
Foreign Direct Investment and the development of the automotive industry in Eastern and Southern Europe

Petr Pavlínek, Ricardo Aláez-Aller, Carlos Gil-Canaleta
and Miren Ullibarri-Arce

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Abstract

This working paper provides an overview of foreign direct investment (FDI) in the automotive industry in Eastern Europe and Spain, examining trends and patterns since the 1990s, with a focus on the 2000s and especially the period after the 2008-2009 economic crisis. It draws on analyses prepared in the context of an ETUI project on developments in FDI after the crisis of 2008 (see Galgóczi *et al.* 2015).

The first part focuses on Central Eastern Europe (CEE) as an example of an integrated periphery in the automotive industry where the main characteristics of FDI can be seen. Besides a comparative analysis, the author provides a detailed description of the sector's developments country by country. The paper argues that the 2008-2009 global economic crisis coincided with the end of the period of rapid expansion of the CEE automotive industry that was related to the opening up of CEE to foreign trade and FDI in the 1990s and European Union membership in the 2000s.

The second part of this working paper seeks to analyse the investment decisions of automotive groups with plants in Spain during the years of the Great Recession, focussing on FDI inflows to vehicle assemblers in Spain. The analysis seeks to provide a description of the trends affecting the position occupied by Spanish vehicle assembly plants in Europe.

Part 1

Truncated development in Eastern Europe

Petr Pavlínek

Introduction¹

The automotive industry has experienced major reorganization on a global scale since the early 1990s and now represents one of the most globalized industries (Dicken 2015). This reorganization involved the rapid expansion of core-based vehicle assembly companies and their principal suppliers into less developed countries, made possible by the liberalization of trade and foreign direct investment (FDI) policies (Sturgeon *et al.* 2008; Sturgeon and Lester 2004; Humphrey and Memedovic 2003; Humphrey 2000). This expansion was driven by the efforts of automotive lead firms to increase sales and production in rapidly growing, less developed countries. It took several distinct forms (Humphrey *et al.* 2000). Brazil, China, India and, more recently, Russia are examples of countries that have attracted major inflows of FDI in the automotive industry mainly because of their large market potential. India, China, and Russia are examples of ‘protected autonomous markets’ in which governments eased restrictions on FDI while continuing to protect the national market and domestic producers. Brazil and Thailand are examples of ‘emerging regional markets’ typified by the combination of trade liberalization and regional integration (Humphrey and Oeter 2000). These countries tend to see automotive FDI as a way of developing (e.g. China and India) or modernizing (e.g. Russia) their domestic automotive industry. In addition to market penetration, transnational corporations (TNCs) expanded their production in less developed economies in order to increase their competitiveness in more developed markets by shifting production to peripheral areas located close to the affluent markets of North America and Western Europe. Mexico, Spain and CEE are the best examples of such integrated peripheries that have been integrated through FDI into the traditional core areas of automotive manufacturing in North America and Western Europe (Humphrey and Oeter 2000; Layan 2000).

In an increasingly globalized economy, foreign direct investment by TNCs is considered a major force in the economic development of less developed economies, including the economies of Central Eastern Europe (e.g. Jindra *et al.* 2009).² In the early 1990s, it was argued that a successful ‘transition’

1. Acknowledgement: This work was supported by the Czech Science Foundation (Grant Number 16-21076S).

2. Central Eastern Europe (CEE) denotes the region composed of former state socialist countries located in Europe outside the former Soviet Union, which have automobile assembly plants (Bulgaria, Czechia, Hungary, Poland, Romania, Serbia, Slovakia and Slovenia). Central Europe (CE) denotes the region composed of Czechia, Hungary, Poland, Slovakia and Slovenia.

to capitalism in CEE would depend on large FDI inflows for triggering the necessary industrial restructuring, modernization and successful economic development (e.g. Fischer and Gelb 1991; Dunning 1993; EBRD 1993). The automotive industry was at the forefront of this FDI-driven development strategy in which foreign TNCs took over the CEE automotive industry through heavy capital investment, restructuring it and incorporating it into European and global production networks in the 1990s and 2000s (Pavlínek 2002a; Pavlínek 2002c; Pavlínek *et al.* 2009).

Part 1 focuses on CEE as an example of an integrated periphery in the automotive industry. It argues that the 2008-2009 global economic crisis coincided with the end of the period of rapid expansion of the CEE automotive industry related to the opening up of CEE to foreign trade and FDI in the 1990s and European Union (EU) membership in the 2000s. Although the FDI-driven development of the CEE automotive industry has continued in the aftermath of the economic crisis, it is no longer predominantly based on building new greenfield factories but increasingly on consolidating the existing spatial structure of the automotive industry in the form of expanding profitable investments through reinvestment. This consolidation phase is typified by continuing process and product upgrading and by the much more selective and uneven functional upgrading of the CEE automotive industry (Pavlínek *et al.* 2009; Pavlínek and Ženka 2011). Although this upgrading is crucial for maintaining the competitiveness of the CEE automotive industry, it is unlikely to alter its peripheral position in the European automotive industry division of labor, which will continue to be largely based on low labor costs compared to the Western European automotive industry core. The pressure to control rising wages in the CEE automotive industry is likely to intensify through inter-plant competition, the intensification of the labor process in the form of process upgrading and also through the selective devaluation of national currencies. I also argue that while large inflows of FDI led to the restructuring and rapid development of the automotive industry in CEE countries, this came at the expense of excessive foreign domination and control and will possibly limit the industry's potential for future economic development and for closing the gap between CEE and Western European economies.

In this part, I first provide an overview of FDI trends in the CEE automotive industry, including an evaluation of automotive FDI trends in individual CEE countries. Next, I consider the future prospects of automotive FDI and its long-term developmental effects in CEE. Finally, I summarize the main points in the conclusion.

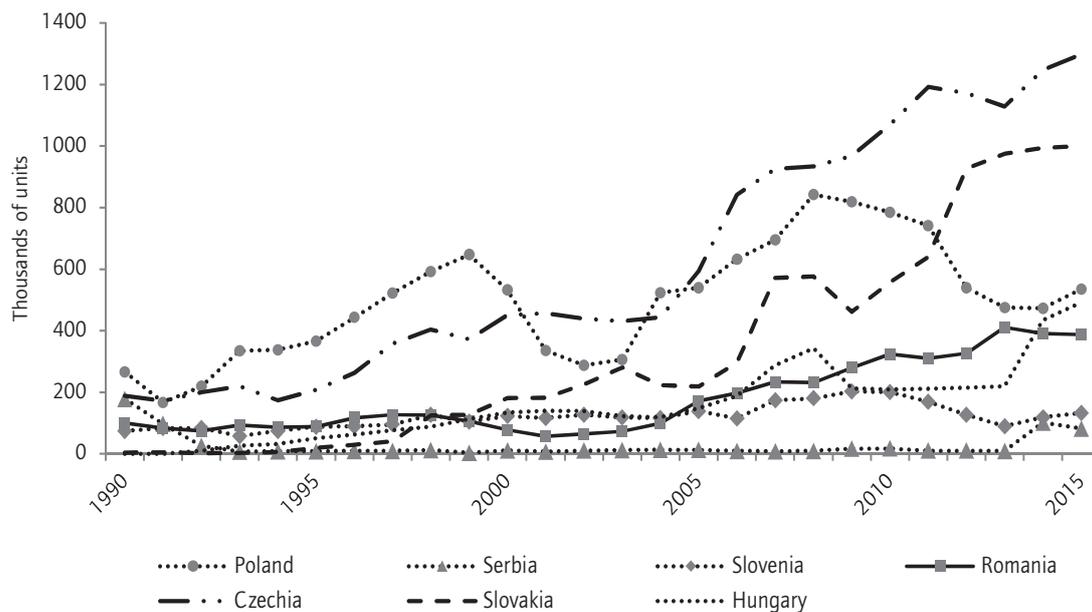
FDI trends in the CEE automotive industry

As a result of large FDI inflows, the CEE automotive industry periphery has been very dynamic (e.g. Pavlínek *et al.* 2009; Pavlínek and Ženka 2011; Bernaciak and Šćepanović 2010; Domański *et al.* 2013; Sass and Szalavetz 2013). The CEE automotive industry has been restructured, modernized and expanded (e.g. Pavlínek *et al.* 2009; Bernaciak and Šćepanović 2010), local capabilities

have been enhanced (Domański and Gwosdz 2009) and a significant, although very uneven, upgrading has taken place (Pavlínek and Ženka 2011). This rapid development of the industry has been organized and directed from abroad and core-based automotive TNCs now fully control the CEE automotive industry through direct ownership of the vast majority of both assembly plants and key automotive suppliers. Slovakia, Hungary, Romania and Czechia had the highest share of their automotive industry controlled by foreign TNCs in 2014. The degree of foreign control was the lowest in Slovenia, reflecting its more cautious approach towards the privatization of its enterprises in the hands of foreign buyers. This almost total dependence on foreign capital is a sign of the weak and continuing peripheral position of CEE in the European automotive industry system, a position in many respects similar to that of Mexico in the context of North America (Sturgeon *et al.* 2010).

Car production has increased in all CEE auto-producing countries with the exception of Serbia since 1990 (Figure 1).

Figure 1 Car production trends in CEE countries



Source: Based on 1997-2015 data in OICA (2016) and 1990-1996 data from the national statistical offices of individual countries.

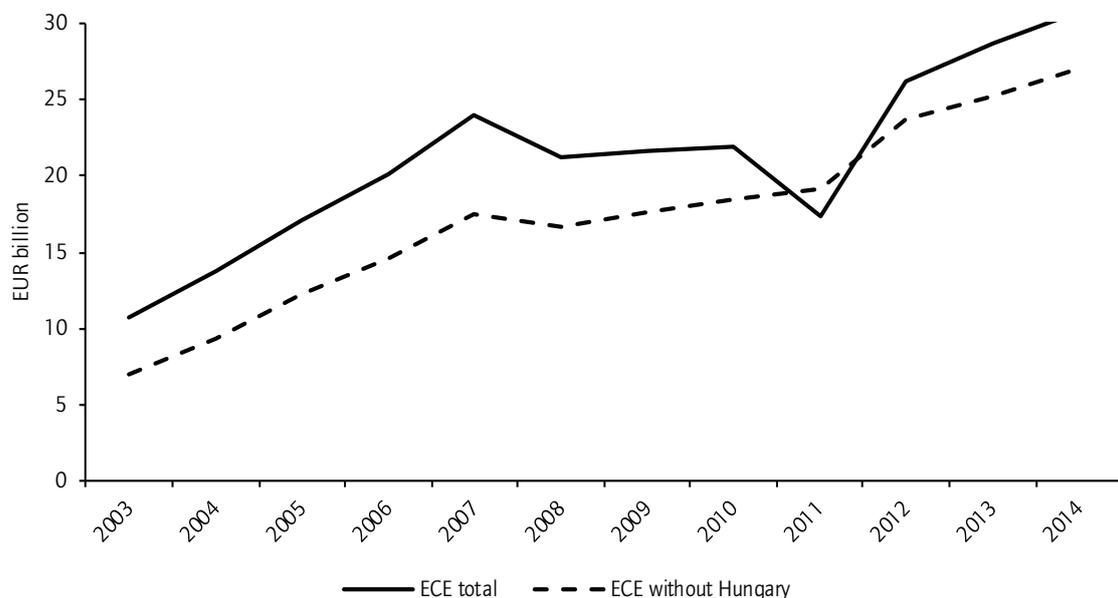
Among the CEE countries that produced passenger cars before 1990, the greatest increase between 1990 and 2015 was in Czechia (+591%), followed by Romania (+287%) and Poland (+101%). Additionally, Hungary and Slovakia, which did not produce any passenger cars before 1990, became involved in car assembly in the early 1990s, and their output grew rapidly, with Slovakia becoming the second largest producer in CEE and the country with the largest car production per capita in the world. The production in Slovakia will further increase when Jaguar Land Rover opens its assembly plant in 2018. In Serbia, production collapsed because of the war and economic embargo in the 1990s, and it has not fully recovered since.

The growth in CEE passenger car production is projected to continue for the next few years. The existing assembly facilities of many carmakers are being expanded across CEE. The development of the automotive industry since 1990 has created a distinct automotive agglomeration in Central Europe. It covers most of Czechia, western Slovakia, northwestern Hungary, and southwestern Poland and includes 23 vehicle assembly plants, 12 large engine factories and hundreds of other component production sites. Geographic accessibility from Western Europe has been one of the underlying reasons behind the concentration of new plants and the expansion of the existing production facilities in this region.

CEE has two basic roles in the European automotive industry production system (Havas 2000; Pavlínek 2002c; Pavlínek *et al.* 2009): first and foremost is the high-volume production of standard car models; second is the low-volume assembly of luxury models and other niche market vehicles. Additionally, the CEE automotive industry has served as a testing ground for new production methods, which, if successful, are consequently introduced in core areas of the automotive industry such as Western Europe.

Based on data from Eurostat, the FDI stock in the automotive industry (NACE 29 and 30) stood at €30.8 billion in CEE as of 2014, compared to €10.4 billion in 2003 (Figure 2).

Figure 2 Total automotive FDI stock in CEE (Czechia, Hungary, Poland, Romania, Slovakia, Slovenia) and in CEE excluding Hungary, 2003-2014

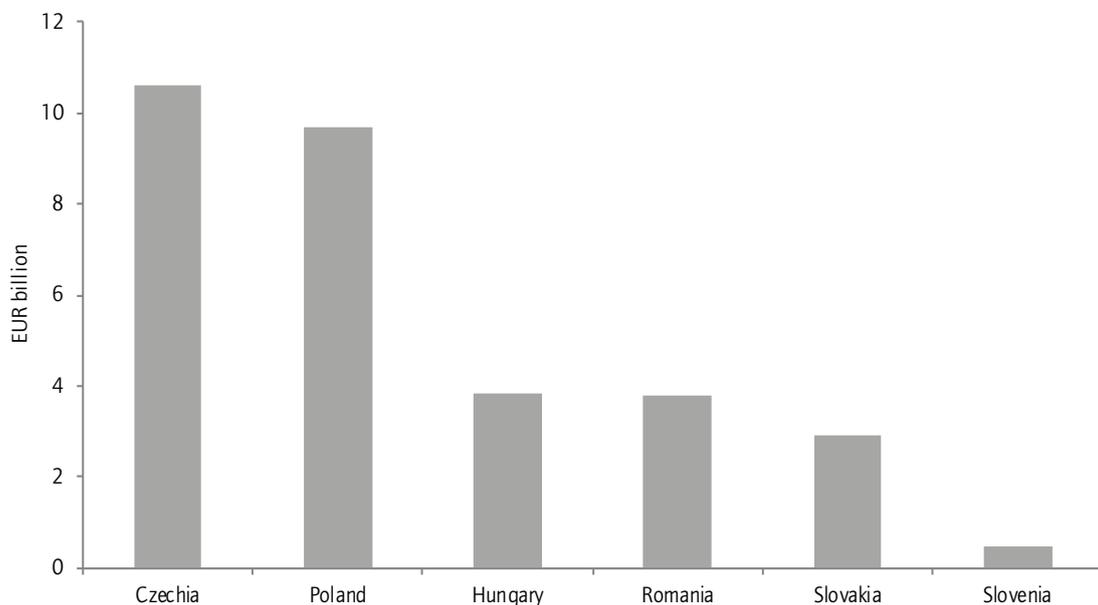


Note: NACE 29 data (manufacture of motor vehicles, trailers and semi-trailers) for Czechia, Poland and Slovakia, NACE 29 and 30 data (manufacture of motor vehicles, trailers, semi-trailers and of other transport equipment) for Hungary, Romania and Slovenia.
Source: Based on data from Eurostat (2016) and national statistical offices of individual countries.

Including Fiat's investment in Serbia, the total FDI stock exceeded €32 billion. The highest stocks were in Czechia (€10.6bn in 2014) and Poland (€10.6bn in 2015), followed by Hungary (€4.2bn in 2015), Romania (€3.8bn

in 2015) and Slovakia (€2.9bn in 2014). Slovenia's stock was €496 million and Bulgaria's €155 million (Figure 3). However, Hungary's stock decreased from €6.5 billion in 2007 to negative €1.7 billion in 2011 partially because a large Audi investment in Hungary was transferred from manufacturing to other services for statistical and accounting purposes (Antalóczy and Sass 2014). Consequently, the real FDI stock in the CEE automotive industry was close to €35 billion in 2015 and significantly more if we include FDI in the closely related supplier industries, such as the production of tires, which are not classified within the narrowly defined automotive industry (NACE 29 and NACE 30). Together, Czechia and Poland attracted more than twice the amount of automotive FDI as the rest of CEE according to official national statistical data. The automotive FDI stock steadily increased between 2003 and 2007. It decreased during and after the 2008-2009 economic crisis, with the lowest point achieved in 2011, only to recover in 2012, suggesting that the negative effects of the economic crisis on FDI were only temporary. However, the FDI data for the entire CEE were affected by large fluctuations in the automotive FDI stock of Hungary. Without Hungary, the rest of the CEE automotive industry recorded only a slight decrease in total FDI stock in 2008, which recovered in 2009. Overall, however, FDI stock increased more slowly during the 2008-2014 period than between 2003 and 2007, as shown in Figure 2.

Figure 3 FDI stock in the CEE automotive industry, 2014



Note: NACE 29 data for Czechia, Poland and Slovakia; 29 and 30 data for Hungary, Romania and Slovenia.

Source: based on data from Eurostat (2016) and national statistical offices of individual countries.

Since the early 1990s, CEE countries were generally open to automotive FDI despite differences in national FDI policies (Drahokoupil 2009; Bartlett and Seleny 1998). However, since the late 1990s, CEE countries engaged in competitive bidding for flagship investments (Drahokoupil 2008; Kolesár 2006).

FDI trends in the CEE automotive industry have largely been driven by the investment and location decisions of lead assembly firms (assemblers). These decisions triggered investment waves of their principal suppliers who followed them into CEE to meet the co-location requirements of modular production through follow sourcing (Sturgeon and Lester 2004; Frigant and Lung 2002; Pavlínek and Janák 2007). The construction of greenfield assembly plants began in the early 1990s in CEE but peaked in the 2000s before and shortly after EU accession. The establishment of new foreign-owned supplier factories peaked in 2004, though has since substantially declined, especially during and after the 2008-2009 economic crisis (Figure 4).

Figure 4 The number of newly built foreign-owned supplier factories in CEE, 1997-2015

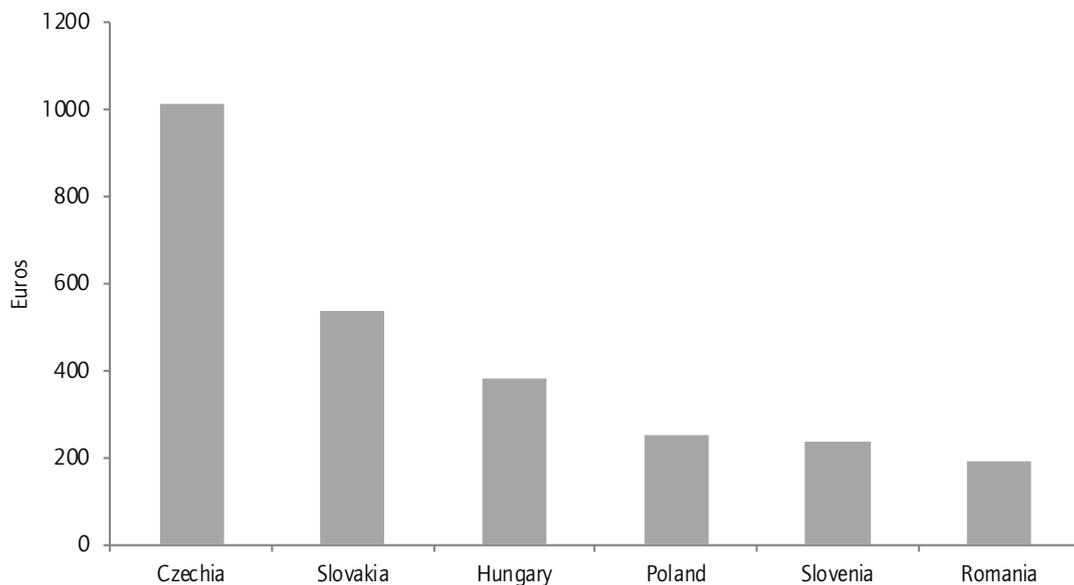


Source: Based on data from EY (2010), Eurofound (2016).

After 2009, automotive investment in CEE continued at a much lower level than in the first half of the 2000s, with especially Western European investment declining well into 2013. Ernst and Young (EY 2014: 50) talk about ‘the end of the Central and Eastern European “miracle”’. It is reasonable to assume that, at least for the time being, the period of rapid expansion of the automotive industry in CEE is over. We should not expect any new waves of greenfield assembly plant construction in CEE on the scale of the 2000s and associated investment waves in the automotive components industry in the foreseeable future, despite the 2015 decision of Jaguar Land Rover to build a new assembly factory in Slovakia. Instead, we should expect the consolidation of existing investments and, in some cases, their gradual expansion. Investment in the components industry is likely to continue at significantly lower levels than in the early 2000s and the period prior to the 2008-2009 economic crisis since automotive supplier networks are now already established in CEE.

To illustrate these trends in a national context, I will briefly analyze FDI trends in the CEE automotive industry, looking at the total FDI stock in the automotive industry of individual CEE countries. Based on automotive FDI, we can classify CEE countries into three categories. Czechia, Poland and Hungary form the first group, typified by the highest FDI stock in the automotive industry. These three countries have benefited from their geographic proximity to Western Europe and especially Germany, low wages, FDI-friendly policies and industrial tradition. The second group includes Slovakia and Romania with lower automotive FDI stock than the first group, although Slovakia has the second highest FDI stock per capita in the entire CEE (Figure 5).

Figure 5 Automotive FDI stock per capita in CEE in 2014



Note: NACE 29 data for Czechia, Slovakia and Poland, NACE 29 and 30 data for Hungary, Slovenia and Romania.
Source: Based on data from the national banks of individual countries.

Compared to the first group, Slovakia and Romania are latecomers that were not very successful in attracting large FDI inflows in their automotive industries in the 1990s but experienced rapid FDI growth in the 2000s because of their EU membership, FDI-friendly policies and lower wages than the first group (Pavlínek 2016). Finally, Slovenia, Serbia and Bulgaria form the third group, typified by low levels of automotive FDI compared to the first two groups. Throughout the 2000s, all CEE countries fiercely competed for new automotive FDI projects, offering large incentives, low taxes and other FDI-friendly policies (Pavlínek 2016; Drahokoupil 2009). Although the CEE region continued to be attractive for automotive FDI after the 2008-2009 economic crisis, parts of Central Europe have become less competitive in the most labor-intensive low-skill automotive assembly, such as the assembly of cable harnesses, because of rising wages, leading to the relocation of these manufacturing activities to cheaper locations such as Romania or North Africa (Pavlínek 2015). This underscores the importance of low wages for the future competitiveness of automotive manufacturing in CEE. The national-

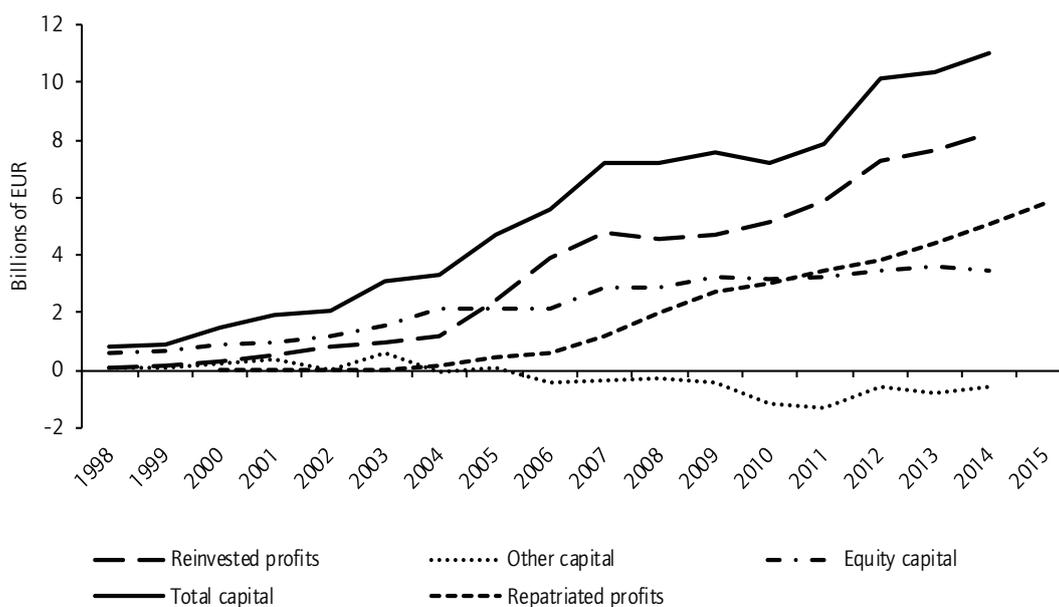
level analysis also underscores the uneven nature of FDI inflows, contributing to the uneven development of the automotive industry and the uneven effects of the 2008-2009 economic crisis.

It is important to note that the following analysis has been negatively affected by the uneven quality and availability of statistical data provided by the national banks of individual CEE countries and by Eurostat, making the compilation of longer-term trends and reliable international comparisons difficult, if not impossible. The quality of FDI data from CEE national banks was crosschecked against the Eurostat FDI database and found to be compatible. In the case of Czechia, Hungary, Slovakia and Slovenia, the definition of FDI is in line with IMF recommendations (BPM5).

Czechia

At €10.6 billion, in 2014 Czechia had the CEE's highest FDI stock in the automotive industry, just ahead of Poland. The period between 1991 and 1998 was dominated by the Volkswagen (VW) investment in Škoda Auto and the related foreign takeovers of Czech automotive suppliers and new FDI greenfield projects by foreign suppliers of Škoda Auto (Pavlínek 2008; Pavlínek and Janák 2007). After the Czech government introduced a system of investment incentives in 1998 (Pavlínek 2002b, Drahokoupil 2009), automotive FDI stock increased steadily from €0.8 billion in 1998 to €10.6 billion in 2014 (Figure 2).

Figure 6 FDI stock (1998-2014) and the stock of dividends transferred abroad (2000-2015) in the Czech automotive industry (NACE 29)

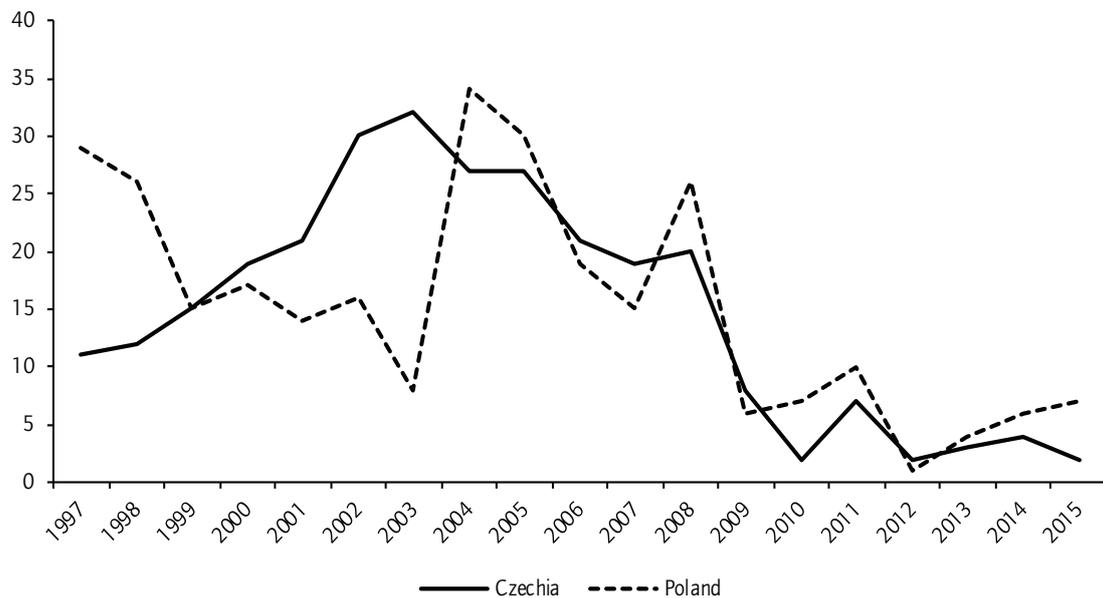


Source: Based on data from CNB (2001-2016).

These general trends are also supported by data on new investments in the supplier sector. The post-1997 steady increase in the number of new supplier factories peaked in 2003, collapsed during the 2008-2009 economic crisis and did not fully recover after 2010 (Figure 7).

The fastest increase took place between 2003 and 2007, with Toyota-Peugeot-Citroen (TPCA) and Hyundai investing in new greenfield assembly plants and their principal Japanese and South Korean suppliers following suit. A 2009 survey of 263 companies in the broadly defined Czech automotive industry conducted by the author suggested that more than half of the surveyed companies (149 companies or 56.7%) stopped or postponed their investment plans because of the economic crisis. FDI inflows stagnated during the economic crisis. Reinvested profits have been the most important source of new FDI. At the same time, however, the outflow of profits in the form of dividends transferred abroad has been steadily increasing since 2000, peaking in the economic crisis at €813 million in 2008. Between 2000 and 2014, €5.8 billion were transferred abroad from the Czech automotive industry in the form of dividends paid to foreign parent companies, as Figure 6 shows (CNB 2016).

Figure 7 The number of newly built FDI-based supplier factories in Czechia and Poland, 1997-2015



Source: Based on data from EY (2010) (1997-2009) and Eurofound (2010-2015).

The effects of the economic crisis in the Czech automotive industry were significant, with the broadly defined automotive industry shedding 10% of its workers (Pavlínek and Ženka 2010; Pavlínek 2015). These job losses affected the whole industry, hitting both foreign and domestic companies regardless of their position in the automotive value chain. Of the 15 bankruptcies, plant closures and relocations during and immediately after the economic crisis,

nine involved foreign-owned component suppliers (Pavlínek 2015). 9,187 jobs were lost, 8,037 (87.5%) of which were in these nine companies.

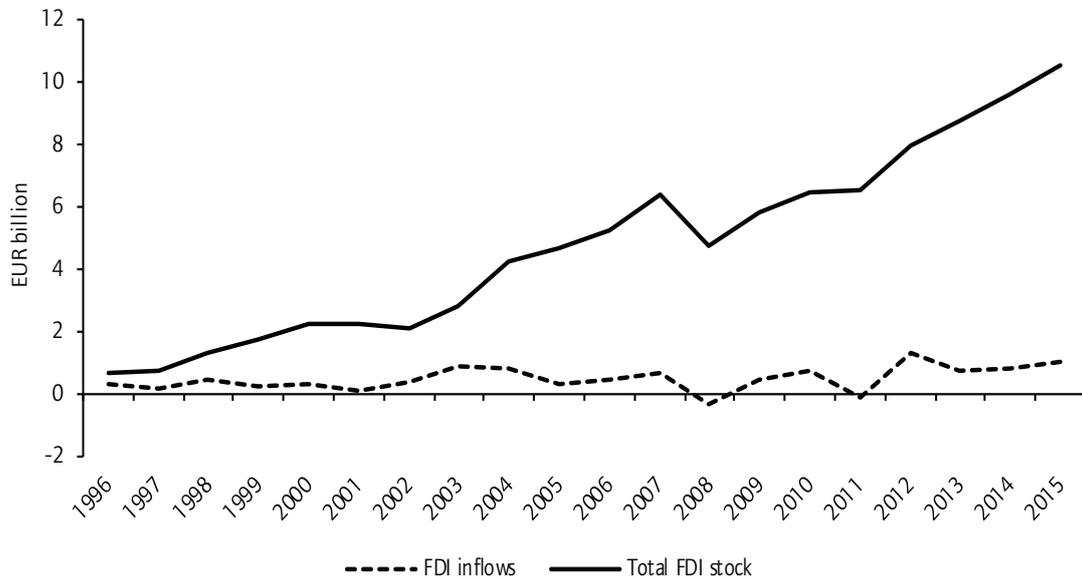
The three largest job losses were in U.S.-owned companies. The largest was caused by Delphi Packard, a manufacturer of cable harnesses, which relocated from Česká Lípa to Romania, eliminating 3,400 jobs. The company attributed its decision to close the plant and relocate production to high production costs, intense competition and terminated contracts with Audi and BMW. The second largest job loss was related to the relocation of AEES Czech Platinum Equity, also a manufacturer of cable harnesses, to Romania due to lower labor costs in 2009, with 2,200 jobs lost. The third largest job loss of 980 jobs involved the 2008 closure of a subsidiary of an US automotive sealing systems producer located in Ostrava.

Czechia continues to benefit from its geographic proximity to Germany, significantly lower labor costs, a well-developed supplier base and increasing agglomeration economies. These factors are expected to contribute to the expansion of existing factories in the form of reinvested profits and attract additional FDI in the supplier sector in the foreseeable future. The latest major expansion was announced in March 2014 when VW, following a VW-wide competition, decided that a new large Škoda SUV (the Kodiaq) would be produced in Czechia. Škoda Auto invested €450 million in expanding its Kvasiny assembly plant in eastern Bohemia, creating 1,500 jobs and attracting new component suppliers. The June 2014 decision by Nexen, a South Korean tire producer, to build its €829 million tire factory in Czechia (near the town of Žatec) represents the largest greenfield investment in the Czech automotive industry after the economic crisis and the third largest foreign investment in the country since 1993. Nexen's location decision suggests that Czechia continues to be attractive for new large FDI projects by global automotive suppliers.

Poland

As of 2014, Poland's total FDI stock in the broadly defined automotive industry (NACE 29 & 30) stood at €11.3 billion (€9.6bn in NACE 29). Similarly to Czechia, Poland has benefitted from its geographic proximity to Germany and substantially lower labor costs (Pavlínek, 2006). Between 1996 and 2015, annual inflows of FDI in the automotive industry were volatile and strongly affected by business cycles and large investment projects. The greatest decrease in FDI inflows and FDI stock was recorded during the 2008-2009 economic crisis, with the FDI stock decreasing by more than €1.6 billion in 2008. The country recorded negative FDI inflows (minus €325 million), negative reinvested earnings (minus €213 million) and a decrease in equity capital (by €68 million). After negative FDI inflows in 2011, the Polish automotive industry received record inflows of €1.3 billion in 2012 and FDI inflows and stocks continued to grow rapidly between 2012 and 2015 (Figure 8).

Figure 8 FDI inflows and FDI stock in the Polish automotive industry (NACE 29), 1996-2015



Source: Based on data from NBP (2016) and Eurostat (2016).

The number of newly built foreign components plants was similarly volatile. The lowest point was reached in 2012 and 2013 with one and four respectively (PIFIA 2013; EY 2010, Eurofound 2016) (Figure 7).

Given the size of its automotive sector, the number of bankruptcies, closures, and relocations was low in Poland during the economic crisis.

Total vehicle output decreased in Poland by 38% between 2008 and 2013 (from 951 thousand units to 583 thousand units), mainly due to a 43.6% decrease in the output of cars (from 842 thousand to 475 thousand units), affecting all manufacturers in Poland (Fiat, GM Opel and FSO). At the same time, the output of commercial vehicles increased by 10.8% (11,200 units). After 2013, the total vehicle output started to recover and reached 661 thousand vehicles in 2015, of which 535 thousand were cars (OICA 2016). Poland has a more diversified automotive industry than its Central European neighbors. For example, compared to Czechia, Hungary, Slovakia and Romania, Poland is a major producer of commercial vehicles. Compared to other CEE countries, Poland also relies more on the supplier sector than on vehicle assembly. This sector accounted for 60% of its automotive industry output and 43% of its exports in 2012.

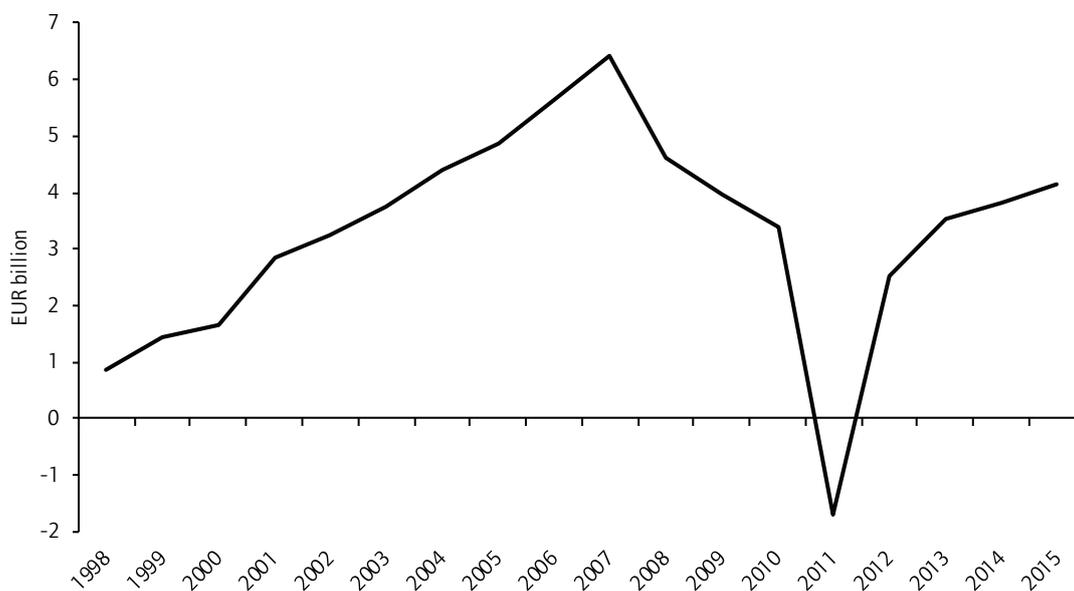
In 2014, VW chose the Polish town Września near Poznań for its new commercial vehicle factory, which will further strengthen Poland's specialization in the assembly of commercial vehicles and attract additional component suppliers to Poland. The VW investment is worth more than €800 million. Production started in the second half of 2016 and the planned annual production capacity of 100 thousand vehicles should be reached in 2019. In

2016, Daimler announced that it would build a €500 million engine factory in Jawor, while Toyota announced a \$150 million transmission factory in Walbrzych that will produce transmissions for hybrid cars. The Polish automotive industry has overcome the economic crisis and is set to grow strongly in the near future based on the rebound in FDI inflows that will likely continue in the near future due to Poland's strong competitive advantages: its geographic location next to Germany, low labor costs, skilled labor and a large domestic market.

Hungary

Hungary was the first CEE country to attract a foreign greenfield car assembly plant in 1990 (Suzuki), followed by Audi in 1994 and Mercedes-Benz in 2008. The country has become a favorite location for foreign automotive companies because of the presence of factors similar to those in the rest of CEE. In particular, the combination of its geographic proximity to Western Europe and low labor costs, together with other factors such as investment incentives and flexible labor laws, have attracted large automotive FDI, as Figure 9 shows.

Figure 9 FDI stock in the Hungarian automotive industry (NACE 29 and 30), 1998-2015



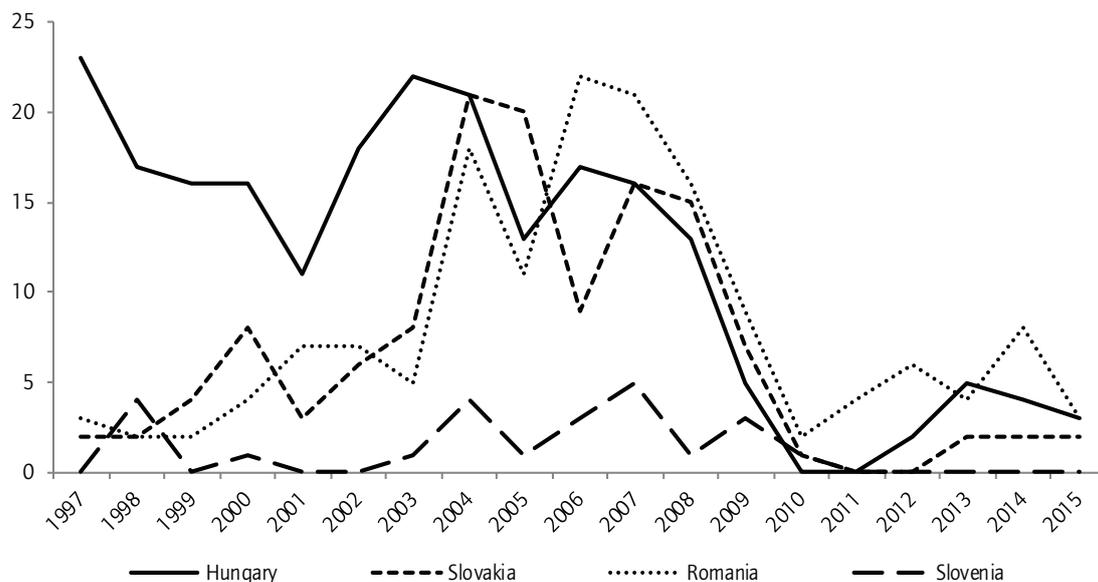
Source Based on data from CBH (2016) and Eurostat (2016).

Automotive FDI stock increased rapidly before the 2008-2009 economic crisis, from €866 million in 1998 to €6.4 billion in 2007. After 2007, however, FDI stock declined to minus €1.7 billion in 2011 before recovering to €2.5 billion in 2012 and €4.1 billion in 2015 (Figure 9). These unusual swings in the statistically reported automotive FDI stock and FDI inflows are difficult to interpret but they obviously have little in common with the actual situation because Hungary did not experience any such dramatic disinvestment in its automotive industry. On the contrary, over €4 billion were invested in the

Hungarian automotive industry by foreign companies between 2009 and 2013 (CTCS 2014). This would suggest that the actual FDI stock in the Hungarian automotive industry is more than €10 billion, i.e. at a similar level as Czechia and Poland. As noted previously, about half of the dramatic decline in the FDI stock is attributable to the transfer of Audi's large FDI stock in Hungary (Audi alone has invested €8.14 billion in its factory in Győr since 1993) from manufacturing to other services in the form of a Hungary-based foreign-owned holding company established by Audi in 2011 (Antalóczy and Sass 2014).

The greatest job losses attributable to the 2008-2009 economic crisis took place in 2010 (Boros 2013) as automotive industry sales decreased on average by 30-40% (Antalóczy and Sass 2011) and the output of cars fell by 39% between 2008 and 2010 (from 342,359 units in 2008 to 205,571 in 2010 (OICA 2016)). For example, Dräxlmaier laid off 450 workers in Mór, Denso cut 800 jobs in Székesfehérvár and Tyco Electronics 330 jobs in Esztergom.

Figure 10 The number of newly built FDI-based supplier factories in Hungary, Romania, Slovakia and Slovenia, 1997-2015



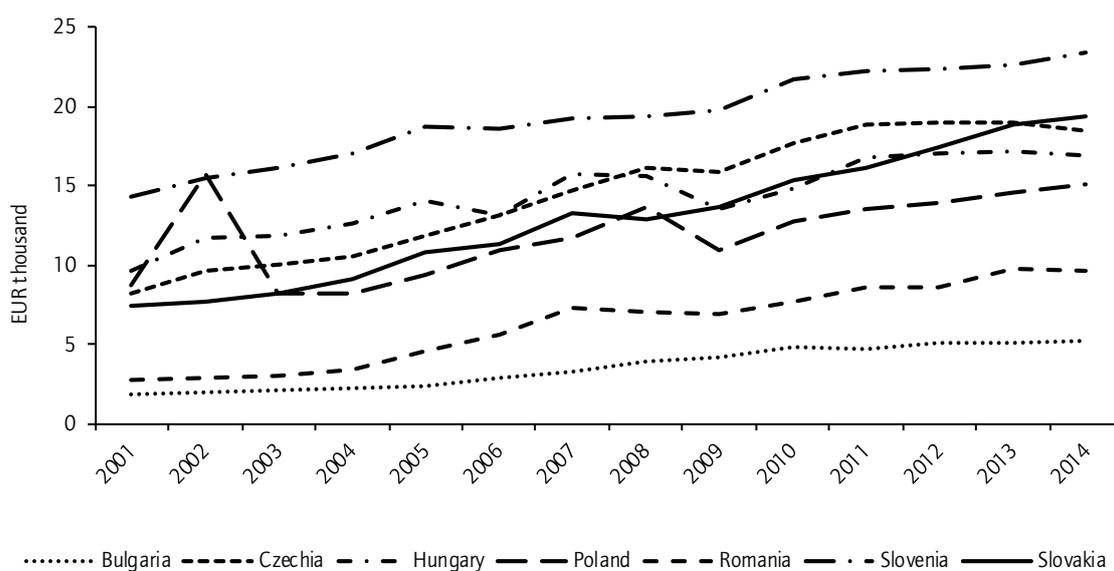
Source: Based on data from EY (1997-2009), Eurofound (2010-2015).

As in other CEE countries, Hungary has been increasingly threatened by the relocation of labor-intensive parts of the automotive supply chain abroad. However, the number of relocations from Hungary has so far been relatively low in the automotive industry. Sass and Hunya (2014) identified only four relocations between 2003 and 2011, significantly less than in the case of Czechia and Slovakia (Pavlínek 2015). The Michelin plant in Budapest closed in 2015 (Eurofound 2016). At the same time, there have been over 60 relocations to Hungary from abroad in the automotive industry (Sass and Hunya 2014), although the 2007-2009 economic crisis saw a sharp decline in the number of newly built supplier factories by foreign companies, as Figure 10 shows.

Several large projects account for a high share of the large automotive FDI inflows after the 2008-2009 economic crisis. Mercedes-Benz's investment in its new assembly plant at Kecskemét (€800 million) was completed in 2012 and attracted 30-40 foreign suppliers to set up new factories supplying its production from Hungary. Examples include Johnson Controls, Brose, Knorr-Bremse, Siemens, Magna, Dürr and Kuka. Ten of these suppliers are located within the Mercedes-Benz production complex at Kecskemét. In 2016, Mercedes-Benz announced that it would build a second factory in Kecskemét by 2020, investing an additional €1 billion and creating 2,500 jobs. In addition to Mercedes-Benz and its suppliers, Hungary attracted several large automotive FDI after the economic crisis, including major expansion projects by Opel, Audi and Hankook Tire. Opel invested €500 million in expanding its engine factory in Szentgotthard, completed at the end of 2012. Opel also announced an additional €130 million expansion of its plant in 2013. In 2013, Audi completed a €900 million expansion of its vehicle assembly plant in Győr and is moving production of its Q3 compact crossover there from Spain, while Hankook Tire announced a €306 million expansion of its factory in Rácalmás in 2014.

These automotive investments suggest that Hungary has been more successful than all other CEE countries in attracting large volumes of automotive FDI after the 2008-2009 economic crisis. It is very likely that this success is, at least partially, related to the continuing low wages in the Hungarian automotive industry (Figure 11).

Figure 11 Average personnel costs (personnel costs per employee) in the automotive industry (NACE 29) 2001-2014



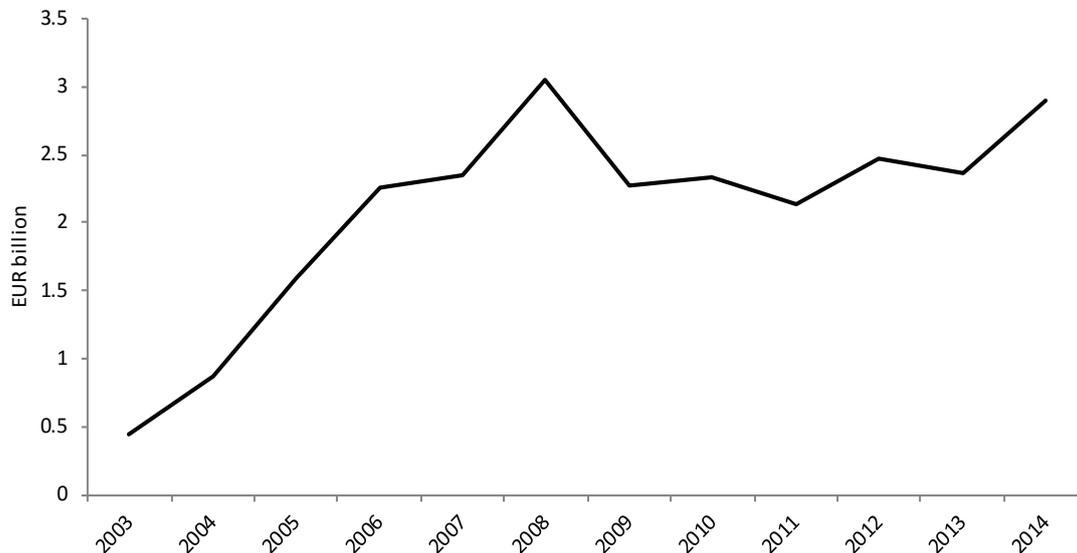
Source: Based on data from Eurostat (2016).

The Hungarian Forint was significantly devalued during the economic crisis, making Hungary more attractive in the eyes of foreign investors. Compared to Poland, Hungary has a less militant labor force and a better infrastructure. As with other CEE countries, Hungary has also vigorously competed for new FDI, offering attractive investment incentives. All these factors mean that Hungary will continue to be a very attractive location for automotive FDI in the foreseeable future as well.

Slovakia

Compared to the 1990s, Slovakia experienced a rapid increase in automotive FDI after 2000 by attracting greenfield assembly factories of PSA Peugeot Citroën to Trnava, Kia to Žilina and, most recently, Jaguar Land Rover to Nitra. These new assembly operations attracted large FDI by principal component suppliers. Additionally, VW substantially expanded its production in Slovakia after 2000, attracting a number of its most important suppliers as well (Pavlínek 2016; 2015). The number of new FDI projects in the supplier industry sharply increased in the early 2000s, peaking in 2004 and 2005 (Figure 10). Automotive FDI stock increased from €448 million in 2003 to €3 billion in 2008 before declining to €2.4 billion in 2013 and recovering to €2.9 billion in 2014 (Figure 12).

Figure 12 FDI stock in the Slovak automotive industry, 2003-2014



Source: Based on data from NBS (2016) and Eurostat (2016).

This rapid increase in FDI inflows in the automotive industry was the outcome of policy changes in the late 1990s and early 2000s, which significantly increased the country's attractiveness in the eyes of foreign TNCs. As a result of large FDI inflows, car production increased from 3,453 units in 1990 to

180,706 units in 2000, 556,941 units in 2010 and 1 million in 2015 (OICA 2016; ZAP 2000). Consequently, Slovakia now has the largest per capita vehicle production in the entire world and is the second largest producer of cars in CEE after Czechia, as Figure 5 showed.

The 2008–2009 economic crisis led to a 19.2% decrease in the output of cars and decreasing output in the entire supplier industry. FDI inflows slowed and the FDI stock declined. There were 13 bankruptcies, plant closures and relocations abroad in the Slovak automotive industry during and immediately after the economic crisis. Nine of these involved the labor-intensive assembly of cable harnesses, an area especially sensitive to labor costs. For example, Delphi eliminated 1,900 jobs in Senica between 2006 and 2010 and relocated the assembly of cable harnesses to Romania, Tunisia and Turkey between 2007 and 2011 (Eurofound 2016). The second largest job loss of 1,211 workers was associated with the closure of Yazaki, a Japanese assembler of cable harnesses, in western Slovakia in 2010.

By 2011 the total output of the automotive industry had recovered to pre-crisis levels, with large production increases being recorded in 2012 and 2013 due to a major expansion of production at VW Slovakia and due to PSA and Kia each reaching full production capacity of 300,000 vehicles per year. In 2009, VW Slovakia won the VW concern-wide competition to assemble the smallest VW car (the VW Up!, Škoda Citigo and Seat Mii), launched in 2011. VW invested €308 million to increase the production capacity of VW Slovakia to 400,000 units, creating 1,500 jobs and doubling its output (VW 2016). A new €600 million welding plant was built in 2013 and VW Slovakia announced an additional €500 million investment in its Bratislava plant in January 2015 with the aim of expanding the welding plant to produce bodies for the Bentley Bentayga SUV and Porsche Cayenne and building a new assembly plant for Porsche Cayenne, creating an additional 1,000 jobs. Starting in 2017, the Cayenne will be completely assembled in Slovakia. VW invested almost €1.5 billion in Slovakia between 2012 and 2016 alone and the total 1991–2016 investment exceeded €2.5 billion.

However, based on the analysis of business announcements of new investments and the expansion of production in the Slovak automotive industry, FDI in the supplier industry did not pick up until 2013, with the lowest point reached in 2012. In 2014 and 2015, four new greenfield factories were announced by component suppliers while there were only three between 2010 and 2013 (Eurofound 2016). The vast majority of new FDI is now flowing into the expansion of production, rather than the greenfield factories characteristic of the early- and mid-2000s. However, this situation is bound to change with the construction of the new assembly facility by Jaguar Land Rover in Nitra, which will attract the most important component suppliers of Jaguar Land Rover to the proximity of its plant.

As with other CEE countries, Slovakia will continue to benefit from its geographic proximity to Germany and the rest of the Western European automotive industry core, backed by its low wages and the aggressive investment promotion

policy of the Slovak government. Compared to Czechia, Hungary and Poland, Slovakia has a distinct advantage in using the Euro, thereby eliminating currency exchange risks, something highly valued by foreign investors (2011-2015 interviews). However, as the Czech, Hungarian and Polish currencies were periodically affected by devaluation during and after the economic crisis, relative labor costs increased in Slovakia since it joined the eurozone. While Slovakia had the lowest labor costs in the Central European automotive industry in the late 1990s and early 2000s, by 2014 its wages surpassed those of Hungary, Poland and Czechia as Figure 11 showed. It remains to be seen what effect this change will have on future inflows of FDI, though it is safe to conclude that Slovakia will be less competitive in attracting investment into labor-intensive automotive production based on low labor costs than it was in the 2000s.

Romania

Romania's automotive FDI remained limited until the late 1990s despite selling 51% of the shares of Automobile Craiova to Daewoo (South Korea) in 1994. The purchase of Dacia by Renault in September 1999 and the subsequent development of Dacia as Renault's global low-cost brand in the 2000s transformed the Romanian automotive industry. This purchase was followed by a wave of investments by Renault's principal suppliers, peaking in 2006 and 2007 before the economic crisis, as Figure 10 showed. Examples include Auto Chassis International, Valeo, Euro APS, Johnson Controls, Autoliv, Inergy, Euralcom, Michelin and Continental. By 2014, Renault had invested €2.2 billion in Dacia (Gillet 2014).

As opposed to Renault, Daewoo never achieved its ambitious plans in Craiova and declared bankruptcy in 1998, leaving the Craiova factory in limbo until 2006 when it was repurchased by the Romanian government. One year later, the government sold its 72.4% stake to Ford for €57 million. Ford promised to invest €869 million with the aim of producing 300,000 cars and 300,000 engines in the Craiova factory annually in exchange for state aid of €75 million (Lupu 2016). The engine plant was opened in 2012. In January 2013, Ford became the sole owner of the Craiova plant and assumed full management control. It encouraged 40 of its most important European suppliers to set up operations in Romania and about 20 of them signed contracts with Ford. Examples of foreign suppliers which have already set up manufacturing operations in the proximity of the Craiova plant include Johnson Controls, Bamesa, Kirchoff Automotive, Leoni Wiring Systems and Gestamp Automoción.

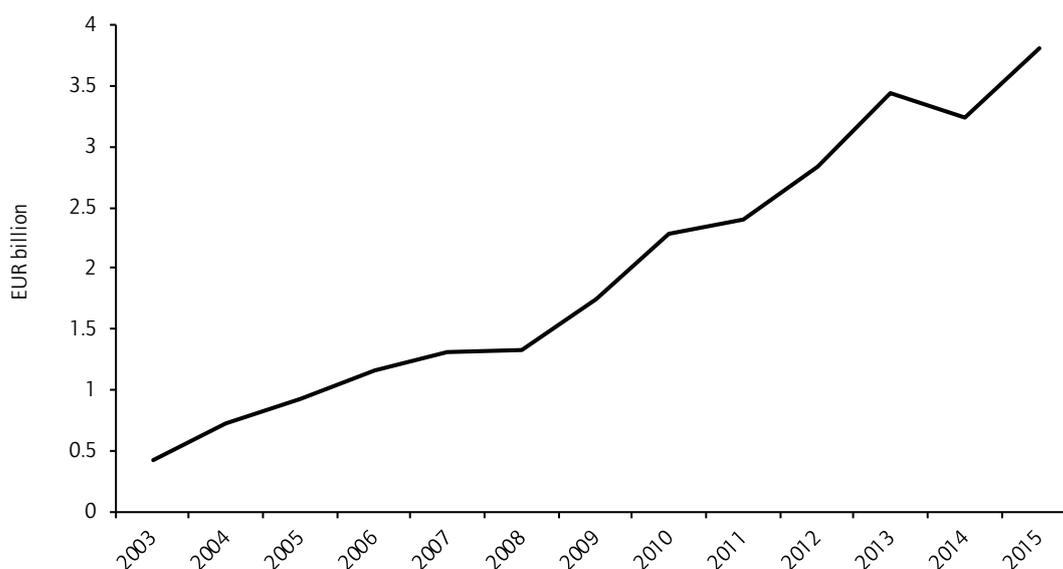
However, the economic crisis slowed down Ford's progress in Craiova. Instead of mid-2009, assembly did not start until 2012 when only 30,591 B-Max minivans were produced (OICA 2014). The expansion of the product portfolio to include a small car planned for 2010 did not materialize. In 2014, Ford produced 52,829 cars and 155,000 engines in Craiova (OICA 2016), well below the plant capacity of 300,000 vehicles. The vehicle output of the Craiova plant will increase after the start of the assembly of the new mini-SUV Ford

EcoSport in the autumn of 2017, which should save the Craiova plant. Ford received the extension from the government to reach the originally promised production targets in exchange for state aid until the end of 2025 (Lupu 2016). The company invested €869 million in the Craiova plant between 2008 and 2012 (Butu 2016) and €1 billion by 2016.

Ford has been using its Craiova plant to extract concessions from workers in its other European plants by threatening to move production there. In 2014, for example, workers in Ford's Cologne plant agreed to a more flexible shift system and working hours after the company threatened to move production of its Fiesta model to Romania (Henning 2014). Workers' concessions in Cologne amount to \$400 million in savings over the period 2017-2021 (ANE 2014). Despite low wages, Romania itself has not been spared relocation threats by automotive lead firms. For example, because of rapidly rising wages at Dacia following the 2008 strike, Renault has repeatedly threatened to move production to Morocco where it started assembly of Dacia cars in a new factory in 2012. The average monthly salary at the Dacia Mioveni factory in Romania was about €900 in 2014 (€950 including bonuses) compared to €285 in early 2008 before the strike. This 170% increase between 2008 and 2014 compares with a 30% increase in inflation over the same period (Rosemain and Timu 2014). In 2016, Renault acted on its relocation threats and announced that 'some' production of the Dacia Logan MCV station wagon would be relocated from Romania to Morocco in 2017, citing the lack of capacity in the Pitesti plant (Ilie and Frost 2016).

The automotive FDI stock in Romania increased from €416 million in 2003 to €3.8 billion in 2015 (Eurostat 2016; NBR 2016; Figure 13).

Figure 13 FDI stock in the Romanian automotive industry, 2003-2015



Source: Based on data from NBR (2016) and Eurostat (2016).

Between 1997 and 2015, 154 new supplier plants were built in Romania (EY 2010; Eurofound 2016). The greatest increase took place before the economic crisis in 2006 and 2007. As in other CEE countries, there was a sharp decrease in the number of newly built supplier plants in 2008 and 2009, as Figure 10 showed. However, Romania continues to be attractive for relocations from other countries, including Central Europe. It benefits from EU membership and low wages. The 2014 average personnel costs per employee in the automotive industry were 87% lower in Romania than in Germany compared to 74% lower wages in Slovakia than in Germany, (77% lower in Hungary and 79% lower in Poland), (Eurostat 2016; Figure 11). Not surprisingly, Romania attracted by far the largest number (27) of new foreign-owned supplier plants among CEE countries between 2010 and 2015. Including 33 expansions of production, foreign firms pledged to create 29,106 new jobs in the automotive industry during this period (Eurofound 2016).

Despite production cuts and layoffs, Romania did not experience any relocations abroad, bankruptcies or closures in its automotive industry during and after the 2008-2009 economic crisis (Eurofound 2016). Instead, it benefited from relocations from other countries during this period. The prospects for further FDI in the Romanian automotive industry are very good because Romanian manufacturing wages continue to be almost 90% lower than in Germany and are also significantly lower than those in Central Europe. Romania will also continue to benefit from its EU membership. The poor quality of infrastructure in Romania has been the most significant obstacle for TNCs to fully exploit Romania's low wages and EU membership.

Slovenia

At €471 million as of 2015, Slovenia had the lowest automotive FDI stock of CEE countries with car assembly plants, as Figure 3 showed. FDI stock in the automotive industry increased rapidly in the early 2000s before the 2007-2008 economic crisis, peaking in 2008 before declining by 38% in 2009 and 2010. Recovery began in 2011, peaking in 2013 and 2014 with the highest annual FDI inflows in the automotive industry since the early 1990s.

Slovenia has only one car assembly plant (Revoz), located in Novo Mesto. Renault has been the majority shareholder of Revoz since 1991 and its sole owner since 2004. The assembly plant has an annual capacity of 220,000 units but has not been working at full capacity for many years. Its production peaked in the aftermath of the economic crisis in 2009 (202,570 units) and 2010 (201,039 units) as sales of small cars were boosted by government scrappage schemes introduced in France and other Western European countries in 2009 (OICA 2014; Stanford 2010; Pavlínek 2015). After 2010, the output declined to 93,700 vehicles in 2013 after which it started to recover. In 2015, 133,092 vehicles were assembled and a similar output was expected in 2016.

As in other CEE countries, Slovenia's automotive industry was hit by the 2008-2009 economic crisis, resulting in significant job losses. During and after

the economic crisis, five automotive supplier plants, two of them Slovenian-owned, were closed between 2007 and 2014 with a total job loss of 1,343.

As of 2016, Renault invested €900 million in the Revoz assembly plant to assemble small Renault cars, such as the Clio and Twingo (STA 2016). Renault invested €150 million in 2013 and 2014 alone to launch production of the new Twingo and the four-seat Smart (Smart Forfour), a city car co-produced by Renault-Nissan and Daimler. It was supported by €22 million in state aid. Production was upgraded and expanded by about 25% from slightly over 600 cars a day to around 800 in December 2014. After significant fluctuations between 2011 and 2015 Revoz employed 2,100 workers in 2016. Only about 30% of the components for the Twingo are made in Slovenia, a percentage lower than that of large-volume assembly plants across CEE. This suggests that because of its low-volume production, the Revoz assembly plant has attracted fewer foreign component suppliers to Slovenia than other car assembly plants across CEE. Between 1997 and 2009 there were 23 investments in new automotive supplier plants, less than 10% of the number of investments attracted by Czechia and Poland and also substantially less than the numbers of suppliers attracted to Slovakia and Hungary (Figure 1.14). The assembly of the new Clio 4 will be launched in February 2017, which should boost the annual output of the factory to between 180,000 and 190,000 vehicles and increase employment by 300 to 500 workers (STA 2016).

Compared to other CEE countries, no new supplier factories have been built in Slovenia after the economic crisis (2010-2015). Slovenia is less attractive as a destination for automotive FDI than other CEE countries for two basic reasons. First, the low-volume production at Revoz makes it more difficult to convince foreign suppliers to co-locate their factories in the proximity of the Revoz plant. Second, relatively high Slovenian wages compared to other CEE countries make Slovenia less attractive as a destination for export-oriented FDI seeking low labor-cost locations. However, in 2016, Magna Steyr, an Austrian contract manufacturer owned by Magna, a Canadian industrial conglomerate, considered Slovenia as a potential location for its new assembly plant. Perhaps the most important reason for considering Slovenia was its geographic proximity to Magna Steyr's Graz plant in Austria, while having average personnel costs per employee in the automotive industry 61% lower than in Austria (Eurostat 2016). The starting wages in Revoz were €910 gross per month at the end of 2016 (STA 2016).

Serbia

Kragujevac-based Zastava was originally set up in 1955 based on a license purchased from Italy's Fiat company in 1953 (Pavlínek 2002a). Zastava closed the car assembly in 2008 after years of low production in the 1990s and 2000s. In 2010, Fiat took over the Kragujevac Zastava plant on establishing the Fiat Automobili Srbija (FAS) (recently renamed to Fiat Chrysler Automobiles Serbia) joint venture between Fiat (67%) and the Serbian government (33%). Under the terms of the agreement, Fiat promised to invest €940 in the

modernization of the factory in exchange for heavy subsidies from the Serbian government in the form of investment incentives and tax breaks. By the end of 2014, Fiat had invested €1.05 billion in the construction of a new assembly plant (SIEPA 2014). Despite the new assembly plant opening in April 2012, which assembles the small Fiat 500L model and has an annual capacity of 186,000 vehicles, car assembly remained at a low level in 2012 and 2013. Production increased in 2014 to 103,150 vehicles but declined to 82,630 in 2015 and 85,000 in 2016 (OICA 2016) because of slow sales of the 500L both in Europe and North America. Consequently, FAS employment decreased from 3,100 to 2,400 in 2016 after it canceled the third shift. Hundreds of jobs were also lost in component suppliers.

Low labor costs are FAS's greatest asset, being 80% lower than in Italy and starting at about 30,000 dinars (\$360) a month. The average monthly wage of assembly workers was 34,000 dinars (\$400) in 2013, a third of what Fiat paid its workers in Poland (Economist 2013). Fiat has attracted a number of foreign suppliers to the vicinity of the FAS plant and it claims that the local content is 67%. More than 60 foreign investors invested around €1.7 billion in the automotive industry as of 2014, including Michelin, Cimos, Bosch, Cooper Tires, Yura, Proma, MagnetiMarelli, Johnson Controls, PKC, Leoni, Draxmaier and Continental. This rapid development has been supported by the generous system of investment incentives from the Serbian government, which can reach 50% of the eligible costs for large companies, 60% for medium-sized companies and 70% for small enterprises (SIEPA 2014).

Future prospects for the development of the automotive industry based on foreign investment are very good. Serbia has a free trade agreement with both the EU and Russia and it is reasonable to expect its EU membership in the foreseeable future since accession negotiations with the EU formally started in January 2014. EU membership will further decrease potential political and economic risks for foreign investors. The country has been heavily investing in transportation infrastructure improvements and its very low labor costs are already attracting export-oriented labor-intensive automotive production from abroad. The average net monthly salaries in the automotive industry were €300 in 2013 (SIEPA 2014).

Bulgaria

Despite its distance from Western European markets and poor infrastructure, Bulgaria has also become increasingly targeted by automotive FDI mainly because of its EU membership, very low labor costs (see Figure 11) and low taxes. In 2014, average personnel costs per employee in the automotive industry were 93% lower in Bulgaria than in Germany, about 70% lower than in Central Europe and 45% lower than in Romania (Eurostat 2016). FDI stock in the automotive industry (NACE 29) was €153 million as of 2012 (Eurostat 2016). Between 1997 and 2015, foreign suppliers built 35 new plants in Bulgaria (EY 2010; Eurofound 2016) but the total number of enterprises in the automotive supplier sector was close to 100 in 2016 and this number has

doubled since 2012. Foreign-owned suppliers employed over 33,000 workers in 2016 (Troev and Petrov 2016).

Bulgaria has been less successful in attracting car assembly operations. Rover's attempt to assemble semi-knockdown kits of Maestro hatchbacks and vans in Varna in a joint venture with the Bulgarian company Daru Group failed in 1996. Another attempt to assemble cars in Bulgaria failed twenty years later in Bahovitsa near Lovech when a joint venture of the Chinese car company Great Wall Motors and Bulgarian Litex Motors stopped the assembly of cars in January 2016 after only four years of operation. The total investment in the assembly plant was about €97 million with 90% being paid by the Bulgarian partner. The factory assembled cars for the Bulgarian market from kits shipped from China. Its cars were also sold in Romania, Macedonia and Serbia. Only about 4,000 Great Wall cars were assembled in 2015, although the annual production capacity of the plant was 50,000 units, which was supposed to be reached by 2014.

Bulgaria has been desperately trying to attract a major car assembly factory for several years. The prospects of future FDI in the automotive industry are very good because Bulgaria has the lowest wages and taxes in the entire EU. For these reasons, Bulgaria is especially competitive in labor-intensive production of simple components that do not have to be delivered just-in-time to the European market.

Future prospects of automotive FDI in Central Eastern Europe and its long-term developmental effects

Let us step back from the empirical details and address the more general questions regarding the development of the FDI-driven automotive industry in CEE. First, I will consider why CEE is set to remain attractive for automotive FDI. Second, I will address the long-term effects of FDI-driven development of the automotive industry for CEE countries and their position in the international division of labor.

The continuing attractiveness of CEE for automotive FDI

Although the pre-2008-2009 economic crisis investment boom in the automotive industry is unlikely to be repeated, CEE will continue to be attractive for automotive FDI in the future due to a combination of favorable factors. The most important ones are the persisting wage gap between Western Europe and CEE, its geographic proximity to the affluent Western European markets and EU membership.

Automakers need to make cars where they sell them on account of logistical reasons, political pressure and local content requirements (Sturgeon *et al.* 2008). This is what makes the relative geographic location of CEE so important to the European automotive industry. The political and economic

instability east of the EU borders, increasing distance from the Western European markets and non-membership of the EU make a major shift of production capacity further east unlikely in the foreseeable future despite lower wages in countries such as Ukraine. Additionally, CEE countries were offering generous investment incentives and favorable conditions to foreign TNCs (e.g. Drahokoupil 2009; Pavlínek 2016).

Western European automakers have used threats to shift production from Western Europe to CEE to extract various concessions from their workers in Western Europe. Therefore, a continuing wage gap between the Western European and CEE automotive industry is of significance for automotive lead firms and for continuing investment in the CEE automotive industry. Although some automotive industry 'experts' argue that wages are no longer an important location factor in the automotive industry (Bella 2013), the behavior of both assembly companies and component suppliers (up until recently) suggests otherwise. This was reflected in their location choices and also in the continuing pressure to maintain wages as low as possible even in the cheapest CEE locations through threats of relocations abroad. In Western Europe, automakers and component suppliers threaten workers with relocations to CEE; in Central Europe workers are threatened with relocations to Romania, Turkey or North Africa; while in Romania, workers are threatened with relocations to North Africa (Henning 2014; Rosemain and Timu 2014). One might argue, however, that real wage increases in Central Europe were the most dynamic in the periods leading up to and following (up until the crisis) the 2004 EU enlargement, when a large part of the foreign investments to the sector were made and there was some room for upward wage convergence. Now that the automotive cluster in the region is well established and the expansionary phase is over, with tight labour markets in the region and limited skills availability, any continued pressure on wages by TNCs will be challenged.

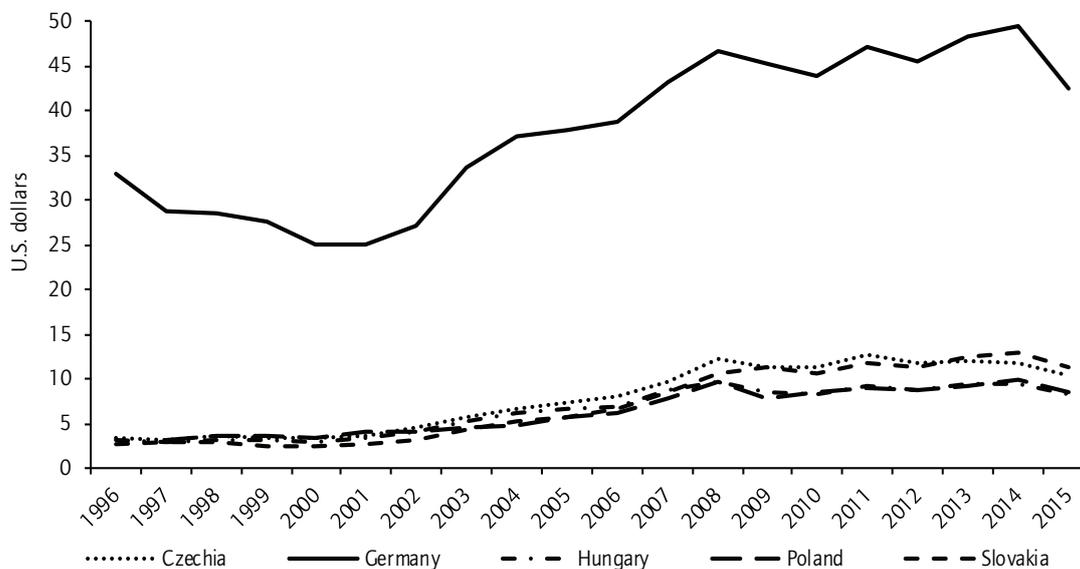
There have been a large number of relocations from Western Europe to CEE. To name just one example, Audi relocated its entire production of gasoline engines from Ingolstadt, Germany to Győr, Hungary, in the 1990s and 2000s after its German workers did not make sufficient concessions to satisfy demands for greater flexibility and lower wages. As a consequence, with its annual production of more than two million engines in 2015, Audi's Győr engine factory has become the world's largest engine plant. In 2016, Audi announced that it would relocate the production of its Q3 compact crossover car from Spain to Győr. In the case of Central Europe, relocations took place during and after the economic crisis, especially in the most labor-intensive segments of the automotive industry value chain, such as the assembly of cable harnesses (Pavlínek 2015).

The growth of the CEE automotive industry and the relocations from Western Europe to CEE have had some effect on West European automotive employment. The number of persons employed decreased from 1.95 million to 1.74 million (by 10.4%) between 2002 and 2015 (as a result of a decline by 320,000 between 2002 and 2010 and an increase by 117,000 between 2010

and 2015). At the same time, CEE employment increased by 396,000 (127%) between 2002 and 2015 despite the 2008-2009 economic crisis. Among the major CEE producers (Czechia, Hungary, Poland, Romania, Slovakia and Slovenia) employment grew from 303,000 in 2002 to 674,000 in 2015. As of 2015, the highest employment in the CEE automotive industry was in Poland (178,000), Romania (169,000) and Czechia (160,000) (Eurostat 2016). Additionally, employment quadrupled among minor CEE producers (Bulgaria and the Baltic states), going up from 5,956 to 30,666 between 2002 and 2015 (Eurostat 2016). Although it is difficult to identify exactly how much of the employment decline in Western Europe was directly related to growth in CEE, the shifting of some parts of automotive production from Western Europe to CEE has had an effect. With nearly twice the number of jobs created in the CEE region than the decrease recorded in Western Europe, Europe as a whole has still witnessed a net job creation in the automotive industry.

The 1996-2015 development of hourly labour costs in manufacturing suggests that the wage gap in the manufacturing industry between Western Europe and CEE is slowly narrowing (Figure 14).

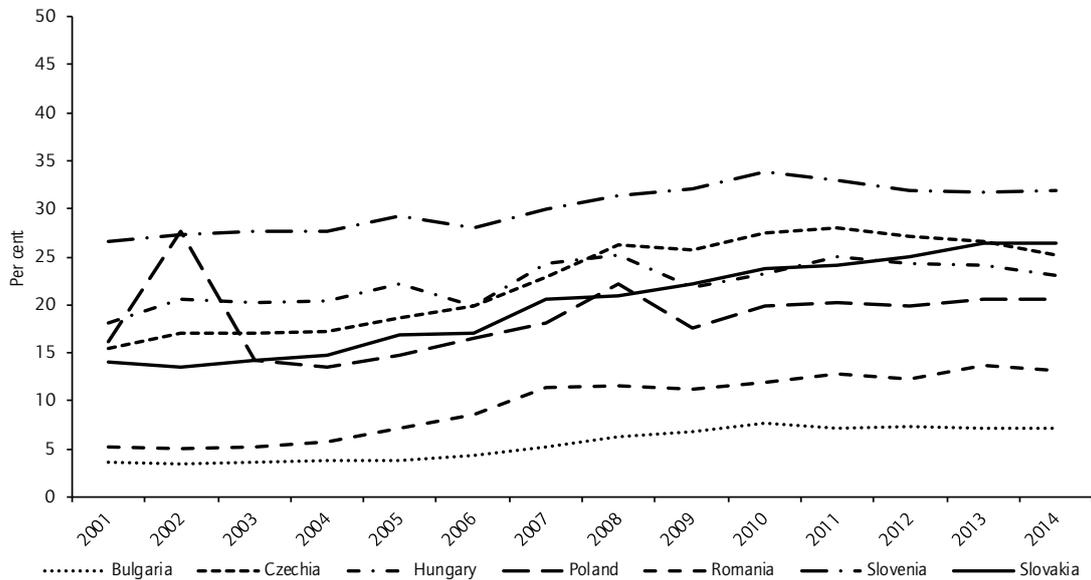
Figure 14 Hourly compensation costs in manufacturing, in U.S. dollars, 1996-2015



Source: Based on data from Conference Board (2016).

In Czechia, Hungary, Poland and Slovakia, average hourly labour costs in manufacturing as a percentage of German costs ranged from 8.3% in Slovakia to 10.3% in Czechia in 1996. In 2015, they ranged from 19.4% in Hungary to 26.5% in Slovakia (Conference Board 2016). In the automotive industry (NACE 29), the wage gap between CEE and Germany decreased substantially in the 2000s before the 2008-2009 economic crisis but this trend slowed down considerably after 2010 (Figure 15).

Figure 15 Average personnel costs (personnel costs per employee) in the automotive industry (NACE 29) as a percentage of German levels (Germany = 100%), 2001-2014



Source: Based on data from Eurostat (2016).

In the automotive industry Slovak labour costs grew the most rapidly of all the CEE countries between 2001 and 2014 (Figure 15). Compared to its neighbors, Slovakia, a Eurozone member, cannot use currency devaluations to maintain its wage competitiveness. This rapid rise in Slovak industrial wages within two decades has undermined its wage competitiveness, which was one of its most important competitive advantages in the 2000s, and it might have an influence on future FDI inflows in the Slovak automotive industry (Pavlínek 2016). Automotive lead firms have attempted to slow down relative wage increases in Slovakia, trying to keep them at a minimum. In 2014, for example, VW Slovakia proposed a 4% cut in workers' salaries despite a low average monthly wage (€1,400 in 2013) and €170 million profits earned by VW Slovakia in 2013 (SME 2014). PSA workers held several protests in Trnava in 2015 because PSA refused to raise salaries in 2015 after a two-year salary freeze in 2013 and 2014 and because of the continuously increasing pace of work. The average monthly wage of PSA assembly line workers without bonuses was €665 as of April 30, 2015.

In Hungary, more than 7,000 out of 11,411 Audi workers threatened to strike over low wages and long working hours in March 2016 (ANE 2016). Mercedes-Benz workers at Kecskemét held a two-hour strike over low pay in November 2016 after which Mercedes-Benz agreed to raise salaries by 10% in April 2017 and another 10% in April 2018 (Than and Szakacs 2016). In Czechia, the Škoda unions staged several strikes over pay and working conditions over the years. Adversarial labor relations typify both Hyundai and TPCA and both companies offered well below average wages and poor working conditions at the start of their assembly operations in Czechia (Pavlínek 2008). In addition to low wages, which both companies attempt to keep as low as possible, workers in Hyundai have also protested the increasing pace of work and

requirements to work extra shifts on Saturdays without advance notice (iDnes 2015). Along with the strike of Dacia workers over pay in Romania in 2008 and other workers' strikes and protests across CEE, the frequent unwillingness of automotive firms to raise wages is reaching its limits. Wage-adjusted labor productivity in the automotive industry is thus significantly higher in CEE than in Western Europe. For example, in 2014, it was 416% in Hungary, 360% in Czechia, 279% in Slovakia, 236% in Poland and 224% in Slovenia for the manufacture of motor vehicles (NACE 29.1), compared to 152% in Germany, 120% in France and 183% in Spain (Eurostat 2016).

Wages in the automotive industry of CEE countries have not been growing more rapidly also because of the relatively weak position of labor compared to that of capital in CEE (Bohle and Greskovits 2006). Union membership, which used to be more or less universal during the period of state socialism before 1990, decreased rapidly after 1990 to below 20% across CEE. In the automotive industry, however, any generalizations about the role of labor unions and industrial relations are difficult to make because of differences in the corporate cultures of TNCs from different countries and also because of legal and institutional differences in individual countries of CEE. Drahoukoupil *et al.* (2015) demonstrated these differences among foreign assembly firms. On one side are German firms represented by Volkswagen Group, such as Škoda Auto, which transferred their relatively good industrial relations from the German automotive industry to their assembly factories in CEE. On the other side are Asian automakers, represented by Japanese and South Korean firms, such as Magyar Suzuki, that are typified by adversarial relations with labor unions and high levels of employment instability and insecurity, especially for temporary workers.

Long-term effects of FDI-driven automotive industry development in CEE

Since the early 1990s, the automotive industry has become a dominant industrial sector across CEE, significantly increasing its share of total exports, industrial production and job creation. In Slovakia, the automotive industry, in 2015, employed 80 thousand workers directly and an additional 120,000 indirectly and accounted for 43% of total manufacturing industry revenues and 35% of exports (SARIO 2016). In Czechia, the narrowly defined automotive industry (NACE 29) accounted for 28.7% of manufacturing industry revenues, one-third of manufacturing exports and 14% of manufacturing industry employment in 2015, employing 155,365 workers (compared to 153,869 in 2008) (MIT 2014). In Poland, the narrowly defined automotive industry accounted for 8.6% of the total gross value added and employed 172,000 workers in 2015. The broadly defined automotive industry employed 362,200 workers in 2012. The automotive industry accounted for 15.9% of total Polish merchandise exports in 2015 (PAIA 2016). There were 2,819 automotive industry companies in 2012 (KPMG 2013). In Hungary, the automotive industry accounted for 30.4% of total industrial output, more than 10% of GDP and 20% of total exports in 2013, while the broadly defined automotive industry employed 143,699 workers in 2015 (HIPA 2016).

These data for individual CEE countries confirm the increased importance of the FDI-based automotive industry for economic growth in CEE in the 1990s and especially in the 2000s, contributing to capital formation, driving exports and creating tens of thousands of new jobs. At the same time, however, the dependence of CEE economies on the externally owned and controlled automotive industry has increased and this dependence is likely to grow further in the future since FDI inflows in the automotive industry are set to continue, although they are likely to be smaller than in the 2000s.

To evaluate the potential long-term effects of the externally owned and controlled automotive industry on CEE economies, we can turn to economic geography to analyse the effects of FDI on regional economies in the peripheral regions of Western Europe and in Canada since the 1970s (Firn 1975; Dicken 1976; Britton 1980; Hayter 1982; Schackmann-Fallis 1989; Amin *et al.* 1994; Phelps 1993). These studies point out the long-term structural costs of external ownership and control of economic activities for peripheral regions in the form of ‘truncated development’. Externally owned manufacturing branch plants usually play a distinct role in a corporate hierarchy, being concentrated on routine manufacturing activities while lacking strategic and high value-added functions, such as decision-making powers about strategic planning, investment, product portfolio, market research and research and development (R&D) competencies. These functions remain concentrated in corporate headquarters or specialized R&D facilities in prosperous core regions (e.g. Britton 1980; Hayter 1982; Hayter and Watts 1983; Schackmann-Fallis 1989). In the case of foreign investment, these high value-added functions tend to remain concentrated in the home countries of principal investors while routine manufacturing functions are developed in host economies. For example, Hayter and Watts (1983: 171) summarized the truncation argument as follows:

‘...[I]n the long run branch plants are counter-productive to regional development goals... because branch plants bring primarily unskilled jobs, limit local autonomy over investment decision making, arrest export potential in high technology goods, and, by relying on corporate rather than local linkages, increase import dependency on goods, services and technology.’

Ultimately, truncated development contributes to value transfer from peripheral to core regions, making it more difficult for the affected regional economies to close the development gap with more developed core regions because of its negative effects on their indigenous growth potential (e.g. Schackmann-Fallis 1989). In the 1990s, the truncation and branch plant economy literature conclusions were challenged by arguments that branch plants were transformed into ‘performance/networked branch plants’ with greater autonomy and more functions and competencies than traditional branch plants (Phelps 1993; Amin *et al.* 1994). This has especially been the case in the automotive industry due to the changes in the organization of production and supplier relations experienced in the 1980s and 1990s (Womack *et al.* 1990). However, these changes have been limited and are insufficient to significantly alter the position

of performance/networked branch plants in the corporate hierarchy and its spatial division of labor (Pike 1998; Dawley 2011). Furthermore, the positive changes only affected a minority of branch plants (Dicken *et al.* 1994). As such, the problems associated with truncation and the branch plant economy persisted in the peripheral regions of Western Europe (Pike 1998).

Are the findings of the literature relevant for the current situation of the CEE automobile industry? Truncation and truncated development were already observed in CEE after the first wave of FDI in the early 1990s (e.g. Grabher 1994; 1997; Hardy 1998). More evidence of economic and regional development risks related to large FDI inflows and their potential long-term structural costs was provided in the 2000s. For example, in the context of the CEE automotive industry it was argued that FDI potentially had both positive and negative effects on host economies (Pavlínek 2004). While FDI often leads to increased production, exports and job creation, wage increases, improvements in labor productivity and competitiveness, growth in real income and tax base, and spillovers to domestic companies, it can also lead to the downsizing of production, labor shedding and transfer of R&D abroad at the enterprise level in addition to a number of potential negative local and regional developmental effects. These include, for example, a dependency on foreign capital, external control, the poaching of skilled workers from domestic companies, the crowding out of domestic companies through deskilling and the development of a dual economy.

At the national level, questions have been raised about the long-term economic effects of large automotive FDI inflows on domestic economies. For example, in the mid-1990s Ellingstad (1997) warned of the development of what he calls the ‘maquiladora syndrome’ in CEE, a reference to the problems related to the rapid growth of a foreign capital-dominated manufacturing industry in Mexico and pointing to a number of FDI effects described by the truncation literature. State-based competition over large FDI projects in the automotive industry (regulatory arbitrage) has led to major state expenditure on investment incentives to attract strategic investors. These incentives are a form of state subsidy paid to foreign companies often at the expense of spending on education, domestic R&D, indigenous companies and other sectors of the domestic economy, and which contribute to the ‘race to the bottom’ in CEE (e.g. Bohle 2006; UNCTAD 1998).

It has also been argued that large foreign investors gained a disproportionate influence over state economic and education policies in CEE in the form of ‘corporate capture’ (Pavlínek 2016; Phelps 2000; Phelps 2008). Nölke and Vliegthart (2009) have further developed this line of thought, arguing that a new distinct basic variety of capitalism, what they call a dependent market economy, has emerged in CEE. Such an economy differs from liberal market economies and coordinated market economies, the two dominant varieties of capitalism, through its greater dependence on foreign capital. This external dependence is its most important feature (see also Vliegthart 2010). However, Nölke and Vliegthart (2009) do not address the potential long-term consequences of this external dependency for CEE economies, with the

exception of the threat of potential relocation ‘further east’. As I have already noted, the relocation threat in the CEE automotive industry is greatest in the most labor-intensive and low-skilled manual operations, such as the assembly of cable harnesses (Pavlínek 2015; Pavlínek *et al.* 2009), while the potential for large-scale relocations of vehicle assembly operations from CEE is low in the foreseeable future. This is because of local content requirements, political pressure to produce within the EU, logistic reasons, transportation costs and large sunk costs in new investments.

There are already signs that the long-term effects of the industry’s dependency on foreign capital will be very similar to those described by the truncation literature: concentration on routine assembly operations, the weak development of R&D functions and other strategic functions in foreign subsidiaries (Pavlínek and Ženka 2016), limited spillovers from foreign to domestic companies, and the weak development of domestic companies, as well as their limited upgrading and subordinate and dependent position in automotive GPNs. All these factors will strongly influence the long-term prospects of the CEE automotive industry for catching up with the more developed Western European automotive industry core.

It is important to realize that both foreign and domestic companies are important for successful economic development in the contemporary globalizing economy since both contribute to value creation and capture in different ways. Therefore, CEE governments should focus more on the long-term and sustainable development of the domestic automotive industry through targeted strategic industrial policies mitigating the overwhelming dependence on foreign capital. Greater investment in human capital in the form of high quality technical education and job training should attract more FDI in high value-added activities and contribute to the gradual upgrading of the CEE’s position in the automotive industry’s division of labor.

Conclusion

The CEE automotive industry has been integrated into the European and global automotive industry since 1990 mainly through the investment and trade activities of foreign TNCs. Foreign capital financed the restructuring of the existing CEE automotive industry and the build-up of new production capacity. Consequently, vehicle output more than quadrupled between 1990 and 2015, while the supplier industry grew even faster. In the contemporary global automotive industry, CEE represents a prime example of an integrated periphery made up of attractive production locations geographically close to large and affluent markets in developed economies and with significantly lower production costs, mainly because of lower wages. The high degree of integration of the CEE’s automotive industry into the European production system and its overwhelming dependence on exports increased its vulnerability in the 2008-2009 economic crisis. The crisis led to declines in production and FDI inflows across the CEE automotive industry, although its effects, including post-crisis recovery, were geographically highly uneven.

Between 1990 and 2015, foreign automotive lead firms invested more than €35 billion in the CEE automotive industry, with the fastest increase in FDI stock taking place between 2000 and 2007. FDI inflows slowed during the 2007-2009 economic crisis and FDI stocks tended to decrease as foreign investors repatriated profits generated in CEE rather than reinvesting them. Although this decrease was only temporary and total FDI stock recovered by 2012, it suggests that the CEE automotive industry is vulnerable to increased profit repatriation and lower levels of investment during economic crises. Since investment by foreign lead firms in the CEE automotive industry is part of their profit-making behavior, we might expect that profit repatriation and the outflow of value from CEE will eventually exceed the volume of invested capital.

Individual automotive FDI country trends reflect the investment and location decisions of automotive lead firms, national differences in institutional environment, and the degree of success or failure in competitive bidding among CEE countries for large investment projects. Recent FDI trends suggest that CEE continues to be an attractive destination for automotive FDI. Although the large FDI inflows related to the construction of new assembly plants in the early and mid-2000s are unlikely to be repeated any time soon, even with a narrowing wage gap with Western Europe, CEE will continue to be attractive for automotive FDI.

Was there any alternative to the FDI-driven development of the automotive industry in CEE after 1990? Given the CEE's history of automotive industry underdevelopment throughout the entire 20th century and the state of the CEE automotive industry at the end of the state socialist period in the late 1980s (Nestorovic 1991; Pavlínek 2002a), CEE countries were not in a position to pursue the successful development of an independent automotive industry. Attempts by domestic automakers to pursue independent development strategies, such as those by the Romanian Dacia in the 1990s and 2000s, were unsuccessful as these domestic automakers were unable to compete with the technologically more advanced production and vehicles of core-based TNCs (Pavlínek 2002c). Neither were CEE countries in a position to negotiate better terms for automotive FDI due to their small markets, similar factor endowments and strong competition over automotive FDI. As such, automotive TNCs were able to negotiate very favorable terms for their investment in CEE, often at the expense of CEE taxpayers and the subordination of state policies to the interests of foreign investors (Pavlínek 2016).

While FDI in the automotive industry strongly contributed to economic growth, job creation and the export competitiveness of CEE economies, it also significantly increased their dependence on the externally owned and controlled automotive industry. External control limits the potential economic benefits of the automotive industry for CEE economies because of truncation and because of limited opportunities for the development of an indigenous automotive industry. The long-term economic policies of individual CEE countries can be negatively affected by corporate capture, which tends to benefit foreign investors at the expense of domestic companies and populations. Foreign ownership also undermines value capture in CEE and leads to value transfer

from CEE to the core regions of the global automotive industry. The increased dependence of CEE economies on the automotive industry also increases their vulnerability to business cycles. In the long run, therefore, the development of the automotive industry in CEE will most likely be significantly more beneficial for foreign capital than for CEE economies and their population.

Part 2

FDI in the automotive plants in Spain during the Great Recession

Ricardo Aláez-Aller, Carlos Gil-Canaleta and Miren Ullibarri-Arce

Introduction

This second part of the working paper analyses the investment decisions of automotive groups with plants in Spain during the years of the Great Recession, focussing on FDI (foreign direct investment) inflows to vehicle assemblers in Spain. The analysis seeks to provide a description of the trends affecting the position occupied by Spanish vehicle assembly plants in Europe and, at the same time, to enable hypotheses to be drawn concerning potential trends in the organisation of production within Europe.

The national organisation of vehicle makers ANFAC (Spanish Association of Automobile and Truck Manufacturers) estimates that 2.9 million vehicles were assembled in Spanish plants in 2016. This is more than 5.6% up on the figure for 2015, and 20% up on 2014.

In 2011 a total of 34 different vehicle models were assembled at Spanish plants. In 2013 the figure rose to 39, and had reached 44 by 2016. Almost all Spanish assembly plants have been awarded new models in the past two years, and none seems currently to be under any short- or medium-term threat of closure or drastic cutbacks in production. Indeed, the two US-based assemblers with plants in Spain (Ford & GM), under pressure after incurring substantial losses on their operations in Europe, have begun restructuring their European value chains, and they are now placing much more emphasis on their Spanish plants. Ford Valencia has been selected as the assembly plant for the company's high-end models in Europe.

At the same time SERNAUTO (Spanish Association of Equipment & Component Manufacturers), which represents 1000 automotive industry suppliers, provided an estimated 330,000 jobs in 2016, and the prospects for growth suggest that a further 10,000 direct jobs could be created in 2017.

Operations at assembly plants during the Great Recession

Any presentation of vehicle assembly operations in Spain must start by describing the 13 Spanish plants assembling vehicles (Table 1). Their main characteristics can be summed up as follows:

- They are all owned by transnational firms with foreign capital. Specifically, two German-based transnationals (VW Group & Daimler), two French-based transnationals (Renault & PSA), two US-based transnationals (Ford & GM), one Italian-based transnational (IVECO) and one Japanese-based transnational (Nissan) have assembly plants in Spain.
- There have been no greenfield investments in assembly plants in Spain for the past 30 years (the opening of SEAT's Martorell plant in 1993 can be seen as the transfer of the old SEAT plant in Barcelona's *Zona Franca*). This means that all investment in the sector during the Great Recession went into existing plants.
- Truck and commercial vehicle assembly accounts for a significant proportion of operations at Spanish plants. In fact, there are three plants specialising in commercial vehicles and trucks and four more where light commercial vehicles (LCVs) form part of the range of vehicles assembled.
- The total number of direct jobs at assembly plants was estimated at 58,602 in 2013 (this figure was obtained from ANFAC based on data from the Spanish National Office of Statistics (INE)), averaging out to around 4,500 per plant.

Table 1 Automotive assembly plants in Spain

Company	Plant location	Production (in thousands)		Employment (number of workers)	
		2007	2013	2007	2013
	Spain	2795.36	2139.65		
VW Group	Barcelona	398.69	390.04	11050	11458
	Pamplona	228.42	289.58	3926	4491
PSA	Vigo	547.20	406.50	9700	6900
	Madrid	136.50	54.80	2900	2041
Renault	Valladolid	102.10	124.94		2460
	Palencia	176.69	142.74		
General Motors	Zaragoza	489.80	281.17	7662	5700
Ford	Valencia	404.74	226.72		(2015) 8000
Nissan	Barcelona/Avila	222.91	140.00	6033	4850
Daimler	Vitoria	97.10	73.25	3075	3500
Iveco (LCV)	Valladolid	40.32	19.16		1047
Iveco (T&B)	Madrid	25.58	28.44	2904	3000

Source: Company Annual Reports, OICA and information published in the specialist and general media.

Over the two decades preceding the Great Recession the location of operations in the automotive value chain in Europe was characterised by two hierarchical structures: one for assembly and the other based on functions (Lung 2007; Pavlínek 2015).

The assembly-based hierarchy resulted in geographical distinctions according to technology levels and prices, with high-end models being assembled mainly in core countries – France and Germany – while the peripheral states of Europe were specialised in the assembly of smaller vehicles (as in the case of Spain).

The function-based hierarchy is similar to that found in most sectors, with the exception of operations that require products to be localised for each domestic market. In the automotive industry, R&D was concentrated in the core regions of the EU (mainly in each company's country of origin), home to development centres for assemblers, suppliers and engineering firms, while actual assembly work was more widely scattered (in line with the hierarchy of locations mentioned above).

An examination of the data on vehicle production and exports from Spanish plants during the Great Recession (2007-2014) corroborates that the features considered by previous publications (Alaez, Bilbao, Camino & Longas 2009) as characteristic of the vehicle assembly business in Spain are as follows:

- The output of Spanish plants is destined mainly for export: in 2013 exports accounted for around 87% of the total (ANFAC 2013), which is about the same level maintained since 2008. The EU-27 accounted for 78.3% of vehicle exports from Spanish plants. If the rest of Europe is added (mainly Turkey, Switzerland and Russia), the figure rises to 88.4%.
- The place occupied by Spanish automotive producers in the EU value chain has been limited to the assembly of vehicles with medium/low added value. A breakdown by segment of the data for passenger car assembly in Spanish plants (ANFAC 2013) reveals that this fact remained true in 2013, when 777,991 small vehicles, 371,241 medium-sized vehicles, 227,975 small people-carriers, 18,700 large people-carriers and 323,793 SUVs were assembled. However, this situation seems to be changing, judging from the new models allocated to Spanish plants. As indicated below, this could mark the beginning of a change in the production specialisation of Spanish plants within the European automotive value chain.

From 2007 to 2013 the total number of units assembled in Spanish automotive plants fell by more than 23%, compared to a fall of just under 16% in the EU-27 as a whole. This relatively poor performance by Spanish plants can be attributed to the fact that the assemblers who performed worst in the EU-27 (Ford and GM) have a relatively stronger presence in Spain and to the high proportion of output accounted for by industrial vehicles and LCVs, the types of product hardest hit by the cutback in demand in the EU-27 during the Great Recession.

Quantitative analysis of FDI during the Great Recession

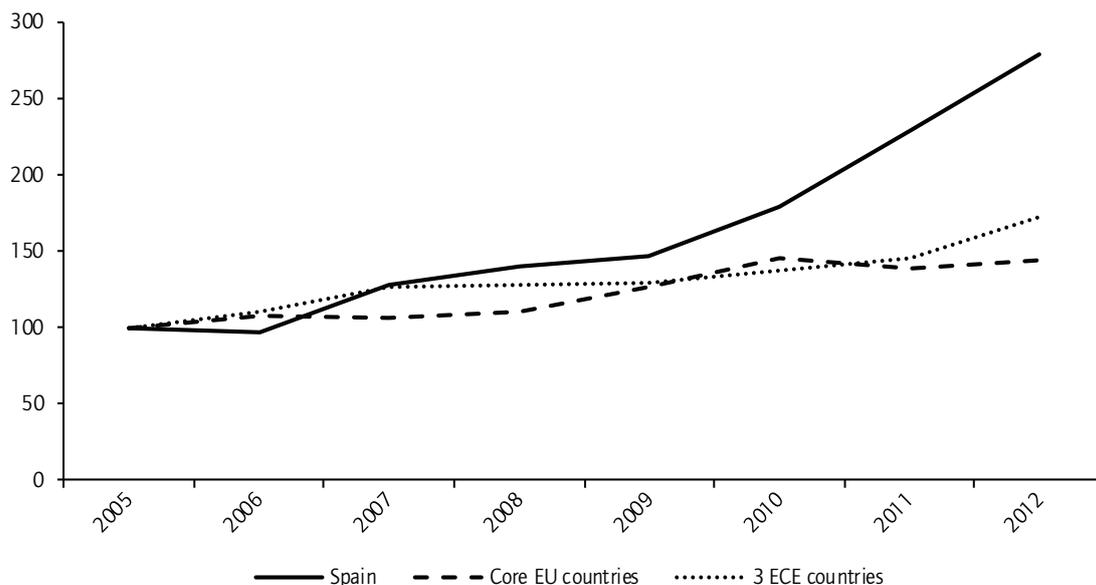
The data on FDI flows available from official statistics do not usually offer detailed breakdowns by areas of activity. In the case of the automotive industry, Figures 15 and 16 are based on statistics provided by the OECD on FDI in the field of “Motor and Other Transport Equipment” (NACE 3400 and 3500).

Figures 15 and 16 are drawn up on the basis of the inward stock of FDI for 2005, which is allocated a value of 100 as the base year. The data for the subsequent years up to 2012 are calculated by adding the inflows of FDI from the ongoing year to the position calculated for the previous year.

The data are grouped by country in an attempt to draw conclusions concerning the effects of the Great Recession on changes over time in the FDI stock of the automotive industry in different EU Member States. The countries for which data are available are thus grouped into three categories: core EU countries (the sum of the data for Germany, France, Italy and the UK), three CEE countries (the sum of the data for Poland, the Czechia and Slovakia) and Spain.

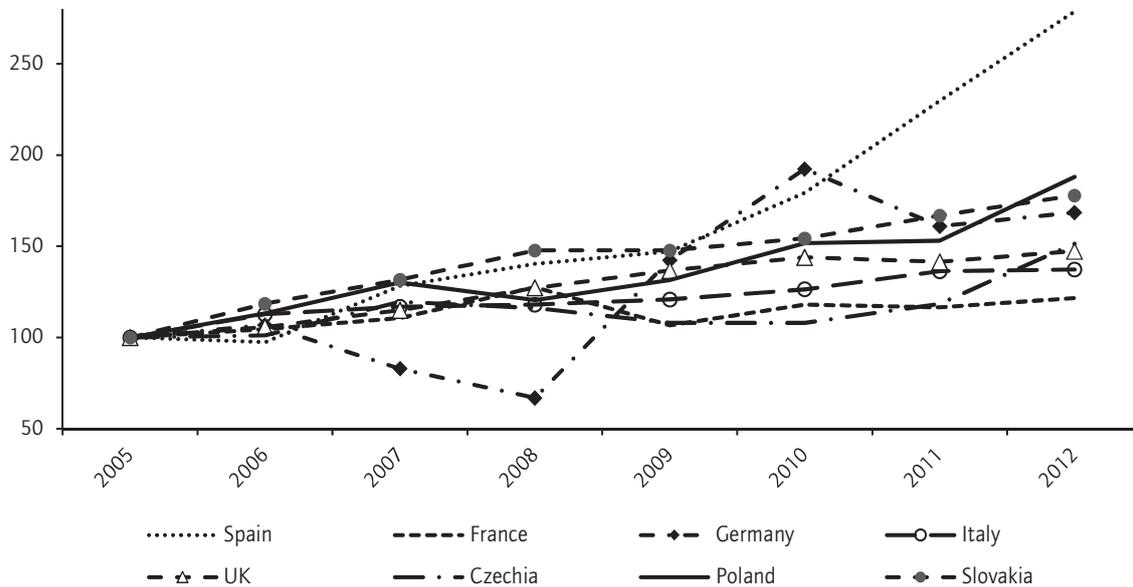
Figures 15 and 16 should be interpreted solely in terms of trends. They show clearly that FDI behaved consistently across the countries of the EU during the early stages of the Great Recession, i.e. up to 2009. However, from 2011/2012 onwards FDI in this sector behaved more dynamically in Spain than in the other countries considered (although the behaviour of FDI in Poland in 2012 is similar to that in Spain).

Figure 16 FDI in motor and other transport equipment



Source: OECD. Inward stock of FDI for 2005=100. Data for the subsequent years are calculated by adding the inflows of FDI from the ongoing year to the position calculated for the previous year. Core EU countries: Germany, France, Italy and the UK. Central Eastern Europe: Poland, Czechia and Slovakia.

Figure 17 FDI in motor and other transport equipment by country



Source: OECD. Inward stock of FDI for 2005=100. Data for the subsequent years are calculated by adding the inflows of FDI from the ongoing year to the position calculated for the previous year.

Investments in Spanish assembly plants during the Great Recession

Investment in automotive assembly plants tends to be associated with the awarding of new models: when a plant is awarded a new model this usually entails an assurance that it will remain operational at least for the lifetime of that model (6-9 years). Once the decision is made it can therefore be considered that the transnational corporation in question intends to keep that plant open.

Awards of new models can be grouped under two headings, with clearly different implications. The first case is that of a model which is a new version of one already assembled at that plant, while the second is that of a new model which is significantly different from the type of vehicle assembled there to date.

We look first at the awarding of new generations of models already assembled at plants. Such decisions should be seen as merely maintaining the status quo by renewing models when necessary; 10 out of 13 plants can be included under this heading.

The second heading covers the awarding of completely new models to Spanish plants. Such decisions can be interpreted as more significant evidence of change in terms of the position occupied by Spanish plants in the automotive value chain in the EU. The following decisions can be placed under this heading:

- The assembly of the Audi Q3 at the **Seat Barcelona** plant began in 2011; however, the replacement of the Q3 assembly, which is expected to commence in 2018, has been awarded to the Győr plant in Hungary, and the Seat Barcelona plant will assemble the Audi A1 instead from 2018. The Seat plant has also been awarded the assembly of the SEAT Arona, the brand's new compact SUV.
- The award of the assembly of the Cactus model to the **PSA** plant in **Madrid** (the model awarded can be seen as a bold strategy by PSA: models with uncertain futures in terms of sales have tended to be awarded to highly flexible plants with low adjustment costs which are capable of dealing with broad fluctuations in demand).
- The awarding of the Opel Mokka, assembly of which began at the **Opel Zaragoza** plant in 2014.
- The **Renault Valladolid** plant can also be placed under this heading thanks to the awarding of the Captur (Renault's first small crossover vehicle, assembly of which began in April 2013) and the Renault Twizy.
- The **Renault Palencia** plant was awarded a new medium-sized crossover vehicle.
- A special mention must also be given to Ford's reorganisation of production in Europe, which has resulted in the shutdown of three plants (Dagenham and Southampton in the UK and Genk in Belgium). This reorganisation has entailed radical changes for the **Ford Valencia** plant, which has been awarded Ford's top-of-the-range models for assembly in Europe: the new Mondeo (assembly of which began in late 2014, with the plant also due to assemble the hybrid HEV version and a deluxe version known as the Mondeo Vignale), the S-Max (summer 2015) and the Galaxy (summer 2015).

Decisions on awarding new models are being made more and more directly in the form of auctions between the plants belonging to a company. In the case of Spanish plants the information published in the press mentioned the following competition processes involving specific plants:

- Seat Barcelona competed with the VW Group plant in Brussels for the award of the assembly of the Audi Q3. It also competed, this time unsuccessfully, with the Kvasiny plant in the Czechia for the award of the new SEAT brand SUV. According to an interview given by SEAT Chairman J. Stackmann to Bloomberg in June 2014, when this decision was made public, the reasons why the award went to the Kvasiny plant were its lower labour costs and the fact that there was more space for production at the Czech plant. It might be thought that in these processes the decision is already made in advance, based on a number of factors other than the comparative labour costs of the plants. However, assemblers always have an incentive to use labour costs as an argument

because this strengthens their bargaining position in drawing up future agreements with workers.

- The process of inter-plant competition was also mentioned specifically in the awarding of the K9 commercial vehicle to the PSA plant in Vigo. In this case the Spanish plant is thought to have been bidding against the plant in Trnava, in Slovakia. PSA Vigo also competed (unsuccessfully) in 2012 with the French SevelNord plant for the updated versions of the Jumpy and Expert commercial vehicles. The fact that SevelNord was already assembling the previous models did not prevent PSA from reaching an agreement with the workers there that entailed a two-year wage freeze and measures to increase work flexibility.

Have there been changes in the location of the value chain in the EU?

The most striking thing about the geography of the automotive value chain in the EU is how the core regions have managed to avoid losing their relative importance in the location of assembly operations (Lung 2003 & 2007). In this context, Spain's main competitors for small vehicle assembly operations have tended to be CEE countries. As a result, automotive plants in Spain might be expected to be among those hardest hit by the opening of new plants in CEE countries

In the years leading up to the Great Recession the key issue for the future of production at Spanish plants was whether they would be able to maintain existing operations and prevent their relocation.

This scenario of increasing output changed radically with the onset of the Great Recession, when the key issue became how to cut back production capacity, which meant deciding which plants to keep operational and which ones to close down. Vehicle assembly in the EU was characterised by an overcapacity that was detrimental to assemblers' profitability, leading them to consider how this problem could be corrected. In that context there were three types of production environment in the EU, each with its pros and cons as regards maintaining vehicle assembly operations: the core countries, the CEE countries and, basically, Spain.

As expected, restructuring has affected some assemblers more than others, with the greatest impact on those who were under the most pressure from the drop in profitability induced by the Great Recession. Distinctions must be drawn between the following reactions on the part of assemblers with plants in Spain:

- The German assemblers (VW Group and Daimler) seem to have felt the least pressure to adjust their production capacity and restructure their business. There have been no major changes in the status quo at the Spanish plants operated by these assemblers.

- It is the American assemblers (Ford and GM) which have undertaken the most far-reaching restructuring of their assembly operations in the EU. At the end of 2012, Ford announced the closure of three plants in Europe (Genk in Belgium, and Southampton and Dagenham in the UK), forcing the company to reorganise its production in Europe with a view to bringing its European operations back into profit. This restructuring has resulted in the Spanish plant in Valencia improving its position both quantitatively and qualitatively (it is now to assemble vehicles with more added value). GM has also restructured its operations in Europe, seeking to bring them back into profit. GM has shut down two plants in the EU (Bochum in Germany in 2014 – making this the first automotive plant to shut down in that country since World War II – and Antwerp in Belgium in 2010). The Opel plant in Spain seems to have come out of the process stronger thanks to the awarding of three models (one update and two new models).
- In an intermediate position, French assemblers have also found it necessary to cut back their production capacity in Europe. PSA has closed down a plant in France (Aulnay near Paris, where the last vehicle rolled off the assembly line at the end of 2013). Renault has not had to resort to traumatic plant closures. Both companies have awarded new models to their Spanish plants, which in some cases have resulted in improvements in their positions in the European value chain.

A review of the decisions made during the Great Recession by assemblers with production plants in Spain brings to light trends in the geographical distribution of the value chain of the industry in Europe. Indeed, falling sales across Europe and an increase in the relative importance of other regions of the world in the industry's turnover have accelerated capacity adjustments in Europe (Pavlínek 2015). The main trends observed can be summed up as follows:

- The R&D centres of assemblers continue to be located mainly in the country of origin of each transnational corporation (and are sometimes even more centralised at specific locations – Aláez *et al.* 2009), though expansion into other regions (Latin America, the USA, Asia) has resulted in the setting up of secondary R&D centres there with a view to adapting products to local tastes and regulations (Sturgeon, Van Biesenbroeck and Gereffi 2008).
- The adjustments made to correct overcapacity at assembly plants seem to have focused mainly on plants located in the core areas of Europe, with plants being shut down in Belgium, the UK, France, Germany and Italy (the Termini factory in Sicily). With regard to the awarding of new models, Spanish plants have not only consolidated their position but also seem to be filling the gap left by capacity adjustments in core EU countries. US transnational corporations, more insulated from political interference in corporate decision-making (the French state owns 17.93% of voting rights in Renault and the state of Lower Saxony

holds 20% of voting rights in the VW Group) have strengthened the position of Spanish plants in both qualitative and quantitative terms: Opel Zaragoza is expected to account for 40% of the company's assembly operations in Europe and Ford Valencia has become the US corporation's most important plant in Europe in terms of the awarding of new, high-end models and volume of investment.

In their award processes transnational corporations try to get workers at different plants to compete for the new model, awarding points for medium-term commitments to maintain a system of industrial relations that involves cost cutbacks and increased flexibility and adaptation in the current context of uncertainty as regards market trends.

There seems to be no doubt that the distinctive situation prevailing in Spain during the Great Recession has undermined trade union bargaining power. Indeed, numerous company closures, unemployment rising to close to 25% of the working age population, the lack of expectation of any positive changes in the job market and widespread cutbacks in wage levels in Spain have produced a context in which workers react purely defensively in bargaining processes, seeking to maximise the likelihood of retaining their jobs. Moreover, the labour market reforms that came into force in Spain in mid-2012 brought in institutional changes to the job market which catalysed wage decreases as a fundamental tool for increasing competitiveness abroad in the context of the single currency. It remains to be seen how sustainable a competitiveness that is based mainly on wage cost-cutting will be in the long run.

According to the statistical information available, during the Great Recession Spain has behaved in a way that seems to be helping to change its relative position in terms of labour costs in the EU. Nominal unit labour costs (Table 2) have decreased in the Spanish economy, especially in 2009-2013, while the equivalent costs have increased in core European countries with automotive assembly plants (Belgium, France, Germany, the UK and Italy) and also in CEE countries (though in this latter case the main increase was between 2007 and 2009, since which time levels have remained steady).

Information on hourly costs in the field of manufacturing motor vehicles, trailers and semi-trailers (Table 3) places Spain in an intermediate position. During the Great Recession hourly costs in core countries moved further away from Spanish costs in both absolute and relative terms, while hourly costs in CEE countries rose from 2008 to 2012, but more moderately than the increases in costs per hour in Spain. It must be pointed out that the moderation of labour costs in Spain was especially noteworthy in 2013-2014 (Table 4), following the entry into force of the aforementioned 2012 labour reforms.

Table 2 **Nominal unit labour cost (2005=100)**

	2007	2008	2009	2010	2011	2012	2013
Belgium	104.2	108.8	113.0	112.7	115.7	120.4	122.8
Czechia	103.0	106.5	108.9	108.5	109.0	112.6	112.5
France	103.5	106.8	110.7	111.5	113.0	115.3	116.8
Germany	97.2	99.4	105.0	103.9	105.0	108.2	110.4
Hungary	108.4	113.1	116.3	115.6	118.3	121.3	126.0
Italy	103.6	108.3	112.6	112.4	113.5	116.0	117.4
Poland	101.6	108.9	111.4	113.0	114.3	116.1	:
Romania	120.9	148.6	152.9	149.2	138.8	144.9	148.5
Slovakia	102.2	106.7	112.8	111.8	112.7	113.8	112.8
Slovenia	103.7	110.3	119.8	120.3	119.4	120.3	119.3
Spain	107.4	113.4	115.1	113.0	111.9	108.6	106.8
United Kingdom	105.5	108.8	115.6	117.5	118.9	122.0	123.6

Source: Eurostat, Annual National Accounts, ESA-95.

Table 3 **Total labour cost per hour (€) in manufacturing of motor vehicles, trailers and semi-trailers***

	2000	2004	2008	2012
Belgium	28.38	34.29	32.97	44.91
Czechia	4.37	6.52	10.08	11.38
France	24.84	33.24	33.38	38.51
Germany	37.78	41.39	43.14	47.91
Hungary	4.62	7.08	8.86	9.41
Italy	20.45	23.08	25.50	30.11
Poland		4.70	7.52	8.09
Romania		2.16	3.90	4.86
Slovakia	2.72	3.77	7.77	9.54
Slovenia			12.73	13.74
Spain	18.63	20.34	23.66	25.39
United Kingdom	25.81	24.99	23.82	24.17

*NACE R1 (2000 and 2004) and NACE R2 (2008 and 2012); manufacture of motor vehicles, trailers and semi-trailers
Source: Eurostat. Four-yearly Labour Cost Survey (LCS): total labour cost (excluding apprentices) for enterprises with at least 10 employees.

Table 4 **Total labour cost per hour (€) in manufacturing, Spain**

	Total labour cost (€)	2007=100
2007T3	19.80	100.00
2008T3	20.74	104.75
2009T3	21.68	109.49
2010T3	21.43	108.23
2011T3	22.32	112.73
2012T3	22.79	115.10
2013T3	23.19	117.12
2014T3	23.11	116.72

Source: Quarterly Labour Cost Survey (INE).

Conclusion

This analysis of the trends in production and investment decisions at the 13 automotive assembly plants in Spain during the Great Recession clearly reveals that Spanish plants have been allocated a considerable number of new models, including the investment that this entails. The models in question are not just new generations of vehicles already assembled in Spain but also brand-new vehicles, and there seems to be a trend for the assembly of high-end models to be transferred to Spain.

This apparent increase in the advantages of locating assembly operations in Spain can be seen particularly clearly in the decisions made by Ford and GM to restructure their European operations. Spanish plants have benefited most in terms of workload and the quality of the models that they have taken on, as both firms seek to quickly return their European operations to profitability. However, other major European assemblers have not made such radical changes in the location of the operations in their value chain, so it remains to be seen whether greater pressure on the profit margins of those assemblers that have not clearly restructured their European operations will result in a similar process of relocation of high-end models from previous core areas towards the old periphery.

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