Taking a Look at the U.S. Auto Cycle

The investment community and news outlets have been fixated on an auto "peak" for years…

"'PEAK AUTO' IS A ZOMBIE IDEA THAT HAS TAKEN OVER THE US AUTO MARKET"
Business Insider, Nov 2, 2016.

"PEAK AUTO SALES MAKE 2017 A WAITING GAME FOR INVESTORS"
WSJ, January 3, 2017.

"PEAK AUTO? THESE CHARTS POINT TO INDUSTRY, U.S. ECONOMY CONCERNS"
Bloomberg, April 5, 2017.

"HAVE WE REACHED PEAK AUTO SALES AGAIN?"
ETF Daily News, June 4, 2018.

It is only possible to know a peak in hindsight. When news outlets discuss the auto peak, they are not concerned with what the highest point is but rather what follows—the magnitude and timeframe of the subsequent decline.

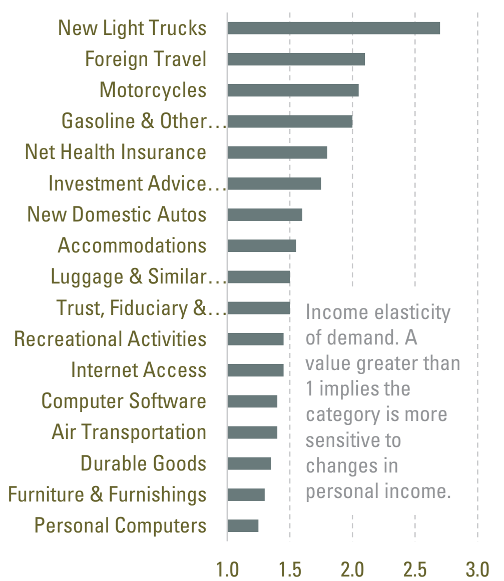
Let's step back and try to put some thought and data around this topic.

WHAT DRIVES AUTO SALES?

Unsurprisingly, economic conditions drive auto sales. Currently, high consumer confidence, healthy unemployment, and strong housing data all support good seasonally adjusted annual rate (SAAR) levels. Accelerated corporate spending from repatriation, individual and corporate tax cuts, and a potential infrastructure bill are also positive for economic growth and spending. Consumer confidence is near its 18-year high and unemployment is the lowest it has been in decades.

Tax reform is an economic stimulus that should be particularly positive for auto sales. Morgan Stanley analyst Adam Jonas states, "We highlight that motor vehicle spending, particularly for more profitable light trucks, is one of the categories that we believe stands to gain the most from tax cuts. It is one of the categories most sensitive to changes in disposable personal income."[1]

Figure 1 "New Light Trucks" and "New Domestic Autos" Are Two of the Top Areas of Spending Poised to Capture Additions to Disposable Income
As of 3/14/2018



Source: Morgan Stanley Research

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While various metrics point to an improving economy, it is worth pointing out that tariffs and a subsequent global trade war could throw a big wrench in economic growth.

WHO BUYS NEW CARS?

At a 17M SAAR, about 13% of households buy a new car during a given year. Looking back at the past several decades, the peak rate of purchase was roughly 17% in 1986, which would imply a 21.5M SAAR at today's household levels.[2] A minority of U.S. households typically buy new cars. Households making more than $100,000 are far more likely to buy new cars, are far less impacted by higher gas prices, and receive more of a benefit from tax cuts.[3,4,5]

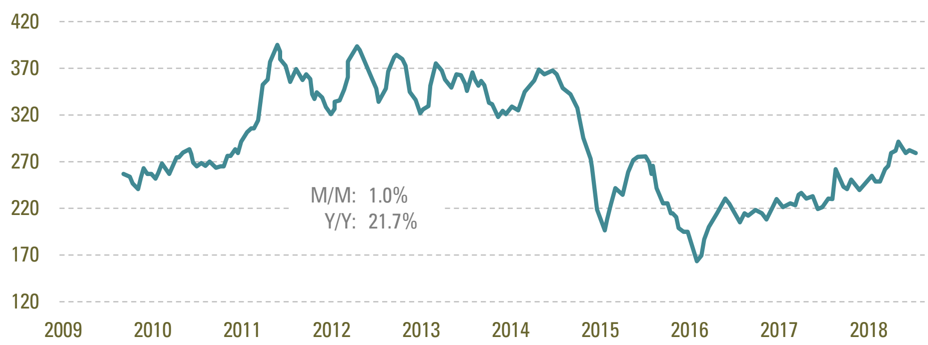
AVERAGE AGE AND MILES DRIVEN

The average age of light vehicles is 11.7 years—an all-time high—as improving quality, technology, and safety features increase vehicle longevity. The average age has steadily increased since 2005 up from 9.4 years. What is more telling is that vehicle miles of travel have grown each year since 2012. The combination of older average age and higher miles driven should be positive for auto purchases.

Higher gas prices could potentially place downward pressure on miles driven although while pricing is clearly rising, it is still well below the historic average (see **Figure 2**).[6]

Figure 2 Gas Price

Cents Per Gallon; As of 8/17/2018



Source: EIA (U.S. Regular Ai Formulations Retail Gasoline Prices), Morgan Stanley Research

Auto credit availability is another important driver of auto purchases. Key metrics to measure auto credit supply include interest rates, average term loans, average monthly payment, and credit quality. Let's hit these one at a time.

INTEREST RATES

While interest rates are still historically low, the shift into a "rising rate environment" can pull forward demand in anticipation of future higher rates. While rising rates lead to higher monthly payments, this can be offset by extending loan terms. Morgan Stanley analyst Adam Jonas points out that, "All else equal, a 100 basis point rise in interest rates could lead to a $25/month increase on a $30,000 loan, representing roughly a 5% inflation in monthly payments. To offset this impact, all an [original equipment manufacturer] would need to do is to extend the term of an auto loan by less than four months…"[7]

AVERAGE LOAN TERMS

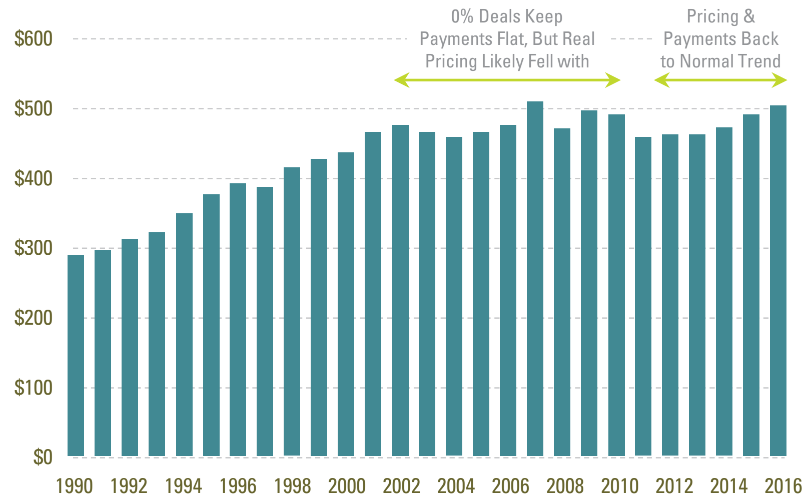
Loan length matters because when comparing across loans being originated at the same time, longer terms usually have higher interest rates in both percentage terms and absolute dollars; the borrower usually ends up paying more over the life of the longer loan. Looking back as far as 1975, the average loan term has continued to increase at an approximate 1.5% compound annual growth rate (CAGR), per Experian and the Federal Reserve. More recently, since 2005, the average car loan has continued to creep up from approximately 60 months and now stands around 69 months. We think it is worth pointing out that not only is this recent CAGR below the historic growth rate but current low interest rates should rationally incentivize longer-term financing as one can lock in lower rates for longer.

Additionally, while the average car loan length has risen nine months since 2005, the average age of a car on the road has risen roughly 27 months. As we noted earlier, car quality has improved over time, making longer loan terms seem less concerning. It is hard to get a sense of the upper bound for loan length; nothing about current data looks particularly concerning when looked at in a historic context.

MONTHLY PAYMENTS

Given the decline in interest rates and extension of average loan terms, there has actually been no real change in average monthly auto loan payment since 2002 (see **Figure 3**).

Figure 3 Average U.S. Monthly Payment on Auto Loan
As of 12/31/2016



Source: Federal Reserve Board, Experian, UBS estimates

SUBPRIME/CREDIT QUALITY

At the recent JPM auto conference earlier this month, auto consulting firm Experian Automotive expressed the view that auto financing remains robust as illustrated by 60-day delinquencies declining year over year (YoY), subprime penetration of used car loans near record lows, and subprime penetration of new car loans not materially higher as had been the case in recent years. The percentage of auto loan balances outstanding from subprime loans has started to decline, weighted average credit score of new and used vehicles remains flat YoY, and delinquency rates are coming down.[8]

This data leads us to believe credit supply remains healthy.

WHAT CONDITIONS USUALLY LEAD TO A DECLINE IN AUTO SALES?

While economic conditions are clearly the most important factor, a decline in used vehicle prices can impact new car purchases as buyers are less inclined to trade in their cars when they have lower residual value because it means their equity in the vehicle is worth less. According to Manheim[9], used vehicles continue to retain value and were particularly strong the summer of 2018. GM Financial is guiding to a 2-4% decline in used vehicle pricing this year.

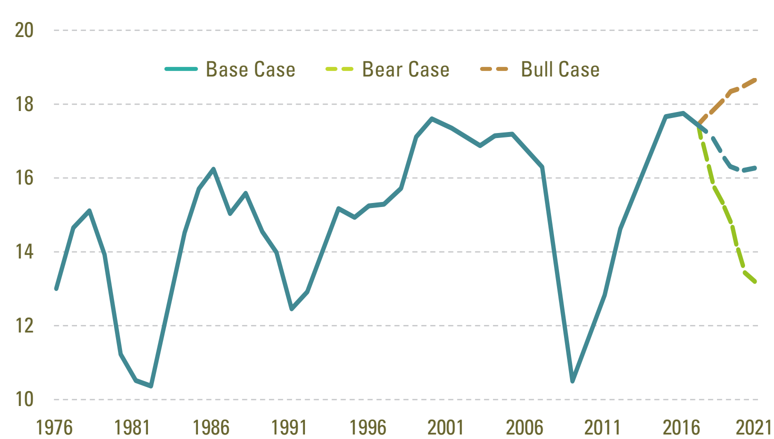
History shows SAAR rarely declines outside of a recession and looking back 40 years, we have never seen a 10% multi-month drop in SAAR outside of a recession. Prior declines coincided with the recessions of 1981, 1991, and 2009.While we don't claim to know the exact timing of the next recession, we believe current data is not supportive of a near-term recession.

WHAT IS THE NORMAL TIMEFRAME FROM WHEN WE HIT A PEAK TO THE NEXT TROUGH?

History shows us that we can have prolonged periods of strong relatively stable SAAR, as was the case in the late 1980s and early 2000s. Both of these periods exhibited multi-year periods of strong yet stable SAAR before contracting during the 1991 and 2009 recessions. "Peak conditions" in both cases lasted approximately 5-7 years. We are perhaps in year three of "peak conditions" now. Between 1996 and 2006, SAAR remained above 15M for 10 years (see **Figure 4**). If history repeats itself, it may be fair to think we could have another seven years of above 15M SAAR.[10]

IHS Automotive, an automotive industry vehicle forecast and consulting firm, expects SAAR to modestly decline in 2018 to 17M and then track flat to modestly down through 2025, but remain in the high 16-17M unit range.[11]

Figure 4 Annual Light Vehicle Sales
SAAR; Millions; As of 3/14/2018



Source: Motor Intelligence, Morgan Stanley Research

The last topic we will explore is how even in a declining SAAR environment, auto company profitability is likely to behave differently than in past recessions.

IMPROVED COST STRUCTURE

The auto industry has meaningfully improved its cost structure by lowering fixed costs from improving their manufacturing footprint, meaningfully increasing the percentage of variable labor, and shutting down unprofitable businesses.

As a case study, GM has stated that if there were a 10-15% reduction in volumes, they could take out 10-15% of labor-related costs in a relatively short period of time. The company believes they can achieve a 20% return on invested capital throughout a cycle and that in a 25% downturn it is positioned to generate positive profit both globally and in North America. GM believes it can breakeven in the U.S. with SAAR as low as 10-11M, which would be a +35% reduction from current levels. As a reference point, over the past three recessions, the maximum differential between peak and trough has been around 50%.

One counter argument to this is that given the large investments into advanced driver-assistance systems and electrification, certain aspects of capital expenditures or research and development that have historically been viewed as discretionary or flexible may become a necessary spend that cannot be cut in a recession—if companies want to remain technologically ahead.

IMPROVED BALANCE SHEETS

Through a series of bankruptcies and financial restructuring during the 2009 recession, the industry has improved its financial position and has less debt and lower interest payments. Thus, the deleveraging in a declining sales environment should be less extreme. At the JPM Auto Conference this past month, Moody's stated it believes automakers would maintain their existing credit ratings through a down cycle given ample liquidity.[11]

MIX SHIFT

Crossover utility vehicles (CUVs) and trucks are 69.8% of SAAR, up from 53.5% in 2009 and growing. These vehicles are much more profitable than light vehicles and have seen better pricing such that even in a declining volume environment, we could still see pricing hold or improve as consumer demand for CUVs and light trucks continues to increase. The IHS estimates the mix of CUV/trucks will reach 72.2% by 2025.[12]

FUTURE TRENDS

We certainly acknowledge that ride sharing and mobility developments, autonomous vehicles, a shift to electric cars, and other factors may mean that future cycles and ownership models may change radically. However, most of these possibilities seem a decade away from wide adoption.

In the meantime, a healthy economy supported by improving consumer spending and auto credit supply support a strong U.S. SAAR, helping sustain "peak conditions" for years. Maybe even more importantly than SAAR is that even if it were to decline, auto industry profitability is poised to be better than in prior downturns due to improved cost structures, liquidity, and mix shift. We believe this may be underappreciated by the market due to a specious obsession with the "peak."

[1] Raising US SAAR Forecast: Falling to a Higher Baseline, by Adam Jonas (Morgan Stanley analyst), March 14, 2018
[2] Brandywine Global Investment Management, LLC, U.S. Census Bureau, U.S. Bureau of Economic Analysis
[3] http://www.wardsauto.com/blog/fewer-us-households-buying-new-cars
[4] https://www.statista.com/statistics/183635/number-of-households-in-the-us/
[5] https://www.federalreserve.gov/econresdata/2016-economic-well-being-of-us-households-in-2015-Automobile-Purchase-Decisions-and-Auto-Lending.htm
[6] Global Auto Databook, Morgan Stanley, August 17, 2018
[7] Rising Rates & Autos: Five Key Thoughts, by Adam Jonas (Morgan Stanley analyst), February 27, 2018
[8] Ibid.
[9] Manheim used vehicle pricing - https://publish.manheim.com/en/services/consulting/used-vehicle-value-index.html
[10] Raising US SAAR Forecast: Falling to a Higher Baseline, by Adam Jonas (Morgan Stanley analyst), March 14, 2018
[11] JPM Takeaways from 2018 Auto Conference, August 13, 2018
[12] Ibid.