



INDUSTRY REPORT



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. 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, and follow IAA on Facebook, Twitter and LinkedIn.

Disclaimer:
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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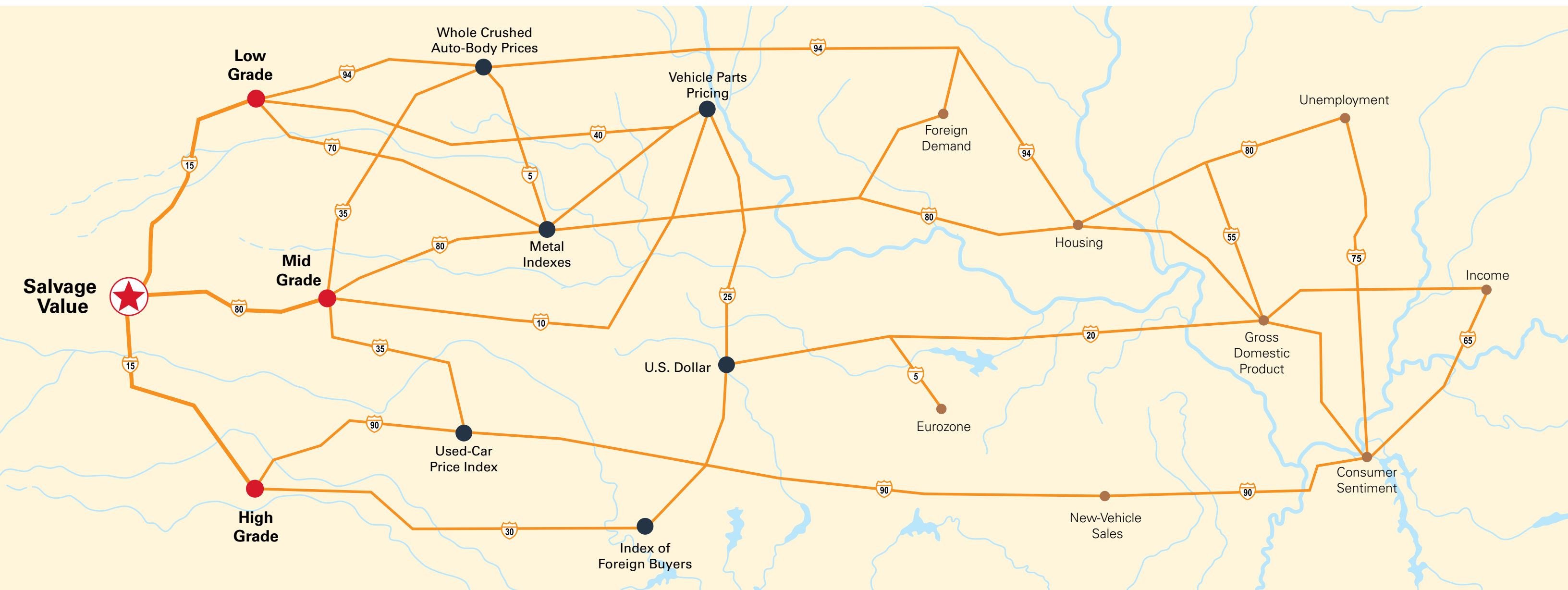
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SALVAGE VALUE LANDSCAPE

A Map of Influences

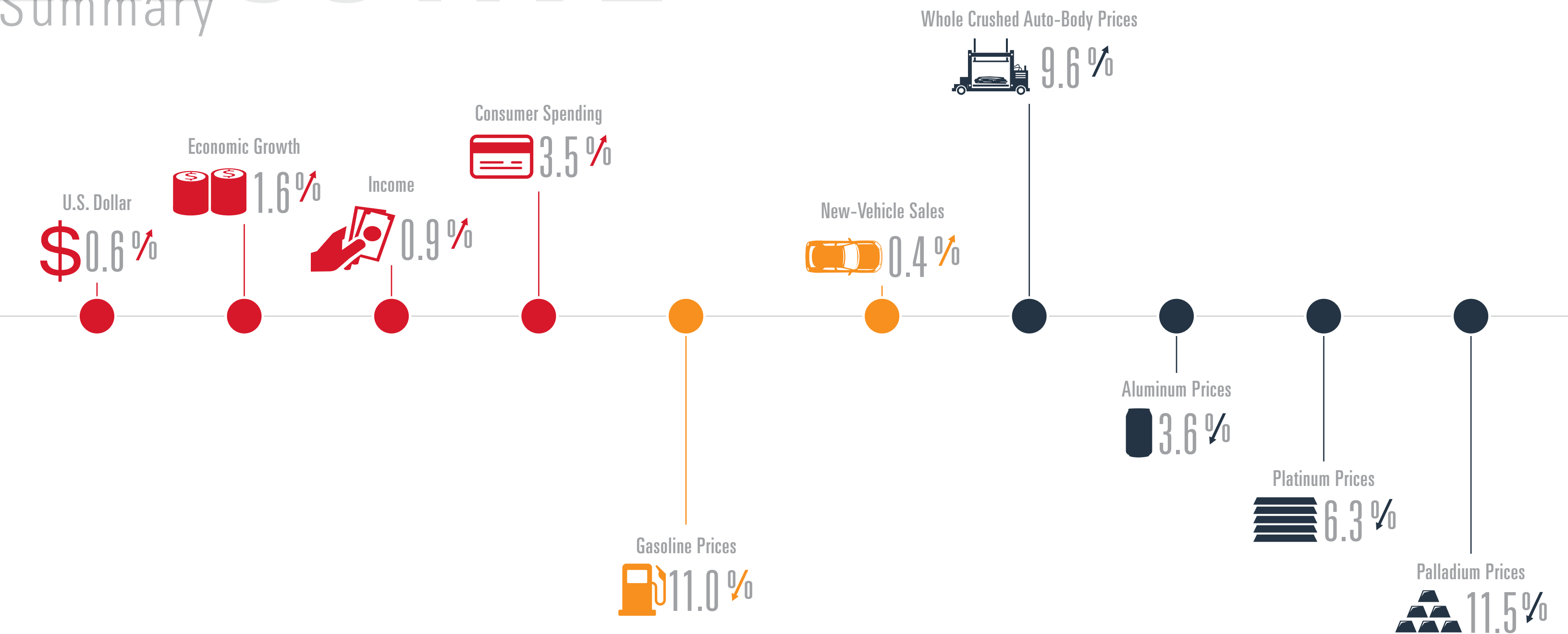
The complexity of the vehicle salvage industry is revealed when trying to understand how its drivers are linked by factors such as the economy, vehicle sale prices, driver behavior and weather. Each factor represented by a dot on the map is scaled to convey its level of impact on the industry.



- Vehicle Grade
- Primary Economic Factors
- Secondary Economic Factors

EXECUTIVE

Summary



U.S. Economy

Cautious business investment and declining government spending led to lackluster U.S. economic growth in the first half of 2016,¹ but by the time the second part of the year came around, the economy experienced some acceleration. Robust consumer spending and an uptick in business investment prompted the modest boost.^{2,3} The unemployment rate remained stagnant as consumers were cautious about economic growth, but topped off the year at its highest levels since 2001.⁵ Find an in-depth look at the U.S. economy in Section 1 of this report.

Automotive Industry

In 2016, total lightweight-vehicle sales set another record high at 17.55 million units sold, besting 2015's record of 17.47 units sold. The year's better-than-expected sales were fueled by low gas prices and interest rates, along with generous incentives and discounts from automakers. SUV and pickup sales remain strong as fuel is still cheap, and demand for passenger cars continues to be weak. Nissan won out for the strongest increase in sales, jumping 5.4% compared to 2015, while Toyota struggled with a 2.0% decline in sales from 2015. See a detailed overview of the automotive industry in Section 2 of this report.

Salvage Industry

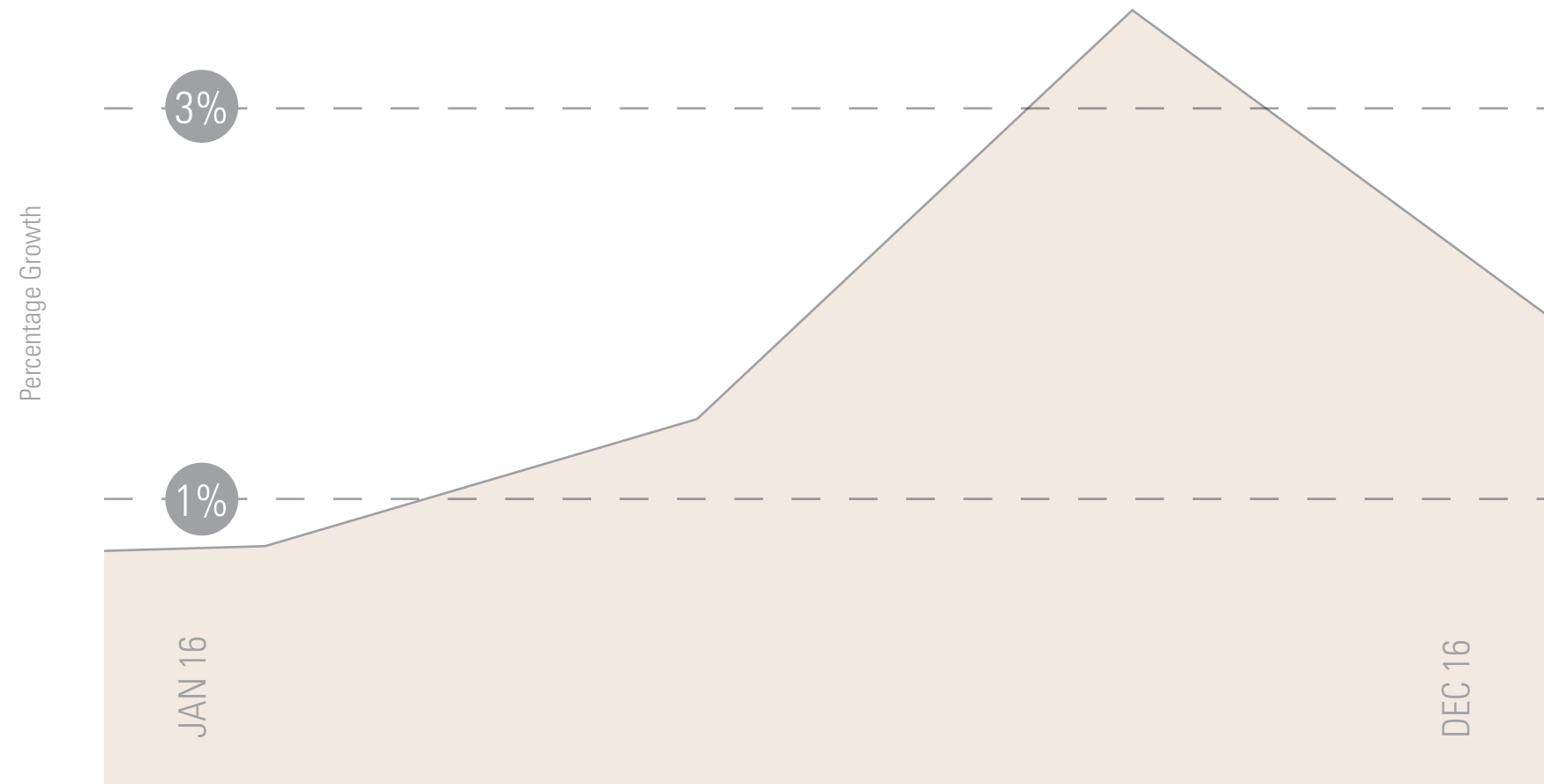
Unfavorable macroeconomic conditions throughout 2016 exerted downward pressure on all three of IAA's vehicle grade segments. Historically low whole crushed auto-body prices and softer markets for platinum and palladium were drains for the Low and Mid Grade segment, while the High Grade segment struggled with the underlying softness of used-car prices and weaker purchasing power from foreign buyers brought on by unfavorable exchange rates from a stronger U.S. dollar. More information about all three vehicle grade segments and the factors that impacted their performance can be found in Section 3 and Section 4, respectively.

SECTION 1

Overview of U.S. Economy

The U.S. economy had modest gains, but ultimately didn't perform as well in 2016 as it did in 2015. It does add another year to the current economic expansion – one of the longest in U.S. history – but the average annual rate of growth has been the weakest since at least 1949.⁶ In this section, you'll find a breakdown of each of the U.S. economy's major influencers.

Chart 1.1
U.S. Real
GDP Growth
Percentage of Growth
Jan 2016 – Dec 2016



GROSS Domestic PRODUCT

U.S. Gross Domestic Product (GDP) growth continued to be underwhelming as 2015 slid into 2016. High energy prices and a tightening labor market that pushed up wages especially squeezed corporate profits and cut into margins, leading to a sluggish 0.8% growth rate in the first quarter (Chart 1.1).⁷

The second and third quarters of the year fared much better, with spending on intellectual property like software and research and development rising at its fastest pace in nearly a decade. Second quarter GDP growth was held back slightly by a strong dollar, which decreased exports.⁸ In the third quarter, GDP growth leapt to 3.5%, spurred by strong consumer

spending, improved business investment in buildings and intellectual property and a surge in exports. While welcome, the gains simply brought the year's growth rate back in line for expectations of a long and lethargic period of U.S. economic expansion.⁹

Following expectations, U.S. GDP eased back to a lackluster growth rate of 1.9% in the last quarter of the year, in line with the 2.0% average in the years after the recession. Strong consumer spending, a recovery in the housing sector and stronger spending by state and local governments all contributed to the growth rate, but a widening foreign-trade deficit presented a challenge for future gains.¹⁰

1.6%

UNEMPLOYMENT



4.9%

The U.S. labor market saw some significant tightening in 2016, with the unemployment rate dropping in November to its lowest level in a decade. The unemployment rate finished the year at 4.7% (Chart 1.2). U.S. employers added jobs to the labor market every month of 2016, with December representing the 75th straight month of job creation. Along with steady hiring came an increase in wages, which may indicate that employment is finally reaching its natural rate.¹¹

The underemployment rate, which includes individuals who work part-time but would prefer a full-time position and individuals who want to work but have given up on their search, fell to 9.2% in the final month of the year, down from 9.9% in December 2015.

An uptick of 0.9% in wages for 2016 demonstrated a modest increase considering average weekly earnings have been increasingly on the rise over the past few years (Chart 1.3). With unemployment rates falling to their lowest levels in a decade, there are indications that the labor market is nearing full employment. With a smaller pool of potential employees to choose from, employers have to compete to retain top talent, which some analysts believe could push average wages even higher.^{12,13}

However, productivity growth is still stuttering after the recent recession and isn't making any move to bounce back. Without much increase in economic output per labor hour, it's unlikely that a significant wage boom could happen at this stage of U.S. economic expansion.¹⁴



0.9%

INCOME

CONSUMER SENTIMENT & Spending on Durable Goods



Consumer Sentiment

1.2%



Consumer Spending on Durable Goods

3.5%

Consumer sentiment fluctuated throughout 2016, but concluded with strong confidence. In the first quarter, sentiment declined slightly as consumers held a cautious outlook about business and personal finances,¹⁵ but quickly rebounded in the second quarter amidst an improved labor market and expectations of lower inflation and interest rates.¹⁶ The third quarter brought about another dip, affected by concerns about the United Kingdom leaving the European Union (Brexit), smaller-than-expected income gains and higher expenses.¹⁷ Soon after, the U.S. presidential election dashed that decline as consumers expected high economic growth under the new administration and continued to experience moderate wage growth, sending consumer sentiment to its highest level in 13 years.¹⁸

Consumer spending experienced quarter-over-quarter growth throughout the entirety of 2016 as consumers took advantage of low oil prices, steady wage growth, low unemployment and fairly stable inflation (Chart 1.4). The year finished with strong spending to match strong consumer confidence, particularly on cars, appliances and homes.¹⁹

Strong demand for fuel in the first half of the year outpaced even optimistic expectations (Chart 1.5). Combined with gasoline stockpiles falling more than expected, the decline in supply amidst strong demand prompted an increase in gas prices.²⁰ Gasoline prices began a brief decline in value in the third quarter as refiners produced a glut of fuel that persisted despite the summer's strong driving demand,²¹ but quickly rallied after an agreement was reached between the Organization of Petroleum Exporting Countries and other major producers to cut global production.²² Oil prices ended 2016 on a high note – having rebounded from the oil glut that had plagued the segment for the past two years – but analysts caution the increase in prices could prompt U.S. shale producers to restart production at previously unprofitable sites, which could lead to price volatility in 2017.²³



11.0%

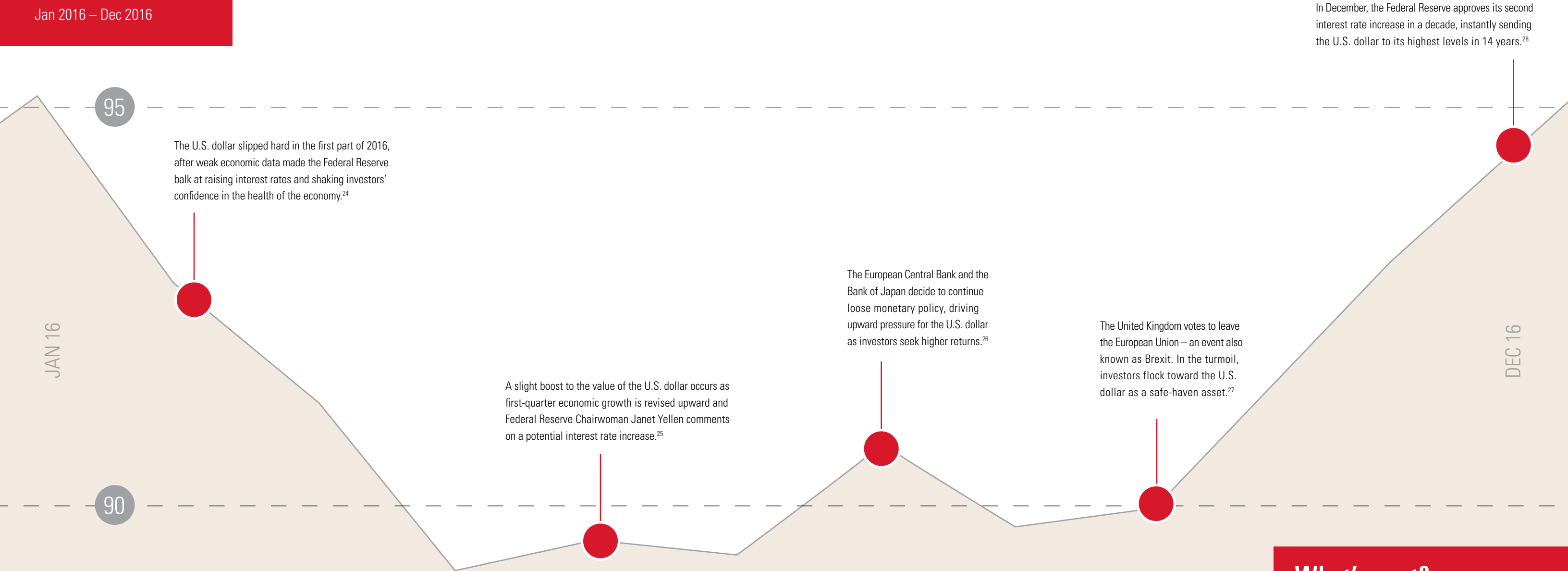
GAS PRICES

U.S. Dollar

0.6%

The value of the U.S. dollar got off to a shaky start, but soon found its stride. With a mix of factors from global influencers to consumer sentiment at home, the U.S. dollar index certainly saw some ups and downs before making an impressive leap near the end of the year.

Chart 1.6
U.S. Dollar Index
Jan 2016 – Dec 2016



What's next?

Initial forecasts for 2017 point to a strong dollar, with the Federal Reserve indicating it may raise interest rates faster than expected in the coming year based on expectations of a strong labor market and future economic growth.²⁸

SECTION 2

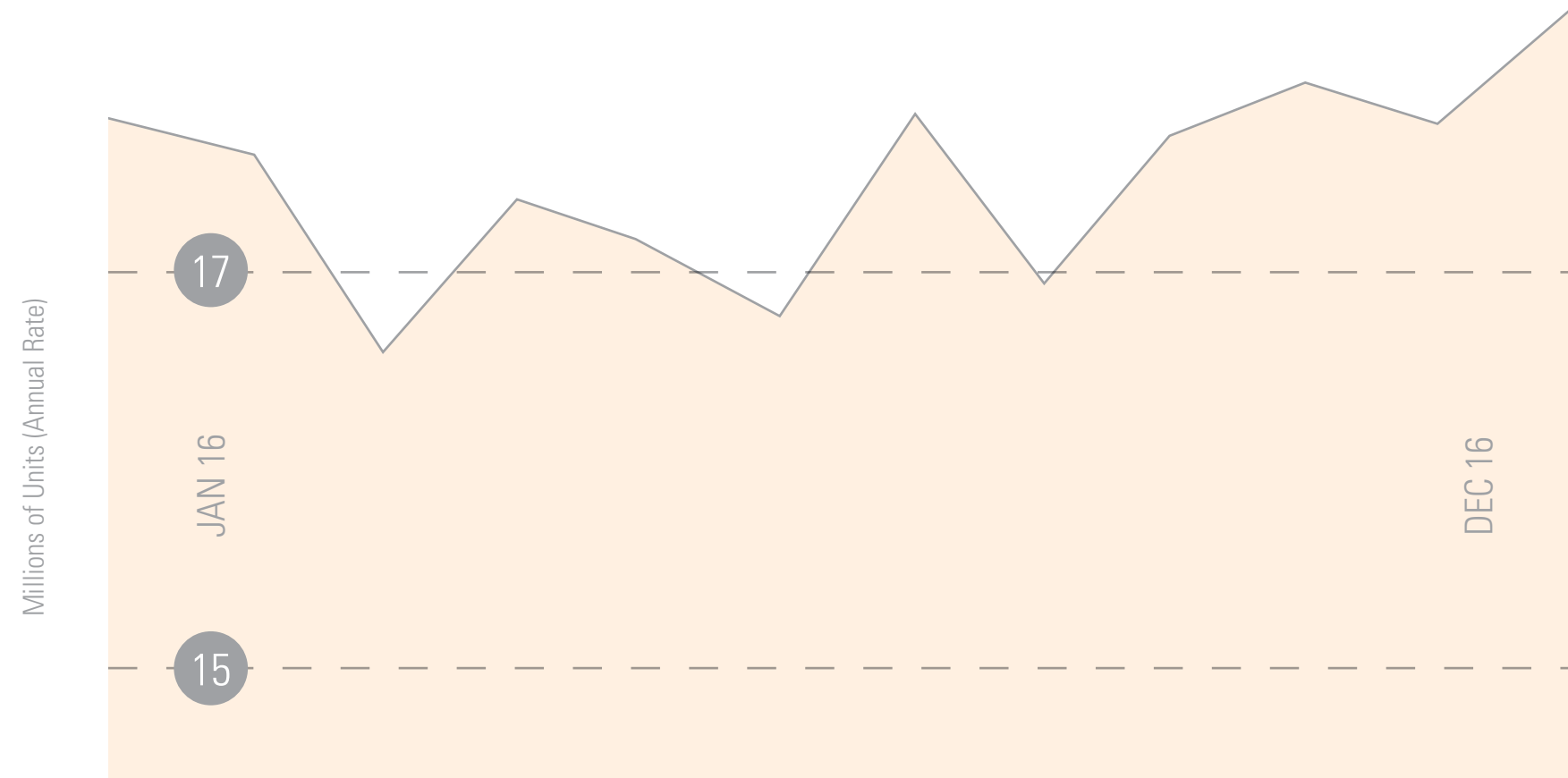
Automotive Industry

A surprise surge in the later part of 2016 bolstered new-vehicle sales for a second consecutive annual high. Fourth-quarter demand especially exceeded expectations and brightened the outlook for the automotive industry.

Chart 2.1

U.S. Lightweight-Vehicle Sales

Automobiles and Light Trucks
Jan 2016 – Dec 2016



TOTAL

New Vehicle

SALES

In March, red flags went up as seasonally adjusted new-vehicle sales clocked in at an annual rate of 16.57 million vehicles, well below analysts' expectations. Despite favorable economic conditions like low gas prices and borrowing at rates lower than previous years, automakers ramped up the incentives to attract consumers.³⁰

In June, the annualized sales rate slipped to 16.67 million vehicles. Continued low gas prices and borrowing rates steered consumers toward larger vehicles like SUVs and trucks, but weakness in the

passenger car segment was a disappointment for industry analysts who anticipated a sales rate of 17 million or more.³¹

What's better than a comeback story? The fourth quarter of 2016 was when consumer demand really shifted into gear. December's monthly performance especially exceeded expectations with its seasonally adjusted selling pace rocketing to 18.42 million and representing the highest rate since July 2005. However, this success comes with a cost — to the tune of an average of \$4,038 in discounts per vehicle.³²

0.4%


SECTION 3

Overview of Segment Analysis

IAA’s framework for analyzing the salvage vehicle market includes six indicators of industry health.


WHOLE CRUSHED AUTO-BODY PRICES

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



USED-CAR PRICE INDEX

(UPCI) 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.



METAL PRICES

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



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.



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.



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 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 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 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

SECTION 4

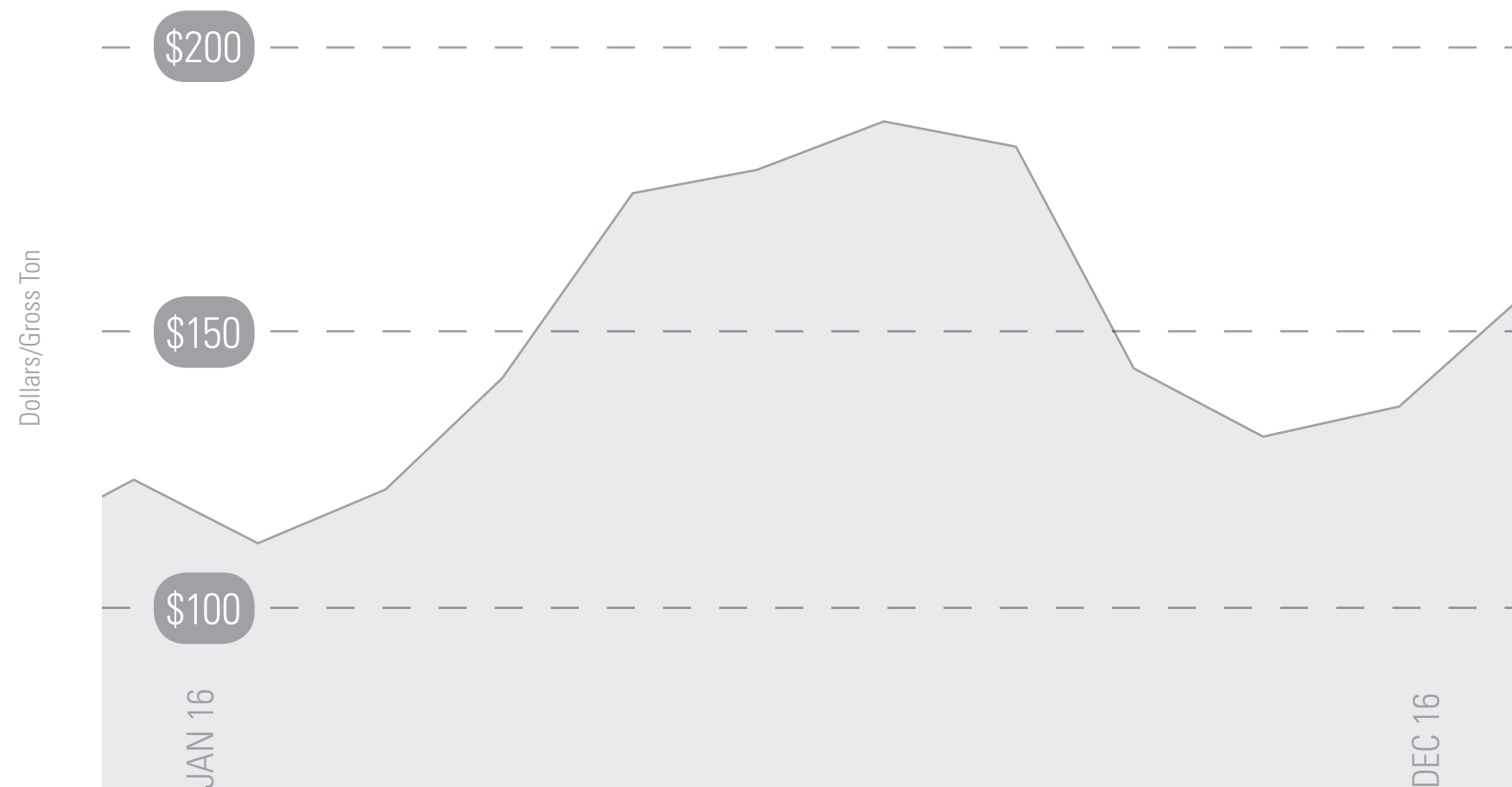
Economic Indicators of Automotive Salvage

Automotive salvage has its own set of unique influencers, and the following sections provide an overview of those factors that impact the value of salvage vehicles at auction.

Chart 4.1

Whole Crushed Auto-Body Prices

Jan 2016 – Dec 2016



WHOLE CRUSHED Auto-Body Prices

Whole crushed auto-body prices increased a disappointing 9.6% in 2016 compared to 2015, when prices reached their lowest level in more than a decade. The dismal rise highlighted the struggle whole crushed auto-body prices have yet to overcome. Compared to 2013 and 2014, prices in 2016 are still at double-digit decreases, at 50.4% and 39.6%, respectively (Chart 4.1). Chronic oversupply was one of the big culprits of plummeting prices, as was a demand slowdown in China.³³ Despite the global glut,

the Chinese government subsidized steel production to aid struggling factories, putting further downward pressure on whole crushed auto-body prices.³⁴

Meanwhile, anticipation of the Federal Reserve raising interest rates three times in 2017 skyrocketed the value of the U.S. dollar against other global currencies to a 14-year high. The strong dollar reduced demand from international buyers, another factor that worked to put downward pressure on the value of scrap.³⁵

9.6%

METAL Prices

ALUMINUM

Despite small and steady increases, aluminum prices still ended 2016 down 3.6% from 2015. Comparatively, prices remained below average prices of \$0.76 (dollars/pound) experienced in 2015 and \$0.85 (dollars/pound) in 2014.

In the early part of the year, aluminum prices were kept artificially low largely because of Chinese government efforts to keep metal factories afloat despite their unprofitability. The continued overproduction added to multiple years' worth of excess capacity.³⁶ As we moved into the third quarter, the price of aluminum managed to rally with an increase of 8.6% from the first half of 2016. This rally was mainly attributed to a shortage in supply, with many analysts pointing to stricter road regulations in China as a main factor, since new weight limitations on trucks delayed aluminum shipments. With higher Chinese demand, the subsequent supply-and-demand fundamentals played a part in driving aluminum prices higher.³⁷

World primary aluminum production increased slightly in 2016 compared to 2015. Stateside, U.S. import reliance increased in 2016 because domestic primary production decreased. U.S. manufacturers were increasingly supplied by imports, with U.S. imports of aluminum increasing by 18% compared to 2015.³⁸

2015 Average
\$0.76

2016 Average
\$0.73

Dollars/Pound

PALLADIUM

Because of palladium's use in autocatalysts, its value is closely tied to new-vehicle sales. Record high vehicle sales in China for the month of November, as consumers scrambled to utilize a tax break provided by the Chinese government before it expired, pushed up the value of the metal.³⁹ Similarly, 2016 U.S. auto sales were the strongest since 2005.⁴⁰ A report by John Matthey PLC, the world's largest refiner of palladium, forecasts the palladium deficit will continue into 2017 to account for autocatalyst demand.

However, as with aluminum and platinum, palladium is also directly affected by the U.S. dollar. A strong U.S. dollar put downward pressure on palladium prices and shrunk international demand.

Total global production fell 3.7% in 2016 compared to 2015 as South African miners significantly reduced production.⁴¹ A reduction in imports led to a net export deficit reduction of 14.2% in 2016 compared to 2015, totaling -51,000 kilograms. The U.S. imports palladium primarily from South Africa, Russia and Italy.

2015 Average
\$696

2016 Average
\$616

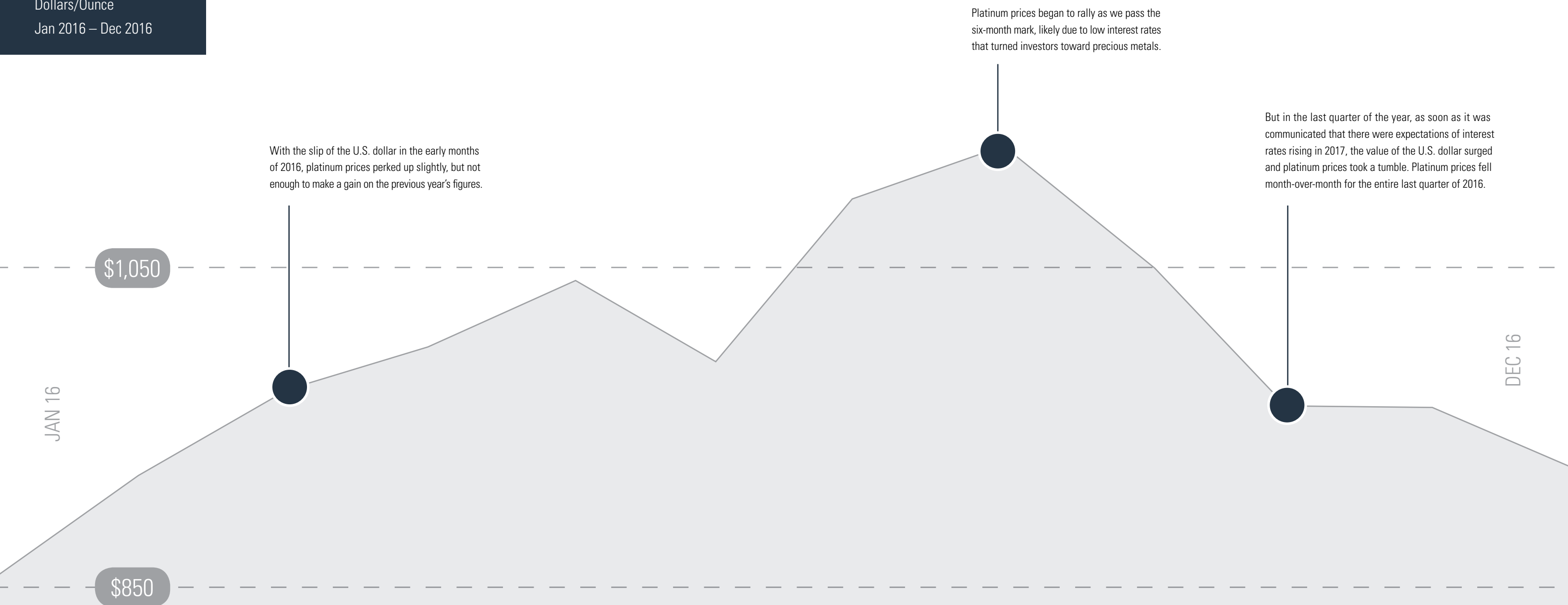
Dollars/Ounce

PLATINUM Prices

6.3%

Platinum prices continued to decline in 2016, dropping 6.3% compared to last year. Even with a rally occurring in the first half of the year, average annual prices were unable to overcome the deep declines of the last four months of 2016. World total production of platinum fell 8.9% in 2016 compared to 2015, due to a sharp reduction in production by South African miners. United States net exports of scrap platinum decreased 20.3% compared to 2015, and was mainly attributed to a significant increase in imports from other countries.

Chart 4.4
Platinum Prices
Dollars/Ounce
Jan 2016 – Dec 2016



VEHICLE PARTS & Equipment Prices



0.5%

The average price of vehicle parts and equipment prices increased in 2016, rising 0.5% compared to 2015. This index is mainly influenced by two components – the average age of vehicles on the road and the average number of total miles driven. When both of these factors increase, it's an indication of more wear and tear on vehicle parts, resulting in the need for replacements.

And rise they did. The average age of vehicles on U.S. roads has increased steadily over the past 20 years, especially picking up post-recession as consumers held off on new-vehicle purchases and continued to drive older cars. That pace has slowed slightly, but 2016 still saw a new record high age of 11.5 years.^{45,46}

As for total miles driven, Americans have increased that number in recent years as employment rises and gas prices are historically low. Accounting for population growth, U.S. drivers drove 1.8% more miles in 2016 compared to 2015. Far from being a small percentage, that 1.8% figure represents billions of extra miles driven, naturally increasing the wear and tear on parts and the probability of accidents that require repair work.⁴⁷

Average used-car prices in 2016 were 3.0% higher compared with 2015 and bucked oversupply pressure to post year-over-year growth in each month of the year (Chart 4.6). According to Tom Kontos, chief economist of KAR Auction Services, strong demand for trucks and SUVs helped prop up the average value of used vehicles and masked weakness in the price of cars. It was likely this effect, in addition to the impact of younger, pricier off-lease units, which biased prices upward during the year.⁴⁸

Used-car prices followed seasonal trends in the first part of the year, rising sharply in March and peaking in April, a reflection of tax return season. Though growing off-lease supply put downward pressure on used-car prices, the combination of robust retail sales and strong truck and SUV values kept average prices up year-over-year.⁴⁹ Low gas prices, which reached a 13-year low in February, played an important part in aiding demand for trucks and SUVs.

This trend would continue well into the second half of the year, with strong truck pricing and an inventory mix that favored younger, lower-mileage, higher-priced off-lease supply driving year-over-year price gains.⁵⁰ However, new-vehicle incentives put some downward pressure on wholesale values toward the end of the year, and loom as a factor in 2017.⁵¹

For more information about used-car prices and the economic indicators affecting the wholesale market, check out ADESA's latest edition of *PULSE*.



3.0%

USED-CAR PRICE INDEX

INDEX OF FOREIGN BUYERS



0.7%

The Index of Foreign Buyers measures the proportion of vehicles purchased by buyers outside of the United States. Because a strong U.S. dollar makes it relatively more expensive for foreign buyers to purchase domestic goods, this index tends to have an inverse relationship with the value of the U.S. dollar. This is influential on High Grade vehicle values, since a stronger dollar puts downward pressure on international demand for these vehicles.

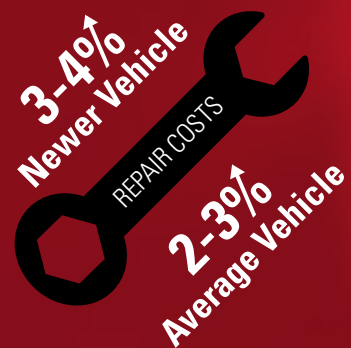
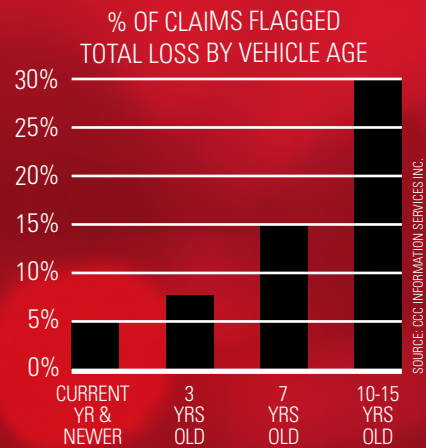
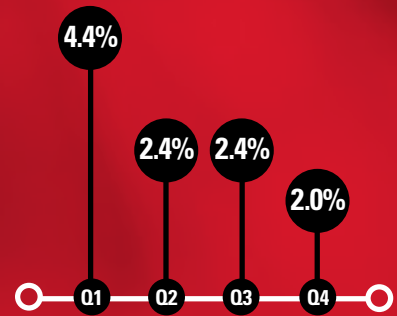
To account for seasonal fluctuations, the Index of Foreign Buyers uses a 12-month moving average to smooth itself and the U.S. Dollar Index. Based on that adjustment, the U.S. dollar increased 7.4% annually while the Index of Foreign Buyers moved in the opposite direction, decreasing 0.7% year-over-year (Chart 4.7). The U.S. dollar had a strong performance through most of 2016 amidst strong economic indicators and a confident Federal Reserve that culminated in the U.S. dollar rising to a 14-year high at the end of the year.⁵² This positivity isn't likely to change – all indications are pointing toward the Federal Reserve again rising interest rates, which would likely prompt high demand from investors for U.S. assets.^{53,54}

As for the strengthening of global currencies, the value of the Canadian dollar and Mexican peso will likely be influenced by oil prices, foreign investment and investors' expectations toward economic growth.^{55,56} The euro and the Japanese yen will be dependent on the European Central Bank and Bank of Japan's intentions to continue loose monetary policies, which keeps interest rates low in the eurozone and Japan.^{57,58}

VEHICLES TOTALLED

What's Driving Total Loss Frequency?

More vehicles are being declared total losses, and it's not a mystery why. From distracted drivers to weather catastrophes, repair costs to aging vehicles, get the quick rundown on why total loss frequency is on the rise.



Miles Driven

Vehicles on American roads are being driven more miles each year.

In 2016, after accounting for population growth, drivers in the United States drove 1.8% more miles compared to 2015. Far from being a small figure, that percentage represents more miles in the billions.⁵⁹ With the increase in miles driven, there is a greater possibility of vehicles getting into accidents.

Aging Vehicles

As vehicles get older, their value depreciates. This means it takes less damage for them to reach the total loss threshold. Coupled with the drop in vehicle sales after the recession, we're seeing more aging vehicles on the road, with 2016 setting a new record-high average vehicle age at 11.5 years.⁶⁰

Repair Costs

Repair costs have risen, and not just because of the aging vehicle population.

The use of modern technology in new vehicles is making them more costly to repair or replace. Average vehicle repair costs are increasing 2% to 3% each year, with newer model-year vehicles increasing 3% to 4% annually.⁶¹ Expensive repair costs are positively correlated with total loss frequency, as it's a direct determinant of whether a vehicle is declared a total loss.



- ANYTIME
- FAIRLY OFTEN/REGULARLY

Distracted Drivers

With new devices and gadgets, it's harder than ever to keep eyes on the road. Many drivers admit to being distracted by emails, text messages, and phone calls while they're behind the wheel,⁶² and the prevalence of these unsafe behaviors contributes to the severity of accidents and the rate of total losses.



Weather Catastrophes

Climate events continue to increase. In 2016, there were 15 weather-related catastrophes that caused more than \$1 billion in damages, only one less than the record high of 16 events in 2011.⁶³ These catastrophes can generate a large number of total loss vehicles in a relatively short amount of time, indicating the impact these events have on total loss frequency.

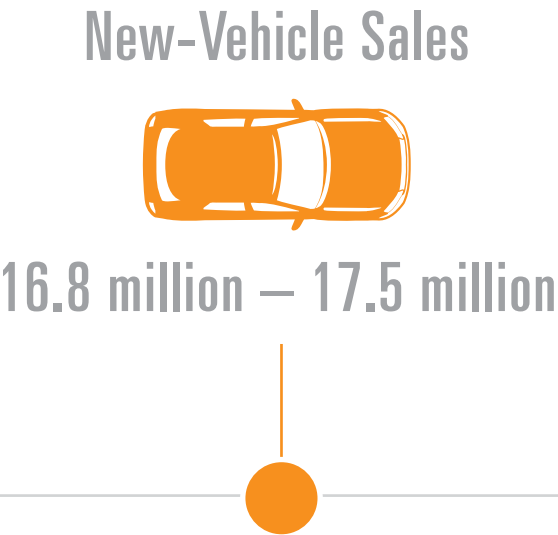
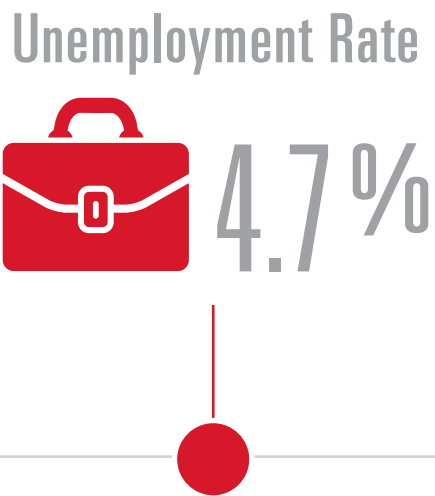
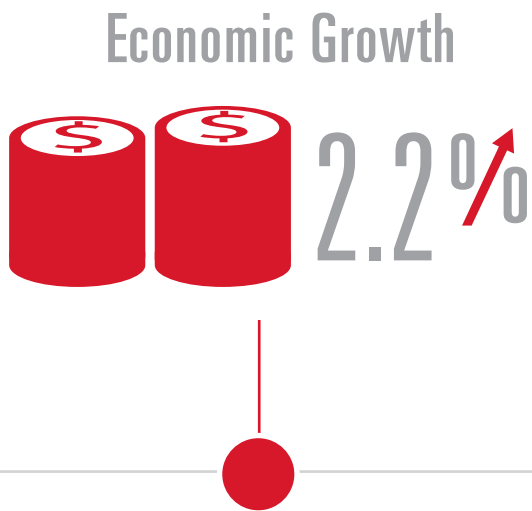
**FULL
SPEED
AHEAD**

Despite efforts to curb it, distracted driving continues to be a contentious issue. The age of an average vehicle continues to hit new record highs each year. Repair costs are increasing with the prevalence of modern technology. There isn't much indication that these factors, and the others discussed, will change in the coming years. Total loss frequency continues to be on the rise and may not be slowing down anytime soon.

SECTION 6

Looking Forward

Future economic and industry performance can never be certain, but there are some expectations for what’s to come in 2017.



U.S. Economy

The Federal Reserve Study of Professional Forecasters puts U.S. economic growth at a modest 2.2% in 2017, roughly in line to continue the current long-but-sluggish economic expansion. The unemployment rate is expected to decrease further to 4.7%.⁶⁴

Automotive Industry

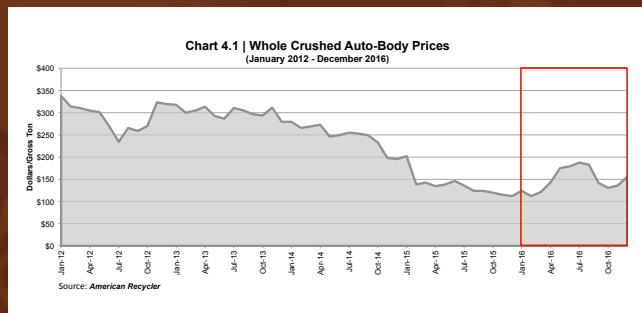
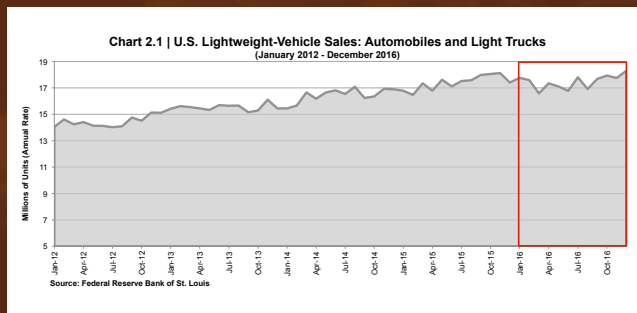
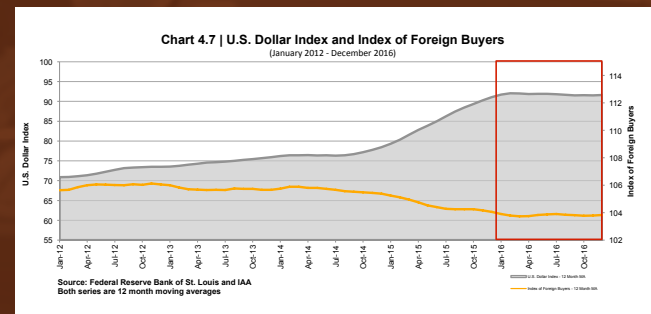
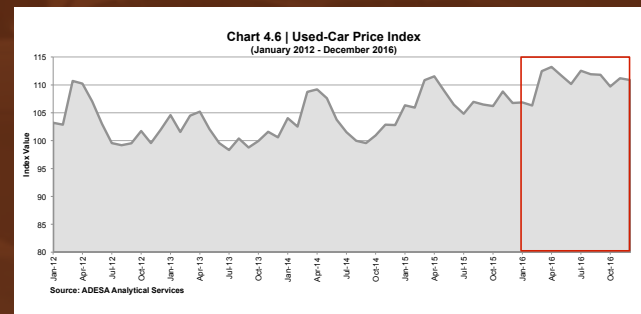
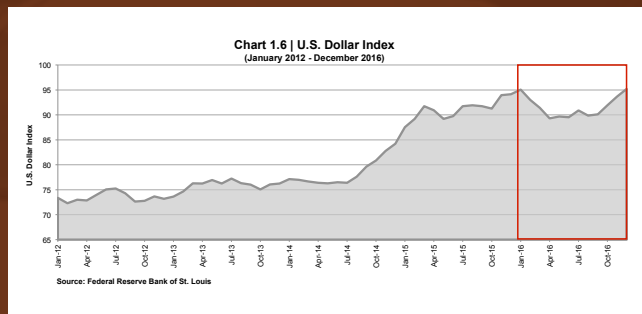
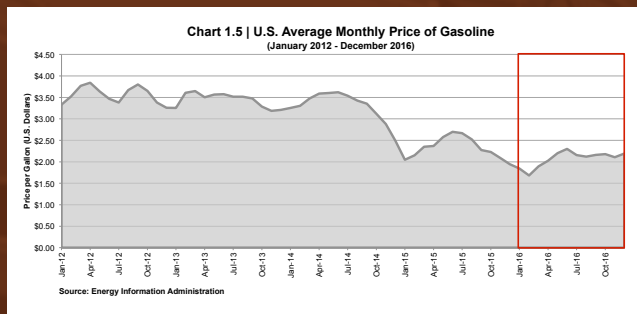
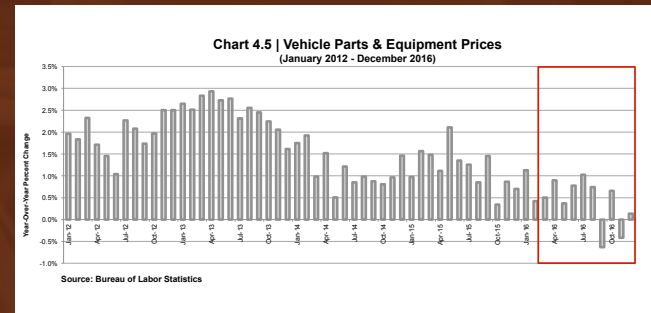
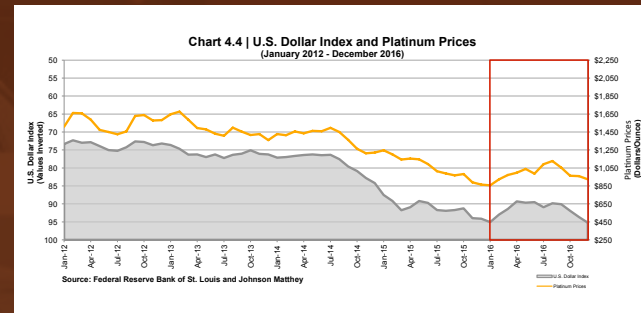
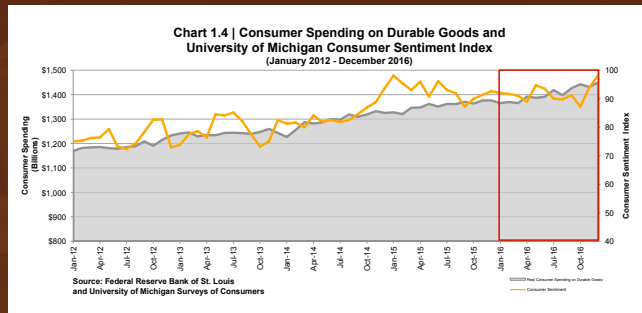
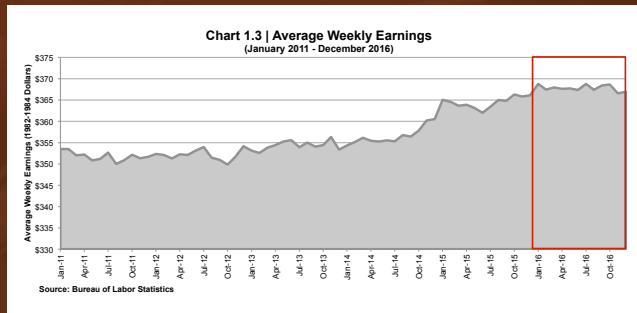
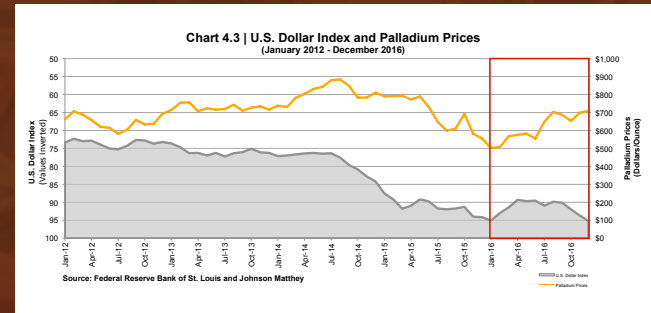
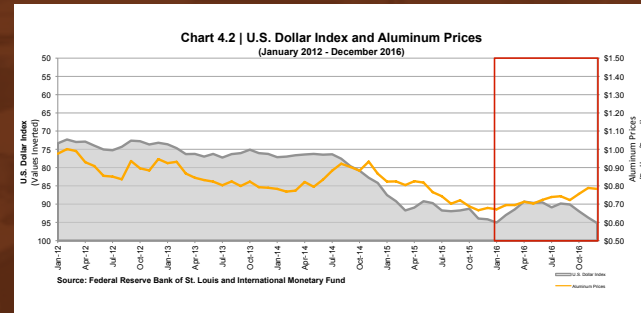
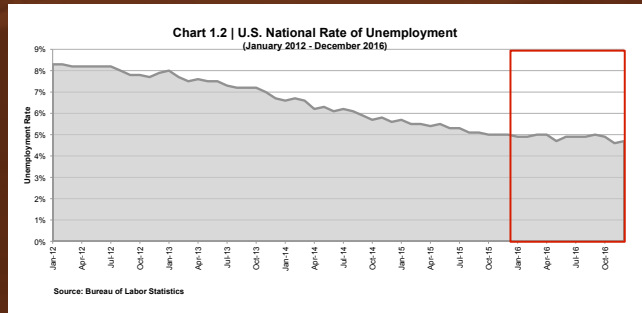
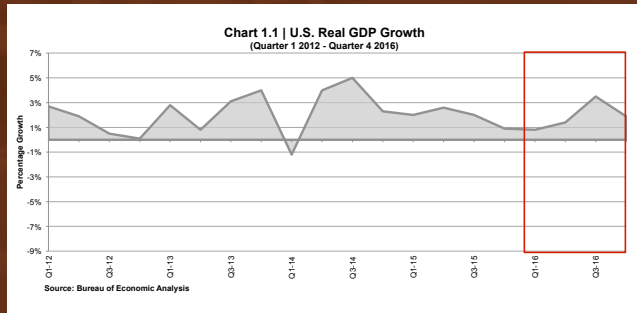
Economists and industry leaders have high hopes for another robust year of U.S. new-vehicle sales. According to several forecasts, including that from chief economist Steven Szakaly of the National Automobile Dealers Association, new-vehicle sales are expected to be in the range of 16.8 million to 17.5 million. However, these forecasts point out that low interest rates, incentives and discounts from sellers and consumer interest in new technology would have to continue to keep the pace.⁶⁵

Metals

The World Bank predicts prices of platinum and palladium will decrease 7% during 2017 because of weak demand, indications of a stronger dollar and rising interest rates.⁶⁶ However, the U.S. Geological Survey of Mineral Commodities predicts that the two precious metals will experience heightened demand from increased auto production in developing countries.⁶⁷ Meanwhile, aluminum is expected to have a global surplus of 317,000 tons according to a Reuters poll of industry analysts. That excess supply and indications that China will wind down its infrastructure spending programs in the second half of the year will likely exert downward pressure on aluminum prices.⁶⁸

SECTION 7

Index Of Charts



The U.S. Dollar Index in charts 4.2 – 4.4 is inverted to clearly showcase the relationship between the value of the U.S. dollar and metals prices.

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SECTION 9

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