



Automotive Outlook:

Long Term Impacts on U.S. Auto Sales

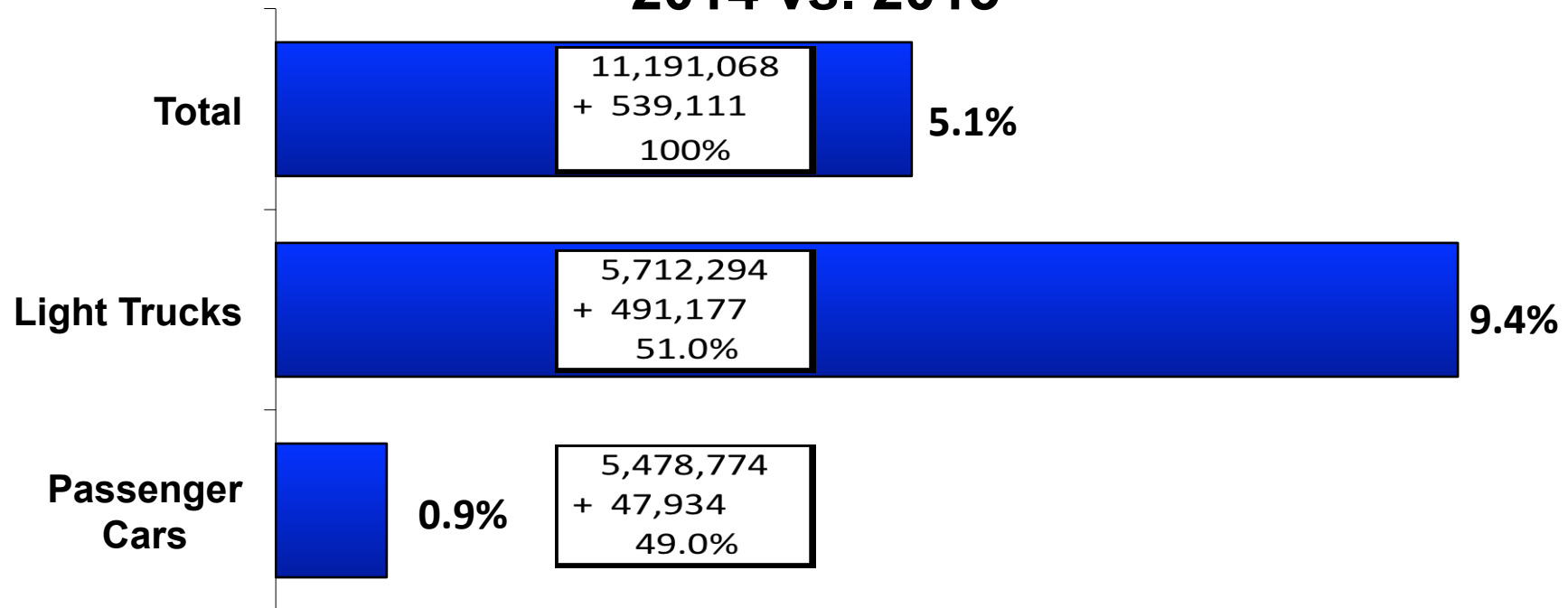
Kim Hill
Research Director

September 29, 2014

Agenda

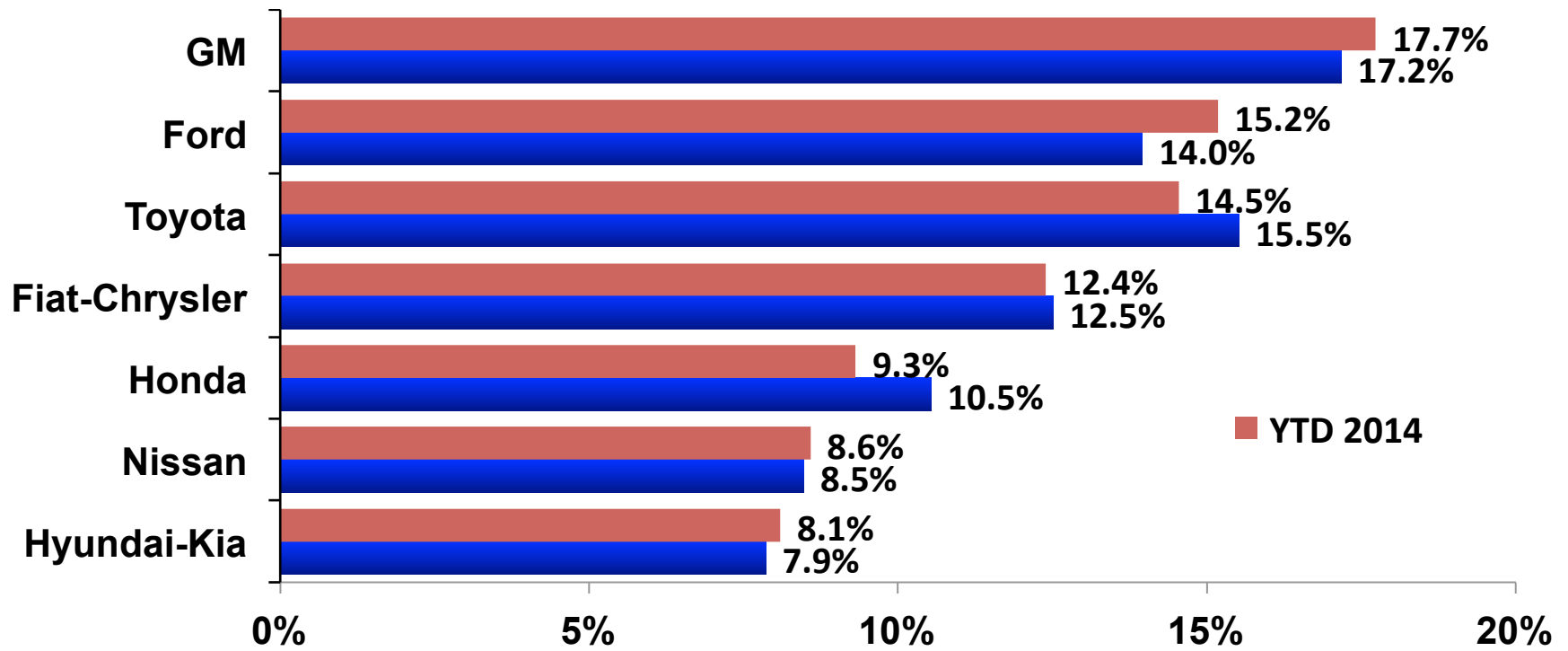
- **Current sales**
- **Factors that affect sales**
- **The current industry**
- **A look forward**

U.S. Light Vehicle Sales Percent Change YTD Through August: 2014 vs. 2013



Source: Automotive News; CAR Research

Detroit Three at 43.6% in August 2014
U.S. Market Share:
August 2014 & YTD Total

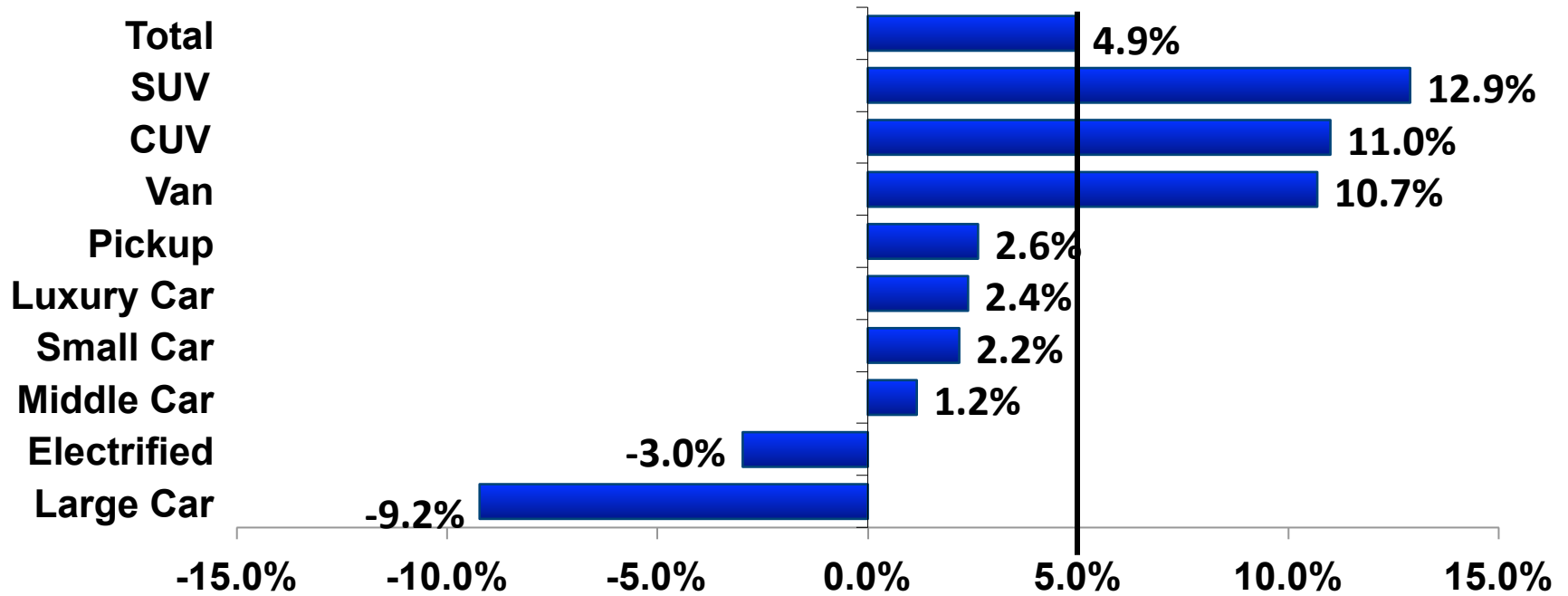


Source: Automotive News; CAR Research

Segment Breakdown

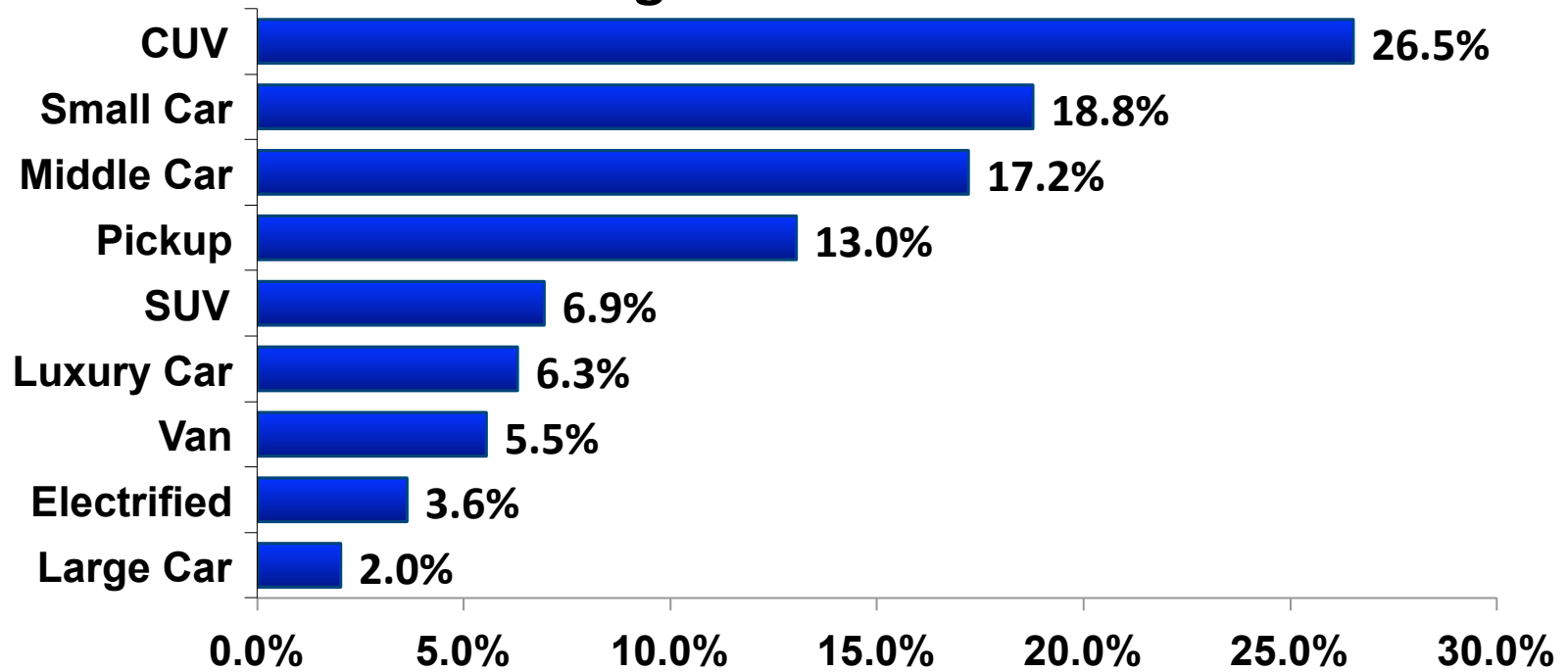
U.S. Light Vehicles Sales Percent Change

August YTD: 2014 vs. 2013



Note: Electrified Segment consists of BEVs, HEVs and PHEVs; all other segments are sales exclusive of Hybrid models
Source: Ward's Automotive Reports, HybridCars.com and CAR Research

Market Share: Segment Breakdown U.S. Light Vehicles Sales August YTD 2014



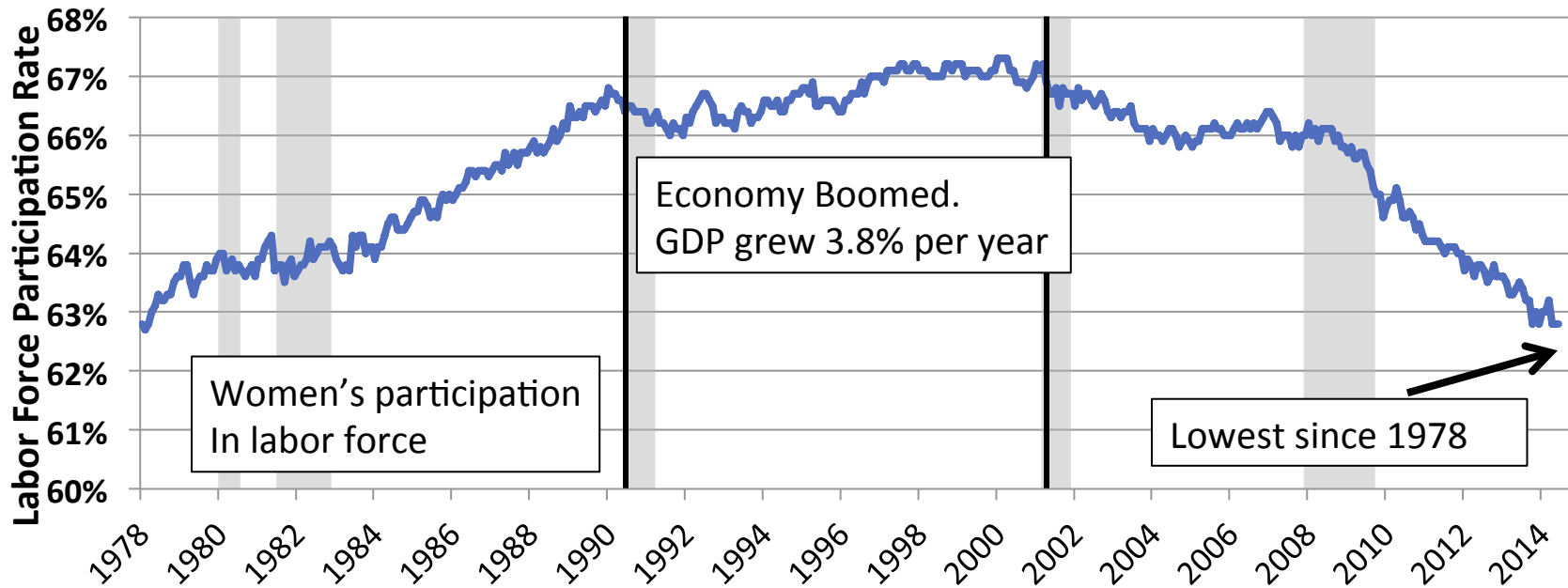
Note: Electrified Segment consists of BEVs, HEVs and PHEVs; all other segments are sales exclusive of Hybrid models
Source: Ward's Automotive Reports, HybridCars.com and CAR Research

Long Term Economic Indicators That Affect Sales

- Diminishing labor force participation
- Increasing household financial burdens
- Household budget outlays are shifting
- Motor vehicle price is rising
- Full-time employment drives up auto sales
- Household wealth effect

Labor Force Participation Rate Is Falling Even After the Last Two Recessions

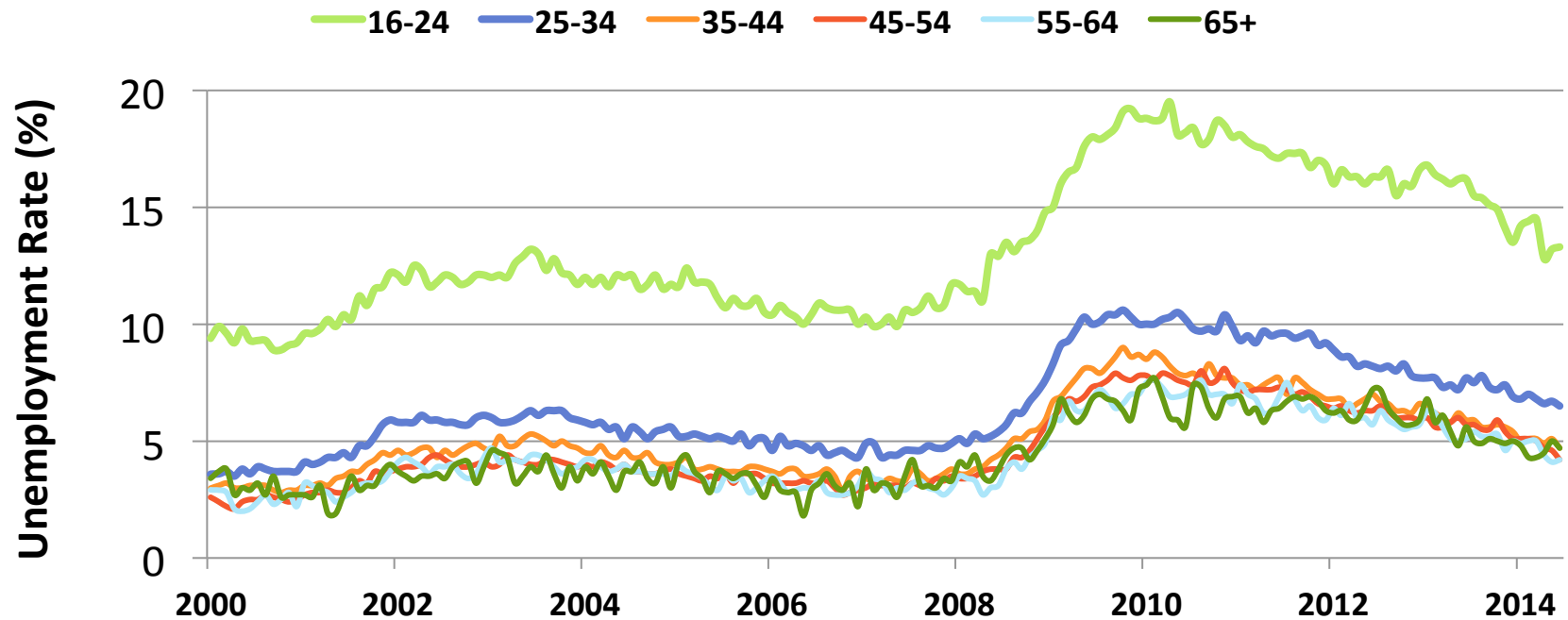
Labor Force Participation Rate 1978 – 2014



Source: Current Population Survey, Bureau of Labor Statistics

Younger Generations Are Facing Tougher Challenges

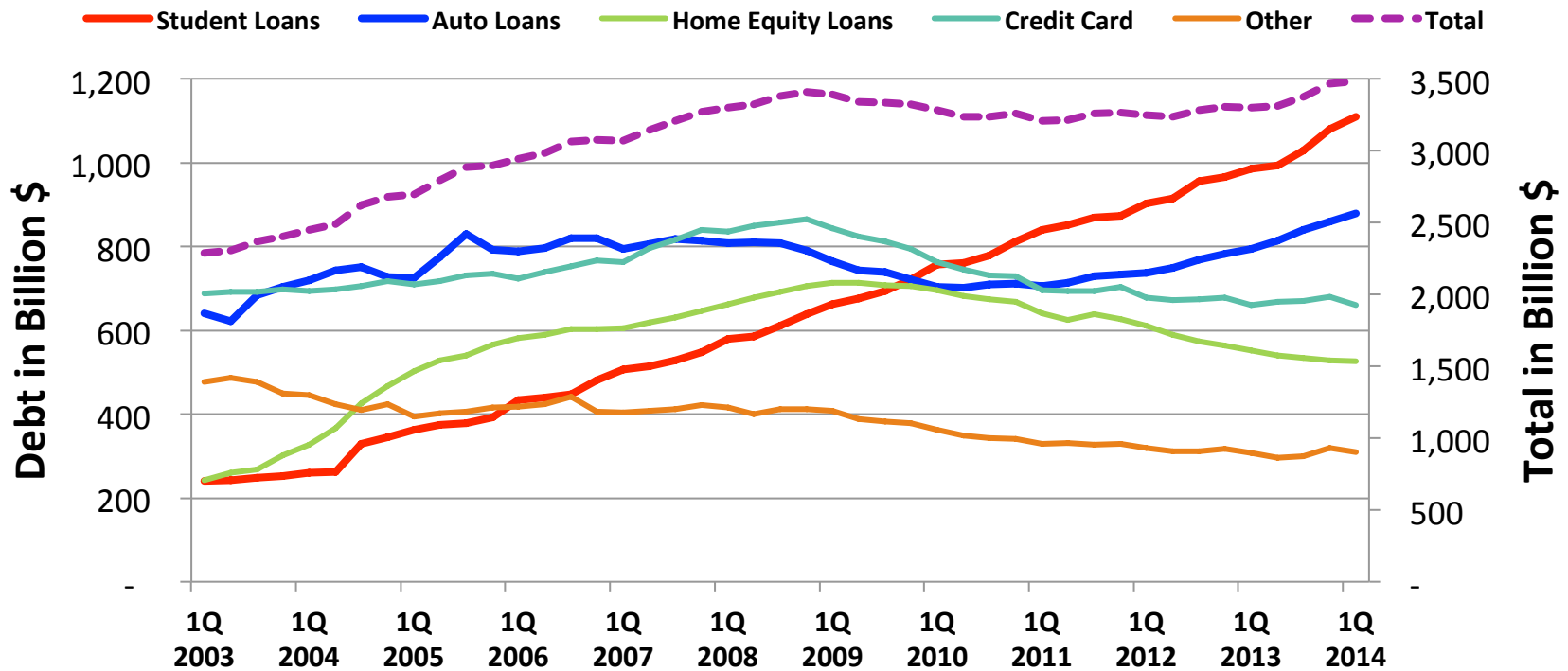
Unemployment Rate by Age January 2000 – June 2014



Source: Current Population Survey, Bureau of Labor Statistics

And Households Are Carrying More Debt

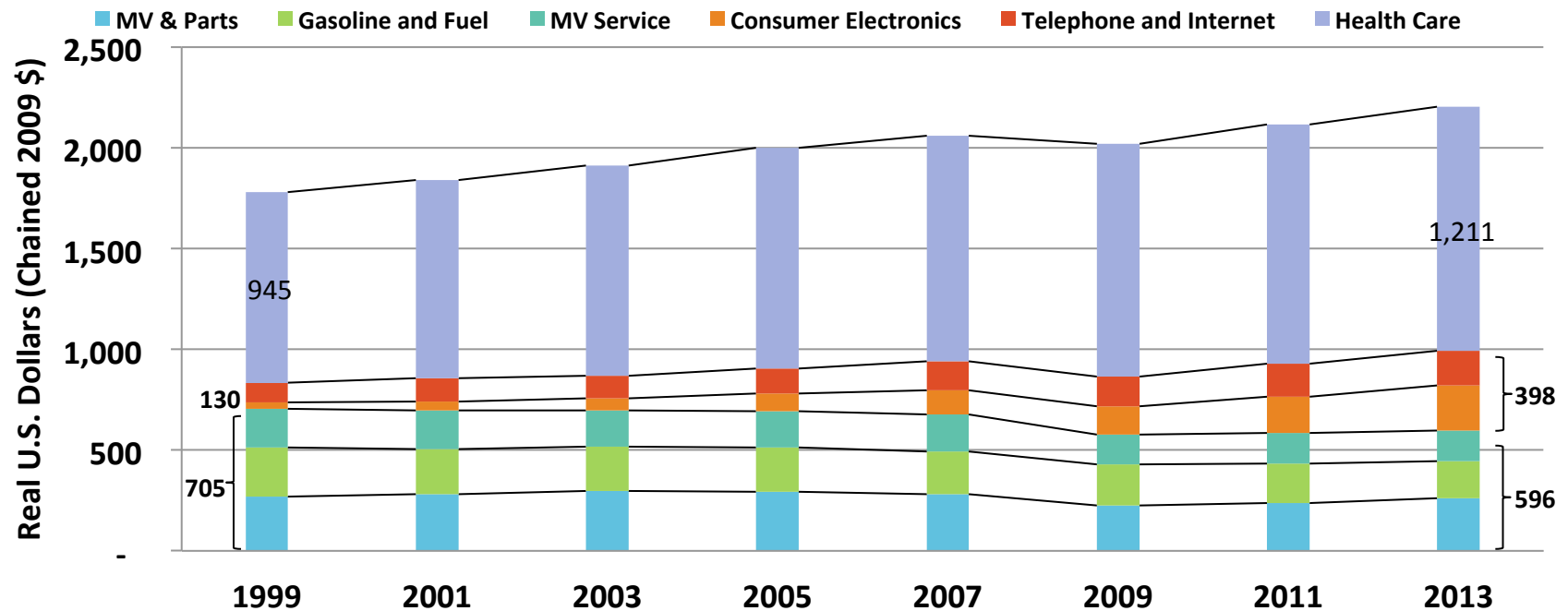
Household Non-Mortgage Aggregate Debt 1Q 2003 – 1Q 2014



Source: FRBNY Consumer Credit Panel/Equifax

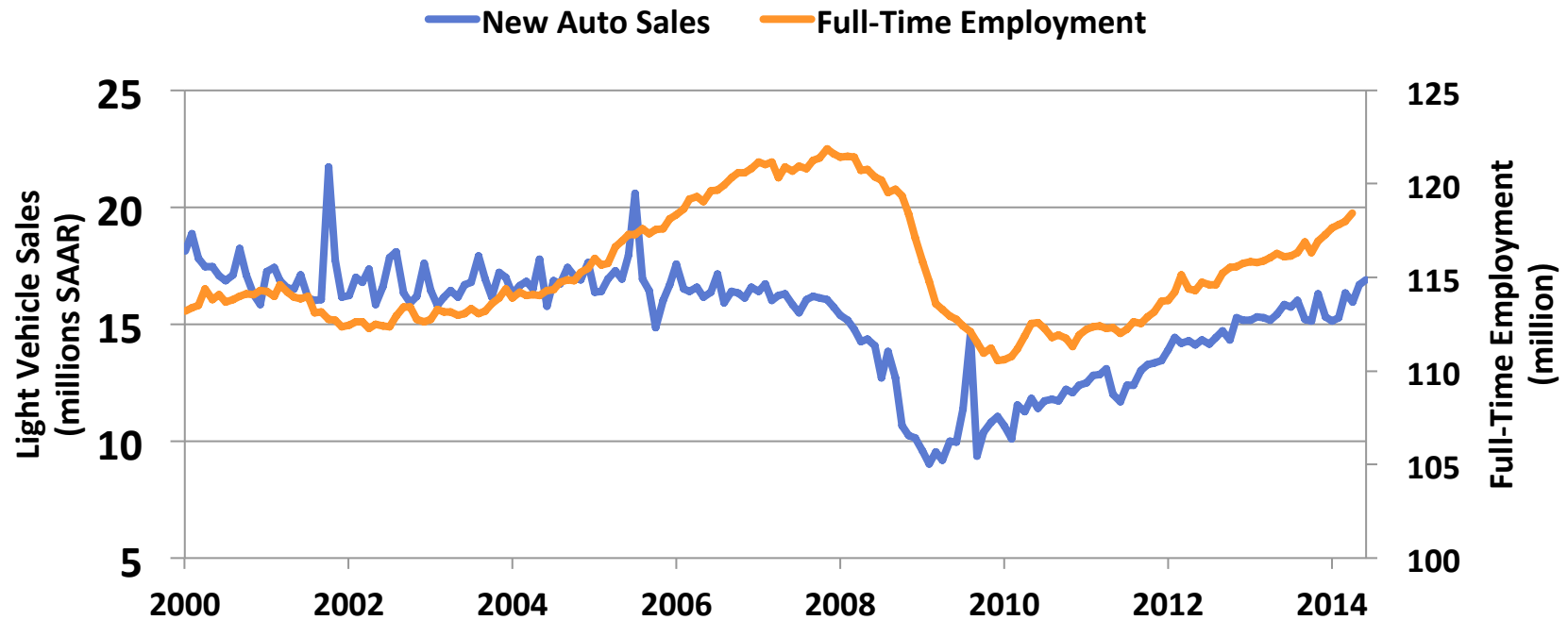
Household Budget Outlays Are Shifting To Non Auto Categories

Monthly Expenditure Per Household By Selected Products and Services, 1999-2013



Source: CAR research based on Personal Consumption Expenditures by Type of Product, Bureau of Economic Analysis

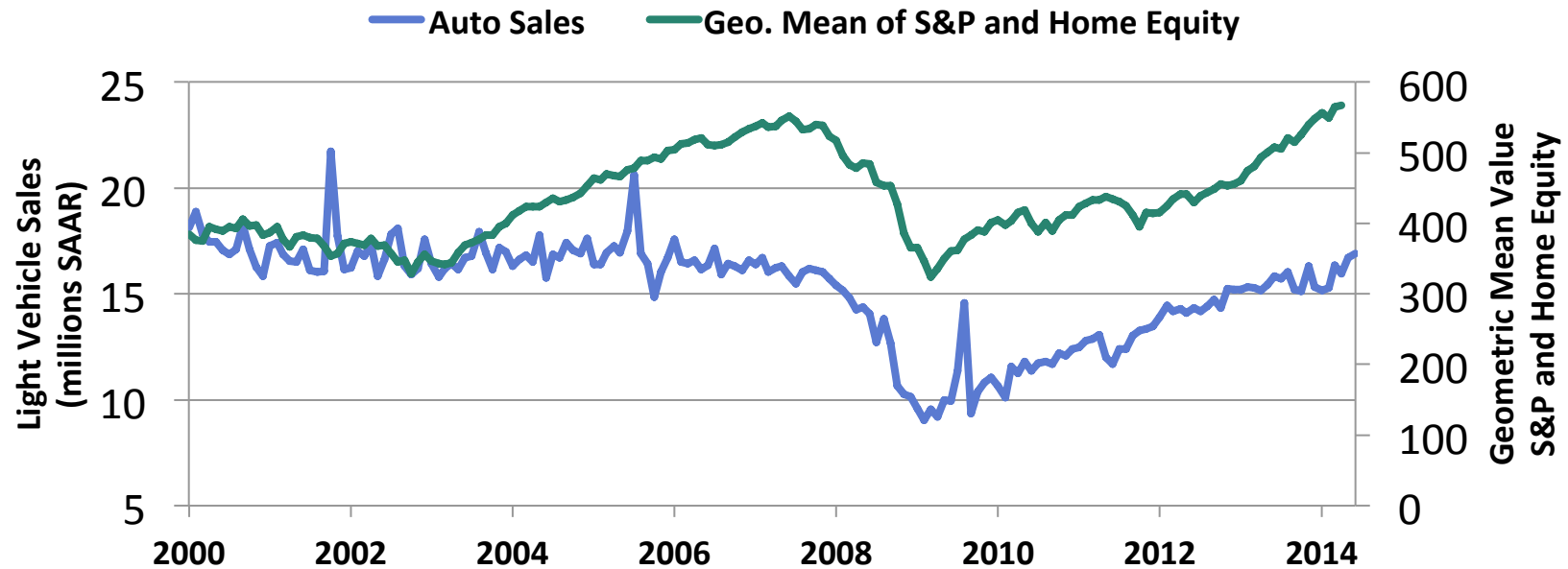
Increase in Full-Time Employment Drives Up Sales October 1996 – June 2014



Source: BEA; BLS

Growth in Household Wealth Drives Up Auto Sales

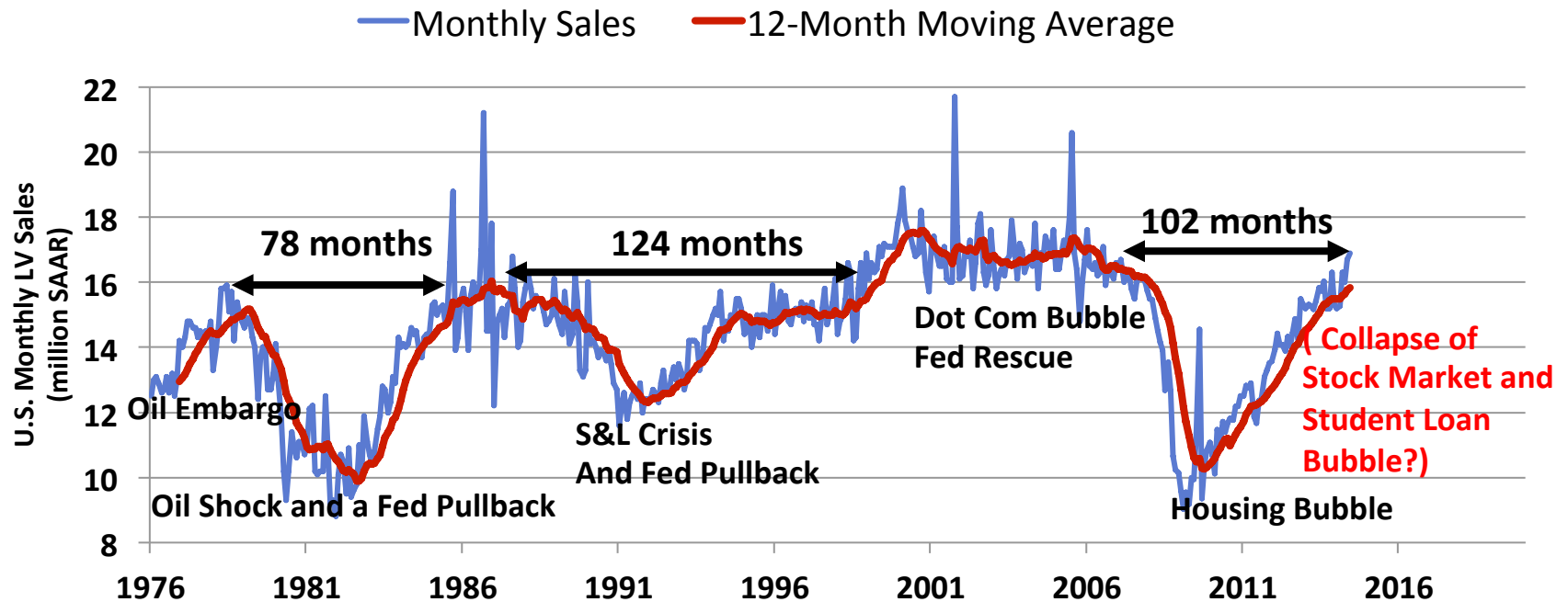
January 2000 – April 2014



Source: BEA; Yahoo Finance; National Composite Home Price Index for the United States

Beware of the Next Downturn!

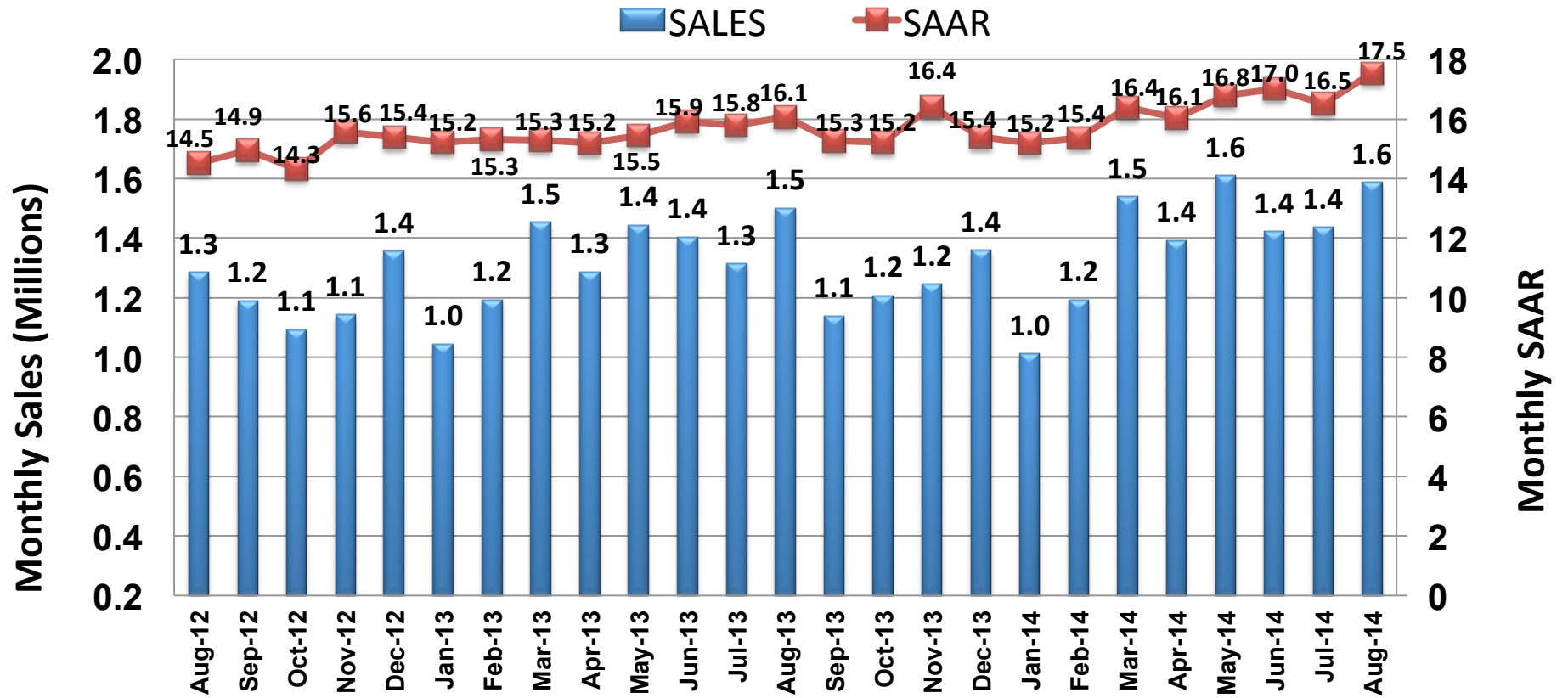
U.S. Monthly LV Sales and Automotive Business Cycle



Source: BEA

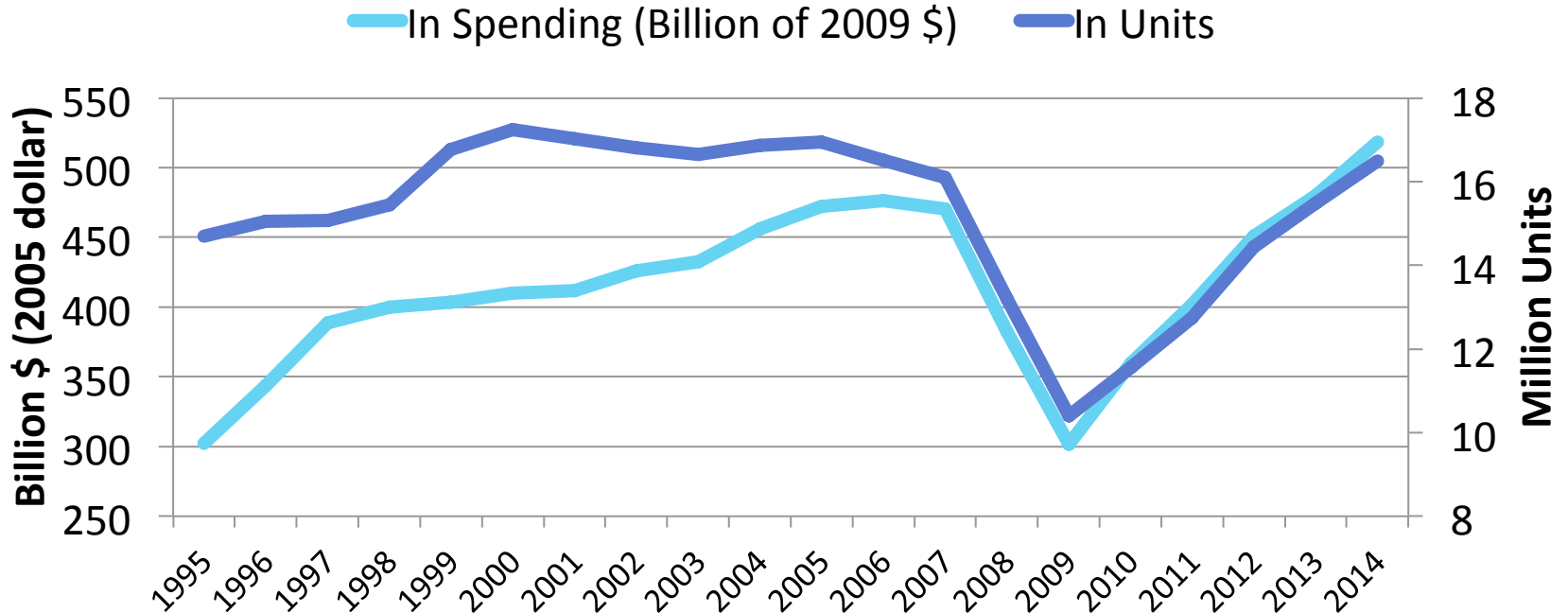
U.S. Light Vehicle Monthly Sales and SAAR

August 2012 – August 2014



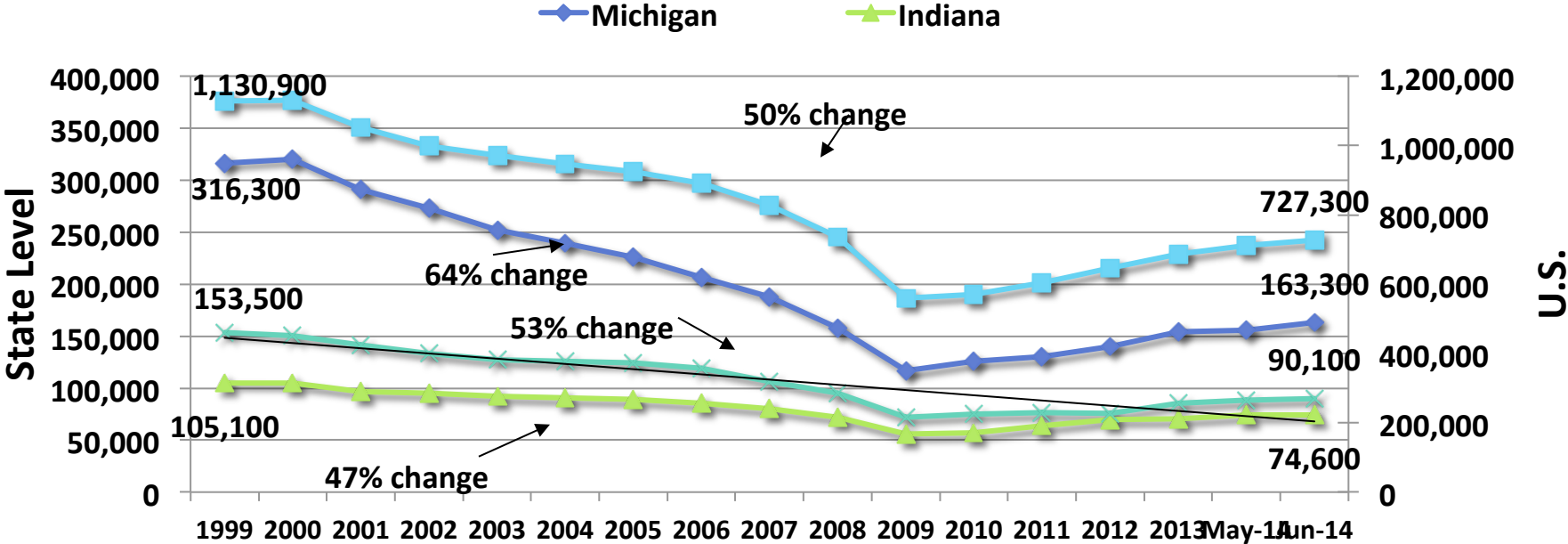
Source: Automotive News; CAR Research

Are Sales Back? 1995-2014



Source: BEA, Table 7.2.6B. Real Motor Vehicle Output, Chained Dollars

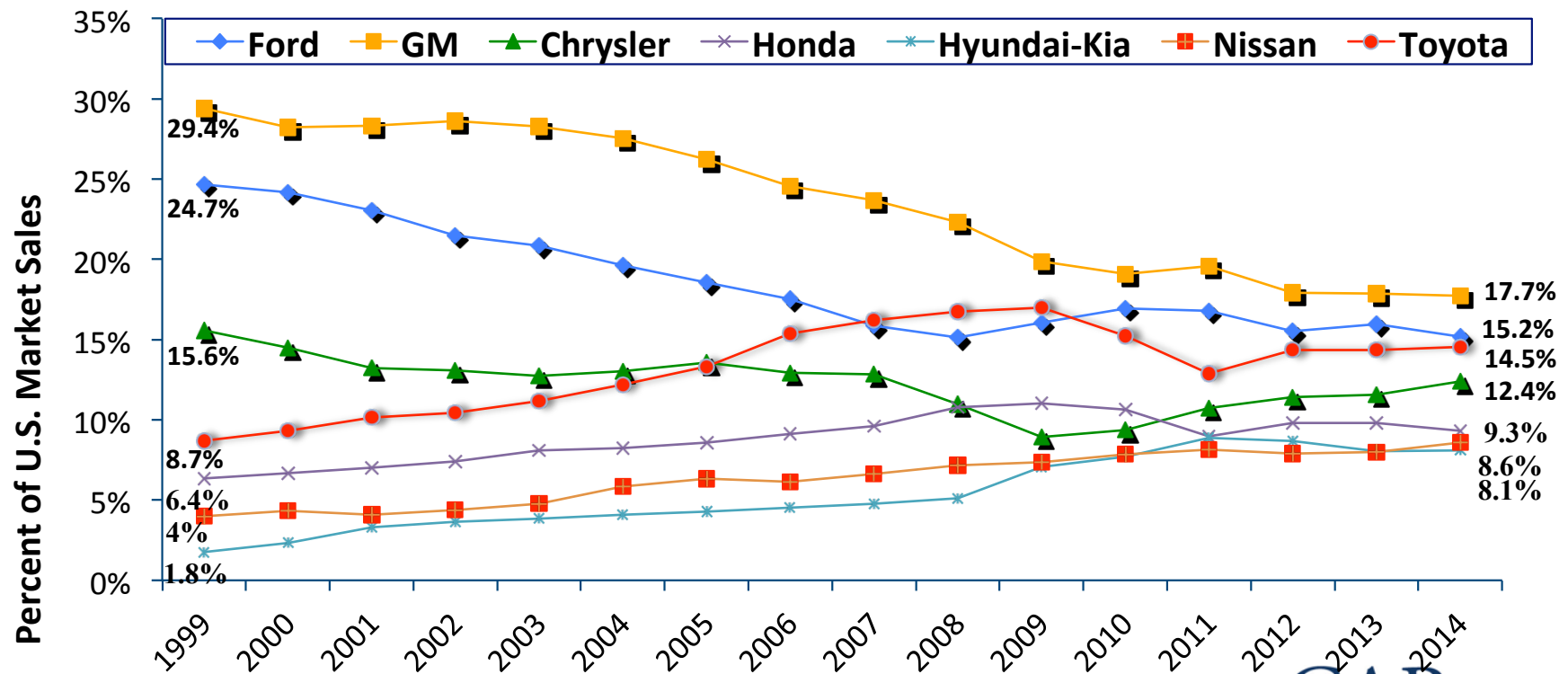
Motor Vehicle & Parts Manufacturing Employment 1999 –2014



Source: BLS, U.S. DOL, Statistics Canada

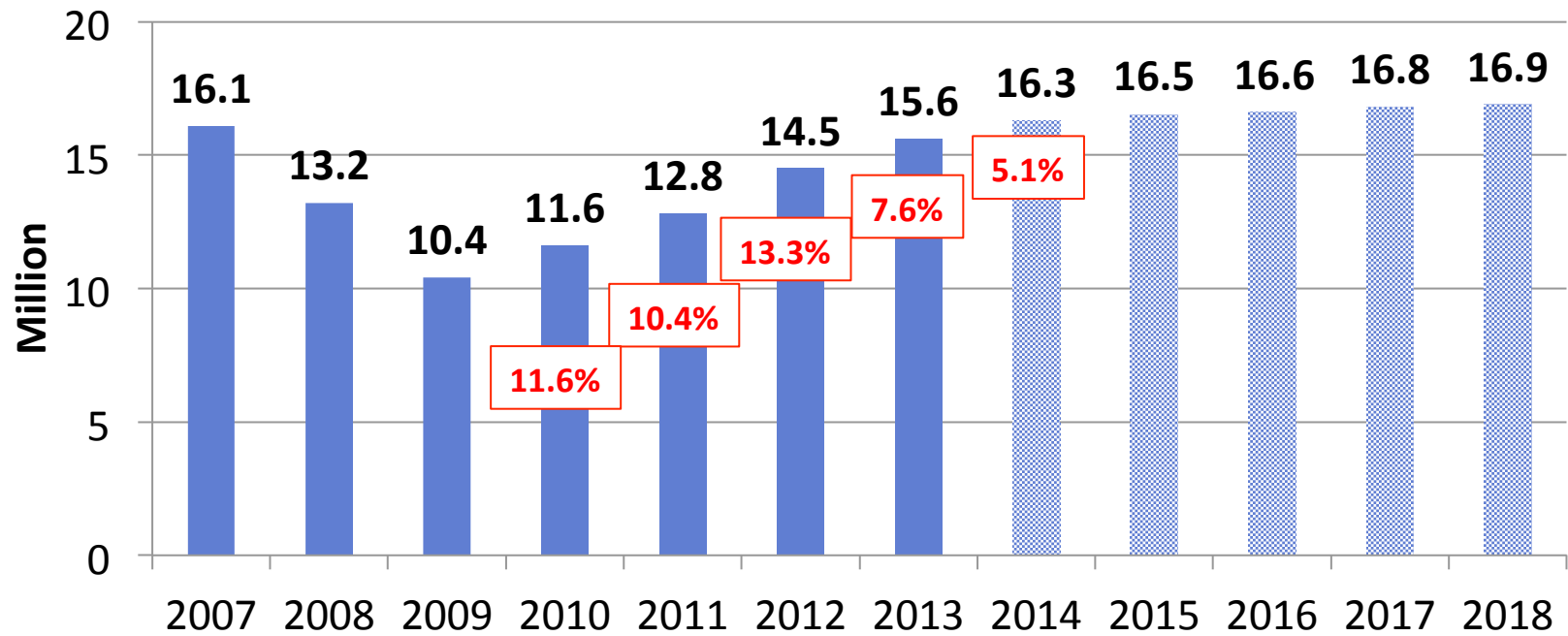
Big 7 Monthly U.S. Market Share

1999 – 2014 YTD (August)



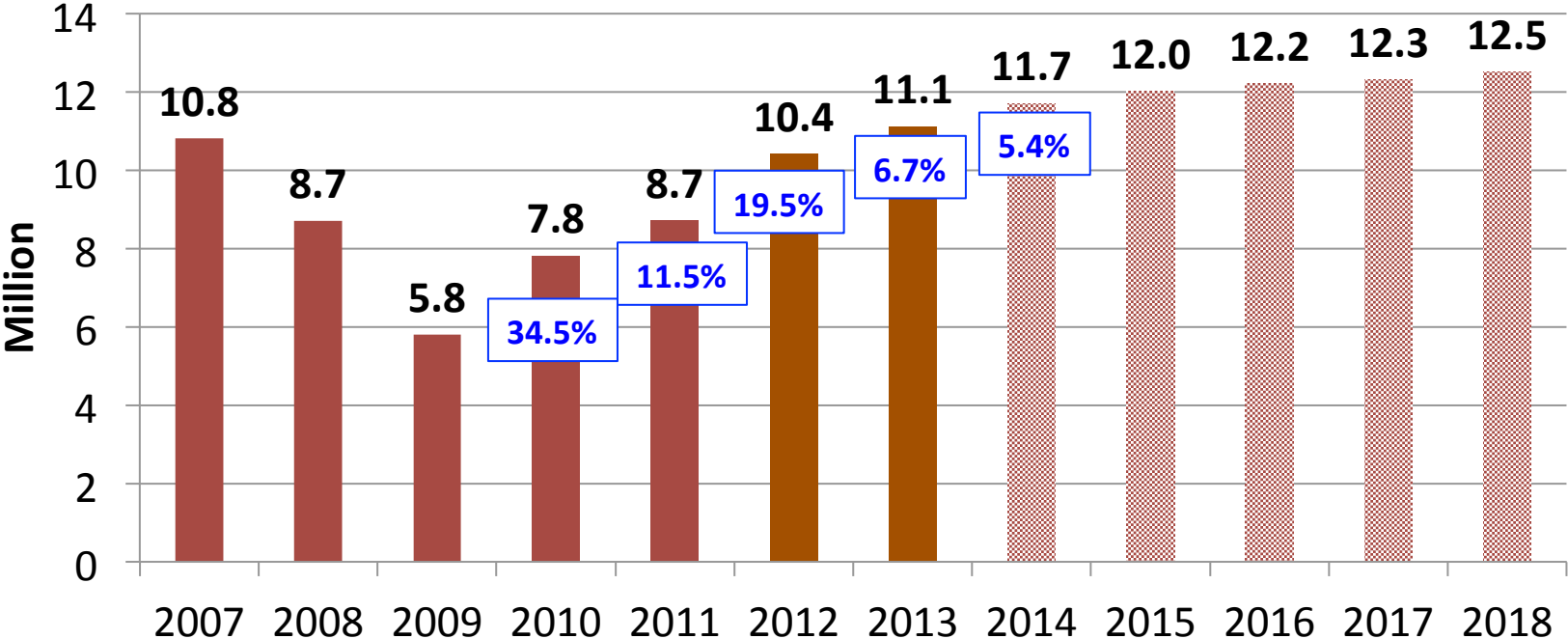
Source: Automotive News; CAR Research

U.S. Sales Forecast: 2014-2018



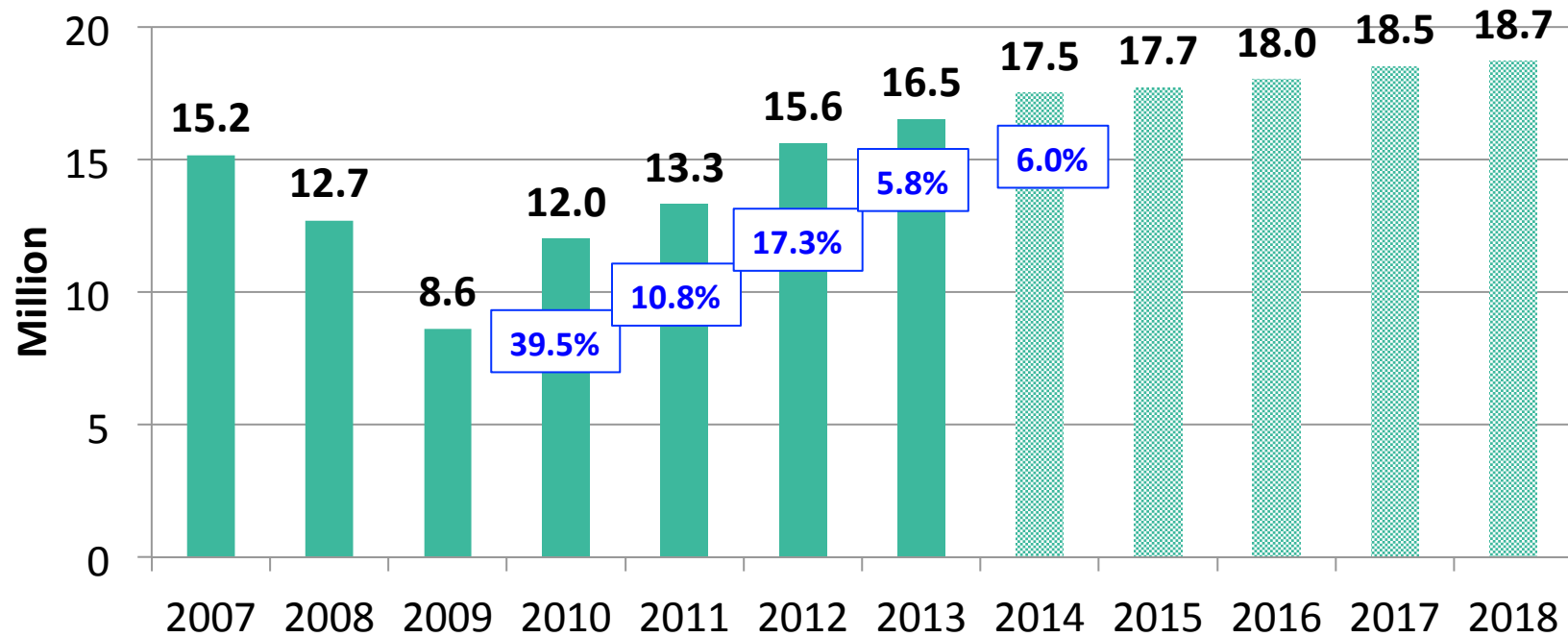
Source: CAR Research, Aug 2014

U.S. Vehicle Production Forecast: 2007-2018



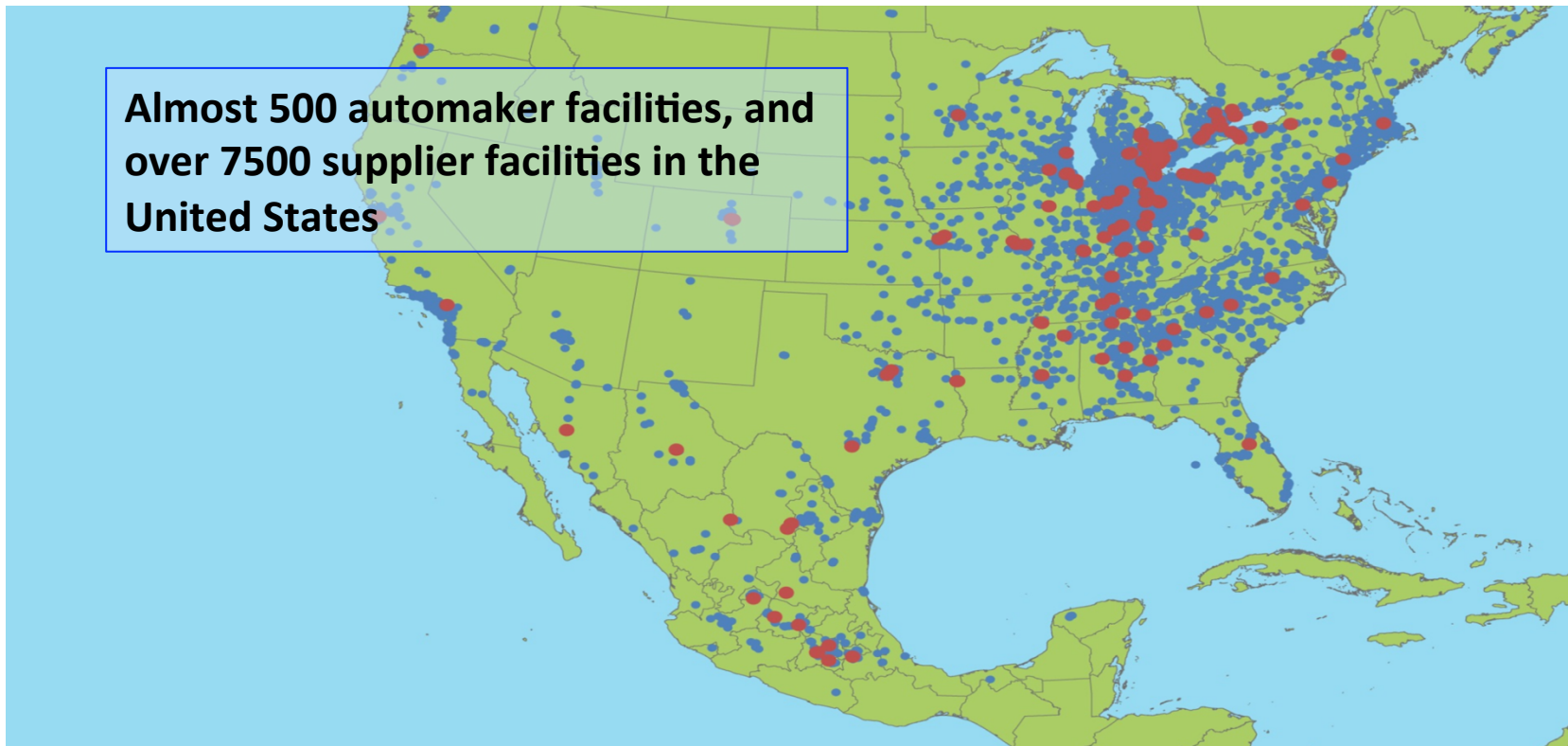
Source: CAR Research, Aug 2014

North American Production Forecast: 2007-2018



Source: CAR Research, Aug 2014

Footprint of the North American Automotive Industry



Source: CAR / BLS 2012

U.S. Motor Vehicle Related Value Chain Exceeds \$1 Trillion



Source: NADA, BEA, U.S. Census, R.L. Polk, CAR Research, 2007 estimates

Automotive-related Taxes and Fees

Sales Tax Revenues

- New Vehicles (New)
- Used Vehicles (Fleet)
- Parts/Services (Fleet)

Use Tax Revenues

- Fuel (Fleet)
- Title/Registration (Fleet)
- Driver's License (Fleet)

Business Taxes

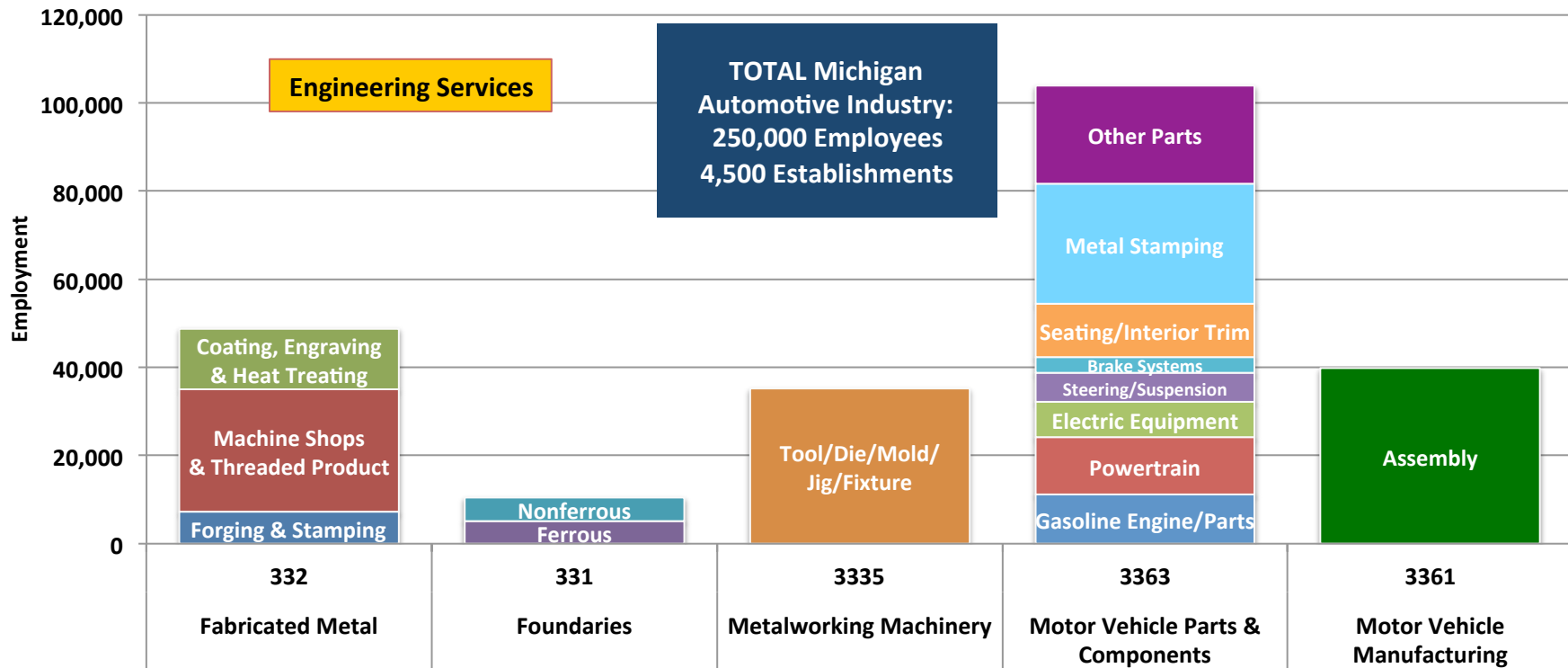
- Manufacturers (New)
- Dealerships (New/Fleet)

Personal Income Taxes

- Automakers (New)
- Suppliers (New)
- Dealerships (New/Fleet)

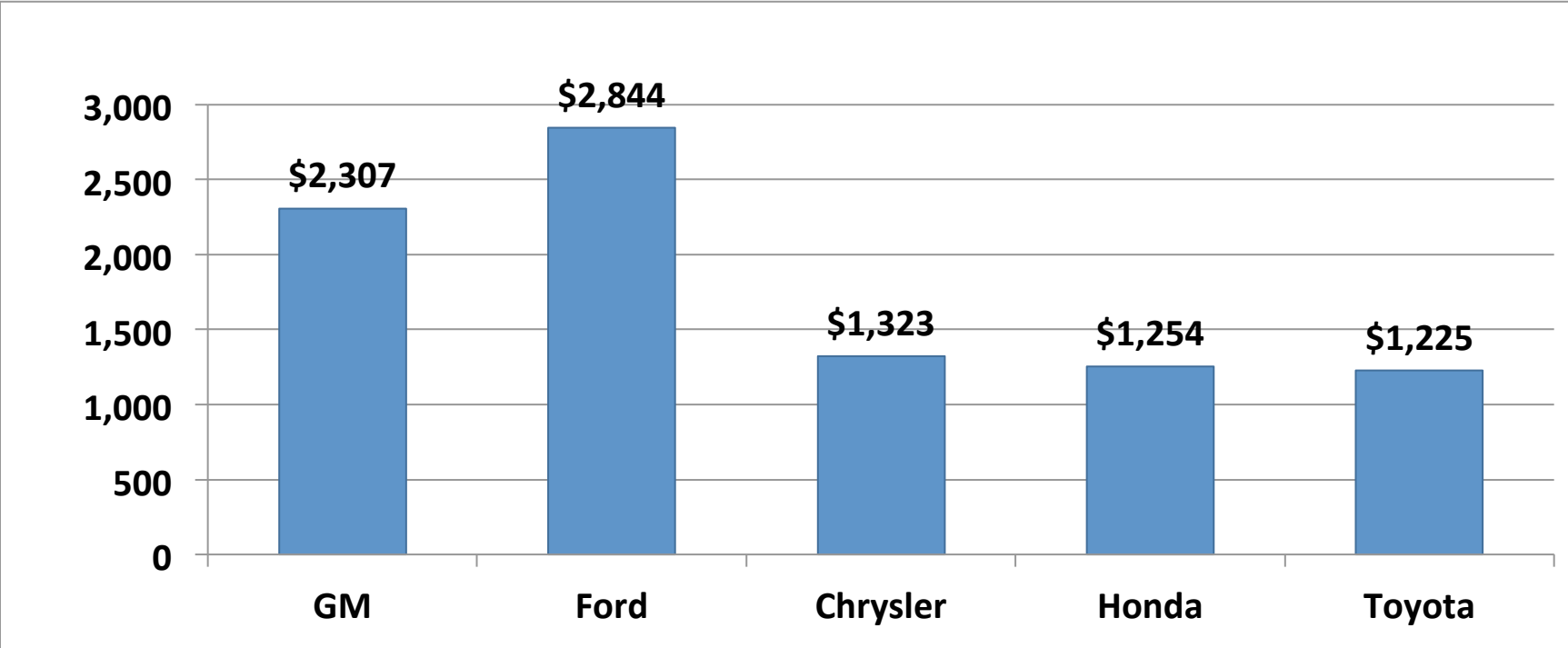
What is Auto Manufacturing?

Automotive Employment and Establishments



Source: U.S. Department of Labor, Bureau of Labor Statistics, QCEW

2013 Per Vehicle Profits North America



EBIT or automotive operating income per vehicle sold. Global average for Chrysler figure. Honda also excludes motorcycle, finance, and power products.

CAR

Announced North American Automaker Investments 2013 and Current 2014

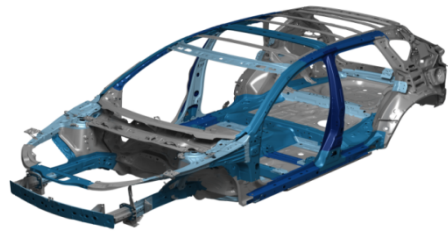
Total North America
2014: \$7.9 billion
2013: \$8.8 billion

Canada
2014: \$0 billion
2013: \$0.9 billion

United States
2014: \$4.5 billion
2013: \$6.4 billion

Mexico
2014: \$3.4 billion
2013: \$1.5 billion

The New Big Three - Technology Shock !



Materials



**New Jobs?
New Rules?
New Players?**

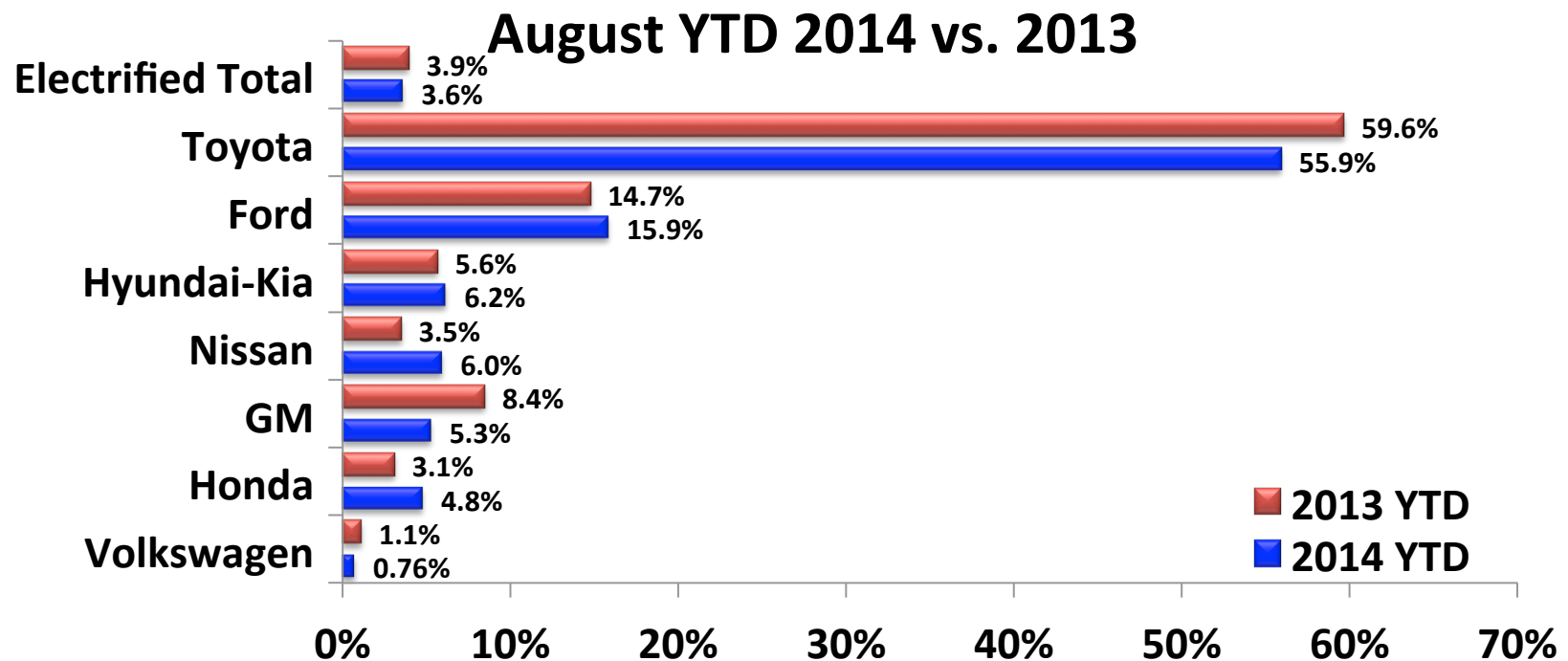


Connectivity



Powertrain

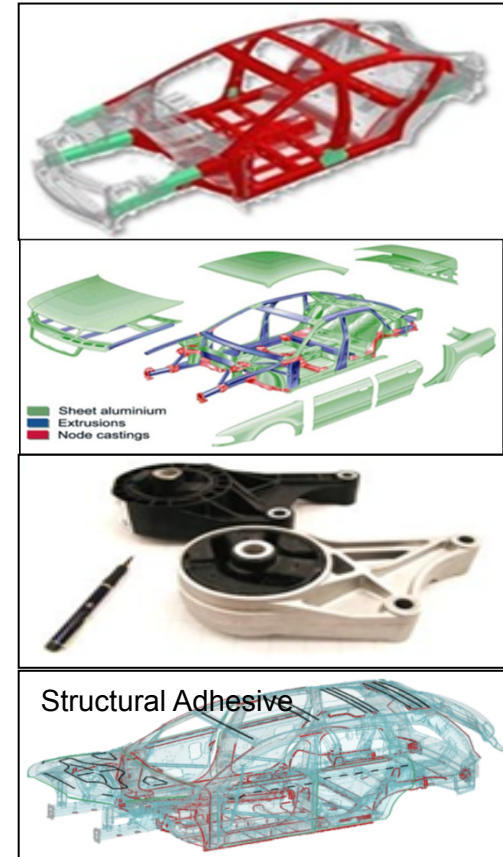
Market Share of U.S. Electrified Light Vehicle Sales and Selected OEM Share of U.S. Electrified Sales



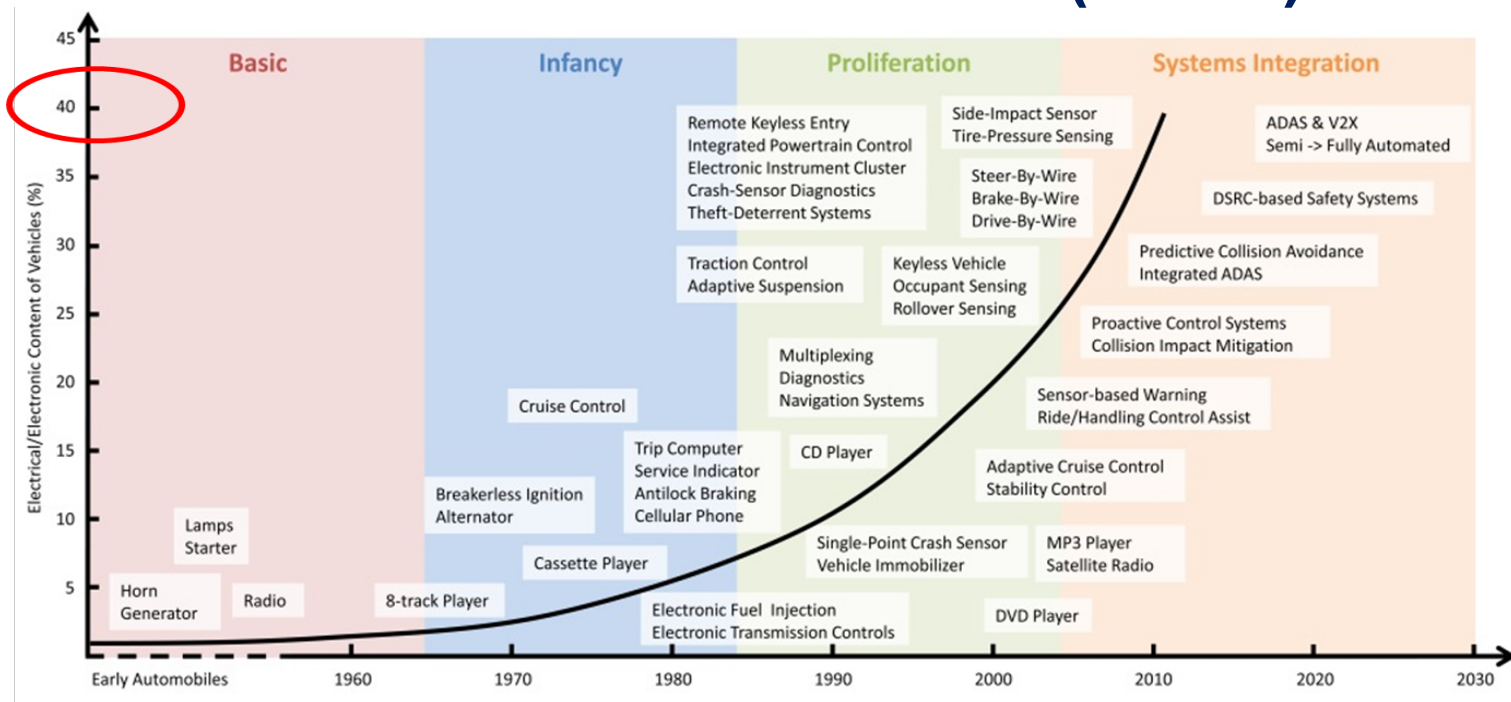
Note: Electrified Light Vehicles consist of BEV, HEV and PHEV
 Source: Ward's Automotive Reports; HybridCars.com; CAR Research

Key Material Trends in Next 10 Years - All technology pathways anticipate light-weighting

- Increased use of ultra high strength steel for structural components around the “safety cage” to prevent intrusion
- Aluminum use for chassis and exterior panels is increasing—Ford F-150
- Fiber reinforced plastics (glass and carbon) for structural components are still several years away from high volume production
- Joining complexity: more laser welding, fasteners and adhesives

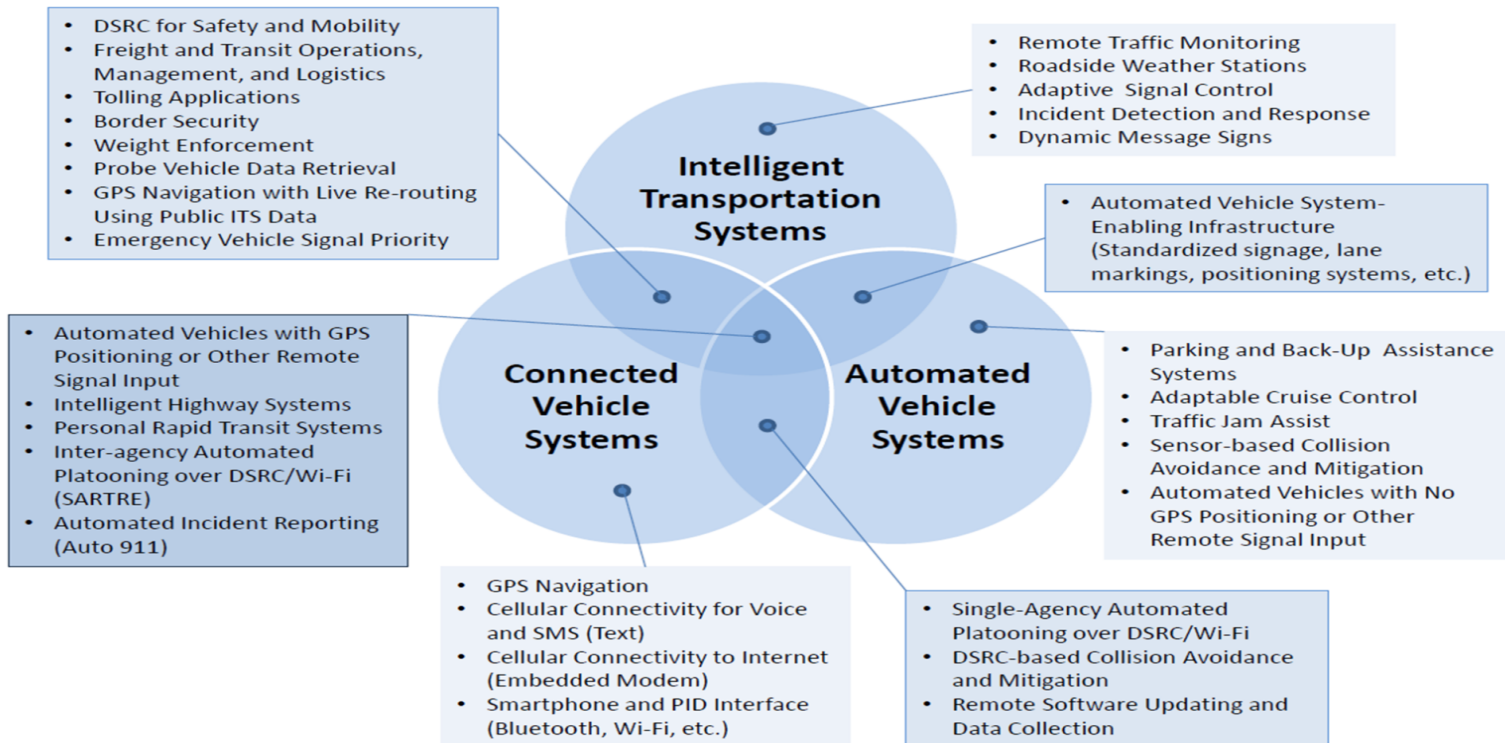


Growth in Electronics (>40%)

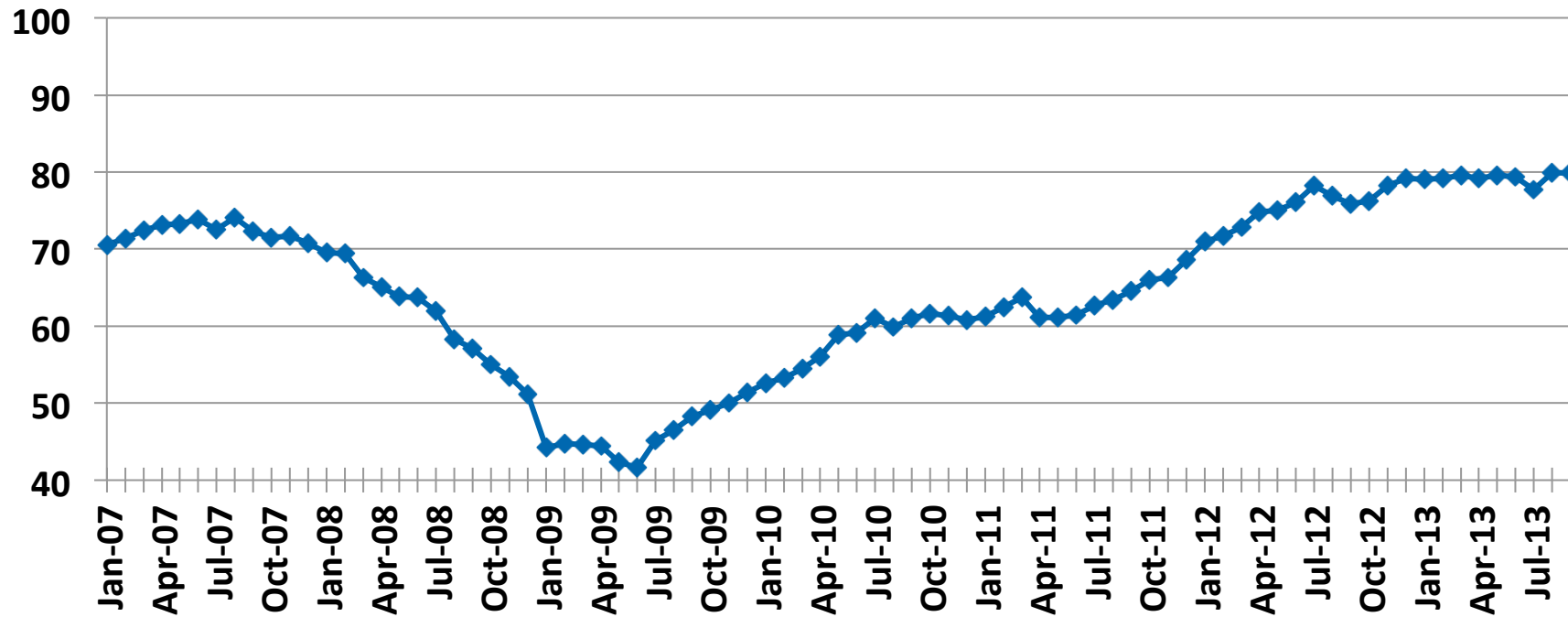


An average vehicle contains around 60 microprocessors to run electric content – four times as many as a decade ago. More than 300 million lines of software code run a typical vehicle’s sophisticated computer network.

Intelligent Mobility



U.S. Auto Parts Manufacturing % of Capacity Utilization



Source: U.S. Federal Reserve Board of Governors, 2013

Generally, All Is Good, But Keep An Eye On These

- Labor force participation rates
- Household financial burdens
- Shifting household budget outlays
- Full-time employment
- Household wealth effect
- External shocks
- Student debt
- GDP growth
- Gas prices
- Interest rates

Thank You

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