



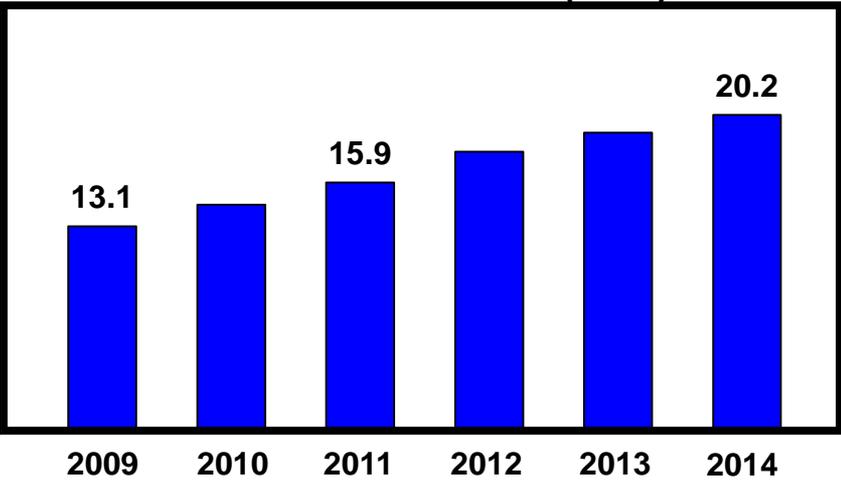
**Go Further**

***U.S. AUTO INDUSTRY UPDATE***  
***Federal Reserve Bank of Chicago***  
***Automotive Outlook Symposium***

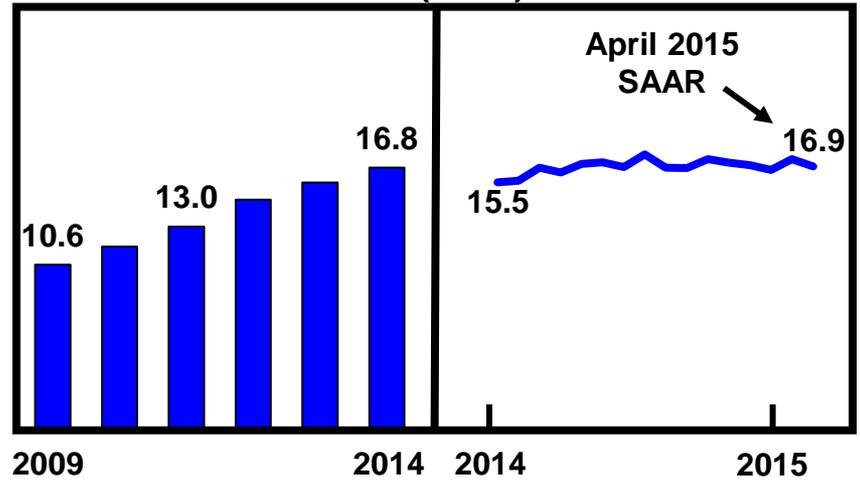
***Emily Kolinski Morris***  
***Chief Economist***  
***May 2015***

# NORTH AMERICA INDUSTRY VOLUME SUMMARY

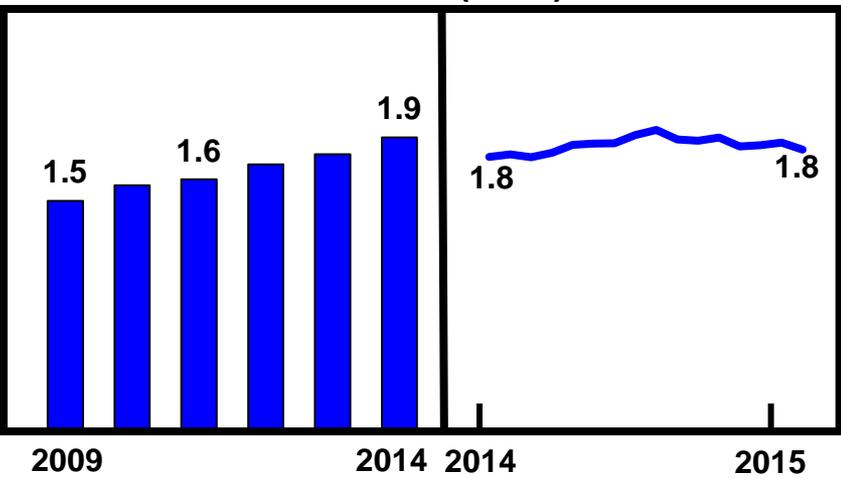
Total North America\* (Mils.)



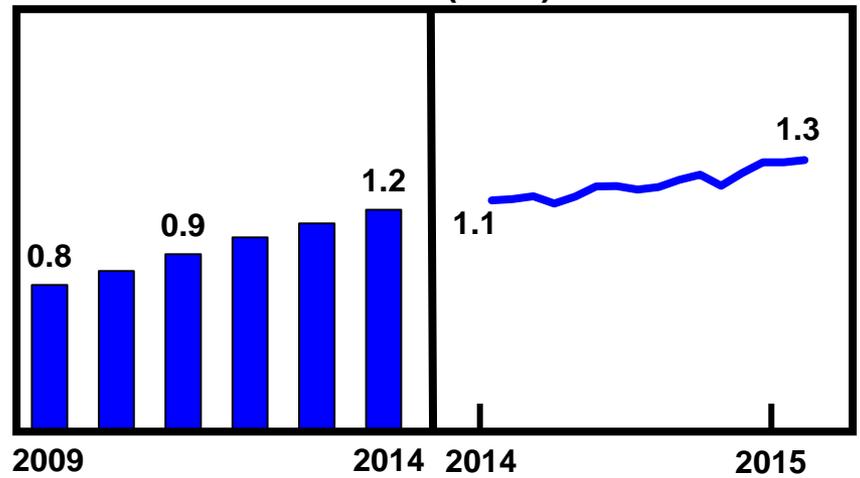
U.S. (Mils.)



Canada (Mils.)



Mexico (Mils.)



\* U.S., Canada, Mexico, and 37 emerging markets

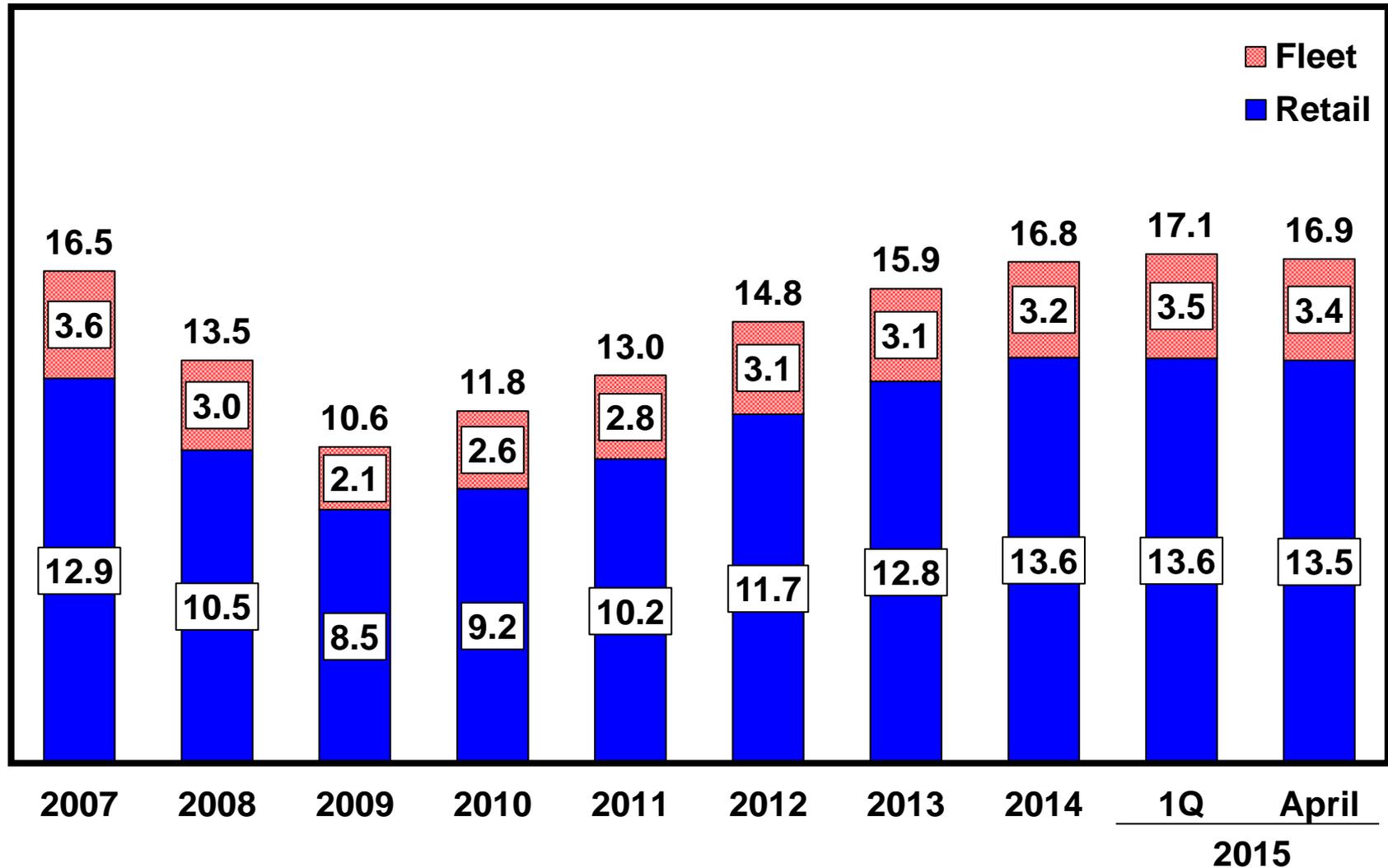
Note: 2014 FY are estimates

**Solid Industry Sales Trends Across The Region**

# U.S. TOTAL NEW VEHICLE SALES



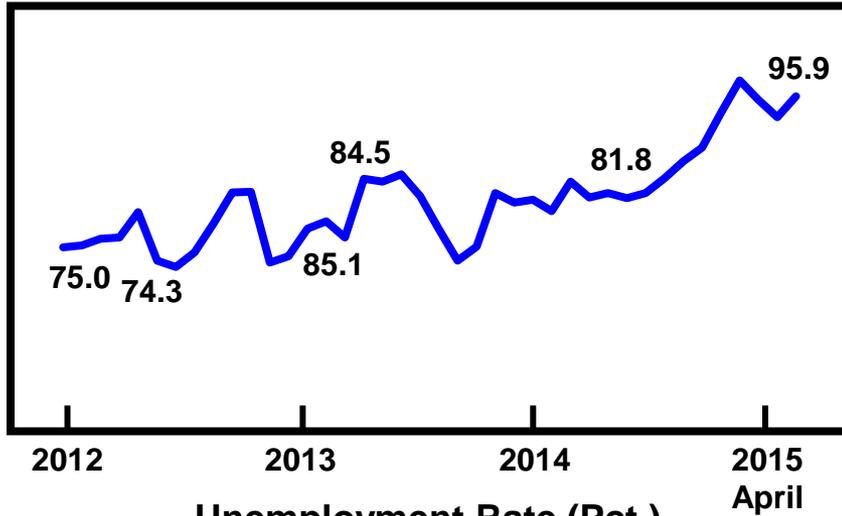
Mils. Units, SAAR



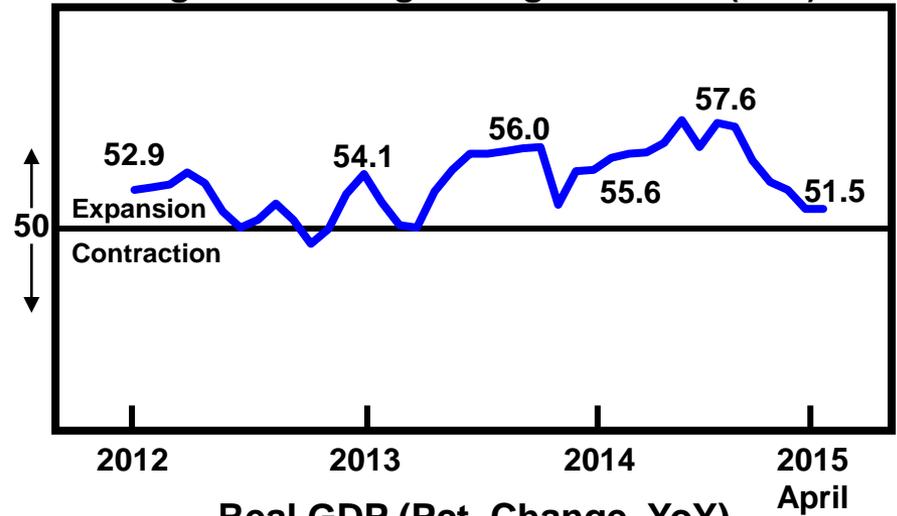
**Full Year 2015 Sales Outlook Of 17.0 – 17.5 Million Units Including Medium And Heavy Trucks**

# U.S. KEY ECONOMIC INDICATORS

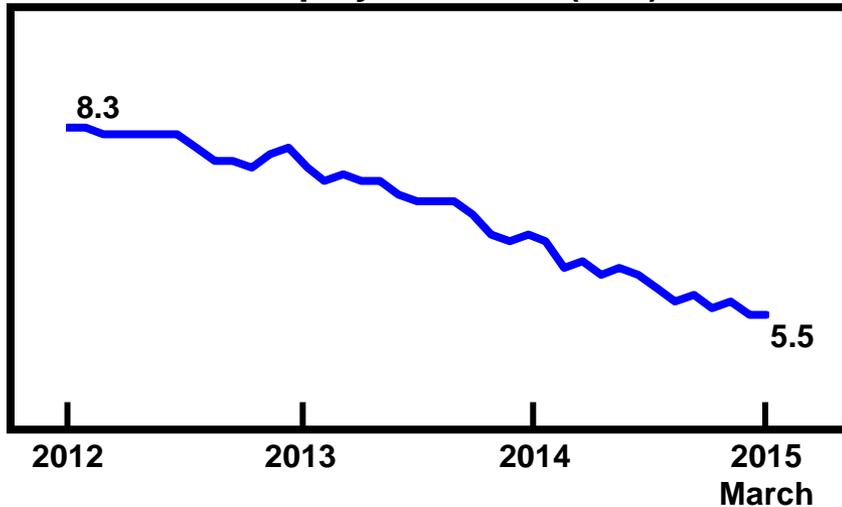
### Consumer Sentiment Index



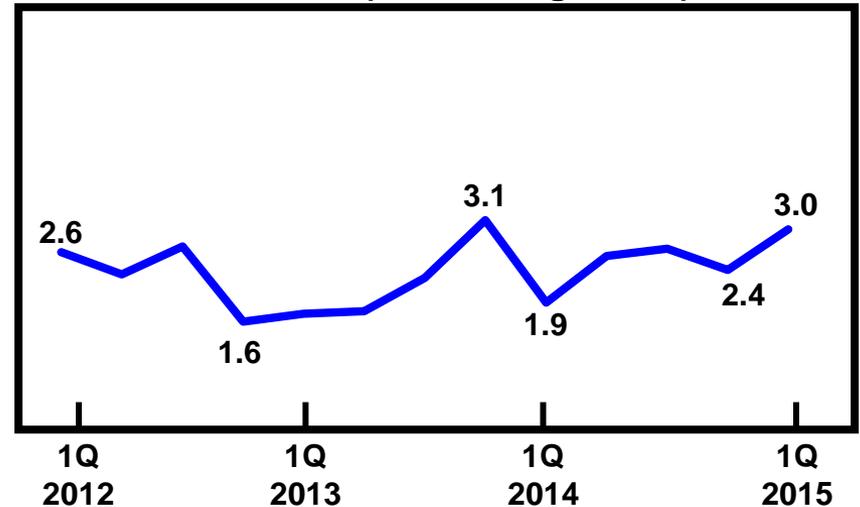
### Mfg. Purchasing Managers' Index (PMI)



### Unemployment Rate (Pct.)



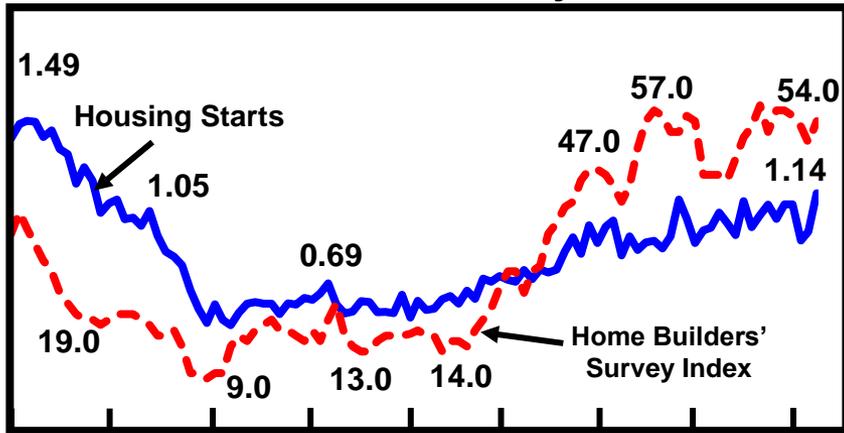
### Real GDP (Pct. Change, YoY)



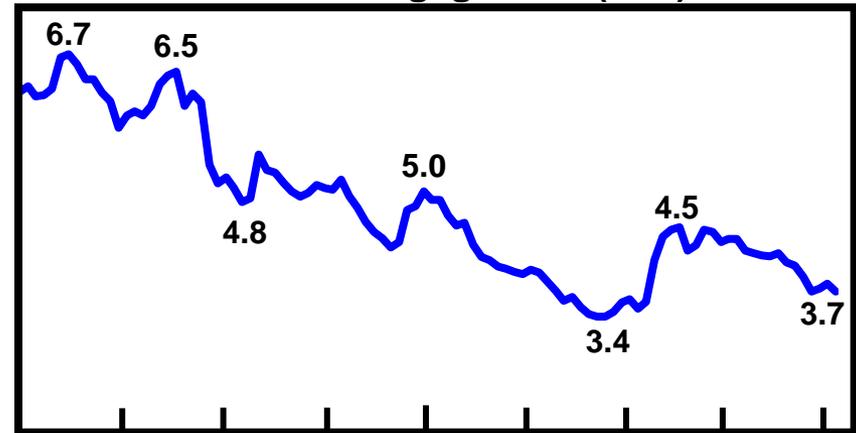
**Key Economic Indicators Suggest A Favorable Backdrop For Auto Sales**

# U.S. HOUSING UPDATE

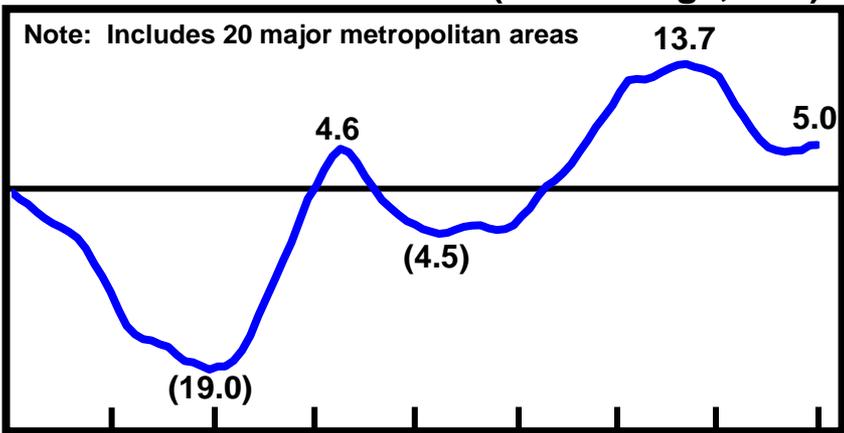
## Housing Starts (SAAR, Mils.) and Home Builders' Survey Index



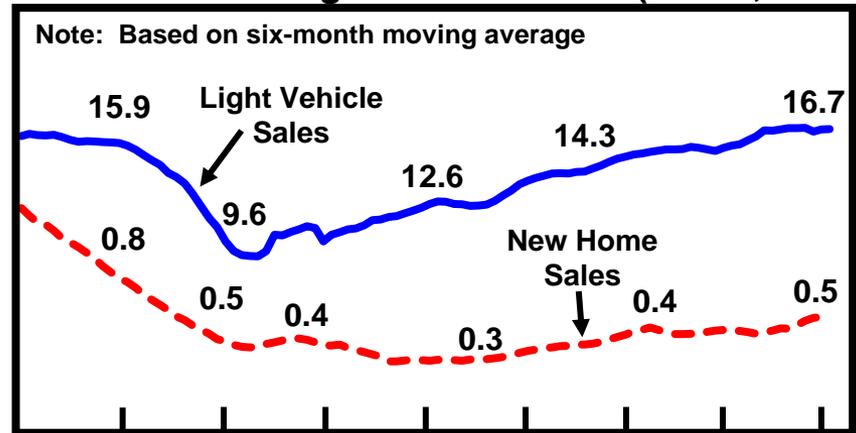
## 30-Year Mortgage Rate (Pct.)



## Case-Shiller Home Prices (Pct. Change, YoY)

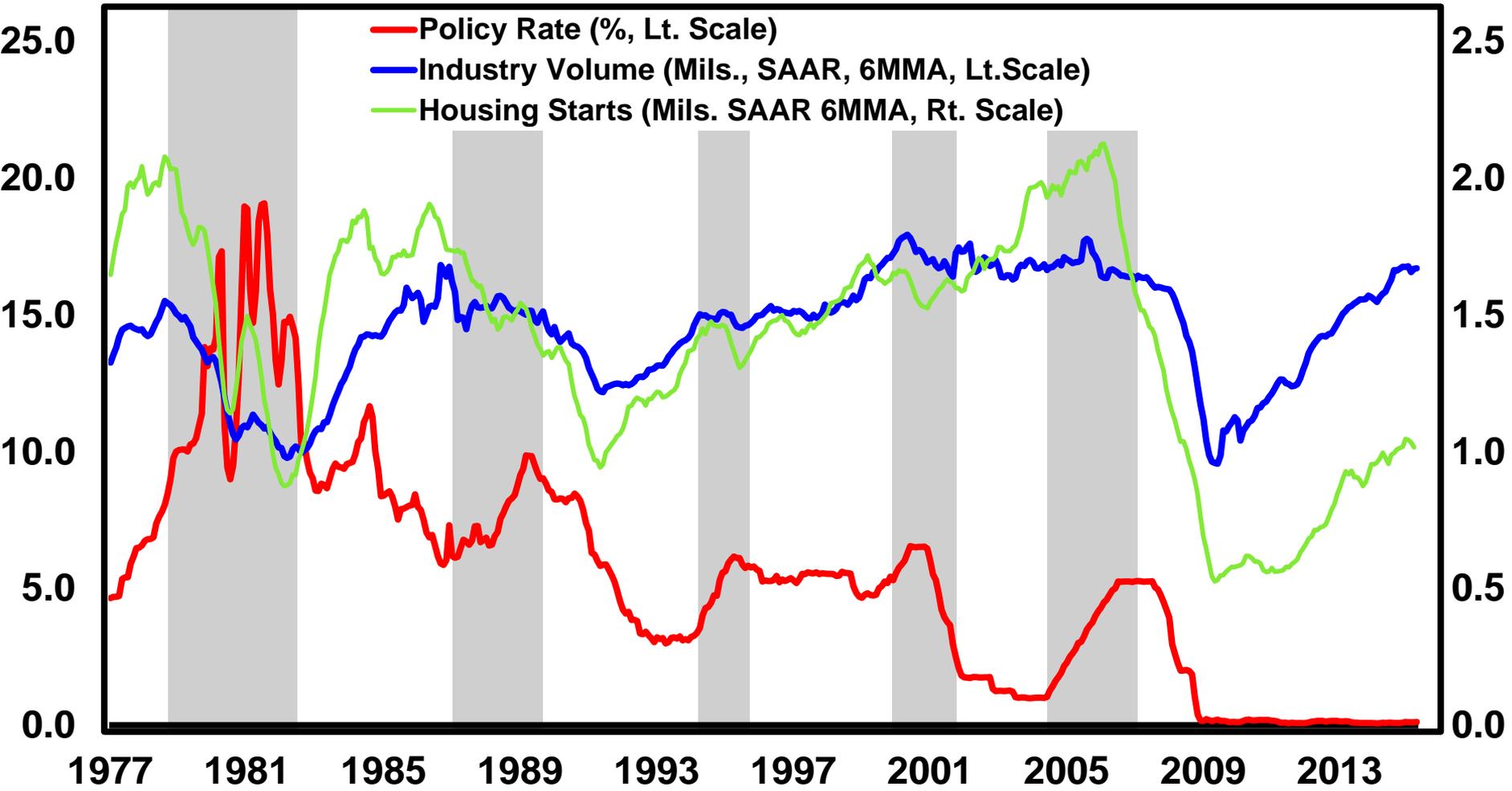


## New Home and Light Vehicle Sales (SAAR, Mils.)



**Housing Sector Recovery Remains Modest**

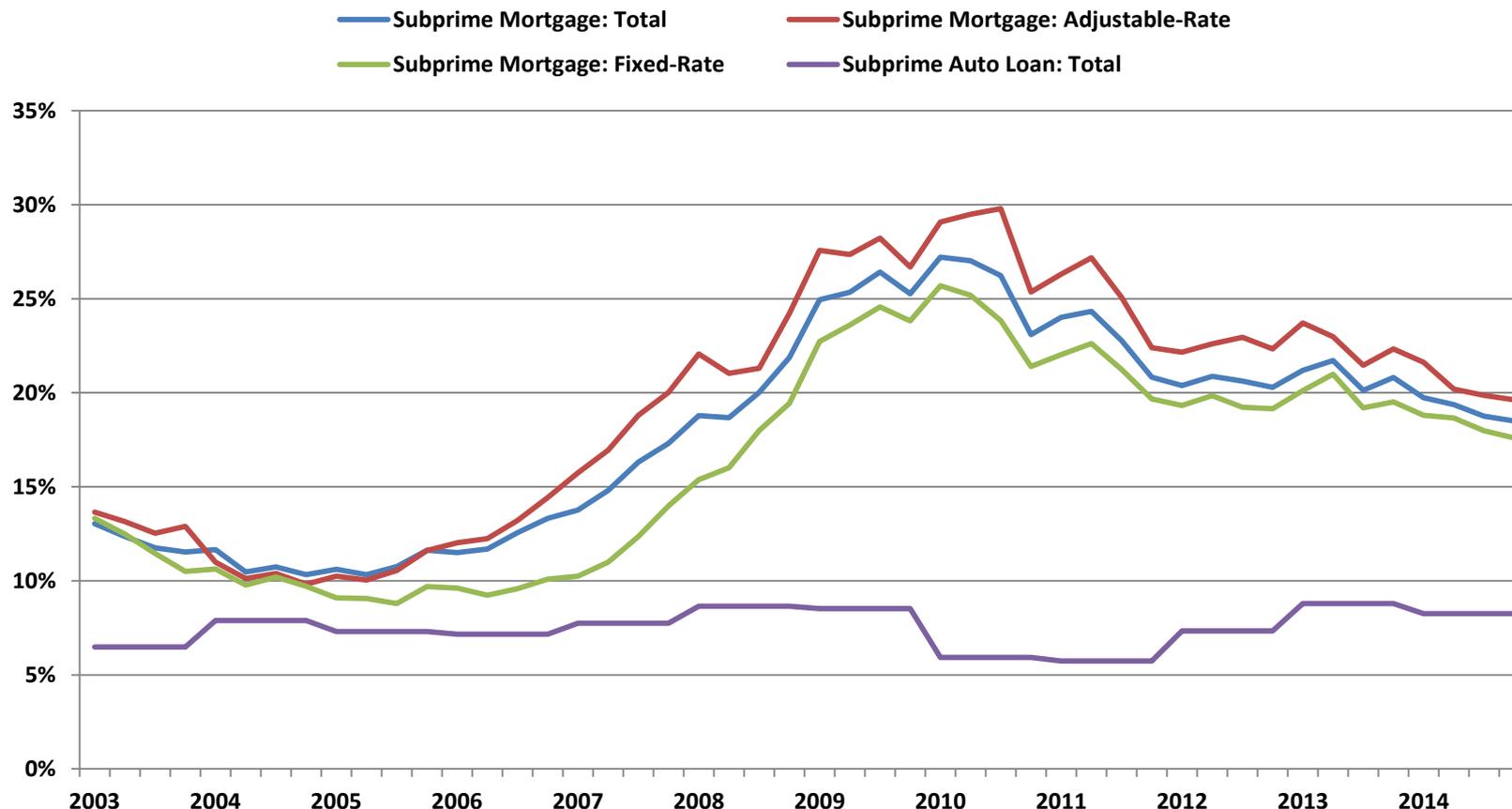
# U.S. HOUSING STARTS, INDUSTRY SALES AND INTEREST RATES



Note: Shaded areas show tightening cycles with industry downturn or flattening

**Historically Strong Relationship Between Interest Rate Cycles, Housing Starts And Vehicle Sales**

# DELINQUENCIES OF SUBPRIME MORTGAGES AND AUTO LOANS

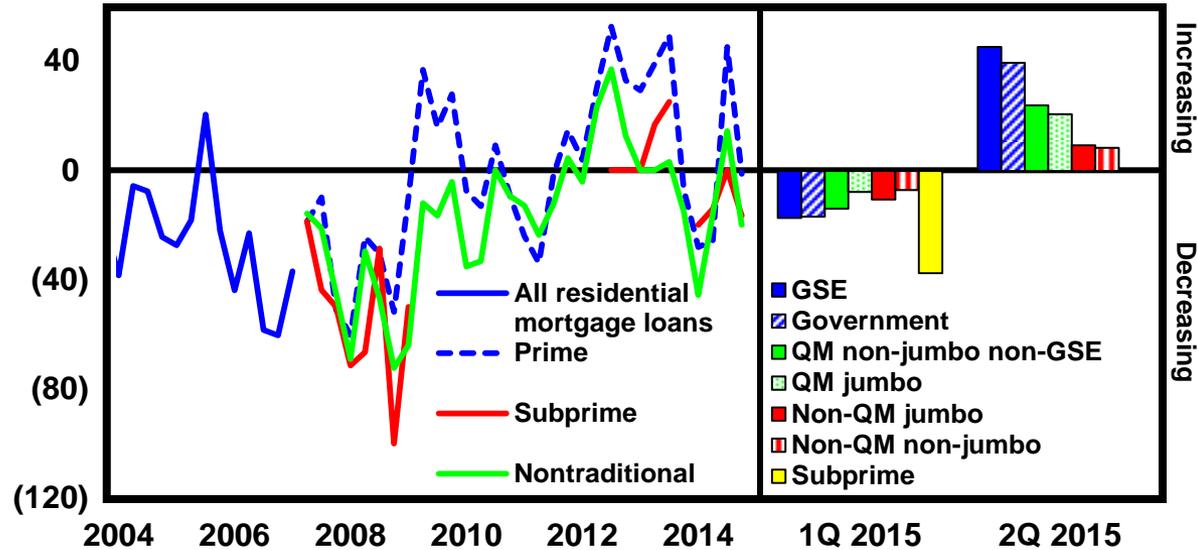


**Auto And Mortgage Loan Performance Has Diverged Since The Crisis**

# U.S. LOAN DEMAND INDICATORS

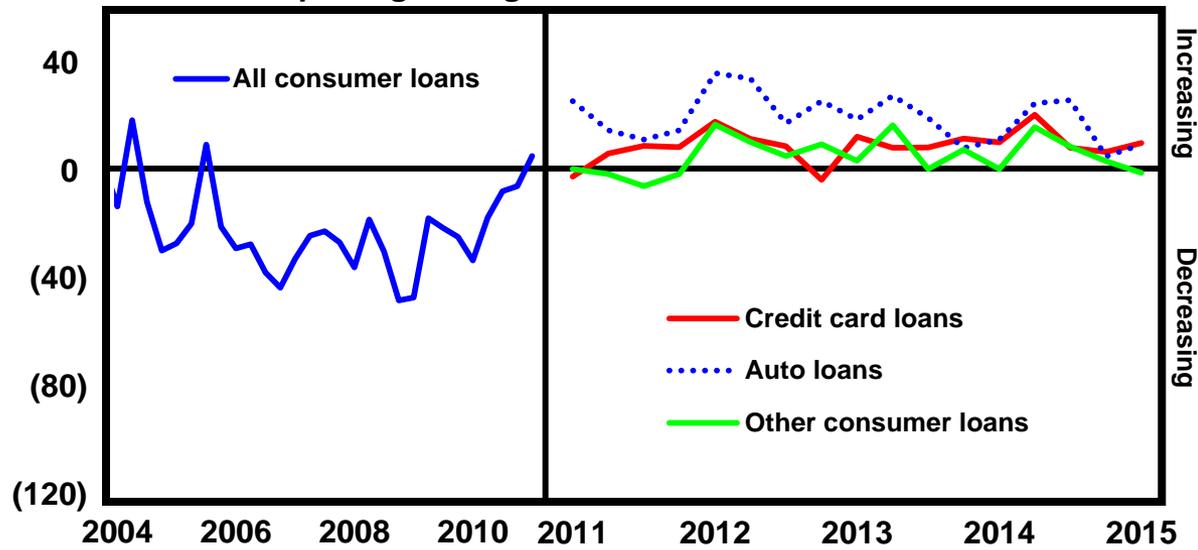
- Demand for residential mortgages has increased in the early Second Quarter 2015, following the weak First Quarter

Net Percentage of Domestic Banks Reporting Increased Demand for Residential Mortgages



- Domestic banks have, on net, reported increased demand for auto loans in every quarter since the Second Quarter of 2011

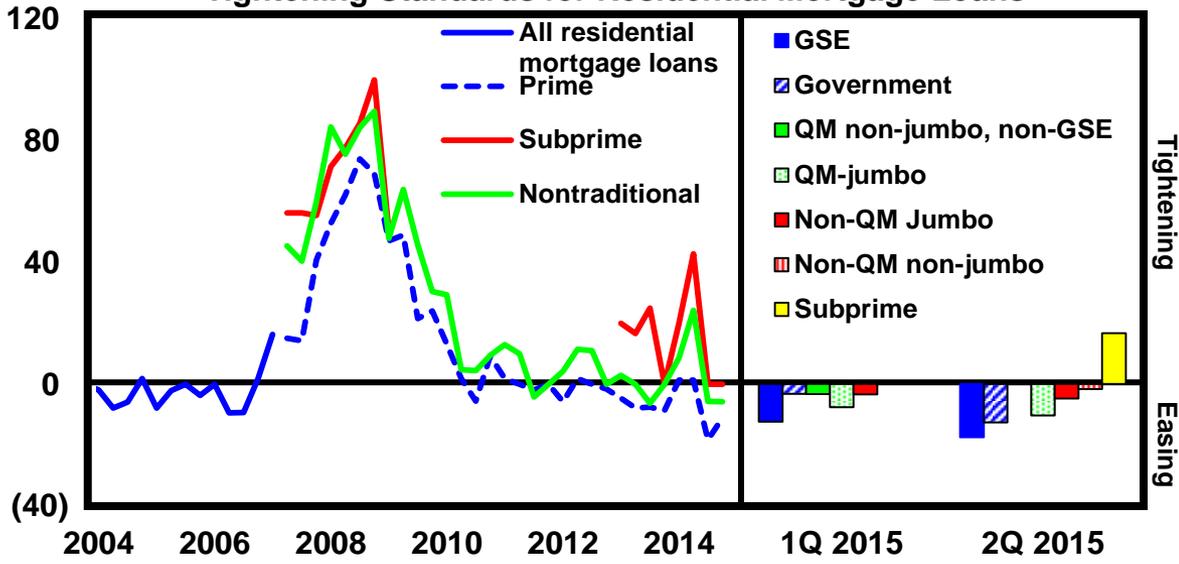
Net Percentage of Domestic Banks Reporting Stronger Demand for Consumer Loans



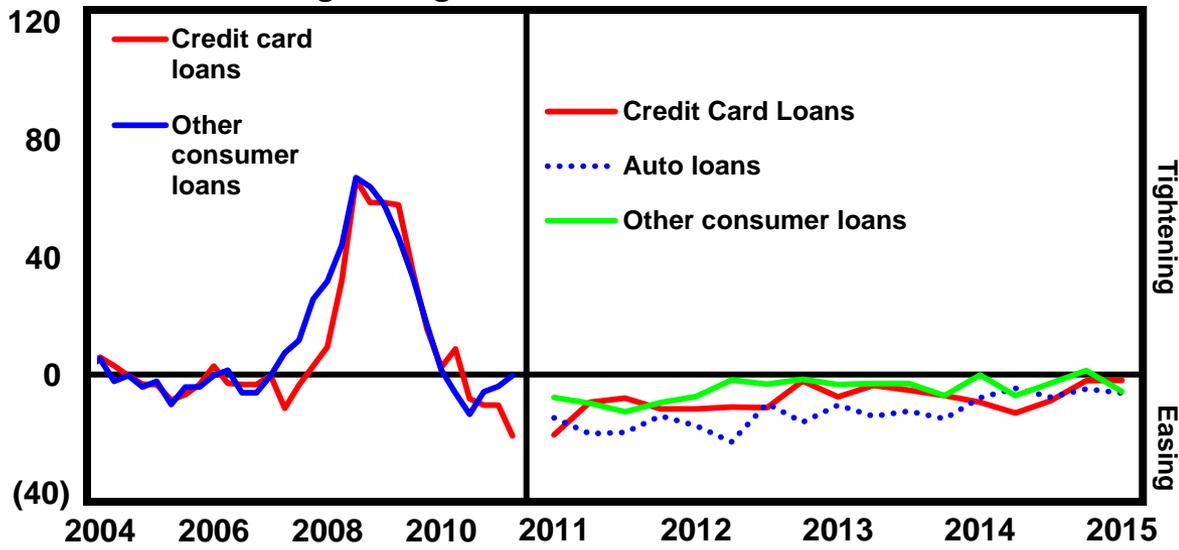
# U.S. LENDING STANDARDS

- Lending standards for well-qualified mortgages have eased considerably within the past year
- Substandard mortgage lending standards have remained tight since the financial crisis
- Relaxed lending standards for auto loans, following the financial crisis, promoting strong industry growth

Net Percentage of Domestic Banks Tightening Standards for Residential Mortgage Loans



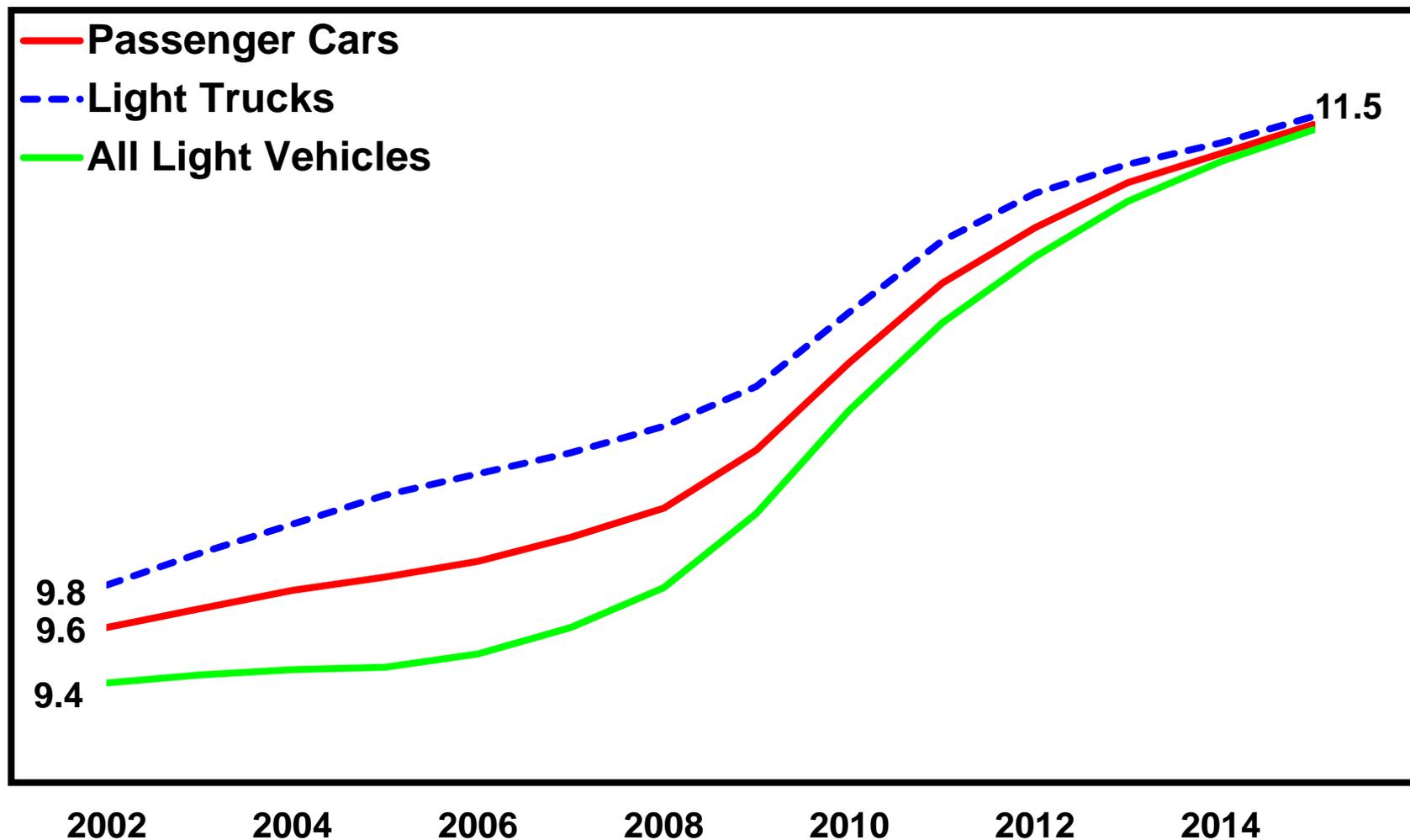
Net Percentage of Domestic Banks Tightening Standards for Consumer Loans



# U.S. AVERAGE AGE OF CARS AND TRUCKS



(Age, years)



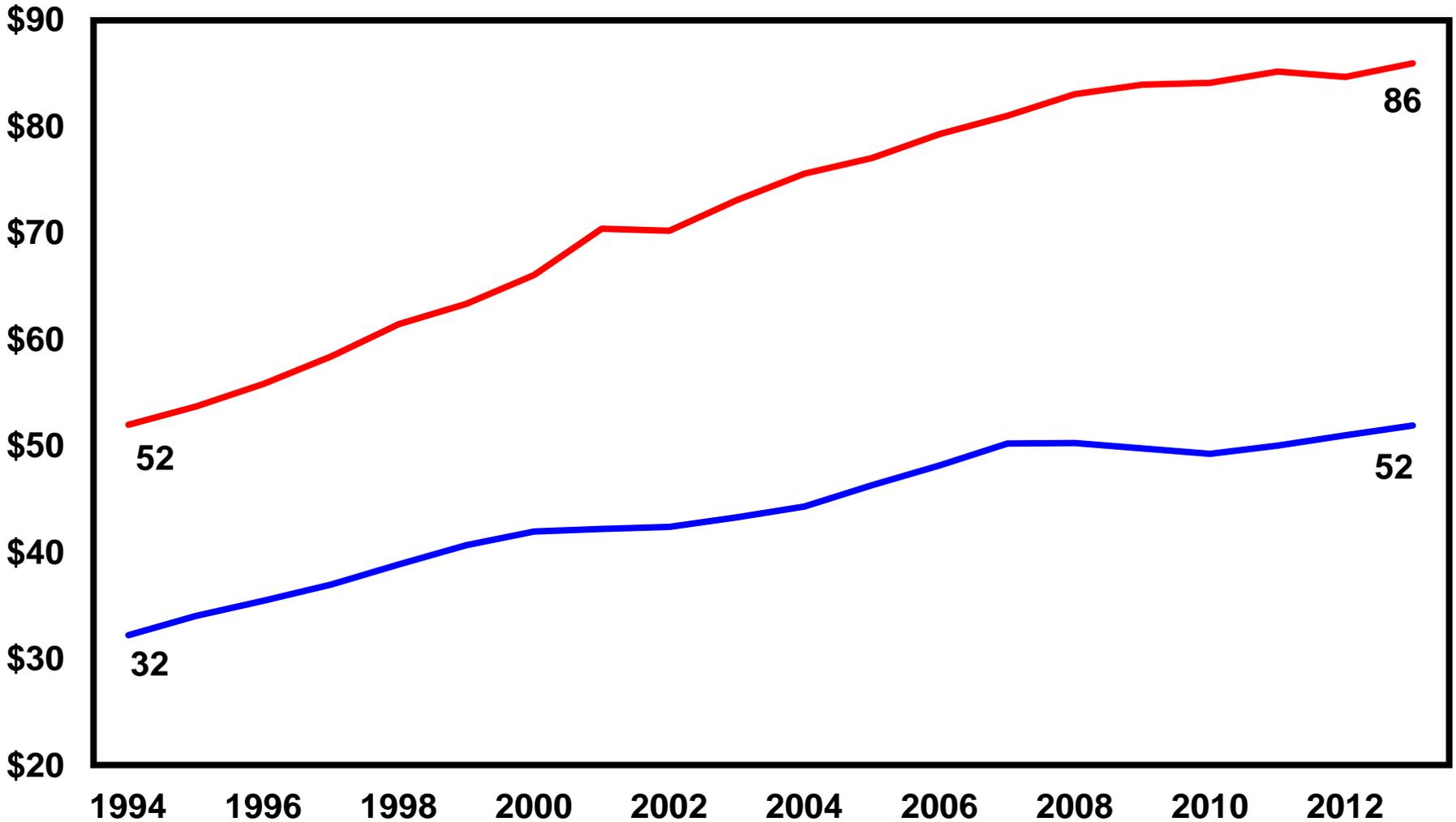
**Elevated Vehicle Age Continues To Support Replacement Demand**

Source: Polk VIO registrations

# U.S. HOUSEHOLD AND NEW VEHICLE BUYER MEDIAN INCOMES



(000s)



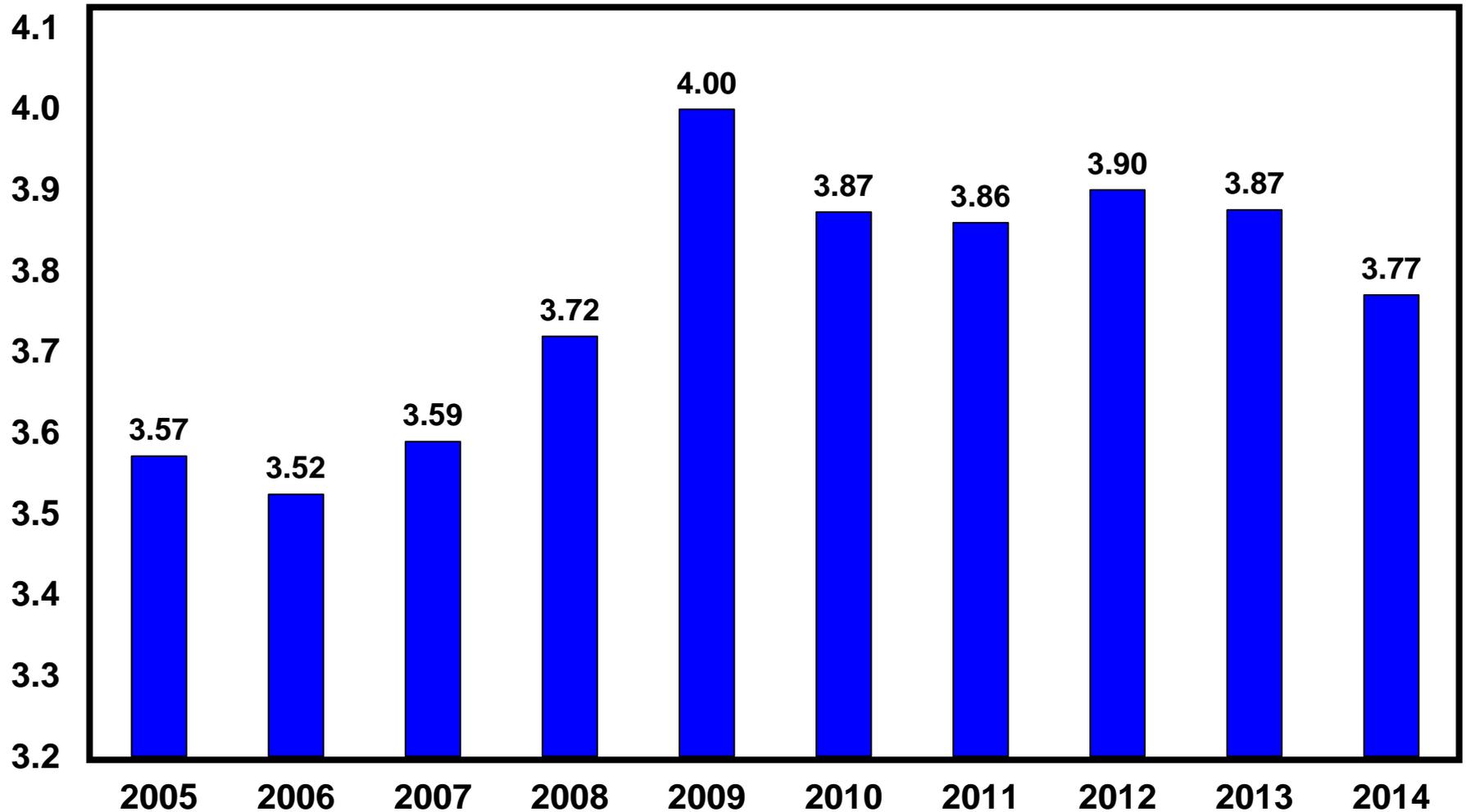
Source: U.S. Census Bureau, NVCS

**New Vehicle Buyers Have Higher Median Income  
Than U.S. Households Overall**

# U.S. EXPECTED VEHICLE HOLDING PERIOD



## Years Between Next Purchase



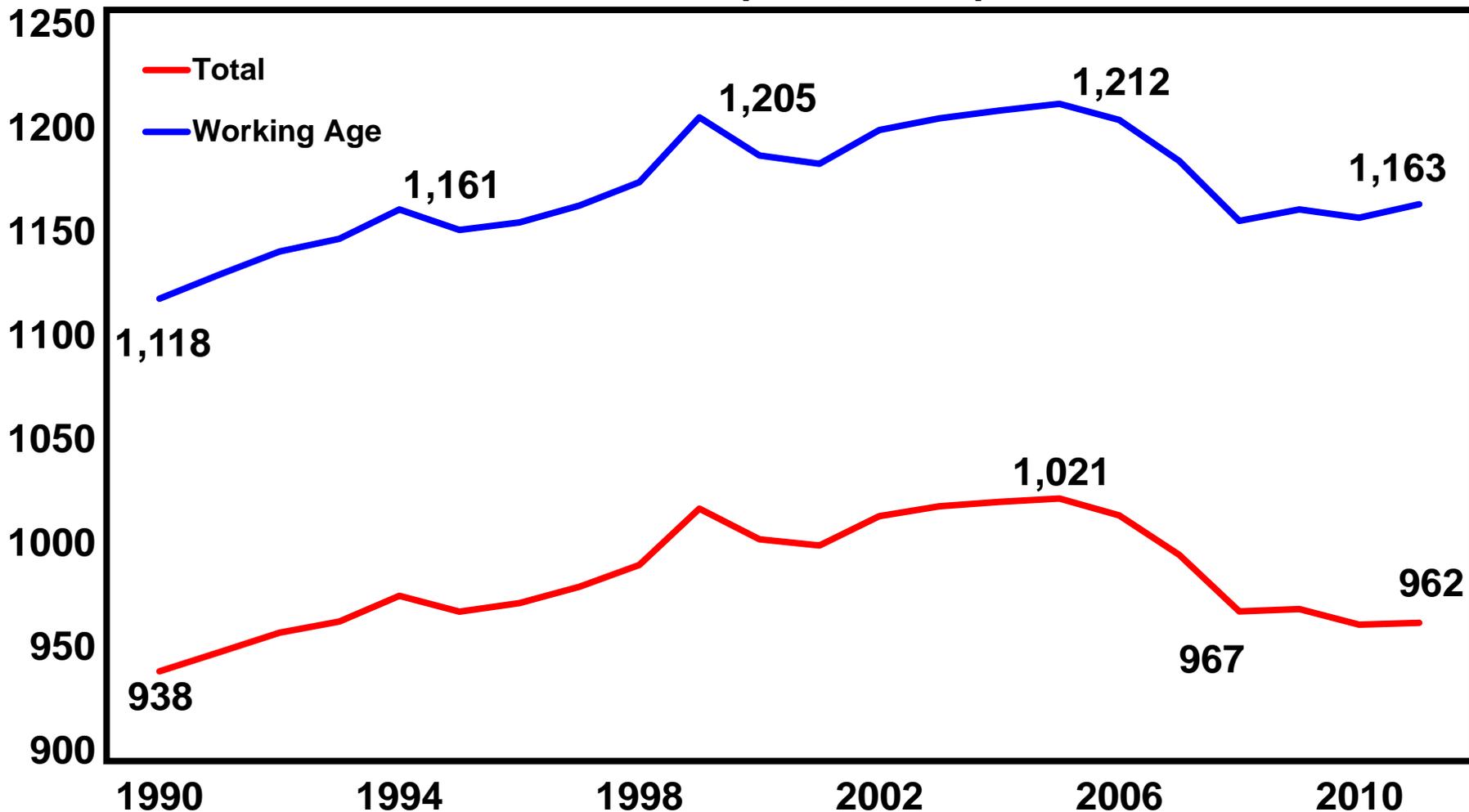
Data Source: NVCS

**Holding Periods Edging Down But Still Above Pre-Crisis Levels**

# U.S. VEHICLE DENSITY



Vehicles per 1,000 Pop.



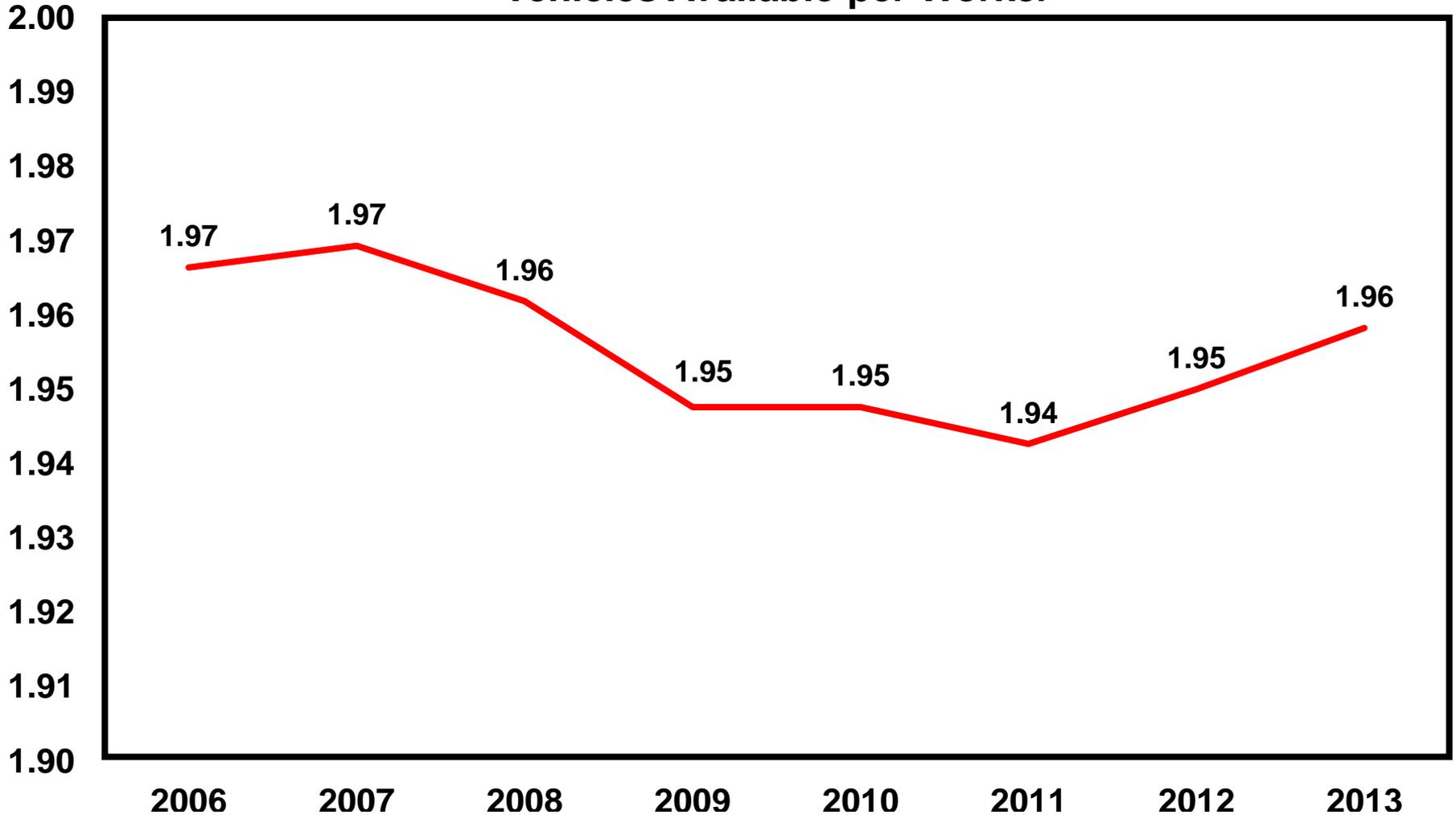
Source: Polk, Census Bureau

**Aging Population Contributing To Lower Overall Vehicle Density**

# U.S. METROPOLITAN VEHICLE DENSITY



## Vehicles Available per Worker



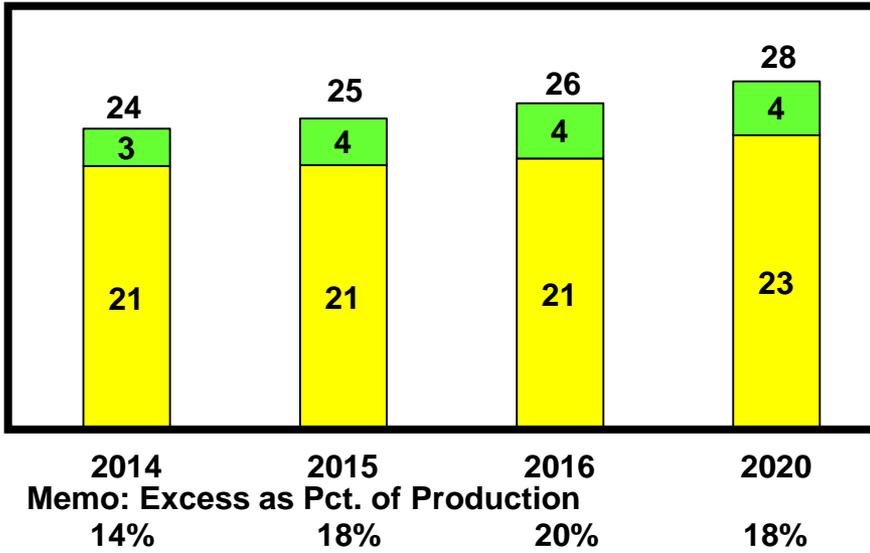
Source: U.S. Census Bureau

Note: Top 51 most populated metropolitan areas

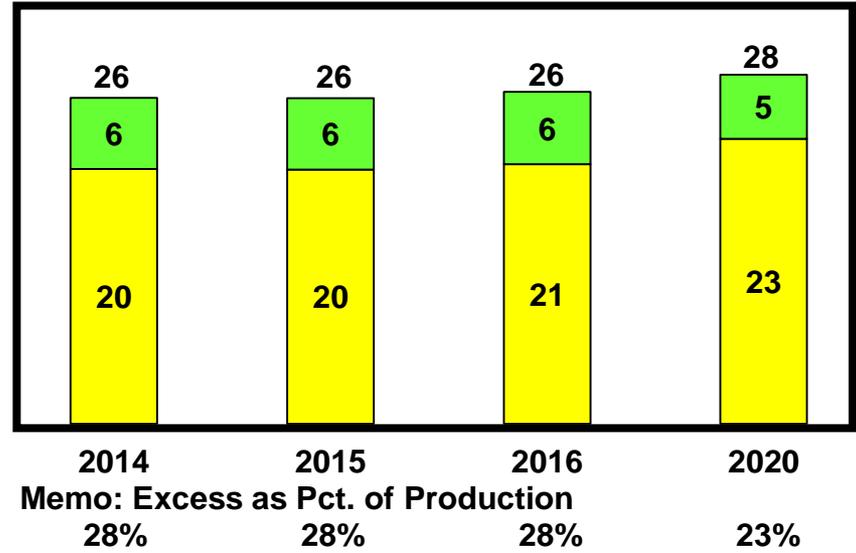
**Metropolitan Vehicle Ownership Rates Have Remained Steady**

# LIGHT VEHICLE CAPACITY BY REGION

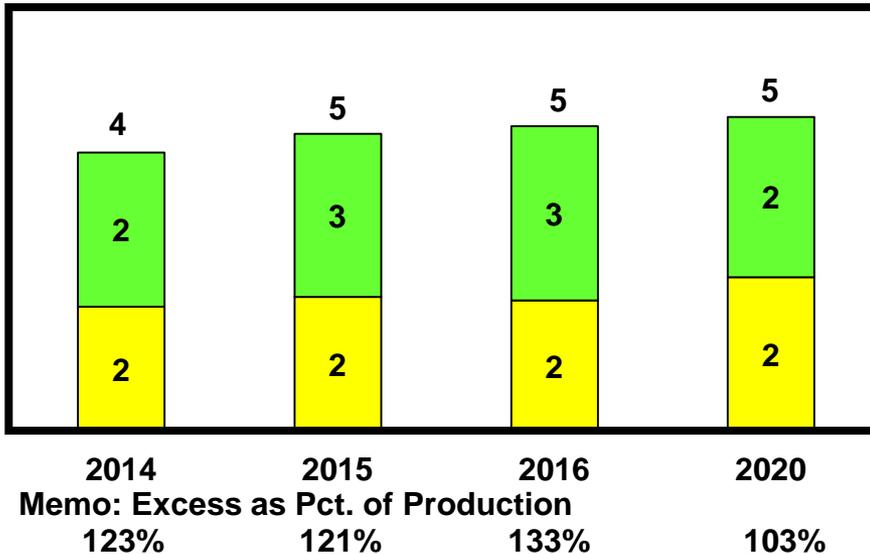
## Americas (Mils.)



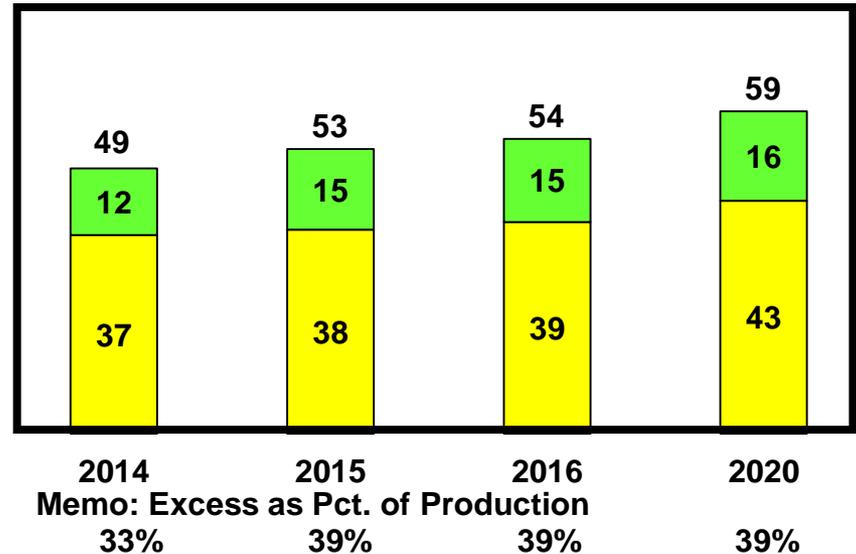
## Europe (Mils.)



## Middle East & Africa (Mils.)



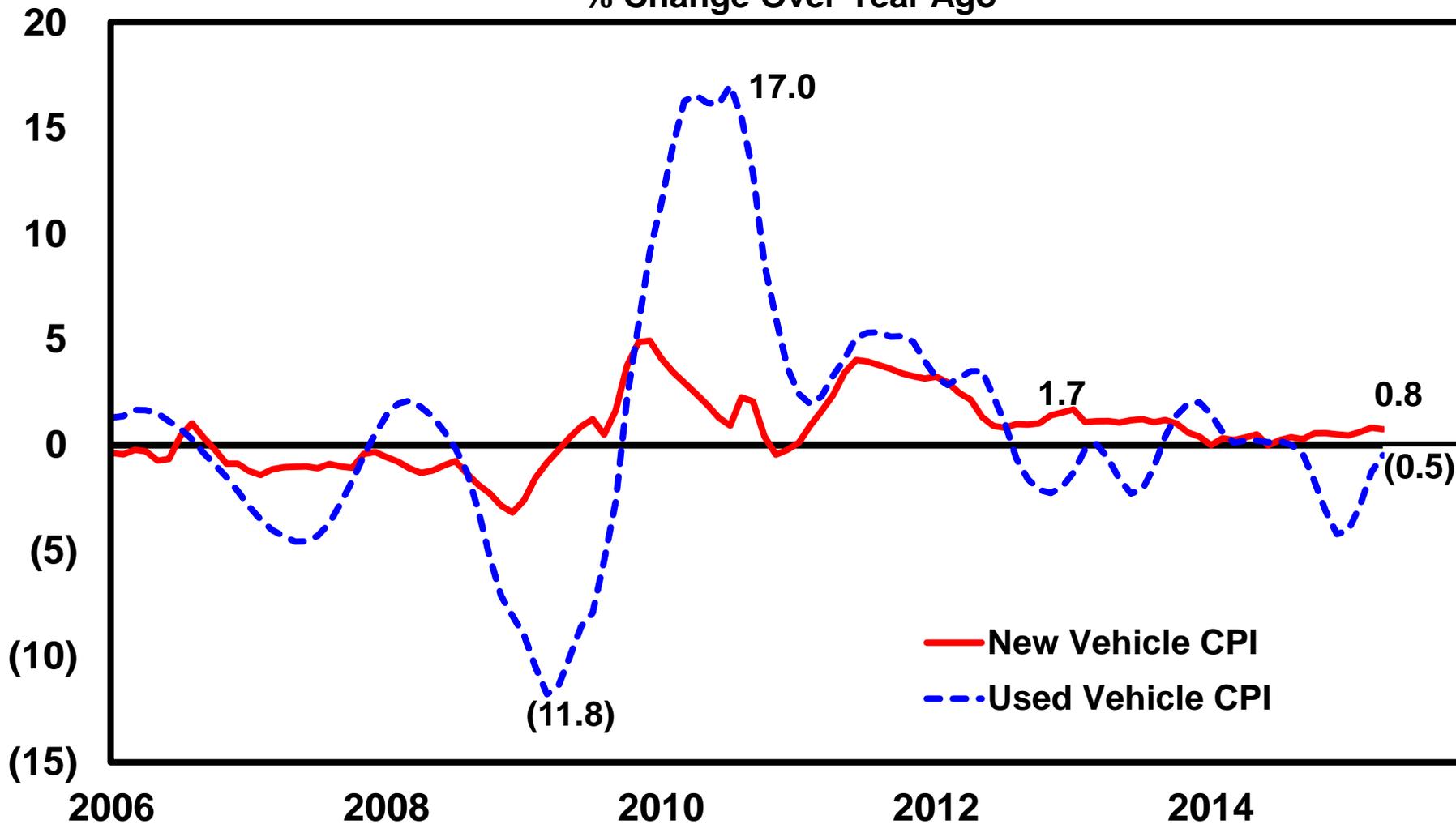
## Asia Pacific (Mils.)



# U.S. NEW AND USED VEHICLE CPI



% Change Over Year Ago



Vehicle Pricing Trends Have Moderated Recently

# ***SUMMARY***



- **U.S. economy recovering at a steady pace, with income and job gains supportive of vehicle buying conditions**
- **Interest rates remain low, supported by global liquidity conditions and with pace of Federal Reserve policy rate increases expected to be very gradual**
- **Housing market recovery remains subpar**
- **Replacement demand remains a key driver of U.S. vehicle sales**
- **Durability and consumer preferences for longer holding periods support elevated vehicle age**
- **Density growth has moderated, driven largely by demographics**
- **Global capacity conditions imply limited upside to U.S. industry pricing**