



THE USED VEHICLE MARKET: BUMPS ON THE ROAD AHEAD

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Introduction

Charles Chesbrough

**Senior Economist and Senior Director of Industry Insights
Cox Automotive**

Charles is a seasoned quantitative analyst and researcher with over 25 years of experience utilizing data to identify industry trends and opportunities.

Charles joined Cox Automotive recently and is focused on expanding the organization's research and analysis initiatives, and on the economic and industry outlook.

Charles comes to Cox after working as Chief Economist at OESA, the automotive supplier trade association, and IHS Automotive where he was Director of Industry Analysis and Senior Economist. At IHS, Charles was responsible for developing and integrating statistical models and economic scenarios into IHS global automotive forecasts.

Charles has also worked for Ford Motor Company's marketing strategy group as well as two technology start-up companies and two market research firms. He began his career as a floor trader at the Chicago Board of Trade.

Charles earned a bachelor's degree in economics from the College of Business at Michigan State University and a master's degree in applied economics from the University of Illinois at Chicago. He returned to Michigan State University and completed all courses for the economics PhD program.

Charles has won many economic forecasting accuracy awards and is a board member and former President of the Detroit Association for Business Economics and a member of the National Association for Business Economics, the Federal Reserve Bank Automotive Roundtable, and the Society of Automotive Analysts.



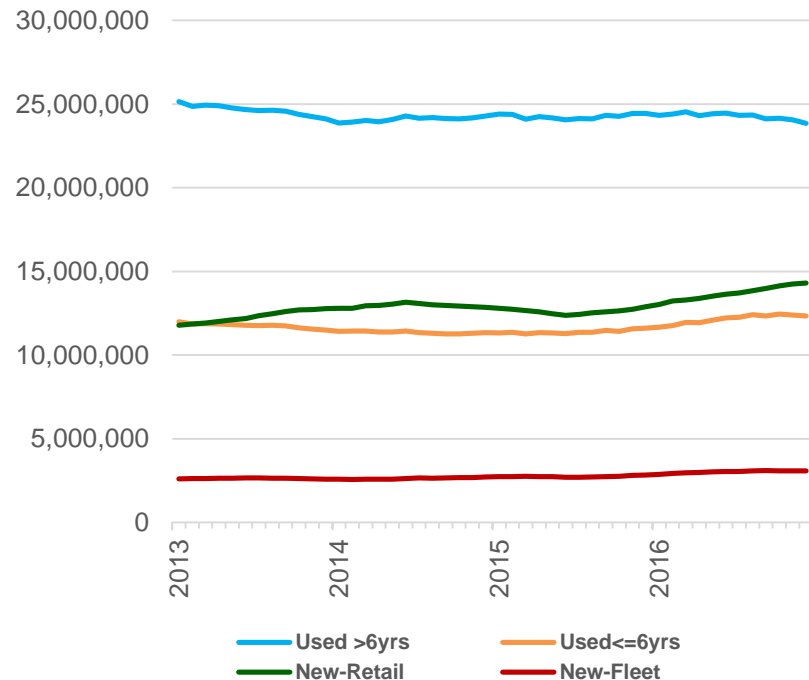
Agenda

- **Status of the Used Vehicles**
- Market threats and vulnerabilities
- Leasing Karma

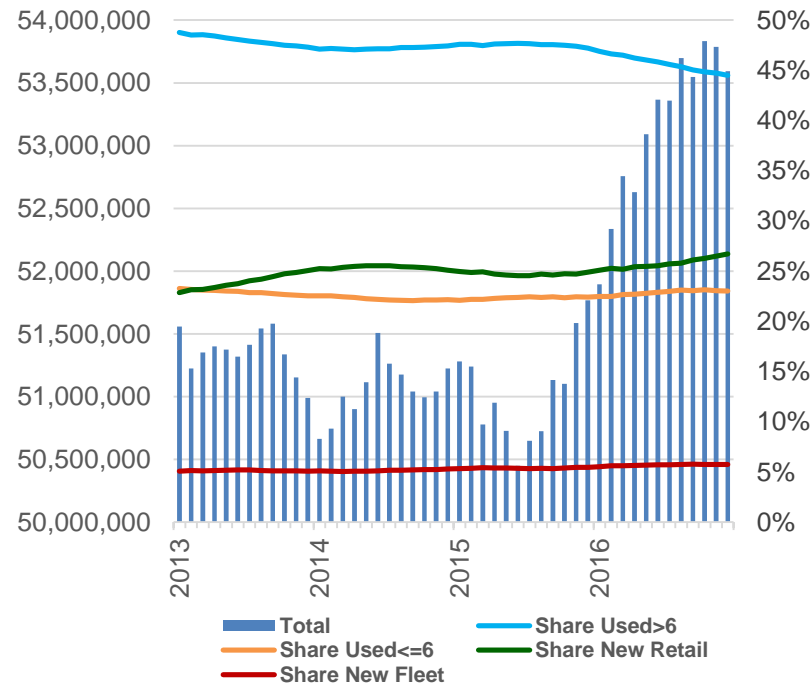
New and Used Light Vehicle Registrations

Old used and new fleet is fairly stable – it's new retail and newer used lifting market to record highs

Registration Volume by Type (12m average)



Total Registration Volume (12m average)

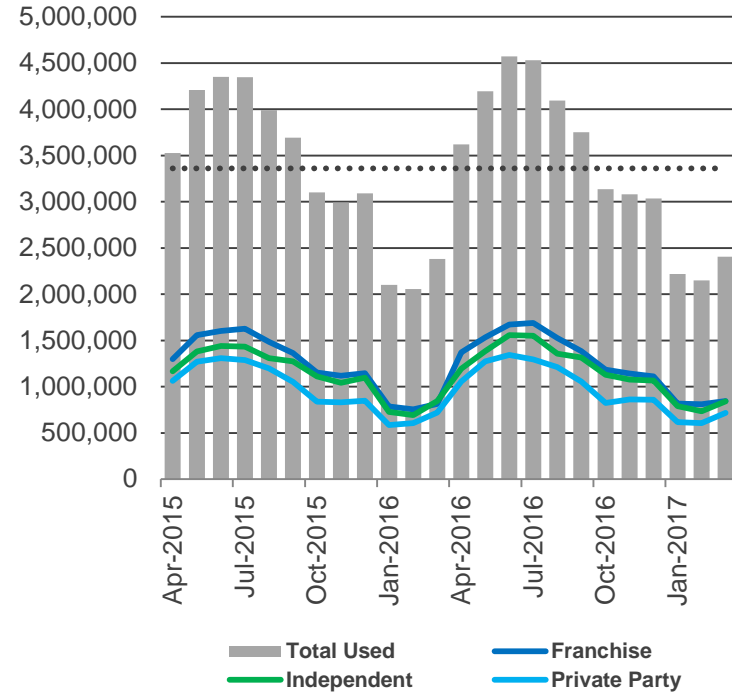


Source: IHS Markit Registrations Data

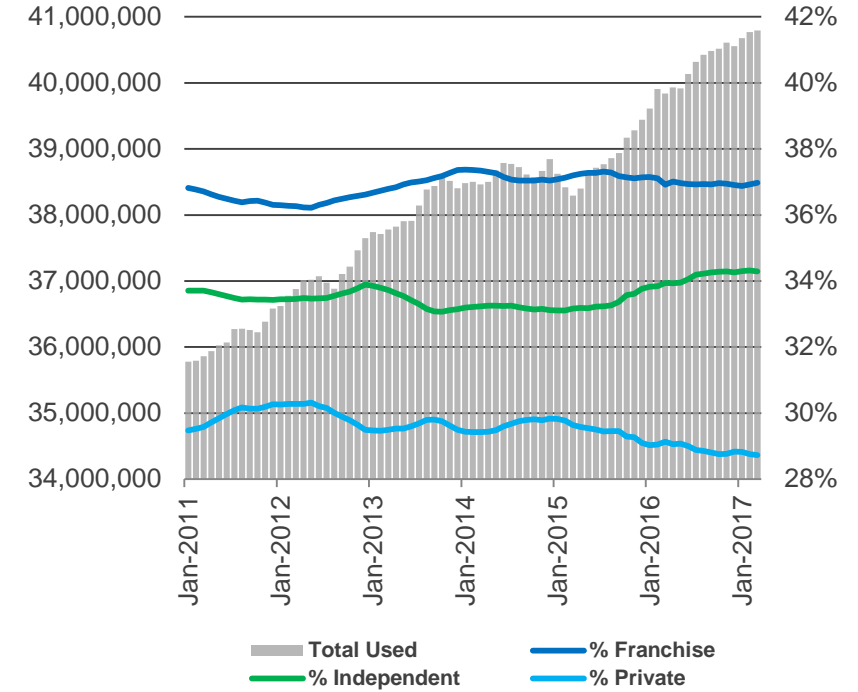
Used Light Vehicle Sales

YTD sales up over 4%, and Independents gaining share

Used Vehicle Sales (Monthly Actuals)



Used Vehicle Sales (12m Total)

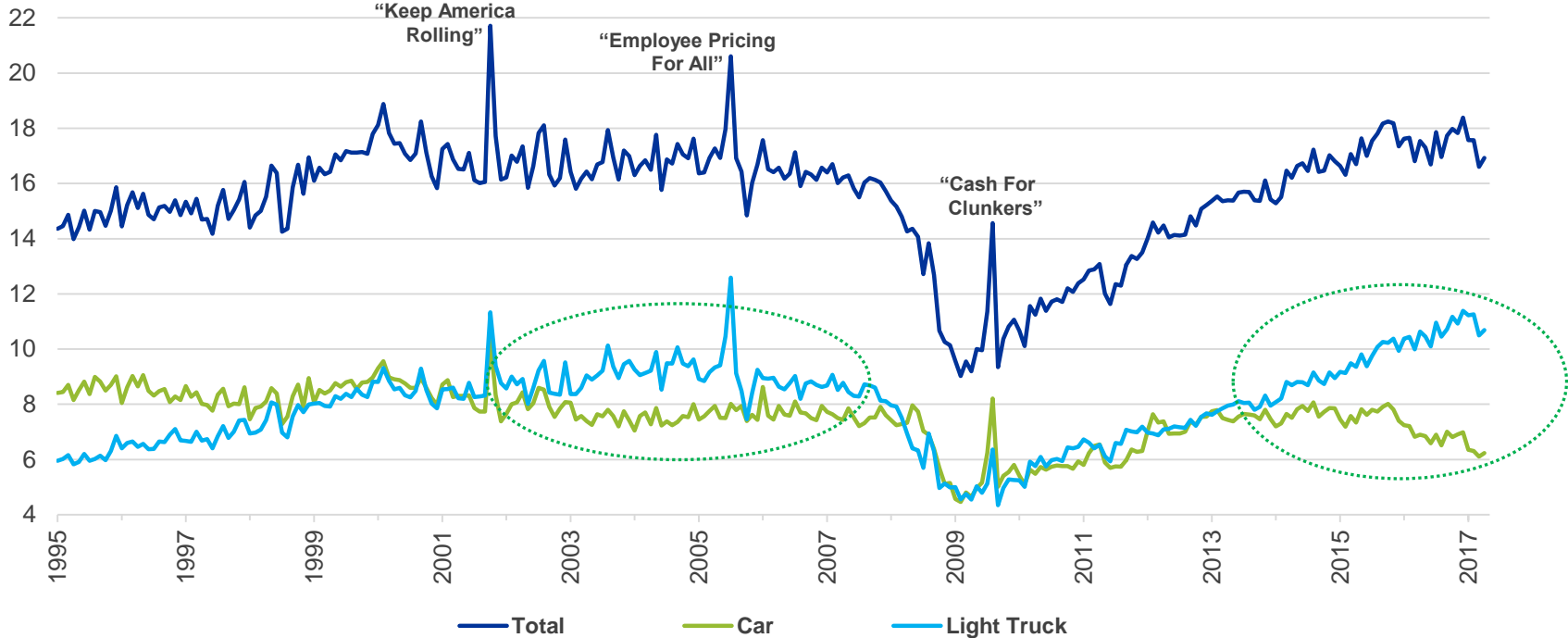


Source: NADA Used Vehicle Sales Data

New Light Vehicle Sales

Pace has slowed since Q4 2015, but still on track for a strong year

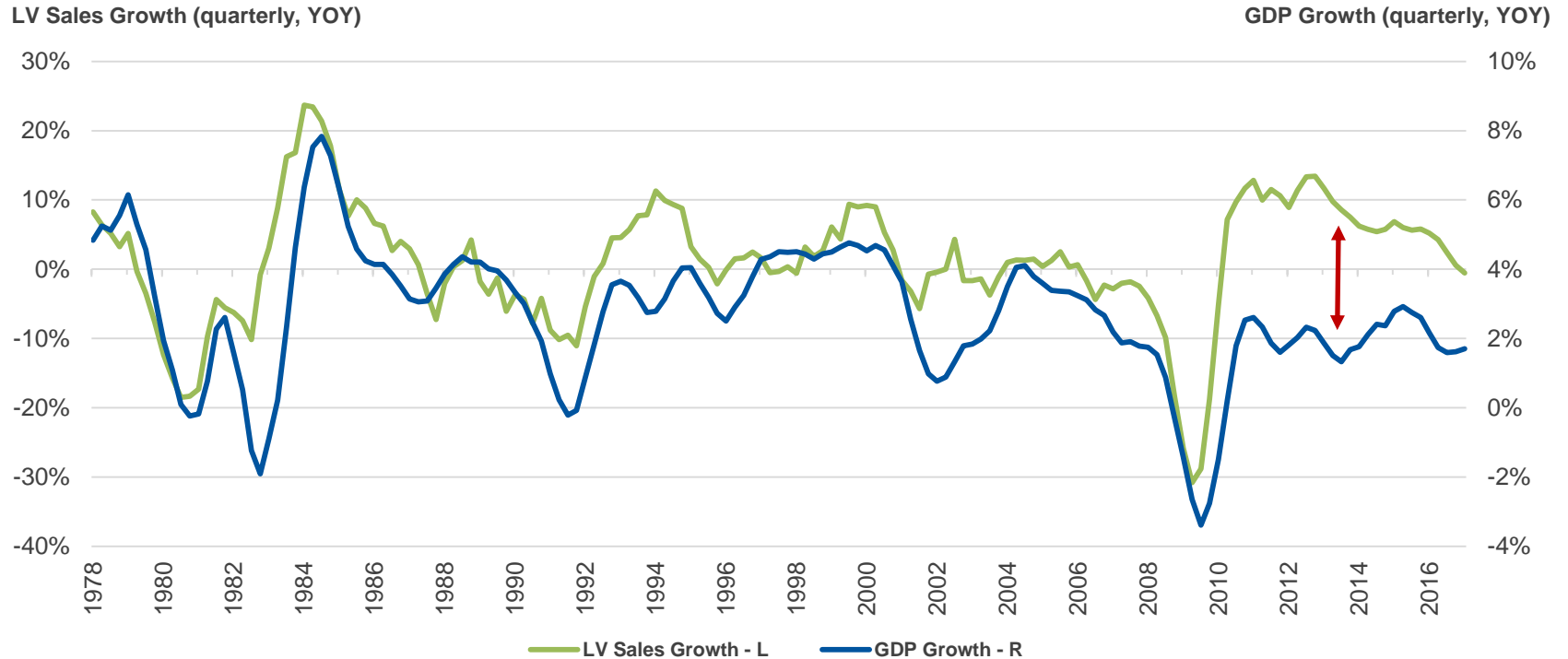
Monthly Sales (SAAR, millions)



Source: Automotive News, US Bureau of Economic Analysis

Economic Growth and New Light Vehicle Sales

Strong relationship historically, but some divergence since 2009 recession

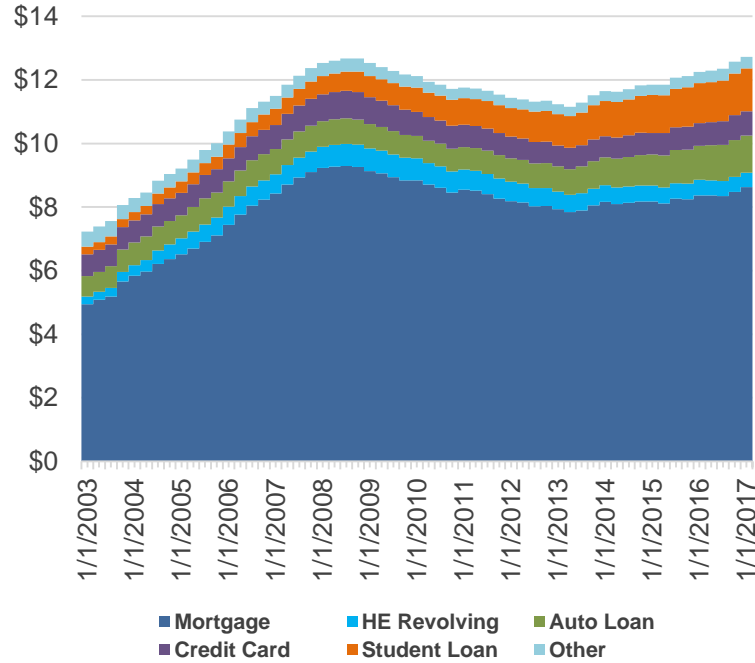


Source: Bureau of Economic Analysis, 4 quarter moving average

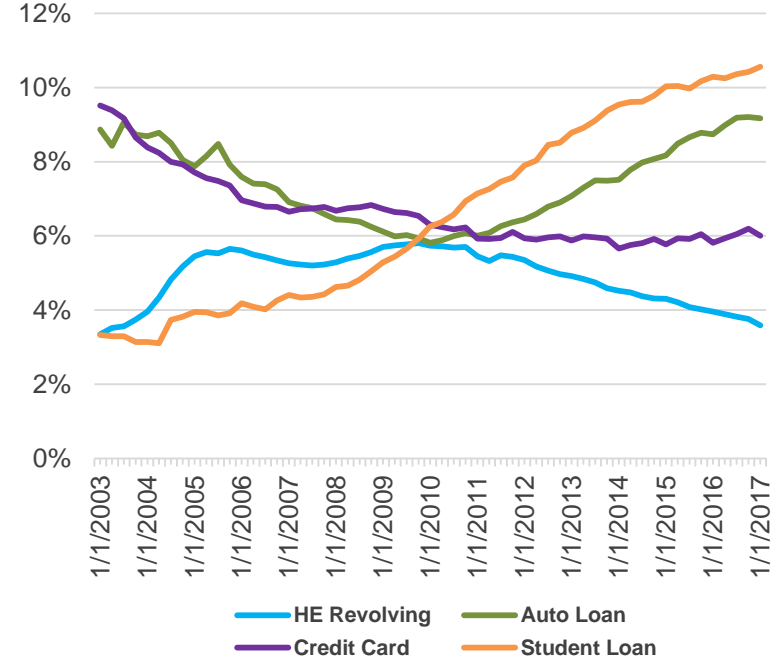
Consumer Debt

Total back to pre-recession levels, but now with Student and Auto debt leading the way

Total Debt Outstanding (trillions \$)



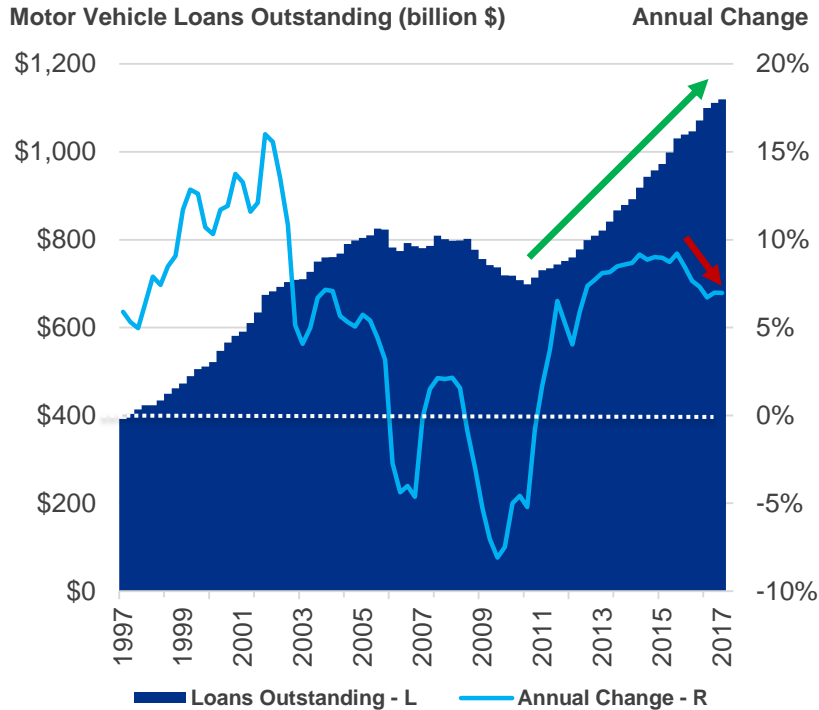
Share of Total Debt (%)



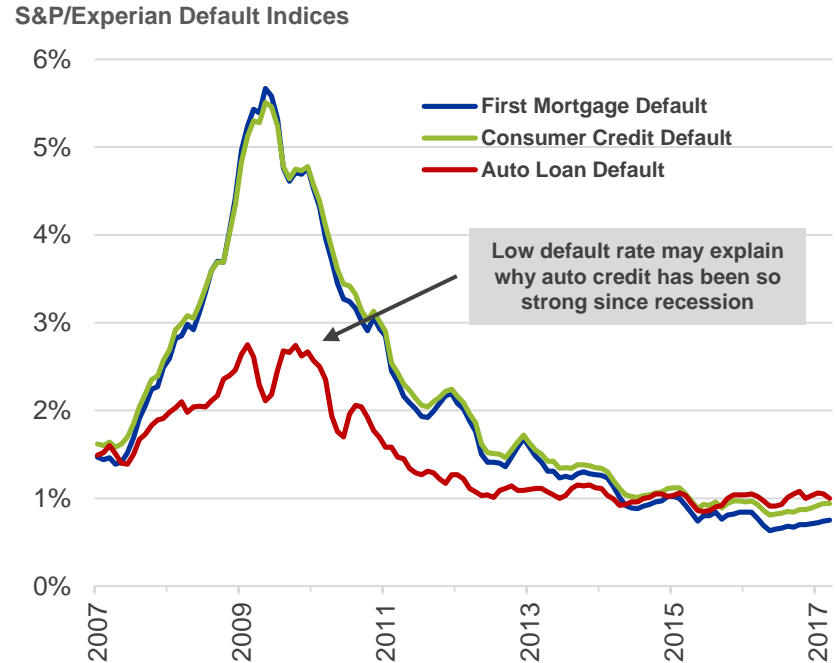
Source: New York Fed Consumer Credit Panel/Equifax

Auto Loan Credit Conditions

Availability has been driving the vehicle market recovery; Why? Car buyers pay their bills



Source: Federal Reserve Bank, Quarterly Data



Source: Experian, monthly data

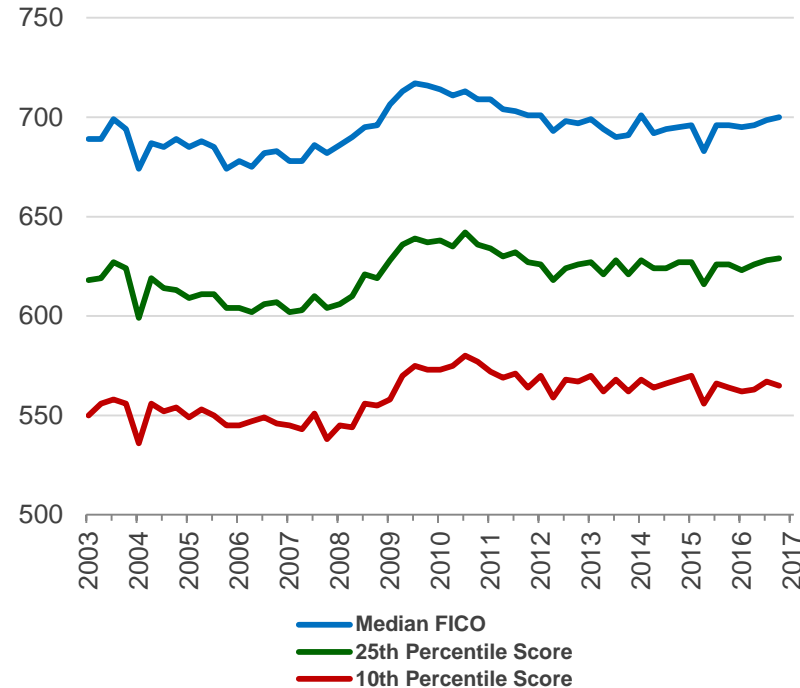
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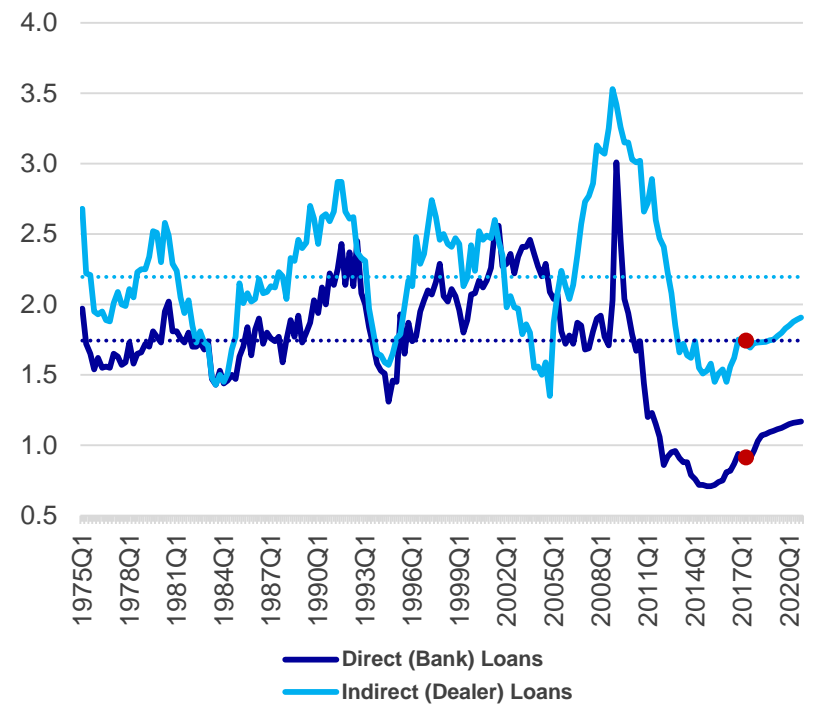
Auto Loan Credit Quality

FICO scores stable, but delinquencies starting to rise

FICO Scores New Originations



Delinquency Rate (% Accounts 30 days past due)

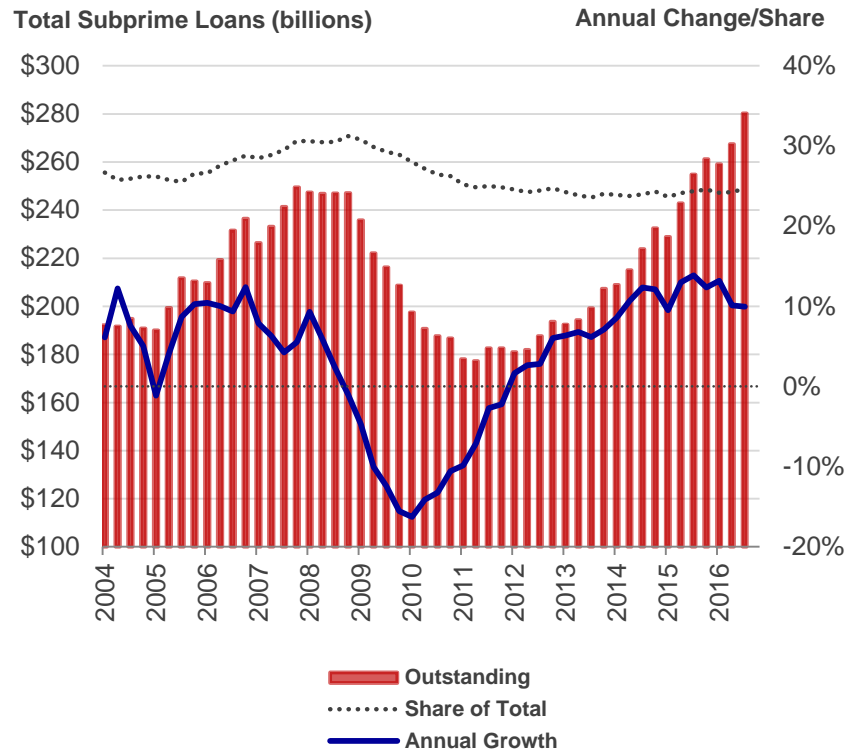
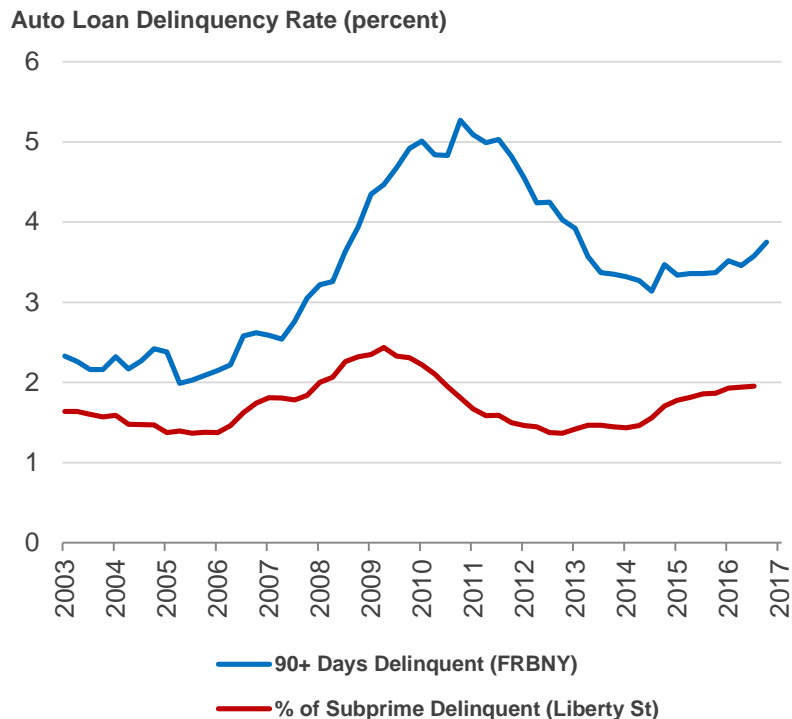


Source: FRBNY Equifax Risk Score, quarterly data, HHDC (household debt and credit) Report

Source: American Banker Association Survey, Moody's forecast

Auto Loans - Subprime

Delinquencies still below previous peak; Amount of poor credit loans is sizable, and vulnerable



Source: Moody's, Federal Reserve Bank New York, Liberty Street quarterly data

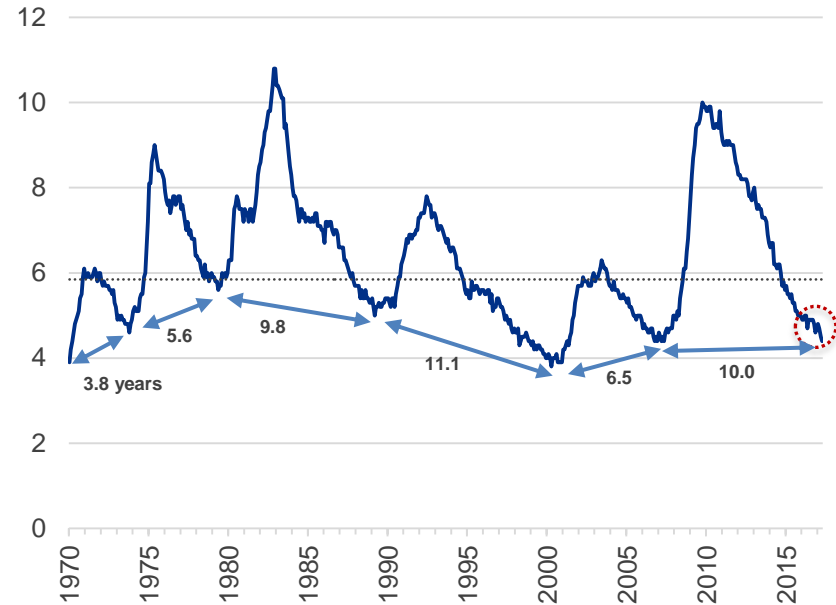
Labor Market

Employment conditions strong – concern is that economy doesn't stay at these levels for long

Initial Claims (4 week moving average)



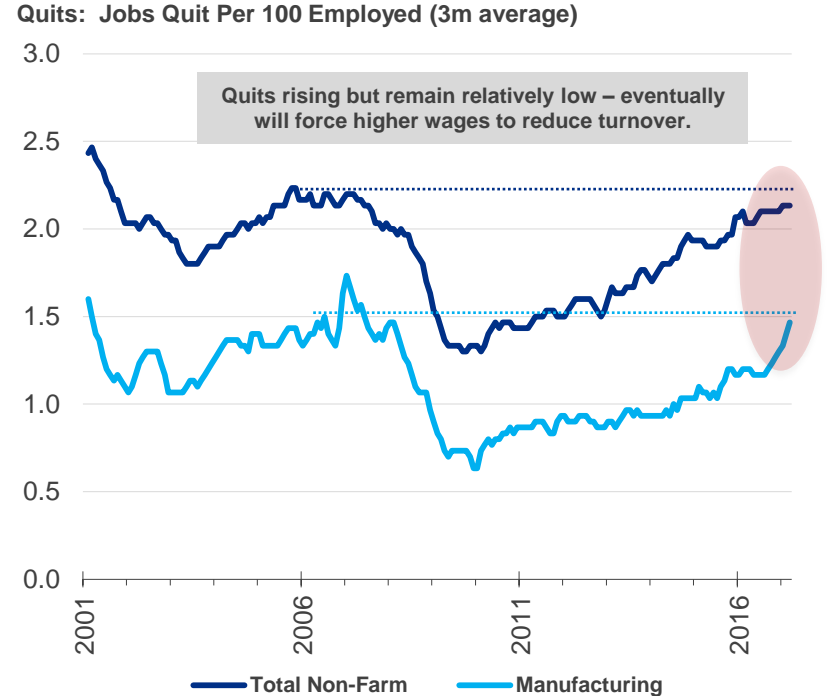
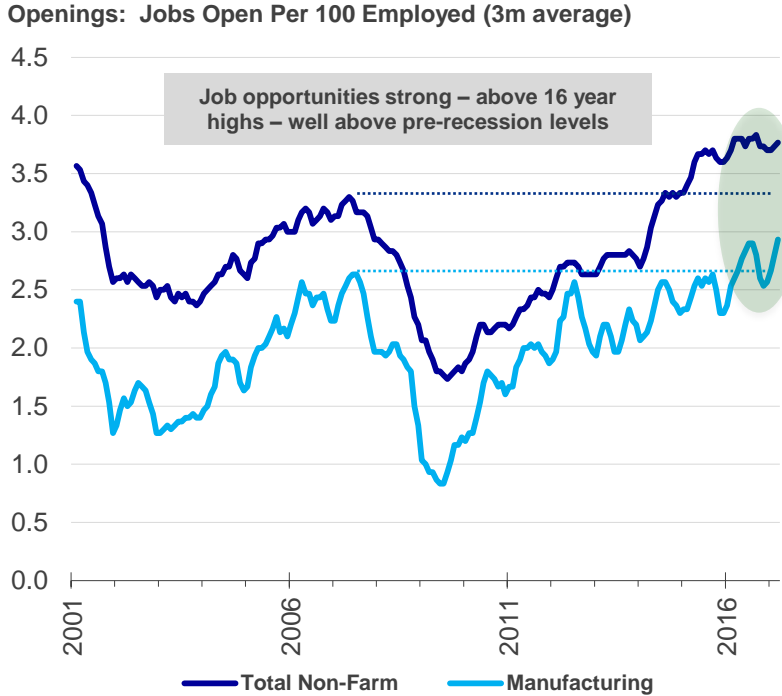
Unemployment Rate (U3, %)



Source: Department of Labor, Bureau of Labor Statistics

Job Market

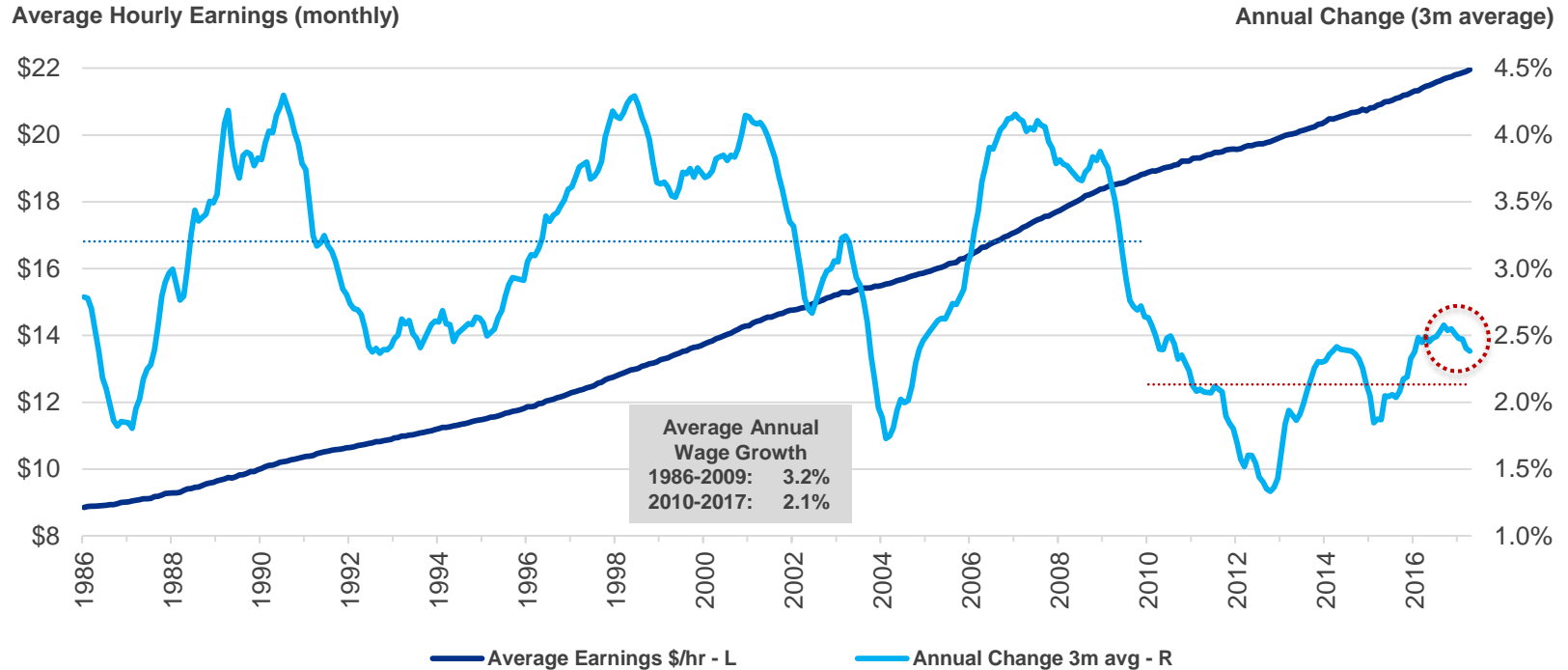
5.7 million openings; Quits slowly rising too – workers gaining confidence, wages to follow?



Source: Department of Labor, Bureau of Labor Statistics

Labor Market Wages

Wage growth weak since recession; FED watching closely as a potential inflation “spark”

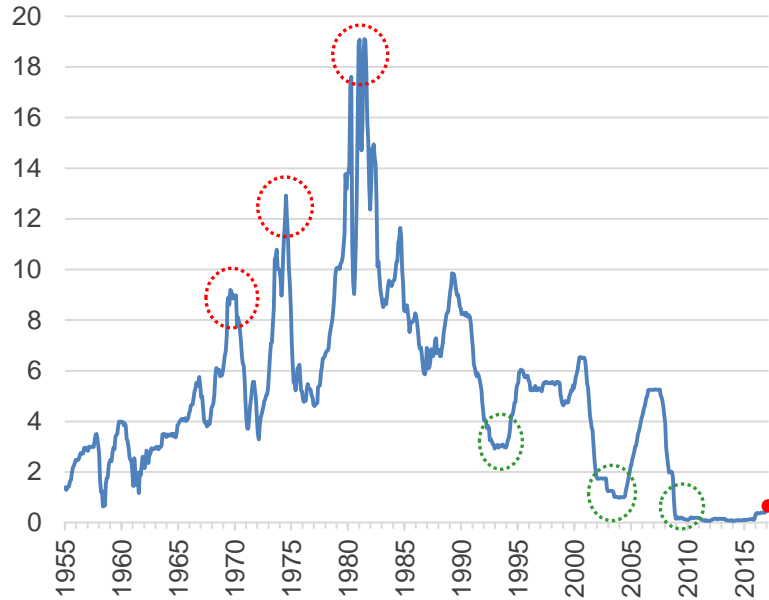


Source: Department of Labor, Bureau of Labor Statistics, Production Non-supervisory

Interest Rates

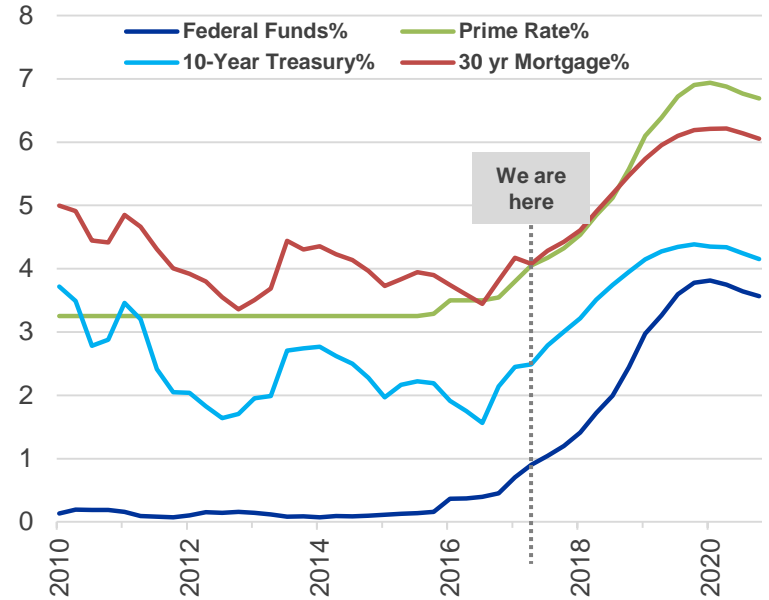
More aggressive tightening likely; FED walking a tightrope to avoid recession

Effective Federal Funds Rate (% , overnight)



Source: Federal Reserve Bank

Key Interest Rate Forecasts (%)

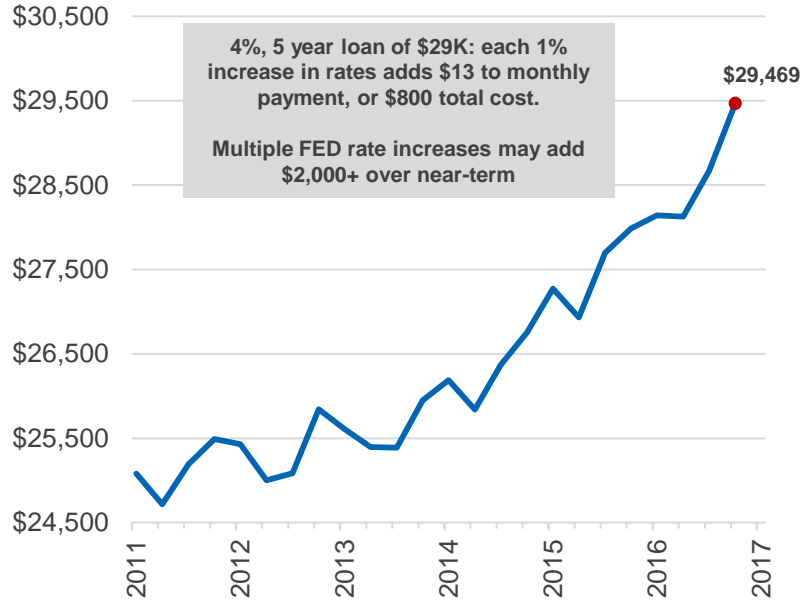


Source: Moody's current quarterly forecast

Borrowing Conditions Vulnerable

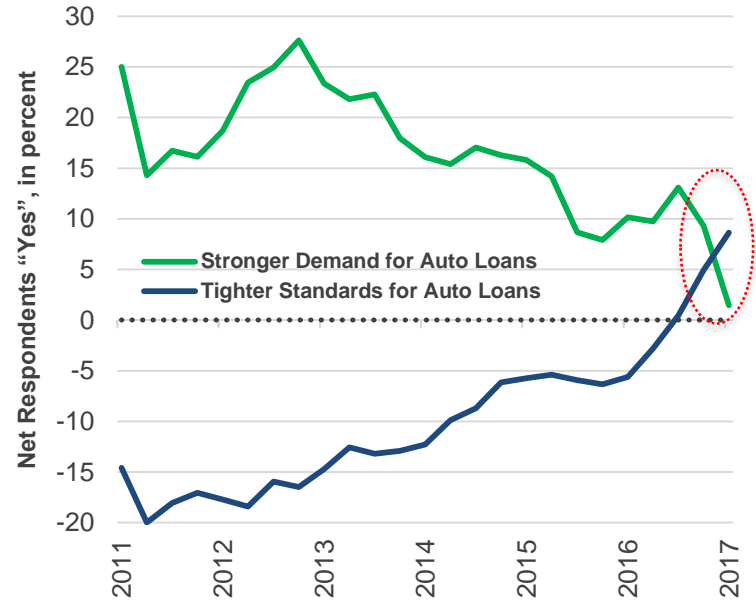
Consumers spending all loan “savings”; Banking survey suggests change is coming

US Average Amount Financed (new)



Source: Federal Reserve

Auto Loan Availability



Source: Federal Reserve, Federal Reserve Loan Officer Survey, 4 quarter average

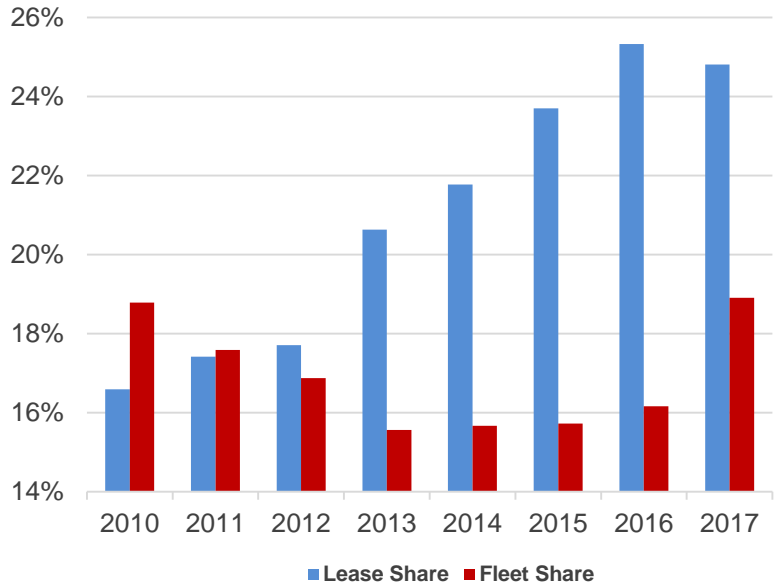
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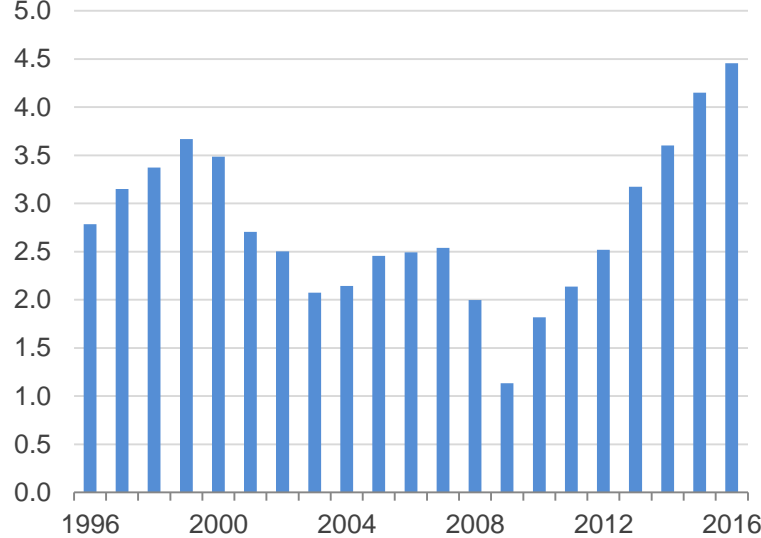
Lease and Fleet Share

Bubble forming? High Lease and Fleet will cause problems for residual values, and surge in CPO

Lease and Fleet Share of New LV Registrations



Lease Originations (millions)

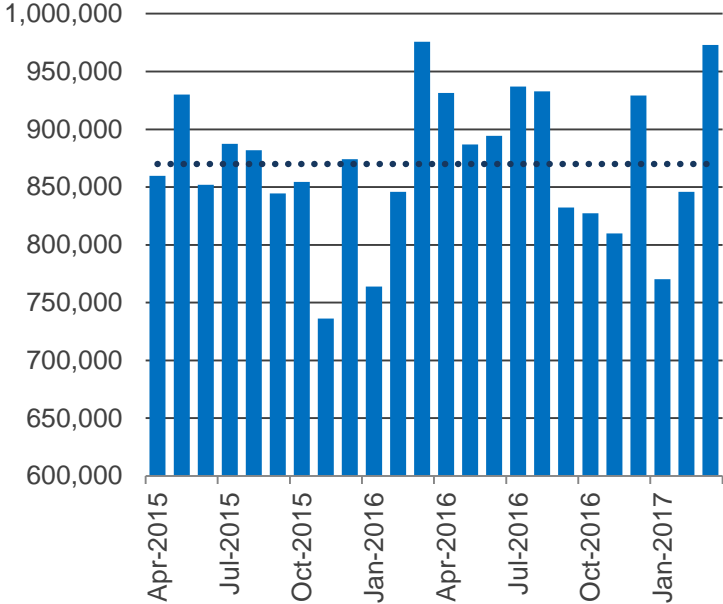


Source: IHS Markit, Manheim Consulting

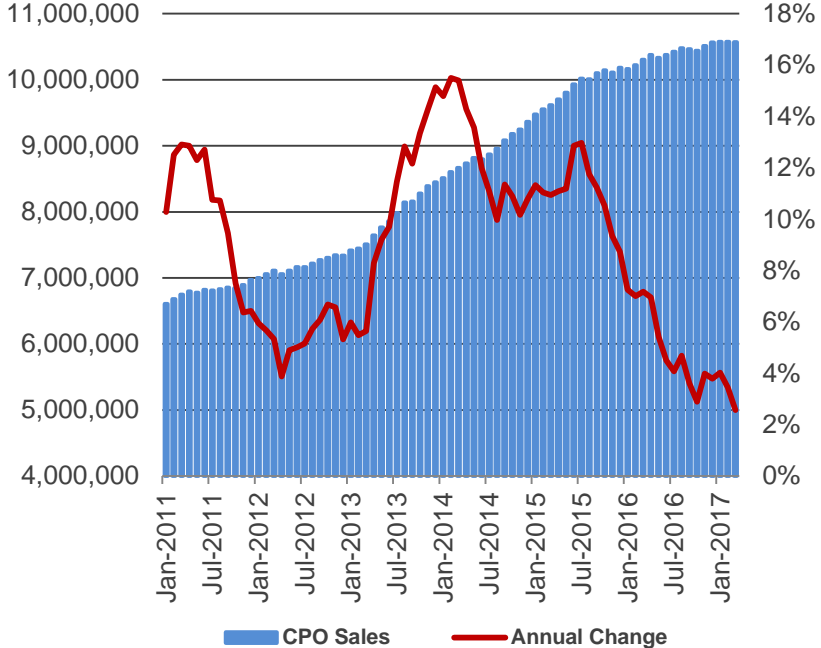
Certified Pre-Owned Vehicle Market

Sales still trending 850K+ each month, but high growth period ending

CPO Vehicle Sales (Monthly Actuals)



CPO Vehicle Sales (12 Month Average)

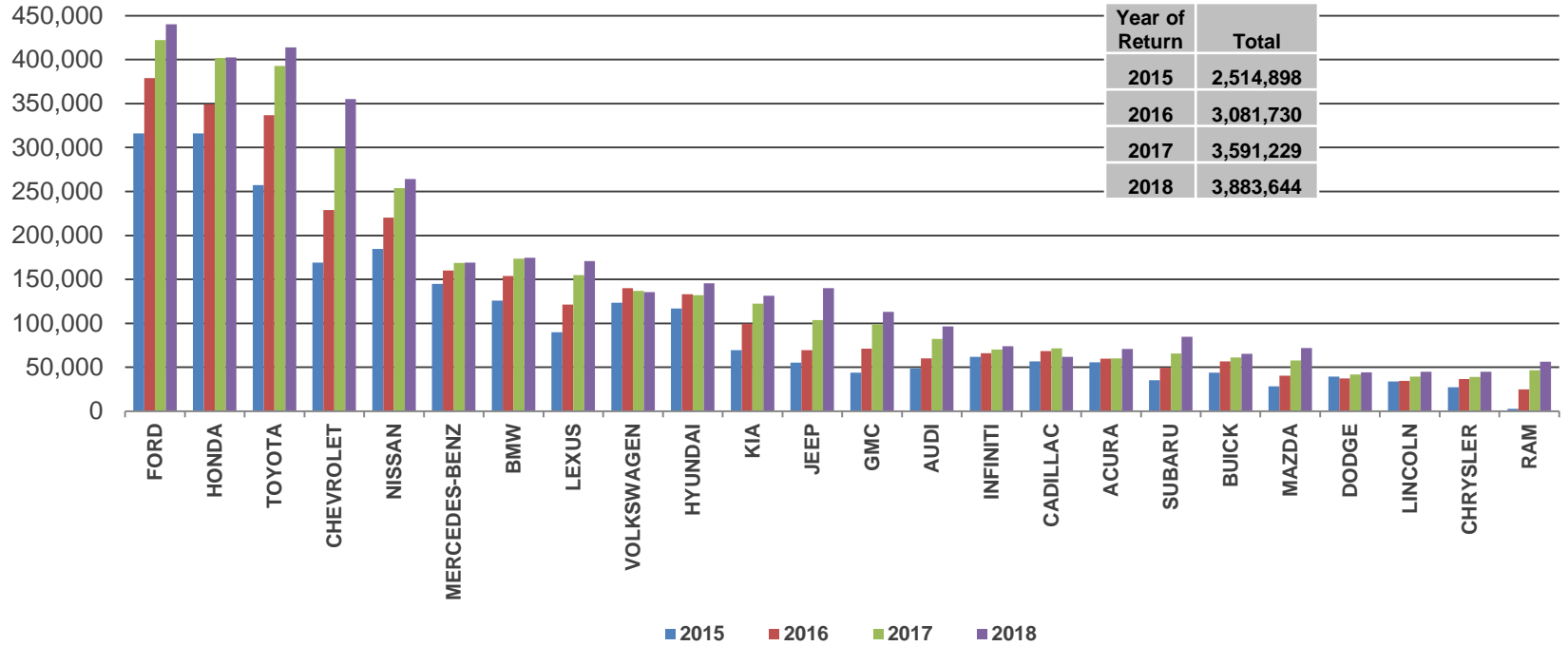


Source: Autodata Used Vehicle Sales Data

Off-Lease Projections: By Brand

OEM sales strategies will have lasting impact – some more than others

Count of Leased Vehicles by Year of Return

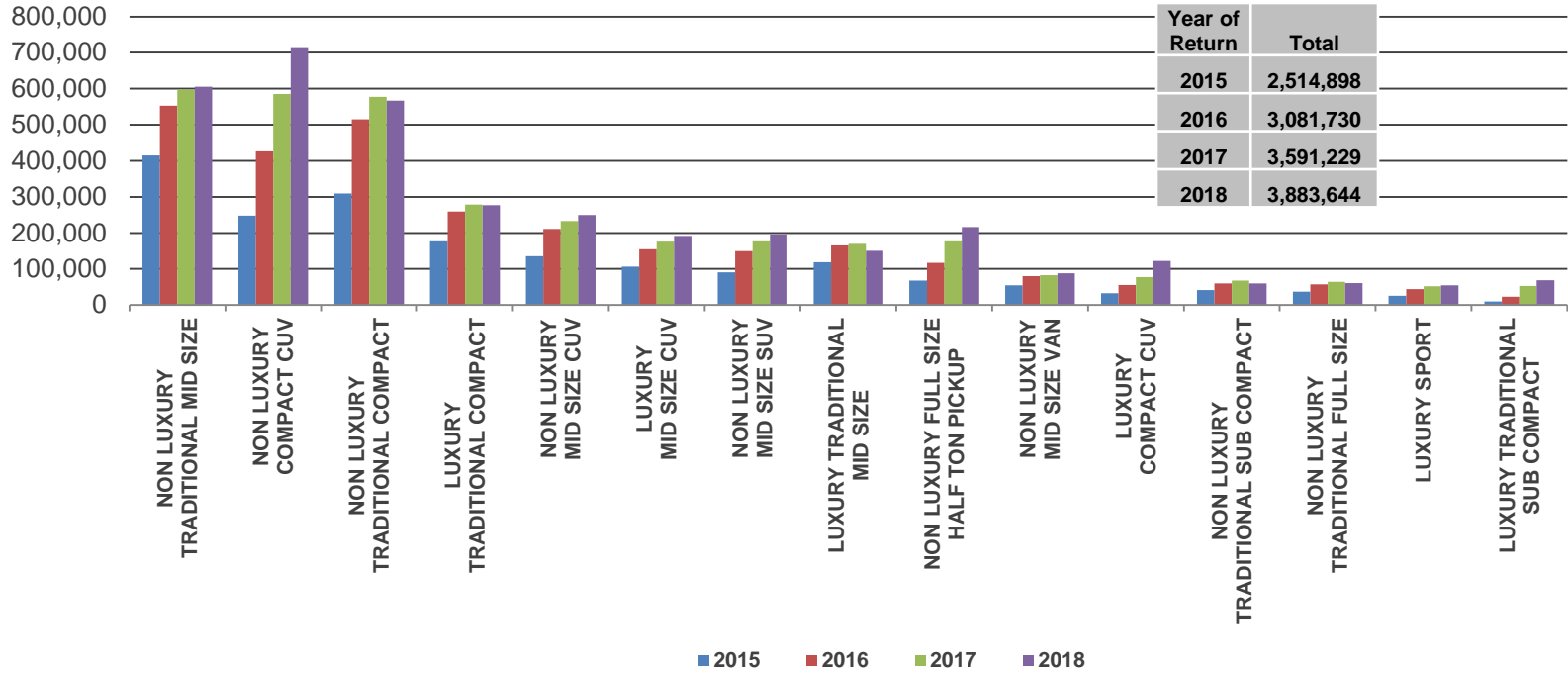


Source: IHS Markit Estimates

Off-Lease Projections: By Segment

Over 3.5 million units coming back to dealers in 2017 – many are “less desired” cars

Count of Leased Vehicles by Year of Return

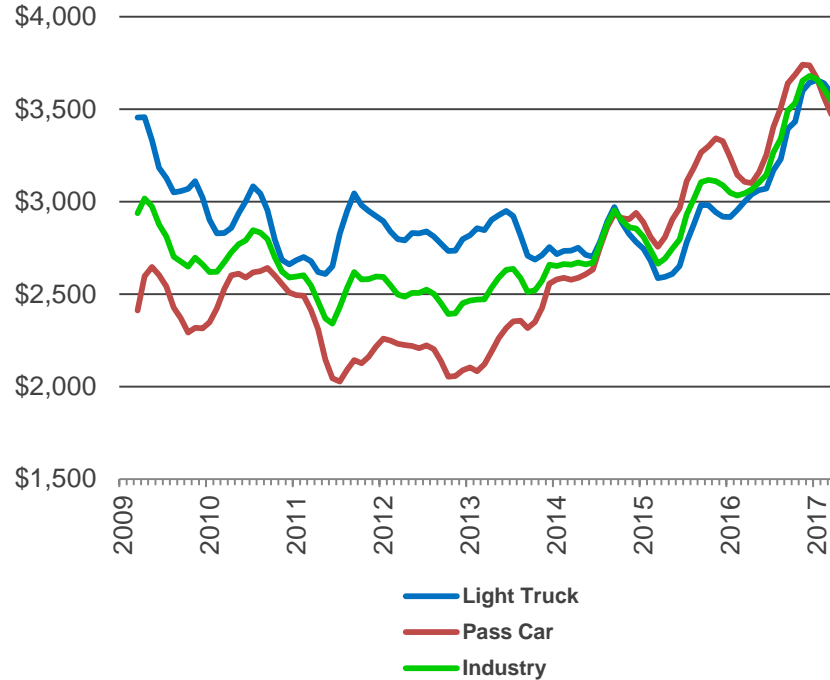


Source: IHS Markit Estimates

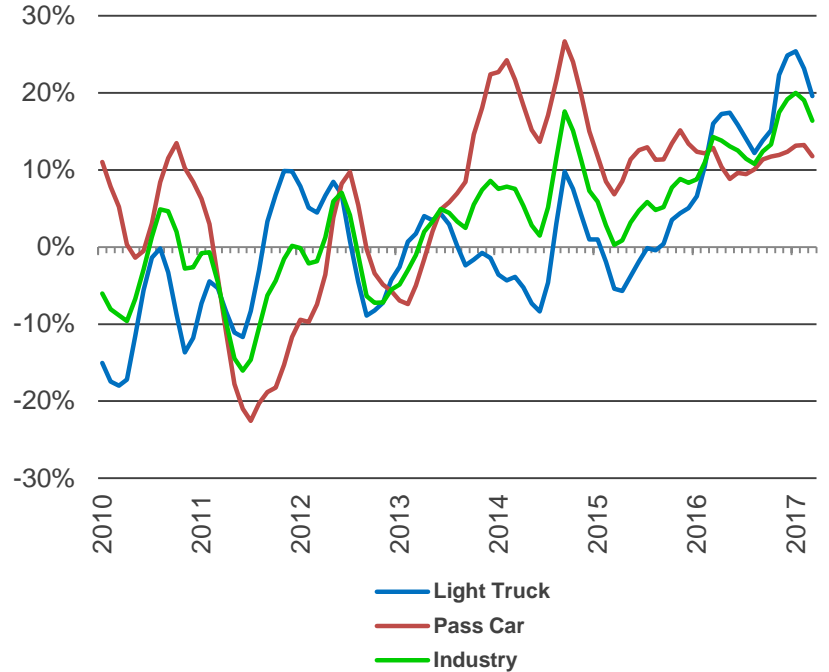
New Vehicle Incentives

Spending above recession levels, and pace is accelerating

Average Incentive Spending Per Vehicle (3 month avg)



Annual Change in Incentive Spending (3 month avg)

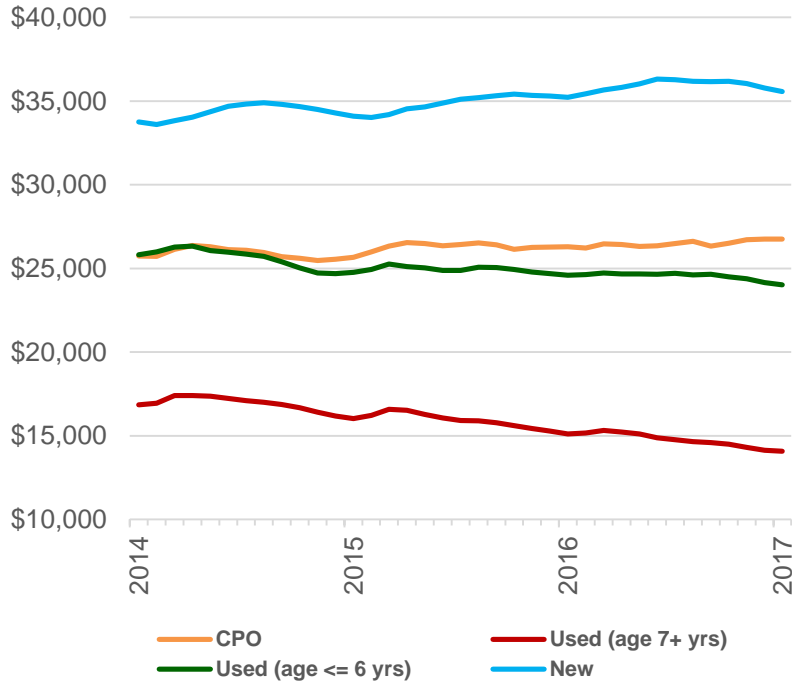


Source: Autodata Incentive Estimates

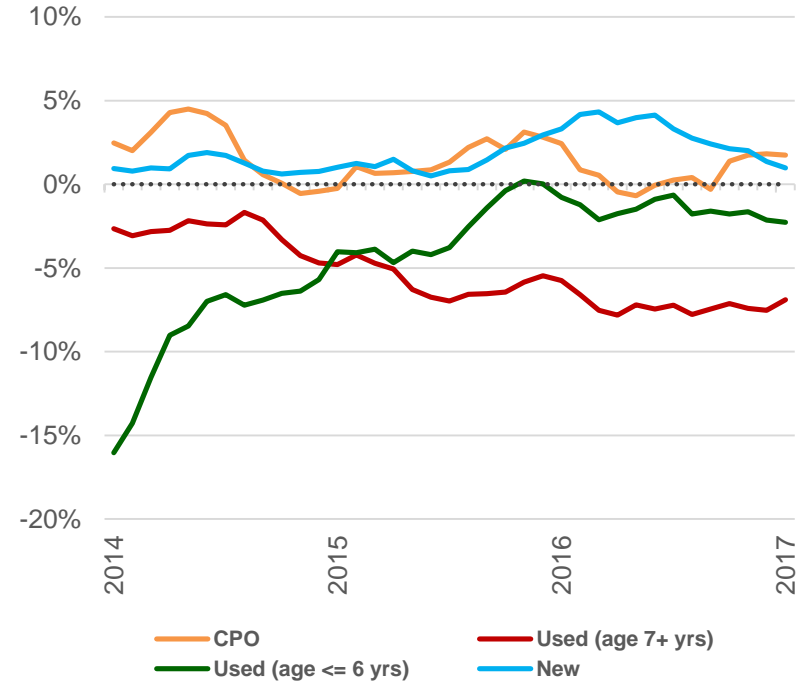
Light Vehicle Listing Price

New and Used asking prices weakening – only CPO appears stable

Average Listing Price on Autotrader Website



Annual Change in Price

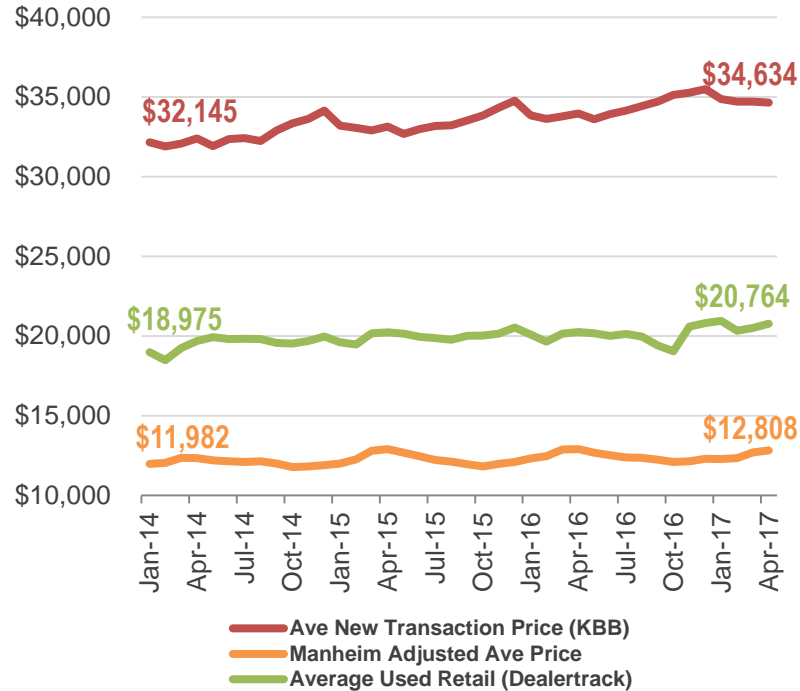


Source: Autotrader Listing Price, Cox Automotive

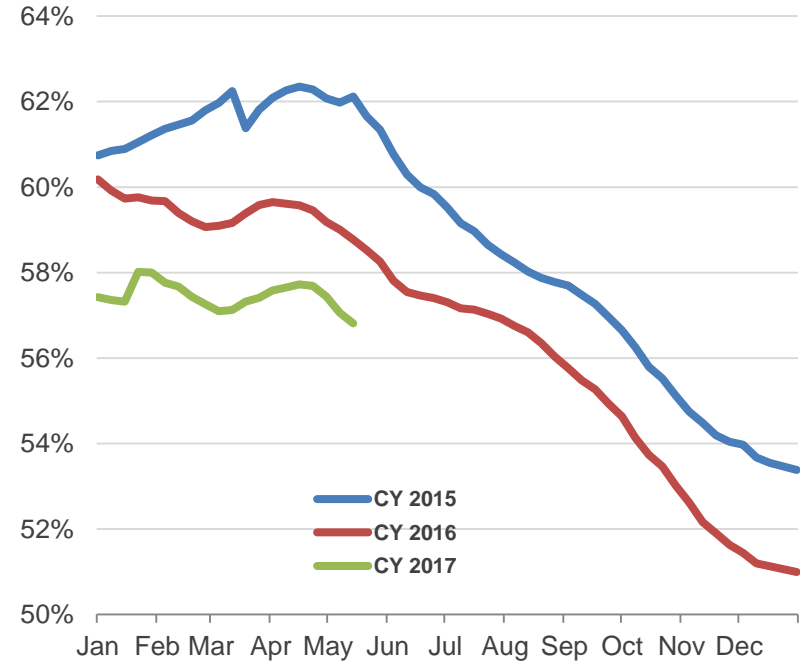
Vehicle Values

Transaction trends positive on nominal basis but retained values falling

Average Transaction Price



Average Retained Values (% of MSRP)



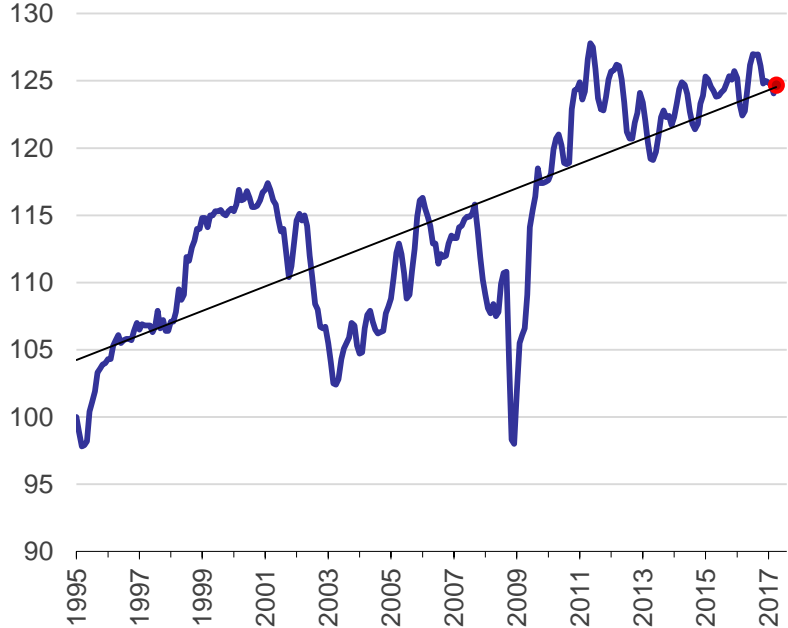
Source: Kelley Blue Book, Dealertrack, Manheim

Source: KBB Auction Values

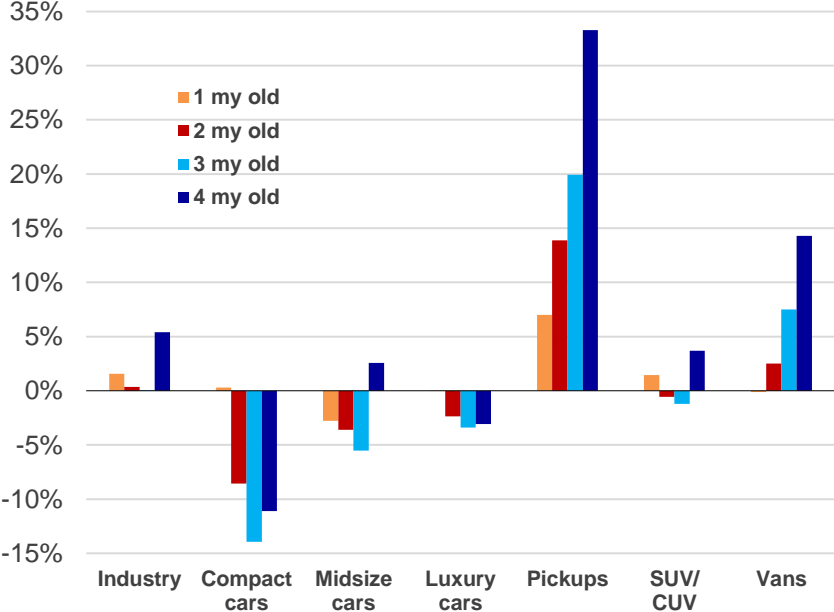
Manheim Used Vehicle Value Index

Maintaining upward trend through April, but segments vary significantly

Manheim Index (Jan 1995=100)



Change in Wholesale Auction Price (YTD, YOY)

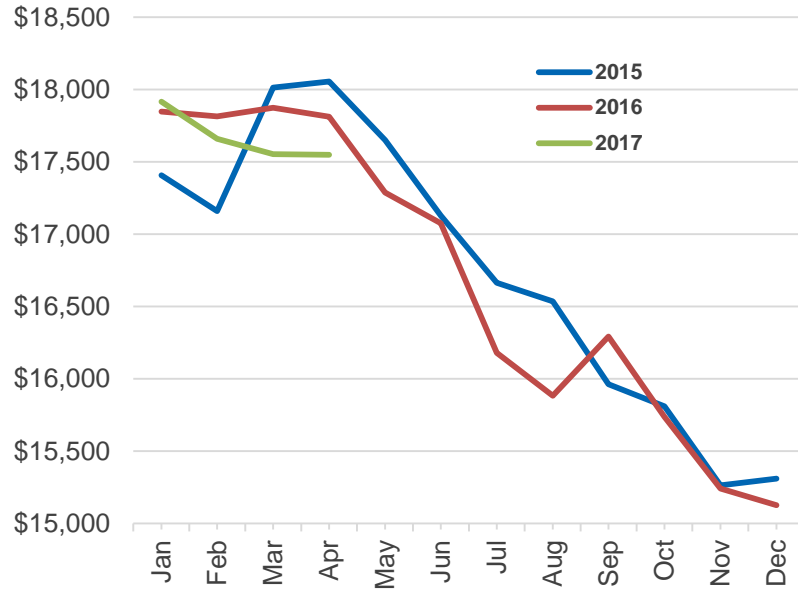


Source: Manheim, monthly, Adjusted for mix, mileage and seasonality

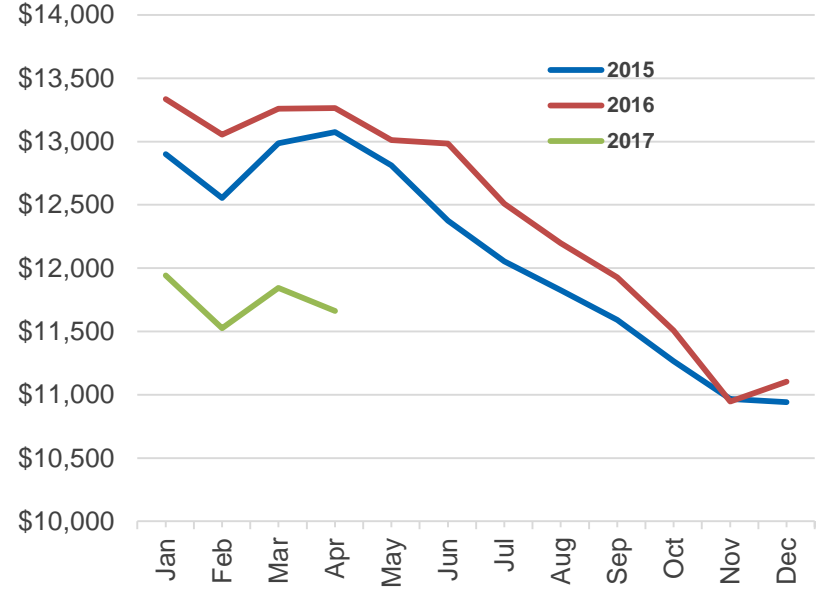
Average Auction Prices

Weakening prices will have impact on residual values, credit availability and profitability

Average Auction Price: 3 Model Years Past



Average Auction Price: 5 Model Years Past

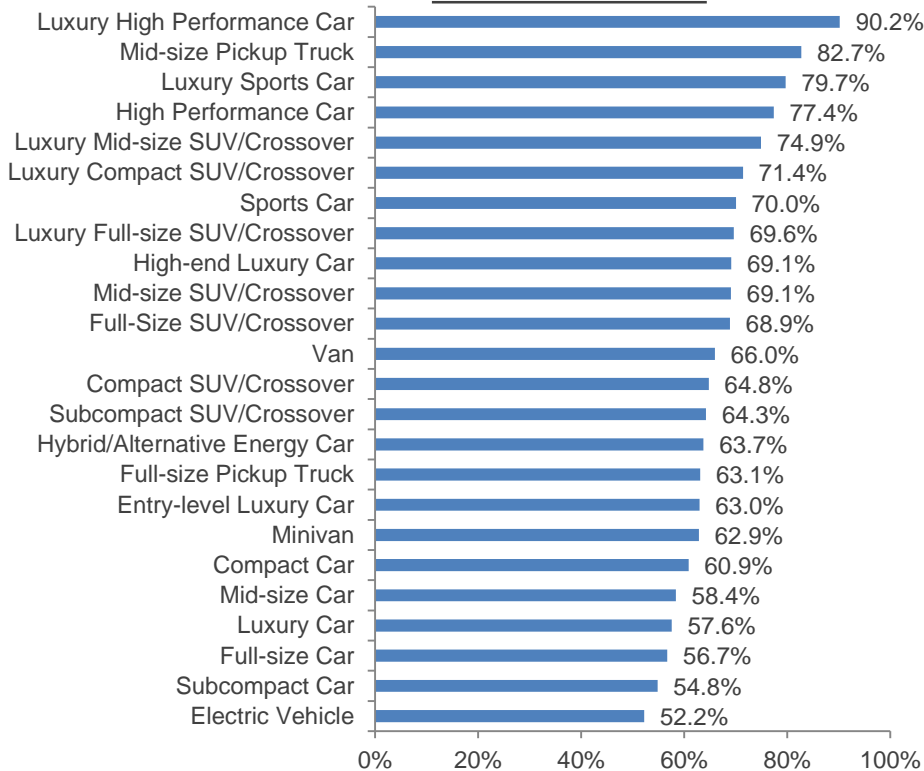


Source: Manheim Consulting

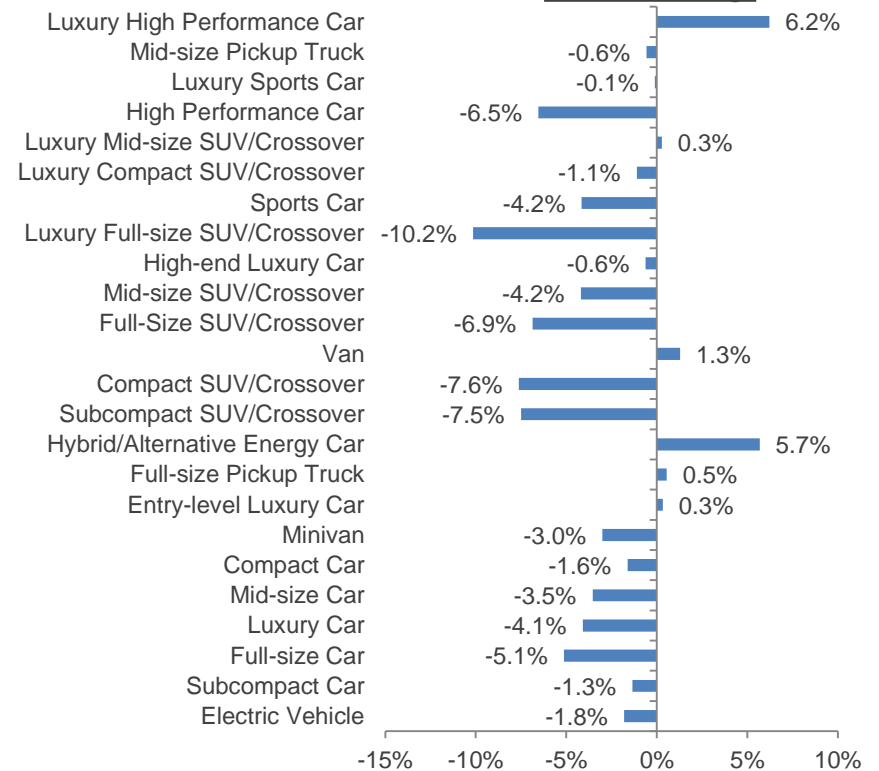
Retained Value of MSRP by Segment

Consumer preferences, incentives, fleeting – all impacting valuations

MY 2016 Retained Value

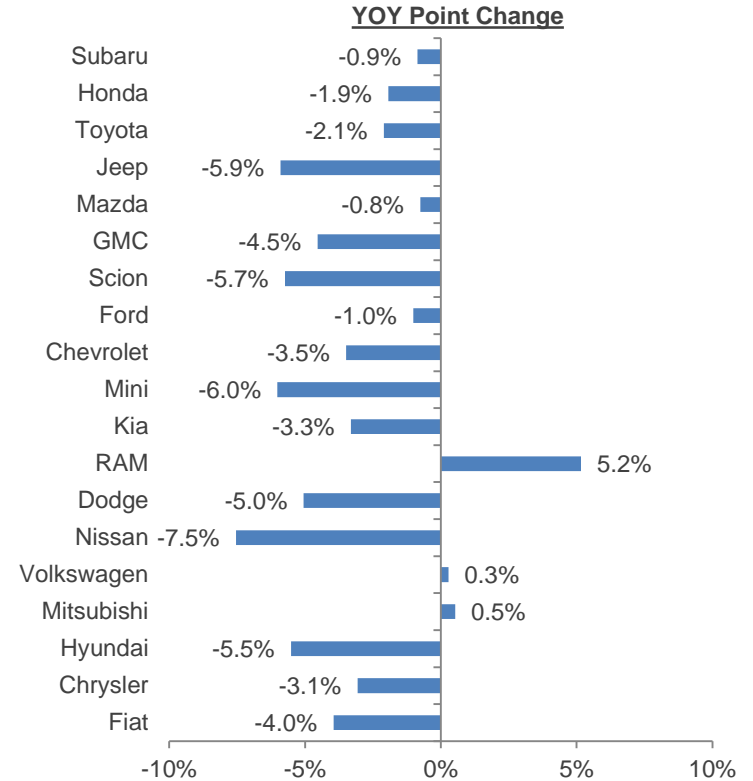
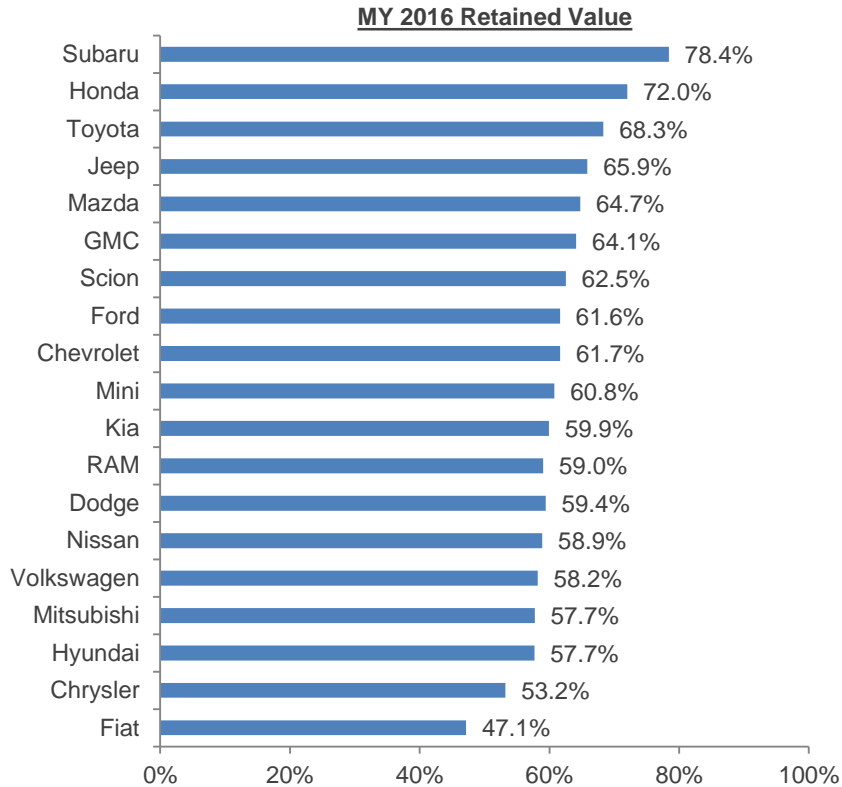


YOY Point Change



Retained Value of MSRP by Non Luxury OEM

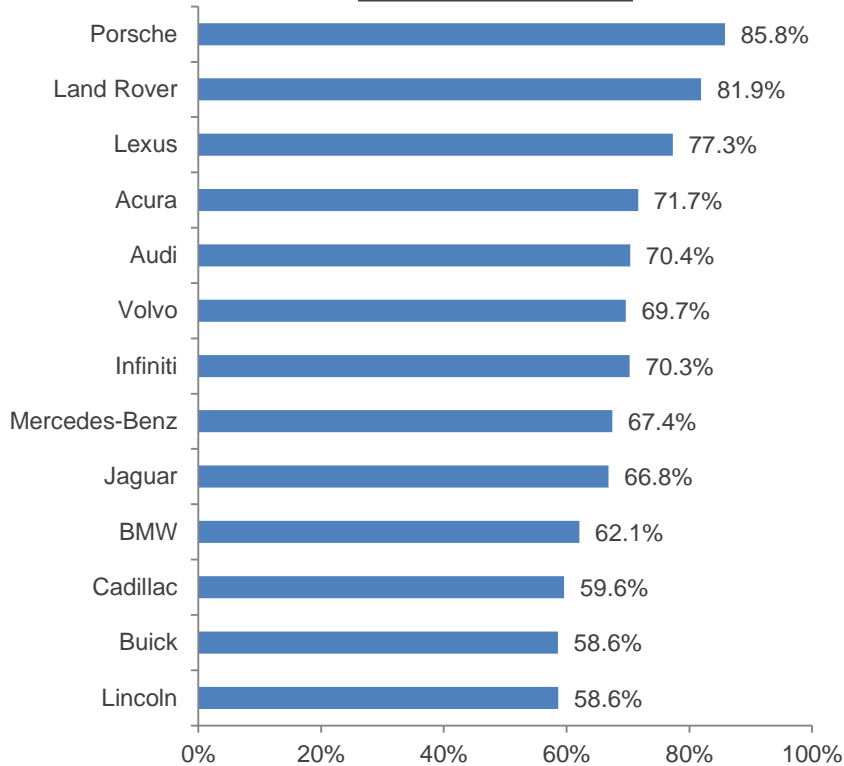
Sales strategies have lasting impact on valuations, and customer loyalties



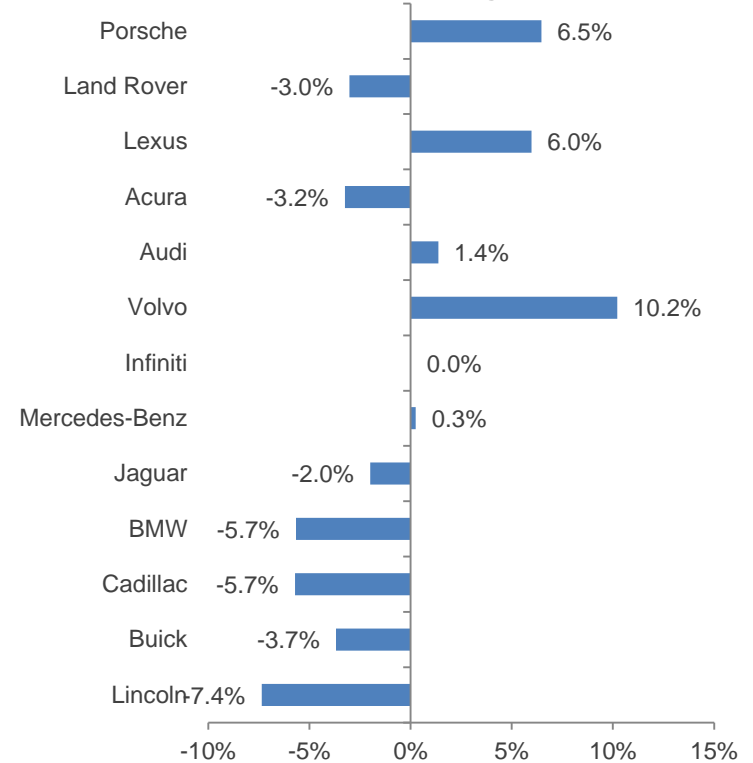
Retained Value of MSRP by Luxury OEM

Wide differences among premium manufacturers

MY 2016 Retained Value



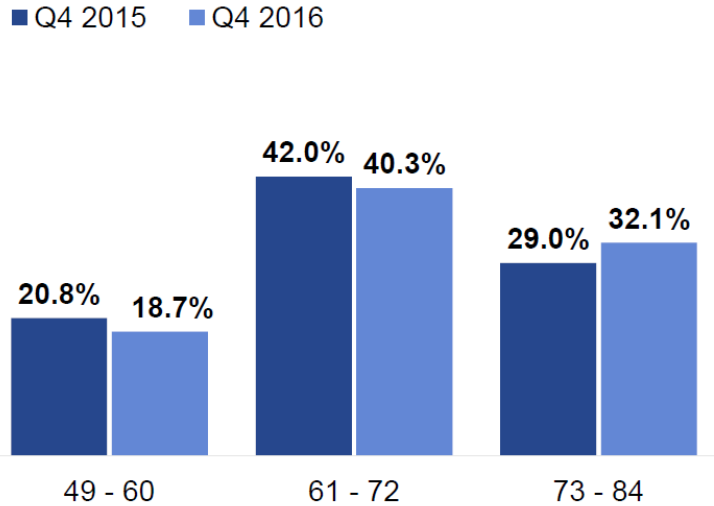
YOY Point Change



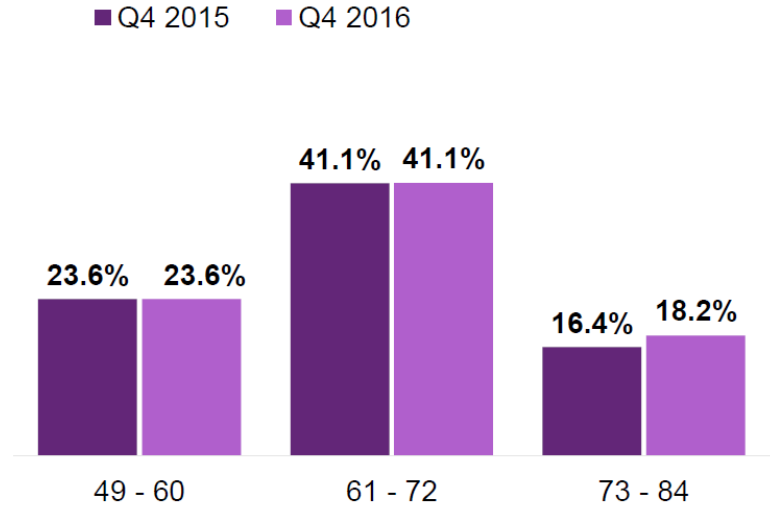
Loan Terms Length

Keeping monthly payments low leading to longer terms – and reducing future sales

Percentage of new loans by term



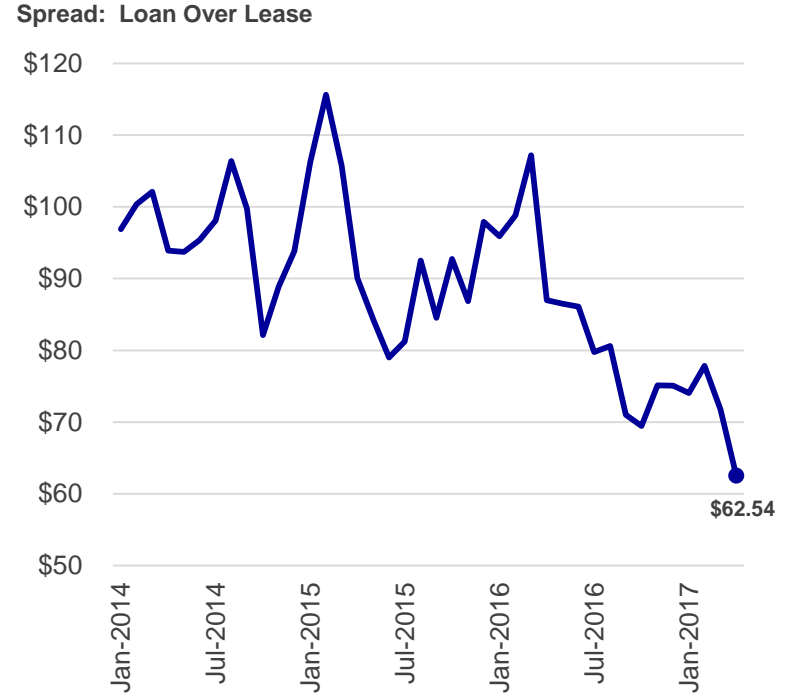
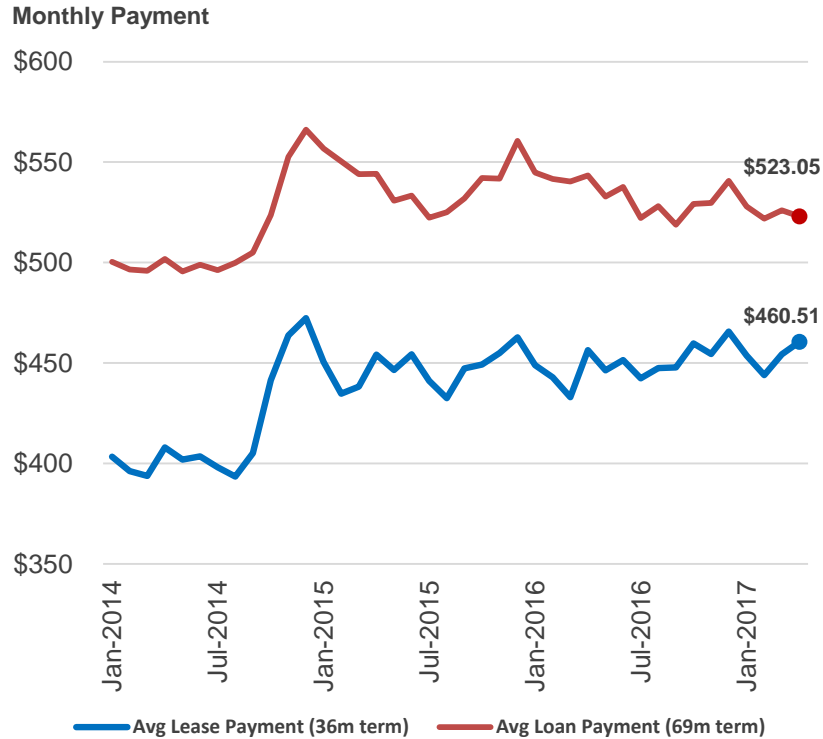
Percentage of used loans by term



Source: Experian Automotive

Monthly Payment

Longer loan terms, higher subsidies are stabilizing payments; Falling “Spread” unfavorable to leasing



Source: Dealertrack

Summary

- Trump victory a surprise and economic policies have shaken the markets – both good and bad – but uncertainty is not a positive contributor to economic growth.
- Economic outlook remains on sound footing: robust job growth, stable consumer spending, low inflation...however business cycle timing suggests a change is coming. What? Monetary and fiscal policy mistakes are possible.
- Auto credit conditions now changing: growth now slowing, interest rates and subprime delinquencies rising. Pull-back in availability occurring.
- Auto Bubble Forming/Popping ? High leasing rates + long-terms overselling market; flood of off-lease vehicles lowering auction prices, impacting residuals, making auto loans less attractive. Will be a headwind for next few years.
- Does weakness in automotive sector lead to economy-wide slowdown? Seems unlikely as long as job growth + low interest rates continues