Wholesale Market Insights
Through December 2019

Jonathan Smoke & Zo Rahim
<table>
<thead>
<tr>
<th>Category</th>
<th>Logos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inventory</td>
<td>![Manheim Logo]</td>
</tr>
<tr>
<td>Financial</td>
<td>![Nextgear Capital Logo]</td>
</tr>
<tr>
<td>Mobility</td>
<td>![Pivot Logo] ![Clutch Logo] ![RideKleen Logo]</td>
</tr>
</tbody>
</table>
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 Rebound To End The Year

Prices in December increased 1.54% versus November 2019 and were up 2.5% compared to December 2018.
Used Vehicle Values Bounce Back From Lows

Year-over-year price performance now stronger than average

Source: Manheim/Cox Automotive
Manheim Index versus Mix & Quality Adjusted New Vehicle Price with 3 ½ year Lag

Used vehicle prices stay above the historical new vehicle price relationship trend

Source: Bureau of Labor Statistics, Manheim/Cox Automotive
Wholesale Used Vehicle Prices vs. New Vehicle Prices

Source: Manheim/Cox Automotive
2019 Weekly Price Trend Ended 2019 Stable

Depreciation accelerated to start the fall, but end of year trend normalized

3-Year-Old Model MMR Index by Week

Source: Manheim/Cox Automotive
Weekly Price Trend Was Strong For Non-Luxury

Accelerating depreciation in the fall transitioned to stabilized values to end the year

Non-Luxury 3YO Model MMR Index by Week
Weekly Price Trend Weaker For Luxury

Luxury vehicles saw steep depreciation in first quarter and again in fall but ended stable

Luxury 3YO Model MMR Index by Week

Source: Manheim/Cox Automotive
Weekly Price Trend Strong for One-Year-Old Vehicles

One-year-old vehicle prices were very stable with little depreciation until the fall and ended stable

1-Year-Old Model MMR Index by Week

Source: Manheim/Cox Automotive
Retention Values Ended 2019 Down 1.6% Relative to 2018

Relative to MSRP and fixing the basket of vehicles by what was sold leaves residuals flat with 2017

Source: Kelley Blue Book/Cox Automotive

(1 to 3 year-old models)
Only three major segments saw year-over-year gains in December:

- **Compact cars**: -1.2%
- **Midsize cars**: 4.8%
- **Luxury cars**: 1.8%
- **Pickups**: -0.4%
- **SUV/CUV**: 1.8%
- **Vans**: -3.0%

**Source:** Manheim/Cox Automotive
Luxury Ends Year on Upward Trend

Luxury prices in December were up 3.1% compared to Dec 2018, while non-luxury prices increased 1.9%.
Electric Car Prices Improved in 2019

Electric car prices in December were up 15.5% compared to December 2018

Source: Manheim/Cox Automotive
Shifting Consumer Preferences Not Reflected in Wholesale Market Volumes

The SUV reigns supreme in new vehicle sales while cars still dominated the used car market.

**New Vehicle Sales by Category**

- CAR
- PICKUP
- SUV
- VAN

**Manheim Sales by Category**

- CAR
- PICKUP
- SUV
- VAN

Source: Manheim/Cox Automotive
Average price for rental risk units sold in December up 3.5% y/y and up 1.5% m/m

Source: Manheim/Cox Automotive
## Distribution of Rental Risk Vehicles

<table>
<thead>
<tr>
<th></th>
<th>2017 Q4</th>
<th>2018 Q4</th>
<th>2019 Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of unique year, make, model, body configurations sold</td>
<td>3,014</td>
<td>2,623</td>
<td>3,054</td>
</tr>
<tr>
<td>Share accounted for top 10 YMMB</td>
<td>11.9%</td>
<td>12.0%</td>
<td>13.3%</td>
</tr>
<tr>
<td>Share accounted for top 25 YMMB</td>
<td>22.5%</td>
<td>23.7%</td>
<td>23.1%</td>
</tr>
<tr>
<td>Number of YMMB to reach 50% share</td>
<td>110</td>
<td>112</td>
<td>109</td>
</tr>
</tbody>
</table>

Source: Manheim/Cox Automotive
Average mileage for rental risk units in December was up 6% compared to a year ago and up 5% m/m.

Source: Manheim/Cox Automotive
Rental Risk Units Sold by Condition

Source: Manheim/Cox Automotive
Rental Risk Units Sold by Segment

Source: Manheim/Cox Automotive
Manheim Market Report (MMR) Vehicle Insights

Top selling vehicles in December at Manheim saw broad range of depreciation rates in the last 30 days (December 3 – January 2) as the top selling vehicles were again heavy in luxury vehicles. Prices year-over-year also saw quite a range from appreciation to higher than normal depreciation.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Source(Rank)</th>
<th>Category</th>
<th>Subcategory</th>
<th>Vehicle</th>
<th>2-Jan</th>
<th>Past 30 Days</th>
<th>Last Year</th>
<th>Current Dep</th>
<th>L12M Dep/Mo</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>All</td>
<td>Compact Car</td>
<td>Compact Car Premium</td>
<td>2017 HYUNDAI ELANTRA 4D SEDAN SE</td>
<td>$9,750</td>
<td>$9,725</td>
<td>$9,625</td>
<td>0.3%</td>
<td>0.1%</td>
</tr>
<tr>
<td>2</td>
<td>All</td>
<td>SUV</td>
<td>SUV Entry</td>
<td>2017 FORD ESCAPE 4WD 4D SUV 1.5L SE</td>
<td>$13,950</td>
<td>$13,800</td>
<td>$14,350</td>
<td>1.1%</td>
<td>-0.2%</td>
</tr>
<tr>
<td>3</td>
<td>All</td>
<td>Luxury Car</td>
<td>Luxury Car Premium</td>
<td>2017 MERCEDES-BENZ E CLASS 4D SEDAN E300</td>
<td>$25,200</td>
<td>$25,700</td>
<td>$35,300</td>
<td>-1.9%</td>
<td>-2.4%</td>
</tr>
<tr>
<td>4</td>
<td>All</td>
<td>Midsize Car</td>
<td>Midsize Car Premium</td>
<td>2017 TOYOTA CAMRY 4C 4D SEDAN SE</td>
<td>$13,850</td>
<td>$13,750</td>
<td>$13,100</td>
<td>0.7%</td>
<td>0.5%</td>
</tr>
<tr>
<td>5</td>
<td>All</td>
<td>Luxury Car</td>
<td>Luxury Car Premium</td>
<td>2016 MERCEDES-BENZ C CLASS 4D SEDAN C300 4MATIC</td>
<td>$16,550</td>
<td>$17,000</td>
<td>$22,400</td>
<td>-2.6%</td>
<td>-2.2%</td>
</tr>
<tr>
<td>1 Dealer</td>
<td>Dealer</td>
<td>Midsize Car</td>
<td>Midsize Car Premium</td>
<td>2015 NISSAN ALTIMA 4C 4D SEDAN S</td>
<td>$6,450</td>
<td>$6,450</td>
<td>$9,025</td>
<td>0.0%</td>
<td>-2.4%</td>
</tr>
<tr>
<td>1 Lease</td>
<td>Lease</td>
<td>Compact Car</td>
<td>Compact Car Premium</td>
<td>2017 HYUNDAI ELANTRA 4D SEDAN SE</td>
<td>$9,750</td>
<td>$9,725</td>
<td>$9,625</td>
<td>0.3%</td>
<td>0.1%</td>
</tr>
<tr>
<td>1 Rental</td>
<td>Rental</td>
<td>Midsize Car</td>
<td>Midsize Car Premium</td>
<td>2018 NISSAN ALTIMA 4C 4D SEDAN SL</td>
<td>$12,650</td>
<td>$12,500</td>
<td>$14,850</td>
<td>1.2%</td>
<td>-1.2%</td>
</tr>
</tbody>
</table>

Source: Manheim/Cox Automotive
Retail Sales Continue to Grow As Used Vehicle Sales Plateau

Source: Cox Automotive estimates based on IHS Markit Registrations

USED VEHICLE SALES OUTLOOK (MILLIONS)

- 2000: 37
- 2002: 37
- 2004: 39.4
- 2006: 39.6
- 2008: 39.6
- 2010: 39.4
- 2012: 39.4
- 2014: 39.2
- 2016: 39.6
- 2018: 39.6
- 2020: 39.6

COX AUTOMOTIVE FULL-YEAR FORECASTS

- 2018: 39.4
- 2019: 39.6
- 2020*: 39.4

COX AUTOMOTIVE USED RETAIL FORECASTS

- 2018: 19.5
- 2019: 20.0
- 2020*: 20.3

Source: Cox Automotive estimates based on IHS Markit Registrations
Retail Inventory Trend Slide

Average Used Days In Inventory

- 2017
- 2018
- 2019

Source: Cox Automotive/vAuto
According to the Q4 2019 Cox Automotive Dealer Sentiment Index (CADSI), the current U.S. auto market is mostly unchanged from Q3 and remains negative, with an index score of 47. The slight decrease from Q3’s 48 was not statistically significant.

Year-over-year, the current market index is up by three points, a statistically significant improvement, but the index remains below 50, which is considered negative. The current market sentiment skews more positive for franchised dealers compared to independents. The gap narrowed this quarter, however, as franchised dealers became less positive—decreasing from 56 in Q3 to 51 in Q4—while independents dealers remained negative at 46, unchanged from Q3.

Franchised dealers’ lower current market sentiment is likely tied to perceptions of used-vehicle sales, which saw a statistically significant decline from last quarter, dropping from 73 to 66. The new-vehicle market is stable according to franchised dealers, down just one point from Q3 and still in positive territory at 56.

When it comes to views of the future, franchised and independent dealers moved closer together in Q4 as well. Franchised dealers scored 54, down from Q3, while independents increased from 49 to 51. Independents have seen a statistically significant increase in their outlook for the future compared to last year. The improvement likely relates to improved used-vehicle inventory and increasing profits.

The factors holding back the business across all dealers remained consistent in Q4, although “The Economy” entered the Top 5 and pushed “Expenses” to number 6. “Market Conditions” remained in the top spot, with 35% of dealers citing it as holding back their business, down from 38% in Q3. “Competition” remained in second place, followed by “Credit Availability for Consumers” and “Limited Inventory.” “The Economy” rounded out the Top 5.

Notably, compared to last quarter, “Consumer Confidence” and “The Political Climate” both saw significant increases as factors holding back the business.
Growth of Off-Lease Has Reached Its Peak

Estimated Off-Lease Maturities

<table>
<thead>
<tr>
<th>Year</th>
<th>Millions of Vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>1.5</td>
</tr>
<tr>
<td>2013</td>
<td>1.8</td>
</tr>
<tr>
<td>2014</td>
<td>2.2</td>
</tr>
<tr>
<td>2015</td>
<td>2.5</td>
</tr>
<tr>
<td>2016</td>
<td>3.0</td>
</tr>
<tr>
<td>2017</td>
<td>3.4</td>
</tr>
<tr>
<td>2018</td>
<td>3.9</td>
</tr>
<tr>
<td>2019F</td>
<td>4.1</td>
</tr>
<tr>
<td>2020F</td>
<td>4.1</td>
</tr>
</tbody>
</table>

Source: Cox Automotive
2020 Tax Season Should Be Similar to Last Year in Timing

In week 9, cumulative refunds approach 50%; by week 16 refunds are above 90%

Cumulative Tax Refunds by Calendar Week and Year

Source: Cox Automotive Analysis of IRS Data
2020 Weekly Used Sales Should Also Look Like Last Year

Weekly sales peak during peak tax refund season each year

Used Retail Weekly Sales Index

- Refunds
- 2018
- 2019

Source: Cox Automotive
2020 Should See a More Normal Depreciation Pattern

A stable start to year, a normal spring bounce, stronger than normal summer, and a steadier fall expected

3-Year-Old Model MMR Index and Forecast by Week

Source: Manheim
Thank You

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Economic Industry Insights

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