

# **The Major Determinants of U.S. Automotive Demand:**

**Factors Driving the U.S. Automotive Market**

**And Their Implications for Specialty Equipment and Performance Aftermarket Suppliers**

**By**



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*The statements, findings, and conclusions herein are those of the authors and do not necessarily reflect the views of the project sponsor.*



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## Executive Summary

The Specialty Equipment Market Association (SEMA) and the Center for Automotive Research (CAR) have engaged in a multi-phased project to create vehicle technology planning and business strategy guideposts for SEMA members. This, the third report in the series—The Major Determinants of U.S. Automotive Demand: Factors Driving the U.S. Automotive Market, And Their Implications for Specialty Equipment Suppliers—presents an analysis of the economic drivers of the U.S. automotive market and their implications for SEMA.

Historically, it has been easier to use leading indicators (stock market/housing indices, yield curve, etc.) to predict a sales decline, than to predict a positive turnaround in the automotive market. For example, the signs were very clear in early 2008. Several of the leading indicators were strongly indicating a significant sales slump; a few of those (e.g. consumer credit, oil prices) even gave an indication of the depths of the coming decline. Now that we are at the depth of the automotive sales decline, it becomes a challenge to understand when the market will begin its recovery, and how large of a market we can expect during the next cycle. This report addresses both the short-term question of when, and the longer-term question of how much.

While the SEMA-CAR project scope is strategic and forward looking, it is helpful to begin with a more short-term evaluation of economic drivers for the automotive and specialty equipment industry. In this section, we focus on several economic measures that can assist SEMA member companies in defining expectations for the near term

The U.S. economy has been in its current recession for more than one year. Yet, as the third quarter of 2009 begins, there are signs that the economy is beginning to turn around. In fact, it is possible that new vehicle sales for the second half of this year may reach an annualized rate of 11.0 million units. While that will not reach the lofty volumes of recent years, it is markedly better than the 9.3 million unit (seasonally adjusted) selling rates of the first quarter of 2009.

Consumer confidence is on the rise, but it remains well below the levels of two years ago. The unemployment rate also continues to be a concern: It continues to rise, albeit at a slower rate. It is likely the unemployment rate will start coming down in 9-12 months. Although it has historically been a lagging indicator for economic recovery, a further increase in the unemployment rate could delay an already-fragile recovery.

House value and stock portfolio holdings comprise a major portion of household net worth. The U.S. consumers have lost roughly \$11 trillion dollars in net worth in two years. To put this in perspective, that loss of is equivalent to three-quarters of the U.S. GDP for one year.

While the wealth effect has had a strong negative impact on short-term sales levels, the severity of this decline will likely reduce sales well into the next economic cycle. It may take years, not months, for

consumers to recover to their previous financial levels. Thus, light vehicle sales will be constrained as the consumer recovery slowly takes hold.

The decrease of more than \$11 billion in net wealth over the past two years will obviously hinder light vehicle sales during the next several years. However, there are several long-term trends that suggest a fundamental growth in light vehicle sales, and—even more importantly for SEMA members—in total fleet, in the coming decade. Long-run light vehicle sales depend on long-run vehicle demand, which can be divided into two subsets: incremental demand and replacement demand. Incremental demand is fueled by growth in population, household formation, and personal wealth. Replacement demand is driven by vehicle stock and the vehicle scrappage rate.

According to CAR's long term forecast model, U.S. light vehicle sales will hit bottom at 10-11 million this year. The recovery will add 2 million units of additional sales per year for two years, before slowing down in 2013-2014. By 2014, the U.S. market will peak at 16.8 million sales, which is still lower than the most recent peak of over 17 million units in 2000.

In conclusion, although the U.S. economy and automotive industry have undergone perhaps the most severe recession since World War II, there does appear to be a light at the end of the dark tunnel. The automotive industry will survive, and in some ways, be healthier and stronger than it was before the crash. The number of vehicles on the road in the U.S. will steadily increase in the coming years. Yet, new vehicle sales will likely not return to the inflated levels experienced at the height of the credit bubble. Thus, vehicles will be on the road longer—which should prove to be a very positive trend for SEMA members.

## Introduction

The Specialty Equipment Market Association (SEMA) and the Center for Automotive Research (CAR) have engaged in a multi-phased project to create business strategy guideposts for SEMA members. The first Phase I report in the program—*The Specialty Equipment Company of the Future: Guideposts for Technology Forecasting and Strategic Planning*—was released in the third quarter of 2008. The second Phase II Report—*Powertrain Forecast and Analysis: What is Coming and What Are the Implications for the Specialty Equipment and Performance Aftermarket Industry*—addresses the important challenges associated with advanced and alternative powertrain. This, the third report in the series—*The Major Determinants of U.S. Automotive Demand: Factors Driving the U.S. Automotive Market, And Their Implications for Specialty Equipment Suppliers*—presents an analysis of the economic drivers of the U.S. automotive market and their implications for SEMA.

The SEMA-CAR industry project and vehicle technology briefing program are intended to assist member companies by investigating strategic concerns and challenges of importance to SEMA member companies. This industry research project is designed to illustrate, analyze and communicate the coming economic challenges, as well as to create a forum for discussion (both within companies and between stakeholders) and a framework for effective and up-to-date scenario planning. The economic crisis of 2009 is an enormous tactical and strategic challenge for companies—and individuals. CAR believes it is crucial for SEMA members to better understand the long-term implications this crisis may have on the automotive market. Thus, we present this report to put into context what the current economic situation may mean to today's aftermarket suppliers, the specialty equipment company of future, the new vehicle market and the nation's existing vehicle fleet.

The Phase I SEMA-CAR report stated “the automotive industry—both original equipment and aftermarket—is experiencing rapid and dramatic structural changes and is currently in a state of significant upheaval.” It further stated that, “Due to this upheaval, many industry participants are experiencing what can best be described as tactical tunnel vision. These companies, faced by severe near-term market vehicle technology and product development challenges and uncertainties, have been actively addressing tactical operational concerns, often at the expense of strategic long-term planning. While this is understandable—even necessary—it does present potential risk and opportunity costs for these companies.” The authors believe that statement to be even more relevant today.

The introduction to the Phase I report also noted the importance of macro-economic trends. Three ‘bubbles’ were highlighted: housing/credit, new vehicle incentives and oil. For more than a decade, the housing and vehicle incentive bubble (driven by overcapacity) drove automotive sales to an unsustainable level. The oil bubble had an opposite, but important, effect on the market. In the past twelve months, the automotive industry has seen the impact of the collapse of those bubbles.

While there were several topics considered for this Phase III report, it was (and continues to be) the strong belief of CAR researchers that a fundamental understanding of the strategic macro-economic issues is the most essential, strategic guidepost for SEMA members to consider in their business planning processes.

Historically, it has been easier to use leading indicators (stock market/housing indices, yield curve, etc.) to predict a sales decline, than to predict a positive turnaround in the automotive market. For example, the signs were very clear in early 2008. Several of the leading indicators were strongly indicating a significant sales slump; a few of those (e.g. consumer credit, oil prices) even gave an indication of the depths of the coming decline. Now that we are at the depth of the automotive sales decline, it becomes a challenge to understand when the market will begin its recovery, and how large of a market we can expect during the next cycle. This report addresses both the short-term question of when, and the longer-term question of how much.

This Phase III report begins by describing recent trends in several short-term drivers for the automotive market. The report then investigates key long-term factors, and concludes with a CAR-generated U.S. sales forecast through 2020. While this report is focused on describing macro-economic trends in the automotive sector, where appropriate, implications for specialty equipment suppliers have been explored and presented.

### **The Short-Term Outlook**

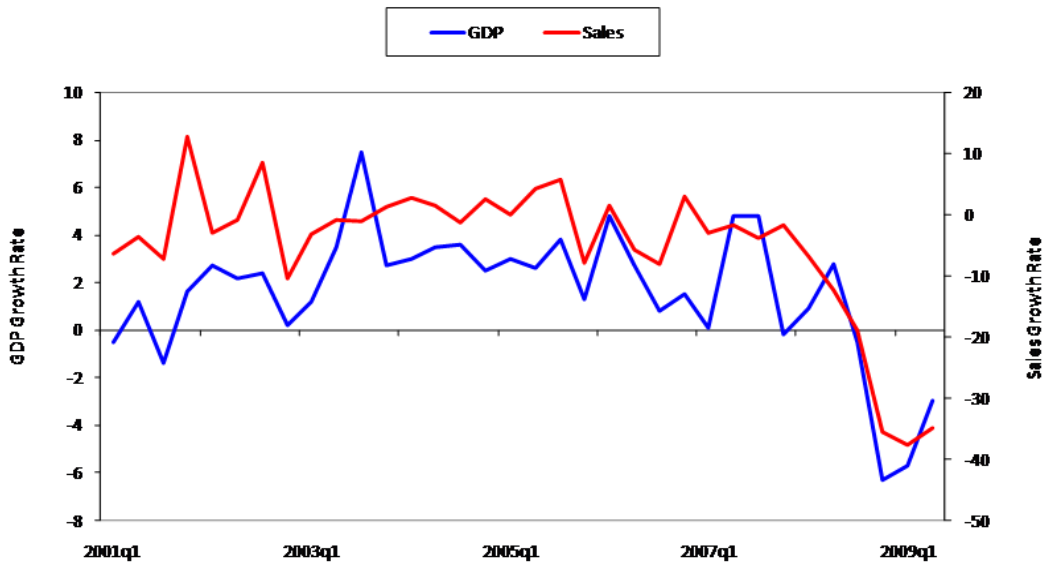
While the SEMA-CAR project scope is strategic and forward looking, it is helpful to begin with a more short-term evaluation of economic drivers for the automotive and specialty equipment industry. In this section, we focus on several economic measures that can assist SEMA member companies in defining expectations for the near term.

#### *GDP Growth*

The growth rates of U.S. light vehicle sales and GDP are highly correlated (Chart 1). On average, the automotive industry accounts for more than three percent of total GDP and contributes a half percent to total GDP growth. This close relationship allows us to analyze the fluctuation of vehicle sales from a macroeconomic perspective, and to estimate the long term vehicle demand utilizing economic indicators.



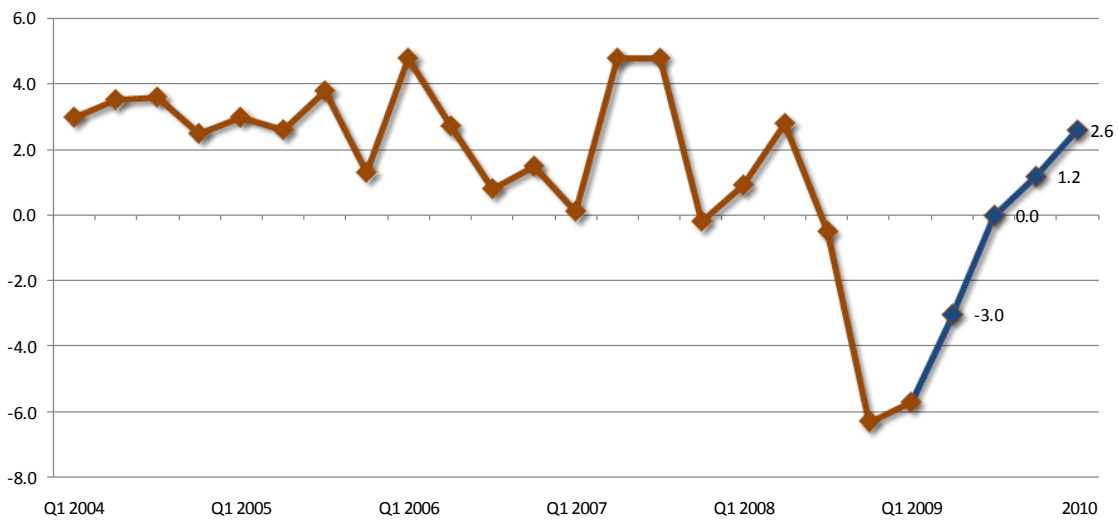
**Chart 1**  
**U.S. GDP Growth Rate and Light Vehicle Sales Growth Rate**  
**1<sup>st</sup> Quarter 2001 through 2<sup>nd</sup> Quarter 2009**  
**Year over Year Percent Change**



Source: U.S. Department of Commerce

Although still contracting, the economy began to show some signs of bottoming out in the second quarter of 2009. Measures such as consumer confidence and personal consumption expenditures showed signs of the beginnings of an economic recovery. These and other measures give reason to believe the economy as a whole will start to turn around, possibly beginning in the third quarter of 2009. According to the University of Michigan’s Research Seminar in Quantitative Economics (RSQE) second quarter 2009 forecast, third quarter output is expected to be flat and will rise by the fourth quarter of 2009 (Chart 2). Output growth is projected to accelerate during 2010, averaging 2.6 percent.

**Chart 2**  
**Quarterly GDP Growth Rate and Forecast,**  
**1<sup>st</sup> Quarter 2004 through 2010**

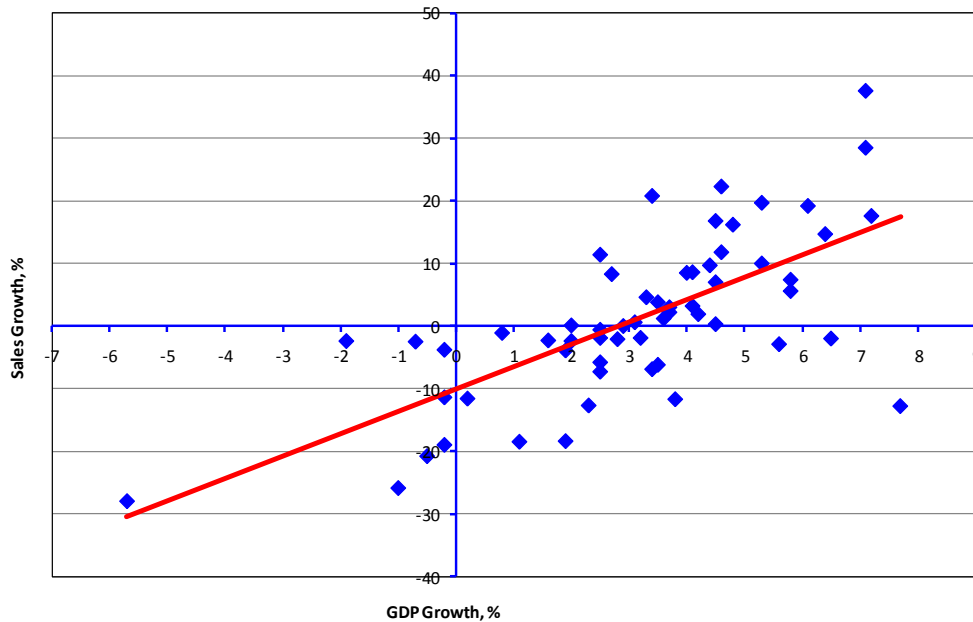


*Source: U.S. Department of Commerce*

In the first quarter of 2009, the GDP growth rate was a negative 5.5 percent, and was accompanied by a 28 percent year-over-year drop in vehicle sales—the worst economic contraction and vehicle sales plunge since World War II. As the economy bounces back, vehicle sales growth will likely outpace GDP growth, as it has in past recoveries.

A historical correlation between annualized GDP and vehicle sales growth indicates that positive vehicle sales growth depends on three percent or higher GDP growth (Chart 3). Based on this analysis, U.S. light vehicle sales can be expected to fall if the annualized GDP growth rate is below 1.0 percent; a growth rate of 1.0 to 3.0 percent GDP growth should lead to stagnant vehicle sales; and a GDP above 3.0 is generally associated with growing sales. Thus, the RSQE forecast for an annualized rate of -1.9 percent GDP in 2009 is an indication of a drop in year over year sales. The forecast for a full year GDP growth rate of 2.6 percent in 2010 further reinforces the expectation that any automotive sales recovery will continue to be slow.

**Chart 3**  
**GDP Growth Rate and U.S. Vehicles Sales**  
**1950 to 1<sup>st</sup> quarter 2009**

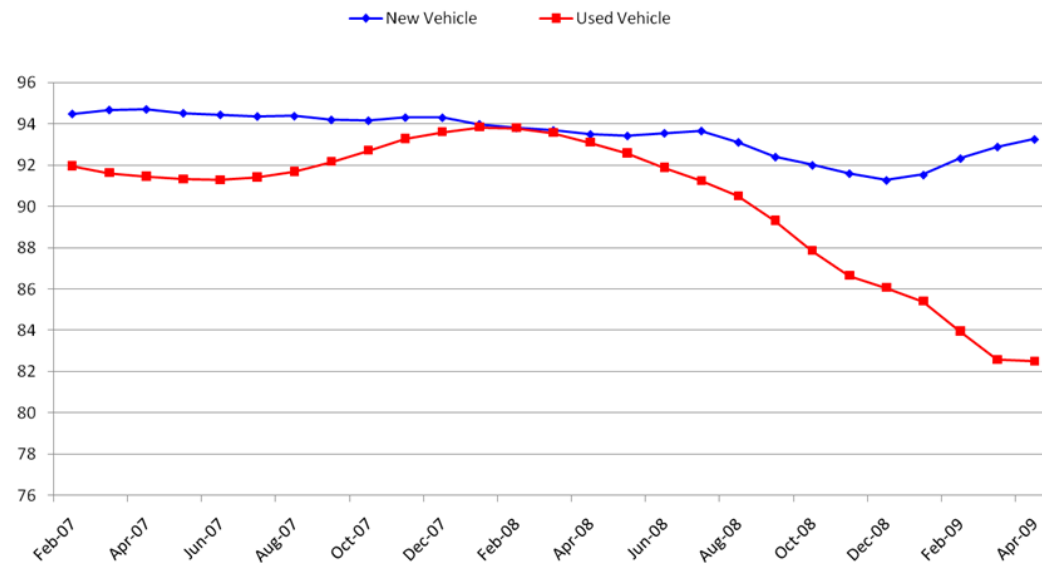


This more recent analysis of GDP and car sales raises an interesting point. Some anecdotal evidence suggested that previously, a GDP of 2.0 percent or above would correlate to positive sales. Increasingly, the levers used to alter vehicle sales appear to require greater swings than they did several decades ago. In essence, it appears that it may be getting more difficult to ‘move the needle’ as far as increasing vehicle sales. It may offer an interesting analysis to look at several measures, using differing time frames (e.g., pre 1990 and 1990-present) to see if there is a marked difference in the ability of the measures to affect motor vehicle sales.

#### *New and Used Car Prices*

The price of used vehicles has plunged by almost 12 percent since February 2008 (Chart 4). This has been driven in part by a shift in consumer preferences which has lowered the value of returned lease vehicles, especially large light trucks. Conversely, new vehicle prices have been steadily rising over the past four months. By April 2009, the new vehicle price index was at its pre-financial crisis level. The rise in new vehicle prices is one of the early indicators suggesting the worst times for the auto industry may have passed.

**Chart 4**  
**CPI-New Vehicles and CPI-Used Vehicles,**  
**February 2007 through April 2009**  
**(December 1997 =100)**



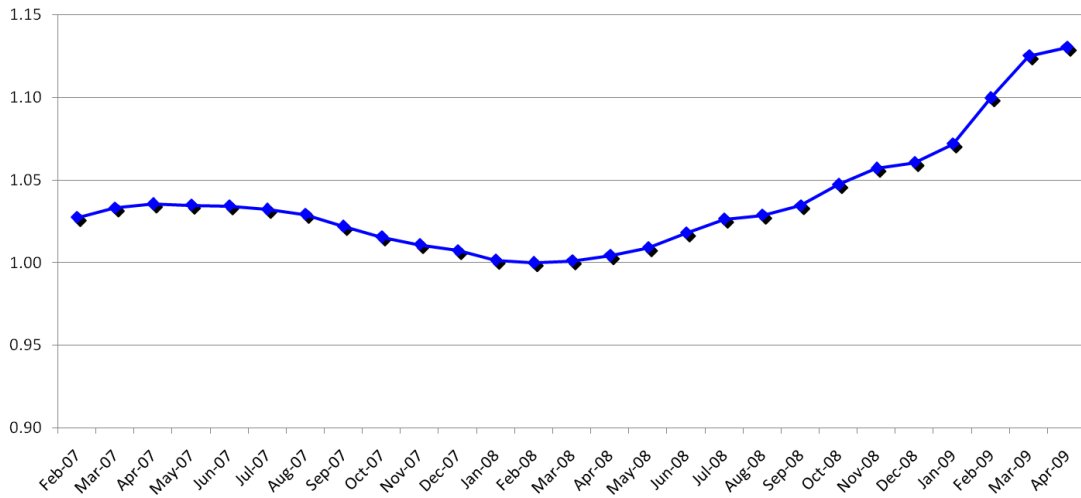
Source: U.S. Department of Labor

Driven by cost concerns, union contracts, and increasing competition, the manufacturers—generally led by the Detroit Three—used incentives to maintain high assembly plant capacity utilization. This was a short-sighted solution to a long-term problem—that of too much capacity. The massive reduction of assembly capacity throughout the North American automotive industry in recent months may lead to an increase in pricing power for the manufacturers—at least in the short term. Although the manufacturers have regained some pricing power over the past few months, it is important to note that Chart 3 is indexed to 1997. So, while they have incrementally regained some pricing power in the past several months, they still are well behind the index year of 1997.

Some industry observers have suggested that capacity reduction will lead to long-term increased pricing power for the industry. However, in an increasingly global industry, there remains an enormous amount of excess global capacity. Historically, automotive industry participants—manufacturers and suppliers—have had difficulty quickly redirecting global capacity. However, reaction time is decreasing, and industry participants show an ever-increasing ability to rapidly redirect capacity to chase profits—whether it’s a supplier shifting between vehicle manufacturers (VM), or a VM shifting between continents.

Chart 5 represents the ratio of Consumer Price Index (CPI) for new vehicles to the CPI for used vehicles. The price differential between the two has increased noticeably since the second quarter of 2008. This trend has powerful implications for the aftermarket.

**Chart 5**  
**Ratio of CPI-New Vehicles to CPI-Used Vehicles,**  
**February 2007 through April 2009**



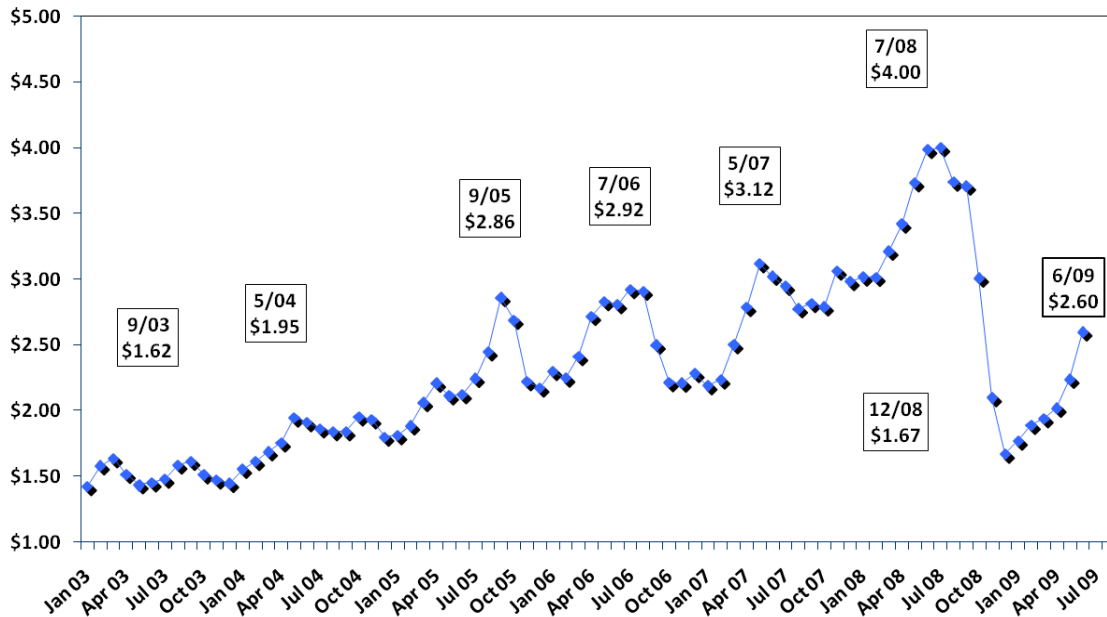
*Source: U.S. Department of Labor*

With used vehicle prices falling by 12 percent and new vehicle prices on the rise, new vehicles have become relatively more expensive. This is another indication the new car market may have stabilized. Meanwhile, used vehicles have become more affordable. As new cars become more expensive relative to used cars, it is likely many consumers will choose to forgo new vehicles and enter the used car market. This will have at least two outcomes: first, increases in used car prices due to higher demand, and second, a longer-term increased demand in aftermarket goods and services.

#### The Role of Gasoline Prices in U.S. Automotive Sales

Gasoline prices are highly cyclical and change based on seasonal demand (Chart 6). Again this year, prices increased from the first quarter to the second quarter (albeit at a significantly lower level than the 2008 summer peak). And, given historical trends, should fall near the end of the year. Gasoline prices have at least two short term implications for sales: given low fuel prices, U.S. consumers have shown preference for larger vehicles over smaller and more fuel-efficient cars. Further, lower gasoline prices tend to boost consumer confidence and disposable income; these factors can help increase the sale of automobiles.

**Chart 6**  
**Nominal Gasoline Prices, January 2003 through June 2009**  
**(U.S. Regular Conventional)**



Source: Energy Information Administration, USDOE

Chart 5 also illustrates another important point, and makes an excellent connection to the second CAR-SEMA report (*Powertrain Forecast and Analysis: What is Coming and What Are the Implications for the Specialty Equipment Market Association*): The magnitude of gasoline price fluctuations has increased over the past decade. Consumers can no longer assume a relatively steady price for gasoline. There would now appear to be a summer price and a winter price, and increasingly, the difference between the seasonal prices has grown to be more than a dollar. While the price level of gasoline has a direct impact on the type of vehicle preferred (or the ability to afford a new vehicle), the price variability adds uncertainty for the consumer over the life of the vehicle.

Consumers are no longer faced only with the choice of vehicle (small versus large), but they now must also choose a powertrain technology (gasoline, diesel, hybrid, etc.) The *Powertrain Forecast and Analysis* addresses the technologies and market challenges of alternative powertrain technology. The choice essentially becomes an economic decision for all consumers: whether or not the added cost of an alternative powertrain will pay off soon enough to justify the increased purchase cost.

#### *Unemployment Rate*

Since the beginning of the current recession, unemployment rates have been rising across the nation. In Michigan, Indiana, and Ohio (states whose economic activities are concentrated on the automotive

industry), the unemployment rates were worse than the national average. The U.S. unemployment rate is expected to remain high for the rest of 2009, and well into 2010. Although recent initial claims for unemployment insurance have begun to level off, the number of new claims remains very high. The level of Initial claims should continue to remain relatively high for another 12 months before returning to a normal range of between 300,000 and 400,000 new claims per week, late next year.

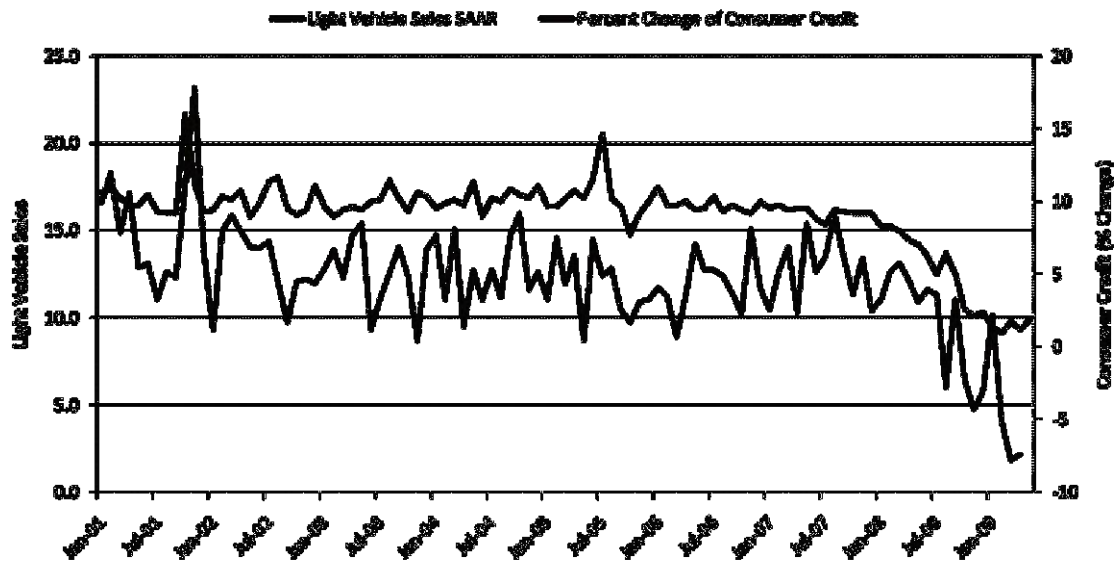
Between the years of 2001 and 2006, the credit bubble partially 'de-coupled' the unemployment rate from auto sales. Historically, the unemployment rate was highly correlated with sales. However, starting in 2001, as unemployment grew from around 4 percent to 6.5 percent, car sales hit a plateau but did not fall (as might have been predicted). This was likely in large part due to both increasing home prices and the availability of sub-prime loans. Sales also rose only slightly as the unemployment rate began to drop, from late 2003 through 2006. Starting in 2007, the two appear to be closely aligned again.

The unemployment rate has traditionally been a lagging indicator for economic recoveries. Therefore the slow turnaround in that measure is not surprising. However, if the unemployment rate continues to struggle or worsen, consumer confidence could suffer. This is especially true if the stimulus package does not appear to positively affect unemployment.

#### *Credit Availability*

Consumers' willingness and ability to buy a car determines short-run motor vehicle sales (Chart 7). In the past eight months, the likelihood of OEM bankruptcies hindered many customers' willingness to buy. This uncertainty of car companies' survival and consumers' economic prospects prevented people from committing to a long term debt obligation—such as a car loan. Moreover, the collapse of Lehman Brothers on September 15, 2008 resulted in overwhelming financial panic and a tightening of credit markets. Due to the contraction in consumer credit availability, many showroom visitors (especially subprime customers who were willing to buy a car) found themselves unable to secure a loan.

Chart 7  
Consumer Credit and New Car Sales January 2001 – May 2009



Source: Federal Reserve Statistical Release, G.19, Consumer Credit

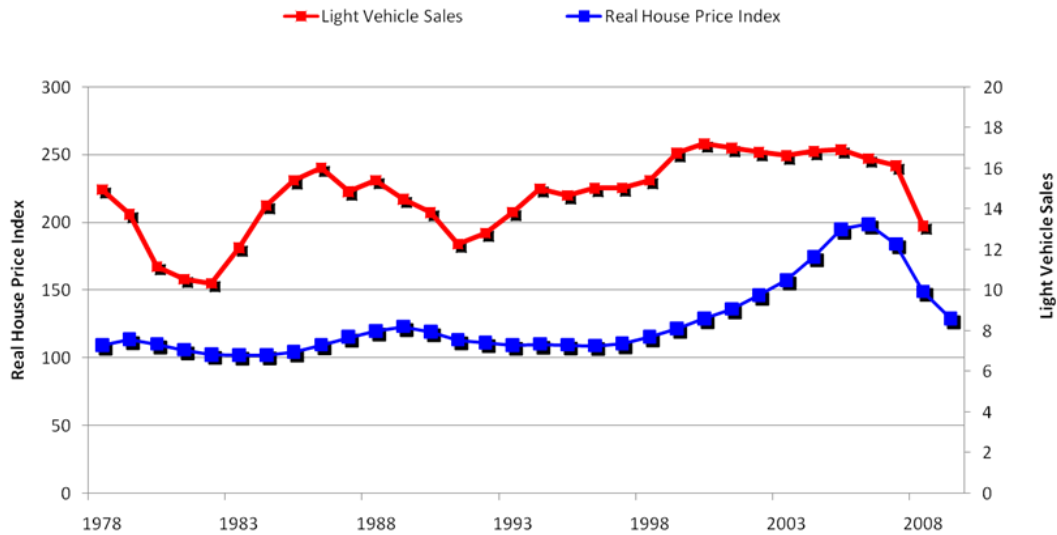
Although the mortgage industry was the focus of the subprime debacle, the automotive sector experienced short-run benefits from subprime lending (both mortgage and auto loans). Between 1998 and 2005, the automotive industry experienced almost unprecedented sales levels, above the long-term trend line. A portion of those sales was to consumers who, without the widespread availability of subprime credit, would either not have purchased a vehicle or would have purchased a less expensive one. Much like the effect on the housing market, the spike in vehicles sales (caused in part by the availability of sub-prime loans) will likely have a negative effect the automotive industry for the next several years.

#### *Housing Prices, Household Investment and Net Worth*

Changes in household net worth present both short-term and long-term challenges to the automotive industry and serve as a stepping-off point between the short-term tactical measures and the more strategic long-term measures. The analysis begins with a key component of net worth—home ownership. The recent depletion in housing values has crushed household wealth and has had a direct and chilling effect on U.S. light vehicle sales (Chart 8).



**Chart 8**  
**House Price and Vehicle Sales 1978-2009\***

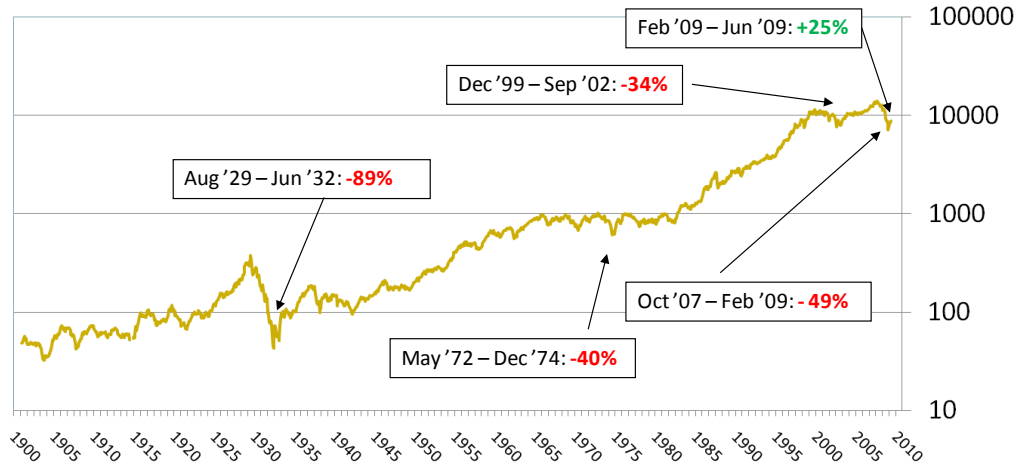


\*As of March 2009 Source: S&P/Case-Shiller Home Price Indices

As housing prices rose to credit-bubble peaks, homeowners experienced a significant increase in home equity, and much of this wealth was used to purchase new vehicles. Consumers (either because they were able to refinance or because they perceived themselves to be better-off financially due to increased home equity) made additional and more-expensive vehicle purchases than they might have otherwise. Between 1997 and 2008 (the length of the most recent growth market), total sales were about 12.8 million units above the long-term trend line. In the short term, the wealth effect (or in this case, the depletion of wealth) has sharply reduced sales. The effect of the years of above-trend sales, caused in part by inflated housing prices, will cause a downward pressure on sales in the coming years.

The Dow Jones Index is another measure of consumer wealth. Much has been written regarding the drop in the Dow Jones Index from October 2007 through February 2009, a contraction second only to the 1929 stock market crash. Chart 9 highlights three significant sell-offs since the Great Depression. While the most recent decline has been shorter than the other two, it represents a larger percent decrease—causing a more intense shock to the consumer.

**Chart 9**  
**DOW JONES INDEX**  
**Logarithmic Index as of June 12, 2009**

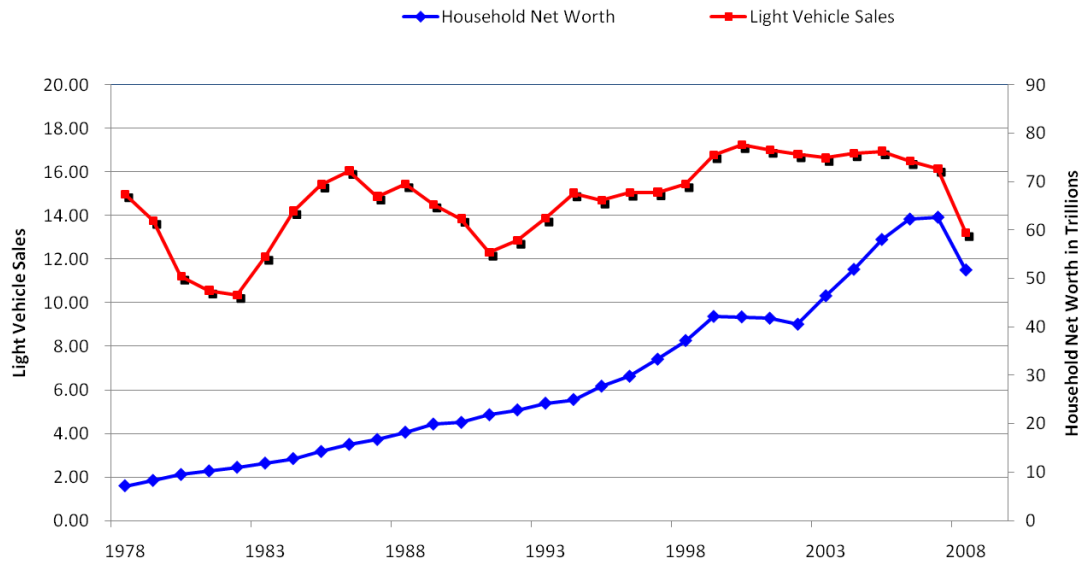


\*Logarithmic Index as of 6/12/09

Since about half of American households own stock, the recent plunge in the stock market has had a direct and painful effect on sales of all types—and particularly specific to this discussion, automotive sales. Despite the recent rally, the stock market continues to be well below peak levels, and has only recently reached 2002 trough levels. As the economy comes out of its current recession, the Dow Jones Index is different in one noteworthy way—General Motors is no longer included in the measure.

House value and stock portfolio holdings comprise a major portion of household net worth. Chart 10 shows the effect that the decrease in household net worth since 2007 has had on light vehicle sales. To put this in perspective, the loss of \$11 trillion dollars in net worth is equivalent to three-quarters of the U.S. GDP for one year.

**Chart 10**  
**Household Net Worth and Vehicle Sales 1978 – 2008**



*Source: Federal Reserve Statistical Release, Z.1, Flow of Funds Accounts of the United States*

While the wealth effect has had a strong negative impact on short-term sales levels, the severity of this decline will likely reduce sales well into the next economic cycle. It may take years, not months, for consumers to recover to their previous financial levels. Thus, light vehicle sales will be constrained as the consumer recovery slowly takes hold.

### The Long-Term Outlook

The decrease of more than \$11 trillion in net wealth over the past two years will obviously hinder light vehicle sales during the next several years. However, there are several long-term trends that suggest a fundamental growth in light vehicle sales, and—even more importantly for SEMA members—in total fleet, in the coming decade. Long-run light vehicle sales depend on long-run vehicle demand, which can be divided into two subsets: incremental demand and replacement demand. Incremental demand is fueled by growth in population, household formation, and personal wealth. Replacement demand is driven by vehicle stock and the vehicle scrappage rate.

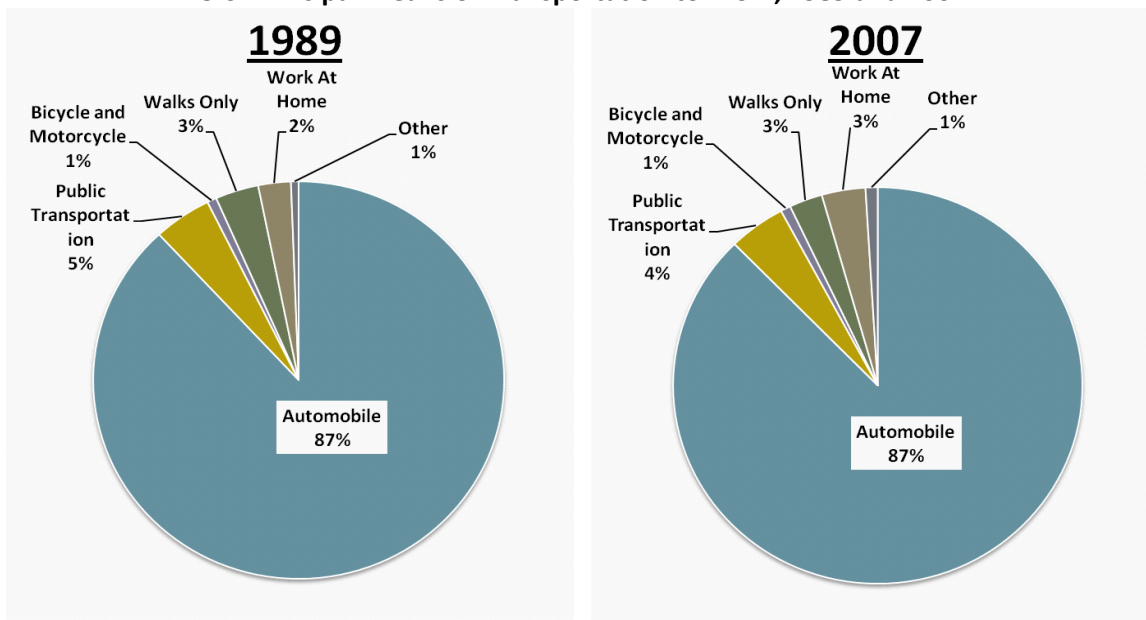
#### *Transportation Requirements as a Driver*

Vehicle travel will remain the main source of transportation in the U.S. for the foreseeable future, due to a number of demographic and other trends that make sudden change nearly impossible. More than half of the U.S. population now lives in suburbs, which tend to offer poor alternatives to the private vehicle. Due to an increase in the number of trips (for a wide range of purposes other than work), commuting

now accounts for only about 16 percent of trips<sup>1</sup>; non-work trips generally are more difficult to serve via non-personal vehicle modes. Even for commuting trips, 87 percent of workers in the U.S. commute to work by automobile (Chart 11). The number of singly occupied vehicles continues to grow, driven in part by significant increases in suburb-to-suburb commuting.

Some trends do suggest that the U.S. may be reaching (or has already reached) a plateau—in terms of commuting trips by vehicle. We have seen a growth in the use of public transit in growing Sunbelt regions; working from home continues to grow; and the length of the commute (in some cases) has become so long, that the so-called rush hour has expanded. Furthermore, we have some indication that re-urbanization is a possibility in some regions. This is driven in part by the aging population, increasing fuel prices, increases in immigration, and other factors. Taken as a whole, these trends currently serve only to slow the rate of increase in vehicle travel; they do not cause it to decline. While we have had some actual decreases associated with the current recession, these decreases mark a temporary blip. Long-term trends are for the high levels of vehicle transportation to remain steady, if not grow slightly.

**Chart 11**  
**U.S. Principal Means of Transportation to Work, 1989 and 2007**



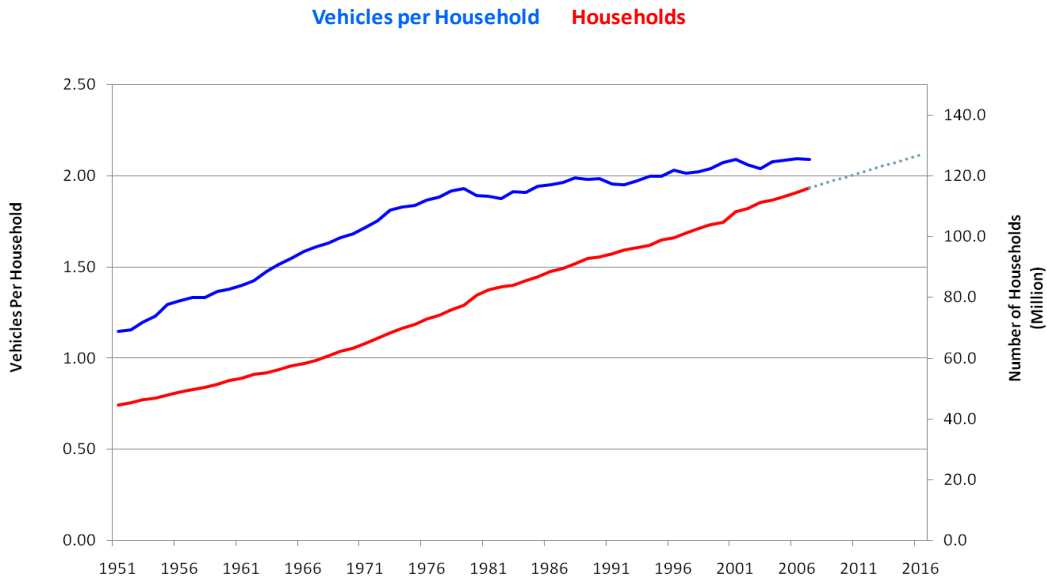
Source: U.S. Department of Housing and Urban Development, American Housing Survey, 1989 and 2007, U.S. Census Bureau

### Household formation

<sup>1</sup> Pisarski, A.E. 2009. *Commuting in America III*. NCHRP Report 550. Washington, DC: Transportation Research Board of the National Academies.

The growth trend in the number of households over the past 60 years (Chart 12) has been steady. By comparison, the number of vehicles per household has seen two different eras. The first was from the end of World War II through the late seventies, and the second from the late seventies through the present. The post-war economy grew at a rapid rate, enabling households to afford multiple vehicles. The two-car garage became the standard. However, once the two-car-per-household point was reached, there was a natural limit—two adults per house. While the measure has “trended up” in the last thirty years, the rate of growth has been much slower than during post-war years.

**Chart 12**  
**Number of Households and Vehicles Per Household**  
**1951 – 2016**

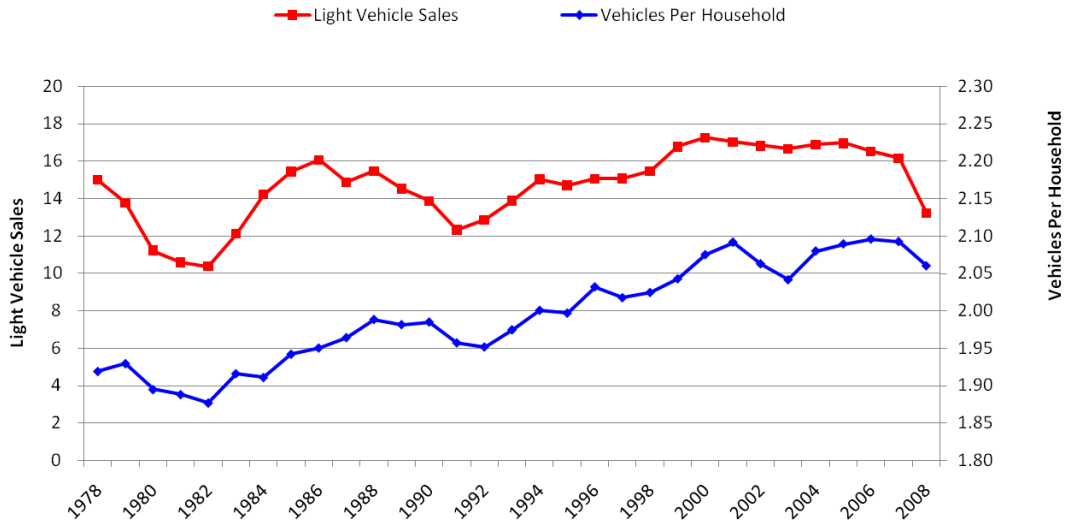


Source: U.S. Census Bureau, *Current Population Reports, "Families and Living Arrangements"*; U.S. Federal Highway Administration, *Highway Statistics*

Assuming the number of U.S. households is going to continue to grow at the rate of 1.2 million per year, there will be at least 2.5 million more operating vehicles each year. By 2016, there will be 270 million operating vehicles in the U.S.—20 million more than in 2008.

The number of vehicles per household is a wealth indicator that is highly correlated with vehicle sales (Chart 13). The theory behind the wealth effect on motor vehicle sales is marginal utility equilibrium: during economic expansion, people are willing to spend more and own more (and newer) vehicles, thus driving up vehicle sales. On the other hand, during economic contraction, people are more reluctant to buy big ticket items such as motor vehicles; therefore, people choose to own fewer and older vehicles, and vehicle sales contract.

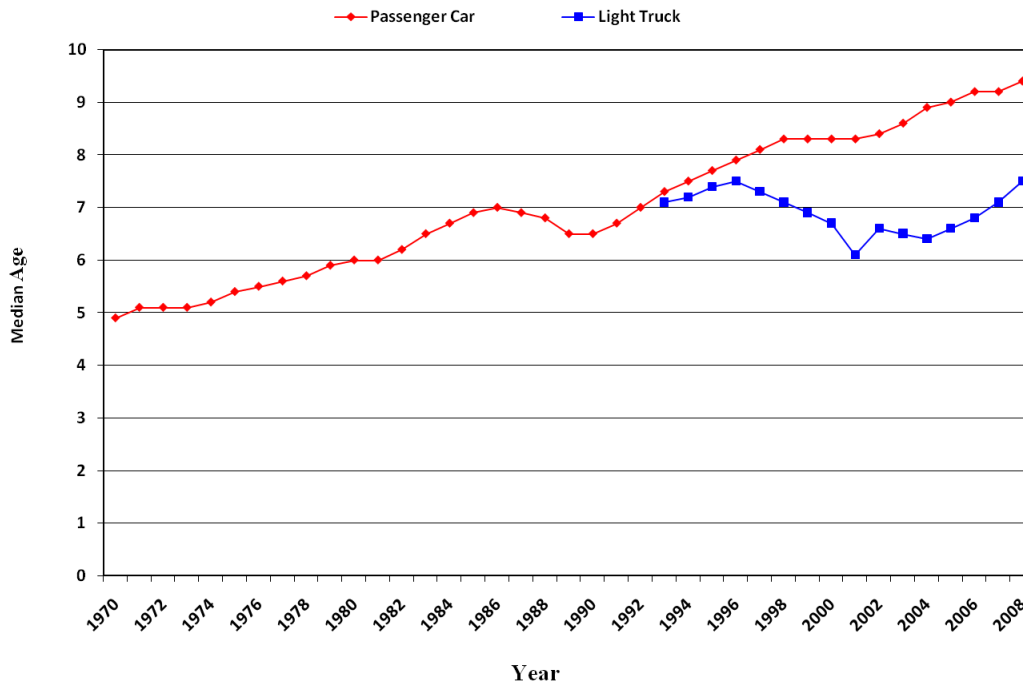
**Chart 13**  
**Vehicle per Household and Vehicle Sales, 1978 – 2008**



Source: BEA, U.S. DOC; Center for Automotive Research

Chart 14 shows the median age of passenger cars (1970-2008) and light trucks (1993-2008) in the U.S. (Data are not available for light trucks before 1993.) The median age of passenger cars reached an all-time high in 2008. From the late 1980s through 2003, sales of light trucks increased rapidly. This rise in sales created a large fleet of newer model trucks in the market. During those years, sales of passenger cars were relatively stagnant. Thus, the car fleet aged, while the median age of the light truck fleet actually decreased. In the past seven years, both passenger cars and light trucks have seen an increase in median age.

**Chart 14**  
**1970-2008 Median Age of Passenger Cars and Light Trucks**



Source: R.L. Polk

Given the macro-economic trends discussed in this paper, it is likely the median age of the U.S. light vehicle fleet will continue its long-term trend over the next five years. New car sales will be muted, while incremental fleet growth (driven by population and household growth) will rise. Given the expectation that there will be relatively fewer vehicles entering the market (compared to the previous sales cycle peak), an increase in the total fleet would likely be driven by a reduction of vehicles exiting the fleet. Vehicle scrappage rates would therefore decline. Historically, the total fleet needs a new vehicle sales rate of approximately 12 million in order to grow. Therefore, it is likely there will be a slight reduction in the fleet for 2009. Due to economic conditions, scrappage rates will also likely decrease for the next several years.

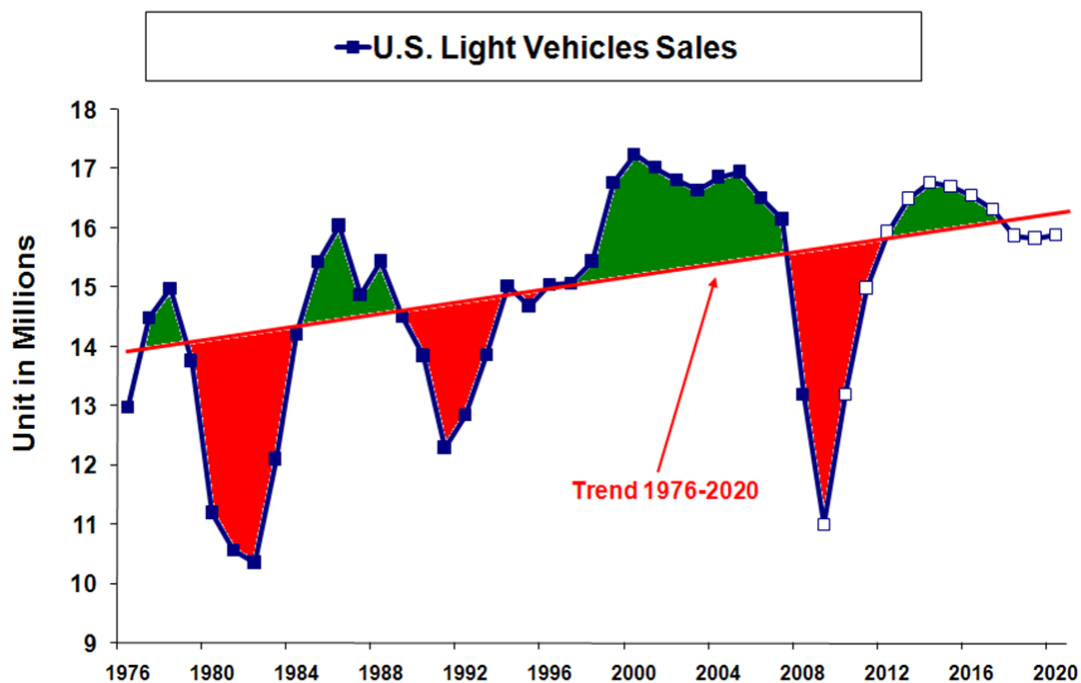
It is worth noting that the recently enacted “Cash for Clunkers” legislation will have some effect on the age of the fleet, but will likely be a short term deviation in the market. Overall, the authors believe the aging of the fleet continues to represent significant opportunity for SEMA member companies.

## U.S. Light Vehicles Sales Forecast

According to CAR's long term forecast model, U.S. light vehicle sales will hit bottom at 10-11 million this year. The recovery will add 2 million units of additional sales per year for two years, before slowing down in 2013-2014. By 2014, the U.S. market will peak at 16.8 million sales, which is still lower than the most recent peak of over 17 million units in 2000.

An analysis of the past three decades of sales data allows us to estimate that buyers over-consumed (total sales units above trend) 12.8 million units of light vehicles, during the period 1999-2007. These above-trend years will be followed by 10.4 million units of under-consumption (total sales units below trend), during the period 2008-2011. By 2012, sales will return to the long-run trend level of about 15 million units per year. We estimate that buyers will over-consume 3 million units during the period 2013-2017. The thirty-year trend line increases by roughly 80,000 units of sales per year, and is supported by growth in population, household formation, and vehicles per household.

**Chart 15**  
**U.S. Light Vehicle Sales and Forecast**



Source: Center for Automotive Research

The current deep downturn and expected softer upside of the next peak has interesting implications for the aftermarket—both repair and replacement—and specialty equipment suppliers. The lower peak sales forecast, combined with expected growth in the operating fleet, suggests the median age of vehicles will likely increase in the coming years. (The median age for passenger cars has risen from 7.9 in 1997 to 9.2 in 2008. While it had been dropping a decade ago, the average age of light trucks has



quickly risen to 7.5 over the past five years). As the fleet ages, drivers will spend more on repair and replacement. It is likely they will also be more interested in specialty equipment to update and customize their vehicles.

## Phase III Summary

The cover story featured in the April 2009 edition of SEMA News, “Don’t Waste This Crisis”, focused on the fact that during a crisis the instinct is to wait out the uncertainty and become paralyzed. That strategy is wrong. Now is the time to be energized, to prepare for the coming changes. There is no script for running a company in this historic downturn. The range of possible futures confronting specialty-equipment businesses is great. However, companies with flexibility and situational awareness are more likely to survive this financial crisis than those that choose to ignore the consequences of inaction. To energize and take action, however, SEMA companies should first have an understanding of the operating environment. This report presents several key short- and long-term economic determinants of U.S. automotive sales to guide SEMA members in their decision-making and business-planning processes. The researchers also illuminate how these determinants may impact future demand for light vehicles. It is a pivotal time for automotive business decision-makers to understand the ways in which the economy will be different following its recovery, as well as the ways in which it may have changed permanently. Understanding economic trends and realizing the implications is essential for strategic business and scenario planning. This document offers information that can serve as one input into those business planning processes.

Increasingly, the levers used to alter vehicle sales appear to require greater swings than several decades ago. In essence, it appears to be getting harder to ‘move the needle’ in regard to increasing vehicle sales. It is possible that the current recession offers an opportunity to re-invent—or at least reconsider—the tools used to predict automotive sales. Further, as these tools are refined, there is great opportunity to leverage the strong aftermarket economic and product segment forecasting (i.e. Parts and Accessories Demand Index) the Specialty Equipment Market Association already has with its market research initiatives.

The U.S. economy has been in its current recession for more than one year. Yet, as the third quarter of 2009 begins, there are signs that the economy is beginning to turn around. In fact, it is possible that new vehicle sales for the second half of this year may reach an annualized rate of 11.0 million units. While that will not reach the lofty volumes of recent years, it is markedly better than the 9.3 million unit (seasonally adjusted) selling rates of the first quarter of 2009.

Leading through uncertainty is tough, and considerable uncertainties remain. Consumer confidence is on the rise, but it remains well below the levels of two years ago. The unemployment rate also continues to be a concern: It continues to rise, albeit at a slower rate. It is likely the unemployment rate will start coming down in 9-12 months. Although it has historically been a lagging indicator for economic recovery, a further increase in the unemployment rate could delay an already-fragile recovery.

The effect this recession has had on the price differential between new and used cars is of special interest to SEMA members. Although the price of used vehicles leveled off in the second quarter of 2009, new vehicle car prices have steadily increased. This means that used cars are relatively less

expensive when compared to new vehicles and may increasingly be considered an alternative for those who have initially considered a new vehicle.

Further, many of those who used subprime financing to buy new vehicles may not be able to return to the new car market soon. These consumers will likely be entering the used car market for their next vehicles. Having become accustomed to the features of newer vehicles, they present great opportunity for the specialty equipment supplier.

Declines in household net worth present both short- and long-term challenges, and serve as the stepping-off point between the short-term tactical measures and the more strategic long-term measures. The consumer who lost a major portion of his net wealth (home equity, investments, etc.), will not likely be in the market for a new vehicle in the near future, or will likely enter with greater frugality.

This recession has left the U.S. automotive industry forever changed. Even with the seemingly successful trip through bankruptcy for Chrysler and General Motors, their futures are uncertain. The recession has also been devastating to the original equipment supply base, and the extent of that damage remains uncertain.

Yet, the long-term outlook for the U.S. light vehicle sales picture remains positive. Although the CAR sales forecast indicates the market will not reach the halcyon levels achieved during the credit bubble, it is expected to reach a strong peak of 16.0 to 16.8 million units by mid-decade. While re-urbanization has become a hot topic of late, for most people, there is little or no substitute for automobiles. Thus, CAR researchers believe there will be a strong replacement need for the more than 250 million vehicles on the road. One final thought: the United States is the third most populous country in the world and ranks second highest in population growth rate of all major developed countries, just behind Australia. Vehicle demand, along with all the various products going into cars, will steadily increase in the foreseeable future—even though there may be some economic bumps in the road along the way.

In conclusion, although the U.S. economy and automotive industry have undergone perhaps the most severe recession since World War II, there does appear to be a light at the end of the dark tunnel. The automotive industry will survive, and in some ways, be healthier and stronger than it was before the crash. The number of vehicles on the road in the U.S. will steadily increase in the coming years. Yet, new vehicle sales will likely not return to the inflated levels experienced at the height of the credit bubble. Thus, vehicles will be on the road longer—which should prove to be a very positive trend for SEMA members.