

## ANALYSIS

# Wholesale Used-Car Price Report December 2017

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### Introduction

Wholesale used-vehicle auction sales waned in November, while the average transaction price fell by 0.53% from a year ago to \$10,556. The surge in replacement demand after Hurricanes Harvey and Irma appears to be fading, resulting in prices and sales normalizing from the strong performance in October and September. Since 2014, average sale prices have trended upward as the share of sales from lease and rental fleets grew from about 35% to 44%, dumping large volumes of young, low mileage, and good-condition vehicles that command high prices. However, rising levels of off-lease/fleet supply also exert downward pressure on late- model year vehicle prices, contributing to the slowdown in overall price growth since the start of 2017. The ratio of average auction sale price to manufacturer's suggested retail price ratio in November was virtually unchanged from a year ago at 0.35.

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BY MICHAEL VOGAN AND ROLAND LINDMAYER

Wholesale used-vehicle auction sales waned in November, while the average transaction price fell by 0.53% from a year ago to \$10,556. The surge in replacement demand after Hurricanes Harvey and Irma appears to be fading, resulting in prices and sales normalizing from the strong performance in October and September. Since 2014, average sale prices have trended upward as the share of sales from lease and rental fleets grew from about 35% to 44%, dumping large volumes of young, low mileage, and good-condition vehicles that command high prices. However, rising levels of off-lease/fleet supply also exert downward pressure on late-model year vehicle prices, contributing to the slowdown in overall price growth since the start of 2017. The ratio of average auction sale price to manufacturer's suggested retail price in November was virtually unchanged from a year ago at 0.35 (see Chart 1 and Table 1).

## Segment performance

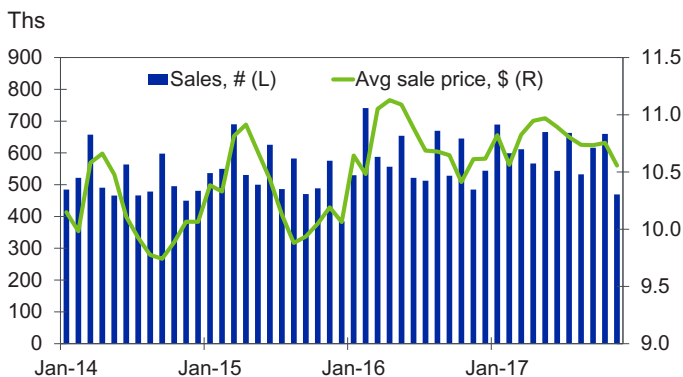
More than 60% of used-vehicle sales at wholesale auctions are midsize sedans, compact sedans, and sport-utility vehicles. High volumes of sedans and compact cars are pushed through auction lanes because of aging inventories, but since 2013, sales of trucks and SUVs have boomed in response to low gas prices combined with a long-running shift in consumer preferences that began in

the 1980s. In 1980, about 23% of all new-car sales were in the truck and SUV category; in 2016, the share was 66%. In wholesale markets, rising shares of large-vehicle sales are a direct consequence of their popularity in the new market (see Chart 2).

Wholesale auction volumes were down in November across all segments except for compact crossover SUVs, compact cars, and midsize cars. Sales of the extremely popu-

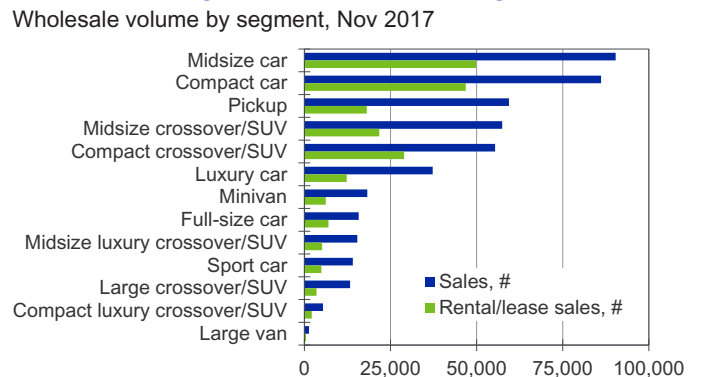
lar compact luxury crossover SUV segment surged by 24% since November 2016 to 5,423 units. The month continued the strong and steady growth in the segment over the last two years. Nonluxury compact crossover SUVs, which make up a much larger share of total auction sales, grew by 3.27% on a year-ago basis. Sales of full-size cars and large vans continued to slide, posting year-over-year declines of 18.19% and 30.56%, respectively. The

Chart 1: Wholesale Price Growth Slowing



Sources: NADA, Moody's Analytics

Chart 2: Large Vehicles Gaining Share



Sources: NADA, Moody's Analytics

decline in large van sales should be viewed in the context of merely 1,500 monthly sales on average for the segment (see Chart 3).

The compact luxury crossover SUV segment boasted the highest average sale price and fastest year-over-year price growth of any segment at \$20,553 and 5.11% in November. The primary driver of this trend is a fast rise in the number of compact luxury crossover SUVs sold from off-lease and rental fleets, the number of which rose by 36.08% year over year in November. This pulls average prices up in the segment because off-lease vehicles carry higher sticker prices and there is ample demand for compact luxury crossover SUVs to absorb the increasing supply. In contrast, full-size car off-lease/fleet sales fell by 10.42% from a year ago, and very low demand contributed to an average price decline of 9.43% over the same time period.

### 20 best and worst value holders

The 20 best value gainers in November, limited to model years 2010 to 2016, reveal that supply plays a large part in assessing recent uptrends. For example, the Mitsubishi Lancer shows up on this list twice in the number two and three spots. That is because production of the performance-oriented Lancer Evolution was officially ended not much more than a year ago, and Mitsubishi also announced earlier this year that North American production of the standard Lancer is also ending with no replacement after 2017. With North American supply capped after this year, there is likely to be sustained upward residual value pressure on existing Lancers, especially performance models.

The 2015 Volkswagen Beetle ranked high on the list because VW temporarily resold

diesel versions of its models over the summer that were modified to comply to EPA standards after the emissions problem of 2015. These limited-supply models were snatched up quickly by loyal diesel fans, pushing up overall prices of certain VW models. Although other such models from the 2015 model

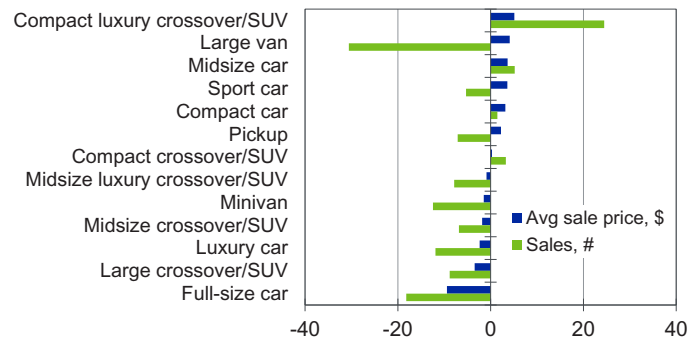
year did not appear on the top 20 list—such as the Golf, Passat and Jetta—they are probably not far behind in the rankings.

It is worth noting that the Nissan Leaf electric vehicle has strong composition biases, which is why three model years appear on the list. Production has increased substantially since its launch in 2011, so the mix of vehicles has been favoring newer, higher-value models more than other models would. It is also possible that the increase in gasoline prices relative to the trough last year had some effect, since battery-only electric vehicle values are generally much more sensitive to gas price swings. Despite the improvement in sale prices, Nissan Leaf residual values are still among the lowest of any vehicle. The average 2015 Nissan Leaf, for example, sells for just 30% of MSRP.

The high prevalence of pickup trucks and SUVs on the list is no surprise; it reflects an increase in consumer demand for such vehicles over just the past year. Light trucks' share of new-vehicle retail sales has been

### Chart 3: Full-Size Car Prices Fall Further

% change yr ago, Nov 2017



Sources: NADA, Moody's Analytics

hitting records upward of 65% over the past several months, and original equipment manufacturers have been changing production to adjust, in turn influencing the wholesale market. The Chevrolet Silverado appears on the list three times and the Dodge Ram appears twice. Other popular pickup trucks and SUVs that made the rankings include the Ford F250, Ford Ranger, Chevrolet Colorado, GMC Sierra, Lincoln MKT, Toyota 4Runner, and Hyundai Santa Fe (see Table 2).

For the 20 worst value losers in November, the worst-performing models generally align with the segments that are performing worst as well. One exception to that is the 2016 GMC Sierra 1500, which might appear on this list while other pickup truck models appear on the value gainers list because of its more extensive history of safety recalls, tallying up five over the past two years.

Many other vehicles that populate the list have fallen out of favor; most simply have not aged well aesthetically or technologically, and many are in segments that have be-

### Table 1: Wholesale Used Vehicle Auction Summary

	Nov 2017	Oct 2017	Sep 2017	Aug 2017	Jul 2017	Jun 2017
Avg sale price, \$	10,556	10,755	10,734	10,737	10,805	10,893
Avg sale price, % change yr ago	-0.53	3.29	0.83	0.55	1.10	0.08
Avg price-to-MSRP ratio	0.35	0.35	0.35	0.35	0.35	0.36
Avg price-to-MSRP ratio, year-over-year difference	-0.00	0.01	-0.00	-0.00	-0.01	-0.01
Sale volume	469,406	659,762	616,161	532,511	662,949	543,573
Sale volume, % change yr ago	-3.17	2.23	16.68	-20.48	29.38	4.19
Lease/fleet sale volume	207,215	279,880	255,090	225,765	279,136	229,628
Lease/fleet penetration rate, %	44.14	42.42	41.40	42.40	42.11	42.24

Sources: NADA, Moody's Analytics

Table 2: 20 Best Value Gainers

Vehicle	Avg sale price, % change yr ago
2015 GMC Sierra 1500	29.4412
2015 Mitsubishi Lancer	19.8614
2013 Mitsubishi Lancer	17.8334
2014 Nissan Leaf	14.9316
2016 Chevrolet Silverado 3500	14.4905
2013 Nissan Leaf	13.3024
2014 Lincoln MKT	12.8698
2014 Porsche 991 911	12.8557
2015 Nissan Leaf	12.7266
2011 Ford Ranger	11.7347
2011 Chevrolet Colorado	10.8283
2015 Toyota 4Runner	10.3691
2012 Chevrolet Silverado 3500	10.2468
2015 Volkswagen Beetle	9.0348
2011 Dodge Ram 2500	8.0828
2010 Dodge Ram 2500	8.0706
2015 Hyundai Santa Fe	7.7384
2016 Chevrolet Silverado 2500 HD	7.4717
2016 Ford Superduty F250	5.5474
2016 Ford Transit Connect	5.3952

Sources: NADA, Moody's Analytics

Table 3: 20 Worst Value Losers

Vehicle	Avg sale price, % change yr ago
2010 Ford Crown Victoria	-68.3045
2011 Lincoln Town Car	-46.3894
2013 Smart Fortwo	-42.7795
2013 Lincoln MKT	-42.6016
2011 Suzuki Kizashi	-41.4211
2013 Nissan Maxima	-39.9885
2016 Lincoln MKT	-38.1368
2010 Lincoln MKT	-37.3082
2016 GMC Sierra 1500	-37.1747
2011 Toyota Yaris	-36.7696
2011 Jaguar XF	-36.7014
2013 Nissan Frontier	-36.0521
2013 Nissan Rogue	-35.7187
2013 Nissan Murano	-35.4452
2013 Buick Regal	-34.8389
2012 Lincoln MKS	-34.6814
2013 Ford Expedition EL	-34.1618
2012 Hyundai Genesis	-33.6655
2014 KIA Sedona	-33.3764
2013 Lincoln MKS	-33.2348

Sources: NADA, Moody's Analytics

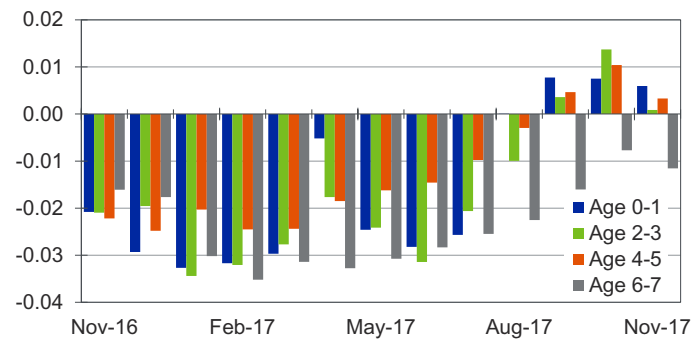
come far less popular. Two examples of this are the 2013 Smart Fortwo and the 2011 Toyota Yaris, which are in one of the worst-performing segments of 2017 in terms of sales and value retention. Small-car retail sales are down 9% year to date, and Smart sales

dwindling number of wholesale fleet transactions, as the last of these vehicles are being retired from police and taxi fleets.

Other large or luxury large cars on the list are the Nissan Maxima, Jaguar XF, Buick Regal, Lincoln MKS and Hyundai Genesis. The

Chart 4: Residual Values by Age Cohort

Avg price-to-MSRP ratio, difference from yr ago, Nov 2017



Sources: NADA, Moody's Analytics

in particular are down a whopping 42%. The Fortwo and Yaris have received major facelifts recently, making older models feel aesthetically and technologically dated.

Two other poorly performing segments throughout this year are the large-car and luxury large-car segments. Despite being relatively small-volume segments, cars in these two segments appear eight times on the list of worst value losers. This includes the number one and two spots; the 2010 Ford Crown Victoria's average sale prices dropped nearly 70% in just one year and its sister model, the Lincoln Town Car, dropped nearly 50%. However, this is likely exacerbated by the

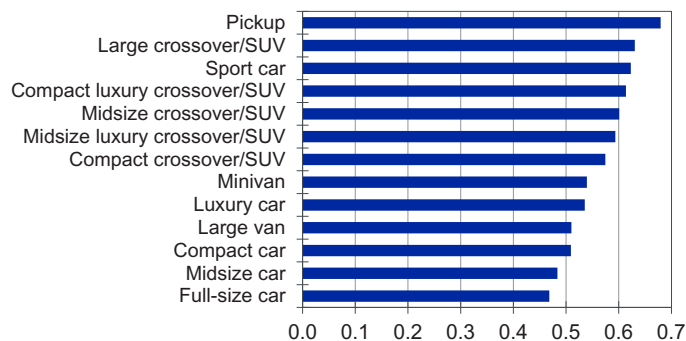
Lincoln MKT appears on the list three times likely because of the introduction of the Lincoln MKC crossover, as retail sales of compact SUVs are increasing more quickly than those of larger ones, fueling dealer wholesale purchases. This is also the case with the Ford Expedition because of the rising popularity of crossovers and midsize SUVs such as the Ford Escape, Edge, and Explorer (see Table 3).

### Value retention

The chart on November residual values, defined as the ratio of sale price to the original vehicle MSRP, examined by age cohort shows that newer vehicles averaged higher price-to-MSRP ratios than year-ago levels for the third consecutive month, while vehicles 6 or 7 years old continued to show year-over-year declines. This is a significant change from earlier in the year, when residual values across all age brackets were consistently lower than 2016 equivalents by upward of 2 to 3 percentage points. The reversal is also reflected in the used-vehicle CPI and more dramatically in the Manheim Used Vehicle Value Index. However, the recent residual increases could be transitory. Hurricanes Harvey and Irma caused substantial inventory losses at dealerships and in private stock in addition to boosting replacement demand, especially in the Houston metro area. A combined total of about 600,000 vehicles were severely damaged or scrapped, according to Cox Automotive. The supply-side shock aided residual values in September and October, but the effect has begun to dampen (see Chart 4).

## Chart 5: Pickup Value Retention Is Superb

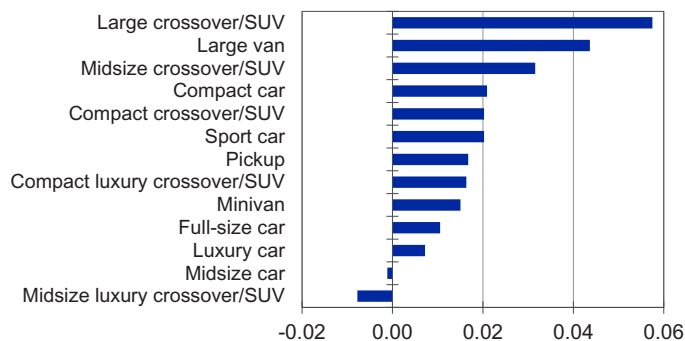
Avg price-to-MSRP ratio, 3-yr-old vehicles, Nov 2017



Sources: NADA, Moody's Analytics

## Chart 6: Residual Values Have Improved

Avg price-to-MSRP ratio y/y diff., 3-yr-old vehicles, Nov 2017



Sources: NADA, Moody's Analytics

Residual values for 3-year-old vehicles sold in November were much higher for pickup trucks and SUVs than for sedans and compacts. Despite being relatively expensive, all truck and SUV segments averaged sale prices greater than 55% of MSRP, supported by a fully employed labor market and gradually improving wage growth. Three-year-old pickup trucks sold for an average of 68% of MSRP and were buoyed by a relatively low off-lease/fleet penetration rate of 47% coupled with robust demand from persistently low fuel prices. The same can be said for the large crossover/SUV segment, which sold for an average of 63% of MSRP. On the other hand, weak demand for cars in addition to high off-lease/fleet penetration rates over 70% created an oversupply problem that depressed sedan and compact residual values below 50% of MSRP. The only exceptions are sport cars, which are not heavily leased or rented, and have a better supply and demand balance in the market (see Chart 5).

Overall, 3-year-old vehicles sold in November 2017 retained their value better than those sold in November 2016. Almost all SUV segments retained at least 1 percentage point of MSRP more value than last year's 3-year-old cohort; the only exceptions were midsize luxury crossover/SUVs, which lost an additional 0.7 percentage point of MSRP. Car retention values were more or less stable, increasing by only about 1 percentage point of MSRP on average since a year ago. Although car retention values are still low compared with other segments in the market, they appear to have at least momentarily improved following the hurricane disasters (see Chart 6).

At the model level, the change in residuals of 3-year-old cars from this year compared with last might coincide with many model facelifts, which would produce larger swings in value. The Nissan Murano tops the list of off-lease/fleet value gainers by a huge margin. Consumers have gravitated more and more toward crossovers over the past year, with Nissan being one of the largest beneficiaries. The brand's light-truck retail sales are up more than 16% year to date. In addition, Nissan introduced a radical redesign to the 2015 Murano, which is just now beginning to come off lease. High demand for crossovers, along with the radical 2015 redesign, has pushed newly off-lease/fleet Murano values higher by nearly 18 percentage points of MSRP compared with just last year.

Models from many facets of the light-truck division populate the list of best off-lease/fleet performers, with four larger pickup trucks making an appearance. These are the Ford F150 and F250, Nissan Titan, and Dodge Ram 3500. The increase in homebuilding this year, along with extensive rebuilding to be done

after wildfires and hurricanes, has lifted demand for these trucks. Midsize pickup trucks also possess some of the best average residual values but are beginning to feel downward price pressures due to higher inventories. Finally, significant design and tech updates in the 2015 model year could have been the catalyst for the off-lease/fleet residual value increases in other models on the list, since this model year is just now exiting leasing terms. Significant redesigns apply to the Cadillac Escalade, Chevrolet Tahoe and Suburban, Ford Edge, Ford Mustang, Hyundai Genesis, and Mercedes-Benz C Class (see Table 4).

Table 4: 20 Best Off-Lease Gainers

Vehicle	Avg price-to-MSRP ratio, y/y diff
Nissan Murano	0.1776
Porsche 991 911	0.1067
Ford F150	0.0829
Ford Edge	0.0812
Hyundai Genesis	0.0801
Dodge Ram 3500	0.0782
Scion xB	0.0776
Ford Mustang	0.0772
Nissan Leaf	0.0724
Lincoln MKS	0.0702
Ford Superduty F250	0.0665
KIA Rio	0.0649
Chevrolet Suburban 1500	0.0626
Subaru XV Crosstrek	0.0620
Mercedes-Benz C Class	0.0608
Nissan Titan	0.0605
Chevrolet Tahoe	0.0583
Jeep Grand Cherokee	0.0562
Cadillac Escalade	0.0506
Dodge Challenger	0.0493

Sources: NADA, Moody's Analytics

Table 5: 20 Worst Off-Lease Losers

Vehicle	Avg price-to-MSRP ratio, y/y diff
Mercedes-Benz CLA Class	-0.0953
Mercedes-Benz S Class	-0.0775
Maserati Ghibli	-0.0717
Land Rover Range Rover	-0.0661
Volvo S60	-0.0600
BMW i3 Series	-0.0571
BMW X5 Series	-0.0556
Land Rover Range Rover Sport	-0.0543
BMW 4 Series	-0.0541
Volkswagen Tiguan	-0.0484
Hyundai Accent	-0.0481
Audi A7	-0.0432
BMW 5 Series	-0.0421
Hyundai Santa Fe	-0.0391
Mercedes-Benz GL Class	-0.0353
Audi A6	-0.0352
BMW 6 Series	-0.0350
Honda Pilot	-0.0349
Mercedes-Benz GLK Class	-0.0346
Buick Encore	-0.0324

Sources: NADA, Moody's Analytics

On the other end of the spectrum, the list of worst off-lease/fleet performers is heavily populated with luxury vehicles, and the Mercedes-Benz CLA Class lands the number one spot with values falling nearly 10 percentage points of MSRP compared with just one year ago. Appearing on the list are many large luxury sedans and SUVs, which are suffering outsize value losses specific to those vehicles that are currently coming off lease. The reasoning here is that a characteristically higher proportion of lease transactions for these models has caused bloated inventories and a flood of luxury vehicles into the off-lease market, suppressing residuals. Leasing accounts for more than 60% to 70% of sales for some models on the list. BMW models appear five times on the list, while Mercedes-Benz models appear four times including taking the top two spots. Land Rover and Audi appear twice, while Maserati, Volvo and Buick each appear once (see Table 5).

### State and regional lease rates

The November map of wholesale off-lease/fleet penetration rates shows that some clear state and regional patterns are at play. New England, which is defined without New York or Connecticut, has by far the

lowest wholesale off-lease/fleet rate of just 31.7%. The next lowest rate is the Midwest region—from Kansas to Minnesota—at 37.1%. The large states of Illinois, Pennsylv-

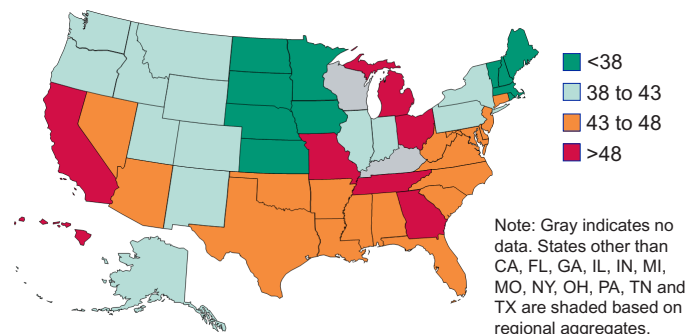
ania and New York tend to have slightly below-average off-lease/fleet rates. With rates close to 50%, California and the Desert Southwest region, which includes Arizona and Nevada, are outliers compared with nearby regions. Plenty of open space in a desert provides an opportunity to store large volumes of off-lease/fleet vehicles. A lack of humidity and precipitation means that vehicles retain their condition better over long periods of time.

Missouri and Georgia also have off-lease/fleet rates just below 50%. States with a large concentration of auto manufacturing plants seem to be correlated with higher proportions of off-lease/fleet sales. These include Michigan, Tennessee and Ohio, which rank the highest in off-lease/fleet composition; rates are 50.9% for Michigan, 51.7% for Tennessee, and 58.3% for Ohio. At nearly double New England's rate, Ohio has by far the highest composition of off-lease/fleet vehicle wholesale sales.

It is important to note that regional characteristics for wholesale off-lease/fleet penetration rates do not necessarily translate to retail lease rates. For example, New York's wholesale off-lease rate is below average, whereas its retail lease rate is among the highest of any state. On the other hand, states such as Michi-

Chart 7: Regional Off-Lease Penetration

Off-lease/fleet volume, % of total volume, Nov 2017



Sources: NADA, Moody's Analytics

gan and Ohio have a high proportion of such sales in both markets (see Chart 7).

lowest wholesale off-lease/fleet rate of just 31.7%. The next lowest rate is the Midwest region—from Kansas to Minnesota—at 37.1%. The large states of Illinois, Pennsylv-

### Outlook

Dealer wholesale auction volumes are poised to slow through the end of the decade as new-vehicle sales gradually slide to just above 16 million units per year. Spent-up new-car demand and tightening credit conditions should reduce the volume of trade-ins moving through auction lanes. Commercial volumes will undoubtedly increase as off-lease volumes rise from about 3.4 million units in 2017 to 4.4 million by 2020. The rise in off-lease volumes will raise average sale prices but put downward pressure on retention values, especially for late-model vehicles less than 3 years old. However, demand for newer used vehicles is expected to stay strong as consumers substitute away from the new market in search of competitively priced, high-quality used inventory.

Oil prices are forecast to stay under \$3 per gallon, which augurs well for the continued popularity of trucks and SUVs among used-car shoppers. However, downward supply pressure will intensify in these larger-vehicle segments when record new sales from the past few years cycle through the used market. The increased popularity of new trucks and SUVs should benefit sedans and compacts because the used-car supply is not expanding as quickly, but residual values are still likely to be weak because of a large existing stock and low demand. The Moody's Analytics baseline used car and truck CPI forecast suggests that the slide in overall prices will stabilize in 2019 when the auto industry recovery begins to cool off.

## About the Authors

[Michael Vogan](#) is the lead auto economist at Moody's Analytics. His expertise lies in conducting research and analysis about trends in the auto industry and auto credit markets. Additionally, Michael manages the development of AutoCycle, an econometric model used to forecast vehicle residual values. Before his current position, Michael worked in the Credit Analytics group building credit loss forecasting models for stress-testing applications. He holds a master's degree in applied economics and econometrics from the University of Delaware and a bachelor's degree in economics from Bloomsburg University.

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