



# 2015 Industry Report



As our industry searches for uncharted opportunities beyond the horizon, we must also look to the past for insight that will help guide our future decisions. IAA is committed to providing its partners with the most comprehensive analysis of the automotive auction landscape, and that dedication continues with the 2015 Industry Report.

The auto salvage industry as discussed in this document refers to the industry as experienced by IAA. IAA does not possess data on the performance of other salvage companies; therefore, the analyses are based on how different economic factors impact the performance of vehicles sold through IAA's auctions.

The statements contained in this report and statements the company may make orally in connection with this report that are not historical facts are forward-looking statements. Forward-looking statements are subject to risks and uncertainties that could cause actual results to differ materially from the results projected, expressed or implied by the forward-looking statements. Factors that could cause or contribute to such differences include those matters disclosed in the company's Securities and Exchange Commission filings. The company does not undertake any obligation to update any forward-looking statements.

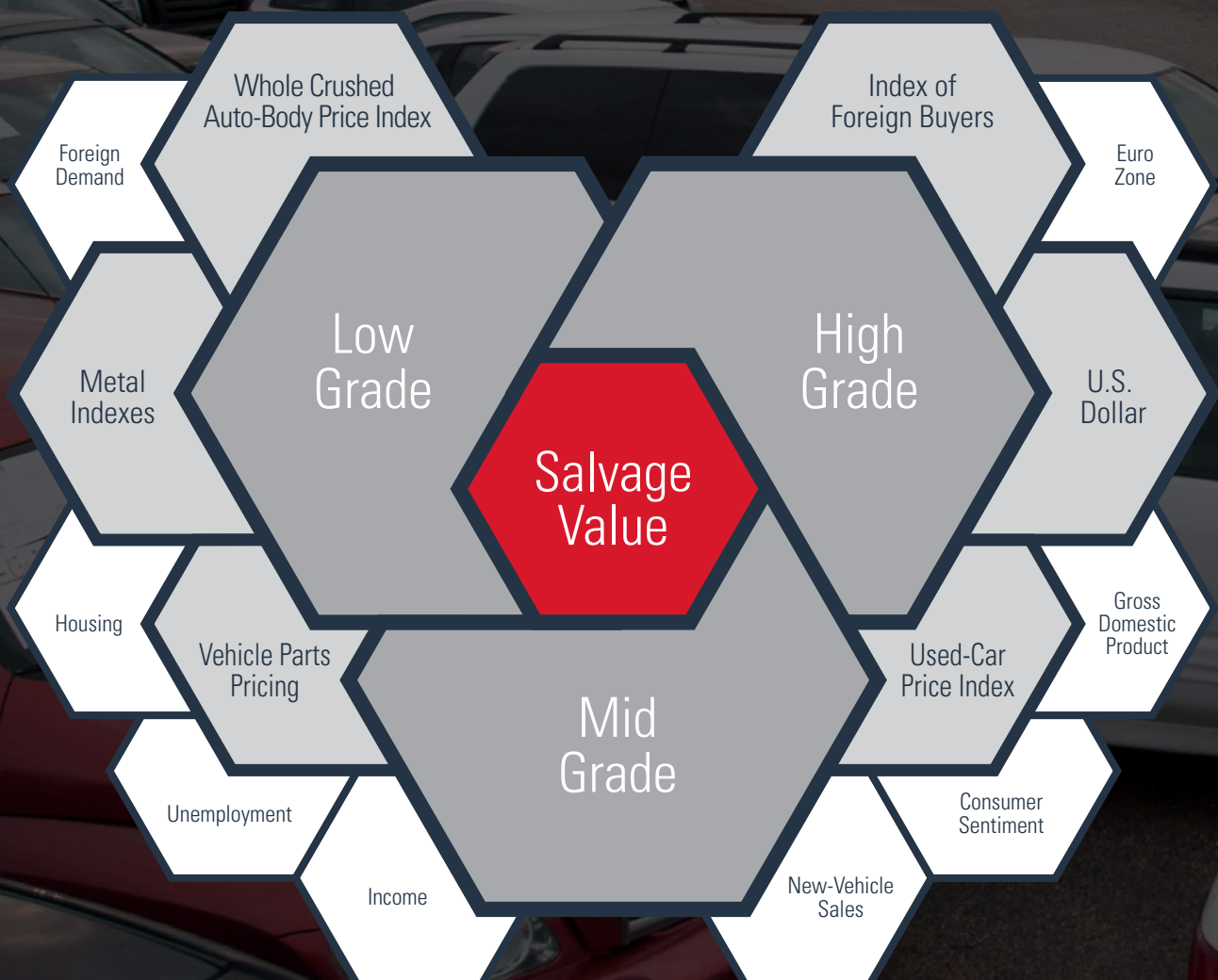
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## SALVAGE VALUE LANDSCAPE — A MAP OF INFLUENCES

The complexity of the vehicle salvage industry is revealed when trying to understand how its drivers are linked by factors such as the economy, vehicle sale prices, driver behavior and weather. This diagram is a visual guide that shows those links. The size of the shape is scaled to represent its level of impact on the industry.



## EXECUTIVE SUMMARY

The IAA 2015 Industry Report | Six-Month Update focused on several indicators and drivers of the economy, including:

- The U.S. economy, which overcame an early stumble and expanded modestly through the first half of the year as consumer spending and exports increased while imports slowed.
- Positive news from the labor markets and strong consumer confidence which stoked speculation the Federal Reserve would raise interest rates. These factors combined to elevate the value of the U.S. dollar during the first half of 2015.
- The automotive industry's continued impressive performance, which reached the highest seasonally adjusted annualized rate (SAAR) in almost a decade, 17.7 million vehicles, in May.

With the release of the 2015 Industry Report, IAA continues to analyze and interpret major industry trends, as well as the industry's response to the dynamic economic environment.

## Economy

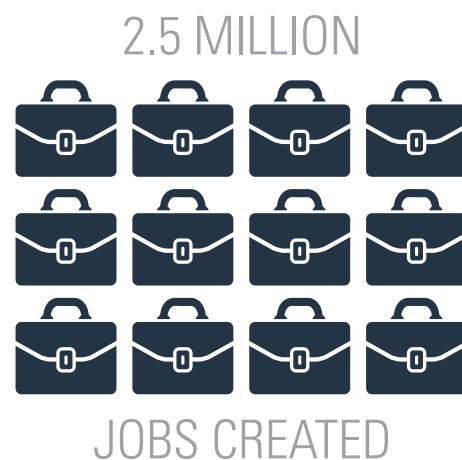
Economic growth remained steady in 2015 despite the influence of divergent forces. A steadily improving housing market, increased job creation throughout the year and record-setting auto sales helped support growth.<sup>1</sup> Struggling exports because of the stronger dollar, a weaker global economy brought on by China's slowdown and volatile financial markets created headwinds.<sup>2</sup> Further details on the economy are available in Section I of the report.



### UNEMPLOYMENT RATE



PERCENTAGE POINTS



# Auto Industry

In 2015, total lightweight-vehicle sales overcame a soft start to the year to finish at a record 17.47 million units sold. This outperformed mid-year projections and represented a 5.9% increase over 2014 levels. Easily obtained credit, low gasoline prices and a steadily improving labor force fueled the increase. Section II contains an in-depth discussion of these developments.

## NEW-VEHICLE SALES



MILLION

## TOP PERFORMER



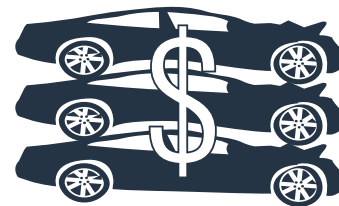
FIAT CHRYSLER

# Salvage Industry

All three vehicle grade segments were hampered by unfavorable macroeconomic conditions throughout 2015, which led to downward pressure on year-over-year performance. Extended declines of average whole crushed auto-body prices, softer markets for platinum and palladium and the weaker purchasing power of foreign buyers brought on by a stronger U.S. dollar and unfavorable exchange rates represented the primary challenges. More about all three segments and the factors that impacted their performance can be found in Sections III and IV, respectively.



-45.0%



WHOLE CRUSHED AUTO-BODY  
PRICE INDEX

## ALUMINUM PRICES



-10.9%

## PLATINUM PRICES



-23.8%

## PALLADIUM PRICES



-14.0%



## SECTION I: OVERVIEW OF U.S. ECONOMY

The U.S. economy experienced muted growth to begin 2015, gathered momentum during the middle of the year, but limped to the finish line. Annual consumer spending posted its biggest gain in nearly a decade and job creation increased throughout the year, but a weaker global economy and skittish financial markets worked to subdue the positive economic news.<sup>3</sup>



# Gross Domestic Product (GDP)

America’s GDP stumbled out of the gate in the first quarter of 2015, as its growth slowed to a SAAR of 0.6% (Chart 1.1). A mix of bad weather, a strong U.S. dollar and cuts to energy sector spending drove the slowdown.<sup>4</sup> Labor disputes at West Coast ports led to delays in exports and imports and distorted numbers from the first three months of 2015, further exacerbating these early issues.<sup>5</sup>

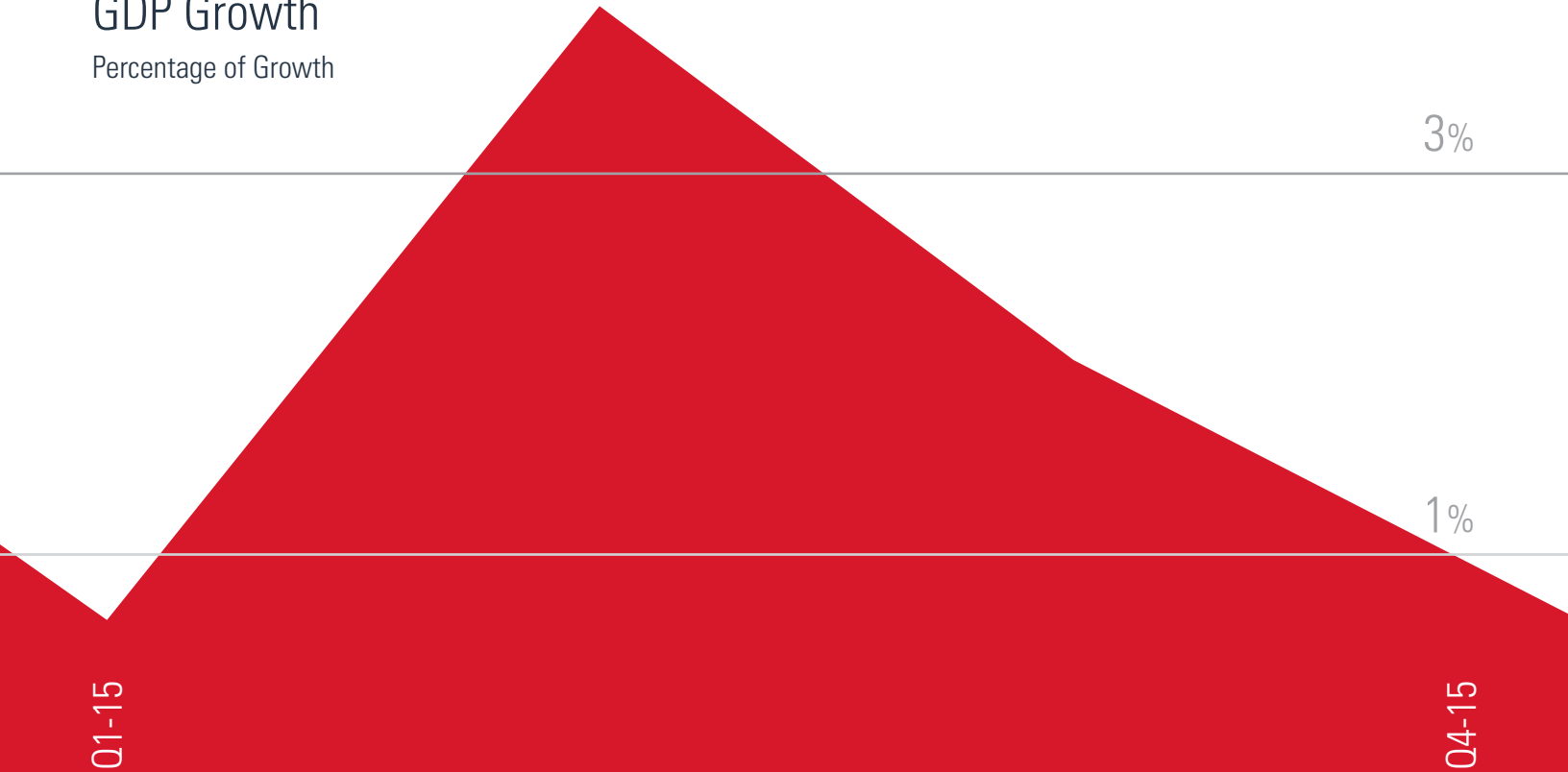
The second and third quarters brought stronger economic growth, and GDP increased at rates of 3.9%

and 2.0%, respectively. This period was characterized by strong levels of consumer spending, as the output of this important category grew 2.9% in Q2 and 2.0% in Q3.<sup>6,7</sup> Increased export volume and higher levels of government spending supported consumer spending in the second quarter, while business investment and increased home building lent support in the third quarter.<sup>8,9</sup>

The U.S. economy ended 2015 the way it came in: with underwhelming growth. According to the Commerce Department’s advanced estimate,

real GDP increased at a SAAR of 0.7% in Q4. Flagging business spending was a key contributor to the lackluster growth. GDP numbers showed nonresidential fixed investment fell 1.8% in the fourth quarter, a sign that companies spent less on buildings and equipment.<sup>10</sup> Net exports and inventories also fell, though personal consumption increased 2.2%.

Chart 1.1  
U.S. Real  
GDP Growth  
Percentage of Growth





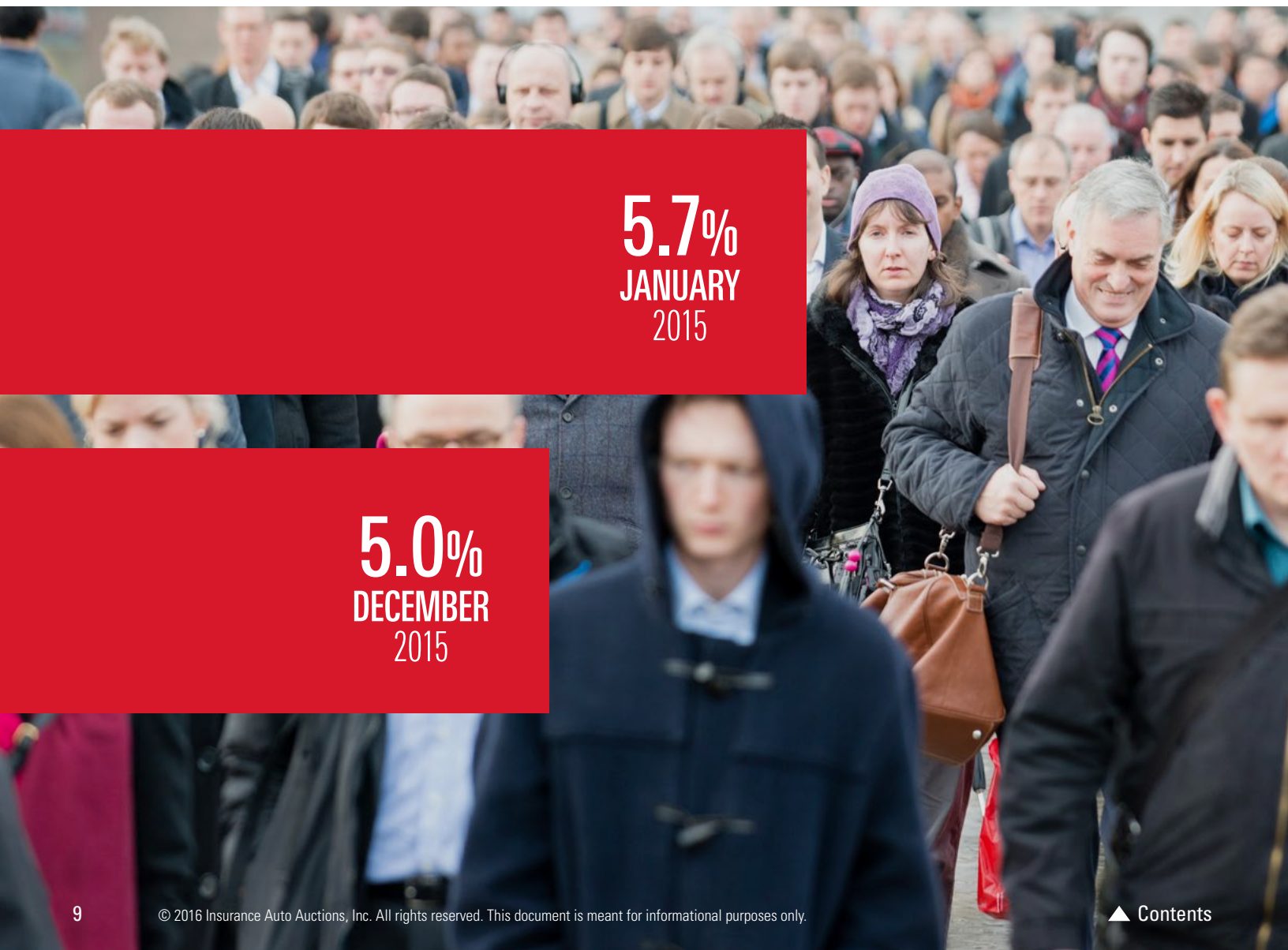
# Unemployment

Overall, 2015 was a positive year for the labor market as the unemployment rate fell from 5.7% in January to 5.0% in December (Chart 1.2). The first half of the year saw the unemployment rate fall 0.4 percentage points and the emergence of a seemingly more optimistic workforce. Unemployment numbers indicated workers' willingness to leave their current jobs and look for a better situation elsewhere.<sup>11</sup> The first half of the year ended with the underemployment rate, which includes discouraged workers who have stopped looking for jobs and part-timers unable to find full-time employment, falling to a level not seen since July 2008.<sup>12</sup>

The positive news for the job market turned somewhat muddier in the second half of the year, even as the unemployment rate fell another 0.3 percentage points. Job creation was well below market expectations during the third quarter, despite a 0.2 percentage point decline in unemployment in August.<sup>13,14,15</sup> Job creation exceeded 250,000 positions in each of the final three months of the year, however, pushing the unemployment rate down to 5.0%.<sup>16,17,18</sup> This trend is expected to continue, as the Federal Reserve's Survey of Professional Forecasters expects the unemployment rate to fall to 4.8% in 2016 and 4.7% in 2017.<sup>19</sup>

Chart 1.2

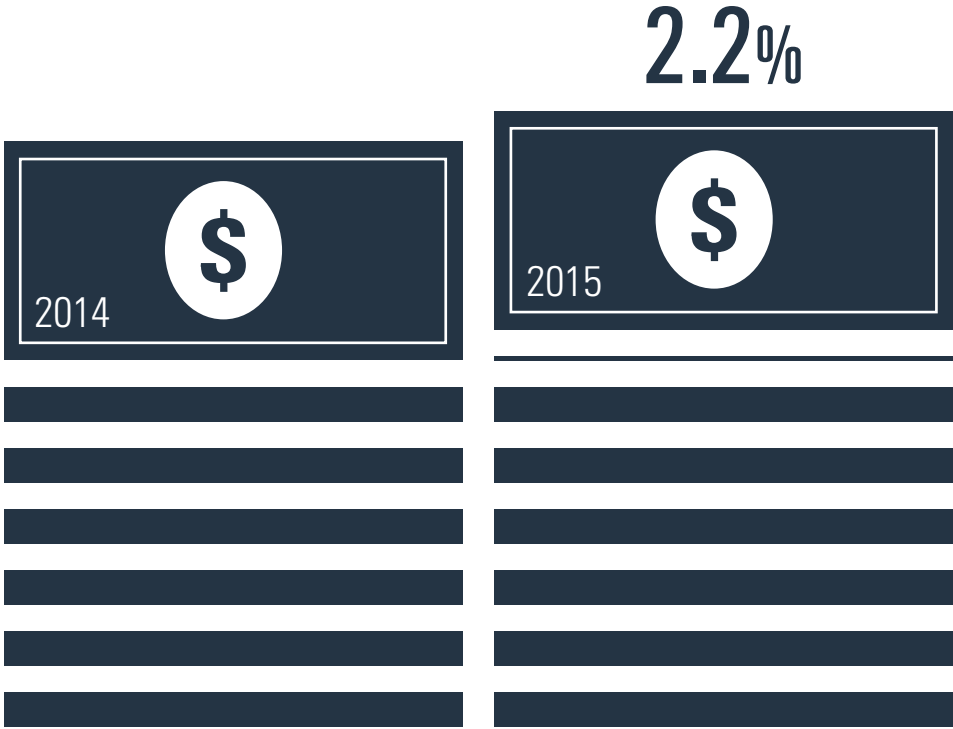
## U.S. National Rate of Unemployment

A large crowd of people walking, likely in a city center. Two red boxes are overlaid on the image, containing text about unemployment rates. The top box is white with red text, and the bottom box is red with white text.

**5.7%**  
JANUARY  
2015

**5.0%**  
DECEMBER  
2015

Chart 1.3  
Average Weekly  
Earnings



## Income

Average weekly earnings increased 2.2% in 2015 compared with 2014, a modest gain for one of the only economic indicators that has shown little post-recession improvement (Chart 1.3). Wages remained mostly stagnant from 2011 through 2014, a concern considering unemployment decreased during that time. Average earnings picked up gradually at the outset of 2015 before declining slightly during the first half of the year. They reached their lowest point in June, but rose consistently to close out the year.

The fact that income has not increased at a faster rate in recent years is disconcerting given the labor market has tightened as unemployment has fallen. Periods of rising employment are typically met with gains in income as employers compete for a dwindling supply of workers, but that hasn't been the case. One explanation for weak wage growth is a shift by employers toward forms of non-wage compensation, including health-insurance benefits, paid time off and retirement contributions.<sup>20</sup>

Some companies have been apprehensive about raising salaries, a move that is difficult to reverse, and instead have increased perks and benefits that are easier to revoke.

Low inflation rates partially offset wage stagnation throughout 2015. Although income wasn't increasing at the expected rate, neither were prices, which should benefit consumer spending going forward.<sup>21</sup> This effect was amplified for commuters, who saw a price break at the gas pump in 2015.

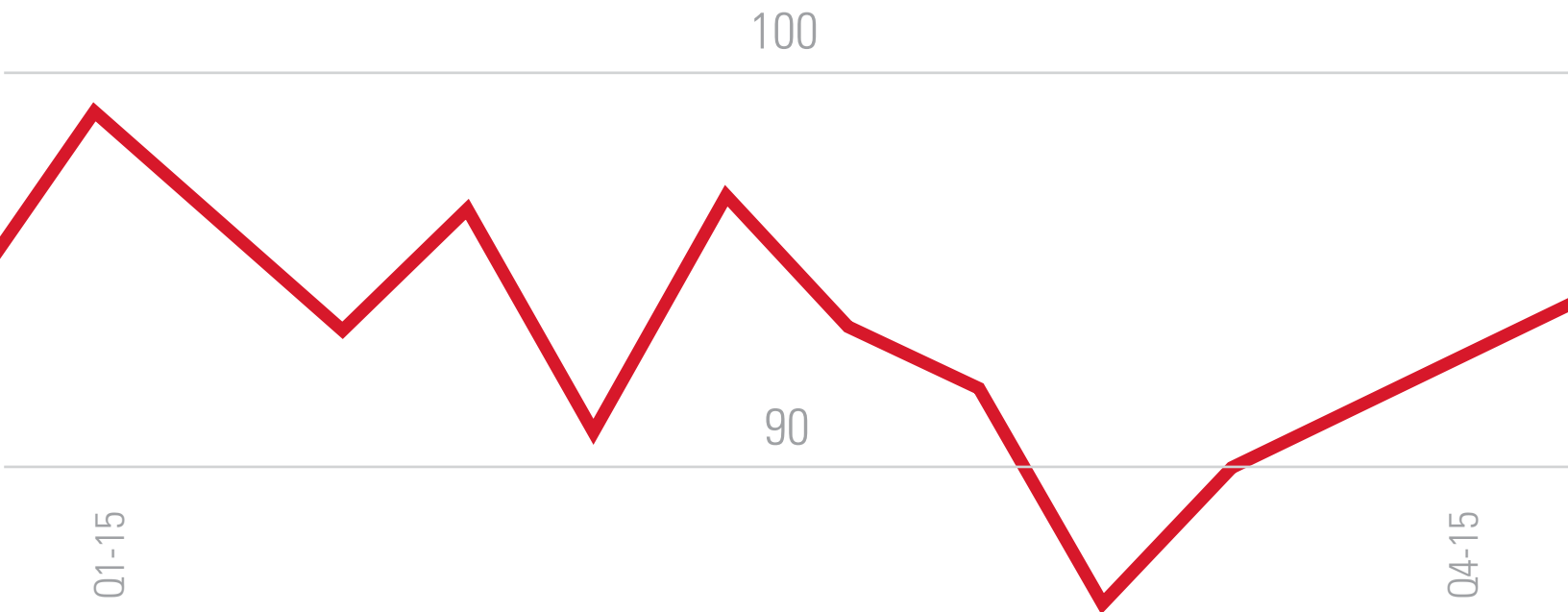
# Consumer Sentiment & Spending on Durable Goods

Positive employment numbers and lower gas prices worked to improve consumer sentiment through the early stages of 2015 (Chart 1.4).<sup>22</sup> Indications of annual wage growth for the workforce allowed consumer sentiment to finish the first half of the year trending in the right direction.<sup>23</sup> The consumer optimism regarding the economy prevalent during the first half of 2015 stumbled slightly as the second half of the year began, but was able to regain its footing by the end of the year. Concerns about the

global economy and an inconsistent stock market brought the average sentiment reading down 4.1% compared with the first half of the year.<sup>24,25</sup> As 2015 came to a close, consumer confidence in the current economic climate strengthened.<sup>26</sup> More specifically, consumers indicated that low inflation and bolstered real income would lead to increased purchases for their homes.<sup>27</sup> Despite mixed results for the period, average sentiment was up 10.5% on a year-over-year basis.

Chart 1.4

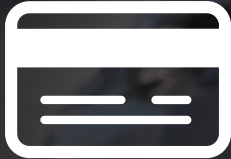
## Consumer Sentiment Index





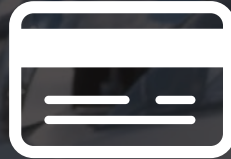
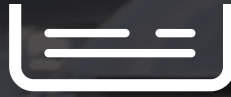
## Consumer Spending (Billions)

\$1,297.9



**JANUARY**  
2015

\$1,346.4



**DECEMBER**  
2015

Thanks to a relatively optimistic consumer outlook, spending on durable goods performed well for the year. In 2015, average real personal consumption expenditures on durable goods rose 3.8% on a year-over-year basis. According to numbers provided by the Bureau of Economic Analysis, average spending across all categories increased in 2015 compared with 2014, with the largest increase coming in the Recreational Goods and Vehicles category at 9.3%.<sup>28</sup>

Despite the good news surrounding expenditures, new orders for durable goods fell in four of the last five months of 2015 and were down 3.5% on an annual basis at year's end.<sup>29,30</sup> This could indicate a contracting domestic manufacturing sector that is facing external pressures as the value of the dollar remains strong compared with foreign currencies.<sup>31</sup> There are concerns that business confidence and overall consumer spending on durable goods may be lower in 2016.<sup>32</sup>



Chart 15

## U.S. Dollar Index



## U.S. Dollar

In the first six months of 2015, America's currency benefited from relative confidence in the country's economy and the policy differences between the Federal Reserve (Fed) and the world's other central banks (Chart 1.5).<sup>33</sup> Positive reports from the labor market and strong U.S. consumer purchasing and manufacturing put upward pressure on the greenback's value early in the period.<sup>34</sup> Mixed economic releases from the Fed provided uncertainty over timing of dollar-friendly activities.<sup>35</sup> But with the Fed's monetary policy diverging from that of other global central banks, investors had reason to bet on the greenback.<sup>36</sup>

In the second half of 2015, the U.S. dollar benefited from the relative strength of the nation's economy and the anticipation and eventual increase of interest rates by the Fed.<sup>37,38</sup> Weakening oil prices and commodity surpluses driven by China's slowing economy worked to put downward pressure on commodity-based economies like Canada and Mexico.<sup>39,40</sup> These factors supported the greenback's 3.0% increase compared with the previous six months and 16.1% annual increase.

# Gas Prices

The run of declines that punctuated the end of 2014 came to an end when gas prices finally bottomed out in the first month of 2015, reaching a mark more than \$1.50 lower than their peak in June 2014 (Chart 1.6). However, the rest of the first half of 2015 was marked with consecutive monthly increases as the price of crude oil began to rise as supply tightened due to the closing of several unprofitable rigs and refinery outages.<sup>41,42</sup>

The price of crude oil declined over the second half of 2015, and gas prices followed suit.<sup>43</sup> As 2015

came to a close, average prices had declined 3.3% compared with the previous six months and 29.6% on an annual basis. Weak oil markets worked to depress average gas prices from the beginning of the second half of the year as oversupply in the crude-oil market caused the price of West Texas Intermediate to fall roughly 20% over the month of July.<sup>44</sup> The string of historical lows for gas prices began shortly thereafter.<sup>45</sup> Oversupply was not the only factor pushing down oil prices, as the strength of the U.S. dollar also worked to weaken commodity

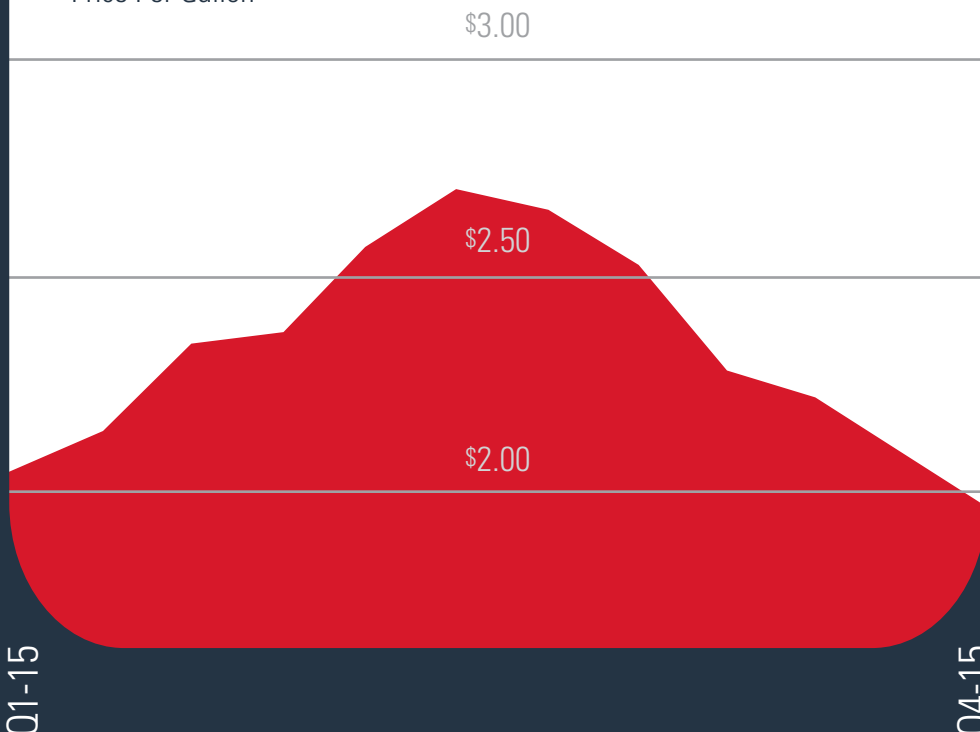
prices, including oil.<sup>46</sup> The interest-rate increase enacted by the Fed supported the strengthening of the greenback<sup>47</sup>, which likely extended the downward pressure on oil prices. This pushed average gas prices below \$2.00 by the end of 2015.

The key component bringing down prices at the pump continues to be historically low oil prices due to a global oversupply.<sup>48</sup> With crude oil demand appearing to be weakening and production continuing to rise, prices at the pump are anticipated to remain low.<sup>49</sup>

Chart 1.6

## Average Monthly Price of Gasoline

Price Per Gallon







## SECTION II: AUTOMOTIVE INDUSTRY

2015 was a record-setting year for new-vehicle sales (Chart 2.1). By December 31, consumers had purchased 17.47 million units, eclipsing the previous high of 17.41 million set in 2010. The year did not begin at a torrid pace, however, as the SAAR lagged at 16.3 million vehicles through February.

That wasn't the case for long. Sales accelerated from June through October, eventually peaking at a SAAR of 18.1 million vehicles. Even a pullback in December couldn't stop sales from reaching a historic level in 2015.

Many factors positively affected new-vehicle sales in 2015, principally toward the end of the year. Economic growth and an improved labor market boosted vehicle demand. Falling gasoline prices reduced the cost of ownership, particularly for trucks and SUVs. Furthermore, increased auto lending made the opportunity to buy a vehicle available to more Americans.<sup>50</sup>

Fiat Chrysler led all automakers in year-over-year sales gains in 2015,

posting an 8.7% increase. Ford and General Motors rounded out Detroit's Big Three with increases of 5.8% and 5.0%, respectively. Nissan led the foreign automakers with a 7.1% rise. Toyota followed with a gain of 5.3% while Honda lagged with a 3.0% year-over-year increase.

Looking ahead, the question will be whether new-vehicle sales can maintain this record-breaking pace. Tom Kontos of ADESA Analytical Services cautions that increased supply of used vehicles in 2016 due to off-lease and trade-ins could cause a drop in used-car prices, which would decrease the trade-in value of consumers' vehicles and make it more difficult for potential buyers to swing a new vehicle purchase.<sup>51</sup>

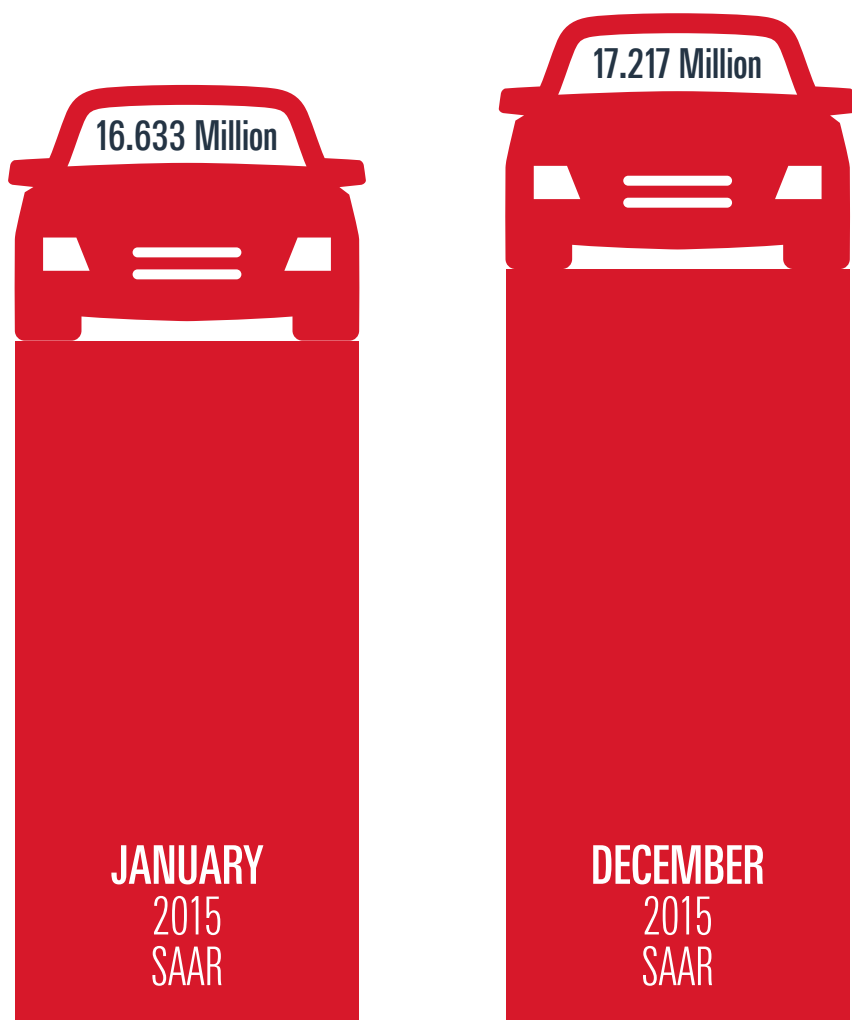


Chart 2.1

## U.S. Lightweight-Vehicle Sales

Automobiles and Light Trucks



## SECTION III: OVERVIEW OF SEGMENT ANALYSIS

IAA's framework for analyzing the salvage vehicle market includes six indicators of industry health:



### **Whole Crushed Auto-Body Price Index**

Compiled monthly by *American Recycler*, this index measures five regional monthly averages for whole crushed car prices.



### **Metal Prices**

Aluminum (London Metal Exchange spot prices), Platinum (Johnson Matthey base prices) and Palladium (Johnson Matthey base prices).



### **Vehicle Parts and Equipment Prices**

A Bureau of Labor Statistics index that measures the average change over time in consumer prices paid for vehicle parts and equipment.



### **Used-Car Price Index (UCPI)**

Measures the average monthly selling price of used cars and light trucks in the whole-car auction industry; compiled by ADESA, IAA's sister company.



### **U.S. Dollar Index**

A Federal Reserve Bank of St. Louis index that measures the value of the U.S. dollar against an index of seven major currencies: the euro, Canadian dollar, Japanese yen, British pound, Swiss franc, Australian dollar and Swedish krona.



### **Index of Foreign Buyers**

An index measuring the percentage of High Grade IAA vehicles sold to buyers from countries outside the United States.



To more accurately track how these six indicators relate to the market for salvage vehicles, IAA divides its inventory into three segments based on selling price. Each vehicle grade has unique characteristics and reacts to the aforementioned market factors differently:

## LOW GRADE



Low Grade vehicles represent the bottom quintile (bottom 20%) and are older, have more miles or are more damaged than the average vehicle sold at auction. These vehicles are primarily purchased for their usable parts or scrap value. Therefore, their value is tied to the price of parts and scrap metals.

## MID GRADE



Mid Grade vehicles represent the middle three quintiles (middle 60%) and compose the largest portion of IAA's inventory. These vehicles range from those that will be dismantled for parts and scrap to those that will be repaired and driven again.

## HIGH GRADE



High Grade vehicles represent the top quintile (top 20%) and tend to have little or no damage. This segment also includes high-value vehicles with desirable parts.



The background of the slide is a close-up photograph of crushed and mangled metal car parts, likely from a vehicle's body or chassis. The metal is twisted and bent, showing various shades of red, brown, and grey. A wheel hub is visible on the right side of the image.

## SECTION IV: ECONOMIC INDICATORS OF AUTOMOTIVE SALVAGE

### Whole Crushed Auto-Body Price Index

The first half of the year was a difficult time for whole crushed auto-body prices, as headwinds from a strong U.S. dollar made it more profitable for foreign countries to eschew scrap sourced from the United States and use alternative materials to manufacture steel products.<sup>52</sup>



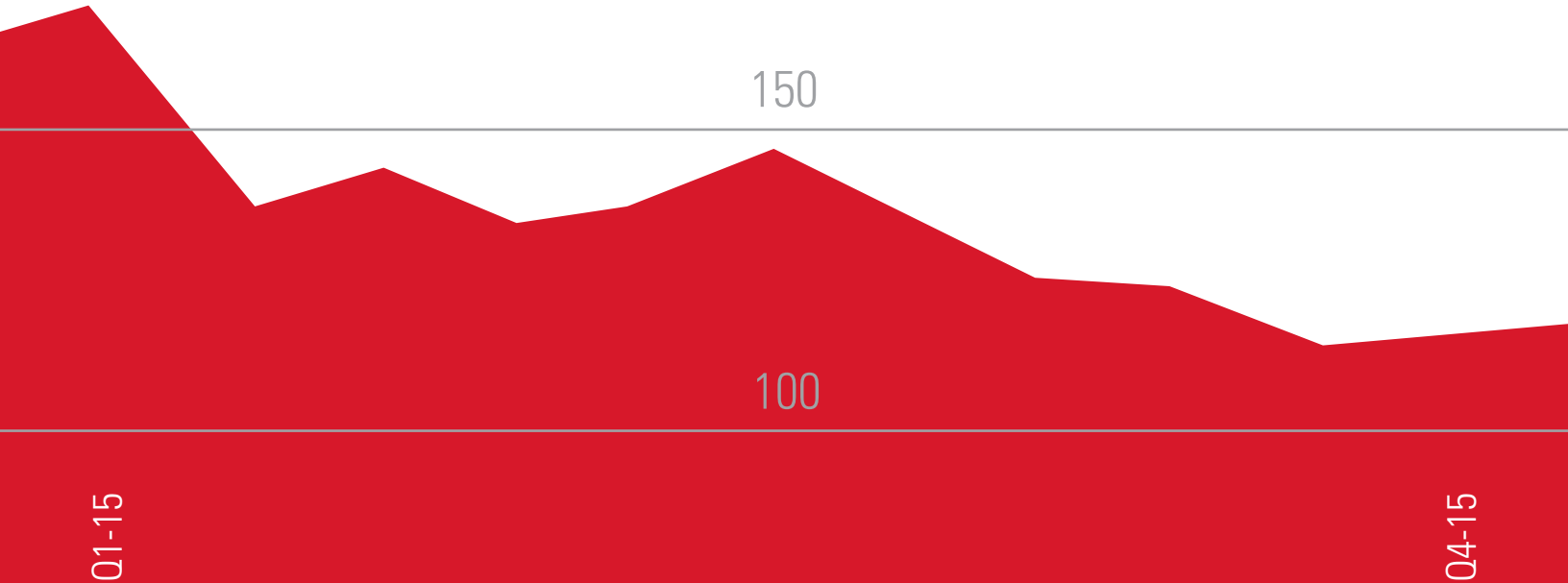
This put significant downward pressure on prices (Chart 4.1). The battering whole crushed auto-body prices experienced during the first half of 2015 continued through the second half. Average prices declined 19.1% compared with the first six months of the year, and were down 45.0% on an annual basis. Each month, save January, declined more than 40% from 2014 levels. 2015 ended with average whole crushed auto-body prices at lows not seen since November 2008.

Metals recyclers struggled throughout the year with a global supply glut as China exported

cheap steel to the rest of the world to cope with declining domestic demand.<sup>53</sup> According to David Wallace, senior vice president of Huron Valley Steel Corp., “If the Chinese economy continues to contract, global demand for scrap will decrease, leading to increased availability and declining prices. But the overproduction of both steel and aluminum flooding the world markets artificially inflates supply without a correlating increase in demand. It will take a decrease in Chinese production to ultimately balance supply and demand again and restore margins.”<sup>54</sup>

Compounding the weak demand for scrap has been the increased value of the U.S. dollar, which continues to negatively impact traditional foreign buyers’ ability to purchase U.S. scrap. Turkish steel mills have been purchasing from Russia, where the ruble is weak, and neighboring Ukraine. Steel mills in Taiwan avoided purchasing from the U.S. in 2015.<sup>55</sup> There may be some light at the end of the tunnel, however. U.S. steel mills have announced first quarter price increases for 2016, indicating that the market may have bottomed out.<sup>58</sup>

Chart 4.1  
Whole Crushed  
Auto-Body Price  
Index Value





# Metal Prices

The U.S. dollar's strength influenced more than scrap in 2015. It also affected the value of other key metals and applied downward pressure on prices. All three metals tracked by IAA because of their prevalence in salvage vehicles experienced sharp annual declines.

The reason the U.S. dollar has an effect on the three metals tracked by IAA is because they're denominated in the currency. So when the dollar gains value, metal prices generally fall because it takes fewer dollars to purchase the same amount of the desired material. With regard to foreign buyers, a strengthening of the dollar means the metals become relatively more expensive for those customers, decreasing the quantity demanded and consequently the price.

## Aluminum

Aluminum's value continued to decline in 2015, as the average price fell 10.9% on a year-over-year basis (Chart 4.2). Prices managed to remain mostly even during the first half of the year, but returned to a downward trend from June through December. By the end of the year, aluminum had lost nearly half its value compared with its post-recession peak in April 2011. The rising value of the U.S. dollar, which increased 11.8% from December 2014 to December 2015, contributed heavily to aluminum's decline.

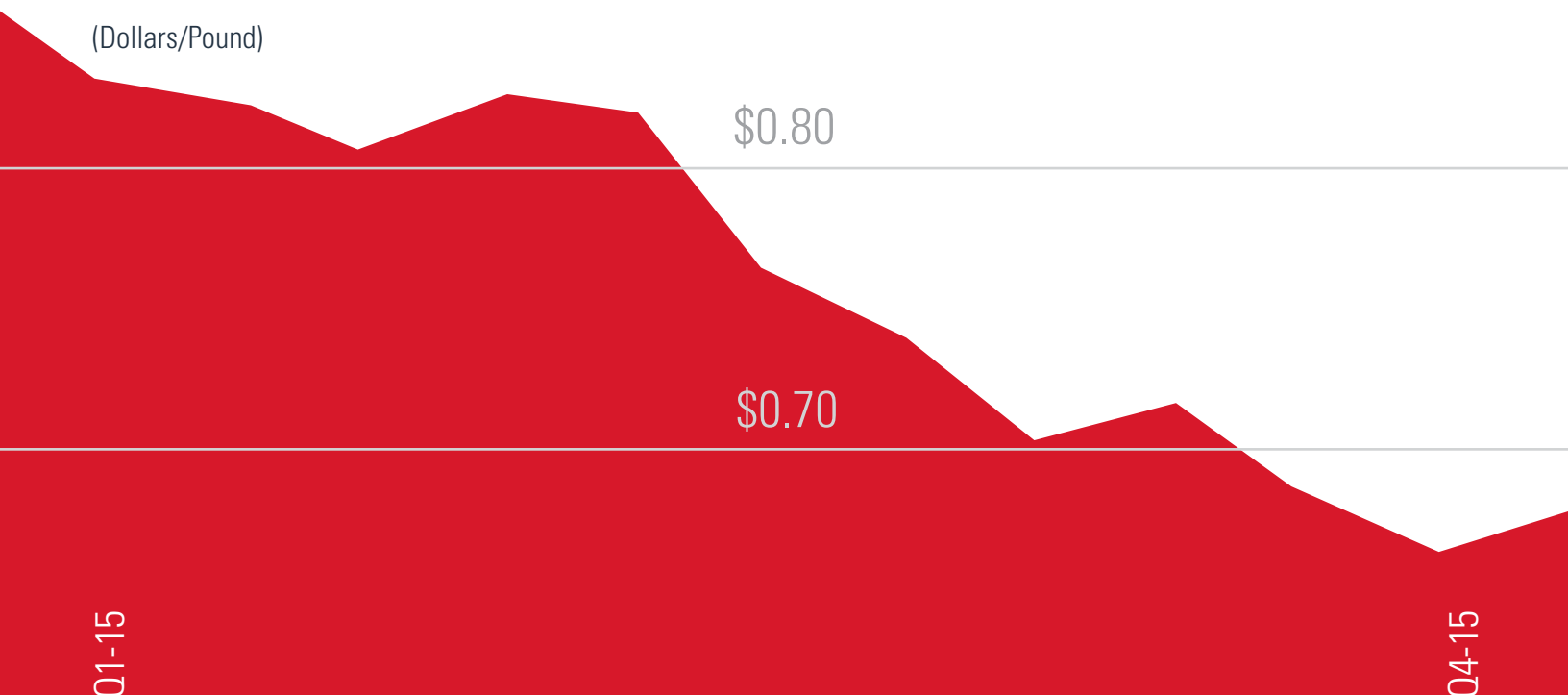
Unfavorable exchange rates weren't the only factors forcing down the value of aluminum; weakening demand and strong, steady supply from China played a part as well. Chinese demand for aluminum slowed during 2015, a consequence of a pullback in the country's economic growth which reached its lowest level in 25 years.<sup>58</sup> The fall in demand was not met with a commensurate decline in production, however, resulting in rising exports and a flood of aluminum supply.<sup>58</sup> This put downward pressure on the price of

aluminum, which will likely continue until supply realigns with falling demand. Alcoa, the largest U.S. aluminum producer, announced in November it would cut 503,000 metric tons of smelting capacity and 1.2 million tons of refining.<sup>59</sup> Several weeks later, Alcoa announced it would halt an additional 269,000 metric tons of smelting and 810,000 tons of refining capacity.<sup>60</sup> The cuts may help aluminum prices rebound, but effects will be limited without a substantial change in Chinese production, which accounts for more than half of global output.

Chart 4.2

## Aluminum Prices

(Dollars/Pound)

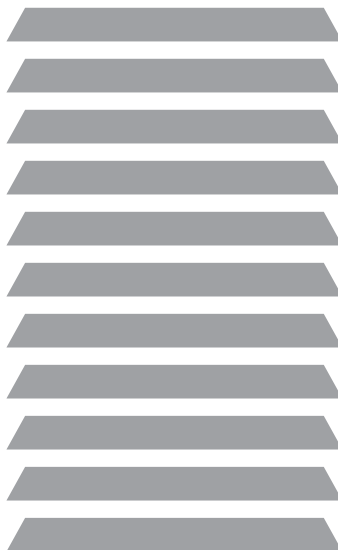


Q1-15

Q4-15

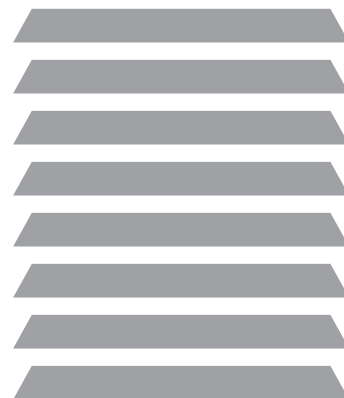
Chart 4.3  
Platinum Prices  
(Dollars/Ounce)

**\$1,247.05**



**JANUARY  
2015**

**\$864.18**



**DECEMBER  
2015**

## Platinum

The platinum market continued to normalize in the wake of a 2014 South African miners' strike which limited supply and applied positive pricing pressure. 2015 started with platinum gaining 2.1% compared with the previous month, but as the first half of the year progressed oversupply became a concern due to the notion that South African production could reach a five-year high in 2016.<sup>61</sup> As a result, average prices declined annually four out of the next five months.

The market contraction continued through the second half of the year, leaving average prices 23.8% lower compared with 2014 (Chart 4.3). Both demand and supply-side forces were at play during this

time, as Chinese demand remained subdued through the second half of the year and South African mines continued to produce despite nearly 75% of them being unprofitable.<sup>62,63</sup> Adding to the upside-down market fundamentals was the Fed's announcement of the first interest-rate increase in almost a decade, which worked to put downward pressure on prices.<sup>64,65</sup>

Demand for platinum suffered an unpredicted setback in September as the revelation of the Volkswagen emissions scandal raised doubts about the viability of diesel engines. This worked to push down prices for platinum, as the metal is a key component in catalytic converters of diesel engines.<sup>66</sup>

## Palladium

After avoiding the same fate as aluminum and platinum prices during the first half of 2015, the palladium market could not avoid the Chinese demand issues and strengthening dollar that plagued the other metals in the second half of the year. By year's end, average palladium prices decreased 21.0% compared with the first six months of 2015 and were down 14.0% year-over-year (Chart 4.4).

While not declining at the rate of aluminum and platinum, increasing concerns about market conditions developed over the first six months. Analysts began the year expecting demand to outstrip supply, but the opposite turned out to be the case. South African mines posted strong annual growth in production, while

a favorable exchange rate in Russia cut the cost of mining the precious metal.<sup>67</sup> On top of that, strong new-vehicle sales led to increased recycling of older vehicles, raising the amount of available recyclable palladium to record levels.<sup>68</sup>

During the second half of the year, demand concerns from the automotive market in China weighed on prices as Chinese car sales in June declined for the first time in 28 months.<sup>69</sup> As a result, Chinese imports of palladium fell 42%, which was especially troublesome for the metal as China accounts for 22% of palladium's global demand. As was the case with platinum, supply-side concerns emerged primarily as a result of South African production

continuing to increase following the five-month miners' strike that stifled 2014 production.<sup>70</sup> Investors also impacted palladium supply by putting nearly 18 tonnes of the metal back into the market from exchange-traded funds.<sup>71</sup> Palladium's year ended much like platinum's, with the Fed's interest-rate increase negatively impacting average prices.<sup>72,73</sup>

Palladium also felt the impact of the Volkswagen scandal, but from the opposite perspective. Unlike platinum, palladium – used primarily in the catalytic converters of gasoline engines – saw a 1.8% increase in average prices in September compared with August.

Chart 4.4

## Palladium Prices

(Dollars/Ounce)

**\$789.54**  
**JANUARY**  
2015

**\$555.14**  
**DECEMBER**  
2015



Chart 4.5

## Vehicle Parts and Equipment Prices

Year-Over-Year Percent Change



## Vehicle Parts and Equipment Prices

Vehicle parts and equipment prices increased an average of 1.2% in 2015 compared with 2014, though the annual average hides a recent trend of slowing price growth (Chart 4.5). Parts prices rose 2.2% year-over-year in May, the quickest rate for any month of the year, but growth fell off considerably from June on. October's growth rate of 0.3% was the smallest gain of the past five years, potentially an effect of tumbling commodity prices spilling over into the value of parts and equipment.

These changes belie the trend of aging vehicles on the road, which drives demand for replacement parts. The average age of vehicles is at its highest level ever, partially a result of recession frugality and improved vehicle longevity.<sup>74</sup> Though these older vehicles increase demand for replacement parts, they are also fodder for parts supply as they are decommissioned via trade-in and dismantling.

Just as vehicles on the road are getting older, there are also more of them and they are being used to drive more miles. The 12-month moving average of vehicle miles driven was a record 3.1 trillion miles in November 2015, and the number of vehicles on the road was more than 257 million as of July 2015.<sup>75</sup> More vehicles and more miles traveled both positively affect demand for vehicle parts.



# Used-Car Price Index

Compared with 2014, average used-car prices in 2015 were 1.3% higher and saw year-over-year growth in every month but December (Chart 4.6). The general trend of the used-car market remained price softening, however, as growing off-lease supply put downward pressure on values. A richer mix of proportionately more late-model, low-mileage units returning in 2015 versus prior years supported average prices and masked this underlying price softness.

Used-car prices were slightly elevated during the first half of the year, partially due to inventory mix shifting toward newer off-lease and off-rental units.<sup>76</sup> Seasonal factors in March and April helped lead to the highest used-car prices in three years, but Tom Kontos of ADESA Analytical Services warned that the favorable vehicle mix was masking an underlying downward pressure due to supply growth in the market.<sup>77</sup>

Typical mid-year seasonal declines were accompanied by downward pressure from supply growth, while a favorable vehicle mix continued to fight the downward movement.<sup>78</sup> While growing supply continued to weigh on prices over the ensuing months, strong retail demand and healthy truck values helped bolster overall prices from September through November. The truck market benefited from low gas prices, which lifted wholesale values in total. Were it not for this, the softness in prices, as seen in the car segments, would have been more evident. Strength in off-rental vehicle prices was a bit deceiving, however, as roughly half the vehicles that were offered did not sell.<sup>79</sup>

The impact of supply pressure was realized in the final month of the year, as prices fell on a month-to-month basis and experienced the first year-over-year dip since August 2014. According to Tom

Kontos, “2015 was largely a year when strong retail used vehicle and CPO demand, benign new vehicle incentive activity, and the embrace of upstream as well as traditional auction processes among remarketers diluted the usual negative impact of growing supply on wholesale values... Nevertheless, supply growth underlies the wholesale price softness seen later in the year and most evidently in December, as prices fell by upwards of one percent on both a month-over-month and year-over-year basis.”<sup>80</sup>

Moving forward, the dip seen in December may continue into 2016. Used-vehicle supply is expected to increase as vehicles sold or leased in recent years make their way back to dealerships as trade-ins or off-lease units.<sup>81</sup> This additional boost to supply could result in depressed prices, assuming the supply growth is not met by a similar boost in demand.

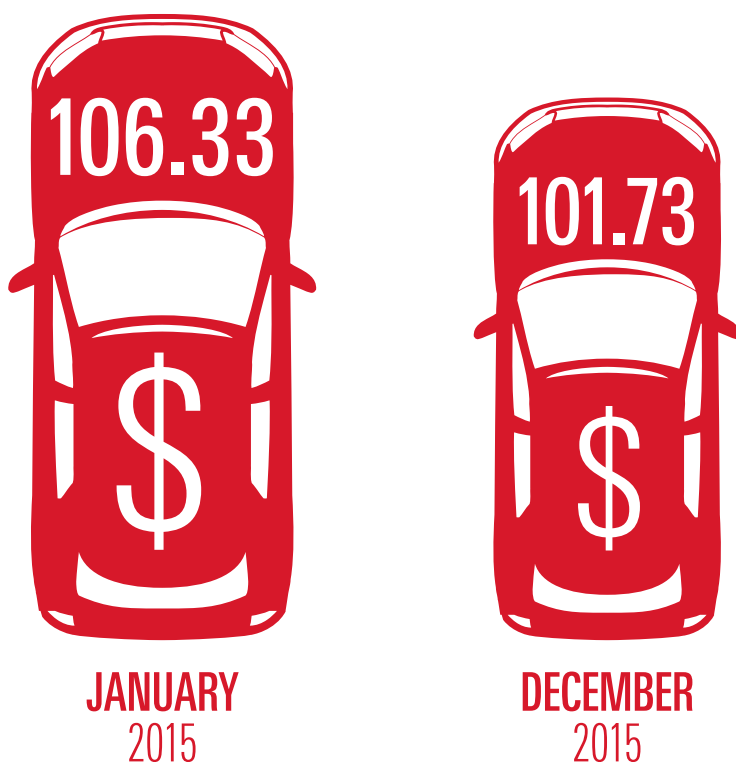


Chart 4.6  
Used-Car Price  
Index Value





105.24  
JANUARY  
2015

Chart 4.7

## Index of Foreign Buyers

Seasonally Adjusted Monthly Average of  
High Grade Vehicles Purchased Outside  
the United States

104.06  
DECEMBER  
2015

# Index of Foreign Buyers

The proportion of vehicles purchased by buyers from outside of the United States, measured by the Index of Foreign Buyers, has an effect on High Grade vehicle values. Because increases in the value of the U.S. dollar make purchases of domestic goods relatively more expensive for foreign buyers, the index tends to have an inverse relationship with the value of the dollar. Therefore, a stronger dollar tends to reduce the number of foreign buyers competing for High Grade vehicles and puts downward pressure on vehicle values.

Due to seasonal fluctuations in the Index of Foreign Buyers, a 12-month moving average is used to smooth both of the indices. Based on that adjustment, the average value of the U.S. dollar increased 16.2% annually (Chart 4.7). Meanwhile, the Index of Foreign Buyers continued to move in the opposite direction, decreasing 1.3% year-over-year.

As mentioned earlier, the value of the greenback increased throughout 2015 on positive economic data as well as anticipating and realizing the Fed's first interest-rate increase

in nearly a decade.<sup>82,83</sup> In order for foreign buyers' purchasing power to improve, the value of their currencies will need to strengthen. For commodity-based economies like Canada and Mexico, the price of oil and the production and consumption of commodities by China will be key drivers. Euro-based economies will be watching to see if the ECB continues to inject stimulus into the economy, essentially weakening the euro.



## SECTION V: THE COMMODITIES QUAGMIRE

# Unlike any other sector, the automotive auction industry is truly the sum of its parts.

There are countless factors – and in some cases sub-factors – that drive the performance of key indicators, and understanding how these variables interact is crucial when seeking a comprehensive understanding of the industry at large.

Anyone involved with the automotive auction industry understands the influence commodities prices have

on auction returns. In many cases, metal composition represents the majority of a salvage vehicle's value, and the respective commodity market prices determine what buyers are willing to pay.

Over the past several years, the value of these metals has plummeted. This development has been covered at length by

both mainstream and industry news outlets, but little attention has been paid to what is causing the downturn.

For insight into what's driving current market performance, we have to go back nearly 20 years to examine developments in a country that was, at the time, the economic engine of the world: China.

### NICKEL \$/METRIC TON

\$25,642.38

\$8,688.69

### LEAD \$/METRIC TON

\$2,597.44

\$1,700.17

### IRON ORE \$/DRY TON

\$179.63

\$40.39

### COPPER \$/METRIC TON

\$9,554.75

\$4,625.78

### WHOLE CRUSHED AUTO-BODY PRICES \$/GROSS TON

\$323.00

\$123.80

### ALUMINUM \$/POUND

\$1.09

\$0.68

### PLATINUM \$/OUNCE

\$1,789.60

\$864.18

### PALLADIUM \$/OUNCE

\$796.78

\$555.14

■ JANUARY 2011  
■ DECEMBER 2015





2007 Chinese  
Economic Growth

14.2%

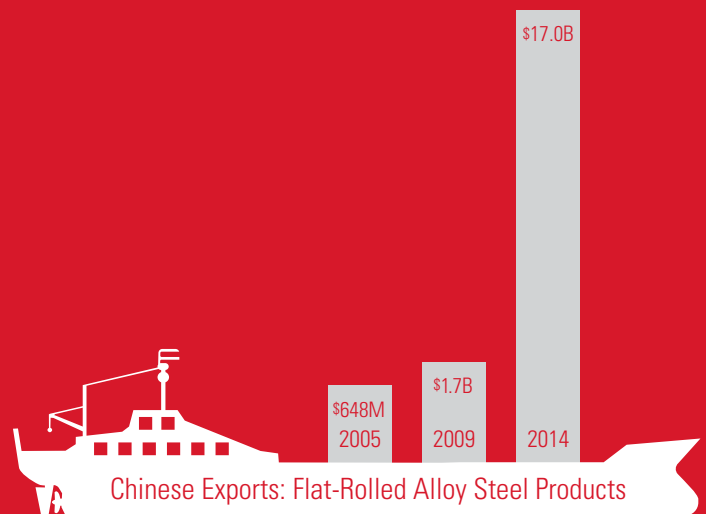
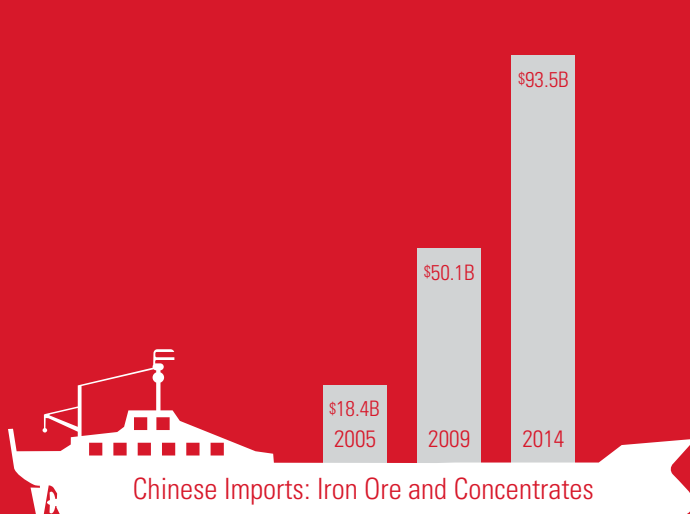
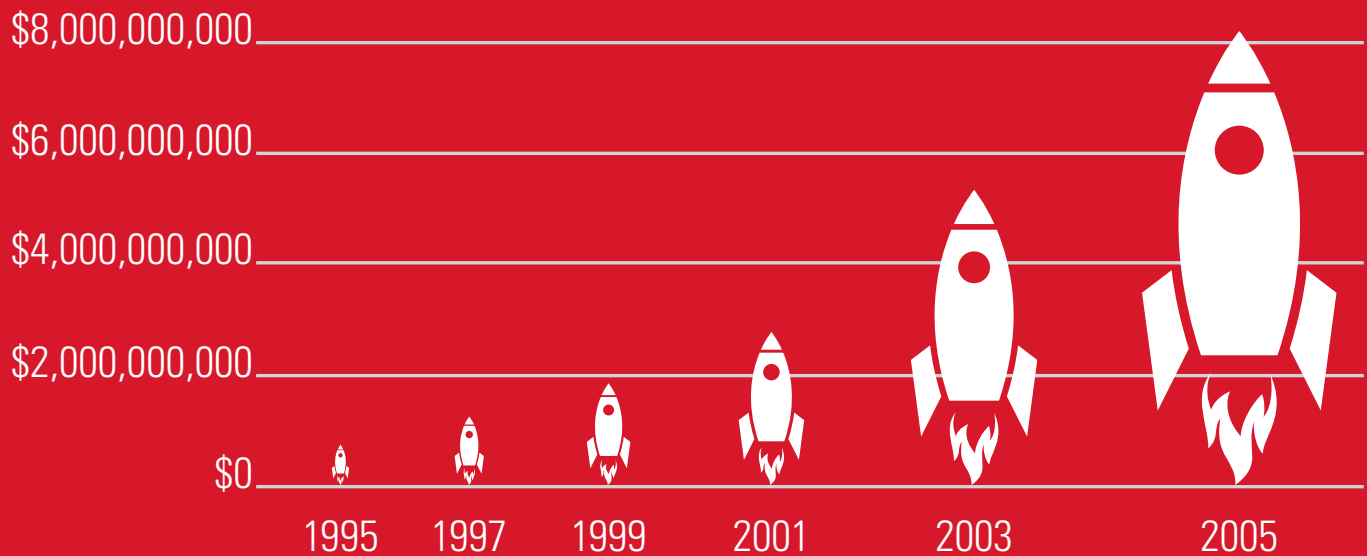
## The Golden Years

At the dawn of the 21st century, China's economic growth was the envy of the world. The country's annual Gross Domestic Product (GDP) posted five consecutive years of double-digit gains, peaking at a heady 14.2% in 2007.<sup>84</sup>

As the value of China's economy reached new heights, so too did the spending power of its citizens. Per-capita gross national income doubled from 1999 to 2005, doubled again from 2005 to 2009, and doubled once more from 2009 to 2014.<sup>85</sup>

With unprecedented economic growth came unprecedented consumer demand, particularly for commodity-intensive durable goods like automobiles, and China's appetite for metals quickly outpaced supply. As demand increased, prices followed suit. The feeding frenzy was on.

# Chinese Imports: Flat-Rolled Alloy Steel Products



## Satisfying Demand

In the commodities industry, ramping up production is often measured in decades, not years. Opening a new mine or smelting facility is a laborious and expensive proposition, but given the lucrative opportunities in China, global producers were happy to invest in expansion. Chinese imports quickly skyrocketed.

It wasn't long before Chinese firms responded to rising metals prices by expanding domestic production. The pendulum swung the other way, and China became a major exporter.

But even as an exporter, China needed raw materials to fuel production. The mining industry stepped in to meet this demand.

Whether China was importing or exporting, it appeared commodities producers couldn't lose. As imports and domestic production surged, supply and demand fundamentals eventually reached equilibrium. Prices weren't as high as they had been a few years earlier, but Chinese demand was still strong. That would soon change.

# What Goes Up, Must Come Down

From 2012 through 2014, China's economy slowed to mid-7.0% annual growth.<sup>86</sup> While mature economies would welcome such performance with open arms, for China it represented a significant pullback. China's demand for metals had finally reached its zenith, and as is always the case when demand wanes, prices followed suit. Making matters worse, manufacturers' efforts to meet

former levels of demand had resulted in a tremendous supply glut. Under normal circumstances, manufacturers would cut production to stabilize prices. But in this case, things weren't that simple.

It had taken years to increase production, and many producers were now beholden to high fixed costs in the form of energy contracts

and infrastructure. Simply reducing production wasn't an option, so many manufacturers continued to operate at a loss in the hopes that prices would return to profitable levels in the near future. This behavior has led to a situation where, according to some estimates, more than 50% of global producers are losing money.<sup>87</sup>

# 7.0%

2012 - 2014 Chinese  
Economic Growth







## Opposite Responses

Fast forward to today, and we see that the response of global manufacturers to this crisis has not mirrored that of their Chinese counterparts.

In November, New York-based Alcoa – one of the world's largest producers of lightweight metals – announced plans to cut its aluminum smelting capacity by 500,000 metric tons, roughly 31% of total U.S. production.<sup>88</sup> Despite its influence in the United States, however, Alcoa's planned reduction represents less than one percent of the global total.

Chinese manufacturers did not follow Alcoa's lead. In fact, not only did they decide against cutting aluminum production, their output actually increased. When Alcoa made its announcement in November, Chinese aluminum production was up 18% year-to-date.<sup>89</sup> What's driving this behavior? Chinese firms benefit from sizable government subsidies, allowing them to operate at a profit even as international prices continue to slump.<sup>90</sup> This has elicited protests from other nations, and has some

calling for higher import taxes to level the playing field.<sup>91</sup>

The outlook for steel manufacturers is more optimistic, but still murky. Steel prices have dropped to the point that Chinese mills are losing almost \$50 per ton, enough to prompt some to cut production.<sup>92</sup> Chinese steel output fell by 2.2% over the first 10 months of 2015 compared with the year prior.<sup>93</sup>

# Satisfying Demand

The future is difficult to predict, but one thing is certain: there is no quick fix for this issue. On the supply side, long timelines and fixed-cost obligations make reducing capacity difficult. Even if it were an immediate possibility, such an effort would require global cooperation; unlikely while Chinese mills are still able to turn a profit.

In what has certainly become a theme by now, China also holds the keys on the demand side. It would take a significant increase in Chinese demand to balance the markets, but that appears unlikely. The World Bank forecasts Chinese economic growth to fall from 7.3% in 2014 to 6.7% in 2016 and 6.5% in 2018.<sup>94</sup> As China transitions from major infrastructure projects to a consumer-based economy, its demand for metals is likely to shrink further.

As with any economic cycle, the deflated prices we're currently seeing will reverse course once supply and demand fundamentals normalize. Exactly when that will happen, however, is not so certain.

## Forecasted Chinese Economic Growth:

The World Bank

7.3%  
2014

6.7%  
2016

6.5%  
2018





## SECTION VI: SUMMARY OF FINDINGS

The U.S. economy provided mixed signals in 2015. Two quarters of relatively strong expansion were book-ended by two quarters of rather weak expansion.

Year-long growth in consumer spending supported by strengthening labor markets as well as an overall increase in business investment supported stable economic growth. Turbulent financial markets and a weak global economy created headwinds for the U.S. economy as the year ended.

New-vehicle sales saw record-breaking growth for the year despite a slow start as harsh winter weather hampered sales during the first quarter. Favorable market conditions – increasing employment, widely available

credit and ever-decreasing gas prices – were instrumental in reaching 17.47 million sold vehicles.

Positive news surrounding the U.S. economy and the depreciation of commodities-based currencies combined with the eventual interest-rate increase to provide the foundation for a substantial increase in the U.S. dollar's value. The stronger greenback applied downward pressure on metal prices and, as a result, Low and Mid Grade vehicle values. As a result of weak Chinese demand and a persistent supply glut, average whole crushed

auto-body prices steadily declined throughout 2015, also weighing heavy on the Low and Mid Grade segments. Steady parts prices helped to mitigate some of the downward pressure put on these segments.

The strength of the dollar also played a role in the High Grade segment's performance as it created unfavorable exchange rates for foreign buyers, limiting their participation. Underlying softness in used-car prices brought on by increased supply also worked against this segment.

←1-9  
WALL ST



An aerial, high-angle photograph of a parking lot filled with various cars. The cars are parked in rows, and the colors range from dark greys and blacks to bright reds and whites. The perspective is looking down at the vehicles, showing their roofs and front hoods. A red rectangular box is overlaid on the top left corner of the image, containing the section title.

## SECTION VII: LOOKING FORWARD

The Federal Reserve Survey of Professional Forecasters expects economic growth to be quite tepid, increasing to 2.6% in 2016 and dipping to 2.5% in 2017. They forecast the unemployment rate will fall to 4.8% in 2016 and 4.7% in 2017.<sup>95</sup>

# Metals prices played a pivotal role in the softening of salvage values in 2015, and everyone in the industry is wondering if 2016 will bring more of the same.

Precious metals forecasters anticipate price increases for palladium in 2016, supported by increased vehicle demand from China and reduced supply.<sup>96</sup> Platinum, meanwhile, may have a tougher road in 2016 as the World Platinum Investment Council expects the market to be close to balanced due to increasing mining and recycled supply and only modest demand growth.<sup>97</sup>

Alcoa expects the aluminum market to return to a deficit in 2016, anticipating demand for aluminum to outpace supply by 1.2 million metric tons.<sup>98</sup> If Alcoa's forecasts are realized it would put much-needed upward pressure on the value of aluminum, but this estimate runs counter to that of Morgan Stanley, which projects an aluminum surplus of 1.18 million tons in 2016.<sup>99</sup>

## Turning to the outlook for gasoline,

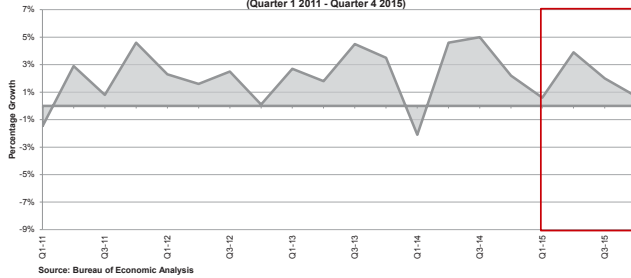
Morgan Stanley said the price of oil could fall to as low as \$20 per barrel in 2016, driven down by increases in the value of the dollar.<sup>100</sup> This would be a dramatic decline for the critical input to gasoline, which traded as high as \$65 per barrel as recently as June 2015. It is possible low gasoline prices could provide a tailwind for economic growth and consumer spending.

For more information, look for our 2016 CAFE Standards Report at [IAA-Auctions.com/Publications](http://IAA-Auctions.com/Publications)

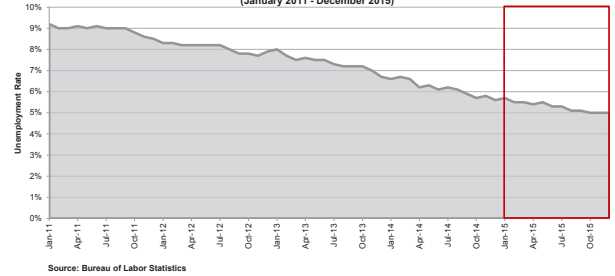


# SECTION VIII: INDEX OF CHARTS

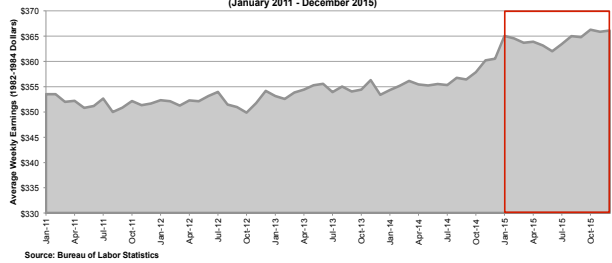
**Chart 1.1 | U.S. Real GDP Growth**  
(Quarter 1 2011 - Quarter 4 2015)



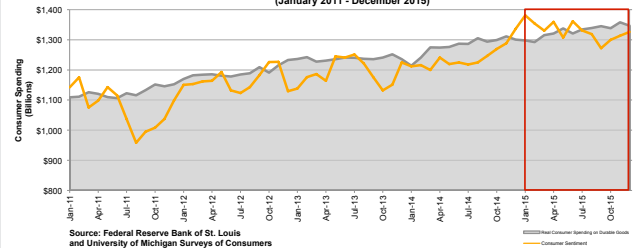
**Chart 1.2 | U.S. National Rate of Unemployment**  
(January 2011 - December 2015)



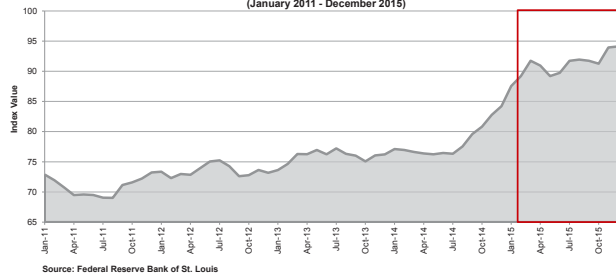
**Chart 1.3 | Average Weekly Earnings**  
(January 2011 - December 2015)



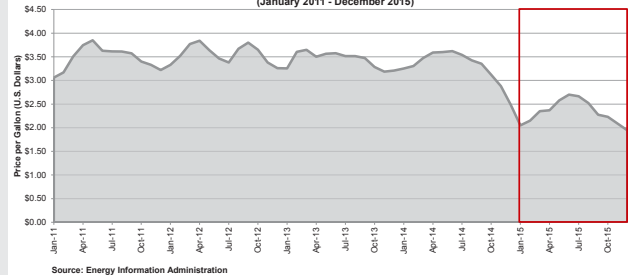
**Chart 1.4 | Consumer Spending on Durable Goods and University of Michigan Consumer Sentiment Index**  
(January 2011 - December 2015)



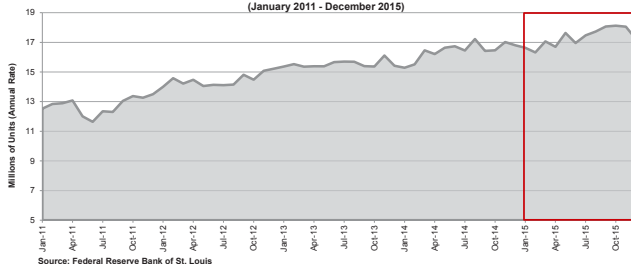
**Chart 1.5 | U.S. Dollar Index**  
(January 2011 - December 2015)



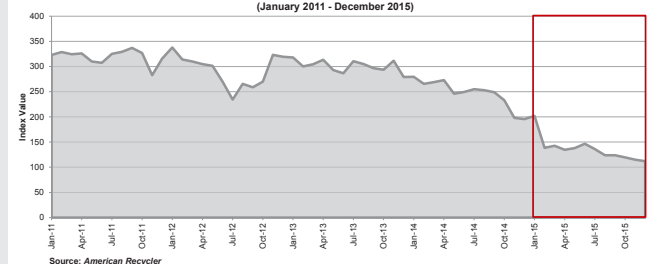
**Chart 1.6 | U.S. Average Monthly Price of Gasoline**  
(January 2011 - December 2015)



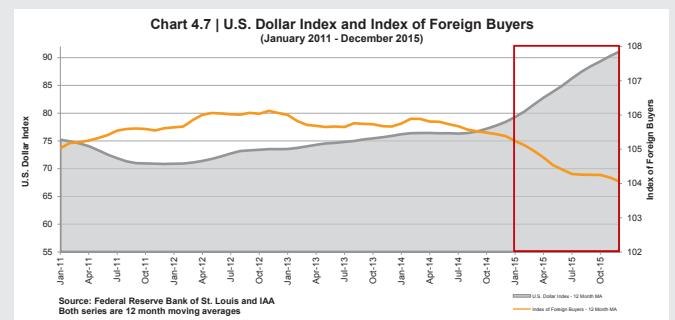
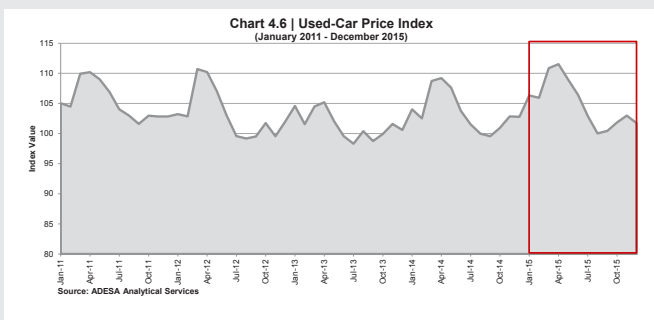
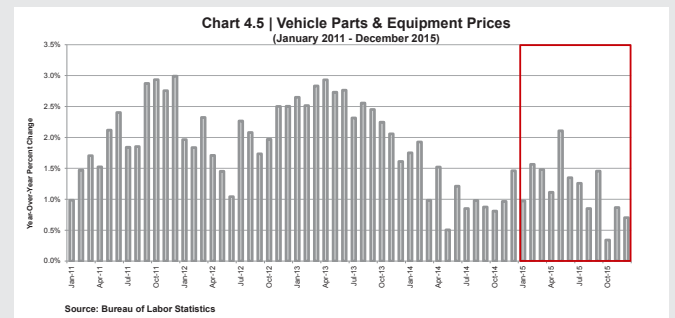
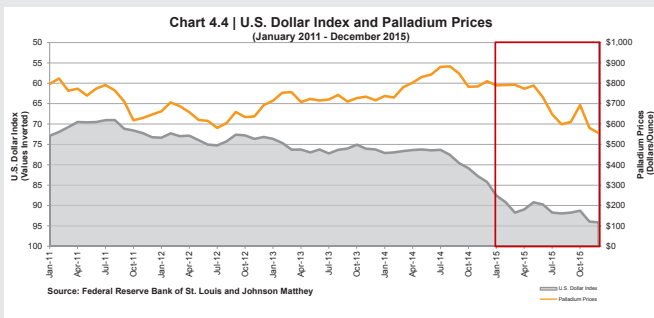
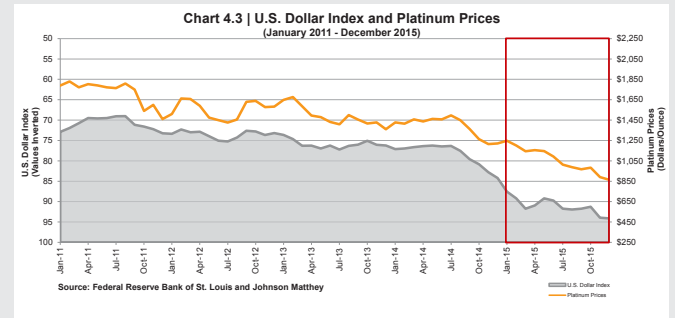
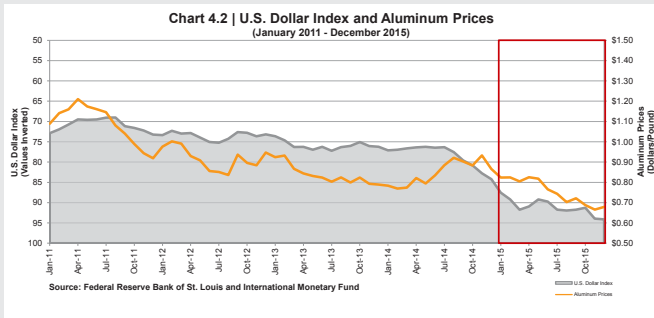
**Chart 2.1 | U.S. Lightweight-Vehicle Sales: Automobiles and Light Trucks**  
(January 2011 - December 2015)



**Chart 4.1 | Whole Crushed Auto-Body Price Index**  
(January 2011 - December 2015)







Note: The U.S. Dollar Index in charts 4.2-4.4 is inverted to clearly demonstrate the relationship between the value of the dollar and metal prices.

## SECTION IX: LIST OF REFERENCES

1. Jeffrey Sparshott and Josh Mitchell, "[U.S. GDP advances 0.7% in fourth quarter](#)," *The Wall Street Journal*, January 29, 2016.
2. Ibid.
3. Victoria Stilwell, "[Economic growth cools as American consumers temper spending](#)," *Bloomberg*, January 29, 2016.
4. Lucia Mutikani, "[U.S. economy contracts mildly in first quarter, but growth rebounding](#)," *Reuters*, June 24, 2015.
5. Jessica Menton, "[Economic Growth 2015: US GDP Shrinks Less Than Previously Thought, By 0.2% In Q1](#)," *International Business Times*, June 24, 2015.
6. Kate Davidson and Eric Morath, "[U.S. Economy Expanded 2.3% in 2nd Quarter](#)," *The Wall Street Journal*, July 30, 2015.
7. Eric Morath, "[U.S. growth cools in third quarter](#)," *The Wall Street Journal*, October 29, 2015.
8. Kate Davidson and Eric Morath, "[U.S. Economy Expanded 2.3% in 2nd Quarter](#)," *The Wall Street Journal*, July 30, 2015.
9. Eric Morath, "[U.S. growth cools in third quarter](#)," *The Wall Street Journal*, October 29, 2015.
10. Jeffrey Sparshott, "[U.S. Economy Grew Anemic 0.7% in Fourth Quarter](#)," *The Wall Street Journal*, Jan. 29, 2016.
11. Eric Morath, "[Brisk Jobs Growth Puts Focus on Fed](#)," *The Wall Street Journal*, March 6, 2015.
12. Sho Chandra, "[Labor Market Runs in Place; More Jobs, Participation Lowest Since 1977](#)," *Bloomberg*, July 2, 2015.
13. Jacob Parmuk, "[U.S. jobs post solid gains; unemployment flat](#)," *CNBC*, August 7, 2015.
14. Chico Harlan and Ylan Q. Mui, "[Unemployment rate falls to 5.1 percent, but Americans are not finding pay increases](#)," *The Washington Post*, September 4, 2015.
15. Patrick Gillespie, "[In setback, U.S. adds only 142,000 jobs](#)," *CNN Money*, October 2, 2015.
16. Patrick Gillespie, "[Strong hiring drives unemployment rate to 5%](#)," *CNN Money*, November 6, 2015.
17. Jeff Cox, "[U.S. created 211K jobs in Nov; unemployment rate at 5%](#)," *CNBC*, December 4, 2015.
18. Jeff Cox, "[WHOA! Job creation surges in December](#)," *CNBC*, January 8, 2016.
19. "[Fourth Quarter 2015 Survey of Professional Forecasters](#)," *Federal Reserve Bank of Philadelphia*, Nov. 13, 2015.
20. Eric Morath & Jeffrey Sparshott, "[Shift to Benefits From Pay Helps Explain Sluggish Wage Growth](#)," *The Wall Street Journal*, Nov. 1, 2015.
21. Josh Zumbrun, "[Wage Growth Is Weak. Inflation-Adjusted Wage Growth Is Much Healthier](#)," *The Wall Street Journal*, Jan. 8, 2016.
22. *Bloomberg*, "[Consumer Sentiment in U.S. Surges to 11-Year High](#)," Jan. 16, 2015.
23. *Bloomberg*, "[Consumer Sentiment in U.S. Rises to Second-Highest Since 2007](#)," May 1, 2015.
24. Michelle Jamrisko, "[Consumer sentiment in U.S. declines to a three-month low](#)," *Bloomberg*, August 28, 2015.
25. Eric Morath, "[Final September consumer sentiment index rises to 87.2](#)," *The Wall Street Journal*, September 25, 2015.
26. Jill Mislinski, "[Michigan consumer sentiment: December final highest since July](#)," *Advisor Perspectives*, December 23, 2015, .
27. Ibid.
28. U.S. Bureau of Economic Analysis, "[Table 2.3.6. Real Personal Consumption Expenditures by Major Type of Product, Chained Dollars](#)," Accessed Feb. 1, 2016.
29. U.S. Department of Commerce, "[Advance Report on Durable Goods Manufacturers' Shipments, Inventories and Orders](#)," Jan. 28, 2016.
30. Ibid.
31. Eric Morath, "[U.S. durable goods orders tumbled 5.1% in December](#)," *The Wall Street Journal*, Jan. 28, 2016.
32. Ibid.
33. Andrea Wong, "[Dollar Gains Slow as Economic Headwinds May Delay Fed Rate Moves](#)," *Bloomberg*, Feb. 26, 2015.
34. Jeff Kearns, "[Fed Stays Patient on Rates Amid Strong Job Gains, Low Inflation](#)," *Bloomberg*, Jan. 28, 2015.
35. NASDAQ, "[Dollar index drops to 3-month lows as U.S. data weighs](#)," May 6, 2015.
36. Sam Forgione, "[Dollar recovers against euro as traders still eye 2015 rate hike](#)," *Reuters*, March 25, 2015.
37. Lananh Nguyen, "[Dollar Rises to 4-Month High as Signs Hint at Fed Move](#)," *Bloomberg*, Aug. 5, 2015.
38. James Ramage, "[Dollar edges higher as Fed raises U.S. rates](#)," *The Wall Street Journal*, December 16, 2015.
39. Benjamin Bain and Nacha Cattani, "[For Mexico's biggest winners and losers in 2015, peso was king](#)," *Bloomberg*, December 31, 2015.
40. Ari Altstedter, "[Canadian dollar's worst rout ever raises petro-state worries](#)," *Bloomberg*, January 4, 2016.
41. Jay Fitzgerald, "[Gas prices edge up as oil market improves](#)," *Boston Globe*, Feb. 9, 2015.
42. Jessica Summers and Lynn Doan, "[U.S. Gasoline Prices Climb to Highest Level Since November](#)," *Bloomberg*, May 17, 2015.
43. David Koenig, "[Nationwide average gas price heading under \\$2 a gallon, lowest since 2009](#)," *U.S. News & World Report*, December 12, 2015.
44. Daniel J. Graeber, "[AAA: National gas prices down, though volatility endures](#)," *UPI*, July 28, 2015.
45. Reuters, "[US gas prices fall alongside crude oil: Lundberg survey](#)," *CNBC*, Aug. 10, 2015.
46. Reuters, "[US gas price trough continues, down 10.5 cents a gallon](#)," *CNBC*, Oct. 26, 2015.
47. James Ramage, "[Dollar edges higher as Fed raises U.S. rates](#)," *The Wall Street Journal*, December 16, 2015.



48. David Koenig, "[Nationwide average gas price heading under \\$2 a gallon, lowest since 2009](#)," *U.S. News & World Report*, December 12, 2015.
49. Ibid.
50. Bernie Woodall, "[U.S. auto sales in 2015 set record after strong December](#)," *Reuters*, Jan. 5, 2015.
51. Gautham Nagesh, "[Auto Industry Looks for Bumper Year in 2016](#)," *The Wall Street Journal*, Jan. 3, 2016.
52. Platts, "[Eastern China Ferrous Scrap Price Reaches 10-Year Low on Weak Demand](#)," March 6, 2015.
53. Maria Armental and John W. Miller, "[Steely Dynamics Profit Narrows Sharply](#)," *The Wall Street Journal*, July 20, 2015.
54. Staff, "[A lack of demand and too much supply](#)," *Recycling Today*, July 28, 2015.
55. Staff, "[Scrap exports from U.S. continue to decline](#)," *Recycling Today*, August 6, 2015.
56. Ibid.
57. Mark Magnier, "[Chinas Economic Growth in 2015 Is Slowest in 25 Years](#)," *The Wall Street Journal*, Jan. 19, 2016.
58. Biman Mukherji, "[Global Metals Prices Hinge on China Production](#)," *The Wall Street Journal*, Dec. 29, 2015.
59. Sonja Elmquist, "[Alcoa Cuts Back on Metal Making as Aluminum Extends Price Slump](#)," *Bloomberg*, Nov. 2, 2015.
60. Sonja Elmquist, "[Alcoa to Close U.S. Smelter, Refinery Amid Commodity Rout](#)," *Bloomberg*, Jan. 7, 2016.
61. Ese Erheriene and Ira Iosebashvili, "[Platinum Prices Hit Six-Year Low](#)," *The Wall Street Journal*, June 15, 2015.
62. Ranjeetha Pakiam and Joe Deaux, "[Gold loses luster in worst slump since '84 as fund holdings drop](#)," *Bloomberg*, December 30, 2015.
63. Andre Janse Van Vuuren, "[Platinum Miners Refusing Output Cuts Seen Deepening Price Rout](#)," *Bloomberg*, July 23, 2015.
64. Ese Erheriene, "[How a rate increase will affect gold, other metals](#)," *The Wall Street Journal*, December 14, 2015.
65. Joe Deaux and Eddie Van Der Walt, "[Gold slips as first Fed rate increase since '06 bolsters dollar](#)," *Bloomberg*, December 16, 2015.
66. Ese Erheriene and Tatyana Shumsky, "[Platinum extends losses on Volkswagen scandal, while palladium shines](#)," *The Wall Street Journal*, September 23, 2015.
67. Jeff Yoders, "[Palladium Price Weakness Drags Down Precious Metals Worldwide](#)," *MetalMiner*, April 3, 2015.
68. Debarati Roy and Eddie Van Der Walt, "[Junkyard Palladium Strands Bulls Betting on Demand for Car Parts](#)," *Bloomberg*, June 17, 2015.
69. Patturaja Murugaboopathy, "[Palladium under siege but strong fundamentals may end carnage](#)," *Reuters*, July 22, 2015.
70. Teresa Match, "[Palladium Price Forecasts Keep Falling](#)," *Investing News*, July 13, 2015.
71. Ibid.
72. Ese Erheriene, "[How a rate increase will affect gold, other metals](#)," *The Wall Street Journal*, December 14, 2015.
73. Joe Deaux and Eddie Van Der Walt, "[Gold slips as first Fed rate increase since '06 bolsters dollar](#)," *Bloomberg*, December 16, 2015.
74. Christie Boyden, "[Auto-Parts Retailers' Immunity to Amazon.com Drives Stock Surge](#)," *Bloomberg*, Oct. 18, 2015.
75. Nathan Bomey, "[Average age of cars on U.S. roads breaks record](#)," *USA Today*, Jul. 29, 2015.
76. Tom Kontos, "[January 2015 Kontos Commentary](#)," *Automotive Digest*.
77. Tom Kontos, "[March 2015 Kontos Commentary](#)," *Automotive Digest*.
78. Tom Kontos, "[June 2015 Kontos Commentary](#)," ADESA.
79. Tom Kontos, "[November 2015 Kontos Commentary](#)," ADESA.
80. Tom Kontos, "[December 2015 Kontos Commentary](#)," ADESA.
81. Gautham Nagesh, "[Auto Industry Looks for Bumper Year in 2016](#)," *The Wall Street Journal*, January 3, 2016.
82. Lananh Nguyen, "[Dollar Rises to 4-Month High as Signs Hint at Fed Move](#)," *Bloomberg*, Aug. 5, 2015.
83. James Ramage, "[Dollar edges higher as Fed raises U.S. rates](#)," *The Wall Street Journal*, December 16, 2015.
84. The World Bank, "[GDP Growth \(Annual %\)](#)," Jan. 1, 2016.
85. The World Bank, "[GNI Per Capita, Atlas Method \(Current U.S. \\$\)](#)," Jan. 1 2016.
86. The World Bank, "[GDP Growth \(Annual %\)](#)," see reference 84.
87. Joe Deaux, "[When a 127-Year-Old U.S. Industry Collapses Under China's Weight](#)," *Bloomberg*, Nov. 3, 2015.
88. Ibid.
89. Biman Mukherji, "[Rising Chinese Production Keeps Lid on Aluminum Prices](#)," *The Wall Street Journal*, Nov. 10, 2015.
90. Ibid.
91. Ibid.
92. Masumi Suga, "['Economic Irrationality' Can't Last in Steel, Top Mill Says](#)," *Bloomberg*, Nov. 16, 2015.
93. Ibid.
94. The World Bank, "[Global Economic Prospects](#)," Jan. 1, 2016.
95. "[Fourth Quarter 2015 Survey of Professional Forecasters](#)," Federal Reserve Bank of Philadelphia, Nov. 13, 2015.
96. Eddie Van Der Walt, "[Top Precious-Metals Forecasters Say Forget Gold, Go to Palladium](#)," *Bloomberg*, Jan. 14 2016.
97. Teresa Match, "[WPIC Calling for Smaller Platinum Deficit in 2015](#)," *Investing News*, Nov. 24, 2015.
98. Joe Deaux, "[Alcoa Sees Aluminum Shifting to Deficit on Record Demand](#)," *Bloomberg*, Jan. 11, 2016.
99. Joe Deaux & Sonja Elmquist, "[Alcoa Sees Oversupplied Aluminum Market Shifting to Deficit](#)," *Bloomberg*, Oct. 28, 2015.
100. Ben Sharples, "[Oil Seen Heading to \\$20 by Morgan Stanley on Dollar Strength](#)," *Bloomberg*, Jan. 11, 2016.

## SECTION X: ABOUT THE AUTHORS



### Meggan O'Malley

#### Manager of Sales Analysis

Meggan O'Malley is manager of sales analysis at Insurance Auto Auctions, Inc. (IAA). Mrs. O'Malley leads the organization's efforts in monitoring and reporting on customer performance and analyzing industry trends.

Mrs. O'Malley joined IAA in 2007 and held several positions before assuming her current responsibilities. Prior to joining IAA she served as a financial analyst at Grant Thornton, one of the world's leading organizations of independent audit, tax and advisory firms.

Mrs. O'Malley holds bachelor's degrees in finance and marketing from Marquette University, and an MBA with a concentration in management from Argosy University.



### Jeanene O'Brien

#### Vice President, Global Marketing

Jeanene O'Brien is vice president of global marketing at Insurance Auto Auctions, Inc. (IAA). Ms. O'Brien is responsible for all marketing efforts, including branding, public relations, advertising, market research, sales enablement and event programs. She analyzes and reports business and economic trends that impact the salvage industry, aligning IAA's expertise and leadership. Previously, Ms. O'Brien served as vice president of provider marketing.

A 17-year veteran in the property and casualty claims industry, Ms. O'Brien has a history of executing innovative brand strategy and comprehensive client growth and retention campaigns. She led marketing efforts at CCC Information Services Inc. and consulted with claims vendors, including independent appraisal firms, collision repair facilities and integrated technology providers. Ms. O'Brien started her marketing career as an associate in a Chicago advertising firm.

Ms. O'Brien holds a bachelor's degree in English from the College of Wooster (Ohio), and a master's degree in market research and advertising from Loyola University Graduate School of Business in Chicago.

Insurance Auto Auctions, Inc. (IAA) is the leading live and live-online salvage vehicle auction company and a business unit of KAR Auction Services (NYSE: KAR). With more than 170 auction facilities — the largest footprint in North America — IAA provides registered buyers from more than 110 countries the opportunity to bid on and purchase vehicles from a comprehensive group of sellers, including insurance companies, fleet and rental companies, financing companies, charitable organizations and the general public. Through its weekly auctions, IAA has sold millions of vehicles, offering towing, financing and titling services. IAA leverages its business model to assist charitable organizations in the U.S. through its One Car One Difference® program. To date, IAA has provided millions of dollars in additional funding to charities by assisting in the processing of donated vehicles. Learn more about the program by visiting [1car1difference.com](http://1car1difference.com). With a talented team of more than 2,500 employees, IAA is committed to technological innovation and providing its customers the highest level of service in the salvage auto industry. To learn more, visit [IAA-Auctions.com](http://IAA-Auctions.com), and follow IAA on [Facebook](#), [Twitter](#) and [LinkedIn](#).



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