European Automotive Newsletter

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July 2023

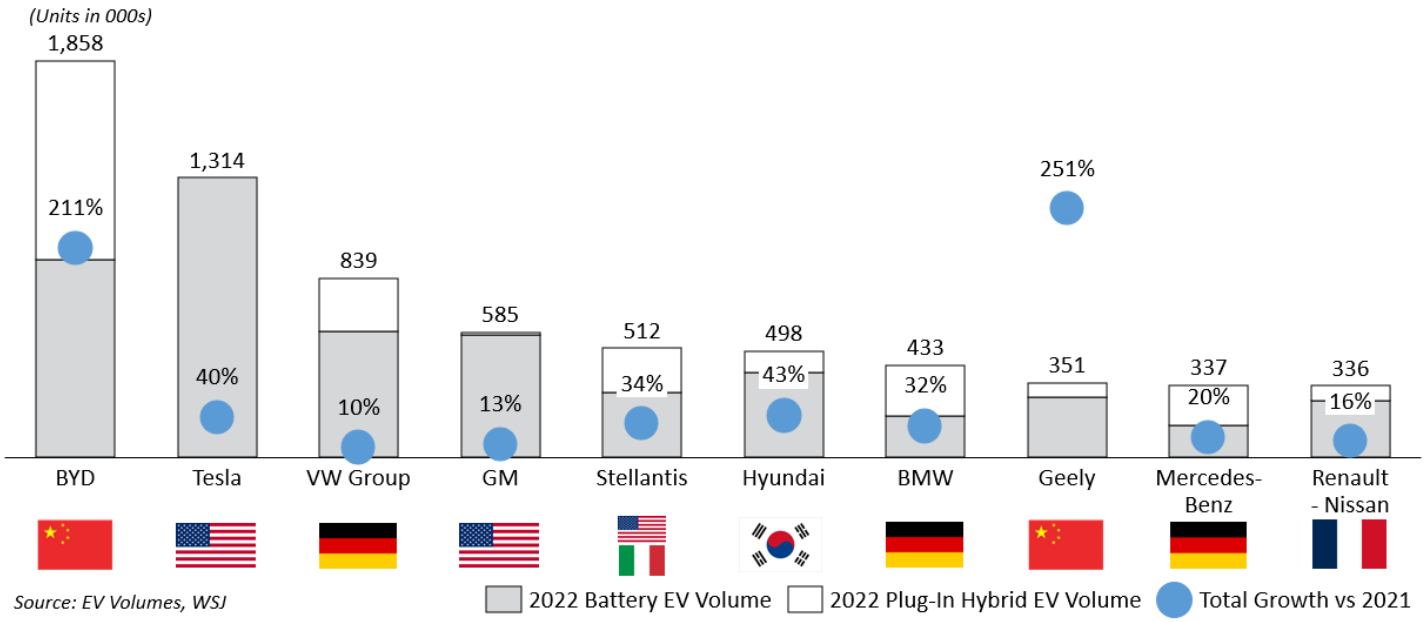
Industry Focus: The Global 'Race' to EV Dominance

In 2022, EV sales reached 10 million units and exceeded 14 percent of global car sales for the first time, with automakers around the world making it clear that they recognize EVs as the future. With over $1.2 trillion committed to the expansion of EVs and their batteries through 2030, the race for the top spot in global EV growth is only just beginning.

Competition is heating up, but big names are falling behind

The competitive landscape that has long been dominated by internal combustion engine vehicles is undergoing a significant transformation with the rise of electric vehicles– both by manufacturer and geography:

2022 Global Electric Vehicle Sales Volumes



Source: EV Volumes, WSJ

When considering only battery-powered EVs (BEVs), Tesla remains the global leader in unit sales. However, Chinese manufacturer BYD experienced a boom in growth for both plug-in hybrids (PHEVs) and BEVs after shutting down production of all internal combustion engine models in April 2022. Continuing to eye aggressive expansion in export markets and with plans to build a new European plug-in factory by the end of 2025, BYD is emblematic of a rapidly growing (and world-leading) Chinese EV market.

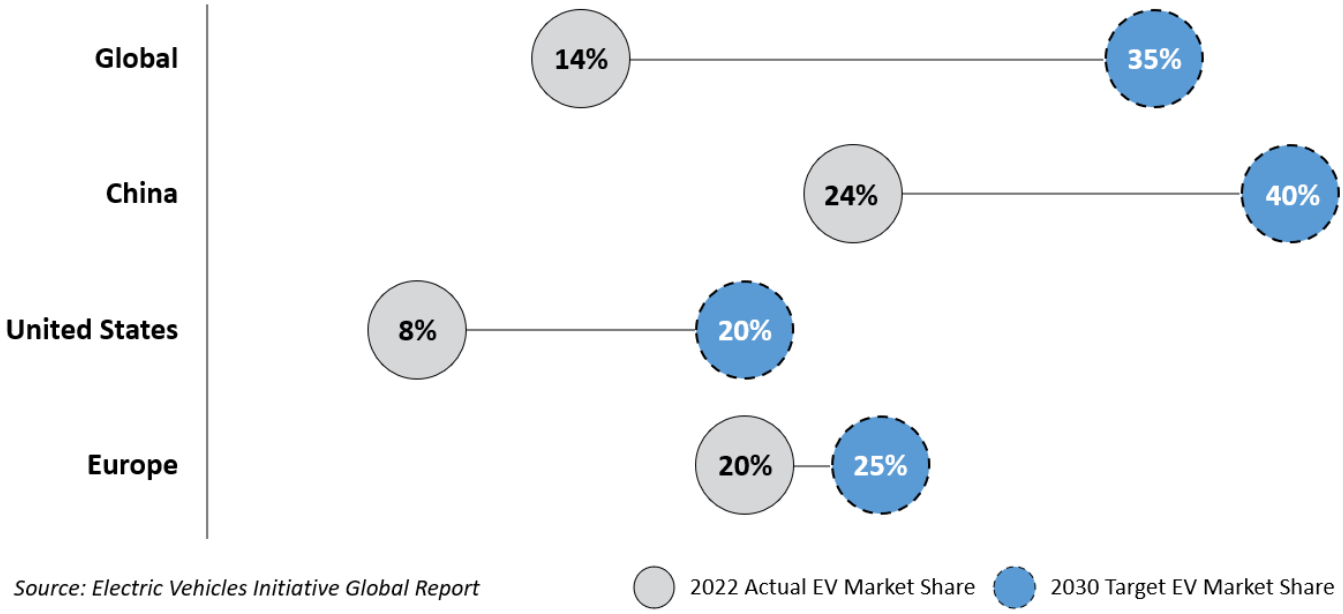
Industry Focus

The Global 'Race' to EV Dominance

China leads the way

Sales of EVs (PHEVs and BEVs) more than doubled in China in 2022 compared to 2021, accounting for nearly 25 percent of all new vehicles sold (the U.S. hit 8 percent of total light vehicle sales in 2022). While Tesla is a leading performer in the Chinese market with Model 3 and Model Y vehicles assembled in Shanghai, lower cost domestic brands BYD and Wuling Hongguang have rapidly grown their market shares based on aggressive production plans. Additionally, EVs are exempt from license plate restrictions in China's major cities, contributing to significant growth in their share of new vehicles sold.

Electric Vehicle Market Share: 2022 Actual to 2030 Target



Source: Electric Vehicles Initiative Global Report

Chinese exports of EVs also more than doubled in 2022 compared to 2021. Tesla's European shipments of the Model 3 and Model Y out of its Shanghai Gigafactory significantly expanded in 2022, and it anticipates continued growth. European manufacturers such as BMW and Renault have a number of EV models that are manufactured in China and designated exclusively for export.

Toyota has been notably absent from the global EV stage . . . until now

The Japanese automotive giant has lagged its traditional competitors in the EV market, with less investment and focus on electric vehicle development. However, recent changes to senior management and growing market pressures seem to have laid the way for new plans; earlier this month, the company announced an additional $7.0 billion in planned investments. The company's new goal to manufacture and sell approximately 200,000 EVs for the current fiscal year represents an almost five-fold increase from the previous year.

While Toyota has trailed its competitors in the BEV market, it remains the market leader for hybrid gas-electric vehicles that it first pioneered in the late 1990s. The company continues to generate significant revenue from its hybrid gas-electric vehicles, but now intends to allocate a larger portion of those funds towards the development of BEV platforms. Toyota plans to introduce at least 10 new BEVs by 2026.

The time for transformation is now

On the needs and perspectives of the automotive industry with a focus on transformation and supply chain

In May 2023, Dr. Geng Wu joined A&M as Managing Director and leader within the European Operations & Supply Chain as well as Industrials practice. Given his industry background as SVP of procurement at Volkswagen and his decade-long experience as a consultant at McKinsey's automotive and operations practices, we would like to share his perspective on the state of the industry and its need for transformation.

Geng, last year, you were in the war room in the Volkswagen Arena in Wolfsburg to lead the Ukraine taskforce of Volkswagen AG and its cable suppliers, what were the key learnings from that that experience?

Three things were remarkable: First, the power of hidden knowledge and capabilities within a large organization. Many people have great knowledge and capabilities hidden and that are not used in the everyday line of work. But when the platform is burning, bringing the people together to show their true talents will bring some positive surprises. Second, it is amazing to see how almost all internal politics and bureaucracy – what normally hinders speed and efficiency – can be left out when the external threat is eminent. When we had to react fast to secure our cable supply to prevent eminent factory shutdown, I witnessed the whole cross-functional team working as one. Third, the risk of the crisis was just a symptom of the strategy of the past of many OEMs. We had to detect the root cause and implement systematic change from cost-focus only to broader focus on supply security and quality, which might sometimes be a trade-off to cost focus.

Coming from this specific case to a broader perspective for the industry, what are the challenges for automotive OEMs and suppliers in the coming years?

Well, the automotive industry in general has to transform from ICE to EV and from a hardware/vehicle-based business model to a software-based business model. But I think that is all known and clear. Let me share some perspectives, especially on operations. To finance the technological transformation, the operations functions (e.g., production, procurement, logistics) have a huge responsibility as they are responsible for over 75% of the P&L. In addition, most of the direct employees are involved in operations and they are key to a successful transformation in many ways. The technological transformation is also a human capital transformation. Just think about the transformation from need of mechanical engineering capabilities in the past towards need of software and chemical engineering capabilities for the future. Besides human capital, also all other forms of capital and corporate capabilities needs to be trans-formed.

This is a huge challenge for a lot of the established automotive corporations with a lot of legacy. The list goes on and on. But bottom-line, the biggest challenge is the reinvention of one's own business model, building new capabilities without losing one's old virtues and find a way to finance this reinvention.

There are many textbook approaches to transformation, what would be your personal view on what makes a transformation successful?

You are right, there are many textbook pieces of advice. So, we do not need to mention the setup of a transformation in general again. Let me share some insights on what I think makes the sustainable execution of transformation successful:

First, you need clear and engaged top-down leadership. You should involve a large group of the management, but only delegation will not signal the importance of a large-scale transformation.

Second, with clear top leadership, you need to empower a large-scale middle and lower management, finding young talents, and let a broad scale of people shine. This multiplier effect will echo through the whole organization including all operative employees

Third, have the right basics and tools in place. It might seem textbook, but a clear KPI and target system, a clear tracking system, a motivational incentive system, and the right digital and technical support to help the employees are must-haves for each transformation

Fourth, you must have endurance. A transformation will take a while and is daunting. Make sure to celebrate every small success, communication through all channels (townhalls, newsletters, dedicated transformation intranet site, video massages, fire site chats, you name it) and find an incentive system (career progress + visibility (honor) + monetary incentives) for at least 2-3 years.

"The automotive industry has to transform from a hardware-based to a software-based business model"

The time for transformation is now

On the needs and perspectives of the automotive industry with focus on transformation and supply chain

This sounds reasonable, but also quite complicated. If I would be a top manager who wants to initiate a holistic transformation, where and how can I start?

Well, it sounds complicated, but it is about launching it holistically, with the right people across hierarchies, have consistent and clear communication on all levels, and most importantly: endure, keep it up. It is the lack of endurance which often kills the transformation. We start with a big bang, but then delegate it down and treat it as a standard large project. So, if you are a top decider, I would advise you to make a specific plan of how to keep the initial spirit up with the right system, tools, people, and incentives.

From a holistic transformation to one of your specialties: procurement. Where do you see the challenges and opportunities here?

In industrial companies, (indirect and direct) procurement often own 60% of the whole P&L. Hence, the function will stay relevant.

However, procurement has to build new capabilities which has not been the main focus in the past. Historically, procurement has a strong focus on supplier qualification, sourcing and negotiations. In the future, when global supply chains are shaking due to political and socio-economical instabilities, when sustainability will drive the supply (partially enforced by regulations), and when product cycles will further shorten and innovations must come faster from suppliers and processed faster by OEMs, procurement must widen its focus, its target system and its talent base.

Moreover, there will be an even faster shift from operative to strategic procurement. The leaps in the development of artificial intelligence (AI), a lot of the transactional work – especially in the procure to pay process – will likely not require human interactions any more in the near future. The purchaser can then focus on strategic work requiring creativity, conceptual and analytical thinking and relationship building.

Beside your practical experience in the industry, you have quite some consulting experience. How have the topics changed over the years for procurement

When I conducted my procurement projects over a decade ago, the classical topics were linked to cost-down, material cost savings and negotiations, operating model optimization, or process improvement. Nowadays, these topics are still relevant, but procurement has become more complex and there is a general shift of focus from pure “buying” to supply chain management, sustainability and risk management. For example, whereas cost was the focus of the procurement function for the past decade, capacity assurance has been much more in the focus for the past three years. Considering the fragile global supply chain and the geo-political tensions which might disrupt this fragile supply chain, the procurement function has a lot of challenges and a high workload ahead.

In addition, since the challenges are more multidimensional, the necessity for cross-functional work (e.g., with technical engineering, production, logistics, sales, quality) has increased. Many large corporations still operate with a philosophy of division of labor and responsibility. So, a lot of my work also evolves around connecting the functions, tying them to cross-functional targets, and ensure streamlined processes.

ABOUT GENG WU

Geng Wu is a Managing Director with Alvarez & Marsal Corporate Transformation Services in Munich. He brings more than 15 years of experience in consulting and industry leadership roles, focusing on performance improvements and turnarounds in operations and procurement.

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Inventory

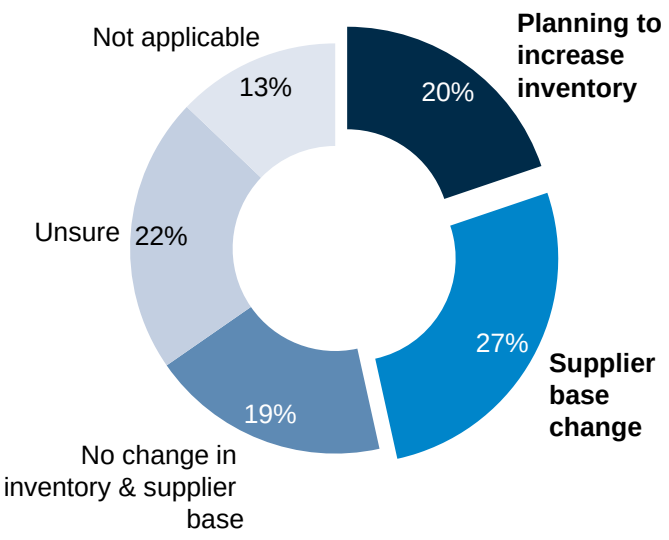
The expensive safety net for automotive suppliers

Inventory - The expensive safety net for automotive suppliers

For years, optimizing inventory levels has been a primary focus for all manufacturing related industries. Stock levels are usually called as one of the waste types according to lean principles and different tools are leveraged to control the inventory and push the levels down as much as possible.

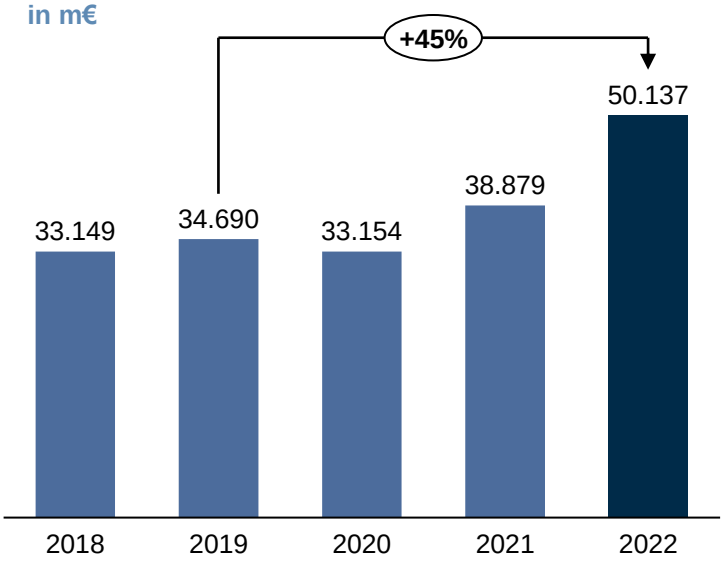
However, in the past three years, the manufacturing sector, particularly the automotive industry, has undergone significant changes, including the impact of the COVID-19 pandemic, raw material shortages (including chips), unexpected increases in inflation rates, and geopolitical developments such as the armed conflict in Ukraine. As a result of these developments, companies have made a deliberate decision to increase their inventory levels to enhance the resilience of their supply chains. According to a survey, approximately 20% of companies have the intention to further increase their inventory levels to create a stronger safety net for their operations. This indicates a proactive approach to address potential disruptions. 27% of the companies want to keep their inventory levels but improve their supply base to prepare themselves for further disruptions.

Inventory strategy survey



Source: Source: BCI Supply Chain Resilience report

Automotive suppliers total inventory development in m€



Source: Source: A&M Automotive study 2023 – S&P Capital IQ, Statista

If we examine the actual development of inventory figures among automotive suppliers in recent years, we observe remarkable results.

The inventory figures of the top 11 automotive suppliers by more than 50% from 2018-2022, with the majority of this increase occurring between 2021 and 2022. This clearly indicates that the automotive executives are relying on inventory development to increase their supply chain resilience and safety to absorb market fluctuations and other disturbing factors. But how long can this trend be kept? Should we approach this problem differently to maximize shareholder value for mid & long term?

What can be done to improve this situation?

In the current dynamic market environment, with sudden changes that might have tremendous or even fatal impact to global supply chain, traditional inventory management techniques are no longer sufficient. To thrive and succeed in a highly competitive market companies should leverage their inventory management with digital-advanced forecasting, intelligent and dynamic inventory modeling, supply chain rethinking, and footprint optimization.

Inventory

The Expensive Safety Net for automotive suppliers

Rethinking supply base & footprint optimization

With a reliable supply base, inventory levels can be optimized to match the actual demand, minimizing carrying costs and the risk of stockouts. When rethinking the supply base, organizations can diversify their supplier sources and reduce single-source dependencies. This helps mitigate risks associated with supply disruptions. By having multiple suppliers, organizations can distribute inventory across different suppliers, reducing the impact of any single supplier's failure or disruption.

In light of the COVID-19 pandemic and geopolitical changes in past years, footprint optimization has been a focus topic for European companies. It involves strategically locating warehouses, distribution centers, and production facilities. The impact of footprint optimization is to minimize transportation and operational costs, reduce lead times, and inventory levels. Companies would need to better analyze customer demand patterns, geographic factors, and supplier networks, and eventually be able to determine the optimal locations for the facilities.

Advanced forecasting

Understanding demand and forecasting is the foundation of successful inventory management. Advanced forecasting techniques employ data analytics, machine learning, and artificial intelligence to predict future demand patterns with greater precision. By analyzing historical sales data, market trends, customer behavior, and external factors, businesses can anticipate demand fluctuations, seasonal variations, and market dynamics. This enables proactive decision-making, such as adjusting production levels, optimizing order quantities, and minimizing stockouts or excess inventory.

The benefit of advanced forecasting is widely known, but companies found it difficult to start, as on one hand there are many variables and influencing factors to be considered, and on other hands so many methods, tools, and technologies to choose. Before starting with advanced forecasting, companies need to understand first the cost of forecasting to total cost, and then decide which techniques to use.

In summary, there are three types of techniques as base for advanced forecasting: qualitative techniques, time series analysis and projection, and causal models.

1. The first uses qualitative data (expert opinion, for example) and information about special events of the kind already mentioned and may or may not take the past into consideration.
2. The second, on the other hand, focuses entirely on patterns and pattern changes, and thus relies entirely on historical data.
3. The third uses highly refined and specific information about relationships between system elements and is powerful enough to take special events formally into account. As with time series analysis and projection techniques, the past is important to causal models

Dynamic inventory management

Traditional inventory models often rely on fixed parameters and static assumptions, leading to suboptimal inventory levels. Intelligent and dynamic inventory modeling takes a more sophisticated approach by continuously analyzing real-time data, supply chain dynamics, and customer preferences. These models employ algorithms that adapt to changing conditions, allowing businesses to make agile inventory decisions. By integrating variables such as lead times, supplier reliability, customer demand, and service level requirements, intelligent inventory models optimize stock levels, reorder points, and safety stocks.

To summarize, inventory increase is an effective short-term measure to cope with the disruptive changes within the supply chain due to global, political and environmental factors. Automotive suppliers need to equip themselves with additional capabilities to enable them apply different solutions other than inventory build up as a countermeasure for these disruptive factors. These countermeasures are both technological as well as structural changes. Based on A&M's experience, these changes are crucial for the survival of companies.

Transaction activity

Stellantis Ventures is investing in EV Battery startup Lyten, hoping to accelerate development on a lighter and more energy efficient lithium-sulfur battery. Ford and Tesla have announced a partnership that grants Ford owners access to over 12,000 of Tesla's fast chargers. Semiconductor manufacturer Qualcomm has announced its acquisition of Israeli chip manufacturer Autotalks Ltd., as part of its efforts to expand its automotive business sales pipeline. In total, transaction activity continues to highlight legacy automotive manufacturers' attempts to buy or partner with sophisticated EV-related capabilities.

Key transactions

Acquisition	Partnership	Acquisition
STELLANTIS is investing in LYTEN	Ford is partnering with TESLA	Qualcomm is acquiring Autotalks
Date Announced: May 25, 2023	**Date Announced:** May 25, 2023	**Date Announced:** May 8, 2023
Focus: Lithium-Sulfur Battery Production	**Focus:** Charging Infrastructure Access	**Focus:** Semiconductor Production

- Stellantis Ventures, Stellantis' venture capital arm, is investing in lithium-sulfur EV Battery startup Lyten. The startup develops EV batteries made with three-dimensional graphene that promises reduced weight, higher energy density and a simplified bill of materials.
- Ford and Tesla announced an electric vehicle charging partnership that will give Ford customers access to more than 12,000 of Tesla's fast chargers beginning in early 2024. Ford also announced it would be adopting Tesla's charging port in future vehicles.
- Semiconductor manufacturer Qualcomm announced its acquisition of Israeli chip manufacturer Autotalks Ltd., whose chips specialize in crash-prevention technology in vehicles. Qualcomm did not disclose the terms of the deal but indicated it is looking to expand its automotive-related business.

Regulatory landscape

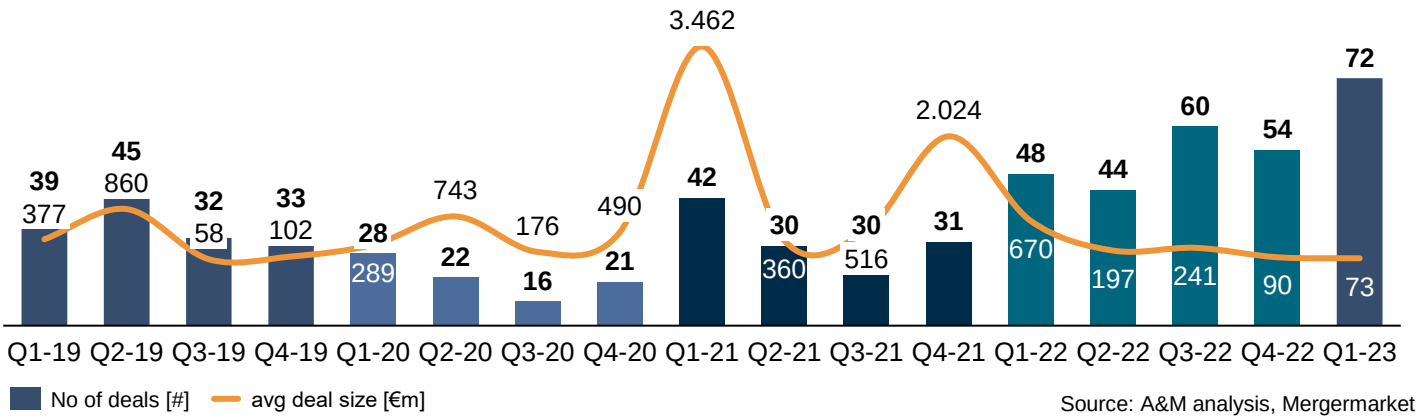
NHTSA orders Mercedes recall in the USA: Mercedes is recalling cars due to problems with the fuel pump. According to the US Highway Traffic Safety Administration (NHTSA), up to 143,551 cars from the model years 2021 to 2023 are affected. The vehicles include models of the C-, E- and S-Class as well as the SUV types GLC, GLE and GLS. Dealers will replace the fuel pump free of charge. A failure of the pump could increase the risk of an accident.

Tesla Autopilot: First reported by Bloomberg News, the U.S. Justice Department's investigation into whether Tesla made misleading claims about its vehicles' autonomous capabilities has found that Elon Musk oversaw the creation of a video that exaggerated the abilities of the company's Autopilot system. The company has maintained the video was intended to demonstrate potential future possibilities rather than delivery features.

Kia and Hyundai Lawsuits: Kia and Hyundai announced they agreed to pay $200 million to settle a class-action lawsuit from owners that claimed the vehicles were not properly equipped with anti-theft technology. The settlement will reimburse people whose cars were stolen and comes on the heels of several municipalities launching their own lawsuits against the manufacturers for the safety issues the lack of anti-theft technology presented.

Source: Automotive News, Business Wire, Reuters, Automobilwoche

European M&A activity – Automotive



Source: A&M analysis, Mergermarket

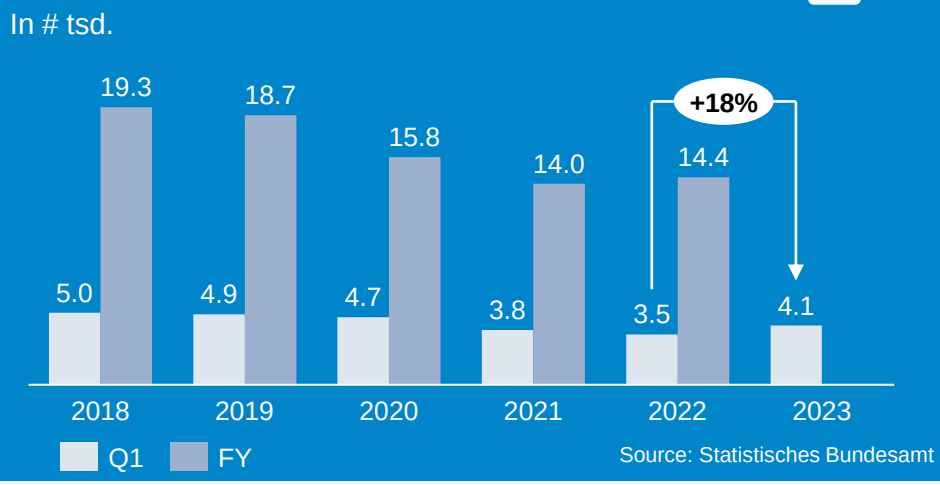
In Q1-23, the European Automotive sector witnessed a continuation of the high number of transactions, but with below-average deal sizes.

Many of these transactions involved companies exiting the Russian market, particularly those with international operations.

Insolvency statistics in Europe, including Germany, followed a trend of increasing filings after the low number of cases during the COVID-19 pandemic starting from 2020.

Macroeconomic data suggests that the number of insolvency cases is likely to rise further, likely due to the technical recession as well as increasing interest rates, especially for companies with considerable debt on their balance sheets.

Insolvency filings Germany



Source: Statistisches Bundesamt

Based on the latest insolvency statistics for Germany, published by the German Federal Statistics Office, insolvency figures for Q1-23 increased and will be 18%, significantly above the Q1-22 filings.

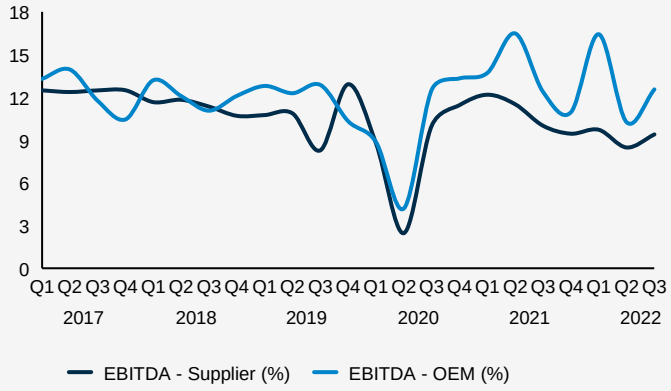
However, insolvency fillings are still below the Pre-COVID 19-pandemic level for the first quarter of the previous years.

KPIs: automotive performance update

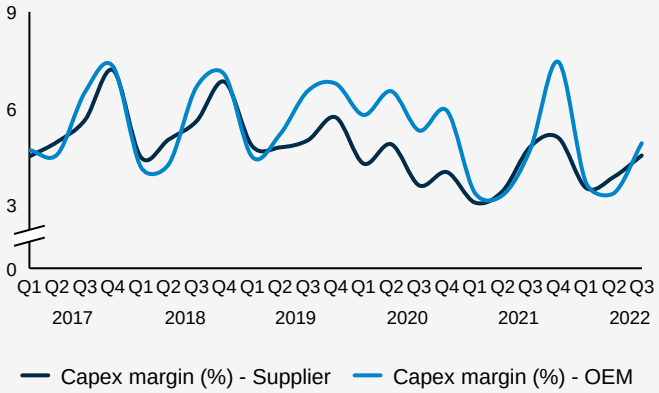
- While the OEMs managed to operate at an EBITDA above that of the Suppliers' EBITDA margin almost continuously since mid 2018, in Q3 2022 the avg. OEM's as well as margin gap with suppliers.
- Equity ratios for OEMs and Suppliers discontinue the Q2 2022 trend in Q3-2022. While OEMs continued to surpassing the levels, they had before the COVID-19 pandemic, Suppliers' ratios fell in Q3 2022 and have not yet recovered from the impact they experienced in 2020.
- Suppliers' inventory levels still remain consistently above pre-COVID levels.

Note: This industry snapshot of financial KPIs compares the quarterly published results of 20 OEM and 70 automotive suppliers since 2017.

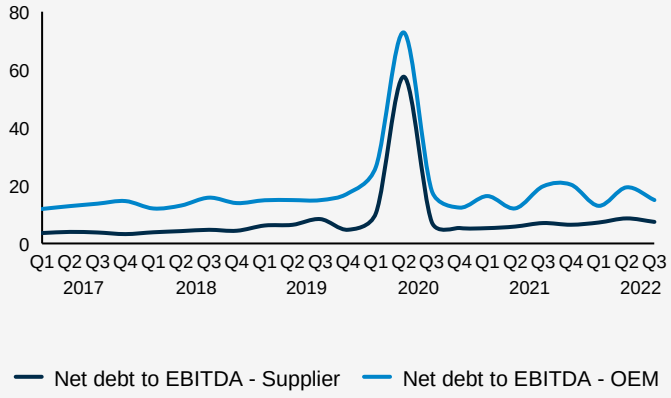
EBITDA margin (%) – Supplier vs. OEM



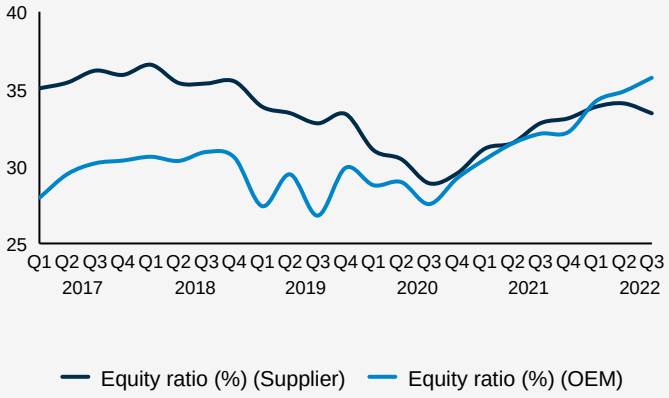
Capex margin (%) – Supplier vs. OEM



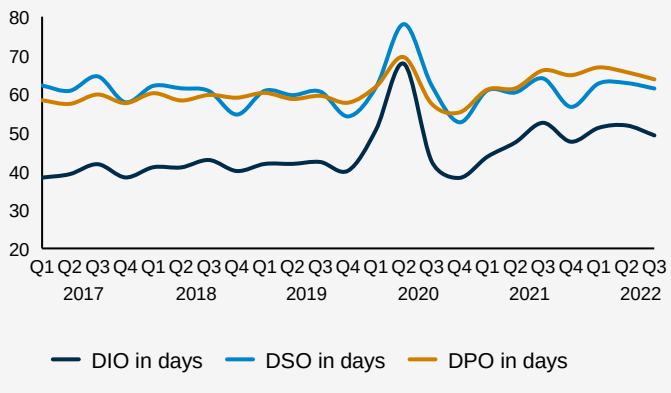
Net debt to EBITDA ratio – Supplier vs. OEM



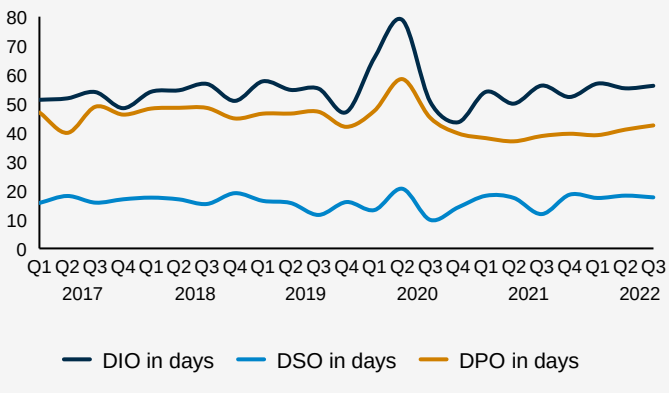
Equity ratio (%) – Supplier vs. OEM



Quarterly WC KPIs in days – Supplier



Quarterly WC KPIs in days – OEM



Source: Company Information, A&M analysis

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With over 7,500 people across six continents, we deliver tangible results for corporates, boards, private equity firms, law firms and government agencies facing complex challenges. Our senior leaders, and their teams, leverage A&M's restructuring heritage to help companies act decisively, catapult growth and accelerate results. We are experienced operators, world-class consultants, former regulators and industry authorities with a shared commitment to telling clients what's really needed for turning change into a strategic business asset, managing risk and unlocking value at every stage of growth.