

Medium Duty Market Update

Steve Tam, Vice President

Student and analyst of the commercial vehicle market since 1993

Frequent speaker at industry and private company events

Often quoted in trade press, the Wall Street Journal, and even on the radio

Transcend boundaries to dialogue with participants from every facet of the industry

Relish opportunity to impart knowledge and understanding of this crazy industry



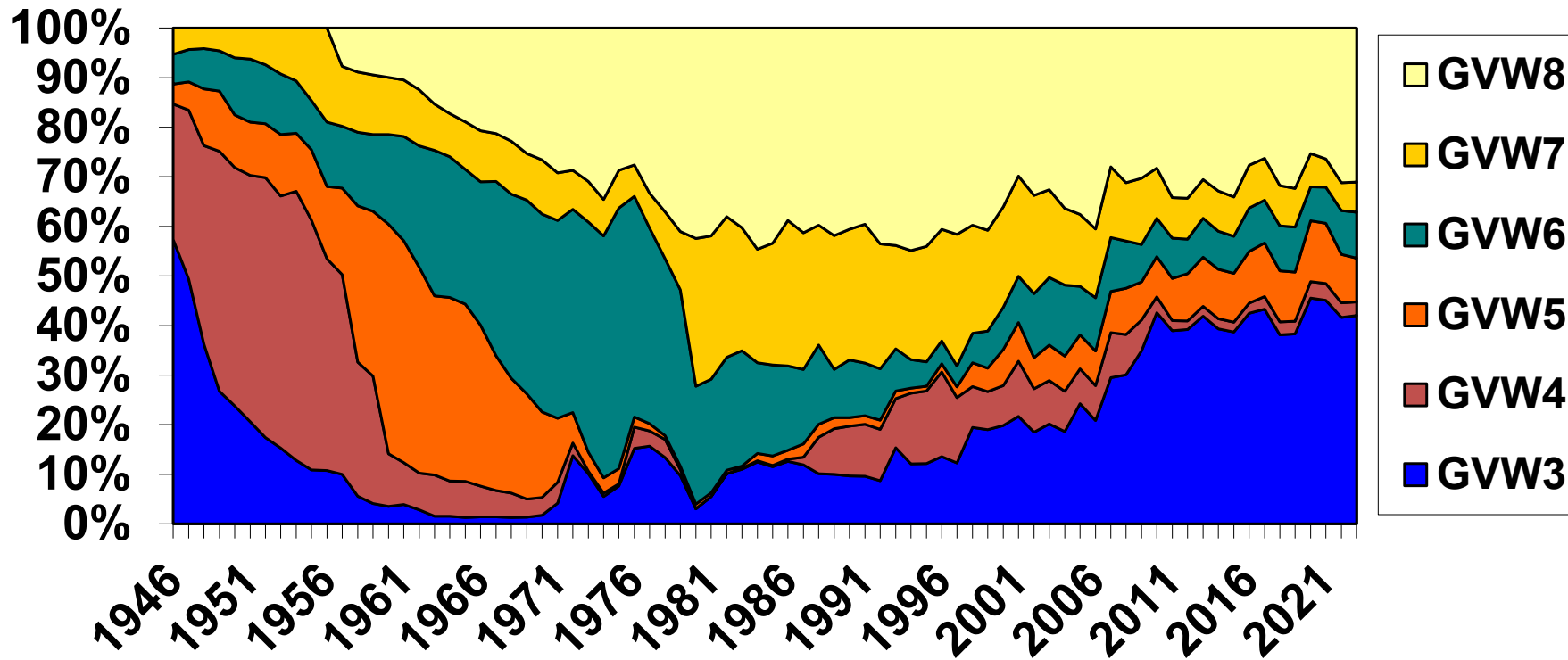
Light/Medium Duty Vehicles

- Defined
- Current Market
- Demand Drivers
- Forecast
- Developments



US Classes 3-8 Market at a Glance

Percent Mix 1946 – YTD 2023



	YTD Share
CI 3	42.0%
CI 4-7	26.9%
CI 8	31.1%

	YTD Share Δ
CI 3	-214bps
CI 4-7	- 5bps
CI 8	+219bps

	YTD Sales Δ
CI 3	+ 4.5%
CI 4-7	+ 9.7%
CI 8	+ 18.2%

Light/Medium Duty Vehicles

Light Duty

- Classes 4-5 (2c-5)
- Pickup truck on steroids



Medium Duty

- Classes 6-7
- Morphed down from Class 8



When I Grow Up...



The State of MD Vehicles (Current Market)

Takeaway is a market yearning to be in the driver's seat

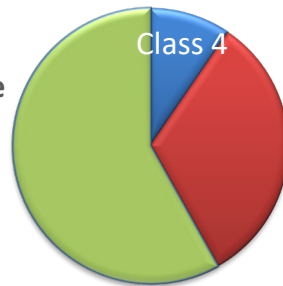


Class 4

GVWR
14,001 to
16,000 lb

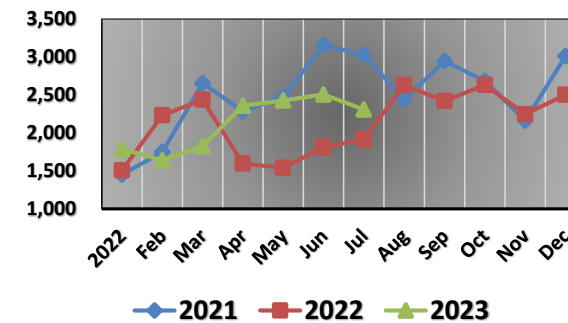
LIGHT DUTY
CLASS 4

Monthly
Market Share
(Classes 4-7)

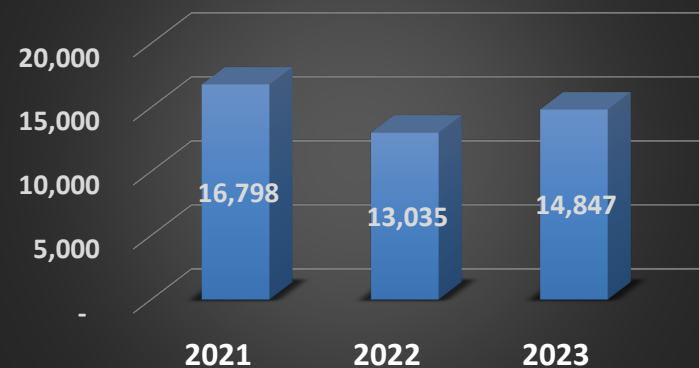


Retail Sales Report July 2023

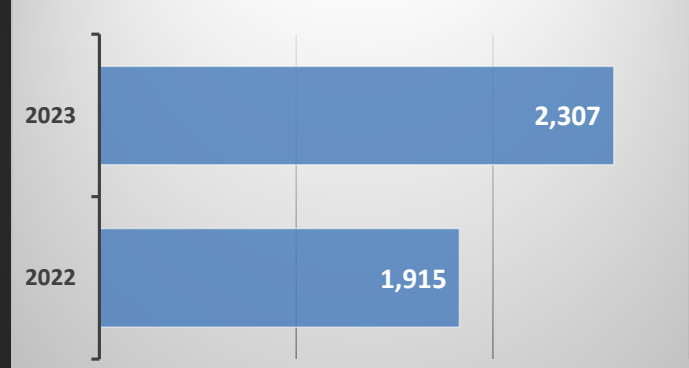
Monthly Sales Trend



Year-to-Date



Year-over-Year

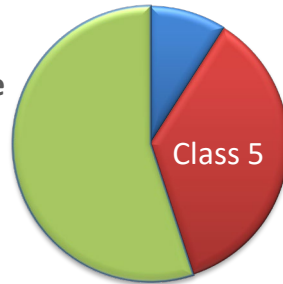


Class 5

GVWR
16,001 to
19,500 lb

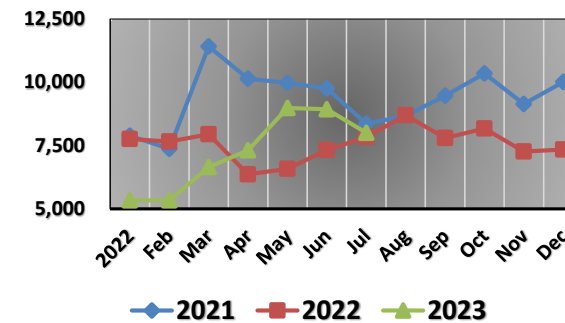
LIGHT DUTY
CLASS 5

Monthly
Market Share
(Classes 4-7)

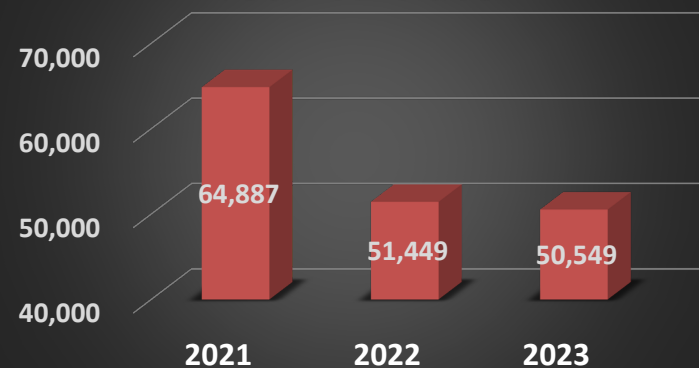


Retail Sales Report July 2023

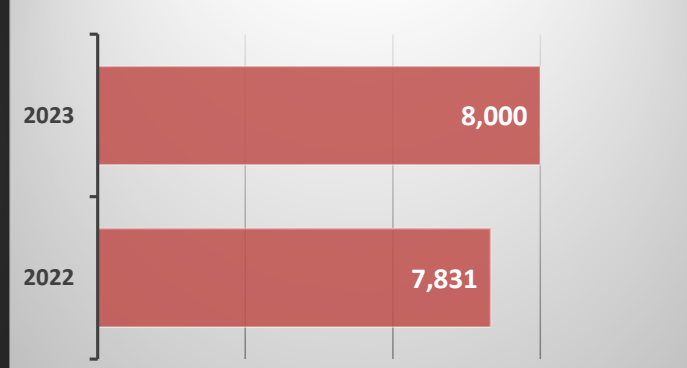
Monthly Sales Trend



Year-to-Date



Year-over-Year



Classes 6-7

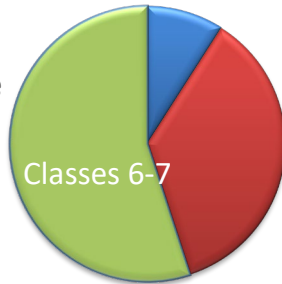
GVWR
19,501 to
33,000 lb

MEDIUM DUTY
CLASSES 6-7

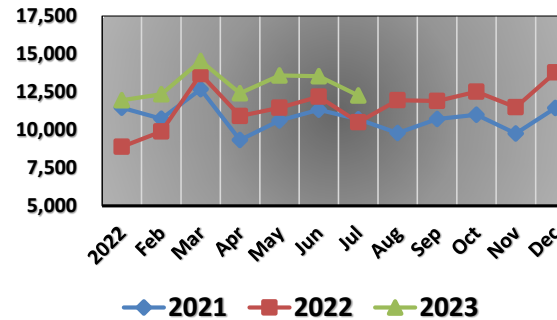
Retail Sales Report

July
2023

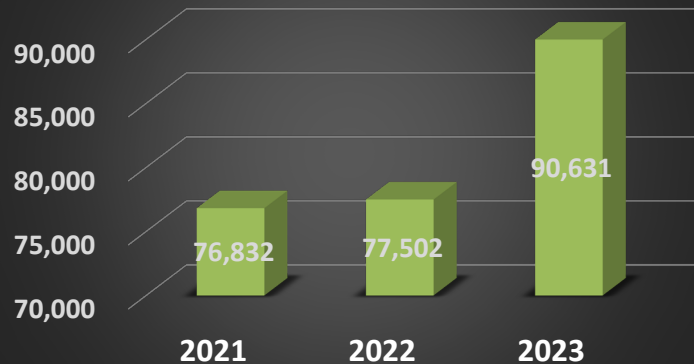
Monthly
Market Share
(Classes 4-7)



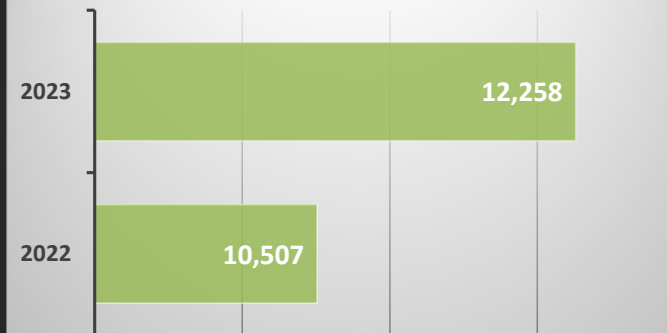
Monthly Sales Trend















Year-to-Date



Year-over-Year

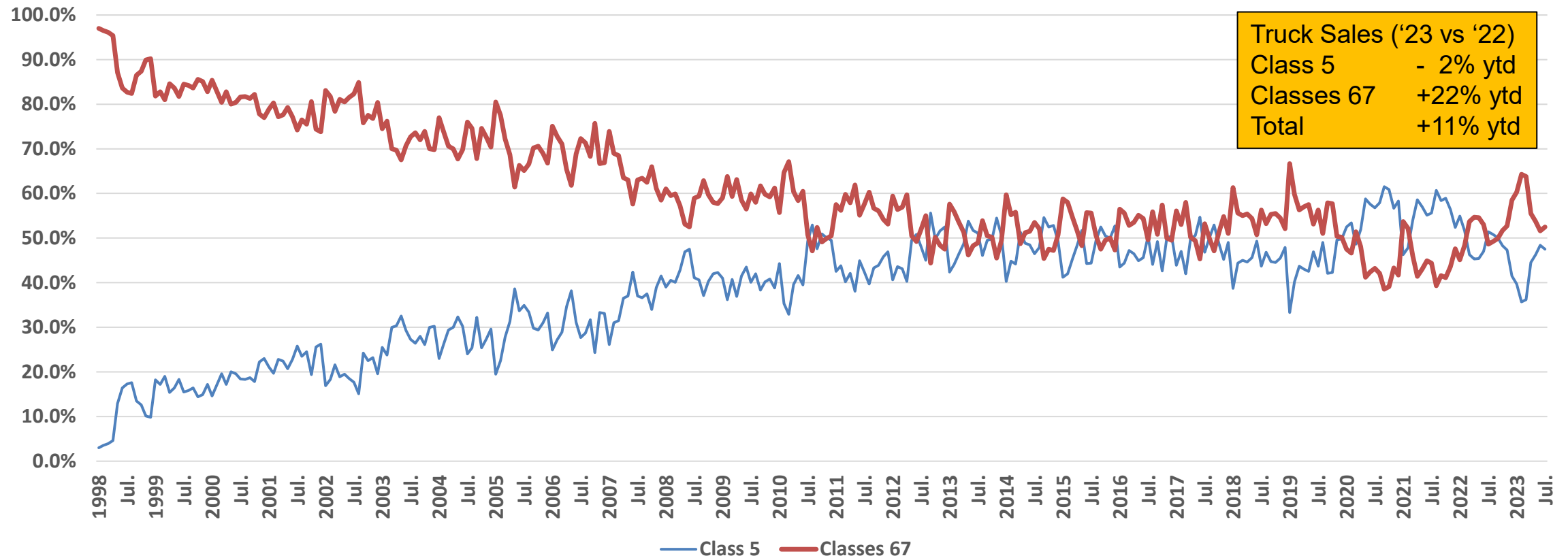


In Pursuit of Higher Margins

Auto/Light Truck Centric	Medium Truck Centric	Heavy Truck Centric
<div> Full-size Pick-up</div> <div> Step Van</div> <div></div>	<div> Rack</div> <div> Large Walk-in</div> <div></div>	
	<div> Bucket</div> <div> Single Axle Van</div> <div></div>	<div> Dump</div> <div> Heavy Conventional</div> <div></div>

Classes 6-7 Trucks Get Much Needed Relief

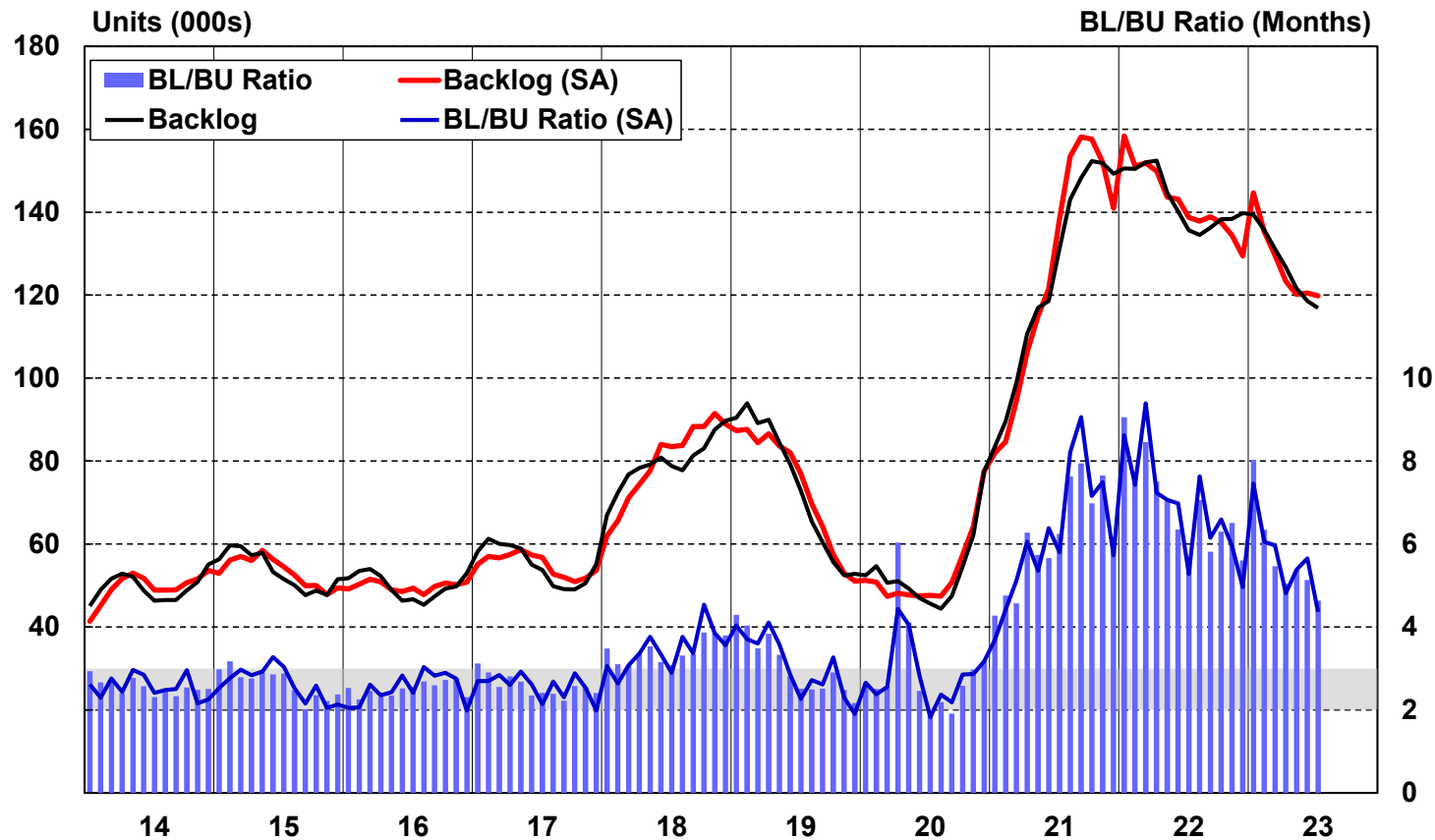
US + CAN Truck Sales



Customers Get Some Of Their Ordered Units

Total Classes 5-7: N.A. Backlog & BL/BU Ratio

January 2014 - July 2023



Source: ACT Research Co. © 2023

OEMs make incremental progress fulfilling demand in the face of lingering part shortages

Q1'22 – 858 upd

Q2'22 – 1,000 upd

Q3'22 – 1,047 upd

Q4'22 – 1,076 upd

Q1'23 – 1,000 upd

Q2'23 – 1,122 upd

Q3'23 – 1,112 upd*

Q4'23 – 1,068 upd*

2022 – 993 upd

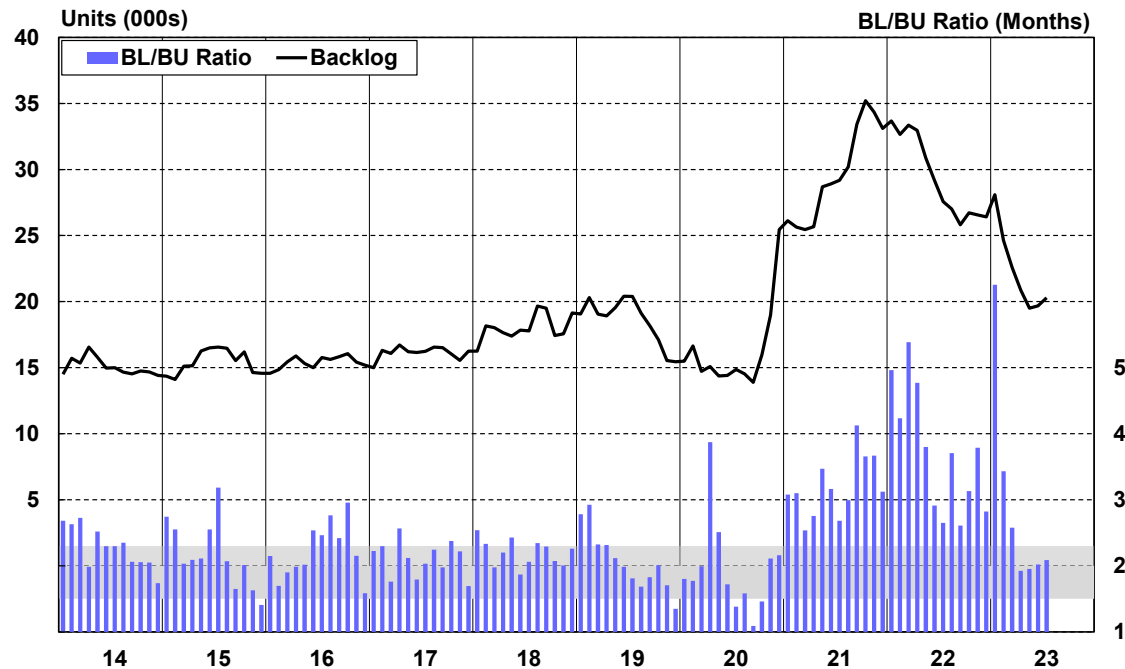
2022 – 1,075 upd

*Based on OEM build plans

Stronger Pent-Up Demand for Classes 6-7 Units

Total Class 5: N.A. Backlog & BL/BU Ratio

January 2014 - July 2023

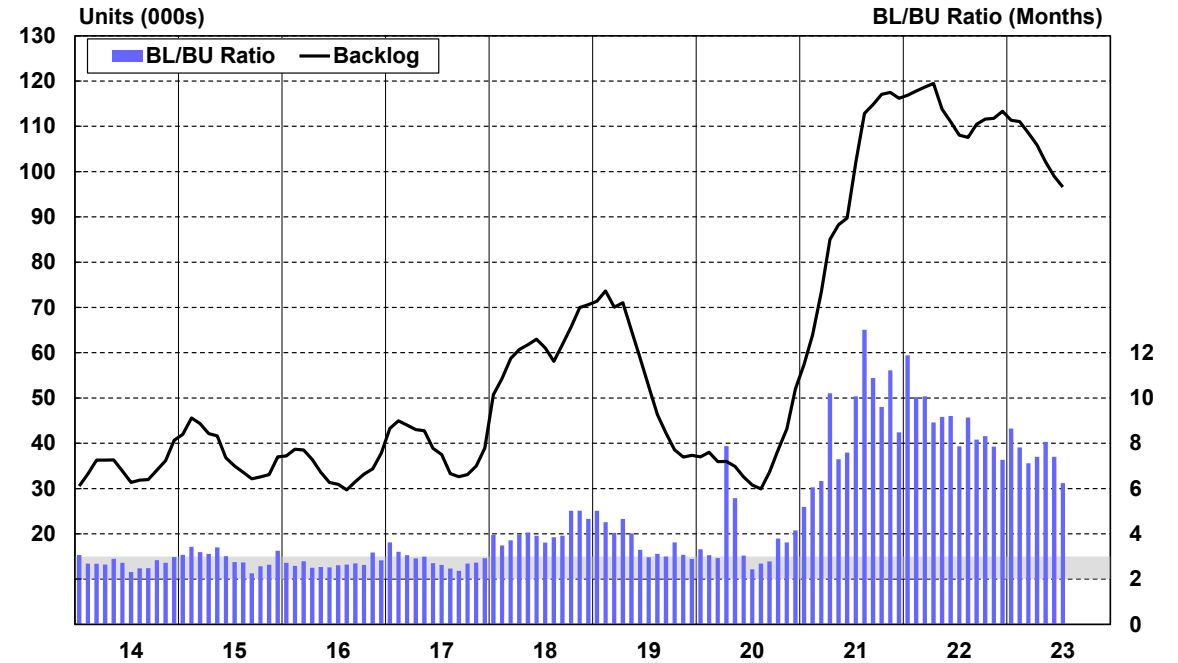


Source: ACT Research Co. © 2023

Nearing 15k average

Total Classes 6-7: N.A. Backlog & BL/BU Ratio

January 2014 - July 2023



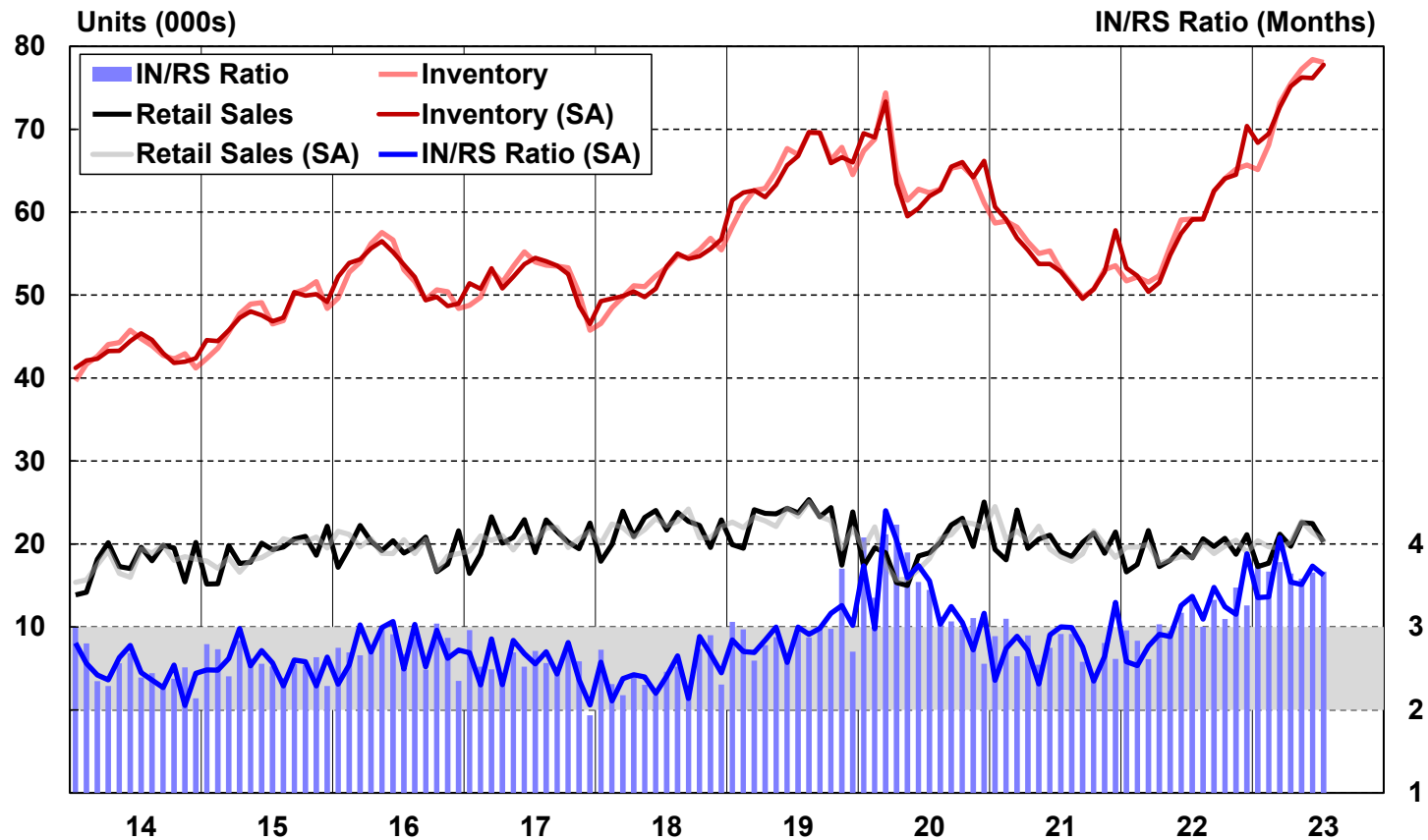
Source: ACT Research Co. © 2023

Still more than 2x 40k average

Inventory Headed the Wrong Direction

Total Classes 5-7: N.A. Inventory/Retail Sales Ratio

January 2014 - July 2023



YTD ('23 vs '22)

Build	+ 14%
Sales	+ 9%
Inventory	+ 32%

Source: ACT Research Co. © 2023

LD/MD Vehicle Demand Drivers



Light/Medium Duty Vehicle Demand Drivers

Operational

- Replacement
- 75% of demand in any given period
- Population/Utilization
- Demographics
- Vehicle age
- Resale value

Economic

- Consumer confidence
- ISM
- Manufacturers' new orders
- Unemployment rate/jobs creation
- Retail sales
- Housing starts/permits (70% R^2)
- Existing/new home sales (60-70% R^2)
- Nonresidential construction
- Inflation (CPI)
- GDP
- Light auto and truck sales (70% R^2)



US LD/MD Fleet Statistics

	Classes 4-5	Classes 6-7
Replacement	90,000 (near all-time peak)	130,000 (off cyclical peak)
Population	1,035,000 (growing)	1,330,000 (growing)
Average Age	5.1 years (poised to rise)	5.6 years (poised to rise)
Resale Value	\$26,300 (falling)	\$45,500 (falling)



The Future of LD/MD Vehicles (Forecast)

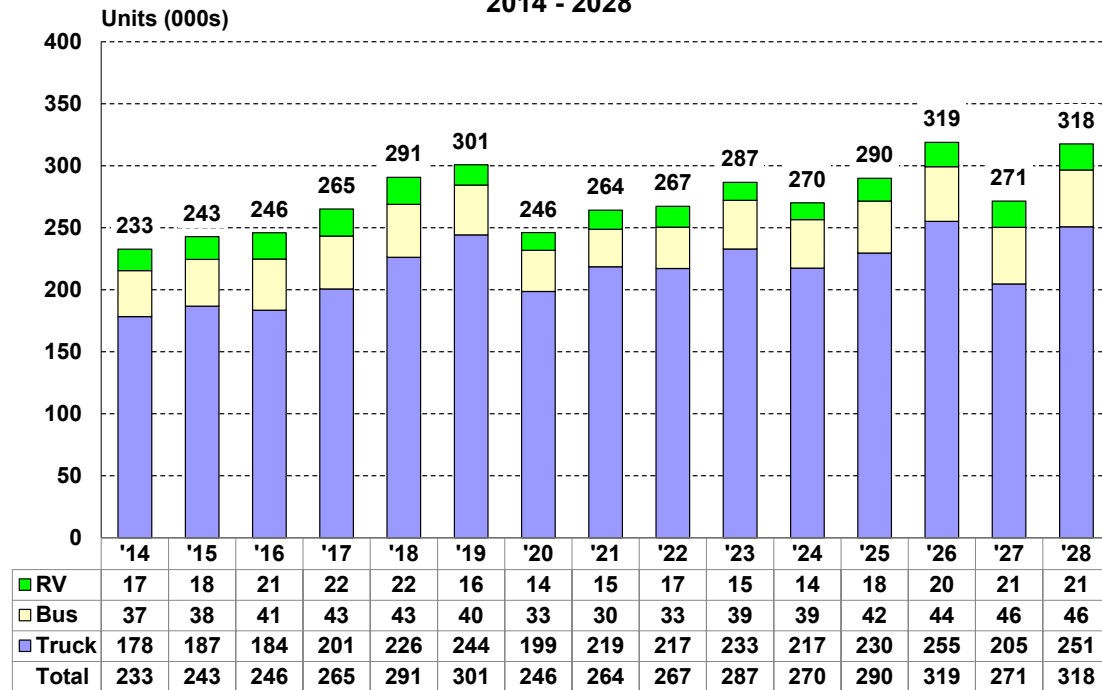
Takeaway is a broadly diverse market with relatively stable outlook



Paul Pays Peter Back

N.A. Classes 4-7 Production

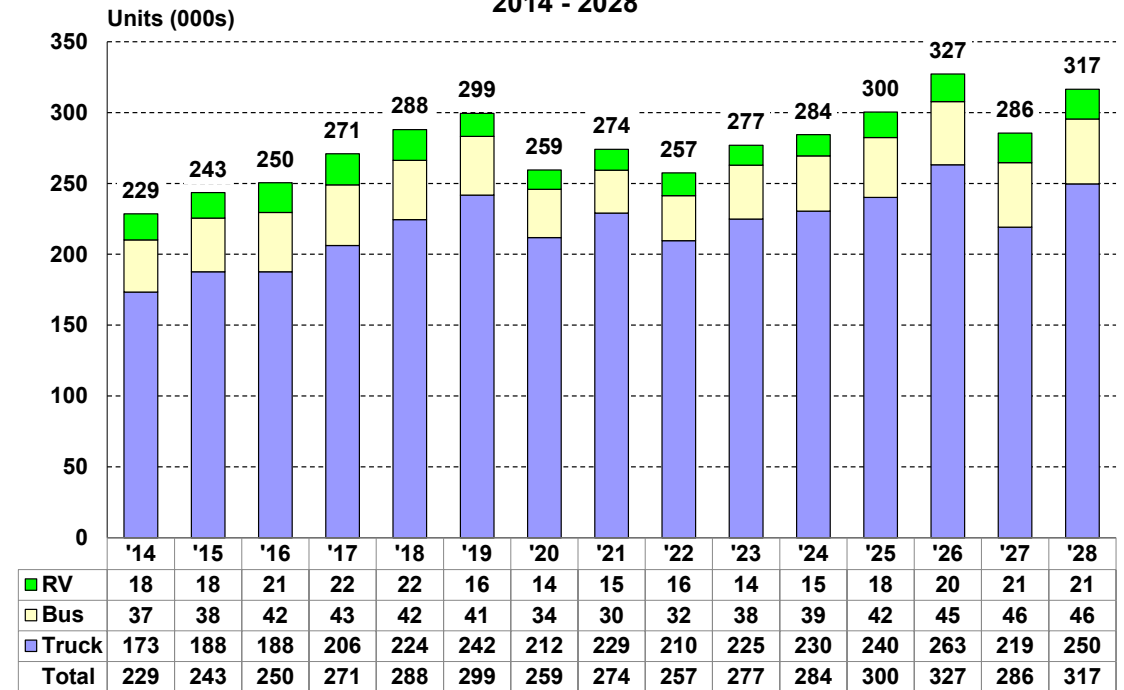
2014 - 2028



Source: ACT Research Co. © 2023

N.A. Classes 4-7 Retail Sales

2014 - 2028



Source: ACT Research Co. © 2023

2023 Micro Forecast (RS)

Class 5

	US	CAN	MEX	EXP	NA
Truck	80.7	5.9	0.8	0.1	87.5
Bus	0.0	0.0	0.4	0.0	0.4
RV	3.5	0.0	0.0	0.0	3.5
Total	84.2	5.9	1.2	0.1	91.4

Classes 6-7

	US	CAN	MEX	EXP	NA
Truck	99.3	5.1	3.0	0.4	107.8
Bus	31.0	2.0	4.6	0.1	37.7
RV	10.5	0.0	0.0	0.0	10.5
Total	140.8	7.1	7.6	0.5	156.0

Class 4

	US	CAN	MEX	EXP	NA
Truck	24.7	2.1	2.1	0.7	29.6

Total
277k



2023 Micro Forecast (BU)

Class 5

	US	CAN	MEX	EXP	NA
Truck	87.4	6.6	0.3	0.1	94.4
Bus	0.0	0.0	0.4	0.0	0.4
RV	4.1	0.0	0.0	0.0	4.1
Total	91.5	6.6	0.7	0.1	98.9

Classes 6-7

	US	CAN	MEX	EXP	NA
Truck	102.6	4.6	3.8	0.4	111.4
Bus	32.3	1.8	4.7	0.1	38.9
RV	10.4	0.0	0.0	0.0	10.4
Total	145.3	6.4	8.5	0.5	160.7

Class 4

	US	CAN	MEX	EXP	NA
Truck	22.2	2.1	2.1	0.7	27.1

Total
287k



2024 Micro Forecast (RS)

Class 5

	US	CAN	MEX	EXP	NA
Truck	81.6	6.6	0.9	0.1	89.2
Bus	0.0	0.0	0.4	0.0	0.4
RV	3.7	0.0	0.0	0.0	3.7
Total	85.3	6.6	1.3	0.1	93.3

Classes 6-7

	US	CAN	MEX	EXP	NA
Truck	100.4	5.7	3.4	0.4	109.9
Bus	31.1	3.1	4.3	0.1	38.6
RV	11.3	0.0	0.0	0.0	11.3
Total	142.8	8.8	7.7	0.5	159.8

Class 4

	US	CAN	MEX	EXP	NA
Truck	26.1	2.2	2.2	0.8	31.3

Total
284k



2024 Micro Forecast (BU)

Class 5

	US	CAN	MEX	EXP	NA
Truck	79.9	6.6	0.3	0.1	86.9
Bus	0.0	0.0	0.3	0.0	0.3
RV	3.9	0.0	0.0	0.0	3.9
Total	83.8	6.6	0.6	0.1	91.1

Classes 6-7

	US	CAN	MEX	EXP	NA
Truck	93.7	4.5	3.9	0.4	102.5
Bus	30.6	3.7	4.3	0.1	38.7
RV	9.7	0.0	0.0	0.0	9.7
Total	134.0	8.2	8.2	0.5	150.9

Class 4

	US	CAN	MEX	EXP	NA
Truck	22.9	2.2	2.2	0.8	28.1

Total
270k



LD/MD Vehicle Developments



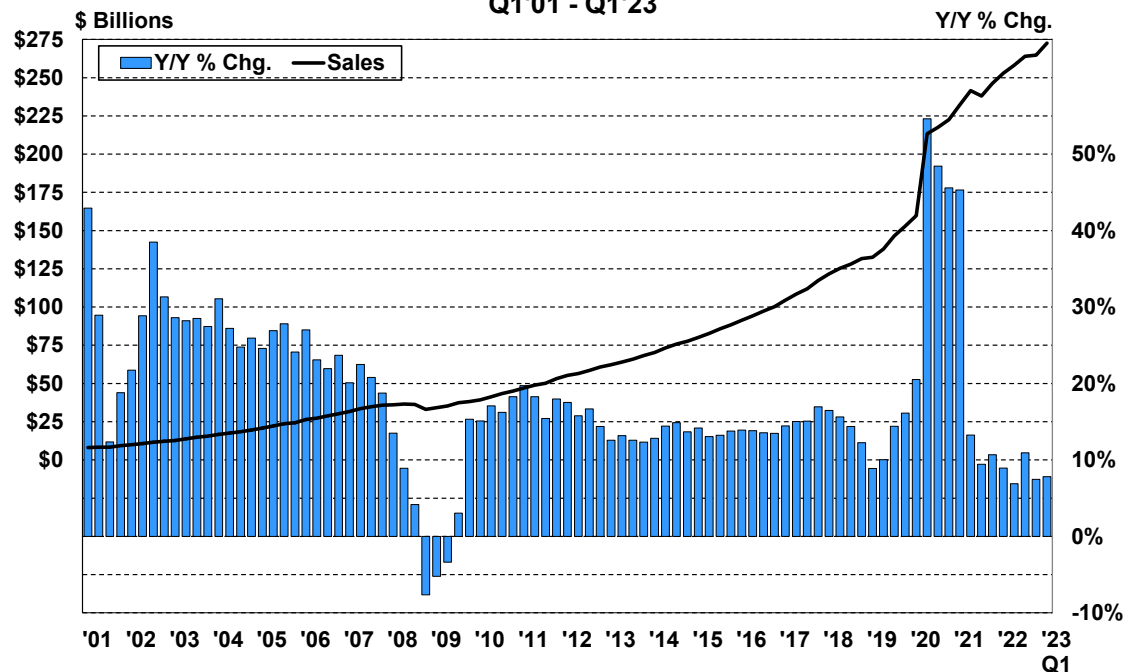
Revolutionary Change at an Evolutionary Pace



E-Commerce-Driven Equipment Changes Shift

Total E-Commerce Retail Sales

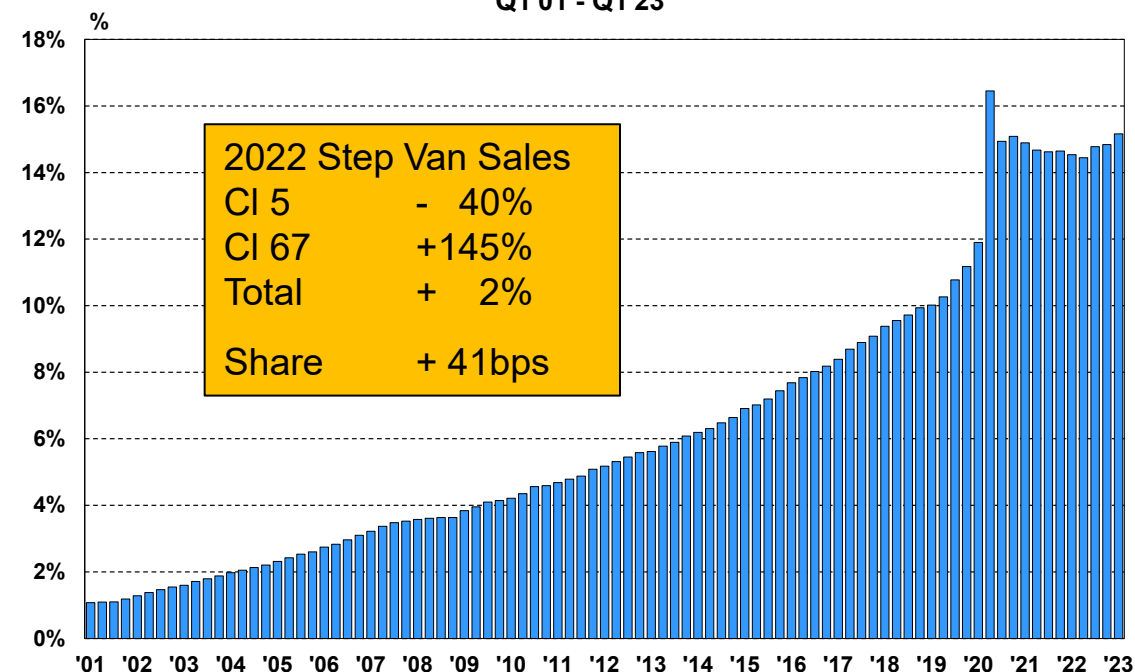
Billions of Dollars - SAAR
Q1'01 - Q1'23



Source: Federal Reserve Board, ACT Research Co. © 2023

E-Commerce as a Percentage of Retail Sales

(Excluding Food Service)
Q1'01 - Q1'23

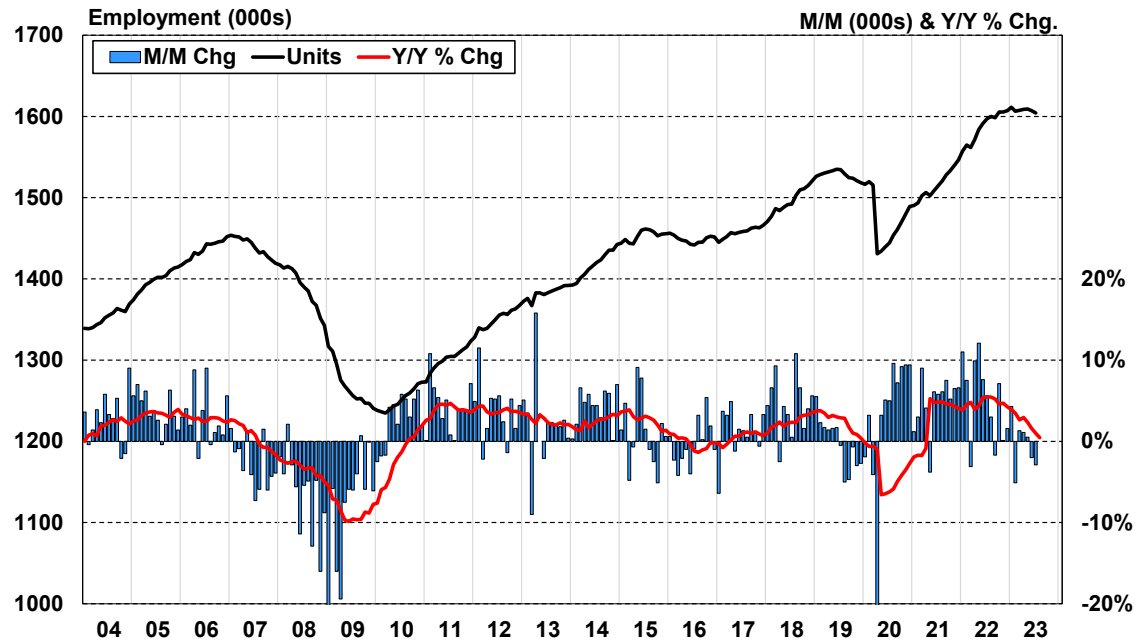


Source: Federal Reserve Board, ACT Research Co. © 2023

Fleets Shifting Operating Models

Truck Transportation Employment

January 2004 - July 2023 (SA)

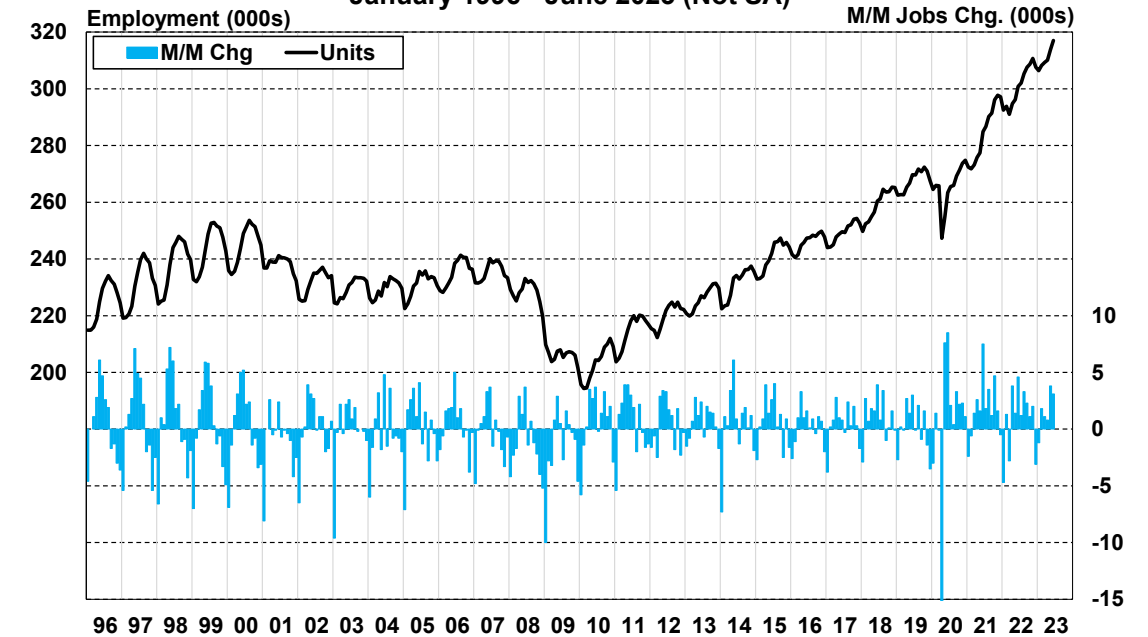


Source: BLS, ACT Research Co. © 2023

Truck Transportation Employment

General Freight Trucking: Local

January 1996 - June 2023 (Not SA)



Source: BLS, ACT Research Co. © 2023

Commercially Available CEVs

131 Models from 41 OEMs

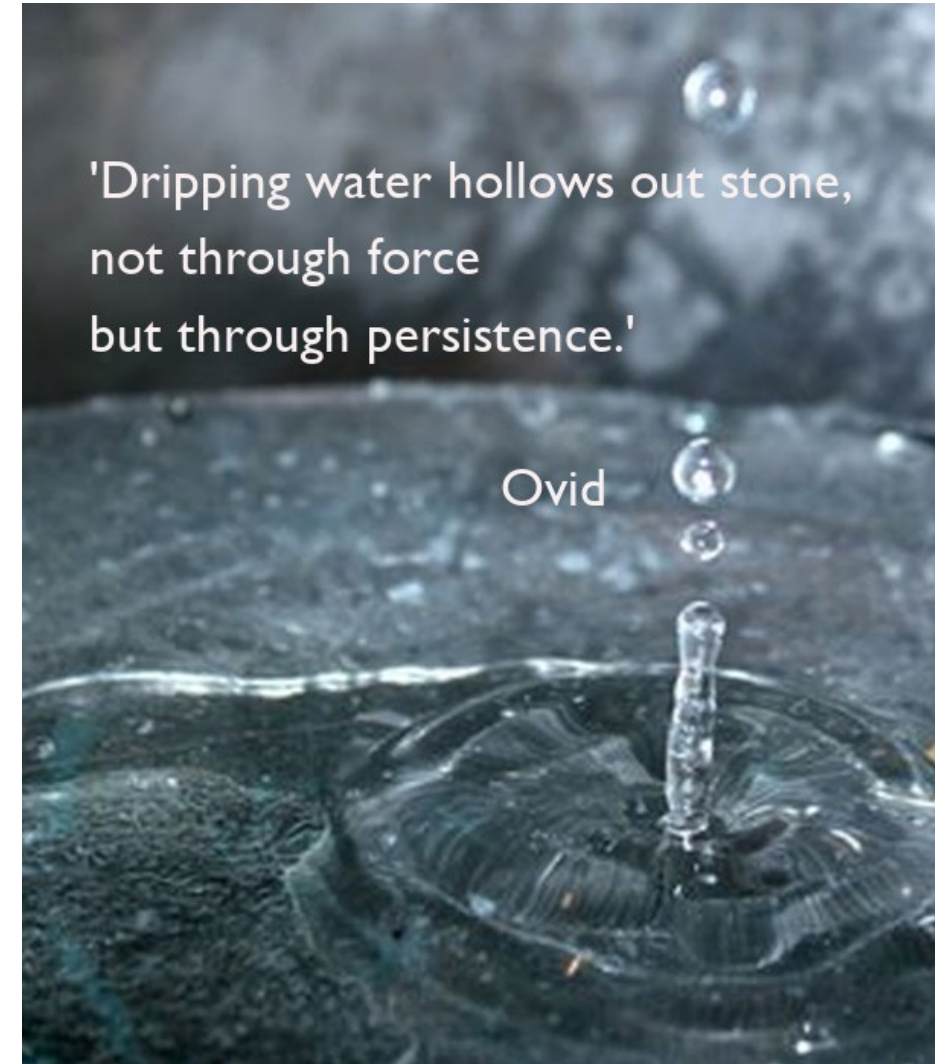
- 71 buses (19)
- 37 straight trucks (20)
- 11 vans/step vans (7)
- 12 tractors/yard spotter (11)



Source: afdc.energy.gov/vehicles/search

NA Medium-Duty Market Recap

- As Heterogenous As Class 8 Is Homogenous
- Supply-Chain Constraints Linger
- MD Demand = Replacement + Economic Growth
- Forecast: Slow Growth Over Time
- Technology Is **SLOWLY** Changing the Market



THANK YOU



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