	36	31.9	55	48.7	41	36.3
Determinant is very important	61	54.0	90	79.6	72	63.7	46	40.7	14	12.4
Total	113	100	113	100	113	100	113	100	113	100
Average ^a	3.4	—	3.7	—	3.5	—	3.3	—	2.5	—
No reply	9	—	9	—	9	—	9	—	9	—
<i>Procurement of services</i>										
Determinant is not important	4	3.4	4	3.4	4	3.4	4	3.4	19	16.1
Determinant is less important	4	3.4	1	0.8	2	1.7	4	3.4	40	33.9
Determinant is important	42	35.6	18	15.3	36	30.5	53	44.9	37	31.4
Determinant is very important	68	57.6	95	80.5	76	64.4	57	48.3	22	18.6
Total	118	100.0	118	100.0	118	100.0	118	100.0	118	100.0
Average ^a	3.5	—	3.7	—	3.6	—	3.4	—	2.5	—
No reply	4	—	4	—	4	—	4	—	4	—

^aCalculated according to the following weights: 1 – not important; 2 – less important; 3 – important; 4 – very important.

Source: Own calculations based on the survey.

Table 7: Procurement structure of foreign manufacturing subsidiaries in Slovenia (in per cent)

	<i>Procurement from</i>		
	<i>Foreign parent firm</i>	<i>Other foreign firms</i>	<i>Local firms</i>
Total	23.5	34.6	41.8
High-technology-intensive industries	33.8	32.2	34.0
Medium-high-technology-intensive industries	23.0	38.4	38.6
Medium-low-technology-intensive industries	23.5	29.2	46.9
Low-technology-intensive industries	18.8	40.2	41.0

Source: Majcen, Rojec, Jaklič and Radošević (2005).

capability of local firms thus seems to be the most important barrier to higher shares of domestic suppliers in the procurement of foreign subsidiaries.⁶ Several other studies that have assessed the technological/R&D/innovation capability of Slovenian firms confirm this finding (Gliha, 1997; Bučar and Stare, 2003; Mulej, 2006).

Policy Measures to Raise the Share of Local Suppliers in Foreign Subsidiaries' Procurements

From the national economic policy viewpoint, it is important to see what the state can do to increase the share of local inputs in the procurement structure of foreign subsidiaries. Participation in the suppliers' network of foreign subsidiaries is, according to economic

theory, an important channel of technology/knowledge spillovers from FDI (see the first section for details). Based on the experiences of countries that proved to be the most successful in promoting the integration of local suppliers into foreign subsidiaries networks, for example Ireland, Singapore and Malaysia (see Rojec *et al*, 2006), we have identified four major possible policy measures to raise the share of local suppliers in the procurement of foreign subsidiaries:

- (1) the collection and distribution of information on local suppliers;
- (2) the establishment of various matchmaking programmes and events;
- (3) programmes to boost the capabilities of local suppliers and
- (4) measures to improve the technological and human resource capacities of local suppliers. These are a specific type of programmes to boost the capabilities of local suppliers.

The overall impression of the survey results is that such policy measures did not have a major impact on the procurement pattern of foreign subsidiaries (Table 8). Only 22.7 per cent of the surveyed firms believe that the collection and distribution of information on local suppliers could be an important or very important measure. Obviously, foreign subsidiaries use their own information channels. The same can be said of matchmaking programmes, which only 32.4 per cent of the respondents find to be important or very important, or for the programmes to boost the capabilities of domestic suppliers, with a respective figure of 35.4 per cent. On the other hand, more than half the surveyed firms found that by far the most important potential policy measure to boost the capabilities of domestic suppliers would be raising their technological or human resource levels. 51.8 per cent of the surveyed firms find this measure to be important or even very important.

The fact that such a significant weight is assigned to the measures raising the technology/human resource capabilities of local suppliers is important for at least two reasons. On the one hand, it reconfirms our previous conclusion that it is the lack of technological capability that prevents local suppliers from increasing their share in the procurements made by foreign subsidiaries. On the other hand, it gives a clear direction to

Table 8: The importance of potential policy measures to increase the share of local suppliers in the procurement structure of foreign subsidiaries

	<i>Gathering and distribution of information on local suppliers</i>		<i>Programmes of 'matchmaking'</i>		<i>Programmes of raising capabilities of domestic suppliers</i>		<i>Measures to improve technological/human resource capabilities of local suppliers</i>	
	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>	<i>Number</i>	<i>%</i>
Not important	34	30.9	28	25.2	28	25.5	21	19.1
Less important	51	46.4	47	42.3	43	39.1	32	29.1
Important	22	20.0	33	29.7	35	31.8	44	40.0
Very important	3	2.7	3	2.7	4	3.6	13	11.8
Total	110	100.0	111	100.0	110	100.0	110	100.0
Average ^a	1.9	—	2.1	—	2.1	—	2.4	—
No reply	12	—	11	—	12	—	12	—

^aCalculated on the basis of following weights: 1 – not important; 2 – less important, 3 – important; 4 – very important.

Source: Own calculations based on the survey.

the government that it needs to play a proactive role in raising the technological capabilities of Slovenian firms.

If we examine the structure of measures promoting R&D/innovation introduced in Slovenia over the past few years (see EU Innovation Trend Chart report for Slovenia, by Bučar, 2006, and Bučar and Stare, 2006), we observe that raising technological capabilities with the objective of increasing the potential of local firms to act as suppliers of foreign subsidiaries has never been an explicit objective of any measure. Implicitly, however, several measures have had as an objective the raising of the technology level and R&D/innovation capability of Slovenian firms. This was partly to be achieved by the co-financing of applied research, partly through the support of various cooperation arrangements (clusters, technology networks and, more recently, technology platforms) and partly through the support of technology centres and parks. According to EU Innovation Trend Chart (Bučar, 2006), and Bučar and Stare (2006), the impact of these measures on raising the technology capabilities of Slovenian firms has been limited due to the relatively modest resources allocated to these measures, the sporadic and non-coordinated fashion in which these measures have been implemented and the frequent changes in the measures themselves. This is also reflected in the very modest and slowly increasing share of innovation-active enterprises that amounted to approximately 27 per cent of firms in the 2002–2004 period (SORS, 2006).⁷ The fact that the situation is even worse for service firms could in the future seriously undermine the competitive position of local suppliers of services to foreign subsidiaries in Slovenia, in particular those services that can be easily outsourced using information communication technologies (Bučar and Stare, 2006).

The potential to raise the capability of Slovenian firms to become suppliers of subsidiaries and thus to increase the likelihood of vertical technology/knowledge spillovers has so far never been a goal of the designers of support measures. This reflects policy-makers' low level of awareness of the potential positive effect that FDI knowledge spillovers can have on the local economy.

Conclusions

Empirical literature on FDI spillovers largely avoids the question of how technology spillovers actually take place, and focuses on the issue of whether the presence and magnitude of foreign subsidiaries affect productivity in domestic firms. The failure to better understand and to identify the exact mechanisms through which FDI facilitates knowledge spillovers is one of the main shortcomings of FDI spillover research. This paper tackles this issue by making an attempt to gain some insight into the actual processes and determinants of one of the most important channels of technology/knowledge spillovers from foreign subsidiaries to local firms: the procurement of inputs from local suppliers. On the basis of a survey of 122 foreign subsidiaries in Slovenia and through interviews, we analysed the structure and trends of their procurement, the degree of their autonomy in selecting suppliers, various determinants in the selection process as well as the importance of potential economic policy measures to increase the share of local suppliers in procurements made by foreign subsidiaries.

The paper's key conclusions are that the share of local inputs in the procurement of foreign subsidiaries is relatively high for material inputs and even more so for services, yet it is not changing (increasing) over time. The expectation that foreign investors would

decide to expand the procurement from Slovenian suppliers once they become more familiar with their capabilities is therefore not confirmed. The results of the survey reveal that we cannot attribute this to a neglect of or smaller preference for Slovenian suppliers due to traditional relations of foreign parent companies with other (foreign) suppliers. Foreign subsidiaries in Slovenia are relatively independent in the selection of their suppliers and are even encouraged by their parent company to seek potential new quality suppliers. As our analysis suggests, the reason lies elsewhere. It is a fact that only a very small number of Slovenian firms have the technological, financial and organizational capability to become an important (strategic) supplier to an MNE that acts globally.

The most important determinants in the selection of suppliers are the quality, price, reliability and flexibility of suppliers. Although the surveyed firms did not differentiate substantially among the determinants, quality may be singled out as the most important. A sufficiently high quality of the inputs provided is a precondition for foreign subsidiaries to even begin the negotiation process. With the exception of policy measures for raising the technological or human resource levels of local suppliers, the surveyed firms do not attribute significant importance to economic policy measures seeking to promote the local share in the procurement of foreign subsidiaries. Obviously, it is predominantly the capability of the supplier itself that assures its qualification as a supplier to foreign subsidiaries. If the local supplier has sufficient technological, financial and organizational capabilities to follow the expansion of the foreign parent firm, there is a potential opportunity to enter the global suppliers' network for all subsidiaries of the parent firm. Is there a role then for economic policy? The role for the government is in the upgrading of the capacity of domestic firms in the broadest sense. The examples of Ireland and Singapore show that policy measures directly targeted to increase local supplies to foreign subsidiaries, such as National Linkage Programme in Ireland or Local Industry Upgrading Programme in Singapore, may have some positive effects. Still, compared to their effects, such programmes have proven to be quite expensive and administratively quite complex (for more examples see OECD, 2005, b).

In the case of Slovenia, one should probably think more of the general firms' upgrading in terms of their innovation and technological capabilities, as well as capabilities related to networking with other firms and increased ability to follow their customers internationally. The level of absorption capacity for innovation and new technologies of the majority of Slovenian firms has been assessed as low (Mulej, 2006), and should be given more policy attention. As mentioned, several support measures have been introduced by the government over the years,⁸ addressing insufficient R&D investment,⁹ promotion of cooperation among enterprises and between the public R&D sphere and business sector,¹⁰ and upgrading of technology.¹¹ A closer look at the measures shows that the approval criteria have usually been concerned with number of new jobs created and increase of profit and export (direct, not via supplies to foreign subsidiaries). The issue of technology spillover has not (yet) entered the policy agenda either directly or indirectly, partly because of the low awareness of the importance of this channel and partly because the financial resources for the existing measures have up until now been too limited.

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Notes

1. As well as advice and help on managerial and organizational improvements.
2. Otherwise, the share of all foreign subsidiaries in the entire population of Slovenian firms is 22 per cent in terms of sales and 13.6 per cent in terms of employment (2006 data), indicating much higher labour-intensity of domestic firms than of foreign subsidiaries.
3. Unfortunately, the data do not allow differentiation between greenfield FDI and acquisitions, which would be useful in the explanation of the above pattern. Namely, one may guess that in the case of foreign acquisitions, the supplier network at the entry point of a foreign investor is predominantly local and gradually becomes more diversified, causing the share of local procurement to decline. In the case of greenfield FDI, the situation is vice versa: initially the new foreign investors have limited knowledge (trust) of the local suppliers' potential, but gradually the local capabilities become better known and therefore the local procurement of inputs increases.
4. This may indicate that the much-discussed off-shoring of services by MNEs to low-cost locations has not affected the procurement of foreign subsidiaries in Slovenia. This can be explained by the complexity of the off-shoring process, as well as by the fact that only some types of services can be provided over a distance (Stare, 2006).
5. Based on the information gathered by the questionnaire, nine foreign subsidiaries have been selected for shorter interviews about their procurement policies and practices. Six cases are further presented in the text. These non-structured interviews have been carried out via phone conversation with the representatives of the selected subsidiaries.
6. The above distinction of technological intensity of industries is based on the OECD Classification of manufacturing industries based on technology (OECD, 2005a, pp. 181–184). This is a widely used but also often-criticized concept. The criticism basically goes in two directions. The first is that being in a low/high-tech sector does not mean that a firm performs activities requiring low/high knowledge input. The firm may be in a high/low-tech industry but actually performs low/high knowledge-intensive activities, and vice versa. The second is that there are considerable differences among countries as far as the technology intensity of the same industries is concerned, for example some sectors can easily show a high R&D intensity in several countries and low R&D intensity in other countries. For these reasons, the results based on OECD classification should be interpreted with caution.
7. The preliminary results of Community Innovation Survey 5 indicate that 35 per cent of firms in manufacturing were innovation-active, whereas in services this share amounted to only 16 per cent (SORS, 2008).
8. A complete picture of Slovenian support scheme for R&D and innovation is given in PRO INNO Trendchart country reports.
9. Co-financing of industrial R&D projects, co-financing of development–investment projects, tax subsidies, and so on.
10. Technology platforms, technology centres, centres of excellence, mobility grants.
11. Subsidized loans for introduction of new technology and equipment for SMEs, credit guarantees, and so on.

References

- Bank of Slovenia (2005) *Neposredne naložbe 2004 [Foreign Direct Investment 2004]*. Ljubljana, Slovenia: Banka Slovenije.
- Blalock, G. (2001) *Technology from Foreign Direct Investment: Strategic Transfer through Supply Chains*. Berkeley: University of California (mimeo).
- Blomström, M., Globerman, S. and Kokko, A. (2000) *The Determinants of Host Country Spillovers from Foreign Direct Investment*. CEPR Discussion Paper No. 2350.

- Bučar, M. (2006) *European Trend Chart on Innovation – Annual Innovation Policy Trends and Appraisal Report – Slovenia 2006*. Brussels, Belgium: European Commission, Enterprise – Directorate General.
- Bučar, M. and Stare, M. (2003) *Inovacijska politika male tranzicijske države [Innovation Policy of Small Transition Economy]*. Ljubljana, Slovenia: Fakulteta za družbene vede.
- Bučar, M. and Stare, M. (2006) From Quantity to Quality: Critical Assessment of Slovenia's Potential for Knowledge-Based Growth. In: K. Piech and S. Radošević (eds.) *The Knowledge-Based Economy in Central and Eastern Europe: Countries and Industries in a Process of Change*. Basingstoke, UK/New York: Palgrave Macmillan.
- Damijan, J.P. and Rojec, M. (2004) Foreign Direct Investment and the Catching-up Process in New EU Member States: Is There a Flying Geese Pattern? Vienna: WIIW. WIIW Research Reports 310.
- Damijan, J.P., Knell, M., Majcen, B. and Rojec, M. (2003) Technology Transfer through FDI in Top-10 Transition Countries: How Important are Direct Effects, Horizontal and Vertical Spillovers. Ann Arbor: The William Davidson Institute at the University of Michigan Business School. William Davidson Working Paper Number 549.
- Gliša, M. (1997) Ocena tehnološke ravni slovenske industrije – Analitične podloge [Assessment of the Technological Level of Slovenian Industry – Analytical Basis]. Ljubljana: Inštitut za ekonomsko raziskovanje (mimeo).
- Görg, H. and Greenaway, D. (2004) Much ado about nothing: Do domestic firms really benefit from foreign direct investment. *World Bank Research Observer* 19: 171–197.
- Görg, H. and Strobl, E. (2001) Multinational companies and productivity spillovers: A meta analysis. *The Economic Journal* 111: 723–739.
- Halpern, L. and Murakozy, B. (2006) Does Distance Matter in Spillover? Budapest: Hungarian Academy of Sciences, Institute of Economics, CEU Department of Economics (mimeo).
- Holland, D., Sass, M., Benaček, V. and Gronicki, M. (2000) The determinants and impact of FDI in Central and Eastern Europe: A comparison of survey and econometric evidence. *Transnational Corporations* 9: 163–213.
- Hunya, G. (ed.) (2000) *Integration through Foreign Direct Investment*. Cheltenham, UK: Edward Elgar.
- Keller, W. (2004) International Technology Diffusion. University of Texas, National Bureau of Economic Research, Centre for Economic Policy Research (mimeo).
- Keller, W. and Yeapl, S.R. (2003) Multinational Enterprises, International Trade, and Productivity Growth: Firm Level Evidence from The United States. Cambridge, MA: National Bureau of Economic Research. NBER Working Paper No. 9504, February.
- Knell, M. and Rojec, M. (2007) The economics of knowledge and knowledge accumulation: A literature survey. Text prepared within EU 6th Framework Project: U-know.
- Konings, J. (2001) The effects of FDI on domestic firms. *Economics of Transition* 9: 619–633.
- Kugler, M. (2006) Spillovers from foreign direct investment: Within or between industries? *Journal of Development Economics* 80: 444–477.
- Lall, S. (1980) Vertical interfirm linkages in LDCs: An empirical study. *Oxford Bulletin of Economics and Statistics* 42: 203–226.
- Majcen, B., Radošević, S. and Rojec, M. (2003) *Strategic Control and Productivity Growth of Foreign Subsidiaries in Central European Countries*, XI International Conference on European Studies; 30 September–3 October, Havana.
- Majcen, B., Rojec, M., Jaklič, A. and Radošević, S. (2005) Productivity growth and functional upgrading in foreign subsidiaries in the Slovenian manufacturing sector. *East–West Series in Economics, Business and the Environment* 8(1/2): 73–100.
- Markusen, J. and Venables, A. (1999) Foreign direct investment as a catalyst for industrial development. *European Economic Review* 43: 335–356.
- Meyer, K. (1998) *Direct Investment in Economies in Transition: Making Central European Industries Competitive*. Cheltenham, UK: Edward Elgar.
- Mulej, M. (2006) Absorbcijska sposobnost tranzicijskih malih in srednjih podjetij za prenos invencij, vednosti in znanja iz raziskovalnih organizacij [Absorption capacity of transition: Small and medium sized enterprises for the transfer of inventions and knowledge from research organizations]. Unpublished PhD dissertation, Faculty of Economics and Business, University of Maribor, Maribor.

- OECD. (2002) *The Benefits and Costs of FDI for Development*, DAFFE/IME(2001)21/REV2. Paris: OECD.
- OECD. (2005a) *OECD Science, Technology and Industry Scoreboard 2005*. Paris: OECD.
- OECD. (2005b) *A Policy Framework for Investment: Investment Promotion and Facilitation*, OECD Conference on Investment for Development: Making it Happen; 25–27 October, Rio de Janeiro.
- Rodrik, D. (1999) *The New Global Economy and Developing Countries: Making Openness Work*. Washington DC: Overseas Development Council. Policy Essay No. 24.
- Rojec, M. (2000) Restructuring and Efficiency Upgrading with FDI. In: G. Hunya (ed.) *Integration through Foreign Direct Investment: Making Central European Industries Competitive*. Cheltenham, UK: Edward Elgar, pp. 130–149.
- Rojec, M., Redek, T. and Kostevc, Č. (2006) Primerjava učinkovitosti oblik za spodbujanje TNI v Sloveniji in tujini [Comparison of Efficiency of Various Forms of Investment Incentives Policies in Slovenia and Abroad]. Ljubljana: Univerza v Ljubljani, Fakulteta za družbene vede (University of Ljubljana, Faculty of Social Sciences) (mimeo).
- Schoors, K. and van der Tol, B. (2001) *The Productivity Effect of Foreign Ownership on Domestic Firms in Hungary*. University of Gent (mimeo).
- Smarzynska, B. and Spatareanu, M. (2002) *FDI Spillovers through Backward Linkages in Romania: Some Determinants*. Washington DC: The World Bank (mimeo).
- Smarzynska, B.K. (2003) *Does Foreign Direct Investment Increase the Productivity of Domestic Firms? In Search of Spillovers through Backward Linkages*. Ann Arbor: The William Davidson Institute at the University of Michigan Business School. William Davidson Working Paper Number 548.
- SORS – Statistical Office of the Republic of Slovenia. (2006) *Innovation activity in manufacturing and selected service activities, 2002–2004*. preliminary data, 13 July.
- SORS – Statistical Office of the Republic of Slovenia. (2008) *Innovation Activity in Manufacturing and Selected Service Activities, 2004–2006*.
- Stare, M. (2006) Outsourcing storitev v okviru razširjene EU- možnosti in priložnosti Slovenije [Outsourcing of services in the enlarged EU – Potential and opportunities for Slovenia]. *Teorija in praksa* 43: 201–220.