Auto sales in the U.S. for the first four months of 2017 have fallen by 2.4 percent, as pent-up demand coming out of the recession appears to have finally been met.

Many consumers had held off from buying a new vehicle during the recession, but as unemployment rates fell, many finally took the plunge. The U.S. unemployment rates peaked at 10 percent in December of 2009, but have since fallen to 4.4 percent as of April 2017, the lowest since May 2007.\(^1\)

Gas prices also remain low, having dropped during the recession, rising, then falling again as increased supply helped drive oil prices lower again. All current signs suggest prices will remain below $3 per gallon in the near-term, and maybe as far out as 2030 per the Annual Energy Outlook from the U.S. Energy Information Administration.\(^2\)

Interest rates for auto loans were also quite low, so cheap in fact that in the U.S. there is now over $1 trillion in outstanding auto loans – up from $886B in Q1 2014.\(^3\) The majority of the outstanding loan dollars are with prime or higher (about 62 percent); but consumers with deep subprime and subprime have increased their balance by double digits, and loan delinquency have started to creep up.

More consumers have opted to lease vehicles as well – with leasing accounting for 32\% of new auto sales in CY16. As finance rates start to inch up and increased over-supply of new vehicles as well as increased supply of used vehicles start to apply pressure to used prices, leasing is expected to slow some.

With the number of vehicles on the road in the U.S. growing again, and more people employed, miles driven in the U.S. grew 3.5\% in 2015, and 2.8\% in 2016. With most people now having maxed out just how much time they have each day to spend behind the wheel, miles driven for the rolling 12 months ended March 2017 are up only 1.9\% - essentially right in line with the average annual rate of increase experienced in the U.S. between 1993 and 2007 – the fifteen years leading up to the last recession.

So let’s take a look at one specific vehicle that made the headlines when introduced, and continues to be among the top-selling vehicles in the U.S. every year – the 2015 Ford F150.
Changes to its design and content, and subsequent impact to vehicle repair costs provide a good example of just how much more challenging today’s new vehicles have become to repair.

The Ford F150 has been around since the early 1940’s and the 2015 model was the 13th generation and the first model with an all-aluminum body. Over time the F150 has been modified, like all vehicles, to adapt to changing consumer preferences and safety standards. At the same time, its average MSRP has increased on average 3.3% annually for the base trim and 4.4% for the fully-loaded models each year between 1997-2007.4

In fact, the average MSRP increased 87% for the base trim and 135% for the fully-loaded model between 1997 and 2017. By comparison the Bureau of Labor CPI for “All Items” increased 53% between Jan ‘97 and Jan ’17.5

Overall average MSRP’s for all vehicles have risen every year upwards of 2% or more – and in 2016 the average MSRP was over $34K.6 In fact, it’s estimated that the government-mandated safety and emissions equipment alone can add more than $5,000 to the price of a new vehicle.7

A comparison of the change in options is particularly telling. Figure 4 is an illustration of standard options on a base F-150 pickup over the last 30 years. Significant changes have occurred primarily with safety options – many of which have become required by NHTSA. For example, among the standard options offered on the base MY 2015 Ford F-150 pickup are items like side-impact air bags, head curtain air bags, stability control, and traction control – none of which were standard on the MY 2000 or earlier versions.
It should perhaps come as no surprise then that as the overall cost of a vehicle has risen, so too would the cost of its parts. Figure 5 shows a comparison of the average OEM list price for several top volume parts in the first year of a new F150 redesign – for example, in CY 2004 the average OEM List price of a MY 2004 tail lamp assembly was $40; by the 2015 MY in CY 2015 that price jumped to $583. This part in particular not only underscores the growing cost of parts, but also the impact of growing vehicle complexity. With the MY 2015 pickup the sensors for the blind-spot monitoring system for the 2015 Ford F-150 are integrated into the rear taillight which is sold as a single assembly, significantly driving up the cost of that one part.

When Ford introduced its 2015 all-aluminum body pickup, it was the first high-volume mainstream vehicle to include that much aluminum in its construction. Nearly every industry event that year talked about the impact to the industry, and how repairers might get themselves ready to repair them. As we know however, even the top selling vehicle takes a while to show up in significant volume among auto accidents and claims. In fact, in Q1 2017, the aluminum model F150 pickup for model years 15, 16 and 17 only accounted for 0.4% of all repairable appraisal volume.

When the pickup was introduced there was much debate about what the impact to repair costs would be – an analysis by the Highway Loss Data Institute of real-world claim data looked at the differences in loss costs for the 2014 vs 2015 F150 models, and found the aluminum model was 2% higher in both repairable and claim severity, although the result was NOT statistically significant.\(^8\) Perhaps the most noteworthy observation made by HLDI was that it took longer for the overall loss to develop – underscoring overall longer time to repair the aluminum vehicle.

Knowing when is the best time to make the necessary investments in tooling and training will become an ever larger challenge for repairers in the future, as automakers introduce more technology, material types, and joining techniques, and move to create OE certified repairer networks.

The addition of features such as the 360-degree camera system, lane-departure warning, blind spot detection, and other advanced driver assistance systems have also added greater complexity and cost to the repair process. In the case of the F150, the fact that the side-view
mirrors are equipped with sensors and cameras means even relatively minor damage to the mirror can lead to a costly repair with labor time required not only for replacement but also for recalibration.

Information from CCC ONE Repair Methods reveals that the right-hand and left-hand side parking aid cameras that are part of the 360-degree camera system are located in the truck’s side-view mirrors. If any of the image processing modules is replaced, a diagnostic trouble code will trigger if the camera has not been aligned using a scan tool.

In this case, damage to the side-view mirror alone requires not only a diagnostic scan tool to realign the camera, but also a full recalibration to be performed, a process that requires special tools such as calibration mats, access to detailed OEM service information related to DTC’s and other information, a scanning device capable of reading and clearing any fault codes, as well as “…a flat open area…with a minimum of six feet of open space to each side, seven feet of open space in front, and 11 feet of open space behind the vehicle.”

And while Ford has not issued a formal position statement as yet, clearly more and more repairs will call for pre-repair and post-repair scan to ensure all of the damage is identified, and most importantly the vehicles’ features function as designed post-repair. Based on the position statements already released by a number of OE manufacturers, 68.1% of all appraisals from Q1 2017 should include pre-repair and/or post-repair scan(s). Yet only 1.6% of all appraisals included any entry denoting a “scan/diagnosis/health check/astech”, and where it was entered, the average fee was $124 (including flat fee and/or labor time). The absence of a scan entry in the appraisal does not necessarily mean that the scan was not performed. However, the disparity does underscore how the industry is still grappling with the when and why and how much for vehicle scans – something we can expect to hear more about as more and more vehicles are equipped with technology that requires this type of repair.
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1 www.bls.gov.
2 www.eia.gov.
5 www.bls.gov.