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Upcoming Events

- Sept. 11** Coffee Break with Plante Moran - Supplier EV Transition Challenges: Volume Volatility & Capital Repayment (free)
- Sept. 17** Nexteer Webinar: Steer-By-Wire + Software Solutions - Enabling Advanced Safety, Performance & Convenience for Future Mobility (free)
- Sept. 26** Navigating the Future: Corporate Venture Capital in the Automotive Industry (free)
- Oct. 15** Webinar: Impact of AI in the Automotive Transformation



www.SAAauto.com

2024 Automotive Update



Laurie Harbour



Steven Wybo



Mike Wall



Clay Vanderpool

Laurie Harbour: *Partner, Manufacturing, Retail & Distribution - Wipfli*

Steven Wybo: *Senior Managing Director - Riveron*

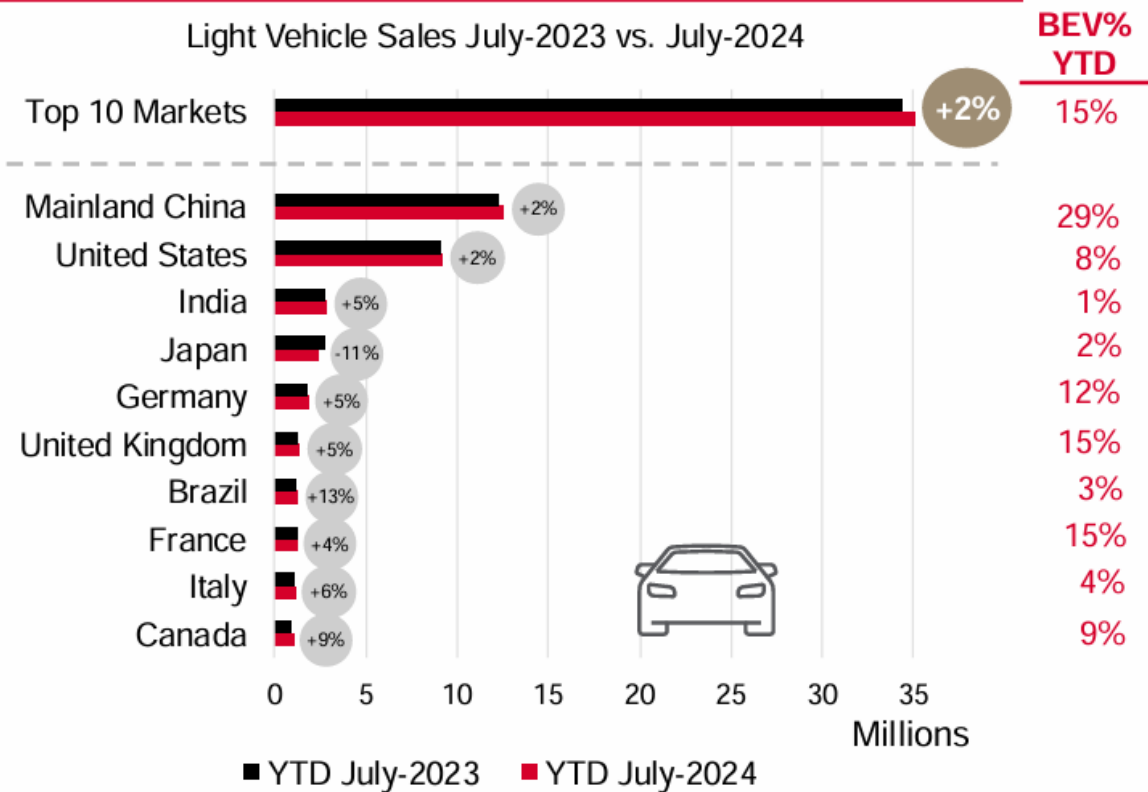
Mike Wall: *Executive Director, Automotive Analysis - S&P Global*

Clay Vanderpool (Moderator): *Senior Vice President - PNC*

Total Industry Sales Volume | Sales Growth is Slowing Relative to 2023

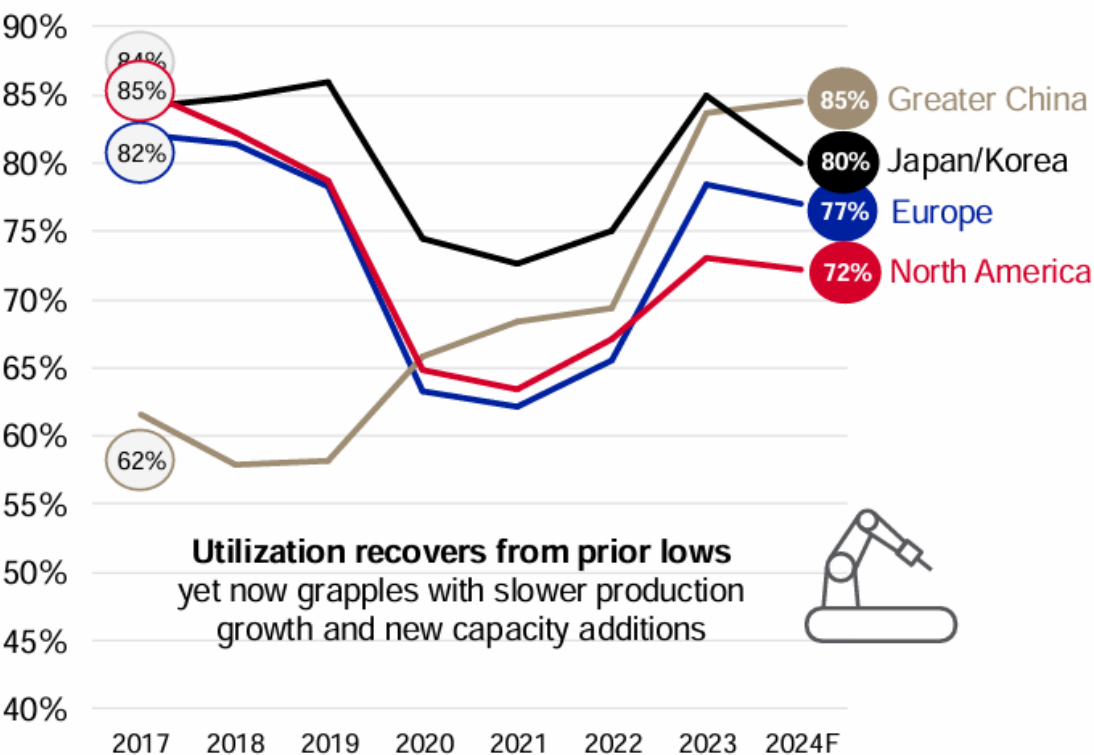
Early 2024 sales supported by China/India and larger developed markets, yet recent results have underperformed; Top 10 market sales up 2% through July 2024; vehicle production & utilization shifts to more demand driven realities

Light Vehicle Sales: Key Markets*



Data compiled September 3, 2024
* Note: YTD July-2023 vs. YTD July-2024 (Includes forecasted data)
Source: S&P Global Mobility – Global Auto Tracker

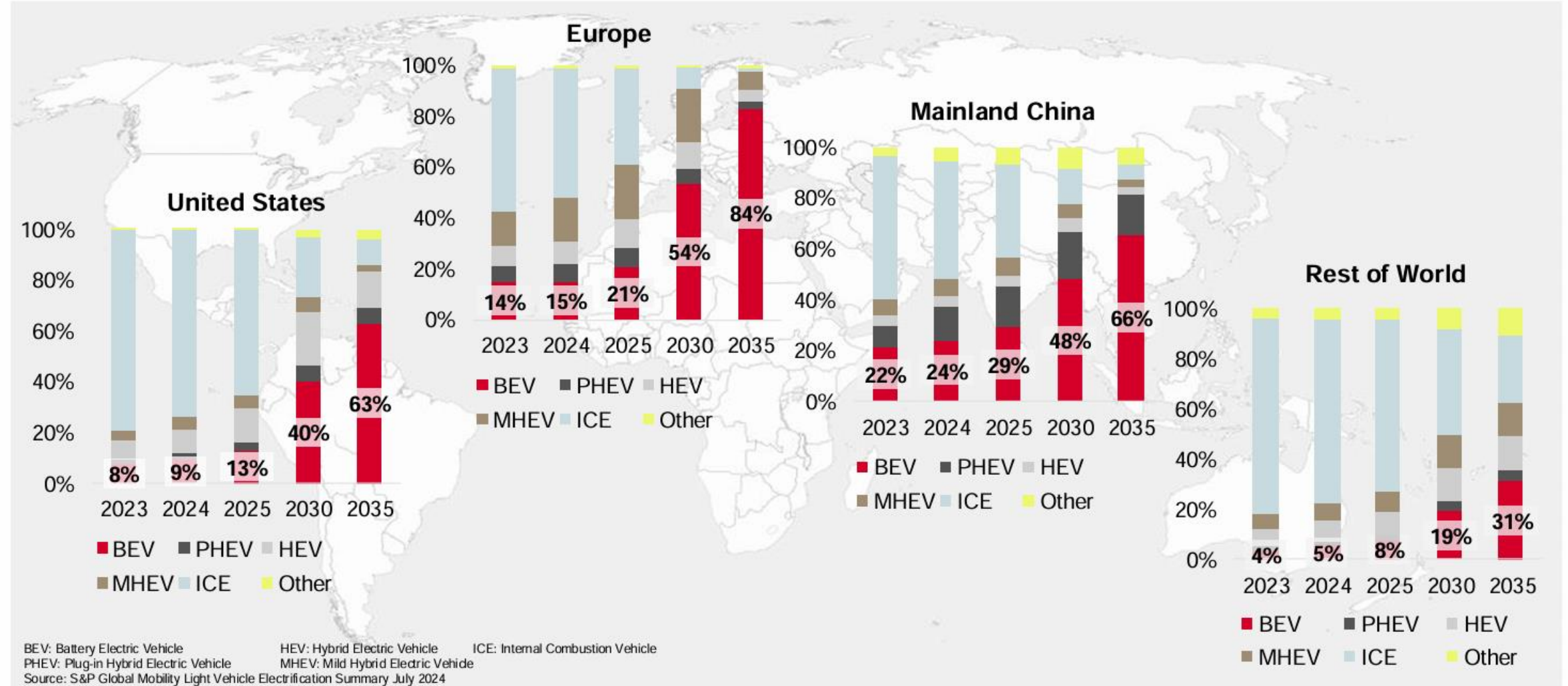
Light Vehicle Production: Capacity Utilization



Source: S&P Global Mobility – Vehicle Plant Capacity August 2024

Light Vehicle Electrification Trends by Region | Realignment of Expectations Continues...

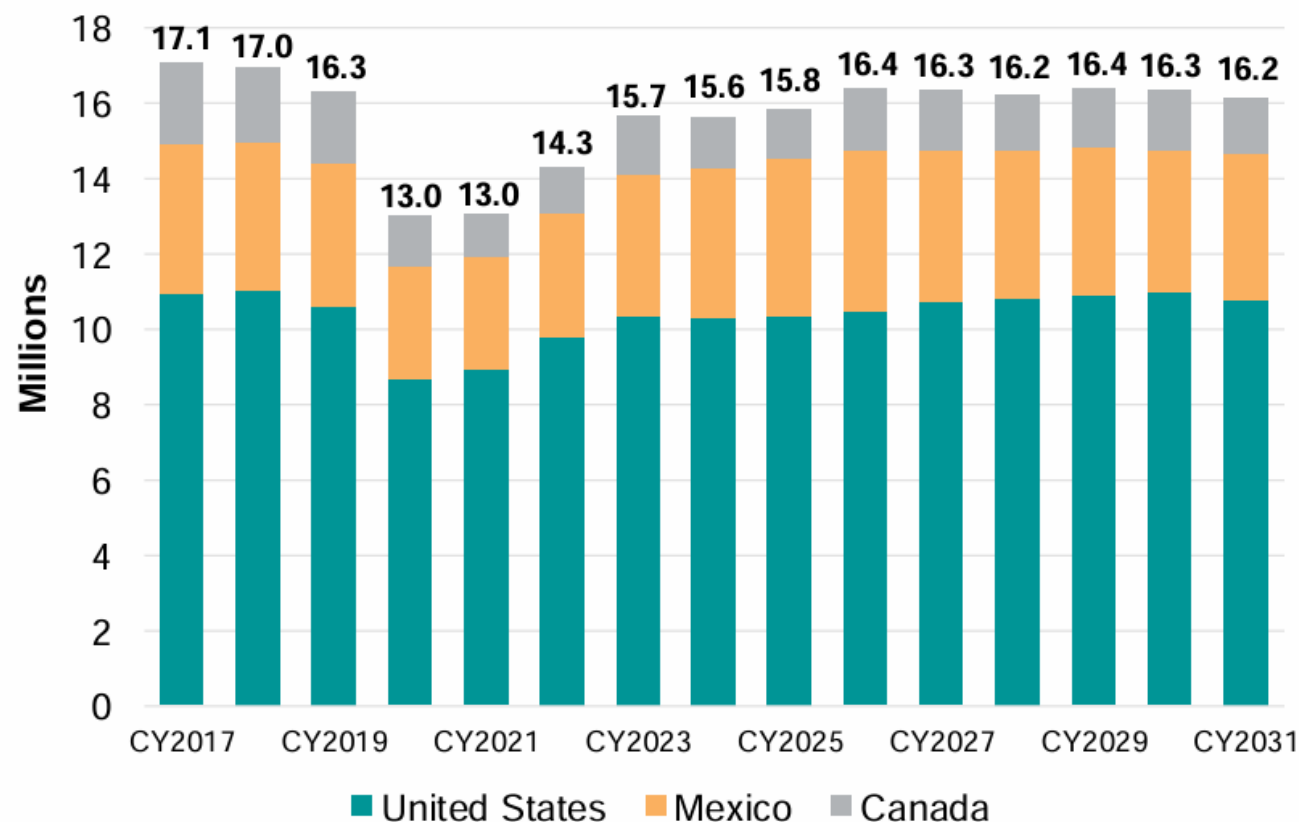
Regional preferences and incentives result in a varied propulsion mix; Watch the model count!



North America: Short-term Outlook Offers a Mix of Strong Competing Influences

Inventory tailwind has largely ended with areas of high inventory needing to be addressed; choppy BEV transition and vehicle pricing are lingering concerns

North America Light Vehicle Production Forecast



Data compiled August 19, 2024
Source: S&P Global Mobility

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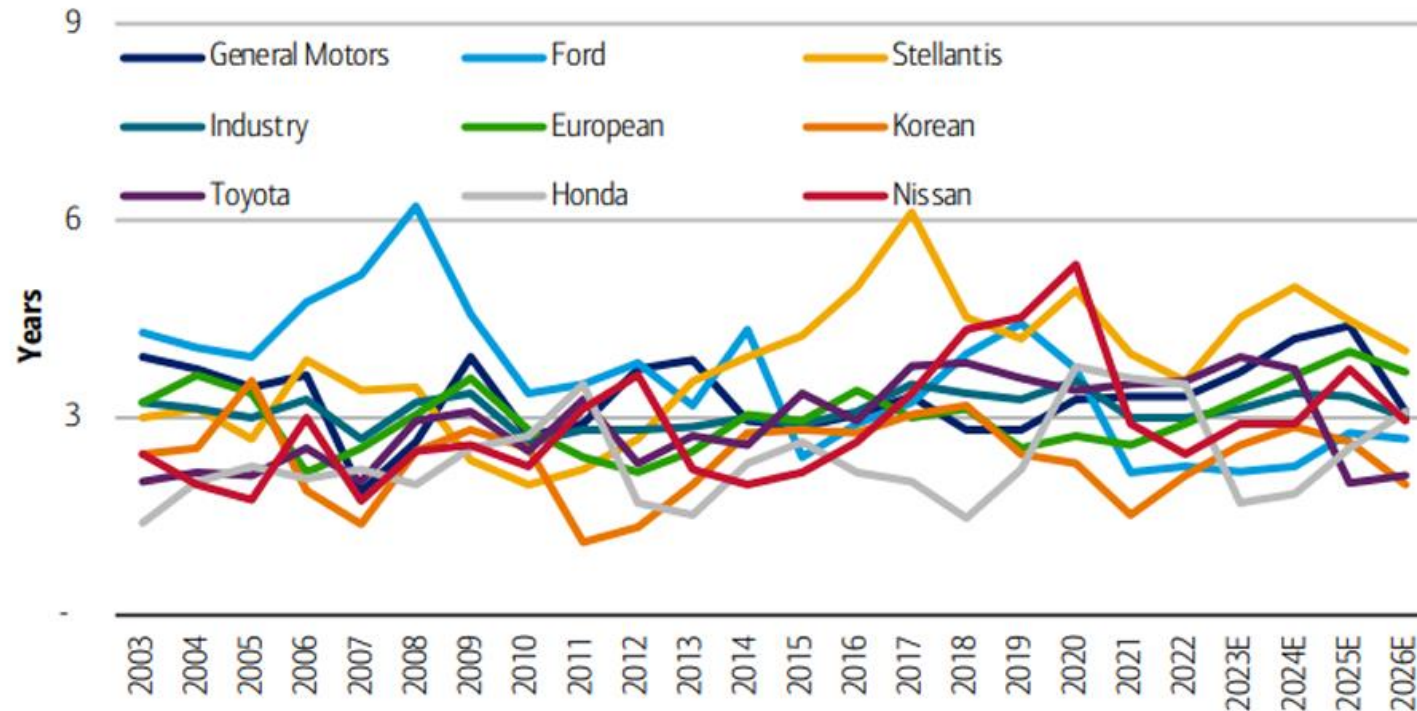
- Theme of inventory tailwind shifts to a focus on inventory discipline; exports stable, not growing as activity focuses on domestic markets; BEVs creating transitory redundancy
- Japanese OEM output influenced by desire to leverage pricing strength and efforts to support domestic utilization; Hyundai/Kia demonstrating similar but more limited impact
- CHIPS Act and Inflation Reduction Act attempt to rebalance supply chains in favor of local production, could provide a boost to on-shore activity – risk of retaliatory legislation possible, fine balance to be achieved
- Renewed interest in Mexico as underutilized ICE capacity leads to BEV investments (GM, Nissan, Stellantis, VW); Chinese localization presents additional opportunity (BYD, Chery, etc.)

AGE OF THE MODELS IN THE DEALERSHIP MATTERS

- ▶ GM and Stellantis have, and are forecasted to have, aging models on the showroom floor. This will impact consumer buying patterns as new vehicles tend to attract new customers into the brands.

Exhibit 15: Average showroom age by OEM (years) – MY2003-2026E

Average age should converge to 3 over our forecast period, with outliers Stellantis (high) and Korean (low)









Source: BofA Global Research, Based on methodology detailed on page 4

ACCELERATING VEHICLE TRANSITION



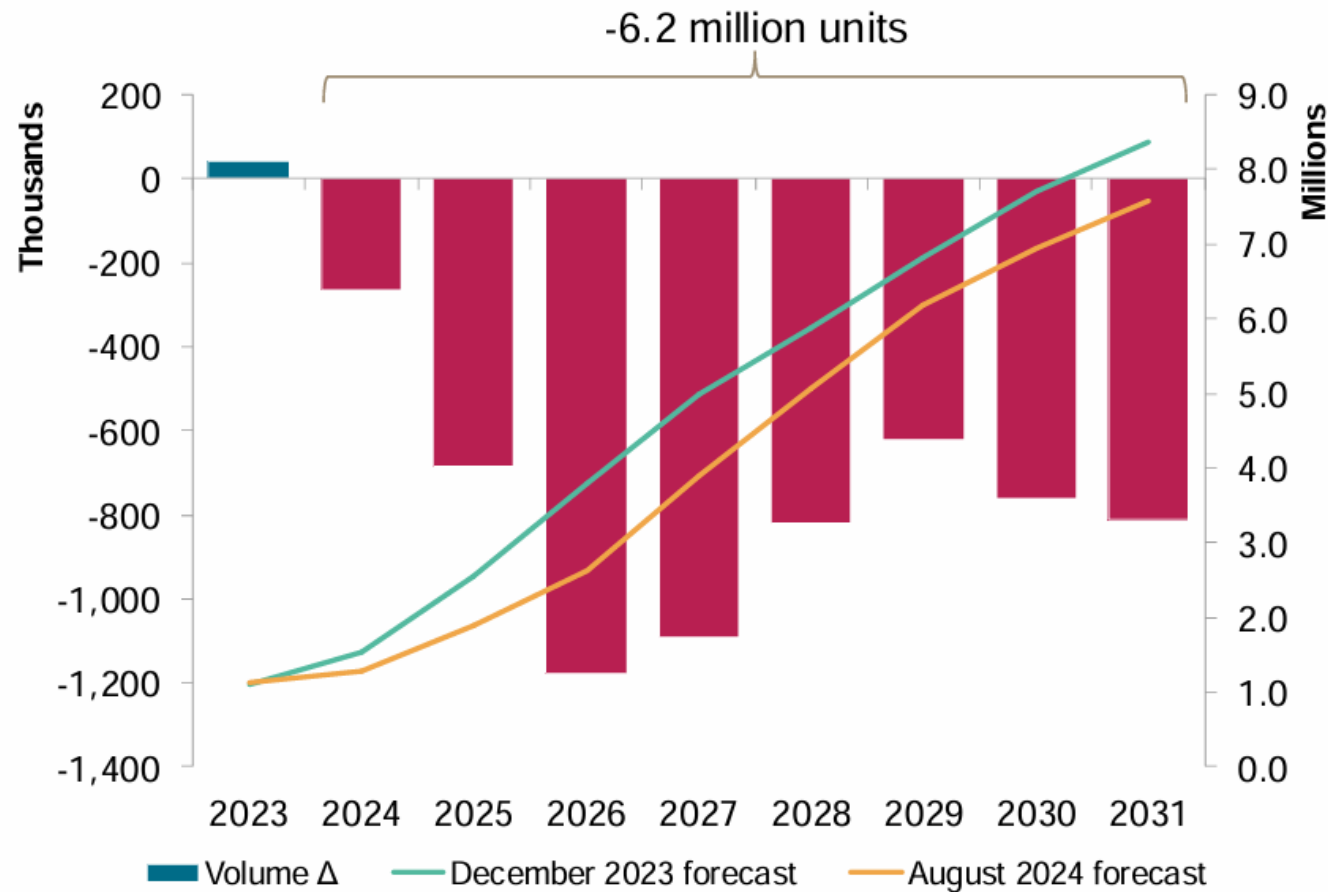
The BEV tidal wave is approaching fast; ICE vs BEV co-existence presents challenges and opportunities.

	2021	2030
Tesla share of US EV Sales	71% 	19% 
California Share of US EV Sales	36% 	16% 
Top 90% Brands of US EV Volume		
# of EV Models	26	300+
Charging Infrastructure (Private, Public, Semi-public)	0.9M	13.4M

Source: S&P Global

Deflating the BEV Hype Bubble

North American production: BEVs limited to market physics



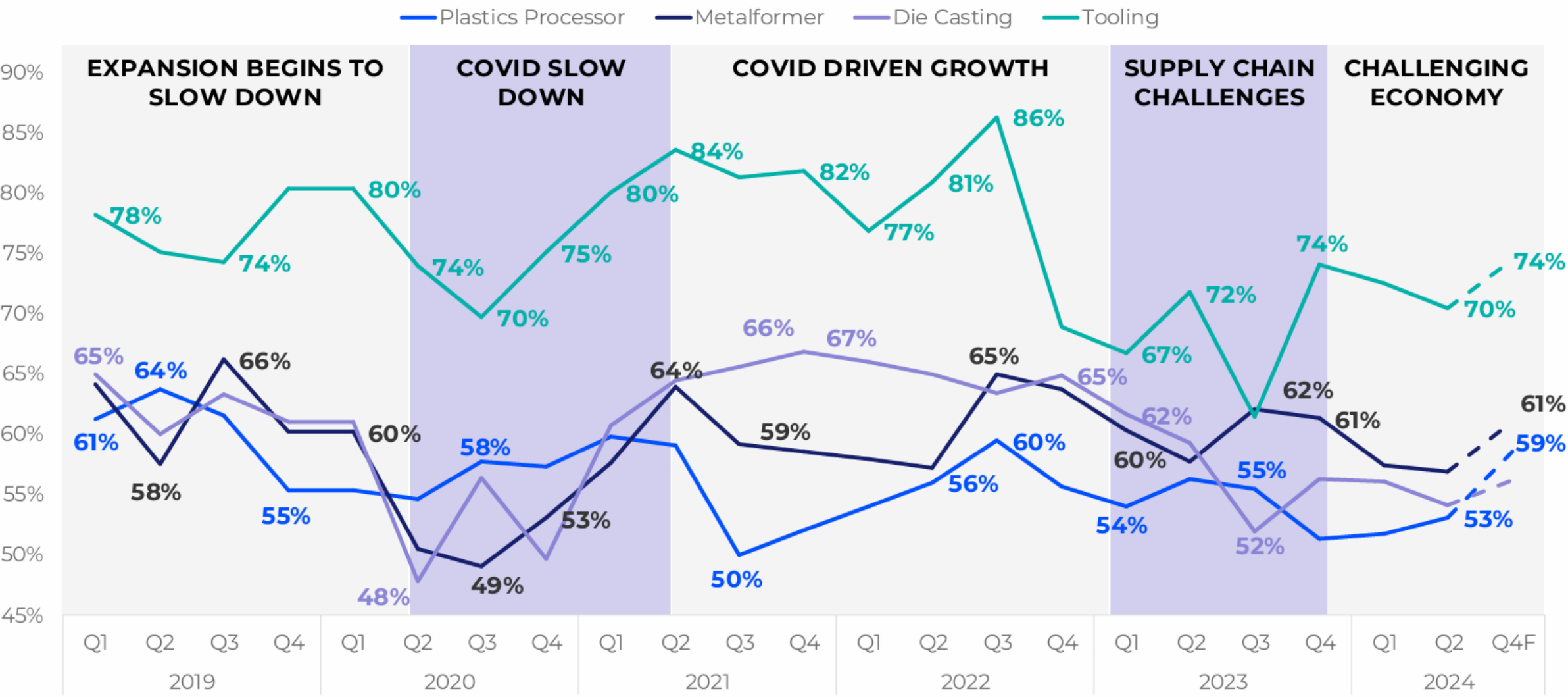
Data compiled September 3, 2024
Source: S&P Global Mobility

Roughest road still ahead

- Pullback in regulations and product planning
- Crossing the chasm to mainstream
 - Exhausting pent-up demand; sell on merits
 - Minimize risks and switching costs
 - Increasingly needs to solve problems
- High level of product execution risk
 - Design, price, position, performance
 - Higher forecast bandwidth amid changes
- BEV loyalty, product and brand to be decided
- Hypotheses:
 - BEV consumers shift with latest product
 - Pricing and incentives as motivation
 - Lifecycle curves; front-loaded demand

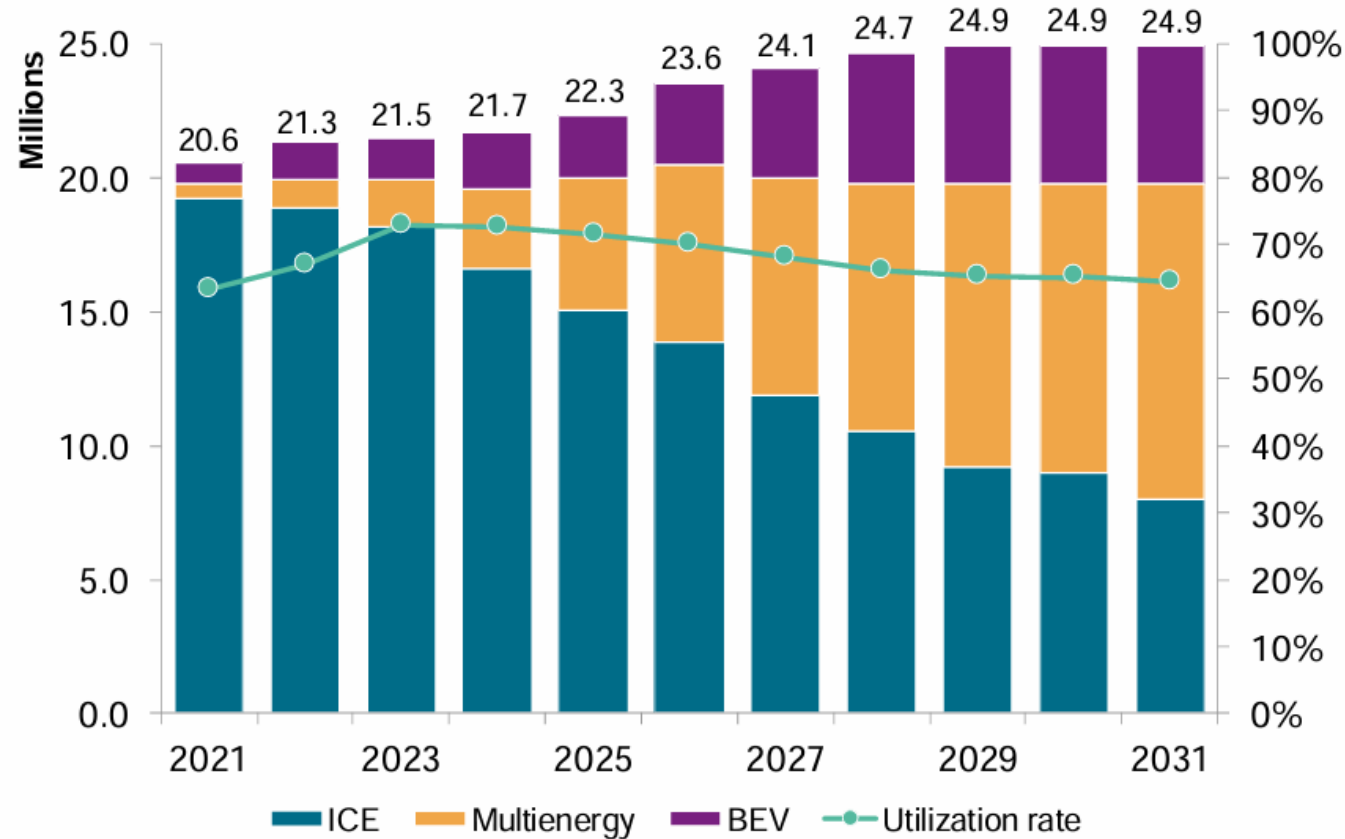
Utilization Varies by Process Type

Capacity Utilization by Process Type



North America Production Capacity

Light vehicle capacity by propulsion type



Data compiled July 26, 2024
Source: S&P Global Mobility

Capacity transformation

- Multienergy as fastest growing segment
 - 580% growth to 47%, largest share in region
 - Multienergy as risk hedge
- BEV plants creating Transitory excess capacity
 - 3.4M or 16% increase to 24.9M
 - Leverage manufacturing benefits for BEV
- Heavy-duty trucks as last ICE remnant
 - ICE capacity from 94% to 33% share
- More dramatic capacity actions post 2030

Utilization issues

- Industrywide underutilization pressures
- ICE utilization declines from 76% to 63%
- BEV increases from 46% to 77%
 - Rate of adoption to influence

MOST EVS ARE BIG LOSERS FOR OEMS PROFITS – FOR NOW

- ▶ The average input costs for EVs vis-à-vis ICE vehicles is approximately \$10k more!
- ▶ Component \$CPV for US ICE vehicle vs. EV - \$34,725 in EV Content

\$USD	Global Traditional ICE Vehicle	US ICE Vehicle - Increased in line with RPU	US Battery Electric Vehicle
Average \$ Revenue per Unit	\$31,922	\$44,557	\$55,338
Component Content Cost			
Steering	\$420	\$590	\$590
Passenger Restraints	\$380	\$530	\$530
Exhaust	\$335	\$470	\$0
Wheels & Tires	\$345	\$485	\$485
Body Glass	\$155	\$215	\$215
Interior	\$1,480	\$2,070	\$2,070
Body & Structural	\$3,325	\$4,655	\$5,585
Suspension	\$650	\$910	\$910
Axles, Driveshafts, & Components	\$1,060	\$1,485	\$1,115
Climate Control & Engine Cooling	\$850	\$1,190	\$1,670
Audio & Telematics	\$415	\$580	\$815
Fuel System	\$415	\$580	\$0
Braking	\$515	\$720	\$1,120
Transmission	\$1,695	\$2,375	\$0
Engine	\$3,350	\$4,690	\$0
Electronics & Electrical	\$2,385	\$3,340	\$3,340
Sub-Total	\$17,775	\$24,885	\$18,445
EV Electrical Architecture			\$1,325
Electric Motor / Drive / Transmission			\$1,200
Power Electronics / Other			\$1,520
Battery Cell / Pack			\$12,235
			\$34,725
			\$9,840

SUPPLIERS ARE FACING FINANCIAL HEALTH CONCERNS FROM RISING WAGES, HIGHER INTEREST RATES, AND DECREASING PROFITABILITY



Larger Suppliers:

Larger suppliers have benefited from the "amend and extend" approach by banks on working capital lines, allowing them to navigate liquidity challenges over the past few years. The softer approach by the lenders may be fading in 2024.



Labor Issues:

Higher labor costs influenced by the new UAW contract and heightened worker expectations, are making their way into the supply base. This will impact both union and non-union companies.



Smaller Suppliers:

Small suppliers are exhibiting signs of deteriorating profitability, with impending challenges related to labor inflation yet to be factored in. Low profitability erodes liquidity and leverage metrics and can lead to working capital loan covenant violations.



Higher Interest Rates:

Tightened credit standards and higher interest rates further erode cash, impacting the ability to operate and fund growth

U.S. Prime Rate
5.50% Feb 2019  8.50% May 2024



Tier 1 Suppliers Squeezed:

OEMs will seek cost reductions to offset their higher labor costs. With sub-supplier's bankability likely to drop in 2024 based on recent data, increased insolvencies seem likely. Thus, Tier 1s will see margin pressure from both OEMs and sub-tiers in 2024.



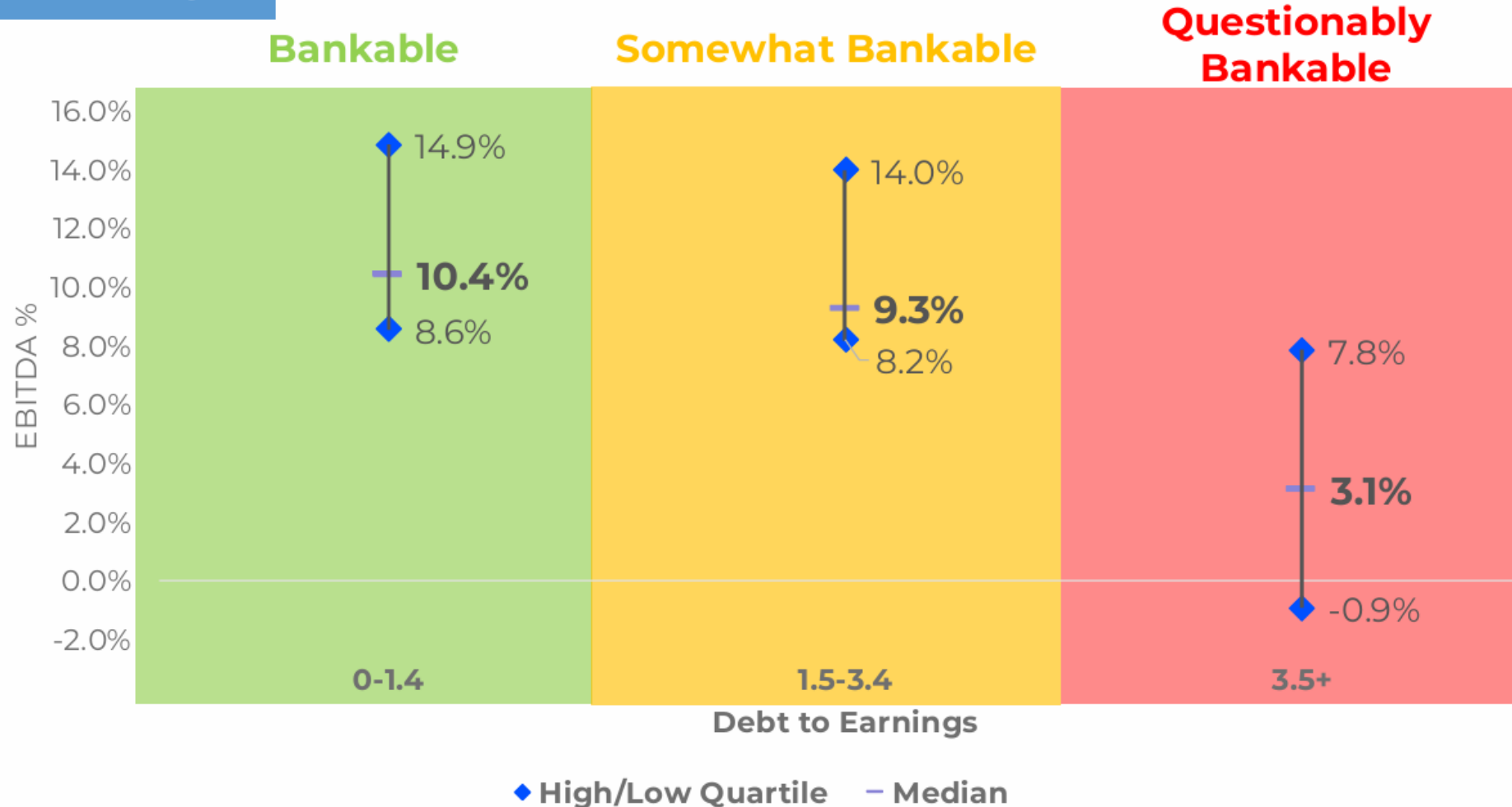
Transition from ICE to BEV:

EV optimism is fading and the pace of transition from ICE to BEV is slowing. OEMs have recently delayed EV program launches and taken down volumes on existing programs. This is further straining suppliers who have invested heavily in BEV.

MFG'ers Hunkered Down to Protect Balance Sheet

Debt to Earnings Trend

All MFG



Wipfli defines any company with a Debt-to-Earnings Ratio greater than 3.5 as not bankable. Some manufacturers are faring far better than others. While several companies in the bankable and somewhat bankable groups continued to have strong profit, the higher cost of money made it more difficult to pay down debt in the high-interest rate environment.

Formulas: Total Debt / EBITDA %

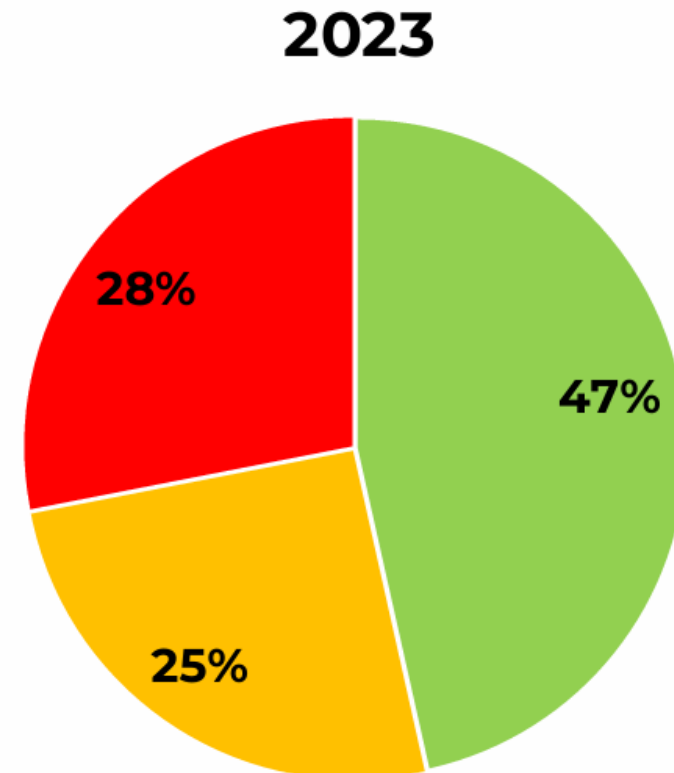
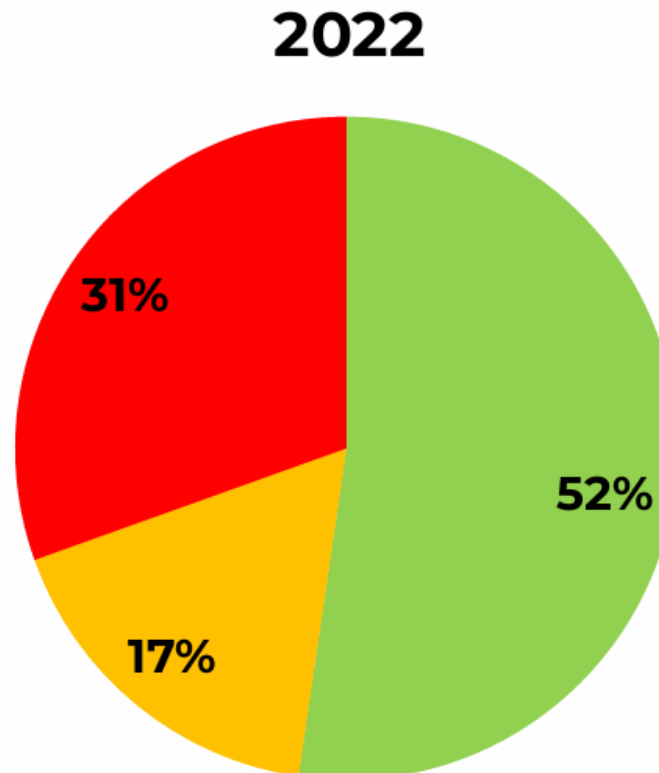
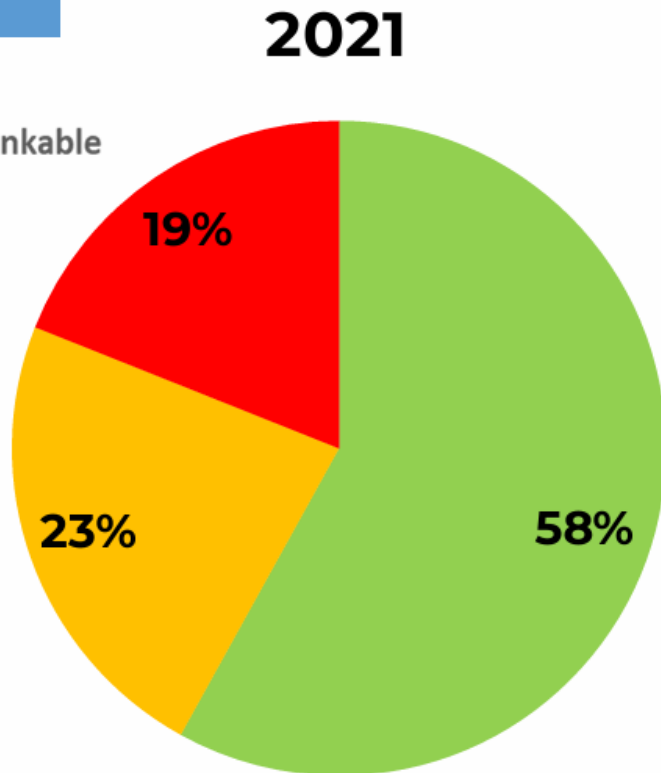
Total Debt = Line of Credit + Current Maturities of Long-term Debt + Long-Term Liabilities

Region: North America. Source: Harbour IQ.

MFG'ers in Bankable Category Decline

All MFG

- Bankable
- Somewhat Bankable
- Not Bankable

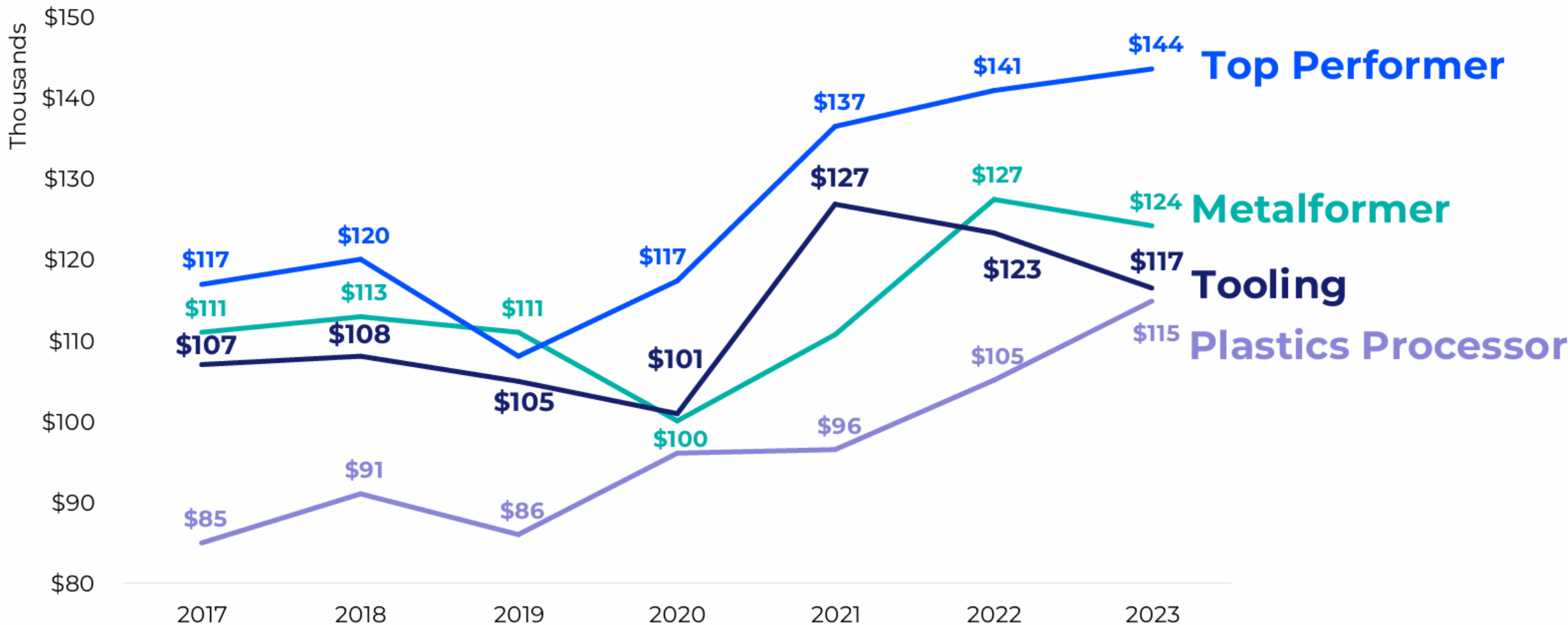


Throughput Change Drives Returns

\$167K

All MFG Top Quartile 2023

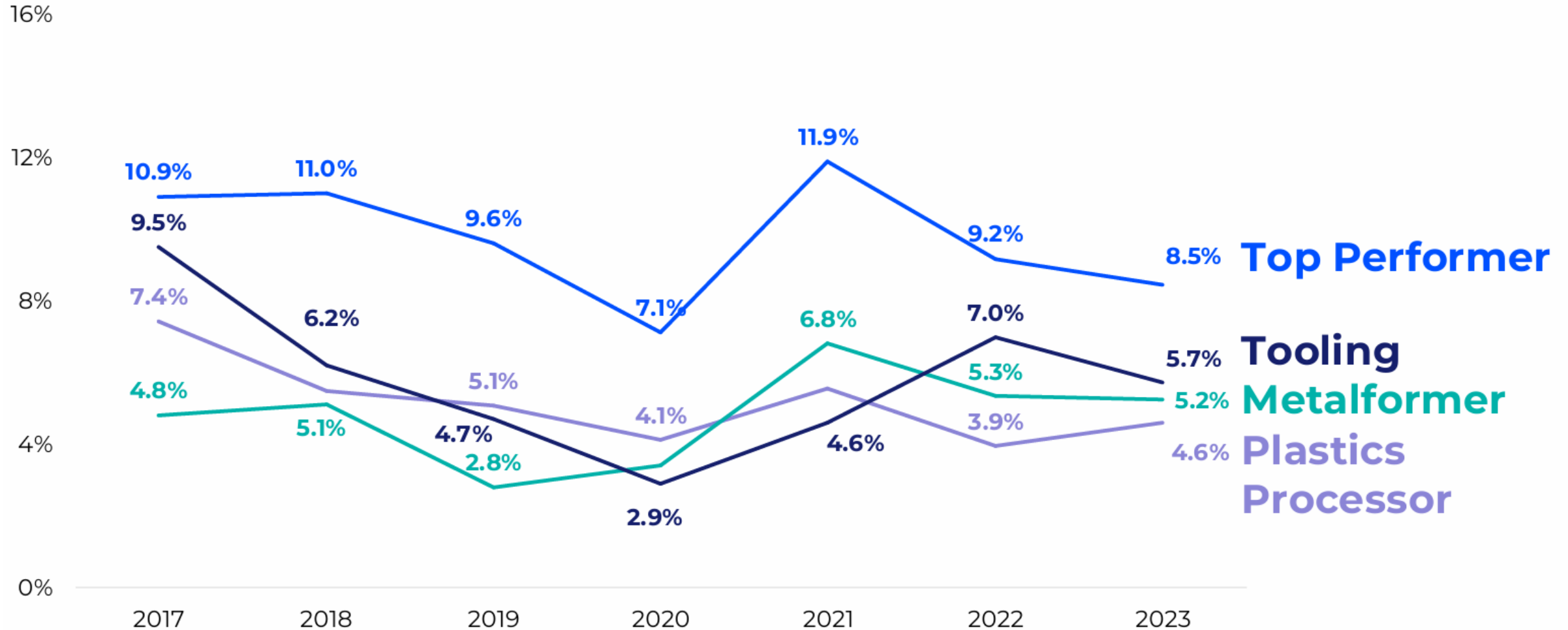
Throughput



Profitability Declines for all but Plastics











11.4%
All MFG Top Quartile 2023

Profitability (EBIT %)



Formula: EBIT % = EBIT / Net Sales
Region: North America. Source: Harbour IQ.

RECENT FINANCIAL TENSIONS IN THE SUPPLY CHAIN HAVE LED TO INTENSE NEGOTIATIONS, RESULTING IN LITIGATION

Plaintiff	Defendant	Case Context	Outcome	Takeaway
 Tier 1 Customer	 Tier 2 Supplier	Pricing dispute where MSSC claimed AirBoss was bound by a long-term requirements contract, while AirBoss argued it wasn't due to lack of a definite quantity term.	The Michigan Supreme Court ruled in favor of AirBoss, stating that "blanket" did not constitute a definite quantity term necessary for an enforceable contract.	Clear and definite quantity terms are essential for enforceable contracts.
 Tier 2 Supplier	 Tier 1 Customer	Higuchi sought increased pricing, which Autoliv refused, leading to a dispute over whether the term "requirements" in Autoliv's purchase orders was a sufficiently definite quantity term to create an enforceable requirements contract under the UCC.	The district court ruled in favor of Autoliv, stating that the term "requirements" in the purchase orders was a definite quantity term. Higuchi has appealed.	This case will clarify if the term "requirements" alone is sufficient for enforceable contracts.
 OEM Customer	 Tier 1 Supplier	Data breach caused Yanfeng to miss shipments, and Stellantis issued a \$26 million debit. Yanfeng suspended shipments until the debit was reversed.	The court granted Stellantis a preliminary injunction, requiring Yanfeng to continue supplying parts despite the data breach.	Courts may issue injunctions to maintain supply chains despite force majeure claims.
 OEM Customer	 Tier 1 Supplier	KAMAX threatened to stop supplying parts unless Stellantis agreed to price increases. KAMAX argued that Stellantis' purchase orders did not sufficiently state a quantity term.	The court granted Stellantis an injunction to continue supply at existing prices while the case is pending.	Injunctions can be granted to maintain supply chains during disputes.
 OEM Customer	 Tier 1 Supplier	MacLean-Fogg sought a price increase, and when Stellantis refused, MacLean-Fogg threatened to stop shipping parts. Stellantis sought an injunction to compel supply.	The court denied Stellantis' request for an injunction, finding that Stellantis' purchase orders were likely enforceable but that the fears of supplier revolt were speculative.	Courts may require stronger evidence of harm before granting injunctions.

Source: Warner Norcross & Judd

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