Automotive industry and global value chain integration in CESEE in COVID-times and beyond[19]

Die Automobilindustrie ist in etlichen CESEE-Ländern eine wichtige Branche der verarbeitenden Industrie, ein essenzieller Exporttreiber und eine wichtige Determinante des Wirtschaftswachstums. In Österreich spielt sie ebenfalls eine wichtige, wenngleich insgesamt etwas weniger dominante Rolle. In Bezug auf Produktion und Beschäftigung ist der Automobilsektor in CESEE vergleichbar mit jenem in Deutschland. Zudem ist die Branche in CESEE (und in Österreich) eng mit der deutschen Automobilindustrie verflochten. Während Deutschland nach wie vor der wichtigste Handelspartner für die CESEE-Autoindustrie ist, stagniert seine Bedeutung im Vergleich zu anderen ausländischen Märkten, insbesondere anderen EU-Märkten, oder geht tendenziell sogar zurück. Angesichts der aktuellen COVID-19-Krise ist es daher besonders bemerkenswert, dass die EU nach wie vor der absolut dominierende Markt für die CESEE-Automobilindustrie ist: Rund 85% der Exporte und Importe der Automobilindustrie in CESEE entfallen auf den EU-Markt.

Die Covid-19-Krise hat zu einem (vorübergehenden) negativen Schock für die globalen Wertschöpfungsketten geführt, da sie die Lieferketten unterbrochen und Kosten von physischen Begegnungen aufgrund von Lockdown-Maßnahmen erhöht hat. Dennoch könnten die längerfristigen Auswirkungen auf CESEE relativ moderat ausfallen. Dies liegt daran, dass die CESEE-Länder (selbst wenn man für ihre Produktionsstruktur kontrolliert) größtenteils in die Wertschöpfungsketten der EU integriert sind und ihre Exposition gegenüber Schocks außerhalb der EU begrenzt ist.

Dennoch stehen andere langfristige Herausforderungen vor der Tür. Insbesondere die Integration von CESEE in die internationalen Wertschöpfungsketten – die stark mit den ausländischen Direktinvestitionen korreliert – hat in den letzten Jahren an Dynamik verloren. Darüber hinaus fungieren einige Länder (bzw. deren Industrien) in ihren Funktionen primär als „verlängerte Werkbanken", d.h. sie sind vorwiegend auf Tätigkeiten entlang der Wertschöpfungskette spezialisiert, die einen vergleichsweise moderaten Mehrwert generieren. Nichtsdestotrotz könnten strukturelle Veränderungen diese funktionalen Spezialisierungsmuster auflösen und damit auch neue ausländische Direktinvestitionen ankurbeln.

Der COVID-19-Schock, der die weltweite Automobilindustrie schwer getroffen hat, kam inmitten einer längerfristigen konjunkturellen Verlangsamung und strukturellen Veränderungen sowohl auf der Nachfrage- als auch auf der Angebotsseite. Das Auto der Zukunft ist "eascy", d.h. elektrifiziert, autonom, gemeinsam genutzt, verbunden und jährlich aktualisiert (PWC 2018). Dies impliziert enormen strukturellen Veränderungsbedarf, die damit einhergehenden Herausforderungen und Investitionserfordernisse für den Sektor bieten große Potenziale und Chancen. Gleichzeitig bergen sie aber auch ernsthafte Risiken, die die Nachfrage nach in CESEE (und generell in Europa) hergestellten Autos und Autoteilen erheblich beeinträchtigen und somit Arbeitsplätze, Einkommen sowie große und kleinere Unternehmen gefährden könnten. Der Transformationsprozess wird für die Automobilindustrie alles andere als einfach sein. Wesentliche Weichenstellungen für die langfristigen Perspektiven dieser Branche werden bereits in der nächsten Zukunft zu erfolgen haben, um Europa und CESEE als Standort in diesem Industriebereich längerfristig abzusichern.

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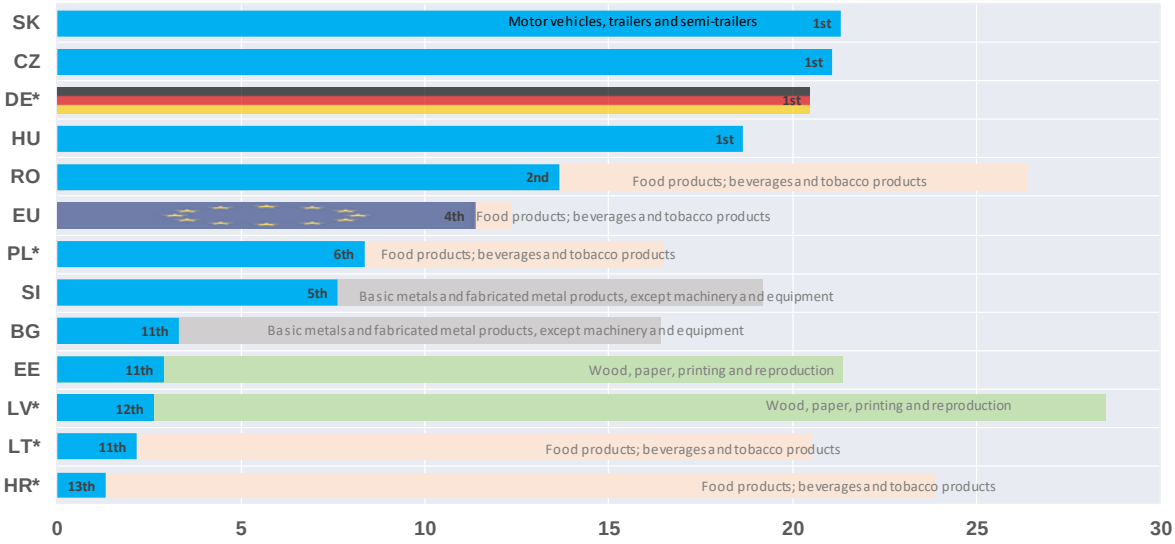
1. Background: significance of the automobile industry in CESEE

In the Czech Republic, Hungary and Slovakia the production of motor vehicles and (semi-)trailers is the number one manufacturing segment. In those three countries the automotive industry generates about one-fifth of gross value added (GVA) in the manufacturing sector, just as it does in Germany. In Romania, the car industry ranks second, surpassed only by the production of food, beverages and tobacco products. In Poland and Slovenia it is less dominant but still important. In other CESEE countries it does not play a major role (chart 1). In Austria, for comparison, the automobile industry creates roughly 9% of the manufacturing GVA, the 5th highest contribution of all manufacturing sectors.

Chart 1: Share and rank of "Motor vehicles, trailers and semi-trailers" in manufacturing compared with the most important manufacturing sector

% of GVA, current prices, 2019



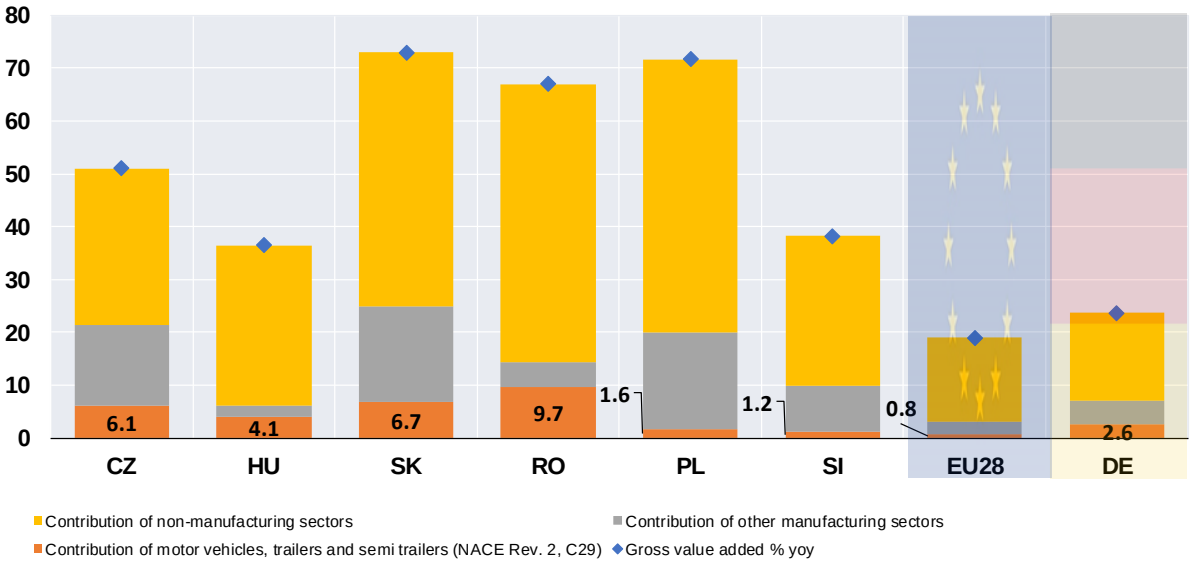
Source: Eurostat.
** 2018*

As a result, the car industry is a key driver of economic growth in the CESEE-6[20] countries despite a recently increased role of the service sector in these economies. Between 2004 and 2019, the car industry contributed nearly 15% to the cumulative real GVA expansion in Romania[21], roughly 12% in the Czech Republic, 11% in Hungary and 9% in Slovakia (chart 2). This compares to about 11% 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 (approximately 3% and 2%, respectively).[22] The car industry in CESEE-6 has benefitted from an increased demand for cars using their inputs and a deeper integration of the countries in global value chains. It is noteworthy, however, that the contribution of the automotive industry to cumulative GVA growth in the reported CESEE countries has slowed in the last couple of years due to an increasing role of non-manufacturing sectors (particularly services).

[20] Those CESEE countries with the most significant car industry are: Czech Republic, Hungary, Poland, Romania, Slovakia, Slovenia.
[21] That is about 10 percentage points out of 67% total real GVA increase (see chart 2).
[22] In Austria the contribution was rather negligible (just around 1.5%).

Chart 2: Contribution of "Manufacture of motor vehicles, trailers and semi trailers" to cumulative real GVA growth 2004-2019

cumulative real growth 2004-2019 in %, contribution of individual sectors in pp



Source: Eurostat.

The size of the aggregate car industry in CESEE-6 is comparable to that in Germany. In the CESEE-6 countries car production totaled more than 4.3 million motor vehicles last year. This is more than 90% of the number produced in Germany and about a quarter of all cars produced in the EU. Car production in the reviewed CESEE countries is 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. In Austria, in contrast, the automotive industry plays a less prominent but still important role. Besides the assembly of motor vehicles, between about 50% (in Hungary and Austria) and nearly 80% (in Romania) of the industry's GVA is contributed by the manufacture of parts and accessories. In total, the industry directly employs more than 950,000 persons in CESEE-6 countries, compared to just above 900,000 in Germany. Employment in the automotive sector thus ranges between 1.6% of total employment in Slovenia and 3.9% in the Czech Republic[23]. However, it has to be borne in mind that the quoted figures underestimate the overall 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 chains[24].

The automotive industry is a major driver of CESEE-6 exports, particularly to Germany. Nearly 35% of Slovakia's exports are related to the production of motor vehicles. In Poland, the largest and most diversified among the CESEE-6 economies, car-related exports amount to about 12%. In the remaining countries of the examined group the share hovers around 20%. Germany is the single-most important export partner for the automotive industry.

[23] In Austria the automobile industry employs slightly more than 30 thousand persons which correspond to 0.7% of total employment.

[24] 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).

However, over time, bilateral integration with Germany has mostly weakened relative to other foreign – mainly EU – markets. Hence, while in 2004 an average 40% of the CESEE-6 exports related to the production of motor vehicles went to Germany, in 2019 the share fell to just above 30%. The biggest drop was recorded in Slovakia from nearly 50% in 2004 to about 27% fifteen years later. A similar picture arises on the import side. Just about one-third on average of imports related to the production of motor vehicles originated in Germany in 2019 – a noticeable drop compared to more than 40% on average (and as high as 60% in Czechia) in 2004. Hence, while the automotive industry in CESEE-6 has diversified away from Germany both on the export and import side, in light of the current COVID-19 crisis it is particularly noteworthy that the EU remains the absolutely dominant market as approximately 85% of exports and imports are directed to/sourced from EU countries.[25]

2. Expected impact of COVID-19 on global value chains in CESEE[26]

Global value chains (GVC) have been under increased scrutiny even before the COVID shock. This is because the GVC integration did not recover after the global financial crisis in 2008/9 to the level seen beforehand.

The COVID-19 crisis is expected to exercise a (temporary) negative shock on GVC as it has interrupted supply chains and increased costs of physical meetings. Nonetheless, research[27] suggests that the longer-term impact on CESEE (and to a lesser extent on Austria) might end up relatively benign since CESEE countries are mostly integrated in EU value chains (chart 3). Their exposure to shocks from outside the EU is limited, even when controlling for their production structure.

Looking forward, the integration of the CESEE economies in GVC is facing further challenges, beyond the impact of the pandemic. In particular, the GVC integration of CESEE – strongly related to FDI flows – seems to have lost steam in recent years. In addition, a number of countries/industries in the region are locked in activities that generate relatively lower value added such as production rather than higher-value-added R&D, logistics, head-quarters or support services. That is, CESEE countries serve primarily as 'factory economies' which generate comparatively little value added in their value chain activities while Western countries take the role of 'headquarter economies'. Such a specialization acts as a drag on economic growth and is tightly connected to the notion of a functional middle-income trap. However, structural changes in specific industries, particularly the automotive sector, might change patterns of functional specialization and spark new FDI boosted by European green deal and investment funds.

[25] This finding is corroborated from a more holistic perspective by a global value chain integration index constructed by the Vienna Institute for International Economic Studies (wiiw). The index combines both the backward and forward linkages of a country's automotive industry in the global value chain. It shows that while the automobile industry in the reviewed CESEE countries has become more integrated in global value chains, its integration with Germany has stagnated or even declined. In contrast, the integration of Austria's car industry with Germany increased in parallel with the higher integration in global value chains. 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 2014. *[We would like to thank Robert Stehrer (wiiw) for sharing these figures based on the most recent vintage of the World Input-Output Database (WIOD).]*

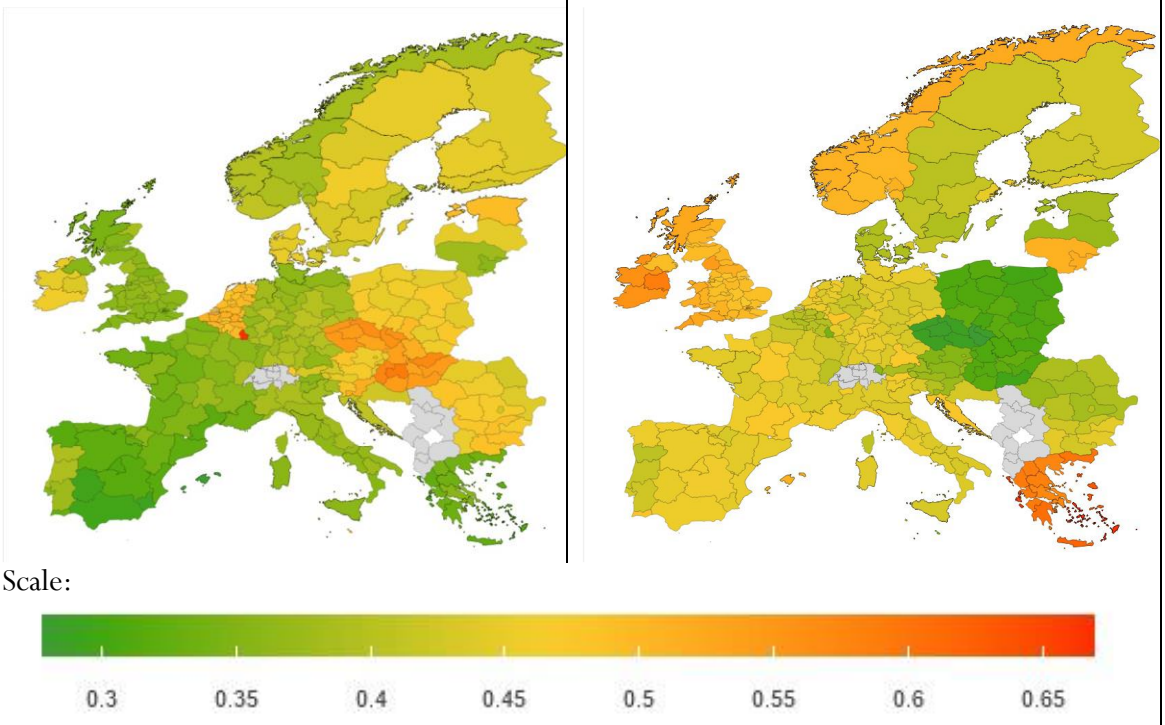
[26] Largely based on contributions by Carlo Altomonte (Bocconi University) and Robert Stehrer (wiiw) in Session 2 at the CEEI 2020.

[27] Altomonte, Coali, Ottaviano (2020)

Chart 3: Share of GVC-related trade at NUTS-2 level

3a: Share of overall GVC-related trade

3b: Share of Extra-EU GVC-related trade



Source: Altomonte, Coali, Ottaviano (2020), data for 2014 (most recent data available)

3. Short- and long-term challenges in the automotive industry globally and in CESEE

The COVID-19 crisis has taken a heavy toll on the automobile industry. After car production in CESEE had declined by between 6% yoy (Romania) and 24% (Slovenia) in Q1, it plummeted further by up to 50% (Poland) in Q2 (Chart 4).[28] Car factory shutdowns during the spring wave of the pandemic ranged between 22 days in Hungary and 36 days in Poland (compared to 30 days in Germany and 34 days in Austria).[29]

However, the pandemic hit the automotive industry amid a longer-term cyclical slowdown and structural changes both on the demand and supply side. Worldwide and European car production, particularly in Germany[30], had been stagnant or even contracting for a couple of years before the pandemic hit. Moreover, it had been subject to major external risk factors such as a slowdown of the Chinese economy, further escalation of trade conflicts or

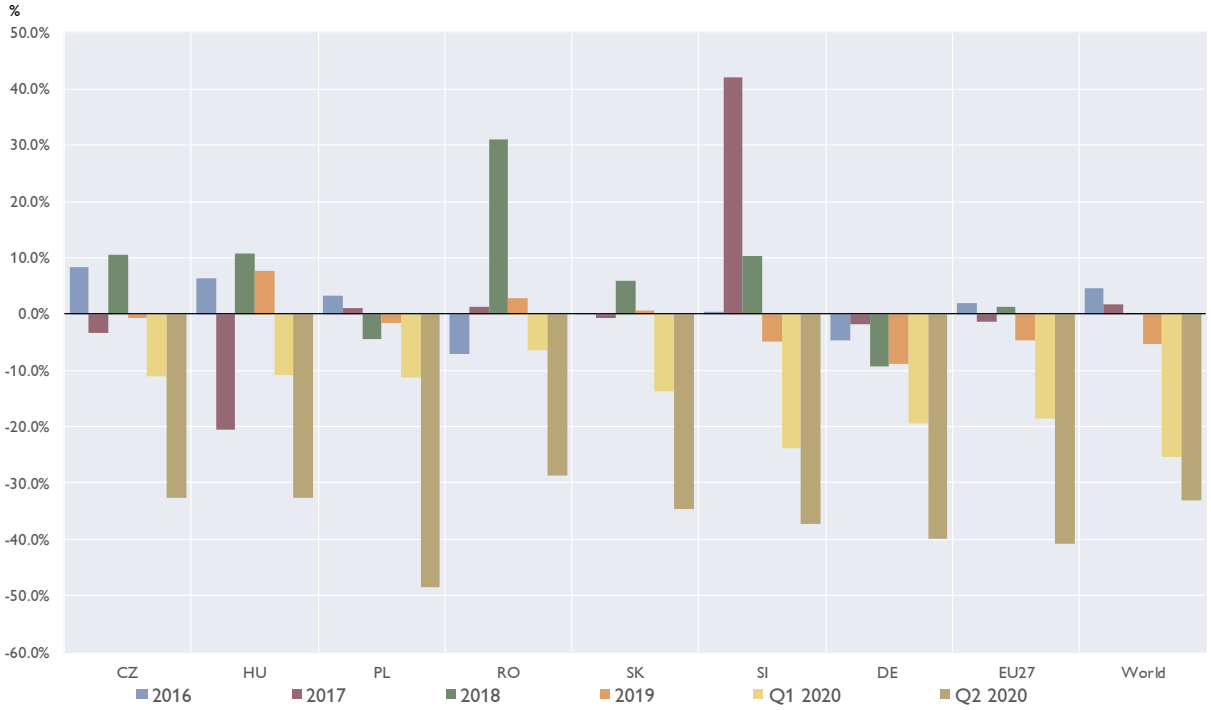
[28] Comparable data on Q3 2020 are not yet available but figures from some national sources suggest a rather mixed picture about the recovery. Whereas car production in Czechia was just 5% down in Q3 compared to the same quarter in 2019, in Germany it was still approximately 18% lower.

[29] Source: https://www.acea.be/news/article/interactive-map-production-impact-of-covid-19-on-the-european-auto-industry

[30] The idiosyncratic development in Germany 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). Another factor rather 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 also left a mark – although a relatively minor one – on foreign demand for European, and particularly for German, cars.

Brexit.[31] Nonetheless, CESEE countries had been to a large extent defying these trends and navigating well through these challenges (Chart 4). According to some automobile sector experts global demand for cars may have peaked already and will decline over the coming years[32] due to several factors such as i) growing urban population, ii) changed preferences among youth regarding car ownership and iii) uncertainty and impact regarding technological changes and stricter environmental regulations. In addition, the COVID-19 shock may persist longer as households decide to postpone non-essential purchases as a result of falling disposable income or heightened uncertainty. On the supply side, one of the most important structural changes relates to the global fight against climate change and thus in particular to the electrification of cars. While there were 17 000 electric cars worldwide in 2010, the number increased to 7.2 million in 2019, of which 47% were in China and 24% in Europe (Garcia et al. 2020). A number of national and particularly EU policies and ever stricter regulations aim to foster these changes.

Chart 4: Changes in car production (yoy)



Source: International Organization of Motor Vehicle Manufacturers.

The car of the future is "eascy", i.e. electrified, autonomous, shared, connected and yearly updated (PWC 2018) which implies enormous structural changes and challenges for the industry. These pose large potentials and opportunities on the one hand. On the other hand, they are subject to serious risks which could eventually dent significantly the demand for cars and car parts produced in CESEE (and Europe) with multiplying effects throughout their economies. Electrification of cars is a process driven by a number of factors, inter alia (if not primarily), by regulatory measures and political targets related to the fight against the climate change which put car manufacturers under massive adaptation strains.[33] In fact, these

[31] According to some estimates, Brexit could knock off some 30% of German car sales in the U.K. (ING, 2019).

[32] See https://edition.cnn.com/2020/01/20/business/global-auto-recession/index.html or PWC (2018) for more details.

[33] For a reaction of car manufacturers to the most recent proposal of the EC to reduce average CO2 emissions of new cars in 2030 by 50% below 2021 levels while the current target calls for a 37.5% reduction see e.g. https://www.fleeteurope.com/en/new-energies/europe/features/eus-stricter-co2-targets-impossible-say-

targets run counter to trends on the demand side where clients have increasingly preferred big SUVs with higher CO_2 emissions on the one hand and shifted away from diesel engines which produce less CO_2 on the other. Moreover, the competitiveness of and demand for electric cars hinge crucially on subsidies, other forms of policy support and the enabling infrastructure while the environmental balance of electric cars is not clear-cut and depends on many (country-) specific factors (see e.g. Schmidt 2020). While the shift to electric cars has become an unavoidable and irreversible necessity, evidence suggests that the EU is lagging far behind China and the US which have a big first mover advantage when it comes to the shift towards electric car technologies and autonomous driving (Garcia 2020). Hence, the shift towards electric, high-tech cars of the future requires massive investments thus increasing production costs and reducing profit margins. In particular, smaller cars might become uneconomical. Furthermore, the shift to electrification is likely to result in changes to the production process with fewer parts required and fewer workers needed in their assembly. In addition, in case of electric cars significant parts of the production are likely to get outsourced and/or automated.

To sum up, the transition to the "eascy world" will be far from easy and strategic decisions over the next few years will have a major impact on the long-term configuration of the sector globally and also in the CESEE region. Traditional manufacturers and suppliers will be extremely vulnerable in the years ahead. They will have to confront falling margins while at the same time making far greater investments in electro-mobility and new customer-oriented innovations. The combustion engine, which has been for decades at the heart of the automobile industry, might become increasingly obsolete.[34] At the same time, more and more competitors will enter the market or increase their still nascent market shares, which will make life difficult for traditional manufacturers and their suppliers.

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[34] However there are also views that in the future the combustion engine may experience some renaissance, see https://www.agvs-upsa.ch/de/news/news-archiv/fuer-fritz-indra-ist-die-e-mobilitaet-nicht-mehr-als-ein-hype

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