IMPACTS OF EU OUTWARD FDI

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INFORMED DECISIONS

COPENHAGEN ECONOMICS

COLOPHON

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

The European Commission (DG Trade) has asked Copenhagen Economics to assess the impact of EU outward foreign direct investment (FDI) on the competitiveness of EU firms and on European labour markets.

The findings in this report are based on a detailed survey of the existing empirical literature regarding the impact of outward FDI on the competitiveness and employment of EU firms. Furthermore, we draw on data from a recent Eurostat survey of international sourcing carried out in 12 EU countries.

The existing data and research findings suggest that:

- EU outward FDI has made a positive and significant contribution to EU firms' competitiveness in the form of higher productivity.
- EU outward FDI has had no measurable impact on aggregate employment so far. In fact, EU firms' investments out of the EU appear to be good for their employment. This finding suggests that the negative labour market impact of reduced export of goods and services produced domestically is more than offset by a positive scale effect due to improved competitiveness and better market access abroad.
- Outward FDI improves employment in the investing firm, but has real redistributive impacts where skilled workers gain relative to unskilled workers.

Findings from the existing economic literature contradict anecdotal evidence of massive job losses due to outward FDI:

- *First*, although the number of jobs going abroad might seem large in absolute terms they are actually quite small in relative terms (i.e. between 0.5% and 2.0% of total turnovers when compared to job layoffs for other reasons).
- *Second*, results from a recent Eurostat survey suggest that for every 100 jobs going abroad, at least 50 new jobs are created immediately in the same firms.
- *Third*, these job relocation numbers do not take into account what might have happened if the EU firm had not invested abroad. In some cases, the firm might have experienced a loss of competitiveness which could translate into job losses over time. No investment or disinvestment may be the alternative to FDI.
- *Fourth*, an assessment of the labour market impacts of outward FDI needs also to take into account the fact that outward FDI might generate positive spillover effects on other EU firms. New and detailed firm level econometric research confirms that - on average - jobs destroyed in one firm are recreated after some time, either in other functions within the same firm or within other firms. The long-run employment effects of outward FDI are therefore not negative.

EU OUTWARD INVESTMENT HAS INCREASED 5 TIMES IN 15 YEARS

Over the last couple of decades, EU firms have increased their investments outside EU borders. Outward FDI has increased by a factor of five during the last fifteen years, and by 2008 the EU27 stock of outward FDI in non-EU countries amounted to €3.3 trillion. Investments into the EU have also been on the rise. The stock of EU inward FDI by non-EU investors amounted to €2.4 trillion in 2008, and the EU is thus a net capital exporter vis-à-vis the rest of the world. The EU has a net asset position of €0.9 trillion in 2008, up from €0.4 trillion in 2004.

POLICY MAKERS ARE CONCERNED

Rising levels of outward FDI concern many policy makers and some parts of the European public. These concerns stem from the perception that the foreign activities of European multinational firms might reduce employment of EU citizens and other economic activities within the EU. Interestingly, both capital exporting countries and capital importing countries have at times expressed concern over the consequences of international capital flows. Capital exporting countries worry that too much of their capital goes abroad. Capital importing countries fear foreign control of domestic assets and the possible macroeconomic instability associated with rapid changes in foreign investment levels.

The concerns of capital exporting countries, including the EU, are often based on the perception that outward FDI depresses economic activity at home. Unsurprisingly, the growing overseas activities of multinational firms have created feelings of economic insecurity for workers, managers and tax collectors.

LACK OF FACTS HAS FUELLED CONCERNS

Due to a lack of sound analytical and empirical support for the economic impacts of EU outward FDI concerns have risen as to whether it is good or bad for the European economy.

On the negative side, the argument has been made that investments abroad take place at the expense of investments at home and therefore cause job losses and lower wages in the EU. In particular, it has been argued that unskilled jobs are at stake since this type of labour is particularly prone to competition from workers in low-wage countries.

On the positive side, EU firms consider FDI a necessary step to stay competitive and as an important part of their global strategies. Firms engage in FDI to increase profits, to improve cost structures, to access new markets, and to source important materials, knowledge and other essential inputs. They expect that the wider global footprint of their business will improve their productivity and increase sales. For many firms in the service sector, establishing abroad might be

the only way to access foreign markets. This is so because many services cannot easily be exported (e.g. hair dressers) but require local presence.

EU FIRMS EARN MORE ABROAD THAN FOREIGN FIRM EARN IN THE EU

Balance of payment data confirm that gains from outward FDI have materialised.[1] European firms operating abroad appear to earn a higher return (around 8.7%) than what is earned by foreign firms operating in the EU (6.8%). The return on the EU's outward FDI generated more than €200 bn in 2006. In comparison, the return on FDI in the EU made by non-EU companies only amounted to €125 bn in the same year. The EU thus receives a net positive income from FDI with the rest of the world of around €75 bn per year. The positive net income creates demand for European labour across all sectors in the economy.

EU FIRMS GO ABROAD TO STAY COMPETITIVE AND SELL MORE

Most of the anecdotal evidence regarding EU firms' international sourcing and investment activities concerns the relocation of jobs to low-wage economies such as India and China. However, the perception that outward FDI is mainly about China and India absorbing European jobs is not reflected by the FDI statistics.

This study finds that more than half (55%) of the EU outward FDI stock is invested in other advanced economies (EFTA countries, North America and Australia/New Zealand). EU outward investment to countries like India and China is growing rapidly, but the stock of EU FDI in these economies accounts for only two percent of the total EU outward FDI stock.

Some types of relocations of EU jobs are not captured by FDI statistics, namely cases of international outsourcing where jobs move abroad to an unaffiliated partner (e.g. shifting from a local supplier to a Chinese supplier without taking an ownership share holding in the Chinese firm). A recent Eurostat survey on EU firms' international sourcing activities reveals that a full 70 percent of the reporting EU firms outsource their activities within the same enterprise group which thus involves foreign direct ownership. The remaining 30 percent represents outsourcing to partners outside the enterprise group, and this does not involve any foreign investment. This study therefore goes beyond FDI as a measure of the labour market and competitive impacts of EU firms' international sourcing activities.

Based on the Eurostat survey, we find that China and India are the most preferred destinations for EU firms' international sourcing outside the EU. In 36 percent of the cases, where an EU firm reports that it has sourced to a country outside the EU, the destination was China or India. Still, in 46 percent of the

[1] See Eurostat (2008) p. 20-21.

cases of sourcing outside the EU, firms report North America (25%) or other European countries (21%) as the destination.

Furthermore, 60 percent of the firms state that outsourcing has improved their competitiveness. In the same survey, 40 percent of the firms confirm that international outsourcing has improved their access to foreign markets. Only 45 percent of the replies from outsourcing firms mentioned reduction of labour costs as their motive for international sourcing.

Outsourcing European jobs to low cost economies such as China and India with the purpose of reducing labour costs at home is therefore only part of the story about EU outward FDI. In fact, EU firms' global investments and sourcing strategies are much more about gaining market access in order to sell more products and services, mainly in advanced economies. It is also about sourcing knowledge and advanced inputs from these economies.

Simply put, international sourcing activities of EU firms represent more the beneficial type of globalisation than its harmful counterpart, and so the European economy gains from openness through both outward FDI and international sourcing.

We rely on two sets of empirics to support this conclusion. The empirical results are based on an in-depth review of the most recent empirical studies of European outward FDI and international sourcing. The first set of evidence shows a positive competitiveness effect, and the second set of evidence shows an absence of negative aggregate labour market impacts.

EMPIRICS 1: A POSITIVE COMPETITIVENESS EFFECT

Outward FDI can improve the competitiveness of EU firms by reducing costs and allowing for economies of scale.

Competitiveness effects are confirmed by firm-level studies

The most recent empirical studies at the firm level confirm that outward FDI improves the competitiveness of EU firms. Outward FDI is mainly taking place in the manufacturing sector, and we find that outward FDI contributes to higher productivity and improved competitiveness of EU manufacturing firms.

First, we find that firms who invest abroad have higher productivity than comparable firms who have not established foreign affiliates. Navaretti and Castellani (2004), for example, find that Italian multinationals experienced a 4.6 percent higher growth rate in total factor productivity than comparable firms who did not establish affiliates abroad. The productivity gains seem to be larger for firms that established themselves in high-wage countries compared to low-wage countries. This is supported by Navaretti, Castellani and Disdier (2006), among

others, who argue that outward FDI to developed countries has positive scale effects which trickle down to home country employment.

Second, we find that firms improve their competitiveness by splitting up the value chain and importing intermediate goods from other firms abroad. Criscuolo and Leaver (2006), for example, find that a 10 percentage point increase in import intensity is associated with a 0.37 percent increase in total factor productivity.[2] Firms in the service sector also seem to benefit from importing intermediates but the impact is less well documented.

Competitiveness effects are also found at the industry-level
We find that outward FDI has had a positive impact on overall productivity in the EU manufacturing industry. However, there are large differences across countries. In the United Kingdom, for example, a 1 percent increase in the stock of outward FDI increases total factor productivity by 0.05 percent. Taking into account that the stock of outward FDI in the United Kingdom has increased, the productivity impact translates into an increase in GDP worth of more than €6 billion. In Germany, the impact of outward FDI on productivity seems to be negative.

The findings of a competitive gain from outward FDI should be interpreted with care. Outward FDI may not be good for all EU firms, and positive past experiences may not carry over to future investments. Vahter and Masso (2007) find that it is only the most productive firms who become multinationals and only the most talented firms that have the knowledge and managerial skills to undertake profitable outward FDI projects. This means that the results cannot be directly transferable to all EU firms. Also, it is likely that the firms which stood to benefit the most from investing abroad did so first and reaped the greatest benefits – perhaps the remaining firms will not gain so much from investing abroad.

However, the experiences of highly productive firms might lead to better functioning investment projects in the future. The findings in this report suggest that there are positive spillovers from investing firms to other firms in the home country (see also Fu, 2008). This could, for example, be due to managerial and technological spillovers or because outward FDI improves the image of the country abroad and thus paves the way for other firms.

EMPIRICS 2: NO NEGATIVE EFFECT ON EU EMPLOYMENT

One of the main worries about outward FDI and international sourcing is the effect on employment. Some domestic jobs have certainly been discarded as a

[2] The import intensity is defined as import of services as a share of total services purchased.

result of outward FDI: in the United Kingdom, for example, offshoring accounted for 3.5 percent of total job losses in 2005.[3]

When EU firms choose to invest abroad it may be at the expense of investment at home, but the alternative to investing abroad might also be not to invest at all.[4] Therefore the impact of outward FDI on employment is not self-evident. Even in cases where outward investments lead to an immediate decline in employment in the short run, longer run effects may actually save jobs and increase overall employment.

Outward FDI has not had a measurable impact on EU employment

We find that EU outward FDI does not appear to have any measurable negative effect on aggregate EU employment. This is because a large share of outward FDI is associated with expansion into foreign markets, which will drive up demand for headquarter services and lead to economies of scale. Also, the competitive gains to EU firms from importing intermediate goods stimulate employment in the business functions that stay in the home country.

A group of French economists, Hijzen, Jean and Mayer (2009), studied a large sample of French manufacturing firms, which opened a foreign subsidiary in a developed country, and analysed what happened to their employment over time. They compared the employment in the investing firms with employment in similar firms which did not invest abroad. The researchers found that, on average, the investing firms experienced 25 percent higher employment after 3 years compared to the firms which did not invest abroad.

Another group of economists from Nottingham University's Globalisation and Economic Policy Centre, delved into the accounts of over 66,000 firms in order to trace the effects of offshoring. Big companies with overseas affiliates are the most assiduous offshorers. Accordingly, the study paid particular attention to 2,850 British multinationals with foreign subsidiaries.[5] Certainly some domestic jobs have been discarded as a result of outward FDI, but companies have also been able to produce more because their investments have made them more competitive. The resulting job gains have more than made up for the losses. The authors estimate that the surge in UK offshoring since the mid-1990s has created 100,000 extra jobs.

[3] See The Economist (2008).

[4] A team of American economists, Desai, Foley and Hines (2005) has investigated this, and they found that one dollar of additional foreign capital spending is associated with 3.5 dollars of additional domestic capital spending, implying that foreign and domestic capital are complements in the production by multinational firms.

[5] See The Economist (2008).

Outward FDI improves employment in the investing firm but has real redistributive impacts where skilled labour seems to gain relative to unskilled labour
The recent empirical literature suggests that employment in the parent company gets a boost when the company establishes a foreign affiliate. The impact seems to be larger for foreign affiliates established in high income countries, which is probably because improved access to foreign markets gives rise to positive scale effects. Over time, there is no indication that employment in the parent company is put under pressure by low wages in the host country of the foreign affiliate.

There do appear to be real distributive effects from outward FDI. When firms start to import intermediate goods or establish a foreign affiliate it is mainly the skilled workers' employment share in the home company which increases. A study by Geishecker and Görg (2007) also finds that outsourcing reduced the real wage for unskilled workers by up to 1.8 percent while it increased the real wages for skilled workers by up to 3.3 percent. Outsourcing has therefore increased inequality between unskilled and skilled workers.

Outward FDI has benefited the EU economy as a whole

Overall, the current body of empirical literature suggests that productivity increases, and that total employment appears to be unaffected by outward FDI. Therefore, there is reason to believe that the benefits in terms of higher national income exceed the costs borne by unskilled workers in terms of a lower wage share. Our calculations based on a recent study by Bitzer and Görg (2009) find that the productivity gains from outward FDI have increased EU GDP by €20 billion. This amounts to an increase of 0.002 percent in EU GDP over the period 2001-2006. Of the €20 billion we find that EU workers have increased their income by almost €13 billion. However, the increased income of EU workers will not necessarily be evenly distributed between skilled and unskilled workers.

It is important to keep in mind that the alternative to outward FDI might not be so attractive to the EU economy either. EU firms invest abroad in order to stay competitive compared to their foreign competitors, and outward FDI might therefore increase their chances of surviving in the longer run. In this way, outward FDI has the potential to save EU jobs.

Future: More outward FDI - most notably in services

We expect that EU firms will continue to invest abroad in order to stay competitive in an increasingly globalised world economy. At the same time, technological developments have reduced historic barriers to FDI and have made ser-

vice jobs increasingly offshorable. We therefore expect that outward FDI will become more prevalent in the service sector in the future. Also, we expect that outward FDI in the manufacturing sector will increasingly involve service (support) functions rather than core business (production) functions. Since service functions are generally more skill intensive than the core business functions, we expect that skilled labour will be put under more pressure in the future.

Chapter 1 | THE PATTERN OF EU OUTWARD FDI

The trend towards further trade integration, the deregulation of international capital movement and reduced transport and communication costs have led firms to relocate production both abroad and at home. Outward FDI involves a process of shifting economic activities towards foreign sites in order to reduce costs, improve market access or due to strategic considerations.

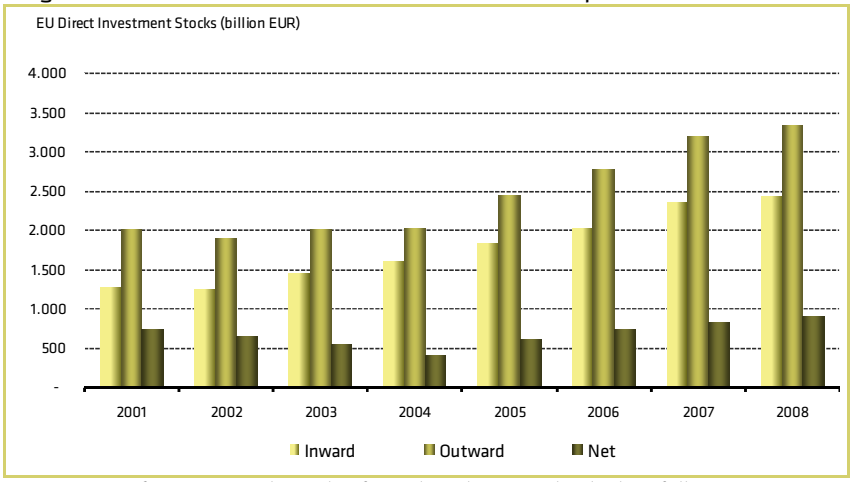
In this chapter we describe the pattern of EU outward FDI. Section 1.1 analyses what characterises EU outward FDI. EU outward FDI has been increasing in recent decades, and this development is mainly driven by investments from high-wage EU countries. Section 1.2 draws on a new data set on international sourcing in order to learn more about EU firms' motives for sourcing abroad, to discern what type of functions EU firms move abroad, and to understand the impacts of international sourcing on employment and competitiveness. Section 1.3 discusses the channels through which outward FDI impacts the EU economy. Section 1.4 concludes and highlights some of the implications of our findings.

1.1. WHAT CHARACTERISES EU OUTWARD FDI?

Over the last couple of decades, EU firms have been investing increasing amounts of money to set up or acquire firms outside the EU (outward FDI). Since outward FDI flows are highly lumpy and volatile, we use the EU outward FDI stock as our main measure of EU firms' investment activities outside the EU.

In 2008, the stock of EU27 outward FDI in non-EU countries amounted to €3.3 trillion. Investments into the EU have also been on the rise. The stock of FDI into the EU by non-EU investors amounted to €2.4 trillion in 2008, and the EU is thus a net capital exporter vis-à-vis the rest of the world. The EU has a net asset position of €0.9 trillion in 2008, up from €0.4 trillion in 2004. We use EU25 data in order to show the development since 2001, cf. Figure 1.1. This data exclude the two newest Member States, Romania and Bulgaria, but since both inward and outward investments from these two countries are small we do not expect their exclusion to alter the picture.

Figure 1.1 EU inward and outward FDI and net asset position 2001-2008

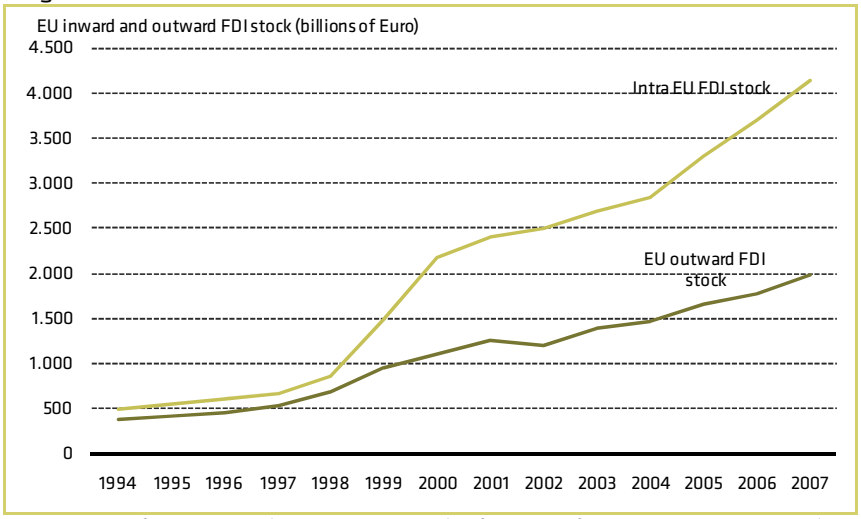


Note: EU refers to EU25. The stocks of FDI show the accumulated value of all previous investments at the end of the reference period. The EU outward FDI stock refers to investments from an EU25 country to a non-EU25 country. The EU inward FDI stock refers to investments by a non-EU25 investor in EU25. Data are in constant 2000 Euros.

Source: Eurostat.

To look at the longer trend, we need to focus on FDI statistics for EU15, since consistent data for EU27 are only available from 2004 and onwards. During the period 1994-2007, the stock of EU15 outward FDI has been increasing from €400 billion to almost €2,000 billion, cf. Figure 1.2. This means that the EU15 outward FDI stock is five times higher in 2007 than in 1994.

Figure 1.2 EU outward FDI stock and intra-EU FDI stock



Note: EU refers to EU15. The intra EU FDI stock refers to FDI from one EU country to another. Data are in 2000 Euros.

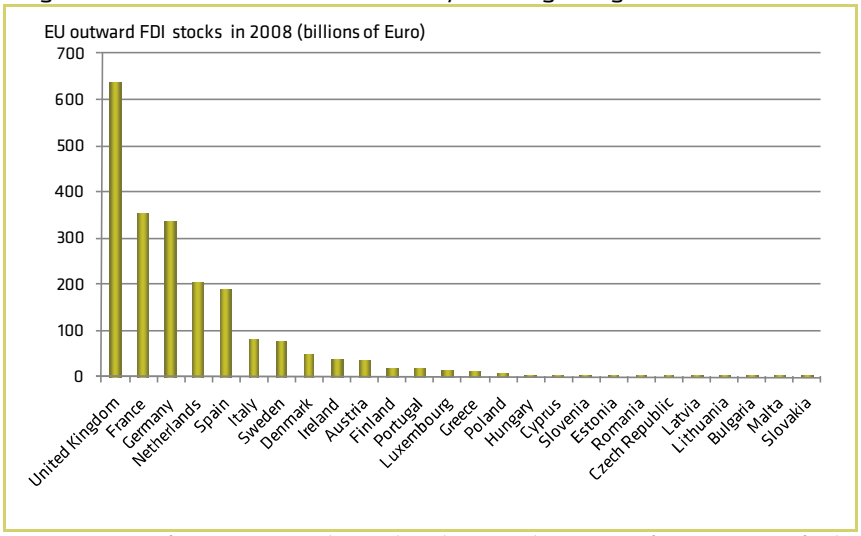
Source: Eurostat.

To put the rapid increase in EU outward FDI in perspective, we can compare with the change in intra EU investments (cross-border investments between EU15 Member States) during the same period. This shows that intra EU investments have increased much more rapidly than outward FDI. The intra EU FDI stock has increased from €500 billion in 1994 to more than €4,500 billion in 2007. This means that the EU15 outward FDI stock is more than nine times higher in 2007 compared to 1994.

As a result, the intra EU FDI stock in 2007 was more than double the EU outward FDI stock although they started out at almost the same level in 1994. It is therefore important to note that investments across borders internally in the EU have grown much faster than investments by EU firms out of the EU, and that cross-border investments internally in the EU have reached a much higher level than outward FDI.

EU outward FDI stems mainly from high-wage countries such as the United Kingdom, France, Germany and the Netherlands, cf. Figure 1.3. In 2008, for example, the stock of outward FDI from the United Kingdom in non-EU countries was almost €650 billion.

Figure 1.3 EU outward FDI comes mainly from high-wage countries

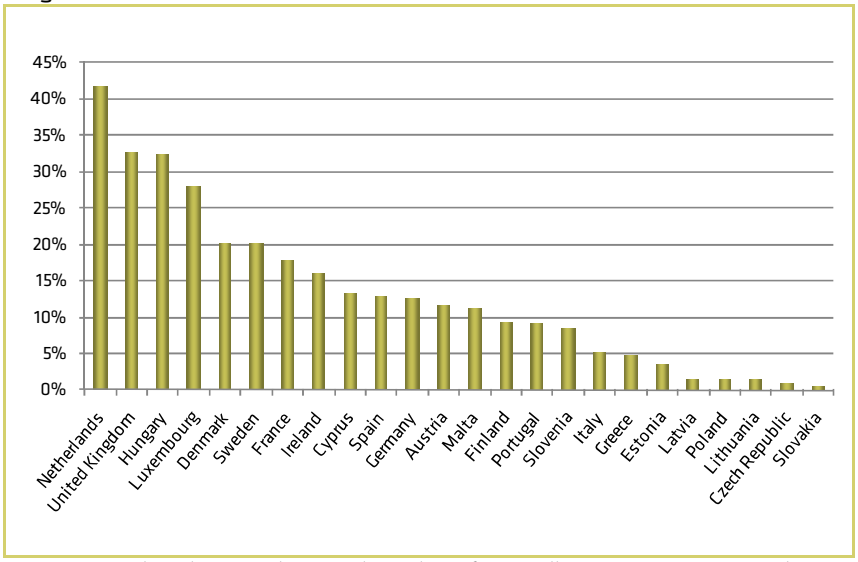


Note: Data are for EU27 except Belgium where there is no data. Data are from 2008 except for the Netherlands (2005), the United Kingdom (2006), and Austria and Portugal (2007).
Source: Eurostat.

Due to their economic size, the large countries are large absolute investors. The investments relative to domestic GDP (stock of outward FDI relative to GDP) might therefore be a more appropriate indicator of which EU countries invest the most. Once we take the economic size of the home country into account, the United Kingdom still turns out to be one of the heaviest outward investors,

but also that smaller countries, such as the Netherlands, Luxemburg, Cyprus, Ireland, Sweden and Denmark have outward investments exceeding 20 percent of their GDP, cf. Figure 1.4.

Figure 1.4 Small countries outsource more in relative terms

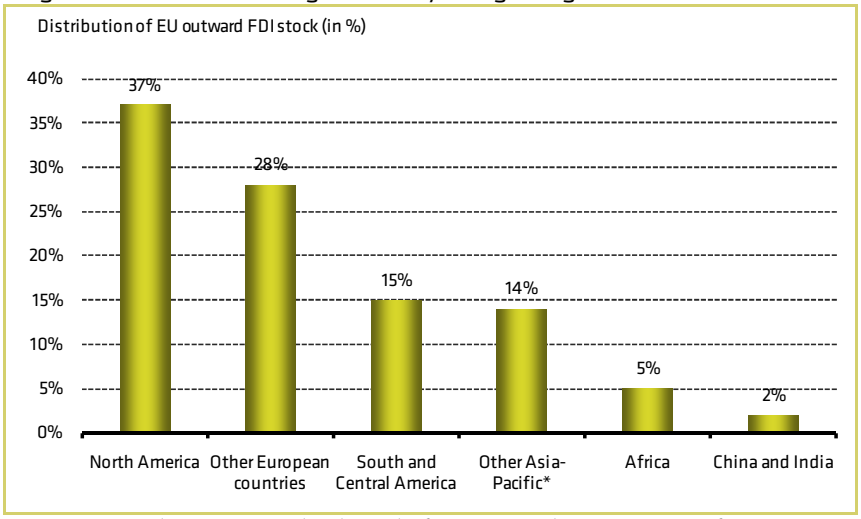


Note: Data show the outward FDI stock as a share of GDP. All EU27 countries, except Belgium, are shown. Data are from 2008 except for the Netherlands (2005), the United Kingdom (2006), and Austria and Portugal (2007).

Source: Eurostat.

EU outward FDI goes both to high and low-wage countries, cf. Figure 1.5. EU outward FDI is mainly directed towards North America and other European countries not in the EU (most notably Switzerland and Norway). The stock of EU outward FDI to India and China is very small and smaller than for example to Africa. This is rather surprising since worries have often been expressed that EU jobs are moving to Asia due to their low wages.

Figure 1.5 EU outward FDI goes mostly to high-wage countries



Note: *Outward FDI is measured as the stock of EU27 outward FDI in 2008. * Refers to Asia-Pacific except India and China.*

Source: Eurostat and Eurostat, SBS.

One could think of at least two explanations for the low level of European FDI in Asia.

First, EU outward FDI to Asia is a recent phenomenon whereas EU countries have a long history of investing in more advanced countries such as North America. Since the stock of outward FDI is the sum of investments over time, the outward FDI stock to Asia will take time to build up. It should also be noted that in many Asian countries, the EU is the largest foreign investor.

Second, the EU outward FDI stock measures the result of accumulated net capital flows and not job relocations. Starting to import labour-intensive intermediate goods produced in China might be costly in terms of jobs lost but might not be very capital demanding. In this case, a small increase in the outward FDI stock will therefore imply large labour market impacts. However, establishing a foreign affiliate in the United States might be very costly in terms of capital whereas the relocation of jobs might be negligible. This will be the case if the investment is motivated by a desire to access the American markets in which case the foreign establishment might be a sales office rather than a production site.

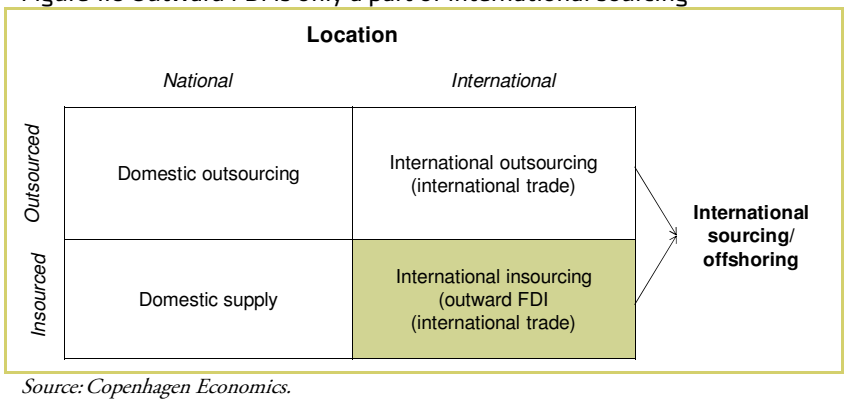
It would be of great interest to know what EU firms actually invest in when they undertake outward FDI, but we only have data on which sectors EU firms typically invest in. A bulk of EU outward FDI takes place in financial intermediation where financial holding companies, insurance companies and pension funding firms buy shares in foreign companies for purely investment purposes.

The impact of this type of outward FDI on the home economy is completely different from outward FDI by EU firms who move or copy part of their production abroad. The latter type of outward FDI projects are expected to impact on both the EU competitiveness and productivity.

Available outward FDI data do not allow us to disentangle the different *types* of investments made by EU firms. In the next section, we therefore draw on a recent Eurostat survey of international sourcing, which holds information about the functions EU firms choose to source internationally, their motives for carrying out international sourcing, and the impacts of international sourcing on the firm and the home economy.

The Eurostat survey describes international sourcing activities of EU firms and covers the relocation abroad of functions that used to be served at home. EU firms source internationally in two ways, cf. Figure 1.6. First, EU firms source activities to foreign affiliates established or acquired abroad. This is called *international insourcing* and is the same as outward FDI. Second, EU firms source activities to external suppliers. This is called *international outsourcing*.

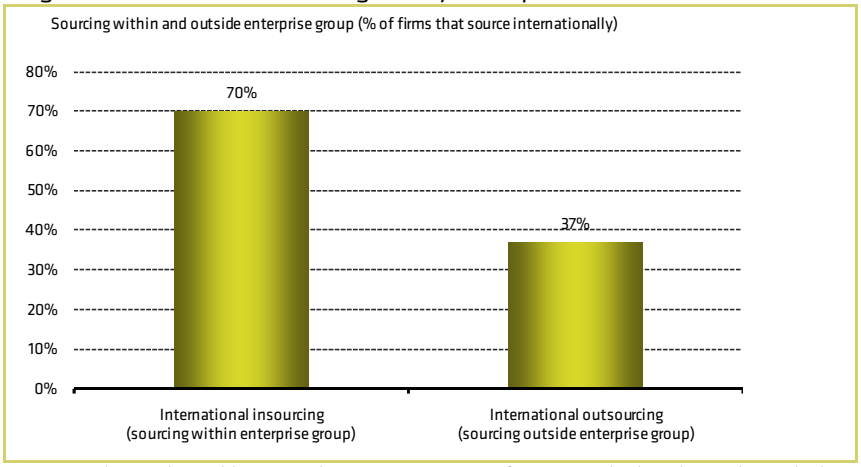
Figure 1.6 Outward FDI is only a part of international sourcing



Source: Copenhagen Economics.

The Eurostat data cover all international sourcing activities of the responding EU firm. However, we find that international sourcing mainly takes place within the firm, cf. Figure 1.7. 70 percent of the responding firms state that they have carried out international insourcing while only 37 percent of the firms have carried out international outsourcing. Since international insourcing activities are measured as outward FDI we conclude that the Eurostat data on international sourcing can bring new information about the characteristics of outward FDI which should be of interest to the policy makers.

Figure 1.7 International sourcing mainly takes place within the firm



Note: The numbers add to more than 100% since some firms source both within and outside their own group. Within the enterprise group includes outsourcing to existing foreign enterprises of the same group, to new foreign enterprises of the same group (by acquisition) and to newly created foreign enterprises of the same group (by acquisition).

Source: Eurostat, SBS.

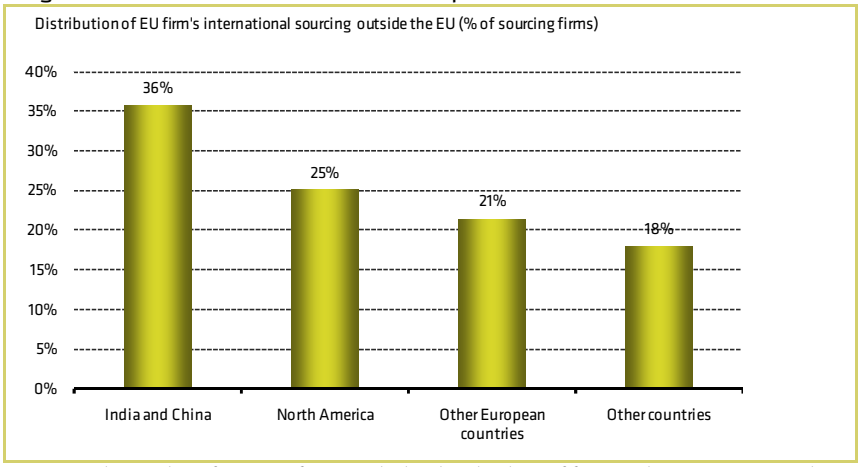
1.2. LESSONS FROM A SURVEY ON INTERNATIONAL SOURCING

In this section we use data on a recent Eurostat data set on EU international sourcing. Data cover 11 EU countries and are therefore only indicative of the international sourcing by EU27 firms. International sourcing in this case covers both sourcing within the EU and outside the EU. Also, since the survey covers only EU firms with more than 100 employees it does not reflect the full scope of international sourcing by the individual EU country covered by the survey.

What are the destinations of EU firm's international sourcing?

Based on the Eurostat survey, we find that China and India are the most preferred destinations for EU international sourcing outside the EU, cf. Figure 1.8. In 36 percent of the cases, where an EU firm reports that it has sourced to a country outside the EU, the destination was China or India.

Figure 1.8 China and India are the most preferred extra-EU destinations



Note: The number of sourcing firms is calculated as the share of firms in the Eurostat survey that have sourced internationally. The percentages are calculated on the basis of the number of times the enterprises have mentioned the country and/or country group as a destination for international sourcing. Data reflect extra-EU international sourcing during 2001-2006.
Source: Eurostat SBS.

This is at odds with the low stock of EU outward FDI to China and India as reported in Figure 1.5. The result can be interpreted in two ways. First, EU firms undertake many (but small) investment projects in India and China. Second, EU firms' sourcing to India and China takes place without significant investments, which would indicate that sourcing to these countries mainly involves external suppliers (international outsourcing).

What are the motives for international sourcing?

Firms have many motives for investing and sourcing outside the EU, and European firms pursue a complex international sourcing strategy which involves both core business functions (production of goods and services) and support functions (distribution and logistics, marketing and sales, ICT services, administrative functions, engineering and R&D).

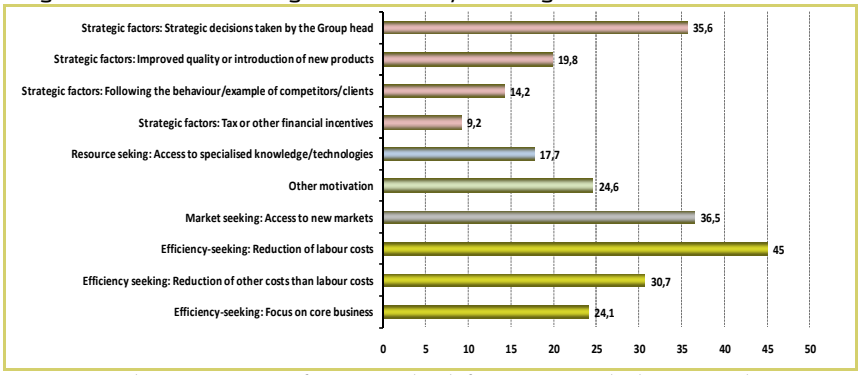
The Eurostat survey provides important information about those functions which have been moved abroad by EU firms as well as their motives for doing so. These motives can be broadly categorised as:

- Strategic (e.g. introduction of new products)
- Resource-seeking (e.g. access to specialised technology)
- Market-seeking (e.g. access to new markets)
- Efficiency-seeking (e.g. access to cheap factors of production)

Market-seeking and efficiency-seeking factors dominate EU firms' motives for investing abroad, cf. Figure 1.9. 45 percent of the responding firms mark reduc-

tion of labour costs as a motivating factor for sourcing internationally. Likewise, 36.5 percent of the responding firms go abroad in order to access new markets. More than 30 percent of the EU firms included in the survey source abroad in order to save costs other than labour costs. One example here could be the reduction of tariffs where firms establish themselves in foreign markets in order to avoid paying tariffs (tariff-jumping motive).

Figure 1.9 Market-seeking and efficiency-seeking motives dominate



Note: Numbers are in percent of answers, and each firm can state multiple motives. The survey includes both sourcing within EU countries and outside the EU.
Source: Eurostat, SBS.

What is being outsourced?

The Eurostat survey also provides detailed information about which functions EU firms typically outsource. We find that both core business functions and support functions are being sourced internationally, cf. Table 1.1. In the United Kingdom, for example, 52.6 percent of the responding firms in the manufacturing sector state that they have outsourced core business functions. Unfortunately, it is not possible to break down the motives by destination country.

Table 1.1 Both core and support functions are being sourced internationally

	Manufacturing		Services	
	Core business functions	Support functions	Core business functions	Support functions
United Kingdom	52.6%	36.6%	15.3%	17.0%
Ireland	49.2%	41.9%	20.8%	22.5%
Denmark	23.9%	23.3%	4.1%	15.8%
Finland	21.7%	14.8%	5.5%	14.2%
Slovenia	17.4%	20.1%	3.6%	7.9%
Italy	15.9%	7.8%	1.3%	2.6%
Germany	13.3%	11.2%	2.6%	5.2%
Portugal*	11.0%	13.0%	2.9%	4.4%
Sweden	9.3%	4.7%	1.0%	2.1%
Czech Republic*	3.7%	3.3%	1.1%	1.7%

*Note: *Refers to provisional data. Data for Netherlands are unreliable and have been excluded. Service sectors include real estate, wholesale and retail trade, transportation and communication, construction, hotels and restaurants, financial intermediation, and electricity, gas and water. Core business functions include production of goods and services. Support business functions include distribution and logistics, marketing and sales, ICT services, administrative functions, engineering and R&D. Data are taken as a share of enterprises that carry out international sourcing. Numbers do not sum to 100 since a firm can outsource more than one function. The survey includes both sourcing within EU countries and outside the EU.*

Source: Eurostat, SBS.

The findings suggest that firms in the manufacturing sector outsource more functions than firms in the service sector. Manufacturing firms outsource both core business and support functions, whereas firms in the service sector outsource support functions more often.

How many jobs are lost and created due to international sourcing?

Based on the Eurostat data on jobs lost and created we can say something about how the home economy is affected by international sourcing by EU firms (see more details on Box 1.1).

Box 1.1 Eurostat data on jobs lost and created

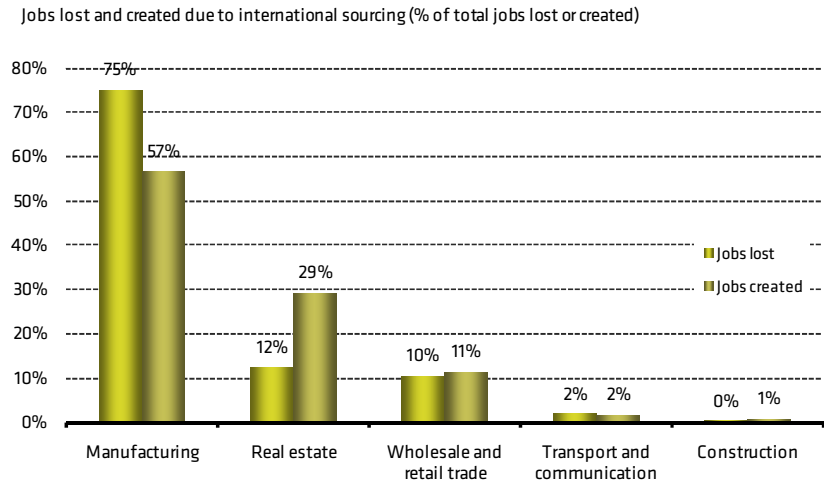
The EU firms in the Eurostat survey were asked to estimate the number of jobs lost and created within the domestic enterprise as a result of international sourcing. The data do not allow us to separate the jobs that are lost due to sourcing outside the EU from job losses due to international sourcing within the EU. This means that a fraction of the jobs that are being lost in one EU country will move to another EU country.

The numbers reported in this study are based on the estimates provided by the responding firms, which means that the data are only representative for the 11 EU countries and the firms which participated in the survey. We therefore use the survey data to inform us about how jobs lost and created are distributed across sectors and across countries rather than the absolute numbers themselves.

As we do not have data on the number of jobs lost and created in each individual firm we cannot draw conclusions about the net job impact at firm level. But the data can inform us about jobs lost and created in the sector or country as a consequence of international sourcing by the firms covered by the survey. This data only capture the direct job impact in the sourcing firm and do not take into account of whether jobs might be lost and created in other firms and in other industries. Also, the survey only considers the immediate jobs lost and created and does not take into account the dynamic effects that materialise in the long and medium run.

We find that most of the jobs lost and created due to international sourcing are in the manufacturing sectors, cf. Figure 1.10.

Figure 1.10 Most jobs lost and created are in the manufacturing sector



Note: Data reflect the number of jobs lost and created within the responding enterprise during 2001-2006 as a result of international sourcing. The numbers are added across the 11 EU countries that are included in the Eurostat survey. The survey includes both international sourcing to other EU countries and outside the EU.

Source: Eurostat, SBS.

Apparently, more jobs are being created than lost due to international sourcing in all other sectors than manufacturing. However, it is important to keep in mind that the jobs which are being lost and created might not require the same skills and might not be located in the same geographic area. Also, the data do not allow us to analyse the destination of those jobs which are being relocated

abroad. Therefore we do not know how many of these jobs have been moved to other EU countries as compared to countries outside the EU.

Overall, the data from the Eurostat survey show that jobs lost and created due to international sourcing differ between countries. On average, for every 100 jobs outsourced, 49 jobs are created immediately within the outsourcing firms, cf. Table 1.2. It should be noted that due to differences in sampling size, 65 percent of the total number of jobs lost (as reported by the EU firms from the Eurostat survey) come from Germany.

Table 1.2 Immediate jobs lost and jobs created within the sourcing firm

	JOBS LOST	JOBS CREATED
	Reported number of jobs lost due to international sourcing (indexed to 100)	Reported number of jobs created due to international sourcing (indexed to jobs lost)
Country	2001-2006	2001-2006
Germany	100	54
Denmark	100	32
Netherlands*	100	12
Finland	100	37
Czech Republic*	100	27
Portugal	100	21
Slovenia	100	70
Average of above	**100**	**49**

*Note: *Refers to provisional data. Data from the Netherlands are unreliable. The survey includes both sourcing within EU countries and outside the EU.*
Source: Eurostat, SBS.

At the same time, we recall from Figure 1.1 that non-EU firms have also invested significant amounts of money in the EU, which will stimulate demand for EU labour. Furthermore, as seen from Figure 1.2, the huge amount of intra-EU FDI might stimulate employment in EU countries.

1.3. How does outward FDI impact the EU economy?

EU firms undertake outward FDI for market-seeking, efficiency-seeking, resource-seeking or strategic purposes, and some examples of the different types of outward FDI are listed in Table 1.3. Underneath we will explain some of the channels through which outward FDI might impact on the competitiveness and employment of EU firms.

Table 1.3: Beneficial effects of outward FDI on firm level productivity

Driving factor	Benefit to the investing company
Market-seeking	Improved market access through relations with clients
Efficiency-seeking	Lower costs and improved profitability
Resource-seeking	Source new talent and technologies
Resource-seeking	Improved resource allocation
Strategic	Strategic considerations of improving the quality of existing products, introducing new products and benefitting from financial incentives

Source: Copenhagen Economics

Market-seeking outward FDI takes place when an EU firm establishes itself in important export markets. The EU firm's direct presence in local markets might lead to a greater understanding of clients' needs and demands, and relations with the client are likely to be improved. Going abroad can be the only option for European suppliers if they wish to access new markets. This is particularly the case for firms in the service sectors where local knowledge and experience is often required.

By undertaking *efficiency-seeking* outward FDI the EU firm gets better access to factor markets for both productive resources and labour. Lower costs will improve the productivity, profitability and competitiveness of EU firms.

Resource-seeking outward FDI takes place when EU firms establish foreign affiliates in order to access specific knowledge or technology not available in the home country. If such knowledge or technology is successfully repatriated, outward FDI can significantly improve employment, productivity and profitability in the EU firm. The firm might also carry out resource-seeking outward FDI by moving part of the production abroad in order to break up the value chain. In this way, outward FDI allows EU firms to optimise on their resource allocation across borders.

Outward FDI is also driven by *strategic* considerations where, for example, improved quality of existing products, introduction of new products and financial incentives make investments abroad attractive for EU firms.

The growth of a productive firm will have an impact on suppliers, competitors and clients in the home country:

- *Suppliers* are likely to benefit from the increased activity level in the functions that are not being outsourced. Since it becomes more attractive to sell to the investing firm, competition among suppliers will increase, and it will become more attractive for suppliers in the industry to adopt new technologies in order to win contracts with the multinational firm.

- *Competitors* are being challenged by the growth of a stronger competitor, and they therefore have a stronger incentive to increase productivity.
- *Clients* are likely to gain since part of the cost savings is likely to benefit clients through cheaper products. Also, the clients might benefit from an improved quality of the inputs purchased from the multinational firm, and the client might also be required to adopt more advanced technologies in order to use the inputs produced by the investing firm.

In addition, outward FDI has the potential to bring positive technology and knowledge spillovers to other firms within the industry or in other industries. One example is the managerial learning which takes place through international investment activities. Also, the 'country-of-origin' effect (better image of the country abroad) may boost demand for home country products from overseas. Furthermore, successful presence of home country companies abroad makes it easier for other companies to follow suit.

In more practical terms, outward FDI takes place when an EU firm establishes a foreign affiliate or acquires a foreign firm and starts to produce abroad. Here, we distinguish between:

1. Cases where the parent company copies the whole production chain to a foreign affiliate.
2. Cases where the parent company moves only part of the supply chain to a foreign affiliate.

The home country impacts of these two types of outward FDI are summarised below. From a theoretical point of view both positive and negative impacts of outward FDI on competitiveness and employment are possible. How these balance out in reality is thus an empirical question, which we will address in the next two chapters.

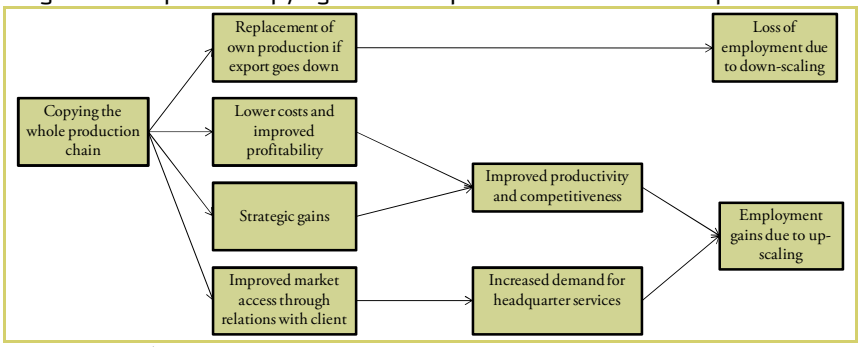
Impacts of copying the whole production chain to foreign affiliates

In this case, the parent company and the foreign affiliate produce the same good but serve different markets. EU firms often make such investments in order to lower costs (e.g. by saving transportation costs and to avoid paying tariffs), to get closer to clients and for strategic reasons. This type of international sourcing is captured by data on outward FDI.

Lower costs, improved profitability and strategic gains will increase productivity and stimulate employment. Also, stronger relations with clients will improve market access abroad and improve employment through a positive scale effect. However, employment in the investing firm might suffer if the foreign markets

were previously served by exports produced at home. The net impact on employment is therefore indeterminate. If headquarter services are skill intensive then the demand for skilled labour will increase. The impacts of copying the whole production chains on the parent firm are summarised in Figure 1.11.

Figure 1.11 Impact of copying the whole production chain on the parent firm

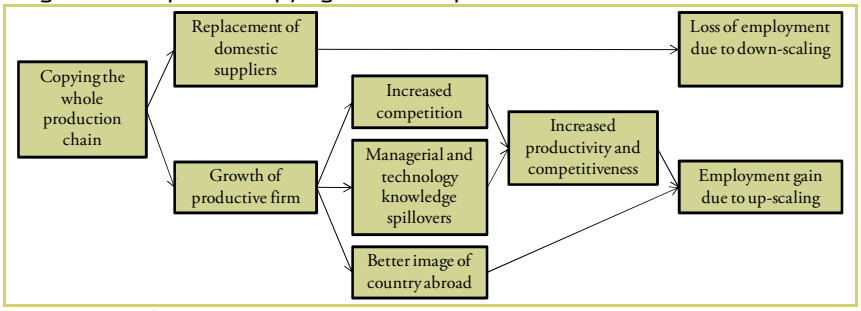


Source: Copenhagen Economics.

Other firms within the industry might benefit from increased competition, managerial and technology knowledge spillovers and by an improved image abroad. All in all, the growth of a productive firm is expected to improve productivity and employment in other firms.

On the other hand, if the firm used to serve the foreign market through export of goods and services produced at home then the firm will buy less intermediate goods and services from domestic suppliers. In this case, outward FDI will have a negative impact on the employment of supplying firms by reducing demand. Less competition hampers the incentive for suppliers to become more competitive (e.g. adopting new technology). The impacts of copying the whole production to a foreign affiliate are summarised in Figure 1.12.

Figure 1.12 Impact of copying the whole production chain on other firms



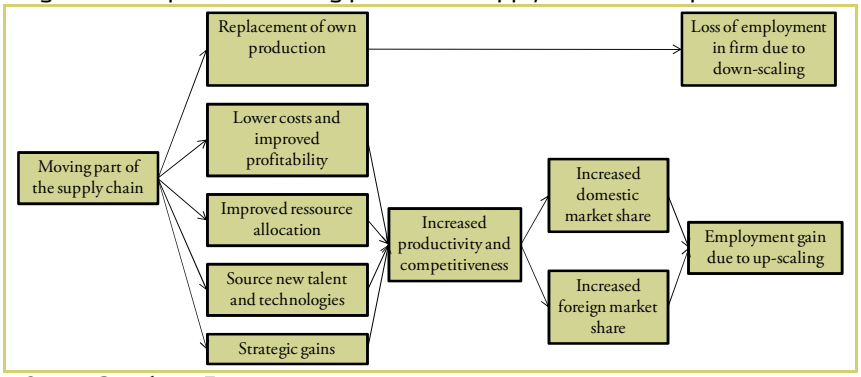
Source: Copenhagen Economics.

Impacts of moving part of the supply chain to a foreign affiliate

In the second case, the foreign affiliate either fulfils the role of a supplier or a distributor. In this case, the initial investment abroad is captured by data on outward FDI, whereas the transactions between the foreign affiliate and the parent company are recorded as international trade. When the foreign affiliate fulfils the role of a supplier trade between the parent firm and the foreign affiliate is recorded as trade in intermediate goods and services. When the foreign affiliate fulfils the role of a distributor trade between the parent firm and the foreign affiliate is recorded as trade in final good.

Moving part of the supply chain is often driven by cost reductions (efficiency-seeking motives) and/or the desire to access specialised knowledge/technologies that are abundant in other countries (resource-seeking motives). By reducing costs and improving resource allocation within the investing firm we expect this type of outward FDI to have a positive impact on productivity and employment in the investing firm. An overview of the impacts of moving part of the supply chain on the investing firm is given in Figure 1.13.

Figure 1.13 Impacts of moving part of the supply chain on the parent firm



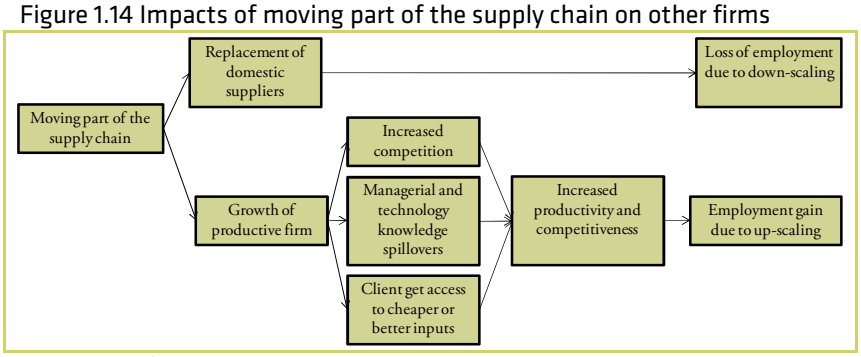
Source: Copenhagen Economics.

However, if the functions which are being sourced abroad used to be performed within the investing firm, then this type of outward FDI replaces the firm's own production and leads to less employment in the firm. The impact on employment in the investing firm is therefore indeterminate: employment in the functions being moved abroad will decrease but employment in those functions which stay at home will increase.

Overall, we expect that firms improve their productivity by moving part of the supply chain to foreign affiliates whereas the impact on employment is indeterminate.

Other firms within the industry might benefit from increased competition, managerial and technology knowledge spillovers and clients might get access to cheaper or better inputs, cf. Figure 1.14.

Figure 1.14 Impacts of moving part of the supply chain on other firms



Source: Copenhagen Economics.

However, if the functions being sent abroad used to be performed by other domestic firms then there will be a loss in employment due to down-scaling. This type of outward FDI might be harmful to the workers whose jobs are being moved abroad. If the functions are skill-intensive, moving part of the supply chain abroad is expected to harm skilled workers at home and will lead to skill downgrading. Likewise, if the functions that are moved abroad are labour-intensive then unskilled jobs are expected to be at risk.

1.4. FINAL NOTES AND INTERPRETATIONS

We find that EU outward FDI has been increasing during the last decade, although this increase is less pronounced than EU inward FDI (EU FDI to other EU countries). The discussion of potential impacts of outward FDI in this chapter has highlighted the need to analyse the question both at the firm and industry level. Also, our findings clearly underline that it is important to take both inter and intra industry spillovers into account in order to understand the impacts of outward FDI on the home economy.

Chapter 2 empirically analyses the impact of outward FDI on EU competitiveness, and Chapter 3 examines the labour market impacts of outward FDI. Since the Eurostat survey suggests that the labour market impacts of international sourcing are most serious in the manufacturing sector, we will mainly focus on the empirical findings for manufacturing firms and industries. This is also where the bulk of empirical work has been undertaken.

Chapter 2 IMPACTS OF OUTWARD FDI AND INTERNATIONAL SOURCING ON EU COMPETITIVENESS

EU firms invest abroad in order to stay competitive in an increasingly globalised world. Outward FDI takes place when an EU firm establishes a foreign affiliate or acquires a foreign firm and starts to produce abroad. The empirical approach to studying the home country impact of outward FDI has therefore been to analyse the impacts of establishing foreign affiliates on the performance of the parent company, and by assessing the relationship between the foreign affiliate and the parent company.

In the case where the EU firm moves part of the supply chain to its foreign affiliates, trade between the parent company and the foreign affiliate will also have an impact on the home country. Empirically, this has often been captured by import of intermediate goods and services (see discussion in OECD, 2007). It is important to keep in mind, however, that EU firms import intermediates from both their foreign affiliates and from foreign suppliers. In this way, import of intermediate goods and services reflects both international insourcing (outward FDI) and international outsourcing.

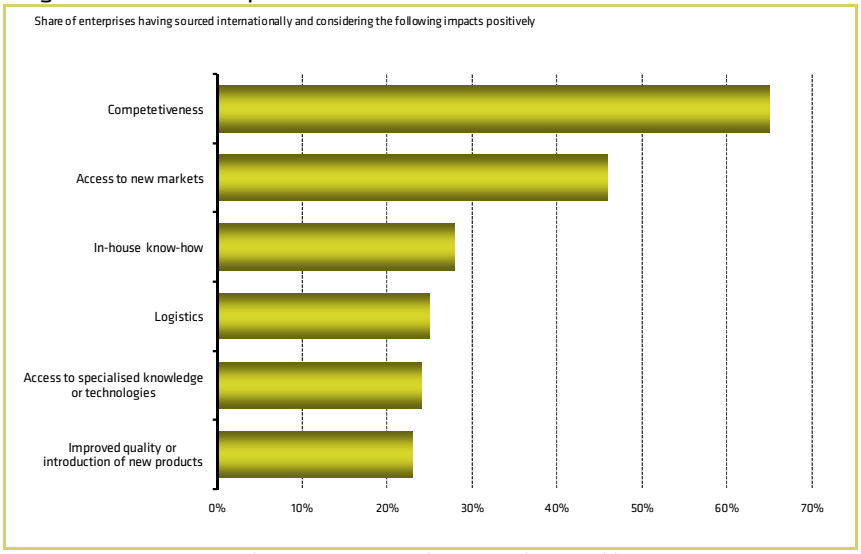
We find that establishing foreign affiliates and importing intermediates both enhance the productivity of EU firms which undertake such activities. Furthermore, we find that the productivity gains carry through to the more aggregate level where most manufacturing industries experience productivity gains due to their international investment and relocation activities. Little is known about the impacts of outward FDI and international sourcing on productivity in the service sectors.

Section 2.1 summarises the empirical studies on EU firms' establishments abroad and illustrates how import of intermediate goods and services impacts on their productivity. Section 2.2 discusses the findings of productivity impacts on the industry level. And, finally, Section 2.3 concludes and highlights some of the implications of our findings. Appendix 3 provides more details about the empirical literature and includes summary tables from the literature review.

2.1. EU FIRMS GAIN COMPETITIVENESS FROM OUTWARD FDI

The positive impact of outward FDI is confirmed by the Eurostat survey of international sourcing in EU firms. More than 60 percent of the respondents find that international sourcing has had a positive impact on their competitiveness, cf. Figure 2.1. Also, over 40 percent of the EU firms find that international sourcing improved their access to new markets.

Figure 2.1 Positive experiences of firms



Note: Data sum to more than 100 since more than one reply is possible.
Source: Eurostat, SBS.

There are other channels through which EU firms who invest abroad improve their competitive position. The investing firms report that international sourcing has improved in-house know-how, brought better logistics, enhanced access to specialised knowledge and improved quality or introduction of new products.

Impact of outward FDI on productivity

The impact of outward FDI on the productivity of EU firms has been analysed in different ways in the empirical literature. The empirical studies can be grouped in two branches:

- Productivity impacts of establishing a foreign affiliate
- Productivity impacts of importing intermediate goods

The *first* branch of the literature analyses how productivity in the parent company is affected by the establishment of a foreign affiliate. These studies are summarised in Appendix Table 1. We expect this impact to be positive since such investments allow for economies of scale, increased revenues from market expansion and stronger relations with clients. However, we also acknowledge that such transactions are costly and that the benefits of going international might not materialise immediately.

We find that firms experience a productivity gain from investing abroad relative to comparable firms who do not establish themselves abroad. Castellani and Navaretti (2004), for example, analyse how the productivity of manufacturing firms in France and Italy is affected over time when the firms set up a foreign subsidiary. In the case of Italy, they find that foreign affiliates in both developed

and less developed countries increase productivity in the parent firm. French foreign establishments carried no significant productivity gains.

Using similar data, however, Navaretti, Castellani and Disdier (2006) find that the positive impacts of investing in less developed countries are only short run. One year after the investment has been made there is no measurable difference between a firm with establishments in less developed countries and a firm that did not make such international investments. The productivity gains from investments in developed countries are positive both in the short and long run.

Hijzen, Jean and Mayer (2009) also provide insights into the dynamics of the productivity gains of establishing abroad. They find that productivity gains for investing firms in the manufacturing sector become stronger over time, whereas productivity gains for investing firms in the service sector only become visible in the longer run (after three years). One explanation could be that establishing a foreign affiliate abroad is costly, and that the benefits in terms of improved market access might not be recorded immediately.

The *second* branch of the literature analyses how the import intensity of intermediate goods and services affects productivity in EU countries (the import intensity is defined as import of services as a share of total services purchased). We expect this impact to be positive since EU firms will benefit from cost reductions and a better resource allocation, cf. Figure 1.13. These studies are summarised in Appendix Table 2.

Most of the studies find that importing intermediate goods has a positive and significant impact on EU firms' overall productivity. Criscuolo and Leaver (2006), for example, find that a 10 percentage point increase in import intensity is associated with a 0.37 percent increase in total factor productivity (TFP).[6]

The size of the productivity gains turns out to depend on the nature of the imported intermediates. Görg and Hanley (2005) as well as Andersson, Karpaty and Kneller (2008) find that the productivity gains are larger for imports of material inputs than for services. Also, Görg, Hanley and Strobl (2008) find that the productivity gains from importing service inputs take longer to materialise.

There are also sectoral differences. Girma and Görg (2004), for example, find that the productivity gains are less pronounced in electronic firms compared to chemical and engineering firms in the United Kingdom. In their study of the Irish electronic sector, however, Görg and Hanley (2005) find that these firms have gained productivity by importing intermediate goods. Results might there-

[6] Total factor productivity accounts for effects in total output not caused by inputs of production (e.g. labour and capital).

fore also differ across home countries but the number of comparable country studies is too limited to draw conclusions.

Overall, the studies summarised in this section find that EU firms in the manufacturing as well as in the service sectors have improved their productivity by establishing foreign affiliates although the gains in the service sector seem to be slightly smaller and take longer to materialise. Likewise, we find that importing intermediates goods leads to significant productivity gains, but the results suggest that the gains from importing service inputs are smaller and take longer to show up than the gains from importing materials (manufactured intermediate inputs used in the production of goods and services).

2.2. Outward FDI brings productivity gains to EU industries

Positive impacts of investing and locating abroad on the individual firm will not necessarily show up in more aggregate studies, where the productivity in the industry as a whole is being analysed. On the one hand, growth of a highly productive firm is likely to improve the productivity of other firms within the same industry and in other industries by increasing competition and providing positive technological and managerial knowledge spillovers. On the other hand, international investments and relocations are also likely to replace domestically produced products and will therefore have a negative impact on other firms.

The industry-level studies are summarised in Table 2.1. There is not much empirical evidence regarding industry-level impacts of outward FDI (three studies) and international sourcing (three studies). In general, the studies find that TFP gains experienced by the individual firms also show up in the manufacturing industries as a whole. Little is known about the impact of international investments and relocations in the service sector.

Table 2.1 Impacts on productivity in the industry

Author(s)	Description of study	Finding
Egger et al. (2001)	Effects of international sourcing on TFP growth in Austrian manufacturing industries over the period 1990-1998.	Sourcing to the East improves TFP growth but possibly less in low-skill, labour-intensive industries and more in capital-intensive ones.
Egger and Egger (2006)	Effects of international sourcing on unskilled workers' labour productivity in EU12 manufacturing industries over the period 1992-1997.	A 1% increase in international sourcing lowers productivity by 0.18% in the short run but increases productivity by 0.53% in the long run. The increased offshoring since 1993 alone accounts for a long run increase of about 3.3% in the real value added per unskilled worker.
Daveri, Iommi and Jona-Lasinio (2006)	Productivity effect of domestic and international sourcing in 60 Italian manufacturing industries over the period 1995-2003.	International sourcing of intermediates is positively related to productivity growth.
Driffield et al. (2005)	Impacts of outward FDI on TFP in the UK manufacturing sector. The study distinguishes between four different types of host countries: (1) high R&D and high labour costs, (2) high R&D and low labour costs, (3) low R&D and low labour costs, and (4) low R&D and low labour costs. High (low) R&D countries have a higher (lower) R&D level than the UK, and high (low) wage countries have a higher (lower wage level than the UK.	FDI to two types of host countries has a positive impact on productivity in the UK manufacturing sector: (1) low R&D and low labour cost countries and (2) high R&D and high labour cost countries. The two other types of FDI included in the study are found to have no impact on productivity: (3) low R&D and high labour cost countries, and (4) high R&D and low labour cost countries.
Pottelsberghe de la Potterie and Lichtenberg (2001)	Effects of outward FDI on TFP in 22 industrialised countries.	A country's productivity increases if it invests in R&D intensive foreign countries.
Bitzer and Görg (2009)	Impacts of outward FDI on TFP in manufacturing industries in 17 OECD countries over the period 1973-2001.	In France, Poland, Sweden, the Czech Republic and the UK there is a positive productivity gain from outward FDI. The impact is negative in Germany, Denmark, Spain and Italy.

Source: Copenhagen Economics.

The results also show that the productivity gains are larger in capital-intensive (Egger et al., 2001) and R&D-intensive industries (Driffield et al., 2005 as well as Pottelsberghe de la Potterie and Lichtenstein, 2001) compared to other industries. This means that the productivity gains from investing and sourcing abroad are even more pronounced when they foster technological progress. This is supported by Goedegebuure (2006) who finds that the positive impact of outward FDI on the domestic economy stems mainly from its supportive role for domestic R&D. Another result comes from Nordas, Miroudot and Kowalski (2006) who identify four possible channels through which outward FDI might affect productivity: better resource allocation, deepening specialisation, higher return to investment in capital and R&D, and technology spillovers. They find that only technology spillovers have an impact on long run productivity growth.

Egger and Egger (2006) find that the productivity gains are larger in the long run than in the short run. The explanation offered by the authors is that firms cannot perfectly adjust factor usage in the short run. In particular, labour markets need time to adjust. This means that the firm might not be able to reduce costs upfront, while the costs of investing and locating abroad are paid immedi-

ately. Also, the gains in terms of improved access to international markets and new technology might only show up in the longer run.

Overall, the empirical literature finds that outward investments and international sourcing by EU firms have increased the competitiveness of EU manufacturing industries. The gains are particularly large when the activities give access to new technology and knowledge. Also, the impact turns out to be larger in the longer run.

2.3. FINAL NOTES AND INTERPRETATIONS

The empirical studies reviewed in this study find that EU outward FDI has made a positive and significant contribution to EU firms' productivity in both the manufacturing and service sectors. These productivity gains are also prevalent in the EU manufacturing industry as a whole, where technology and knowledge spillovers play an important role for catalysing these productivity gains. However, gains in the service sector and from importing service inputs seem to be smaller and take longer to show up.

It is important to notice that the positive experiences in the past may not carry over to future investment. Vahter and Masso (2005) find that it is only the most productive firms which become multinationals. The second most productive firms serve foreign markets through export. This suggests that firms which stood to benefit the most from investing abroad did so first and reaped the greatest benefits – so perhaps the remaining firms will not gain so much from investing abroad. However, it might also be the case that other firms in the home country will benefit from the experiences made by the frontrunners, which will make it easier for other firms to make their own international investments in the future.

Most of the empirical papers on the impacts of outward FDI focus on the manufacturing sector and little is known about outward FDI in the service sector. One explanation is probably that outward FDI in the service sectors is not very labour-intensive and is therefore not so interesting from a labour market point of view (see Chapter 1). However, analysing the impact of international investments in the service sector on the competitiveness of EU firms could be of great interest. Such research should take the time dimension into account since the gains of outward FDI in services might take time to materialise.

Chapter 3 IMPACTS OF OUTWARD FDI AND INTERNATIONAL SOURCING ON EU EMPLOYMENT

EU firms' investments out of the EU appear to be good for their home employment. We find that establishing foreign affiliates stimulates employment in the parent company or, alternatively, saves jobs in firms which are under competitive pressure. For already established multinational firms, employment in the EU parent company does not seem to be competing with employment in foreign affiliates. Furthermore, we do not find that establishing a foreign affiliate has an impact on the skill structure in the EU parent company.

There are only a few studies which analyse the impacts on employment when EU firms move part of their production abroad and start to import intermediate goods. In general, these studies find no impact on employment. This suggests that the positive scale effect due to productivity gains (as explained in Chapter 2) is sufficiently strong to outweigh the negative impacts of downscaling domestic production.

However, positive or neutral effects at the firm level may come at the expense of employment in other domestic firms in the value chain (mainly competitors and suppliers), and it is therefore important to look at employment effects at the industry level. We do not find empirical evidence of a negative impact of EU outward FDI on employment in the manufacturing or service industries in EU countries.

However, one could argue that globalisation primarily affects the composition, rather than the level of employment over the longer run since laid off workers find new employment either within the industry or in other industries. The majority of the studies summarised in this chapter find that outward FDI has a negative impact on the demand for unskilled labour. A case study from Denmark also finds that workers who are laid off find new jobs as quickly as workers who are laid off for other reasons. However, the study also finds some indication that unskilled workers that are being laid off due to international sourcing are unemployed for longer than workers who are laid off for other reasons.

This chapter reviews the empirical linkages between employment and outward FDI undertaken by EU firms. Section 3.1 addresses the impacts on employment and skill structures in individual EU firms. Section 3.2 reviews the empirical findings on industry-wide impacts of EU outward FDI on home employment. Section 3.3 focuses on how outward FDI impacts on the skill structure in the EU economy. Finally, Section 3.4 concludes and highlights some of the implications of our findings.

3.1. OUTWARD FDI STIMULATES EMPLOYMENT IN EU FIRMS

Most of the empirical evidence at the firm level finds that outward FDI may have a negative immediate impact, but has a positive medium to long run impact on employment in the investing firms.

Regarding employment, the empirical studies focus mainly on four aspects of the investment decision of EU firms:

- Are there differences in employment between firms that establish a foreign affiliate and comparable firms that do not make such investments?
- What is the relationship between workers in the parent company and workers in the foreign affiliate? Do they compete over jobs (substitutes) or do they share the benefits (complements)?
- How does outward FDI impact the skill intensity in the parent company?
- How does the import of intermediate goods and services impact on employment in the investing firm?

Impacts on employment of opening a foreign affiliate

This group of studies analyses the labour market impact of EU firms that have established a foreign affiliate. Worries have been expressed that this kind of outward FDI substitutes for export so that production and employment in the parent company are at risk. However, employment increases if demand for headquarter services increases and if the improved competitiveness of the investing firm drives up employment through a positive scale effect.

The empirical evidence summarised in this study suggests that the net impact of these counteracting forces is positive on average. Hijzen, Jean and Mayer (2009), for example, find that French manufacturing firms which open foreign affiliates in developed countries during 1988-1998 on average experienced 25 percent higher employment after 3 years compared to similar firms which did not invest abroad. The study also finds that there is no significant difference between employment in manufacturing firms which establish in less developed countries and those firms that do not invest. We expect firms that invest in developed countries to be driven by market-seeking motives. Likewise, firms that invest in less developed countries presumably do so for factor-seeking purposes. The French data show a positive effect of the first type of investment and no effect on employment of the second.

There is some indication that the positive employment effect is larger in services than in manufacturing. This is the case in Masso, Varblane and Vahter (2007), for example, who studied the experiences of Estonian firms who established affiliates abroad over the period 1995-2002.

The relationship between parent employment and affiliate employment

This group of studies analyses the relationship between employment in the parent company and in the foreign affiliate over time. Here, the main purpose is to assess whether workers in the parent company compete with workers in the foreign affiliates, i.e. if the two types of workers are substitutes. This question is important since the Eurostat survey found that the majority of the functions which are being sent abroad actually stay within the enterprise group, cf. Chapter 1.

The empirical studies of the relationship between employment in the parent company and the foreign affiliate are summarised in Appendix Table 4. The findings suggest that there is a neutral or even positive relationship between employment in the parent company and in the foreign affiliate. Workers abroad and at home might be competing over jobs before the establishment of a foreign affiliate (i.e. if the EU firm establishes a foreign affiliate in order to take advantage of low wages in the host country). But once the investment has taken place the two types of workers supplement each other. However, the methodologies used in these studies are very different which makes it difficult to make generalisations.

There are very few studies that focus on EU *outward* FDI. To explore the possible effects, we therefore draw on the literature that has analysed the part of intra-EU FDI which takes place through the establishment of Western EU foreign affiliates in Eastern EU countries. Voices have been raised that this type of FDI moves manufacturing jobs from high-wage Western EU countries to lower-wage Eastern EU countries. There are at least five comparable studies that have estimated the impact of establishing foreign affiliates in Eastern EU countries on employment in parent companies located in Western EU countries (see Box 3.1 for further details).

Box 3.1 Do jobs move from Western EU countries to Eastern EU countries?

There are five comparable studies that analyse how the establishment of foreign affiliates in Eastern EU countries affects parent company employment in Western EU countries. A positive relationship between affiliate wages and employment in the parent company would indicate that workers in the parent company compete with workers in the foreign affiliates.

Konings and Murphy (2001)	On average, relocation of parent companies' jobs to foreign affiliates takes place between parent companies and their subsidiaries located in other Western EU countries, not between parents and their subsidiaries in Central and Eastern EU countries. The relocation of jobs is mainly driven by firms that operate in the manufacturing sector. For firms that operate in the service sector there is generally no evidence of employment relocation. However, for firms that operate in the wholesale sectors (distribution) there is relocation to the lower-wage subsidiaries in Central and Eastern EU countries.
Konings (2004)	Employment relocation from Western EU countries to Eastern EU countries is not taking place, but there is evidence of employment relocation within high-wage EU regions.
Konings and Murphy (2003)	There is relocation of jobs from parent firms that operate in the manufacturing sector to Northern EU affiliates. Employment substitution is stronger when affiliates operate in a different sector than their parent firm. There is no evidence of substitution between parent employment and employment in its affiliates located in low-wage regions in the EU. Furthermore substitution effects are absent for parent firms operating in the non-manufacturing sector.
Falk and Wolfmayr (2008)	Only limited evidence of substitution between employment in the parent companies in Western EU countries and their affiliates in the Eastern EU countries. In particular the study finds that substitution is higher between employment in affiliates in high-wage countries and in the parent company than between affiliate employment in the Eastern EU countries and parent company employment in Western EU countries.
Cuyvers et al. (2005)	This paper distinguishes between low-skill intensive sectors (food, textiles, wood, minerals and metals) and high-skill intensive sectors (paper, chemicals, non-electrical machinery, transport equipment and professional goods). While there is evidence of sectoral differences in the effect of outward FDI on parent firm labour demand, these differences do not seem to be driven by differences in skill intensity. Also, in most sectors, parent firm employment in Western EU countries is negatively affected by production in affiliates in Eastern EU countries which indicates a substitution effect between workers in Western and Eastern EU countries.

Source: Copenhagen Economics.

These studies indicate that:

- Employment in the parent company in Western EU countries does not seem to be competing with employment in foreign affiliates located in Eastern EU countries.
- Employment in the EU parent company in Western EU countries seems to be competing with employment in foreign affiliates based in other Western EU countries.
- There are sectoral differences but there is no indication that differences are driven by differences in skill intensity.

Impacts on the skill structure in investing firms

The third group of studies analyses the impact of EU outward FDI on the skill structure of investing firms. We do not expect the skill structure in the parent

company to change significantly as a result of opening a foreign affiliate. However, outward FDI might have a positive impact on skilled employment at home if headquarter services are more skill intensive than the outsourced functions.

Our expectations are confirmed by the findings in the empirical literature as summarised in Appendix Table 5. In most cases, the impact of outward FDI on the skill intensity of the investing firm is neutral or even positive. Castellani et al. (2008), for example, find that firms which invested in Central and Eastern European countries during 1998-2004 experienced some skill upgrading relative to firms that stayed national. However, Blomström, Fors and Lipsey (1997) find that Swedish firms which established foreign affiliates in developed countries during 1970-1994 increased demand for unskilled labour and harmed the employment of skilled workers. These findings indicate that skilled workers are challenged by establishments in developed countries and unskilled workers face competition from establishments in developing countries.

Impacts on employment of starting to invest abroad

There are only few studies that analyse the impact on employment of moving part of the supply chain abroad and starting to import intermediate goods and services. For the period 1997-2004, Hijzen, Upward and Wright (2007) found no evidence that increased imports of intermediate services cause job destruction in the home country. In fact, those firms which outsource service provisions actually grow faster and have faster employment growth. In their study of international sourcing by German firms during 1998-2004, Moser, Urban and di Mauro (2009) also find a positive relationship between imported intermediate goods and employment in the home firm.

However, Castellani et al. (2008) find that there is no impact on employment in Italian manufacturing firms when they start to invest abroad. Also, Böckerman and Riihikäki (2009) examine the employment effects of international sourcing by using firm-level data from the Finnish manufacturing sector. They do not find that intensive international sourcing (more than two times the industry median) over the period 1999-2004 reduces employment nor does it have an impact on the share of low-skilled workers. On the firm level, these findings therefore suggest that the negative relocation impact of moving part of the supply chain abroad is more than outweighed by the positive scale effect due to competitive gains.

3.2. Outward FDI has no measurable impact on industry employment

The impact of outward FDI on employment in the industry is not clear cut. The employees who perform the functions that are being sourced internation-

ally may lose their jobs. However, outward FDI may create more jobs in other business functions.

The findings from a set of studies that analyse the impacts of outward FDI on employment in the industry are summarised in Table 3.1. These studies do not find a negative impact from outward FDI on employment in the industry. Frederico and Minerva (2007) find no impact of outward FDI on employment in the Italian manufacturing industry, Amity and Wei (2005) find no impact of outward FDI on manufacturing and service industries in the United Kingdom, and Amity and Ekholm (2008) find no overall impact of outward FDI on employment growth in Finnish, German, Italian and Swedish manufacturing firms. These findings suggest that the productivity effect is sufficiently strong that new jobs created by increased sales (the scale effect) offset jobs lost because production becomes less labour intensive (the relocation effect).

Table 3.1 Impact of outward FDI on employment in the industry

Author(s)	Description of study	Finding
Frederico and Minerva (2007)	Impact of Italian outward FDI on local employment growth between 1996 and 2001 for 12 manufacturing industries and 103 administrative provinces.	Outward FDI is associated with faster employment growth relative to the national industry average. Employment in small plants is not negatively influenced by higher levels of outward FDI.
Amiti and Ekholm (2008)	Impact of international sourcing of materials and services on manufacturing employment growth in Finland, Germany, Italy and Sweden.	International sourcing of materials input has no impact on employment growth, and only in the case of Italy does international sourcing of services turn out to have a negative impact on employment. Countries with rigid labour market institutions (measured by the difficulty of firing) are more likely to suffer negative employment effects from international sourcing.
Amiti and Wei (2004)	Study of the relationship between international sourcing and employment covering 69 manufacturing industries and 9 service industries in the United Kingdom from 1995 to 2001.	International sourcing of materials has no impact on employment in manufacturing industries whereas there is a positive impact of international service sourcing in the short run. International sourcing of materials and services has a negative impact on employment in the service sector but the impact disappears in the longer run.
OECD (2007)	Impact of offshoring on industry level employment for 26 industries in 12 OECD countries for 1995 and 2000.	There is a negative effect from international sourcing on employment: a 1% increase in international sourcing leads to a 0.15% reduction in employment in manufactures and 0.08% in services.
Hijzen and Swaim (2007)	Uses the same data sources and same years as OECD (2007) but refines the methodology to disentangle relocation and scale effects and extends the country coverage to 17 OECD countries.	International sourcing within the same industry (intra-industry) has no overall effect on employment. When the international sourcing is taking place across industries (inter-industry), labour intensity does not seem to be affected and the scale effects mean that overall offshoring has a positive effect on employment.
Egger and Egger (2005)	Analyses the labour market effects of international sourcing in 21 manufacturing industries in Austria during the 1990s. The study takes industrial interdependencies into account.	International sourcing has a positive impact on employment in all industries. In addition, there are important inter-industry spillovers which are stronger the more important the input-output relations between the industries.

Note: Materials input is defined as manufactured intermediate inputs used in the production.
Source: Copenhagen Economics.

To our knowledge, Amiti and Wei (2005) is the only study that analyses the labour market impacts of outward investments and relocations in EU service sectors. Overall, they conclude that jobs displaced by international service sourcing are likely to be offset by new jobs created in the same sector. In the short tem, however, employment in the service sector seems to be more sensitive to international sourcing of both materials and services.

OECD (2007) and Hijzen and Swaim (2007) base their studies on international sourcing in a number of OECD countries. In their study of 12 OECD countries, the OECD (2007) finds that there is a negative impact of international sourcing on employment in both the manufacturing and the service sectors.

In their study of 17 OECD countries, Hijzen and Swaim (2007) find that international sourcing in the same industry has no overall impact on employment

(i.e. that workers who are being laid off in the investing firm find new employment in other firms within the same industry). When inter-industry employment effects are taken into account this study finds that the impact of international sourcing turns out to have a positive impact on employment.

Overall, these findings suggest that international sourcing in one industry stimulates employment in other industries and that such inter-industry employment dynamics should be taken into account in order to appreciate the full impact of international sourcing on the home economy. This is confirmed by Egger and Egger (2005) who find that disregarding spillover effects leads to a substantial underestimation of the labour market implications of international sourcing in their study of 21 Austrian industries during the 1990s.

However, it is difficult to draw firm conclusions regarding the impact of EU outward FDI on employment in the home country based on studies that include both EU and non-EU countries. In particular, the inclusion of the US in the OECD (2007) and Hijzen and Swain (2007) studies might be problematic since it is uncertain whether the results reflect US experience more than EU experience. This issue could be explored further in future research.

3.3. Outward FDI changes the industry's skill structure

Although we find that establishing a foreign affiliate and moving part of the supply chain abroad have a neutral or perhaps even positive impact on overall employment in the home economy, this does not mean that all EU workers can expect to gain from outward FDI in the short to medium run. In particular, moving part of the supply chain abroad is likely to change the skill structure in the EU industries. This is so because the employees who perform those functions which are being moved abroad may lose their jobs. This means that unskilled workers stand to lose when the EU firm moves part of the value chain to low-wage countries in order to save labour costs. Similarly, skilled workers are likely to lose when EU firms move some skill-intensive functions abroad.

We analyse two aspects of how outward FDI affects skilled and unskilled workers in the industry. First, we look at the impacts of outward FDI on the industry's demand for skilled and unskilled labour. Second, we analyse the impact of outward FDI on skilled and unskilled workers wages shares in the industry.

Impacts of outward FDI on demand for skilled and unskilled labour

A large body of empirical studies have analysed how outward FDI impacts on the industry's demand for skilled and unskilled labour. These studies are summarised in Table 3.2. The majority of these studies find that outward FDI has a negative impact on the demand for *unskilled* labour in the manufacturing in-

dustries. Straus-Kahn (2003), for example, finds that the import of intermediate goods accounted for 11-15 percent of the decline in the share of unskilled workers in French manufacturing employment for the period 1977-1985 and for 25 percent of the decline in the period 1985-1993.

The impact of outward FDI on the French skill structure seems to be quite significant. To put the finding in perspective, the study notes that employment-share differentials between more-educated and less-educated workers in France rose by 95 percent for the 1981-1994 period compared to an increase of only 48 percent in the United Kingdom over the same period. Other factors aside from international sourcing therefore seem to influence the skill structure in the French manufacturing industry.

Driffield et al. (2005) find a negative impact of outward FDI on skilled and unskilled labour demand in the United Kingdom during 1987-1996. The impact gets stronger over time and is particularly severe for unskilled workers since outward FDI to low-cost locations dominates outward FDI in the United Kingdom. However, Falk and Koebel (2002) find no evidence that unskilled labour in the German manufacturing sector can be substituted for either imported materials or purchased services, whereas highly skilled workers tend to be a substitute for purchased services.

Besides carrying out econometric analysis, Egger and Egger (2006) also report results from a simulation analysis, where they show that international sourcing alone can explain about 4 percent of the observed change of skill intensities in overall EU manufacturing and about 18 percent of the change in the import competing industries (industries that are net importers) for the period 1995-1997.

Table 3.2 Impact of outward FDI on the skill structure in EU industries

Author(s)	Description of study	Finding
Egger and Egger (2006)	Effects of international sourcing of low-skill-intensive components of exports and import-competing products on the skill intensity in the home production in EU manufacturing industries over the period 1995-1997.	International sourcing increases the high-skilled to low-skilled ratio in the exporting industries in favour of high-skilled labour. The effect on the import-competing industries is more ambiguous.
Driffield et al. (2005)	Impacts of outward FDI flows on industry level employment for 11 UK manufacturing industries in 13 destination countries during 1987-1996.	Negative impact of outward FDI on skilled and unskilled labour demand. The impact gets stronger over time and is particularly severe for unskilled workers since outward FDI to low-cost locations dominates the UK outward FDI.
Hansson (2000)	Impacts of total import on the change in skilled workers employment share for Swedish manufacturing industries over the period 1970-1993.	Intensified competition from the South has increased the relative demand for skilled labour. However, the impact seems to be small and to be driven by the textile industry.
Straus-Kahn (2003)	Impacts of imported inputs as a share of industry production (vertical specialisation) on the share of unskilled employment for French manufacturing industries during 1977-1993.	International sourcing accounted for 11% to 15% of the decline in the share of unskilled workers in French manufacturing employment for the period 1977-1985 and for 25% of the decline during 1985-1993.
Helg and Tajoli (2004)	Tests whether the shift in intensity of skilled and unskilled labour employed in Italy and Germany during the 1990s is related to the international sourcing intensity in the manufacturing sector over the period 1988-1997.	Part of the increase in the ratio of skilled to unskilled labour in Italy is linked to international sourcing but there is no impact on the German demand for skilled labour.
Falk and Koebel (2002)	Examines the price elasticities between imported materials and purchased services in the German manufacturing sector during 1978-1990.	No evidence that unskilled or skilled labour can be substituted for either imported materials or purchased services.
Böckerman and Riihimäki (2009)	Examines the employment effect of international sourcing on the Finnish manufacturing sector during 1999-2004.	International sourcing has a negative impact on industry employment of unskilled workers.

Source: Copenhagen Economics.

Overall, the empirical literature finds that international investments and relocations by EU firms harm unskilled workers in the home country by reducing their employment. This results is confirmed by a Danish case study, cf. Box 3.2.

Box 3.2 Danish case study

In the context of the Eurostat survey of international sourcing in EU countries, the Danish Ministry of Economic and Business Affairs initiated an in-depth study of the labour market consequences of Danish sourcing activities during 2001-2006. The study finds that 6,300 jobs have been moved abroad due to international sourcing by Danish firms. At the same time, international sourcing created 2,900 jobs through increased administrative requirements. For comparison, we note that 260,000 jobs are being created and destroyed every year for other reasons than international sourcing.

Thus, the number of job layoffs due to international outsourcing is relatively small compared to the number of jobs which are lost for other reasons.

The study also finds that workers who are laid off find new jobs as quickly as workers who are laid off for other reasons. However, there is some indication that unskilled workers that are being laid off due to international sourcing are unemployed for longer than workers who are laid off for other reasons.

Source: Danish Ministry of Economic and Business Affairs (2008).

Impacts of outward FDI on the wage shares in the industry

A large number of wage/cost share studies are summarised in Appendix Table 6. The literature generally finds that unskilled workers' share of total wages decreases due to outward FDI. Hijzen, Görg and Hine (2005) estimate the empirical relationship between the wage share of unskilled workers and the level of international sourcing in the United Kingdom during 1982-1998. They find a clear negative impact of importing intermediate goods on the wage share of unskilled workers.

In his study of outward FDI by manufacturing firms in the United Kingdom during 1993-1998, Hijzen (2003) finds that it makes a significant difference if one uses the so-called "narrow" or "broad" offshoring measure. The narrow offshoring measure refers to imported intermediates from the same industry as a share of the total output value (or total intermediate purchased). The broad offshore measure is related to total imported intermediates as a share of the total output value (or total intermediate purchased). When the narrow offshoring measure is used, the study finds a negative impact on the unskilled workers wage share. However, when the broad offshoring measure is being used, the impact turns out to be positive. This finding suggests that workers that are being laid off in one industry find new employment in other industries.

The negative impact on unskilled workers' wage share can be explained by either lower employment or lower wages of unskilled workers (or a combination of the two). The previous section found that unskilled workers' face lower employment when EU firms make international investments or relocations. There is not much empirical analysis of how such international activities impact on unskilled workers' wages. One study is Geishecker and Görg (2007) who find that international sourcing by German firms during 1991-2000 reduced the real wage for unskilled workers by up to 1.5 percent while it increased real wages for high-skilled workers by up to 2.6 percent.

3.4. FINAL NOTES AND INTERPRETATIONS

EU firms' investments out of the EU appear to be good for their parent company employment. This finding suggests that the negative impact on labour demand from reduced export of goods produced domestically is more than offset by a positive scale effect due to improved market access abroad. In fact, evidence from Lipsey, Ramstetter and Blomström (2000) shows that Swedish outward investment and exports are positively – not negatively related.

There is some indication that firms in the service sector demonstrated a stronger parent company employment effect than manufacturing firms. One explanation for this finding is that outward FDI in the service sector is likely to be the only way to access new markets, whereas foreign markets more often can be reached by export in the manufacturing sector.

The skill structure in the parent company does not seem to be affected by the establishment of foreign affiliates abroad. Also, the impact of importing intermediate goods on the skill structure in individual EU firms is not very well documented.

We do not find empirical evidence of a negative impact of outward FDI on overall employment in EU manufacturing industries. More research is needed in this area, and the findings in this report suggest that such a study should take both intra- and inter-industry effects into account.

We find that outward FDI by EU firms has a negative impact on the employment and wage share of unskilled labour in the manufacturing industries. Since the impact on overall employment is neutral, it seems to be the case that the costs for laid off unskilled workers are transitory since those workers who are laid off find new employment, even in the short to medium run. The transitory costs of unemployment to some workers could be reduced by implementing labour market policies which would support laid off workers in finding a new job quickly.

We find indications that jobs displaced by service sourcing are likely to be offset by new jobs created in the same sector. In the short run, however, employment in the service sector seems to be more sensitive to international sourcing of both materials and services. However, there is little empirical analysis of these issues and more research is required.

Chapter 4 QUANTIFYING THE ECONOMIC GAINS FROM EU OUTWARD FDI

Based on Chapters 2 and 3 we find that:

- There is a positive impact of EU outward FDI on productivity in the investing firms and in most cases also on overall productivity in the manufacturing industry. This implies that productivity gains in the investing firm spill over to productivity in other firms.
- There is a positive impact of EU outward FDI on employment in the investing firms while we find no impact on employment at the industry level.

The overall aim of this report is to assess the impact of EU outward FDI on EU competitiveness and employment. Since overall home employment does not seem to be affected by EU outward FDI, this chapter will focus on assessing the size of the productivity gain achieved from undertaking outward FDI. Section 4.1 discusses the contradictions between the neutral employment effect found in the empirical literature and the anecdotal evidence of job losses due to international investment and sourcing. Section 4.2 sets out our methodology to quantify EU productivity gains. Section 4.3 presents our results and, finally, Section 4.4 concludes.

4.1. NO IMPACT OF OUTWARD FDI ON OVERALL EMPLOYMENT

There is a large amount of anecdotal and direct evidence of negative labour market impacts of outward FDI. The European Restructuring Monitor (a provider of up-to-date news and analysis on major company restructuring in Europe), for example, finds that a total of 739,775 jobs have been lost due to EU firms' restructuring activities during 2002-2004. These large-scale layoffs have concerned EU workers and since such internal restructurings have occurred amidst accelerating globalisation, this has led to fears of job relocations abroad.

However, data from the European Restructuring Monitor find that the employment dynamics caused by international relocations (35,515) and international outsourcing (18,335) are minor compared to planned job reductions due to internal restructuring, cf. Table 4.1. Although the European Restructuring Monitor data base does not capture all jobs lost due to outward FDI, the numbers indicate that the absolute number of job losses due to outward FDI is likely to be small. This was also the finding of the Eurostat survey of international sourcing by EU firms as reported in Chapter 1.

Table 4.1 Job losses associated with major EU firm restructuring, 2002-2004

Type of restructuring	Planned job reductions	% planned job reductions	Number of restructuring cases	% of restructuring cases
Internal restructuring	560,557	75.8	860	64.5
Bankruptcy/closure	100,666	13.6	296	22.2
Relocation	36,513	4.9	91	6.8
M&A	22,884	3.1	48	3.6
Offshore outsourcing	18,335	2.5	13	1.0
Other	820	0.1	26	2.0
Total	739,775	100	1,334	100

Source: European Restructuring Monitor (2004).

If the number of jobs lost due to outward FDI is small then we do not expect the impact to be significant in econometric analyses. And even if the numbers reported in the Eurostat survey and the European Restructuring Monitor underestimate the actual number of jobs lost due to outward FDI we still expect a number of factors to counterbalance the negative impact and which might even lead to a positive impact of outward FDI on employment in the longer run.

First, the anecdotal and direct estimates of job losses do not take into account that the alternative to outward FDI might not be so attractive either. EU firms invest abroad in order to stay competitive, and outward FDI may in this way carry the potential to save jobs in industries that are under pressure from their international competitors. In most cases, the firm level studies summarised in Chapter 2 and 3 compare the performance of firm which carry out outward FDI with (almost) identical domestic firms which do not invest abroad. Their findings of a superior performance of investing firms suggest that the net job impact is positive, i.e. that more new jobs are created in place of those that are being destroyed. The job creation (or job saving) impact of outward FDI is not taken into account in the anecdotal and direct estimates of EU job losses.

Second, and related to the argument above, the anecdotal and direct evidence does not take into account that outward FDI might bring positive intra-industry and inter-industry spillovers. The growth of a highly productive firm in the EU industry is likely to lead to managerial and technological spillovers and to intensify competition within the industry as well as in other industries. This will benefit other firms and stimulate their employment.

Third, estimates of job losses only take the immediate employment effects of outward FDI into account. Firms which establish foreign affiliates or move part of their production abroad most often gain productivity and competitiveness (see Chapter 2). Over time such competitive gains are likely to trigger increased employment, and this positive impact on employment will outweigh some or all of the initial layoffs that potentially followed from the outward FDI activities of the investing firm.

Fourth, it is important to keep in mind that outward FDI is only one side of the coin. Globalisation has also accelerated inward FDI flows (see Chapter 1), and such foreign investments in EU markets are likely to increase labour demand and employment in the host countries.

Overall, we find that there are good reasons to rely mainly on empirical analyses of the labour market impacts of outward FDI. Since the empirical studies summarised in this report find that the impact of outward FDI on average is neutral (or possibly even positive) we focus on quantifying the impact of productivity gains on the EU economy.

4.2. OUR METHODOLOGY TO QUANTIFY EU PRODUCTIVITY GAINS

Economic income basically depends on technology and the availability of production factors (labour and capital). In order to assess the impact of outward FDI on GDP in EU countries we therefore need to quantify:

- *The impact of outward FDI on the technology level in the EU.* The technology level is typically measured by total factor productivity. Chapter 2 found that outward FDI has a positive impact on productivity in EU industries.
- *The impact of outward FDI on employment*. Chapter 3 found that outward FDI has no significant impact on the overall employment in EU industries (in some cases we find a small positive impact).
- *The impact of outward FDI on capital accumulation*. Capital accumulated is closely related to domestic investments. Outward FDI might replace domestic investments since capital is typically scarce in supply. At the same time, however, outward FDI is likely to raise the profitability of the investing firm, and the firm might therefore be able to increase the amount of capital available for domestic investments. The empirical literature finds support for both arguments, cf. Box 4.1, and we therefore take the conservative stance and carry out the analysis under the assumption that outward FDI does not have a significant impact on domestic investments.

Box 4.1 The relationship between outward FDI and domestic investments

Arguments can be put forward for both a positive and negative relationship between outward FDI and domestic investments. If firms face an upward sloping supply curve of capital (i.e. that the price of capital increases the more capital is demanded), then outward FDI is a substitute for domestic investment. This is so because the decision to undertake a foreign investment project would raise the investment costs for subsequent domestic investments. At the same time, outward FDI could have a positive impact on domestic investment if it raises the profitability of the investing firms and increases the amount of capital available for investments. There are other complications of the issue.

First, there is a time dimension of the effect of outward FDI on domestic investments which needs to be taken into account. Kokko (2006) points out that the initial capital outflow might be expected to be offset by subsequent inflows of repatriated profits, but it is not clear how long this process will take. Herzer (2008), for example, finds that OFDI has negative short-run and positive long-run effects on domestic investment *Second*, Namini and Pennings (2009) find that horizontal multinational activity (copying the whole production chain to foreign affiliates) always leads to a complementary relationship between domestic and foreign investment. Vertical multinational activity (copying part of the production chain to foreign affiliates), in contrast, leads to either a substitutional or complementary relationship between domestic and foreign investment, depending on the firms' technologies. *Third*, there is a serious causality issue. Herzer (2008), for example, finds that the long-run causality between outward FDI and domestic investments is bi-directional, which suggests that increased outward FDI is both a cause and a consequence of increased domestic investment.

Some of the empirical studies are summarised below. These studies find that the impact of outward FDI on domestic investments depends on a wide range of factors: type of outward FDI (e.g. the relationship between the parent company and the foreign affiliate), sectoral differences (e.g. R&D intensity), home country (e.g. US results do not seem to apply to EU countries) and industrial structures (e.g. dominance of multinational firms). Overall, these studies do not reach conclusive results either:

- In a study of Dutch industries (food, metal and electronics), Belderbos (1992) provides evidence of a substitution effect. If the Netherlands as an investment site becomes less attractive relative to foreign locations, then Dutch multinationals will allocate more capital abroad and invest less domestically, and vice versa.
- Braunerhjelm and Oxelheim (2000) find significant differences across industries in Sweden. A strong substitutionary relationship between outward FDI and domestic investment was found for more R&D-intensive production, whereas the opposite pattern seems to prevail for production based on traditional comparative advantages.
- Feldstein (1994) finds that each dollar of outward FDI reduces domestic investment by approximately one dollar in major OECD countries.
- Goedegebuure (2006) provides empirical evidence that investments in R&D are positively correlated with outward FDI, especially in high-tech industries and companies. In addition, there is evidence that capital investments are also positively correlated with outward FDI. Overall, the analyses indicate that there outward FDI does not have a negative impact on domestic investments in R&D.
- Desai, Foley and Hines (2005) find that OECD countries with high rates of outward FDI in the 1980s and 1990s exhibited lower domestic investment than other countries, which suggests that FDI and domestic investment are substitutes. However, for US time series data they find that years in which American multinational firms had greater foreign capital expenditures coincide with greater domestic investments by the same firms.
- Arndt, Buch and Schnitzer (2007) find that the effect of outward FDI on the domestic capital stock depends on the structure of industries and the relative importance of domestic and multinational firms. Using data on German outward FDI they find a positive long-run impact of FDI on the domestic capital stock.
- Sauramo (2008) uses data for Finland during the period from 1965 to 2006. The study finds that outward FDI decreased domestic investments. The relationship is a one-to-one trade-off: one Euro abroad decreases domestic investment by one Euro in the long run.

Since outward FDI does not seem to have a measurable impact on employment and domestic investments, it is productivity gains (technological progress) that

spill over into GDP gains. This means that we can use the empirical results from Chapter 2, which linked outward FDI to productivity in EU industries.

We use the results from Bitzer and Görg (2009) to quantify the productivity impact of EU outward FDI in the EU manufacturing industries. Bitzer and Görg (2009) estimate the elasticity of home country productivity with respect to outward FDI in 17 OECD countries across 10 manufacturing sectors during the period 1973-2001. These elasticities tell us how much productivity in a particular country will increase from a 1 percent increase in the outward FDI stock.[7] Since the elasticities are country-specific, the inclusion of non-EU countries in the sample (most notably the US) does not have an impact on the productivity impact of outward FDI. This is one of the main advantages of this study compared to others which are based on a large number of countries, and where the estimated elasticities therefore reflect an average across all the countries in the sample.

Combining these elasticities with data on developments in the outward FDI stock over the time period, we can calculate how much GDP has increased or decreased for the individual EU countries in the sample. We can then aggregate in order to get an EU total. The results are presented in the next section.

4.3. OUR FINDINGS

In most of the EU countries included in the sample, Bitzer and Görg (2009) find that outward FDI has had a positive impact on productivity in the manufacturing industry, cf. Table 4.2.

Table 4.2 Quantifying the EU productivity gain

Country	Elasticity of productivity with respect to outward FDI (%)	Increase in outward FDI 2001-2006 (%)	GDP in 2001 (million €)	Gain in GDP 2001-2006 (million €)
Germany	-0.0233	-15.0%	2113160	7406
United Kingdom	0.0500	7.7%	1643154	6326
France	0.0124	10.8%	1497187	2002
Italy	-0.0119	-6.4%	1248648	953
Netherlands	0.0000	14.4%	447731	0
Sweden	0.0186	-6.4%	251340	-298
Denmark	-0.0088	24.3%	179226	-384
Finland	0.0000	-44.2%	139789	0
Total			**7520235**	**16006**

Note: Together the eight countries account for 97 percent of the total EU ODI stock in 2001.
Source: Data on elasticities are from Bitzer and Görg (2009). Data on the EU ODI stock are from Eurostat.

[7] Since the host countries include both EU and non-EU countries, we use the average productivity impacts under the assumption that there are no systematic difference between the impact of investing in EU and non-EU countries.

In the United Kingdom, a 1 percent increase in the outward FDI stock will increase productivity by 0.05 percent. In Germany, the study finds that the outward FDI stock has had a negative impact on productivity although the impact is smaller than in the United Kingdom. However, it is important to keep in mind that the German outward FDI stock has dropped over the period 2001-2006, which explains the negative relationship between productivity gains and international investments.

On the aggregate level, we find that the productivity gain due to outward FDI has increased GDP in the eight EU countries listed in the table by €16 billion. This amounts to an increase of 0.002 percent in their total GDP. If we extrapolate these findings, a 0.002 percent increase in EU27 GDP over the period 2001-2006 amounts to more than €20 billion. When we use the wage share of 0.63 percent from Roeger (2006) this means that EU workers have increased their income by almost €13 billion, cf. Box 4.2.

Box 4.2 Wage share calculations

The wage share calculations follow Roeger (2006) and are based on the standard Cobb-Douglas production function. Within this national accounting framework, growth of economic income stems from technology (A), capital (K) or labour (L). Technology is typically captured by total factor productivity (TFP). α is the capital share and 1-α is the wage share. The wage share reflects labour costs as a share of total costs.

The Cobb-Douglas production is given as: $Y = AK^{\alpha}L^{1-\alpha}$

The empirical specification assumes that there is constant return to scale and that there is perfect competition. The study then uses data for total output, capital accumulation and employment for the EU15 countries over the period 1960-2003. The study finds that the output elasticity of labour (the wage share) is 0.63.

From the partial derivatives of the Cobb-Douglas production function we see that

- The elasticity of GDP with respect to technology is $\partial Y/\partial A = 1$. This means that a one percent increase in TFP increases GDP by one percent.
- The elasticity of GDP with respect to labour is $\partial Y/\partial L = 1 - \alpha$. As Roeger (2006) we fix the empirical wage share to 0.63. This means that a one percent increase in employment increases GDP by 0.63%.

Source: Copenhagen Economics.

The empirical studies summarised in this report find that while there has been no impact of outward FDI on overall employment, demand for unskilled labour has decreased. Also, the literature generally finds that unskilled workers' wage share decreases due to outward FDI. We therefore expect that the increased income of EU workers will not be evenly distributed between skilled and unskilled workers, but rather that skilled workers are likely to gain relative to unskilled workers. The empirical literature seems to find that the increased income of skilled workers in the EU manifests itself both in increased employment and higher wages.

4.4. FINAL NOTES AND INTERPRETATIONS

This chapter finds that anecdotal and direct estimates of job losses due to outward FDI do not paint the full picture. *First*, although the numbers might seem

large in absolute terms they are actually quite small in relative terms (i.e. when we compare with job losses for other reasons). *Second*, these numbers do not take into account what might have happened if the EU firm had not invested abroad. In some cases, the firm might have experienced a loss of competitiveness which could translate into significant job losses over time. *Third*, an assessment of the labour market impacts of outward FDI needs to take into account that outward FDI has the potential to generate positive spillover effects for other EU firms. Jobs destroyed in one firm might therefore be recreated in other functions within the same firm (leaving firm level employment unchanged) or within other firms (leaving industry level employment unchanged). And, *fourth*, outward FDI takes place in parallel with inward FDI flows, which are likely to stimulate EU employment.

We find that the productivity gain due to outward FDI has increased the EU GDP by €20 billion. This amounts to an increase of 0.002 percent in EU GDP. We find that EU workers have increased their income by almost €13 billion. However, skilled workers have probably received a larger share of this income than unskilled workers.

Chapter 5 THE FUTURE PATTERN OF EU OUTWARD FDI

Technological developments have reduced historic barriers to outward FDI, and EU firms have adjusted their organisational framework in order to achieve competitive gains from outward FDI activities.

EU outward FDI has increased over the last decade, and there is no reason to expect this tendency to slow down or reverse. Factor-cost differentials between countries in the EU and in less advanced countries will continue to make it attractive for EU firms to shift functions to foreign production sites. Likewise, the opening of new geographic markets and the launching of new products will encourage EU firms to continue to establish foreign affiliates abroad.

However, there are reasons to believe that the *types* of jobs which are affected by EU outward FDI are likely to change. This is so because technological advancements have made many service jobs potentially offshorable. Since service functions are relatively skill intensive we expect that the demand for some types of skilled labour will decrease. Rather than increasing inequality between unskilled and skilled workers (as seems to have been a consequence of the past outward FDI), moving service jobs abroad is therefore more likely to increase inequality between different types of skilled workers. However, one important lesson to be drawn from this report is that overall EU employment will not necessarily suffer when service functions are being located abroad.

5.1. SERVICE JOBS ARE VULNERABLE TO OFFSHORING

There is general agreement about many of the characteristics of service jobs which make them vulnerable to being relocated abroad. These characteristics include high informational content of the work product, ability to use technology to deliver the product and lack of a need for physical proximity to the client, cf. Table 5.1.

Table 5.1 Occupations potentially at risk of being moved abroad

Authors	Characteristics of jobs at risk of being moved abroad	Estimated number of jobs potentially at risk of being moved abroad
Bardhan and Kroll (2003)	1. High information content. 2. No face-to-face customer service requirement. 3. Work processed telephonically or electronically (Internet). 4. High wage differential with same/ similar occupations in host country. 5. Low set up barriers. 6. Low social networking requirement. 7. Tasks reducible to a set of instructions with measurable output.	15 million service jobs or 11.7 percent of US workforce in 2003.
McKinsey Global Institute (2005)	1. No physical presence requirement. 2. Little complex interaction with customers (no face to face). 3. Little interaction with colleagues needed (low social networking). 4. Little knowledge of local markets and customs needed.	160 million jobs worldwide or 11 percent of the global workforce in 2003.
Jensen and Kletzer (2005)	"Tradable occupations" are occupations in industries that are geographically concentrated. These occupations can be broken down into discrete functions and moved offshore.	9.4 million jobs or about 9.4 percent of total employment across all US industry sectors in 2000.
Van Welsum and Vickery (2005)	1. Intensive use of information and communications technologies. 2. High informational content. 3. No face-to-face contact required.	Approximately 19.2 percent of total EU15 employment in 2002.
Garner (2004)	1. Labour-intensive: labour makes up a large part of production costs. 2. Information-based: jobs collect, manipulate or organise information. 3. Codifiable–job can be reduced to a routine set of instructions. 4. High-transparency: the information that is exchanged is easy to measure and verify.	14 million service jobs, or 10 percent of total US employment in 2000.

Source: Adopted from National Academy of Public Administration (2006).

More outward FDI in the service sectors is therefore expected in the future. The high wage differential between service functions in EU countries and their counterpart in less advanced countries means that moving service functions abroad is not only feasible but also economically attractive for EU firms. For example, Garner (2004) finds that the average salary of a computer programmer in India is less than a third of that of Ireland. Also, the low cost of establishing service functions abroad compared to moving a full production line abroad is likely to spur this development.

5.2. THE IMPLICATIONS OF INCREASED SERVICE SOURCING

We expect that service functions in EU firms will increasingly be served from abroad. Unfortunately, the empirical evidence does not provide much evidence

about the labour market impact of sourcing service functions internationally. However, there is some indication that the productivity gains from service sourcing are smaller and take longer to materialise. Also, employment seems to be more sensitive to international sourcing of services than materials.

The Monteagudo (2005) points out that outward FDI in services is likely to increase inequality within skilled occupations rather then between unskilled and skilled occupations.

Table 5.2 Comparing outward FDI in manufacturing and in services

Manufacturing	Services
• Impacts unskilled jobs • Affects individual industrial sectors and some specialised occupations within firms • Job losses offset and even reversed by increases in services employment • Leads to increased inequality between unskilled and skilled occupations	• Impacts skilled jobs • Affects individual occupations in many industrial sectors across the economy • May lead to different composition of occupations in the economy; unclear how the labour market adjustment will work • Leads to increased inequality within skilled occupations

Source: Adopted from Monteagudo (2005).

5.3. FINAL NOTES AND INTERPRETATIONS

Although we expect that more service jobs will be moved abroad, this does not necessarily mean that EU employment will contract. Many existing service sectors have expanded, new services have emerged, and ongoing technological developments and services trade liberalisations will imply increased demand for labour in the service sector.

The offshoring phenomenon itself will also create new jobs in the domestic economy (OECD, 2005). The efficiency and productivity gains achieved through offshoring are expected to enhance the overall growth and employment opportunities of both the home and host economies and should result in further job creation (see for example Global Insight, 2004, and Mann, 2003). In addition, jobs created abroad generate demand for EU countries' exports of information technology equipment and communications services immediately and, over time, for a wide range of other goods and services.

Chapter 6 Conclusions

Fears have been raised that outward FDI moves EU jobs abroad. This study finds that outward FDI has had no measurable impact on employment in EU countries. This might be so because the absolute number of jobs lost due to outward FDI is small relative to the number of workers who are laid off due to other reasons. Overall, we find that the net employment effect of outward FDI is likely to be small (or even positive) once we take into account that outward FDI might save jobs, lead to intra-industry and inter-industry spillovers, and improve the competitive stance of EU firms.

We find that outward FDI has a positive impact on EU competitiveness, and our estimates show that outward FDI has led to an increase in EU GDP of 0.002 percent or more than €20 billion over the period 2001-2006. Of the €20 billions we find that EU workers have increased their income by almost €13 billion.

The empirical studies summarised in this report find that there has been no impact of outward FDI on overall employment. At the same time, however, demand for unskilled labour has decreased. We would therefore expect that the increased income of EU workers will not be evenly distributed between skilled and unskilled workers.

We expect that EU firms will continue to pursue outward FDI, but there are reasons to believe that outward FDI will increasingly take place in the service sector. The empirical literature provides little evidence of productivity and labour market impacts of outward FDI in the service sector. More research in this area would provide policy makers with valuable information which will help them design policies that will benefit firms and workers in an increasingly globalised world.

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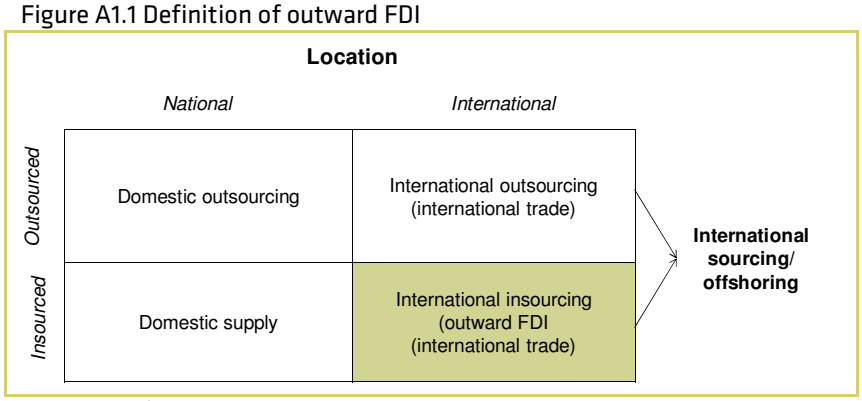
APPENDIX 1: OUR DEFINITION OF OUTWARD FDI

Strictly speaking, outward FDI is *international insourcing*, i.e. the relocation of functions that used to be performed in the multinational firm to foreign affiliates abroad, cf. Figure A1.1.

Figure A1.1 Definition of outward FDI



Source: Copenhagen Economics.

Outward FDI takes place when an EU firm establishes a foreign affiliate or acquires a foreign firm and starts to produce abroad. The impact of outward FDI on the home economy depends on the relationship between the parent company and the foreign affiliate. Here, we distinguish between:

1. Cases when the parent company copies the whole production chain to a foreign affiliate.
2. Cases where the parent company moves only part of the supply chain to a foreign affiliate.

In the case where the EU firm copies the whole production chain to a foreign affiliate, the parent company and the foreign affiliate produce the same good but serve different markets. EU firms often make such investments in order to lower costs (e.g. by saving transportation costs and to avoid paying tariffs) and to get closer to clients. This type of international sourcing is captured by data on outward FDI.

When the EU firm moves part of the supply chain to a foreign affiliate, the foreign affiliate either fulfils the role of a supplier or the role of a distributor. In this case, the initial investment abroad is captured by data on outward FDI, whereas the transactions between the foreign affiliate and the parent company are recorded as international trade. When the foreign affiliate fulfils the role of a supplier, trade between the parent firm and the foreign affiliate is recorded as trade in intermediate goods and services. When the foreign affiliate fulfils the role of a distributor, trade between the parent firm and the foreign affiliate is recorded as trade in final goods and services.

APPENDIX 2: DESCRIPTION OF THE EUROSTAT DATA

The Eurostat data establish statistical evidence on the international sourcing activities of companies in Norway and 12 EU countries (the Czech Republic, Denmark, Germany, Ireland, Spain, Italy, the Netherlands, Portugal, Slovenia, Finland, Sweden and the United Kingdom).[8] The data cover companies that have sourced internationally during the period 2001-2006 and companies that plan to source internationally during 2007-2009. The survey involves enterprises with 100 or more employees.

The definition of international sourcing is in line with our definition in Appendix 1 and is described as

> *The total or partial movement of business functions (core or support business functions) currently performed in-house or currently domestically sourced by the resident enterprise to either non-affiliated (international outsourcing to external suppliers) or affiliated enterprises located abroad (international insourcing).*

Importantly, exemptions include the movement of business functions (core or support business functions) abroad without reducing activity and/or jobs in the enterprise concerned, i.e. if the company sets up a new production line.

The international sourcing statistics cover NACE Rev.1.1 (Statistical Classification of Economic Activities in the European Community) sections C to I and K, which broadly speaking cover non-financial market activities. Not covered are agriculture, fishing, public administration and defence, education, health and social work.

Core functions include production of goods and services. *Support business functions* include administrative and management functions, distribution and logistic, engineering and related technical services, ICT services, marketing, sales and after sales services, and research & development.

[8] The Spanish survey covered only service activities.

APPENDIX 3: OUR APPROACH TO REVIEWING THE LITERATURE

Empirical questions analysed in this report

In order to analyse the impact of outward FDI on the home country we review the literature that has analysed the following dimensions of the multinational firms' activities:

1. *What happens to the performance (e.g. productivity, employment and skill structure) of a multinational firm when it establishes a foreign affiliate?*

These studies take into account that outward FDI is implemented by relatively more successful firms, so that any changes in the firm's performance after undertaking outward FDI need not have been caused by its FDI, but might have occurred even without the FDI. In this case, selectivity of successful firms will make it difficult to draw conclusions regarding causality. This is frequently tackled by constructing an appropriate control group for the multinational firm, which includes firms without outward FDI who are as similar as possible in several dimensions (the so-called "counterfactual"). Usually, propensity score matching is used for that purpose.

2. *What is the relationship between employment in the parent company and the foreign affiliate – are workers substitutes or complements?*

Many studies in this category have focused their inferences about the employment effects of outward FDI on the elasticities of parent employment to wages in its affiliates and in the parent company itself. A positive impact of a foreign affiliate's wage on home country employment indicates a substitution effect (production is relocated from the affiliate to the parent if ceteris paribus the wage level of the affiliate increases), while the negative coefficient of the affiliate's wage indicates that employment in the affiliate and the parent are complementary (because of, for instance, the decomposition of the value chain so that different production stages take place in different locations).

3. *How does the import of intermediate goods and services affect the performance (e.g. productivity, employment and skill structure) of the sourcing firm?*

This group of studies typically relate a firm's performance to the import of intermediate goods and services using either a narrow or a broad offshore measure. The *narrow offshore measure* refers to imported intermediates from the same industry as a share of the total output value (or total intermediates purchased). The *broad offshore measure* is related to imported intermediates as a share of the total output value (or total intermediates purchased).

While the first and second question have been analysed at the firm level, the third question has been analysed both at the firm and industry level. When this question is analysed at the industry level, there is a need to take both intra-industry and inter-industry employment dynamics into account. If workers that are being laid off in one industry find a new job in another industry then overall employment will stay constant, whereas employment in the industry that invests abroad will go down. Assuming independence between industries and neglecting spillovers and feedback effects across industries are at odds with multi-sector general equilibrium models of trade.

Overview of our summary tables

The following aspects of the *competitiveness* impacts of outward FDI are being covered in the literature review:

- The impact of establishing a foreign affiliate on productivity in the parent firm (Appendix Table 1)
- The impact on firm's productivity of importing intermediate goods and services (Appendix Table 2)
- The impact of outward FDI on industry level productivity in EU countries (Table 2.1)

The following aspects of the *labour market* impacts of outward FDI are being covered in the literature review:

- The impact of establishing a foreign affiliate on employment in the parent firm (Appendix Table 3)
- The relationship between workers in the foreign affiliate and the parent company (Appendix Table 4)
- The impact of outward FDI on the parent company skill structure (Appendix Table 5)
- Impact of outward FDI on employment in the industry (Table 3.1)
- Impact of outward FDI on the skill structure in the industry (Table 3.2)
- Impacts of outward FDI on skilled and unskilled workers' wage/cost shares in the industry (Appendix Table 6)

Appendix Table 1. Impacts on productivity in the parent company of establishing a foreign affiliate

Author(s)	Industry	Productivity measure	Home country	Location of new affiliate	Time period	Impact
Navaretti and Castellani (2004)	All	TFP growth	Italy	All	1993-1998	Positive
Castellani and Navaretti (2004)	All	TFP growth	Italy	DC	1993-2001	Positive
				LDC	1993-2001	Positive
			France	DC	1993-2001	Neutral
				LDC	1993-2001	Neutral
Navaretti, Castellani and Disdier (2006)	All	TFP growth	Italy	LDC	1995-2000	Positive (short run)
						Neutral (long run)
				DC	1995-2000	Positive
			France	LDC	1995-2000	Neutral
				DC	1995-2000	Neutral
Hijzen, Jean and Mayer (2009)	Manufacturing	TFP	France	All	1988-1998	Positive
				LDC	1988-1998	Positive
				DC	1988-1998	Positive
	Services	TFP	France	All	1988-1998	Positive
				LDC	1988-1998	Neutral
				DC	1988-1998	Positive
Kleinert and Toubal (2007)	All	TFP	Germany	All	1996-2004	Neutral
Jäckle (2006)	All	TFP	Germany	All	1992-2001	Positive
		LP	Germany	All	1992-2001	Positive

Note: TFP=total factor productivity, LP=labour productivity, LDC = less developed country and DC = developed country.

Appendix Table 2. Impacts on a firm's productivity of importing intermediate goods and services

Author(s)	Industry	Offshoring measure	Productivity measure	Home country	Location of new affiliate	Time period	Impact
Girma and Görg (2004)	Chemicals	Broad	LP growth	UK	All	1982-1992	Positive
	Engineering	Broad	LP growth	UK	All	1982-1992	Positive
	Electronics	Broad	LP growth	UK	All	1982-1992	Neutral
	Chemicals	Broad	TFP growth	UK	All	1982-1992	Positive
	Engineering	Broad	TFP growth	UK	All	1982-1992	Positive
	Electronics	Broad	TFP growth	UK	All	1982-1992	Neutral
Criscuolo and Leaver (2006)	All	Broad (S)	TFP	UK	All	2000-2003	Positive
	Manufacturing	Broad (S)	TFP	UK	All	2000-2003	Neutral
	Services	Broad (S)	TFP	UK	All	2000-2003	Positive
Görg and Hanley (2005)	Electronics	Broad	TFP	Ireland	All	1990-1995	Positive
		Broad (M)	TFP	Ireland	All	1990-1995	Positive
		Broad (S)	TFP	Ireland	All	1990-1995	Neutral
Görg, Hanley and Strobl (2008)	Manufacturing	Broad (M)	TFP	Ireland	All	1983-1988	Positive
		Broad (S)	TFP	Ireland	All	1983-1988	Neutral
Anderson, Karpaty and Kneller (2008)	Manufacturing	Broad (M)	TFP	Sweden	All	1997-2002	Positive
		Broad (S)	TFP	Sweden	All	1997-2002	Positive
Moser, Urban and Mauro (2009=	All	Broad	Turnover per worker	Germany	All	1993-2005	Positive

Note: M=materials, S=services and TFP=total factor productivity. Narrow offshoring refers to imported intermediates from the same industry as a share of the total output value (or total intermediates purchased). Broad offshoring refers to imported intermediates as a share of the total output value (or total intermediates purchased).

Appendix Table 3. The impact of establishing a foreign affiliate on employment in the parent company

Author(s)	Industry	Employment measure	Home country	Location of new affiliate	Time period	Impact
Hijzen, Jean and Majer (2009)	Manufacturing	Employment	France	All	1988-1998	Positive
				LDC	1988-1998	Neutral
				DC	1988-1998	Positive
	Services	Employment	France	All	1988-1998	Positive
				LDC	1988-1998	Neutral
				DC	1988-1998	Positive
Navaretti and Castellani (2004)	All	Employment growth	Italy	All	1993-1998	Neutral
Navaretti, Castellani and Disdier (2006)	All	Employment growth	Italy	LDC	1995-2000	Positive
				DC	1995-2000	Positive
			France	LDC	1995-2000	Positive
				DC	1995-2000	Positive
Kleinert and Toubal (2007)	All	Employment	Germany	All	1996-2004	Neutral
Masso, Varblane and Vahter (2007)	Manufacturing	Employment growth	Estonia	All	1995-1999	Neutral
					2000-2002	Positive
	Services	Employment growth	Estonia	All	1995-1999	Positive
					2000-2002	Positive
Jäckle (2006)	All	Employment growth	Germany	All	1992-2001	Neutral

Note: LDC = less developed country and DC = developed country.

Appendix Table 4. Relationship between workers in the foreign affiliate and the parent company

Author(s)	Industry	Employment measure in foreign affiliate	Employment measure in parent company	Home country	Location of new affiliate	Time period	Impact
Braconier and Ekholm (2000)	Manufacturing	Wage in affiliate	Employment in parent company	Sweden	DC	1970-1994	Replacement
					LDC	1970-1994	Neutral
Hatzius (1998)	Manufacturing	Wage in affiliate	Employment in parent company	Sweden	All	1965-1994	Replacement
Marin (2004)	Manufacturing	Wage in affiliate	Employment in parent company	Austria	CEE	1990-2001	Complementary
					SEE	1990-2001	Neutral
					FSU	1990-2001	Neutral
				Germany	CEE	1990-2001	Complementary
					SEE	1990-2001	Neutral
					FSU	1990-2001	Neutral
Monteagudo (2005)	Manufacturing	Wage in affiliate	Employment in parent company	Belgium	NEE	1993-1998	Neutral
					SEE	1993-1998	Neutral
					CEE	1993-1998	Replacement
				Germany	NEE	1993-1998	Complementary
					SEE	1993-1998	Complementary
					CEE	1993-1998	Replacement
Pfaffermayr (1999)	Manufacturing	Parent wage relative to affiliate wage	Parent employment to affiliate employment	Austria	Non-CEE	1990-1996	Replacement
					CEE	1990-1996	Complementary
Falzoni and Grasseni (2005)	Manufacturing	Share of employment in foreign affiliate	Employment in parent company	Italy	All	1985-1995	Complementary
					DC	1985-1995	Complementary
					LDC	1985-1995	Complementary
Mariotti. Mutinelli and Piscitello (2003)	All	Employment growth in affiliate	Employment growth in parent company	Italy	DC	1985-1995	Complementary
					LDC	1985-1995	Replacement
					CEE	1985-1995	Replacement
Molnar, Pain and Taglioni (2007)	All	Employment growth in affiliate	Employment growth in parent company	Germany	All	1998-2003	Neutral

LDC = less developed country, DC = developed country, CEE = Central East Europe, SEE = South East Europe, FSU = Former Soviet Union and NEE = North East Europ.

Appendix Table 5. Impacts of establishing a foreign affiliate on parent company skill structure

Author(s)	Industry	Skill measure	Outward FDI measure	Home country	Location of new affiliate	Time period	Impact
Hijzen, Jean and Majer (2009)	Manufacturing	Skill intensity (average level of wages in parent company)	Establishing a foreign affiliate	France	All	1988-1998	Neutral
					LDC	1988-1998	Neutral
					DC	1988-1998	Neutral
	Services	Skill intensity (average level of wages in parent company)	Establishing a foreign affiliate	France	All	1988-1998	Neutral
					LDC	1988-1998	Neutral
					DC	1988-1998	Neutral
Blomstrom, Fors and Lipsey (1997)	Manufacturing	Affiliate net sales	Skilled employment share in parent company	Sweden	All	1970-1994	Neutral
					DC	1970-1994	Negative
					LDC	1970-1994	Positive
			Unskilled employment share in parent company	Sweden	All	1970-1994	Positive
					DC	1970-1994	Positive
					LDC	1970-1994	Positive
Castellani et al. (2008)	Manufacturing	Dummy for starting to invest abroad	Skilled workers employment share	Italy	DC	1998-2004	Neutral
					CEE	1998-2004	Positive
					LDC	1998-2004	Neutral

Note: LDC = less developed country, DC = developed country and CEE = Central East European country.

Appendix Table 6. Impact of establishing a foreign affiliate on skilled and unskilled workers' wage/cost shares in industry

Authors	Industry	Proxy for ODI	Wage/cost measure	Home country	Host country	Time period analysed	Impact
Hijzen, Görg & Hine (2005)	Manufacturing	Narrow	Skilled workers	UK	All	1982-1998	Neutral
			Unskilled workers	UK	All	1982-1998	Negative
Görg, Hijzen and Hine (2004)	Manufacturing	Broad	Skilled workers	UK	All	1982-1996	Neutral
		Narrow	Skilled workers	UK	All	1982-1996	Neutral
Hijzen (2003)	Manufacturing	Narrow	Skilled workers	UK	All	1993-1998	Neutral
			Unskilled	UK	All	1993-1998	Negative
		Broad	Skilled workers	UK	All	1993-1998	Neutral
			Unskilled workers	UK	All	1993-1998	Positive
Ekholm and Hakkala (2006)	All	Narrow	Skilled workers	Sweden	All	1995-2003	Neutral
			Unskilled workers	Sweden	All	1995-2003	Neutral
			Skilled workers	Sweden	LDCs	1995-2003	Positive
			Unskilled workers	Sweden	LDCs	1995-2003	Neutral
			Skilled workers	Sweden	DCs	1995-2003	Negative
			Unskilled workers	Sweden	DCs	1995-2003	Neutral
Hansson (2000)	Manufacturing	Share of total import in total imports and shipments	Skilled workers	Sweden	Non-OECD	1970-85	Positive
						1986-93	Neutral

Hansson (2005)	Manufacturing	Affiliate employment relative to total employment in industry	Skilled workers	Sweden	OECD	1990-1993	Neutral
			Skilled workers	Sweden	OECD	1993-1997	Neutral
			Skilled workers	Sweden	Non-OECD	1990-1993	Neutral
			Skilled workers	Sweden	Non-OECD	1993-1997	Neutral
		Affiliate employment relative to total employment in industry	Skilled workers	Sweden	OECD	1990-1993	Neutral
			Skilled workers	Sweden	OECD	1993-1997	Neutral
			Skilled workers	Sweden	Non-OECD	1990-1993	Neutral
			Skilled workers	Sweden	Non-OECD	1993-1997	Positive
Geishecker and Görg (2007)	Manufacturing	Narrow	Skilled workers hourly wages	Germany	All	1991-2000	Positive
			Unskilled workers hourly wages	Germany	All	1991-2000	Negative
		Broad	Skilled workers hourly wages	Germany	All	1991-2000	Positive
			Unskilled workers hourly wages	Germany	All	1991-2000	Negative
Helg and Tajoli (2004)	Manufacturing	Outward processing trade flows	Skilled workers	Italy	All	1988-1997	Positive

Note: LDC = less developed country and DC = developed country. Narrow offshoring refers to imported intermediates from the same industry as a share of the total output value (or total intermediates purchased). Broad offshoring refers to imported intermediates as a share of the total output value (or total intermediates purchased).