Outward Foreign Direct Investment and firm performance[1]

Yama Temouri[†], Nigel L. Driffield and Dolores Anon Higon

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(Work in progress)

Abstract: This paper presents productivity effects of German investments abroad at the firm-level for manufacturing and service industries over the period 1995-2004. We link the parent firm's operations in Germany with its subsidiaries in Eastern and Western Europe in an attempt to examine whether and to what extent domestic parent productivity is influenced by its investments. Controlling for endogeneity through semi-parametric techniques, our preliminary findings suggest that engaging in outward FDI is positively related to productivity at home.

Keywords: Multinationals, Productivity, Outward FDI.

JEL-Classification: F23, D24, F2.

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[†] Corresponding Author: Economics and Strategy Group, Aston Business School, Aston Triangle, Birmingham, B4 7ET, United Kingdom. E-mail: temouriy@aston.ac.uk. Phone: +44 121 204 3154, Fax: +44 121 204 3326. Yama Temouri acknowledges support for his work from the ESRC.

1. Introduction

Over the last few years, heated debates about low competitiveness at home, outsourcing and job exporting have sparked widespread concern among policy-makers and the media in many developed countries. The fear is that direct investments abroad replace home country production and exports which as a consequence increases unemployment at home. Such views are heard especially across Europe and North America in the face of the economic threat from China, India and other low wage countries.

This is a highly controversial issue in Germany, which perhaps more than any other EU member state is beset by such concerns. Its sluggish economy, its unique location near the Eastern EU accession countries and its apparent loss of competitiveness at home are seen to be the root cause for the relocation of German multinational activity to cheaper production sites in Eastern Europe and elsewhere. Arguably the most technologically advanced country in Europe; Germany attracts in excess of 10 per cent of inward foreign direct investment (FDI) into the EU and undertakes FDI in the region of 15 per cent of all investments in the EU (UNCTAD, 2006). It has high levels of investments in Western as well as Eastern Europe, with the latter destination increasing in prominence and attractiveness to German multinational enterprises (MNEs). As the largest economy in Europe, it therefore offers an interesting contrast to many other countries engaged in FDI.

Using a rich firm-level data set, this paper aims to contribute to the so far limited empirical literature on outward FDI by investigating the effects of German FDI on domestic productivity. It presents productivity effects of German investments abroad at the firm-level for manufacturing and service industries over the period 1995-2005. It is an attempt to examine whether and to what extent domestic parent productivity is influenced by German multinational activity to East European versus West European destinations. Preliminary findings suggest that engaging in outward FDI is positively related to productivity at home. This result holds for both the manufacturing and services sector in Eastern as well as Western Europe.

This paper contributes to the literature in a number of ways. First, as far as we know, this is the first attempt to present a detailed and systematic analysis on the effects of German outward FDI at the firm level, incorporating all regions of Germany over 10 years. It particularly highlights the productivity differences between the Eastern versus Western destinations of German outward FDI. A unique feature of our data set is that it allows us to link the parent's domestic operations with its subsidiaries across Europe including the latter's financial and operational activities.

Furthermore, most of the previous studies mentioned above concentrate on the manufacturing sector, either on aggregate or at the firm level, which is certainly due to the fact that micro-data for the service sector is not readily available for many countries, including Germany. However this paper is able to contribute further by incorporating the services sector in the analysis in addition to the manufacturing sector. This is important because the services sector is a knowledge-intensive sector which plays an ever more important role in advanced economies attracting large amounts of foreign investment.

The rest of the paper is organized as follows. Section 2 gives an overview of previous empirical studies on the relationship between outward FDI and domestic productivity, with particular focus on Germany. Section 3 describes general trends of German outward FDI followed by a description our data set. Section 4 discusses the econometric approach and the methodology involved. Section 5 presents the results and section 6 concludes and offers some future lines of research.

2. Previous empirical evidence

Much of the vast and high profile literature concerned with potential productivity effects from FDI has focused on host country effects, leaving the potential impact on the home country under-researched. Relatively little is known about the effects of outward investments on the origin country, especially at the firm-level. To this end, theory has only recently offered the notion that the most productive firms in the economy choose to invest abroad (Helpman et al., 2004). This can be seen to affect the home economy either positively or negatively.

It may be argued that the relocation of the most productive firms reduces productivity (and employment) in the home economy. However, this may not necessarily be true as firms locating abroad are able to improve their overall performance and efficiency by relocating only low value-added production abroad and keeping and even expanding high value-added activities at home. Furthermore, the notion of "learning by exporting" can also apply to firms undertaking FDI as they become exposed to increased international competition, best practice and the technology frontier (see Clerides et al, 1998). Generally, this forces firms to stay ahead of rivals and work even harder in international markets. Coming across new products, process technologies, marketing and organizational skills, firms can learn about them and try to assimilate such skills, known as the demonstration effect. Fosfuri and Motta (1999) argue that some firms may source technology abroad which is beneficial to productivity at home. For example, firms can improve their productivity by imitating the way technology is used by other more superior firms operating in a host industry (e.g. reverse engineering).

To what extent, either view can be supported is an empirical question. Previous empirical evidence on the link between outward FDI and home productivity is scarce. One exception is van Pottelsberghe and Lichtenberg (2001) who find from aggregate data that there are R&D spillovers through outward FDI that benefit domestic productivity. Bitzer and Görg (2005) provide evidence on the effects of both inward and outward FDI for 10 manufacturing sectors in 17 OECD countries. Their overall result is that a country's stock

of outward FDI is, on average, negatively related to domestic productivity. However, their findings differ across individual OECD countries. With regards to Germany, they find a negative relationship between outward FDI and productivity.

More recently, Jäckle (2006) investigates for Germany the extent to which already successful firms become multinational or whether becoming a multinational improves the home performance of the parent firm. His results, although mixed, suggest that total factor productivity growth is significantly influenced by selectivity issues. Barba Navaretti et al (2006) using propensity score matching provide no evidence for France and Italy of a negative effect of outward FDI to low wage countries.

3. German FDI, Data and Descriptive Statistics

Table 1 shows the various destinations of German MNE investments. Around 90 per cent of its FDI stock is invested in other OECD countries. Only a minority of around 5 or 6 per cent is invested in Central and Eastern Europe whereas 8 to 9 per cent is targeted at developing countries. However, the latest figures for 2004 show that a number of Eastern European accession countries are attracting an increasing amount of German FDI (see Table 2). Indeed, countries such as Hungary, the Czech Republic and Hungary have increased their stock of FDI by more than 50 per cent, although from a much lower base than other Western European recipient countries. Note that the aggregate German FDI stock around the work accounts for around 30 per cent of GDP which is relatively high compared to other OECD countries.

Generally, high technology and knowledge intensive industries undertake the lion share of German FDI. Among the biggest German investors are the Chemical industry, Transport equipment (i.e. Autos), Electrical and optical equipment, Machinery and equipment, Banking sector and the Insurance sector.

Table 3 shows the number of German affiliates, their employment and sales figures in various regions. Over 20,000 affiliates employ more than 4 million workers abroad and sell their goods and services achieving around 1.4 trillion Euros. However, to get an idea of how well Germany is performing compared to other developed countries, see tables in Appendix 1.

Table 1: German FDI stock and its destinations (millions €)

	All economic activities				Of which Manufact. (in %)	
	2000	2001	2002	2003	2001	2003
Total World	582 338	700 973	663 482	665 839	30.8	29.9
OECD (%)	91.1	91.6	92.1	91.7	29.8	29.4
Western Europe (%)	44.7	41.6	44.8	48.3	24.3	23.6
Central and Eastern Europe (%)	4.8	4.8	5.8	5.8	35.7	35.0
Developing (%)	9.7	9.2	8.5	8.1	35.1	34.6
As % of GDP	28.9	33.3	35.1	34.6		

Source: German Bundesbank, UNCTAD, own calculations.

Table 2: Top destinations of German MNEs (Stock in millions €)

	2001	2004	Industries
UK	62 192	77 978	Chemical industry, Transport equipment, Electrical and optical equipment, Machinery and equipment, Banking sector, Insurance sector.
France	42 047	37 648	
Belgium	25 307	27 008	
Italy	18 513	22 238	
Luxembourg	28 572	31 698	
Netherlands	37 321	46 897	
Austria	19 156	21 967	
Hungary	8 212	12 224	
Czech Republic	8 258	12 381	
Slovak Rep	2 114	3 769	
Poland	9 509	9 991	
Russian Federation	2 209	3 773	
Turkey	1 580	3 249	

Source: Bundesbank (2006)

Table 3: Aggregate figures for German MNE affiliates

	1991-99	2000	2001	2002	2003
Number of affiliates abroad	24 461	32 939	34 357	22 721	22 551
Of which in OECD	20 894	25 896	27 505	18 972	18747
Of which in Western Europe	14 448	17 341	17 765	11 620	11 403
Of which in Central and Eastern	2 131	4 639	5 083	2 952	2 959
Employment (in thousands)	3 022	4 440	4 698	4 546	4 498
Sales (billions €)	625 099	1 292 400	1 411 000	1 417 600	1 352 900

Source: German Bundesbank, UNCTAD.

Our data is taken from *Amadeus*[2], a rich firm level dataset, which is provided by Bureau van Dijk, an electronic publishing and consultancy firm (BvD)[3]. It offers detailed financial and other operational information[4] on medium to large sized private and public companies operating in 38 Western as well as Eastern European countries (see Appendix 1). Companies in most European countries are required to file their accounts, but the extent of this does vary across Europe. BvD compiles public and private company accounts from so called regional information providers (IPs) which are either Central Banks, Official statistical offices, a credit rating agency or some other sort of organisation. BvD supplements incomplete data using information from company reports and direct communication with individual companies.

Amadeus is a modular product which allows one to choose the level of coverage. The three versions are the top 250,000 companies in Europe, the top 1.5 million all companies (approximately 9 million). The dataset used in this paper comes from the intermediate version of Amadeus which covers an estimated 98 per cent of all companies incorporated in Europe. Based on this version of Amadeus, the selection of firms is based on satisfying **at least one** of the following criteria: number of employees equal to at least 20, total

[2] **A**nalyse **M**ajor **D**atabases from **EU**ropean **S**ources.
[3] It can be compared with similar commercial company data sets such as the Compustat database in the United States or the OneSource database in the United Kingdom.
[4] A standard company report includes: 24 balance sheet items, 25 profit and loss account items and 26 ratios, descriptive information including trade description and activity codes (NACE 1, NAICS or US SIC can be used across the database).

operating revenues and total assets equaling to at least €1.5 million and €3 million, respectively. The data for Germany are retrieved by BvD from annual company accounts published by *Creditreform*, Germany's largest credit rating agency. The data sourced from Creditreform represents the most comprehensive set of accounts commercially available (Konings, 2006).

The unique feature of the data set is the identification and detailed operations of domestic MNEs including its subsidiaries, an issue which is rarely addressed in the literature, especially for Germany due to data limitation. This allows us to link the parent's operations in Germany with its subsidiaries in Eastern and Western Europe[5]. This is possible because we have detailed information about a firm's ownership structure including the name and identification number of subsidiaries for every year of the sample period. This is an advantage to previous studies which assume (using the same data set) that the ownership information for the latest year of their sample period is valid for the entire period (e.g. Konings and Murphy 2006; Peri and Urban 2006). Although the actual timing of the investment decision is not given in the data set, we can in effect trace changes in ownership from earlier Amadeus releases retrieved from historical discs.

A foreign subsidiary is defined as an incorporated enterprise in which more than 50 per cent of equity is directly or indirectly[6] owned by the foreign business entity (i.e. parent). This threshold is suggested and used for statistical purposes by the OECD[7] and is common in the literature (e.g. Ruane and Moore, 2005). The threshold is considered to represent a meaningful stake and effective voice in the management of the subsidiary by the parent. Companies report their accounts in either consolidated or unconsolidated form. In this paper, we include only the latter for both the parent and subsidiary. The reason is that, unlike consolidated accounts, unconsolidated accounts represent the domestic activities of firms and not its operations worldwide or an aggregate in the case of owning other companies at home.

[5] Note that Amadeus lists subsidiaries which operate outside Europe. However, since Amadeus covers only Europe these companies cannot be linked in our analysis.
[6] Through another subsidiary.
[7] See OECD Benchmark Definition of Foreign Direct Investment, 3rd Edition.

Due to variation in national reporting requirements, a significant number of firms have limited financial information, missing observations for variables considered in this analysis or are simply inactive due to exit. We simply include company information on the basis of data availability and the ability to link parents with foreign affiliates. The following table shows the number of active firms in Germany over time. Due to this fact, we have an unbalanced panel of firms which increases over time. Parent and subsidiary firms are classified according to the NACE industry classification at the 2-digit level.

After eliminating outliers and firms with only limited financial accounts, the final sample consists of an unbalanced panel of 1,708 parent firms in manufacturing and 1,871 parent firms operating in the service sector. These firms together own 12,618 affiliates, 1,788 of which are located in Eastern Europe and 10,830 in Western Europe.

4. Econometric Approach and Estimation Issues

The approach and methodology taken in this paper follows along fairly standard lines which are well developed and adopted in previous studies (see e.g., Griffith 1999a, b). The main form of analysis will focus on production functions from which TFP levels are estimated in an attempt to measure the effect of outward FDI. The standard measurement technique describes the process in terms of a production function augmented by measures on foreign presence along industry and regional lines. This essentially involves estimating the following basic model:

$$y_{it} = \alpha_k k_{it} + \alpha_l l_{it} + \alpha_m m_{it} + \varepsilon_{it} \quad (1)$$

$$\hat{\varepsilon}_{it} = \pi OFDI_{it-k}^{West-EU} + \eta OFDI_{it-k}^{East-EU} + \beta_j + \beta_t + \beta_r + \upsilon_{it} \quad (2)$$

where subscripts *i, t, j, r and k* refer to firm, year, industry and region and time lag respectively; y_{it}, k_{it}, l_{it}, and m_{it} represent the logarithm of a firm's output (sales) and the

production inputs: capital (measured as the book value of tangible fixed assets), labour[8] (number of employees) and material costs respectively. In equation (1) ε_{it} represents the TFP residual while in equation (2) the υ_{it} represents the error term. To deflate monetary values we use the appropriate producer price index for each manufacturing industry and consumer price index for services. All price indices are taken from the German Federal Statistical Office.

In terms of estimation, the first step essentially includes obtaining an estimate of TFP from (1), as the residual of the production function. The second step involves decomposing the TFP estimate into its determinants using (2). More specifically, this paper divides outward FDI into two destination countries, namely Eastern Europe as $\eta OFDI_{it-k}^{East-EU}$ and Western Europe as $\pi OFDI_{it-k}^{West-EU}$.

There are a number of econometric problems associated with estimating unobserved productivity as the residual of the production function, even with firm-level data on the capital, labour and material inputs. The most common problem concerns endogeneity. The endogeneity problem occurs when at least a part of the TFP will be observed by the firm at a time early enough so as to allow the firm to change the factor input decision. If that is the case, then profit maximization implies that the realisation of the error term is expected to influence the decision on factor inputs. In other words, the regressors and the error term are correlated, which makes OLS estimation inconsistent.

The remedies to control for endogeneity include, among others, the Olley and Pakes (1996) approach (OP) which uses investment as an indicator or proxy for productivity shocks. However, one of the limitations of the OP approach is that it requires firms to make positive investments every year, which may not necessarily be presented in actual firm-level data sets and would cause the loss of a large number of observations. Levinsohn and Petrin (2003) (LP) extend the OP approach by using material inputs as a proxy to control for unobservable productivity shocks, as it is more common for firms to

[8] There is no breakdown by type of labour or by skill but we can calculate the average wage which may serve as a proxy for the average level of human capital per worker.

register material costs every year. This paper uses the latter approach to address the endogeneity problem. The advantage of this approach over more traditional estimation techniques is its ability to more effectively control for the correlation between unobservable productivity shocks and inputs. The argument is that in the presence of adjustment costs, materials are likely to react more rapidly than investments to any productivity shocks.

A recent critique by Ackerberg et al (2005) highlights the restrictiveness of assuming that labor is perfectly flexible in the LP approach, which may lead to a potential identification problem of the variable input (labor). To overcome the potential collinearity problem, they propose an extension of LP approach, which involves estimating the labor coefficient in the second stage, in contrast to LP and OP. In this regard, Wooldridge (2005) proposes an alternative more efficient, one-step GMM estimation approach. Nevertheless the LP remains one of the most popular approaches in the literature (Smarzynska Javorcik, 2004; Griffith et al, 2006), as none of these extensions or alternatives has yet to emerge as superior in all cases. We would stress that the LP estimation technique is consistent with a range of realistic underlying assumptions about firm behaviour, and in particular allows us to correct for the endogeneity problem of capital, particularly important in the context of FDI.

5. Estimation results

The following table shows the estimation results for the manufacturing and services sector. They reveal significant positive coefficient on the contemporaneous outward FDI variables $OFDI_{it}^{West-EU}$ and $OFDI_{it}^{East-EU}$. To address potential endogeneity bias, we include a lag of one period for the outward FDI variables (i.e. $\eta OFDI_{it-1}^{West-EU}$ and $\eta OFDI_{it-1}^{East-EU}$). For both specifications, we include a full set of regional, industry and time dummies. Furthermore, we control for the Size and Age of the firm. Overall, the

results are consistent for both manufacturing and services in Eastern as well as Western Europe.

However, the results do not show whether the type of FDI is either technology-exploiting or technology-sourcing FDI. This is left for future research. However, one can expect that German FDI in Eastern Europe is unlikely to be technology-sourcing whereas FDI to Western Europe can be both.

Table 1

	Manufacturing		**Services**	
$OFDI_{it}^{West-EU}$	0.01**		0.03***	
	(2.15)		(4.28)	
$\eta OFDI_{it-1}^{West-EU}$		0.01**		0.02***
		(2.34)		(4.89)
$OFDI_{it}^{East-EU}$	0.01***		0.01**	
	(6.02)		(2.12)	
$\eta OFDI_{it-1}^{East-EU}$		0.01***		0.01**
		(4.09)		(2.26)
Region, Industry and Year dummies?	Yes	Yes	Yes	Yes
Size dummy?	Yes	Yes	Yes	Yes
Age dummy?	Yes	Yes	Yes	Yes
Observation	2514		2332	

Robust standard errors in brackets. Standard errors in LP estimation are bootstrapped.
* significant at 10%; ** significant at 5%; *** significant at 1%

6. Conclusions

This paper extends the limited literature on the link between productivity effects and outward FDI. By presenting productivity (TFP) effects across Western and Eastern European destination over the period 1995-2004, results show that engaging in outward FDI is positively related to productivity at home. These results are consistent both for the manufacturing and services sector for Eastern as well as Western Europe.

In general, these results so far have two important policy implications. Firstly, in common with most European countries, there has been increased focus recently in Germany about the potential hollowing out of the economy. The fear is that relocation of production to low wage countries will replace home country production and exports which as a consequence increases unemployment at home. However, it is doubtful whether such a view is justified. This paper shows some tentative evidence that German outward FDI contributes to the productivity of the parent which as a consequence may boost the average productivity for Germany overall. This suggests further, that a policy focus on indigenous development (encouraging FDI) may generate larger long term effects. In other words, future initiatives may link outward investment to economic and technological development at home.

Secondly, the results raise interesting questions about the possibility of productivity spillovers. There is only a limited literature concerned with the potential spillover or externality effects of outward investment. This is largely concerned with testing for productivity growth in the domestic sector following foreign investment, and is predicated on the assumption that German MNEs have higher productivity than the domestic firms. Having investigated the effects of German outward FDI on parent productivity the focus of future research is to test whether there is there an impact beyond the parent firm (i.e. spillover effect)?

As Germany is arguably the most technologically advanced economy in Europe, we might find that the dominant model of German FDI may not be one of technology

exploitation, but of “technology sourcing”, in that German MNEs may seek to invest abroad, not only to exploit existing firm specific advantages, but to acquire them from local firms. The extent to which such a phenomenon is observed in Germany is an empirical question, highlighting the need for further research in this area. This would essentially involve linking the determinants of FDI to the potential productivity effects.

References

Ackerberg, D., Caves, K. and Frazer G. (2005). Structural Identification of Production Functions. Working paper, accessed at http://www.colorado.edu/Economics/seminars/ackerberg.pdf

Barba Navaretti, G., Castellani, D. and Disdier, A. (2006) 'How Does Investing in Cheap Labour Countries Affect Performance at Home? France and Italy', *CEPR Discussion Papers* 5765.

Bitzer, J., and H. Görg (2005) 'The impact of FDI on industry performance', *International Trade* No. 0505003, Econ WPA, Nottingham University.

Clerides, S., Lach, S. and Tybout, J.R. (1998) 'Is learning by exporting important? Micro-dynamic evidence from Colombia, Mexico, and Morocco', *Quarterly Journal of Economics*, Vol. 113, 903-947.

Driffield N and Love J H (2002) 'Does the Motivation for Foreign Direct Investment Affect Productivity Spillovers to the Domestic Sector?', Aston University Working 0202, available at http://research.abs.aston.ac.uk/working_papers/0202.pdf

Driffield, N., Love, J. and Taylor, K. (2007) 'Linking FDI Motivation and Host Economy Productivity Effects: Conceptual and Empirical Analysis', *Journal Of International Business Studies*, forthcoming.

Fosfuri, A. and Motta, M. (1999) 'Multinationals without Advantages' *Scandinavian Journal of Economics*, Vol. 101, 617-630.

Griffith, R., Harrison, R. and Van Reenen J. (2006). How special is the special relationship? Using the impact of US R&D spillovers on UK firms as a test of technology sourcing. American Economic Review 96 (5): 1859-1875.

Helpman, E., Melitz, M. J. and Yeaple, S. R. (2004). Export versus FDI with heterogeneous firms. American Economic Review, 94, 300–16.

Jäckle, Robert (2006) 'Going Multinational: What are the effects on home market performance?', *Bundesbank Discussion Paper Series* 1 (3).

Konings, J. and Murphy, A. (2006). Do Multinational Enterprises relocate employment to Low-Wage Regions? Evidence from European Multinationals. The Review of World Economics, 142 (1), 1-20.

Levinsohn, J. and Petrin, A. (2003) 'Estimating production functions using Inputs to control for unobservables', *Review of Economic Studies*, 70, 317-341.

Olley, S. and Pakes, A. (1996). The Dynamics of Productivity in the Telecommunications Equipment Industry. Econometrica, 64 (6), 1263-98.

Peri, G. and Urban, D. (2006). Catching-up to Foreign Technology? Evidence on the Veblen-Gerschenkron effect of Foreign Investments. Regional Science and Urban Economics, 36 (1), 72-98.

Ruane, F. and Moore, P. (2005). Taxation and the Financial Structure of Foreign Direct Investment. The Institute for International Integration Studies, Discussion Paper Series No.88.

Smarzynska Javorcik, B. (2004). Does foreign direct investment increase the productivity of domestic firms? In search of spillovers through backward linkages. American Economic Review, 94 (3), 605-27.

van Pottelsberghe de la Potterie, B. and Lichtenberg, F. (2001) 'Does Foreign Direct Investment Transfer Technology across Borders?', *Review of Economics and Statistics*, 83, 490-97.

UNCTAD, World Investment Report 2006. New York and Geneva: United Nations.

Wooldridge, J. (2005). On Estimating Firm-Level Production Functions Using Proxy Variables to Control for Unobservables. Working paper accessed at http://www.msu.edu/~ec/faculty/wooldridge/current%20research/panel8r2.pdf

Appendix 1

Table 1: FDI Flows over Time (millions of dollars)

OFDI Flow	1991-99 annual avg.	2000	2001	2002	2003	2004	2005
Germany	45 195	56 557	39 684	18 946	6 174	1 883	45 635
UK	61 760	233 371	58 855	50 300	62 187	94 863	101 099
France	35 542	177 449	86 767	50 441	53 147	57 007	115 668
EU 15 (average)	15 571	54 140	28 952	17 624	18 813	22 022	36 597
US	93 167	142 626	124 873	134 946	129 352	222 437	- 12 714
Canada	13 739	44 675	36 028	26 773	21 516	43 254	34 083
Japan	22 214	31 558	38 333	32 281	28 800	30 951	45 781
OECD (average)	12 943	36 669	23 026	16 236	17 206	22 996	21 775

Source: UNCTAD; own calculations

Table 2: FDI Stock over Time (millions of dollars)

OFDI Stock	1991-99 annual avg.	2000	2001	2002	2003	2004	2005
Germany	268 613	541 861	617 761	695 765	830 719	921 664	967 299
UK	349 675	897 845	869 700	994 136	1 187 046	1 268 532	1 237 997
France	211 830	445 091	508 847	586 330	724 457	829 247	853 159
EU 15 (average)	93 806	202 991	215 742	249 787	309 720	352 190	363 233
US	747 697	1 316 247	1 460 352	1 616 548	1 791 891	2 063 998	2 051 284
Canada	128 404	237 639	250 693	275 699	318 699	375 073	399 363
Japan	255 889	278 442	300 114	304 237	335 500	370 544	386 581
OECD (average)	93 972	186 873	203 798	225 272	267 326	304 309	310 467

Source: UNCTAD; own calculations

OECD: Canada, US, Japan, Austria, Belgium, Belgium-Luxembourg, Czech Rep., Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland, UK, Australia, New Zealand, Mexico, Korea, Turkey.