

WELCOME!

COX
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INDUSTRY INSIGHTS 2021

Q4 MANHEIM USED VEHICLE VALUE INDEX

Cox
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Cox AUTOMOTIVE

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 Kelley Blue Book

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NEXTGEAR
CAPITAL

PIVOT

 RideKleen

vAuto
LIVE MARKET VIEW

VinSolutions

 oxtime

AGENDA

The Economy – Jonathan Smoke, Chief Economist

New-Vehicle Sales – Charlie Chesbrough, Senior Economist

Used-Vehicle Sales – Zo Rahim, Manager of Economic & Industry Insights

2021 Outlook and Playlist – Michelle Krebs, Executive Analyst and Jonathan Smoke, Resident DJ

Wholesale Marketplace – Zach Hallowell, Senior Vice President, Manheim Digital

Manheim Used Vehicle Value Index – Jonathan Smoke and Zo Rahim

Q&A

THE ECONOMY

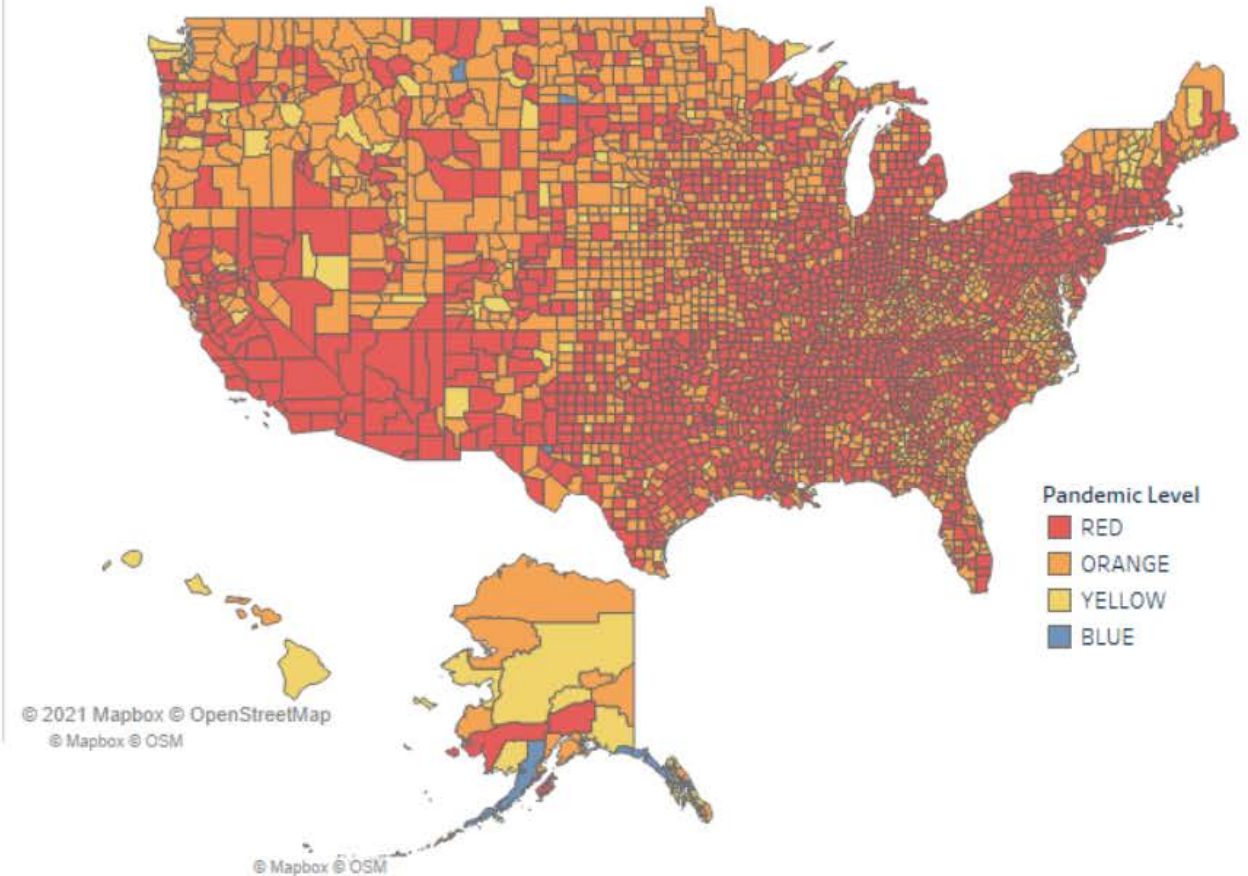
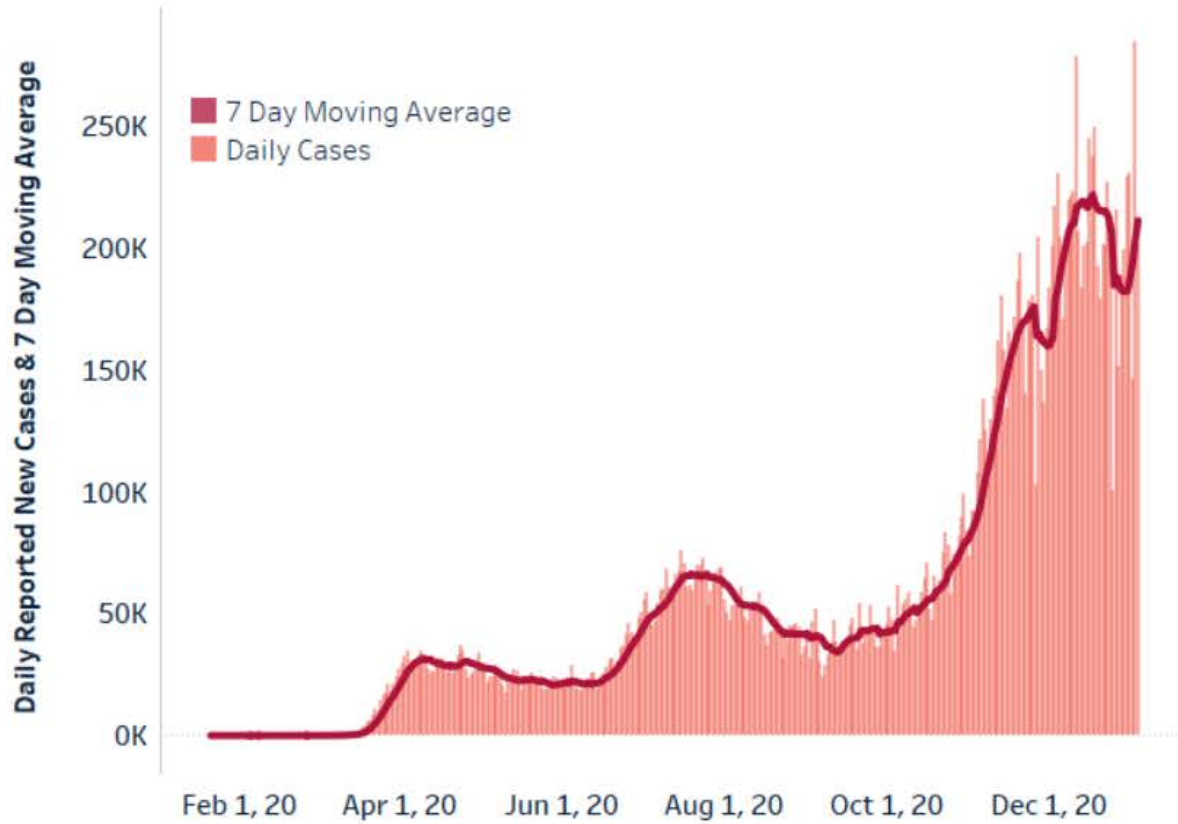
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An aerial photograph of a winding asphalt road through a dense green forest. A blue car is driving on the road, which curves to the right. The road has white lane markings. The surrounding area is filled with lush green trees and some dry brush. The image is partially obscured by a white, semi-transparent graphic overlay on the left side.

JONATHAN SMOKE

CHIEF ECONOMIST

COVID-19 PANDEMIC: The Backdrop of 2020








GOVERNMENT SET: President-Elect Joe Biden and the Light Blue Hue





- Stimulus
- Infrastructure
- Regulation
- Taxes?



THE ECONOMY: Partial Recovery in GDP and Jobs

Overall Economy	GDP Growth / FRBNY	3.1% (Q4 '19)	+33.4% (Q3 '20)	+4.0% (Q4 '20 F)	
Employment Conditions	U3 Unemployment Rate	3.5% (Dec '19)	6.7% (Nov '20)	6.7% (Dec '20)	
Buyer Confidence	UofM Consumer Sentiment	99.3 (Dec '19)	80.7 (Dec '20)		
Wages	Earnings Growth	3.0% (Dec '19)	5.1% (Dec '20)		
Buyer Ability	Disposable Income Y/Y	3.6% (Nov '19)	4.3% (Nov '20)		

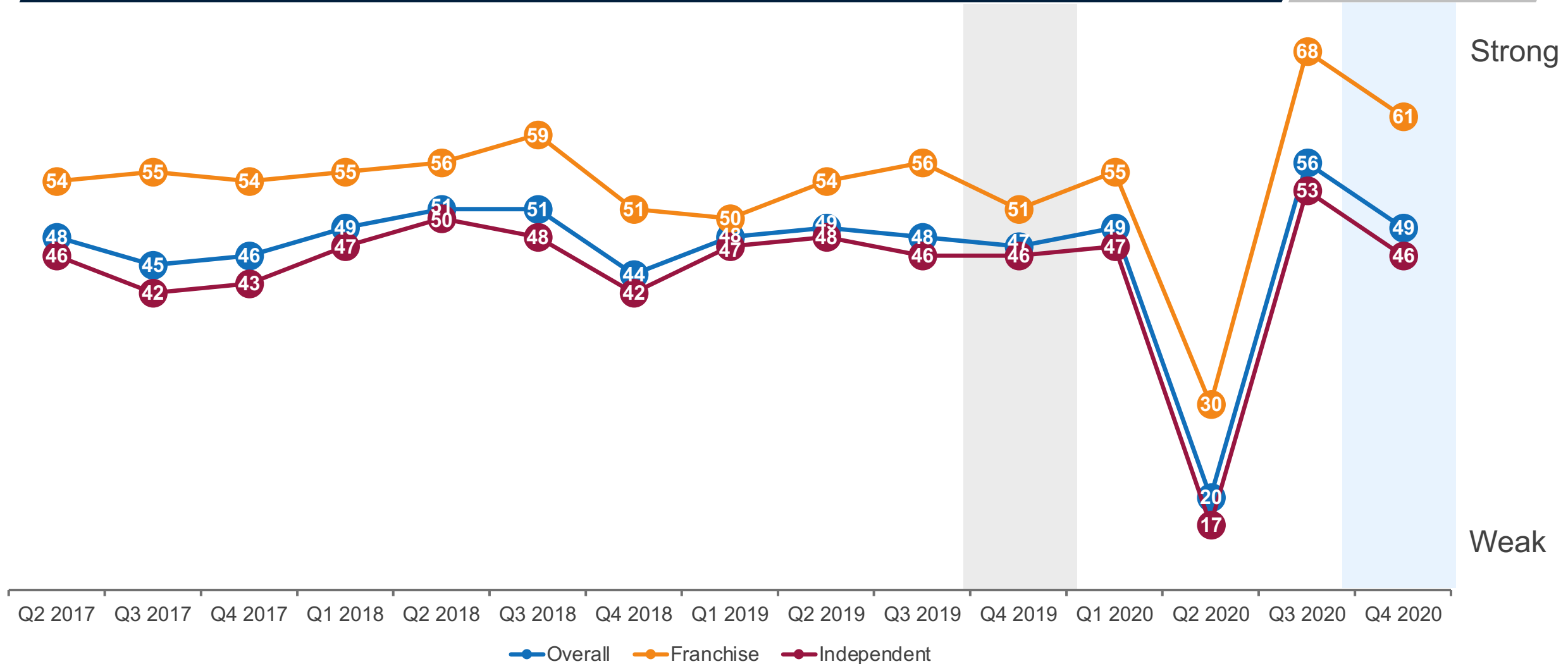
THE ECONOMY: Cost of Funds and Fuel Remain Very Low

Auto Finance	FRBNY	\$159.1 billion (Q3 '19)	\$168 billion (Q3 '20)	
Interest Rates	Effective Fed Funds Rate	1.55% (Dec '19)	0.09% (Dec '20)	
Borrowing Costs	Average New Auto Loan Rate	5.83% (Dec '19)	4.29% (Dec '20)	
Mobility Costs	Average Retail Unleaded Gasoline Price	\$2.59 (Dec '19)	\$2.25 (Dec '20)	

How would you describe the current market for vehicles in the areas where you operate?

Dealer Sentiment Index

FOURTH QUARTER 2020

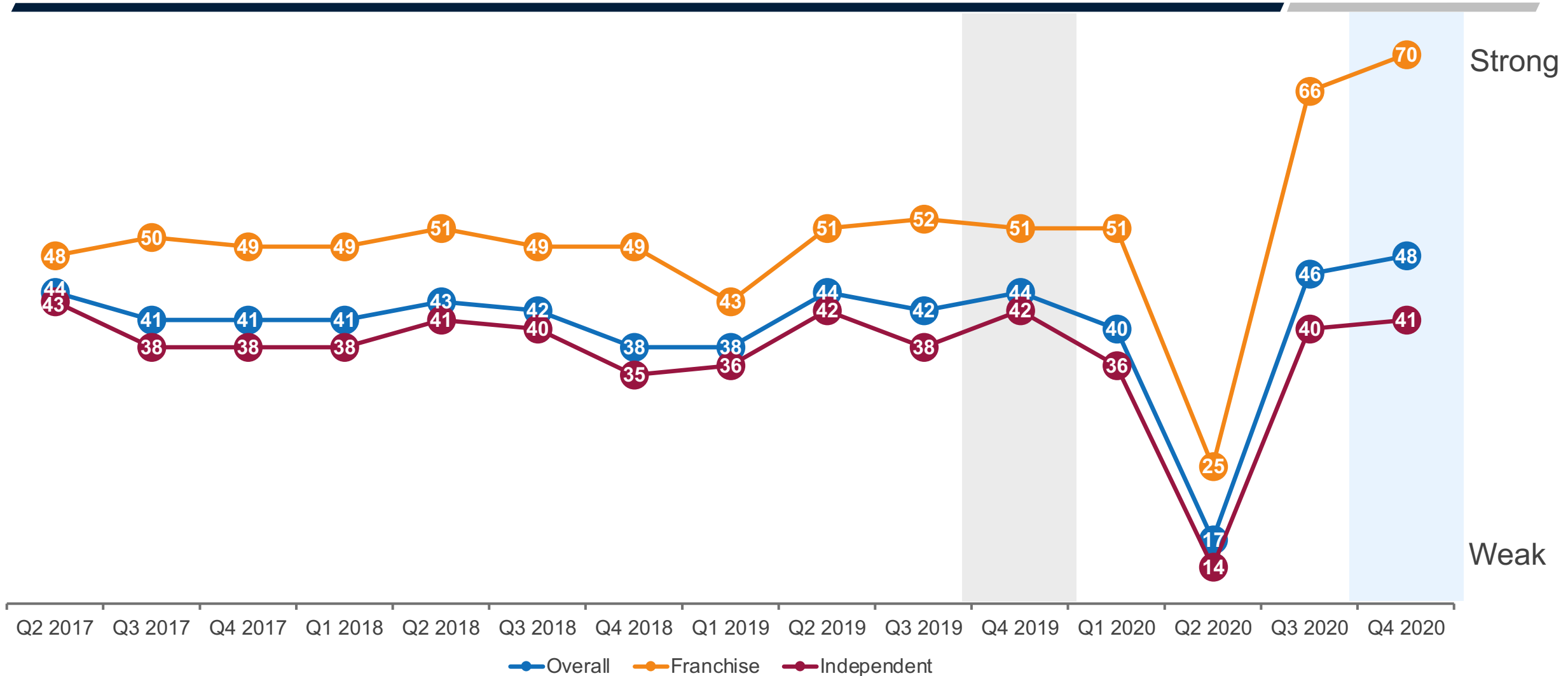


Note: Scale 1 - 100

How would you describe your profits over the past 3 months?

Dealer Sentiment Index

FOURTH QUARTER 2020



Note: Scale 1 - 100

NEW-VEHICLE SALES

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An aerial photograph of a winding asphalt road through a dense green forest. A blue car is driving on the road, which curves to the right. The road has white lane markings. The surrounding area is filled with lush green trees and some dry brush. The image is partially obscured by a white, semi-transparent graphic overlay on the left side.

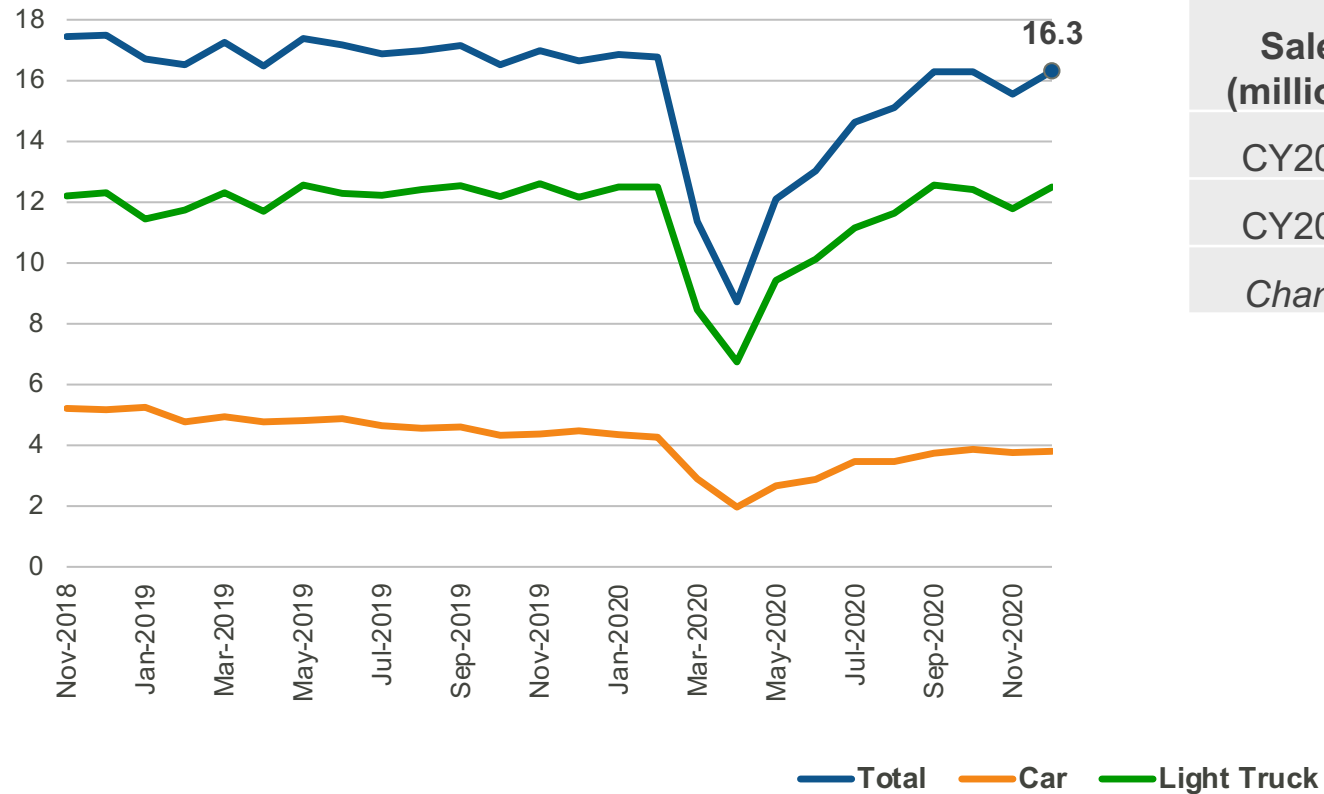
CHARLIE CHESBROUGH

SENIOR ECONOMIST

NEW-VEHICLE SALES SAAR: Return to Recovery Path in December

We had a strong retail sales finish – lots of good “buying” news in December – but can the momentum continue in 2021?

Monthly Light Vehicle Sales SAAR (millions sold)

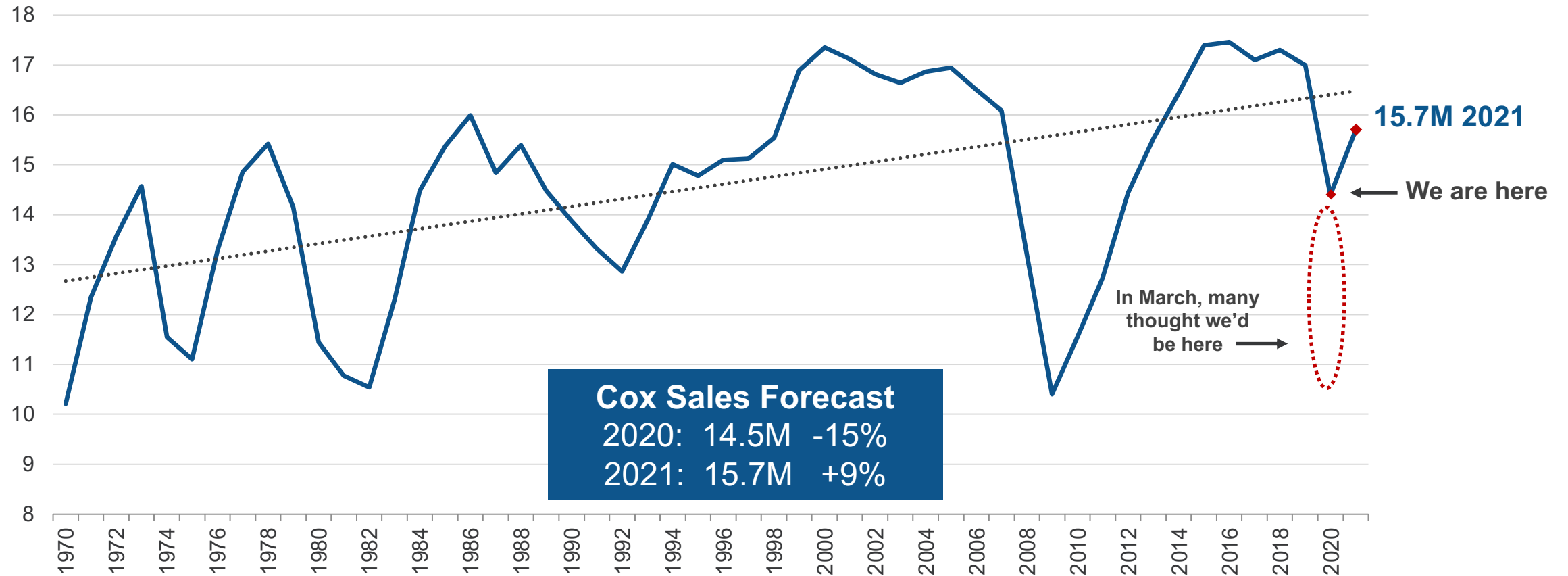


Sales (millions)	Pass Car	Light Trucks	Total	Car Share
CY2019	4.7	12.2	17.0	27.8%
CY2020	3.4	11.1	14.5	23.6%
<i>Change</i>	<i>-27.7%</i>	<i>-9.7%</i>	<i>-14.8%</i>	<i>-4.2%</i>

NEW-VEHICLE SALES: Surprisingly Strong After Spring Doomsday Scenarios

Forecasts varied greatly during spring shutdowns – *Hope for the best, plan for the worst* – became guidance.

New Light Vehicle Annual Sales (millions)



SALES CHANNELS: Retail Purchasing Saved the Market, Fleet Did Not

Fleet recovery, stronger leasing is likely in 2021, but vehicle buyers remain key to market success.

<i>As of October 2020</i>	<u>Total</u>	<u>Retail Purchase</u>	<u>Retail Lease</u>	<u>Fleet Rental</u>	<u>Fleet Other</u>
Sales Volume	-15.3%	-7.6%	-21.2%	-57.8%	-20.9%
Share 2020	100.0%	60.5%	24.1%	7.3%	8.2%
Change	0.0%	7.5%	-0.6%	-6.7%	-0.2%
Volume Loss Share	100.0%	21.3%	27.4%	42.2%	9.1%

**Government stimulus/
infrastructure spending,
more certainty lifts
consumer demand**

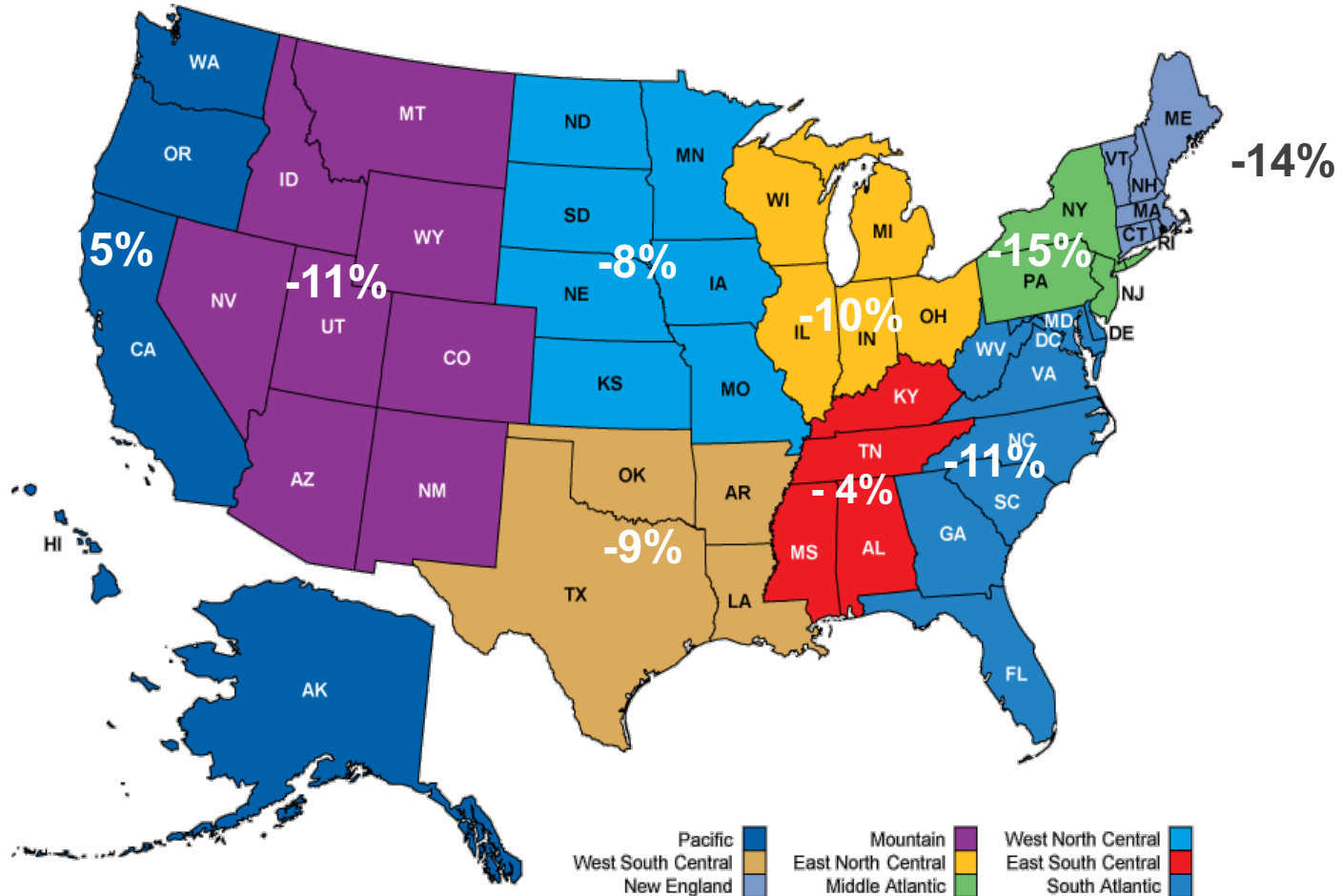
**Vaccines/economic
recovery, and 2017
tax reform lifts
commercial demand**

REGIONAL VEHICLE SALES: Varied Policies, Varied Impact

Government closures, virus fear contributed to sales declines, but the situation is now similar across the country.

**YOY Change
Retail Sales
Nationally -11%**

Based on Cox captured data



OEM SALES VOLUME: Many Challenges Impacted Performance

BMW, Volvo, Tesla had strong second half performances while Nissan, Mitsubishi, Tata lagged.

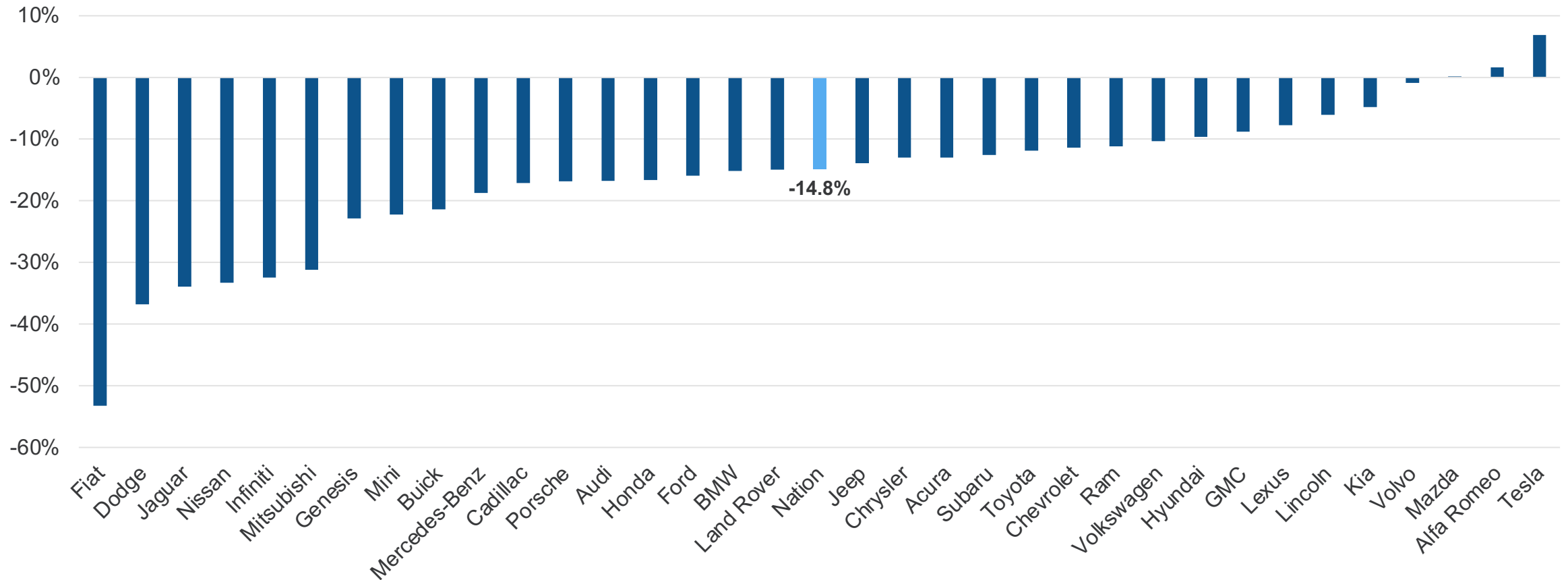
OEM*	Q4-2019	Q4-2020	Change	H2-2019	H2-2020	Change	CY2019	CY2020	Change	H1-2020	H2-2020	Change
BMW	100,738	107,299	6.5%	186,895	185,933	-0.5%	360,918	303,654	-15.9%	117,721	185,933	57.9%
Tesla	53,750	68,200	26.9%	108,450	123,900	14.2%	192,325	205,600	6.9%	81,700	123,900	51.7%
Volvo	30,802	34,017	10.4%	57,971	64,366	11.0%	108,091	107,102	-0.9%	42,736	64,366	50.6%
Toyota	604,017	660,715	9.4%	1,231,211	1,219,164	-1.0%	2,383,319	2,112,940	-11.3%	893,776	1,219,164	36.4%
Daimler	104,672	92,320	-11.8%	194,438	165,188	-15.0%	358,355	290,722	-18.9%	125,534	165,188	31.6%
VW	167,313	172,025	2.8%	332,696	319,520	-4.0%	649,001	563,627	-13.2%	244,107	319,520	30.9%
GM	732,618	767,444	4.8%	1,468,269	1,429,587	-2.6%	2,877,590	2,535,283	-11.9%	1,105,696	1,429,587	29.3%
Subaru	174,788	175,382	0.3%	360,592	344,828	-4.4%	700,118	611,937	-12.6%	267,109	344,828	29.1%
Honda	401,961	366,068	-8.9%	831,175	754,501	-9.2%	1,608,170	1,346,788	-16.3%	592,287	754,501	27.4%
Hyundai	340,482	341,698	0.4%	677,166	681,284	0.6%	1,325,277	1,224,758	-7.6%	543,474	681,284	25.4%
FCA	542,519	499,431	-7.9%	1,107,553	1,006,782	-9.1%	2,203,593	1,820,636	-17.4%	813,854	1,006,782	23.7%
Mazda	70,385	75,796	7.7%	139,997	150,207	7.3%	278,552	279,076	0.2%	128,869	150,207	16.6%
Ford	598,728	538,643	-10.0%	1,174,734	1,087,777	-7.4%	2,406,188	2,034,708	-15.4%	946,931	1,087,777	14.9%
Tata	36,716	31,023	-15.5%	63,382	52,764	-16.8%	125,787	101,108	-19.6%	48,344	52,764	9.1%
Nissan	301,291	243,133	-19.3%	628,645	464,283	-26.1%	1,345,681	899,217	-33.2%	434,934	464,283	6.7%
Mitsubishi	25,475	16,796	-34.1%	49,949	35,559	-28.8%	121,049	83,319	-31.2%	47,760	35,559	-25.5%
NATION	4,286,255	4,189,990	-2.2%	8,613,123	8,085,643	-6.1%	17,044,014	14,520,475	-14.8%	6,434,832	8,085,643	25.7%

* Sorted by H2 Recovery Change

BRAND NEW VEHICLE SALES: Everyone is Down in 2020, Almost

Old/new products, channel recovery pace, and geography are having varied impacts across the marketplace.

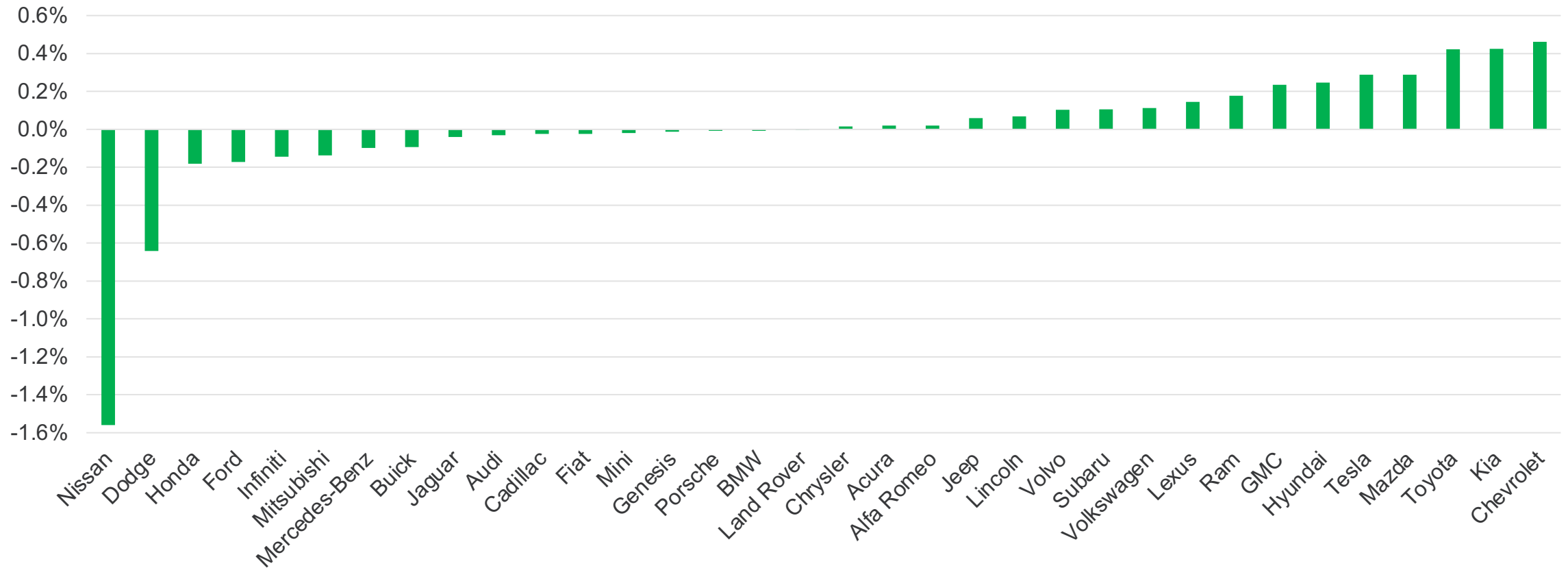
2020 Brand Sales



BRAND MARKET SHARE: Some Winning, Some Losing in Volatile 2020

It's hard to declare victory in this environment with so many moving parts contributing.

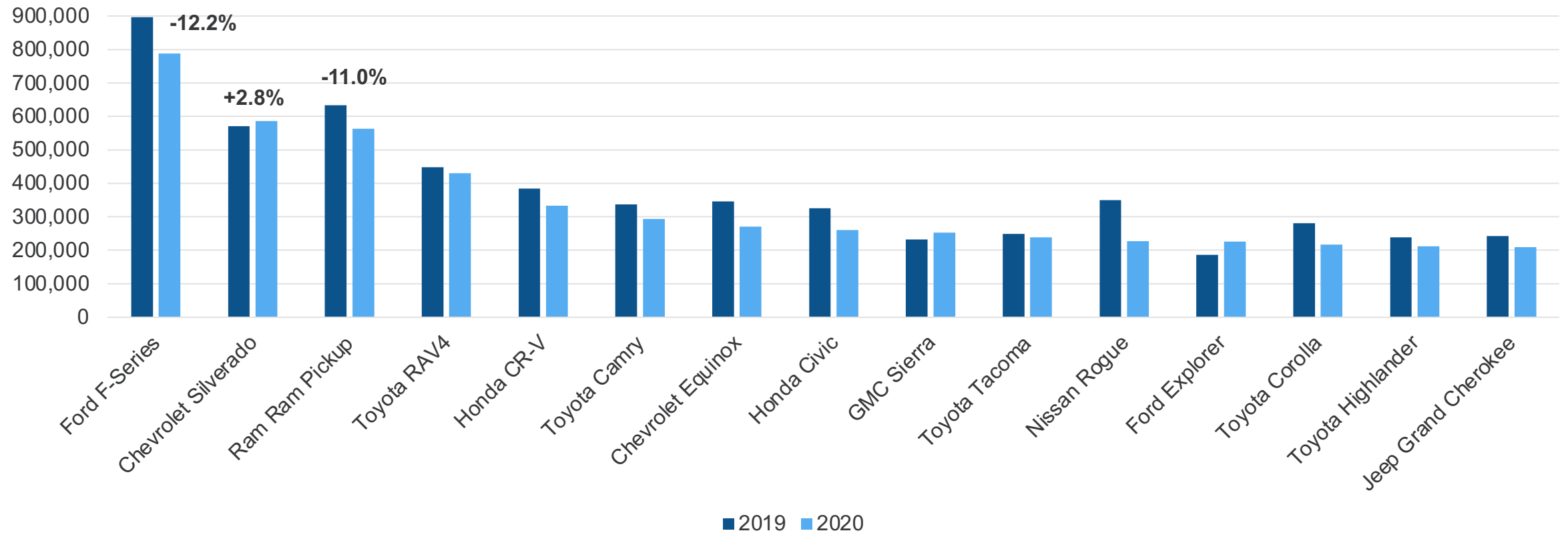
Gain/Loss Share Of Total Light Vehicle Sales



TOP SELLING VEHICLES: F-Series Wins but Competitors Gain

Lots of change in 2020, but at least one constant: We are a pickup truck market.

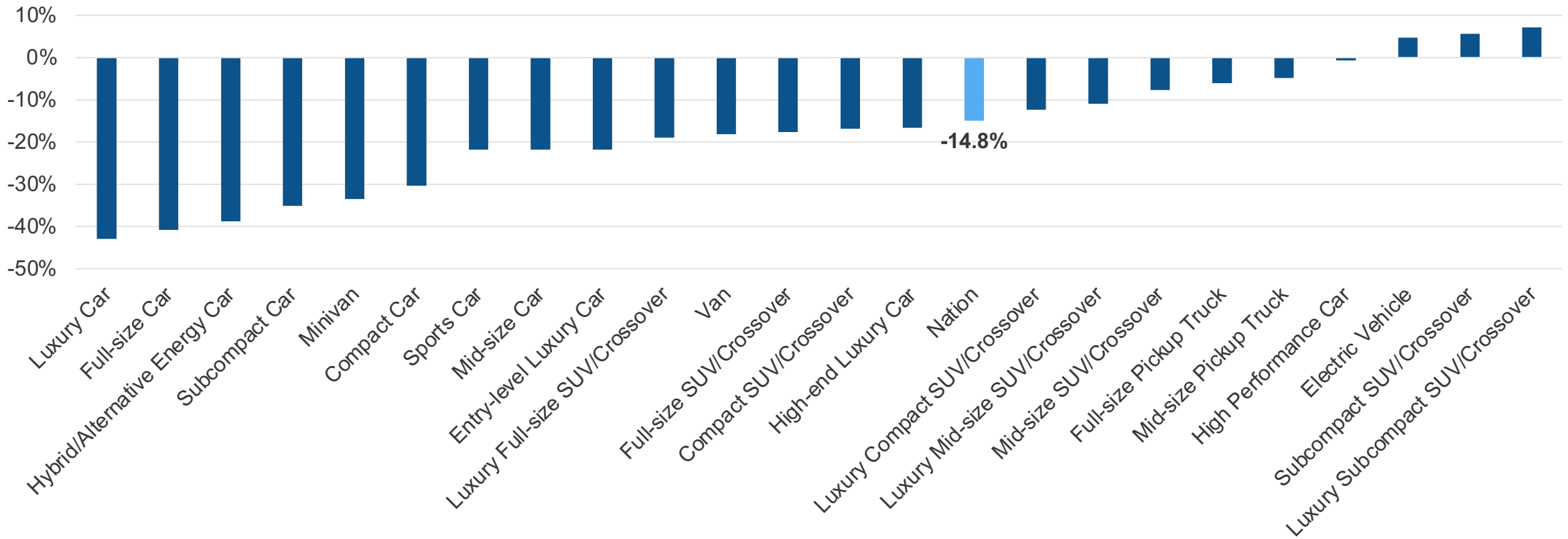
2020 Top 15 Selling Vehicles



SEGMENT NEW VEHICLE SALES: Subcompact Crossovers Win the Year

Subcompact and compact cars are two of the lowest priced products and should be doing better in a recession.

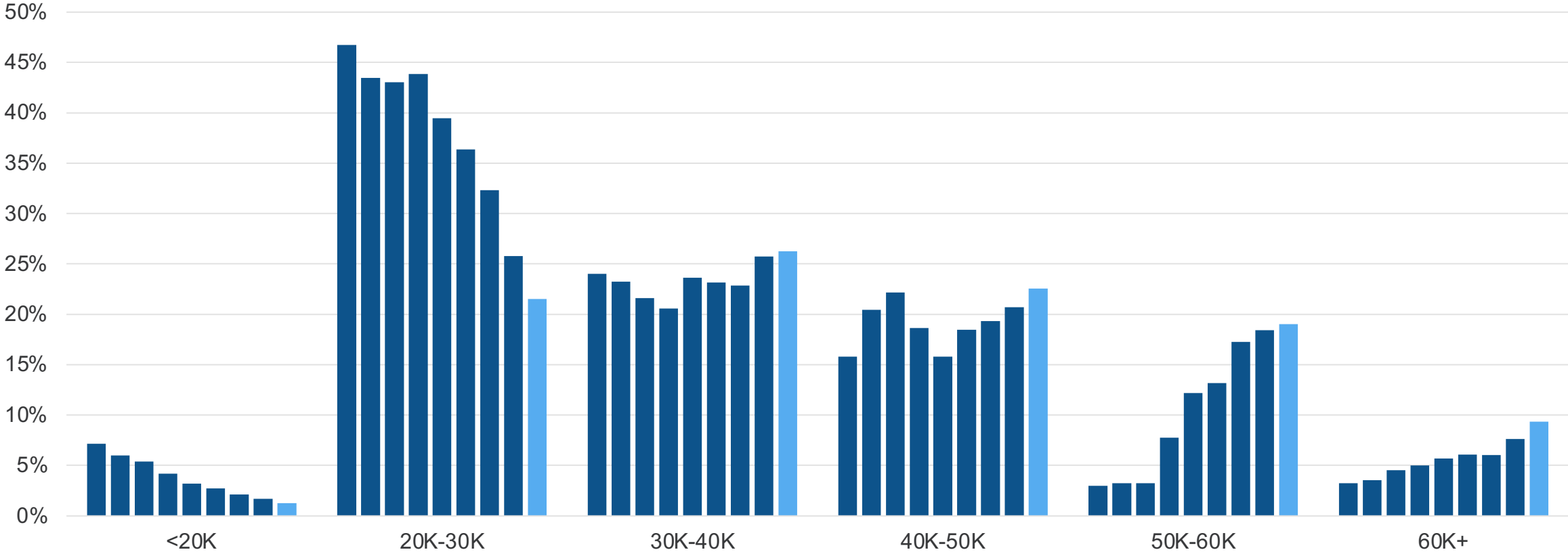
Segment Sales



VEHICLE PRICING: Higher Price Trend Accelerated in 2020

In 2020, 24% nameplates were priced below \$30,000, down from 54% in 2012 and down from 28% last year.

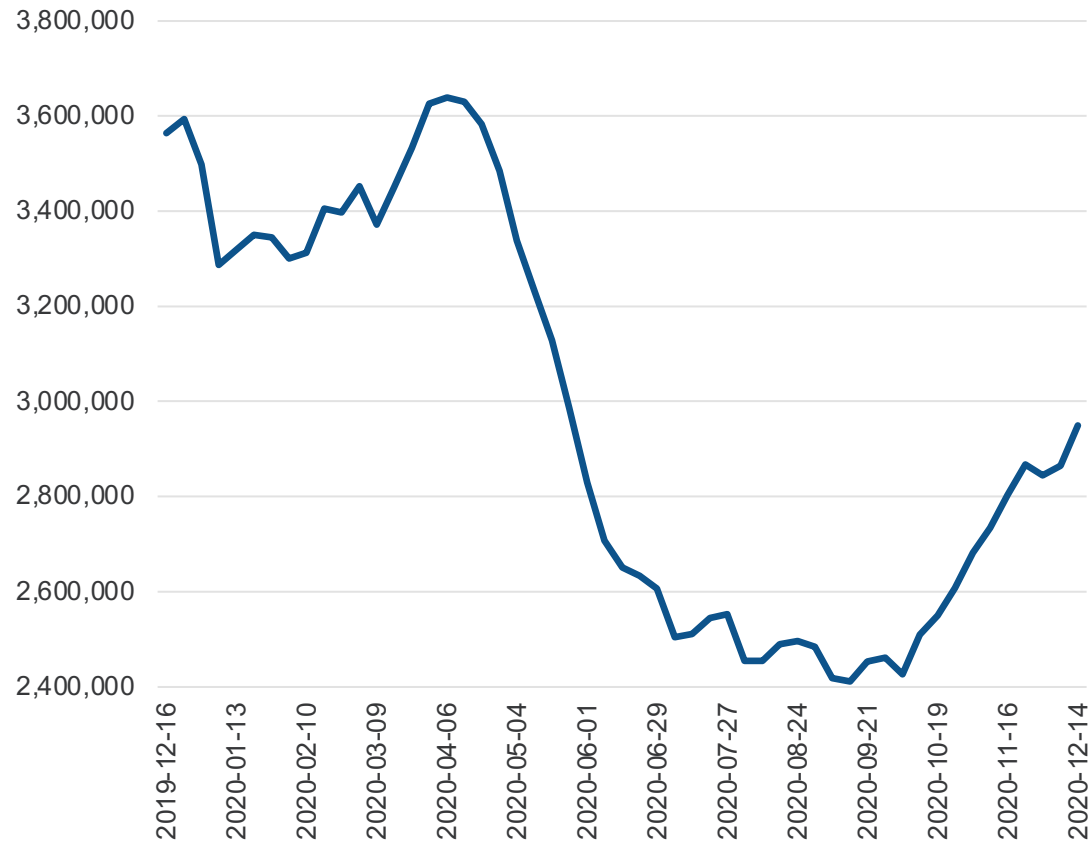
Share of Market by MSRP Price Range 2012 – 2020



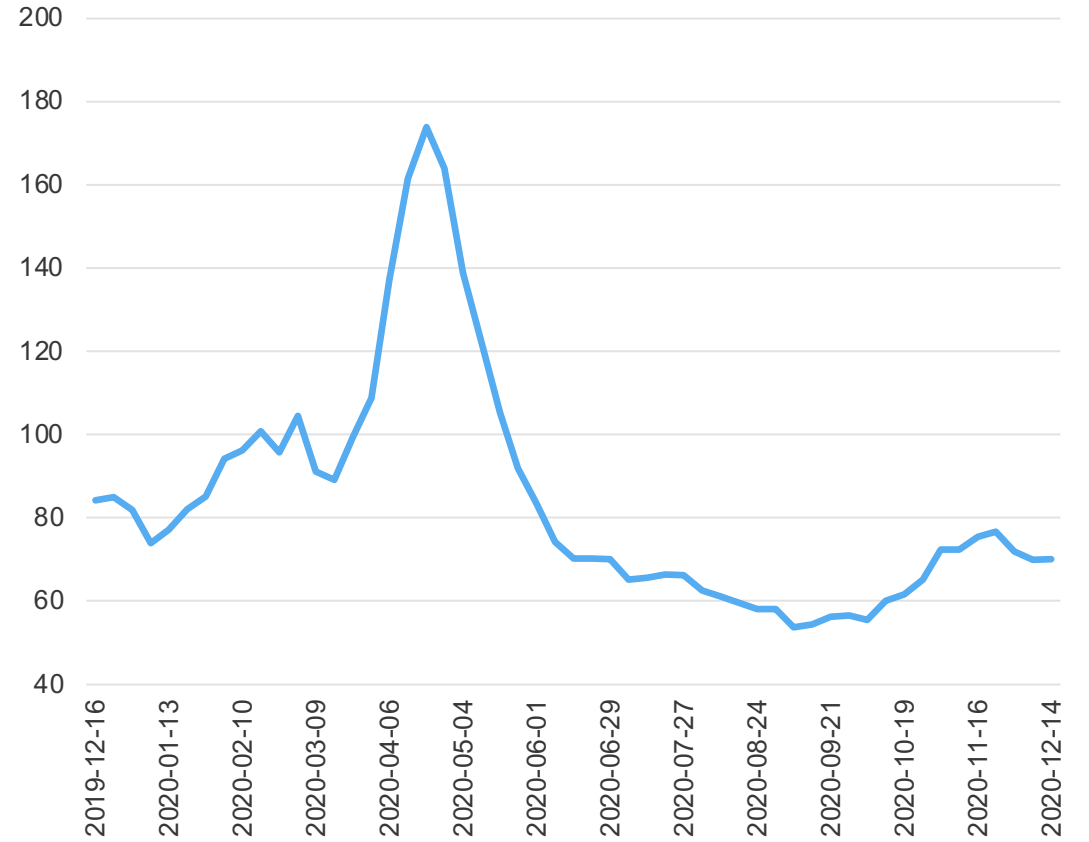
NEW-VEHICLE INVENTORY: Tight Inventories Slowly Improving

The supply situation is now stabilizing but remains well below last year's levels.

Available Supply weekly, last 12 months



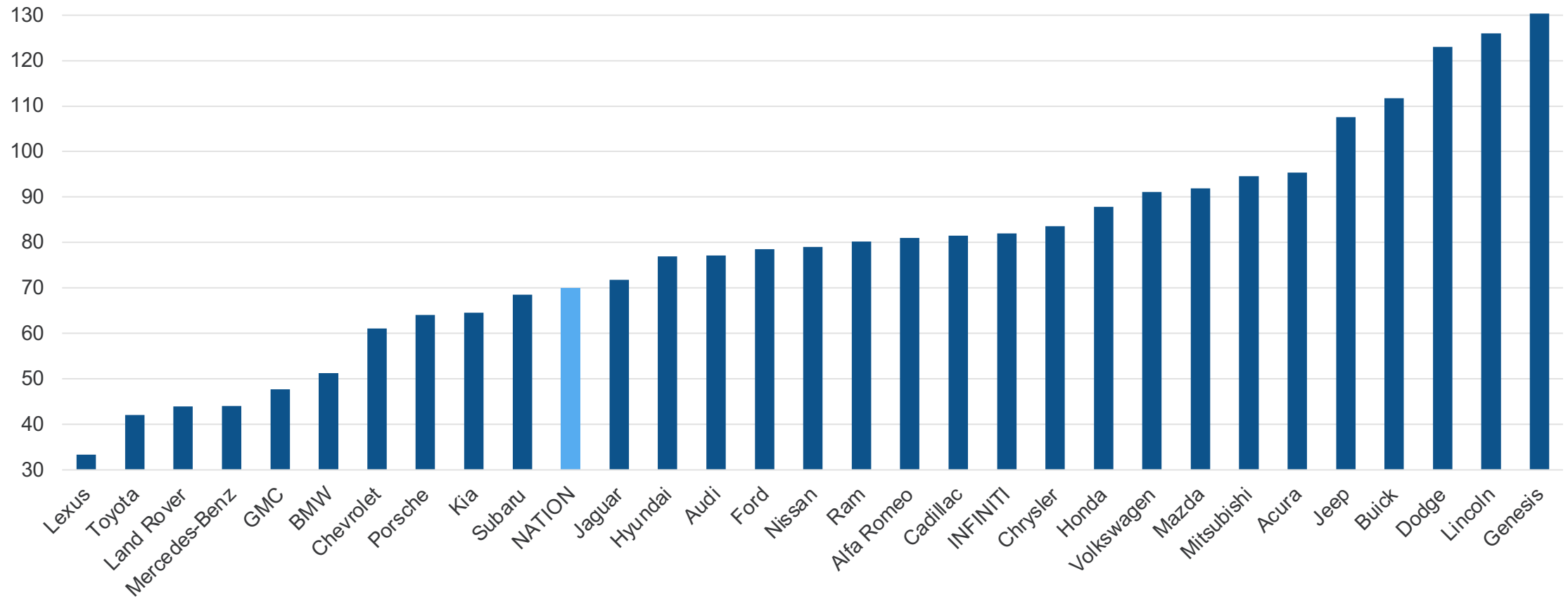
Days of Supply weekly, last 12 months



BRAND INVENTORY: Supply Situation Varies Significantly

Toyota and many imported luxury brands have tight inventories.

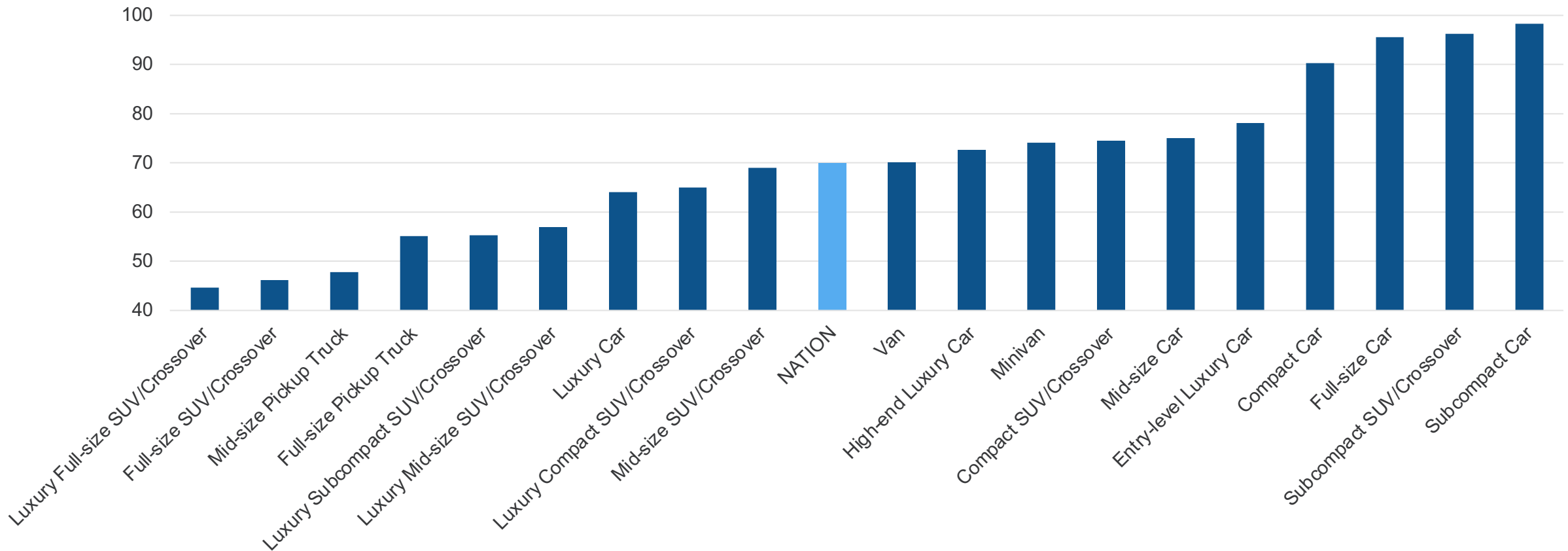
Days of Supply



SEGMENT INVENTORY: Supply Situation Varies Significantly

Pickups, luxury CUVs are relatively tight inventories while relatively inexpensive segments have too much.

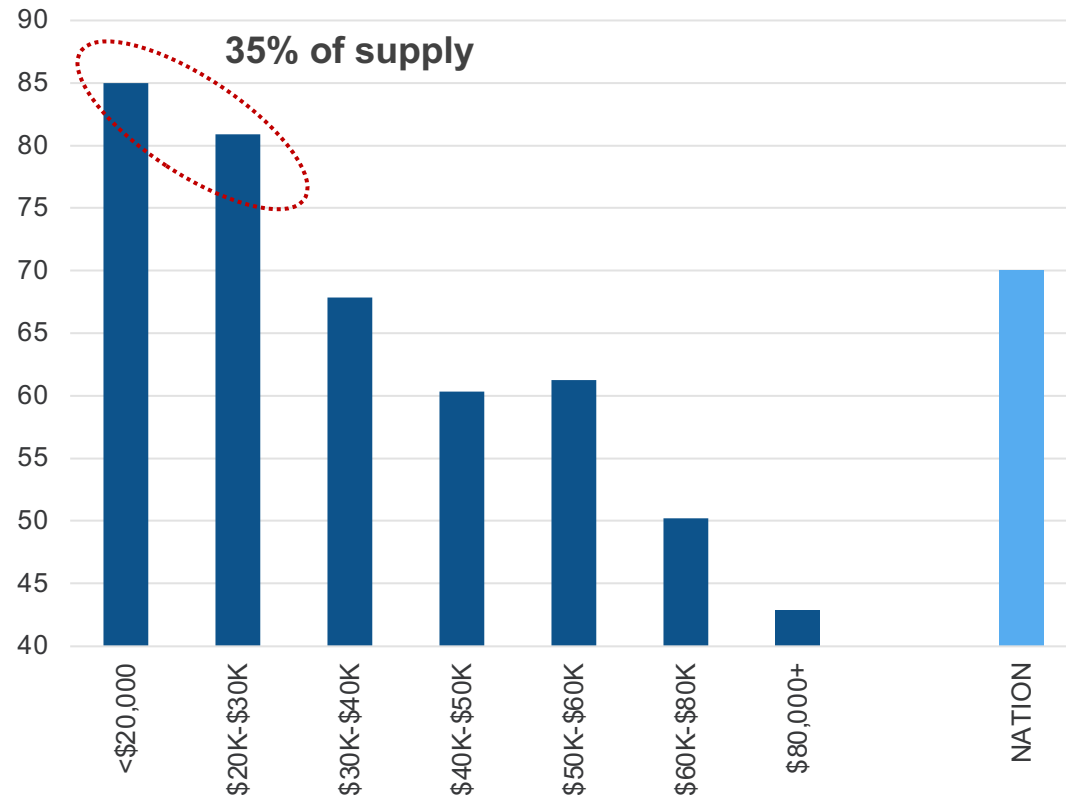
Days of Supply



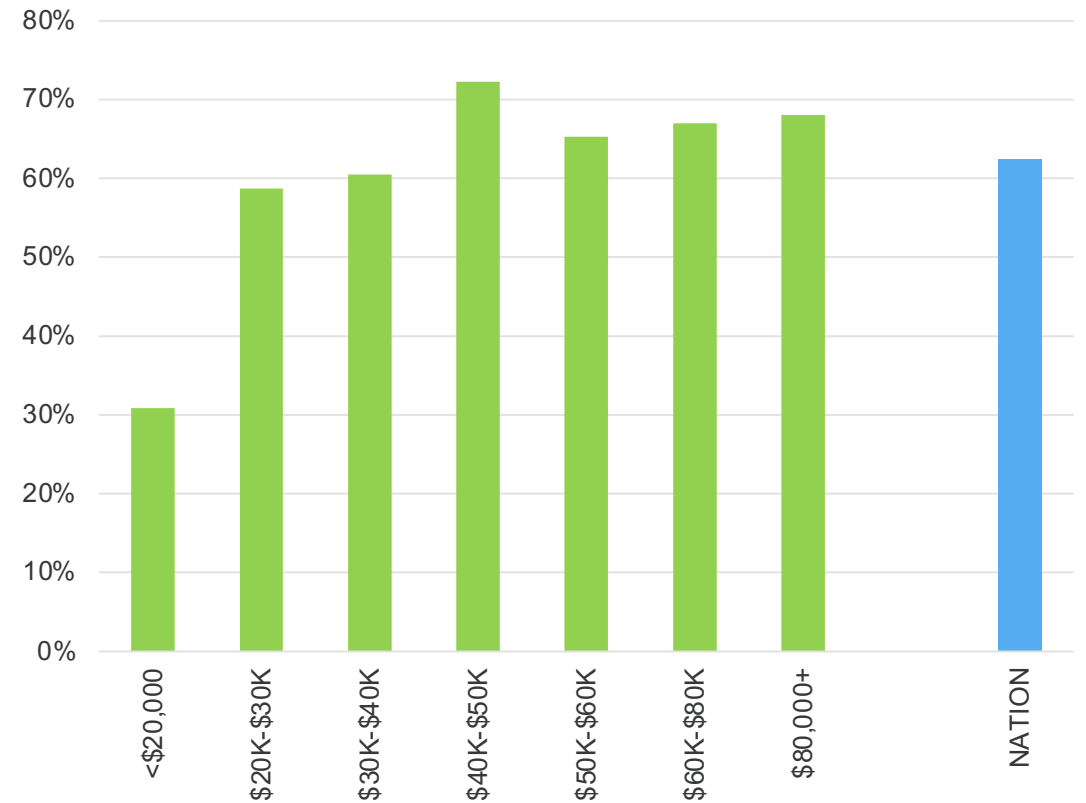
PRICE CATEGORY INVENTORY: Lower Prices May Be Over Supplied

Lowest price categories have the highest days of supply, and the lowest share of next MY products.

Days of Supply



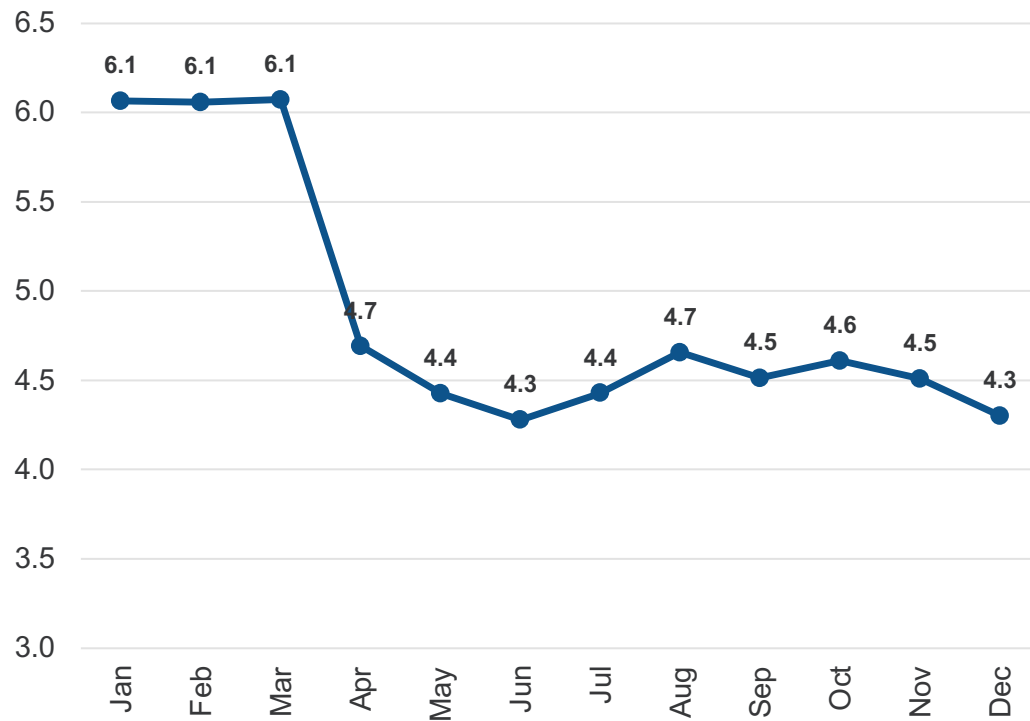
Model Year 2021 Inventory Share



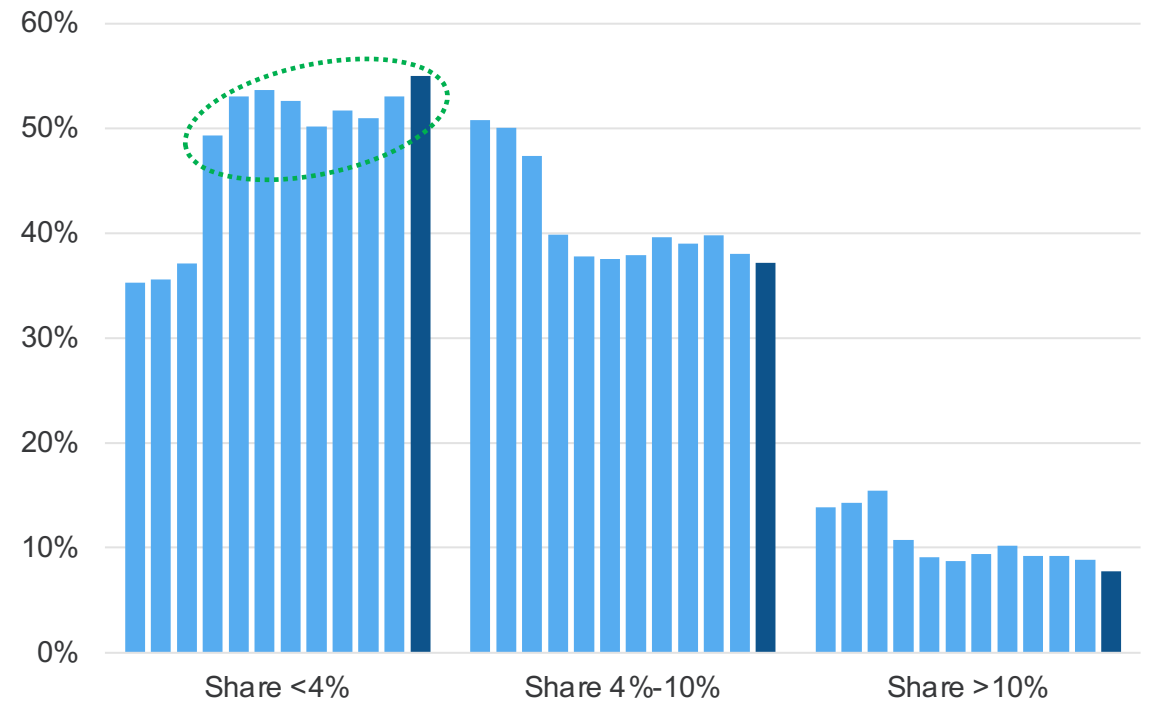
PURCHASE INTEREST RATES: Massive Shift Towards Lower Rate

Market share of purchasers paying 4% rate or less jumped 15% in April and has maintained share since.

Average Purchase Contract Interest Rate



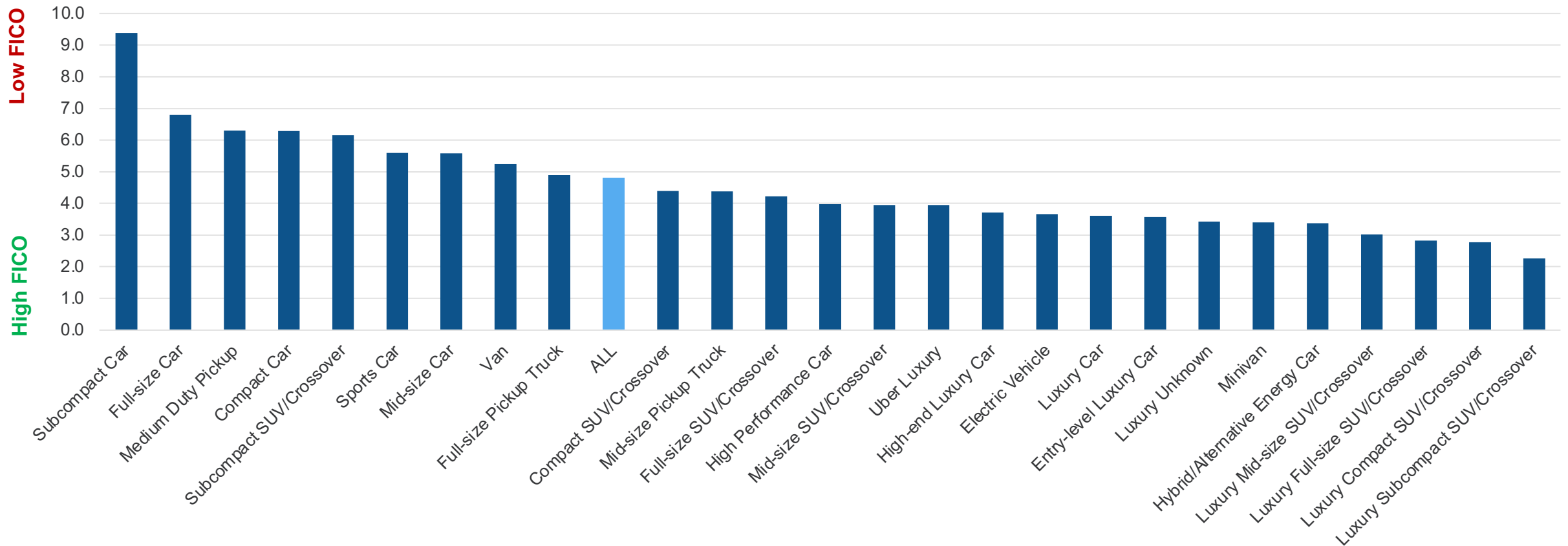
Purchase Share By Interest Rate January – December



SEGMENT INTEREST RATES: Some Vulnerable in 2020, Now Opportunities?

Recession hit some customers harder than others – Does economic recovery do the same?

Segment Average Purchase Interest Rate year to date



USED-VEHICLE SALES

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ZO RAHIM

MANAGER, ECONOMIC & INDUSTRY INSIGHTS

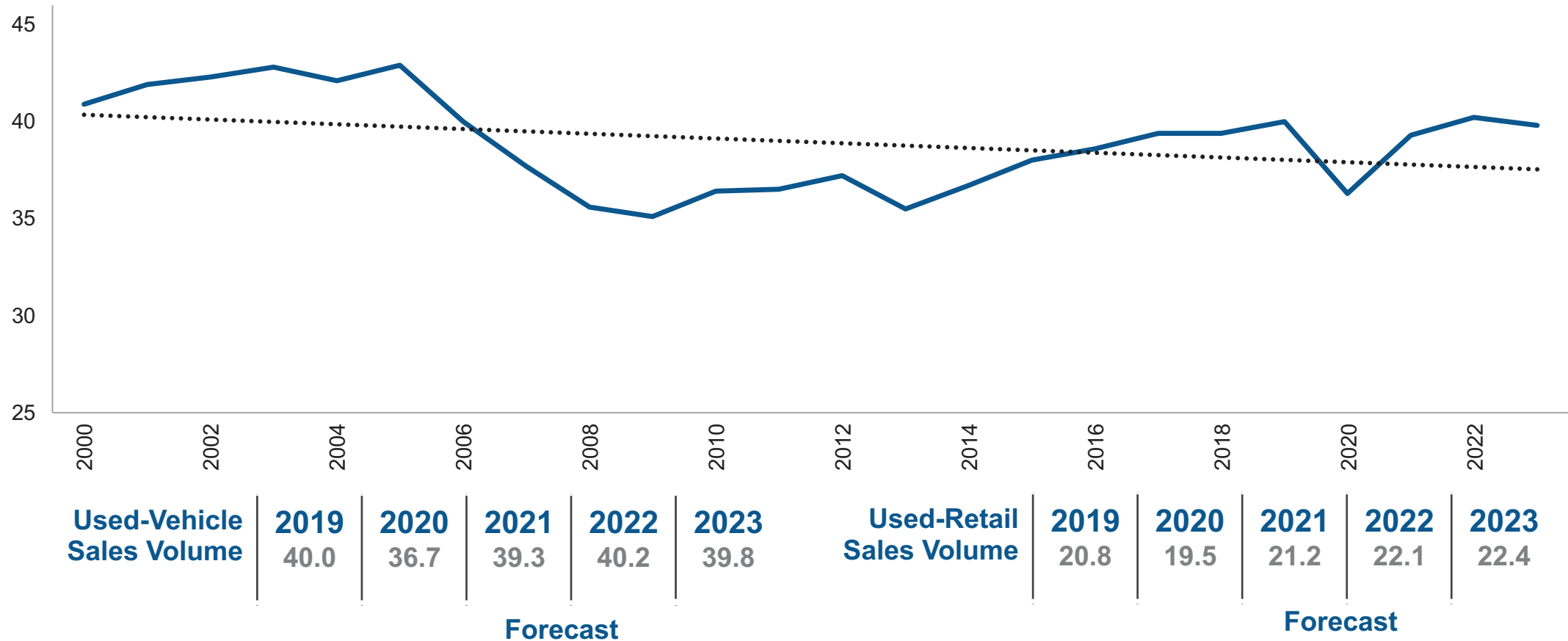


@autosanalyst

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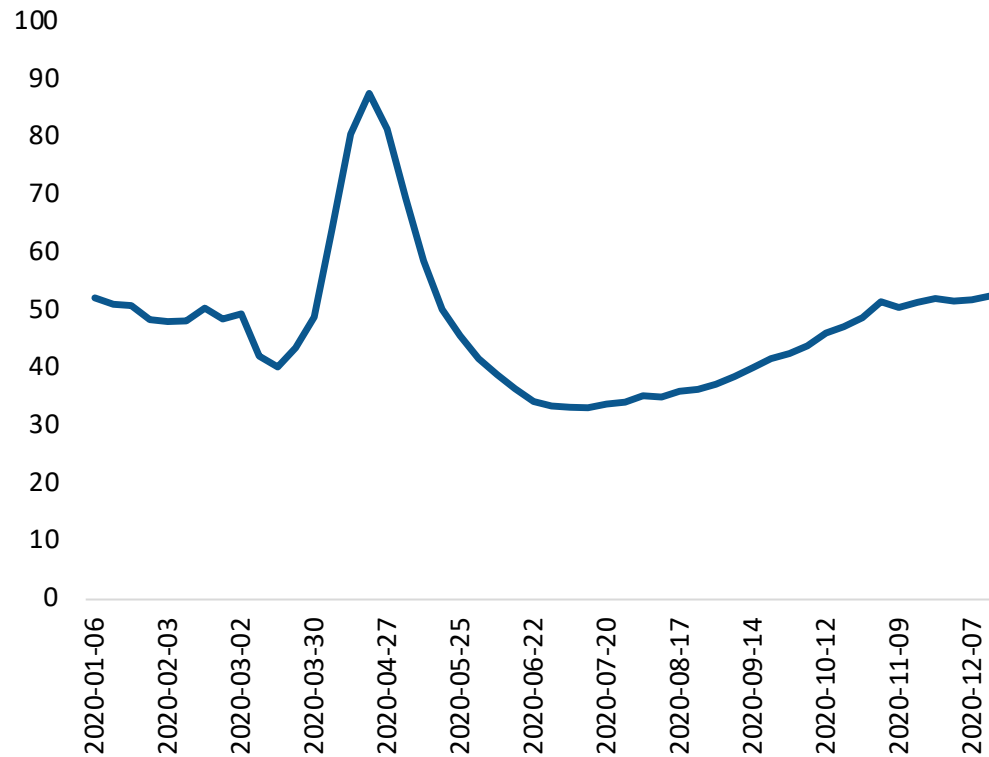
USED-VEHICLE SALES: Fall Less Than New and Rebound Faster

USED-VEHICLE SALES OUTLOOK (MILLIONS)

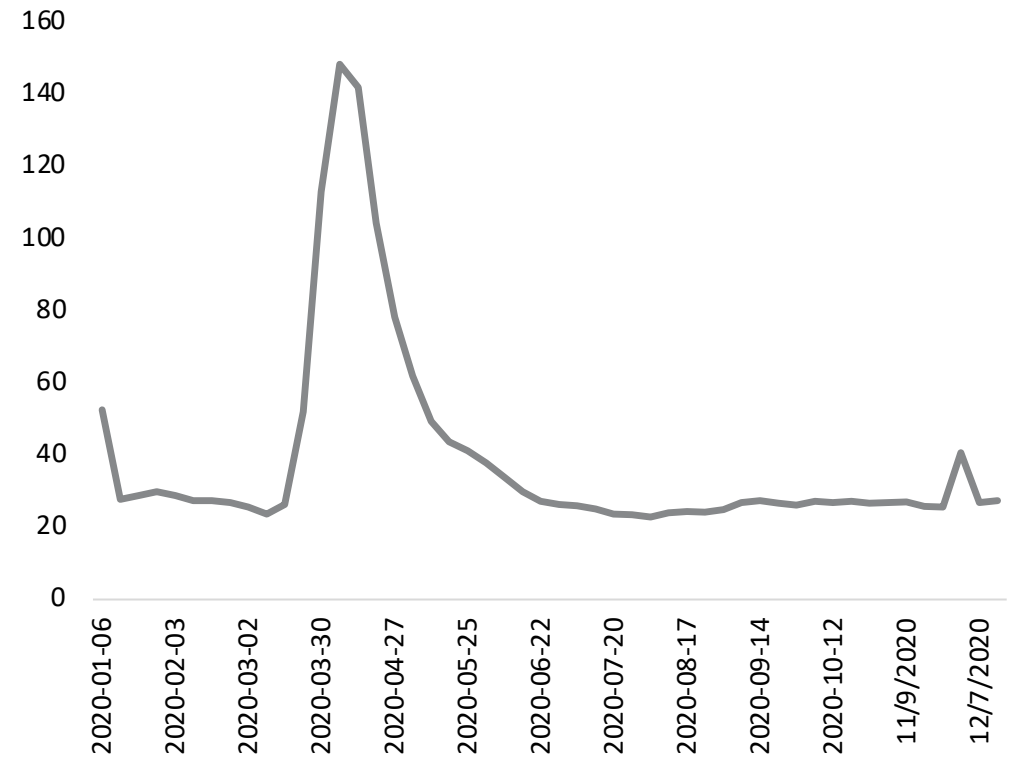


USED-VEHICLE SUPPLY: Inventory of Unsold Used Vehicles Stabilizes

Days of Retail Supply Available

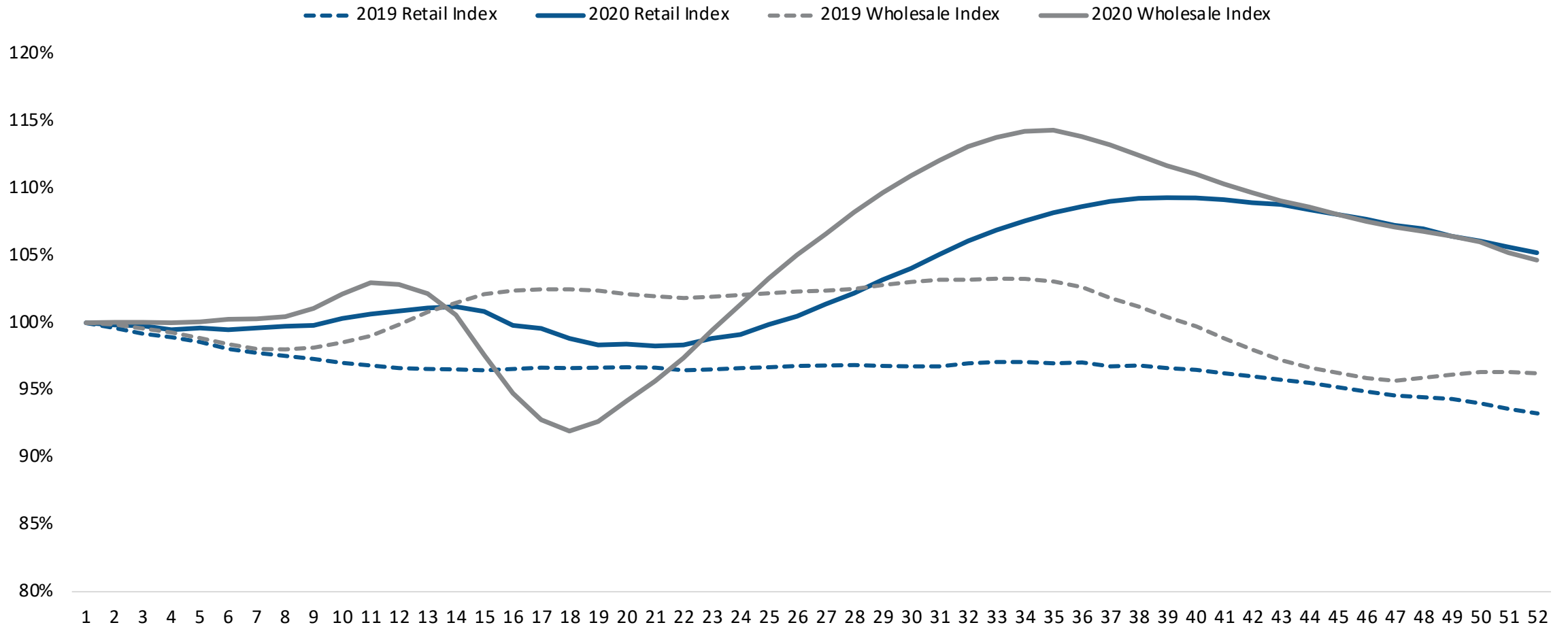


Days of Wholesale Supply Available

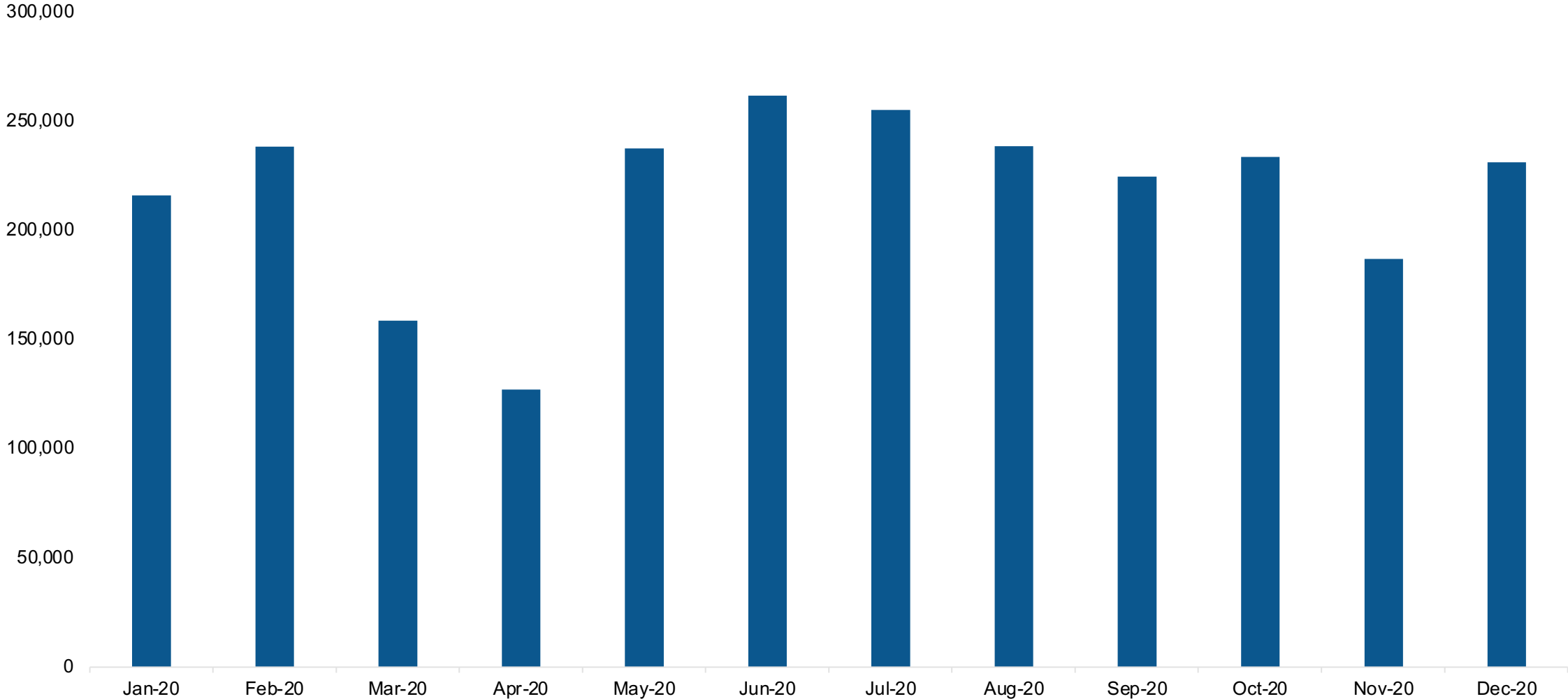


USED-VEHICLE PRICES: Decline Continues in December

MY 2017 RETAIL AND WHOLESALE PRICE INDICES (wk1=100)



CPO SALES: Impressive Recovery



2021 OUTLOOK & PLAYLIST

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An aerial photograph of a winding asphalt road through a dense forest. A blue car is driving on the road, which curves to the right. The surrounding area is filled with green trees and some dry brush. The image is partially obscured by a white, semi-transparent graphic overlay on the left side.

MICHELLE KREBS

Executive Analyst

JONATHAN SMOKE

Resident DJ

2021 PREDICTIONS STUDY: Six Predictions for the Automotive Market

- #1:** Even with a vaccine, things won't "return to normal" in 2021.
- #2:** Auto industry will emerge stronger from the pandemic.
- #3:** Inventory will remain tight through 2021.
- #4:** 2021 is the tipping point for digital retailing.
- #5:** New competition will slow Tesla's growth.
- #6:** In 2021, vehicle ownership increases, ride-sharing and ride-hailing declines.



LOOKING AHEAD: Awesome Songs for an Awesome Year



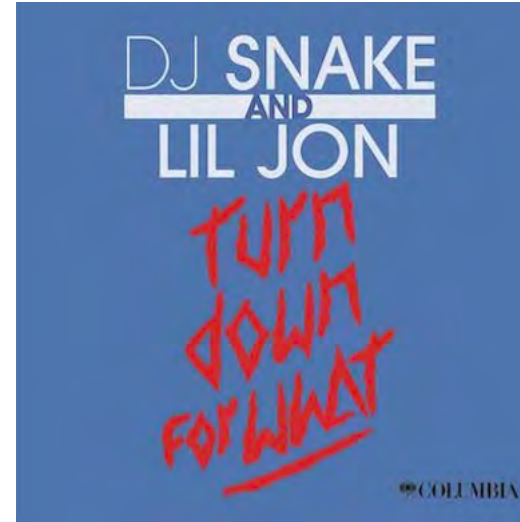
**Hit Me with Your Best Shot
by Pat Benatar**

Vaccines Begin to Change Things



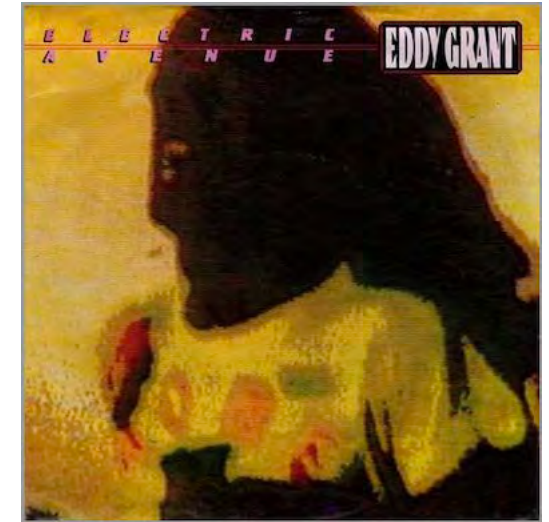
**Don't Stop Me Now
by Queen**

Supply Improves But Will Still Be Constrained



**Turn Down for What
by DJ Snake and Lil Jon**

Credit Will Flow But Will Remain Relatively Tight



**Electric Avenue
by Eddie Grant**

EVs Start to Take Center Stage

WHOLESALE MARKETPLACE

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An aerial photograph of a winding asphalt road through a dense green forest. A blue car is driving on the road, which curves to the right. The road has white lane markings. The surrounding area is filled with lush green trees and some dry brush. The image is partially obscured by a white, semi-transparent graphic overlay on the left side.

ZACH HALLOWELL

SENIOR VICE PRESIDENT, MANHEIM DIGITAL

Manheim Digital by the Numbers

605

TOTAL
DIGITAL LANES

3.25M

SOLD IN DIGITAL CHANNELS YTD

2.3M

VEHICLES IMAGED

190%

GROWTH IN DIGITAL
DEALER SALES

30%

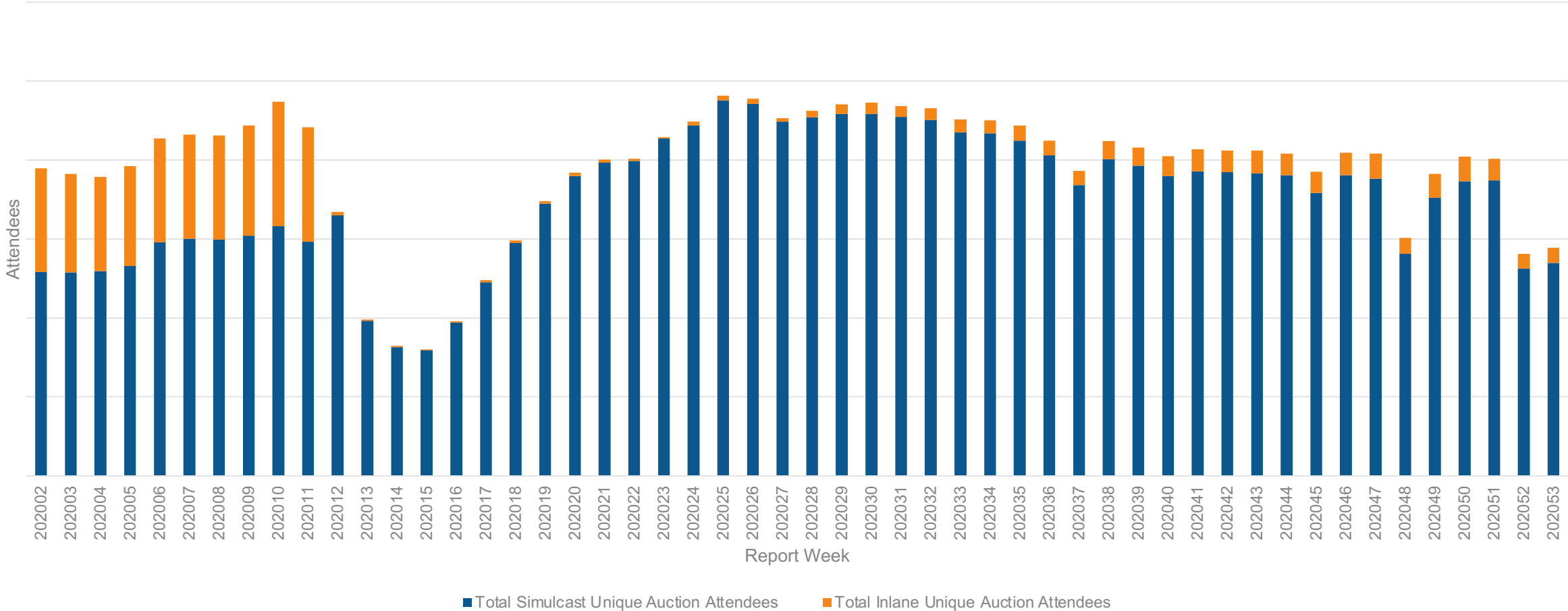
INCREASE IN SIMULCAST
BUYERS

740k

OVE SALES YTD
(+18% YOY)

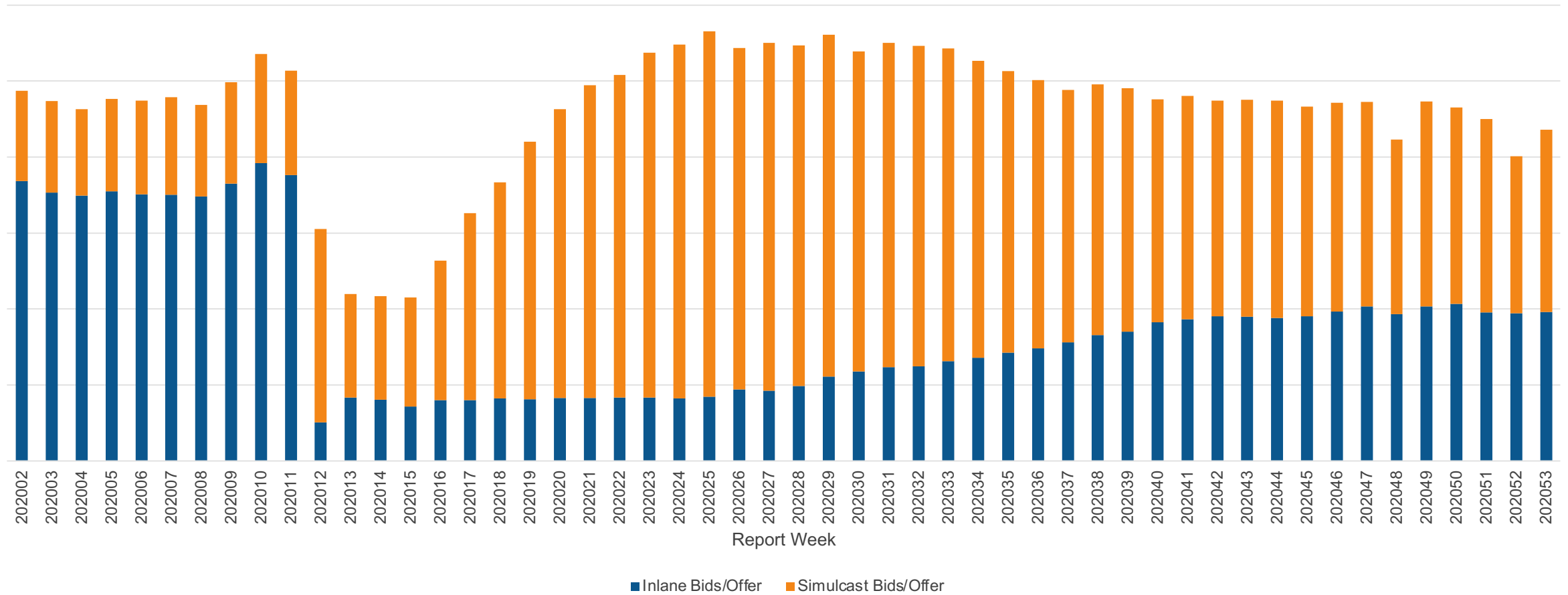
Digital Attendance Remains Strong

Combined Unique Attendees at Each Auction
(Total US Auctions Only)



More Digital Bids Per Offering

Average Bids per Offer per Lane - Inlane vs. Simulcast



CONNECTED CLIENT EXPERIENCE

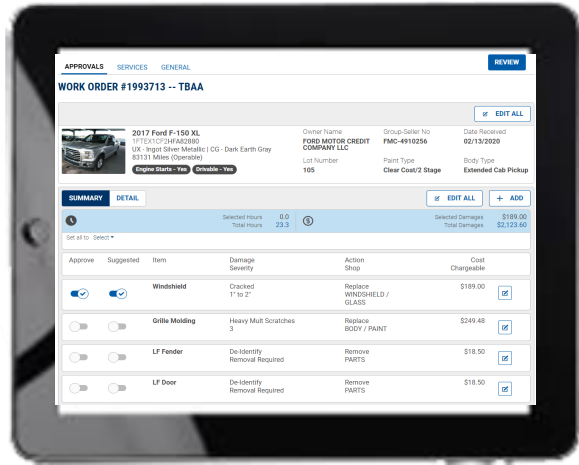
Deliver a client experience that moves Digital from Possible to Preferred



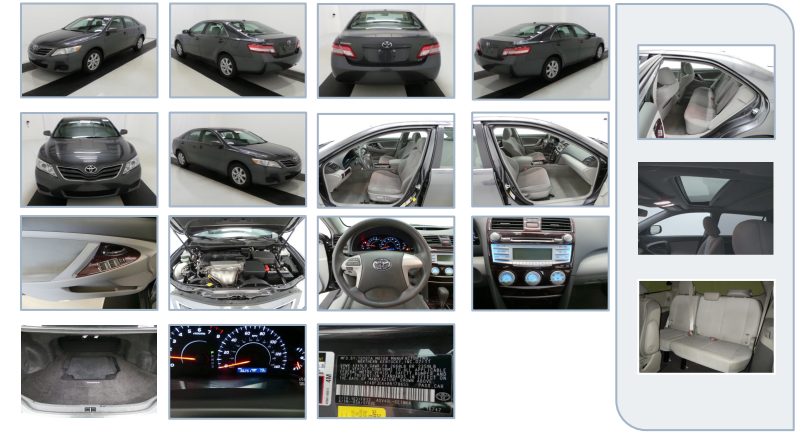
FLEXIBLE AND MODERN TECHNOLOGY PLATFORM

Recent Vehicle Imaging Deployments

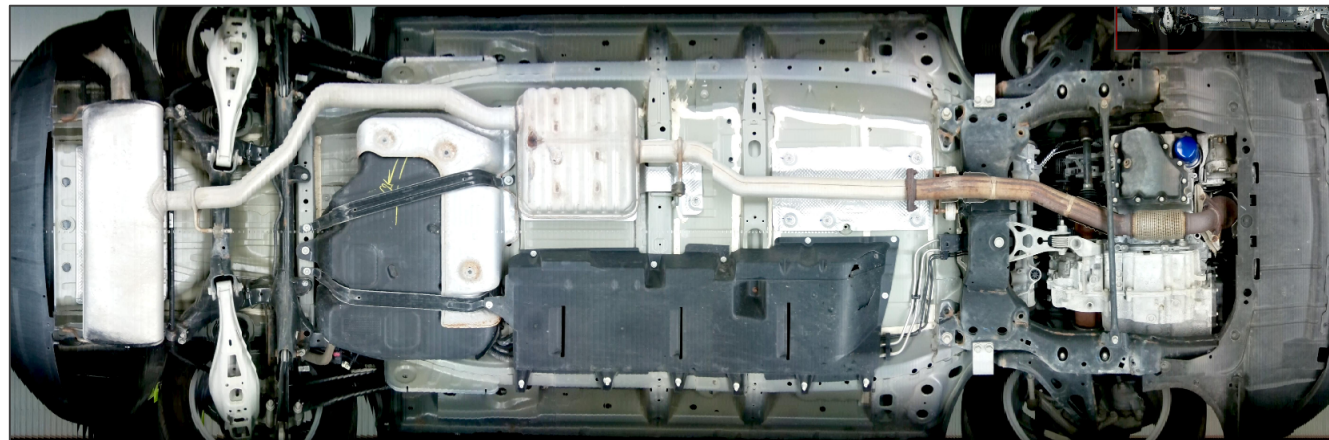
Smart Approve



15+3 Image Package

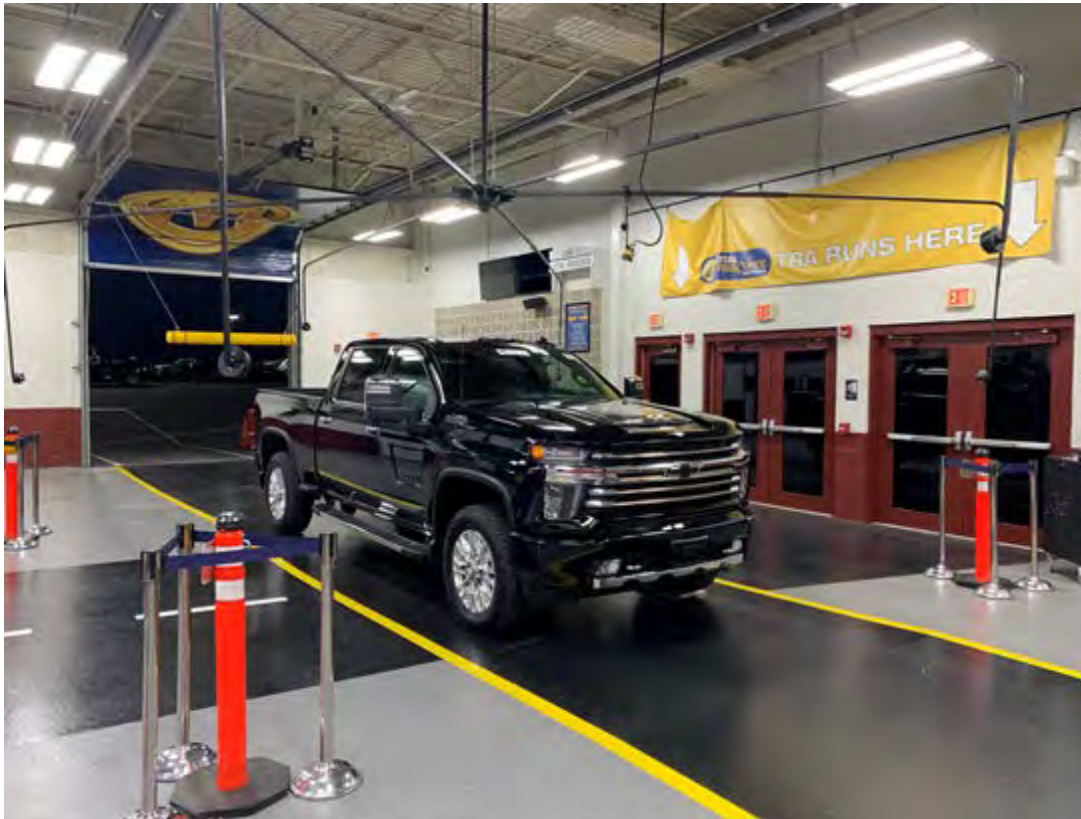


Undercarriage Imaging



2021 Vehicle Imaging Focus Areas

Automated Imaging



Damage Image Labeling



FYUSION

+

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JONATHAN SMOKE & ZO RAHIM

Economic & Industry Insights



@SmokeonCars



@autosanalyst

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Manheim Used Vehicle Value Index

Concept:

A single measure of used vehicle price change that is independent of underlying segment shifts in the characteristics of vehicles being sold

Steps:

All Manheim U.S. sales

Classify by market segment

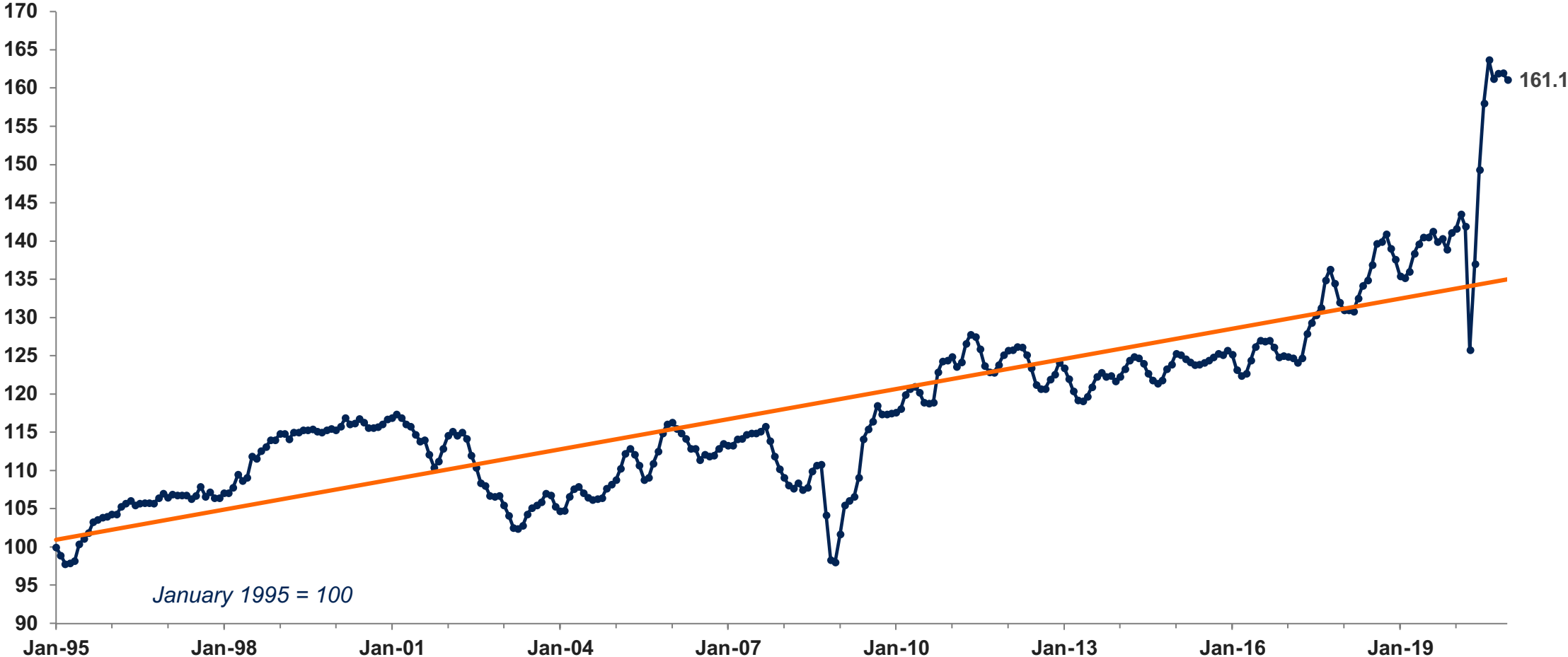
Account for differences in mileage

Weight to provide smoother segment mix

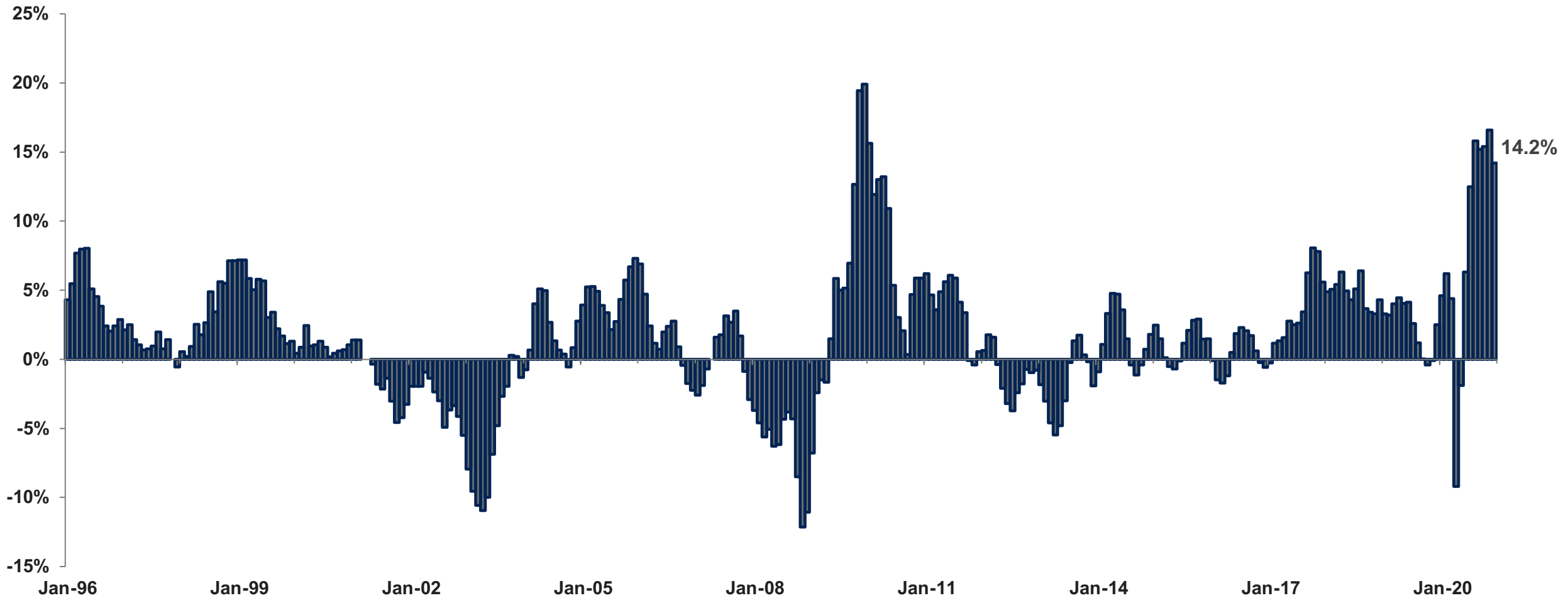
Seasonally adjust

Wholesale Prices Decline in December

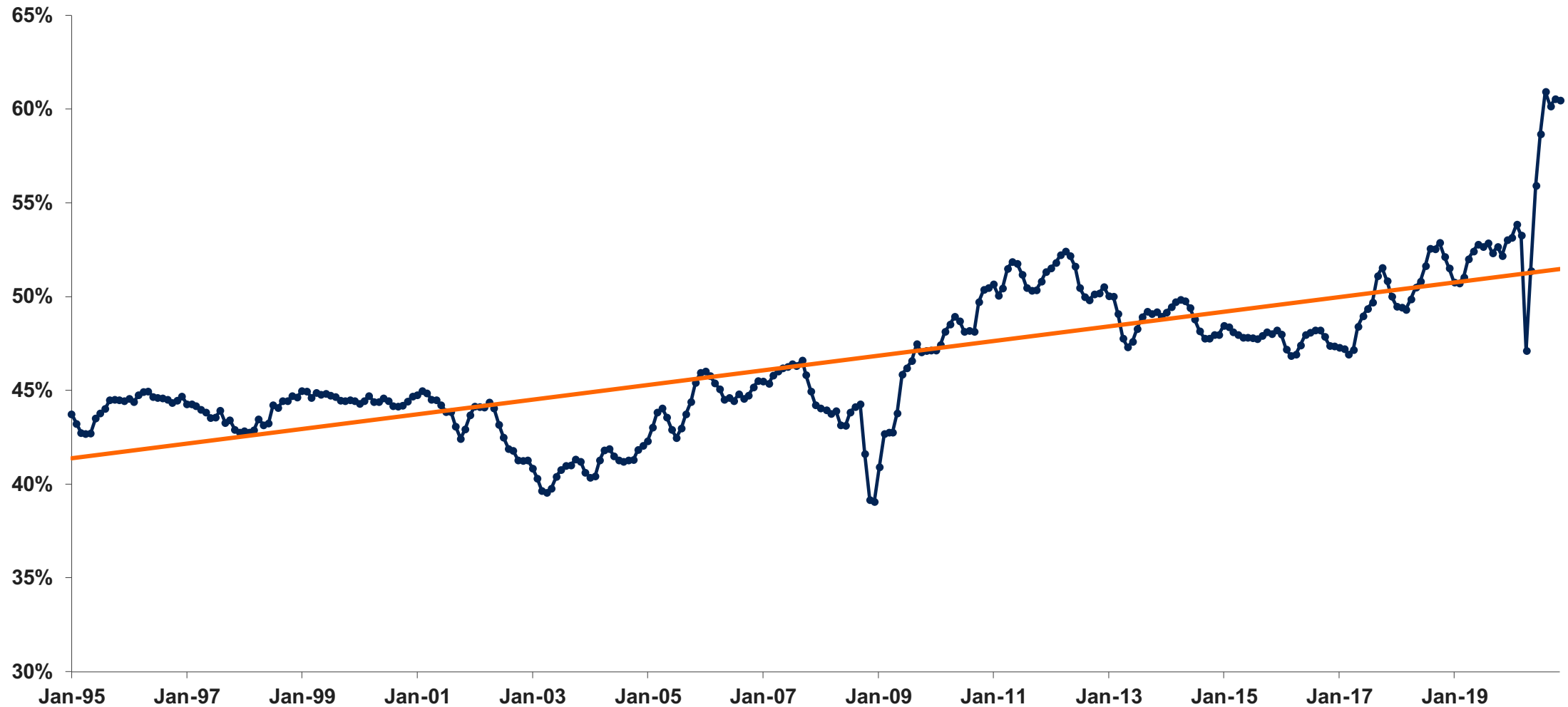
Prices in December decreased 0.59% month-over-month and were up 14.2% compared to December 2019



Used-Vehicle Values Show Continued Strength



Manheim Index Versus Mix & Quality Adjusted New Vehicle Price with 3 ½ year Lag

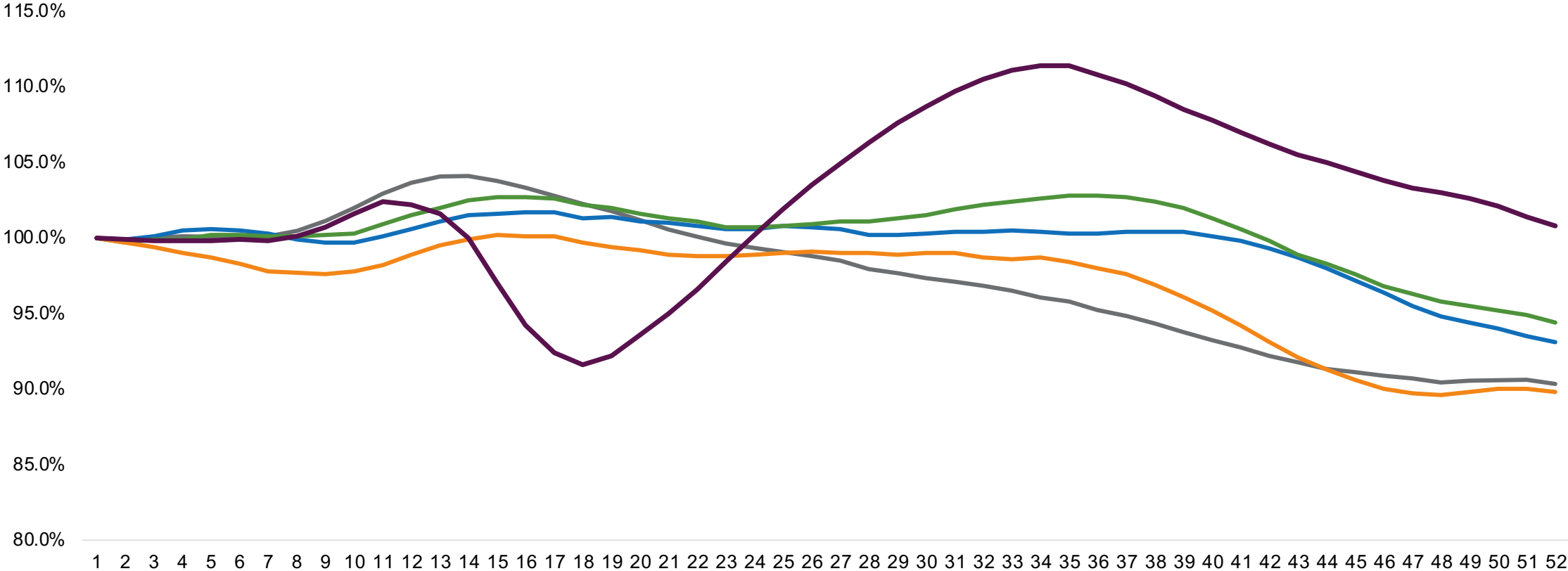


2020 Weekly Price Trend Saw Steady Fall Decline

After 16 weeks of price appreciation, weekly values started to decline, and fall price declines were steady

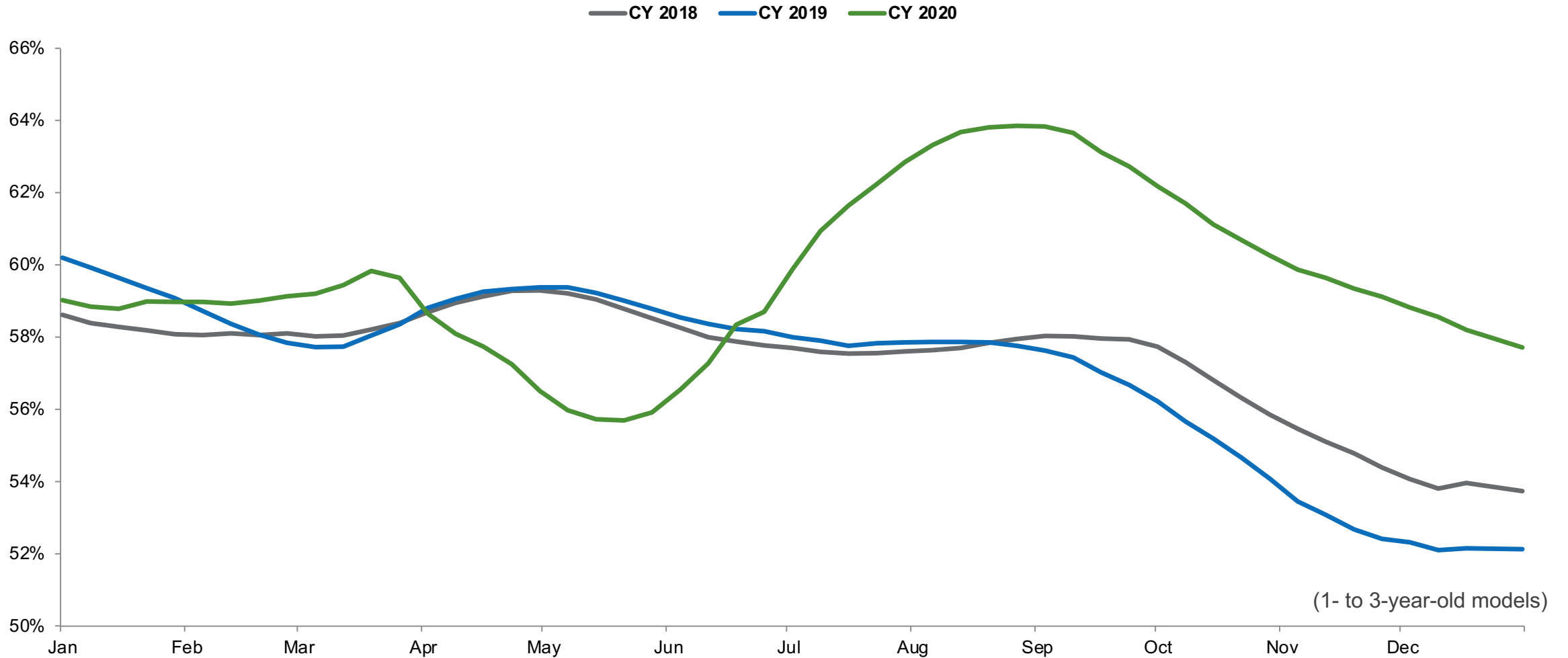
3-Year-Old Model MMR Index by Week

— 2014-2016 — 2017 — 2018 — 2019 — 2020



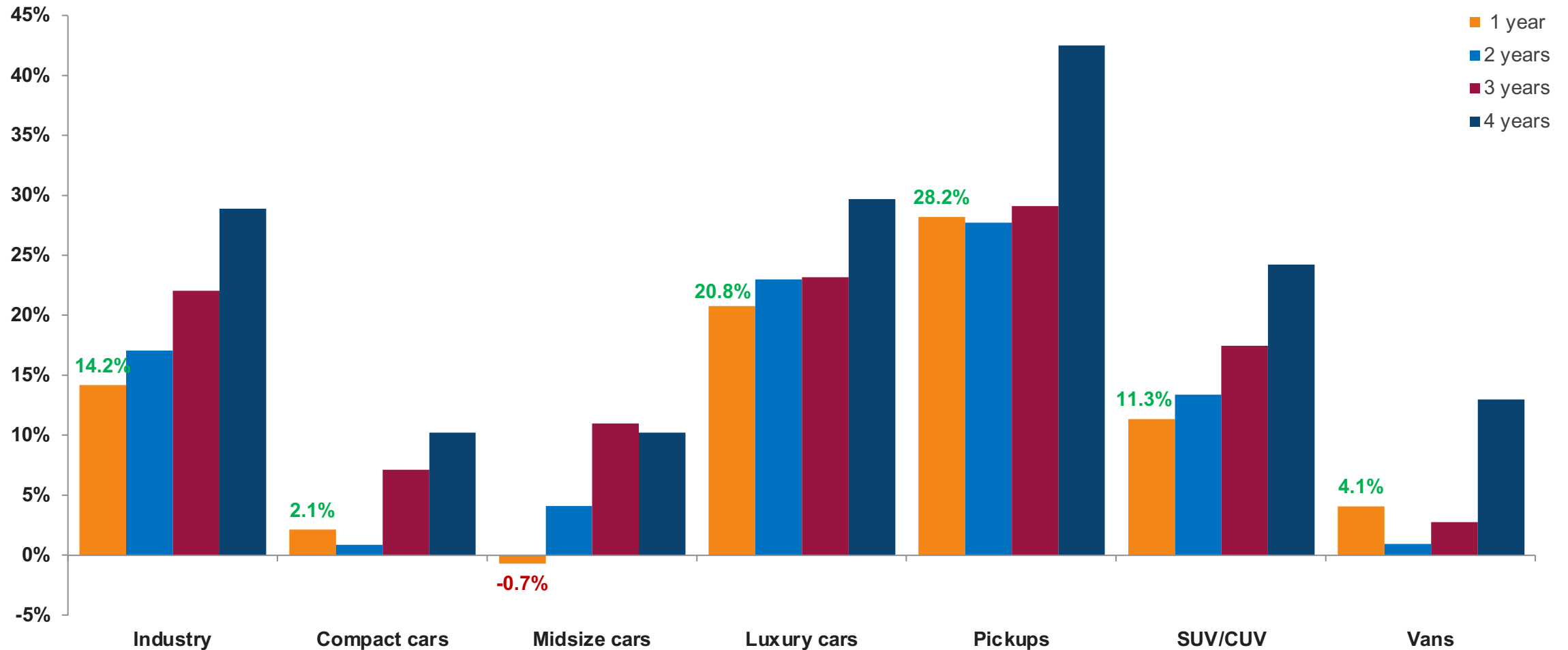
Retention Values Remain Up Strongly

Retention values are up 4 percentage points compared to last year at the end of December



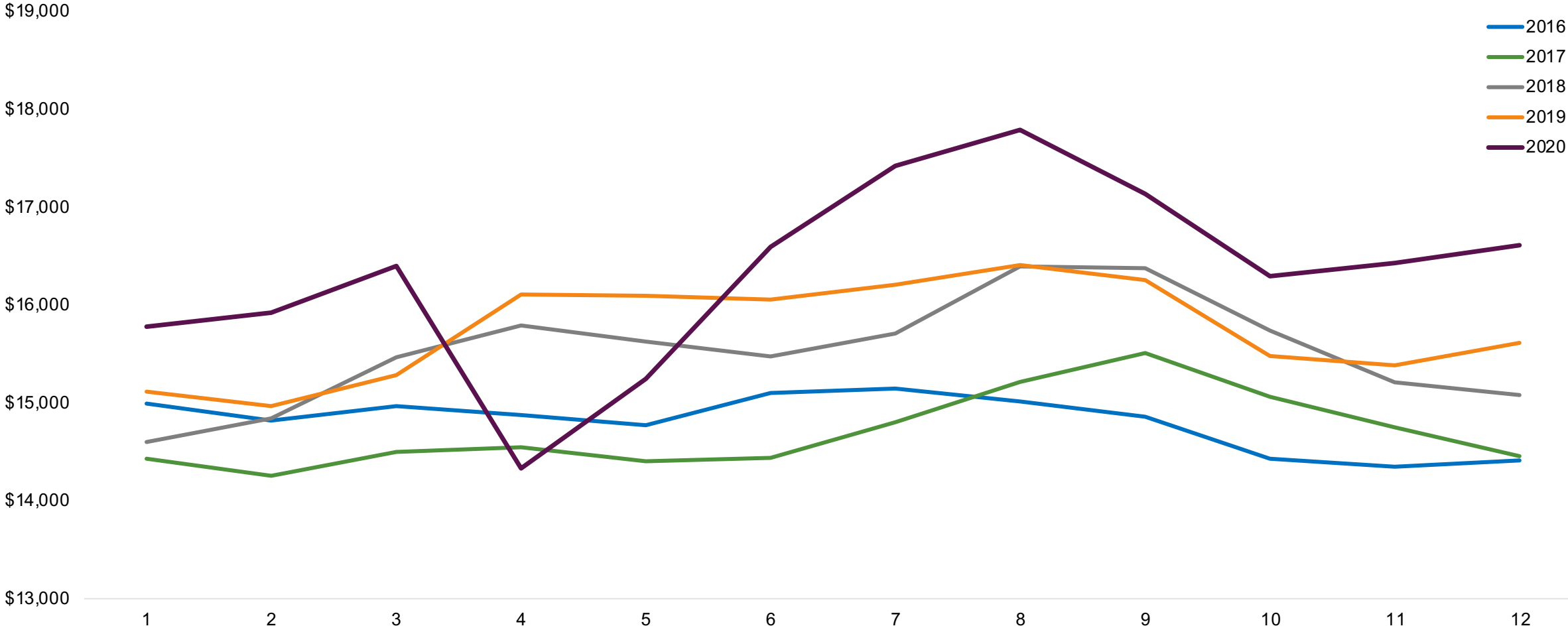
Percent Change in Wholesale Prices for Major Market Segments

Most major segments saw year-over-year gains in December



Average Auction Price – Rental Risk Units

Average price for rental risk units sold in December was up 6.4% y/y and up 1% m/m

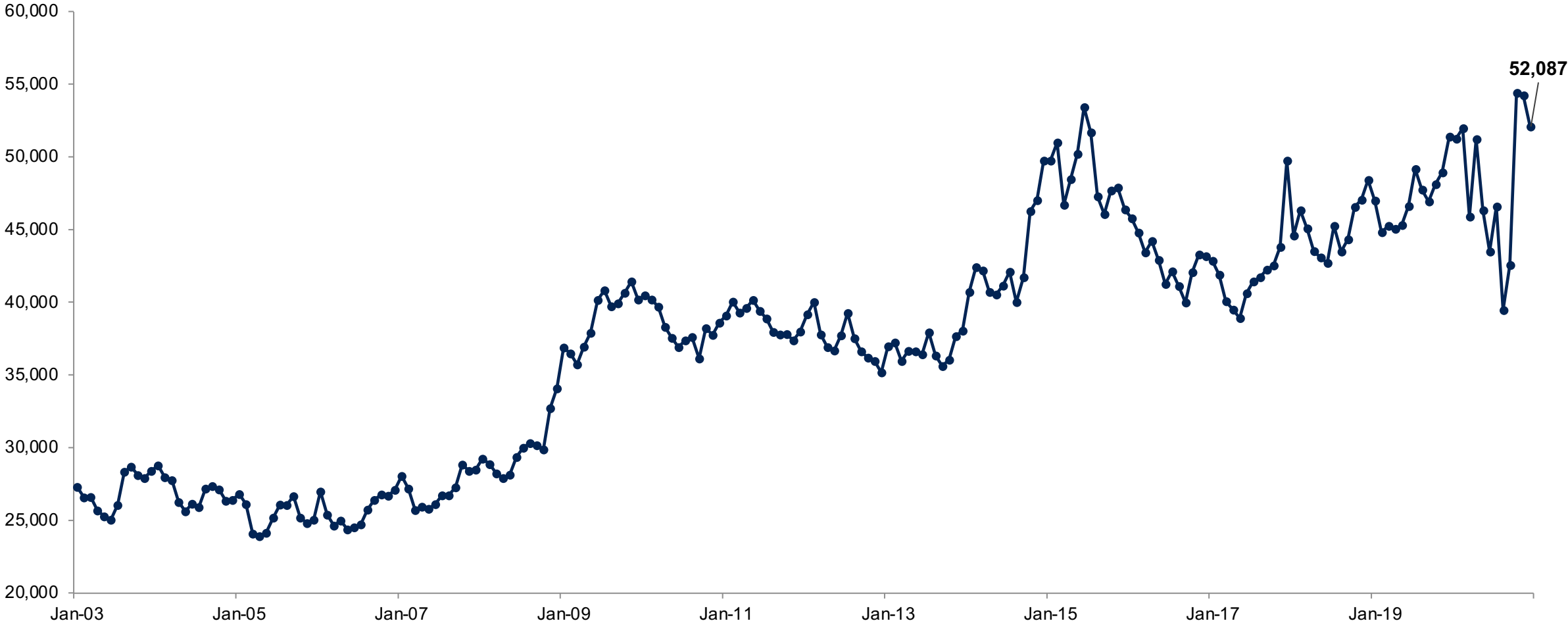


Distribution of Rental Risk Vehicles

	2018 Q4	2019 Q4	2020 Q4
Number of unique year, make, model, body configurations sold	2,623	3,054	3,792
Share accounted for top 10 YMMB	12.0%	13.3%	13.9%
Share accounted for top 25 YMMB	23.7%	23.1%	24.1%
Number of YMMB to reach 50% share	112	109	125

Average Mileage – Rental Risk Units Sold at Auction

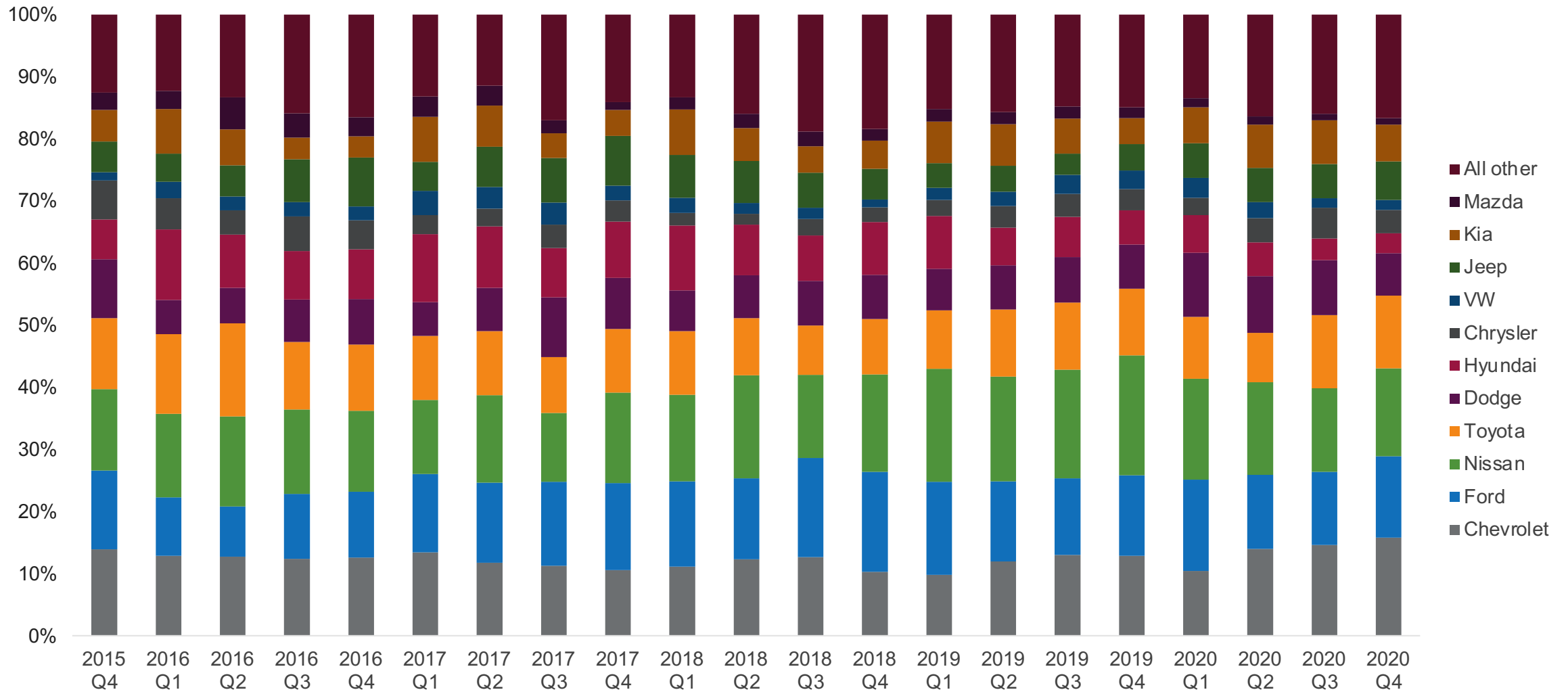
Average mileage for rental risk units in December was up 1% compared to a year ago and down 4% m/m



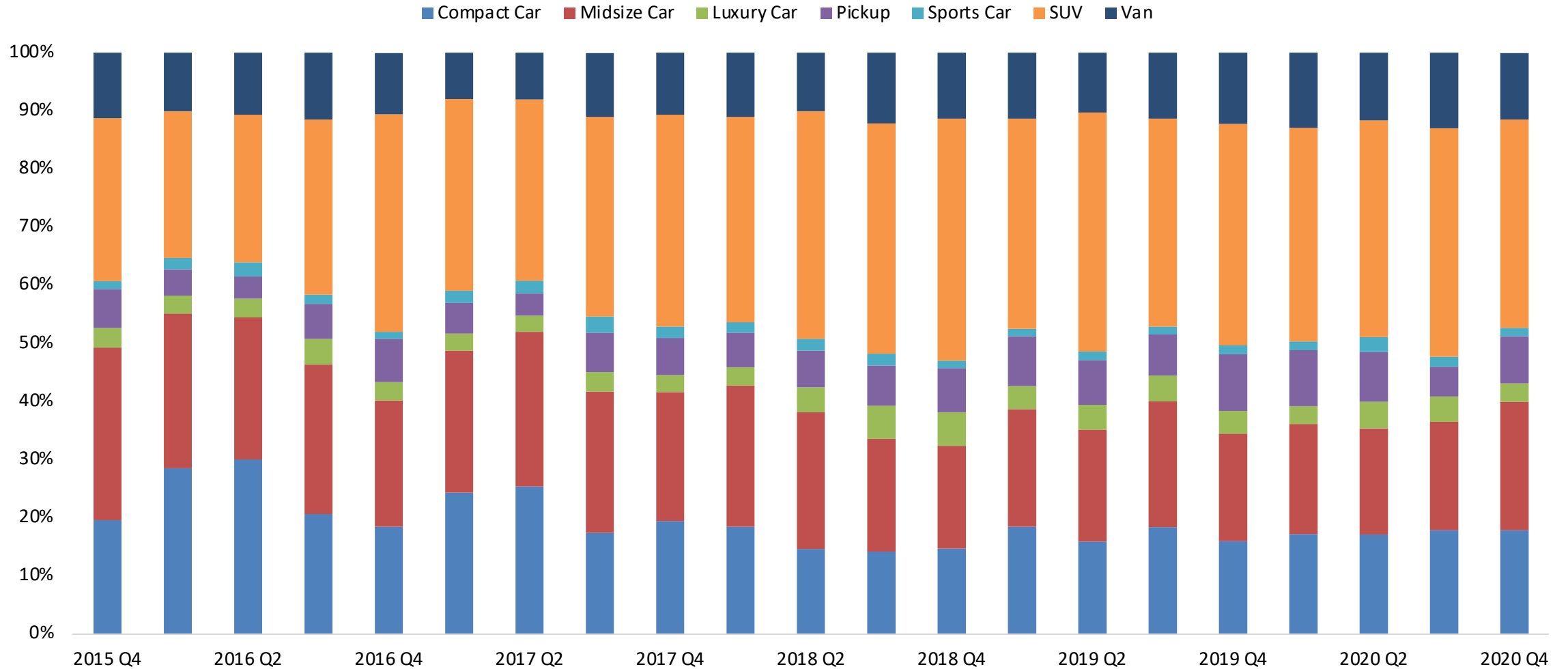
Rental Risk Units Sold by Condition



Rental Risk Units Sold by Make



Rental Risk Units Sold by Segment



Manheim Market Report (MMR) Vehicle Insights

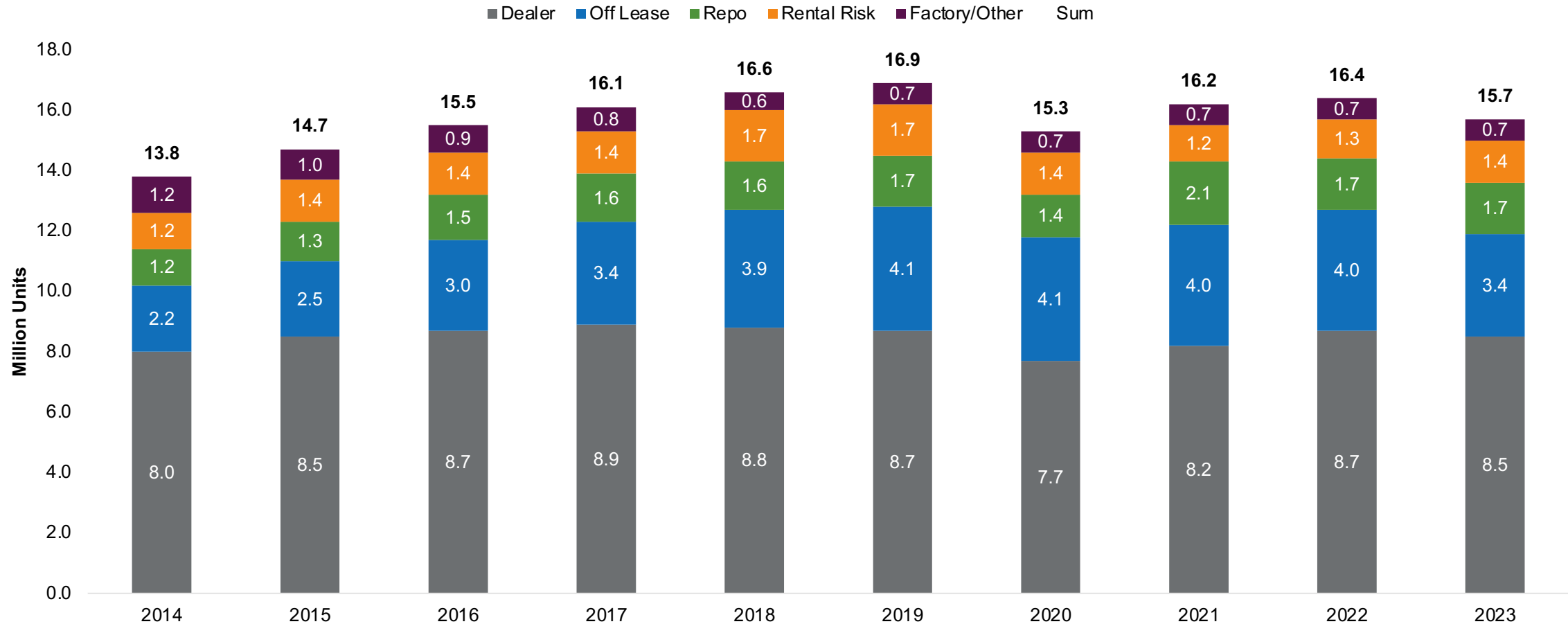
Price trends on top selling vehicles in December at Manheim was quite varied over the last 30 days (December 5 – January 4). Prices year-over-year saw appreciation and depreciation while depreciation was evident in the last 30 days for most, but some saw appreciation

Rank	Source(Rank)	Category	Subcategory	Vehicle	4-Jan	Past 30 Days	Last Year	Current Dep	L12M Dep/Mo
1	All	SUV	SUV Midsize	2017 NISSAN ROGUE AWD 4D SUV 2.5L SV	\$13,750	\$14,000	\$14,800	-1.8%	-0.6%
2	All	SUV	SUV Midsize	2017 FORD EXPLORER 4WD V6 4D SUV XLT	\$22,300	\$22,600	\$22,800	-1.3%	-0.2%
3	All	SUV	Pickup Lite Duty Full	2018 FORD F150 4WD V6 CREW CAB 2.7L XLT	\$32,200	\$31,900	\$28,000	0.9%	1.3%
4	All	Compact Car	Compact Car Premium	2017 NISSAN SENTRA 4D SEDAN SV	\$8,475	\$8,675	\$9,100	-2.3%	-0.6%
5	All	SUV	SUV Midsize	2018 NISSAN ROGUE AWD 4D SUV SV	\$15,100	\$15,300	\$15,150	-1.3%	0.0%
1 Dealer	Dealer	Midsize Car	Midsize Car Premium	2015 NISSAN ALTIMA 4C 4D SEDAN S	\$5,975	\$5,950	\$6,300	0.4%	-0.4%
1 Lease	Lease	SUV	SUV Midsize	2017 NISSAN ROGUE AWD 4D SUV 2.5L SV	\$13,750	\$14,000	\$14,800	-1.8%	-0.6%
1 Rental	Rental	Midsize Car	Midsize Car Entry	2020 CHEVROLET MALIBU 4D SEDAN LT	\$13,900	\$14,050	\$15,900	-1.1%	-1.0%

Total Wholesale Volumes Estimated To Have Declined By 1.6 Million Units

Wholesale volumes tightened from delayed repossessions, decline in rental dispositions, and fewer dealer trades

Estimated Wholesale Volumes by Inflow Channel (Annual Volume)



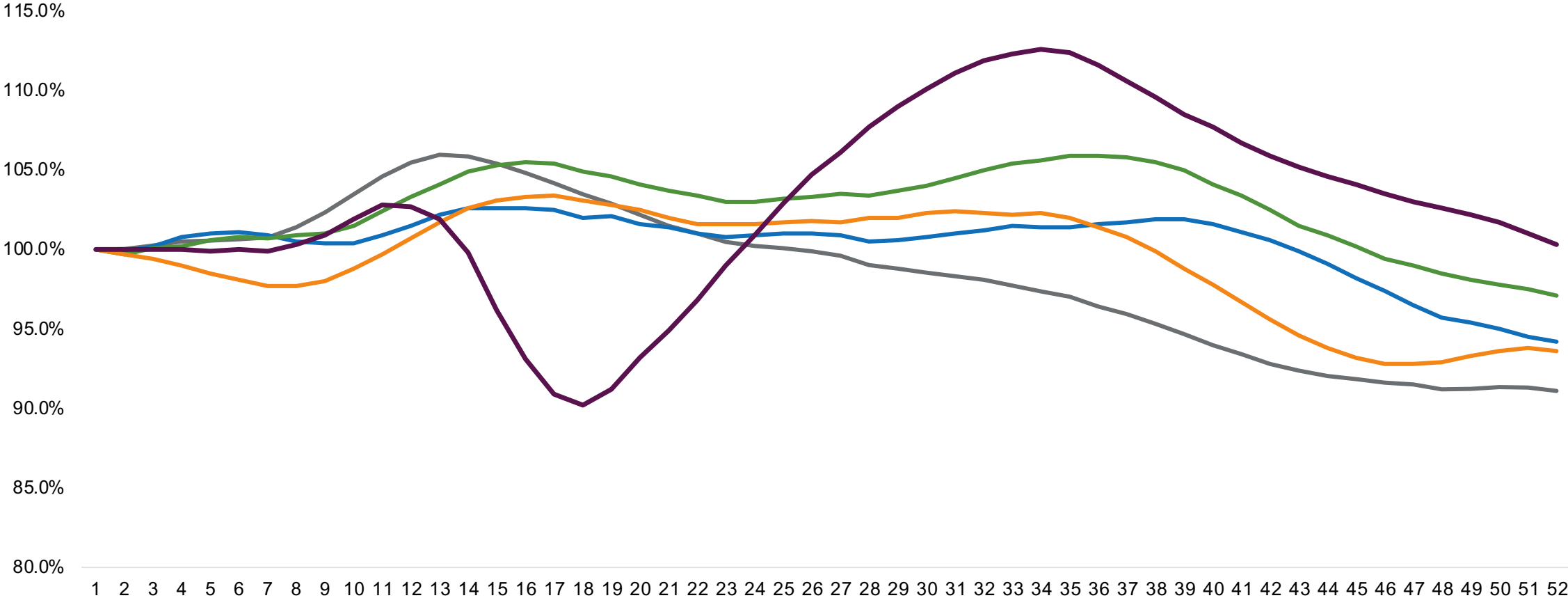
Appendix

2020 Non-Luxury Weekly Price Trend Very Similar

Slightly stronger declines followed by stronger recovery and then steady fall declines

Non-Luxury 3-Year-Old Model MMR Index by Week

— 2014-2016 — 2017 — 2018 — 2019 — 2020

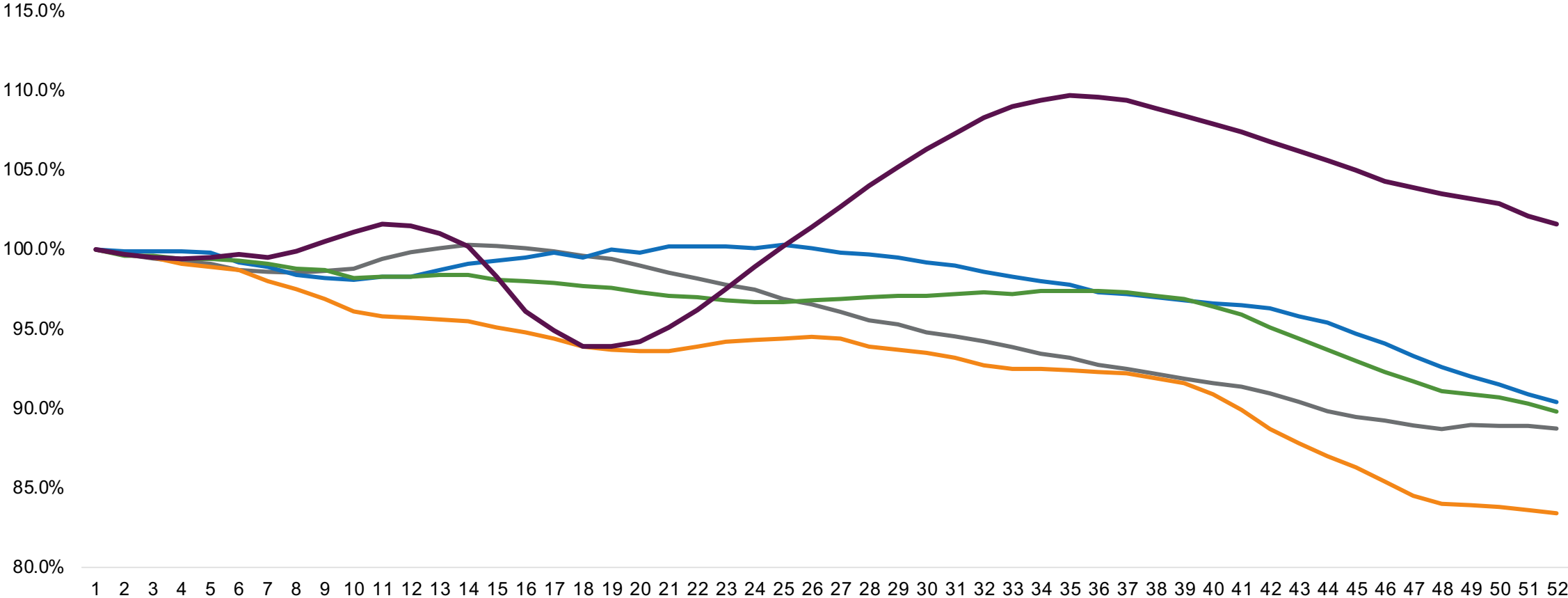


2020 Luxury Weekly Price Trend Less Severe

Luxury vehicles have outperformed by not declining as much and then seeing smaller declines in the fall

Luxury 3-Year-Old Model MMR Index by Week

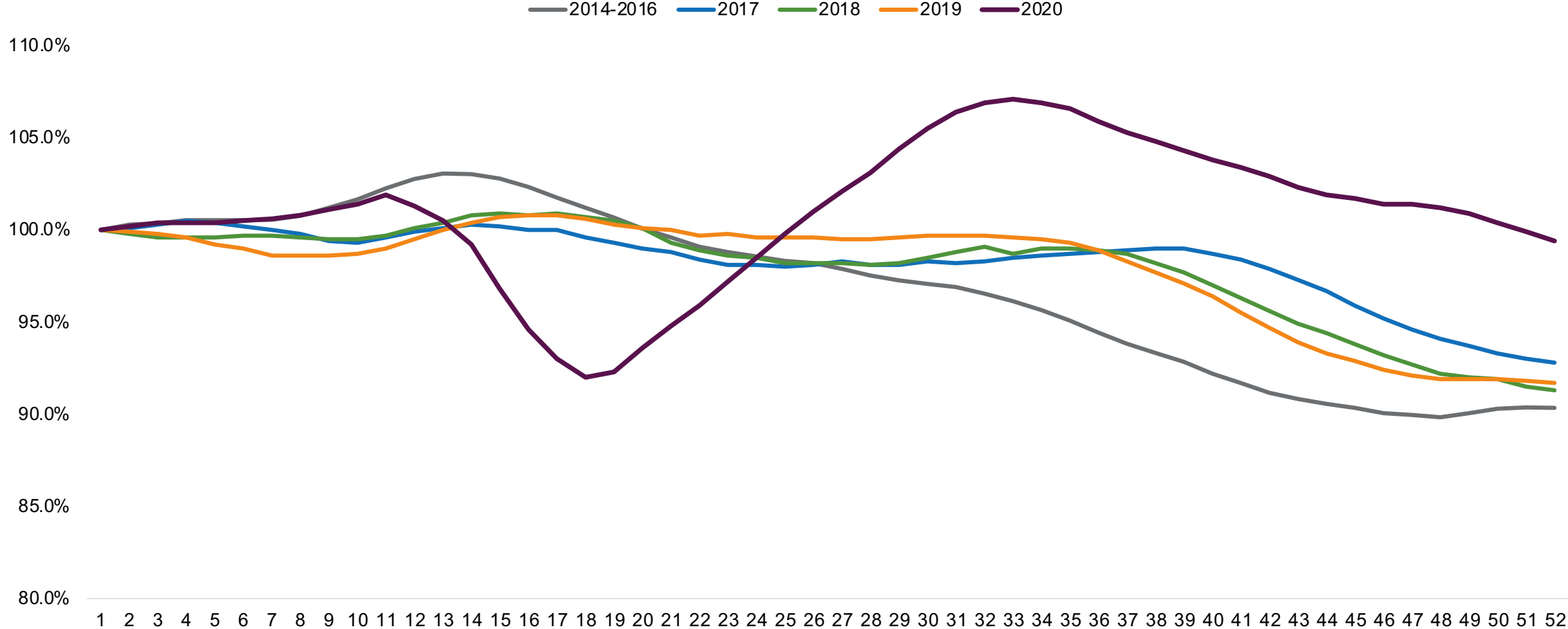
— 2014-2016 — 2017 — 2018 — 2019 — 2020



2020 Weekly Price Trend Was More Severe For One-Year-Old Vehicles

One-year-old vehicle prices fell more in March and April but then saw periods of smaller and then larger declines in fall

1-Year-Old Model MMR Index by Week



Q&A

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THANK YOU!

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