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"Trends and Patterns in Outsourcing and Offshoring in Europe:
A Literature Review"

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Abstract

During the past decades Western European manufacturing firms have experienced dynamic effects on the actual output produced in the region. The trend has displayed a turn towards more knowledge intensive duties in the manufacturing industry, while the true production of goods is sourced to different regions outside the borders of Western Europe. What are the positions and trends of the EU member states in the global integration of production? The patterns of shift in production are analysed by means of an in-depth study of the European automotive industry. The focus is on outsourcing activities performed as offshoring in the production of physical goods. The outline of the value chains in Europe will also consider indicators such as foreign direct investment (FDI), employment data, industry dynamics and trade flows. An interesting result is that the EU countries receive the majority of the FDI flows from other EU countries. Furthermore, Western European multinationals are frequently offshoring activities to the new emerging markets in Central and East Europe.

Keywords: offshoring, outsourcing, automotive industry, globalisation, international trade, manufacturing and services, Europe.

Introduction

During the past decades Western European manufacturing firms have experienced dynamic effects on the actual output produced in the region. The trend has displayed a turn towards more knowledge intensive duties in the manufacturing industry, while the true production of goods is sourced to different regions outside the borders of Western Europe (OECD, 2006). For instance, Sweden had a strong comparative advantage in textile manufacturing during the first half of the 20th century. After this period of time, the Swedish textile industry was characterised by a major structural change. During the 1950s the Swedish comparative advantage shifted to Southern Europe and countries such as Portugal, Italy and Spain. Nowadays, the comparative advantage in the textile production is located in China and other low-cost countries, (Edebalk and Wadensjö, 1993; Blinder, 2006). What has been the effect of such change in terms of jobs, income and economic growth? Is the EU gaining or losing due to these patterns in outsourcing? The modern European firm is today actively involved in building global networks that generate increased efficiency in production and logistics, reduced costs and increased profits for its owners. The value chains in turn consist of complex processes where firms vertically integrate or disintegrate the steps of production.

The current era of globalisation began sometime in the middle of the 1970s and is mostly based on rapid expansions in infrastructure e.g. through road networks, air connections, human capital formation, investments in R&D and information processing (Karlsson et al, 2010). The multinational enterprise is one major force behind this development (Chandler, 1977; Dicken, 2003). During this era it has been more common to outsource (or to offshore) labour-intensive elements of production to other countries. More than 70,000 multinational enterprises (with more than ten times as many foreign affiliates) have been involved in some form of relocation (McCann, 2008). The number of firms taking part in the global economic integration is increasing at a rapid pace and

so also the importance of the global movement of capital in the world markets (Obstfeld, 1998; Obstfeld and Taylor, 2004). Other factors of importance that have facilitated the current trend are the creation of trading blocs, reduced transportation costs and the removal of impediments to international trade (Wang, 2010; McCann, 2008; Bhagwati, 2004). The relocation of activities of multinational enterprises has resulted in production networks that are more globally integrated with value chains performing various steps of production at different locations (Fujita and Thisse, 2006). At these various stages, industries often specialise in producing specific components in order to exploit economies of scale. Our global scene of production networks is typically characterised by increased levels of international trade and foreign direct investment (Karlsson et al, 2010; OECD, 2010).

Purpose and Outline

The purpose of this paper is to analyse the position and trends of the EU member states in the global integration of production. It will analyse the patterns of shift in production by means of a general overview of the European manufacturing sector and an in-depth study of the European automotive industry. The study will focus on outsourcing activities performed as offshoring in the production of physical goods. Factors of interest are related to trends in FDI, international trade and employment rates. Furthermore, it will contribute to an increased knowledge of what offshoring is and how it has impacted the EU member states.

The paper is organised as follows: The following section discusses the drivers of globalisation in the context of infrastructure, trade barriers, trading blocs and the different forms of outsourcing. Section 3 covers some theoretical perspectives behind the motives for outsourcing. Section 4 will focus on empirical studies on outsourcing in Europe related to manufacturing and services. Section 5 comprises of a case study of the European automotive industry. The final section will conclude this paper.

The Drivers of Globalisation

The driving forces behind globalisation are many. The definition of globalisation is far stretched, however from an economic point of view it consists of the integration of national economies in international trade, foreign direct investment, technology flows and international mobility of labour and capital flows, (Bhagwati, 2004). To be able to understand the development of an economy in a long-run perspective one must consider the factors that develop more slowly over time. Economic structural change can be seen as a result of dynamics in the fundamental conditions of different regions. Some important conditions are represented as the infrastructure of the economy, reduction in trade barriers and the creation of trading blocks.

Infrastructure

A region characterised with access to a well-developed infrastructure and to global communication tools fulfils the basic conditions to experience long-run growth. Infrastructure could be defined as both tangible and intangible factors creating a collective importance for the economy at the same time as these factors should be durable and difficult to change. If this would be the case, it would induce an opportunity landscape for both public and private actors to benefit from global integration (Karlsson et al, 2010). Table 2.1 lists a number of factors considered as tangible and intangible infrastructure.

Table 0.1 Factors considered as infrastructure

-
- | | |
|--|---|
| • Well-developed rules for setting up business and for competition in the market | • Basic values and attitudes to development, creativity and entrepreneurship |
| • Transportation networks of goods | • The level of quality and distribution of scientific and technological knowledge |
| • Transportation of energy | • The level of quality and distribution of entrepreneurial and cultural knowledge |
| • Transportation of information | • Social protection systems and other rights and obligations |
| • Transportation of people | • Well-functioning national institutions |
| • Well established ownership rights | |
-

Source: Karlsson et al (2010)

During the last millennium, Europe, and later the rest of the developed world have been experiencing a slow and stable change in the infrastructure (Braudel, 1994). Slow dynamics in the infrastructure causes tension when it is combined with fast economic processes (Karlsson et al, 2010). A multinational enterprise strives for efficiency in its production process. If there is an opportunity to profit from lower costs and better infrastructure in form of production technology, accessibility and factor conditions etc. in one region, then a relocation of the plant (or the whole industry) to that specific region would not be an impossible event (Solé and Losilla, 2010). Hence, globalisation should not be seen as a smooth continuous process, rather it is a process that is discontinuously depicting various states of growth and setbacks (Mees, 1975). The

dynamics of globalisation seems to be fueled by successive technological revolutions, advances in transportation (of both goods and people) and in capital movement. An increased international trade have resulted in rapid productivity growth and a higher standard in national welfare worldwide (Karlsson et al, 2010).

The Reduction of Trade Barriers

National governments have become more active in the field of industrial and trade policy (Smeets, 1990). The implementation of more lenient policies to promote free trade has resulted in a more rapidly changing world due to the effects of globalisation. Countries that are more open towards free trade in terms of reduced trade barriers have stronger prospects to experience economic growth in the long-run (Bhagwati, 2001).

The first proposal for an international trade policy framework was presented in the end of the 1940s. The framework, named the General Agreement on Tariffs and Trade (GATT), was based on supporting and encouraging its member countries to negotiate for a reduction of trade quotas and tariffs. With time, the GATT developed as the central regulatory framework for international trade politics. In the mid 1990s, during the Uruguay Round, a new regulatory framework was setup to expand the GATT to include more flexibility in trade related to services and new regulations for preserving intellectual property rights, copyrights and brands. The result was the establishment of the World Trade Organisation (WTO). (Kleen et al, 2006)

The WTO consists of 153 members, including all member countries of EU27, China and the USA. In 2009, the WTO members accounted for over 97 percent of the total world trade (WTO, 2010a). The trade barriers in form of tariffs and quotas on imports have been reduced drastically within the WTO over time. Since the end of the 1940s, world merchandise exports has increased exponentially, as can be depicted in Figure 2.1 (WTO, 2010b).

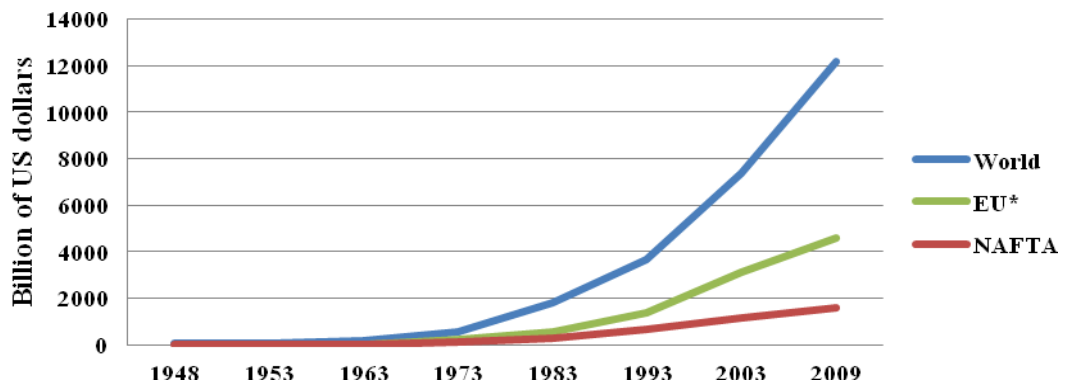


Figure 0.1 World merchandise exports 1948 to 2009¹
Source: WTO (2010b)

* Data refers to the EEC6 in 1963, EC9 in 1973, EC10 in 1983, EU12 in 1993, EU25 in 2003 and EU27 in 2009.

¹ The aggregate data for the EU and NAFTA includes intra and extra exports.

Trading Blocs

Another important role for the dynamics of globalisation is played by the regional trading blocs (Drysdale and Garnaut, 1994). Trading blocs require their member economies to cross national borders in order to benefit from exchange in goods and services, as due to reduced trade barriers (Wang, 2010)

The majority of the global exports in merchandise is carried out in the form of trade within and between trading blocs. In 2009, the European Union (EU) carried out approximately 38 percent of the total world merchandise exports, whereas the North American Free Trade Area (NAFTA)² corresponded to approximately 13 percent of the world merchandise exports, as seen in Figure 2.1 (WTO, 2010b). The EU and the NAFTA were responsible for more than half the total amount of the world merchandise exports in 2009.

The EU enlargement has contributed substantially to the re-shaping of the European economy. Expanding the EU to include Central and East European (CEE) countries, such as Bulgaria, Czech Republic, Poland, Romania, Slovakia and the Baltic nations has resulted in an increased movement of multinational companies and a rapid increase in global trade. Huge amounts of foreign direct investments (FDI) have been made by Western European firms in the new EU member countries located in CEE. This has helped the industrial development to take off in these new emerging markets. The inflow of FDI to the CEE has led to a boost in EU exports and in this way contributed to a more integrated region. van Winden et al (2010)

NAFTA was established in 1994 with a purpose to increase the regional efficiency of trade flows between the North American countries in terms of lower tariffs and reduced quotas. However, today NAFTA serves more like an open global markets, with trade connected to most countries of the world (Blecker and Esquivel, 2010). Examples of other trading blocs that have contributed to the expansion of the global market are the Association of Southeast Asian Nations (ASEAN³) and the Southern Common Market (MERCOSUR⁴), where the latter bloc has the EU as its main trading partner (Camroux, 2010; Cîmpeanu and Pîrju, 2010).

Trading blocs of today have become more flexible when it comes to trade flows. There are more incentives to be involved in both extra-regional and intra-regional trade, (Blecker and Esquivel, 2010; Camroux, 2010; Cîmpeanu and Pîrju, 2010). A typical example of this is the East Asian region, where the majority of investment and trade is carried out as extra-regional trade. China for instance, has a high requirement for production inputs that are imported from countries that the Chinese government established a free trade agreement with (e.g. India and Australia). Later these goods become exported to the main markets located in the USA and Europe. Regional economic relations in East Asia are heavily dependent on global financial flows and world trade in goods and services. Having a closed regional perspective is simply not possible (Breslin, 2010a).

Make or Buy? Defining Outsourcing and Offshoring

From the previous parts, the multinational enterprise, together with a well-developed infrastructure, the advances in technological revolutions, the reduction of trade barriers

² NAFTA: Canada, Mexico and USA.

³ ASEAN: the Philippines, Indonesia, Cambodia, Laos, Malaysia, Myanmar, Singapore, Thailand and Vietnam.

⁴ MERCOSUR: Argentina, Brazil, Paraguay and Uruguay.

and the formation of trading blocs, were depicted as the driving forces of a globalised world. The globalisation process within a company can take on many shapes. Dicken (1998: 5) explains it in the following way:

“Globalisation is much more recent than internationalisation because it implies functional integration between internationally dispersed activities”

The driving forces of globalisation have resulted in two distinct types of economic networks, namely make-driven and buy-driven global commodity chains (Dicken, 2007; Gereffi, 1999). Make-driven commodity chains usually involve large transnational producers. These actors play an important role in coordinating the various production networks that often are characterised by capital intensive and technology driven industries (e.g. the automotive industry and the aircraft industry). Buy-driven commodity chains are often depicted by industries occupied by large retailers, marketing firms and brand corporations acting as spiders in the net. The main purpose of such actors is to decentralise the production network to different export countries in order to find the most cost efficient solution. Buyer commodity chains are commonly traced to third world countries, where the production is performed in tiered networks of contractors that produce the final products for their foreign buyers. These products are often tailor-made and based on specific requests in design and quality demanded by the large retailing companies. The main attribute of buyer-driven retailers (e.g. Nike, Wal-Mart) is their tendency to not be involved in the manufacturing process of the branded goods they sell on the market. Hence, they are depicted as “manufacturers without factories”, as they succeed in separating the physical production from the design and marketing process (Gereffi, 1999).

Outsourcing, which is rooted in make and buy decisions, can be explained as a process in where a firm acquires goods and services from suppliers within its own value chain, or purchases them from an external source (Kotabe and Mol, 2004). The process can involve different directions of outsourcing performed under three main categories.⁵

The first category of outsourcing takes place locally where the company is established, either in its own make-driven direction or by contracting another company, i.e. buy-driven. A number of reasons can explain the choice of local sourcing. Such examples could be historical ties to local networks, efficiency in production, economies of scale, quality, responsiveness, firm location, improved logistics, technology and human capital (Turok, 1993; Wilding and Juriado, 2004). An example of local outsourcing can be depicted by using the case of Volvo Cars. For instance, Volvo Cars has its main Swedish production site in Torslanda, which is located in the outskirts of Gothenburg. At this industrial plant, the company assembles five car models. The engines of these cars are produced by Volvo Penta, a subsidiary of Volvo Cars. The Penta factory is located in Skövde, approximately 170 kilometres from Torslanda. In the 1930s, Volvo Cars acquired the technology from the Penta Industries in order to strengthen the quality of the Volvo brand. Today, Volvo Penta delivers engines, just-in-time, to Volvo Cars in Torslanda, (Knudstrup, 2010; Volvo Penta, 2010). Outsourcing in this case is taking place locally, in a make-driven direction. Conversely, if Volvo Penta was a self-owned company, the outsourcing would be taking place locally, in a buy-driven direction.

⁵ In this context, the direction of a company is referred to as the ownership of a specific production process within the value chain of the company. If the direction is “make-driven”, the company owns the production process. A “buy-driven” direction, refers to a company that is contracting an external firm to complete its final product.

In the second category, the production of goods can be allocated to another company outside the local region, however within the national borders of the country. The direction of this type of sourcing can either be carried out by the company itself, through its own subsidiary (make-driven), or by contracting an external capacity (buy-driven). The reasons for performing outsourcing in this respect are mainly the same as those explained in the first category, however, at a national level.

The third category of outsourcing is performed when a company is offshoring its production. This basically refers to that the company allocates the production process to a foreign country, either in its own make-driven direction or via a buy-driven direction. The most common reasons for such actions are to minimise production costs (e.g. in terms of land, wages and taxes), to access more lenient laws and regulations, gain proximity to global markets and resources in production (e.g. raw material). Offshoring can also be influenced by state political reasons, trade unions, NGOs or other institutions prospecting a reduction in national poverty (Henderson et al, 2002; Dunning, 1980). This form of sourcing can be illustrated by using Audi AG as an example. Audi is a German luxury car manufacturer within the Volkswagen Group. The company has its main production plant located in Ingolstadt, Germany. In recent time the demand for Audi cars in Asia has increased by a great amount, which has induced the company to invest in new production plants in both China and India (van Winden et al, 2011). In this example, Audi has offshored parts of its production to foreign countries, in its own make-driven direction.

The different scenarios are summarised in Table 2.2.

Table 0.2 Different categories of outsourcing

Region →	Local		National		Global	
Direction →/ Activity ↓	“Make” driven	“Buy” driven	“Make” driven	“Buy” driven	“Make” driven	“Buy” driven
Outsourcing	✓	✓				
Outsourcing			✓	✓		
Offshoring					✓	✓

Source: Adapted from Feenstra (2010)

Outsourcing – Theoretical Frameworks

It is difficult to apply a specific theory that sets a platform to understand the motives behind outsourcing and offshoring, yet, what we want is to understand the most important factors associated with such type of fragmentation. The difficulty arises due to the many dimensions the reasons for global integration can take on as a company decides to outsource its components in the production process. Empirical studies within the subject focus on one or a couple of aspects when building a theory to illustrate the resulting implications.

Production Theory

An important question to raise for a continued discussion in this topic is: Why do firms exist? The general view suggests that firms exist in order to reduce the transaction costs that arise when economic agents trade on a market (Coase, 1937; Kogut and Zander, 1992).

Why do firms exist?

The principal-agent relationship is commonly adapted to explain problems arising due to individual self-interest (Shapiro, 2003). People have to make decisions on daily basis with an ambition to reach optimal results. What tends to deter such outcomes is the absence of full knowledge about the options that need to be made to reach such efficient states. A way to explain this could be in the case of a car deal. Suppose a buyer lacks full information on a potential car purchase and turns to an advisor for help (e.g. a car salesperson). By doing so, the buyer enters a principal-agent relation with the salesperson. The former takes on the role as the principal, while the latter acts the role of agent. However, it is not always the case that the agent has the same goal as the principal. Thus, a problem arises in matching the interests in mind of both the principal and the agent (Jensen and Meckling, 1976).

Outsourcing and offshoring decisions can expose firms to problems related to agency theory (cf. Bahli and Rivard, 2003; Eisenhardt, 1989; Jiraporn et al, 2008; Sloof and van Praag, 2008 for further readings). Suppose that the principal firm is a manufacturer located in country A. Its management has decided to offshore parts of the production to an agent located in country B. There are two major problems arising in this situation. The first problem arises due to the possible difference in the goals of the principal and agent. A typical case is when the principal finds it too difficult (or costly) to monitor the work of the agent in terms of production output, labour working hours etc. The second problem relates to the possible disparity in risk preferences of the principal and agent. Such disparities can negatively affect the principal's decision making (Reeves et al, 2010). Differences in risk attitudes that can worsen the contract between principal and agent could for example be due to goal conflicts or the lack of information. However, one way for the principal to avoid risk is to encourage the agent's performance to be based on outcome (Logan, 2000; Sharma, 1997).

The theory behind transaction costs⁶ was first introduced by the economist Ronald H. Coase. According to Coase (1937), firms exist so that they can economise on the transaction costs of exchanges that arise due to the price of production factors and by the creation of new contracts. When production stages are vertically integrating, the main purpose of the firm is to minimise the arising transaction costs. The initiative to expand or reduce the activity of the firm is directly connected to forecasting the market price of the firm’s inputs. Contracts are then established by the firm to create efficient agreements that keep track on the dynamic changes in the transaction costs.

Williamson (1979) expanded the transaction cost theory and developed a new concept that became known as transaction cost economics (TCE). TCE is grounded in the fact that organisational rationality is bounded to some limit, which in turn resides in that all complex contracts are incomplete, (Williamson, 1998). Moreover, TCE treats the transaction costs as the main determinant in the firm’s make or buy decisions. As the firm economises on the transaction costs, the resulting efficiency (e.g. through improved planning, adaptation and monitoring) will support it to implement the optimal decision, whether to make or buy the production function (Williamson, 1979). Thus, if a company relocates its production, transaction costs could include activities such as monitoring the production, contracting, transportation of goods and communication with subsidiaries (Reeves et al, 2010). These type of costs increase as the company expands its activities and the production process becomes more and more complex with its growing size.

An example of how transaction costs can give rise to relocation of production can be illustrated by comparing the price level between two regions. Let the local market (L) price for producing a specific good be P_L and the price for the very same good produced in a “source” market (S) be P_S . Figure 3.1 depicts the cost functions (c_{ijk} , where $i \neq j$ and $k = 1, 2, \dots, n$) associated with the different choices of sourcing for this good. For simplicity, the focus will be on the cost function denoted c_{LS1} .

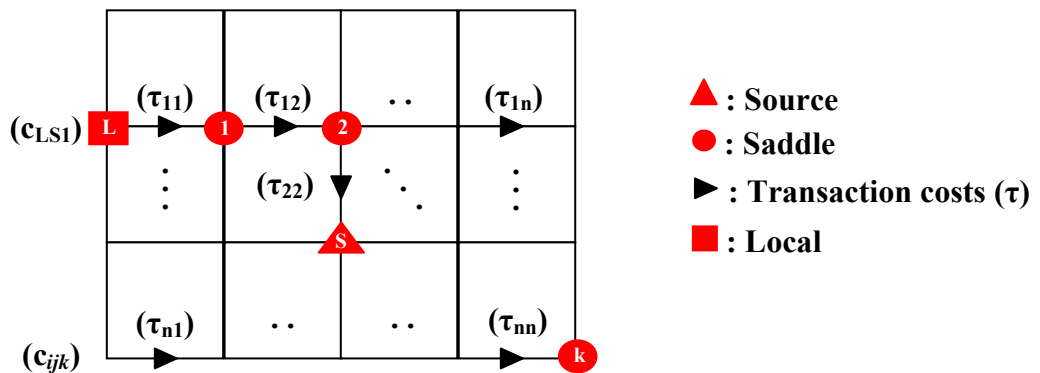


Figure 0.1 Transaction costs
Source: Johansson (1993)

For the company in region L to start a sourcing process in region S, it needs to pass through both saddles 1 and 2. If this is the source strategy of choice it will involve

⁶ What exactly is meant with transaction costs is difficult to say, however, two common definitions of transaction costs prevail in the literature: the first definition is that transaction costs occur only when a market transaction takes place, and the second states that transaction costs occur as a property right is established or requires protection (Allen, 1991).

transaction costs τ_{11} , τ_{12} and τ_{22} , respectively. The cost function associated with this sourcing process between region L and S can be written as:

$$c_{LS1} = P_S + \tau_{11} + \tau_{12} + \tau_{22} \quad (3.1)$$

Equation 3.1 implies that the costs in region S are a function of the price in that region, plus the additional transaction costs. By collecting all the transaction costs between region L and S, we can define a new term for these:

$$\tau_{LS} = \tau_{11} + \tau_{12} + \tau_{22} \quad (3.2)$$

Substituting Equation 3.2 into 3.1 allows us to write the following expression:

$$c_{LS1} = P_S + \tau_{LS} \quad (3.3)$$

The price between the two regions can be compared through the following inequality:

$$P_L \geq P_S + \tau_{LS} \quad (3.4)$$

The inequality in Equation 3.4 implies that the flow should increase between regions L and S, as long as P_L is greater than $P_S + \tau_{LS}$. If this process is continuous, the company can benefit from the lower costs and increase its profits by relocating its production from the local region, L, to the source region, S. (adapted from Johansson, 1993)

Theories of Industrial Organisation

Economic life originates from the satisfaction of the independent human behaviour and the happiness resulting from it. This satisfaction could also be applied to a company in terms of increased production leading to a higher profit margin and a greater happiness of its management (Porter, 1980). The multinational enterprise (MNE) acts like a somewhat power system on the international market with a main purpose to generate more profits to its owners (Galbraight, 1967). Expanding the production to involve international activity increases the opportunities to gain higher profits as it creates a larger market with more varieties of cost functions related to the production process in terms of input factors (Beckmann et al, 1998).

The principal purpose of MNEs is to act capitalistic, aiming for increased profits to survive financially over the long-run. The simple profit function of the firm is $\pi = TR - TC$. π equals the total profit and is composed of the total revenues (TR) generated from selling the company products less the total costs (TC) of producing and distributing the goods or services. The profit can increase if the revenues increase or if the costs decrease or through a combination of both (Porter, 1980; Harvey, 1982).

The market economy of today is highly competitive and characterised by an increased global competition. Companies do not only compete at a national level, but with similar actors from all over the world. This has created a somewhat “hyper-competition”, where companies, on the one hand, can benefit from their competitive structure, or on the other hand, disappear quickly when being outcompeted (D’Aveni, 1994). A capitalistic economic process is a constant on-going process. The purpose of it is to have the end time capital greater than the starting point capital, and the value of goods produced greater than the value of inputs used in production. If so, the economic resources created through profits can be re-invested in new production and the process starts all over again (Harvey, 1982). The capital circulation model can be expanded to three different, however, connected systems for capital in terms of trade, investment and production. The trade capital was the first to be globalised as it grew with the expansion of international trade. The investment capital was the second system to be internationalised with the increase in foreign direct investments. Finally, the increasing number of MNEs made the production capital to become worldwide as their industries were being spread globally (Palloix, 1977).

The theory behind the circulation of capital works as a good interpretation for internationalisation of economic activities as it connects financial actions to production and commerce. However, the theory does not answer to specific issues relating to geography, organisation, sector aspects of multinational enterprises and to internationalisation in general, (Eriksson et al, 2008).

The Dynamics of Industrial Organisation

Instead of depicting a whole system, the incentives to offshore production can be explained by looking in the perspective of a company. A foreign company that enters a new international market can encounter several barriers that give domestic companies an advantage. Such advantages for local companies are that they have a better understanding of the local business culture, the language, market dynamics and domestic laws. For a foreign company to enter such a market it must possess a market specific asset that gives it an advantage over the local companies. For example, this could relate to company size, economies of scale, advanced marketing resources, technological advantages or better financial opportunities. Hence, if markets are incomplete, foreign companies will have major reasons to develop an international production and exploit the arising benefits. Hymer (1960).

Hymer's theory is good in explaining why and how companies establish their international production. However, it fails in explaining the future dynamics of a company that already have a well-established international position. Johanson and Vahlne (1977).

The life cycle of many products has become shorter. Companies are facing higher market pressures and an increased need to be innovative. In general there are three ways for a product to keep or increase its sales. First, a company can introduce a new product that replaces the existing product and has somewhat overlapping characteristics. Second, the life cycle of the existing product can be extended, either by modifications or by finding new areas to adapt the product. Third, changes in the product technology can be imposed to make the product more competitive. Eriksson et al (2008).

In a response to the failure of the Heckscher-Ohlin model⁷ and its attempt to explain the patterns of international trade, Vernon (1966) developed what became known as the product life cycle (PLC). In an increasingly competitive market environment it has become more important to introduce new products to generate higher profits and long-run growth of the company. The PLC has four stages of development: *i*) product development, *ii*) market growth, followed by *iii*) market saturation and finally *iv*) product standardisation, as is illustrated by Figure 3.2.

⁷ Published in Ohlin (1933).

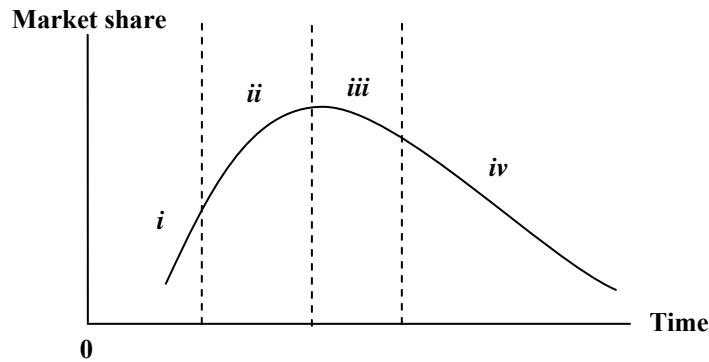


Figure 0.2 The product life cycle
Source: Vernon (1966)

At the first two stages, all production activity is based in the country where the product was first developed. The early stages in the PLC are characterised by high investments in production platforms, R&D and human capital. As the company makes heavy investments in the marketing of its product it will start gaining market shares. The home market is supplied by local producers and as foreign demand increases, the product will also be exported to these new emerging markets. Some companies will with time establish production abroad, either due to lower costs of production and distribution, or to strengthen its global market position. The latter case may be a fact if domestic companies in the foreign market have developed to become strong competitors, or that the governmental policies in the foreign country act to decrease the imports demanded by the introduction of tariffs and quotas. According to the PLC theory, the first wave of global integration is to offshore production to another high income country. The increased competition results in a reduction in market shares over the time, which is illustrated by stage three in Figure 3.2. As the product becomes more standardised (at stage four), the production is expected to move to a developing country and the company can benefit further from lower production costs. Vernon (1966)

MNEs are, however, characterised by complex networks producing multiproduct lines. This makes the application of the PLC model too simple and very limited in its attempt to explain the motives behind the companies' investments abroad (Vernon, 1979; Hedlund, 1986).

The theories developed by Hymer and Vernon only explain partially the reasons underlying foreign direct investments and international production. During the late 1970s and early 1980s, Dunning (1979; 1980) made an attempt to look at companies' motives to globally integrate. Dunning mixed theories of business administration, trade and location together and created what was going to be known as Dunning's Eclectic Theory. According to this theory, a company will establish international production if the following three requirements hold:

- The company possesses *owner specific advantages* that foreign competitors do not
- Such advantages must be exploited by the company itself and not be sold or leased to other actors, thus implying that the company *internalises* its owner specific rights
- There must exist *specific localisation factors* making it more profitable to exploit the benefits in a foreign country rather than to setup production at a domestic location

Owner specific advantages include a company's knowledge and organisational skills, size, market power and technology in terms of know-how. Why should a company internalise its owner specific rights by investing in international production? Instead, it

can traditionally export the goods or let foreign companies purchase licenses (or royalties) to manufacture the products. As this is a common case, the most important reason to internalise lies in how the dynamics in the markets for raw-material, semi-manufactures, and final goods work. Markets are imperfect, and if it were the opposite there would be no incentives to circumvent the market. This implies that a market with a lower performance would increase the incentive of the company to take care of the market features on its own. A common example is a vertically integrating company that decides to take control over both the material supply and what circulation markets to act on. Both the cases (i.e. as a material supplier and whole-seller) imply an internalisation within the company. Thus, different forms of uncertainty are important factors that tend to increase the internalisation within the firms. MNEs spend enormous sums on research and development. To insure profits on these investments and to protect the firms' know-how, there are strong incentives to keep the production technologies within the organisation structure of the MNEs. Instead of selling or leasing the know-how to foreign competitors, many MNEs establish their own production capacity abroad by offshoring industrial plants to exploit the technological advantages on their own. The third condition concerns specific localisation factors. There are a number of such factors, all important to consider in an international production perspective. Some examples related to location are economic resources, production costs, political relations, market perspectives and transaction costs in form of cultural barriers and language dissimilarities. Dunning (1979)

Dunning's theory has been widely criticised due to that it mainly consists of a set of factors and less of a theoretical base to use when analysing companies' incentive to globally integrate production (Itaki, 1991; Johansson and Vahlne, 1990). However, the theory is useful for to analysing specific cases of international production.

Theories of Global Production Networks and Transnational Corporations

There are different views of how to treat the links between globalisation dynamics and regional development. One aspect tends to focus on the institutional structures and the ability to control global networks (see e.g. MacLeod, 2001; Storper, 1997 for further readings), while others put emphasis on inter-firm networks and global commodity/value chains (Gereffi and Kaplinsky, 2001; Gereffi, 1996). However, these two different strands can be criticized for their failure to effectively depict regional economic development in an era of globalisation (Coe et al, 2004).

Global Production Networks

Coe et al (2004) develop a framework comprising a model that integrates global regional dynamics in a context of taking both global forces and regional assets into account. The model depicts the dynamics in the strategic coupling of global production networks (GPNs) and regional assets. The main argument of the model is to stress that regional development depends on the virtue of this very coupling system in order to encourage processes of value creation, improvement and profit allocation.

At any point in time, regional development requires the presence of the following three interrelated conditions:

- The existence of economies of scale and scope within specific regions
- The possibility of localisation economies within GPNs

- The appropriate configurations of regional institutions to retain GPNs and unleash the potential for regional growth

Figure 3.3 summarizes these conditions.

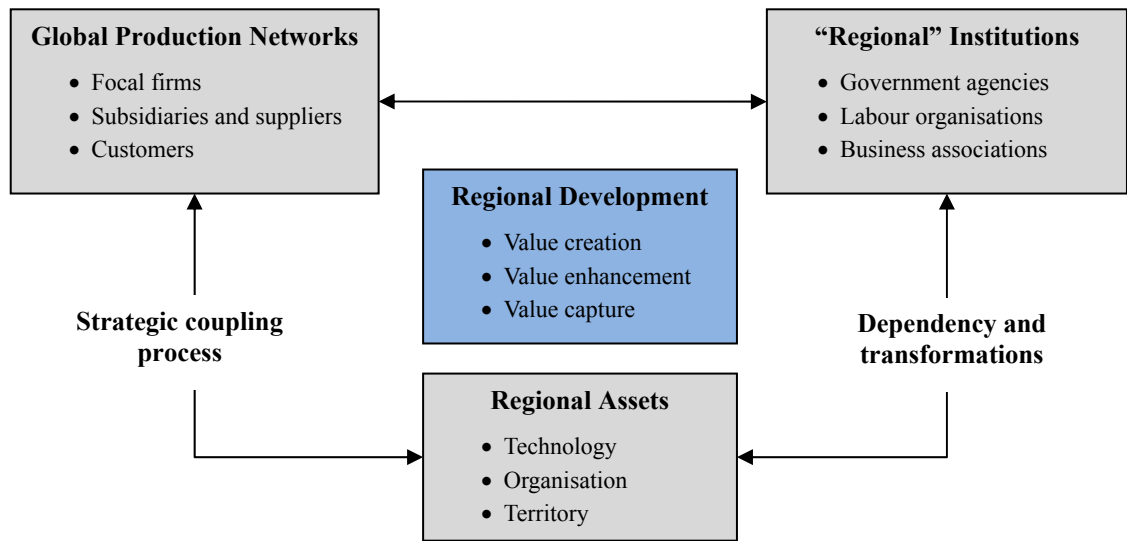


Figure 0.3 A framework for analysing global production networks
Source: Coe et al (2004)

The model depicts regional assets such as technology, organisation and territory as a main requirement for regional development to prevail (Storper, 1997). “Regional” institutions such as government agencies, labour organisations and business associations also play an important role to convey regional assets to reach progress. However, the term “regional” should be treated with care (thereof the quotes), as development also can be a result of interest from extra-local institutions. Assuming this, the regional assets can produce both economies of scale and scope if processed properly. Scale economies can be achieved as clusters are formed within specific regions and value inputs such as knowledge, skills and expertise in combination with technological improvement are exploited to reach large volumes of output. Moreover, economies of scope can exist if the value inputs are “spilled over” to neighbouring regions, implying that economic actors can benefit from learning and cooperation as part of the cluster network (Coe et al, 2004; Florida, 2003; Marshall, 1920; Porter 1998). This imply that such regions have lots of potential to create tendencies for a variety of manufactured goods based on innovative and entrepreneurial activities. However, the economies of scale and scope are only beneficial to regions directly connected to the agglomeration and as a result networking brings with it regional development. Hence, regional development is also attainable if such clusters are about to complement the strategic needs of global subsidiaries and suppliers within the GPNs. If such operations exist between regions and GPNs, strategic coupling processes will take place between actors, where relational advantages of regions interact with the needs of GPNs. Table 3.1 reflects the different dimensions of local and global regional development (Coe et al, 2004).

Table 0.1 Local and global dimensions of regional development

Dimensions:	Local outcome:	Global forms:
• Firms	<ul style="list-style-type: none"> - Indigenous SME's - Industrial clusters - Intra-regional markets - Venture capitalists 	<ul style="list-style-type: none"> - Global corporations - Entrepreneurial subsidiaries - Distant global markets - Decentralised business and financial networks - Global production networks
• Labour	<ul style="list-style-type: none"> - Skilled and unskilled workers - Permanent migrants 	<ul style="list-style-type: none"> - Skilled experts and technologists - Transient migrants - Transnational business elites
• Technology	<ul style="list-style-type: none"> - Spillover effects - Tacit knowledge - Infrastructure and assets 	<ul style="list-style-type: none"> - Global standards and practices - Intra-firm R&D activities - Technological licensing - Strategic alliances
• Institutions	<ul style="list-style-type: none"> - Conventions and norms - Growth coalitions - Local authorities - Development agencies 	<ul style="list-style-type: none"> - Labour and trade unions - Business associations - National agencies and authorities- - Inter-institutional alliances - Supranational and international organisations

Source: Coe et al (2004)

The model tends to explain regional development, both in a local and global context, where such progress is dependent on relational coupling processes evolving over time to supply the rapid dynamic needs of GPNs.

Transnational Corporations

Following the former case of the GPN, the geography of production can take on various forms depending on which strategy the transnational corporation (TNC) follows. As illustrated in Figure 3.4a), the production unit is globally integrated, however, the production occurs at one single location. The goods manufactured at this industry are exported to the world markets through advanced networks of sales and marketing. The reasoning behind a setup like this is to keep a tight centralisation in decision making and to retain assets and resources such as production techniques and expertise within the TNC. Corporations that have adopted similar production units are e.g. Ford and Rockefeller in the early 1900s, and later a number of Japanese corporations in the 1970s. TNCs that are characterised by a globally integrated production network, rule under the mentality of having one unified market. Dicken (2007)

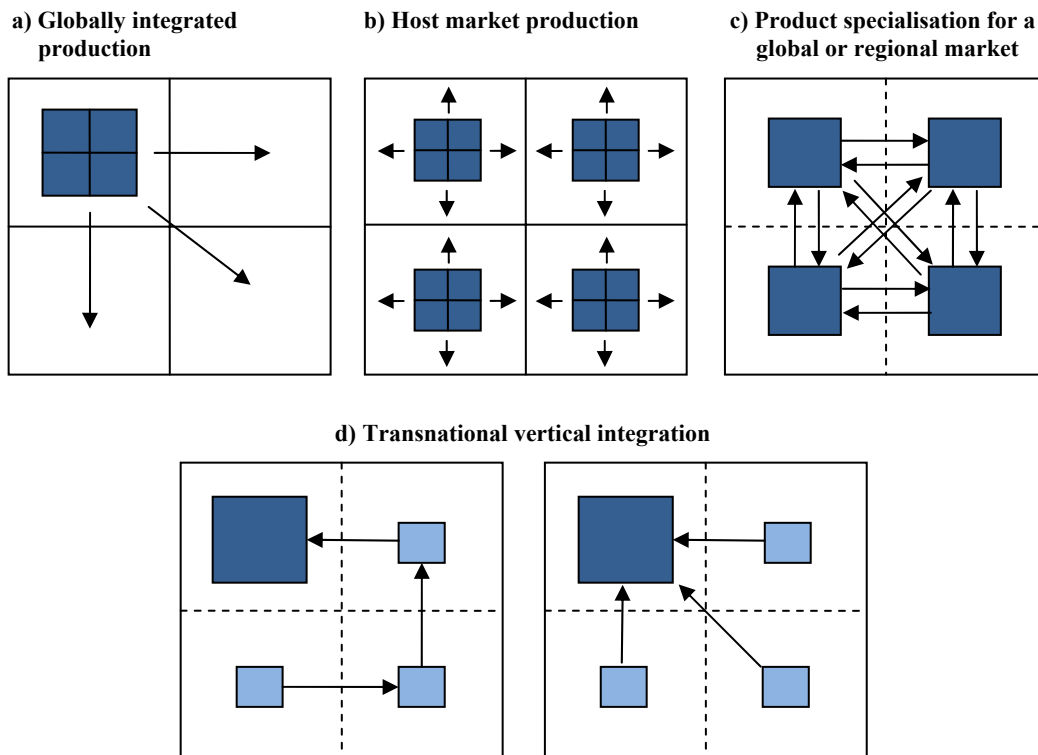


Figure 0.4 Alternative ways of transnational production
Source: Dicken (2007)

In Figure 3.4b), each manufacturing unit produces a variety of goods that are aimed for a specific national market. Host market production implies that there are no sales across national borders and the size of each industrial plant is limited by the demand of the national market. Furthermore, if the market demand and tastes are similar to those of the home market, then the goods produced in the host market are likely to be identical to those produced in the home market. A number of reasons can influence the TNCs to set up industrial plants in the host markets:

- Market sophistication in terms of income levels and firm size
- Consumer tastes and demand
- Cost-related advantages of direct location in the host market
- Governmental impediments for market entry

There are two main reasons for a continued development of host market production. First, to meet the sensitivity in changes in consumer preferences or to be able to offer fast after sales service. Second, the existence of trade barriers (Dicken, 2007). Examples of TNCs acting under this production strategy are Coca-Cola, Unilever and Proctor & Gamble (Cooper, 1993).

Figure 3.4c) illustrates the case of TNCs with production units focusing on manufacturing of one single product to be sold in the regional market in a number of countries where an industrial plant has been established. The individual plant size is often very large, as TNCs benefit from economies of scale when serving a large regional market (e.g. the EU or East Asia). Where to set up the industry depends on the trade-off between economies of scale at one or a number of plants and the additional

movement costs involved in producing and shipping the final product to the regional market of interest, (Dicken, 2007).

Figure 3.4d) depicts a process of specialised production. In this case, the parent company organises the operations by vertically integrating the steps of production across national borders. The specialisation process often involves semi-finished products that are assembled at different locations around the world. Such a network is often characterised by a complex web of transportation flows, where the output in country “A”, becomes the input in country “B”. If the final product in this process is exported to the home market of the parent firm or to a host market in a third country, that market will serve as a global sourcing point for the TNC as a whole. Offshore sourcing was an unknown phenomena before the 1960s. The process was first implemented by the American electronics firms, where parts of their assembling operations were offshored to manufacturing industries in East Asia and Mexico. The process of transnational vertical integration is growing rapidly today and it has become a main factor of importance in the global integration of production processes. However, it is rather difficult to find suitable production locations across borders. Lower costs or more lenient trade policies are in some cases not the only reasons for a potential relocation of production. There are other factors that matter, e.g. proximity and risk posture. The proximity to markets is a significant factor, since firms’ offshore production to countries with higher labour costs than elsewhere. For example, American firms relocate production to Mexico, while Western European firms offshore production to Southern and Eastern parts of Europe, instead of other low cost countries in East Asia and Latin America. Finally, multiple sourcing processes induce lower risk of over-reliance in one single source. Interruptions can affect parts of the integrating units or in the worst case, affect the whole system. Dicken (2007).

Theories of the Global Value Chain

The concept of value-added chains is often adapted to better understand the dynamics of international trade and industrial organisation (Kogut, 1985). According to Kogut (1985: 15), a value-added chain refers to:

”The process by which technology is combined with material and labour inputs, and then processed inputs are assembled, marketed, and distributed. A single firm may consist of only one link in this process, or it may be extensively vertically integrated.”

What is highly significant in this context is the kind of activities and technologies the vertically integrating firm decides to keep in-house and what activities it decides to outsource or offshore, and where to (Harrigan, 1985; Gereffi et al, 2005).

Vertical Integration or Vertical Disintegration?

The value chain process could be described as a somewhat fragmentation of the production as it allows the company to relocate across national borders. A common result of fragmentation is the creation of global production networks, which involve a number of companies that all take part in the value-chain (Arndt and Kierzkowski, 2001; Arndt, 1998; Wixted, 2009; Jones and Kierzkowski, 2001). Another description of vertical integration refers to a case where its specific design resembles a production process characterised by various disintegrating stages. Generally, the disintegration arises due to factors such as outsourcing of non-core activities (Feenstra, 1998). The very same scenario is explained in Krugman (1996) as “slicing the value chain”.

Vertical disintegrating firms often place new requirements on the value chain, e.g. through increased product differentiation or improved efficiency in the just-in-time flow. Processes like these increase the complexity of transaction costs in the value chain (Williamson, 1998; Baldwin and Clark, 2000). However, large buyer firms have developed various strategies to help reduce the complexity of transactions. One way of doing this is through codifying technical standards and information processes within the value chain (Sturgeon, 2002; Gereffi et al, 2005). As new suppliers are introduced into the global value chain, it tends to increase the number of challenges conferred to the structure of coordination. Producers in developing countries are often required to meet the demands of the export market. This would not be a problem, if it were not so that the domestic market not yet adapted to such pace. The pressure stemming from these requirements imposes a wide gap in terms of capability, thus increasing the buyers' incentive for control (Keesing and Lall, 1992).

Gereffi et al (2005) propose a theory that helps explain the dynamics of industrial organisation by considering underlying factors such as transaction costs and global commodity chains. The framework is based on three key elements that are allowed to take on only two values, "high" or "low": *i*) complexity of information and knowledge transfers, *ii*) the extent of efficient codifications in information and knowledge transfers and *iii*) capabilities of actual and potential suppliers. The model includes five different analytical cases in where the governance of the global value chain is depicted.

Markets: if the product specification is easy to follow, the ability to codify transaction costs is a simple task to proceed with. A result of this is that producers are less dependent on buyers when a product is developed. Since buyers respond to market prices that are set by sellers, there is a low degree of explicit coordination and complexity.

Modular value chains are created when transaction costs are increasingly complex, yet, the ability to codify transactions still remains high. This is often the result if the product design is modular, thus requiring high input amounts of technical competence in production. In this case, the lead firm will act to unify most processes in production under one module. If the supplier is able to produce the complete package under this module, it will tend to reduce the buyer's costs in terms of surveillance and control. This kind of linkage, based on codified knowledge, provides a number of positive effects, such as speed in the production flow, flexibility, and access to low-cost inputs. The high abilities in codification implies that complex information can be transferred with little distinct coordination (the cost of changing supplier is still kept low, as in the case with markets).

Relational value chains are created when products cannot be codified and transaction costs are too complex to organise. Networks like these require high capabilities from their potential suppliers. The knowledge in production is often incomplete, which allows the lead firm to outsource steps of production in order to gain access to an increased knowledge base. Relational value chains are often characterised by a high explicit coordination via regular face-to-face interactions between actors. The reciprocity that may arise is commonly based on reputation, proximity, family and ethnic relationships. Thus, finding new partners may induce a high cost for both the lead firm and the supplier.

Captive value chains are formed when the supplier capability is low and the product specification is complex. The ability to codify detailed instructions and information is high. The lead firm needs to put in a lot of effort in monitoring the supplier in the production process. As investment costs increase, the lead firm will seek to lock-in the

supplier to avoid its investments going to waste. The supplier faces a high switching cost as it is caught in the lead firm’s web. However, the lead firm provides the supplier with enough resources, in order to make a potential exit by the supplier unattractive. Captive suppliers are often compelled to a few simple tasks, such as assembly and are much dependent on the lead firm to be contracted for new tasks.

Hierarchy: in-house production is generally a result of a situation in where products are complex to produce, highly difficult to codify due to lack of skills and competence to manufacture the product of interest. A hierarchical value chain has a high degree of explicit coordination. The lead firm organises its own production flows and attempts to centralise the control over the firm’s resources.

Table 3.2 summarises the five governance types of the global value chain. The three columns in the middle present the values due to the key elements *i)* complexity of transactions, *ii)* ability to codify transactions and *iii)* capabilities in the supply base. The last column in the table displays the degree of distinct coordination. The degree is low in the case of markets and expands to a high degree of explicit coordination when the structure is hierarchical.

Table 0.2 Global value chain governance types

Governance type	Complexity of transactions	Ability to codify transactions	Capabilities in the supply base	Degree of explicit coordination and power asymmetry
Market	Low	High	High	Low
Modular	High	High	High	↕
Relational	High	Low	High	
Captive	High	High	Low	
Hierarchy	High	Low	Low	High

Source: Gereffi et al (2005)

Figure 3.5 depicts the above situation graphically. The line arrows represent transfers based on price (most typical in the market case), while the block arrows show larger flows of information and control governed via distinct coordination (as in the case of hierarchy).

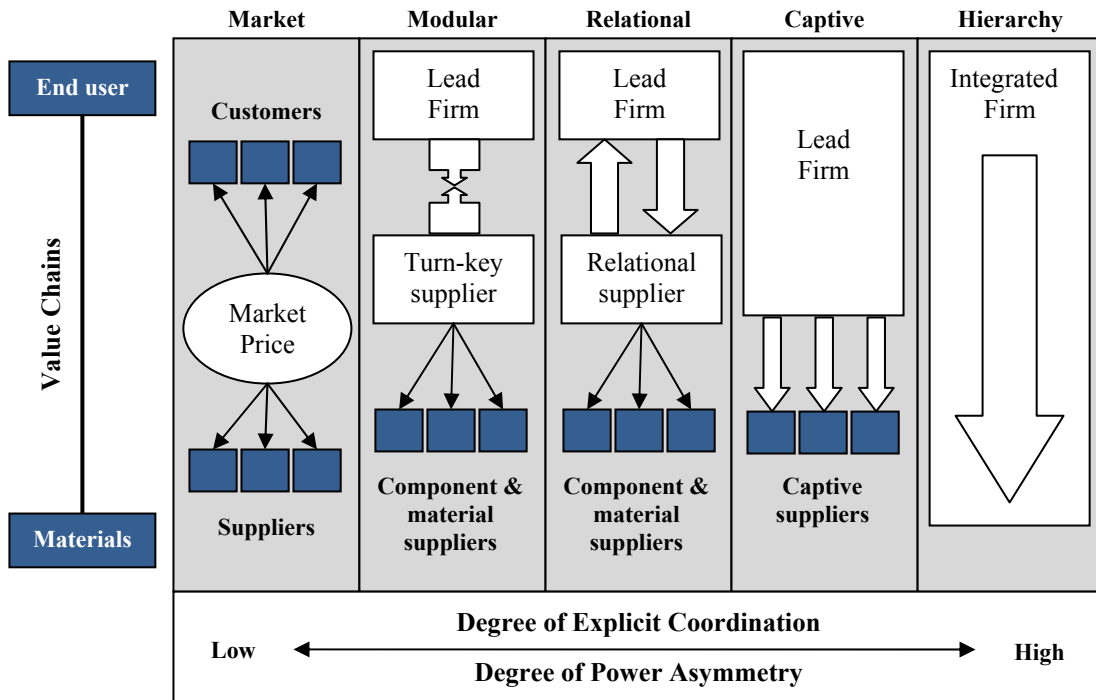


Figure 0.5 Global value chain governance types
 Source: Gereffi et al (2005)

Outsourcing and Offshoring in the European Industries

It is frequently observed, that firms outsource part of or even all their production to other firms (Cassia, 2010; McMillan, 2010; van Winden et al, 2010). Firms exist so that they can economise on the transaction costs of exchanges, compared with contracting individual producers' in the market place (Coase, 1937). However, organising production activities within a firm also has its costs, which implies that there are cases when individual contracting in the market place is preferred. We have seen that the choice, whether to perform production activities within the firm, or to contract them in the market place, is as a process driven by make or buy decisions. Thus, it is motivated to ask what effects are associated with outsourcing and offshoring decisions? Having this question in mind, the remaining part of this section will describe some empirical findings related to offshoring in the manufacturing industries in Europe.

The Dynamics of the European Production Industry

Europe is world famous for its long history of establishing large multinational corporations that dominate the global markets, (Inkpen and Ramaswamy, 2007). The region comprises of countries that often are characterised by stable economic growth. Most of the countries referred to are located in Western Europe and are commonly known for their role in driving the production dynamics in the world markets, (Fabrizio et al, 2009; van Winden et al, 2010).

The European production industry has been affected differently in the various countries within the EU region. Figure 4.1 depicts the trend in total employment in the manufacturing industry for the EU27, EU15 and EU12, during the period 1999 to 2007.⁸

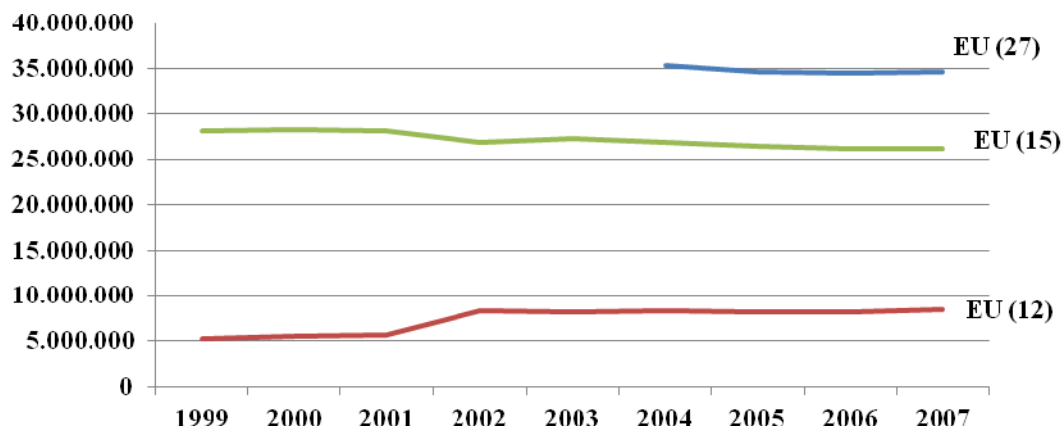


Figure 0.1 Persons employed in the manufacturing industry in the EU, 1999 to 2007
Source: Eurostat (2011)

The aggregate total employed in manufactures in the EU15 has fallen throughout the period of time. In 2007, the number of employed persons in manufactures in the EU15 started to increase. The prosperous employment numbers for the EU15 countries in the

⁸ EU15 comprises of the countries Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and the United Kingdom. EU12 consists of Bulgaria, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Romania, the Slovak Republic, Slovenia and Poland. EU27 equals EU15 and EU12 combined. For further notes regarding the data, see Appendix 1.

late 1990s have almost reduced by half its amount in 2007. Since the start of the century, the EU12 has experienced an increase in the aggregate number of workers in manufacturing.⁹ Figure 4.1 displays an interesting on-going structural change in manufacturing within the EU.

Figures 4.2 and 4.3 present the total persons employed in the manufacturing industry in some selected EU countries for the period 1996 to 2007. Germany is the only country among the selected EU15 countries showing an increase in persons employed in manufactures in 2007. Italy, France, Spain and the United Kingdom, respectively, display falling trends in employment for this sector. The extreme case concerns the United Kingdom, where the number of employed in manufacturing has decreased by over one million workers. Sweden, however, depicts an almost constant trend (yet increasing marginally) over the period of time.

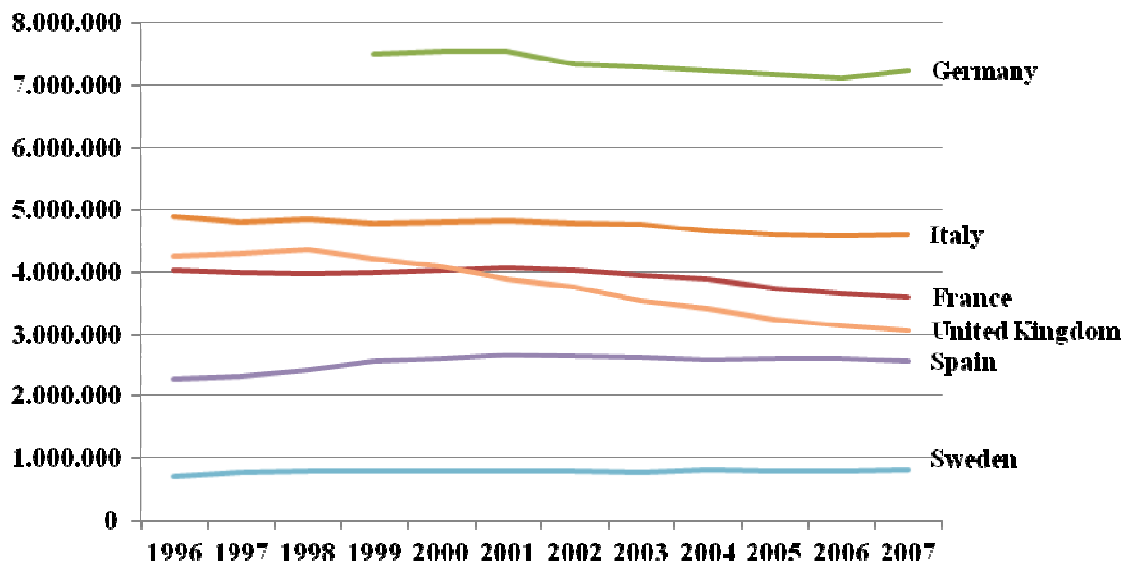


Figure 0.2 Persons employed in manufacturing, selected EU15 countries, 1996 to 2007
 Source: Eurostat (2011)

All the selected EU12 countries in Figure 4.3 (except Hungary) are depicting increasing numbers of employed persons in manufactures in 2007. Poland shows the largest increase in recent years, followed by the Czech Republic, Romania and Bulgaria. Figures 4.2 and 4.3 indicate that countries in Western Europe are experiencing a decline in numbers of persons employed in the manufacturing industry, while countries located in Central and East Europe are prospered by an increase in this sector. In general, the total employment in manufactures in the EU27 has increased and more jobs have been allocated from the EU15, to the emerging markets in the EU12, (Wixted, 2005; 2009).

⁹ The total employment value in manufactures for Romania is missing for 2007. Due to its large size, the missing value highly affects the aggregate total employment of the EU12. To correct for this, the Romanian workforce in manufacturing has been approximated for 2007. See Appendix 1 for further information.

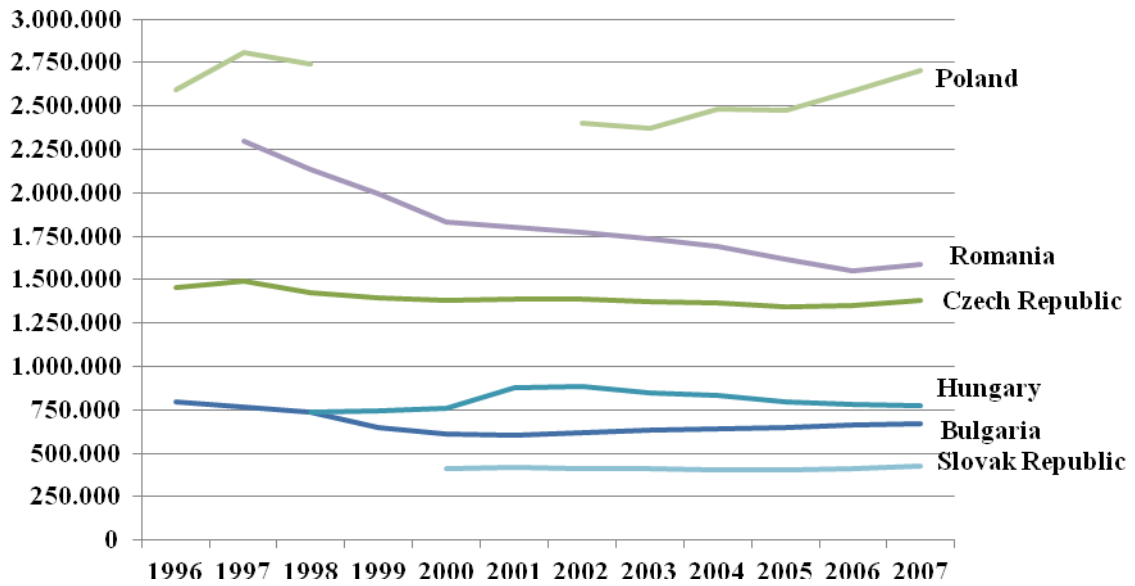


Figure 0.3 Persons employed in manufacturing, selected EU12 countries, 1996 to 2007
 Source: Eurostat (2011)

The enlargement of the EU to include countries from Central and East Europe (CEE)¹⁰ has resulted in an increase in the level of income and human capital endowments for all member countries in the European Union (Marques and Metcalf, 2005). Outsourcing, offshoring and trade within Europe (i.e. the interaction between Western Europe and the CEE) are increasing at a rapid pace. Several studies have found this relationship and indicate that the relocation of production networks to the emerging markets in CEE is an on-going trend (Fabrizio et al, 2009; OECD, 2010; van Winden et al, 2010). Moreover, all CEE countries show significant patterns of increase in their national export shares. In countries such as Czech Republic, Estonia and Hungary, the structural transformation of exports has been increasing at an exponential pace (Fabrizio et al, 2009).

East Asia is another popular market for Western European firms to relocate production to. The main attraction of the East Asian market is its low factor costs (e.g. in terms of land and labour costs), the lenient governmental policies (e.g. in terms of taxes) and the broad network of entrepreneurs willing to supply the markets in Western Europe. The European production networks have stepwise moved to countries located in this region in order to benefit from these attractive conditions. The EU, as a trading bloc, has separate strategic partnerships with Asian countries such as China, India and Japan. Also, the EU has started bilateral relations with South Korea and other countries located in South East Asia, in order to create long-term inter-regional relations with the ASEAN (Breslin, 2010b). The East Asian performance is still characterised with an impressively strong and persistent growth. The economies of this region are constantly renewing themselves and succeed to escape their own growth bottlenecks, to adjust to the dynamics of the international environment. The current trend reflects that the global integration, between EU and ASEAN, is a continuous process promoted at a national political level (Meng et al, 2006; Fabrizio et al, 2009).

¹⁰ CEE countries are referred to as Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia.

Other markets of interest for companies in Western Europe are countries located in the southern parts of Latin America and in North Africa. Western European firms that are investing in Latin America can acquire highly advanced technological competence at a relatively low factor cost. This is typical for countries such as Brazil and Chile (Arora and Gambardella, 2005; van Winden et al, 2010). North African countries, e.g. Morocco, Algeria and Tunisia have also been a significant destination for industry location and increased FDI spending by Western European firms. A main reason for companies to locate in this area is the proximity to the EU markets and the lower costs of production inputs. However, trade barriers are still a major deterrence causing a moderate integration between Western Europe and African countries (López-Cálix et al, 2010).

The Role and Extent of European FDI Flows

Throughout the years, the EU has played an important role for global investment flows.¹¹ As can be depicted in Figure 4.4, the EU share of the world FDI outflows has exceeded one third of the total share during the period 1970 to 2009. An extreme case is seen in 2005, when the EU share accounted for more than two thirds of the world FDI outflows. The countries France, Germany, Italy, Sweden and the United Kingdom contributed to almost 80 percent of the total EU share of FDI outflows in 2009. However, the trend in recent years has experienced a downturn, going from 57 percent in 2007, to a share slightly above 35 percent in 2009.

¹¹ It is important to note that the FDI data for all EU countries include both internal flows (i.e. within the EU) and external flows (with partner countries outside the EU). In this context, the FDI outflows and inflows comprise of:

“The capital provided (either directly or through other related enterprises) by a foreign direct investor to a FDI enterprise, or capital received by a foreign direct investor from a FDI enterprise. FDI includes the three following components: equity capital, reinvested earnings and intra-company loans.

The foreign direct investment flows are presented on net basis and can be defined as:

FDI flows = capital transaction credits - debits between direct investors and their foreign affiliates

- Net decreases in assets or net increases in liabilities are recorded as credits
- Net increases in assets or net decreases in liabilities are recorded as debits

Negative FDI flows indicate that at least one of the three components of FDI is negative and is not offset by the positive amounts of the remaining components. This is also referred to as reverse investment or disinvestment.” UNCTAD (2011)

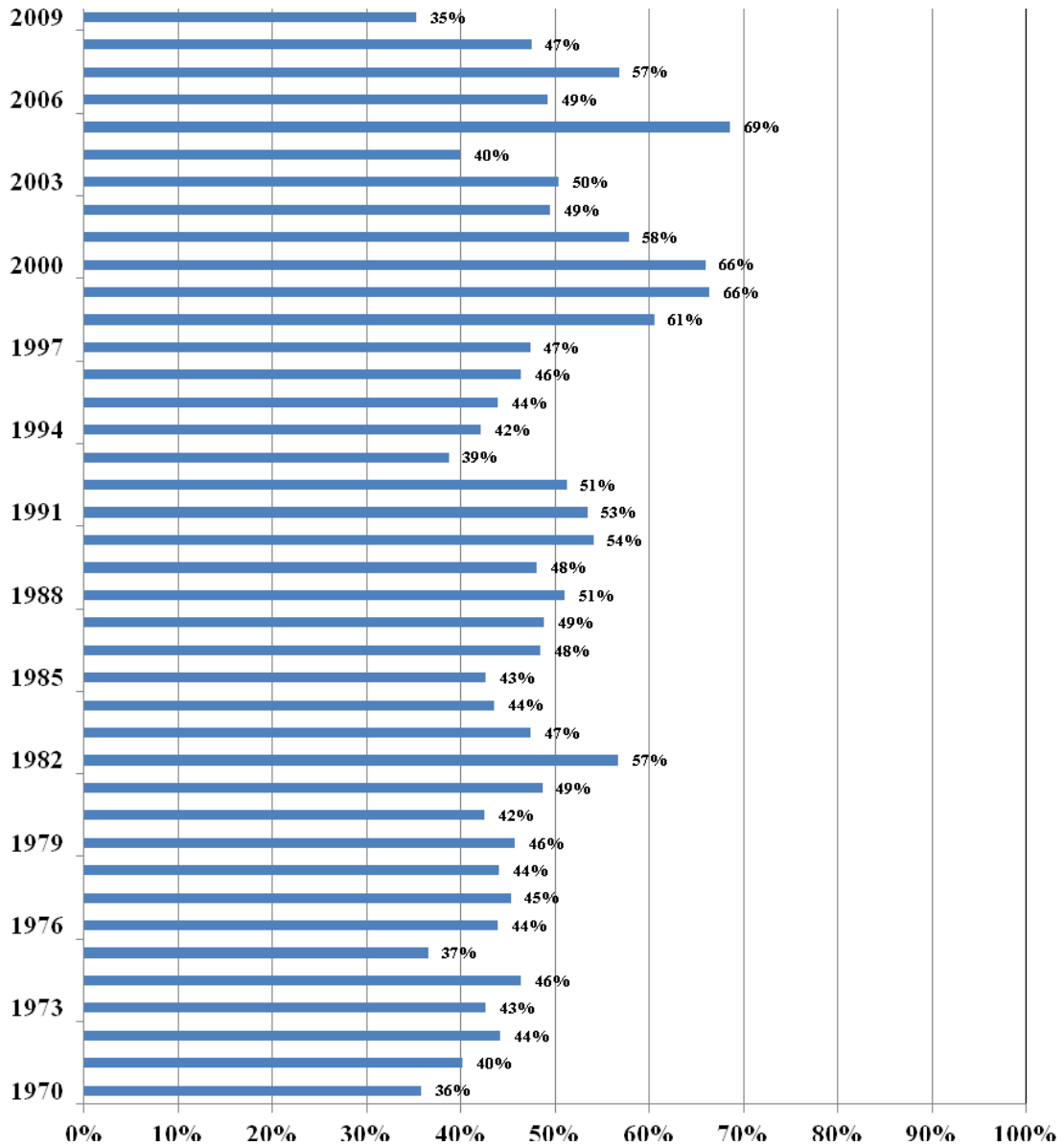


Figure 0.4 The EU share of world FDI outflows, 1970 to 2009
Source: UNCTAD (2011)

Figure 4.5 illustrates the FDI outflows of the EU, the NAFTA and the world for the period 1970 to 2009. The world FDI outflows reached its peak in 2007, when approximately 2,267,547 million US dollars were invested globally. In the 1970s, the combined FDI outflows from the NAFTA countries exceeded those of the EU. The trend took a turn in the beginning of the 1980s, as the EU outflows began to increase in a higher pace. The FDI outflows of the EU, the NAFTA and the world follow each other well throughout the time span. The curvature of the three lines is almost identical. During the last three-year period, the world outflows of FDI (including the EU and NAFTA), has been characterised by a sharp drop, mostly as a result of the global financial crisis (OECD, 2010).

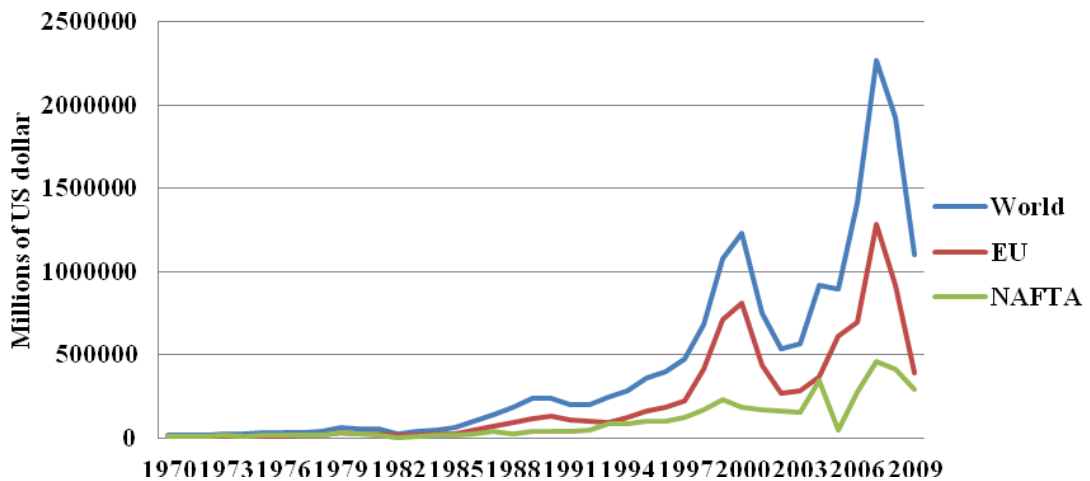


Figure 0.5 FDI outflows measured in net value, 1970 to 2009
 Source: UNCTAD (2011)

The EU countrywise net values of FDI outflows are depicted in Figure 4.6 for the years 2002, 2005 and 2009.¹²

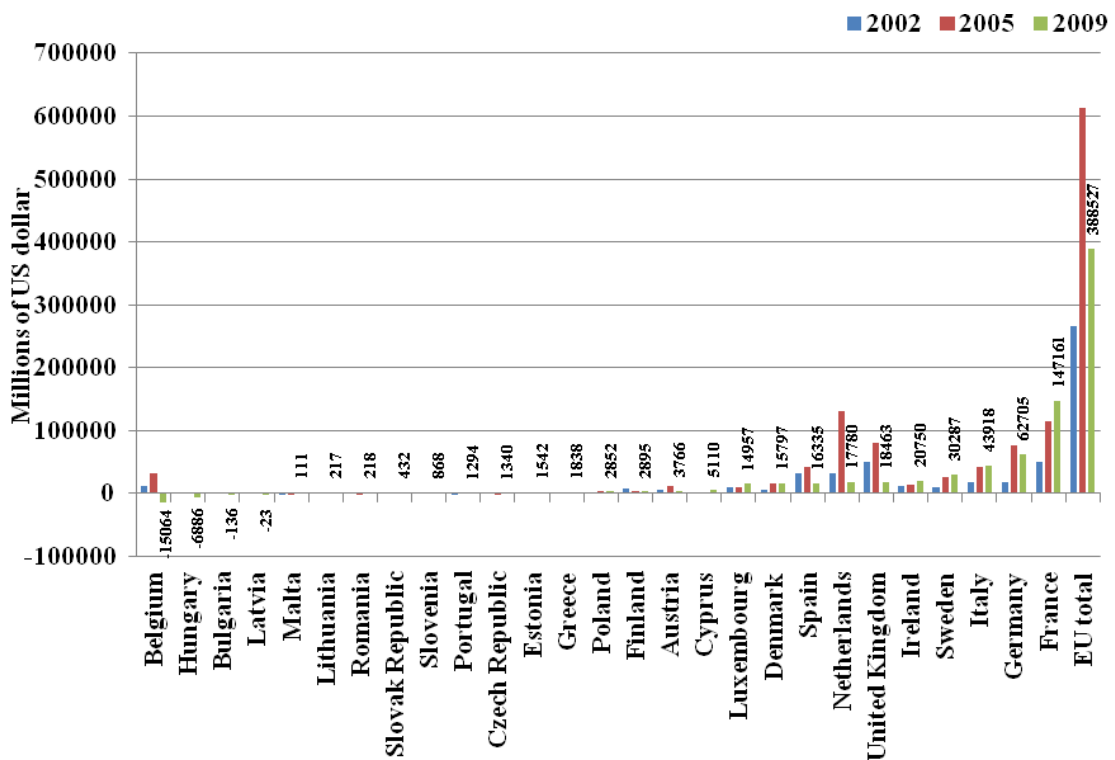


Figure 0.6 The net value of FDI outflows in the EU, per country, for 2002, 2005 and 2009
 Source: UNCTAD (2011)

¹² Only the FDI net values for 2009 are labelled in Figures 4.6 and 4.9. The countries are sorted based on their FDI flows in 2009.

France is without doubt the leading country in terms of FDI outflows and it is followed by Germany, Italy and Sweden, respectively. France, Italy and Sweden have increasing FDI outflows over the three years that are being analysed. Germany, however, experienced a decrease in value of outgoing FDI between 2005 and 2009. Note that Belgium has gone from a positive outflow in 2002 and 2005, to a state characterised by a negative value for its national outflow of FDI. The same applies to Hungary, Bulgaria and Latvia, however, with lower values compared to the former.

The EU share of the world FDI inflows is illustrated in Figure 4.7 for the time period 1970 to 2009. The time span depicts a rather similar pattern, as compared to the case with outflows, however, in the case of FDI inflows the shares are lower. There are both up and down going trends throughout the years. The highest EU share, corresponding to over half the amount of world FDI inflows, was obtained in 1991, while the lowest share occurred in 1984.

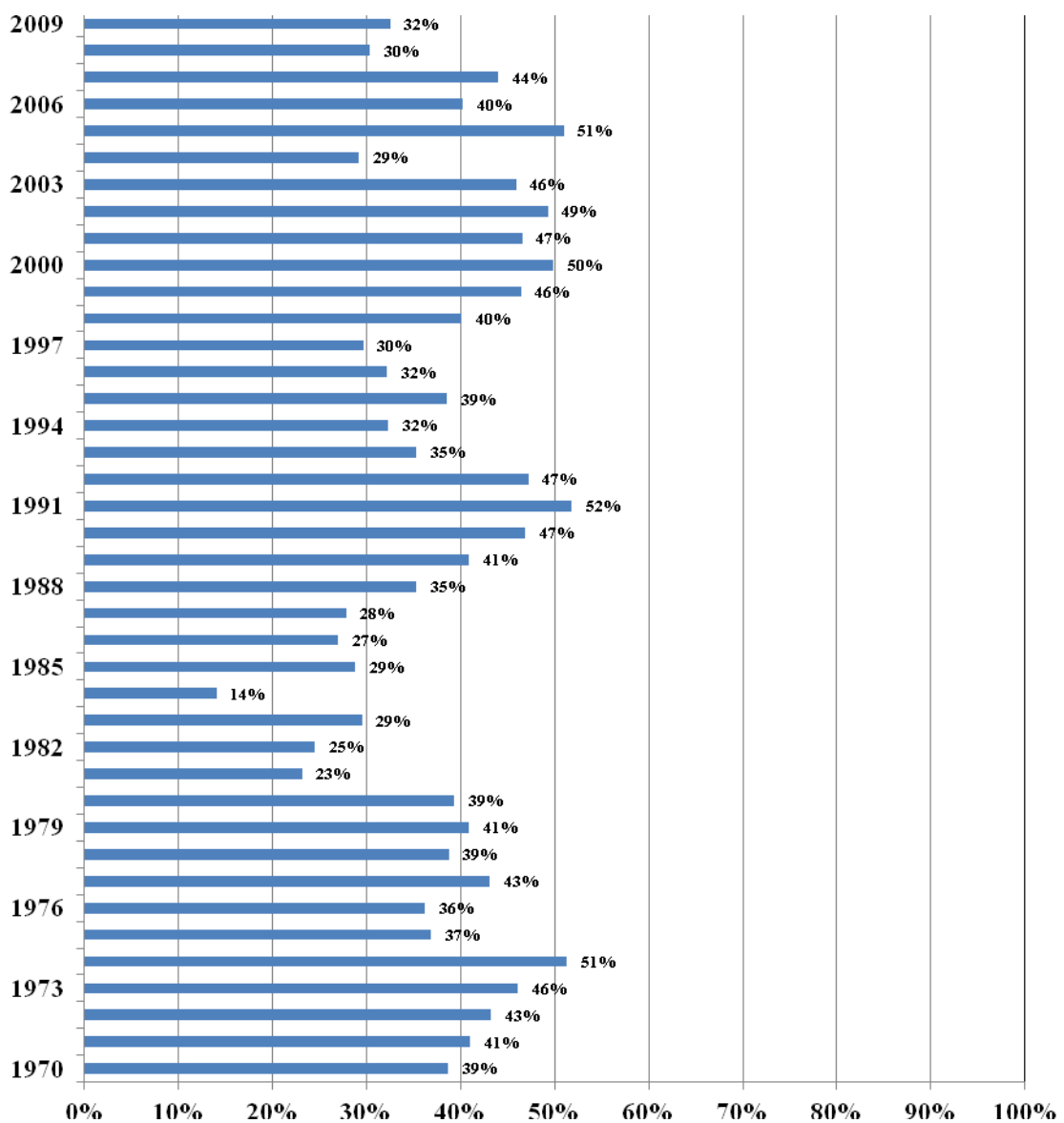


Figure 0.7 The EU share of world FDI inflows, 1970 to 2009
Source: UNCTAD (2011)

Figure 4.8 graphs the net value of FDI inflows in relation to the EU, NAFTA and the World. The FDI inflows are resembling a mirror reflection of the outflows. The peak was reached, like in the former case, in 2007. The following two-year period resulted in a drastic fall in FDI inflows. The main reason, as mentioned before, for this drop was the financial crisis causing foreign direct investors to withdraw their global investments. Moreover, what is interesting to see is that the gap between the line representing the world FDI inflows (i.e. the upper line in Figure 4.8), and the line measuring the FDI inflows of the EU, is wider when compared to that in Figure 4.5. Thus, it is more common for the EU countries to have higher values of FDI outflows, compared to FDI inflows. The EU and the NAFTA FDI inflows followed each other quite well until the 1990s. Past that period of time, the EU inflows have increased in a higher pace. This is also evident from studies analysing global economic indicators (cf. OECD, 2010; UNCTAD, 2010).

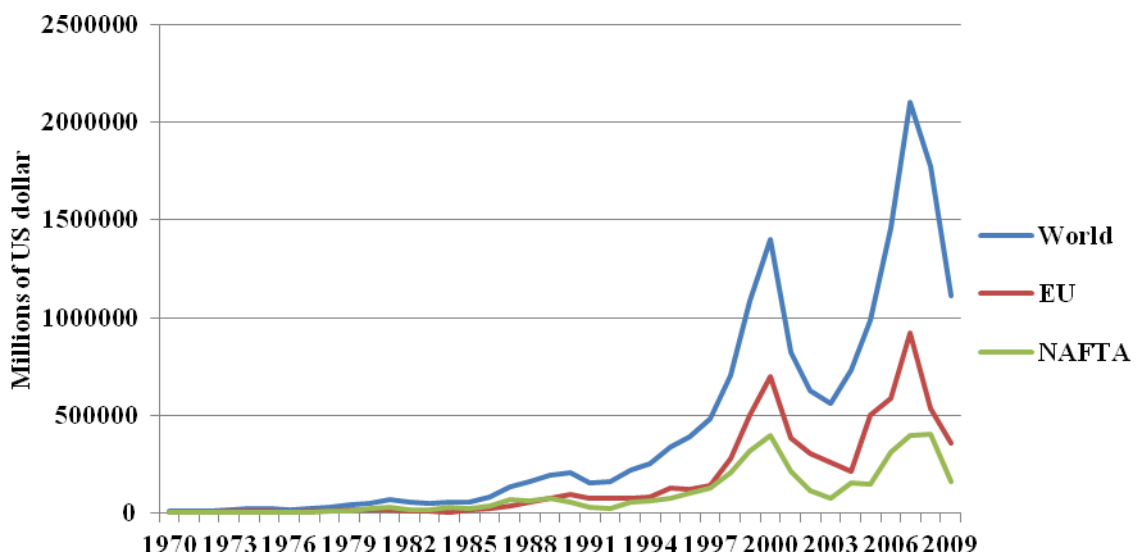


Figure 0.8 FDI inflows measured in net value, 1970 to 2009
Source: UNCTAD (2011)

Figure 4.9 shows the net value of FDI inflows per country in the EU for the years 2002, 2005 and 2009. France retains its top position also in terms of FDI inflows, followed by the United Kingdom, Germany and Belgium, respectively. France and United Kingdom show large increases in the value of FDI inflows from 2002 to 2005, followed by sharp declines in 2009.

Note that Belgium, with negative FDI outflows in 2009, has the fourth highest value of FDI inflows for the same year. It is interesting to see that countries such as Hungary, Slovenia and the Slovak Republic have negative values of FDI streaming in. However, new EU members like Poland, Romania and Bulgaria, all show increasing trends in FDI inflows. The Czech Republic, with an increasing trend between 2002 and 2005, experiences a sharp decline in 2009. The FDI inflows to the EU in 2009 have decreased by more than one fifth of its 2005 amount.

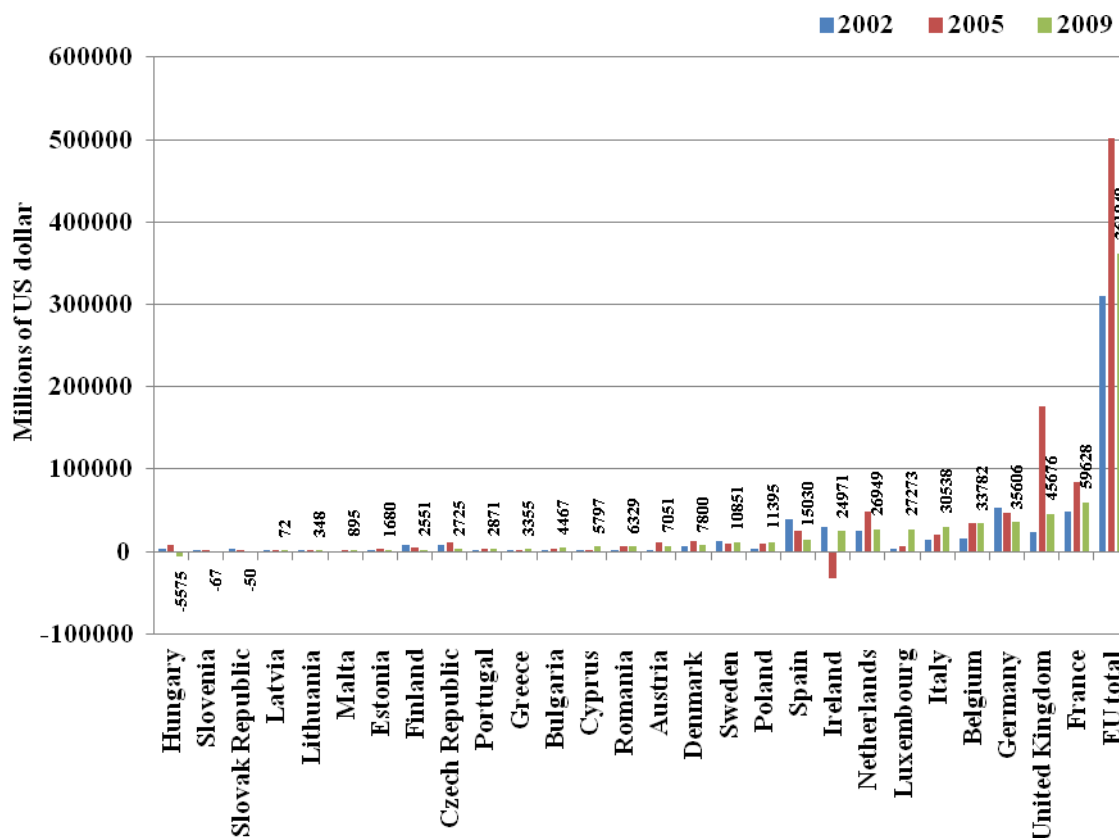


Figure 0.9 The net value of FDI inflows in the EU, per country, for 2002, 2005 and 2009
 Source: UNCTAD (2011)

Table 4.1. shows the FDI flows in shares, net values and top global destinations and origins for Germany, United Kingdom, France, Sweden and Italy in 2009. France has the largest EU share in terms of FDI outflows and inflows. The top global destination for French FDI flows is the United Kingdom, and to other EU countries. The EU is also the most important market for German, Swedish (except in the case of Russia) and Italian FDI outflows. The most important destinations for British FDI outflows are to non-EU countries, such as Jersey, South Africa, Argentina and Switzerland.

The FDI inflows, however, have a slightly wider spread of remitters among investors. Countries such as Qatar and the United Arab Emirates (UAE) invest large funds in Germany, France and the United Kingdom. The USA is the main investor in the United Kingdom. Similar to the case with the FDI outflows, it is evident that countries within the EU are the main sources behind the FDI inflows to the EU.

Table 0.1 Selected EU countries FDI net flows, shares, destinations and origins, in 2009

Outflows			Inflows		
FDI share of EU total	Total FDI value*	Top 4 destinations	FDI share of EU total	Total FDI value*	Top 4 origins
Germany					
16%	62705	1. Luxembourg	10%	35606	1. Luxembourg
		2. UK			2. Italy
		3. Italy			3. Qatar
		4. France			4. Netherlands
France					
38%	147161	1. UK	16%	59628	1. UK
		2. Belgium			2. Netherlands
		3. Luxembourg			3. Belgium
		4. Netherlands			4. UAE
Sweden					
8%	30287	1. Netherlands	3%	10851	1. Belgium
		2. UK			2. Ireland
		3. Belgium			3. Finland
		4. Russia			4. Netherlands
Italy					
11%	43918	1. Netherlands	8%	30538	1. Netherlands
		2. Spain			2. Ireland
		3. Ireland			3. Spain
		4. UK			4. UK
United Kingdom					
5%	18463	1. Jersey	13%	45676	1. USA
		2. South Africa			2. Germany
		3. Argentina			3. Romania
		4. Switzerland			4. Qatar
EU total					
100%	388527		100%	361949	

*In million of US dollars (net value)

Source: UNCTAD (2011) and OECD (2011)

In a survey conducted by UNCTAD (2010), the top priority host economies for FDI were analysed among some of the world's largest transnational corporations for the period 2010-2012. Figure 4.10 presents the result from this survey.¹³ China is still the main attractor of FDI from transnational corporations. The USA drops from a second to a fourth place, allowing both India and Brazil to pass. Mexico climbs a number of positions, going from twelfth to sixth place. Countries that were outside the top 20 in

¹³ The ranking for the previous period 2009-2011 is presented in the parentheses before the name of each country. The countries without numbers in brackets were ranked outside the top 20 in the previous study.

previous period and climbing on the list are Thailand, Malaysia, Japan, Chile, South Africa, Spain and Peru. Six European countries are part of the top 20 list. Countries in Latin America (i.e. Brazil, Chile and Peru) are becoming more interesting for global investing corporations.

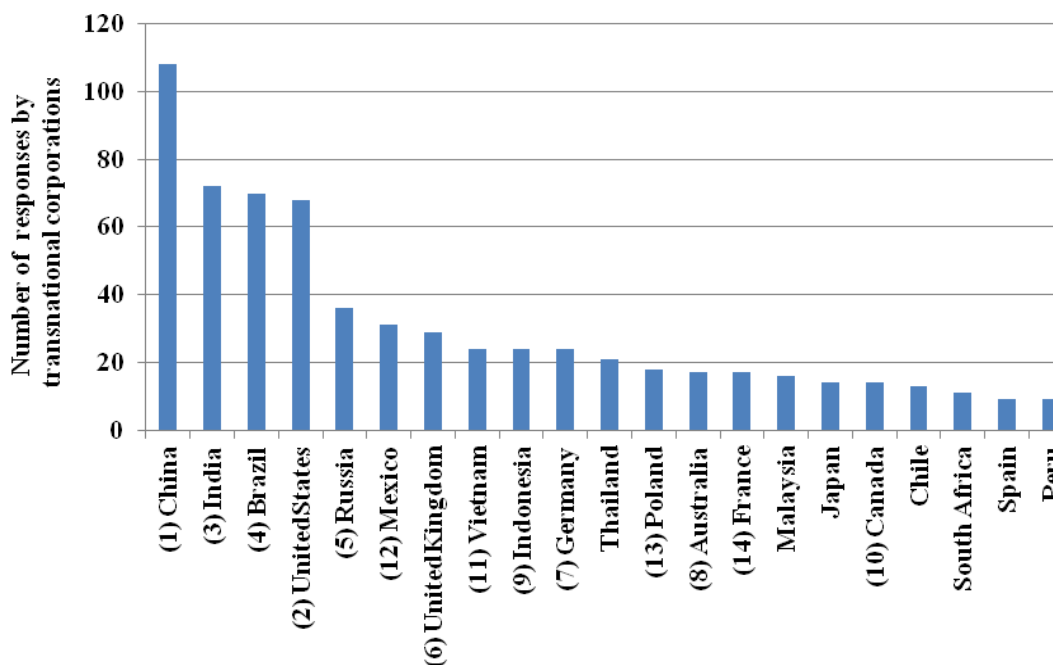


Figure 0.10 Top priority host economies of FDI for the period 2010-2012
Source: UNCTAD (2010)

The EU countries are the main source of FDI flows within the EU. The EU also plays an important role for the global FDI flows. An interesting pattern is that the EU has a larger volume of outflows compared to inflows, indicating that it is a net-investor of FDI to regions within and outside the European Union. The FDI flows from the EU act as important drivers of regional development, industrial growth and tends to increase the technological competence at a global scale. These results are supported by studies such as Éltető (2010); Carvalho et al (2010); OECD (2010) and UNCTAD (2010).

Offshoring in Europe

During the twentieth century, the Western European manufacturing industry functioned as a world export platform, supplying the global needs with European made goods. In recent time, the trend has displayed a change towards an increased level of exports in services, such as financial services and information and communications technology. It has been increasingly common that there is an on-going structural change taking place within the region. Western European countries are moving towards becoming highly knowledge-intensive economies, where multinational corporations are relocating parts of the production, to other countries in new emerging markets in Central and East Europe, Latin America and East Asia (Pavitt, 2003; van Winden et al, 2010). The heavy industrial machinery in these countries have been replaced by research intensive laboratories and office space accommodating high-skilled personnel that have been

acquired to develop the future of the expanding multinational enterprises (Bidanda et al, 2006; van Winden et al, 2010).

This part will analyse the trend in offshoring in the manufacturing industries and the service sectors.¹⁴ As data is limited to the OECD, the focus will be on member countries within the organisation and a smaller group of non-member countries.¹⁵

Offshoring in European manufactures

Figure 4.11¹⁶ shows the level of offshoring in the manufacturing sector within the OECD and a group of non-member countries for the years 1995 and 2005. In general, the index increased slightly for the majority of countries. An exception is made for the Central and East European countries, where the offshoring index rose greatly. The main cause for the increasing trend in Eastern Europe is due to that Western European multinational corporations have found it attracting to set up trading contracts with foreign affiliates in this area (OECD, 2010). As a result, countries such as Hungary, Estonia, the Slovak Republic, Poland and the Czech Republic have experienced increasing offshoring indices. These results are supported by empirical studies conducted by Éltető (2010) and Sass (2010). An interesting remark is that both China and Brazil increase their offshoring indices within manufactures. However, not all countries show rising levels in offshoring trends, e.g. Belgium, Sweden, Greece, Norway, United Kingdom and Italy, all show declining patterns in offshoring. The extreme case involves the Netherlands, Luxembourg and Ireland, where the fall has been dramatic. The decreasing shares of these countries are mostly due to growing interest for markets in Central and East Europe and Asia (Collins and Grimes, 2010).

¹⁴ “Offshoring is generally defined as companies’ purchases of intermediate goods and services from foreign providers at arm’s length or the transfer of particular tasks within the firm to a foreign location, *i.e.* to foreign affiliates. Outsourcing refers to the purchasing of intermediate goods and services from outside specialist providers at arm’s length either nationally or internationally. The cross-border aspect is the distinguishing feature of offshoring, *i.e.* whether goods and services are sourced abroad as opposed to the domestic economy, not whether they are sourced from within the same firm or from external suppliers”. OECD (2010; 220)

The index of offshoring abroad (OI_i) constructed for a sector i and for a set of goods and services j is defined as:

$$OI_i = \sum_j \left[\frac{\text{purchases of inputs } j \text{ by industry } i}{\text{total inputs used by industry } i} \right] \times \left[\frac{M_j}{D_j} \right]$$

where M_j are the imports of goods or services j , D_j is the domestic demand for goods or services j , where $D_j = Y_j - X_j + M_j$. Y_j is the production of goods or services j and X_j are the exports of goods or services j . Feenstra and Hanson (1996; 1999)

¹⁵ Non-member countries are Argentina, Brazil, China, India, Indonesia and South Africa.

¹⁶ The countries in Figure 4.11 are sorted in groups per region, based on the highest offshoring index in 2005.

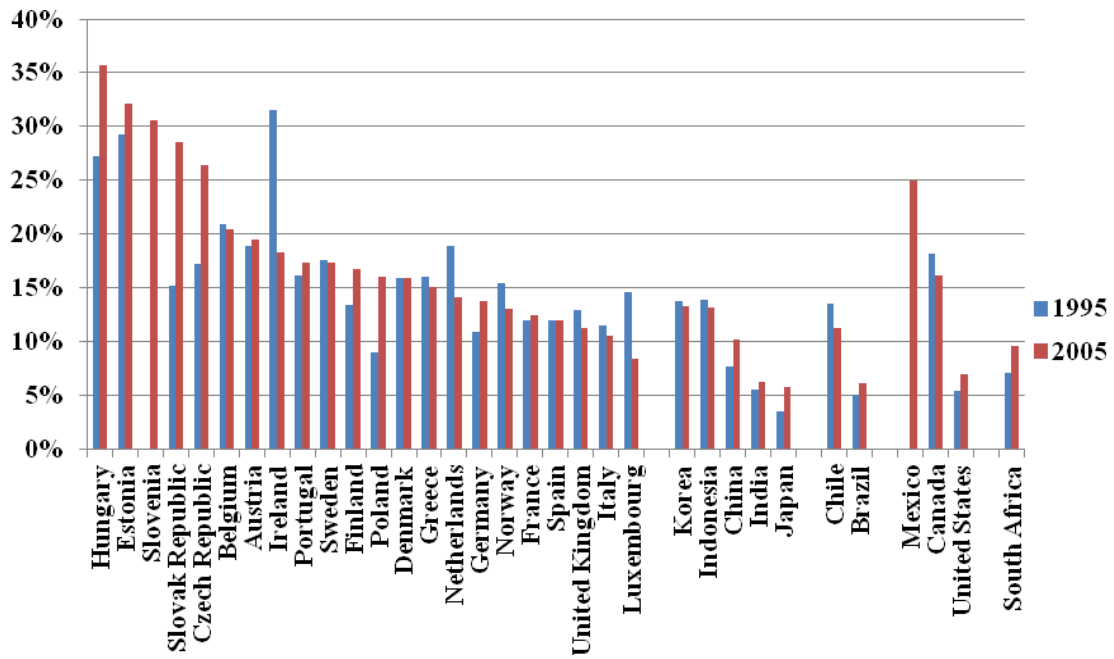


Figure 0.11 Offshoring in manufacturing, 1995 and 2005, by country
 Source: OECD (2010)

The manufacturing industry in Western Europe is becoming more re-shaped. There are a number of empirical studies supporting this new on-going trend. For instance, the increased global integration of Swedish manufacturing firms, between the years 2000 to 2005, has widely affected the production output of the whole manufacturing industry. As a result, the unemployment rates have increased in a number of sectors in manufacturing (Norén, 2010). The same is true for Denmark and the Netherlands (Neureiter and Nunnenkamp, 2010).

France is another country that has experienced an increasing trend in offshoring manufactures (OECD, 2010). In an analysis of the performance of the French manufacturing industry, in the period 1990 to 2001, it was proved that the French industrial firms were more productive as activities were offshored to developing countries. In combination with the negative labour market effects, offshoring firms were found to put more focus on core competencies, allowing them to benefit more from the induced flexibility in allocating company resources (Jabbour, 2010). In a study of the Spanish manufacturing sector, for the period 1999 to 2005, it was found that corporate restructuring and relocation of production of Spanish manufacturing firms was likely to increase in the near future. A main reason for this result was that firms found it more attractive to expand production in lower cost countries by implementing new sourcing strategies (Pelegrín and Bolance, 2010). An analysis of the Irish electronics industry found that international sourcing activities were limited to materials. An additional result was that international outsourcing strategies tended to increase the profitability of large scale companies (Görg and Hanley, 2004).

German manufacturing firms are also found to increase the industrial capacity when parts of the production process are being outsourced (Görzig and Stephan, 2002). One of many examples of companies relocating production is the German industrial conglomerate ThyssenKrupp AG. Consisting of 670 companies worldwide makes it one

of the largest steel producers in the world. In 2010, ThyssenKrupp invested €5.2 billion in a new industrial steel mill in Rio de Janeiro, Brazil. The production capacity of the new steel mill was calculated to a total of 5 million tons of steel per year, with 2 million tons of the total output aimed for its own industrial plants in Germany (ThyssenKrupp, 2010). In parallel to the above investment, ThyssenKrupp was actively taking part in dismantling its largest industrial park located in the urban area of Dortmund, Germany (van Winden et al, 2010).

A study of the Italian manufacturing industry, for the period 1995 to 2006, shows that material offshoring has a direct negative effect on employment in each sector, respectively. However, some of the lost jobs was also found to be reproduced by the increased efficiency of downstream sectors performing offshoring activities (Cappariello, 2010). In an analysis of the three manufacturing sectors: chemicals, electronics and mechanical instruments engineering in the United Kingdom it was found that the effect of outsourcing on productivity was greater in cases including affiliates of foreign multinationals. An additional finding was also that high wages tended to increase establishments in foreign countries, as due to firms' cost-saving perspectives (Girma and Görg, 2004).

The results indicate that firm performance, in terms of production output, can be increased if parts of production, are relocated via international sourcing strategies. However, with firms relocating their production processes, follows a negative impact on the total employment in the manufacturing industry. Job losses are partly absorbed by the creation of new employments, yet the net effect shows that the unemployment rates are rising. This is evident from many manufacturing industries within Western Europe.

Offshoring in European Services

In contrast to the manufacturing industry, the level of offshoring in the service sectors increased significantly for most of the countries in the sample group. Figure 4.12 depicts the offshoring index in the service sectors for the years 1995 and 2005. The intermediate sourcing of abroad services increased in almost all European countries, except for the Slovak Republic, the Czech Republic and Portugal, where the offshoring index of services fell. The high increases in Luxembourg and Ireland are most likely due to the presence of many financial districts and call centres in these countries (OECD, 2010). Other European countries that show significant increases in offshoring services are Denmark, Netherlands, Greece, Belgium, Austria, Germany and Sweden.

In the group of non-OECD members, countries such as China, Indonesia, Brazil and Chile are displaying increasing trends in offshoring services. The United States and Japan, again, show timid shares of offshoring services. Furthermore, the Indian offshoring index suffers a drop of approximately 75 percent over the time period.

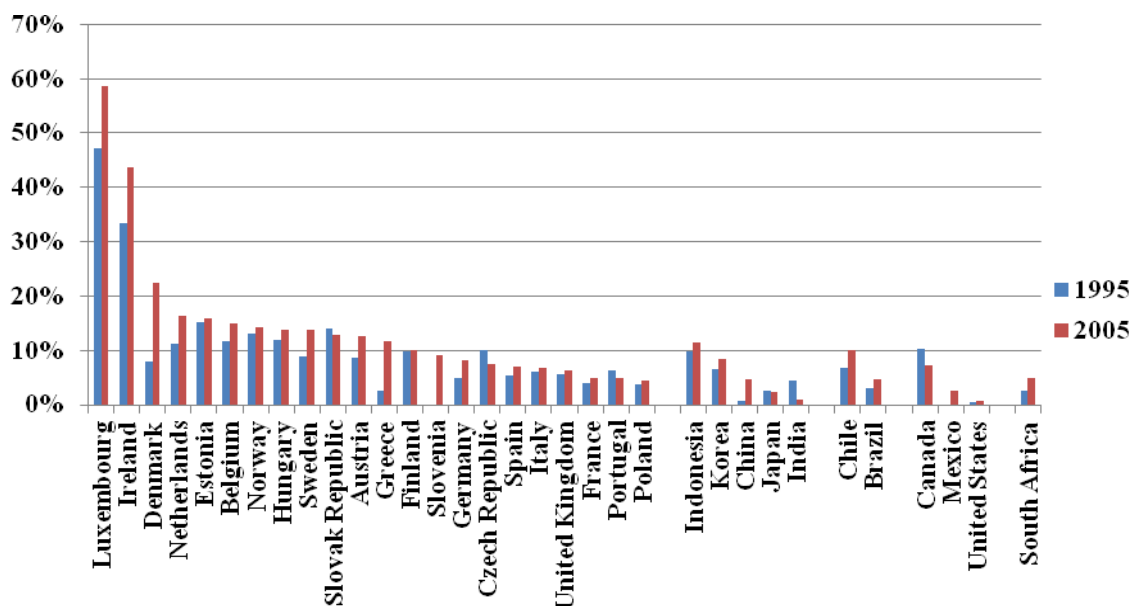


Figure 0.12 Offshoring in services, 1995 and 2005, by country
Source: OECD (2010)

Empirical studies in this area show different results in terms of employment statuses in the service sectors. For example, in the case of Germany, the impact of offshoring services on productivity and labour demand was estimated for the manufacturing industry during the period 1995 to 2006. The study indicated that offshoring services increased the labour efficiency in a majority of sectors. However, the total employment decreased in the German manufacturing industry. Furthermore, new jobs created as due to offshoring services did not compensate for the lost employments, despite the increased productivity among workers (Winkler, 2010). This result is different from studies made for the United Kingdom and the United States, where the labour markets have experienced a positive effect of services offshoring. The positive re-employment rates in the Anglo-Saxon countries could be related to more flexible labour markets in co-existence with more productive jobs in the high-technology sector (Amiti and Wei, 2005; 2006).

For the period 2002 to 2005, the amount of jobs created in Denmark, as a result of inshoring, were greater than the amount of jobs lost as due to offshoring. Yet, a main implication found in this study was that high-skilled workers benefitted more from offshoring activities, whereas the lower-skilled workers suffered from the negative impact on the labour market (Ørberg Jensen et al, 2009). Moreover, the offshoring of business services in Belgium, for the period 1995-2003, was found to have no significant impact on the total employment (Bernhard, 2009).

English is the primary language of international business. The use of English as the medium language in education in East Asian countries, such as India, Malaysia and the Philippines, has increased the offshoring motives of firms located in Europe, the United States and Japan (Schultze, 2004). Offshoring of information technology (IT) and various business process operations has become a common practice in Europe and the United States (van Winden et al, 2010; Rubin, 2004). An evaluation of the service sector markets in the EU, the United States and Japan, reported that the three economies combined were losing more than 600,000 jobs per year (Meredith, 2003). In the

perspective of Europe, around 150,000 jobs within the IT sector were estimated to move offshore by the year 2015 (Forrester Research, 2005).

Overall, there is much evidence indicating a high degree of service offshoring across the EU. The average increase in offshoring services has risen for most of the EU countries over the period 1995 to 2005 (cf. Figure 4.12 above; OECD, 2010). The effect on employment is, however, indicating different results. The distributional labour market effects, as due to outsourcing and offshoring, are found to have quite an impact on low paid jobs. The low paid jobs are increasingly being replaced with higher paid jobs, which require that workers' have a higher educational level (Brainard and Litan, 2004; van Winden et al, 2010). Furthermore, Jensen and Kletzer (2005) find that offshoring within the EU is concentrated to the manufacturing industries, financial services and the IT sector. A main reason for this is partly that these sectors produce tradable goods and services.

The results from OECD (2010) suggest that the emergence of global value chains increasingly absorb the service sectors and the offshoring activities within these. However, the level of offshoring in the service sectors is still at a much lower share, compared to that of the manufacturing industries. Thus, offshoring in the manufacturing industry, is on an average, more important for global value chains.

Intra-Firm Trade in Manufactures in Europe

Intra-industry trade can be classified as simultaneous exports and imports (Krugman and Obstfeld, 2010). A common pattern is that such trade happens to occur between rich economies, usually characterised by the same economic structures and close proximities to one another (Andersson and Andersson, 2000). A typical feature of intra-industry trade is that it is a main driver of foreign direct investment. This is mostly due to the multinational corporations' high incentive to locate their affiliates in foreign markets. In this sense, trade increases between the parent company and its various affiliates spread around the world (OECD, 2010).

Figure 4.13 depicts the average index of intra-industry trade in manufactures for the period 1997 to 2008, within Europe, China and the USA.¹⁷ The intra-industry trade index is relatively high in most of the countries being analysed. Belgium has an average index of over 90 percent in two-way trade in manufactures. Countries located in the CEE region, such as Hungary, the Czech Republic, Slovenia and the Slovak Republic, also present high averages over the period of time. Almost all European countries (except Greece, Iceland and Russia) have the majority of their trade in manufactures classified as intra-industry trade. The Western European countries, France, Austria, the Netherlands, the United Kingdom and Spain, respectively, all show average indices above 80 percent. Most EU12 countries are displaying higher indices in two-way trade in manufactures, when being compared to the two reference countries (i.e. China and the USA).¹⁸ Another interesting observation is that the top 13 countries are all members of the EU, which indicates that intra-industry trade in manufactures is a common activity in countries within the European Union.

¹⁷ The majority of intra-industry trade is recognized as trade in similar, but often highly differentiated, finished products (OECD, 2010).

¹⁸ Estonia and Poland have higher average indices than China, but lower than the USA.

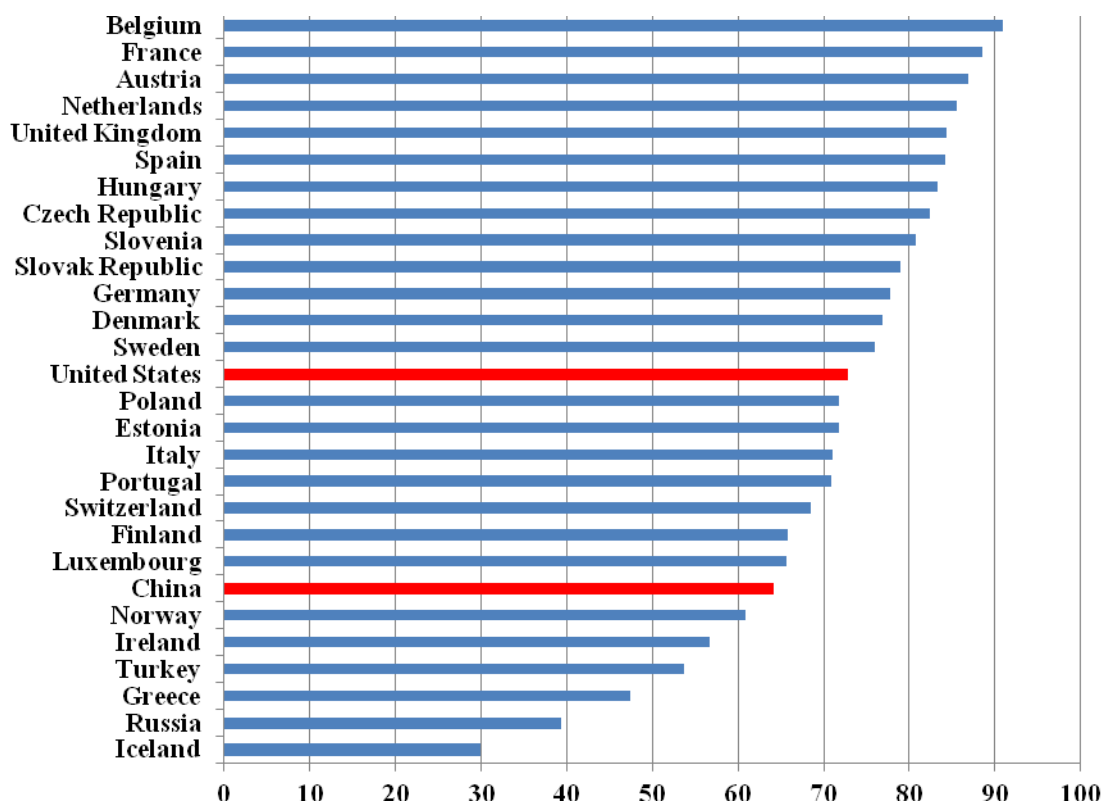


Figure 0.13 Average index of intra-industry trade in manufactures in Europe, China and the USA, 1997 to 2008

Source: OECD (2010)

That the EU is found to be highly involved in intra-industry trade is similar to other empirical studies analysing the manufacturing industry in Europe. Outsourcing and offshoring activities are main contributors to an increased two-way trade between countries. The international sourcing strategies implemented by multinational corporations have had both positive and negative effects on countries in Europe.¹⁹ This pattern proves that intra-industry trade in the manufacturing industry is highly important for European countries, especially for countries located in the Central and East Europe.

The manufacturing industry is an important sector for the global value chains, in where the multinational corporations in this segment have been dominating the global trade in recent years. The establishment of multinational corporations in countries that are part of trading blocs is increasing at a high pace. These dynamics have been further ignited by rapid expansions in infrastructure (e.g. roads, airports, harbours, ICT etc.), free movement of capital and through reductions in trade barriers and transportation costs.

¹⁹ See for example Éltető, 2010; Sass, 2010; Collins and Grimes, 2010; Norén, 2010; Neureiter and Nunnenkamp, 2010; Pelegrín and Bolance, 2010; Görg and Hanley, 2004; Jabbour, 2010; Görzig and Stephan, 2002; Cappariello, 2010; Girma and Görg, 2004; van Winden et al, 2010.

Outsourcing and Offshoring in the European Automotive Industry

In this section the patterns of shift in production are analysed by means of an in-depth study of the European automotive industry. The focus is on outsourcing activities performed as offshoring in the production of physical goods. The outline of the value chains will also consider indicators such as plant distribution, employment and trade flows.

The Production Dynamics of the European Automotive Industry

The automotive industry in Europe is seen as “the driving sector” of production in the region. In 2009, approximately one fourth of the total 61 million passenger cars produced globally were assembled within the EU, making it the world’s largest vehicle producer (OICA, 2011). The European automotive sector supports over 2 million Europeans with jobs and an additional 10 million individuals are employed in related industries. The industry exports of this sector are valued around €70 billion annually, making it a highly important sector for the European countries (ACEA, 2010). The composition of automotive plants in Europe in 2009 is depicted in Figure 5.1.²⁰

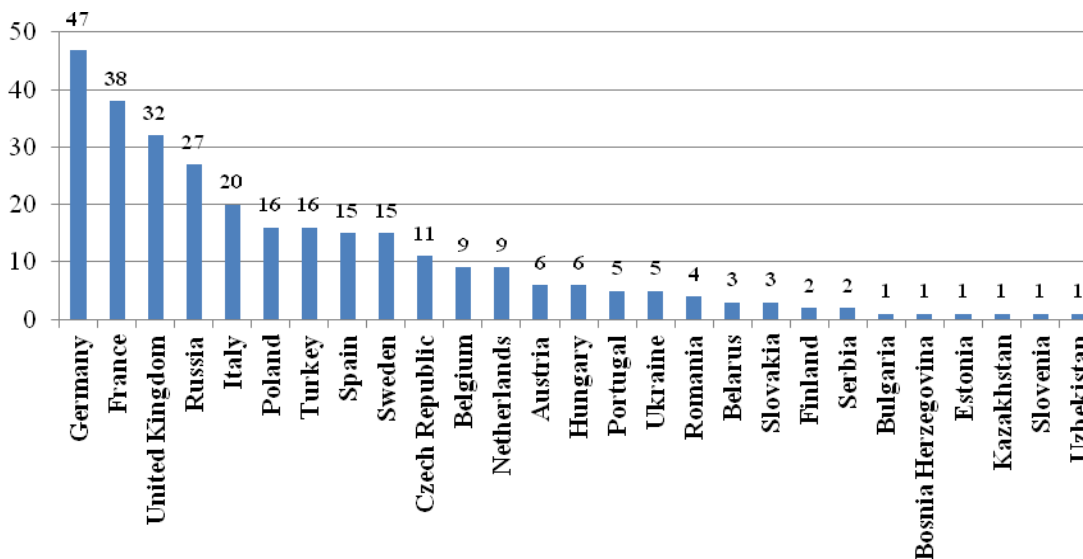


Figure 0.1 Number of automotive plants in Europe in 2009
 Source: ACEA (2010)

In recent years, the automotive industry in Western Europe has suffered hard from the economic crisis and from the increasing competition from global car manufacturers (ACEA, 2010). A direct implication has been a drastic slowdown in the production of automobiles and the production plants are commonly being moved across borders or overseas, to locate in low cost countries in Central and East Europe, Asia and Latin America (Jürgens and Krzywdzinski, 2009; Sturgeon and Biesebroeck, 2010).

The global automotive industry is characterised by a large presence of foreign affiliates and it is highly dominated by a small number of original equipment

²⁰ The total number of plants is 297, out of these 241 plants are located within the EU region.

manufacturers (OEMs), which have established affiliates over a wide range of countries across the world (OECD, 2010). A majority of these OEMs are from Western Europe and they hold a dominant position in the world production of automotive and other related goods. Germany, which from its historical background is known as one of the most industrialised countries in the world, is the host nation for several OEMs in Europe, followed by France, Italy, the United Kingdom and Sweden (van Winden et al, 2011; Domański and Lung, 2009). OEMs, like these, are often involved in multi-production processes, ranging from assembling of passenger cars, trucks, buses, trailers and engines, to development of electronic software and various security systems adapted in the motor vehicles, making the industry highly heterogeneous.

To meet up with the increased competition from global automotive actors, the OEMs in Western Europe have actively been involved in stepwise re-organisation of the company structure. The outcome of such governance has produced two main patterns of change: firstly, the focus on core competencies, such as corporate management, R&D, marketing and product design, has increased. Operations like these are commonly kept in the country in where the parent company once was established. Secondly, it has become more common to offshore production processes²¹ to countries with more attractive factor conditions (van Winden et al, 2011). The main implication of these acts has resulted in gained access to new and growing markets for motor vehicles, as well as increased benefits from sourcing low priced foreign production factors (OECD, 2010).

The production of motor vehicles²² within the automotive industry in the EU is presented in Table 5.1 for the years 2005 to 2009. The total motor vehicle production in the EU15 countries decreased by more than 4 million units during the five-year period. Over the same range of time, the EU countries located in Central and East Europe (CEE) increased their vehicle production by approximately 1 million units. Almost all EU countries show falling trends in the production of motor vehicles in 2007 to 2009. The most likely reason for this negative trend in recent years is due to the development of the global financial crisis (Sturgeon and Biesebroeck, 2010). The exceptions, showing an increased production, are the Czech Republic, Romania and Slovenia.

France has lost most in terms of units manufactured in the EU. The total French production of motor vehicles dropped by approximately 1.5 million units (an average fall corresponding to 11 percent of motor vehicles produced in French industries). Moreover, the United Kingdom suffers from a drop of over 700,000 units. Germany and Spain also present high values of decreased production, where approximately half a million less motor vehicles were produced in these two countries respectively. Negative trends over the time period are also experienced by Austria, the Netherlands and Sweden. The last column in Table 5.1 shows the average change in production of motor vehicles for the period 2005 to 2009. An interesting remark is that there has been a negative change in the total vehicle production of all EU countries located in Western Europe (with Finland as an exception), while all the EU countries in the CEE region have experienced positive changes.

²¹ Mainly comprising of labour intensive assembling processes.

²² Motor vehicles in this context comprise of passenger cars, light commercial vehicles, heavy trucks and buses.

Table 0.1 Total production of motor vehicles in the EU and a group of reference countries, 2005 to 2009

Country	2005	2006	2007	2008	2009	Average change 2005-09 ²³
Europe						
Austria	253 279	274 907	228 066	151 277	72 334	-19%
Belgium	926 528	918 056	844 030	724 498	537 354	-9%
Czech Republic	602 237	854 817	938 527	946 567	974 569	18%
Finland	21 644	32 770	24 303	17 895	10 971	13%
France	3 549 008	3 169 219	3 019 144	2 568 978	2 047 658	-11%
Germany	5 757 710	5 819 614	6 195 661	6 045 730	5 209 857	-1%
Hungary	152 015	190 233	292 027	346 055	182 540	15%
Italy	1 038 352	1 211 594	1 284 312	1 023 774	843 239	-5%
Netherlands	180 748	159 454	138 568	132 494	76 601	-20%
Poland	613 200	714 600	784 700	945 959	884 133	8%
Portugal	221 026	227 325	176 242	175 155	126 015	-10%
Romania	194 802	213 597	241 712	245 308	296 498	21%
Slovak Republic	218 349	295 391	571 071	575 776	461 340	21%
Slovenia	177 951	153 127	198 402	197 843	212 749	11%
Spain	2 752 500	2 777 435	2 889 703	2 541 644	2 170 078	-6%
Sweden	339 229	333 072	359 947	308 299	156 338	-11%
United Kingdom	1 803 109	1 649 792	1 750 253	1 649 515	1 090 139	-9%
EU15	16 468 889	16 284 317	16 677 907	15 174 690	12 241 033	-7%
EU27	18 385 283	18 675 982	19 672 926	18 432 198	15 252 862	-3%
New EU countries²⁴	1 958 554	2 421 765	3 026 439	3 257 508	3 011 829	12%
Reference countries						
Argentina	319 755	432 101	544 647	597 086	512 924	16%
Brazil	3 182 617	3 215 976	2 977 150	2 611 034	2 530 840	7%
China	5 708 421	7 188 708	8 882 456	9 299 180	13 790 994	22%
Japan	10 799 659	11 484 233	11 596 327	11 575 644	7 934 516	-4%
South Korea	3 699 350	3 840 102	4 086 308	3 826 682	3 512 926	0.4%
USA	11 946 653	11 263 986	10 780 729	8 693 541	5 708 852	-13%
World	66 482 439	69 22 29	75 73 266 061	70 520 493	61 714 689	-1%

Source: OICA (2011)

²³ Shows the average change in production of motor vehicles in the period 2005 to 2009. Average changes for the "EU15" and for "New EU countries" are based on production of motor vehicles in the period 2006 to 2009.

²⁴ The Czech Republic, Hungary, Poland, Romania, the Slovak Republic and Slovenia.

The average change in the Korean motor vehicle production has been positive, yet, at an almost constant rate, while the production of motor vehicles has fallen in the USA and Japan. The increased global competition has made the American automotive industry suffer hard as production has decreased by more than half its amount between the period 2005 to 2009. On the other hand, the Chinese automotive industry has experienced a remarkable growth in production. The number of units produced has more than doubled over the five-year period.

The world production of motor vehicles was increasing steadily until 2007. In the same year, the financial crisis hit the global automotive industry severely and resulted in a drastic fall in the world production of motor vehicles. In the period 2005 to 2009, the world average change of producing motor vehicles fell by 1 percent.

What is of main importance is that there is an on-going structural change taking place in the global automotive industry. The decreasing production output of motor vehicles in Western Europe, USA and Japan is not only due to that the world production has fallen. It is also due to the fact that the assembly lines of motor vehicles are constantly being relocated to more competitive regions located in Central and East Europe, China and Latin America. In a European perspective it is highly apparent that the producing countries located in the western parts of the EU are giving way to more competitive and cost efficient countries in eastern regions of the EU. This pattern is highly apparent when analysing the average change in production over the five-year period.

The European automotive industry employs a wide range of persons. Structural changes taking place in this sector are directly related to shifts in employment in the region. Figure 5.2 depicts the employment in the production of motor vehicles within the European Union for the period 2001 to 2007.²⁵ The total employment in the EU27 follows a relatively constant trend throughout the time span. The pattern of change in the labour stock is seen by comparing the EU15 to EU12.²⁶ The employment in the EU15 has fallen over time. Countries that suffer from a decrease in this sector are Belgium, France, Spain and the United Kingdom. Austria, Germany, Italy, Slovenia and Sweden have experienced an increase in the number of persons employed. The employment in the EU12 has increased during the whole period. Most countries in this group show increases in employment over time. The exceptions are Bulgaria and Romania, where increases have occurred in recent years. Moreover, countries such as Poland, the Czech Republic, Hungary and the Slovak Republic are experiencing large employment increases over the time period.

In Austria, Italy, Germany and Sweden, the number of persons employed in motor vehicle production is increasing, even though the average production of vehicles has been on a downturn in recent years. One main cause could be that companies in these countries focus more on core competencies such as product design and R&D. Activities like these absorb parts of the direct loss of jobs in the assembling process, however, requires a more knowledge intensive supply of labour (van Winden et al, 2011).²⁷

²⁵ Corresponds to manufacturing of motor vehicles, trailers and semi-trailers (NACE DM34).

²⁶ Cyprus and Malta are not included in the EU12 and Luxembourg is not included in the EU15. The numbers of these countries are relatively small and have no impact on the aggregate total.

²⁷ Austria (Styria and the upper Austrian region), Italy (mainly the Turin area), Germany (Ingolstadt, Munich, Stuttgart and Wolfsburg) and Sweden (Gothenburg and the Stockholm area) have a broad range of design centres that focus on R&D in vehicles and automotive related products (cf. Calabrese, 2009; Jenkins and Tallman, 2010; van Winden et al, 2010; Pernstål, 2008).

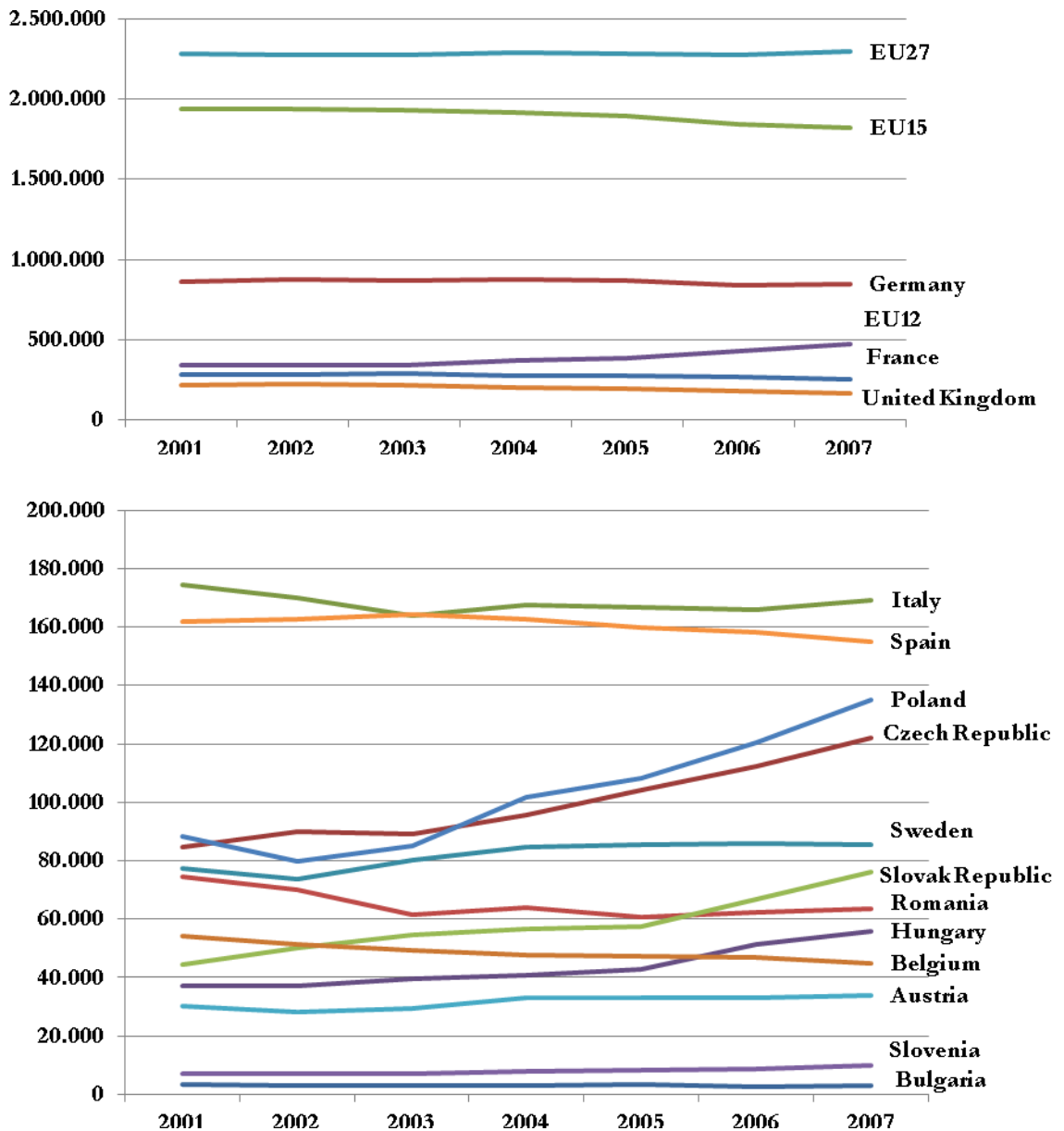


Figure 0.2 Employed in the production of motor vehicles in the EU, 2001 to 2007
 Source: ACEA (2010)

Foreign Direct Investment (FDI) in the European Automotive Industry

The corporations in the European automotive industry have experienced many changes in ownership over the last 20 years of time. The majority of these shifts involve huge investments made by leading European and American motor vehicle companies. In recent years the interest has also expanded to include Asian investors.

A key aspect behind these dynamics is that Western European companies are highly attractive in terms of their technological know-how. Specific knowledge endowments are of great importance to survive the highly competitive market of the global

automotive industry (Hudson, 2002; Eriksson et al, 2008). Another highly relevant factor behind this on-going trend involves the optimisation of the firms' total costs. The increasing wages and rental costs in Western Europe have forced the companies to rethink and restructure their organisations in order to meet the market competition and to capture the production functions associated with the lowest attainable costs. In doing so, the first stage that often becomes relocated is the assembling process (Dicken, 2003; Jürgens and Krzywdzinski, 2009; Rugraff, 2010; Pavlínek and Ženka, 2010). However, to relocate is associated with high investments in new facilities and high search costs in terms of finding good suppliers (cf. Section 3.3.1: captive value chains) that can produce the components of interest, at a relatively low factor cost (Gereffi et al, 2005).

The pattern of change was first depicted in the late 1980s, when American motor vehicle producers started to invest in the automotive industry in Western Europe. To mention a few examples, GM acquired the Swedish car producer Saab Automobiles in 1989.²⁸ In addition, GM acquired more than one fifth of the total shares in the Fiat Group during the period 2000 to 2005 (GM, 2011a; 2011b). In 1996, the Dutch heavy truck producer DAF was purchased by the American truck manufacturer PACCAR Incorporated (van den Berg et al, 1997). Moreover, in 1999 Ford acquired Volvo Cars, and a year later also the former British luxury car brands Aston Martin, Jaguar and Land Rover from the German automobile producer BMW. With the financial crisis in 2008, Ford sold the luxury car brands to the Indian vehicle producer Tata Motors, while Volvo Cars was sold to the Chinese holding company Geely (Tata Motors, 2008; SvD, 2011).

Despite these huge investments from American and Asian multinationals, the main contributing source of FDI is mostly driven by large automotive corporations of European origin (Hudson, 2002; Lung, 2003). The ownership of the majority OEMs in Europe is concentrated to a small group of actors that possess advanced production networks that involve subcontractors all over the world (van Winden et al, 2011). In an analysis of national innovation systems, Germany and USA were found to be the largest and most important nodes for the global automotive industry (Wixted, 2009).

The presence of foreign affiliates is widespread throughout Europe (Hudson, 2002; OECD, 2010). Figure 5.3 presents the share of turnover of foreign affiliates in the motor vehicle production in Europe for 2007.²⁹ The countries located in Central and East Europe (i.e. the Slovak Republic, Hungary, the Czech Republic and Poland) are experiencing extremely high shares of turnover of foreign affiliates, while countries located in Western Europe (e.g. Germany, Italy and France) display lower shares. The foreign affiliates that have located in the CEE area are mostly comprised of OEMs from Western Europe. Typical countries that invest frequently in the CEE region are Germany, Italy and France (Hudson, 2002; Jürgens and Krzywdzinski, 2009; van Winden et al, 2011). Portugal, the United Kingdom, Netherlands, Spain, Austria and Sweden, also depict high turnover shares of foreign affiliates. The high shares of the latter group of countries are mostly due to the recent changes in ownership of domestic OEMs, as well as they being successful in attracting new investment flows to their automotive sectors (Sturgeon and Biesebroeck, 2010; van Winden et al, 2011). The European average, corresponding to approximately 60 percent, shows that the majority of turnover shares are directed to affiliates with foreign origin (OECD, 2010).

²⁸ Saab Automobiles was later sold (in 2010) to the Dutch sports car manufacturer Spyker.

²⁹ Or the latest available year.

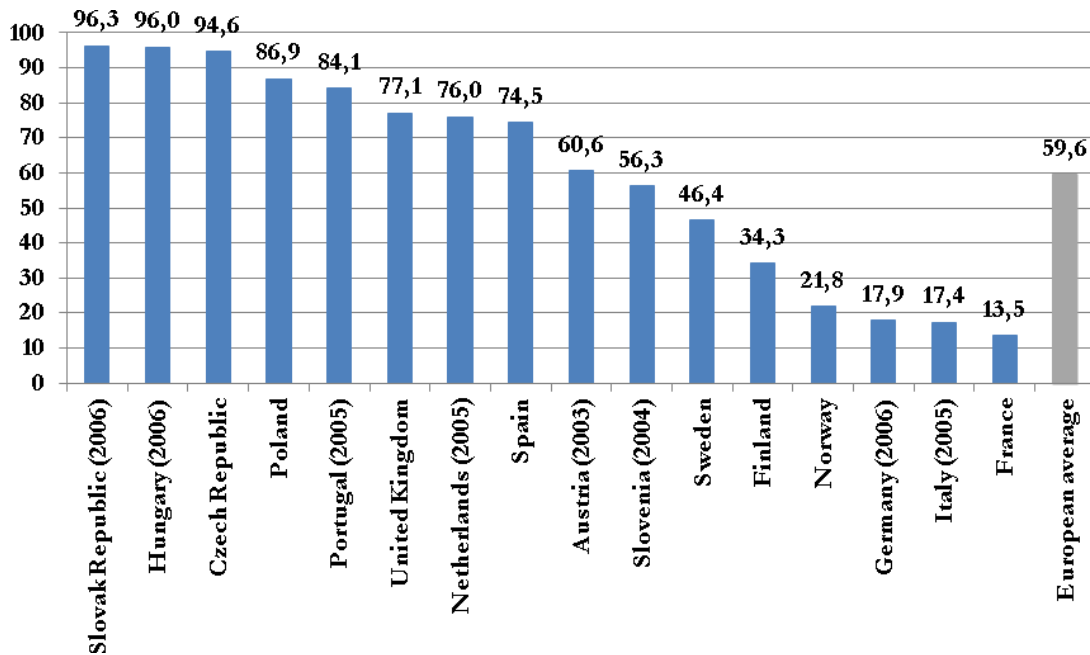


Figure 0.3 Turnover share of foreign affiliates in the production of motor vehicles in Europe, for 2007
Source: OECD (2010)

Global Value Chains in the European Automotive Industry

The major transformation that is taking place in the European automotive industry is mainly driven by large motor vehicle companies from Western Europe that are expanding beyond the borders of their home nations. The production stages are increasingly being relocated to low cost countries such as Argentina, Brazil, China, the Czech Republic, Hungary, Morocco, Poland, Romania, the Slovak Republic and Slovenia (Bilbao-Ubillos, 2010; Dicken, 2003; Lung, 2003; Sako, 2010; van Winden et al, 2011).

The most recent examples are the new agreements for setting up production plants by the Renault Group in Morocco and by Volvo Cars in China. In the latter case, Geely announced that Volvo Cars is opening up three new industrial plants in China by 2013. By 2015, the annual total production aimed for the East Asian markets is estimated to 300,000 units. This can be compared to the total global sales of Volvo Cars in 2009, corresponding to 335,000 units (SvD, 2011; Volvo, 2010). Another company with a globalised production function is the Volkswagen Group. In 2008, the Volkswagen Group produced approximately 6.5 million vehicles in total, whereas two thirds of these (4.2 million) were built outside the German borders (Volkswagen, 2011).

Figure 5.4 synthesises the spatial pattern of offshoring and diffusion in Europe towards semi-peripheral and peripheral spaces in two distinct phases: the first phase shows that there is a diffusion towards Southern Europe, mainly Spain but also Portugal, while the second phase from the late 1990s and onwards, depicts that offshoring activities are mostly directed to the CEE countries, including Turkey.

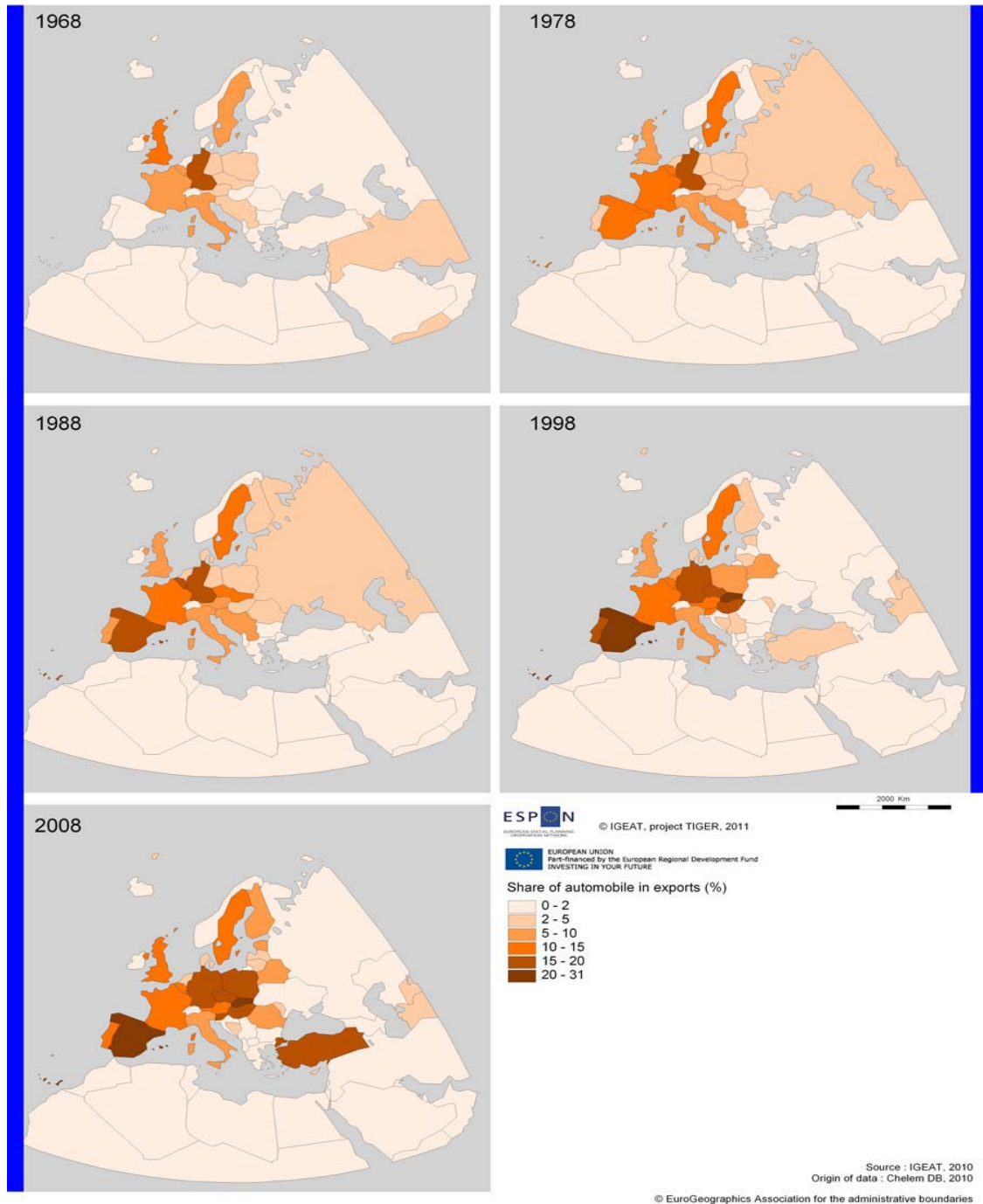


Figure 0.4 Export specialisation in the European automotive industry, 1968 to 2008
Source: IGEAT (2010)

Intra-industry trade can be classified as simultaneous exports and imports (Krugman and Obstfeld, 2010). A common pattern is that such trade occur between rich economies, usually characterised by the same economic structures and close proximities to one another (Andersson and Andersson, 2000). A typical feature of intra-industry trade is that it is a main driver of foreign direct investment. This is mostly due to the multinational corporations’ high incentive to locate their affiliates in foreign markets. In this sense, trade increases between the parent company and its various affiliates spread around the world (OECD, 2010).

Figure 5.5 displays the EU countries share of the total EU exports and imports of road vehicles in 2009.³⁰ Germany has the largest export share that corresponds to more than one third of the total EU exports. The importance of Germany in this sector is further strengthened by comparing its share to the combined exports of all EU economies directed to non-EU countries. Moreover, countries such as France, Spain and Belgium have shares around 10 percent of the EU exports. Germany, France, Spain, Belgium and the United Kingdom have a combined export share of approximately 70 percent of the EU exports in road vehicles, making the quintet of countries highly important for exports within this product group. Other countries that show rather good export shares are Italy, Poland and the Czech Republic.

Germany also dominates the share of EU imports of road vehicles in 2009. It is followed by France, Italy, the United Kingdom and Belgium. The combined imports of these five countries make up about two thirds of the EU imports. The EU imports from non-EU economies are about 15 percent, which is less than the German import share corresponding to 19.2 percent. The import share is lower than the export share in all EU countries located in Central and East Europe (Poland, Czech Republic, Slovak Republic, Hungary and Romania), indicating that these countries were net exporters of road vehicles in 2009. This also applies to Germany and Spain, while France, the United Kingdom, Belgium, Italy, the Netherlands, Austria, Sweden and Portugal were net importers of road vehicles in 2009.

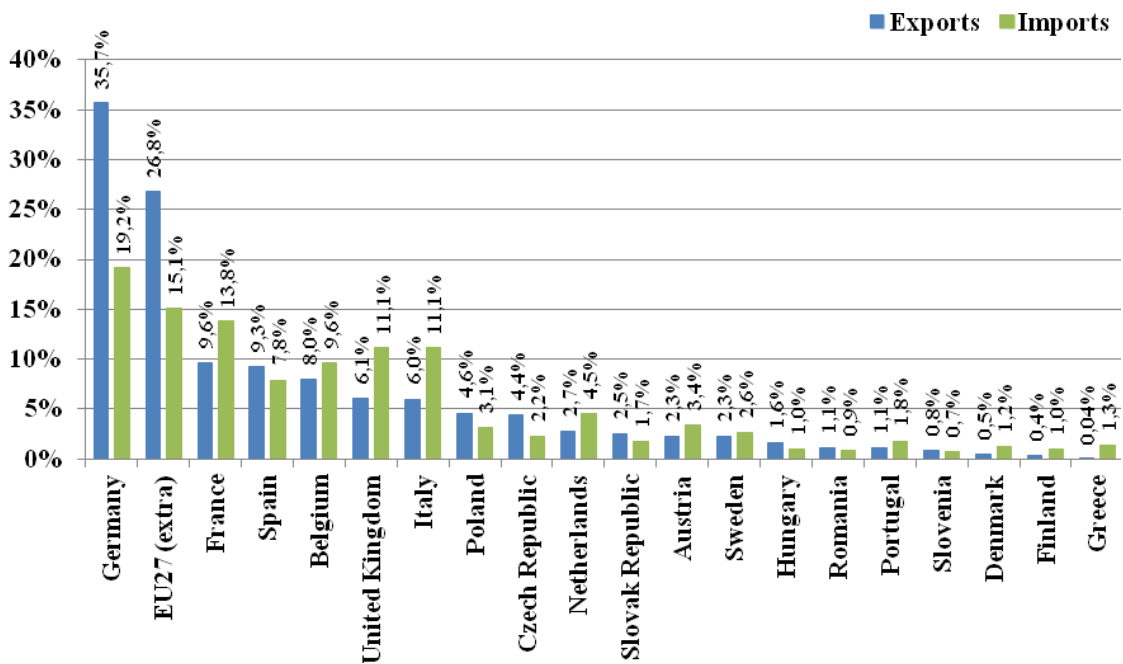


Figure 0.5 Share of EU exports and imports of road vehicles (SITC78), per country 2009
Source: Comtrade (2011)

Figure 5.5 indicates that the EU economies are highly involved in simultaneous trade within the same product group. This result strengthens the view of the global value creation in the European automotive industry. The industry comprises of a wide production network that links parent companies together with subcontractors. Stages

³⁰ Exports (imports) of road vehicles (SITC78) include motor cars and other motor vehicles, motor vehicles for transporting goods, parts and accessories of the motor vehicles and motor cycles. All data refer to the share of total exports (imports) of the EU in 2009. The countries are sorted based on their export share in 2009.

that are offshored to non-domestic markets later get re-imported to be sold in the domestic market and exported to the world markets with strong demand for the final good (OECD, 2010).

One of many examples of companies involved in two-way trade and relocation of production is the Renault Group. The French corporation holds three brands including Renault, Dacia and Renault Samsung Motors. Renault is today present in 118 countries worldwide. The vehicle production is located at 38 industrial sites in 17 countries, to ensure that production is close to its markets. The Renault Group's sales worldwide in 2009 was 2.3 million vehicles and of these 34 percent (or 780,000 vehicles) were made outside Western Europe (Renault, 2010a). The international production capacity is expanding rapidly within Renault. France is still reported as the main production location for Renault, however the production output at the French industries is declining. In 1998, Renault produced 1.2 million vehicles in France, making up 60 percent of its total production output (van Winden et al, 2011). In 2009, this number amounted to 702,000 vehicles (or 30 percent of total output), indicating a huge drop in total French production of Renault automobiles (Renault, 2010b).

The destination of exports for some selected EU countries in 2009 is presented in Figure 5.6. The German chart shows that the United Kingdom and the USA are the two largest export markets for German road vehicles, followed by France and Italy. German exports within this product group are mostly directed to Europe. Approximately one fifth of the French exports are directed to Germany. Other important markets for French road vehicles are Spain, Italy, Belgium and the United Kingdom. The Belgian chart depicts Germany as the most important market. More than one fourth of the total exports of road vehicles in Belgium are directed to Germany. The United Kingdom is the second largest market, followed by France and the Netherlands. The British exports are mostly intended to the USA, followed by Germany as the second largest export market. Other important destinations for British automotive goods are Belgium, France and Italy. The Italian chart indicates that about 40 percent of the exports are aimed for Germany and France. Spain, the United Kingdom and Poland are also supplied by the Italian producers within this product group. In the perspective of the Czech Republic, the top ten destinations all comprise of European countries. The most important export markets for the Czech Republic are Germany and France. The country also has strong ties to the Slovak Republic, the United Kingdom, Poland and Italy.

Figure 5.7 shows the origin of imports of road vehicles for the selected group of EU countries in 2009. The German import shares are highest for France, Spain and the Czech Republic. In France approximately half the imports originate from Germany and Spain. Belgium has large import shares for Germany, France and Japan. The Belgian imports from these three countries are about 60 percent of the total. Nearly one third of the British imports are from Germany. Other main countries that the United Kingdom imports from are Belgium, Spain and France. The chart for Italy displays an impressive import share from Germany of nearly two fifths. Automotive goods from France, Spain and Poland are important as well for the Italian market. Imports to Italy from Central and East Europe are more common, as compared to the other countries that have been selected for the analysis. The Czech Republic's import share of road vehicles from Germany is above 40 percent. The importance of German road vehicles (and other related products) in the Czech industry is highly significant. France, followed by Poland are the next largest suppliers to the country.

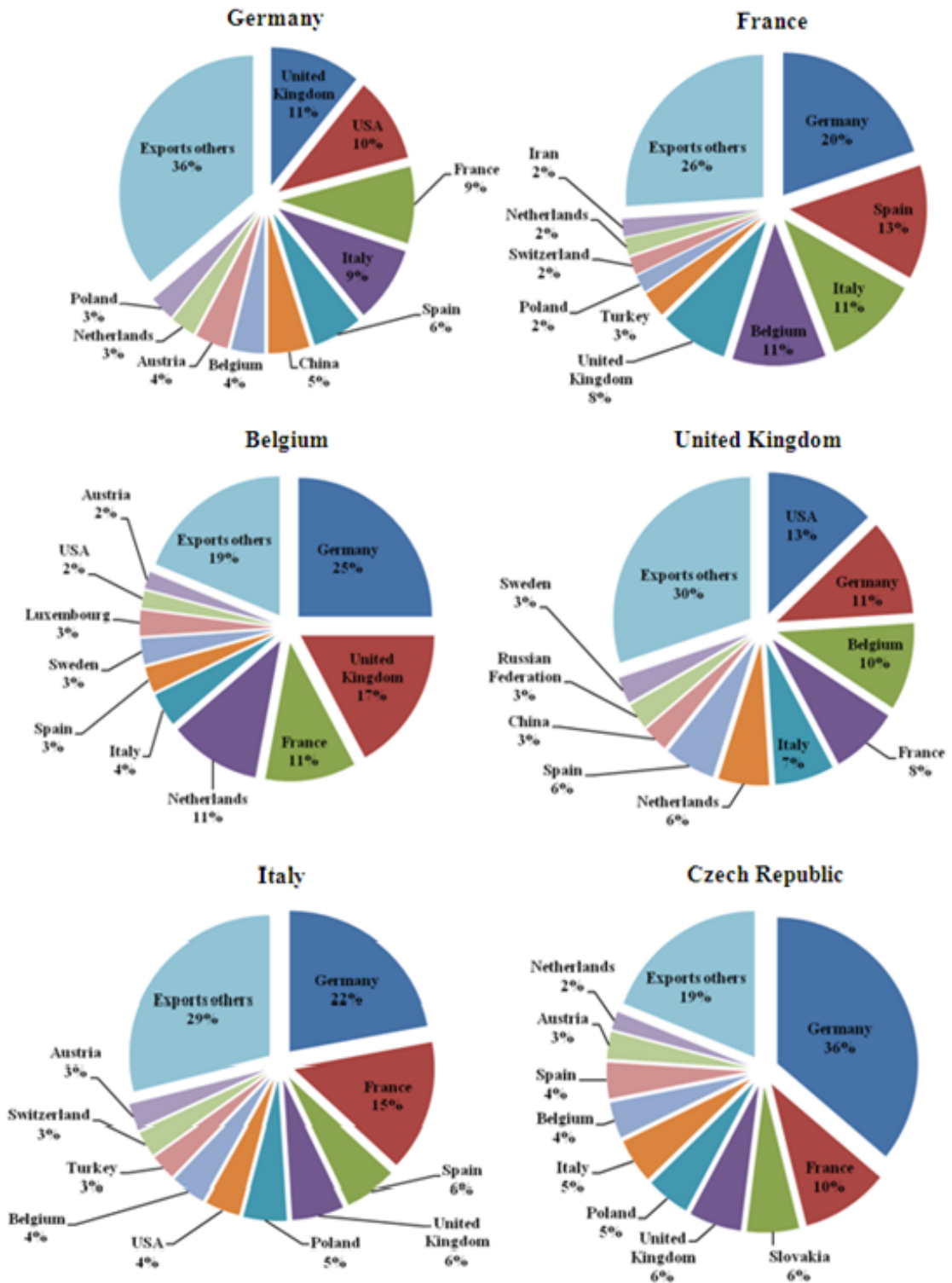


Figure 0.6 Destination of exports of road vehicles (SITC78), selected EU countries in 2009
 Source: Comtrade (2011)

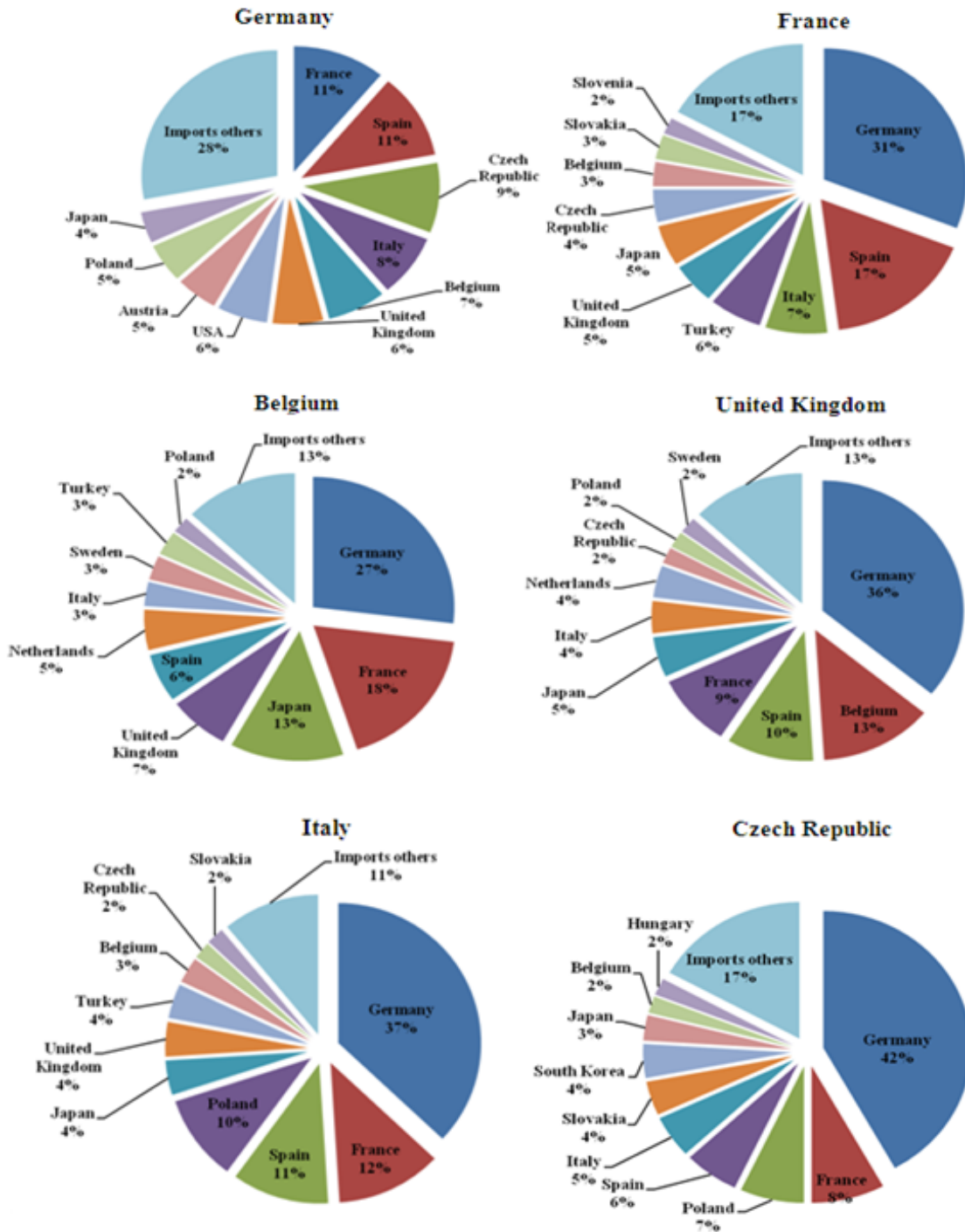


Figure 0.7 Origin of imports of road vehicles (SITC78), selected EU countries in 2009
Source: Comtrade (2011)

Both Figures 5.6 and 5.7 highlight the importance of Germany in the European automotive industry. Germany is the largest export market for France, Belgium, Italy and the Czech Republic and the next largest export market (after the USA) for the United Kingdom. In terms of imports, Germany is the largest supplier for all the selected EU economies. This result is in line with Wixted (2009), where Germany is described as a one of the largest automotive hubs in the world. Another interesting

result is that the selected EU countries trade mostly with other EU member countries. This proves the importance of the EU market for trade in the European automotive industry. Among the six selected EU countries, China enters the top ten destinations (origins) only twice in exports, for Germany and the United Kingdom, and not even once in terms of imports. Countries such as France and Germany imports more from Central and East Europe. In this respect, the Czech Republic and Poland are the largest suppliers of road vehicles to the selected countries. This result is comparable to findings made by Hudson (2002), Jürgens and Krzywdzinski (2009), Pavlínek and Ženka (2010) and van Winden et al (2011).

Huge amounts of FDI have been made by Western European firms in establishing production platforms in new EU member countries in CEE (Hudson, 2002; Pavlínek and Ženka, 2010). The increased investment flow to this emerging region within the EU has helped the industrial development to take off in countries such as Poland, the Czech Republic, the Slovak Republic, Hungary, Romania and Bulgaria. The inflow of FDI to the CEE has also led to a further boost of EU exports within this product group and in this way contributed to an increased global value in this sector (van Winden et al, 2011).

Offshoring activities play an important role in the progress of two-way trade between countries within a specific product group. This is highly evident in the case of automotive goods and other related products, where the majority EU countries show clear patterns of involvement in intra-industry trade. Offshoring brings a number of macroeconomic effects to the region being exposed to it in terms of job losses, tax revenue reductions and increased societal costs. However, it also improves the development taking place at the offshore destination (Andersson and Andersson, 2000).

Relocating production might generate increased benefits to the firm in form of new global value. As firms lower their factor costs and increase the productivity in activities being offshored, new resources are created that can be re-invested in the firms' core competencies (Feenstra, 2010; Bhagwati et al, 2004; De Backer and Yamano, 2007). The structural change taking place in the EU is positive in a way that the majority of the offshored activities are still kept within the region, allowing the industrial development to diffuse in the new EU member countries.

Intra-industry trade in motor vehicles proves to be highly important for the European economies, especially for countries located in Central and East Europe. The automotive industry is dominated by large OEMs that have created complex trade networks that have formed today's value chains that operate all over the world (OECD, 2010). The global value chains in the automotive industry are mostly dependent on well-established tangible and intangible infrastructure (van Winden et al, 2011). Europe has experienced a relatively slow, but stable growth in its infrastructure over the recent years. Roads, airports and harbours within the region have been improved and enlarged to be able to tackle the tension created by the many firms that globally integrate with each other on daily basis (McCann, 2008). The information technology in Europe and the rest of the world is growing at a rapid pace (Karlsson et al, 2010). Such advances in technology has made the movement of capital to become fully implemented in today's international trade (Obstfeld and Taylor, 2004). Trading blocs like the EU induces its member countries to trade with other EU members in order to capture the benefits from an increased global integration. In the case of the EU and the European automotive industry: proximity matters, trade barriers are few (or even non-existing) and the transportation costs are kept low. Thus, to relocate production from West Europe to East Europe has its advantages.

Conclusions

This paper has discussed the on-going dynamic processes in the European automotive industry by highlighting the importance of global drivers. The up-going trend in international outsourcing and offshoring has affected the European countries quite differently. On the one hand, the jobs that have been lost due to outsourcing and offshoring activities have increased the unemployment rates in Western Europe. This in turn would induce higher social costs for the affected economies in form of increased national welfare programmes and reduced tax revenues. On the other hand, markets often adapt to the current state and with time the system finds a solution to repair the created unemployment gap by absorbing the negative effects on the labour markets.

The fragmentation of production in the automotive industry has mainly involved offshoring of low-skilled work tasks to affiliates and subcontractors in foreign countries with more attractive factor conditions. Work tasks involving more knowledge intensive operations are slowly entering the automotive sector in Western Europe as OEMs tend to focus more on core competencies in form of R&D and prototype design. Other interesting results are that the EU countries receive the majority of their FDI flows from other EU countries. Also, offshoring activities to new emerging world markets are common among European manufacturing firms in general.

The production pattern in Western Europe has moved further east, to locate in countries in Central and East Europe. This shift is clearly depicted in Figures 4.11 and 4.12 for manufactures and services and in Figure 5.4 for automotive, along with the high levels of foreign turnover shares and two-way trade in road vehicles in Europe. Offshoring production stages to the CEE area is supported by a number of issues interesting for companies in Western Europe. Main reasons are for example proximity to markets, no tariffs and quotas in trade with other EU countries, access to raw material (such as steel and other important ores), more lenient tax laws and low costs of land and labour. The enlargement of the EU has increased the possibility for actors in the European industries to enter new emerging markets in Europe.

In the perspective of the European automotive industry the first diffusion stage in Europe was aimed towards the region's developed countries with lower per capita incomes, such as Spain, Portugal and Greece, as compared to the wealthiest countries for example Germany, France and Sweden (cf. Maddison, 2010). In the second diffusion stage, new emerging markets have been entered by OEMs (mostly from Western Europe) that relocate production in developed countries with much lower per capita income in Central and East Europe and other developing countries located in Africa, Latin America and Asia.³¹

The boost of FDI flows to these emerging markets has increased the global value. The production networks are growing larger and larger as new value is constantly being generated within the manufacturing and service sectors. The global value chains will continue to grow as long as further investments are made in infrastructure, countries are members of trading blocs and capital is allowed to move freely in international markets. However, to remain competitive in the manufacturing industry and its various sub-sectors, economic actors are required to adjust their production functions to suit the prevailing market situation. Thus, offshoring has become an activity that partly proclaims for such an adjustment and its dynamic forces are hard to mitigate with a rapidly changing and globally integrating world market.

³¹ Similarities could be drawn to the product life cycle discussed in Section 3.1.3, if assuming that one single good is being dealt with, for example automobiles.

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Appendix1 Employment Data

The number of persons employed is defined as the total number of persons working in the various manufacturing industries: employees, non employees (e.g. family workers, delivery personnel) with the exception of agency workers.

Table A.1 Persons employed by sector 1999 to 2007 (tin00004), manufacturing

Country	1999	2000	2001	2002	2003	2004	2005	2006	2007
EU27	NA	NA	NA	NA	NA	35264200	34643800	34412800	34540600
EU15	28185137	28258480	28127121	26902036	27372304	26975603	26492544	26192984	26219905
EU12	5203121	5577683	5689434	8351496	8227506	8288597	8151256	8219816	8400575
Austria	628011	628753	628523	631296	624464	621087	619811	624394	638050
Belgium	665484	676961	678517	NA	631863	623457	614770	608502	611324
Denmark	478779	488000	479226	457633	437562	417285	409918	415088	421380
Finland	426675	435788	436132	431617	422286	409686	406715	406638	413465
France	3984755	4026591	4069632	4038522	3940739	3887901	3737182	3657504	3600991
Germany*	7503831	7551269	7535385	7337847	7293159	7228207	7171468	7108858	7243522
Greece	NA	NA	NA	NA	377598	402103	389746	400081	406965
Ireland	250191	255705	251199	241738	230002	220935	217080	220101	223612
Italy	4784004	4821489	4833179	4782300	4771484	4675047	4610345	4576771	4603649
Luxembourg	33207 ^p	34357	34316	34364	37207	37822	37075	37020	37255
Netherlands	869927	915268	928823	853088	795324	785917	767624	778676	777380
Portugal	997388	937549	909922	911645	886253	866105	868881	830116	818418
Spain	2555976	2594832	2656155	2629611	2618213	2584251	2599254	2589588	2545358
Sweden	792496	791764	798566	790641	772366	806881	797039	798471	806325
United Kingdom	4214413	4100154	3887546	3761734	3533784	3408919	3245636	3141176	3072211
Bulgaria	648097	611347	605060	615305	635898	643793	645154	663847	668709
Cyprus	NA	36422	37090	37477	40375	40144	36829	36490	36824
Czech Republic	1392518	1377896	1391218 ^p	1387998	1372300	1363226	1345623	1354162	1383837
Estonia	NA	119379	122729	127113	128301	130433	130943	132236	131903
Hungary	746824	756003	877827	888255	851504	835079	794254	778075	773948
Latvia	148568	153516	154405	172269	161956	167936	166793	163840	158466
Lithuania	240695	244720	246471	250360	270468	263545	266319	267850	259256
Malta	31949	31728	31951	31705	NA	31851	33037	32206	32622 ³²
Poland	NA	NA	NA	2402050	2374593	2482445	2473495	2590854	2703514
Romania	1994470	1835416	1802045	1772876	1736732	1689459	1621043	1552158	1586601 ³³
Slovakia	NA	411256	420638	408924	411425	400992	404843	412181	424295
Slovenia	NA	NA	NA	257164	243954	239694	232923	235917	240600

Notes:

NA = Not available

P = Provisional value

* = Including the former GDR

Source: Eurostat (2011)

³² Estimated by adding 2005+2006 and dividing by 2

³³ Estimated by adding 2005+2006 and dividing by 2