

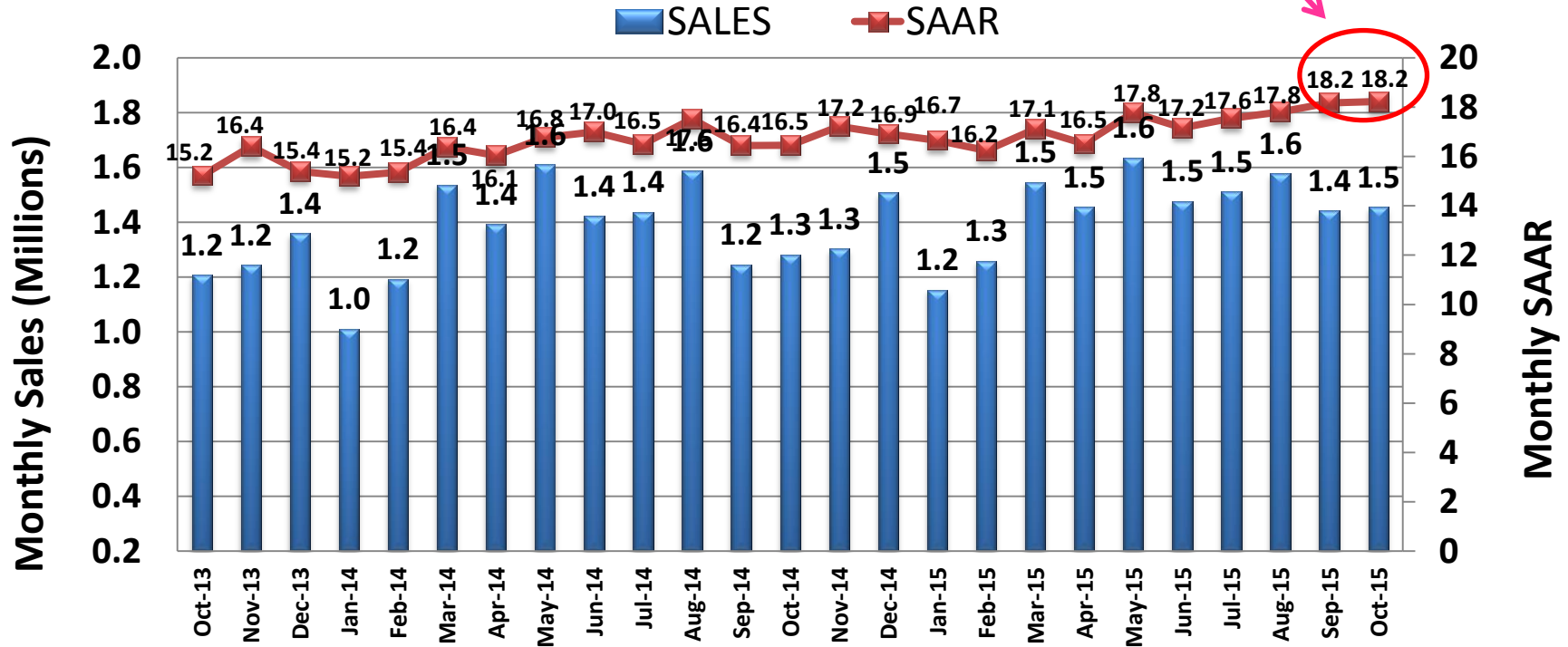
CAR's U.S. Automotive Forecast

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Annual Economic Outlook Symposium
Federal Reserve Bank of Chicago
December 4, 2015

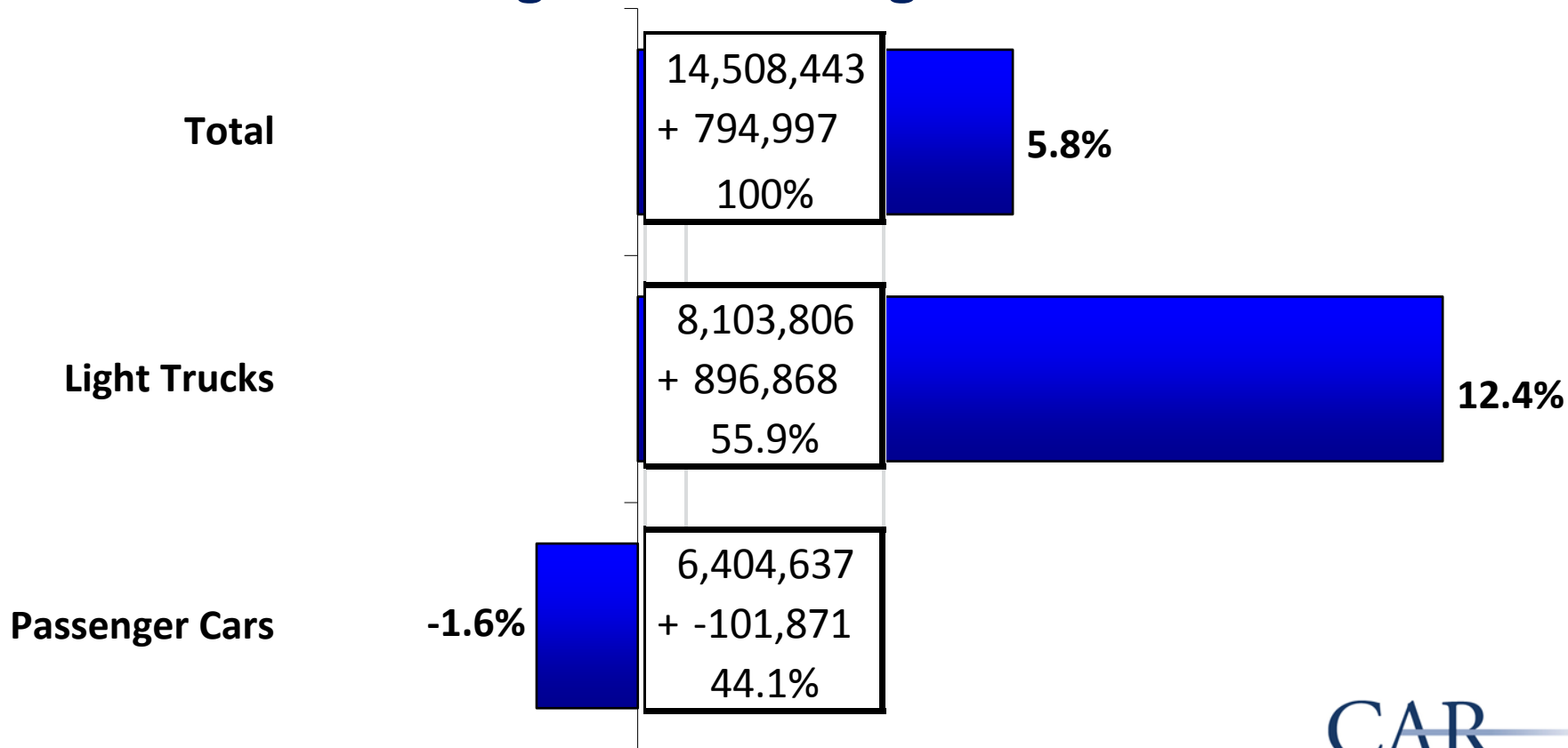
A New Peak/Plateau? U.S. Light Vehicle Monthly Sales and SAAR Oct. 2013 – Oct. 2015

3 Mil. Higher than 2013!



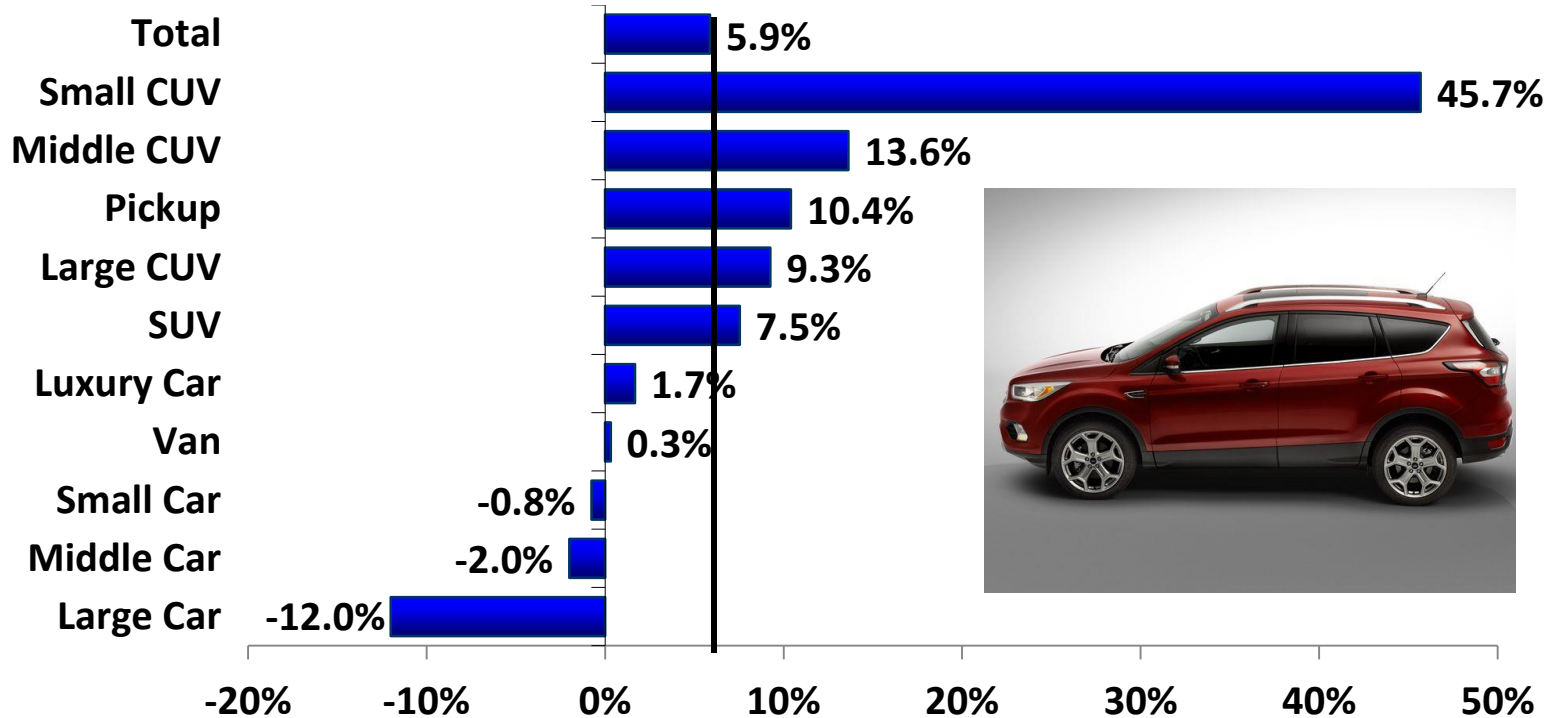
U.S. Light Vehicle Sales

Percent Change YTD Through Oct. : 2015 vs. 2014

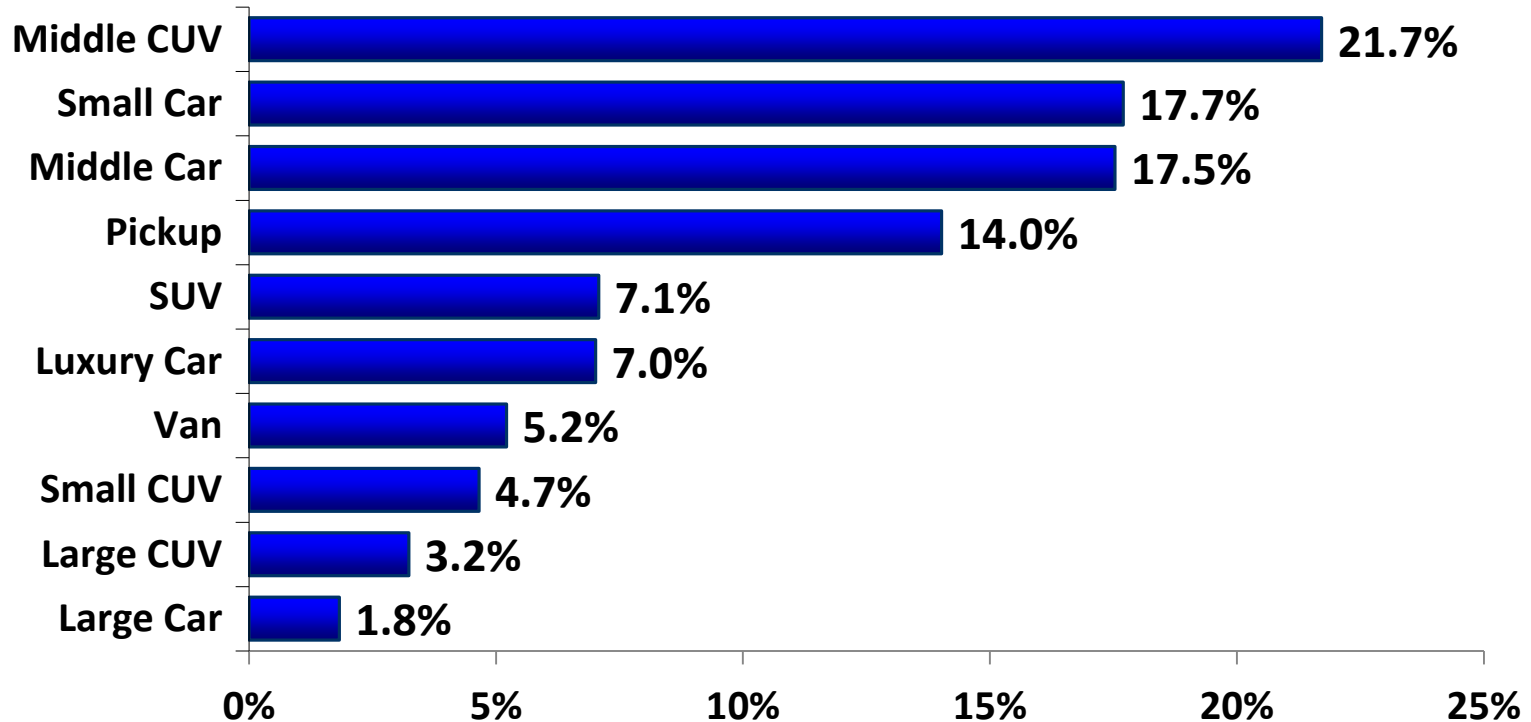


Must Have a Hatch or a Bed!

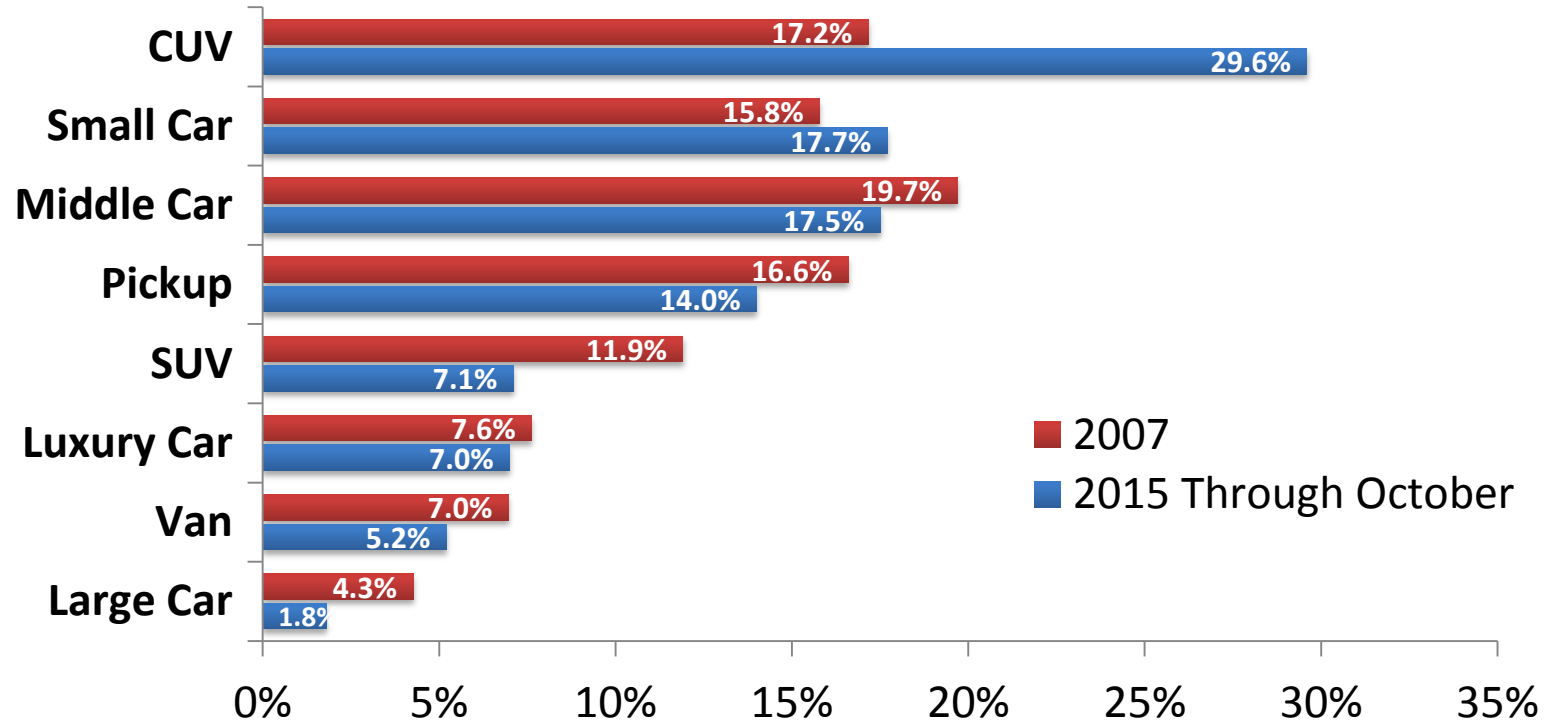
Segment Breakdown - U.S. LV Sales Percent Change Oct. YTD 2015 vs Oct. YTD 2014



Market Share: Segment Breakdown – U.S. LV Sales Oct. YTD 2015



U.S. LV Sales Market Share: Segment Breakdown – 2015 vs. 2007

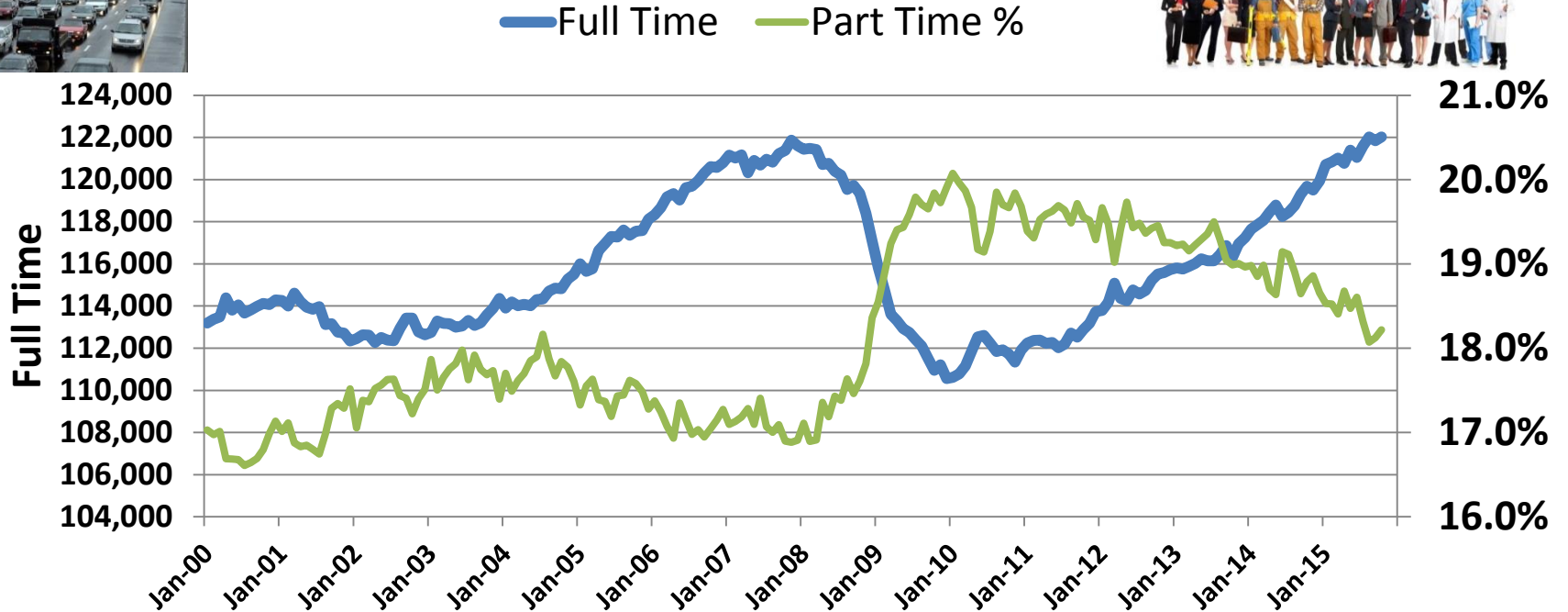


CAR Forecast Notes

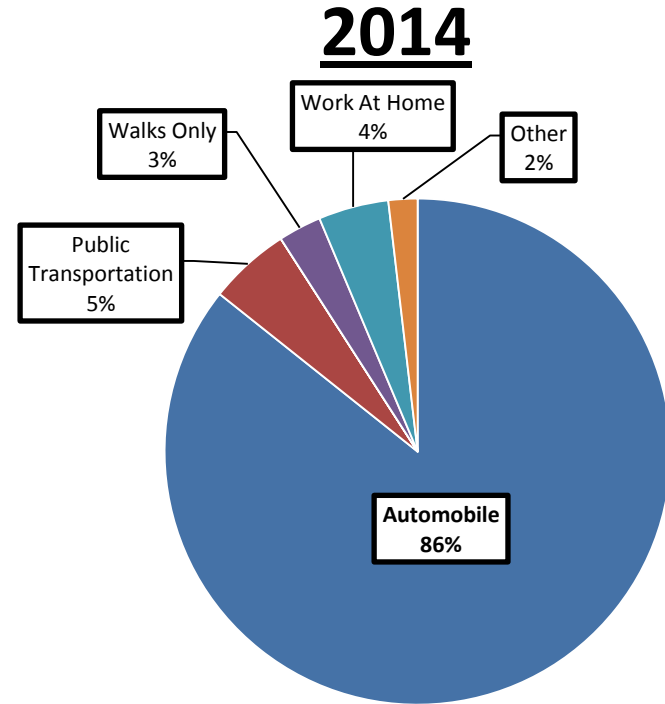
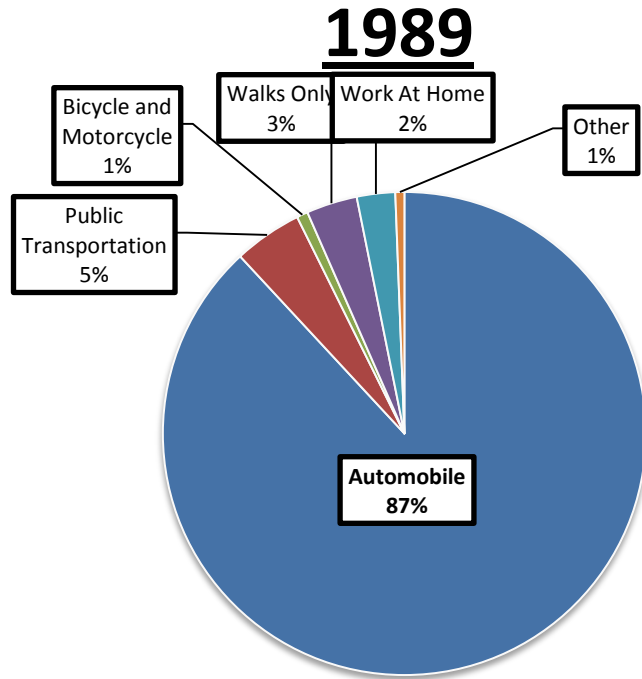
- **Full-time employment** is back to pre-recession level and continue to trend up.
- **Consumer credit** continue to expand at a healthy 6% annual rate. But loan lengths are approaching 70 months: **Over \$1Trillion in auto debt**.
- Motor vehicle **price inflation** is higher than the CPI and wage inflation, but is offset by **customer incentives** (14%), **low interest rates**, **longer auto loan terms**, and **cheap gasoline**.
- US economy is relatively good. 3Q '15 **GDP growth** was 2.1%. Full year GDP growth is expected to be 2.4+ %. The Fed is almost certain to hike the interest rate. This could affect **cost of large auto loans** and is bad news for exporters.
- **Outside US**, Chinese economy is weakening. Japan in recession. EU is trying to keep its economy away from another recession by using negative interest rates.
- Residential construction is recovering. **New housing starts** SAAR came back to 1.2 million.
- Millennials and younger generations (under 35) finally found jobs. But **labor force participation rates** are still low.

Back to Where We Were

Full Time and Part Time Employment (thousands, seasonally adj.) - Jan' 2000 – Oct' 2015

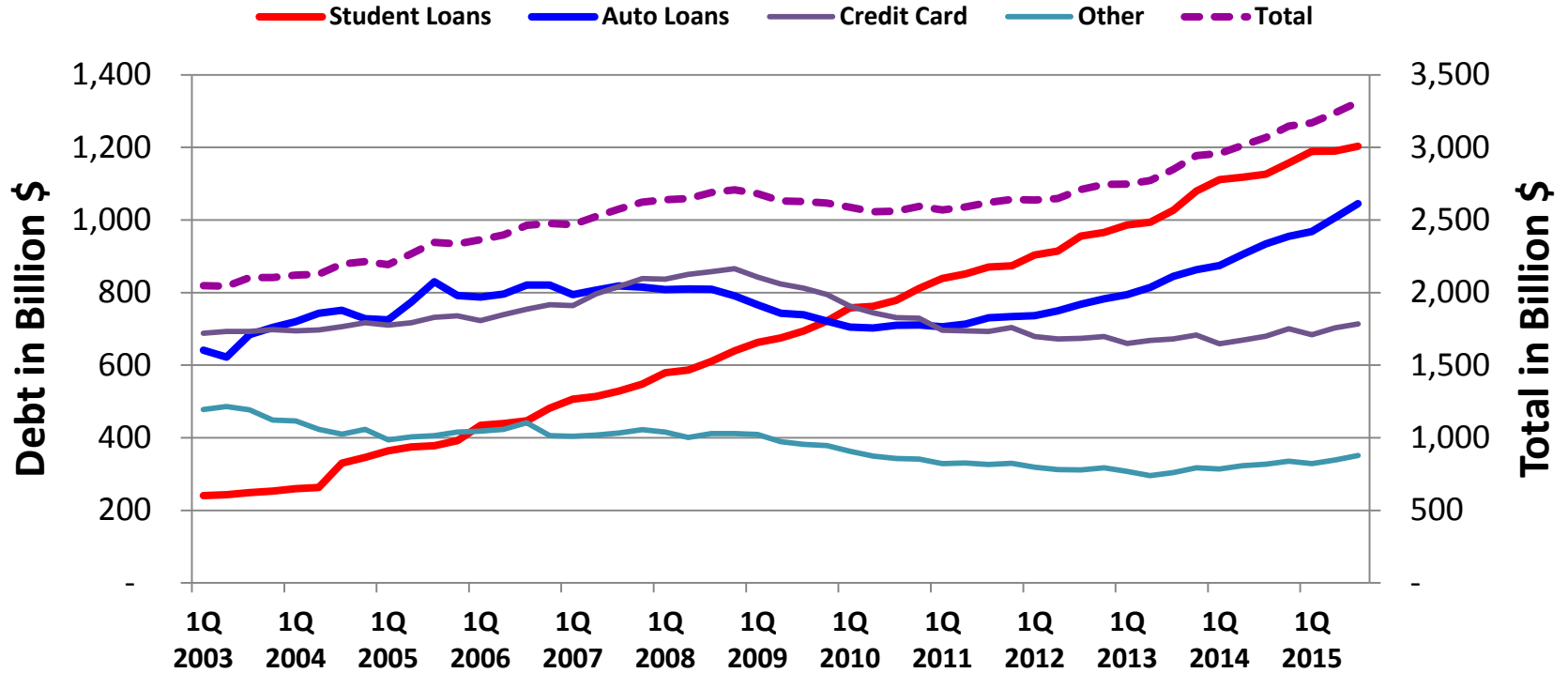


U.S. Principal Means of Transportation to Work 1989 & 2014



And Households Are Carrying More Debt

Household Non-Housing Debt* 1Q 2003 – 3Q 2015

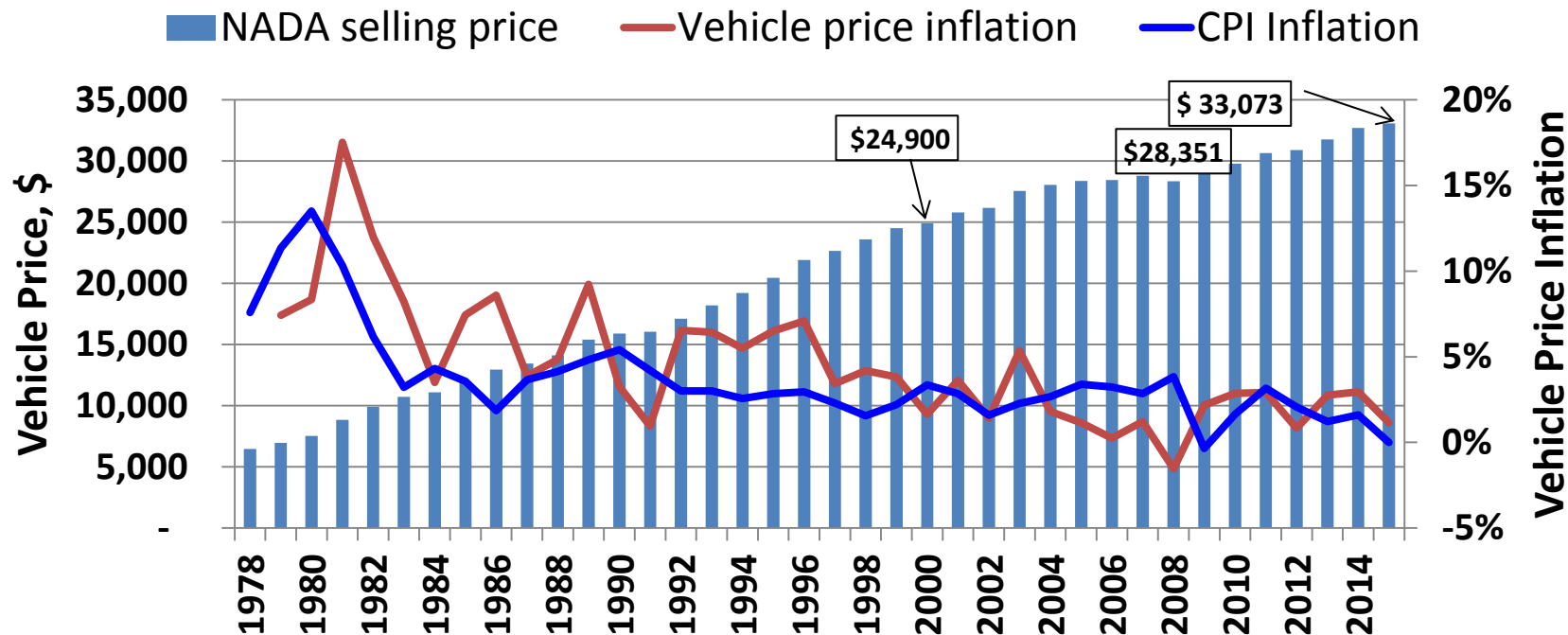


*Excludes mortgage and home equity line of credit

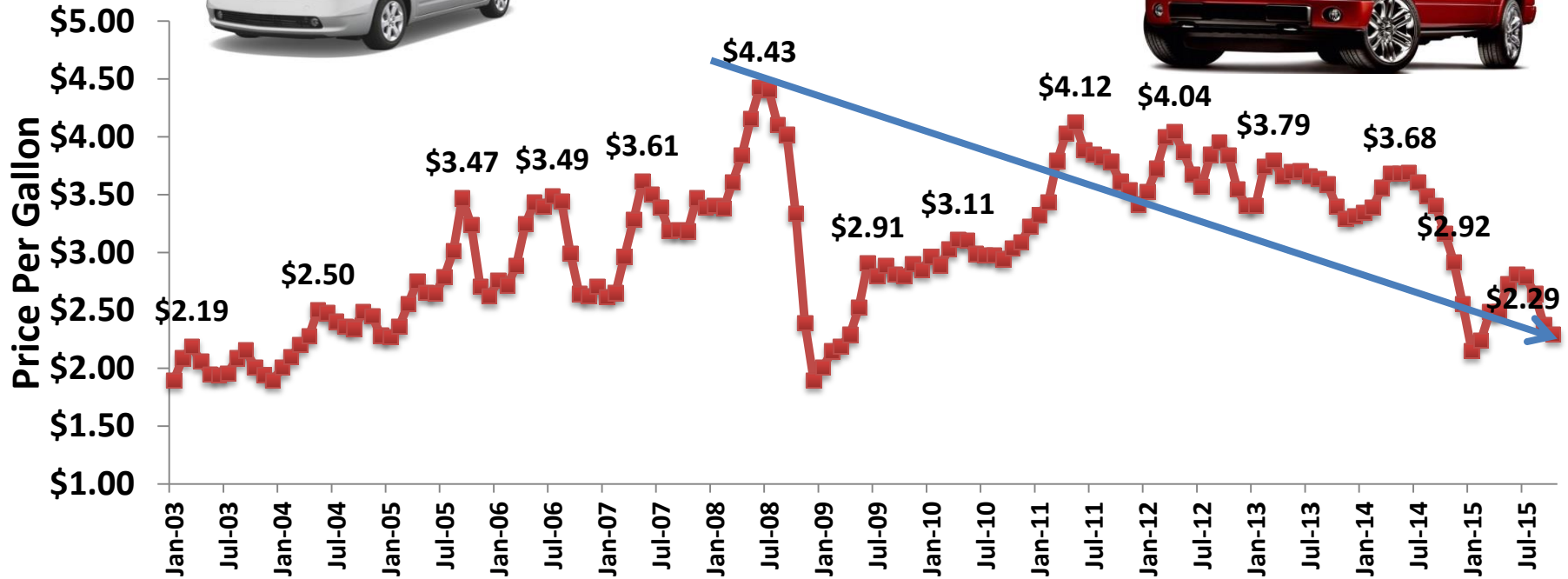
Source: FRBNY Consumer Credit Panel/Equifax

A Change in Mix Drives RA Prices

NADA New Vehicle Selling Price
 (Incentives now about \$3,000 on average)
 1978 – 2015 (As of September)

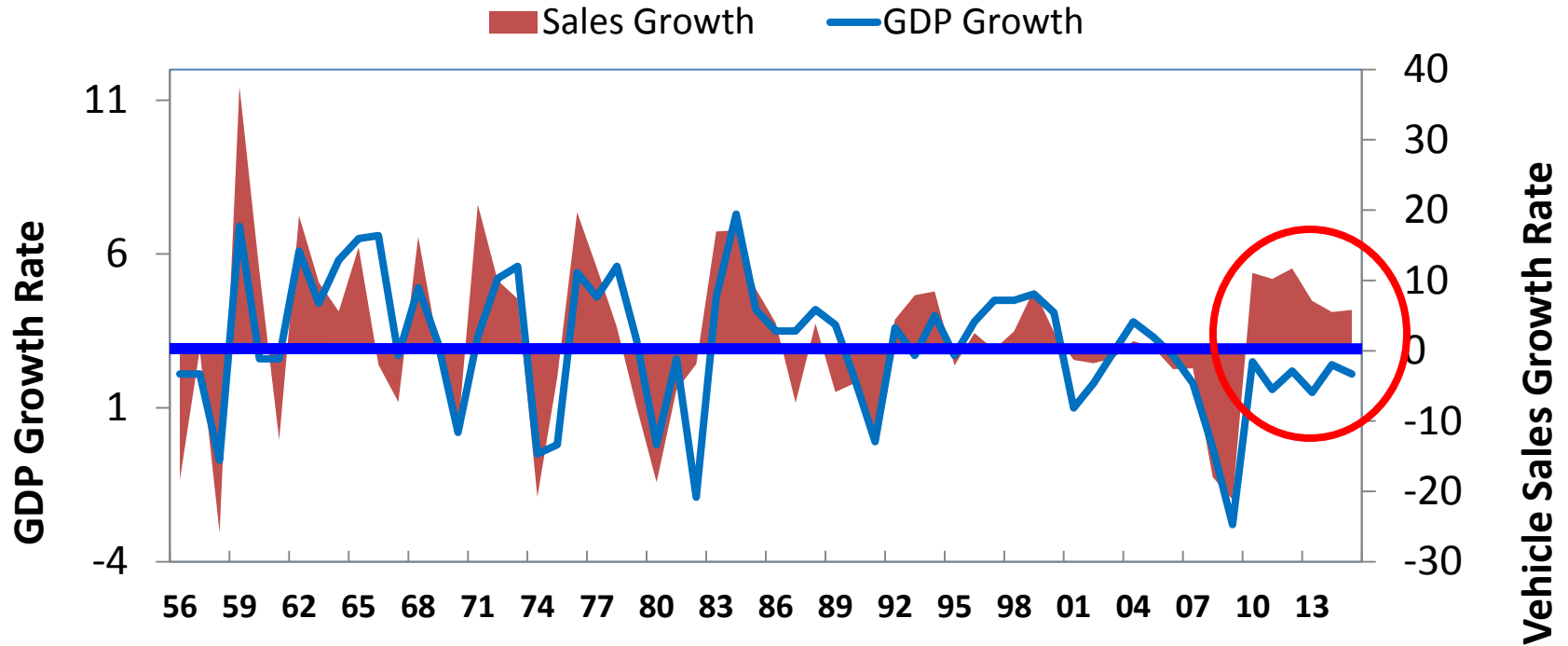


Gasoline Prices (Real) Jan. '03 – Oct. '15



Vehicle Sales Still Disconnected From Macro Economy

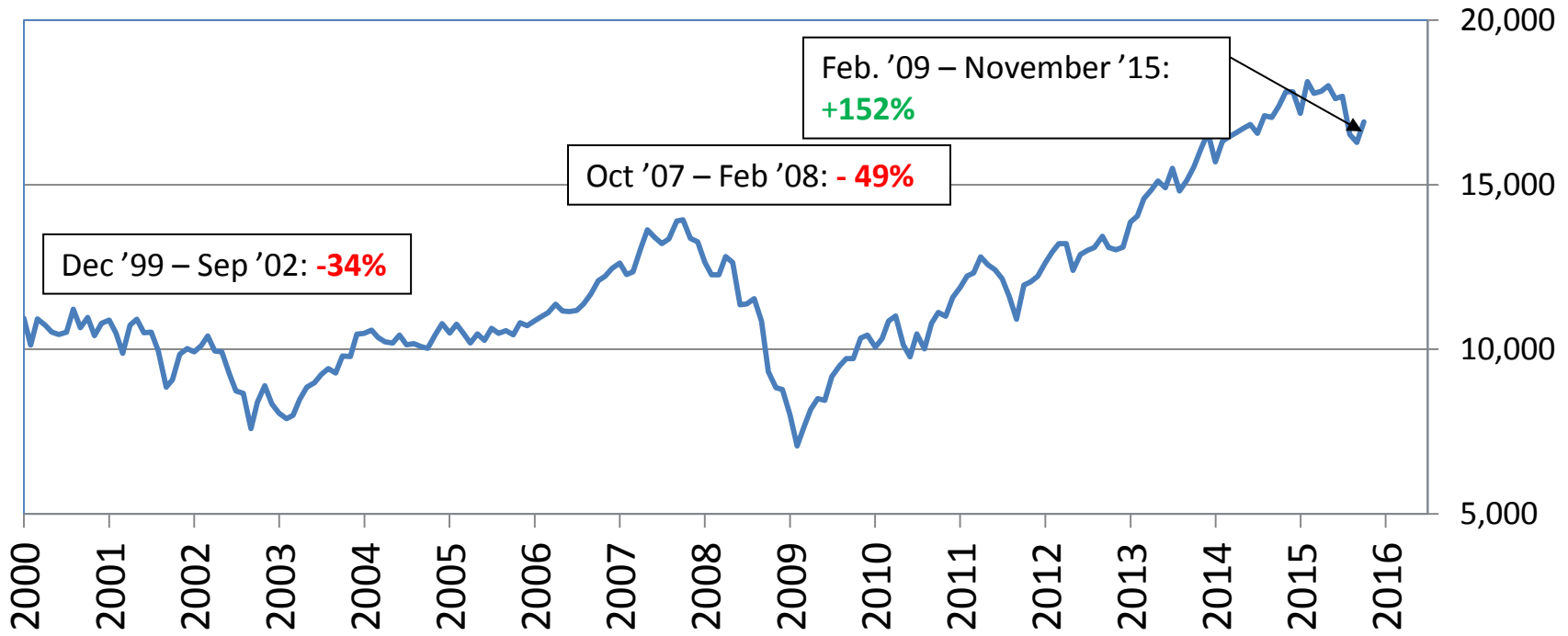
U.S. GDP Growth Rate and Vehicle Sales Growth Rate 1956 – 2015



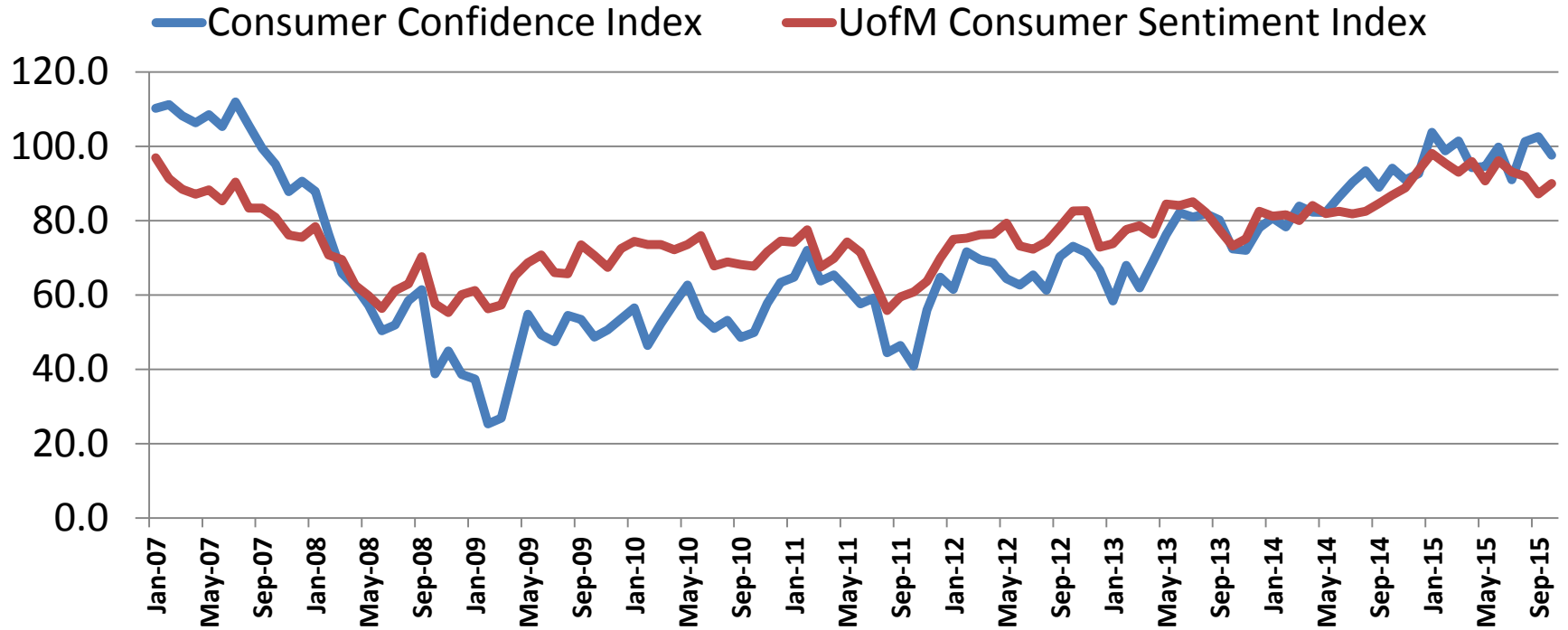
Better than We Were . . .

DOW JONES INDEX*

January 2000 – November 2015



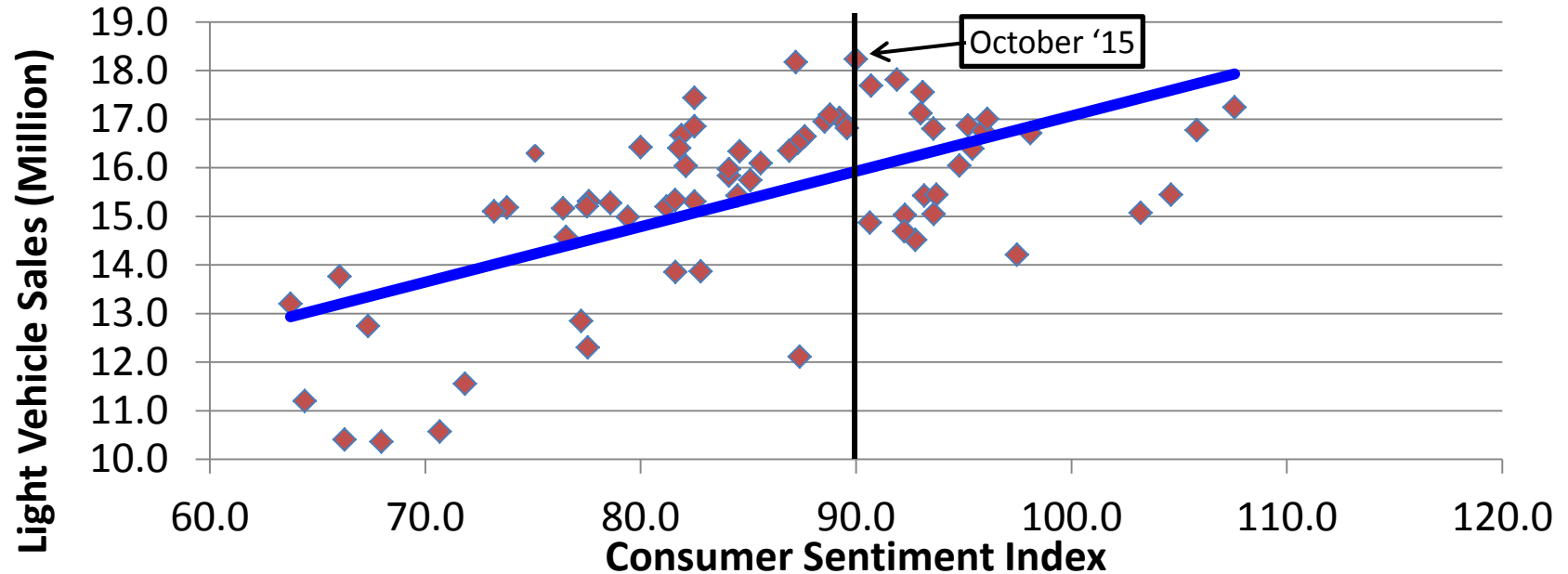
Consumer Confidence & Sentiment January 2007— October 2015



UM Consumer Sentiment Index

Annual: 1978 - 2012

Monthly for Jan. 2013 – October 2015



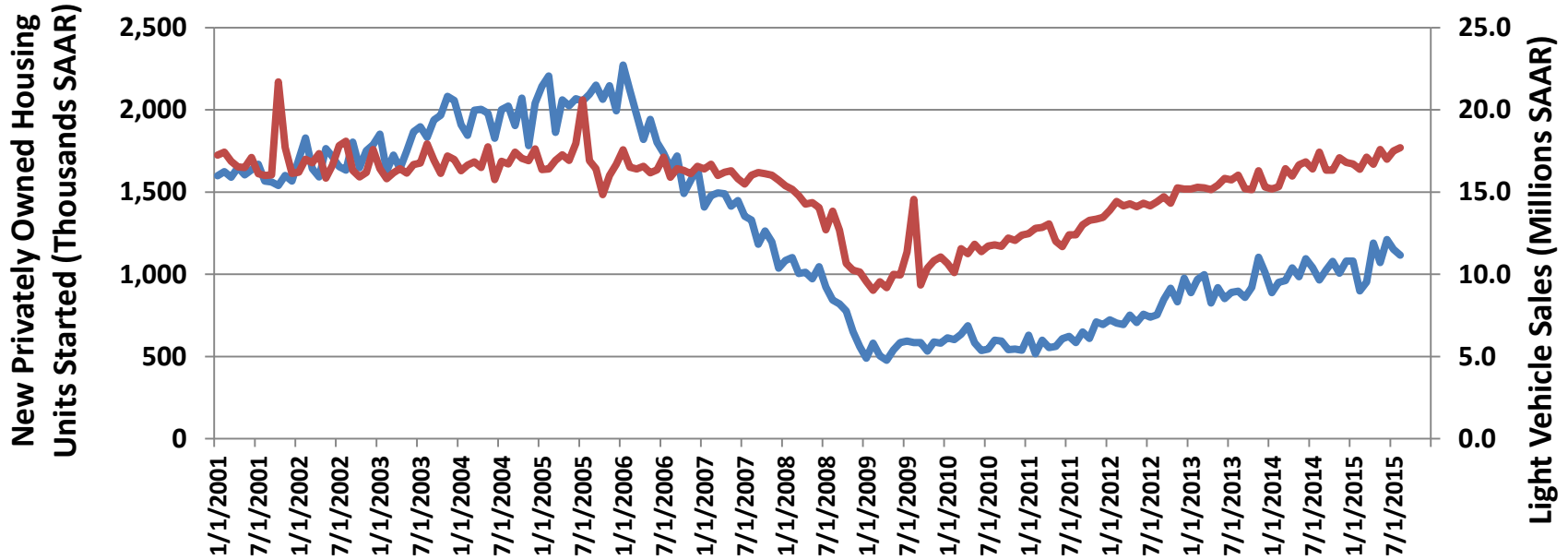
Not Back Yet . . .

U.S. Housing Starts and Auto Sales

Jan. 2001 – October 2015

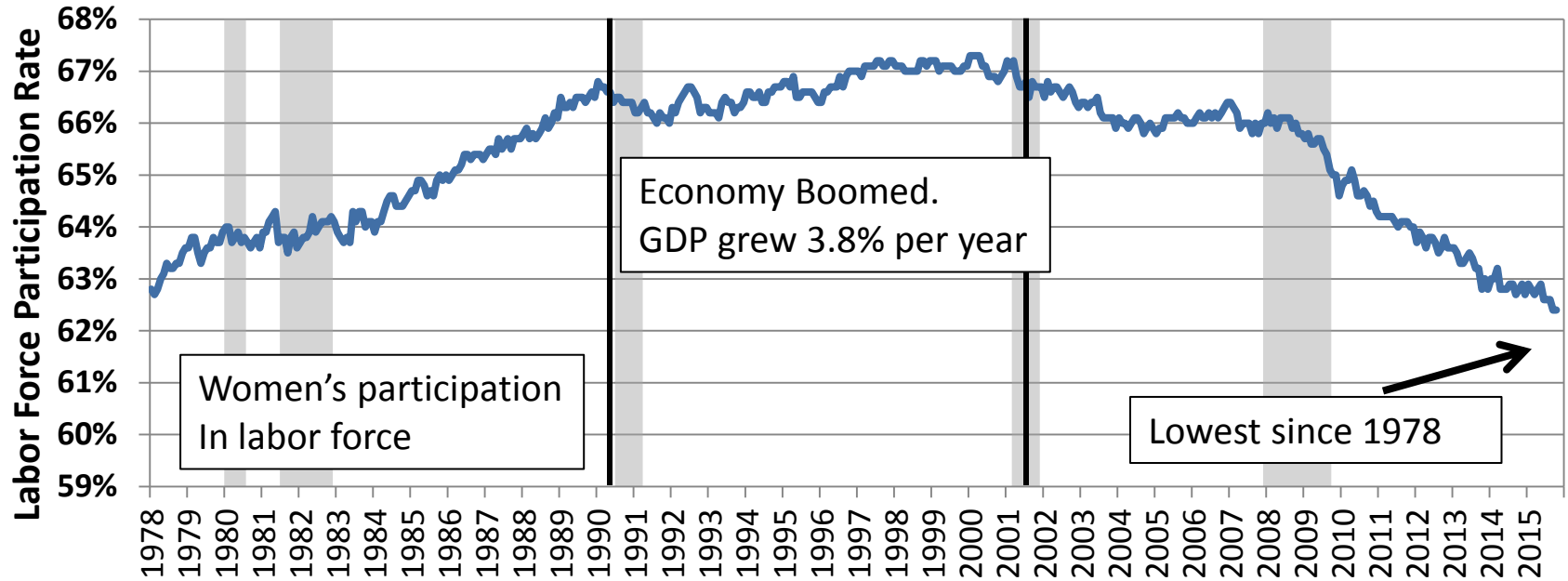


— Housing Starts — Auto Sales



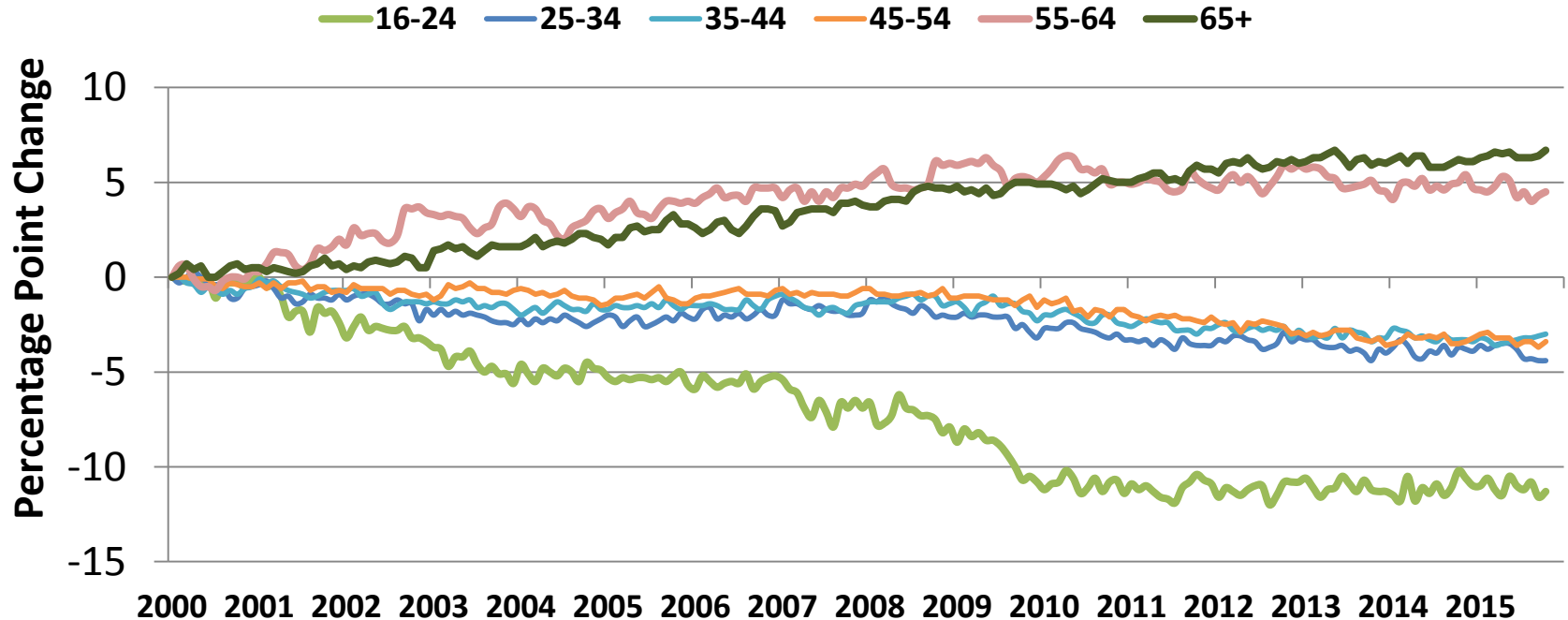
Labor Force Participation Rate Is Falling Even After the Last Two Recessions

Labor Force Participation Rate 1978 – 2015



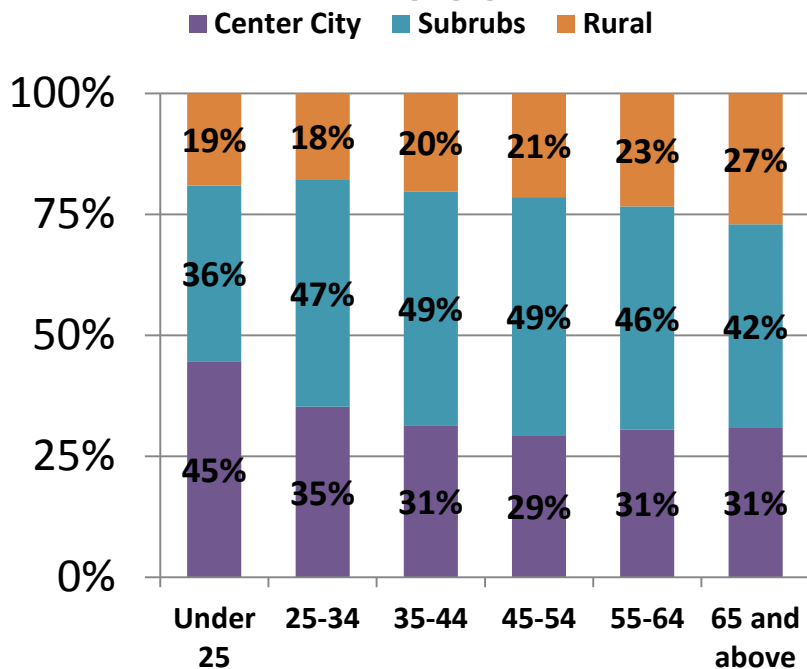
Who is Dropping Out of Labor Force?

Change in Labor Force Participation Rate by Age Cohort Since 2000

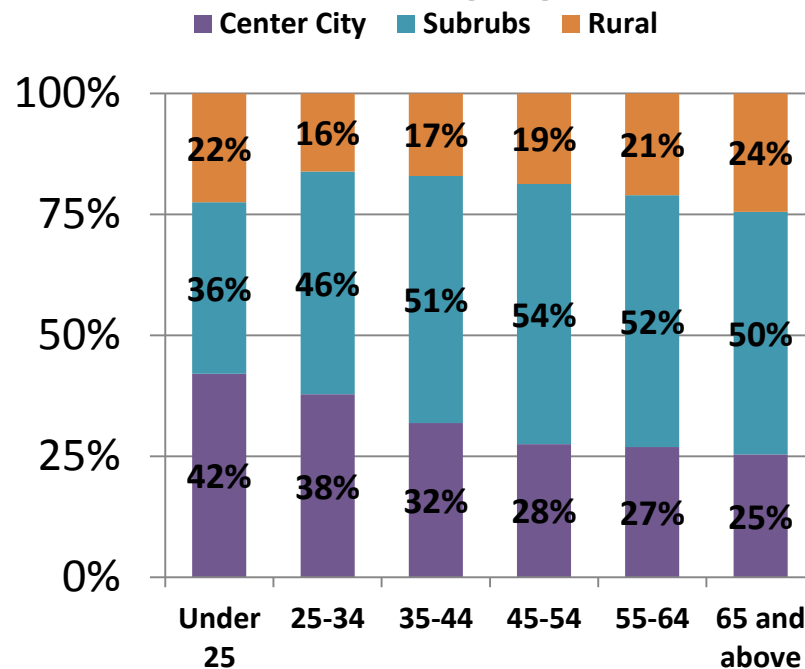


Location of Household by Householder's Age

1989

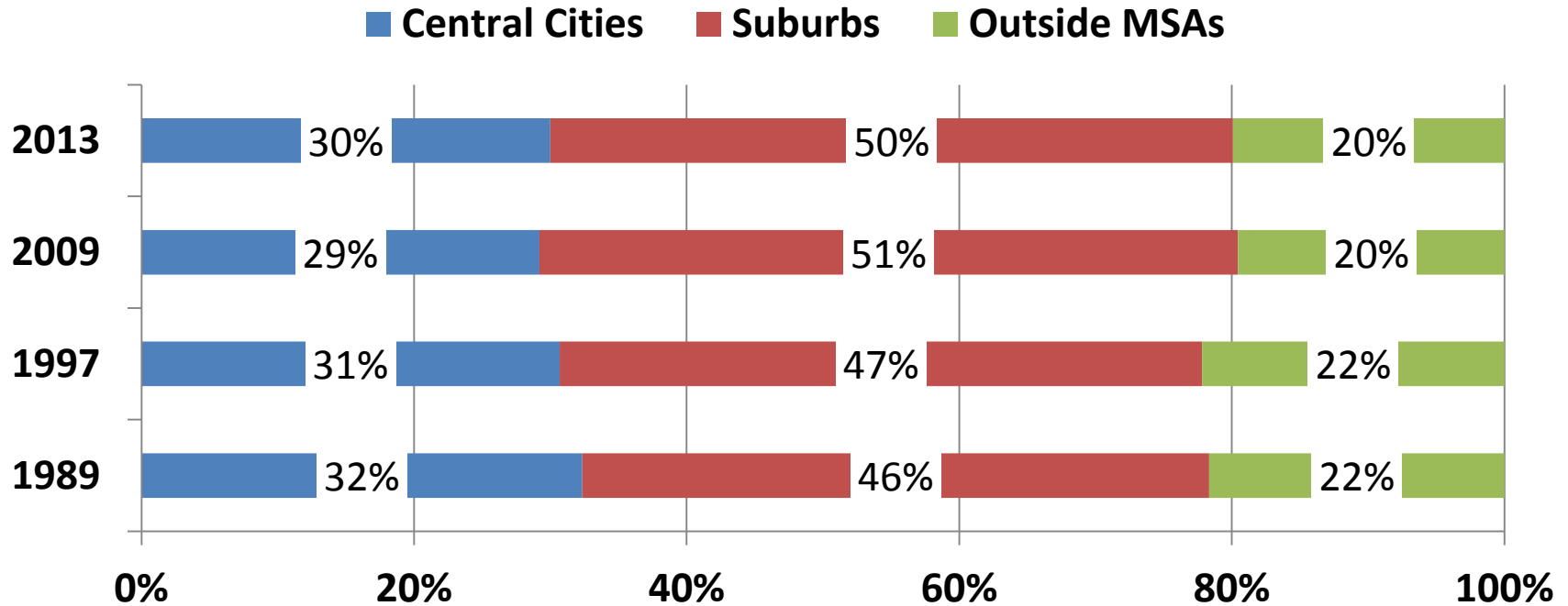


2013

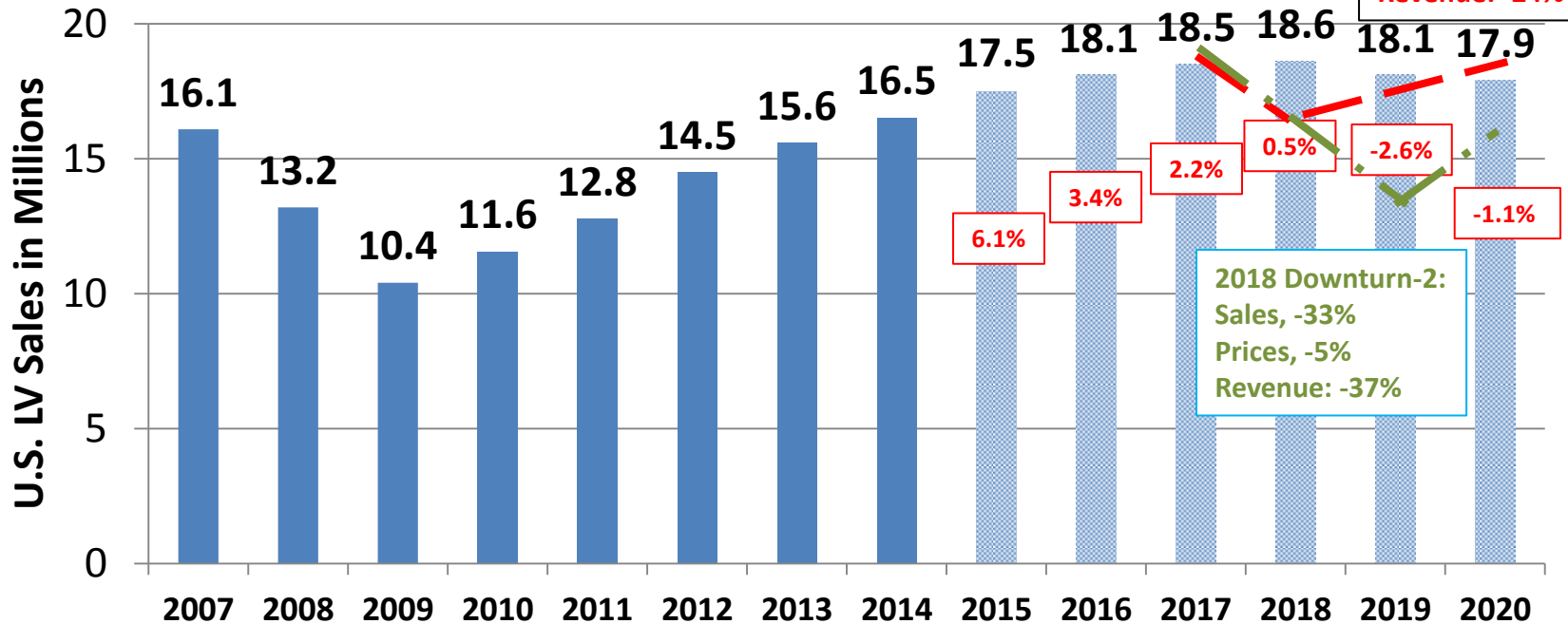


American Are Moving Into Suburbs

U.S. Occupied Housing Units



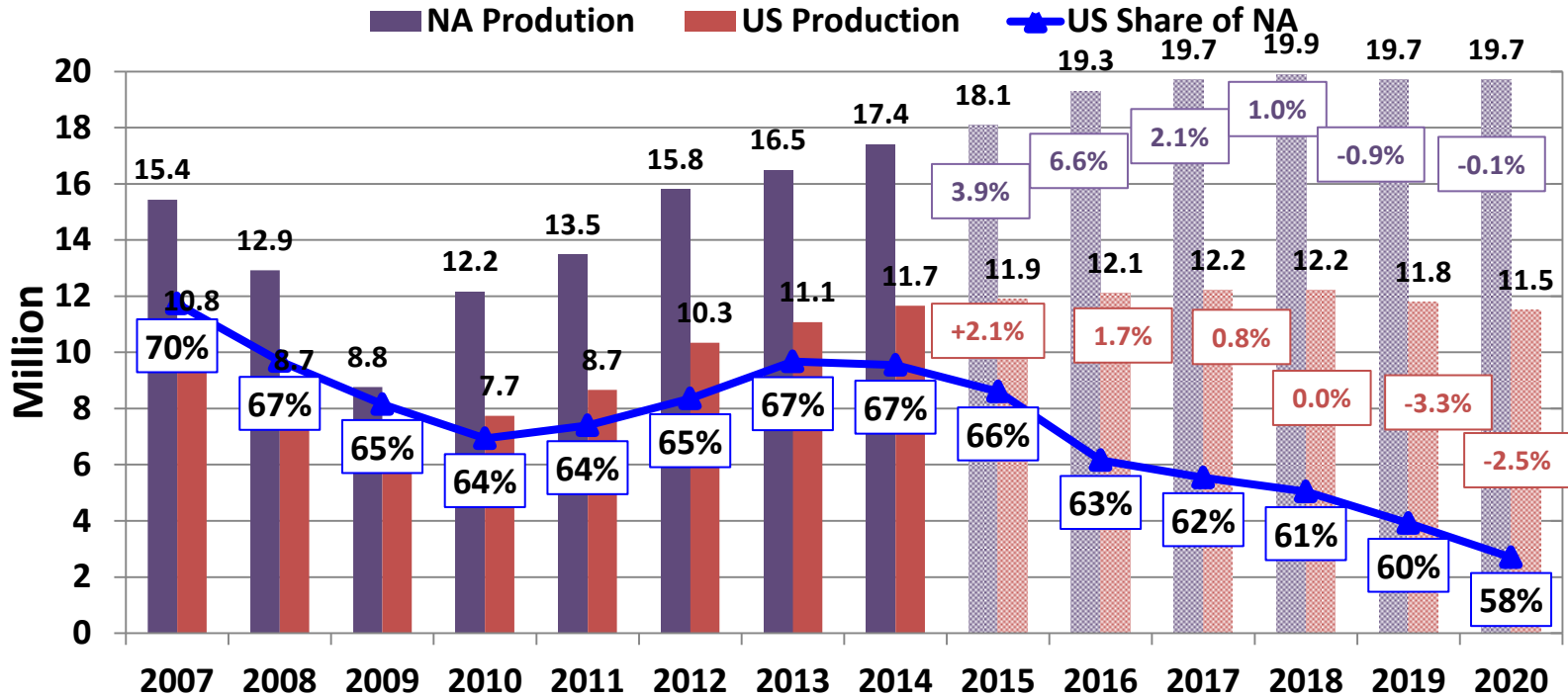
CAR U.S. Light Vehicle Sales Forecast: 2015-2020



2018 Downturn-1:
 Sales, -12%
 Prices, -13%
 Revenue: -24%

2018 Downturn-2:
 Sales, -33%
 Prices, -5%
 Revenue: -37%

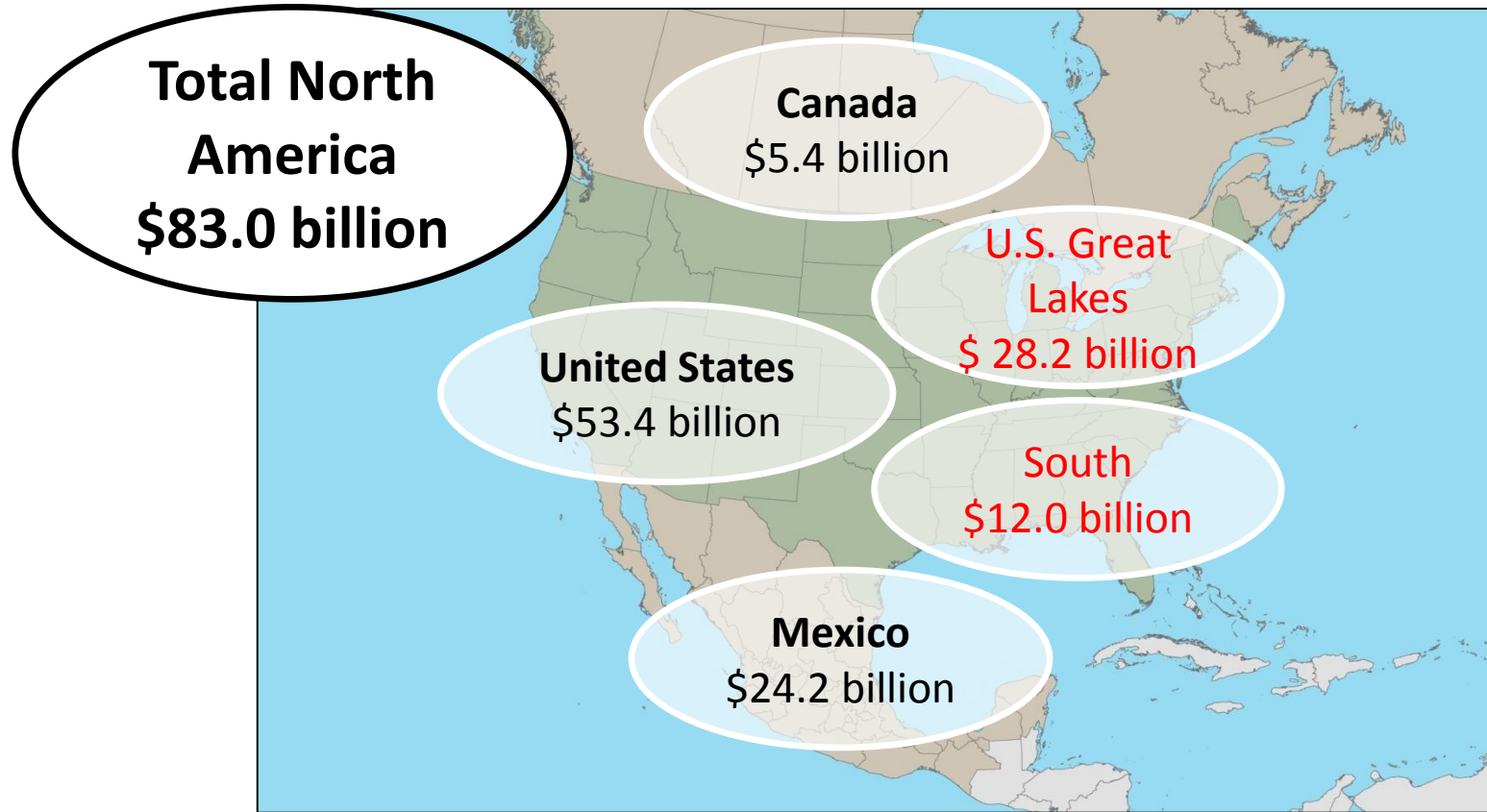
N.A./U.S. Production Forecast: 2007-2020



Production includes HD Trucks.

Source: CAR Research, November 2015

Automaker Investment Announcements, Jan 2010-May 2015

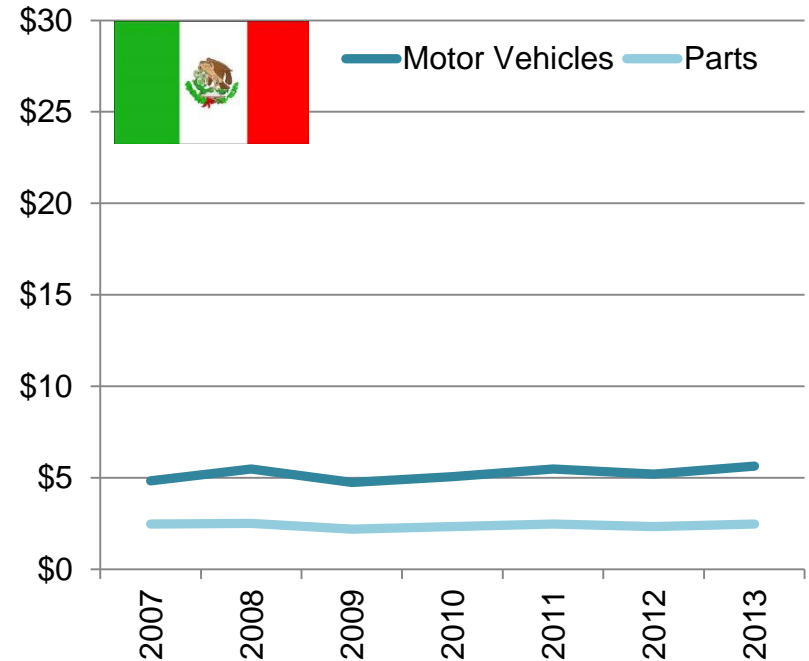
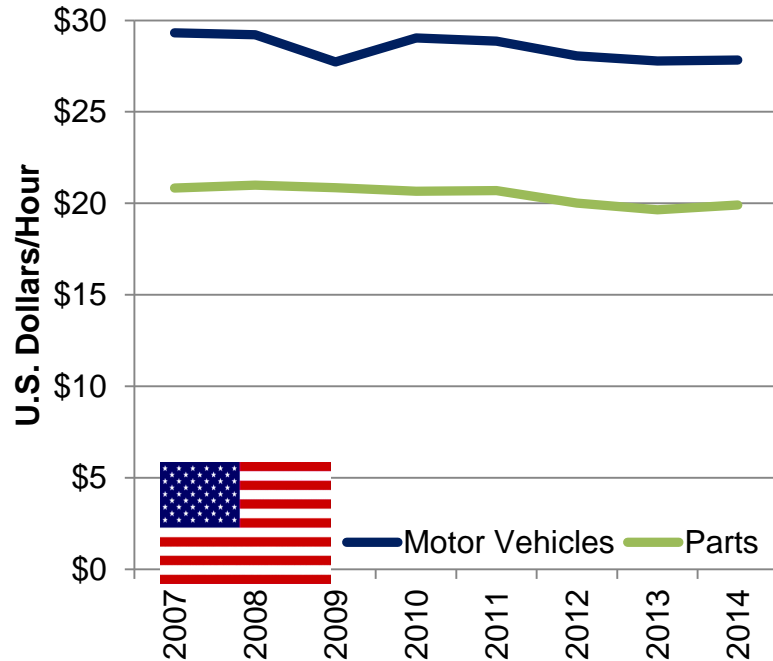


Note: U.S. Great Lakes includes: IL, IN, KY, MI, MO, and OH while South includes: AL, FL, GA, MS, SC, TN, and TX

Source: CAR Research, Book of Deals

Mexican Automotive Wages are One-Eighth to One-Fifth the Wages Paid to U.S. Hourly Auto & Parts Workers

Average Hourly Wages for Production and Non-Supervisory Workers in Motor Vehicle and Parts, 2007-2014



Sources: U.S. Department of Labor, Bureau of Labor Statistics; Mexico National Institute of Statistics and Geography (INEGI: Instituto Nacional de Estadística y Geografía)

In Dollar We Trust

MX/USD

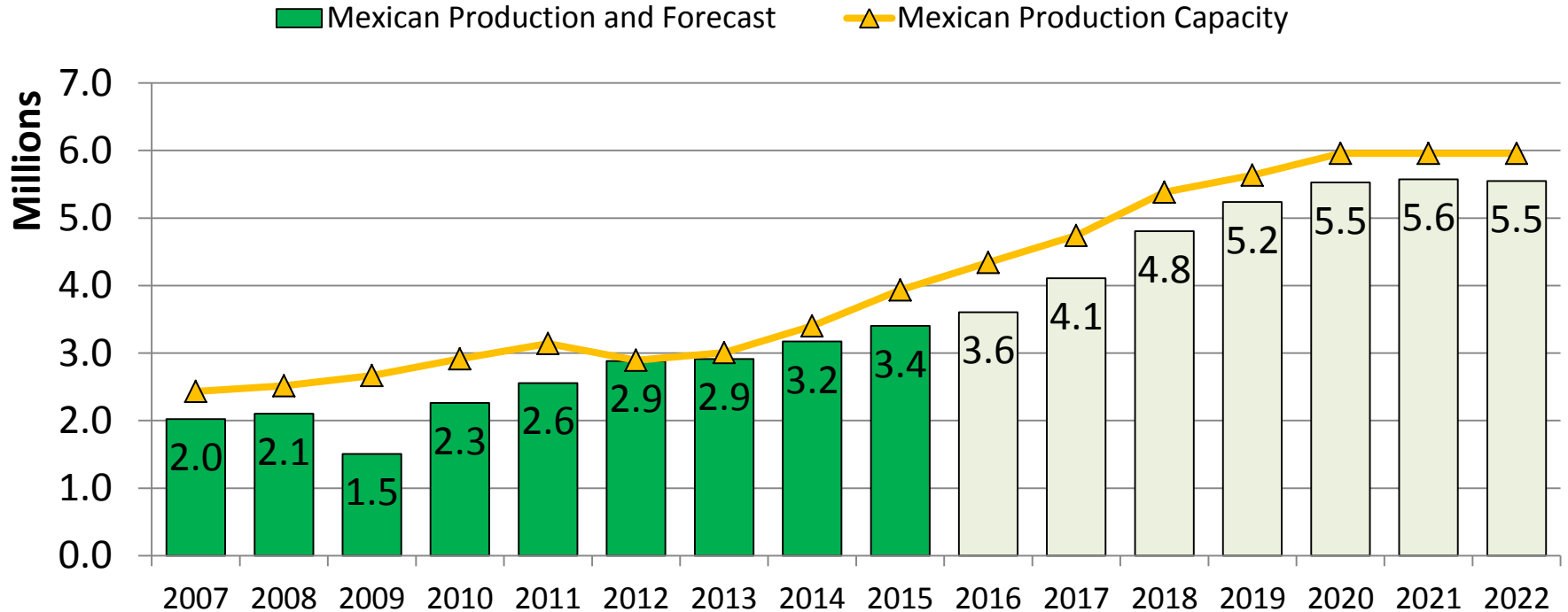
October 2000 – October 2015



23% depreciation
since 2011

Bigger Than Germany!

Mexican Capacity, Production, and 2015-2018 Production Forecast



Some Mexican Advantages



US/MEX Difference in Hourly Labor Cost
on a Subcompact Car

\$674 a car

US/MEX FTA advantage on a Q5 Export to
Europe

\$4,500+ per vehicle



Imported From _____



Summary

- **New US vehicle sales records set a new higher plateau.**
- **Have to have a hatch or bed to sell now with low fuel prices.**
- **Auto market having the best year in 15 years—Jobs , credits, interest rates, gasoline price, household wealth, etc. are all in favorable conditions—but for how long?**
- **Sales downturn is coming—but when?**
- **Even the US sales are held, US vehicle production will not.**