The automotive industry in CESEE and in Austria, its linkages with Germany and challenges ahead¹⁹

Die europäische und insbesondere die deutsche Automobilindustrie ist derzeit mit erheblichen zyklischen und strukturellen Herausforderungen konfrontiert. Gleichzeitig stellt der Automobilsektor in einigen CESEE²⁰-Ländern und in Deutschland einen wesentlichen Wirtschaftszweig sowohl im Hinblick auf die Wertschöpfung als auch die Beschäftigung dar. Auch in Österreich spielt er eine nicht vernachlässigbare Rolle. Die Automobilindustrie in CESEE und Österreich ist stark in den globalen Wertschöpfungsketten eingebettet und insbesondere mit Deutschland eng verwoben. Schocks können sich damit über die integrierten Produktionsnetzwerke von einem Land auf andere direkt und indirekt leicht übertragen. Vor diesem Hintergrund widmet sich diese Analyse vor allem den drei folgenden Fragen: (1) Was für eine Rolle spielt die Automobilindustrie in den CESEE-Ländern und in Österreich? (2) Inwieweit ist die Industrie in CESEE bzw. in Österreich verwoben - einerseits miteinander und andererseits vor allem mit Deutschland – der größten europäischen Volkswirtschaft und einem der weltweit führenden Autoproduzenten? (3) Welche rezenten Entwicklungen haben die Automobilindustrie geprägt? Welche künftigen Risiken und Herausforderungen kommen auf sie zu und was für einen Einfluss werden diese auf die CESEE-Region haben?

Der Beitrag erörtert im Detail, dass die Automobilindustrie eine Schlüsselrolle in Tschechien, Ungarn, der Slowakei und in Rumänien spielt. Nicht zu vernachlässigen ist der Sektor auch in Polen und Slowenien. Somit stammt etwa jedes vierte in der EU produzierte Auto aus einem dieser sechs CESEE-Länder und die stückmäßige Autoproduktion beträgt ungefähr 80% der deutschen Produktion. In der Autoproduktion pro Einwohner belegen sogar die Slowakei, Tschechien und Slowenien die ersten drei Plätze weltweit. Die Autoindustrie in den sechs genannten CESEE-Ländern hat etwa ein Fünftel des kumulierten realen Wertschöpfungswachstums der letzten fünfzehn Jahre beigesteuert und es werden dort mit 850.000 fast genauso viele Personen beschäftigt, wie in der deutschen Automobilindustrie. In Österreich spielt die Automobilindustrie sowohl im Hinblick auf die Produktionsvolumina als auch auf die Beschäftigung eine weniger bedeutende Rolle. Deutschland ist für die Autoindustrie in CESEE und in Österreich der wichtigste Handelspartner, für die CESEE-Länder nimmt aber seine Wichtigkeit relativ zu anderen Ländern eher ab. Die Verflechtung zwischen der Autoindustrie in CESEE und in Österreich hat zwar massiv zugenommen, ist aber vor allem relativ zu Deutschland – immer noch gering. In letzter Zeit wurde die Automobilindustrie von einigen zyklischen und einmaligen Faktoren beeinträchtigt. Diese dürften zwar kurzfristig wieder abebben, aber auch mittel- und langfristig steht der Sektor vor großen strukturellen Herausforderungen, insbesondere vor immer strengeren Regulierungsvorschriften für CO2-Emissionen. Es ist davon auszugehen, dass diese massive strukturelle Veränderungen in jenen Ländern hervorrufen, in denen die Automobilindustrie eine wichtige Rolle spielt. Aufgrund der engen Verflechtung mit Deutschland dürften sich allerdings die zyklischen und strukturellen Schocks auf die dortige Autoindustrie auch auf andere Länder und Wirtschaftszweige ausbreiten.

¹⁹ Autor: Tomas Slacik mit statistischer Unterstützung von Zoltan Walko (beide Abteilung für die Analyse wirtschaftlicher Entwicklungen im Ausland) und dem WIIW.

²⁰ CESEE sind Länder in Zentral-, Ost- und Südosteuropa.

Automobile industry is key in the Czech Republic, Slovakia, Hungary and Romania

In some countries in Central, Eastern and Southeastern Europe (CESEE), the automotive industry plays a crucial role. In the Czech Republic, Hungary and Slovakia – as in Germany – the production of motor vehicles and (semi-)trailers is the number one manufacturing segment, generating about one-fifth of gross value added (GVA) in the manufacturing sector. In Romania, the automotive industry ranks second, surpassed only by the production of food, beverages and tobacco products. In Poland, Slovenia as well as in Austria, it is less dominant but still relatively important. In other CESEE countries it does not play a significant role (chart 1).



As a result, the car industry is an important driver of economic growth in some CESEE countries. Between 2004 and 2017, the industry contributed more than one-fifth to the cumulative real GVA expansion in Hungary (i.e. about 4.5 percentage points out of 22% total real GVA increase), roughly 13% in the Czech Republic and Romania, and 11% in Slovakia (chart 2). This compares to about 12% in Germany and 4% in the EU on average. In contrast, in Slovenia and Poland, only small shares of real cumulative GVA growth in the period under review were ascribable to the automotive sector (less than 4% and roughly 2%, respectively). In Austria the contribution was even smaller, amounting to just 0.3% out of about 21% total GVA increase.





In the six above-mentioned CESEE countries²¹, car production totaled more than 4.2 million units last year (table 1). This is about 80% of the number produced in Germany and slightly less than one-quarter of all cars produced in the EU. In terms of production volumes, the automotive industry in Austria plays a rather minor role. In 2018, some 160,000 vehicles were produced in Austria, which equals about 80% of the units manufactured in Slovenia. Car production in the reviewed CESEE countries is not only impressive in terms of total units but even more so in terms of cars produced per capita. In this respect, Slovakia ranks first, the Czech Republic second and Slovenia third in the world. Besides assembly of motor vehicles, some 50% (in Hungary and Austria) to 80% (Romania) of the industry's GVA is contributed by manufacture of parts and accessories.

In total, the industry directly employs more than 850,000 persons in the six CESEE countries under review. This almost matches the 880,000 employees in Germany. Employment in the automotive sector thus ranges between 1.3% of total employment in Slovenia and 3.7% in the Czech Republic. In Austria the automobile industry employs slightly more than 30,000 persons, which represents 0.7% of total employment. However, it has to be borne in mind that the quoted figures underestimate the importance of the automobile industry since both the number of employees as well as the contribution to growth indirectly linked to the sector are significantly higher due to deep integration in European supply chains²². Table 1 shows that the automotive industry also attracts a large share of foreign direct investment. In the four CESEE countries with the most dominant

²¹ Czech Republic, Hungary, Poland, Romania, Slovakia, Slovenia.

 $^{^{22}}$ E.g. the Czech Automotive Industry Association estimates that apart from about 150,000 people directly employed in the automotive industry there are a further 400,000 jobs indirectly linked to the sector. As a result, when the supply chain linkages are taken into account, the share of the automotive sector's contribution to GDP rises from about 6% to 9% (ING, 2019).

automotive sectors, around 7% of all FDI is directed toward the industry. This is a roughly ten times larger share than in the EU on average and compares to about 1.4% in Austria.

Table 1: Production, employment and FDI in the automotive sector						
	Vehicle production			Employment		Foreign Direct Investment (FDI)
	2018	% change 18/17	per capita ranking worldwide (2017)	Ths. persons (2016)	% of total employment	% of total-FDI (2016)
CZ	1,345,041	-5.3	2nd	192.31	3.7	7.6
HU	430,998	-14.7	9th	94.80	2.1	n.a.
SK	1,090,000	8.8	1st	73.28	3.2	7.0
RO	476,769	32.7	20th	190.30	2.3	6.0
PL	659,646	-4.4	21st	292.80	1.8	n.a.
SI	209378	10.3	3rd	12.01	1.3	2.9
CESEE-6	4,211,832			855.50		n.a.
EU28*	16,146,681	-2.1		2,478.47	1.1	0.7
DE	5,120,409	-9.3	6th	880.00	2.0	n.a.
AT	164,900	69.7	41st	32.26	0.7	1.4

Source: Eurostat, WIIW, ACEA (European Automobile Manufacturers Association), OICA (International Organization of Motor Vehicle Manufacturers)

* EU28 employment in 2015, production passenger cars only

Automotive industry in CESEE and in Austria is strongly intertwined with Germany, but bilateral integration with Germany is weakening in most instances

Nearly 30% of Slovakia's and 25% of the Czech Republic's exports are related to the production of motor vehicles. In Poland, the most diversified among the examined economies, car-related exports amount to slightly less than 15%. In Austria, the share of automotive products in total exports declined from roughly 15% in 2004 to just above 11% in 2017. However, the share of vehicle-related sales on the German market remained nearly unchanged. In the analyzed CESEE country group the picture is slightly different. While Germany is still the single-most important export partner for the automotive industry, it loses out relative to other foreign markets. Germany's share as an export market has been falling despite rising exports of the automotive industry relative to total exports in the six CESEE countries under review except Poland (chart 3).



Chart 3: Exports - Share of products related to the production of motor vehicles

Note: Product groups according to SITC Rev. 4: 722, 781, 782, 783 (tractors, motor cars and motor vehicles), 784 (parts and accessories), 786 (trailers and semi-trailers, containers), 7132 (piston engines) and 7783 (various electrical equipment for motor vehicles).

Source: Eurostat.

Hence, in 2004, on average 40% of the six CESEE countries' exports related to the production of motor vehicles ended up in Germany. In Hungary, Romania and Slovakia, even half of the automobile industry's exports were headed to the biggest European economy in 2004. In 2017, in contrast, less than one-third of automotive industry exports manufactured in the six examined countries went to Germany. Between 2004 and 2017, Germany's share in the automotive export market dropped for all examined CESEE countries except Slovenia. In 2017, it did not exceed 50% in any of these countries (the highest share was 43% in Hungary) and recorded the biggest drop in Slovakia from nearly 50% in 2004 to about 22%. A similar picture arises on the import side. Obviously, products related to the production of motor vehicles make up a significantly lower share in total imports than is the case with exports (maximum: 12% in Slovakia). Yet, just about one-third of all these imported goods originated in Germany in 2017 – a noticeable drop compared to more than 40% in 2004. A look at the integration of the automotive industry in global value chains provides a more holistic view. It corroborates the previous outcome. Chart 4a shows a global value chain integration index which combines both the backward and forward linkages of a country's automotive industry in the global value chain. Chart 4b depicts the same kind of index but vis-à-vis Germany only. The charts show that while the automobile industries in the reviewed CESEE countries have become more integrated in global value chains, their integration with Germany has stagnated or even declined. In contrast, the integration of Austria's automotive industry with Germany increased in parallel with the higher integration in global value chains.²³ For the sake of comparison, it is also worth mentioning that an analogous value chain integration index of Austria's automobile industry vis-à-vis CESEE doubled between 2000 and

²³ We would like to thank Robert Stehrer, The Vienna Institute for International Economic Studies, for providing us with these figures based on the most recent vintage of the World Input-Output Database (WIOD).

2014. Nonetheless, it still amounted to a mere 0.09, hence just about one-third of the value visà-vis Germany (0.28, see chart 4b).²⁴



European and especially German automobile industry is facing several cyclical and structural challenges and risks

Recently, the European, and particularly the German automobile industry has been confronted with several cyclical and structural factors that have impaired the industry's performance. Hence, the production of passenger cars dropped by about 2% year on year in 2018 in the whole EU, even though the picture was quite mixed across countries. German vehicle production fell by more than 9% year on year. This was primarily the result of weakened domestic demand and delivery delays caused by the introduction of new emissions standards (WLTP – Worldwide Harmonised Light Vehicle Test Procedure). A factor specific to Germany was the ban of older diesel engine cars in cities, which added to the long-term downward trend in demand for diesel cars. Some external factors such as the trade war between the U.S. and China and the slowdown of the Chinese economy have also left a mark on foreign demand for European, and particularly German, cars. However, this impact has been relatively small so far.

Looking ahead, the European and German automotive industries face several risks and challenges. Major external risks are Brexit, a further slowdown of the Chinese economy and a further escalation of trade conflicts. According to some estimates, Brexit could knock off some 30% of German car sales in the U.K. (ING, 2019). China is an increasingly crucial market for German car producers. Almost every fourth car sold in China originates in Germany and more than one-third of the production of the three biggest German car producers go to China. The potential introduction of U.S. import tariffs on European cars would certainly also harm the industry, although the impact would be relatively limited. According to estimates by the ifo Institute (Felbermayr and Steininger, 2019) import tariffs of 25% would reduce GDP by about 0.15% in Germany, by less than 0.2% in Hungary, by about 0.1% in the Czech Republic and 0.05% in Austria. For most other European countries, the impact would be negligible. The wiiw

²⁴ From the OeNB's perspective particularly interesting would be the interlinkages between the automotive sector in CESEE and Austrian banks. However, financial sector data is not available at this level of granularity.

(Stehrer, 2018) has estimated that in the EU more than 600,000 jobs, corresponding to 0.3% of total employment, depend on car exports to the U.S. Most of them are located in Germany (300,000). In central Europe, there are roughly 40,000 of such jobs in Poland, 25,000 in the Czech Republic and Hungary, about 16,000 in Austria and 12,000 in Slovakia. The extent to which these jobs would be at risk depends very much on the elasticity of U.S. car imports vis-à-vis the price hikes, the exporting firms' pricing strategies as well as other countries' (e.g. China's) reactions.

However, the most important risk and challenge looming ahead for the automotive industry seems to lie in stricter CO_2 emission regulations at the EU level. While these will most certainly imply major structural changes in all countries with significant automobile industries and entail massive investments and most likely smaller margins and profits for automotive firms, the long-term effect of these shake-ups is uncertain at this stage.

Conclusion

To conclude, the automotive industry is a key manufacturing segment in some CESEE countries. In Austria it does play a role too, but a much less prominent one. The industry, both in CESEE and in Austria, is closely intertwined with Germany, one of the world's leading carproducing economies. Germany is still by far the most important export and import partner for the CESEE and Austrian automotive industries, even though its importance in the CESEE region is stagnating or even declining relative to other countries. The integration between automobile sectors in Austria and CESEE has increased significantly but is still relatively limited compared to the interlinkages of CESEE with Germany. The recent slowdown in the automotive sector has been driven by several factors, many of them cyclical or one-off, so that a cyclical recovery is possible in the short run. Yet in the medium to long run, the industry in its current form is facing big structural challenges and downside risks. Due to a particularly large exposure to Germany, any cyclical and/or structural shocks in the German economy are likely to have contagious harmful effects in the CESEE region. In Austria, the overall macroeconomic implications would be much less pronounced due to the comparably contained importance of the sector in the Austrian economy.

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