

Automotive Sector Analysis

One Piece at a Time

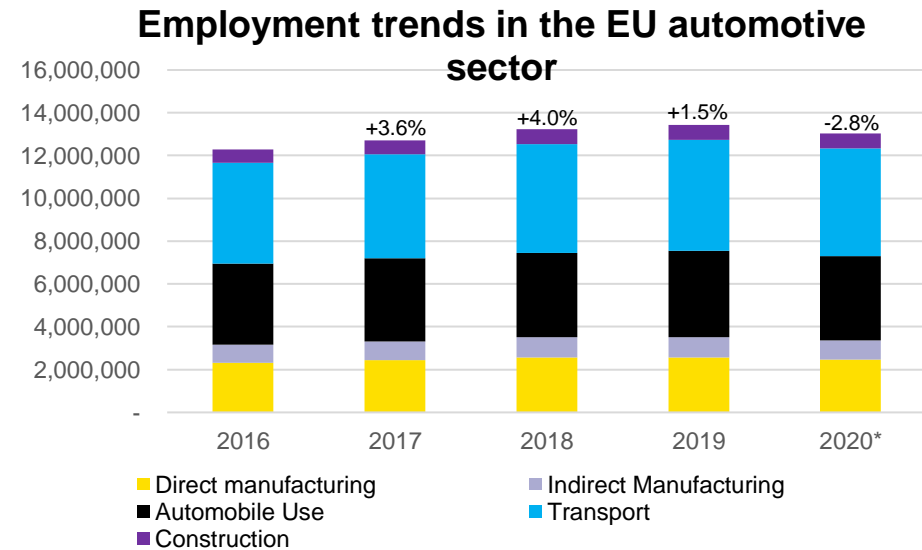
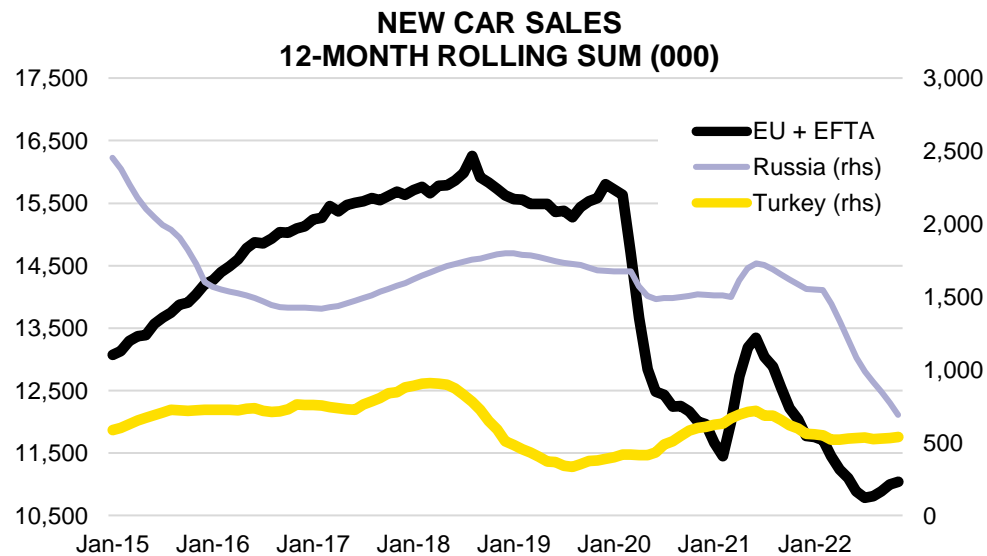
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Observing trends for the EU, EFTA and the biggest near-by markets, the figures are displaying bottoming out in car sales. We see two factors dominantly explaining the latest dynamics: i) a gradual recovery in the global supply chains after the COVID-19 tightening, and ii) demand strengthening as a function of economic activity rebound from the pandemic. **Still, it must be mentioned that even then the latest data (October-2022) for the EU & EFTA mark the lowest value of new car sales - on a 12-month rolling sum basis – in at least two decades. The rationale is that supply factors have not fully recovered, with factory deliveries still lengthy in historical terms.** Also, there is a refocus in demand from fully combustion-driven engines towards (semi) electric motors, with the latter also taking longer to deliver. All said, we are examining the latest trends and outlook for the automotive industry, concentrating on the Adria region's key producers and their contribution as well as dependencies.

The automotive industry can be defined as highly labour and capital intensive. The sector plays a major role in any economy generating jobs and services through a highly diversified value chain. It is prone to economic shocks and tightly correlated to consumer/market optimism. In terms of strategic importance, the sector is especially prominent - EU countries export over 5.6 million vehicles to the rest of the world, generating a trade surplus of 74 billion in 2020. The players in the EU and the Adria region are predominantly exporters. As of 2020, the automotive sector provides direct and indirect jobs to 13 million Europeans or around 7% of total EU employment, whereby 3.4 million people work in direct or indirect manufacturing of motor vehicles, representing 11.5 % of EU employment in manufacturing.



*Provisional data for 2020 Source: ACEA, Eurostat

Industry highlights

Movements in the automotive industry are spread out quickly over the global value chain. In other words, **a drop in car production will inevitably spill over to component manufacturers through lower demand for components.** Also, automotive is a globalised industry that is driven by regional clusters. **In order for an automaker to expand globally, it must cater to local demand needs which led to a highly consolidated industry.** Through strategic joint ventures and M&A global players acquired and expanded to numerous markets. For example, Renault acquired Dacia in 1999 and subsequently offered low-cost cars in the European Market. Dacia offered the Logan for around EUR 5,000 which was the price point for used cars. Not only was the Logan successful in the western part of Europe, but Renault managed to tap the Eastern European market where imported used cars are dominant. Since then, Dacia has gone on to sell millions of units.

More recently, in 2021, a 52 bnUSD merger of FCA and PSA group to form a single Automotive group Stellantis is a prime case. These two companies merged to broaden and strengthen their electric vehicle line-up and compete with bigger market players such as Volkswagen and Toyota. More specifically, to leverage Peugeot’s expertise in the EV Segment. **Strategic alliances such as these are key for market penetration, leveraging deal incumbents’ respective assets and stimulating growth.**

Consolidation also leads to economies of scale. **Fixed costs are amortized over high levels of output. Car makers also benefit from platform and engine sharing - the same platform and/or engine is used for a wide array of models.** This is also prominent between different companies. For example, the Fiat-developed SCCS platform (a.k.a. the small platform) is used for both the Fiat 500L and Jeep Compass (with adjustment in wheelbase length), along with a wide array of models in the Stellantis group (presented in table below)

Platforms and engines are the most expensive components to develop and therefore the need to share is apparent. Once developed, car platforms and engines remain relevant for years. The Fiat small platform was developed in 2002 and is still in use today.

Car makers also use what is popularly dubbed “badge engineering” or rebadging. This refers to the fact that most of the parts of a car are shared either within the company or with competitors, only the badge and exterior appearance is different. Therefore, the need to develop specialized parts to serve a wide model range is diminished, and therefore costs of development and production are much lower. For example, the VW Up!, Seat Mii and Škoda Citigo are essentially the same car produced by VW AG, underneath a cosmetically altered exterior. This allows VW to market intrinsically the same car to different market segments and amortize development costs through several products.

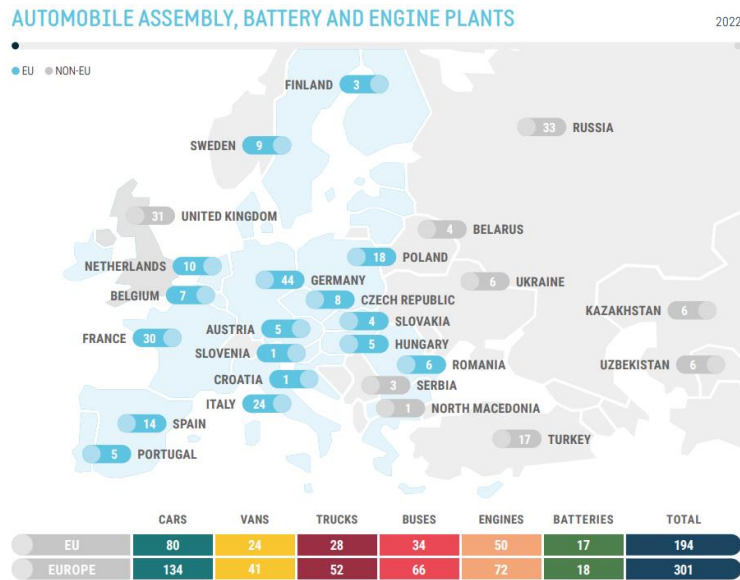
Small (SCCS)	Small LWB (long wheel base)	Small Wide LWB (long wheel base)	Small Wide 4x4	Small Wide 4x4 LWB
Alfa Romeo MiTo (2008–2018)	Fiat Linea (2007–2018)	Fiat 500L (2012–present)	Jeep Renegade (2014–present)	Jeep Compass (2017–present)
Fiat Fiorino/Qubo (2007–present)	Fiat Doblò/Ram ProMaster City (2010–present)	Fiat Tipo/Egea/Dodge Neon (2015–present)	Fiat 500X (2015–present)	Jeep Commander (2021–present)
Fiat Grande Punto (2005–2018)	Opel Combo D (2011-2018)	Fiat Toro (2015–present)		Alfa Romeo Tonale/Dodge Hornet (2022–present)
Opel Adam (2012–2019)				
Opel Corsa D (2006–2014)				
Opel Corsa E (2014–2019)				

Source: https://en.wikipedia.org/wiki/SCCS_platform

Industry consolidation made way for rapid expansion as well as opportunities for suppliers in developing eastern European economies. Car manufacturing and assembly facilities opened in countries such as the Czech Republic, Poland, Slovakia, Hungary and others. This is evident when observing the graphic on the bottom right, showing the volume of produced passenger vehicles by region.

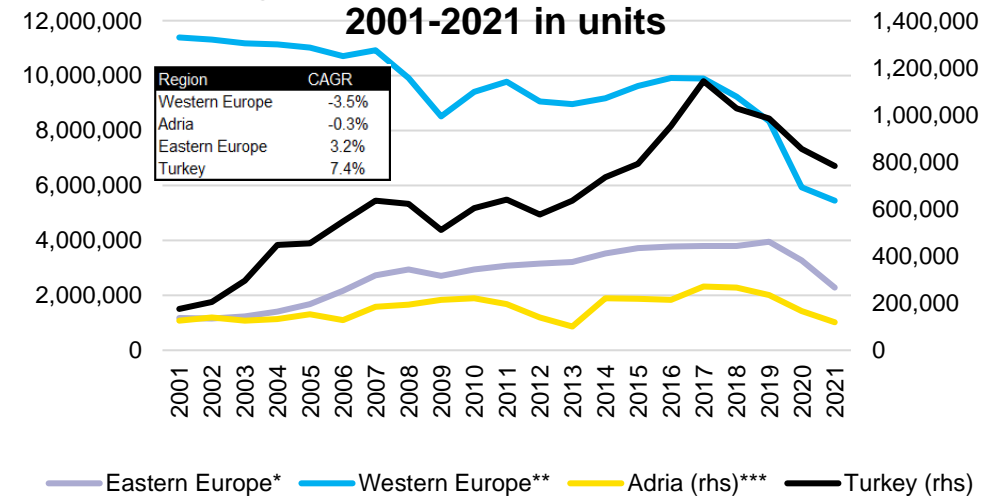
Eastern Europe has displayed steady growth in the passenger vehicle production in the last twenty years, especially in the mid to late 2000's, with many western producers setting up large facilities in the Eastern European region, and the accumulated know-how in these countries **resulted in a workforce that is well versed in auto production.** On the other hand, Western Europe exhibited a production slowdown, with less units manufactured, as various stages of production were outsourced to Eastern Europe or Turkey. **One must note that the car's most complex i.e. value-adding components are still produced in the western countries.** For example, engines and drivetrains at BMW are still principally produced in the Bavaria region of Germany.

All being said, over the period 2001-2021, Eastern Europe displayed a superior CAGR of 3.2%, having materially outperformed Western Europe's CAGR of -3.5%. Turkey is a stellar example of the growth potential of the East, displaying a 7.4% CAGR and boasting 17 automobile related plants. This trend is also observed in the Adria region where international automotive players have set up shop through manufacturing plants, assembly plants, component manufacturing and related services. **However, Adria region was still a laggard in the broader Eastern Europe's automotive sector production, shaping a sub-average CAGR of -0.3%** as the region did not prioritize ramping up the overall production – as was the case in other CEE countries e.g. Slovakia, Czechia – but was more rather oriented towards restructuring i.e. closing of some legacy businesses and opening of new ones. In the end, aside from small-to-medium sized auto component producers, Adria region ended up with “only” two principal automotive players, being FCA Srbija and Revoz.



Source: ACEA

Passenger vehicle production East vs West
2001-2021 in units



*Eastern Europe includes Czech Republic, Hungary, Poland, Slovakia

**Western Europe includes Austria, France, Germany, Italy and the UK

***Adria includes Serbia and Slovenia

Source: Bloomberg intelligence

Headwinds and producers' response

Low labour costs coupled with a relatively more qualified work force than at more distant markets (e.g. Western Asia) have been the main incentives behind automotive production allocation into Adria region. Geographic proximity significantly curbs transportation costs. **There are also other direct incentives such as subsidies given by local governments and tax breaks.** These kinds of deals are bi-laterally lucrative; governments attract Foreign Direct investment and create local jobs while auto industry players benefit from lower costs and increasing market potential. **Broadly speaking, the companies in the Adria region mainly manufacture components that are subsequently sold to the largest automakers (Original Equipment manufacturers or OEMs).** Components that include exterior trim (plastic components), cables, hoses, seat upholstery, dashboards, electrical drives, aluminium castings, batteries and many more. Virtually, the entire production output of said players is sold to international car makers and exported.

Headwinds and producers' response to stay alive

The challenges faced by the automotive industry in the recent period have been sizeable:

- a. The effects of the pandemic through supply chain disruptions (semiconductor shortages) led to production standstills;
- b. Inflated input costs pressured bottom lines;
- c. The Ukraine- Russia conflict further deepens uncertainty in the global value chain.

Especially vulnerable are companies which have exposure(s) in Russia, like AD Plastik which operates a production plant in Russia. Mostly notable are hikes in key raw materials previously imported from Russia, mainly aluminium. The industry is further weighed down by recession concerns, high interest rates, rising fuel costs and declining consumer confidence. Changes in prices of key production input commodities were driven by three main drivers : (i) COVID measures and lockdowns which impacted demand and caused bottlenecks in transportation due to substantial shift from services demand to products demand, (ii) money printing by central banks in order to prevent global recession caused by COVID protection measures, (iii) easing of COVID measures, which together with the excessive amount of money supply resulted in spike of demand and consequently put an upward pressure to commodity prices in 2021.

To make things worse, commodities such as aluminum, steel, pvc and others are being utilized by numerous other industries in production processes (e.g., conduit manufacturing, construction, food, etc.) and all those industries experienced a boom in demand after mild contraction in 2020. **Such sky-scraping prices are unsustainable in the long term and given the monetary tightening commenced by the Fed and the ECB during 2022, we are witnessing a slow cooldown of commodity prices - although, still excessively high given the elevated base of 2021.** Aluminum is still the most resilient one in 2022 and its average price is growing double-digit compared to the average price from 2021. In fact, this is the second largest price increase in the previous 6 years. Such resilience can be interpreted by the supply deficit in 2021-2022, which is now catching up and is expected to stabilize in the following year supported by the slowing demand amid monetary tightening.

Commodity average prices - yoy change (2017 - YTD22)

Commodity	2017	2018	2019	2020	2021	YTD22
Steel	17%	28%	-23%	-6%	164%	-26%
Rubber	30%	-33%	19%	-2%	20%	-3%
Aluminum	20%	2%	-10%	-7%	40%	23%
Copper	25%	0%	-2%	1%	47%	6%
Polypropylene	9%	9%	-9%	-14%	17%	4%
Polyvinyl Chloride	10%	6%	-3%	-3%	45%	-9%

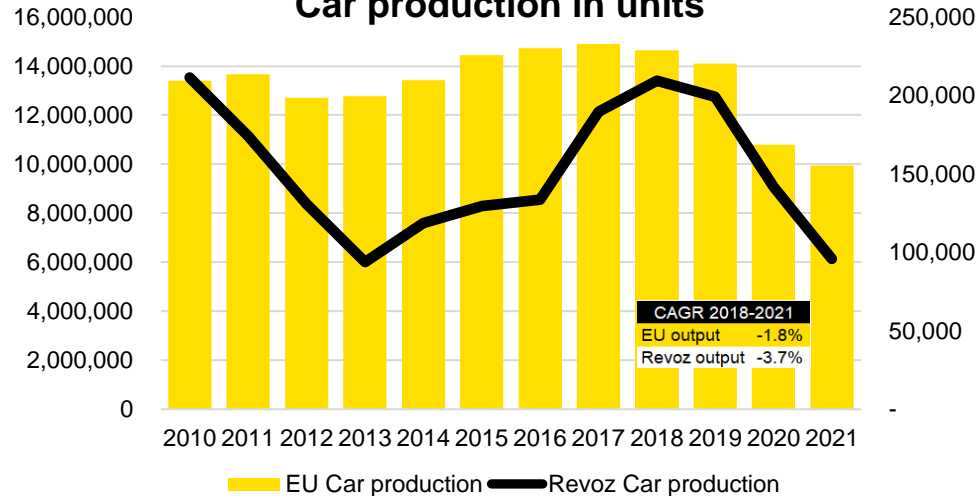
Source: Bloomberg terminal, Bloomberg subindex, Bloomberg Adria Analysis

Headwinds and producers' response

The issues faced currently are pushing production lower to historically conservative levels, with passenger car production declining for four consecutive years in the EU (Source: Acea, IHS Markit), and, most notably, being a 23.5% decrease in 2020. The same trend can be observed in Revoz's production volumes (Revoz d.d. Novo Mesto is the only automaker in Slovenia, being 100% owned by Renault SA).

The underperformance can be explained by Renault SA unclear long term strategy and uncertainty regarding the production in the Slovenian plant. Revoz accounts for around 10% of total Renault SA output. Demand in the EU is also shifting away from the subcompact and mini cars (which are produced by Revoz) in favor of crossovers and SUVs. Most recently, in the first half of 2022, manufacture of Daimler's second-generation Smart Forfour model stopped in Novo Mesto as the Daimler-Renault partnership fell apart. Revoz is strategically vital for Slovenia, being the economy's 4th largest exporter with mEUR 1,182 value of exports in 2021. Therefore, the Slovenian government grants subsidies in order to keep Revoz in Slovenia – e.g. when the production of vehicles in the Edison project - the aforementioned platform sharing collaboration between Renault and Daimler - including the third generation Twingo and Smart For Four started back in 2014, the government granted around mEUR 22.5 in subsidies. The total value of the project was mEUR 450.

EU Passenger car production and Revoz Car production in units



Source: <https://www.acea.auto/figure/eu-passenger-car-production/>, Revoz d.d. Annual reports

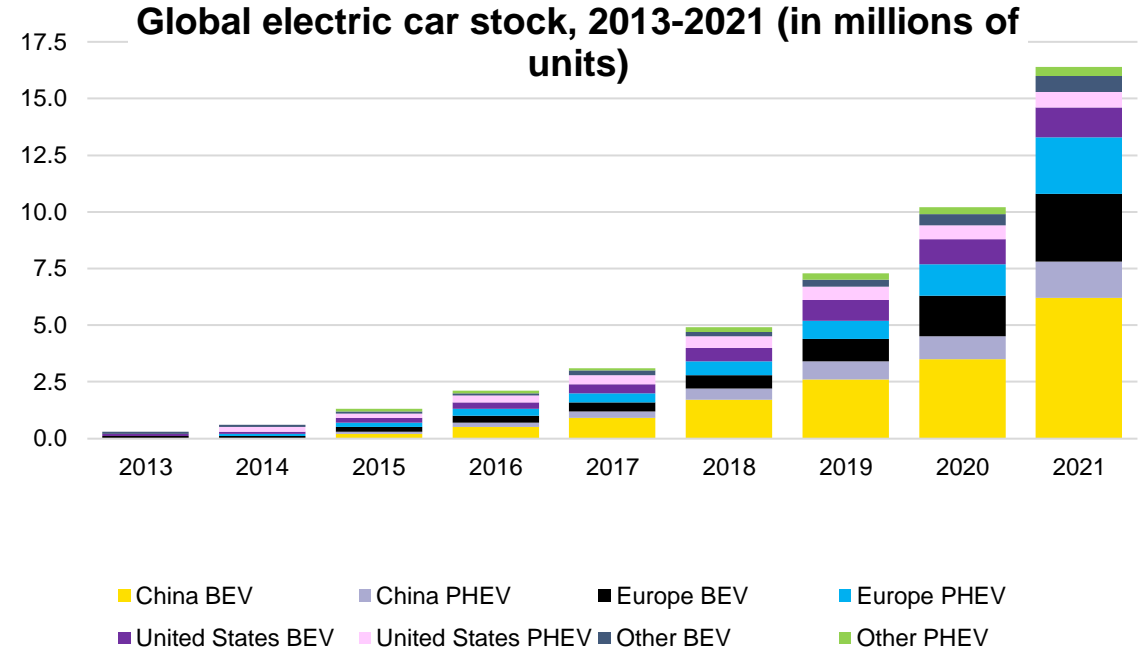
The slowdown in Revoz production from 2018 to 2021 is apparent. The sharpest decline is noted between 2020 and 2021 – a 32% decline in production. The downward trend is indicative of the headwinds the entire industry has been facing. The CAGR on Revoz' output between (-3.7%) 2018 and 2021 underperformed to the CAGR of total EU passenger car production (-1.8%).

There are two key ways how producers in car industry address the business cycle challenges: **a) they are exploring ways to tighten inventories i.e. weed out low selling models**, and **b) they adjust prices**. The auto industry is seasoned in cost cutting measures in times of crisis, which was the best displayed in the wake of the 2008 market crash and the subsequent bankruptcies of many of the largest automotive players such as GM and Chrysler. These were followed by government bailouts, corporate acquisitions (Fiat bought Chrysler to form FCA) as well as drastic cost cuts in order to make operations viable. Experience with cost cutting should equip market players with the hedging abilities to circumvent some of the increase in input costs we see on the market today.

Aside from the already heavily discussed CO2 emission reduction targets, increase in commodity prices, notably fossil fuels, has further amplified the need to restructure the setup of drivetrains, and the car industry is, as a result, **experiencing a seismic shift from vehicles with internal combustion engines towards electric vehicles**. This was not only concentrated on the motion generating setup, but it also led the legacy market players to rethink their overall vehicle line-up and production. Many of the components of traditional internal combustion cars are rendered obsolete such as the drivetrain which is replaced by batteries. **This is bound to displace both production facilities and jobs**. Reliance on commodities remains, however in a different form, with more focus on Lithium and Nickel pushing **the EV production towards different cost dynamics i.e. battery price being critical for cost competitiveness and all major automakers forming strategies to reduce the battery cost**.

European Parliament and council agreed that by 2035 all new cars and vans registered in Europe will be zero-emission. In turn, legacy players like Stellantis, GM, Renault are already actively steering their strategy towards EV's, while innovative market players like Tesla in the US or Rimac in the Adria region – in part of battery production - set new benchmarks in EV technology. Also, electric vehicles are rising in popularity, as the stock of electric vehicles is rapidly rising globally. The highest yoy growth rates in stock in 2021 compared to 2020 were exhibited in China for BEVs (77% increase), Europe for PHEVs (79%) and once again Europe for BEVs (67%), with the electric car stock tripling in just three years. **EV sales in Europe continue to break records in 2021, with a 63% yoy increase to nearly over 1.2 million sales. This is 3.4 times as much as the EV tally in 2019!** The market share of EVs topped 10% for the first ever, up from 6.2% in 2020, 2.3% in 2019 and 1.3% in 2018. Plug-in hybrid vehicles also broke records with sales up 68% to just over 1 million deliveries. In total, plug-in vehicles had a market share of 19.1% of the total European car market, up from 11.3% in 2020.

Global growth comes despite a still underdeveloped infrastructure, limited range and high cost of EVs. Demand is boosted by government subsidies for EV purchase and inflated fuel costs. Adoption in the region is lagging to say the least, as charging infrastructure is very sparse and EVs are too cost prohibitive for region's consumers budgets.



BEV – battery powered electric vehicles

PHEV – plug in hybrid electric vehicles

„Other“ includes Australia, Brazil, Canada, Chile, India, Japan, Korea, Malaysia, Mexico, New Zealand, South Africa and Thailand. Europe in this figure includes the EU27, Norway, Iceland, Switzerland and United Kingdom.

Source: IEA analysis based on country submissions, complemented by ACEA; CAAM; EAFO; EV Volumes; Marklines. <https://www.iea.org/topics/energy-transitions>

The peer group we selected contains both automobile peers (marked light blue in the peer table) and auto component producing peers. Auto component manufacturers are far more numerous in the region, and to best display the variety of production sub-segments as well as for the sake of group representativeness. We selected companies producing diverse products – ranging from wire harnesses, hoses, alloy wheels, exhaust systems, exterior trim, seats etc. Our analysis mainly focuses on passenger/light commercial vehicle market segment. **The selected automotive players delivered aggregated sales of 2,569 mEUR in 2021, presenting -5.6% average yoy drop as well as a reduction of 25.6% lower than aggregated sales in 2019 – pre pandemic period.** That alone indicates the sector exposure to market turbulences and economic cycles in general.

At the moment when monetary tightening is stretching across the globe, that is an important indicator for stakeholders to bear in mind.

In 2020, the top lines of our peer group converged with broader auto industry trends. For example, Renault SA group revenue fell 21.7% in 2020, while in our peer group we observe a negative sales growth figures averaging -20.7% in 2020. This is a testament to the magnitude of the economic shock brought on by the pandemic and supply chain snags. A marked contraction in top line was observed in most of the peer group. Effects were felt through 2021, with most of the peer group displaying negative sales growth figures, although much less severe than those seen in 2020.

Company name	Sales EUR in millions			Sales growth %			EBITDA margin %			EBIT margin %			ROE %			ROIC %			Net debt/EBITDA			CCC in days		
	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021
AD Plastik	203.50	157.50	146.50	16.24	-22.61	-7.00	13.08	13.98	11.37	5.77	5.81	3.04	7.55	3.12	2.07	5.91	4.43	1.46	2.23	2.03	2.85	61.75	94.36	120.30
Rimac Group Doo*	21.83	29.08	26.83	168.66	33.21	-7.74	20.18	10.55	-206.62	10.58	2.48	-221.00	2.40	0.54	-25.98	1.89	0.38	-21.22	-6.04	7.64	-0.08	1237.65	1101.01	1164.02
FCA Srbija	522.38	369.27	344.82	-27.80	-29.31	-6.62	18.30	19.50	13.34	2.00	-4.15	-9.24	0.40	-6.55	-11.68	2.60	-4.29	-10.39	0.55	0.40	-0.97	-15.35	3.14	6.37
FCA Plastics	14.31	10.58	8.29	-27.30	-26.10	-21.55	17.20	22.45	26.44	1.20	1.64	1.61	-0.70	0.20	0.34	0.70	0.74	0.58	0.26	-1.00	-1.94	296.02	398.27	507.51
Aptiv Mobility Services	103.51	102.36	129.50	3.50	-1.11	26.52	10.90	6.48	9.04	4.20	-0.66	3.54	18.60	-7.85	31.58	14.70	-4.42	13.59	-0.34	0.40	0.53	-20.89	-13.81	9.81
Hutchinson	61.97	50.57	37.62	38.60	-18.41	-25.60	2.20	4.66	4.08	-0.80	1.10	-1.71	-80.00	-33.26	40.43	-1.40	1.57	-1.94	24.68	11.92	20.60	86.66	89.43	86.05
LBK Livnica	49.05	36.87	28.75	-6.50	-24.83	-21.92	8.50	9.98	5.96	2.10	-0.45	-6.37	7.90	-4.56	-21.13	4.50	-1.18	-11.16	1.42	0.83	2.28	-15.81	-8.86	-5.85
Kromberg & Schubert	247.90	210.06	199.93	n.a	-19.26	5.05	6.73	5.57	6.26	3.14	1.23	2.47	n.a	-1.57	9.11	n.a	3.32	7.56	-0.48	-0.55	-0.57	n.a	30.99	25.84
Revoz DD	1799.10	1391.49	1212.37	1.57	-22.66	-12.87	5.58	4.14	4.66	1.47	0.06	0.55	13.86	-0.94	3.64	12.25	0.39	3.69	0.42	0.12	0.06	-22.78	-24.30	-22.95
Akrapovič	129.23	127.17	150.01	15.88	-1.59	17.96	21.09	22.04	20.15	14.63	16.77	15.29	57.96	44.03	44.80	21.07	22.00	22.79	1.68	0.93	1.18	158.18	180.28	139.83
TPV Automotive	76.69	68.79	98.16	-10.54	-10.29	42.68	10.58	10.09	11.67	2.61	0.72	4.08	5.14	0.51	7.62	3.28	0.58	3.68	4.61	8.38	5.58	13.60	24.46	7.83
Adient Novo Mesto**	81.41	65.10	50.99	-10.17	-20.03	-21.67	3.84	3.23	10.43	2.33	-0.11	6.41	10.04	-2.82	13.60	8.35	-0.30	11.33	1.12	3.88	1.70	-18.27	-11.76	-28.72
Veritas Automotive	38.85	31.13	29.69	18.18	-19.85	-4.63	32.42	32.27	27.10	24.49	21.23	15.27	70.96	35.79	29.26	33.50	20.78	15.75	1.02	0.53	0.73	112.70	128.85	103.01
TMD Ai	45.60	35.97	46.93	-11.56	-21.12	30.50	3.64	-5.20	6.41	-0.61	-10.78	1.51	-18.95	-94.27	-3.16	-2.33	-41.87	10.03	7.08	-5.82	3.40	-26.18	-53.99	-61.62
Jajce Alloy Wheels	34.51	33.77	39.56	-3.55	-2.14	17.14	24.89	29.41	24.10	11.94	15.59	11.84	10.46	12.03	9.64	10.07	11.98	9.40	-0.13	-0.89	-1.80	183.38	211.52	149.54
Volkswagen doo	23.61	18.94	19.33	-1.96	-19.77	2.05	6.89	6.66	-1.05	0.00	-1.76	-7.94	0.93	0.27	-4.99	-0.15	-1.74	-7.75	-1.58	-1.38	10.64	179.25	244.76	236.93
Median All	69.3	57.8	49.0	-2.0	-19.8	-5.6	10.7	10.0	9.7	2.5	0.9	2.0	7.6	-0.4	5.6	4.5	0.5	3.7	0.8	0.5	1.0	61.8	60.2	55.9
Average All	215.8	171.2	160.6	n.a	-20.7	-6.2	12.9	12.2	-1.7	5.3	3.0	-11.3	7.1	-3.5	7.8	7.7	0.8	3.0	2.3	1.7	2.8	147.3	149.6	152.4
Median Autos	1160.7	880.4	778.6	-13.1	-26.0	-9.7	11.9	11.8	9.0	1.7	-2.0	-4.3	7.1	-3.7	-4.0	7.4	-2.0	-3.4	0.5	0.3	-0.5	-19.1	-10.6	-8.3
Average Autos	1160.7	880.4	778.6	n.a	-24.2	-11.6	11.9	11.8	9.0	1.7	-2.0	-4.3	7.1	-3.7	-4.0	7.4	-2.0	-3.4	0.5	0.3	-0.5	-19.1	-10.6	-8.3
Median Components	55.5	43.7	43.2	-2.0	-19.5	-1.3	10.7	10.0	9.7	2.9	1.2	2.8	7.6	0.2	8.4	4.5	0.7	5.6	1.1	0.7	1.4	86.7	91.9	94.5
Average Components	80.9	69.8	72.3	n.a	-13.6	3.5	13.0	12.3	-3.2	5.8	3.8	-12.3	7.1	-3.4	9.5	7.7	1.2	3.9	2.5	1.9	3.2	172.9	172.5	175.3

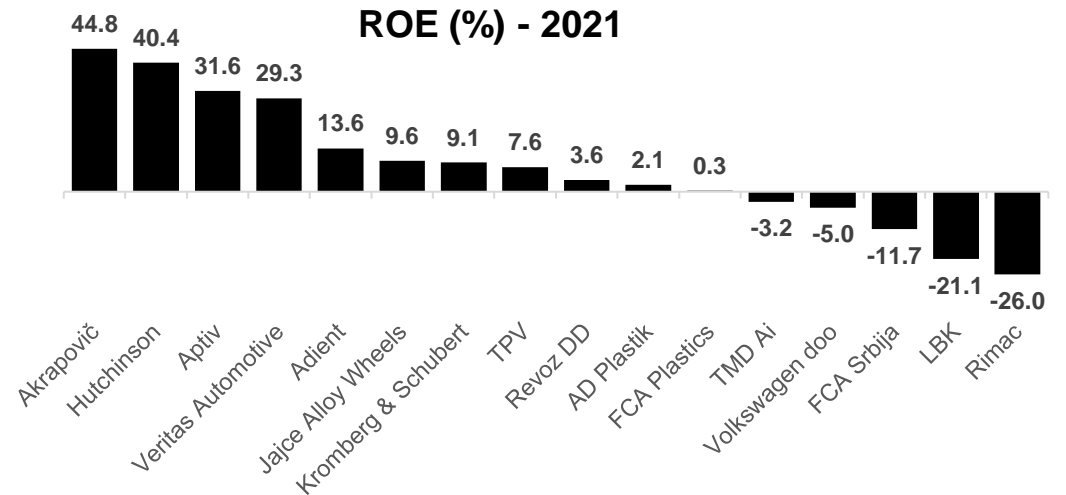
Source: Company financial statements, Bloomberg Adria Research; *please note that for 2021 not all figures for Rimac Doo are available, namely the 2021 statement of cash flows is not publicly available
 **for period 1.10.2020-30.09.2021

Automobile players in the region saw an average top line decrease of 11.6% in 2021. In the case of FCA, poor sales of the Fiat 500L and supply chain issues were the main causes of top line contraction. Production is currently halted, and facilities are being repurposed for the production of the rumoured Electric Fiat Panda in 2024. One part of the machinery has arrived to the Kragujevac plant and installation is in progress. Revoz DD also exhibits double digit percentual sales decline in 2020 and 2021, due to decreased output. Revoz experienced higher decreases in revenue compared to its parent company – Renault SA. Renault group sales increased by 6% in 2021, while Revoz' sales contracted by 12.9%. **Pressure on margins was evident mainly due to input cost hikes, resulting in declining margins yoy for both FCA and Revoz in the period 2019-2021.** FCA posted losses in both 2020 and 2021 resulting in negative ROE levels, while Revoz posted a loss only in 2020 amounting to mEUR 1.6, with a subsequent bounce back in 2021 to a mEUR 5.7.

While automakers were under downside pressure, the auto component end of the peer group performed stronger, exhibiting an average increase in top line amounting to 3.5% in 2021. Most of the peer group saw rebounding top lines with the biggest growth exhibited by TPV Automotive, TMD Ai, Aptiv, Akrapovič and Jajce Alloy Wheels. On the other hand, Players with the highest negative sales growth rates are Hutchinson, Adient, LBK Livnica and FCA Plastics. FCA Plastics' steep decline in sales can directly be attributed to lower output of the Fiat 500L, with the main product of FCA Plastics being Fiat 500L bumpers and the largest buyer being FCA Srbija. Despite top line contraction, even these players show steady margins yoy, with most exhibiting double digit EBITDA margins. The main exceptions being Hutchinson and LBK Livnica, posting single digit margins yoy. These players are highly exposed to the inflating price of commodities. Especially in the case of LBK Livnica which produces aluminum castings. That being said, the average ROE in 2021 for auto component players amounted to 9.5%, far outperforming auto manufacturers that exhibited an average negative ROE of -4%.

AD Plastik is a prime example of the auto industries' predisposition to extrinsic shocks. AD Plastik's top line sustained hard hits over the last three years, both from supply chain issues and more recently the geopolitical aspect of the Ukraine – Russia conflict. Top line consistently shrunk in the observed period. Production slowdown in 2020 is apparent with a double digit decrease in top line. Pressures on the bottom line further arose from a value adjustment regarding Russian operations, amounting to around mEUR 9.95 in 2022 (Russian plant production stoppage and subsequent asset revaluation).

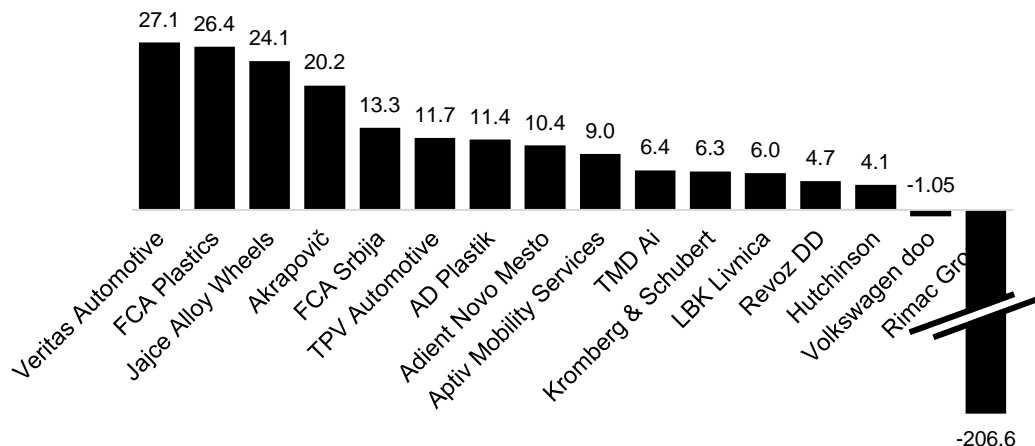
Producers of specialized, higher value-added products fared better in 2021, in terms of sales growth. Jajce alloy wheels, producer of high-end alloy wheels for the German market exhibited double digit sales growth. Akrapovič, producer of exhaust systems for automobiles and motorcycles also had double digit sales growth figures. **Producers of lower value-added non-differentiable products such as hoses or aluminium castings took a hit both in sales and profitability.** These include producers such as Hutchinson, LBK Livnica, FCA plastics and AD Plastik.



Source: Company financial statements, Bloomberg Adria analysis

Producers of high value components also boast double digit margins yoy. The outlier in this subgroup is Rimac, manufacturing highly specialized, high performance EV focused components and hypercars. Despite a relatively stable top line, every cost category in the P&L experienced a double to triple digit growth in 2021, outpacing top line growth, placing margins in the red and leading to a net loss of mEUR 71 in 2021.

EBITDA Margin (%) - 2021



Source: Company financial statements, Bloomberg Adria analysis

The value generated by Akrapovič is reflected in its financial performance. Their top line has consistently been growing since 2015, with the pandemic-stricken exception of 2020. The decrease in 2020 was symbolic (around 1.5% and is among the lowest percentual decreases in the peer group, second only to Aptiv). Since 2016, both EBIT and EBITDA margins remained double digit. ROE was also in the double digits in observed period. The average number of employees showed a convergent trend, rising yoy. The number of employees rose even in 2020 (by 10%), despite industry wide layoffs.

Even though Akrapovič's main revenue generator is motorcycle components (60.6% of total sales in 2021) while the auto segment accounts for 30.5% of total sales in 2021, we still believe that Akrapovič is representative of the fact that specialized, high value added, premium components serving a niche market segment can bring about stellar results. Aptiv displayed double digit margins and steady yoy top line growth. Aptiv produces wire harnesses for automobiles. Production is based on orders from OEMs. Aptiv utilizes the KSK harness concept. KSK harness is a customized wiring harness that is manufactured based on customer specifications. Harnesses are manufactured according to an individual list of modules, and each has an individual part number. In other words, harnesses are tailor made to consumer specifications, which adds considerable value. KSK gives way to production zero waste but requires high degrees of communication and coordination. This fact is also reflected in a favourable cash conversion cycle, much lower than Hutchinson, for example. As vehicles grow more complex, numerous ECUs (Electronic Control Units) are used to support a wide range of car features from power steering to airbag deployment. These ECUs require an increasing number of connections that are ultimately organized through wire harnesses. Wiring harnesses are not specific to ICEs, EVs only add to this complexity as the whole drivetrain is electrically controlled. Taking into account the increasing "computerisation" of cars, with computers regulating communication between different components, the demand for additional wire harnesses is apparent.

Financial distress resulting from shocks is evident in the increase in average net debt to EBITDA from an average of 1.7x in 2020 to 2.8x 2021 for the entire peer group. This effect is mainly due to diminished margins. Auto manufacturers managed to reduce their level of indebtedness reflecting in a decrease in net debt/EBITDA from 2.7x in 2020 to -0.3x in 2021. **Both Revoz and FCA Srbija significantly deleveraged their balance sheets.** Revoz decreased their short-term financial liabilities by 47% in 2021 compared to 2020, while the 2021 level is 92% lower than in 2019, pre pandemic. Number of employees decreased significantly – 23% decrease in 2020 compared to 2019 and a 13% decrease in 2021 compared to 2020. FCA Serbia also saw significant deleverage, but this is in the wake of production stoppages and uncertainties regarding the Kragujevac based plant. Auto component manufacturers showed an opposite trend with average net debt/EBITDA increasing from 1.5x in 2020 to 3.5x in 2021, predominantly due to decreased EBITDA **Both auto manufacturers and auto component manufacturers are financed primarily by intercompany loans or capital infusions. The loans are approved and granted on Group level, and thus subsidiaries have little control over indebtedness levels.**

Rimac - often wrongfully perceived as exclusively a hypercar producer - **is primarily a component producer whose main goal was to use the hypercar production as a platform to launch and promote their engineering innovation and know-how.** For the sake of simplifying their corporate structure, maintaining independence in production for other car brands, strictly differentiating their two business segments, and given the merger with Bugatti, Rimac Automobili was split into two legal entities in the second half of 2021 – Bugatti Rimac and Rimac Technology. That said, Bugatti Rimac will be a legal entity focused on the production of hypercars under the brands of Bugatti (e.g., Chiron) and Rimac (e.g., Nevera). On the other side, production of electric powertrains, battery systems, infotainment systems, autonomous-driving technology etc. will be the main tasks of Rimac Technology. Despite being more famous to the masses for the production of the fastest overall car and the fastest accelerating car (Nevera), Rimac is in the relevant car-making business area mostly known for its high-performance components being incorporated into cars produced from legacy OEMs such as Porsche, Aston Martin, Pininfarina, Koenigsegg, etc.

The financial statements of two separated entities have not yet been made available to the public, thus we are unable to analyse business performance. However, logic dictates that Rimac Technology will be an extremely complex entity powered by high capital requirements (robotization of manufacturing plant) in order to achieve a large-scale serial production of components and trumped by the large workforce working on R&D. Rimac Technology will expectedly have two main revenue streams such as production of rolling-chassis and production of components. Aside from the sale of Concept One, these two business units were the main revenue generators in the previous combined entity.

Looking at historical numbers presented in the income statement distorts the picture due to situation being significantly worse from the cash flow perspective. A substantial amount of salary expenses is being capitalized and not yet amortized, since Nevera commercialization started only in 2022. In 2020, **despite delivering positive bottom-line result, Rimac Automobili had negative operating cash flow of 48.9 mHRK (2019: - 84.7 mHRK). Even more worrisome is the investment activity displaying 81.2 mHRK spent on tangibles and 249.7 mHRK development costs being capitalized** – proof to our statement that this company is both labour and capital intensive.

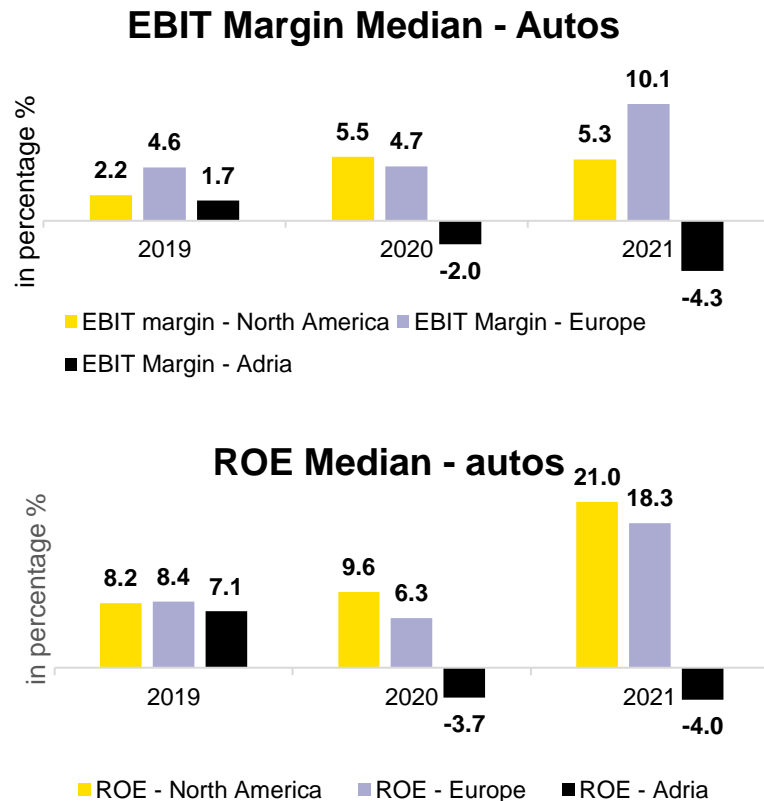
Many components developed for the purpose of Nevera production will be sold to other OEMs. However, the split of development costs being capitalized - during Nevera development - between the two established entities is not yet clear.

There are many challenges going forward. **Rimac will need to make a transition from a producer of a handful units a year to a serial producer that is able to deliver thousands of components a year, followed by strict deadlines and complex logistics coming hand in hand with such delicate components.** In addition, serial production sometimes brings unexpected issues related to quality, car recalls, etc. – things that may damage the reputation of a business irreparably and matters that are not a rare occurrence in the automotive industry. On a positive note, we see tremendous pricing power in the luxury hypercar production segment i.e. in the newly formed entity Bugatti Rimac. Bugatti and Rimac both represent a so-called scarcity product with just a handful of units that are being produced for each model. Prices of such products can normally be increased by a double-digit percentage with no effect on demand.

In the component production business, we have a perfect example of Akrapovič that being a market leader in particular segment builds road to remarkable returns and positive cashflows. **Given the achievements of producing the fastest car and fastest accelerating car out of scratch, we believe Rimac has a lot to offer in terms of components to OEMs.** However, Rimac Group success will be dependent on the willingness of capital backers to support the business scaling period and their patience for cashflow profitability.

Automobiles

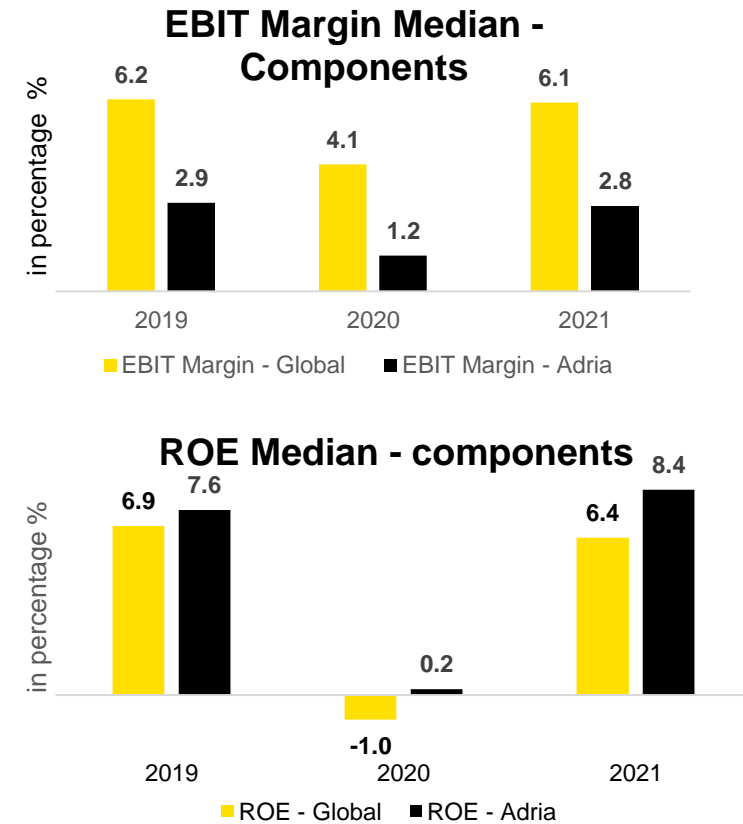
The Adria automobile segment **has underperformed compared to its western peers both in terms of EBIT margin and ROE**. In 2020, both Revoz and FCA Serbia posted losses, while in 2021 ROE levels were negative due to FCA Serbia's loss amounting to EUR 32.8 million. European ROE levels reflect difficulties faced during COVID, with a 2.1% drop from 2019 to 2021 and a subsequent bounce back from the 2020 low by 12%. The US peer group followed a steady upward trend, outperforming Europe in 2020 and 2021.



Source: Company financial statements, Bloomberg Terminal, Bloomberg Adria analysis

Autocomponents

The autocomponents segment shows the opposite – **the Adria region outperformed the global peer group in each observable period in terms of ROE**. This is most likely attributable to lower levels of capital held by local players compared to their respective groups. Bottom line strain is evident in 2020. Adria region component manufacturers underperformed compared to global peers. The trends do converge, with a noticeable slump in 2020, and a recovery in 2021.



Source: Company financial statements, Bloomberg Terminal, Bloomberg Adria analysis

Auto component firms often come in the form of greenfield investment in the region - companies like Aptiv or Hutchinson set up their facilities from the ground up. They bring in their own machinery and tooling. **Greenfield investment allows for superior control over production and benefits from the region's lower operating costs and subsidies granted by the government.** These companies are subsidiaries of large international conglomerates and produce according to group instructions. In other words, they are contract manufacturers for the rest of their respective groups. On the other hand, investments like **Renault's in Revoz and Fiat's in Serbia are brownfield investment where existing facilities are taken over.** These investments came after decades of strategic cooperation between Renault and IMV (Industrija Motornih Vozil), or in the case of the Serbian Market – Fiat and Zastava Automobili. FCA Serbia doo was established in 2008 by Fiat Chrysler Automobiles, now Stellantis with a 67% share and the Republic of Serbia holding a 33% share.

Component producers were generally not enticing to legacy players since Adria component producers were mainly devoted to the low-cost production of low value-added components. In addition, as a result of exceedingly complex value-chain production, automotive companies have not leaned towards vertical integration. However, in-house production of key components such as e.g., internal combustion engines was something to which automotive producers were committed in order to distinguish themselves from the competition and in order to have a profit-generating business.

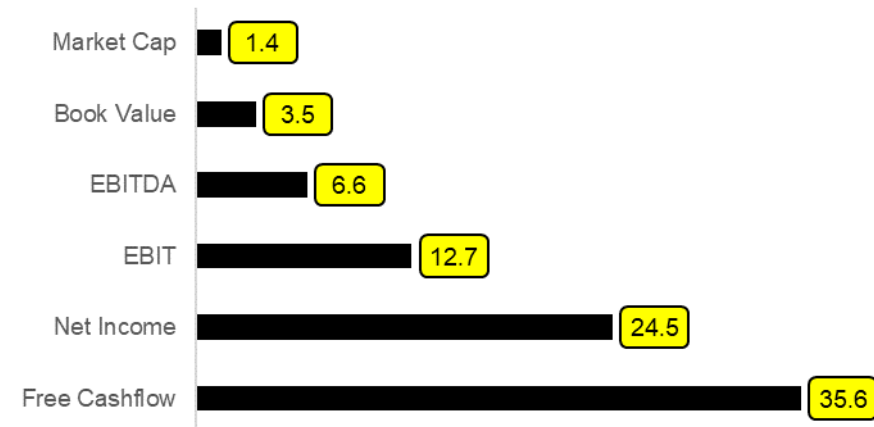
That being said, in recent years, **we have witnessed a shift of foreign investments towards Adria region companies, driven mainly by the presence of Rimac Automobili.** Rimac Automobili is the first Adria region producer of high value-added, key components such as electric powertrain systems, rolling-chassis, and infotainment systems. Individually, these represent the most complex, the most expensive components, with the longest market duration. Engineering accomplishments did not remain unnoticed by legacy players such as Porsche AG (owned by VW) or Hyundai Motor Group and have resulted in multiple significant minority investments over the years. In the latest - Series D funding - Rimac has managed to raise 500m EUR from prominent companies such as Porsche, Goldman Sachs, Softbank and Investindustrial. In the previous rounds, Rimac has raised 30m EUR from Camel group, 80m EUR from Hyundai Motor Company and Kia Motors (both owned by Hyundai Motor Group), 120m EUR from Investindustrial. Porsche, as the largest owner of Rimac Group, aside from Mate Rimac, has taken part in several investment rounds and now owns 24% of Rimac Group.

Due to virtually non-existent M&A transactions in the Eastern Europe over the past 5 years, be it in car production or car component production, we present the median multiples and a list of M&A transactions for Europe in general.

M&A transactions in Europe - auto components sector (Nov 17 - Nov 22)

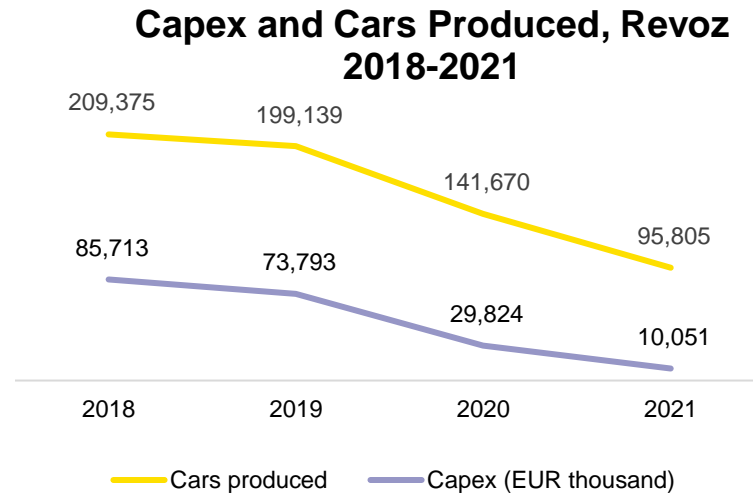
Year	Target name	Acquirer name	Announced value (in mEUR)	Multiple of EBITDA
2018	GKN Ltd	Melrose Industries PLC	9,325	7.0
2021	Veoneer Inc	SSW HoldCo LP	3,340	n.d.
2020	Borgwarner Jersey Ltd	BorgWarner Inc	2,279	6.6
2021	Hella GmbH & Co KGaA	Faurecia SE	1,300	7.7
2019	CIR-Compagnie Industriali Riunite SpA/Italy	CIR SpA-Compagnie Industriali	1,142	3.7
2018	Grammer AG	Ningbo Jifeng Auto Parts Co Ltd	770	n.d.
2021	AKASOL AG	BorgWarner Inc	687	n.d.
2022	Haldex AB	SAF-Holland SE	349	7.7
2021	STS Group AG	Adler Plastic SpA	76	6.0
2021	Carraro SpA/Campodarsego	Private Investor, Finaid SpA	54	6.2
2021	AKASOL AG	BorgWarner Inc	51	n.d.
2020	Blue Solutions	Bollro SE	22	n.d.

Deal median multiples - auto components - Europe (Nov 17 - Nov 22)



Source: Bloomberg Terminal, Bloomberg Adria analysis

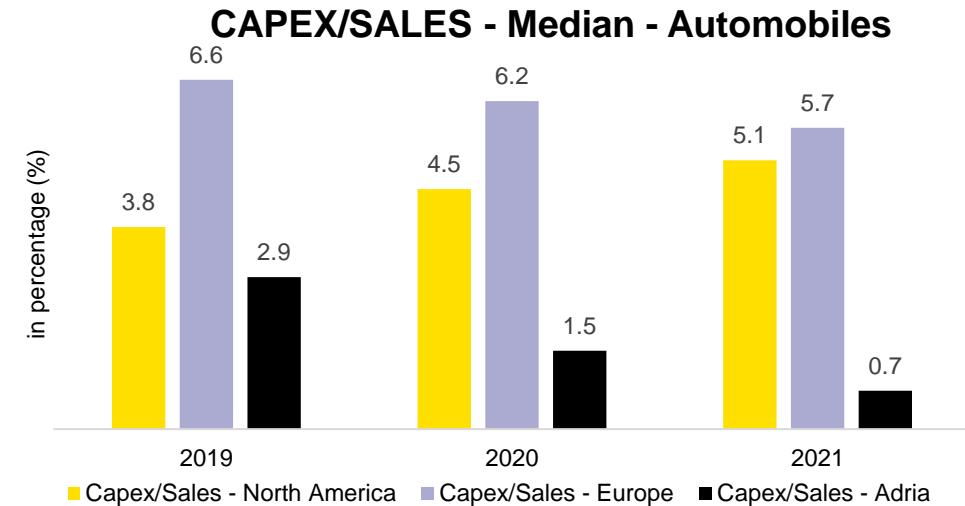
Market uncertainty led to decreased capital investment in the past 3 years. In 2020, the divestment is most apparent. Divestments from capital followed reduced output and in some cases production stoppages. The correlation between capital investments and output is evident when observing Revoz DD.



Source: Company annual reports

Decreasing output corresponds to a decreasing level of capital investment. The production slowdown in 2020 due to Covid related lockdowns led to pronounced pessimism in the auto industry. Thereby, capital investments, costly and long term focused, were put on the back burner. **Capital investments in the auto industry are predominantly focused on new production lines in order to ramp up output and/or broaden product range.** Comparing Revoz to FCA Serbia, Revoz's capital investments in facilities for EV manufacture were made before the pandemic. Revoz is relatively better disposed in the shifting tide toward EV's, as it already manufactures the Twingo Electric. Therefore, timing is of the essence for these investments, in order to keep up with market trends.

That being said, the capital expenditures have slowed and this trend is convergent with that of the European automobile market:

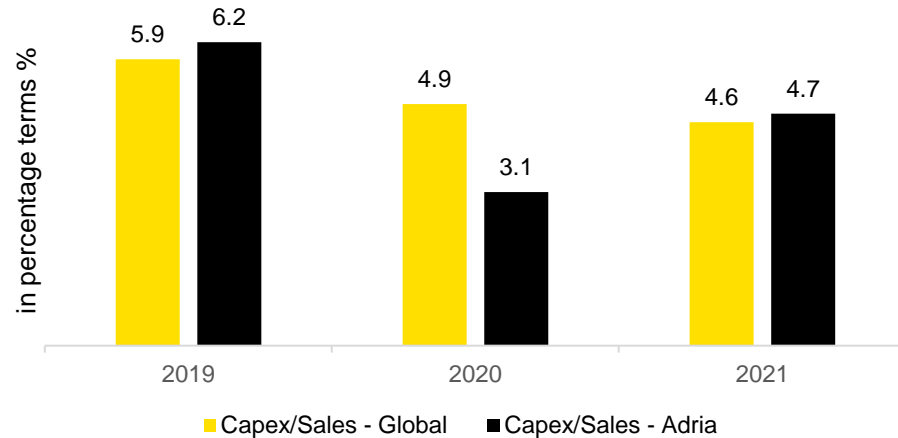


Source: Company financial statements, Bloomberg Terminal, Bloomberg Adria analysis

Capital expenditures in Europe have slowed yoy, while US capex has followed a moderate upward trend. **Adria region Capex has underperformed compared to western peers, mainly buffeted by declines in FCA Serbia and Revoz Investments.** Data for Rimac capex level in 2021 is unavailable due to the aforementioned restructuring. Lower capex to sales rates in Europe can also be explained by the amount of value added. The most complex production stages are still concentrated in European OEMs, while less complex production stages are outsourced to the Adria region. For example, FCA Serbia is essentially an assembly plant for the Fiat 500L. The same is true of Revoz.

Auto component manufacturers in the Adria region kept pace with Global investment levels, even outpacing them in 2021. The year 2020 proved to be especially demanding, as Adria region median Capex/sales was 1.85% lower than the Global median.

CAPEX/Sales - median - Components



Source: Company annual reports, Bloomberg terminal, Bloomberg Adria Analysis

The main challenge for auto component manufacturers going forward will be maintaining the level of investments, not only due to weakening fundamentals to support sales but also given the rise in cost of capital courtesy of the global monetary tightening. Also, investments toward EV production will be of the essence in order to keep up with automakers ambitious EV strategies, as well as those of regulators. The main challenge posed to the automobile end of the Adria market will be the lingering effects of divestment. Divestments could indicate a non-defined strategy for EV production or even for general production, which is true in the case of FCA Serbia. Fears of declining demand also buffeted capital investments. Decreased capital investment will very likely result in lower production volumes.

Large global legacy automotive players Stellantis and Renault SA both reported increased sales for Q3 2022. More precisely, 29% increase compared to Q3 2021 and 20.5% increase for the same period, for Stellantis and Renault, respectively. **Supply chain issues with semiconductors eased in 2022, leading to higher volumes produced and orders fulfilled.** Despite a low base year, Stellantis Global BEV Q3 sales grew 41% yoy. The same is true at Renault – their E-tech range (electric and hybrid) accounts for 38% of Renault Brand car sales in Europe in the first 9 months of 2022, and is up 12% yoy.

Strong pricing has been paramount for automakers in 2022, while underlying demand was relatively weak – down 10% through September and 32% lower vs. 2019 for new cars in the EU. **Maintaining price discipline going forward will be vital for retaining sales levels amid timid demand.**

The demand in the region lies heavily in favour of used cars. Circa 98% of Revoz output is exported – around 60% to France, 20% in Italy, while only around 1% is sold on the Slovenian domestic market. The same is true for FCA Srbija with 94% percent of product sales are generated from the foreign market. **Therefore the regional demand is not a significant determinant in the new car market.** On the supply side, the region is very significant, especially for components.

The apparent shift toward EVs will steer demand away from components that are specific to internal combustion vehicles. The attractiveness of the Adria Region market for autocomponent manufacturers is clear. Attesting to this, ZF group opened a production plant for EV components in Pančevo in 2019, with another factory being built as this report is being written. ZF received mEUR 45.5 as well as 16 acres of free land for their production plant. ZF is not an outlier here. For example, within the observed peer group, Hutchinson and Aptiv benefited from state subsidies, in exchange for meeting employment and investment quotas. Therefore the region is ripe for production of diverse autocomponents, including EV specific components, and as such we expect more similar investments in the region. A brief digression, EVs are technically zero emission. However, **the question remains how the raw material for batteries will be sourced and how the batteries will be disposed off sustainably in the long run.** Also, existing electrical power grids would have to increase their capacity. The region is mainly powered by thermal power plants. If EV adoption rates take off, these power plants would have to up their capacity, directly increasing CO2 emissions. Alas, in the medium term, players who are producing EV related equipment will be better positioned to respond to these policies.

Outlook for the overall auto industry is grim and we think that recession fears, high interest rates, low consumer confidence, inflated fuel costs, input costs will remain the principal headwinds for the industry at least through 2024. Another element is pricing, which before was the car makers' strong side, however now with used car prices falling Europe-wide we see downward pressure to new car pricing materializing as well. In the wake of these factors, automotive players should leverage their main strengths – an integrated market, strong brand recognition and wide product portfolio. We already saw that car makers can respond well to consumer demand. For instance, in the last 5 years, crossover and SUV (sport utility vehicles) shot up in popularity amongst consumers. Responding to this, car makers that were already producing these vehicles ramped up production, while many producers who did not have a crossover in their line-up, introduced one or more to suit consumer demand. Legacy players' shift towards EV's was also relatively prompt. **This shows that automotive players are quick to respond to consumer demand, despite high development costs for new vehicles.** As we have seen, a new vehicle can be introduced with minimal costs by sharing the platform, engine and parts with other vehicles in the product line, or even in a deal with competitors. **Despite these strengths, we do not expect order intake or output to return to pre pandemic levels quite soon.**

Term	Definition	Formula
ROE	Return on Equity	Net income/average total shareholder's equity
ROA	Return on Assets	Net income/average total assets
ROIC	Return on Invested Capital	(EBIT - income tax)/ average invested capital
INVESTED CAPITAL	Invested Capital	Short-term debt + long-term debt + provisions + long-term payables + deffered tax liabilities
AR DAYS	Accounts receivables days	Average accounts receivables/Sales revenues*365
AP DAYS	Accounts payables days	Average accounts payables/(cost of materials + cost of services)*365
INVENTORY DAYS	Inventory days	Average inventory/cost of materials*365
CCC	Cash Conversion Cycle	AR days + Inventory days - AP days
INTEREST COVERAGE RATIO	Interest coverage ratio	EBIT/interest paid
CURRENT RATIO	Current ratio	Current assets/current liabilities
NET DEBT/EBITDA	Net debt/EBITDA	(Long-term debt + short-term debt - cash)/EBITDA
NET DEBT/EBIT	Net debt/EBIT	(Long-term debt + short-term debt - cash)/EBIT

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