

Automotive Outlook: D/FW Association for Business Economists June 17, 2022

HAIG STODDARD

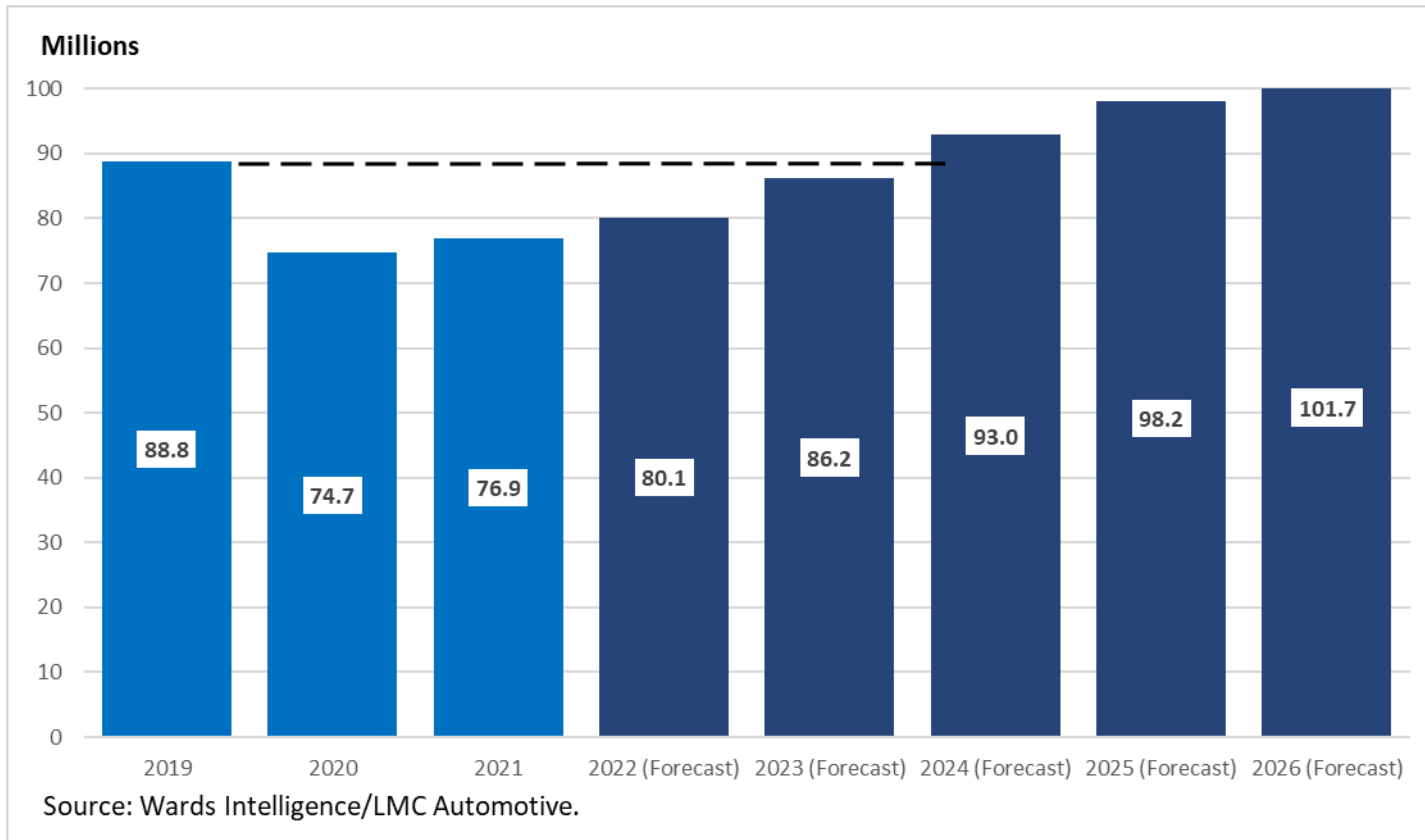
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Global Production Outlook

Global Light-Vehicle Production Summary

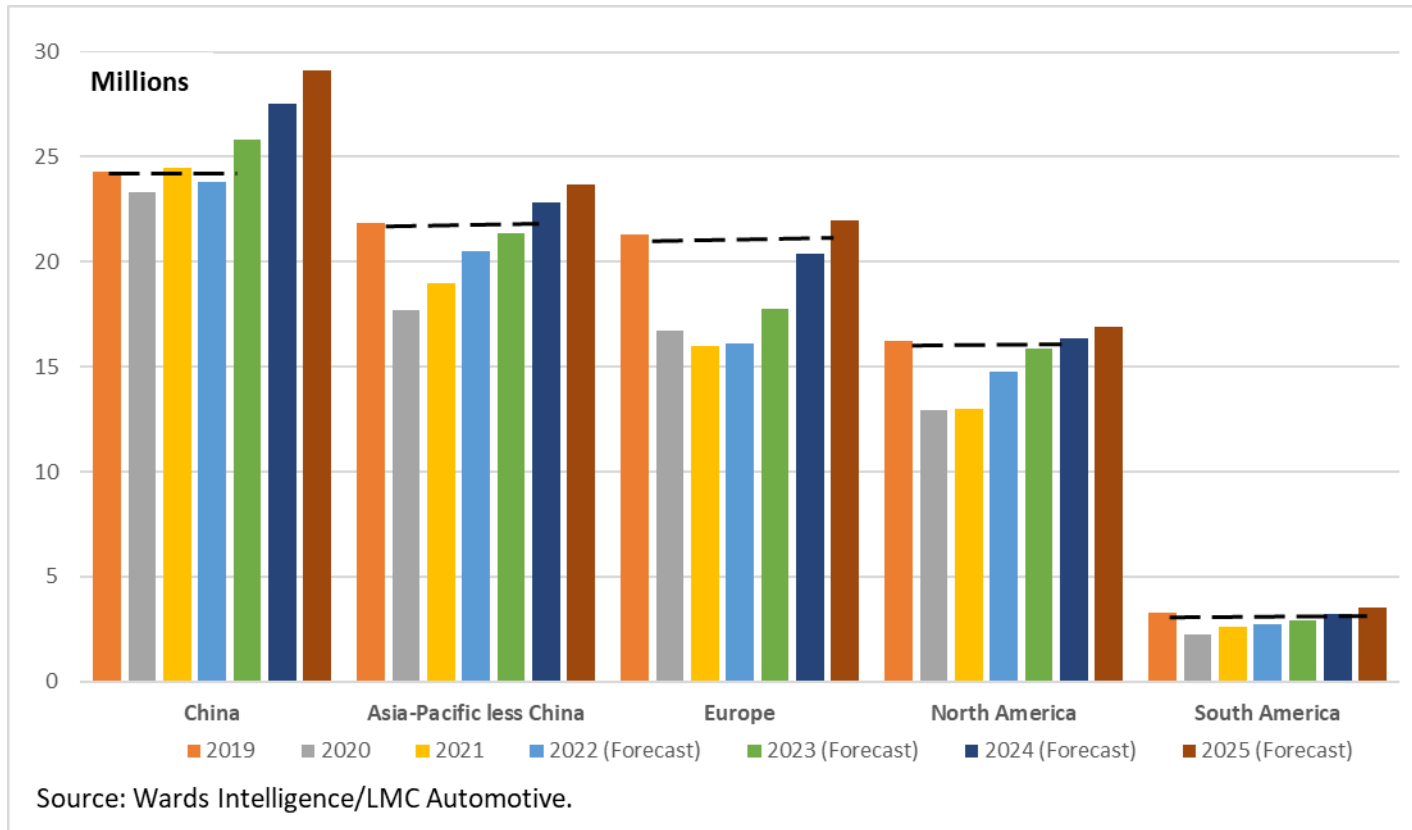
- Supply-chain disruptions from myriad sources continue pushing down the production forecast – revised down nearly every month this year – and economic headwinds are starting to impact the outlook for demand.
- Semiconductor shortages and logistics bottlenecks still underpin manufacturers' inability to build to capacity but that is improving.
- Lockdowns (especially in China), Russia/Ukraine-related materials and energy shortages and soaring inflation are behind recent downgrades to the forecasts.
- Despite expected year-over-year growth, lost production directly related to supply challenges in 2022 could come close to 2021's estimated 9-million-plus units.

Global Light-Vehicle Production Forecast



- Production not expected to resume pre-pandemic (2019) until 2024

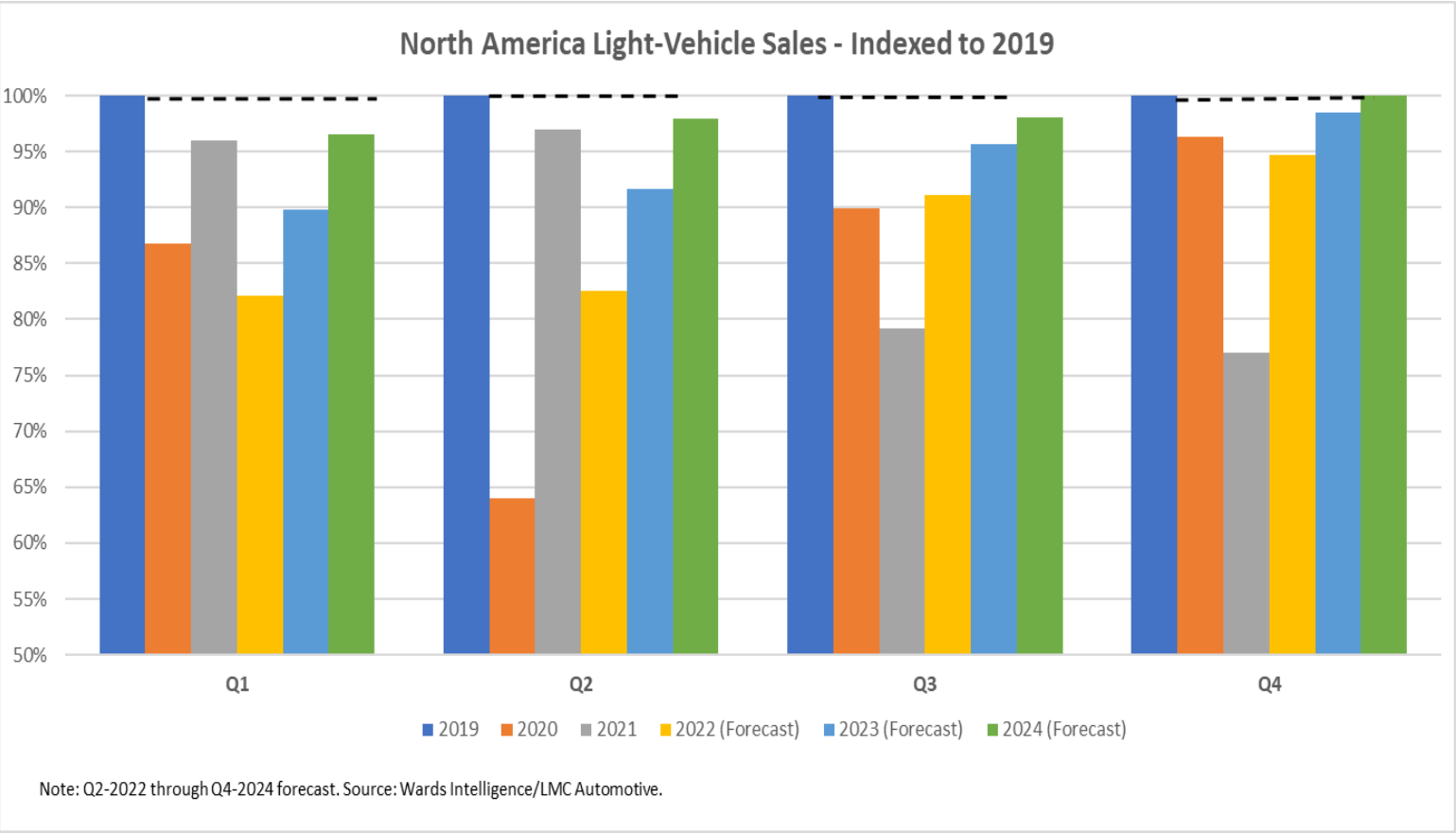
Global Light-Vehicle Production By Region



- Covid-related lockdowns and restrictions cause China to be only region to suffer a year-over-year decline in 2022
- However, China is the lone region to get back to pre-covid totals in 2023
- Easing up on tight supplies of semiconductors and wire harnesses in Europe expected in second half of this year but other supply-related issues hinder growth compared to other regions
- Two years until both North America and South America resume 2019-like levels

North America Overview

North America Light-Vehicle Sales Forecast

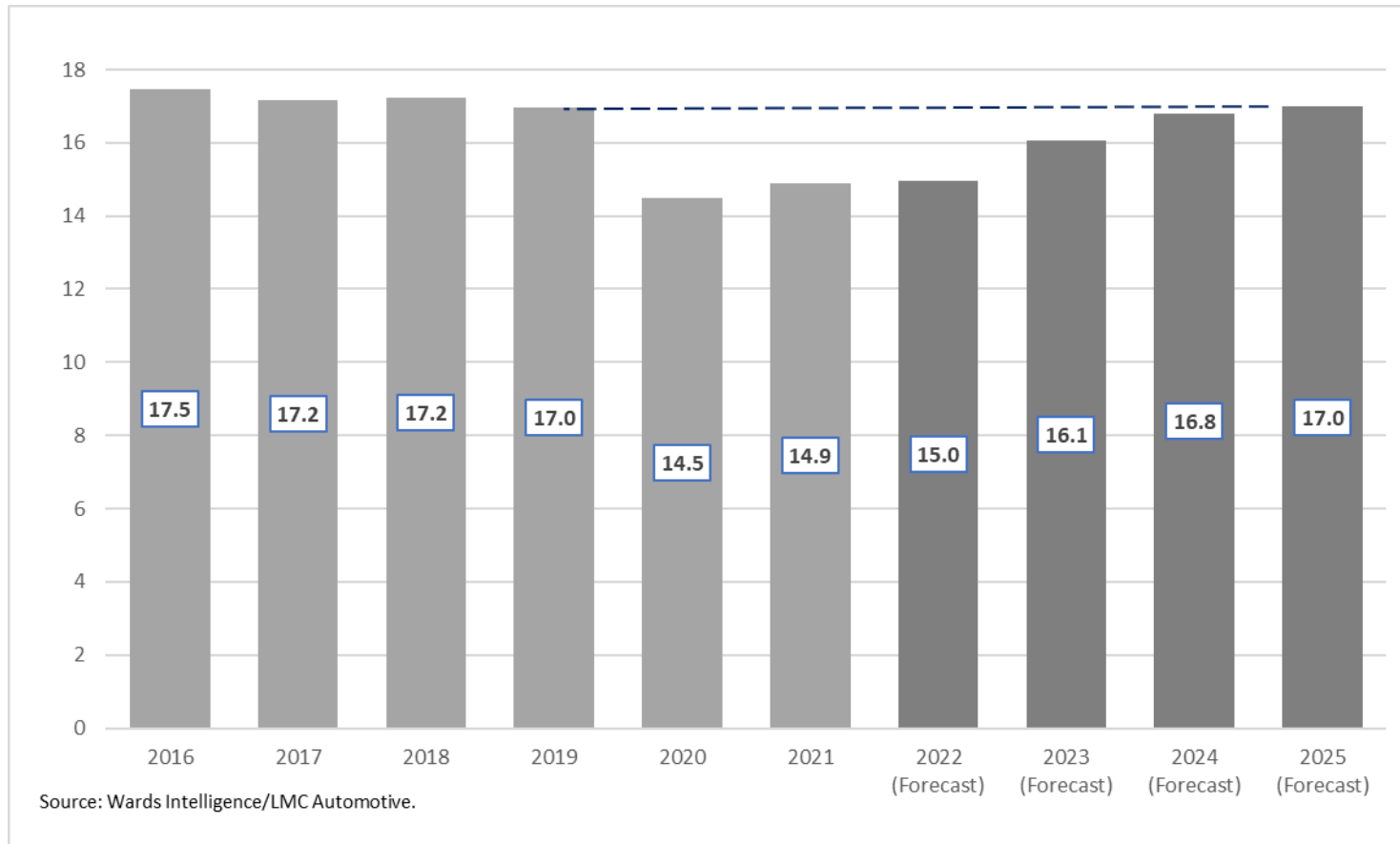


Calendar Year

2019: 20.2 million
2020: 17.0 million
2021: 17.6 million
2022: 17.7 million
2023: 19.0 million
2024: 19.8 million

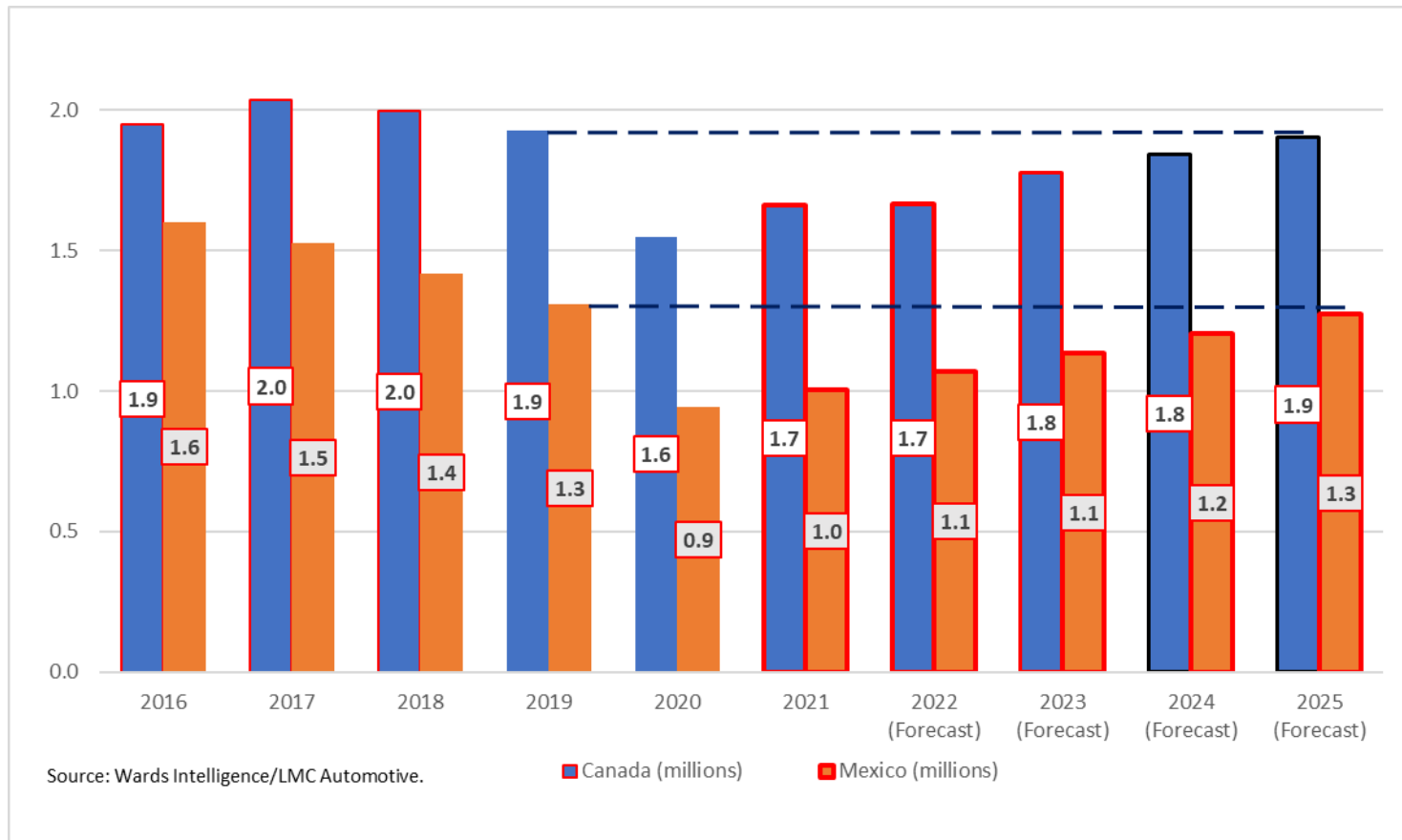
- Nearly flat growth in 2022 picks up in 2023, but sales stay below pre-pandemic levels until end of 2024

U.S. Light-Vehicle Sales (millions)



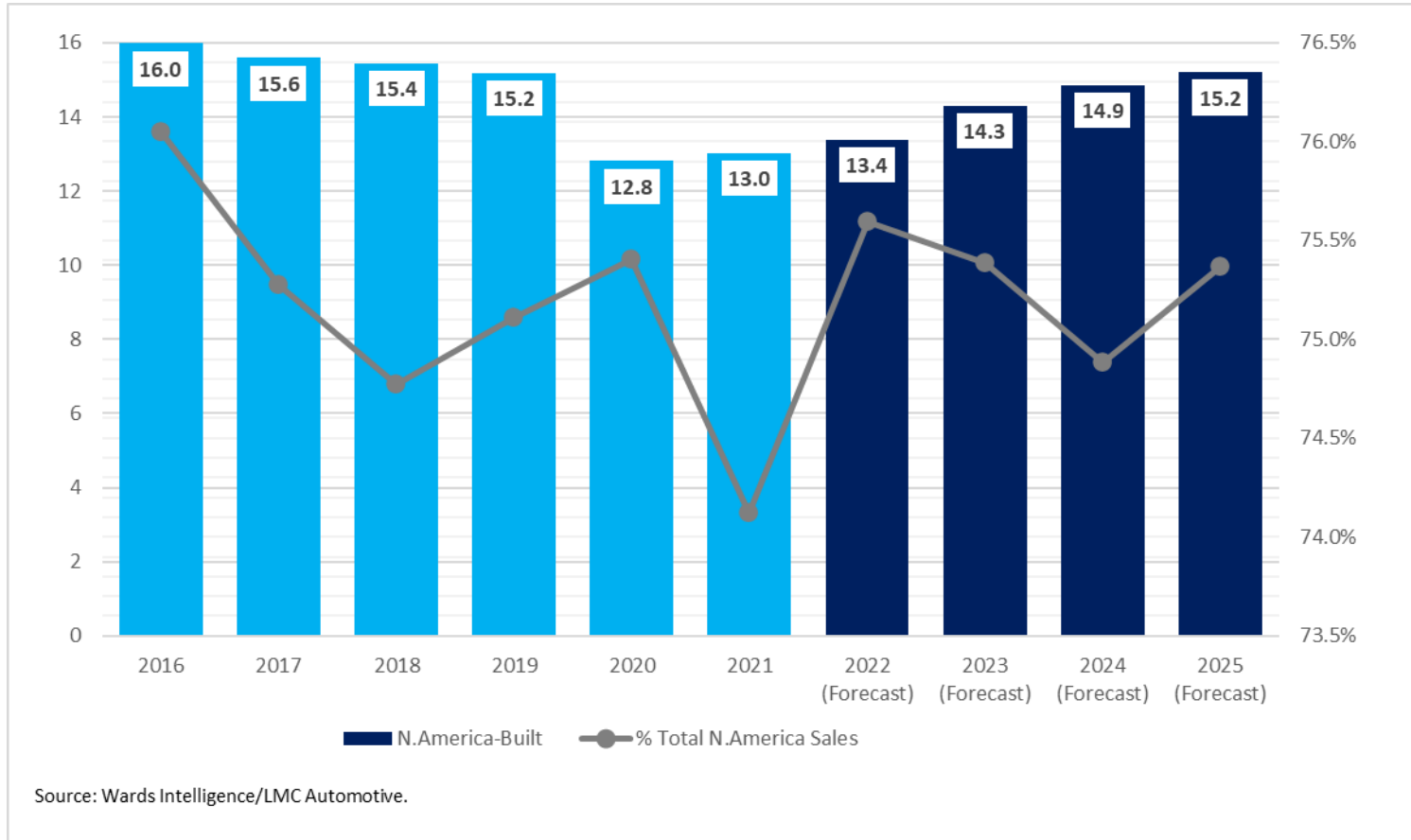
- Sales would be at ~17 million now if enough inventory was available
- At this point, however, a large portion of the lost sales since the pandemic first impacted the U.S. market in March 2020 will not be made up

Canada and Mexico Light-Vehicle Sales (millions)



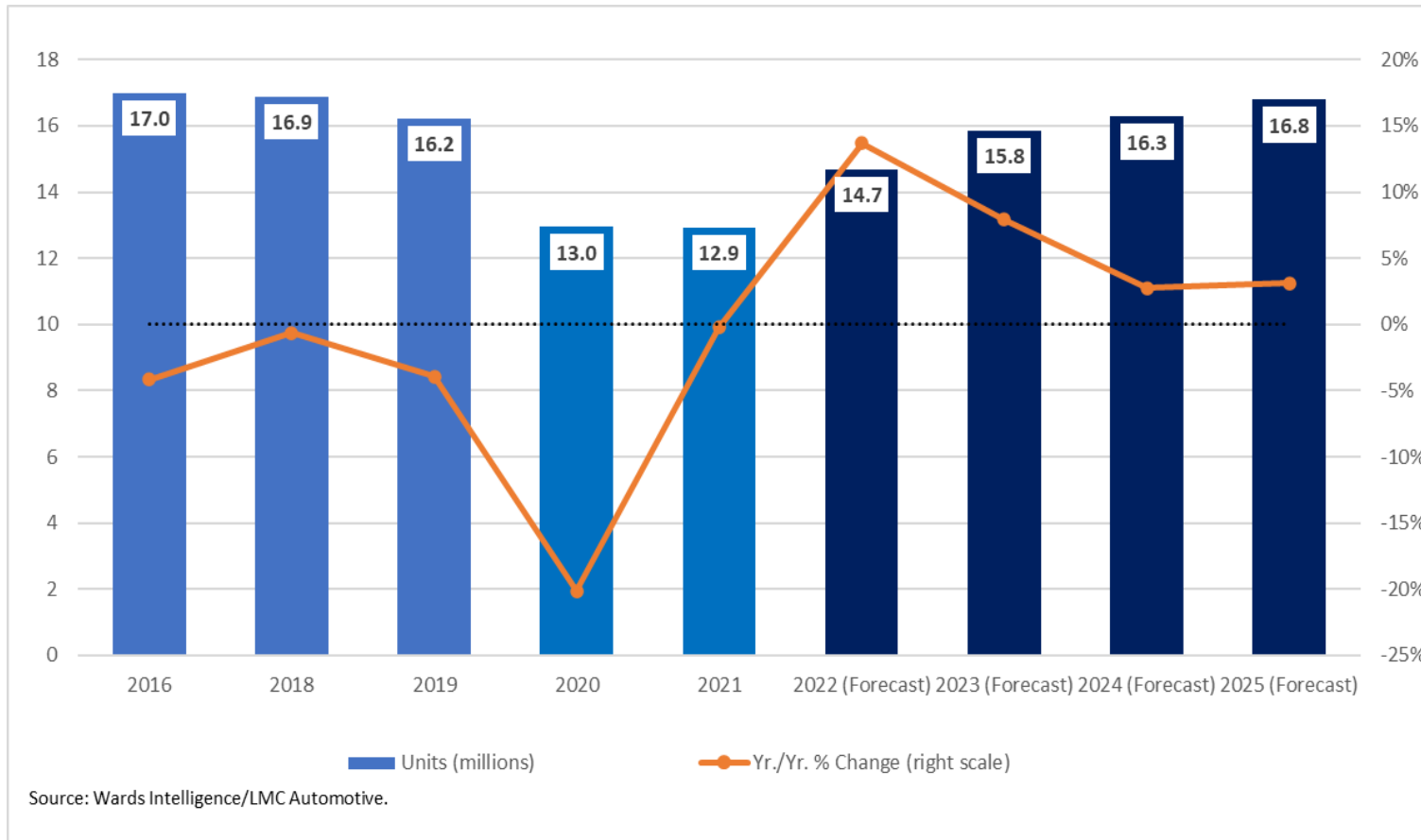
- Economic growth in Canada expected to slow later this year, creating a further drag in demand on top of lack of inventory, tighter Covid restrictions, Russia-Ukraine, etc.
- Ditto for Mexico

North America Sales of Locally Sourced Vehicles (millions)



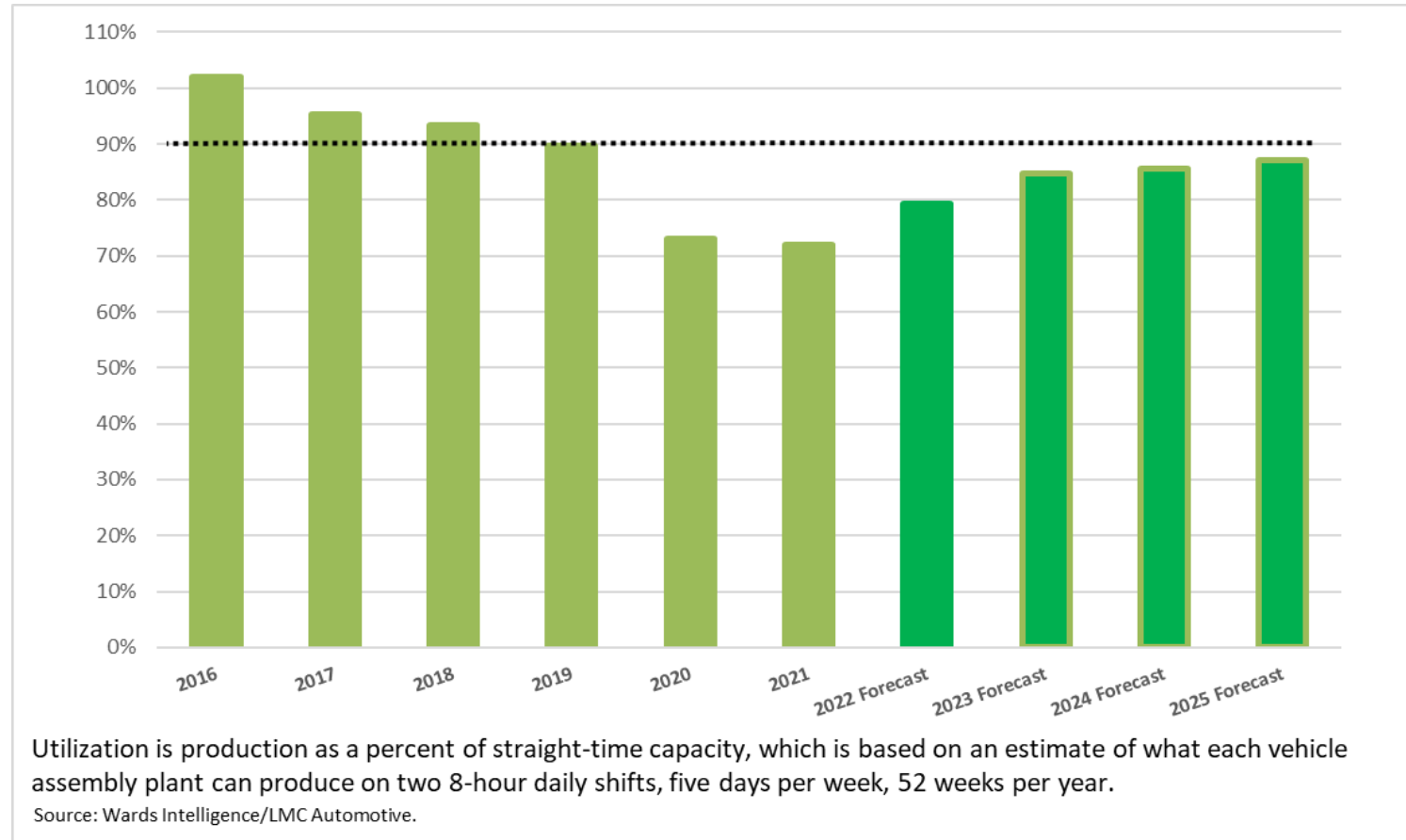
- Three-fourths of North America sales volume is locally sourced
- Roughly 90% of North America production is for the local market

North America Production Forecast



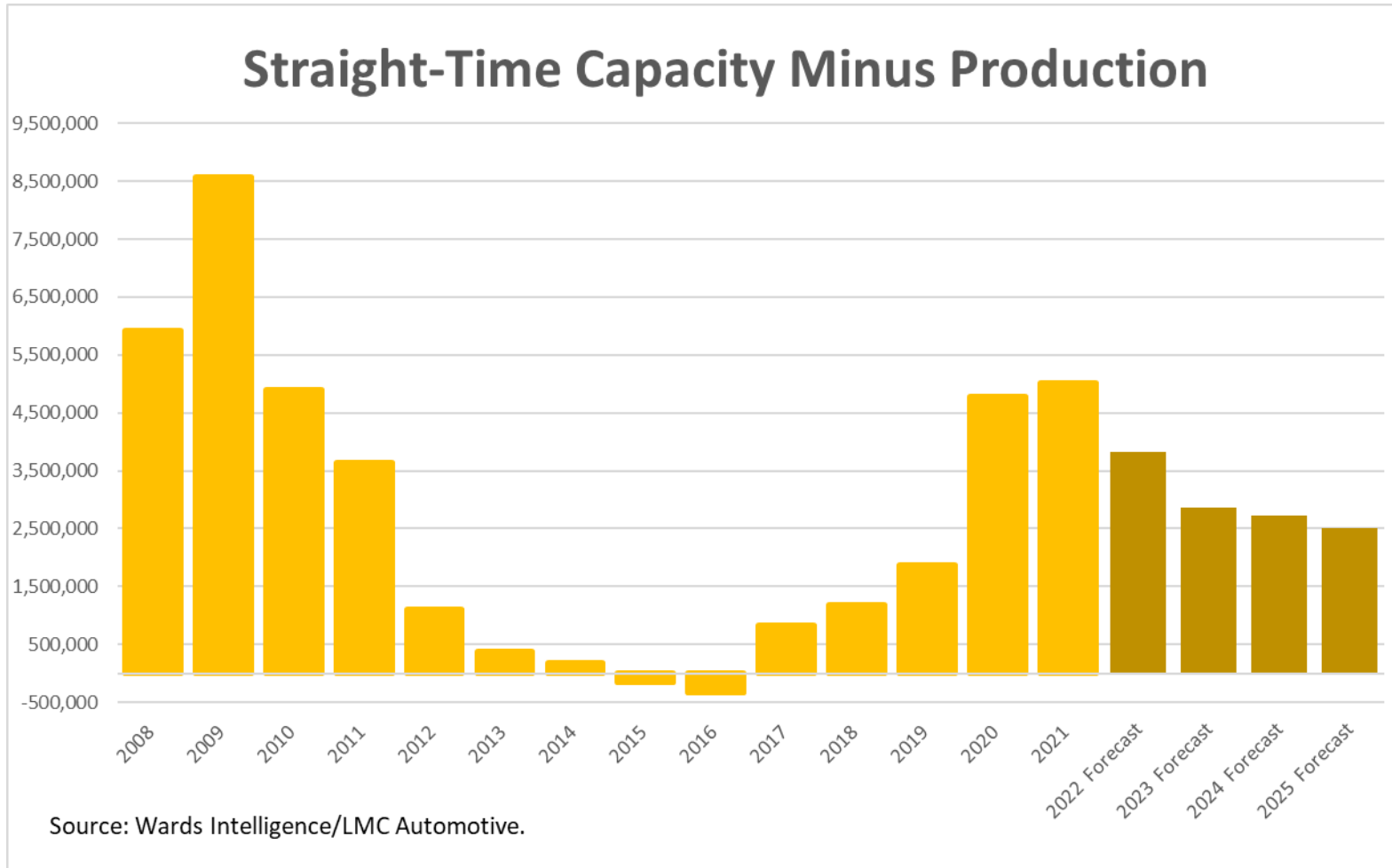
- Production struggles to keep up with demand for at least next two years
- Increasing economic uncertainty creating more downside than upside
- Like sales, some lost production since the start of the pandemic impact in Q1-2020 will not be made up

North America Production Capacity Utilization



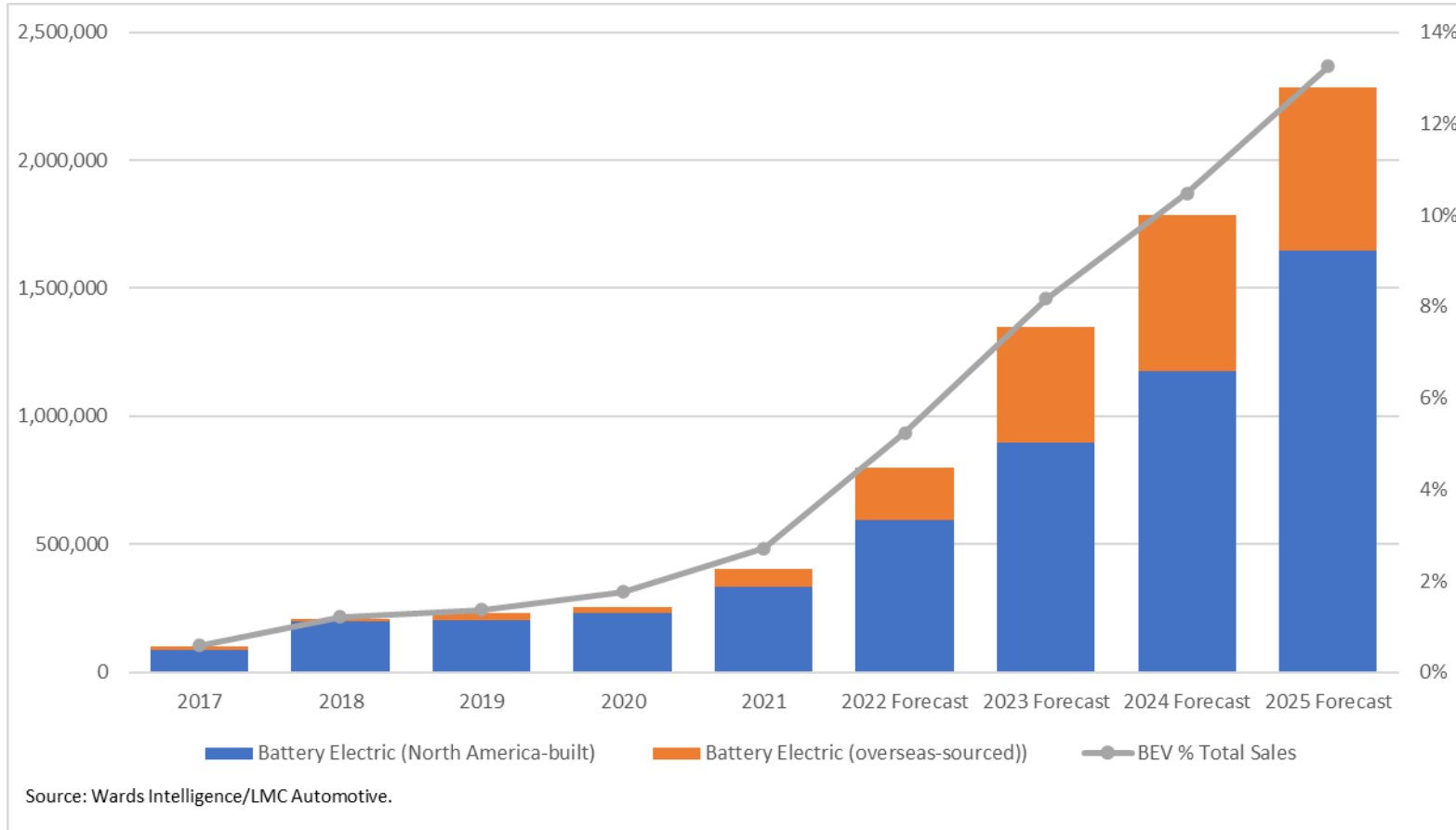
- Plant utilization not expected to get back to pre-pandemic levels over next three years

Unused North America Straight-Time Capacity



- Capacity consolidation of some kind could be in the cards

U.S. Sales of Battery-Electric Light Vehicles

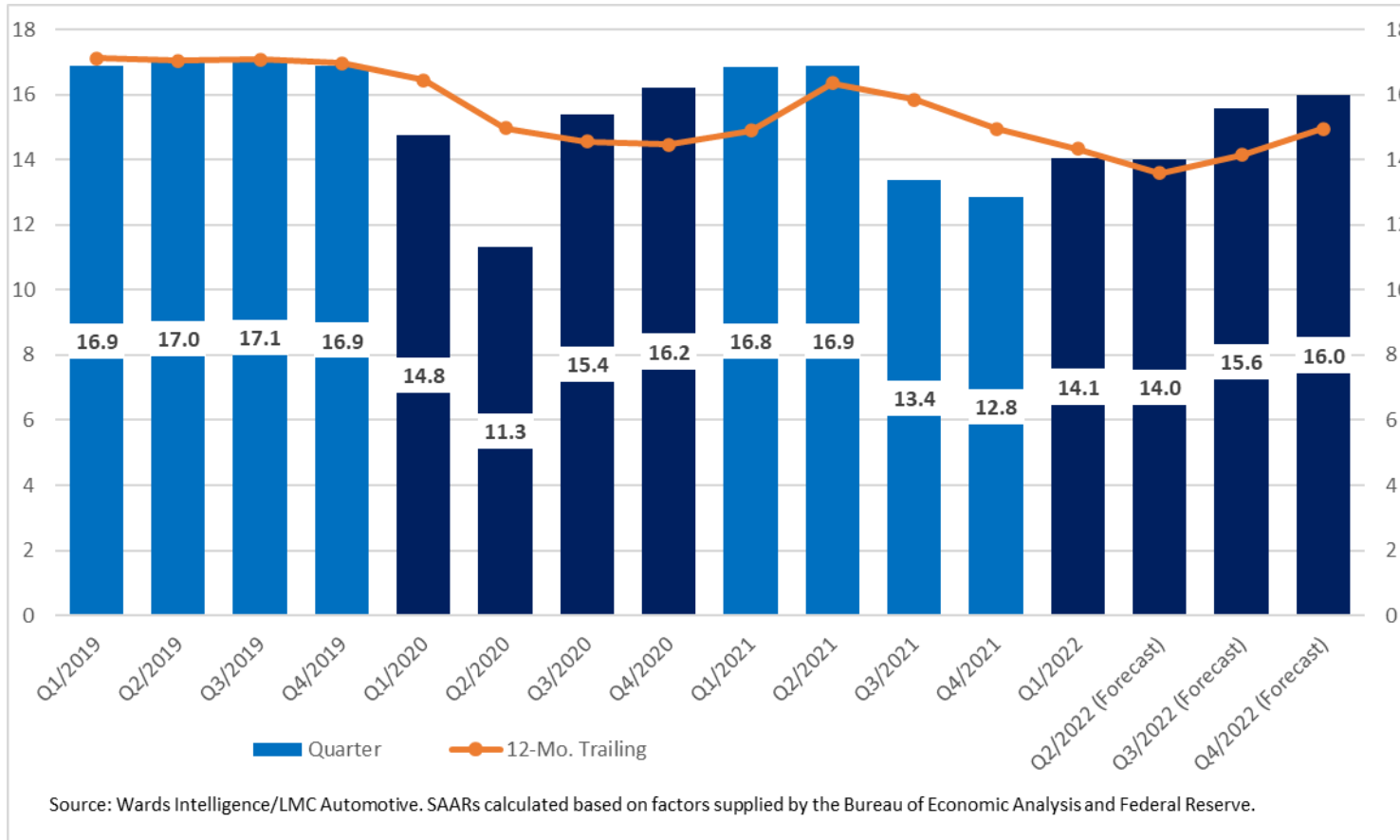


- BEV growth steady but years, maybe over decade, away from dominating the new-vehicle market

U.S. Market Outlook

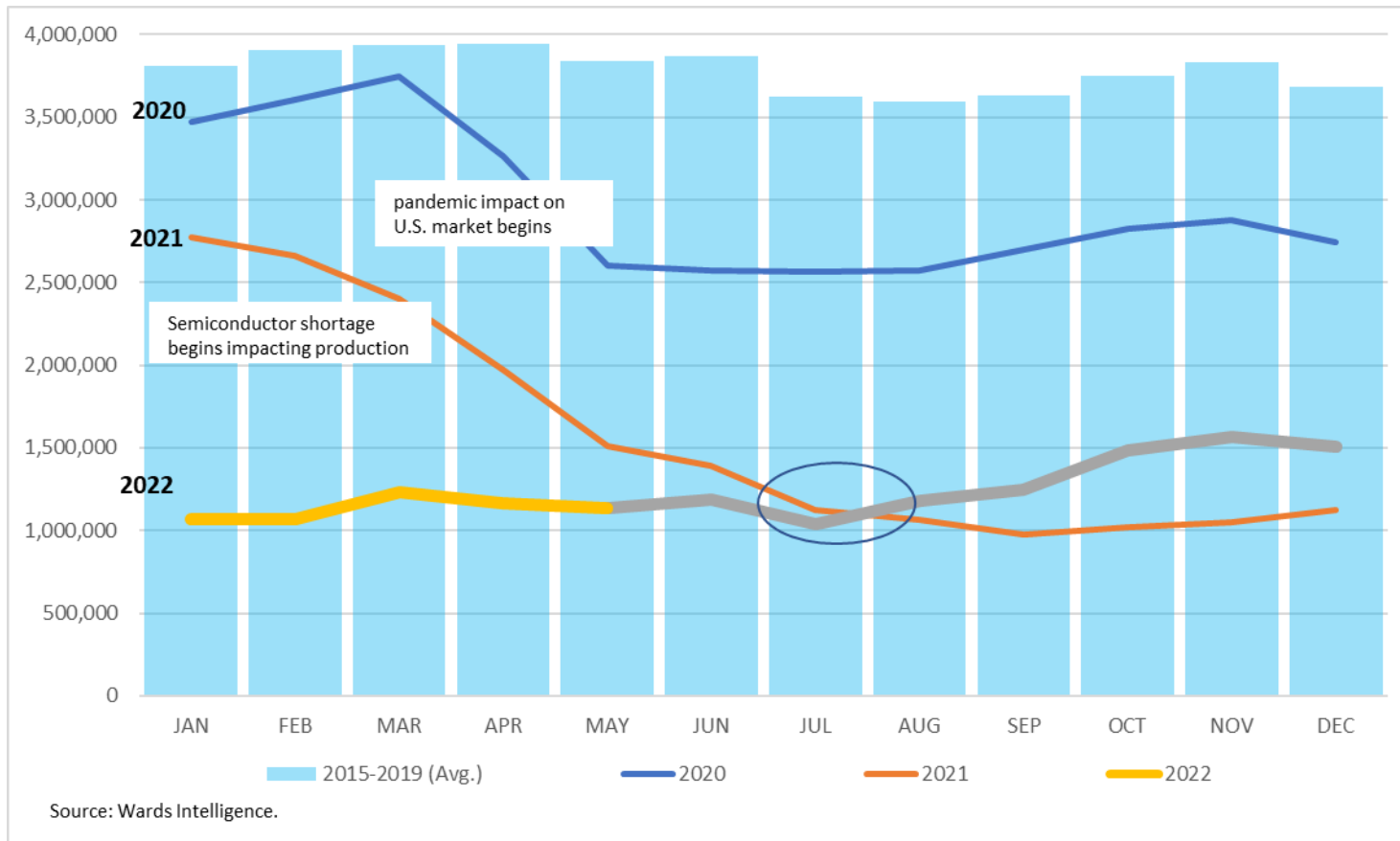
Short-Term U.S. Sales Outlook

(Seasonally Adjusted Annual Rates – in millions)



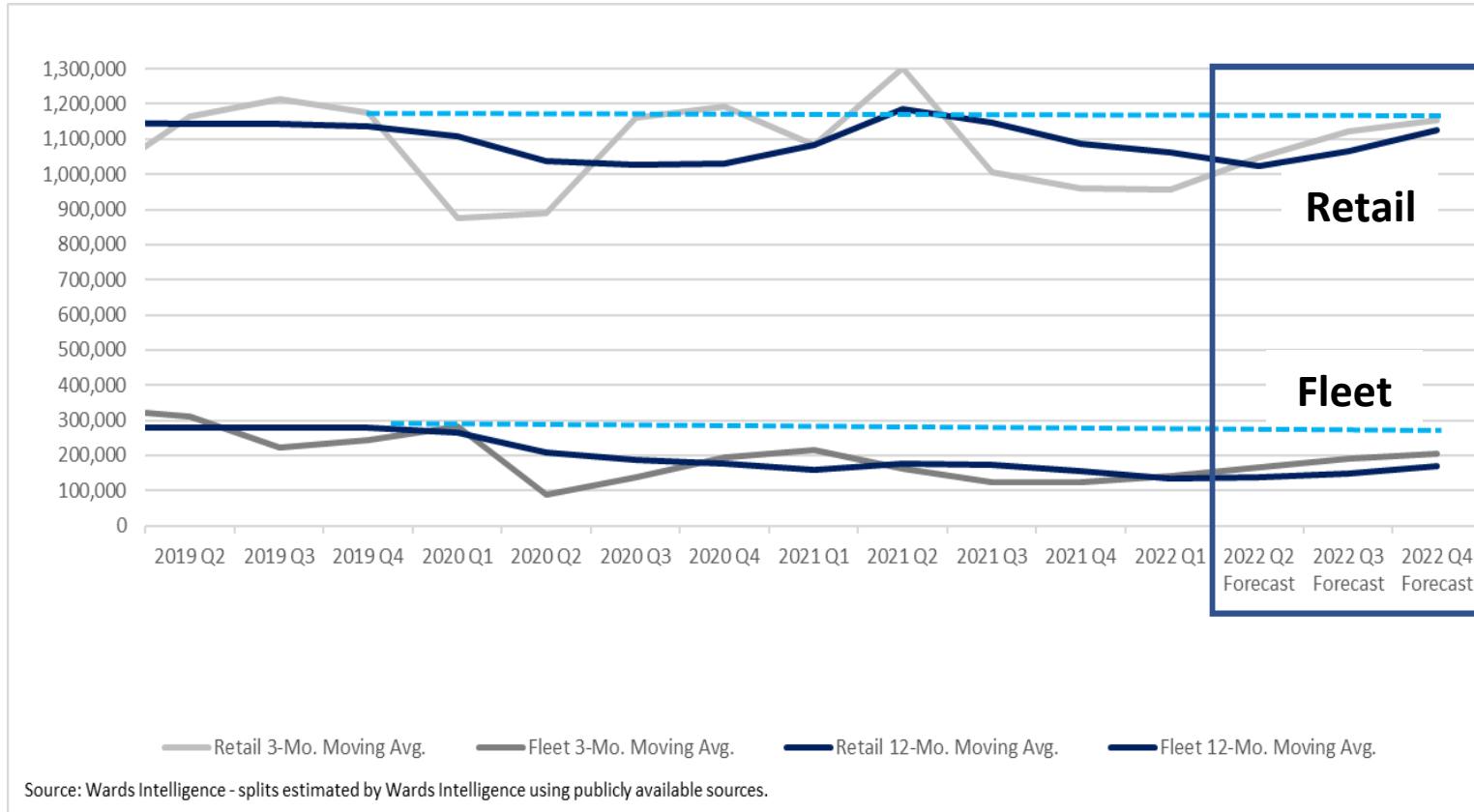
- Inventory remains key to sales levels for the rest of the year
- Volumes forecast to pick up significantly in the second half of the year
- Production/inventory limitations will keep Q4 from improving even more on Q3
- Inflation, stock market, fuel prices increasing downside risk to outlook

U.S. Light-Vehicle Inventory Forecast - Raw Volume



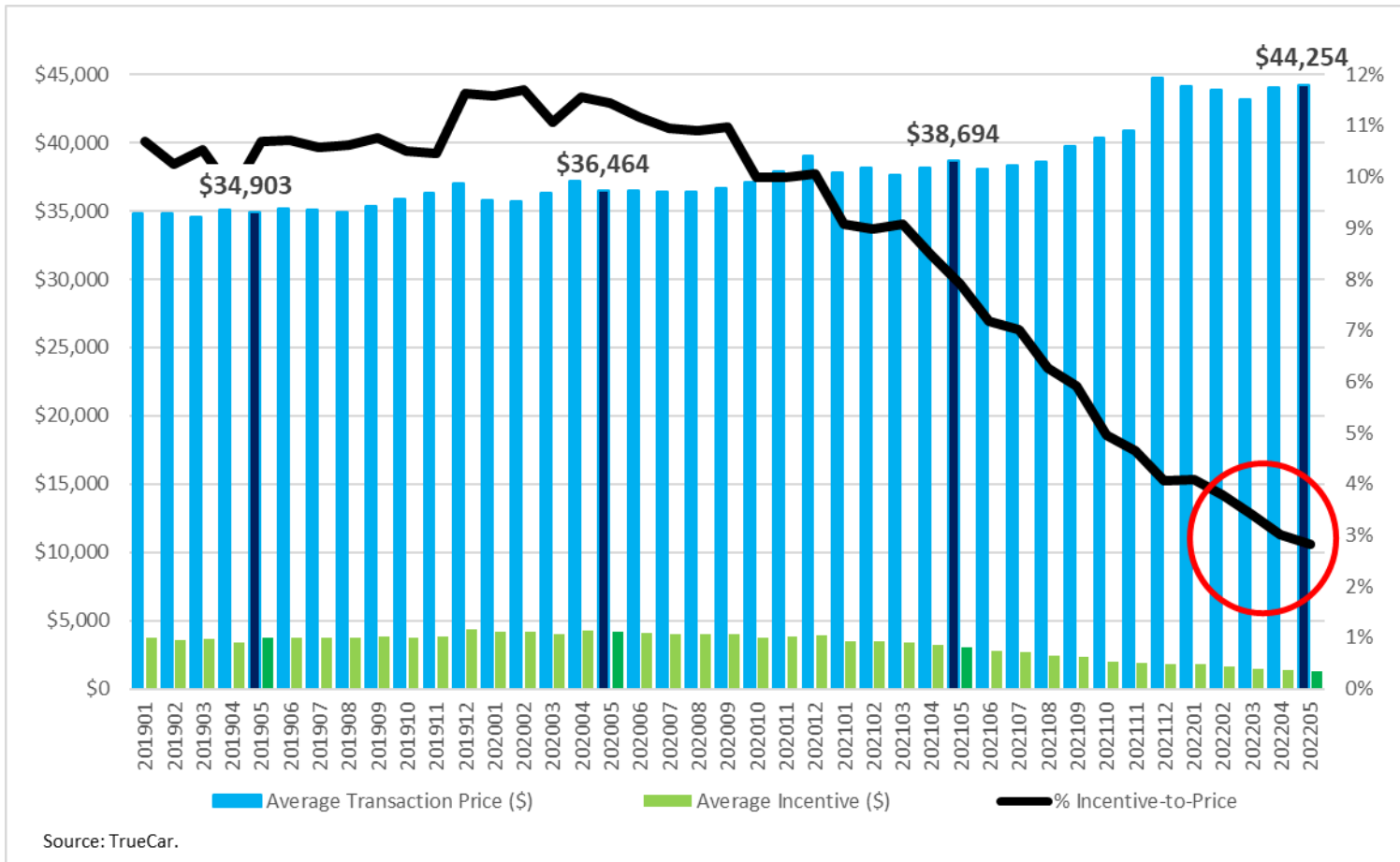
- Inventory still forecast to grow through the end of the year
- The mix of affordable vehicles will start to increase but the overall balance will continue to favor premium-price cars and (cross/sport/) utility vehicles, and non-luxury fullsize trucks

Pent-Up Demand There to Tap in Both Retail and Fleet



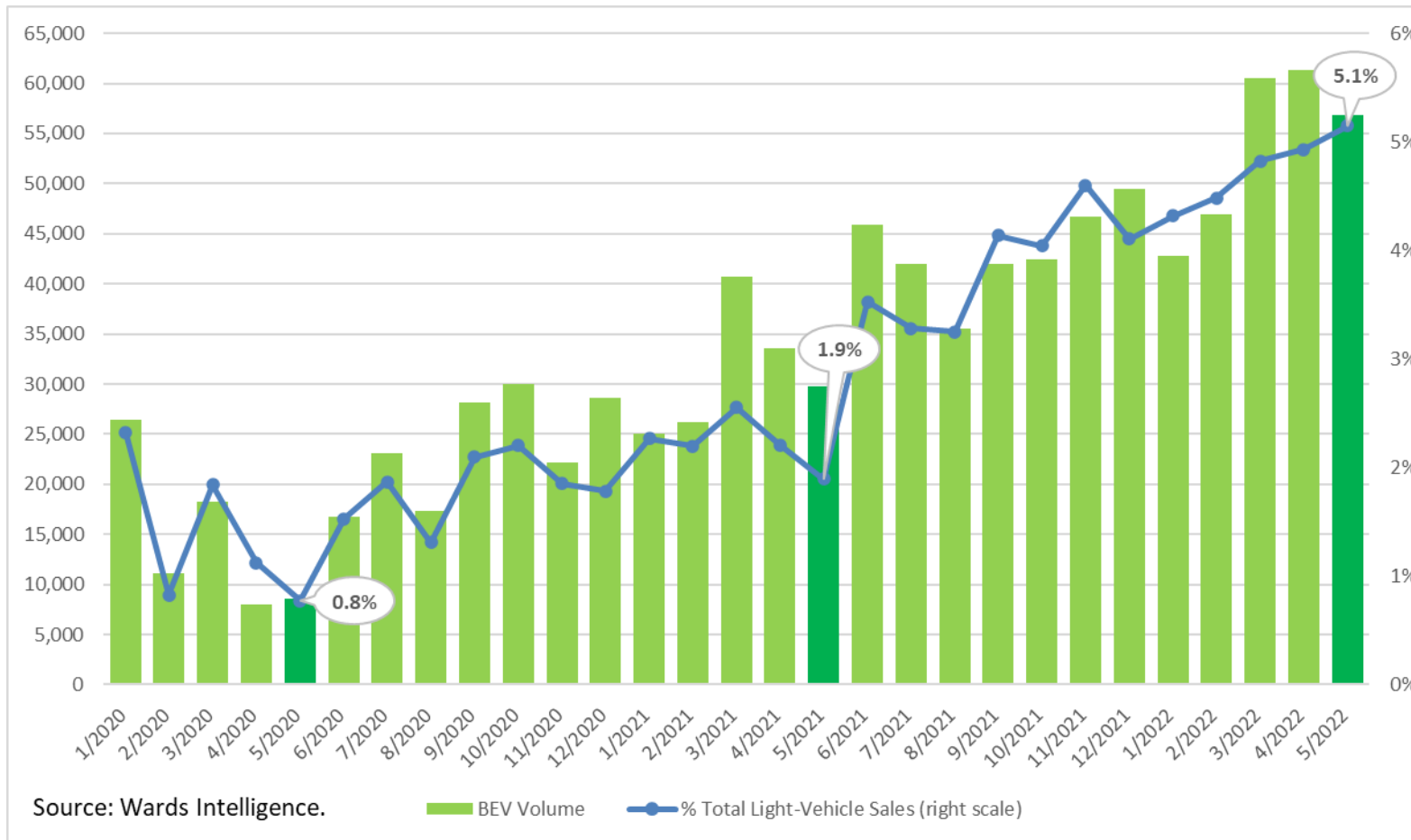
- Despite being a small part of the market, fleet continues to be the thrust of pandemic-related pent-up demand into 2023

Average Transaction Prices and Incentives



- Sellers still have pricing power
- Lack of supply remains the main driver behind rising prices
- Heavy mix of higher price vehicles exacerbating rising costs
- If demand does not improve significantly on May's 12.7 million annualized rate, watch for upturn in ratio - incentives to average price

U.S. Battery-Electric Light-Vehicle Sales



- Sales rising mainly due to increased availability
- Eight more all-new BEVs scheduled to begin sale over the final seven months of 2022

U.S. Market Summary: Economic-Related Headwinds

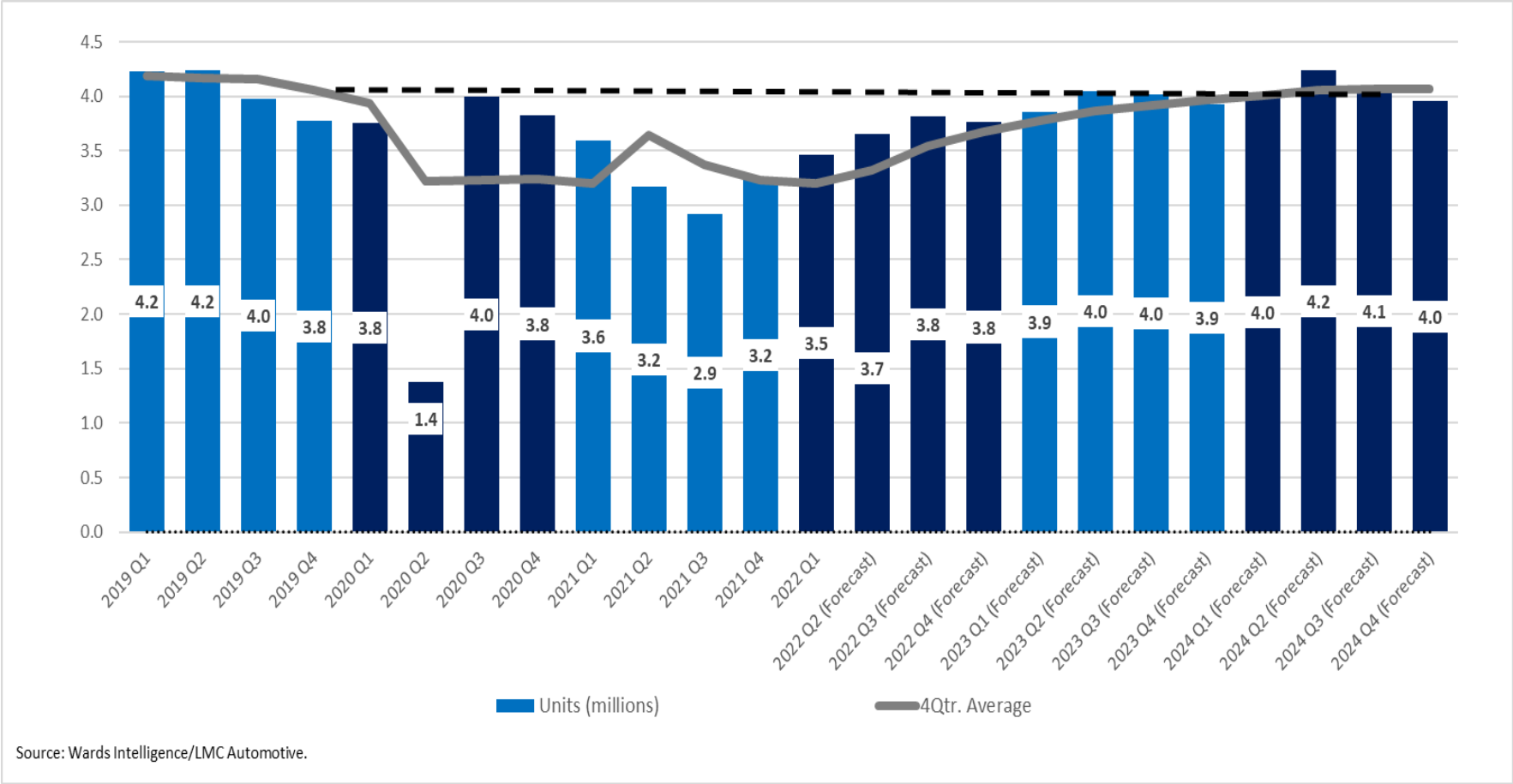
Latest Elephant in the Room

- Rising interest rates, inflation, stock-market volatility and declining confidence, on top of existing supply-chain problems already capping production/inventory, are creating more downside to the sales forecast.
- Inventory will remain unprecedentedly lean through the end of the year, with a heavy mix of high-priced vehicles.
- Pricing, exacerbated by the mix of premium-price vehicles, already is keeping some consumers out of the market.
- Upside is pent-up demand combined with historically lean inventory means production slowdowns lag decline in underlying demand.

North America Short-Term Production Outlook

(Including Top Manufacturers)

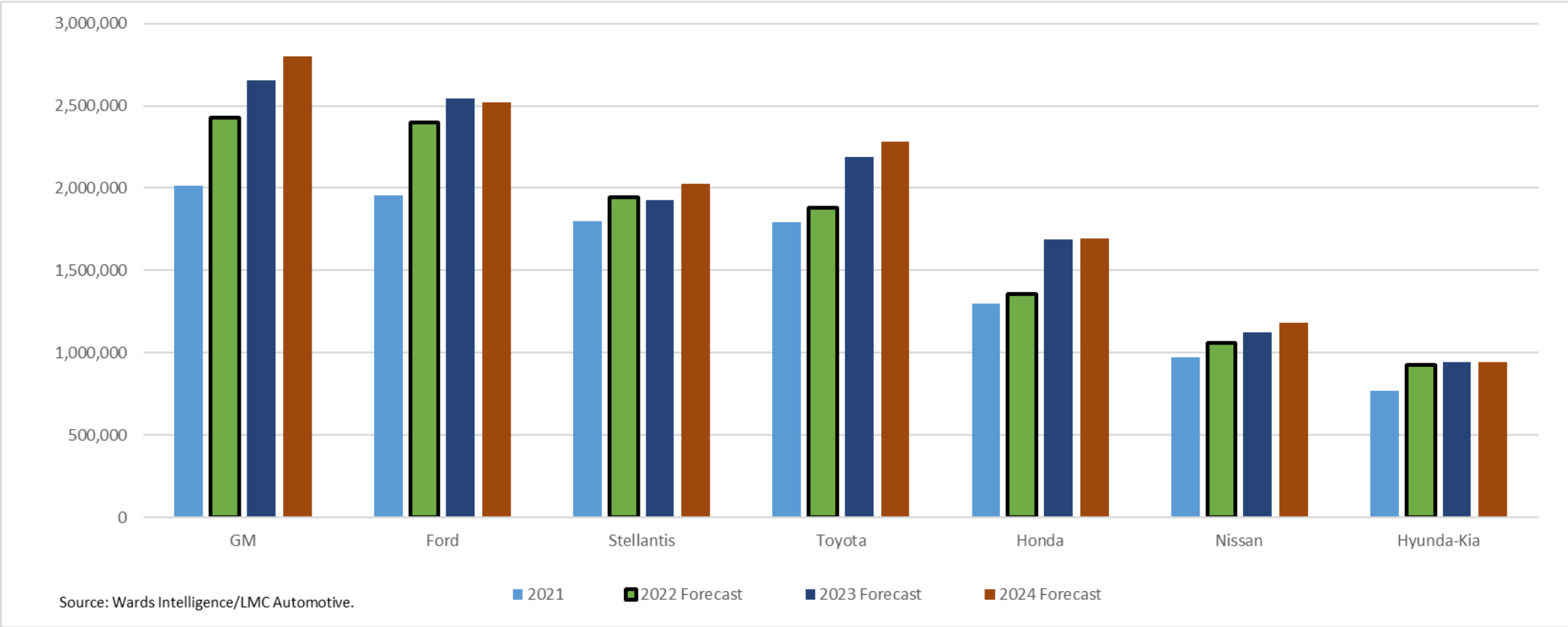
North America Production Back to Pre-Pandemic Levels Second-Half 2023



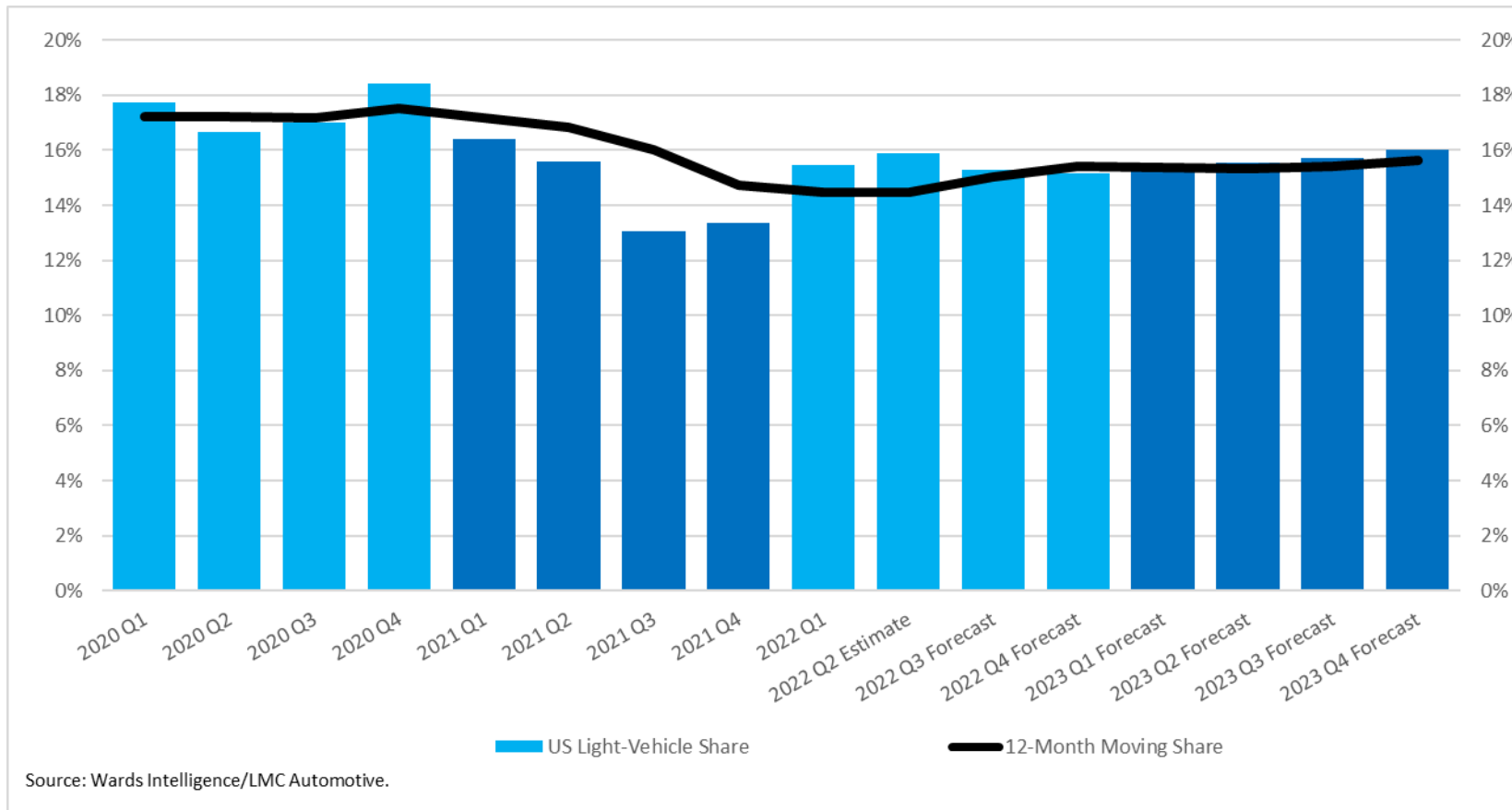
Calendar Year

2019: 16.2 million
2020: 13.0 million
2021: 12.9 million
2022: 14.7 million
2023: 15.8 million
2024: 16.3 million

North America Light-Vehicle Production: Top 7

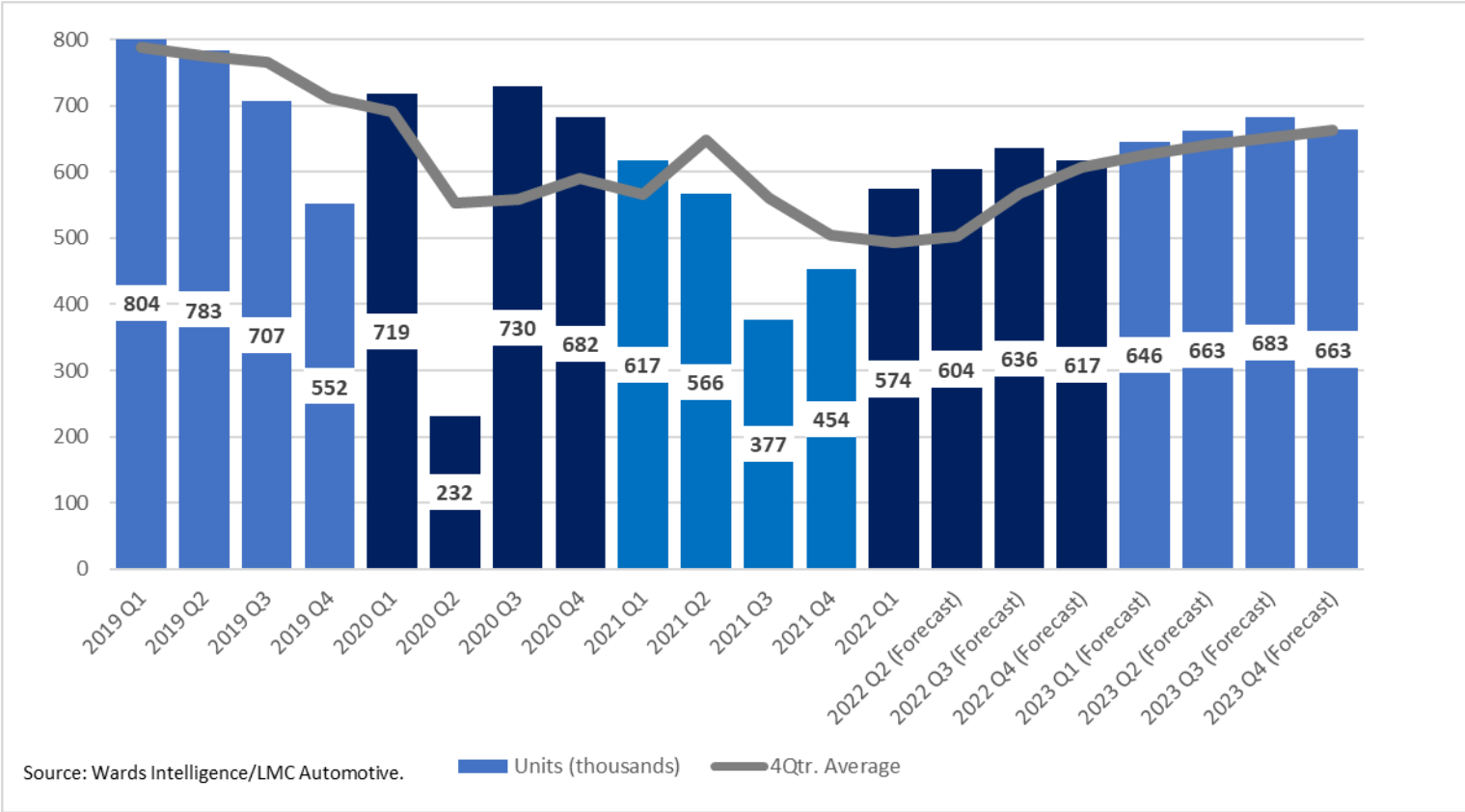


General Motors U.S. Light-Vehicle Market Share



- Market share rising year-over-year mainly because of low base in 2021
- New product in the pipeline in 2022 mostly electric vehicles – not volume movers

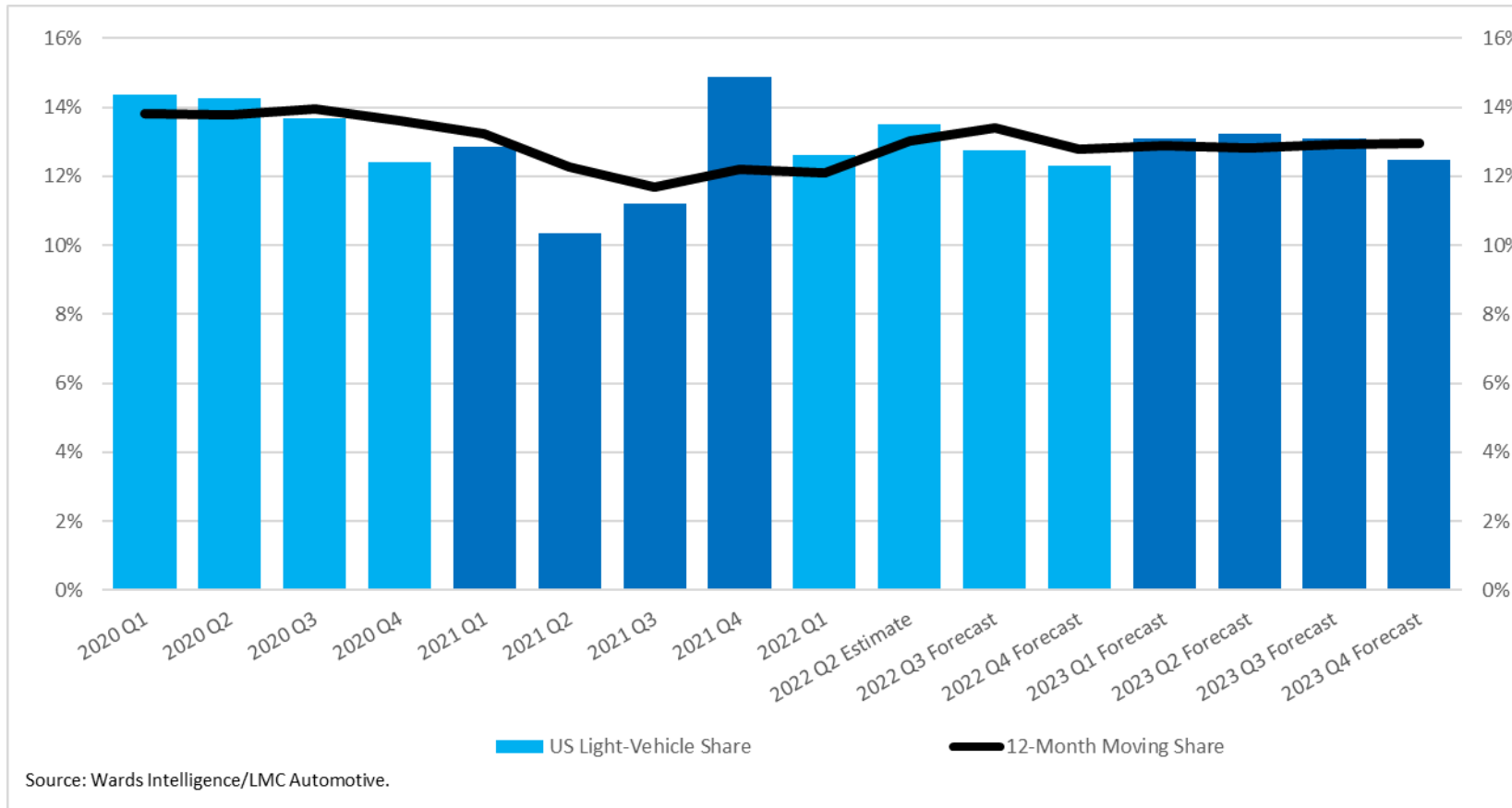
General Motors N. America Light-Vehicle Production



	Production (millions)	Y/Y % Chg.
2019	2.85	-9.9
2020	2.36	-17.0
2021	2.01	-14.7
2022	2.43	20.7
2023	2.65	9.2

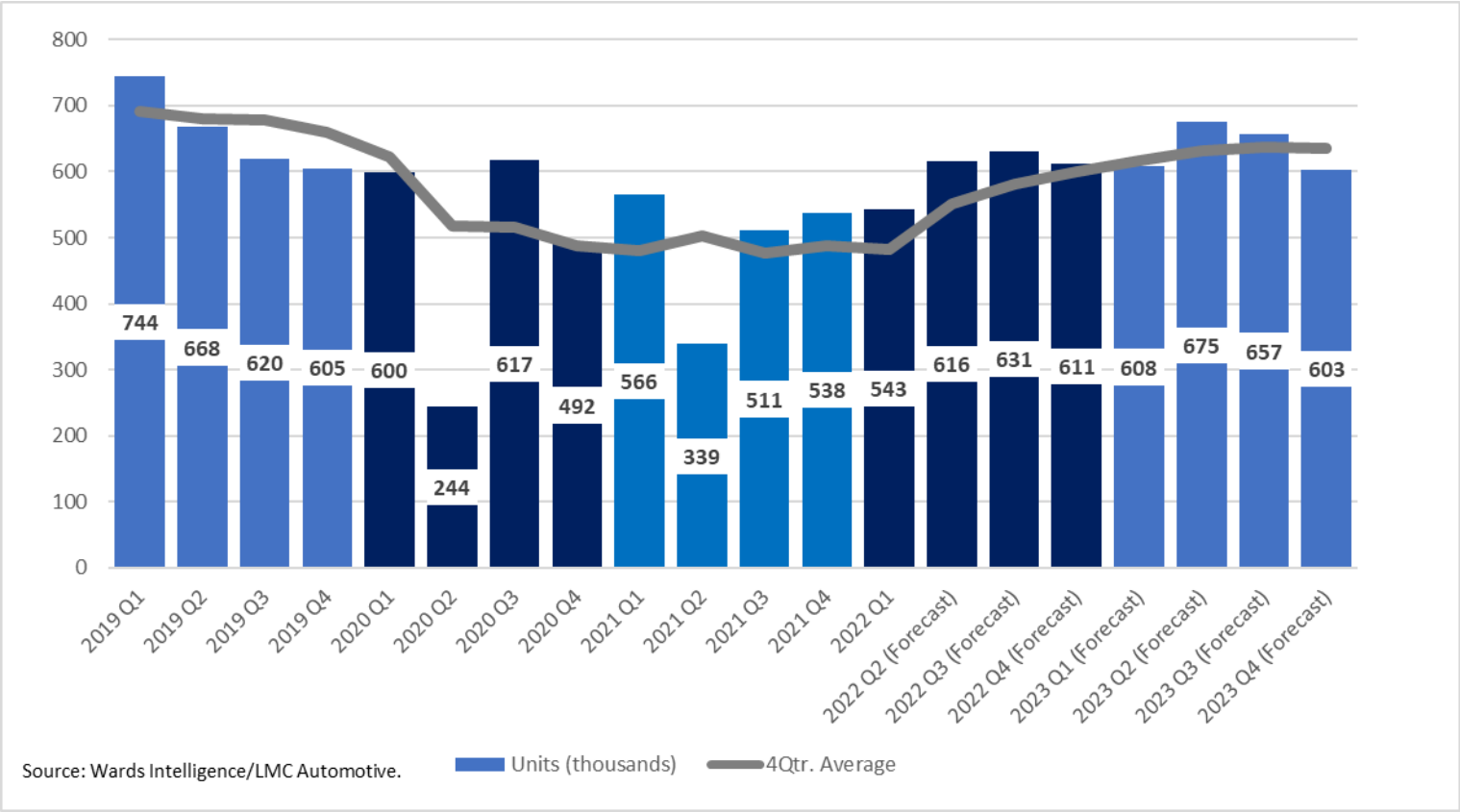
- Improved supply-chain flow plus more acute management of the logistics leading to production increases

Ford U.S. Light-Vehicle Market Share



- After several years of decline, market share rebounding on strength of fresh-product mix
- Inventory shortages in Q2 haunting it again after it appeared to be making significant strides forward

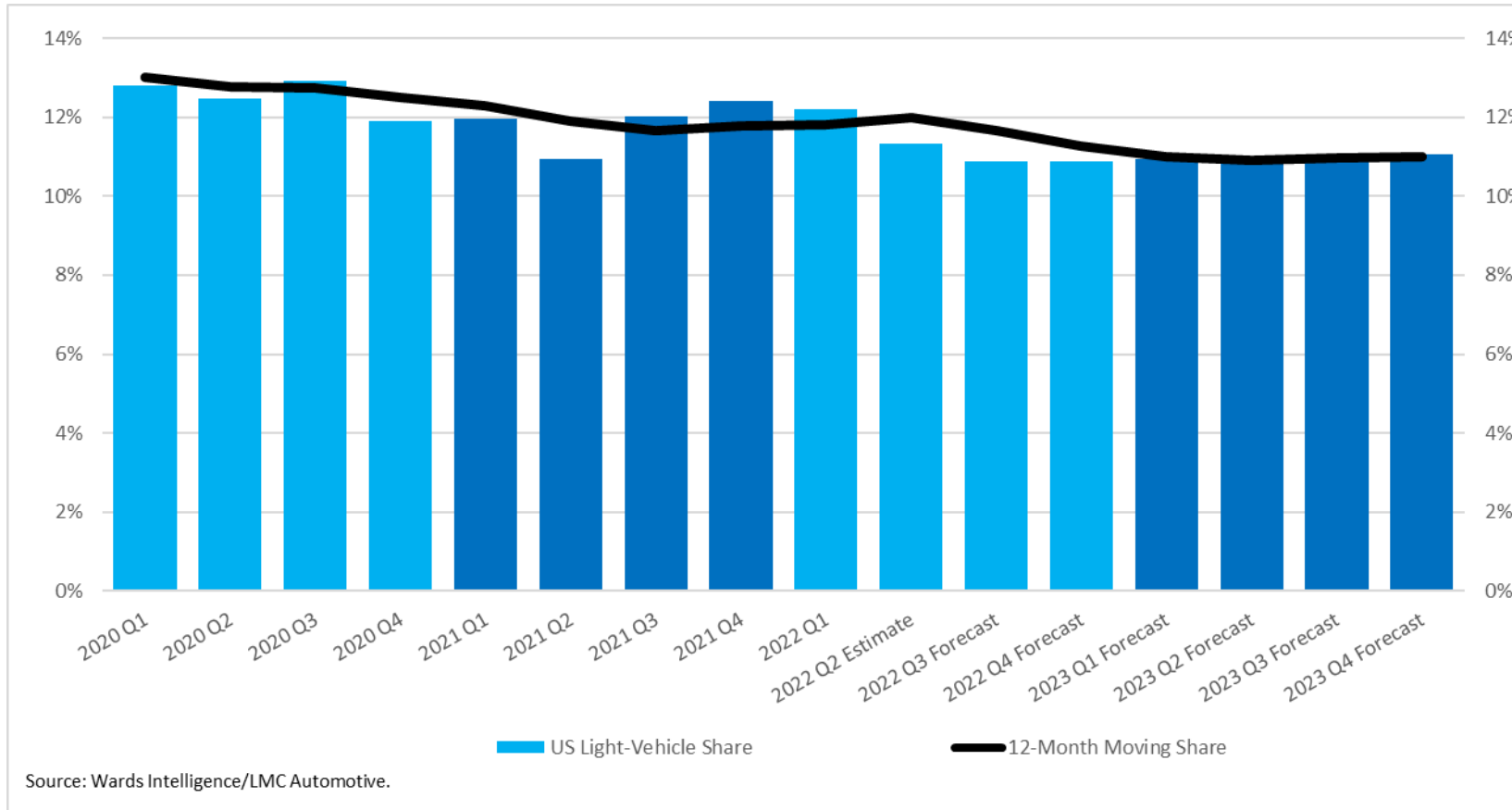
Ford Light-Vehicle Production



	Production (millions)	Y/Y % Chg.
2019	2.64	-6.3
2020	1.95	-25.9
2021	1.95	0.0
2022	2.40	22.9
2023	2.54	5.9

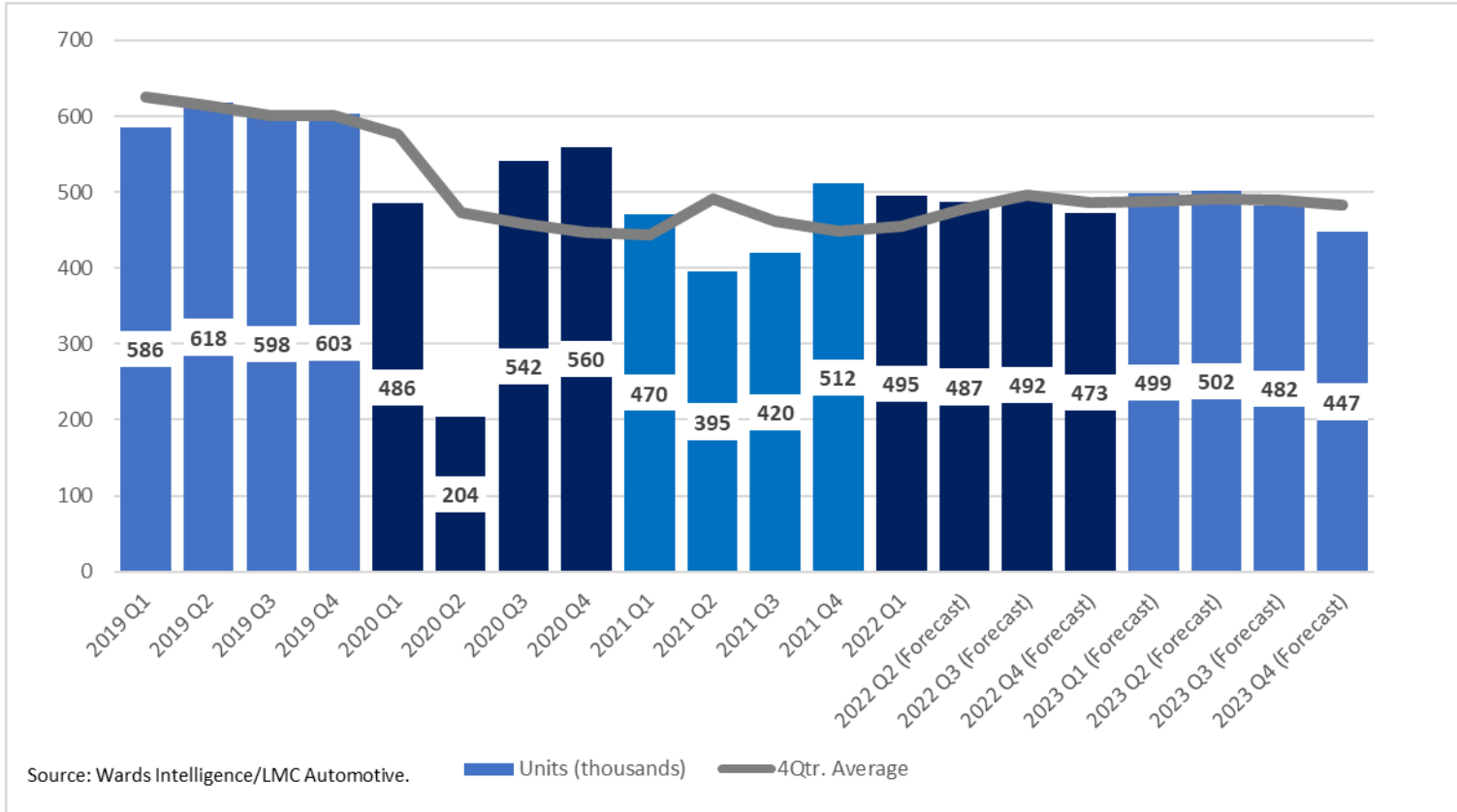
- Supply-chain disruptions nagging at production more than expected in Q2

Stellantis U.S. Light-Vehicle Market Share



- Mostly aging product line pushing market share down in 2022
- Infusion of fresh products steadying share in 2023

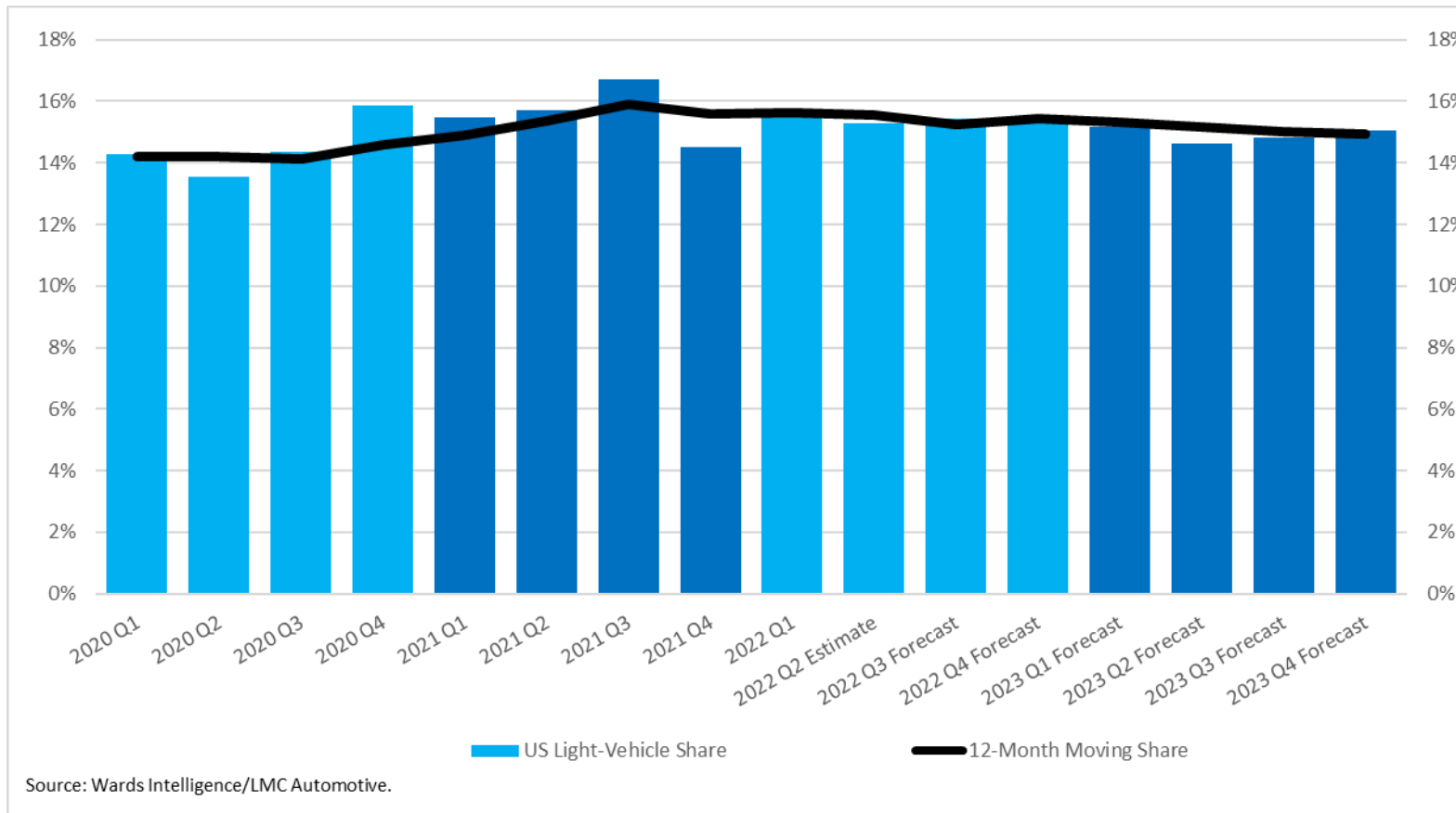
Stellantis Light-Vehicle Production



	Production (millions)	Y/Y % Chg.
2019	2.40	-6.5
2020	1.79	-25.5
2021	1.80	0.3
2022	1.95	8.3
2023	1.93	-0.8

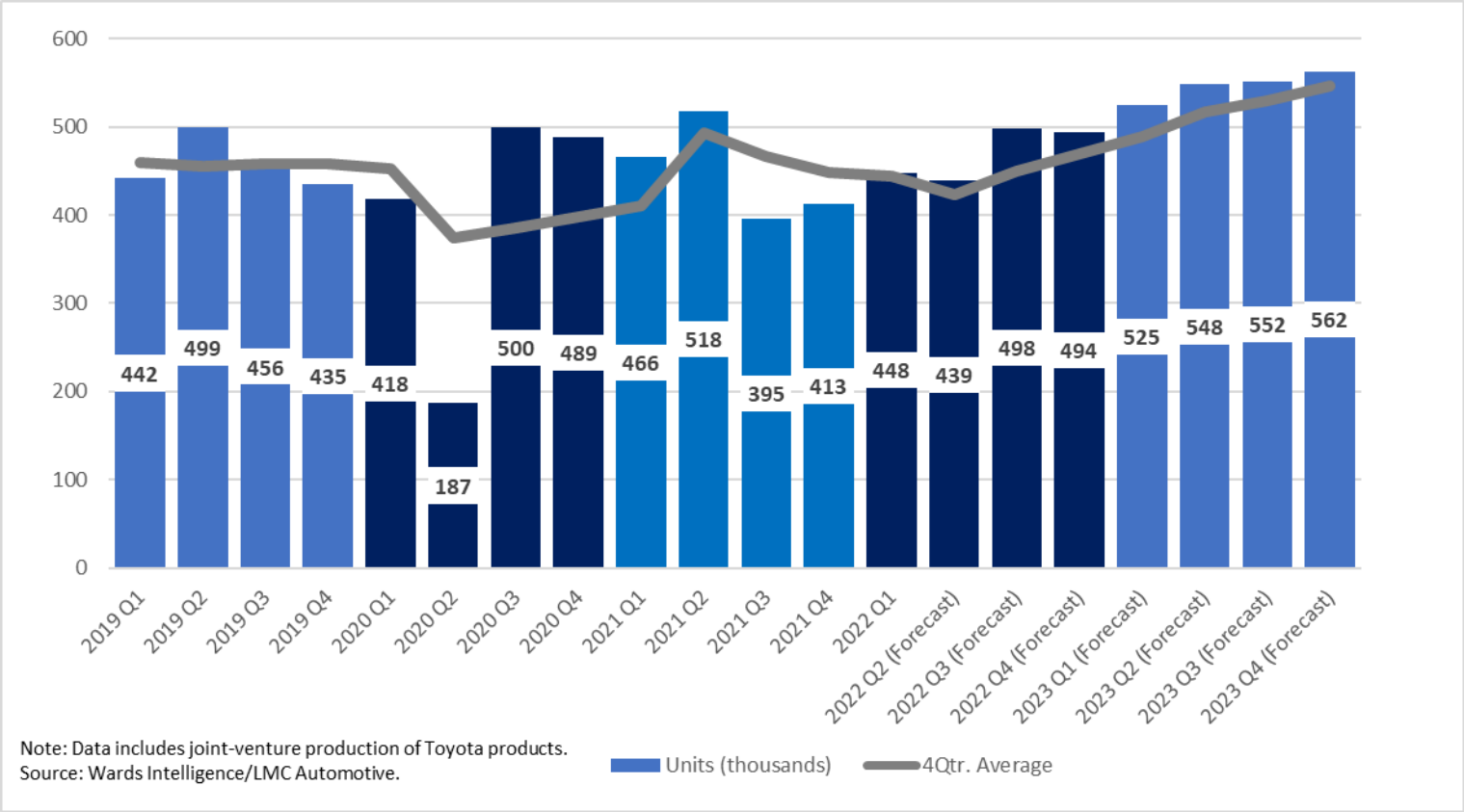
- Despite downward sales outlook, production gains in 2022 related to inventory buildup, and it is faring better than major competitors in supply-chain disruptions
- Slightly improved sales in 2023 from fresh overseas-built vehicles – not helping production in North America

Toyota U.S. Light-Vehicle Market Share



- Flat share in 2022 somewhat deceiving – 2021 totals skewed upward by semiconductor-related issues
- Share falls slightly in 2023, but has upside depending on volume from some key redesigns

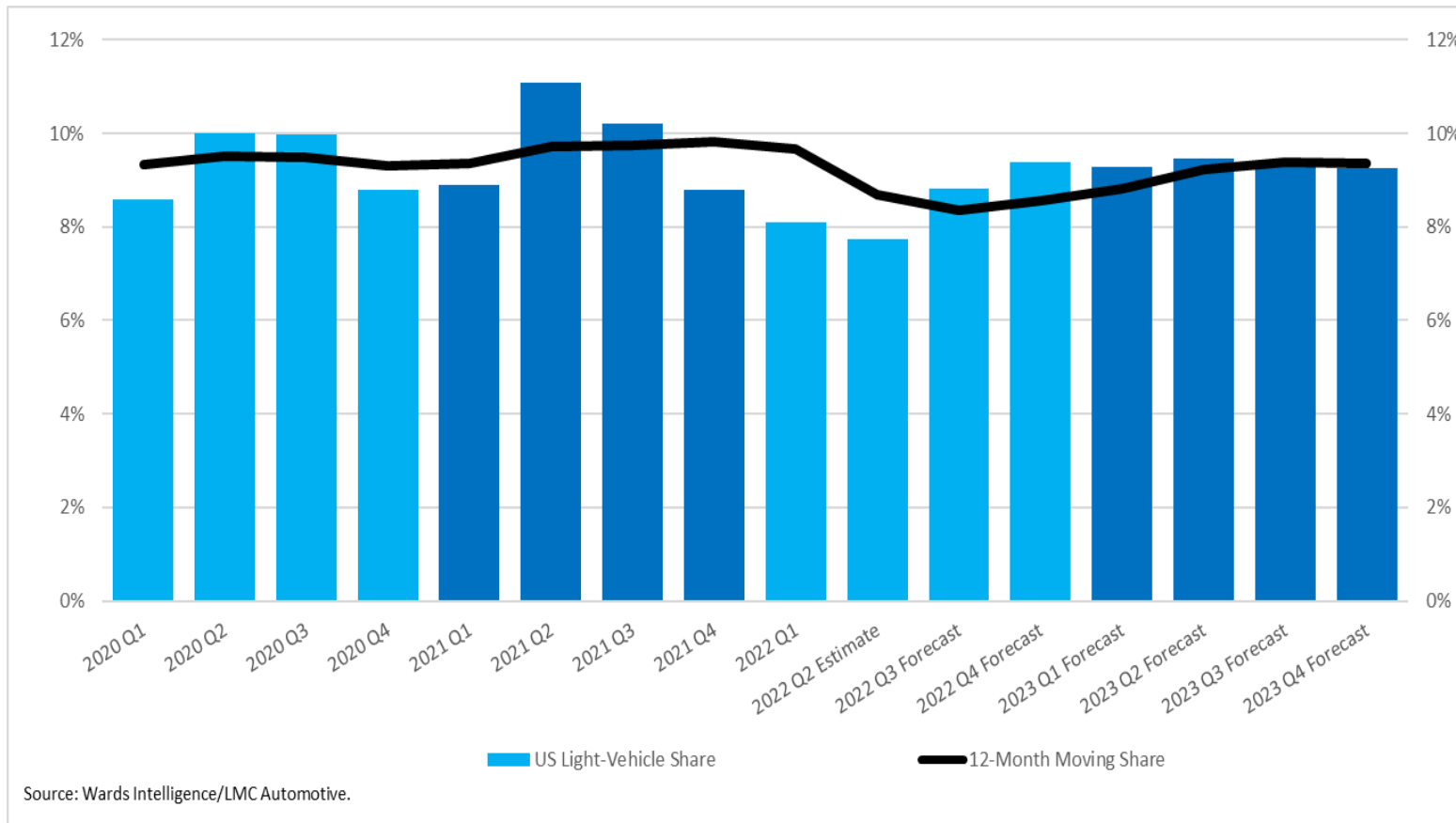
Toyota Light-Vehicle Production



	Production (millions)	Y/Y % Chg.
2019	1.83	-3.4
2020	1.59	-13.0
2021	1.79	12.4
2022	1.88	4.9
2023	2.19	16.4

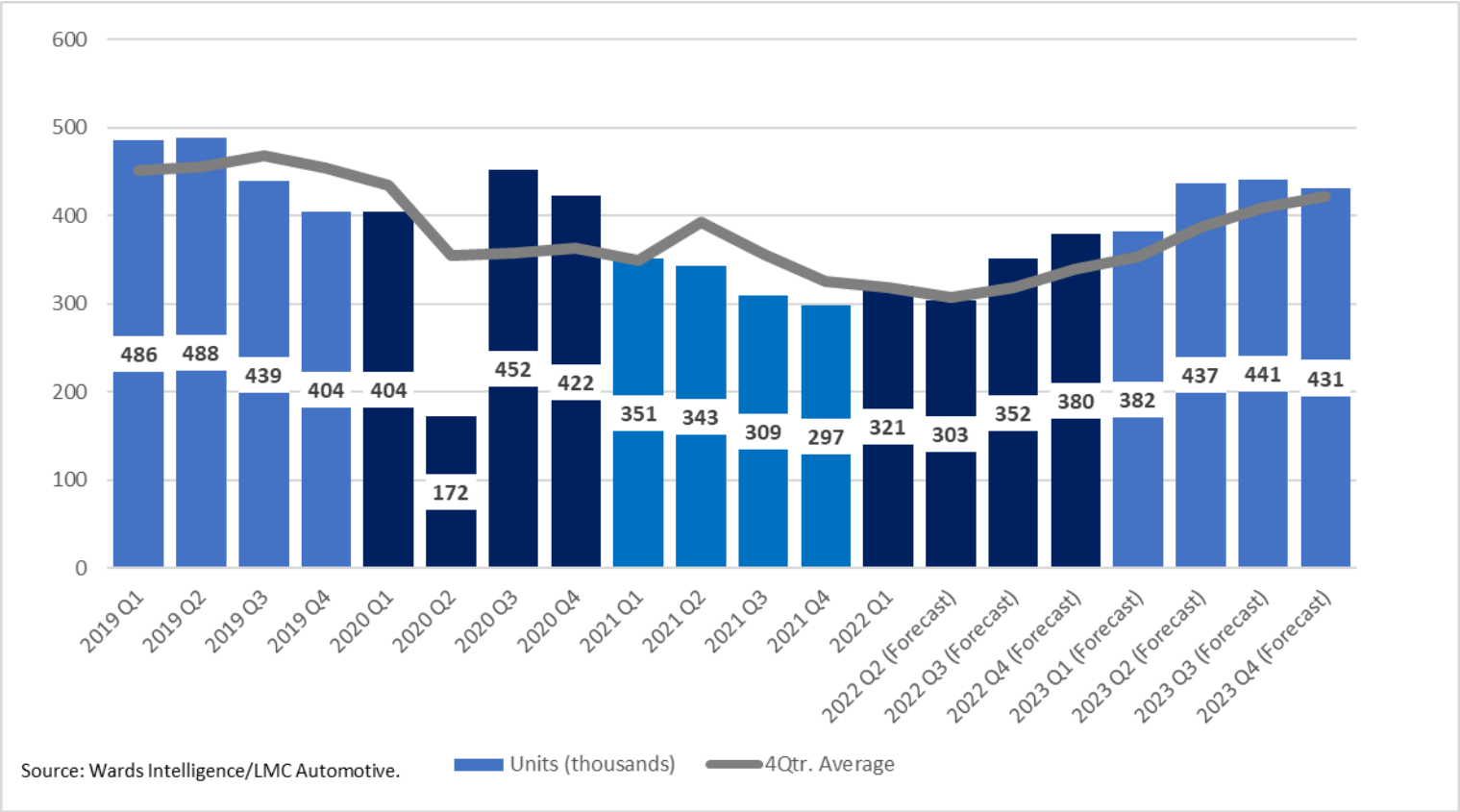
- Semiconductor shortage continues to impact production in first-half 2022
- Strong gains in 2023 boosted by sourcing production locally of overseas-sourced product
- Also pumping 2023 is increased capacity for Toyota at its joint-venture with Mazda

Honda U.S. Light-Vehicle Market Share



- Market share well below where it should be so far in 2022 due to dried-up inventory

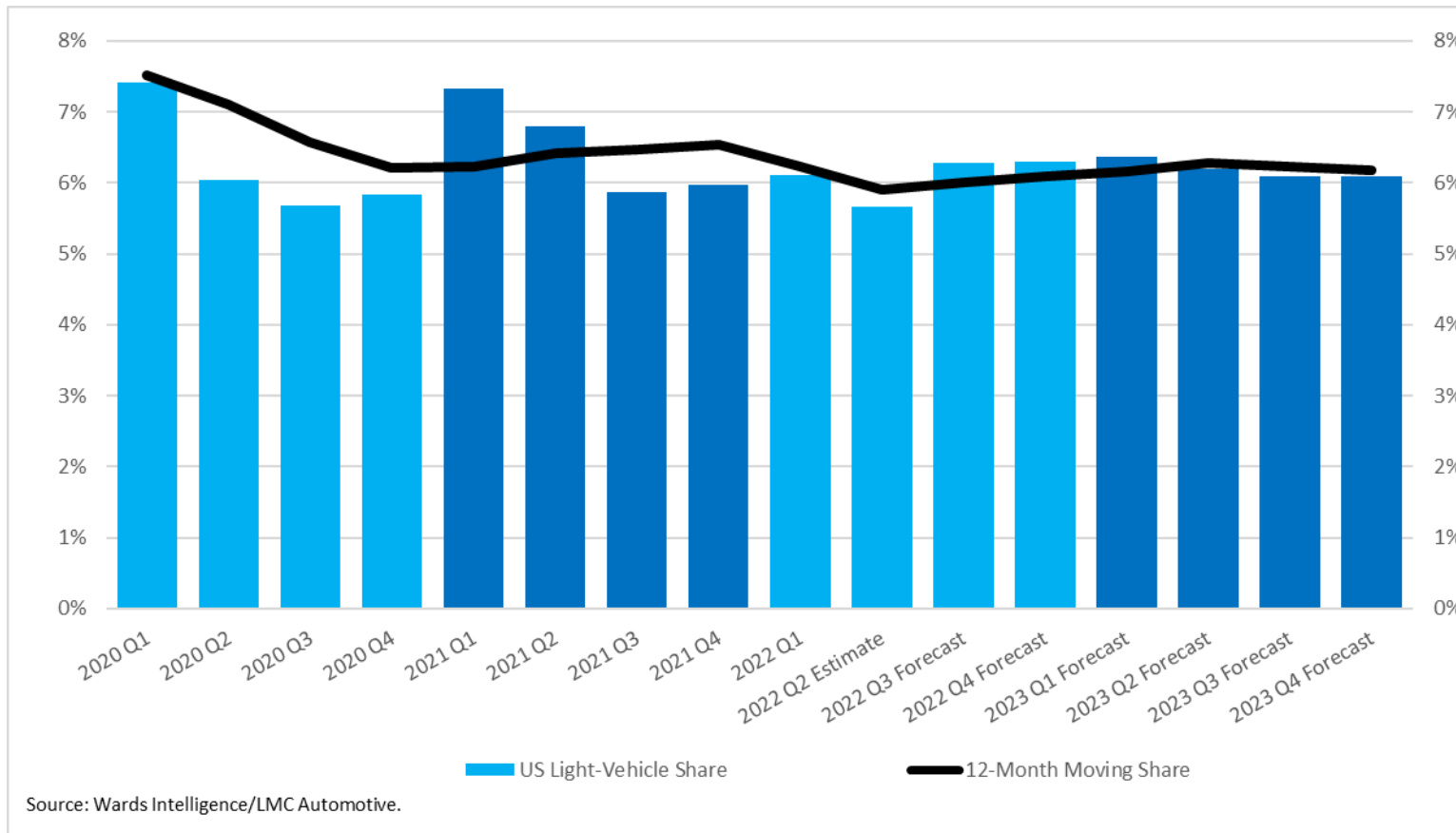
Honda Light-Vehicle Production



	Production (millions)	Y/Y % Chg.
2019	1.82	-0.3
2020	1.45	-20.2
2021	1.30	-10.3
2022	1.36	4.2
2023	1.69	24.7

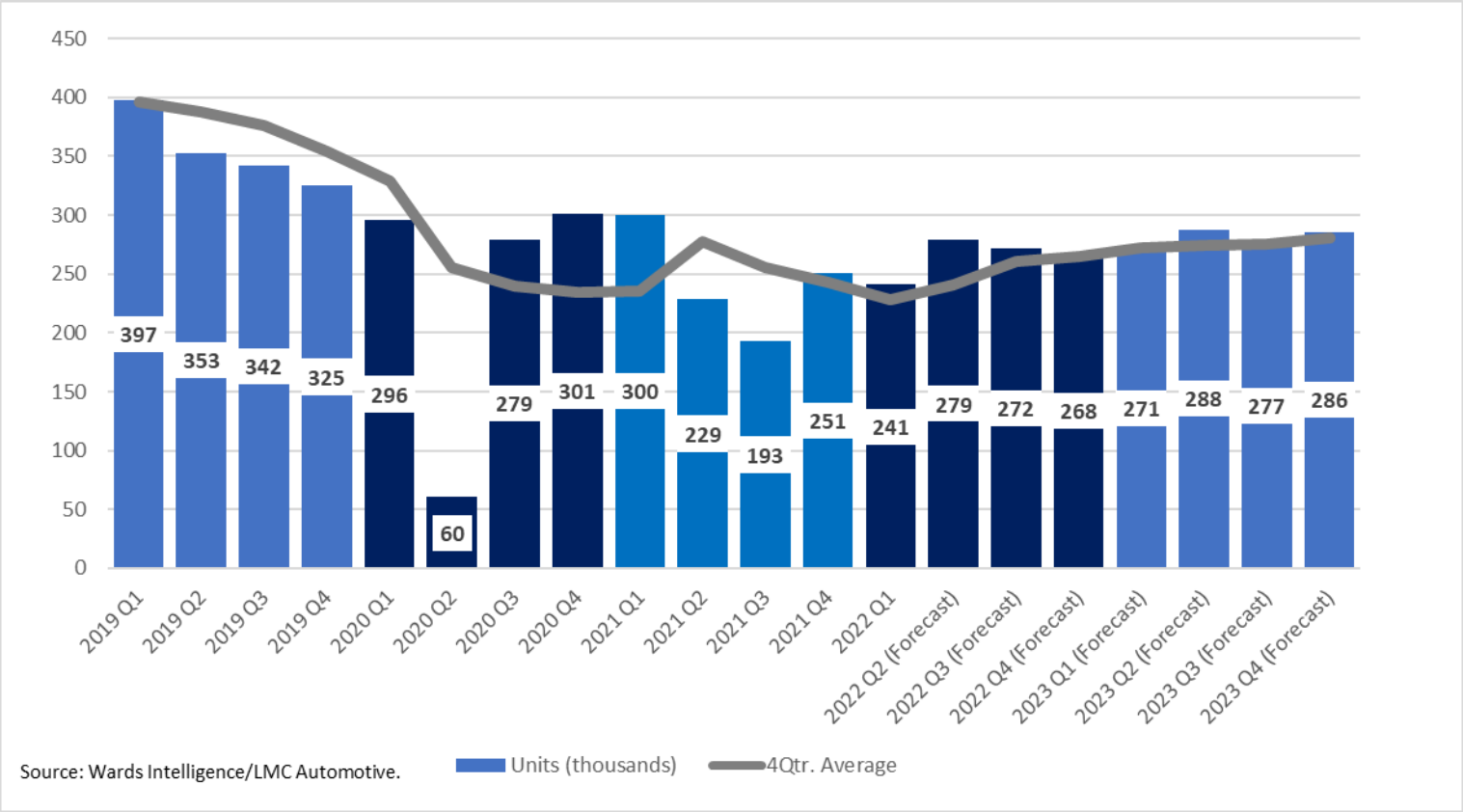
- Supply-chain challenges hitting Honda hard (compared with rest of industry) in Q2

Nissan U.S. Light-Vehicle Market Share



- Market share levelling off as it concentrates on selling only more profitable vehicles and trim options
- Also moving away from dependency on fleet volume – capping car share, especially
- Some more much-needed fresh product coming in 2023

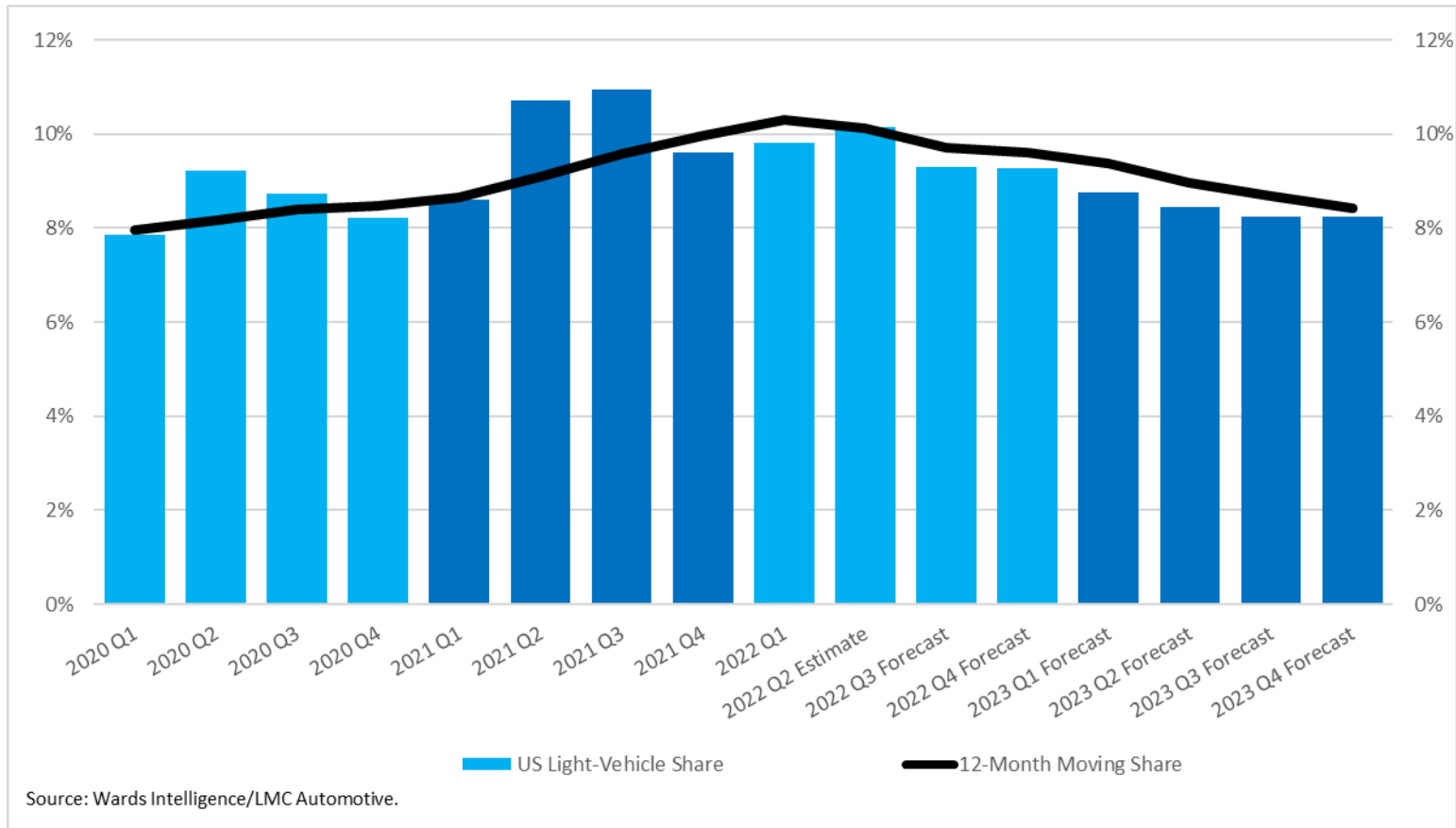
Nissan Light-Vehicle Production



	Production (millions)	Y/Y % Chg.
2019	1.42	-11.6
2020	0.94	-34.0
2021	0.97	3.9
2022	1.06	9.0
2023	1.12	5.8

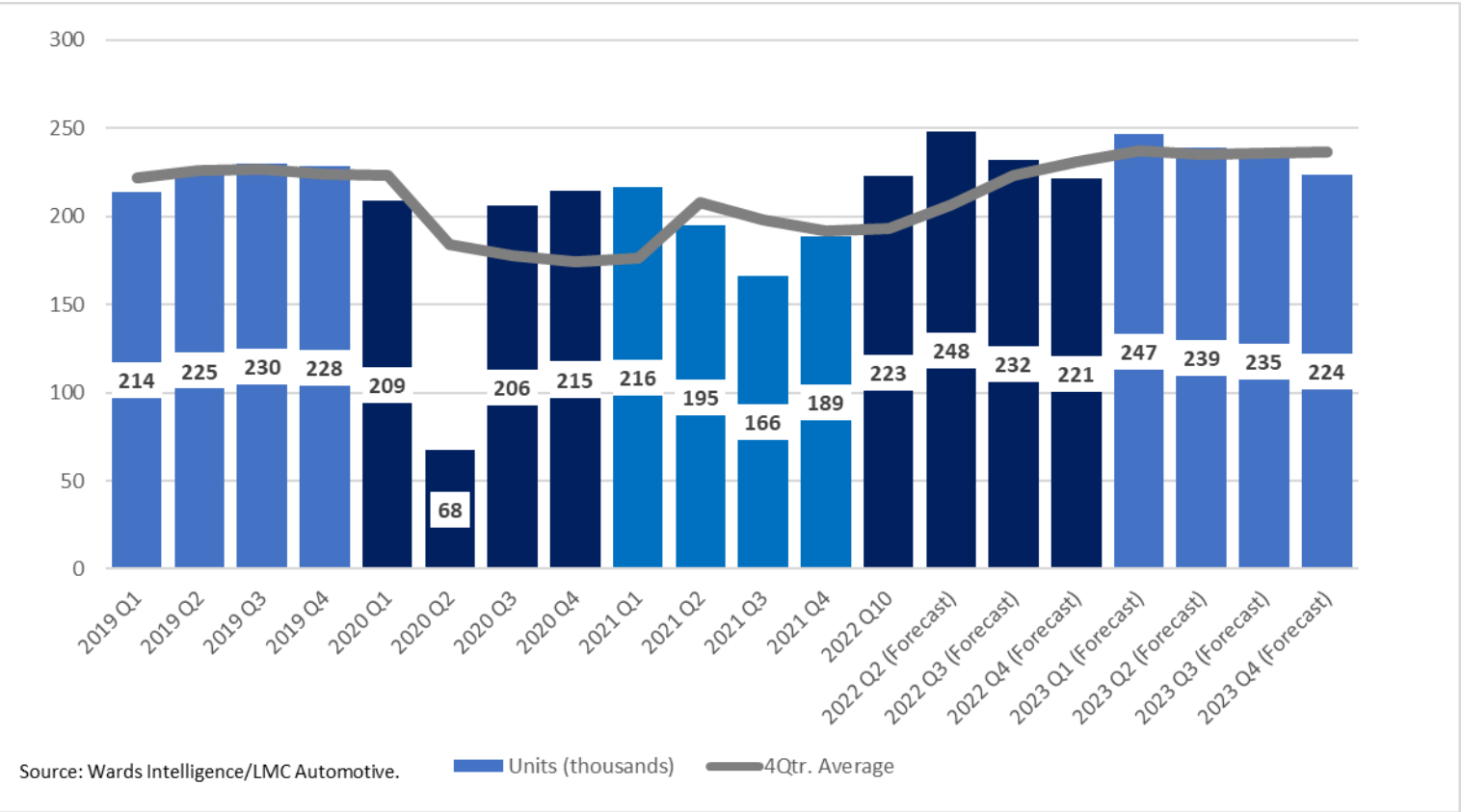
- Production rebounding with industry
- Focus on profitable sellers keeping production from resuming historical norms

Hyundai-Kia U.S. Light-Vehicle Market Share



- Sales penetration leveling off after inventory fared much better than most from the semiconductor shortage in 2021 – and to a lesser extent in 2022
- Also had, and still has, a lot of fresh product propping volume
- Fresh-product bump begins wearing off in 2023 but has strong upside

Hyundai/Kia Light-Vehicle Production



	Production (millions)	Y/Y % Chg.
2019	0.90	4.8
2020	0.70	-22.2
2021	0.77	9.8
2022	0.92	20.6
2023	0.95	2.3

- Increasing local sourcing of its portfolio helped spark production gains from 2021
- Overseas sourcing giving it fits more than domestically sourced vehicles



Thank you

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