

POST-ACQUISITION PERFORMANCE  
OF FIRMS ACQUIRED IN CROSS-  
BORDER ACQUISITIONS:  
Theoretical considerations and  
empirical evidence

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JOŽE DAMIJAN, ČRT KOSTEVC, MATIJA ROJEC



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ACQUISITIONS: Theoretical considerations and empirical evidence**

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## INTRODUCTION

Over the past twenty years, cross-border mergers and acquisitions (M&As) have been responsible for more than two fifths of foreign direct investment (FDI) inflows worldwide, and for almost three fifths in developed countries (Brakman, Garretsen and van Marrewijk 2006; UNCTAD 2010). Detailed definition of cross-border M&As is given in UNCTAD (2000: 99–105; 2008: 7, 206). In a nutshell, in a cross-border merger, the assets and operations of two firms belonging to two different countries are combined to establish a new legal entity. In a cross-border acquisition, the control of assets and operations is transferred from a local to a foreign company, the former becoming an affiliate of the latter. Acquisitions can be minority (foreign interest of 10 to 49 per cent of a firm's voting shares), majority (foreign interest of 50–99 per cent), or full or outright acquisitions (foreign interest of 100 per cent). Cross-border M&As can be functionally classified as *horizontal* (between competing firms in the same industry), *vertical* (between firms in client-supplier or buyer-seller relationships) or *conglomerate* (between companies in unrelated activities) (see UNCTAD 2000: 99–100).

Over the period of 1990–2009, there was a 43.8 % share of cross-border M&As in the total value of world FDI inflows. In developed countries, M&As with 57.2 % share in total FDI inflows were the dominant mode of FDI, while the share for developing countries was only 17.2 %. In EU-15 the respective share was 60.7 %, in ten new EU member states (NMS) from Central and Eastern Europe 17.4 %, in South East European (SEE) countries 20.7 % and in CIS countries 18.6 % (see Table 1). Obviously, acquisitions are much common in developed than in developing countries. Since 1990, there have been two waves of M&As; the first was from 1991 to 2000 when annual value of cross-border M&As sales/purchases gradually increased from US\$ 21.1 billion to US\$ 905.2 billion. In 2001, the value decreased to US\$ 429.4 billion and to only US\$ 182.9 billion in 2003, but then began to rise again and reached a record level of US\$ 1,022.7 billion in 2007. The current global economic downturn once again brought about a decrease in annual value of cross-border M&As, to US\$ 706.5 billion in 2008 and US\$ 249.7 billion in 2009. In 2010, cross-border M&As seem to begin growing again as they reached US\$ 341.4 billion. Most of the drop in FDI flows in 2008 and 2009 was due to a decrease of M&As, but *vice versa* in 2010 cross-border M&As increased by 34 % while greenfield FDI declined (UNCTAD 2000, 2010, 2011, see also Table 1). According to UNCTAD (2000), less than 3 % of the total number of cross-border M&As are mergers, the

rest are acquisitions.<sup>1</sup> Horizontal acquisitions, i.e. those between firms in the same industry, and full acquisitions, where foreign acquirers take over the majority equity share of the target company, prevail. Of the total value of US\$ 6,961.5 billion of cross-border M&A sales in the period from 1990 to May 2010, 57.7 % were in the tertiary sector and 34.9 % in the manufacturing. M&As are concentrated in a handful of industries. In the tertiary sector, finance (15.6 % of overall total), transport and communications (15.6 %) and business services (10.8 %) prevail, while the most important sectors in manufacturing are chemicals and chemical products (8.8 %), food, beverages and tobacco (6.3 %), electrical and electronic equipment (4.2 %), metals and metal products (3.4 %), and motor vehicles and transport equipment (2.5 %), etc. (see Table 2). In these manufacturing industries, most cross-border M&As were horizontal, aiming at economies of scale, technological synergies, increasing market power, eliminating excess capacity, or consolidating and streamlining innovation strategies and R&D budgets (UNCTAD 2000).

Strategic foreign investors have two entry mode options when considering investing abroad, greenfield or acquisition. What are the specific factors that make them going for acquisition? The two main factors are speed and access to proprietary assets. In principle, acquisition is the fastest way to expand at home or abroad. Acquisition is the fastest way to build up a strong position in a foreign market. The second explicit advantage is that by acquisition foreign investor comes into possession of acquired company's strategic assets such as R&D or technical know-how, patents, brand names, the possession of local permits and licences, and supplier or distribution networks. This allows firms to realize synergies by pooling the proprietary resources and capabilities of the firms involved with potential static and dynamic efficiency gains (UNCTAD 2000). According to UNCTAD (2000: 140–4), these two main advantages of acquisitions interact with a number of other driving forces which often affect the decision of a foreign investor to undertake acquisition, i.e. the search for new markets, increased market power and market dominance,<sup>2</sup> efficiency gains through synergies, greater size, diversification (spreading of risks); financial motivations; and personal (behavioural) motivations. Dunning and Lundan (2008: 286–7) point that firms may choose acquisition to prevent competitors from entering a particular market or to avoid the (perceived) unfavourable consequences of not being active in the market or not having access to specific resources. In short, »cross-border M&As are growing so rapidly in importance precisely because they provide firms with the fastest way of acquiring tangible and intangible

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1 UNCTAD's data bases do not distinguish between mergers and acquisitions and strictly use the term M&A. On the other hand, most theoretical and empirical literature actually deals with acquisitions. In our literature review we will follow this distinction.

2 Based on the Thomson Financial Securities Data, Brakman *et al.* (2006) claim that most firms engaged in cross-border M&As seem to be 'market-seeking'.

assets in different countries, and because they allow firms to restructure existing operations nationally or globally to exploit synergies and obtain strategic advantages. In oligopolistic industries, furthermore, deals may be undertaken in response to the moves or anticipated moves of competitors« (UNCTAD 2000: xxi).<sup>3</sup>

**TABLE 1: Share of cross-border M&As<sup>1/</sup> in total value of FDI inflows by region of seller, 1990–2009; %**

	World	Developed economies	EU-27	EU-15	NMS-10 <sup>2/</sup>	South-East Europe	CIS <sup>3/</sup>	Developing economies
1990	47.6%	51.8%	40.6%	44.5%	27.7%	0.0%	0.0%	27.3%
1991	13.7%	15.3%	10.7%	12.2%	12.5%	0.0%	0.0%	9.2%
1992	29.0%	36.4%	33.2%	36.7%	75.8%	83.2%	1.3%	14.2%
1993	19.5%	27.0%	28.6%	33.6%	27.5%	1.1%	10.8%	5.9%
1994	35.8%	54.0%	48.3%	56.5%	20.7%	17.6%	1.6%	10.1%
1995	32.9%	47.3%	40.1%	45.6%	31.4%	22.6%	15.5%	5.8%
1996	36.6%	50.9%	44.6%	53.2%	26.6%	7.5%	42.4%	13.7%
1997	37.2%	48.9%	44.6%	52.0%	22.0%	7.6%	53.8%	19.1%
1998	57.5%	69.9%	58.8%	67.2%	23.7%	2.1%	5.1%	26.6%
1999	58.0%	66.0%	58.7%	79.3%	39.6%	65.0%	6.2%	29.6%
2000	64.6%	74.9%	71.2%	82.7%	58.0%	15.7%	7.0%	20.4%
2001	52.0%	60.6%	43.7%	58.7%	33.0%	45.6%	24.3%	29.0%
2002	39.6%	46.3%	44.9%	46.3%	28.7%	45.3%	15.6%	23.8%
2003	32.3%	42.2%	33.9%	35.4%	16.1%	31.6%	53.5%	11.0%
2004	31.0%	48.1%	67.5%	81.2%	7.8%	13.7%	18.2%	8.4%
2005	46.9%	64.6%	60.7%	64.0%	31.4%	19.7%	-23.7%	19.3%
2006	42.9%	54.3%	56.8%	63.3%	14.4%	39.6%	11.3%	20.5%
2007	48.7%	61.8%	57.1%	66.9%	3.3%	17.1%	36.2%	17.8%
2008	39.9%	57.1%	46.8%	58.4%	8.4%	6.0%	17.8%	16.6%
2009	22.4%	36.0%	32.1%	33.0%	27.8%	7.0%	10.6%	8.2%
Total	43.8%	57.2%	52.3%	60.7%	17.4%	20.7%	18.6%	17.2%

Source: calculated from UNCTAD, <http://www.unctad.org/Templates/Page.asp?intItemID=5545&lang=1> UNCTAD, cross-border M&A database ([www.unctad.org/fdistatistics](http://www.unctad.org/fdistatistics)).

1/ Cross-border M&A sales are calculated on a net basis as follows: Sales of companies in the host economy to foreign TNCs (-) Sales of foreign affiliates in the host economy. The data cover only those deals that involved an acquisition of an equity stake of more than 10 %. Data refer to the net sales in the industry of the immediate acquired company.

2/ NMS-10 = New EU member states from Central and Eastern Europe.

3/ CIS = Commonwealth of Independent States.

3 On the hand, potential benefits of greenfield over acquisition for foreign investor include stronger management attachment, easier integration of technology and employees from parent company, no problems with number and quality of existing employees, no danger of hidden liabilities, no negative honeymoon effect, etc.

TABLE 2: Value of cross-border M&amp;A sales, by sector/industry, 1990-May 2010; in million US\$

Sector / industry	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Total	98 903	21 094	48 106	43 623	91 769	112 527	142 557	180 751	406 427	630 807	905 214	429 374
Primary	9 470	- 558	2 388	689	3 928	9 862	8 474	2 728	67 658	74 463	5 680	51 457
Agriculture, hunting, forestry and fishing	2 670	60	196	- 64	558	960	- 31	- 557	6 393	- 61	228	39
Mining, quarrying and petroleum	6 750	- 619	2 192	753	3 369	8 902	8 504	3 285	61 265	24 524	5 452	51 418
Manufacturing	45 539	8 453	23 052	22 032	50 895	47 129	44 031	73 551	152 468	222 489	244 904	103 284
Food, beverages and tobacco	9 224	1 328	5 757	4 910	11 200	8 014	756	13 972	4 189	8 026	45 573	6 864
Textiles, clothing and leather	883	307	379	350	1 011	400	794	1 806	1 303	3 898	2 140	1 255
Wood and wood products	5 738	828	796	186	3 779	3 667	1 290	3 220	4 875	5 265	22 384	10 110
Publishing and printing	1 140	- 824	424	375	1 305	- 363	7 988	862	12 593	6 290	- 776	14 962
Coke, petroleum products and nuclear fuel	954	548	- 520	562	224	905	- 902	1 536	1 007	14 606	34 460	- 647
Chemicals and chemical products	6 524	1 858	3 588	8 316	18 871	22 340	8 786	17 117	29 233	74 020	28 481	16 710
Rubber and plastic products	2 059	158	231	176	388	2 271	3 842	2 009	974	2 271	4 317	1 922
Non-metallic mineral products	2 286	480	5 320	1 466	1 362	970	3 245	5 539	3 641	8 982	9 180	9 202
Metals and metal products	2 889	212	2 761	- 535	1 648	- 1 279	7 813	10 675	6 676	11 762	13 516	9 138
Machinery and equipment	311	505	849	353	1 447	2 869	2 313	5 246	6 284	10 795	7 035	3 585
Electrical and electronic equipment	3 213	1 835	1 121	2 611	1 596	3 138	2 414	6 144	77 818	47 098	47 485	20 010
Precision instruments	2 557	684	747	800	3 690	1 013	2 322	2 695	2 920	4 971	10 119	7 272
Motor vehicles and other transport equip.	6 931	261	1 554	2 061	3 727	1 948	4 103	2 608	48 345	23 055	19 910	1 436
Manufacture of furniture	451	20	108	- 220	167	224	45	154	23	1 008	648	242
Other manufacturing	379	253	- 64	620	478	1 014	- 780	- 33	2 587	442	433	1 223
Tertiary	43 945	13 200	22 666	20 902	36 947	55 537	90 053	104 472	186 301	383 855	654 629	274 632
Electricity, gas and water	58	- 198	1 613	1 581	1 717	10 009	18 947	22 186	31 806	38 520	42 778	8 339
Construction	315	169	652	20	279	497	3 887	1 004	1 253	3 294	4 626	1 291
Trade	3 065	2 640	2 540	4 152	3 637	3 680	16 775	9 367	23 654	28 579	17 119	17 636
Hotels and restaurants	7 733	908	1 257	1 291	1 785	1 958	1 977	1 855	3 730	8 100	10 333	6 633
Transport, storage and communications	11 445	2 317	2 542	5 645	12 390	6 245	16 431	13 631	45 732	184 350	299 731	83 926
Finance	10 643	5 109	11 443	3 588	5 516	19 540	18 560	29 283	59 577	75 367	144 571	101 098
Business services	7 989	1 366	1 508	2 935	7 135	6 595	11 043	15 084	30 757	34 964	101 299	42 300
Public administration and defence	-	-	6	10	-	605	6	587	397	1 536	1 707	275
Education	- 25	3	-	4	18	-	16	205	42	- 83	69	202
Health and social services	76	27	129	239	2 515	- 425	110	2 034	881	- 1 715	410	1 792
Community, social & personal service activ.	3 317	835	1 377	1 020	1 035	3 905	792	8 703	- 12 911	7 788	31 746	11 096
Other services	- 669	23	- 401	417	971	2 928	1 509	533	1 203	3 155	239	44

TABLE 2, cont.

Sector / industry	2002	2003	2004	2005	2006	2007	2008	2009	2010 (Jan-May)	TOTAL 1990-2010	%
Total	248 446	182 874	227 221	462 253	625 320	1 022 725	706 543	249 732	125 211	6 961 477	100.0%
Primary	18 588	17 145	6 601	43 093	43 093	74 013	90 201	48 092	13 461	515 506	7.4%
Agriculture, hunting, forestry and fishing	18	392	583	7 499	- 152	2 422	2 898	1 033	127	25 213	0.4%
Mining, quarrying and petroleum	18 569	17 730	6 018	9 647	43 245	71 591	87 303	47 059	13 334	490 293	7.0%
Manufacturing	89 071	73 494	67 608	147 577	212 998	336 584	326 114	76 080	60 900	2 428 202	34.9%
Food, beverages and tobacco	25 797	22 185	5 497	37 047	6736	49 950	131 855	9 636	29 961	438 477	6.3%
Textiles, clothing and leather	525	1 731	4 188	1 181	1 799	8 494	2 112	410	871	36 475	0.5%
Wood and wood products	2 934	1 285	- 1 697	333	1 922	5 568	3 166	821	- 1 332	75 136	1.1%
Publishing and printing	1 184	8 762	3 283	4 933	24 386	5 543	4 658	66	3 696	100 486	1.4%
Coke, petroleum products and nuclear fuel	10 603	1 418	220	- 77	2 005	2 663	3 086	2 214	22	74 888	1.1%
Chemicals and chemical products	12 511	11 763	33 424	31 709	48 035	116 736	73 563	32 559	14 245	610 390	8.8%
Rubber and plastic products	2 310	977	360	2 639	6 577	7 281	1 200	15	546	42 523	0.6%
Non-metallic mineral products	2 895	1 041	3 562	11 281	6 166	37 800	28 944	118	1 161	144 642	2.1%
Metals and metal products	12 537	5 982	1 882	20 371	46 312	69 740	14 215	- 2 953	224	233 586	3.4%
Machinery and equipment	432	5 206	1 808	1 467	17 664	20 108	15 060	2 431	1 122	106 890	1.5%
Electrical and electronic equipment	5 967	2 836	12 465	11 938	35 305	24 483	14 151	17 763	5 122	294 513	4.2%
Precision instruments	2 614	3 887	1 669	11 339	7 064	- 17 184	23 059	4 105	1 675	78 021	1.1%
Motor vehicles and other transport equipment	7 934	5 880	507	8 524	7 475	3 099	11 608	8 753	3 562	173 280	2.5%
Manufacture of furniture	51	64	219	258	98	863	457	82	10	4 972	0.1%
Other manufacturing	776	477	221	3 947	1 454	1 442	- 1 022	59	15	13 921	0.2%
Tertiary	140 787	91 258	153 011	297 581	369 228	612 128	290 228	125 561	50 850	4 017 770	57.7%
Electricity, gas and water	41 979	9 640	13 819	40 158	1 402	103 005	48 969	61 627	6 104	504 061	7.2%
Construction	841	3 290	1 211	4 319	9 955	12 994	2 452	10 391	778	63 517	0.9%
Trade	6 098	10 546	10 702	15 946	11 512	41 307	17 458	3 658	6 598	256 669	3.7%
Hotels and restaurants	- 3 515	1 854	2 319	3 273	14 476	9 438	3 499	1 422	947	81 269	1.2%
Transport, storage and communications	37 957	27 965	21 322	75 783	113 915	66 328	34 325	15 912	6 497	1 084 388	15.6%
Finance	17 673	16 139	65 431	53 912	107 951	249 314	73 630	9 535	7 756	1 085 816	15.6%
Business services	27 236	13 599	48 075	84 366	80 978	102 231	100 701	17 167	12 175	749 503	10.8%
Public administration and defence	1 404	55	9	324	- 111	29	30	110	55	7 034	0.1%
Education	- 37	330	41	1 474	- 429	860	1 048	559	6	4 302	0.1%
Health and social services	673	348	2 797	2 293	10 624	8 140	2 222	1 123	- 5	34 286	0.5%
Community, social & personal service activ.	12 562	5 121	- 13 907	15 627	17 060	15 625	1 002	3 434	9 255	124 483	1.8%
Other services	- 2 082	2 370	1 192	105	1 896	2 856	4 893	624	683	22 441	0.3%

Source: UNCTAD cross-border M&A database ([www.unctad.org/fdistatistics](http://www.unctad.org/fdistatistics)).

Note: Cross-border M&A sales are calculated on a net basis as follows: Sales of companies in the host economy to foreign TNCs (-) Sales of foreign affiliates in the host economy. The data cover only those deals that involved an acquisition of an equity stake of more than 10%. Data refer to the net sales in the industry of the immediate acquired company.

In this monograph we make an overview of the literature on the post-acquisition performance of firms acquired by foreign investors, i.e. on what happens to the level and growth of productivity of companies, and of activity in terms of sales, employment, R&D and innovation, etc. after being acquired by foreign investors. The objective of the overview is to identify relevant propositions for empirical analysis of acquired companies' post-acquisition performance. Two streams of literature are relevant for this task. The first is the literature on the performance, mostly productivity, of foreign affiliates as such and in comparison with domestic firms. From foreign affiliate's performance point of view, there is no difference between greenfield and acquisition in the longer run (UNCTAD 2000). Therefore, the findings and propositions arising from general literature on foreign affiliates' performance can also be applied to foreign acquisitions. The second, in our case the main stream of literature, is the one on post-acquisition performance of acquired firms, especially in the part which distinguishes between cross-border and domestic acquisitions.

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## PERFORMANCE OF FOREIGN-OWNED VERSUS DOMESTIC FIRMS

Based on the theoretical argument that foreign-owned firms (foreign affiliates) enjoy an advantage over their domestic counterparts because certain firm specific advantages are 'supplied' to them by their foreign parent companies, the empirical literature which compares performance of foreign-owned and domestic firms is more or less unanimous in claiming that in general foreign-owned firms show superior performance compared to domestic firms. The superior performance, however, is not the consequence of 'foreignness' itself but of a number of other characteristics typical for multinational enterprises (MNEs). Thus, apart from firm specific advantages, superior performance of foreign-owned firms stems from the factors of multi-nationality, industry specific (MNEs tend to invest in better performing industries), size (economies of scale on the firm level) and parent country. Any empirical study analysing the determinants of foreign-owned firms' performance should take account of these factors. Below, we provide a more detailed overview of theoretical considerations and empirical evidence on the performance of foreign-owned as compared to domestic firms.

The literature dealing with the performance of foreign-owned firm per se and in comparison with domestic firms is relevant for the analysis of post-acquisition performance of firms acquired by strategic foreign investors because in principle, in the longer run, there is no difference between greenfield and acquisition as far as the performance of foreign affiliate is concerned. The very act of acquisition initially does not add to the capacity of the acquired company. At the time of entry and in the short term, acquisition may even bring the reduction of the productive capacity and, thus, in some respects, smaller benefits or larger negative impacts from the host-country perspective. Most of the specific shortcomings of foreign acquisitions relate to the effects upon entry or soon after entry. However, over the longer term most differences between the impacts of greenfield and acquisition diminish or disappear, as foreign takeovers are often followed by sequential investments of foreign acquirers and transfers of new or better technology (including organizational and managerial practices), etc. (UNCTAD 2000: xxiv; OECD 2007: 79).<sup>4</sup> Thus,

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4 For example, Yun (2000) claims that foreign takeovers in Korea led to greater subsequent investment outlays than greenfield investment, Jermakowicz (1994) finds that during the privatization process in Poland firms privatized by foreigners received much more investment in the post-privatisation period than firms privatized in other ways.

the literature on the performance of foreign affiliates can also be applied to the analysis of post-acquisition performance of acquired firms.

The theoretical argument in favour of superior performance of foreign-owned firms is based on the idea that they enjoy an advantage (technology, production programmes, marketing channels, management and organisational knowledge, etc.) over their domestic counterparts in the host country, which is 'supplied' by their parent company at low cost (Bellak 2004a). This argument is based on Dunning's eclectic or OLI (ownership-location-internalisation advantages) paradigm (Dunning 1988; Dunning and Lundan 2008) of international production, saying that existence and growth of MNEs can be explained by their ability: (i) to create and sustain a set of ownership specific advantages deriving from their sole possession of technologies, technical and managerial skills and other tangible or intangible assets, (ii) to make better use of these advantages, by extending their value-added chain or by selling rights for its use to others (internalisation advantages), (iii) to choose the best location for their exploitation (location specific advantages). In this context, the central issue is the specific advantage hypothesis (see also Caves 1974, 1996; Hymer 1976; Koutsoyiannis 1982; Markusen 1995) saying that foreign investor must have some specific advantages over local companies to be able to compete in a host-country market. Firm specific advantages are intangible and have public good characteristics within the firm. As a consequence they are exploited within the firm (internalization) and can be transferred to a foreign affiliate at only low marginal cost (Pfaffermayr and Bellak 2000; Bellak 2004a: 31–2). Location specific advantages of a host country then give additional impetus to efficient production. This 'package' is claimed to result in the performance superiority of foreign-owned over domestic firms.

The above determinants of foreign-owned firms superior performance have also been formalized by Markusen (1984, 1995, 2002), Helpman (1984), Helpman and Krugman (1985), and Markusen and Venables (1997, 1998). In a more recent theoretical literature, Helpman, Melitz and Yeaple (2004) and Nocke and Yeaple (2007) offer new developments related to performance and international involvement of firms. Helpman, Melitz and Yeaple (2004) show that in the presence of fixed costs to exporting and to undertaking FDI, in equilibrium, heterogeneous firms apply different modes of servicing foreign markets related to their company performance. The least productive firms tend to sell on the local market, only more productive firms decide to sell abroad, and only the most productive among the latter decide to service foreign markets through FDI. Nocke and Yeaple (2007) developed a general equilibrium model in which firms with heterogeneous capabilities which differ in their degree of international mobility can choose between three different modes of foreign market access: exporting, greenfield FDI, and cross-border mergers and acquisitions. Depending on whether firms differ in their mobile or immobile capabilities, cross-border mergers involve the most

or the least efficient active firms. The source of firm heterogeneity also plays an important role for the effects of country and industry characteristics on the distribution of firm efficiencies (see also Schiffbauer, Siedschlag and Ruane 2009).

The theoretical models saying that foreign-owned firms receive firm specific advantages from their parent companies at zero or low cost, which give them competitive edge over domestic firms, obviously suggest that MNEs and their affiliates are more efficient than other firms and tend to explain why foreign-owned firms perform better than domestic firms. In fact, there is more than ample empirical evidence which speaks in favour of superior performance of foreign-owned over domestic firms. Below we provide a brief overview of studies comparing the performance of foreign-owned and domestic firms.

OECD's (2007: 77–8) review of a broad span of studies dealing with performance of foreign-owned as compared to domestic firms suggests that at an aggregate level, some of the discrepancies between foreign-owned and domestic firms can be explained by differences in their relative size, capital-intensity, age, geographical location and industry. OECD, thus, reports a clear consensus of empirical evidence that foreign-owned firms outperform domestic firms in host economies in terms of higher labour productivity, investment, skill and R&D intensity, higher wages and higher profitability. OECD list of empirical studies which tend to confirm at least one of these are: Doms and Jensen (1998) for the U.S. ; Feliciano and Lipsey (1999) for the U.S.; Griffith and Simpson (2003) for UK; Girma, Greenaway and Wakelin (2001) for UK; Girma and Görg (2004) for UK; Conyon, Girma, Thompson and Wright (2002) for UK; Fukao, Ito and Kwon (2004) for Japan; Fukao, Ito, Kwon and Takizawa (2006) for Japan; Aitken, Harrison and Lipsey (1996) for Mexico; Heyman, Sjöholm and Tingvall (2004) for Sweden; Almeida (2004) for Portugal; Csengodi, Jungnickel and Urban (2005) for Hungary. Bellak (2004b) surveys 56 empirical studies on performance gaps between MNEs and their domestic counterparts. Performance gaps arise in such fields as productivity, technology, profitability, wages, skills and growth. Foreign affiliates generally perform better than domestic-owned firms regardless of which indicator is analysed – with the exception of profitability. Damijan, Rojec, Majcen and Knell (2008) also report on ample empirical evidence on higher productivity levels and growth of foreign-owned as compared to domestic firms. Empirical studies using firm-level panel data have included developed as well as developing countries (for example, Haddad and Harrison 1993; Blomström and Wolff 1994; Blomström and Sjöholm 1999; Aitken and Harrison 1999; Girma, Greenaway and Wakelin 2001; Barry, Görg and Strobl 2001; Blalock 2001; Alvarez, Damijan and Knell 2002; Damijan, Knell, Majcen and Rojec 2003; Ilmakunnas and M. Maliranta 2004; Arnold and Smarzynska-Javorcik 2005; Girma and Görg 2006; Aydin, Sayim and Yalama 2007). Another review of studies on differences in performance of foreign-owned firms is provided by Schiffbauer, Siedschlag and Ruane (2009). They find a large empirical evidence showing that

foreign-owned firms are more productive than domestic firms (Doms and Jensen 1998 for the US; Driffield 1997; Griffith and Simpson 2001; Girma and Göorg 2007 for the UK; De Backer and Sleuwaegen 2002 in the case of Belgium; Pfaffermayer and Bellak 2000 in the case of Austria; Ruane and Ugur (2004) for Ireland).

FDI may also be the cheapest means of technology transfer, as the recipient firm normally does not have to finance the acquisition of new technology. Additionally, it tends to result in the transfer of newer technology more quickly than licensing agreements and international trade (Mansfield and Romeo 1980), and it has the most direct effect on firm efficiency. FDI has been particularly important as a source of foreign technology and productivity growth for firms in transition economies because of the urgent need to restructure quickly (Blanchard 1997). Rojec (2005) reports on evidence that foreign-owned firms in transition economies of Central and Eastern Europe (CEE), in principle, perform better than domestic ones; acquired companies/greenfields have a significantly higher productivity than domestic companies, they have deeper foreign trade linkages by having disproportionately high shares in exports and imports, foreign-owned firms are the main profit generators in these countries with higher relative shares of investments and R&D than domestic firms, etc. (Hunya 2000; Resmini 2000; Rojec 2000; Konings 2001; Meyer 1998; Damijan, Knell, Majcen and Rojec 2003). Similarly, Lipsey (2006), who summarizes microdata studies in CEE countries, claims that foreign participation is associated with higher productivity in the affiliates themselves.

In spite of generally superior performance of foreign-owned firms over domestic ones, one should avoid a simplified conclusion that this is simply the consequence of foreign ownership, i.e. of 'foreignness'.<sup>5</sup> Superior performance of MNEs and foreign-owned firms does not seem to be the consequence of their foreignness, but of other characteristics which are typical for MNEs and foreign-owned firms. As put forward by Lipsey (2006), when looking for differences between foreign-owned and domestic plants one should not confine the interest only to foreignness but should also study differences that are associated with foreign ownership but cannot be unequivocally attributed to it. Apart from firm specific advantages, Pfaffermayr and Bellak (2000: 9–13) point to the following differences which may contribute to superior performance of foreign-owned firms:

- MNEs tend to be larger in size. As a consequence, they are more suited to fragment production stages internationally according to the location advantages of the host countries inducing further gains from specialisation of affiliates.

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5 Here, we only look at the performance differences between foreign-owned and domestic companies. We do not tackle the potential positive or negative impact of FDI on domestic firms via spill-over effects, or via the impact of MNEs on the market structure and the degree of competition in the host economy.

- Foreign affiliates have access to newer and superior technology and additional possibilities for learning.
- Participation of foreign-owned firms in a multinational network brings specific additional benefits.

Differences in corporate governance systems results in different control patterns and better control leads to differences in company performance. Since the corporate governance systems are largely national the result are differences in performance between MNEs from different home countries and their affiliates.

There is plenty of empirical evidence on the above points. In reviewing the results of selected studies on performance gaps between MNEs and their domestic counterparts, Bellak (2004a, 2004b) argues that these gaps result from being a multinational rather than from the nationality of the firm. Empirical evidence shows that foreign ownership is much less important explanatory factor than firm-specific assets and firm characteristics such as industry (the possibility that MNEs invest in better performing and faster growing industries), size (economies of scale on the firm level), parent country (different corporate governance, history, legal environment, business cultures, etc. in different parent countries; factor-endowment differentials) and multi-nationality *per se*. Review of empirical evidence suggests that ownership mostly explains only a few percentage points of the variance between foreign-owned and domestic firms, after taking account of other variables. Multi-nationality of firms turns to be more important (Bellak 2004b: 34–5). The study of performance gaps among foreign-owned and domestically-owned Austrian firms confirms the positive effects of participating in a foreign multinational's network on productivity and profitability. Pfaffermayr and Bellak (2000) distinguish among foreign MNEs, domestic MNEs and purely national firms and find no performance difference between the two types of MNEs, but both types of MNEs exhibit superior performance than purely national firms. Thus, the gaps arise between uni-national and multi-national firms, be they foreign-owned or not; this suggests that multi-nationality of the firms is more important than foreign ownership *per se*.

Globerman, Ries and Vertinsky (1994) also conclude that any discrepancy between Canadian firms and foreign-owned establishments in Canada can be explained by these factors. Graham and Krugman (1995) suggest much the same for foreign firms in the U.S. Bernard and Sjöholm (2003) find that in Indonesia, plants with any foreign ownership are far less likely to close than wholly-owned domestic plants. However, the lower probability of shutdown is a result of the larger size of foreign plants rather than their nationality of ownership. Controlling for plant size and productivity, foreign plants are significantly more likely to close than comparable domestic establishments. According to Schiffbauer, Siedschlag and Ruane (2009), the more recent studies have shown that a large

part of this productivity differential is between multinational firms and non-multinationals. Hence, one should separate foreign ownership from other firm-specific factors. Damijan, Rojec, Majcen and Knell (2008) point to the importance of foreign-owned firms' heterogeneity in analysing their performance. They analyse productivity growth of foreign-owned firms in ten transition countries of CEE and find that on average, foreign-owned firms grew faster in terms of TFP in only three out of the ten countries under examination (Czech Republic, Latvia and Slovenia). For other countries, the TFP growth rate of affiliates was also higher than that of domestic firms, but not significantly. By including foreign affiliates heterogeneity in terms of size and productivity, Damijan, Rojec, Majcen and Knell (2008) find that the productivity growth differential of foreign affiliates relative to domestic firms in the above three countries is driven by small (Czech Republic) and medium-sized foreign affiliates (Latvia and Slovenia), as well as by affiliates of medium (Czech Republic and Latvia) or high productivity (quintiles in Slovenia). Another relevant factor of foreign-owned firms' heterogeneity which affects their performance is their position in the MNEs' international production network (see, for instance, White and Poynter 1984; Bartlet and Ghoshal 1989; Birkinshaw, Hood and Jonsson 1998).

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## THEORY, DETERMINANTS AND EVIDENCE ON POST-ACQUISITION PERFORMANCE OF ACQUIRED FIRMS

In this section, we first briefly review the literature on acquisitions in general and domestic acquisitions, and then concentrate on the literature on cross-border acquisitions.

### In general on acquisitions/domestic acquisitions

The literature on domestic acquisitions is of obvious relevance for the analysis of cross-border acquisitions. As far as success of acquisitions and post-acquisition performance of firms are concerned, empirical research predominantly looks from the point of view of the acquirer or the newly merged firm. Analyses of the performance of the acquired firms are almost non-existent. General conclusion of the empirical work is that the share prices of the acquiring firm tend to show at best a modest improvement with most of the gains accruing to the target company. The literature puts forward a broad variety of factors which determine the success of acquisitions, from the rationale for the merger, to the benchmark, the counterfactual and the time frame. Theoretical frameworks for explaining post-acquisition performance have traditionally focused on financial and strategic factors, such as the degree of 'strategic fit' between the acquiring and target firms, the method of payment, the acquisition premium paid, and so forth. Recently, factors such as level of integration between the two firms, replacement of management and 'softer,' less tangible social, cultural, psychological factors and trust have been brought into analysis. Time-frame of post-acquisition restructuring plays a prominent role. Extensive post-merger restructuring takes place in a short period following acquisitions. Acquirers restructure targets in ways that exploit their comparative advantage.

The literature on domestic acquisitions is of obvious relevance for the analysis of cross-border acquisitions. Acquisitions have been subject of research in various disciplines. According to Cartwright and Schoenberg (2006), finance scholars have primarily focused on the issue of whether acquisitions are wealth creating or wealth reducing events for shareholders, strategic management research mostly deals with the identification of strategic and process factors that may explain the performance variance between individual acquisitions, while the 'process' literature focuses on the important role that the choice of integration strategy and

acquisition process itself can play. Andrade, Mitchell and Stafford (2001) claim that economic theory has provided many possible reasons for why acquisitions might occur: efficiency-related reasons that often involve economies of scale or other 'synergies'; attempts to create market power, perhaps by forming monopolies or oligopolies; market discipline, as in the case of the removal of incompetent target management; self-serving attempts by acquirer management to 'over-expand' and other agency costs; and to take advantage of opportunities for diversification, like by exploiting internal capital markets and managing risk for undiversified managers. Based on empirical facts that mergers occur in waves and that within a wave, mergers are strongly clustered by industry, a more recent strand of the literature, exemplified by Mitchell and Mulherin (1996), suggests that mergers might occur as a reaction to unexpected shocks to industry structure.

As far as success of acquisitions and post-acquisition performance of firms are concerned, empirical research predominantly looks from the point of view of the acquirer or the newly merged firm. Analyses of the performance of the acquired firms are almost non-existent. General conclusion of the empirical work on the success of acquisitions and post-acquisition performance of firms involved in the case of domestic acquisitions is controversial and inconclusive. In their overview of recent literature on the subject, Cartwright and Schoenberg (2006) say that acquisitions appear to provide at best a mixed performance to stakeholders involved; target firm shareholders generally enjoy positive short-term returns, investors in bidding firms frequently experience share price underperformance in the months following acquisition, with negligible overall wealth gains for portfolio holders (Agrawal and Jaffe 2000). Internally managers of acquiring firms report that only 56 % of their acquisitions can be considered successful against the original objectives set for them (Schoenberg 2006). Tuch and O'Sullivan (2007) also present a review of empirical evidence on the impact of acquisitions of firm performance. They claim that performance measured by long-run event studies is overwhelmingly negative, while the evidence using accounting performance measures is mixed. Calipha, Tarba and Brock (2011) claim that less than 50 % of acquisitions succeed. A kind of general conclusion is that the shares of the acquiring firm tend to show at best a modest improvement with most of the gains accruing to the target company (Andrade, Mitchell and Stafford 2001; OECD 2007). According to OECD (2007: 75–7), the results depend on the rationale for the merger which tends to vary across countries and industries as well as over time. The outcome also varies according to the benchmark (share prices, profitability, market shares, product prices, productivity, wages or research and development), the counterfactual (the purchaser and the acquired firm before and after the acquisition or relative to competitors) and the time frame (short or long run).

Andrade, Mitchell and Stafford (2001) believe that empirical literature has not been very successful in really establishing the long-term effects of mergers, and

what makes some successful and others not. After ascertaining that acquisitions do not really bring very encouraging results for the stakeholders involved, most of the literature tries to identify the factors which impact the success or failure of (domestic) acquisitions. According to Stahl, Chua and Pablo (2006), theoretical frameworks for explaining post-acquisition performance have traditionally focused on financial and strategic factors, such as the degree of 'strategic fit' between the acquiring and target firms, the method of payment, the acquisition premium paid, and so forth. Only relatively recently, 'softer,' less tangible social, cultural, and psychological factors have been introduced in the research. The importance of factors such as cultural fit, management style similarity, the pattern of dominance between the acquiring and target firms, and the social climate surrounding a takeover have been recognized as important to the success of acquisitions. The importance of trust has also been put forward as important (for more on that see in Stahl, Chua and Pablo 2006: 69–70).

Maksimovic, Phillips and Prabhala (2011) examine how firms redraw their boundaries after acquisitions using plant-level data. They analyse the disposition and efficiency changes of firm plants involved in takeovers of manufacturing firms in the U.S. between 1981 and 2000. They find that extensive post-merger restructuring takes place in a short period following mergers and full-firm acquisitions. Acquirers of full firms sell 27 % and close 19 % of the plants of target firms within three years of the acquisition. They show that plants in related transactions and plants that are in the target's main division are less likely to be sold, whereas plants that are in the target's peripheral divisions or are unrelated are significantly more likely to be sold. Firms tend to retain plants in which they have a comparative advantage and improve their productivity but they tend to sell or close other plants. Acquirers with skill in running their peripheral divisions tend to retain more acquired plants. Retained plants increase in productivity whereas sold plants do not. These results suggest that acquirers restructure targets in ways that exploit their comparative advantage.

Time-frame of post-acquisition restructuring plays a prominent role in the findings of Maksimovic, Phillips and Prabhala (2011). This is confirmed by other studies, noticing intensive post-acquisition restructuring in a short period after transition and its gradual dwindling afterwards. Yamada and Taguchi (2010) analyse the effects of acquisitions on target firms' employment in Japan. They find that the immediate effects of firm acquisition on target firm's employment proved to be significantly negative presumably due to labour restructuring intended by the acquiring firm, while the negative effects do not appear to last as the subsequent dynamic impacts on target firm's employment. UNCTAD (2000) is of the same opinion, saying that in the short run foreign acquisition may not contribute to the productive capacity of a host country, or may even reduce it due to the post-acquisition restructuring of the acquired firm, but in the long run there is no

difference between greenfield and acquisitions, as foreign investors also usually invest in the acquired firms. In other words, in the long run, the impact of foreign acquisition on productivity level and growth is positive. This is not necessarily so in the shorter run, when post-acquisition restructuring processes are under way. Thus, at the end of the day, the time frame of analysis is of crucial importance. On the other hand, there is no *a priori* theoretical or empirical prediction about the post-foreign-acquisition level and growth of employment. This may increase or decrease in a shorter but also in a longer period of time after the acquisition. Much depends on acquirer's motivation for acquisition and acquired firms position in acquirer's network.

Various authors point to some other factors which co-determine the success of acquisitions. Thus, Zollo and Singh (1999) after analysing 228 acquisitions in the U.S. banking industry claim that the level of integration between the two firms involved in the acquisition significantly enhances performance, while the replacement of top managers in the acquired firm negatively impacts performance. The latter is contrary to a more common view that replacing top management has beneficial effects on performance of acquired firms. Thus, in their study of 197 U.S. takeovers from the 1980s, Parrino and Harris (1999) find that the most important determinant of superior post-merger operating performance is whether the target company's management is replaced or retained. When the target CEO is replaced, the post-merger firm's annual cash flow returns outpace industry standards. In contrast, when target top management remains after the merger, operating returns do not exceed industry averages. Capron and Guillen (2008) argue that the extent to which stakeholders can pursue their interests within their organizations varies with the nature of national governance systems. They claim that an additional legal protection of shareholder rights increases the acquirer's ability to downsize the target and increase its cost performance, while the protection of the target's employee rights restricts the acquirer's ability to downsize, and transfer resources to the target, and eventually hurts target performance.

## **Post-acquisition performance of firms acquired by foreign investors**

According to Erel, Liao and Weisbach (2009), who analyse the sample of 56.978 cross-border acquisitions that occurred between 1990 and 2007, about one-third of worldwide acquisitions combine firms from two different countries, and, as the world's economy becomes increasingly integrated, cross-border acquisitions are likely to become even more important in the future. They find that firms are much more likely to purchase firms in the nearby countries than in the countries far away, purchasers usually come from developed countries, they tend to purchase

firms in the countries with lower investor protection and accounting standards and from the countries relative to which the acquirer's currency has appreciated. Economy-wide factors reflected in the country's stock market returns lead to acquisitions as well.

The issue of post-acquisition performance of firms acquired by strategic foreign investors is important for the whole range of host-country stakeholders, probably the least for former owners who sold the company. These stakeholders are: management, employees, buyers and suppliers of the acquired firm, other partners and host-country government. In spite of recognising the possible benefits of inward FDI for host-country economy and for strengthening the competitiveness of the acquired firms by transferring technology, knowledge, skills etc., and in spite of a common consensus that, as far as the host country and acquired firm is concerned, there is no real difference between greenfield FDI and acquisition in the longer run, the concerns over short-run risks related to foreign acquisitions are quite generally spread. These shorter run acquisition specific risks include: (i) foreign acquisitions do not add to productive capacity but simply transfer ownership and control from domestic to foreign hands, (ii) potential layoffs of employees, (iii) downgrading or closure of some production or functional activities (e.g. R&D capacities), (iv) swapping of domestic with foreign suppliers, (v) increasing concentration and domination of the local market, (vi) reduced exports or increased imports (UNCTAD 2000: xxii-xxvi or OECD 2007: 71-4). In short, it is argued that foreign acquisitions may have a detrimental effect on the targeted firms' performance, since the foreign MNEs are less rooted in the local economy and are more footloose, i.e. have the possibilities of relocating production among their affiliates in different countries (Bandick 2009). Hereafter, we elaborate relevant theoretical considerations and empirical evidence on the various aspects of post-acquisition performance of firms acquired by strategic foreign investors.

### *Theoretical considerations*

The existing FDI theory, including the OLI paradigm, does not distinguish between greenfield FDI and acquisitions. They predict that firms acquired by MNEs tend to gain or at least not lose from resource transfers from the parent company and therefore will perform well compared to domestic companies. There are some new theoretical attempts which relate specifically to cross-border acquisitions. Thus, Neary's (2007) two-country model of oligopoly in general equilibrium predicts that international differences in technology generate incentives for bilateral mergers in which low-cost firms located in one country acquire high-cost firms located in the other. Similarly, in the two-country heterogeneous firm model of Breinlich (2006) reductions in trade costs lead to a reallocation of assets from low towards high productivity firms via acquisitions. In a general equilibrium model of Nocke and Yeaple (2007), either the most or the least productive firms acquire

foreign targets. The foreign acquirers operating in R&D-intensive industries represent the most productive firms in the corresponding industries in their home country while foreign acquirers operating in marketing-intensive industries represent the least productive firms. When it is the least productive firms which acquire foreign firms, this limits the positive impact of foreign acquisitions on the acquired firms.

The existing FDI theories predict that the firms acquired by MNEs tend to gain or at least not lose from resource transfers from the parent company and therefore will perform well compared to domestic companies (Gioia and Thomsen 2004). In general, FDI theory explores the effect of foreign ownership on firm productivity, not distinguishing formally whether it refers to greenfield investment or cross-border acquisitions. Thus, OLI paradigm as the most prominent explanation of FDI does not distinguish between different modes of entry and was formulated primarily in reference to greenfield FDI. UNCTAD (2000: 141–2) attempts to apply OLI factors specifically for acquisitions. What is the outcome? It is argued that as far as ownership-specific advantages are concerned, cross-border acquisitions and their characteristics call for an adaptation of the conventional analysis in the sense that they allow investors much faster access to, or offer new, ownership advantages; this accounts partly for their growing use in the current international competitive environment. The internalization factors are specific in the case of acquisitions in that there is joint internalization, particularly in acquisitions between similar firms, while OLI paradigm has no specific messages for acquisitions, as far as the location-specific advantages are concerned.

There are, however, some new theoretical attempts which relate specifically to cross-border acquisitions, i.e. which distinguish between greenfield FDI and acquisitions. The first is Neary's (2007) two-country of oligopoly in general equilibrium, which is used to show how changes in the market structure accompany the process of trade and capital market liberalisation. The model predicts that international differences in technology generate incentives for bilateral mergers in which low-cost firms located in one country acquire high-cost firms located in the other. As a result, cross-border mergers facilitate more specialization in the direction of comparative advantage. As a corollary, the model predicts that cross-border mergers and exports are complements rather than substitutes, in the sense that exporting sectors tend to be sources of rather than hosts for FDI. Finally, the model predicts that cross-border merger waves tend to reduce factor demands and so put downward pressure on the returns to productive factors. These predictions are very different from those of standard models of greenfield FDI and, according to Neary (2007), more consistent with the available empirical evidence. He claims that there is ample anecdotal evidence that cross-border mergers tend to reflect comparative advantage, i.e. that investing country has a comparative advantage in exporting (see Feliciano and Lipsey 2002) or that acquiring firms come

disproportionately from the sectors which have a revealed comparative advantage (see Brakman, Garretsen and van Marrewijk 2005).

The model of Breinlich (2006) also analyses acquisitions in view of trade liberalization. He develops a two-country heterogeneous firm model in which reductions in trade costs lead to a reallocation of assets from low towards high productivity firms via acquisitions. He comes to very similar findings as Neary (2007). Using the Canada-United States Free Trade Agreement of 1989 as a natural experiment, he provides empirical evidence that trade liberalization does indeed lead to significant increases in acquisition activity, that resources are reallocated from less to more productive firms in the process and that the amount of reallocation is quantitatively important.

Further theoretical development which deals explicitly with the relationship between cross-border acquisitions as a mode of entry into foreign markets and efficiency of firms is provided by Nocke and Yeaple (2007). They developed a general equilibrium model in which firms can choose between three different modes of foreign market access: exporting, greenfield FDI, and cross-border mergers and acquisitions. Their framework is based on three key ideas. First, there is heterogeneity in firms' capabilities. Second, these capabilities differ in their degree of international mobility. Third, firms can participate in a merger market so as to exploit complementarities in their capabilities. They have applied this framework to address two sets of questions: (1) what are the characteristics of firms that choose the different modes of foreign market access, and (2) what are the effects of country and industry characteristics on this international organization of production. Nocke and Yeaple (2007) show that either the most or the least productive firms acquire foreign targets. Their model predicts that foreign acquirers operating in R&D-intensive industries represent the most productive firms in the corresponding industries in their home country while foreign acquirers operating in marketing-intensive industries represent the least productive firms. The predictions of Nocke and Yeaple (2007) stress the importance of industry-specific effects and contrast with the predictions of Neary (2007), Breinlich (2007) and Helpman, Melitz and Yeaple (2004) who all predict that it is the most productive firms which go for foreign acquisitions. When it is the least productive firms which acquire foreign firms, this limits the positive impact of foreign acquisitions on the acquired firms.

### *Empirical evidence*

Empirical studies of the post-acquisition performance of firms acquired by strategic foreign investors analyse a broad variety of possible performance indicators, from the most commonly analysed impact on productivity to the impact on employment and wages, output, sales, profitability, exports and imports, R&D

and innovation, etc. A number of specific factors which should be controlled for in analysing the performance are also proposed, such as time period which elapsed since the acquisition, industry-specific characteristics, horizontal versus vertical acquisitions, type of acquirer and/or acquired firm (foreign MNEs versus domestic MNEs versus domestic firms, exporters versus non-exporters), institutional, geographic and economic distance between acquirer and acquired firms, resources of acquirer and acquired firms, acquirer's home country, etc. As a rule, the pre-acquisition performance of the acquired company is also controlled for. This is to help answering the question whether the acquired firms outperform domestic ones because of transfers of know-how from the parent, or these firms had already been better performers before they were acquired ('cherry picking'). In order to distinguish between the selection effect and the actual impact of foreign ownership *per se*, studies have looked at local firms before and after their acquisition by a foreign investor (OECD 2007). To address this selection bias, the far predominant econometric approach to measuring post-acquisition performance of acquired firms is propensity score matching combined with difference-in-difference estimators. UNCTAD (2000: 137–40) and OECD (2007: 77–88) provide broad overviews of empirical studies on the post-acquisition performance of acquired firms. These studies produced mixed results, but overall, foreign acquisitions tend to exert positive impacts on the productivity of the acquired units. According to OECD (2007: 77–88), »the effects on the acquired firms are largely beneficial. Although empirical studies are not unanimous in their conclusions, they suggest that the acquired firm mostly benefits in terms of productivity. Following a cross-border takeover, most target companies are found to enjoy a significant increase in operational efficiency and, as a corollary, in international competitiveness. Probably in consequence of the higher productivity, cross-border takeovers also tend to have a positive impact on wages in the acquired companies, particularly for skilled workers«. Empirical studies, however, do not open the black box of foreign acquisitions, i.e. they do not really analyse the process of acquisition and comprehensive post-acquisition restructuring processes in the acquired companies. This seems to be the subject for a case study approach.

Below, we present an overview of empirical studies on individual aspects of acquired companies post-acquisitions performance, i.e. productivity, employment and wages, R&D and innovation, company survival, pre-acquisition performance of acquired firms ('cherry picking'), export performance of foreign-owned firms, local suppliers, impact of foreign acquisitions on competition, impact of foreign privatizations in the transition countries of Central and Eastern Europe. Summary of the findings of the main empirical studies is presented in Table 3.

TABLE 3: Summary of the findings of empirical studies on the post-acquisition performance of companies acquired in cross-border acquisitions

Author	Main finding	Performance indicator	Factors of performance to be controlled for	Data / country	Method
Almeida (2004)	Foreign firms pay significantly higher wages across all skill levels, even after controlling for the sector, region, size and age of the firm.  Wage premium increases with skill levels.	Wages	Different effects for different skill levels.  Domestic mergers could produce the same outcome as the cross-border ones. It is acquisition rather than foreign ownership <i>per se</i> which causes wage increases.	Portugal	
Arnold and Smarzynska Javorcik (2005)	Foreign ownership leads to significant productivity improvements in the acquired plants.  Acquired plants increase investment outlays, employment and wages, export and imports.	Productivity, investment outlays, employment, wages, exports / imports		Micro data from the Indonesian Census of Manufacturing	Difference-in-differences approach combined with propensity score matching
Bandick (2009)	Acquisition has no effects on overall, skilled or less-skilled wage growth neither in targeted Swedish MNEs nor in targeted Swedish non-MNEs and neither if the acquisition was motivated by vertical or horizontal motives.  Both targeted Swedish MNEs and non-MNEs have better growth in TFP after vertical foreign acquisition, but there is no such impact from horizontal foreign acquisition.	Effect of foreign acquisition on wages and total factor productivity (TFP)	Distinguish among different skill levels.  Distinguish targeted firms being domestic multinational or non-multinationals.  Distinguish between horizontal and vertical acquisitions.	Detailed firm-level data for Sweden for the period 1993–2002	Instrumental variable approach and propensity score matching with difference-in-difference estimation technique

Author	Main finding	Performance indicator	Factors of performance to be controlled for	Data / country	Method
Bandick and Görg (2009)	<p>Acquisitions increase the lifetime of the acquired plants only if the plant is an exporter.</p> <p>Effect on survival differs for horizontal and vertical acquisitions: survival increases by between 17 %–34 % for vertical and 6 %–8 % for horizontal acquisitions.</p> <p>Positive effects on employment growth only for exporters, and only if the takeover is vertical, not horizontal.</p>	Effect of foreign acquisition on survival probability and employment growth	<p>Distinguish among targeted plants being those within Swedish MNEs, Swedish exporting non-MNEs, and purely domestic firms.</p> <p>Horizontal versus vertical acquisitions.</p> <p>Exporters</p>	Swedish manufacturing plants during 1993–2002	Controlling for possible endogeneity of the acquisition dummy by using an IV and propensity score matching approach
Bandick, Görg and Karpáty (2010)	Foreign acquisitions lead to increasing R&D intensity in acquired domestic MNEs and non-MNEs.	R&D activity		Firm level data for the Swedish manufacturing sector	Different micro-econometric estimation strategies in order to control for potential endogeneity of the acquisition dummy
Barba Navaretti and Venables (2004)	No causal link between cross-border acquisitions and post-acquisition performance of acquired firms.	Productivity			
Bertrand (2009)	<p>Foreign acquisitions of French firms boost R&amp;D spending.</p> <p>After acquisition R&amp;D is more contracted out to local research providers, in particular to local public laboratories and universities.</p>	R&D activity		French innovative manufacturing firms data for 1994–2004	Difference-in-difference estimation techniques associated with matching propensity score procedure

Author	Main finding	Performance indicator	Factors of performance to be controlled for	Data / country	Method
Bertrand and Zitouna (2008, 2009)	<p>Acquisitions do not increase the profit of acquired firms, even on the long run, but they clearly raise their productivity. Efficiency gains are significantly stronger for cross-border acquisitions. This holds only for extra-European Union operations.</p> <p>Operating in remote cultural and institutional environments leads to performance-enhancing synergies to the greatest benefit of the acquired firm.</p> <p>Geographic distance seems to have a negative impact on post-acquisition performance of acquired firms.</p> <p>Economic distance: higher gap in sectorial TFP enhances the post-acquisition productivity of target firms.</p>	Effects of domestic versus cross-border horizontal acquisitions on the performance – profit and productive efficiency of acquired firms	Institutional, geographic and economic distance (remoteness) between foreign acquirer and acquired company is a key factor in explaining the performance of international acquisitions.	French manufacturing firm-level data of acquired firms in the 1990's	Difference-in-difference estimation techniques associated to a matching propensity score procedure
Buckley, Ella and Kafouros (2010)	<p>The impact on acquired firms depends on different factors:</p> <p>(i) the resources of the target firm and the resources of the acquiring company, (ii) target firm's own network, but also national and international network of the acquiring company, (iii) moderate level of relatedness between the target and the acquiring company maximize the impact on performance.</p>	Performance	Impact depends on: resources of acquirer and acquired firm, their network, moderate level of relatedness.	Acquisitions of target firms in advanced countries by firms from emerging economies	
Cassiman, Colombo, Garrone and Veugelers (2004)	R&D activities in EU firms acquired by foreign investors are reduced or become more focused after the acquisition	R&D		EU firms	

Author	Main finding	Performance indicator	Factors of performance to be controlled for	Data / country	Method
Castellani and Zankei (2004)	Foreign acquirers do not acquire better domestic firms.	Pre-acquisition performance of acquired firms		Sample of foreign acquisitions of Italian manufacturing companies in 1997–2000	
Chari, Chen and Dominguez (2009)	In the years following the acquisition, sales and employment of the acquired firms decline while profitability rises, suggesting significant restructuring of the target firms.	Employment, sales, profitability		Firm-level data for U.S. firms acquired by firms from emerging markets over 1980–2007	Difference-in-differences approach combined with propensity score matching to create an appropriate control group of non-acquired firms
Chen (2009)	Companies acquired by firms from industrial and developing countries increase profits by 10 and 6 percentage points, respectively, compared with firms acquired by a buyer from the United States.  U.S. companies acquired by firms from industrial countries exhibit higher profits than those acquired by firms from developing countries.  Compared with domestic acquisitions, foreign industrial firm acquisitions of U.S. companies tend to increase employment and sales of acquired companies. However, companies acquired by firms from developing countries experience a decrease in both revenues and total number of employees.	Impact of geographic origin of the acquiring firm on the post-acquisition performance of acquired firms in terms of profits, employment, sales.		Data on a comprehensive sample of public U.S. firms acquired during 1979–2006	Propensity score matching to create similar comparison groups of target firms prior to acquisitions

Author	Main finding	Performance indicator	Factors of performance to be controlled for	Data / country	Method
Chen, Contreras and Cuervo-Cazurra (2010)	<p>In crisis, foreign acquirers enjoy an advantage of foreignness in better access to capital that enables them to buy target firms with better pre-acquisition performance.</p> <p>In crisis foreign acquirers suffer a disadvantage of foreignness in higher information asymmetries, which results in worse target firm post-acquisition performance. In times of stability, the balance shifts and the differences in target firm performance between foreign and domestic acquirers diminish.</p>	Pre-acquisition performance of acquired firms	Distinguish between periods of economic crisis and stability.		
Cimoli (2001)	R&D was reduced or moved to a third country.	R&D		Latin America	
Conyon, Girma, Thompson and Wright (2002)	<p>Acquired firms exhibit an increase in labour productivity by 13%.</p> <p>Acquired firms pay equivalent employees 3.4% more than domestic firms.</p>	<p>Productivity</p> <p>Wages</p>		<p>Specially constructed database for UK in the period 1989–1994</p>	Use ownership change (acquisition) to control for unobserved differences between plants.
Csengodi, Jungnickel and Urban (2005)	Foreign-owned firms pay a wage premium over local firms. Long-run wage premium of acquired firms is substantially larger than prior to the takeover.	Wages		Hungary	

Author	Main finding	Performance indicator	Factors of performance to be controlled for	Data / country	Method
Fukao, Ito, Kwon and Takizawa (2006)	<p>Productivity/profitability of companies acquired in cross-border acquisitions improved significantly more and quicker than in companies acquired in domestic acquisitions.</p> <p>Foreign acquirers do not acquire better domestic firms.</p> <p>Positive effects in the non-manufacturing sector tend to be much larger than in the manufacturing sector.</p> <p>The larger the technological and managerial gap the higher the positive effects of foreign acquisition for the acquired firm.</p>	<p>Productivity</p> <p>Profitability</p> <p>Pre-acquisition performance of acquired firms</p>	Industry specific, manufacturing versus non-manufacturing.	Japanese firm-level data for the period from 1994-2002	Combining a difference-in-differences approach with propensity score matching to avoid the selection bias problem.
Gioia and Thomsen (2004)	<p>In short-post acquisition period, TFP in foreign acquisitions drop more than in domestic acquisitions.</p> <p>In a longer term, relative performance of the internationally acquired firms improves significantly.</p> <p>Foreign acquirers tend to acquire poorly performing firms</p>	<p>TFP</p> <p>Pre-acquisition performance of acquired firms</p>	Time since acquisition (negative short-term and positive long-term effects)-	Danish firms over the period 1990-1997	TFP methodology, use of a standard Cobb-Douglas production function
Girma and Görg (2004)	<p>Takeover reduces the lifetime of the acquired plant.</p> <p>Takeover reduces employment growth, in particular for unskilled labour in the electronics industry.</p>	<p>Plant survival</p> <p>Employment prospects</p>	Sector specific impact on employment (electronics, food sector).	Plant level data for the UK electronics and food industries in 1980-1993	Difference-in-difference approach combined with propensity-score matching

Author	Main finding	Performance indicator	Factors of performance to be controlled for	Data / country	Method
Girma and Görg (2007)	Sizable positive wage effects following acquisitions by U.S. firms, but no impact from acquisitions by EU firms.	Wage effect	Home-country specific	Panel data of establishments in the UK food and electronics industries	Difference-in-difference approach combined with propensity-score matching
Griffith, Redding and Simpson (2004)	Little negative effect on R&D with very few closures of R&D facilities.	R&D		UK	
Guadalupe, Kuzmina and Thomas (2011)	Domestic firms on acquisition conduct more product and process innovation. Innovation on acquisition is associated with the increased market scale provided by the parent firm.	Innovation	Model of endogenous selection and innovation in heterogeneous firms that jointly explains the observed selection process and the innovation decisions.	Panel of Spanish manufacturing firms in 1990-2006	Propensity score matching
Heyman, Sjöholm and Gustavsson Tingvall (2004, 2005)	Foreign firms do not pay higher wages than domestic firms for identical types of workers.  Foreign takeovers tend to raise wages for high-skilled workers, at least for managers and CEOs, and decrease those for the low skilled.  Wages tend to rise more slowly in foreign-owned firms than in local ones over time	Wages	Different effect for different skill levels  Foreign-owned firms in Sweden are similar to Swedish firms which are themselves MNEs, suggesting that multi-nationality matters more than foreign ownership.	Sweden	Difference in difference and propensity-score matching

Author	Main finding	Performance indicator	Factors of performance to be controlled for	Data / country	Method
Harris and Robinson (2003)	Foreign investors tend to acquire firms with higher productivity. Acquired firms do not reap any benefit from foreign ownership.	Pre-acquisition performance of acquired firms Post-acquisition performance		UK manufacturing firms	
Huttunen (2007)	Foreign acquisitions have positive effect on wages. The magnitude of this effect increases with the level of schooling of the workers. The wage increase is not immediate, but occurs within one to three years from the acquisition.	Effect of foreign acquisitions on wages of different skill groups	Different effect for different skill levels. Time matters for post-acquisition effects to be realised.	Panel data on Finnish companies for 1988–2001	Various regression and propensity score matching methods
Ilmakunnas and Maliranta (2004)	Acquisitions significantly improve productivity in the acquired companies.	Productivity		Manufacturing sector in Finland	
Kalotay and Hunya (2000)	R&D spending as a share of sales dropped significantly after foreign privatizations. Foreign acquisitions increase the productivity in acquired companies, resulting in a difference by between 3 % and 9 %, depending on the estimator chosen. Productivity difference starts three years after the acquisition.	R&D Productivity level and growth		Central and Eastern Europe	
Karpaty (2007)	Foreign ownership boosts productivity level and growth. No evidence of 'cherry picking'.	Pre-acquisition performance of acquired companies	Time matters for post-acquisition effects to be realised.	Swedish manufacturing firms	Use of propensity score matching estimator to compare similar treated and untreated firms and application of difference-in-difference estimator

Author	Main finding	Performance indicator	Factors of performance to be controlled for	Data / country	Method
Lehto and Böckerman (2008)	<p>Cross-border acquisitions lead to downsizing in manufacturing employment, effects in non-manufacturing are much weaker.</p> <p>Domestic acquisitions with a domestic purchaser have negative employment effects for all sectors.</p> <p>Effect of domestic acquisitions with foreign-owned purchasers on employment is remarkably negative in construction and other services.</p>	Employment effects	<p>Distinguish between cross-border acquisitions, domestic acquisitions with a domestically owned purchaser, and domestic acquisitions with a foreign-owned company that is located in Finland.</p> <p>Manufacturing vs. non-manufacturing.</p>	Matched establishment-level data from Finland in 1989–2003	
Li (1995)	Exit rate is higher for foreign acquisitions and joint ventures than for greenfield investments.	Company survival	Whether subsidiary diversifies or stays in the parent firm's main product areas.	Foreign subsidiaries in U.S. computer and pharmaceutical industries over 1974–89	Hazard rate model
Lichtenberg and Siegel (1987)	Positive effect on acquired firms' productivity.	Productivity	Learning and experience in foreign operations.	USA	

Author	Main finding	Performance indicator	Factors of performance to be controlled for	Data / country	Method
Lipsey and O'Connor (1982)	Acquired firms have been weak relative to others in their industries and had particularly suffered during the year in which a takeover occurred. Post-acquisition performance of acquired firms has been above industry average, especially in the short term (profitability, efficiency). Employment increases in short-term after the acquisition. In the longer run the acquired firms did not show the same relative employment gains.	Pre-acquisition performance of acquired firms (profitability, efficiency) Post-acquisition performance Employment	Time since acquisition (the best effects are immediately after acquisition).	Swedish firms	
Lipsey, Sjöholm and Sun (2010)	Acquired plants show faster employment growth than domestic ones.	Employment		Indonesian plants acquired by foreign investors in 1975–2005	Propensity score matching
Maioli, Ferret, Girma and Görg (2006)	Greenfield FDI dampens price-cost margins, whilst acquisition FDI increases them.	Competition		Plant level data for manufacturing industries in UK	
Martins (2004)	Wage growth is lower in the firms acquired by foreigners.	Wages			Difference in difference propensity-score matching methods
Modén (1998)	Mixed results.	Productivity		Sample of Swedish manufacturing firms	
Munari and Sobrero (2005)	Post-acquisition drop of R&D spending as a share of sales but increase of R&D output in terms of patent numbers and quality of R&D.	R&D		European countries	
Piscitello and Rabbiosi (2004)	Medium-term productivity generally increases. Productivity increase is positively related to both the acquired company's dimensional scale and its geographical and cultural proximity to the parent company.	Productivity	Company size Geographical and cultural proximity between acquired and acquired company	Foreign acquisitions of Italian companies in the 1990s	Counterfactual analysis based on matching pairs, parametric t-tests, and a simple econometric model
Salis (2008)	No effect on productivity.	Productivity		Slovenia	

Author	Main finding	Performance indicator	Factors of performance to be controlled for	Data / country	Method
Schiffbauer, Siedschlag and Ruane (2009)	<p>No longer-run effects of foreign ownership on TFP at the aggregate level.</p> <p>No differences with regard to different countries of origin of foreign acquirers.</p> <p>Effects of foreign acquisitions vary across industries.</p> <p>When classifying acquiring firms as R&amp;D and marketing-intensive they confirm Nocke and Yeaple (2007) hypothesis.</p> <p>Positive aggregate effects on labour productivity but not on TFP in the manufacturing sector, meaning that foreign acquisition leads to capital deepening but not improvements in technological or organizational knowledge in the longer-run.</p>	<p>Causal relationship between foreign mergers and acquisitions and firm productivity</p>	<p>Profile of firms acquired.</p> <p>Country of origin of foreign acquirer.</p> <p>Differences at industry level.</p> <p>Different measures of firm productivity.</p>	<p>Micro data set which effectively covers all firms in the UK including over 2,000 foreign acquisitions over the period 1999–2007</p>	<p>Propensity score matching combined with a difference-in-difference estimator which allows to distinguish between causality and correlation effects of foreign ownership</p>
Stiebale and Reize (2011)	<p>Foreign acquisitions have negative impact on the propensity to perform innovation activities and on average R&amp;D expenditures in innovative firms.</p>	R&D and innovation		Large sample of small- and medium-sized German firms	Controlling for endogeneity and selection bias
Velho (2004)	<p>Innovation efficiency does not increase.</p> <p>R&amp;D was reduced or moved to a third country.</p>	R&D		Latin America	
Zhu, Jorg and Otchere (2011)	<p>Partial cross-border acquisitions have no significant impact on the operating performance of acquired companies.</p> <p>Targets of domestic acquisitions experience significant improvements in operating performance.</p>	Performance / productivity		Partial cross-border acquisitions in emerging markets	

## Productivity

Productivity trends of acquired companies in the post-acquisition period are by far the most frequently analysed aspect of cross-border acquisitions. Although the findings are not fully unanimous, studies which report of the positive impact of foreign acquisition on acquired firms productivity levels and growth far prevail. As expected, positive results tend not to be the consequence of foreign ownership *per se*, and are usually conditional on a number of other factors, such as the time period after acquisition, industry, foreign investor's home country, etc. The time issue may be the most frequently quoted. As claimed by Schiffbauer, Siedschlag and Ruane (2009), the impact of a take-over on firm productivity is expected to be negative in the short-run due to the high short-run costs of reorganization. The latter effect is expected to be larger in cross-border as compared to domestic acquisitions due to higher adaptation costs. Similarly, long-run productivity effects in cross-border acquisition are potentially more pronounced due to a larger scope for knowledge spill-overs and adverse competition effects.

There are numerous empirical studies reporting on the positive impact of cross-border acquisitions on acquired firms' productivity. Conyon, Girma, Thompson and Wright (2002) look at the impact of foreign acquisitions on productivity of acquired firms in the UK. Using a specially constructed database for the period 1989–1994, and applying ownership change (acquisition) to control for unobserved differences between plants (in terms of firm size and fixed-firm and industry-specific effects), they find that firms acquired by foreign investors exhibit an increase in labour productivity of 13 %. For the US, Lichtenberg and Siegel (1987) have found positive effects of foreign acquisitions on firm productivity. Arnold and Smarzynska Javorcik (2005), using micro data from the Indonesian Census of Manufacturing and applying difference-in-differences approach combined with propensity score matching to control for the possible endogeneity of the FDI decision, find that after three years, the acquired plants outperform the control group in terms of productivity by 34 percentage points. The rise in productivity is also a result of restructuring, as acquired plants increase investment outlays, employment and wages. Similarly, Fukao, Ito, Kwon and Takizawa (2006), who analyse Japanese firm-level data for the period from 1994–2002 and combine a difference-in-differences approach with propensity score matching to avoid the selection bias problem, find that foreign acquisitions improved target firms' productivity and profitability significantly more and quicker than acquisitions by domestic firms, and that this is not a consequence of 'cherry-picking'. Positive effects of foreign acquisitions tend to be much larger in the case of the non-manufacturing sector

than in the case of the manufacturing sector.<sup>6</sup> Comparing their results with those of Arnold and Javorcik's (2005) for Indonesia, Fukao, Ito, Kwon and Takizawa (2006) find that the magnitude of the positive effects of foreign acquisitions in Japan is much smaller. They attribute this to the difference in technological and managerial capabilities between domestic and foreign firms, which is much larger in Indonesia than in Japan and technology transfer effects from foreign firms to domestic firms should be less relevant in Japan. Ilmakunnas and Maliranta (2004) analyse the productivity effect of foreign takeovers in the manufacturing sector in Finland and find that acquisitions significantly improve productivity in the targeted firms. Using transaction-specific information and firm-level accounting data, Chari, Chen and Dominguez (2009) also find that profitability of publicly traded U.S. firms that have been acquired by firms from emerging markets over the period 1980–2007 increased in the years following the acquisition.

A number of studies report on the positive impact of cross-border acquisitions on acquired companies' productivity but conditional to some specific factors, or they elaborate factors which determine the scope of the impact. Based on the data on foreign acquisitions of Italian companies in the 1990s, and using a counterfactual analysis based on matching pairs, parametric t-tests, and a simple econometric model, Piscitello and Rabbiosi (2004) analyse the impact of foreign acquisitions on acquired company's performance in the medium term following acquisition. They find that foreign acquisitions generally increase the acquired company's medium-term productivity and that such an increase is positively related to both the acquired company's dimensional scale and its geographical and cultural proximity to the parent company. Gioia and Thomsen (2004), who compare international and domestic acquisitions of Danish firms over the period 1990–1997, stress the importance of time. They find that performance in all target companies tends to drop for a year or two after the acquisition, but the performance of firms acquired by international buyers tends to drop even more. However, the relative performance of the internationally acquired firms improves significantly a couple of years after acquisition. The importance of time element is also put forward by Karpaty (2007), who investigates how foreign acquisitions affect productivity in Swedish manufacturing firms. To isolate the causal effects due to a takeover, he uses a propensity score matching estimator to compare similar treated and untreated firms. He then applies the difference-in-difference estimator. He shows that there is a positive effect on productivity due to foreign acquisition. Foreign acquisitions increase the productivity in Swedish firms, re-

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6 Fukao, Ito, Kwon and Takizawa (2006) say that there are two possible reasons for this: higher technology gap of Japanese non-manufacturing firms, foreign manufacturing firms often acquire Japanese wholesalers or retailers in order to obtain their own distribution channels and thus contribute to the streamlining of distribution networks in the Japanese commerce sector.

sulting in a difference by between 3 % and 9 % depending on the estimator chosen and whether the firms are matched or not. This productivity difference does not occur immediately, but starts three years after the acquisition. Foreign ownership is also found to boost productivity growth, not just the level of productivity. Bertrand and Zitouna (2008) investigate the effects of domestic versus cross-border horizontal acquisitions on the performance – profit and productive efficiency – of acquired firms in the 1990's, using French manufacturing firm-level data and applying difference-in-difference estimation techniques associated to a matching propensity score procedure. They find that acquisitions do not increase the profit of acquired firms, even in the long run, but they clearly raise their productivity. Efficiency gains are significantly stronger for cross-border acquisitions. This conclusion is however true only for extra-European Union operations. In their article from 2009 (Bertrand and Zitouna 2009), they further elaborate this issue by saying that cultural, institutional, geographic and economic distance (remoteness) between the foreign owner and its foreign affiliate is as a key factor in explaining the performance of international acquisitions. Operating in remote cultural and institutional environments leads to performance-enhancing synergies to the greatest benefit of the acquired firm. But, geographic distance seems to have a negative impact. As for the economic distance, the results of Bertrand and Zitouna (2009) suggest that a higher gap in sectorial TFP enhances the post-acquisition productivity of target firms especially for European acquisitions. Buckley, Ella and Kafouros (2010) investigate the way in which acquisitions from emerging economies impact on the performance of target firms in advanced countries. They suggest three sets of determinants which impact the post-acquisition performance of the acquired firms: (i) both the resources of the target firm and the resources of the acquiring company play an important role in determining performance outcomes, (ii) the performance of the target firm is influenced not only by its own network, but also by the national and international network of the acquiring company, (iii) the performance of the target firm is likely to be maximised when there is a moderate level of relatedness between the target and the acquiring company. Chen, Contreras and Cuervo-Cazurra (2010) bring another aspect in the analysis. They argue that the balance between advantages and disadvantages of foreignness changes during crises. In a crisis, foreign acquirers suffer a disadvantage of foreignness in higher information asymmetries, which results in worse target firm post-acquisition performance. In times of stability, the balance shifts and the differences in target firm performance between foreign and domestic acquirers diminish. Using data on a comprehensive sample of public U.S. firms acquired during 1979–2006 and applying propensity score matching, Chen (2009) analyses the impact of country of origin of the acquiring firm on acquired firm post-acquisition performance. He finds that targets acquired by firms from industrial and developing countries increase profits by 10 and 6 percentage points more, respectively, compared with firms acquired by a buyer from the United States, and that the U.S. targets acquired by firms from industrial countries exhibit higher profits than those acquired by firms from developing countries. Chen

stresses specifically the importance of the propensity score matching; by applying it the results are substantially different from those obtained when not controlling for selection, suggesting that causal inference based on studies that do not use appropriate comparison groups may yield misleading conclusions. Bandick (2009) uses detailed firm-level data for Sweden for the period 1993–2002, implement an instrumental variable approach and propensity score matching with difference-in-difference estimation technique to take account of the potential endogeneity of the acquisition decision (for example due to ‘cherry picking’),<sup>7</sup> and allows for the acquisition effect to differ depending on whether the targeted firms were domestic multinational or non-multinationals before the foreign takeover, as well as depending on whether the acquisition is horizontal or vertical. His results indicate that both targeted Swedish MNEs and non-MNEs have better growth in TFP after vertical foreign acquisition only, but no such impact from horizontal foreign acquisition.

Schiffbauer, Siedschlag and Ruane (2009) introduce several sources of heterogeneity in the analysis and find positive post-acquisition effects of cross-border acquisitions on the acquired firms not being general but depending on a number of other determinants. They examine the causal relationship between foreign mergers and acquisitions and firm productivity in the UK over the period 1999–2007. They use propensity score matching combined with a difference-in-difference estimator, which allows them to distinguish between causality and correlation effects of foreign ownership.<sup>8</sup> They also explore the profile of the firms which are acquired by or merged with foreign-owned firms, to what extent the effects on firm productivity vary by the country of origin of the acquiring/merging firm, how the effects vary at industry level and whether the answers depend on the particular measure of firm productivity. Their results bring some doubts over the existence of longer-run effects of foreign ownership on TFP at the aggregate level. Also, they do

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7 Bandick (2009) uses different econometric approaches to identify the causal effect of takeovers in post-acquisition periods. He first estimates a difference-in-difference regression model taking account of the potential endogeneity of the acquisition decision by implementing an instrumental variable approach. As an alternative estimation strategy, he uses an extended version of the matched difference-in-difference method suggested by e.g. Blundell and Costas Dias (2000) by in the first step matching, on a yearly basis, the non-acquired and acquired firms with similar propensity score and in the next step estimate difference-in-difference on the matched sample.

8 To address the selection bias, Schiffbauer, Siedschlag and Ruane (2009) analyse the causal effect of foreign acquisition by using propensity score matching following Rosenbaum and Rubin (1983) combined with difference-in-difference estimators (Heckman, Ichimura and Todd 1997). To tackle the measurement issues related to total factor productivity (TFP), they determine TFP by means of production function estimations at the three-digit industry level. They follow the approach of Olley and Pakes (1996) which generates unbiased industry level input elasticities by controlling for the correlation between unobserved productivity shocks and firm inputs. In addition, they use three alternative firm productivity measures as a robustness check: and a multi-lateral TFP index based on Caves, Christensen and Diewert (1982), TFP based on conventional OLS production function estimations, and labour productivity.

not find any differences with regard to different countries of origin of foreign acquirers. However, they find that the effects of foreign acquisitions vary across industries, leading to higher productivity in ICT manufacturing industries but not in ICT service industries. These industry level results highlight a significant heterogeneity of the effect of foreign acquisition on target firm productivity across industries; this is consistent with the theoretical predictions of Nocke and Yeaple (2007) and potentially explains the absence of positive longer-run TFP effects at the aggregate level. Moreover, when they follow the theoretical suggestions of Nocke and Yeaple (2007) by classifying acquiring firms as R&D and marketing-intensive, they broadly reveal a systematic pattern of post-acquisition TFP effects that is consistent with their theoretical predictions which generate a specific TFP ranking of acquiring firms. Finally, they find positive aggregate effects on labour productivity but not TFP in the manufacturing sector, i.e. foreign acquisition leads to capital deepening but not improvements in technological or organizational knowledge in the longer run. Hence, the use of labour productivity instead of TFP generates misleading results with respect to the causal impact of foreign acquisition on target firm performance in the UK, as described in the theoretical literature on multinational firms.

On the negative side, Salis (2008) finds no effect on productivity as a result of foreign acquisition in Slovenian manufacturing firms, while Modén (1998), who analyses a sample of Swedish manufacturing firms, finds mixed results as far the productivity effect in targeted firms is concerned. Zhu, Jog and Otchere (2011) claim that partial cross-border acquisitions have no significant impact on the operating performance of target firms from emerging markets, while targets of domestic acquisitions experience significant improvements in operating performance and substantial changes in ownership structure after the acquisition. They claim that this evidence suggests that domestic partial acquisitions in emerging markets serve as a market for corporate control, while cross-border partial acquisitions are motivated by the strategic market entry rationale. Harris and Robinson (2003) claim that the UK manufacturing firms acquired in cross-border acquisitions do not reap any benefit from foreign ownership. Barba Navaretti and Venables (2004) rejected a causal link between cross-border acquisitions and post-acquisition performance of acquired firms.

### *Employment and wages*

The impact of foreign acquisitions on acquired firms' employment and wages is one of the most commonly analysed aspects of post-acquisition performance of acquired firms, especially as far as the wages are concerned. The results of empirical studies on the impact of foreign acquisitions on acquired firms' employment are mixed, but those suggesting a drop of employment seem to prevail. This is not specific only for cross-border but also for domestic acquisitions. This is explained by the change in control through acquisitions, which offers an opportunity for

renegotiating labour contracts that have constituted obstacles for layoffs (Lehto and Böckerman 2008). Along these lines, Lehto and Böckerman (2008), by using matched establishment-level data from Finland in 1989–2003, compare the employment effects of cross-border acquisitions, domestic acquisitions with a domestically owned purchaser, and domestic acquisitions with a foreign-owned company that is located in Finland. The results show that cross-border acquisitions lead to downsizing in manufacturing employment. The effects of cross-border acquisitions on employment in non-manufacturing are much weaker. Domestic acquisitions with a domestic purchaser, on the other hand, have negative employment effects for all sectors. The effect of domestic acquisitions with foreign-owned purchasers on employment is remarkably negative in construction and other services. Based on plant level data for the UK electronics and food industries in 1980–1993, Girma and Görg (2004) claim that the incidence of foreign acquisitions reduces employment growth, in particular for unskilled labour in the electronics industry, while there is no significant effect for the food sector. Chari, Chen and Dominguez (2009) find that in the years following the acquisition of the U.S. firms by investors from emerging markets over the period 1980–2007, sales and employment of the acquired firms decline while profitability rises, suggesting significant restructuring of the target firms. They use firm-level accounting data and apply a difference-in-differences approach combined with propensity score matching to create an appropriate control group of non-acquired firms.

Some other studies report positive results of foreign acquisitions on the acquired firms employment which, however, is usually pending on certain conditions or hold only for certain categories of acquisitions. Thus, Lipsey and O'Connor (1982) report of post-acquisition employment growth in short-term after the acquisition of Swedish firm. However, in the longer run the acquired firms did not show the same relative employment gains as in the first year or two after a takeover. Lipsey, Sjöholm and Sun (2010) examine employment growth in a large panel of Indonesian plants acquired by foreign investors between 1975 and 2005. Acquired plants show faster employment growth than domestic ones, even after controlling for the fact that foreign firms own relatively large domestic plants, which in general grow more slowly than smaller plants. Bandick and Görg (2009) look at the employment effect of acquired Swedish manufacturing plants during 1993–2002. They control for possible endogeneity of the acquisition dummy using an IV and propensity score matching approach and find robust positive employment growth effects only for exporters, and only if the takeover is vertical, not horizontal. Arnold and Smarzynska Javorcik (2005) find that the rise in productivity of firms acquired by foreign investors in Indonesia is a result of restructuring, as acquired plants increase investment outlays, employment and wages. Chen (2009) claims that compared with domestic acquisitions, foreign industrial firm acquisitions of the U.S. companies tend to increase their targets' employment and sales. However, targets acquired by firms located in developing countries experience a

decrease in both revenues and total number of employees. These findings suggest that target firms are subject to significantly different restructuring processes depending on the nationality of the acquiring firm. Whereas industrial country acquirers increase profits in their targets by increasing revenues, developing country acquirers are more likely to reduce the labour costs of target firms.

The literature on the impact of foreign acquisitions on wages in the acquired firms is ample. Contrary to employment, most (but not all) studies report on the positive impact of foreign acquisitions on wages. According to OECD (2007: 77–88), foreign takeovers have a more powerful effect on wages than foreign greenfield FDI and wage effects differ according to worker skills. Unlike other workers, workers with vocational training or less do not experience any significant wage premium change following a takeover. OECD (2007) says that this is because the foreign investor has less need to prevent turnover among lower skilled workers since they are much less likely to contribute to spill-overs to other firms in the economy. Probably an even more important factor for higher wage premium in the case of skilled workers is that the lower skilled workers are much more easily available on the labour market than high-skilled workers.

Based on 1981–1994 panel data of UK firms in food and electronics industries and applying difference-in-difference propensity-score matching methods, Girma and Görg (2007) find sizable positive post-acquisition wage effects on skilled and unskilled labour following acquisitions by the U.S. firms, but no such impact from acquisitions by the EU firms. According to Almeida (2004), Portuguese firms acquired by foreign investors pay significantly higher wages across all skill levels, even after controlling for the sector, region, size and age of the firm. The wage premium increases with skill levels. Almeida (2004), however, claims that domestic mergers may produce the same outcome. Heyman, Sjöholm and Gustavsson Tingvall (2004) find that foreign investors in Sweden pay on average 20 % higher wages than domestic firms, but much of this is because foreign-owned firms tend to have more skilled workforce. On the other hand, wages in the firms acquired by foreign investors tend to rise more slowly than in domestic ones. Also, the difference is not between foreign-owned and domestic firms, but between multinational, be it foreign or domestic-owned, and uni-national firms. Thus, what matters is multi-nationality and not foreign ownership. If Heyman, Sjöholm and Gustavsson Tingvall in their study of 2004 claim that foreign firms do not pay higher wages for the same levels of skills, in their study from 2005, they claim that foreign takeovers tend to raise wages for high-skilled workers, at least for managers and CEOs, and decrease those for the low skilled. Csengodi, Jungnickel and Urban (2005) look at the effect of foreign takeovers on wages in Hungary and find that foreign-owned firms pay a 15 % wage premium over local firms after controlling for worker and firm characteristics. Still, firms acquired by foreigners were paying higher wages already before the acquisition. In the long run, wage premium of acquired firms is substantially

larger than prior to the takeover. Conyon, Girma, Thompson and Wright (2002) look at the impact of foreign acquisitions on wages in the UK. They find that firms acquired by foreign investors pay equivalent employees 3.4 % more than domestic firms, though this is wholly attributable to their higher levels of productivity. Firms which are acquired by foreign companies exhibit an increase in labour productivity by 13 %. Huttunen (2007) uses panel data on Finnish companies for 1988–2001 and applies various regression and propensity score matching methods to examine the effect of foreign acquisitions on wages of different skill groups. She finds that foreign acquisitions have positive effect on wages. The magnitude of this effect increases with the level of schooling of the workers. The wage increase is not immediate, but occurs within one to three years from the acquisition. The results also indicate that acquisitions result in a small decrease of the share of highly educated workers in the plant's employment. This seems to hold for domestic acquisitions as well. Arnold and Smarzynska Javorcik (2005) also report on the increase of wages in Indonesian manufacturing firms acquired by foreigners.

Contrary to the above, Martins (2004), who examines the wage differentials between domestic and foreign firms in Portugal by using matched employer-employee panel and applying differences-in-differences and propensity score matching, finds that foreign-firm wage premium is large and significantly positive but falls substantially when firm and worker controls are added. His final conclusion is that wage growth for workers in domestic firms that are acquired by foreign investors is lower. For Sweden, Bandick (2009) claims that foreign acquisition has no effects on overall, skilled or less-skilled wage growth neither in targeted Swedish MNEs nor in targeted Swedish non-MNEs and neither if the acquisition was motivated by vertical or horizontal motives.

### *R&D and innovation*

The issue of R&D and innovation in the acquired firms has traditionally been one of the concerns of host countries relating to foreign acquisition. Empirical studies on the subject do not give unambiguous results. UNCTAD (2005: 191) provides an overview of empirical studies confirming both positive and negative impact of foreign acquisitions on R&D in acquired firms: Cassiman, Colombo, Garrone and Veugelers (2004) claim that R&D activities in EU firms acquired by foreign investors were reduced or became more focused after the acquisition, Velho (2004) and Cimoli (2001) claim that foreign acquisitions in Latin America lead to a reduction of R&D or its relocation to a third country, Kalotay and Hunya (2000) for Central and Eastern Europe report on the fall of R&D spending in the firms privatized via foreign privatizations, Rugman and D'Cruz (2003) quote two cases of closing down local R&D and one case of its expansion in the chemical industry of Canada, Costa (2005) and Queiroz, Zanatta and Andrade (2003) report on elimination and reduction but also on increase of R&D in the case of foreign acquisitions in Brazil,

Munari and Sobrero (2005) report on the fall of R&D spending as a share of sales but on the increase of R&D output in terms of patent numbers and quality of R&D in eight European countries, according to Griffith, Redding and Simpson (2004) foreign acquisitions in the UK have little negative effect on R&D with very few closures of R&D facilities. OECD (2007: 85–6) says that a decrease in R&D in the acquired firm by itself is not a proof that the foreign investment weakened domestic R&D capabilities overall, i.e. when the quality and efficiency of the research undertaken in acquired company might not justify the amount of money spent on it.

Empirical studies of more recent data have not cleared up the conclusion either. Bertrand (2009) investigates the causal effect of foreign acquisitions on R&D activities of domestic target firms in France and finds that foreign acquisitions boost R&D spending, and that R&D is more contracted out to local research providers, in particular to local public laboratories and universities. Bandick, Görg and Karpaty (2010) evaluate the causal effect of foreign acquisition on R&D intensity in Swedish manufacturing firms. They distinguish between domestic multinationals and non-multinationals, which allows them to investigate the fear that the change in ownership from domestic to foreign multinationals leads to a reduction in R&D activity in the country, as headquarter activities are relocated to the new owner's home country. Based on firm level data and different micro-econometric estimation strategies in order to control for the potential endogeneity of the acquisition dummy, their results give no support to the fears that foreign acquisition of domestic firms lead to a brain drain of R&D activity. Quite the opposite, they find robust evidence that foreign acquisitions lead to increasing R&D intensity in acquired domestic firms. For a panel of Spanish manufacturing firms in 1990–2006, Guadalupe, Kuzmina and Thomas (2011) show that MNEs acquire the most productive domestic firms, which, on acquisition, conduct more product and process innovation and adopt foreign technologies, leading to higher productivity. Innovation on acquisition is associated with the increased market scale provided by the parent firm. They use a model of endogenous selection and innovation in heterogeneous firms that jointly explains the observed selection process and the innovation decisions. On the other hand, based on a large sample of small- and medium-sized German firms and controlling for endogeneity and selection bias, Stiebale and Reize (2011) find that foreign acquisitions have a large negative impact on the propensity to perform innovation activities and a negative impact on average R&D expenditures in innovative firms. Also, they do not find any evidence of increasing the innovation efficiency after the acquisition.

### *Company survival*

The results of two empirical studies on the impact of cross-border acquisitions on acquired firms' survival are mixed. Girma and Görg (2004) and Bandick and Görg (2009) analyse the impact of foreign acquisition on the plant survival prospects.

Girma and Görg (2004) use plant level data for the UK electronics and food industries in 1980–1993 and find that foreign takeover reduces the lifetime of the acquired plant in both sectors. Li (1995) investigates the survival rate of foreign subsidiaries in the U.S. computer and pharmaceutical industries over 1974–1989. By the way of using a hazard rate model he finds a higher exit rate for foreign acquisitions and joint ventures than for greenfield investments. Bandick and Görg (2009) look at the survival of acquired Swedish manufacturing plants during 1993–2002 and take into account firm level heterogeneity by separating the targeted plants into those within Swedish MNEs, Swedish exporting non-MNEs, and purely domestic firms before foreign takeover. They find that foreign acquisitions increase the lifetime of the acquired plants only if the plant was an exporter. The effect differs depending on whether the acquisition is in the same industry (horizontal) or not (vertical); survival increases by between 17 % to 34 % after foreign takeover for vertical, and 6 % to 8 % for horizontal acquisitions.

### *Pre-acquisition performance of acquired firms ('cherry picking')*

One of the issues which has attracted quite some attention in the literature is the pre-acquisition performance of the acquired firms, i.e. is post-acquisition performance of firms acquired by strategic foreign investors better than that of domestic firms because they acquire better/the best firms (the so called 'cherry-picking' effect). The overall conclusion of OECD's (2007: 78) literature review of the issue of 'cherry picking' is that many studies indeed confirm it, but it still explains only a part of the discrepancy. In empirical studies this problem is usually dealt with by isolating the exact impact of a foreign takeover by following the target firm before, during and after the takeover. The proper way to handle the possible endogeneity here is difference-in-differences approach combined with propensity score matching. Zhu, Jog and Otchere (2011) find that targets of partial cross-border acquisitions in emerging markets outperform targets of domestic acquisitions in the pre-acquisition period. For the panel dataset of Spanish manufacturing firms in 1990–2006, Guadalupe, Kuzmina and Thomas (2011) claim that MNEs acquire the most productive domestic firms. Harris and Robinson (2003) provide empirical evidence showing that foreign investors tend to acquire firms with higher productivity in comparison with other manufacturing firms in the UK. Furthermore, the higher productivity of foreign-owned firms observed at the economy-wide level might simply reflect the fact that they are concentrated in high productivity sectors (Griffith, Redding and Simpson, 2004). One must not, however, forget that there are a number of studies which do not confirm the existence of 'cherry picking' or even document the opposite situation. Based on a sample of foreign acquisitions of Italian manufacturing companies in 1997–2000 period, Castellani and Zanfei (2004) look if there are any ex-ante advantages related to foreign acquisitions in the sense that foreign investors tend to acquire the most productive and innovative Italian companies. They find no

evidence of ‘cherry-picking’ and conclude that acquired firms are not a source of advantages for foreign MNEs, at least not *ex ante*, i.e. at the time of acquisition. Similarly, Fukao, Ito, Kwon and Takizawa (2006), who analyse Japanese firm-level data for the period 1994–2002, examine whether a firm is chosen as an acquisition target based on its productivity level, profitability and other characteristics. They found no evidence of ‘cherry-picking’. The same goes for Karpaty’s (2007) analysis of foreign acquisitions of Swedish manufacturing firms. Even more, Gioia and Thomsen (2004) and Lipsey and O’Connor (1982) report that strategic foreign investors tend to acquire under-average performing firms. Comparing international and domestic acquisitions of Danish firms over the period 1990–1997, Gioia and Thomsen (2004) say that acquired firms are self-selected to be poor performers, and since the information asymmetries are larger for foreign buyers, they tend to buy poor performers compared to firms acquired by domestic buyers. Indeed they find that foreign firms tend to acquire poorly performing firms as measured by return on assets and factor productivity. Lipsey and O’Connor (1982) claim that Swedish firms acquired by foreigners were considerably larger than the average firms in their industries and had relatively low value added per employee at the time of takeover and before; the takeovers tended to take place in years when the acquired firms did poorly relative to their industries and also relative to their own past performance with respect to the growth of employment, value of production, and value added. Thus, the acquired firms seem to have been weak relative to others in their industries and had particularly suffered during the year in which the takeovers occurred. Chen, Contreras and Cuervo-Cazurra (2010) bring another aspect in the analysis of the pre-acquisition performance of target firms, i.e. they analyse how the performance of target firms purchased by foreign and domestic acquirers differs in periods of crisis and stability. They argue that in a crisis, foreign acquirers enjoy an advantage of foreignness in a better access to capital, which enables them to buy target firms with better pre-acquisition performance.

### *Export performance*

Export performance of foreign-owned firms is one of the main issues on the FDI policy agenda of host countries. While foreign greenfield investors are hoped to help increase exports, host countries have a fear that foreign acquisition may result in foreign parent company decision that export markets can best be served by an affiliate elsewhere (OECD 2007). Empirical research on the subject is scarce but does not seem to really confirm this view. UNCTAD (2000) reports on mixed results of the studies for Central and Eastern Europe; in Hungary greenfield investors appeared to export more than acquired firms, while in the Czech Republic there was no significant difference between the two. Girma, Kneller and Pisu (2005) find that foreign investors are significantly more likely to acquire UK companies with an established prior export experience, that firms acquired by strategic foreign investors are more likely to export than domestically owned

enterprises, and when they do export they are more export-intensive than domestic firms. Arnold and Smarzynska Javorcik (2005) find that foreign acquisitions in Indonesia enhance the integration of plants into the global economy through increased exports and imports.

### *Local suppliers' network*

Potentially the most important development impact of FDI for a host country is (knowledge) spill-overs from foreign affiliates to domestic firms. There are horizontal intra-industry or vertical inter-industry spill-overs. The latter means positive or negative impact of foreign affiliates' activity on their local suppliers (backward spill-overs) or customers (forward spill-overs). There is no *a priori* reason for horizontal and forward vertical spill-overs to be different in the case of foreign acquisition as compared to greenfield FDI. Backward vertical spill-overs, i.e. engaging of local suppliers by foreign affiliates may, however, be different. In the case of greenfield FDI, newly created foreign affiliate may use existing suppliers' network of foreign parent company and/or may also use local suppliers. In any case, greenfield FDI will bring some additional demand for local inputs. In the case of foreign acquisition, however, one may also see a net reduction of demand for local inputs, depending on what happened to the existing suppliers of the acquired firms, to what extent they are kept or swapped by new suppliers from the existing suppliers' network of foreign parent company.

The fact that the entry of a MNE may stimulate the development of host-country upstream industries supplying parts or components has been recognised long ago (Markusen and Venables 1999). However, only relatively recently, empirical studies of FDI spill-overs take explicit account of the differentiation between vertical and horizontal spill-overs. With rare exceptions these studies mostly suggest positive backward vertical spill-overs for host countries (for an overview, see Rojec and Knell 2010) but, unfortunately, they do not differentiate between greenfield FDI and acquisitions. Post-acquisition relations of firms acquired by foreign investors with their pre-acquisition customers and suppliers are neglected in the literature. Anderson, Havila and Holtström (2003), who prepared a comprehensive literature review on the subject, claim that articles only very rarely consider customers and suppliers in connection with acquisitions. Those articles that mention suppliers and customers do not address the issue of how acquisition influences the acquired companies' customers and suppliers; usually they go with some kind of pre-understanding that something good/positive usually comes along with an acquisition or a merger, in the sense that the acquirer obtains access not only to the acquired firm's internally created knowledge but also to a larger external domain of knowledge that is understood and used by the acquired firm. Only a few articles adopt an approach by which customers and suppliers are seen as subjects, and claim that the final outcome is rather uncertain.

### *Impact of foreign acquisitions on competition*

By way of using plant level data for manufacturing industries in the UK, Maioli, Ferrett, Girma and Görg (2006) investigate the competitive discipline effect exerted by FDI on plant-level price-cost margins. They find robust evidence that greenfield FDI dampens price-cost margins, whilst acquisition FDI does increase them. Thus, the disciplining effect that enhances competition is found only for greenfield-FDI, and this is more pronounced in less concentrated industries.

### *Impact of foreign privatizations in the transition countries of Central and Eastern Europe*

The main conclusion of the literature on foreign privatisation in Central and Eastern European countries is that from the point of view of corporate governance, company restructuring and development, has probably been the best performing mode of privatization. During the transition, especially in its early stage, most of FDI in transition countries of Central and Eastern Europe were in the form of foreign privatizations, i.e. foreign acquisitions of state-owned companies. The nation-wide mass privatisation schemes with preferential treatment of insiders and residents in general brought about a dispersed ownership structure (corporate governance problem) and owners with a lack of entrepreneurship determined motivation, resources and knowledge for enterprise restructuring. The lack of real and efficient ownership led to delays in restructuring, especially as the voucher privatisation was accompanied by an acute lack of new financial resources for investment (Hunya and Kalotay 2000). On the other hand, FDI as a privatisation method immediately provides strategic foreign investor as 'responsible' owner who can quickly contribute to an improvement of the efficiency of the acquired company, its internationalisation and integration into the global economy. In other words, FDI brings in the privatised companies strategic foreign investors with entrepreneurship-determined motivation, interested in profitability, efficiency and long-term development of a company and with a capability of realising these goals. The main conclusion of the literature on foreign privatisation in Central and Eastern European countries is that from the point of view of corporate governance, company restructuring and development, FDI has probably been the best performing mode of privatization (see, Estrin, Richet and Brada 2000; Hunya and Kalotay 2000; Wes and Lankes 2000; Artisien-Maksimenko and Rojec 2001). Djankov and Murrell (2000), who analysed 23 studies on the effects of different types of owners on post-privatisation company performance in Central and Eastern European countries, found that among eleven types of owners, privatisation to foreigners has been the most effective, i.e. foreign privatisation has been ten times more productive than the least effective privatisation, which was the one with diffused individual ownership.

## CONCLUSIONS: PROPOSITIONS ARISING FROM THE LITERATURE REVIEW TO BE EMPIRICALLY TESTED

In this monograph we overview the literature on the post-acquisition performance of firms acquired by foreign investors, i.e. on what happens to the level and growth of productivity of companies, and of activity in terms of sales, employment, R&D and innovation, etc. after being acquired by foreign investors. The objective of the overview is to identify relevant propositions for empirical analysis of acquired companies' post-acquisition performance. Two streams of literature are relevant for this task. The first is the literature on the performance, mostly productivity, of foreign affiliates as such and in comparison with domestic firms. From the foreign affiliate's performance point of view, there is no difference between greenfield and acquisition in the longer run. Therefore, the findings and propositions arising from general literature on foreign affiliates' performance can also be applied to foreign acquisitions. The second, in our case the main stream of literature is the one on the post-acquisition performance of acquired firms, especially in the part which distinguishes between cross-border and domestic acquisitions. Below, we provide the main conclusions of the theoretical and empirical literature which can serve as propositions for empirical testing.

***Performance of foreign-owned versus domestic firms.*** Theoretical and empirical literature on performance of foreign-owned versus domestic firms puts forward the following messages of importance for the analysis of post-acquisition performance of acquired firms:

- *Existence of firm specific advantages of foreign investors or MNEs.* Foreign-owned firms (foreign affiliates) enjoy an advantage over their domestic counterparts because certain firm specific advantages are 'supplied' to them by their foreign parent companies at low cost or free of charge. Only the best/the most efficient (or the least efficient) firms internationalize their activities via FDI.
- *It is not really the foreign ownership per se but other factors and characteristics of MNEs which make them better performing than domestic firms.* These factors are multi-nationality (one should distinguish between foreign and domestic MNEs and uni-national domestic firms, industry specific (MNEs tend to invest in better performing industries), size (possibilities of economies of scale), capital intensity, age, parent country. Any empirical analysis looking at performance gaps between foreign-owned and domestic firms should control for these factors.

- *Heterogeneity of foreign-owned firms.* Not every foreign-owned firm is able to profit from its position within a MNE. Foreign-owned firms' heterogeneity in terms of their productivity, skills, size, and position in foreign parent company's international network is important determinant of their performance.
- *Importance of the time period after the acquisition.* At the time of entry and in the short term, acquisition may even bring the reduction of the productive capacity and, thus, smaller benefits or larger negative impacts from the host-country perspective. Most of the specific shortcomings of foreign acquisitions relate to the effects at entry or soon after entry. Over the longer term most differences between the impacts of greenfield and acquisition diminish or disappear.

***Theory, determinants and evidence on post-acquisition performance of acquired firms in general and in domestic acquisitions.*** Theoretical and empirical literature on acquisitions in general and on domestic acquisitions puts forward the following messages of importance for the analysis of post-acquisition performance of acquired firms:

- *Results of acquisitions depend on the:* (i) *rationale for the merger* which tends to vary across countries and industries as well as over time, (ii) *benchmark* (share prices, profitability, market shares, product prices, productivity, wages or research and development), (iii) and *the counterfactual* (the purchaser and the acquired firm before and after the acquisition or relative to competitors).
- Theoretical frameworks for explaining post-acquisition performance have traditionally focused on *financial and strategic factors*, such as: (i) the degree of 'strategic fit' between the acquiring and target firms (for example, level of integration between the two firms involved in the acquisition which enhances performance, (ii) the method of payment, (iii) the acquisition premium paid, and so forth.
- Recently, '*softer*' factors such as: replacement of management of the acquired company which reduces the performance, social, cultural and psychological factors have been found of significant importance for post-acquisition performance.
- *Time-frame* of post-acquisition restructuring plays a prominent role. Extensive post-merger restructuring takes place in a short period following acquisitions but afterward it gradually dwindles.
- *Acquirers restructure targets in ways that exploit their comparative advantage.* Firms tend to retain plants in which they have a comparative advantage and improve their productivity but they tend to sell or close down other plants. Retained plants increase productivity whereas sold plants do not.

***Theoretical literature on foreign acquisitions puts forward the following messages of importance for the analysis of post-acquisition performance of acquired firms:***

- *In traditional FDI theory acquired firms gain from foreign acquisition.* The existing FDI theory predicts that firms acquired by MNEs tend to gain or at least not lose from the resource transfers from the parent company and therefore will perform well compared to domestic companies.
- *In Neary's model low-cost firms located in one country acquire high-cost firms located in the other.* Neary's (2007) two-country model of oligopoly in general equilibrium predicts that international differences in technology generate incentives for bilateral mergers in which low-cost firms located in one country acquire high-cost firms located in the other.
- *In Brienlich's model cross-border acquisitions lead to a reallocation of assets from low towards high productivity firms via acquisition.* In two-country heterogeneous firm model of Breinlich (2006) reductions in trade costs lead to a reallocation of assets from low towards high productivity firms via acquisition.
- *In Nocke & Yeaple's model, the impact of foreign acquisition on the post-acquisition performance of the acquired firm is industry specific.* In a general equilibrium model of Nocke and Yeaple (2007) either the most or the least productive firms acquire foreign targets. Foreign acquirers operating in R&D-intensive industries represent the most productive firms in the corresponding industries in their home country, while foreign acquirers operating in marketing-intensive industries represent the least productive firms. This has two important implications for empirical testing: (i) when it is the least productive firms which acquire foreign firms, this limits the positive impact of foreign acquisitions on the acquired firms; (ii) the impact of foreign acquisition on the post-acquisition performance of the acquired firm is industry specific (R&D-intensive versus market-intensive industries).

***Empirical literature on foreign acquisitions puts forward the following messages of importance for the analysis of post-acquisition performance of acquired firms:***

- *Analysed aspects (indicators) of acquired companies' post-acquisition performance.* Empirical studies of the post-acquisition performance of firms acquired by strategic foreign investors analyse a broad variety of possible performance indicators, from the most commonly analysed impact on productivity to the impact on employment and wages, output, sales, profitability, exports and imports, R&D and innovation, etc.
- *Specific factors which are controlled for in empirical studies.* A number of specific factors which should be controlled for in analysing the performance are also proposed, such as time period which elapsed since the acquisition, industry specific characteristics, horizontal versus vertical acquisitions, type of acquirer and/or acquired firm (foreign MNEs versus domestic MNEs versus domestic firms, exporters versus non-exporters), institutional, geographic and economic distance between acquirer and acquired firms, resources of acquirer and acquired firms, acquirer's home country, etc.

- *Pre-accession performance of acquired companies.* As a rule the pre-accession performance of the acquired company is also controlled for. This is to help answer the question whether the acquired firms outperform domestic ones because of transfers of know-how from the parent, or these firms had already been better performers before they were acquired ('cherry picking'). In order to distinguish between the selection effect and the actual impact of foreign ownership *per se*, studies have looked at local firms before and after their acquisition by a foreign investor (OECD 2007).
- *Methodological approach.* To address this selection bias, the far predominant econometric approach to measuring post-acquisition performance of acquired firms is propensity score matching combined with difference-in-difference estimators. UNCTAD (2000: 137–40) and OECD (2007: 77–88) provide broad overviews of empirical studies on the post-acquisition performance of acquired firms.
- *Overall results of empirical studies.* These studies produced mixed results, but overall, foreign acquisitions tend to exert positive impacts on the productivity of acquired units. According to OECD (2007: 77–88), »the effects on the acquired firms are largely beneficial. Although empirical studies are not unanimous in their conclusions, they suggest that the acquired firm mostly benefits in terms of productivity. Following a cross-border takeover, most target companies are found to enjoy a significant increase in operational efficiency and, as a corollary, in international competitiveness. Probably in consequence of the higher productivity, cross-border takeovers also tend to have a positive impact on wages in the acquired companies, particularly for skilled workers.«
- *Short-term risks of foreign acquisitions.* Literature lists a number of potential short-term risks of foreign acquisitions for host countries and acquired companies which deserve to be empirically tested. They include: (i) foreign acquisitions may not add to productive capacity, (ii) potential layoffs of employees, (iii) downgrading or closure of some production or functional activities (e.g. R&D capacities), (iv) swapping of domestic with foreign suppliers, (v) increasing concentration and domination of the local market, (vi) reduced exports or increased imports.

***Empirical literature on individual aspects of post-acquisition performance of acquired firms puts forward the following messages of importance for our analysis:***

**Productivity.** Productivity trends of acquired companies in the post-acquisition period are by far the most frequently analysed aspect of cross-border acquisitions. Although the findings are not fully unanimous, studies which report of the positive impact of foreign acquisition on acquired firms productivity levels and growth far prevail. As expected, positive results tend not to be the consequence of foreign ownership *per se*, they are usually conditional on a number of other factors:

- *Measuring of productivity.* Schiffbauer, Siedschlag and Ruane (2009) find positive aggregate effects on labour productivity but not TFP in the manufacturing sector, i.e. foreign acquisition leads to capital deepening but not improvements in technological or organizational knowledge in the longer-run. Hence, the use of labour productivity instead of TFP generates misleading results with respect to the causal impact of foreign acquisition on target firm performance.
- *Time period after acquisition.* The impact of a take-over on firm's productivity is expected to be negative in the short-run but positive in the longer run (Gioia and Thomsen 2004; Arnold and Smarzynska Javorcik 2005; Karpaty 2007; Schiffbauer, Siedschlag and Ruane 2009).
- *Industry specific.* Positive effects of foreign acquisitions tend to be much larger in the case of the non-manufacturing sector than in the case of the manufacturing sector (Fukao, Ito, Kwon and Takizawa 2005); effects of foreign acquisitions on acquired firms' productivity vary across industries in consistence with the theoretical predictions of Nocke and Yeaple (Schiffbauer, Siedschlag and Ruane 2009).
- *Foreign acquirer specific.* Both the resources of the target firm and the resources of the acquiring company play an important role in determining performance outcomes; national and international network of the acquiring company (Buckley, Ella and Kafouros 2010).
- *Acquired company specific.* Dimensional scales of acquired company (Piscitello and Rabbiosi 2004); both the resources of the target firm and the resources of the acquiring company play an important role in determining performance outcomes (Buckley, Ella and Kafouros 2010); acquisition effect to differ depending on whether the targeted firms were domestic multinational or non-multinationals before the foreign takeover (Bandick 2009).
- *Foreign investor's home country specific.* Positive effect if acquirers are from outside the EU (Bertrand and Zitouna 2008); targets acquired by firms from industrial countries exhibit higher profits than those acquired by firms from developing countries (Chen, Contreras and Cuervo-Cazurra 2010).
- *Host-country specific.* Magnitude of the positive effects of foreign acquisitions on productivity is higher in less developed than in developed countries (Fukao, Ito, Kwon and Takizawa 2005).
- *Proximity of acquirer and acquired company.* Geographical, cultural proximity of acquired to the parent company (Piscitello and Rabbiosi 2004); cultural, institutional, geographic and economic distance (remoteness) between the foreign owner and its foreign affiliate is a key factor in explaining the performance of international acquisitions (Bertrand and Zitouna 2009); the performance of the target firm is likely to be maximised when there is a moderate level of relatedness between the target and the acquiring company (Buckley, Ella and Kafouros 2010).
- *Horizontal versus vertical acquisition.* Acquisition effect to differ depending on whether the acquisition is horizontal or vertical (Bandick 2009).

Employment and wages. The impact of foreign acquisitions on acquired firms' employment and wages is one of the most commonly analysed aspects of post-acquisition performance of acquired firms, especially as far as wages is concerned. The results of empirical studies on the impact of foreign acquisitions on acquired firms' employment are mixed but those suggesting a drop in employment seem to prevail. This is not specific only for cross-border but also for domestic acquisitions. As expected, results are often conditional on a number of other factors:

- *Time period after acquisition.* Employment grows in short-term after the acquisition, but in the longer run the acquired firms did not show the same relative employment gains as in the first year or two after takeover (Lipsey and O'Connor 1982).
- *Skilled specific.* Foreign acquisitions reduce employment growth in particular for unskilled labour (Girma and Görg 2004).
- *Industry specific.* Employment effects of cross-border acquisitions differ by sectors of activity (Girma and Görg 2004; Lehto and Böckerman 2008).
- *Foreign acquirer specific.* Employment effects of cross-border acquisitions, domestic acquisition with a domestically owned purchaser, and domestic acquisition with a foreign-owned company that is located in a host country differ (Lehto and Böckerman 2008).
- *Acquired company specific.* Employment growth effects are present only in the case of exporting acquired companies (Bandick and Görg 2009).
- *Foreign investor's home country specific.* Compared with domestic acquisitions, foreign industrial firm acquisitions of the U.S. companies tend to increase their targets' employment and sales. However, targets acquired by firms located in developing countries experience a decrease in both revenues and total number of employees (Chen 2009).
- *Horizontal versus vertical acquisition.* Employment growth effects are present only in the case of vertical but not horizontal acquisitions (Bandick and Görg 2009).

Wages. Contrary to employment, most (but not all) studies report on the positive impact of foreign acquisitions on wages. Foreign takeovers have a more powerful effect on wages than foreign greenfield FDI and wage effects differ according to worker skills. Unlike other workers, the workers with vocational training or less do not experience any significant wage premium change following a takeover. As expected, results are often conditional on some other factors:

- *Skilled specific.* Wage effects differ according to worker skills; unlike other workers, the workers with vocational training or less do not experience any significant wage premium change following a takeover (Heyman et. al 2005; Huttunen 2007; OECD 2007).
- *Multinationality.* Difference in wages is not due to foreign ownership but due to multi-nationality (Heyman, Sjöholm and Gustavsson Tingvall 2004).

- *Foreign investor's home country specific.* Positive post-acquisition wage effects are found only in acquisitions by the U.S. firms but not in acquisitions by the EU firms (Girma and Görg 2007).

R&D and innovation. The issue of R&D and innovation in the acquired firms has traditionally been one of the concerns of host countries relating to foreign acquisition. Empirical studies on the subject do not give unambiguous results.

Company survival. The results of two empirical studies on the impact of cross-border acquisitions on acquired firms' survival are mixed. Bandick and Görg (2009) claim positive impact on company survival only for exporters, and higher probability of survivals in the case of vertical as opposed to horizontal acquisitions.

Pre-acquisition performance of acquired firms. One of the issues which has attracted quite some attention in the literature is the pre-acquisition performance of the acquired firms, i.e. is post-acquisition performance of firms acquired by strategic foreign investors better than that of domestic firms because they acquire better/the best firms (the so called 'cherry-picking' effect). The overall conclusion of OECD's (2007: 78) literature review of the issue of 'cherry picking' is that many studies indeed confirm it, but it still explains only a part of the discrepancy. In empirical studies this problem is usually dealt with by isolating the exact impact of a foreign takeover by following the target firm before, during and after the takeover. The proper way to handle the possible endogeneity here is difference-in-differences approach combined with propensity score matching.

Export performance. Export performance of foreign-owned firms is one of the main issues on the FDI policy agenda of host countries. While foreign greenfield investors are hoped to help increase exports, host countries have a fear that foreign acquisition may result in foreign parent company decision that export markets can best be served by an affiliate elsewhere. Empirical research on the subject is scarce but does not seem to really confirm this view.

Local suppliers' network. In the case of greenfield FDI, newly created foreign affiliate may use existing suppliers' network of foreign parent company and/or may also use local suppliers. In any case, greenfield FDI will bring some additional demand for local inputs. In the case of foreign acquisition, however, one may also see a net reduction of demand for local inputs, depending on what happened to the existing suppliers of the acquired firms, to what extent they are kept or swapped by new suppliers from the existing suppliers' network of foreign parent company. Studies that find positive impact of inward FDI on local suppliers tend to prevail but they do not differentiate between greenfield FDI and acquisitions. Post-acquisition relations of firms acquired by foreign investors with their pre-acquisition customers and suppliers are neglected in the literature.

Impact of foreign acquisitions on competition. Maioli, Ferrett, Girma and Görg (2006) investigate the competitive discipline effect exerted by FDI on plant-level price-cost margins. They find robust evidence that greenfield FDI dampens price-cost margins, whilst acquisition FDI increases them. Thus, the disciplining effect that enhances competition is found only for greenfield FDI, and this is more pronounced in less concentrated industries

Impact of foreign privatizations in the transition countries of Central and Eastern Europe. The main conclusion of the literature on foreign privatisation in Central and Eastern European countries is that from the point of view of corporate governance, company restructuring and development, FDI has probably been the best performing mode of privatization.

Different post-acquisition performance of acquired companies in manufacturing and non-manufacturing (services) sectors. Most of the existing literature on post-acquisition performance of firms acquired in cross-border acquisitions deals with the manufacturing sector. Only three of the analysed studies specifically tackle differences between manufacturing and services. Thus, Fukao, Ito, Kwon and Takizawa (2006) for Japan claim that positive effects of cross-border acquisitions on the acquired companies in the non-manufacturing sector tend to be much larger than in the manufacturing sector. For Finland, Lehto and Böckerman (2008) find that cross-border acquisitions lead to downsizing in manufacturing employment, while these effects in non-manufacturing sector are much weaker. Schiffbauer, Siedschlag and Ruane (2009) find that the effects of foreign acquisitions vary across industries; foreign ownership leads to higher productivity in ICT manufacturing industries but not in ICT service industries. They explain this by the model of Nocke and Yeaple (2007), saying that foreign acquirers operating in R&D-intensive industries (e.g. ICT manufacturing) represent the most productive firms in the corresponding industries in their home country, while foreign acquirers operating in marketing-intensive industries (e.g. ICT service) represent the least productive firms. Thereof, one can obviously not make any real conclusion about differences/similarities of the impact of cross-border acquisitions on acquired companies in the manufacturing and services sectors. The message which is conveyed is that the future analysis should give more attention to sector specificities.

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