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Japan autos & auto parts sector



CORPORATE FINANCE
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C O R P O R A T E F I N A N C E
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Introduction

Masahiro Akita - Senior Director, Enterprise-Value Creation Division, Corporate Strategy Department, Industry Research Department



Work experience

- After working at Aisin Seiki Co., Ltd. (currently Aisin Corporation), joined Credit Suisse Securities (Japan) Ltd. in 2011. Engaged in equity research covering the Japan autos and auto parts sector

Achievements

- Joined Frontier Management Inc. in 2023
- Engaged in sales, sales planning, and business planning for overseas customers at Aisin Seiki Co., Ltd.. Also worked overseas at Belgian head office and French branch
- Engaged in industry, corporate and equity research covering the autos and auto parts sector at Credit Suisse Securities (Japan) Ltd.. Led the Japanese automotive team as a senior analyst, with maximum 36 companies under coverage. Assigned as the global sector coordinator of the Credit Suisse global autos and auto parts team. Conducted various thematic research covering industry technical and structural trends. Ranked in the Institutional Investor Japan Research Survey, Nikkei Veritas Analyst Ranking, etc.

Education

- Belong to the Enterprise-Value Creation Division of the Corporate Strategy Department and Industry Research Department at Frontier Management Inc.. Engaged in various projects such as creation of M&A candidate long lists, startup funding, due diligence for new business of auto parts manufacturers, and support of the formulation of long-term management strategies for auto parts manufacturers

Interests

- B.A. in Commerce, Waseda University, HEC Paris MBA
- Rugby, golf

Key Topics



No time to wait, the CASE era is arriving

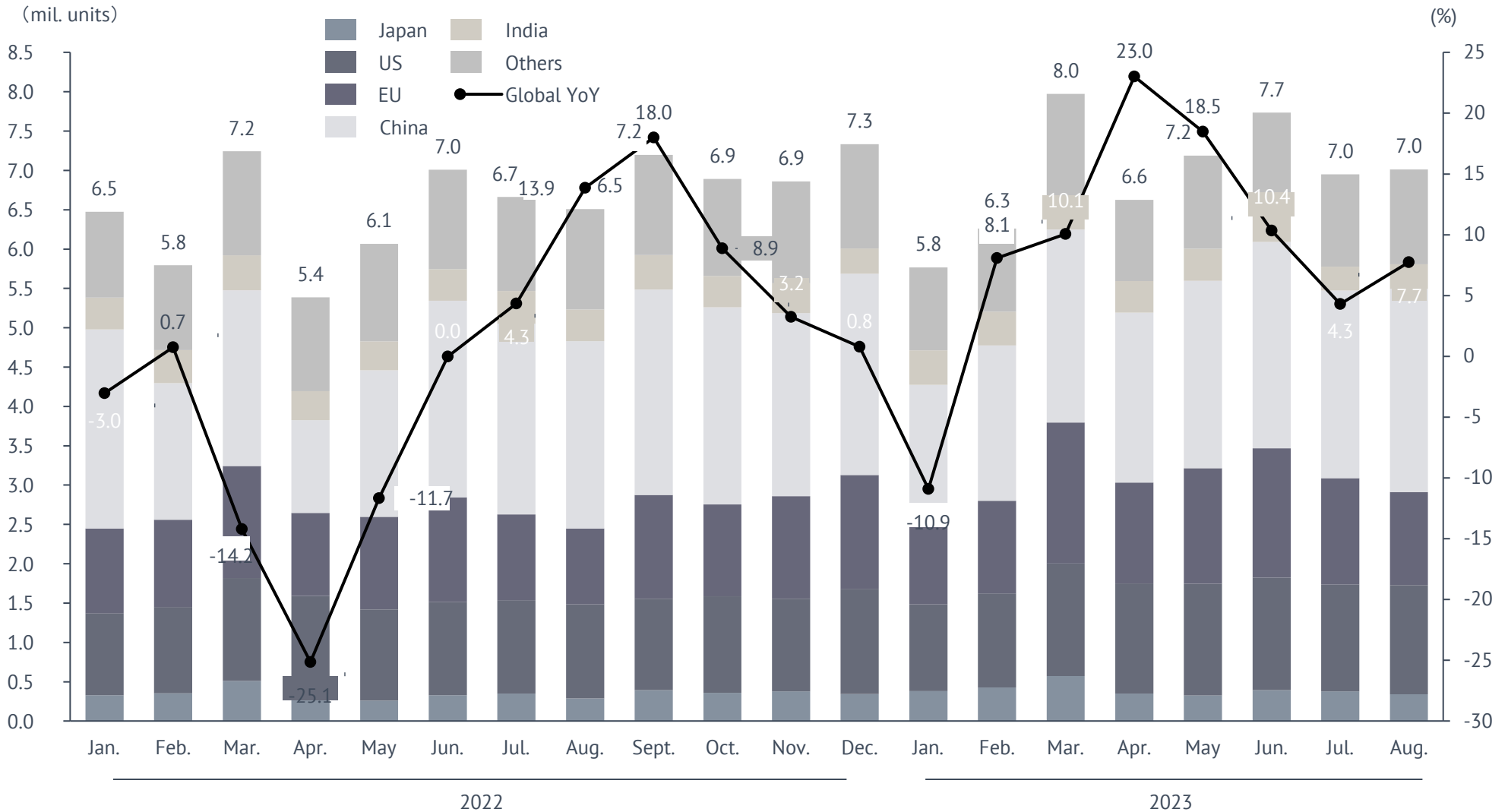


Obvious contrast between winners and losers in the auto parts sector



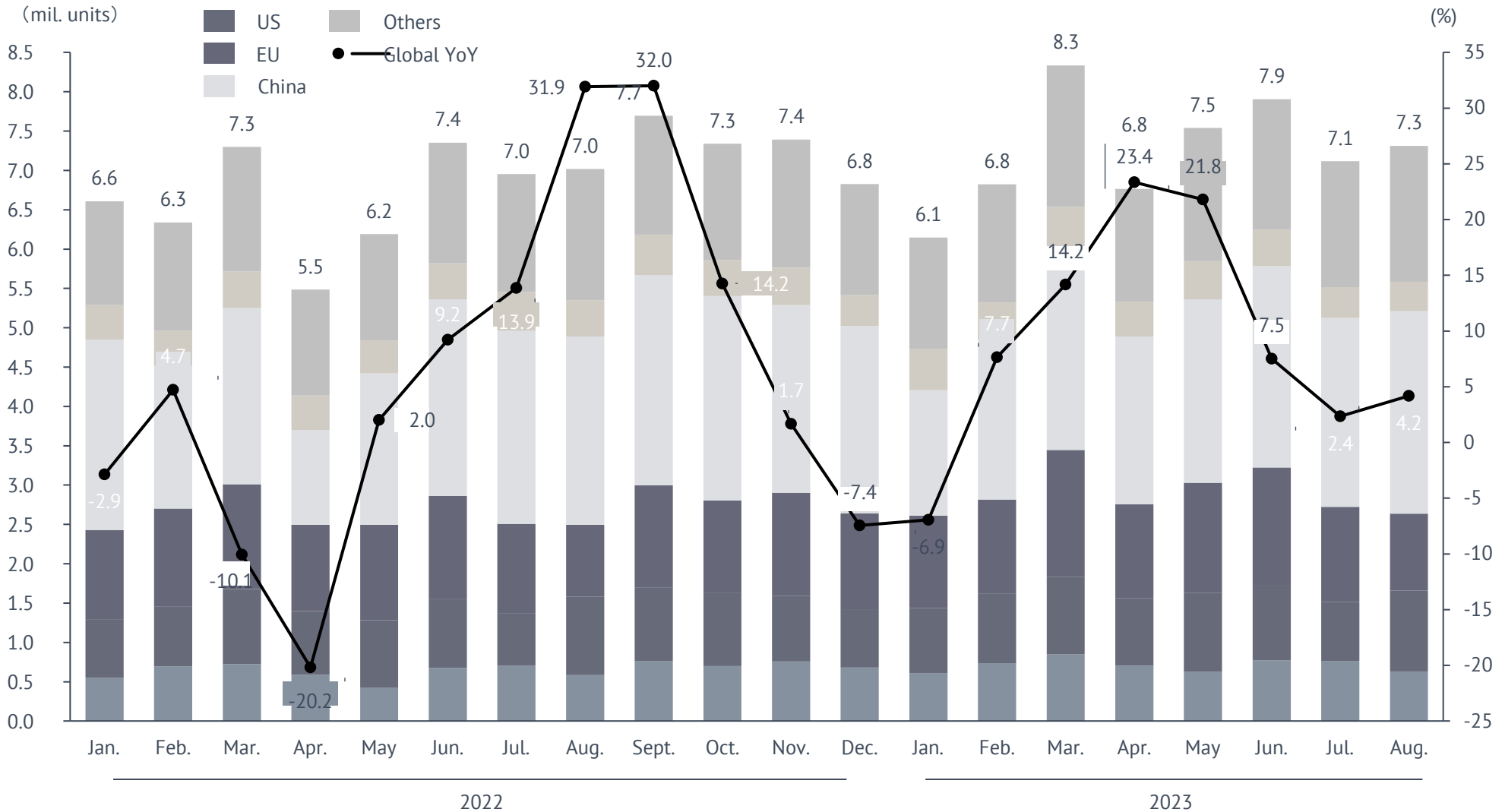
Business restructuring and consolidation in the auto parts sector to shift from phase 1 to phase 2

Global auto sales



Source: Marklines

Global auto production

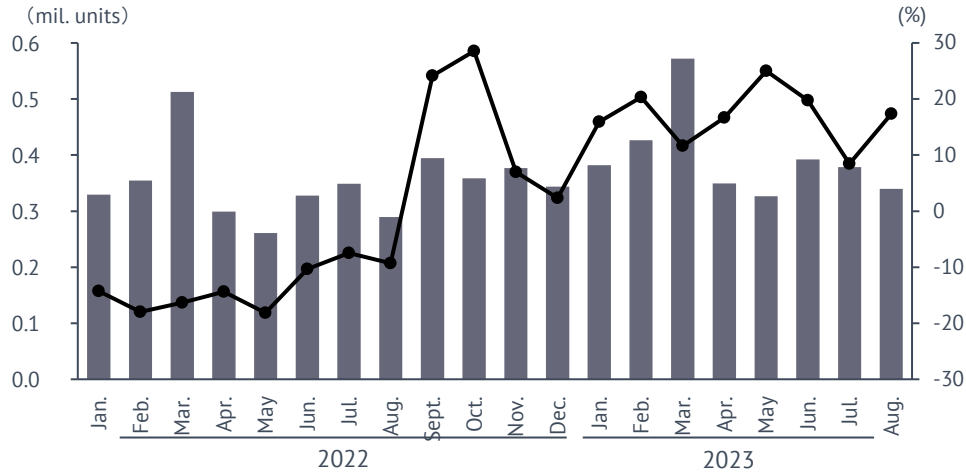


Source: Marklines

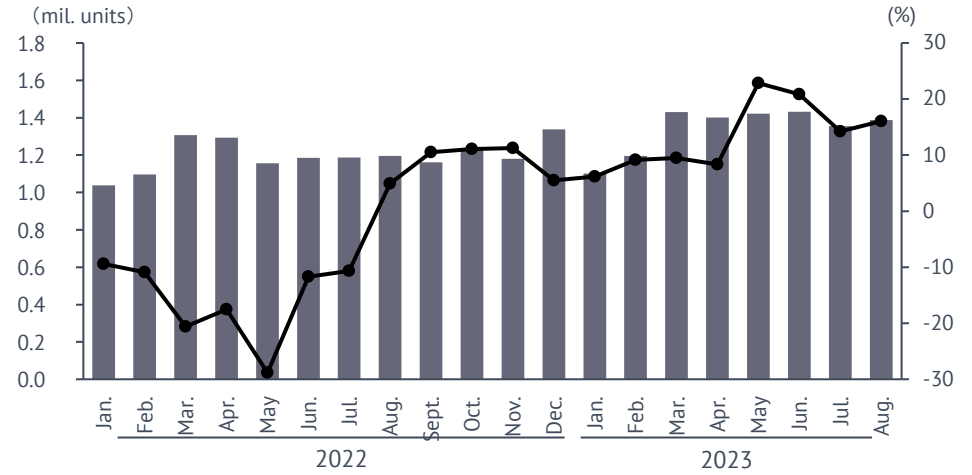
Auto sales by region (1/2)

■ Unit sales (left) ● YoY change (right)

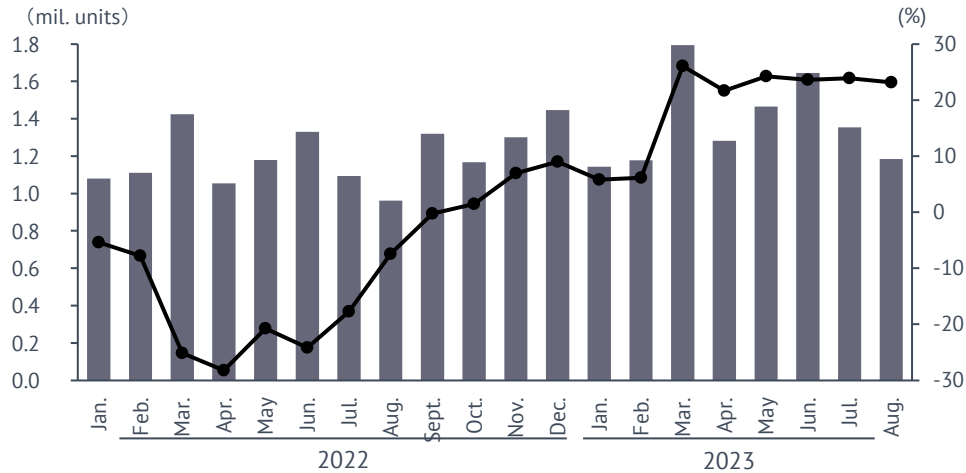
Japan



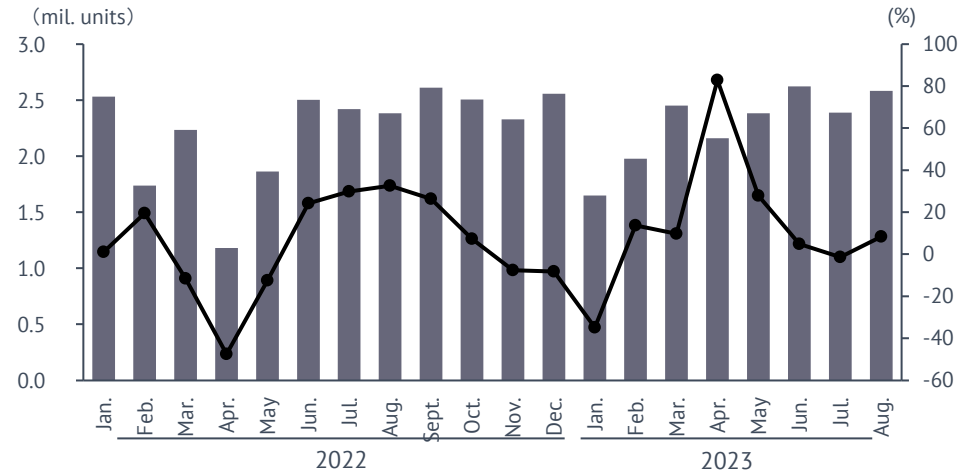
US



EU



China

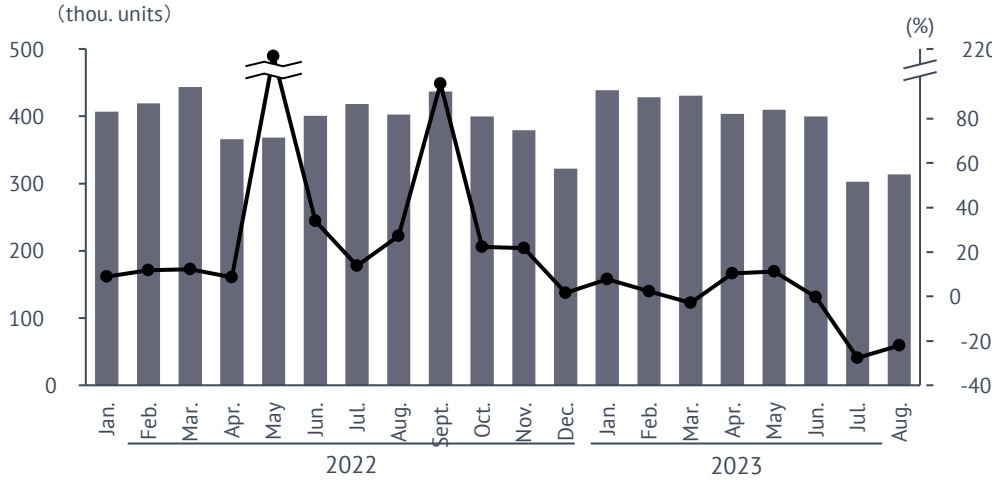


Source: Marklines

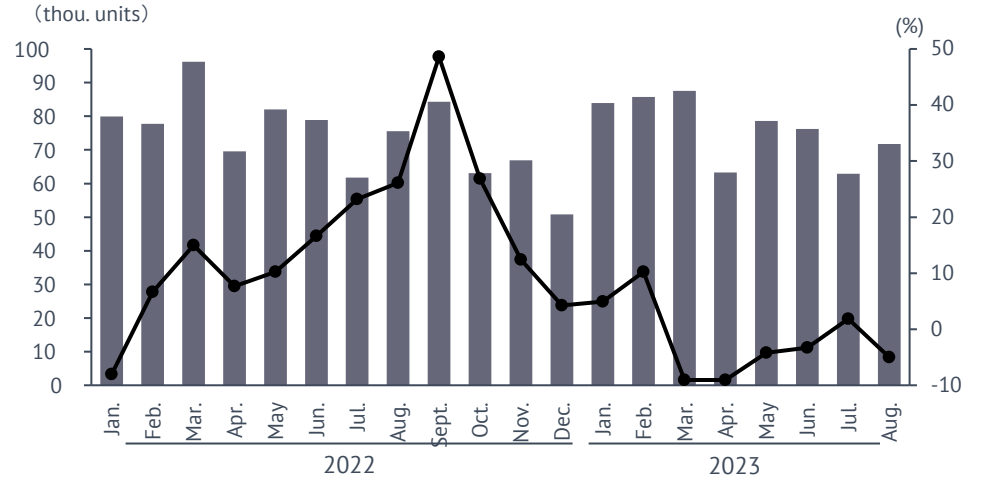
Auto sales by region (2/2)

■ Unit sales (left) ● YoY change (right)

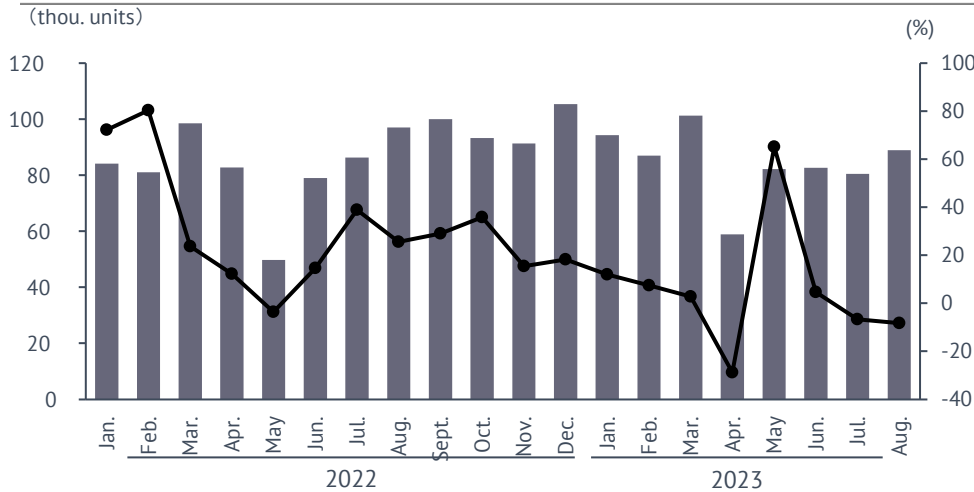
India



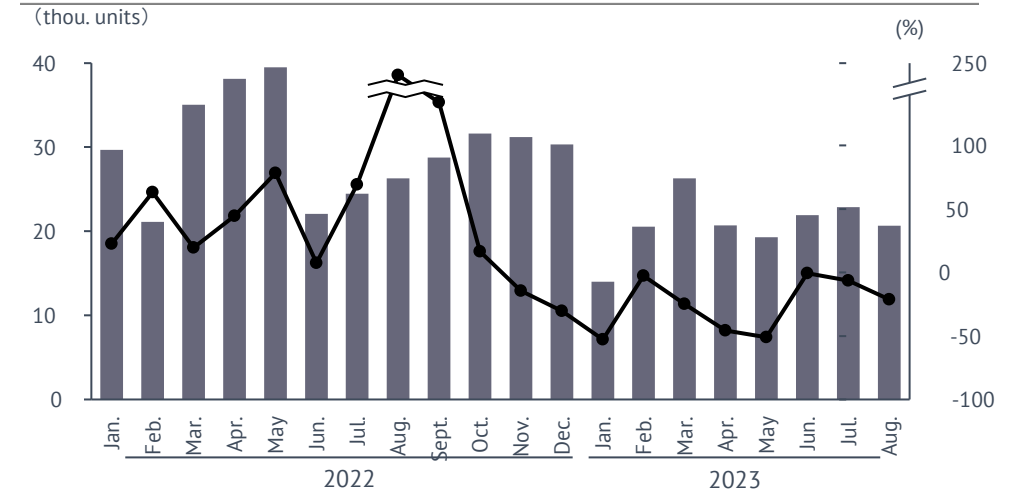
Thailand



Indonesia



Vietnam

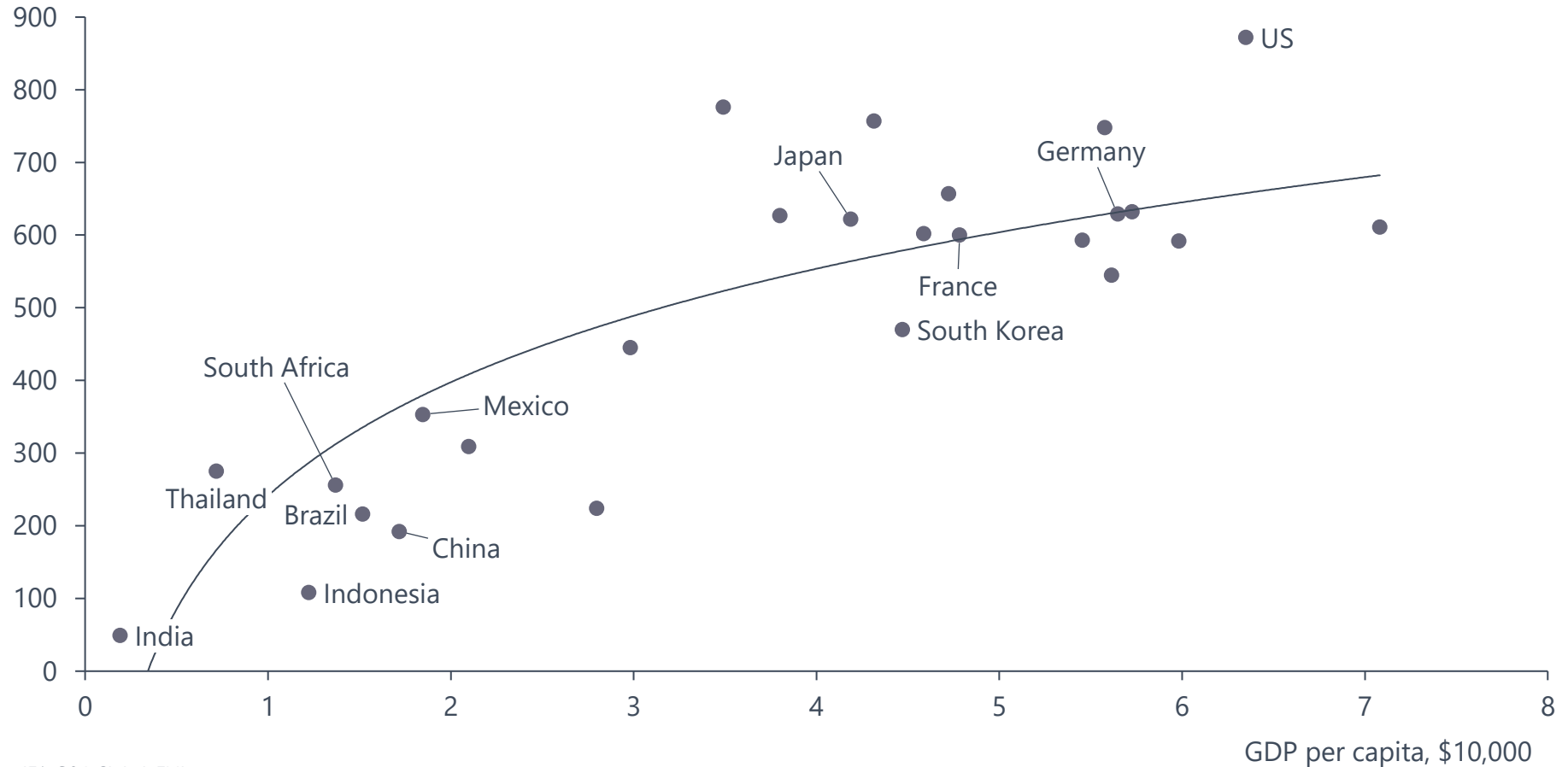


Source: Marklines

GDP per capita and car ownership by country

- In Asian countries, GDP per capita exceeds \$3,000, and motorization is in full swing. Especially in India, where there is room for growth and demand for auto demand to double by '30

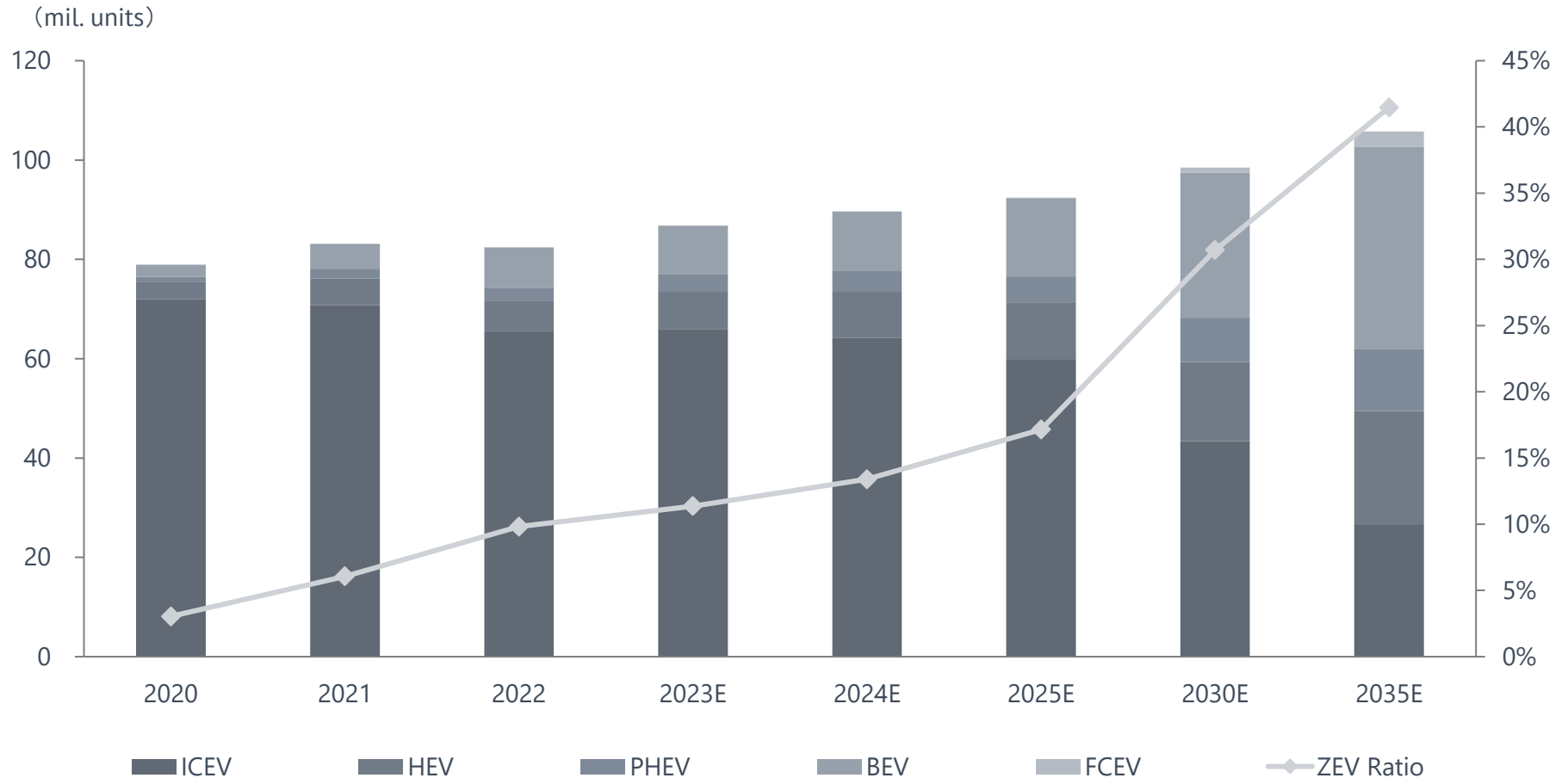
Number of cars owned per 1,000 population, including trucks and buses



Source: IEA, S&P Global, FMI

The CASE era is arriving: global xEV demand forecast

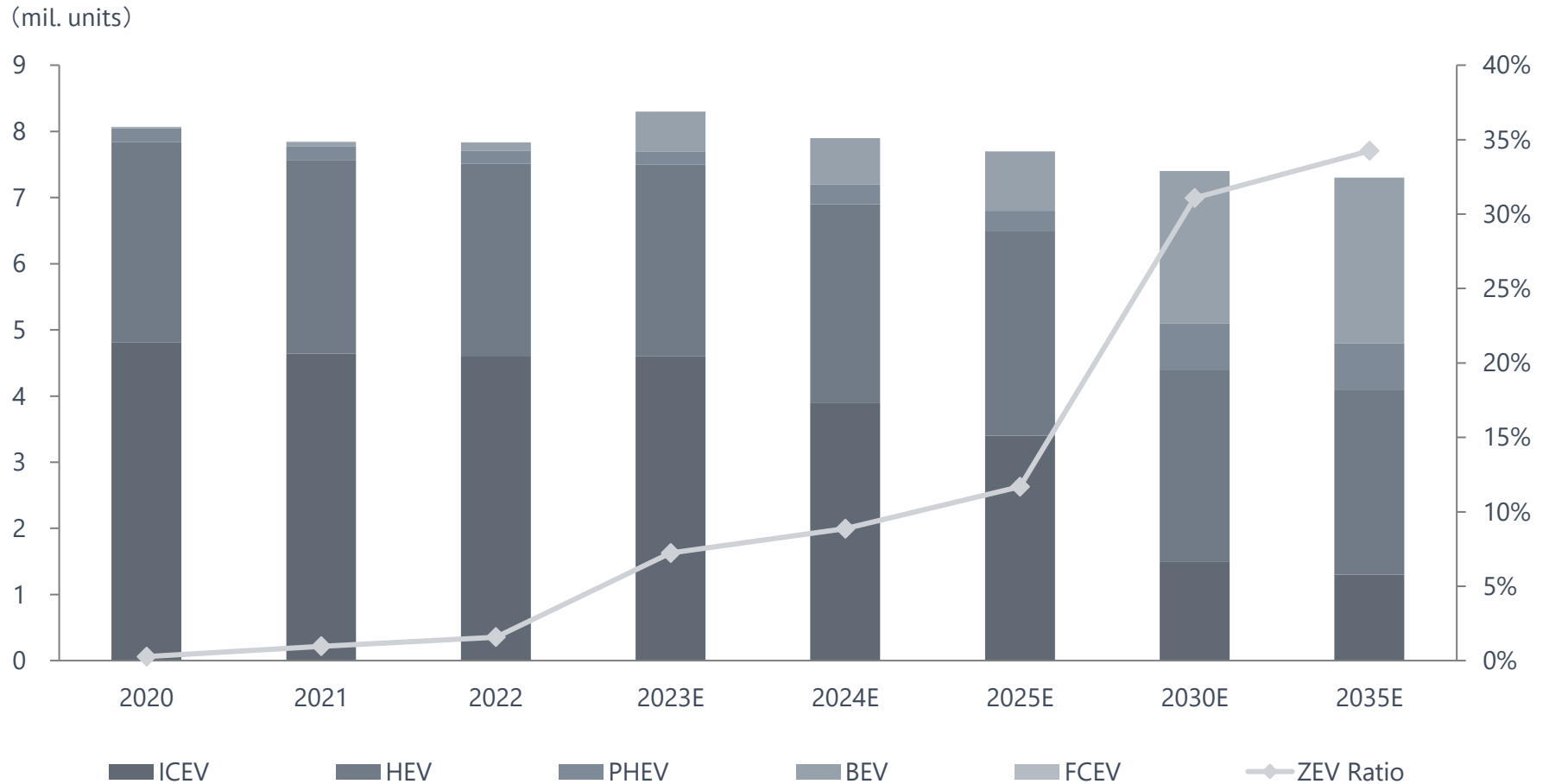
- The ratio of ZEVs (BEVs, FCEVs) in global vehicle sales is expected to increase to 31% in 2030 and 41% in 2035. Due to the expansion of BEV sales after the pandemic, the peak out of ICEVs was brought forward much earlier than previously expected by the market



Source: IEA, S&P Global, FMI

The CASE era is arriving: domestic xEV production forecast

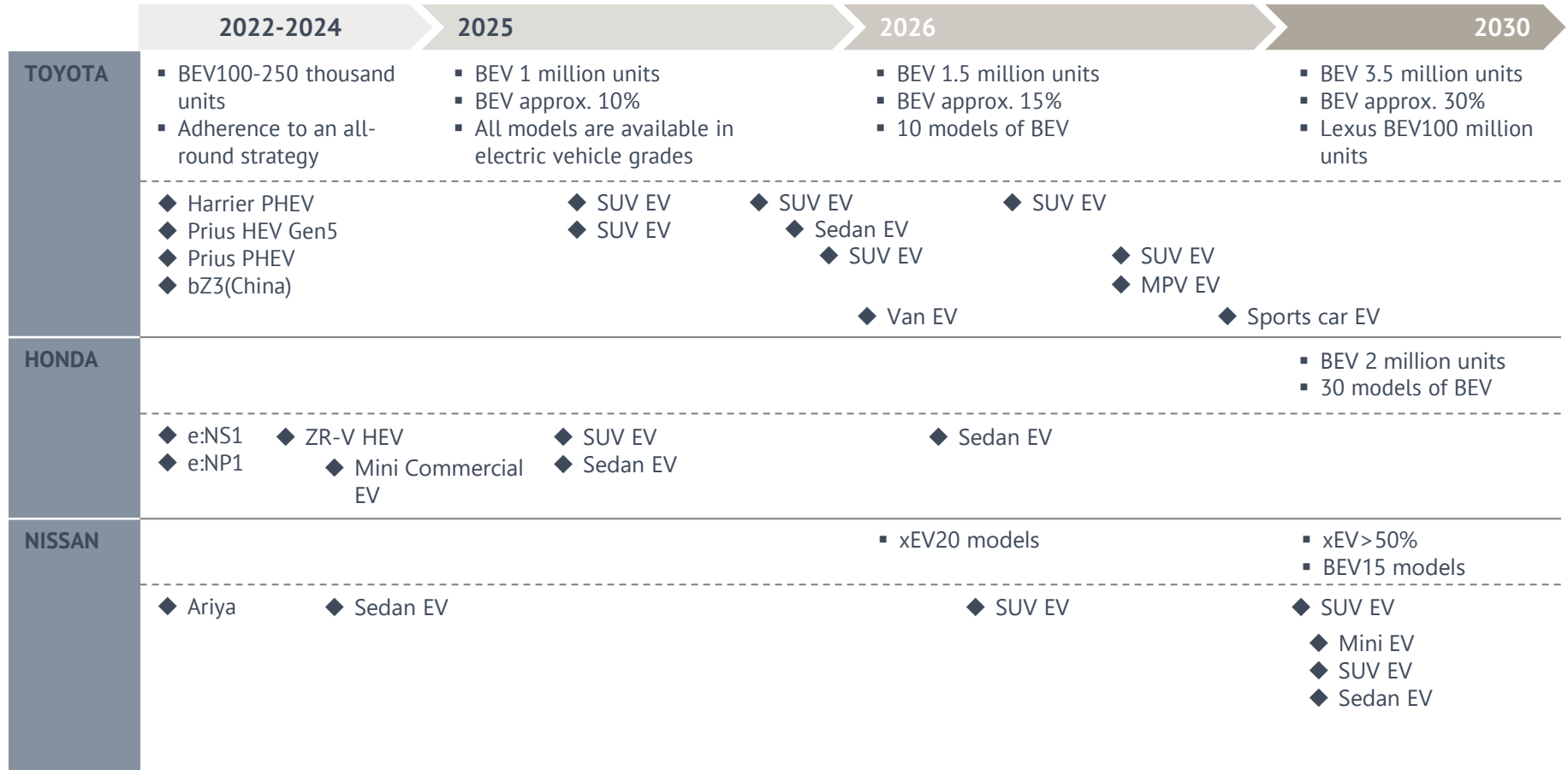
- The share of ZEVs (BEVs, FCEVs) in domestic vehicle production is expected to increase to 31% in 2030 and 34% in 2035. The pace of ZEV demand expansion expected to accelerate from 2025, when Toyota starts to enroll next generation BEV models



Source: IEA, S&P Global, FMI

The CASE era is arriving: Japanese OEMs xEV sales targets & model plans

– Major Japanese OEMs aiming to catch up with new BEV model launches. Toyota's full-scale launch of next generation BEVs will begin in 2025. Honda expected to launch BEV model mainly in China during short term. Nissan's BEV model launch will accelerate in the late 2020s



Source: Materials released by each company, Marklines, S&P Global, FMI

The CASE era is arriving: Toyota next generation EV platform

– Toyota plans to start production of its next-generation EV platform in mid-2026. They aim to significantly improve production efficiency and cost by their self-propelled skateboard platform and module concept. The modules will be sub-assembled on each sub-line and finally assembled on Toyota's assembly line. Competition for modules among suppliers has already started

Self-propelled skateboard platform



- Underbody (front + center + rear)
- eAxle
- Battery Module
- Thermal Management System
- ARS
- AVS

Toyota next generation EV platform concept

Giga casting

No. of rear body parts 86 => 1



Parts	86 → 1
Process	33 → 1

Self-propelled assembly line

To shift from conveyor to self-propelled assembly line

Modules

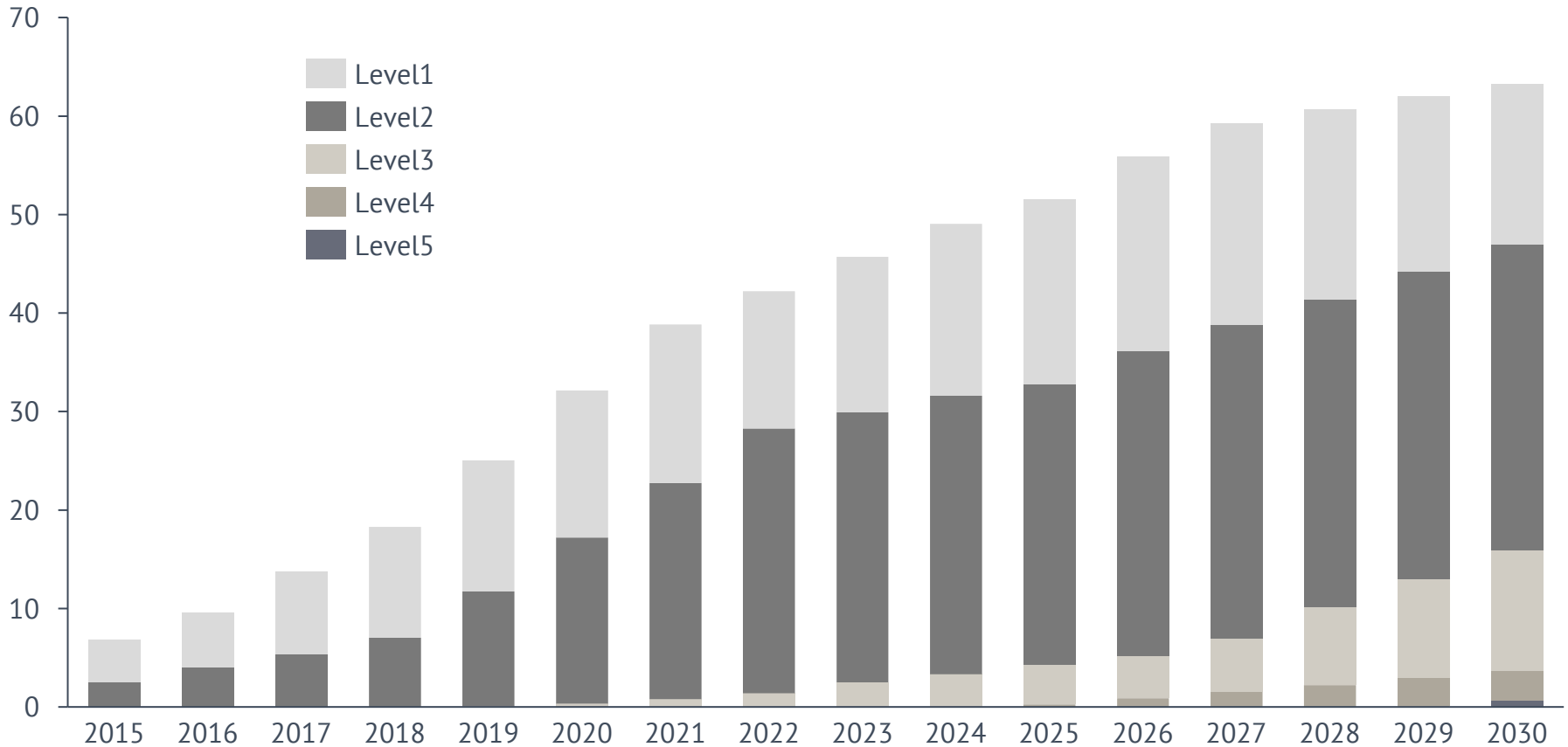
- Front
- Center
- Rear
- Side
- Door
- Roof
- Backdoor
- Front upper

GC (giga casting): Toyota in-house, Aisin?

The CASE era is arriving: global AV market forecast

– Vehicles equipped with ADAS and AD technology in the global automotive market are expected to increase at CAGR of 5% by 2030. For the time being, the focus will be on Level 1 and Level 2, but the spread of Level 3 and above will begin after 2025

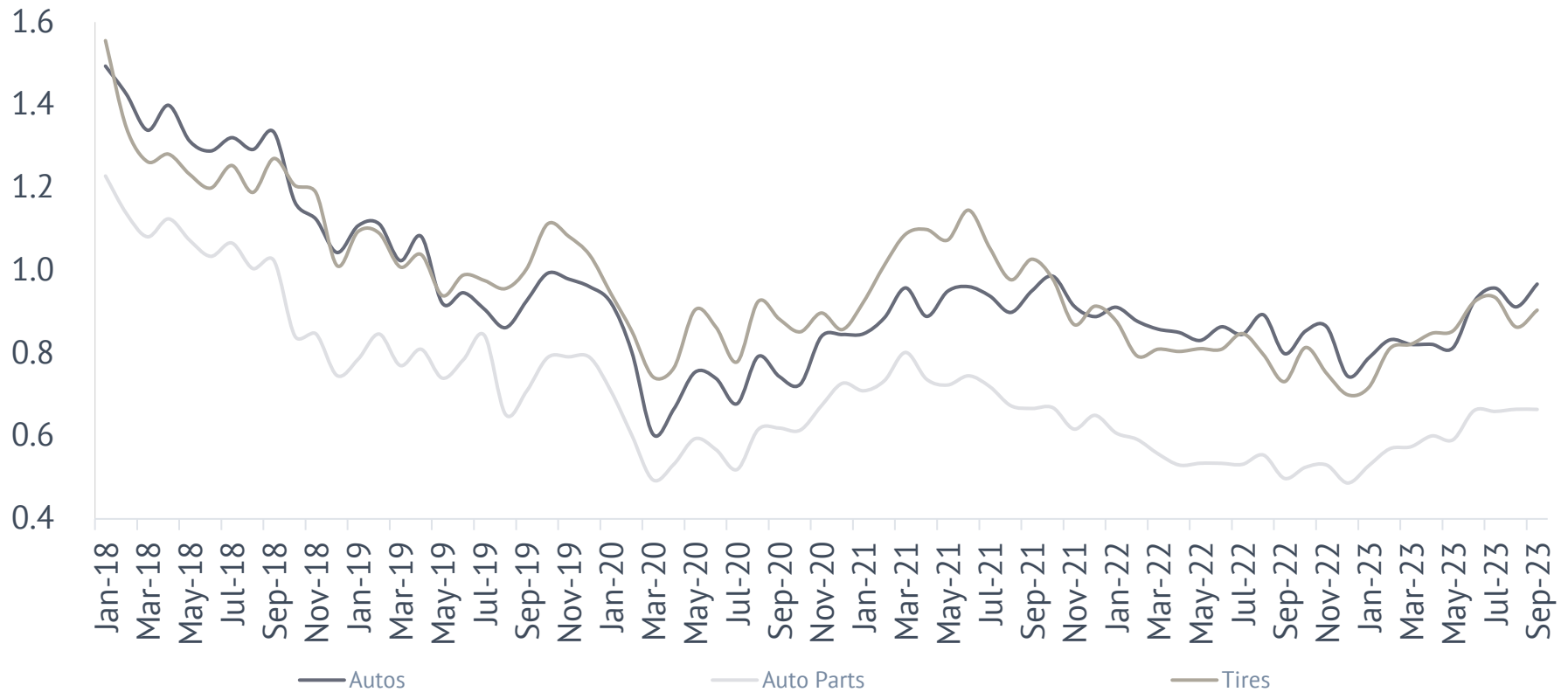
(mil. units)



Source: Marklines, S&P Global, FMI

The CASE era is arriving: PBR by auto subsectors

- The current average PBR of autos is 1.0 times and tires is 0.9 times, while the auto parts is lower at a level of 0.7 times with the largest decline in the past five years. The reason for the auto parts' low PBR incorporates zero or negative expected growth in addition to ROE impairment. While the auto parts sector is required to adopt to the CASE era, the low valuation implies sustainable profit growth



Source: S&P Capital IQ, FMI

The CASE era is arriving: ICE related parts

- Needless to say, the shift from ICE to EV will significantly impact the auto parts supply chain

Body Parts	Valve Train Parts	Fuel System Parts	Intake And Exhaust System Parts	Lubrication, Cooling System Parts	Electrical Components	Drivetrain Parts
<ul style="list-style-type: none"> ▪ Engine Block ▪ Cylinder Liner ▪ Crankshaft ▪ Piston ▪ Piston Pin ▪ Piston Rings ▪ Cylinder Head ▪ Cylinder Head Cover ▪ Cylinder Head Gasket ▪ V-belt ▪ Flywheel ▪ Dry Plate ▪ Ring Gear ▪ Engine A'ssy 	<ul style="list-style-type: none"> ▪ Camshaft ▪ Rocker Arm ▪ Engine Valves ▪ Valve Springs ▪ Valve Seat ▪ Valve Guide ▪ Valve Lifter ▪ Timing Belt ▪ Timing Chain ▪ Timing Crank Pulley ▪ Timing Cam Pulley ▪ Variable Valve Timing Unit ▪ Variable Valve Lift Mechanism ▪ Timing Tensioner ▪ Timing Belts (Chains) and Covers 	<ul style="list-style-type: none"> ▪ Injector (Gasoline) ▪ Throttle Body ▪ Pressure Regulator ▪ Electronic Diesel Fuel Injection ▪ Fuel Tube ▪ Fuel Filter ▪ Fuel Pump ▪ Fuel Tank ▪ Canister 	<ul style="list-style-type: none"> ▪ Air Cleaner ▪ Intake Manifold ▪ Turbocharger ▪ Intercooler ▪ Exhaust Manifold ▪ Exhaust Pipe ▪ EGR Pipe ▪ O2 Sensor ▪ Catalyst ▪ Catalytic Converter ▪ Muffler 	<ul style="list-style-type: none"> ▪ Oil Pan ▪ Oil Strainer ▪ Oil Pump ▪ Oil Filter ▪ Water Pump ▪ Glow Plugs ▪ Alternator ▪ Gasoline/ Diesel Vehicle Starting Battery 	<ul style="list-style-type: none"> ▪ Ignition Coil ▪ Spark Plug ▪ Glow Plugs ▪ Starter 	<ul style="list-style-type: none"> ▪ Clutch Cover ▪ Clutch Disc ▪ Clutch Facing ▪ Clutch Master Cylinder ▪ Clutch Release Cylinder ▪ MT ▪ MT Shift Lever ▪ Shift Fork ▪ Synchronizer Ring ▪ AT ▪ CVT ▪ Torque Converter ▪ AT Shift Lever ▪ AT Control Cable ▪ Transfer ▪ Differential

Source: Marklines, FMI

The CASE era is arriving: list of suppliers with large exposure to ICE

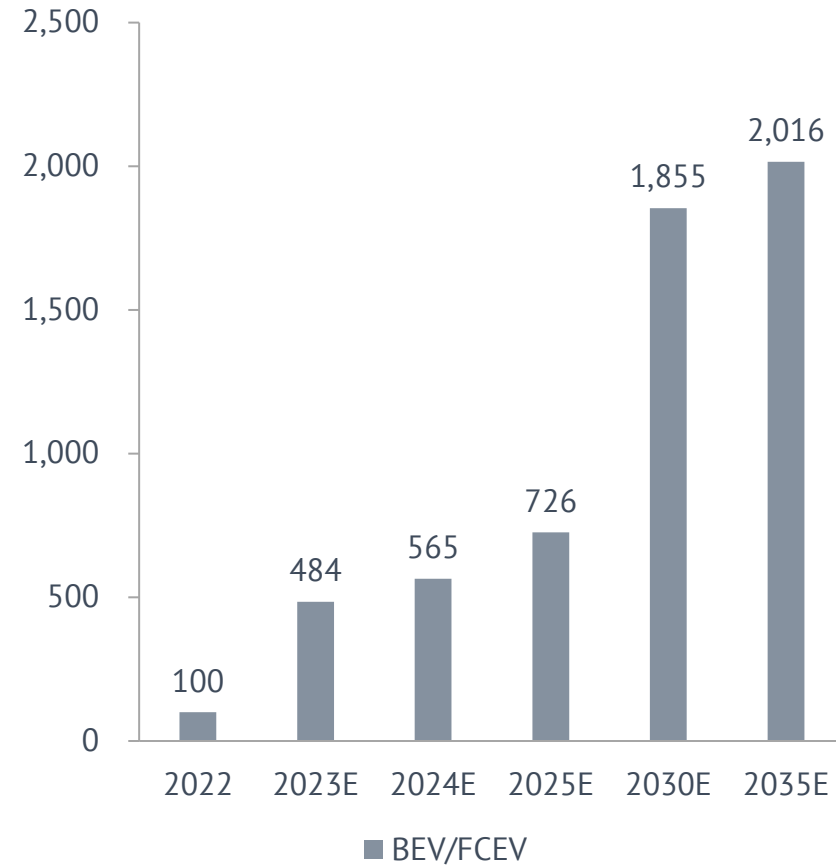
- Auto parts suppliers with large exposure are at risk to face decline in profits from an earlier stage as the EV shift progresses. Stock valuations seem to broadly factor in certain impact

Company Name	Main ICE Products	ICE Sales Ratio	PBR
Aisan Industry	Fuel Pump	90%	0.7
EXEDY	Clutch, Torque Converter	86%	0.5
Niterra	Spark Plug	83%	1.0
Ahresty	Aluminum Die-cast Parts	80%	0.3
Aisin	Transmission	55%	0.7
FCC	Clutch	52%	0.6
Musashi Seimitsu Industry	Gears, Shafts	52%	1.1
Sumitomo Riko	Engine Mounts	51%	0.5
Futaba Industrial	Exhaust Manifold, Muffler	50%	0.5
TPR	Piston Rings	47%	0.4
Denso	Engine Control System	39%	1.7

Source: Marklines, FMI

The CASE era is arriving: domestic production volume forecast by powertrain type

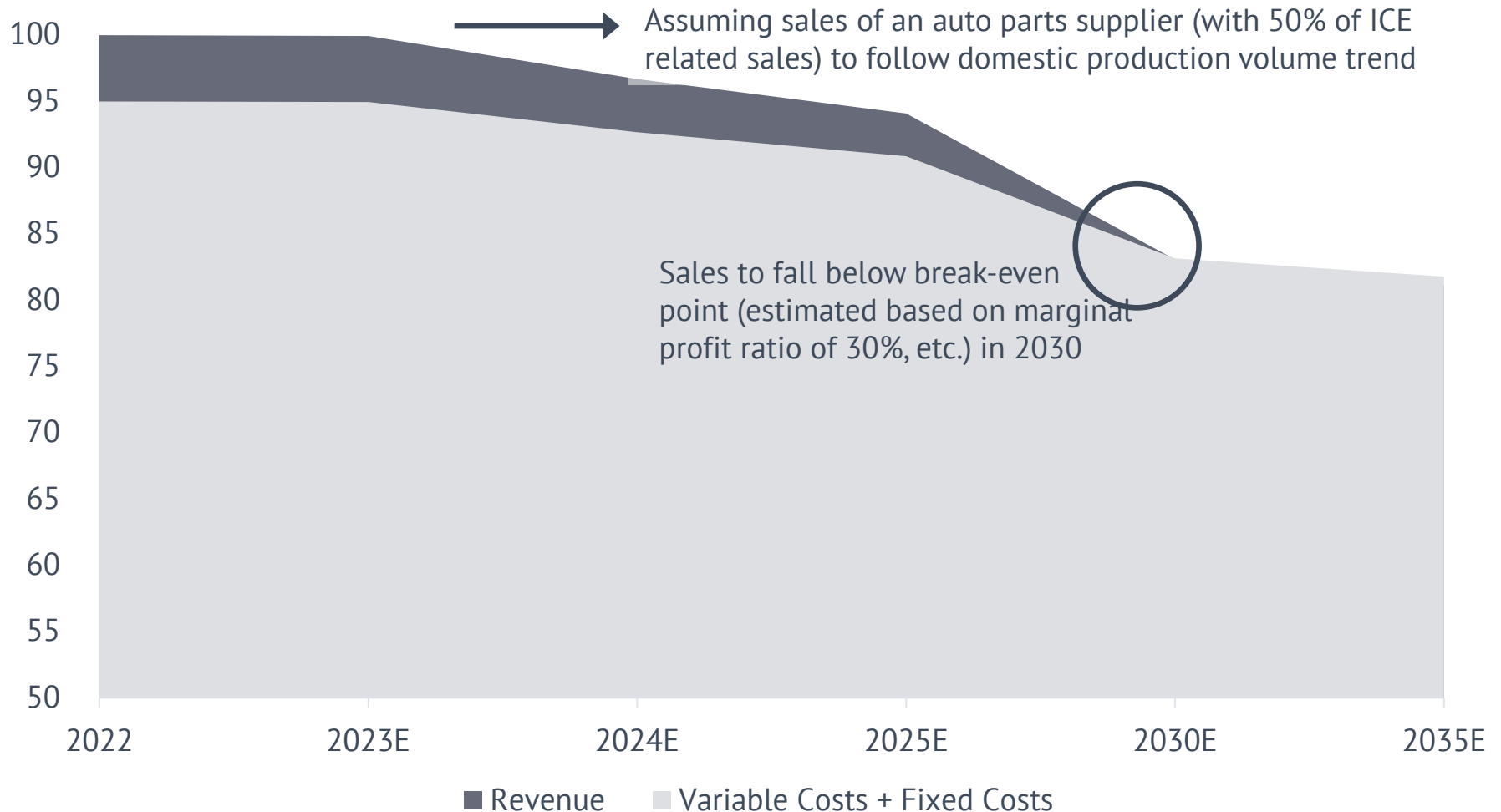
- According to S&P Global, domestic production of vehicles equipped with engines (ICEV/HEV/PHEV) is expected to start to decline from 2024. Considering domestic production in 2022 as 100, volumes are expected to fall to 88 in 2025, 66 in 2030, and 62 in 2035



Source: S&P Global, FMI

The CASE era is arriving: estimated earnings impact due to EV shift

- Risk to see unprofitable or loss-making auto parts suppliers from around 2030



Source: JAPIA, FMI

The CASE era is arriving: development lead time for next-gen. models

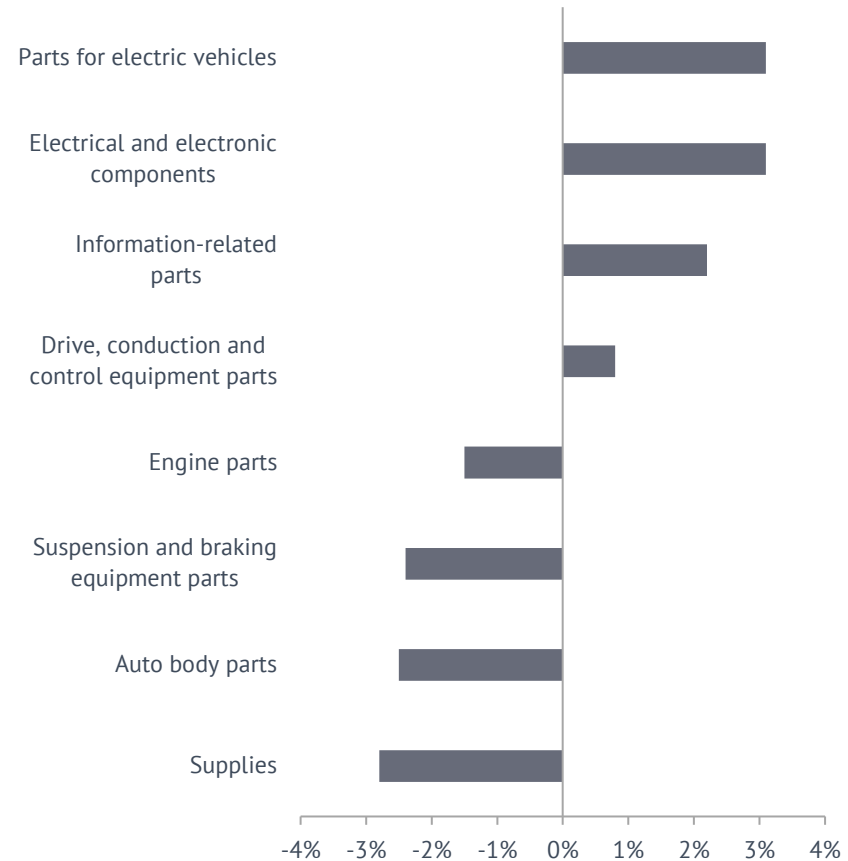
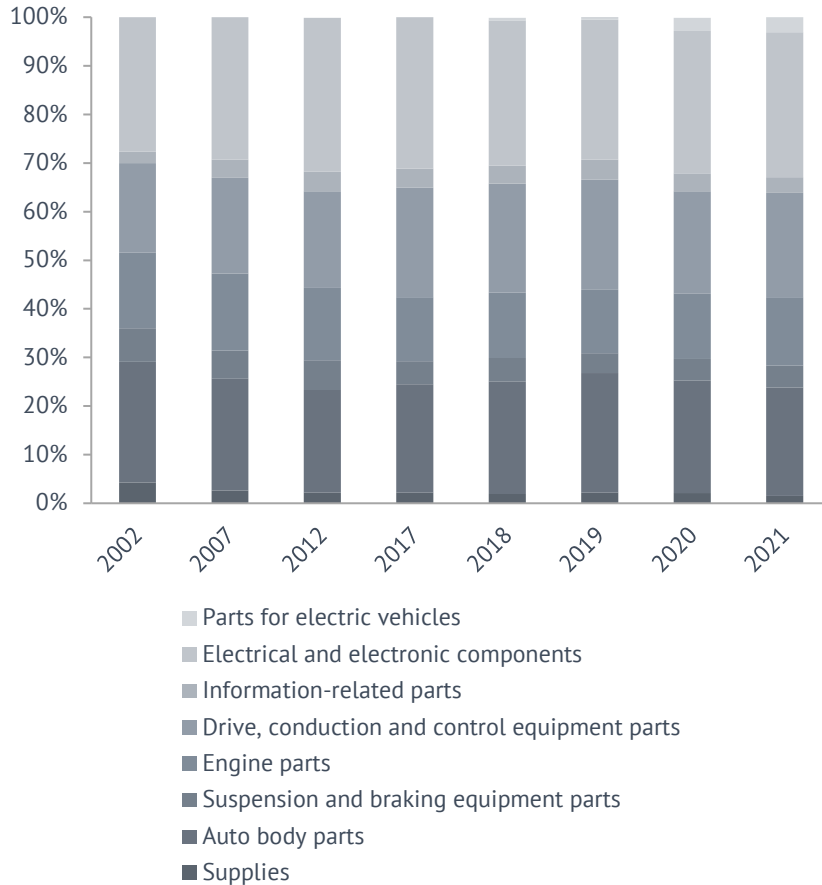
- Supplier new technology & products must be proposed 4 years prior to SOP. Sourcing for Toyota's next-generation BEV models scheduled for launch in 2025-2026 is largely completed. Proposals for models to be launched in 2030 must be made at least by 2026

	"N year" - 4	"N year" - 3	"N year" - 2	"N year" - 1	"N year"
★ Supplier new tech/product proposal					
		★ CE conception study			
		★ Structural design drawing			
		★ RFQ			
			★ SE study drawing		
			★ Mass production tooling drawing		
				★ Mass production tooling prototype	
				★ Mass production tooling & process prototype	
					★ SOP

Source: FMI

Obvious contrast between winners and losers: shipment trends by product category

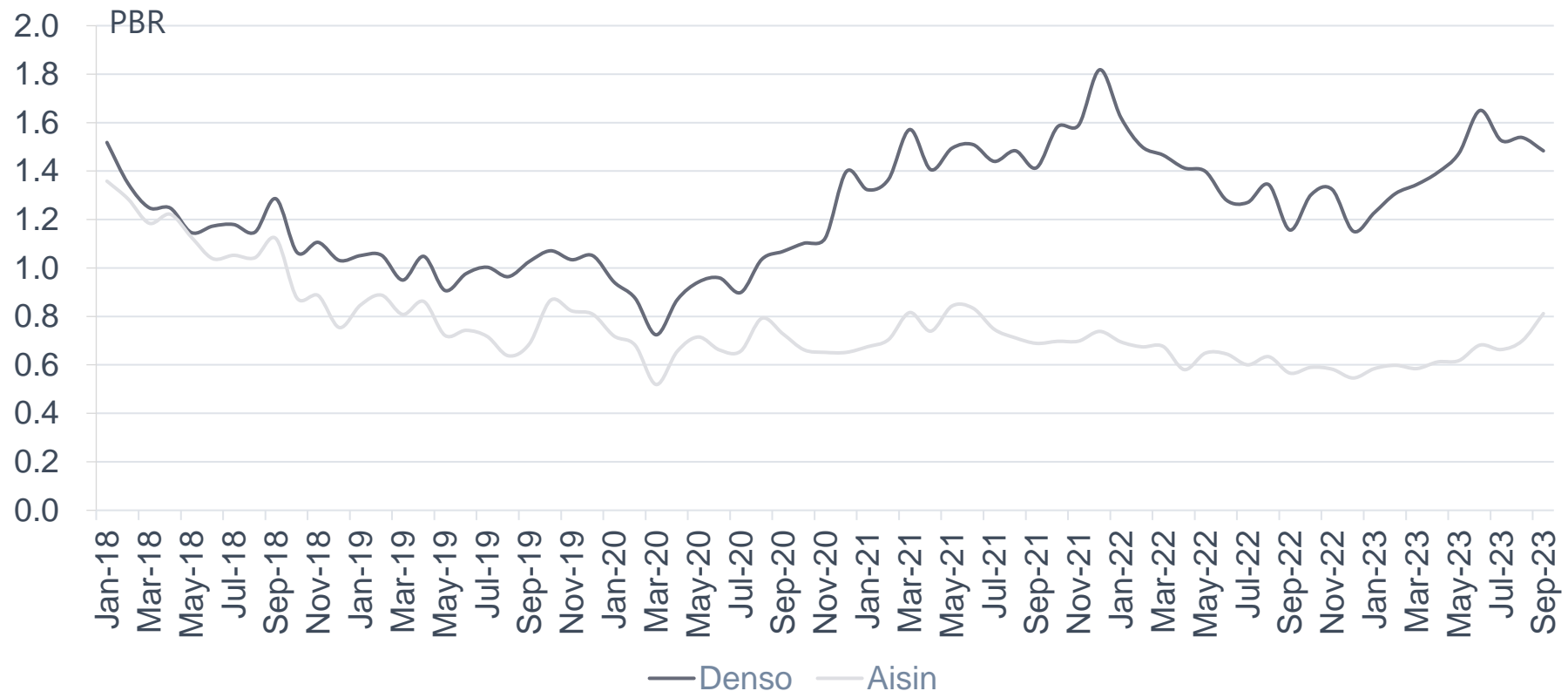
- The Japan Auto Parts Industries Association (JAPIA) shipment value survey indicate winners and losers in the auto parts sector. Over the past 20 years, the value added for electric vehicle parts, electrical and electronic components has increased, while the value of body parts and engine parts has declined



Source: JAPIA, FMI

Obvious contrast between winners and losers: Denso vs Aisin

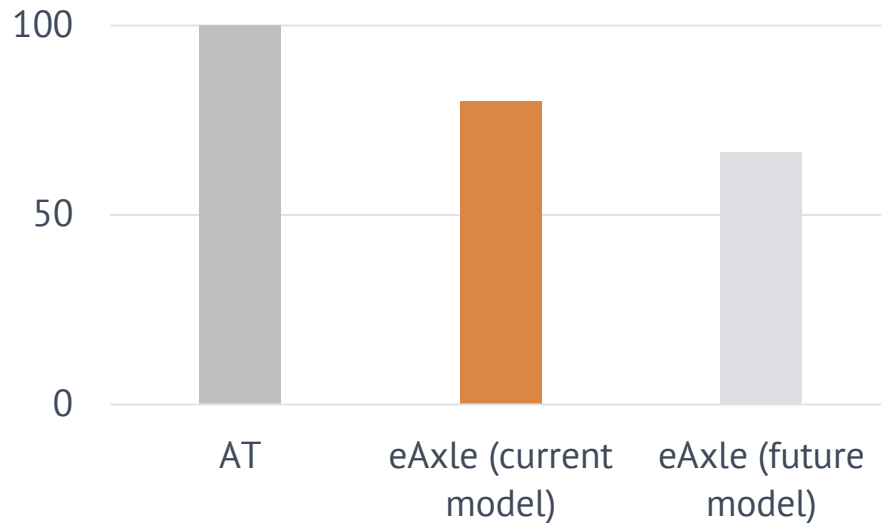
- Denso possesses technologies and components essential for electrification, such as PCUs, power semiconductors, and thermal management, and has also begun business restructuring in the ICE field, including the transfer of its fuel pump business to Aisan Industry, and its PBR has remained at more than 1.5 times, almost the same level as five years ago. On the other hand, Aisin's transmission and other engine parts still make a significant impact to its performance, and it seems that it has been labeled as a representative stock in the ICE field in the stock market. As a result, the company's PBR is 0.7 times, down significantly from 1.4 times five years ago



Source: S&P Capital IQ, FMI

Obvious contrast between winners and losers: Aisin

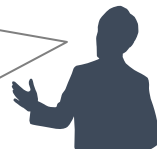
- The value-added sales price of the eAxle is assumed significantly lower than that of the AT, and the price of the future model is expected to further decline. Many Japanese, European, American, and Chinese suppliers have already entered the eAxle market, making it difficult to monopolize the market like AT



eAxle supplier



Sales expansion of BluE Nexus has not progressed as expected. In the first place, Denso can sell inverters as individual companies without going through BluE Nexus.
- Auto parts analyst



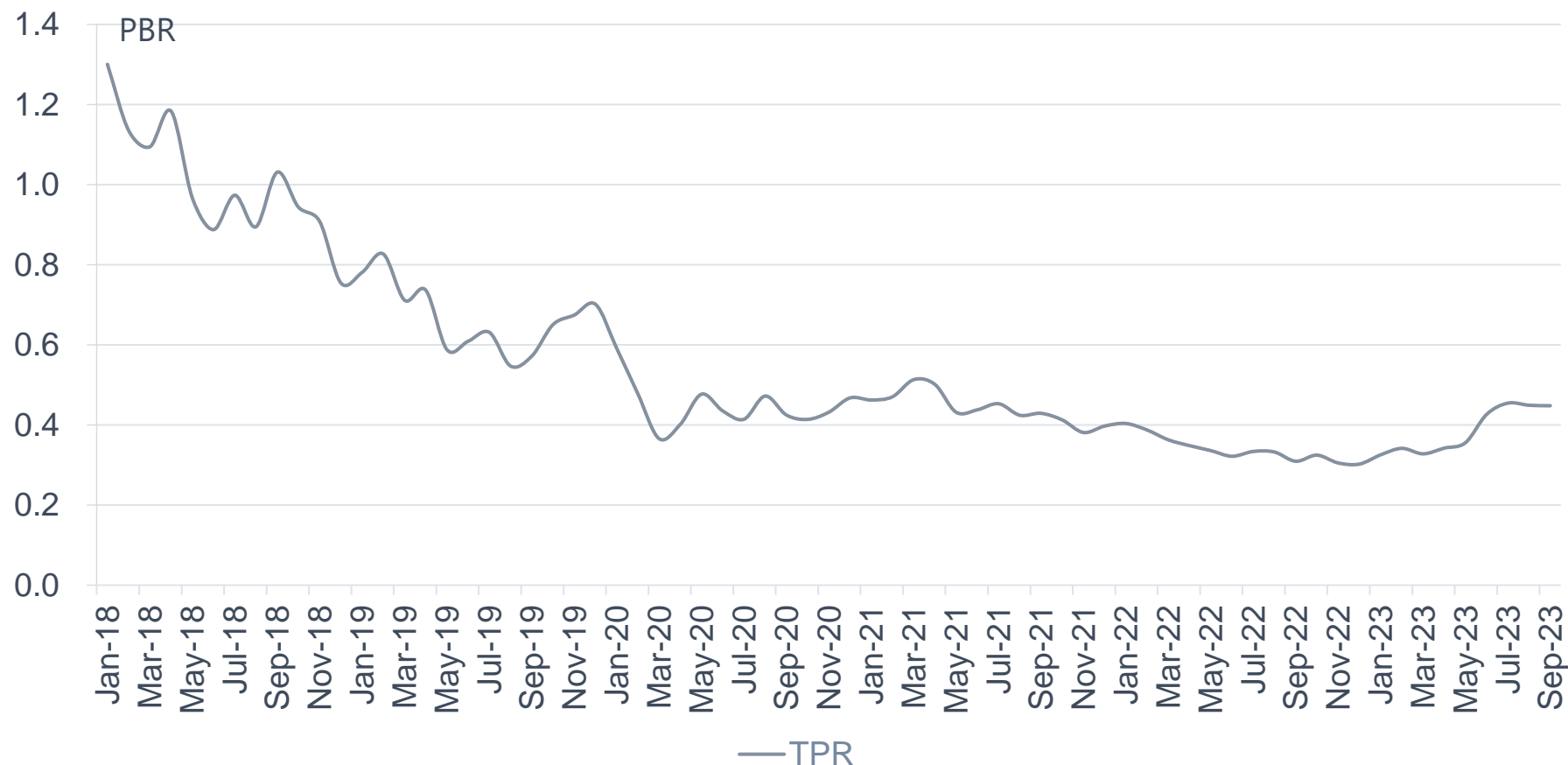
Toyota might consider in-house production of the eAxle, or sourcing from external sources such as Chinese manufacturers. Thus, it might be difficult for Aisin to monopolize the Toyota eAxle supplychain.
- Auto parts analyst



Source: Company Announcement Information, FMI

Obvious contrast between winners and losers: TPR

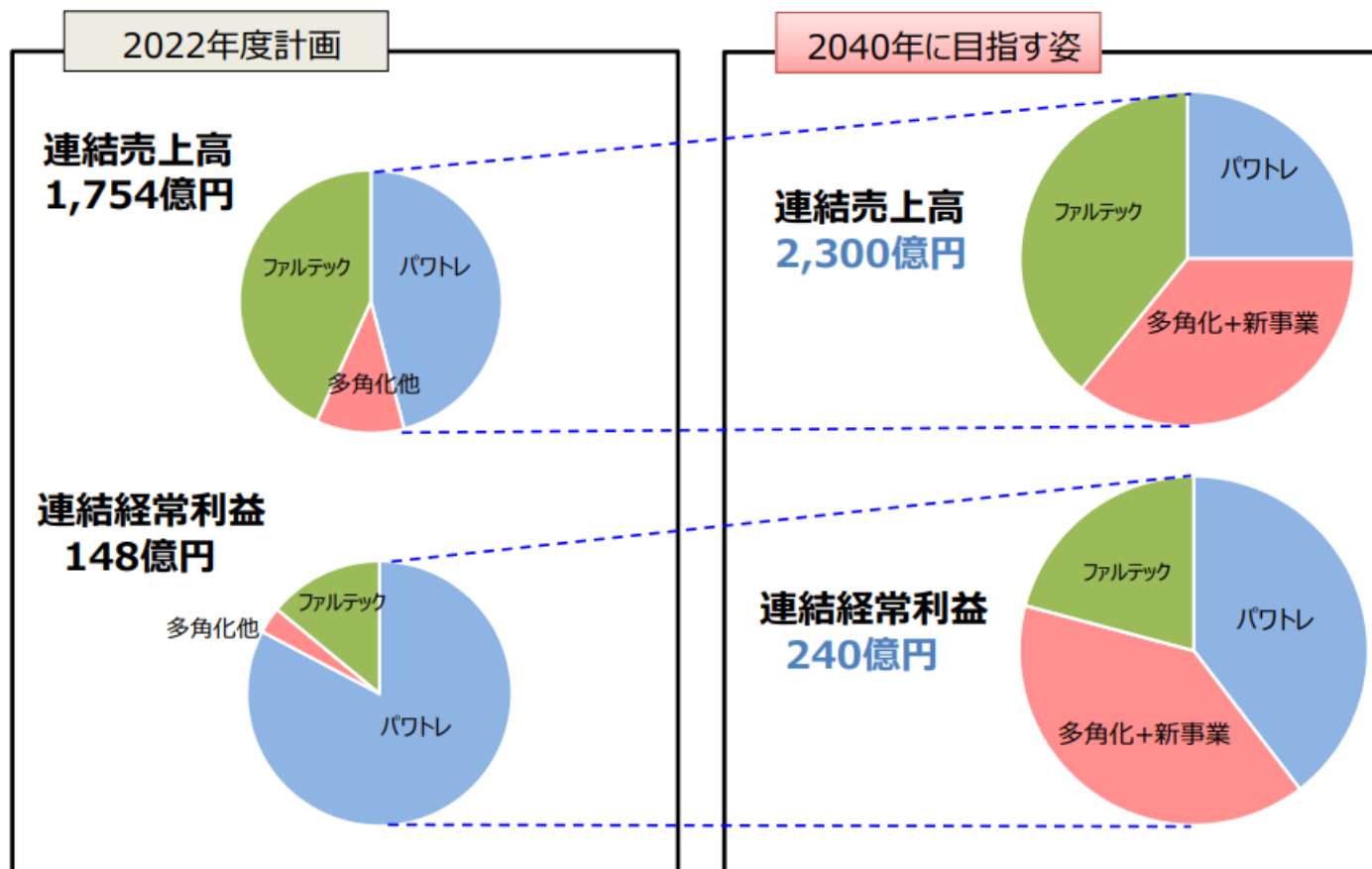
- The PBR of TPR, which handles engine-related parts centered on piston rings, has dropped from 1.3 times five years ago to 0.4 times today. The decline in valuations is partly due to a temporary decline in business performance due to the coronavirus pandemic, semiconductor shortages, etc., as well as a decline in ROE, but the negative expected growth rate factored into stock prices cannot be ignored (rough estimate: PBR 0.4 times = ROE 5%+ (cost of equity 7.5% - expected growth rate -5%)



Source: S&P Capital IQ, FMI

Obvious contrast between winners and losers: TPR

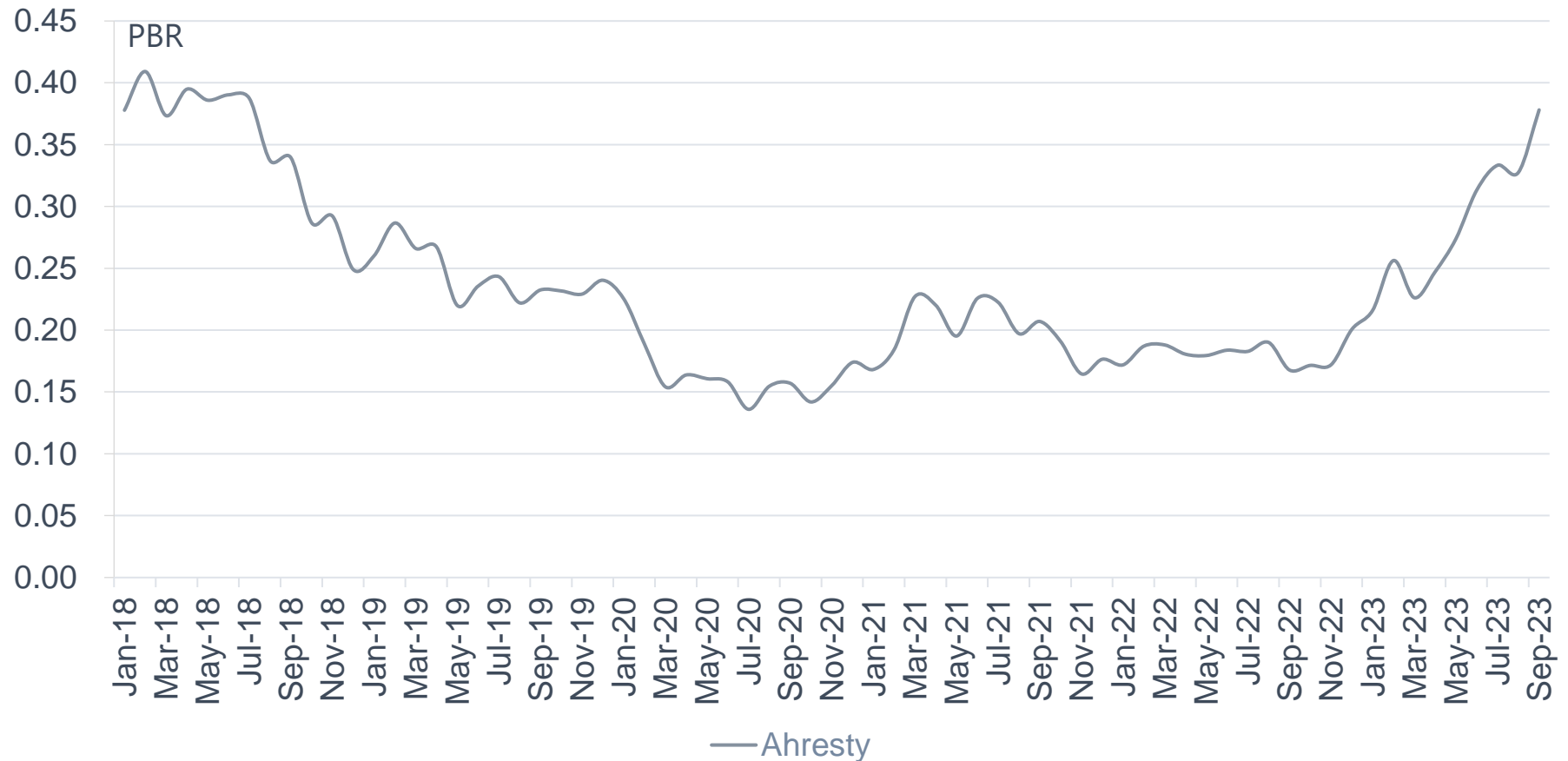
- TPR aims to achieve sales of JPY 230 billion and operating income of JPY 24 billion in 2040, and to achieve well-balanced growth in the powertrain business (piston rings, cylinder liners, valve seats) and non-powertrain business (diversified and new businesses, FALTEC). On the other hand, the probability of achieving numerical targets for diversification and new businesses, and the sustainability of profitability of the powertrain business and FALTEC are unclear. At the very least, the stock market has not gained confidence



Source: TPR, FMI

Obvious contrast between winners and losers: Ahresty

- Ahresty, a major supplier of aluminum die-casting, has improved slightly to 0.3 times recently, but has remained at a low level of 0.2-0.3 times for the past few years. The company has been in the red for four consecutive years since FY20/3

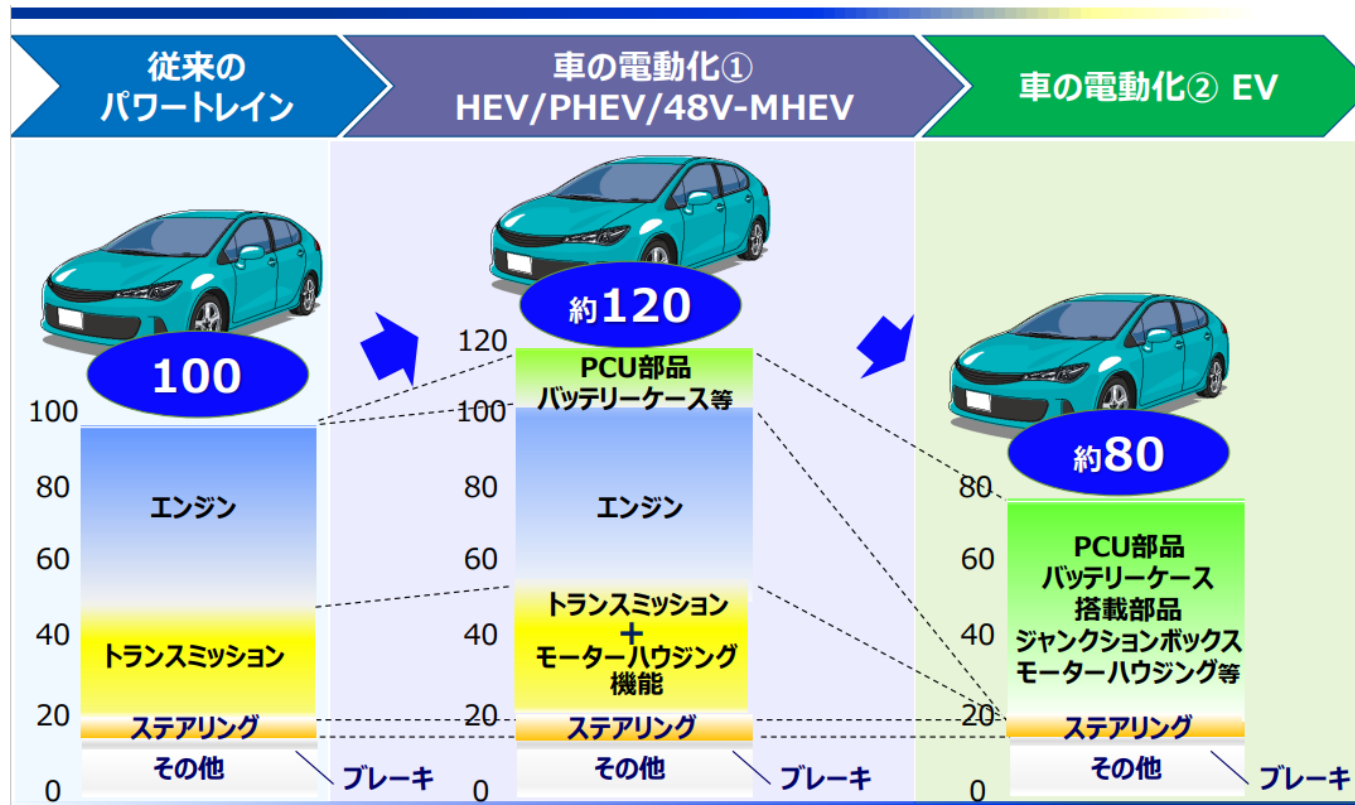


Source: S&P Capital IQ, FMI

Obvious contrast between winners and losers: Aluminum die casting manufacturer

- About 90% of the aluminum die casting market is for the automotive market. Of these, more than 80% are for vehicles equipped with engines. According to Ahresty's calculations, the amount of aluminum die-cast per vehicle used is about 120 HEVs/PHEVs and 80 BEVs, compared to ICEV 100. Impact of the shift to EVs for aluminum die-cast makers is significant as the Japan Die Casting Association consists of a wide range of member companies, including regular members (197 companies) and supporting members (202 companies), for a total of 399 companies

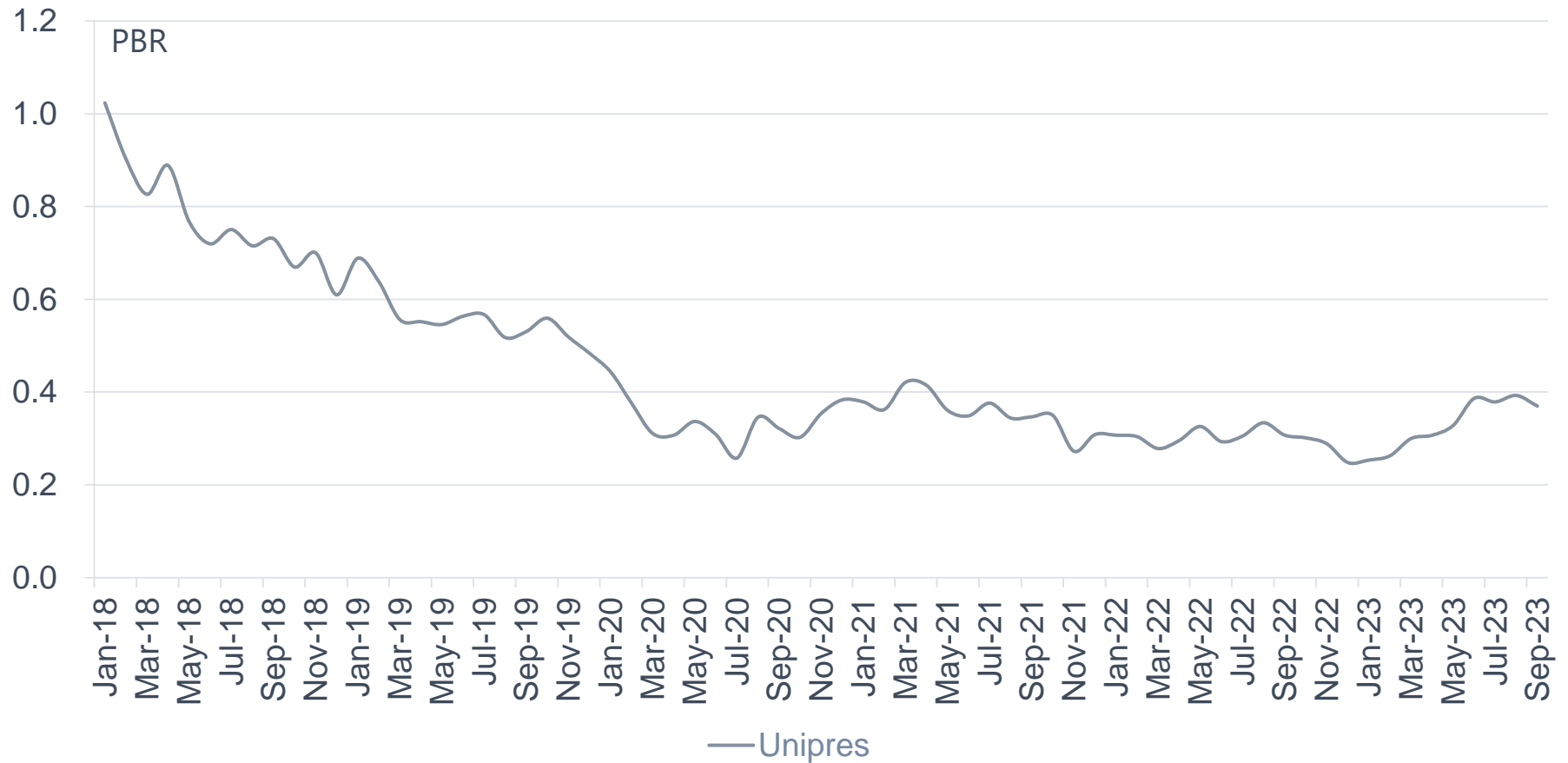
Changes in the amount of aluminum die casting used per automobile platform



Source: Ahresty, FMI

Obvious contrast between winners and losers: UNIPRES

- Unipres, a manufacturer of pressed parts, has seen its PBR drop from 1x five years ago to 0.4x at present. Its ROE has fallen to 2.5 % due to a drop in production at its main customer, Nissan

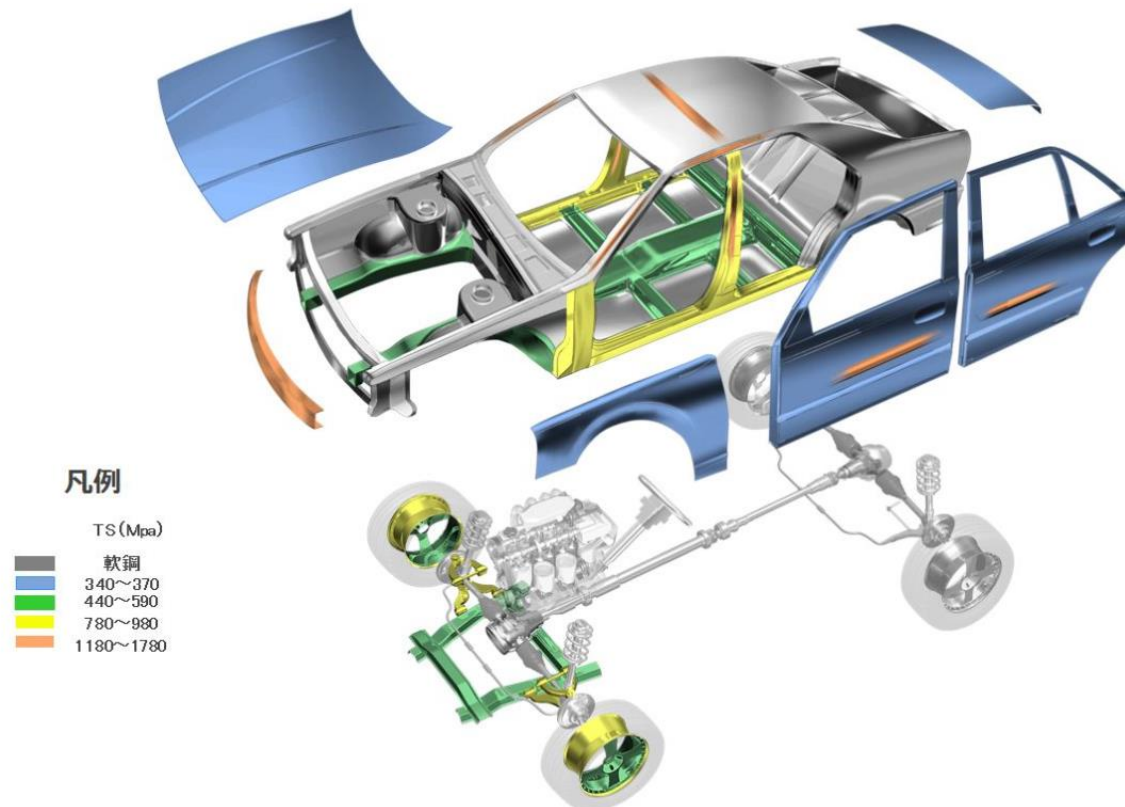


Source: S&P Capital IQ, FMI

Obvious contrast between winners and losers: press makerz

- Currently, about 80% of the total weight of a single car is steel parts and about 10% are aluminum parts. Tesla's Model Y consists of 50% of aluminum parts and low percentage of steel parts. Toyota also seems to intend to significantly increase the amount of aluminum parts used (reduce the amount of steel parts used) by introducing giga cast (in-house production), and the influence for the press manufacturers that use steel materials is significant

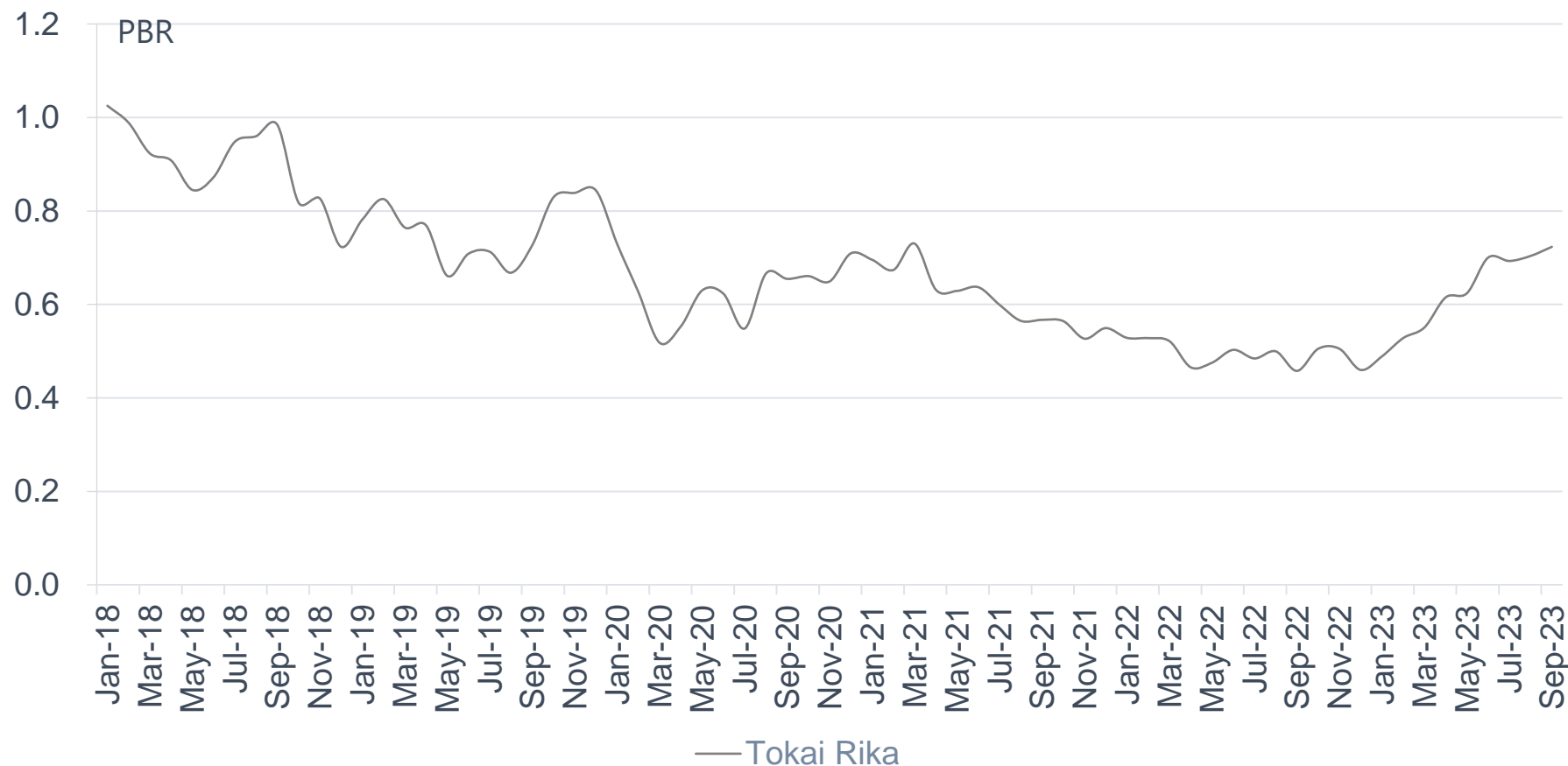
Main Parts of Automobile Steel Materials Used



Source: Nippon Steel, FMI

Obvious contrast between winners and losers: Tokai Rika

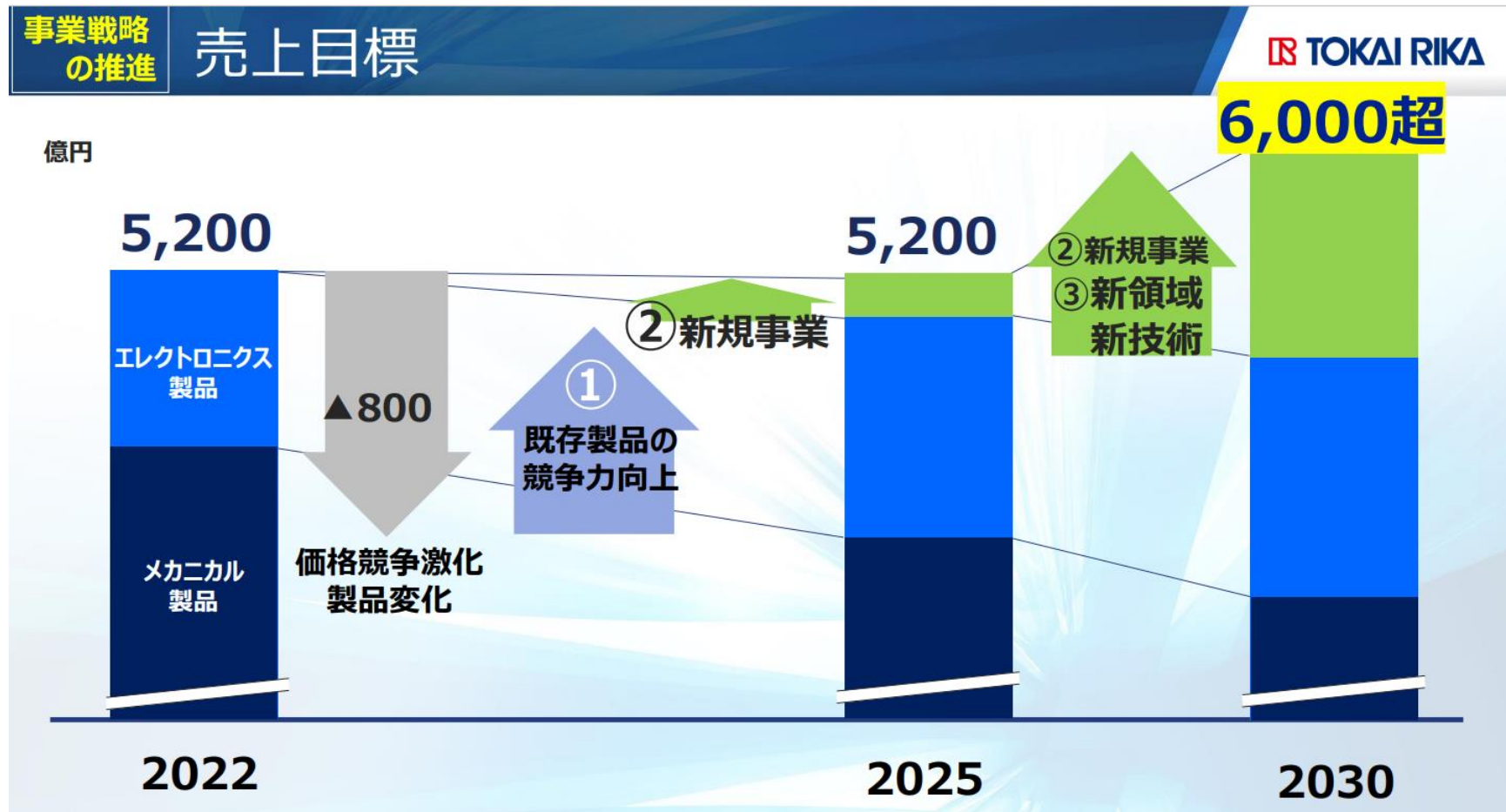
- Tokai Rika, which handles various switches in cars, has seen its PBR constantly stay lower than 1x. In its medium-term management plan, the company expects sales to remain flat from FY2022 to FY2025. The main reason is the decrease in the number of switches installed due to the shift to liquid crystal instruments and intensification of competition. It seems that confidence in the stock market has not been obtained, including the possibility of a rebound due to new businesses after FY2026



Source: S&P Capital IQ, FMI

Obvious contrast between winners and losers: Tokai Rika

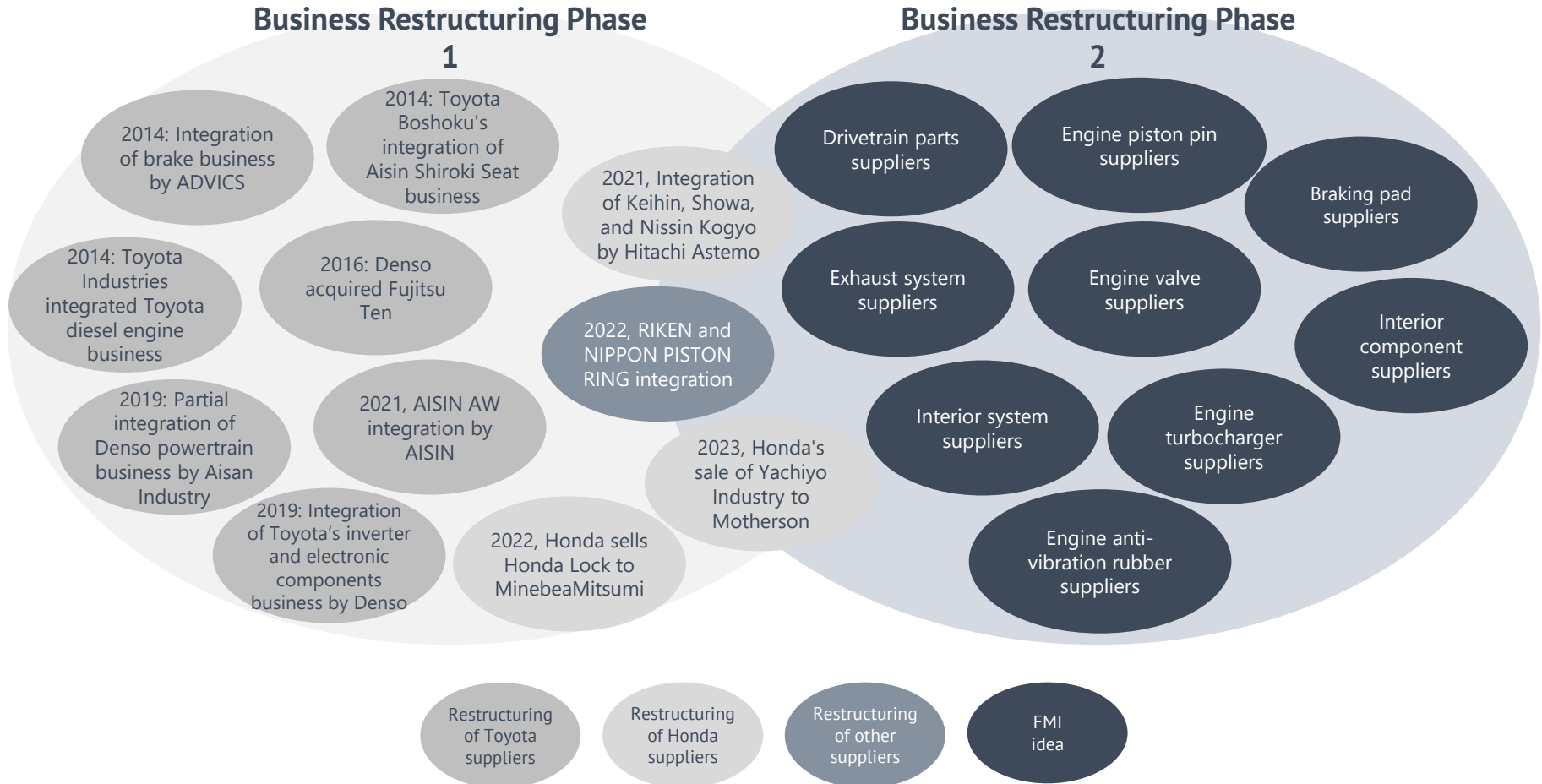
- Following are the sales targets in Tokai Rika's current medium-term management plan



Source: TOKAI RIKA, FMI

Business restructuring and consolidation

– Restructuring of the auto parts sector, previously led by Toyota and Honda suppliers, has shifted from the first phase to the second phase. Engine and drivetrain parts suppliers, which are significantly impacted by the EV shift, will need to accelerate business restructuring and consolidation in order to survive



Source: Information released by each company, FMI

M&A examples: consolidation and competition easing

– While the shift to EVs is accelerating, engine parts will not disappear for the time being. Capturing residual income and cash cow to buy time to create and grow new businesses

Body Parts	Valve Train Parts	Fuel System Parts	Intake And Exhaust System Parts	Lubrication, Cooling System Parts	Electrical Components	Powertrain Parts
<ul style="list-style-type: none"> ▪ Engine Block ▪ Cylinder Liner ▪ Crankshaft ▪ Piston ▪ Piston Pin ▪ Piston Rings ▪ Cylinder Head ▪ Cylinder Head Cover ▪ Cylinder Head Gasket ▪ V-belt ▪ Flywheel ▪ Dry Plate ▪ Ring Gear ▪ Engine A'ssy 	<ul style="list-style-type: none"> ▪ Camshaft ▪ Rocker Arm ▪ Engine Valves ▪ Valve Springs ▪ Valve Seat ▪ Valve Guide ▪ Valve Lifter ▪ Timing Belt ▪ Timing Chain ▪ Timing Crank Pulley ▪ Timing Cam Pulley ▪ Variable Valve Timing Unit ▪ Variable Valve Lift Mechanism ▪ Timing Tensioner ▪ Timing Belts (Chains) and Covers 	<ul style="list-style-type: none"> ▪ Injector (Gasoline) ▪ Throttle Body ▪ Pressure Regulator ▪ Electronic Diesel Fuel Injection ▪ Fuel Tube ▪ Fuel Filter ▪ Fuel Pump ▪ Fuel Tank ▪ Canister 	<ul style="list-style-type: none"> ▪ Air Cleaner ▪ Intake Manifold ▪ Turbocharger ▪ Intercooler ▪ Exhaust Manifold ▪ Exhaust Pipe ▪ EGR Pipe ▪ O2 Sensor ▪ Catalyst ▪ Catalytic Converter ▪ Muffler 	<ul style="list-style-type: none"> ▪ Oil Pan ▪ Oil Strainer ▪ Oil Pump ▪ Oil Filter ▪ Water Pump ▪ Glow Plugs ▪ Alternator ▪ Gasoline/Diesel Vehicle Starting Battery 	<ul style="list-style-type: none"> ▪ Ignition Coil ▪ Spark Plug ▪ Glow Plugs ▪ Starter 	<ul style="list-style-type: none"> ▪ Clutch Cover ▪ Clutch Disc ▪ Clutch Facing ▪ Clutch Master Cylinder ▪ Clutch Release Cylinder ▪ MT ▪ MT Shift Lever ▪ Shift Fork ▪ Synchronizer Ring ▪ AT ▪ CVT ▪ Torque Converter ▪ AT Shift Lever ▪ AT Control Cable ▪ Transfer ▪ Differential

Source: Marklines, FMI

M&A examples: multi-domain (Faurecia)

– Faurecia (now “Forvia”), a manufacturer of seats and interior materials, executes M&A strategy aimed at transforming itself into a company that can provide cockpits and interior spaces in a single package in preparation for the era of automated driving

Announcement Period	Target Companies	Classification	Acquired Technology, Capabilities, etc.
Jul. 2018	SUBPAC (US)	Capital Investment	Immersive sound system
Oct. 2018	Clarion (JPN)	Acquisition	Car Navigation System
Nov. 2018	Hella (GER)	Affiliated	Development of lighting products for cockpits
Dec. 2018	ESP Consulting (FRA)	Capital Investment	Research on human health, etc.
Feb. 2019	Japan Display (JPN)	Affiliated	Large display for interior use
Apr. 2019	Creo Dynamics (SWE)	Acquisition	Soundproofing system
Jul. 2019	Microsoft (US)	Affiliated	Digital services in the cockpit
Dec. 2019	Devialet (FRA)	Affiliated	Development of high-quality sound systems
Jan. 2020	Beijing Horizon (CHN)	Affiliated	Development of cockpit modules and AI systems for ADAS
Apr. 2020	Changchun Xuyang Industry (CHN)	Joint Venture	Production capacity of display products
Jul. 2020	IRYStec Software (CAN)	Acquisition	Display software platform
Jun. 2021	DesignLED (UK)	Acquisition	LCD backlight
Aug. 2021	Hella (GER)	Acquisition	Electronics, Software development engineer

Source: Publicly available materials of each company, FMI

M&A examples: multi-domain (Faurecia)

	Company	Integrated System	Individual System	Module Mechanism	Platform
Type A Tier 0.5 Supplier	Bosch	[Grey Box]	[Grey Box]	[Grey Box]	[Grey Box]
	Denso		[Grey Box]		
	Continental		[Grey Box]		
Type B Multi-domain Supplier	Valeo	[White Box]	[Grey Box]	[White Box]	[White Box]
	Aisin		[Grey Box]		
	Forvia (Faurecia)		[Grey Box]		
Type C Single Domain Supplier	BorgWarner	[White Box]	[Grey Box]	[White Box]	[White Box]
	Koito Manufacturing		[White Box]		
	Hanon Systems		[White Box]		
Type D Module Supplier	CATL	[White Box]	[White Box]	[White Box]	[White Box]
	NVIDIA		[White Box]		
	Renesas Electronics		[White Box]		
Type E Component Supplier	Gestamp	[White Box]	[White Box]	[White Box]	[White Box]
	Musashi Seimitsu Industry		[White Box]		
	Unipres		[White Box]		
Type F Platformer Foundry	Magna	[White Box]	[Grey Box]	[White Box]	[Grey Box]
	Foxconn		[White Box]		
	Valmet Automotive		[White Box]		

Source: Publicly available materials of each company, FMI

M&A examples: vertical consolidation (Musashi Seimitsu Industry)

- Musashi Seimitsu Kogyo Co., Ltd., which mainly manufactures engines and drive parts such as gears and camshafts, has invested in Booma, an EV startup in India, which is also a sales channel for its EV drive units for motorcycles



Source: Publicly available materials of each company, FMI

M&A examples: vertical consolidation (Daido Kogyo)

- Daido Kogyo, whose main focus is engines such as timing chains and tensioners, has invested in F2 Techno, a domestic EV start-up company



Source: Publicly available materials of each company, FMI

M&A examples: shift to service (Horiba)

- Horiba Corporation, which mainly produces automotive engine measurement equipment, acquired MIRA, which provides vehicle development engineering and testing facilities for automobiles in the United Kingdom. Since then, the company has shifted its focus to expanding its ECT (Engineering Consultancy & Testing) business

自動車新領域での様々な開発ソリューションを提供

ホリバMIRA社—世界各地の自動車関連メーカーと緊密なパートナーシップで開発をサポート

ホリバMIRA社 顧客	エンジニアリング	認証・規格試験対応	現地仕様試験	ベンチマーク試験	立地
英国拠点を持つ自動車関連企業	✓	✓			✓
英国拠点のない自動車関連企業	✓	✓	✓	✓	
自動車関連スタートアップ	✓	✓		✓	
自動車関連サプライヤー	✓	✓	✓	✓	
素材メーカー	✓			✓	



ASSURED CAV

- 2022年に本格稼働した設計から実車検証までを包括的に支援する、開発エンジニアリング総合施設
- イギリスのVehicle Dynamics International誌より“Test Facility of the Year”を2022年に受賞

シミュレーションと実証実験をシームレスに実施 (デジタルツイン)



Source: Publicly available materials of each company, FMI



C O R P O R A T E F I N A N C E

I N T E R N A T I O N A L