

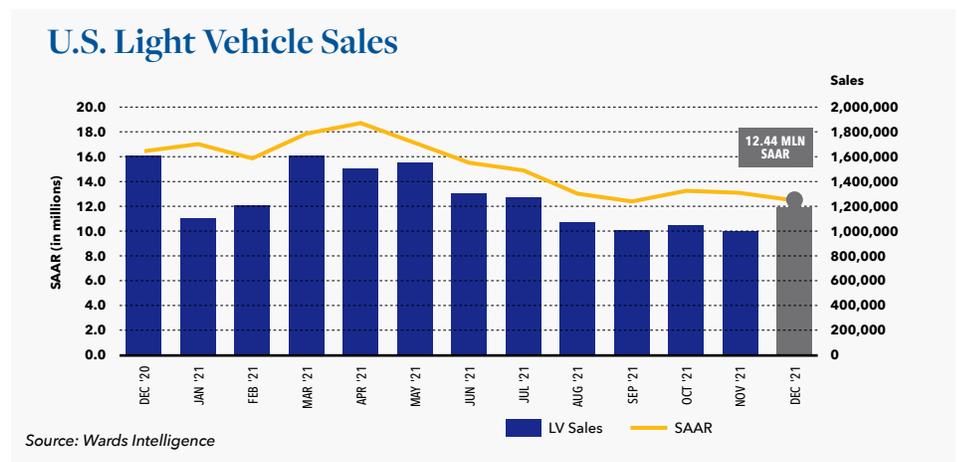
SMARTER PERSPECTIVE: AUTOMOTIVE

# Microchips a Mega Problem

By Keith Spacapan

**January 25, 2022** Hobbled by a global pandemic, the U.S. light vehicle market only managed to sell 14.6 million vehicles in 2020. Sales tumbled quickly with the onset of stay at home orders, slumping to a 50-year low before staging a steady recovery. December 2020 was the third month since April in which the seasonally adjusted annualized rate of sales (SAAR) exceeded 16 million vehicles. The momentum had carried over into January 2021 convincing industry analysts the market could recover to 16.0 million vehicles by the end of that year. Although sales softened in May, analysts were loathe to cut their forecasts until they knew more. In the end, sales in the second half of the year were the slowest in a decade. Flush with new models and heavy incentives on past models, the industry typically looks forward to ending the year on a high note. December is the last chance for manufacturers to push the metal to make their targets. Instead, the industry posted its worst year-over-year decline (27%) in December 2021 and the SAAR barely exceed the year's low water mark set back in September. After a promising first half of the year, U.S. light vehicle sales for 2021 were a disappointing 15.1 million vehicles.

It is not unusual for there to be periodic shortages of materials in the supply chain. These problems are often mitigated by substituting other materials, adjusting the product mix, working



overtime, or adding production shifts. It turns out, however, that none of the normal mitigation strategies were able to resolve this problem quickly. These microchips (or chips) are at the heart of everything electronic and various electronic systems account for 40% of the cost of a new car. The manufacturing plants and the equipment employed to make these chips are very sophisticated and take years to install and qualify. To be cost effective they are designed to operate on a 24/7 basis. There simply is/ was no additional capacity available and no acceptable substitutions.

Cars were being assembled and then parked in the yard until the necessary chips arrived and could be installed. General Motors decided to temporarily halt building cars with optional seat warmers in order to save microchips for

other more critical features and promptly lost its crown as the market leader for the first time since the Great Depression. I am sure there is an important marketing lesson to be learned there. AutoForecast Solutions (AFS) estimates the global automotive industry cut 2021 production by 10.2 million units due to the chip shortage. Lost volume for lack of chips is expected to improve greatly next year, but with dealer inventories at an all-time low, the industry has a lot of catching up to do. The industry outlook for 2022 is a conservative 15.5-16.0 million vehicles.

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**Finance Cost**

4.1% APR  
-30 bps QOQ -50 bps YOY

**Fuel Cost**

\$3.31 per gallon  
-\$0.01 MOM +\$0.97 YOY

**Inventory**

35 days  
+5 day MOM -33 days YOY

**Incentives**

\$1,756 per vehicle  
-\$148 MOM -\$2,166 YOY