

**21st Annual Automotive Outlook Symposium
Federal Reserve Bank of Chicago-Detroit Branch**

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US Economic and Vehicle Market Outlook

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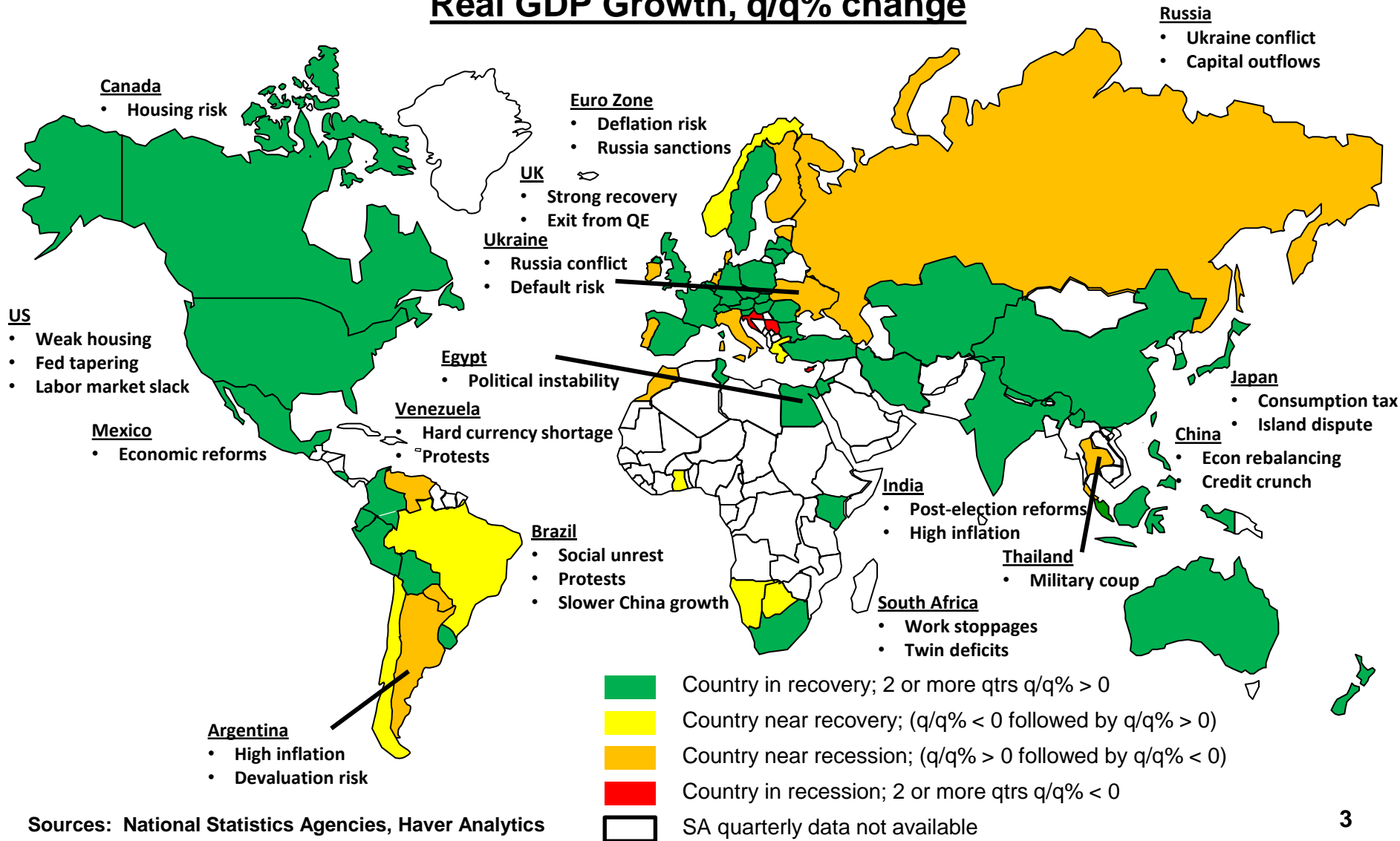
Overview

- **Global economic developments highly unsynchronized – creating uncertainty regarding the pace of the outlook**
- **US economy still emerging from the Global Financial Crisis, with Fed policy, housing sector, and the labor market being the major factors influencing the strength of the expansion**
- **US vehicle demand fundamentals generally favorable – supporting a gradually improving sales outlook**

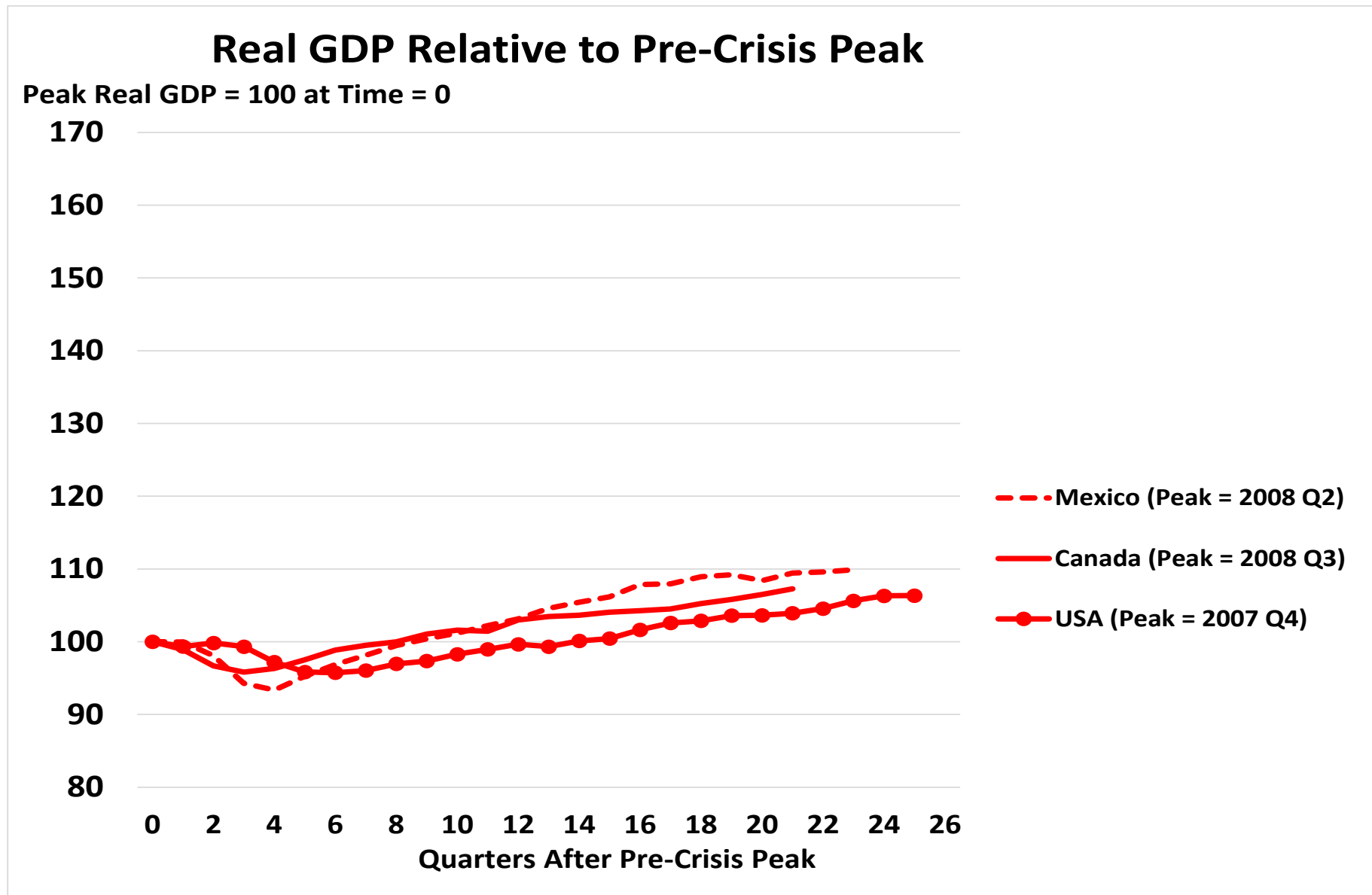
Global economic recovery largely uneven

- Economic and political conditions consistent with modest global growth outlook
- North American region reflects generally positive growth prospects; albeit, the outlook for the US, Canada, and Mexico are not without risks

Real GDP Growth, q/q% change



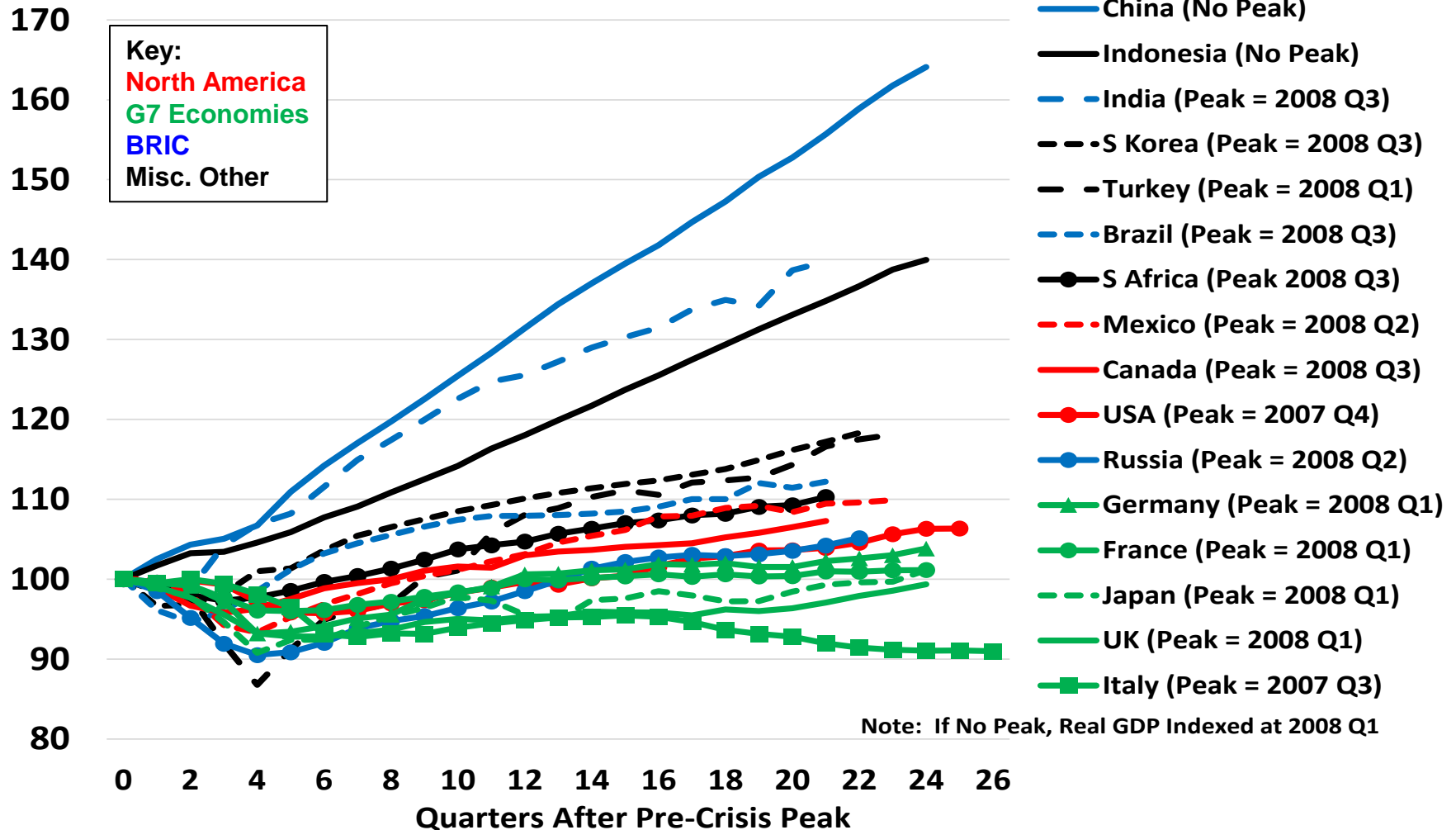
Based on the latest data, the economies of the US, Canada, and Mexico are less than 10% above their pre-crisis peak



Multi-speed recovery with emerging markets generally outperforming developed markets

Real GDP Relative to Pre-Crisis Peak

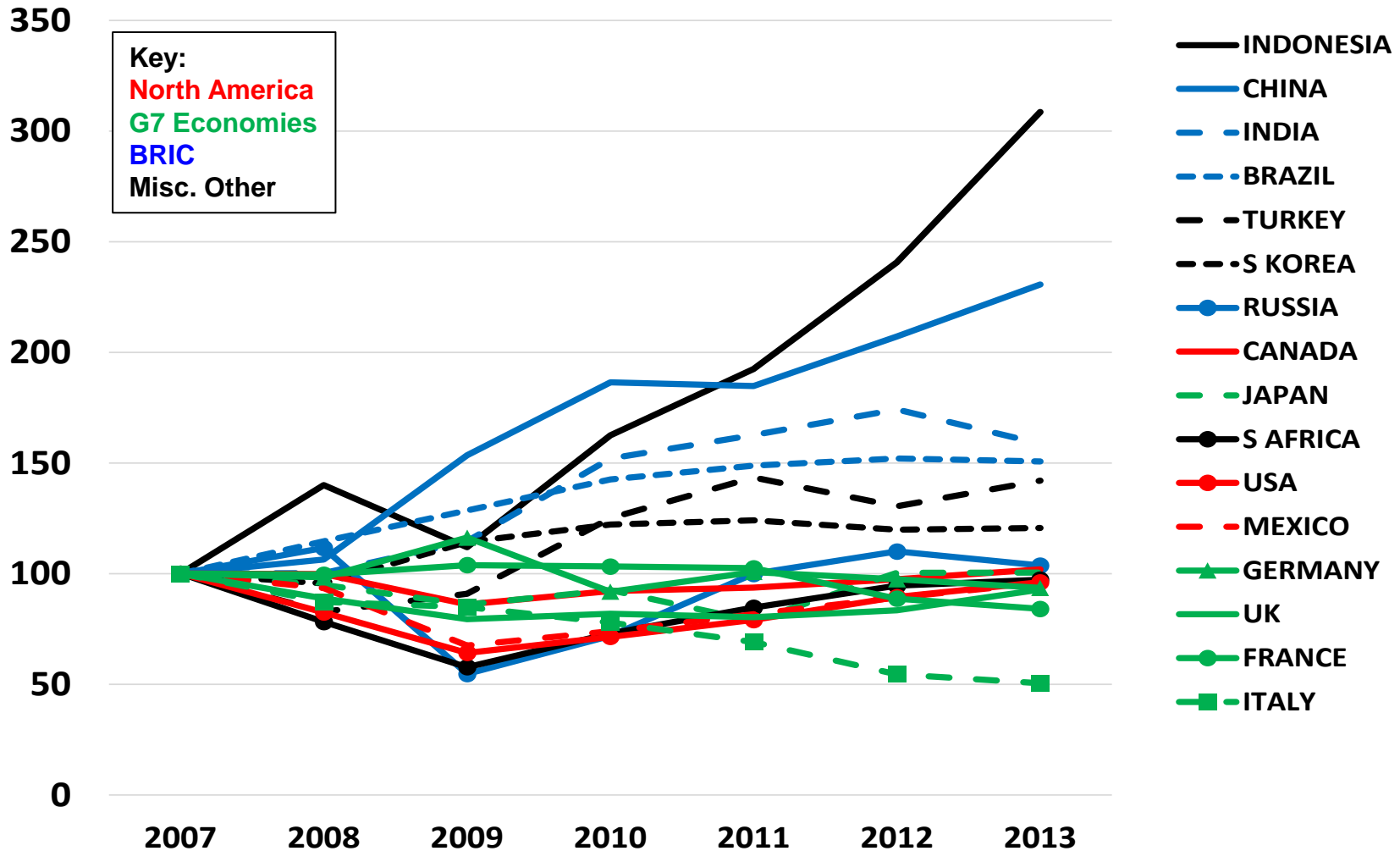
Peak Real GDP = 100 at Time = 0



In line with the post-crisis real GDP development, new vehicle sales since 2007 have been largely uneven

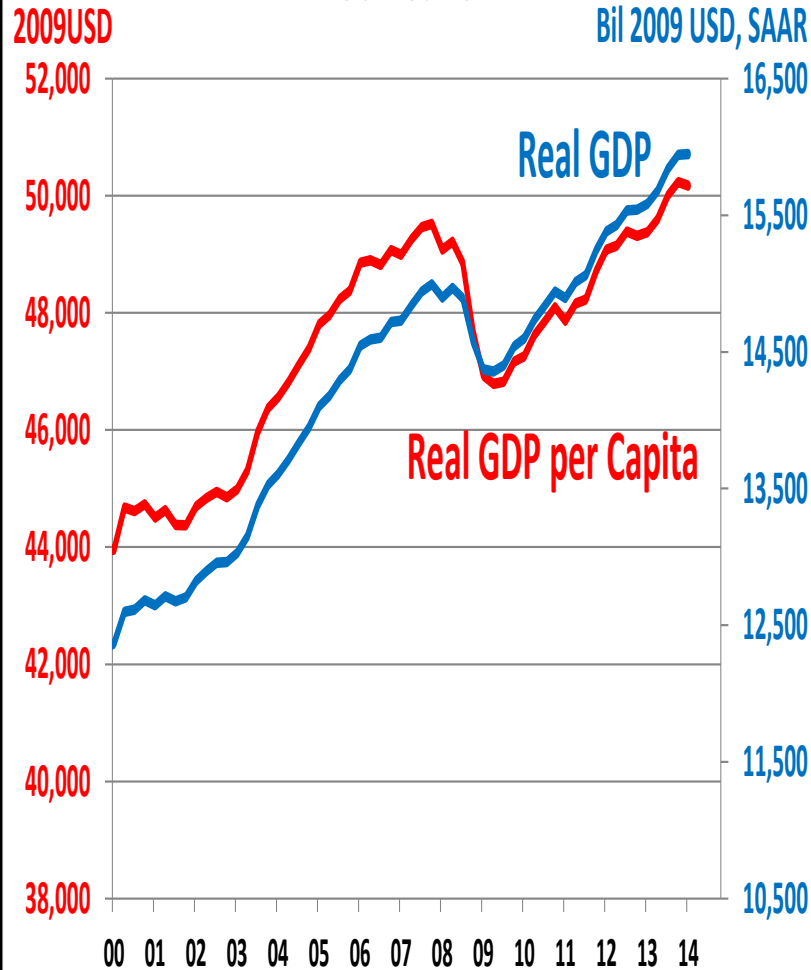
New Vehicle Sales Relative to 2007

Sales =100 at 2007



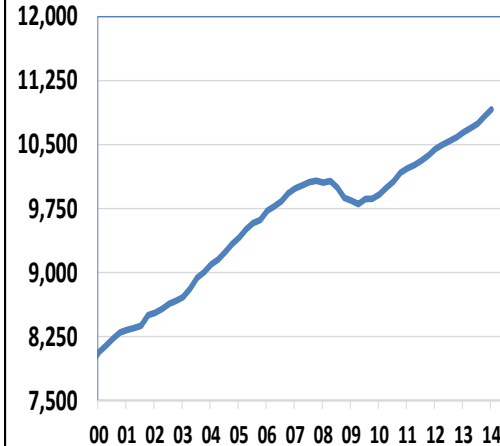
For the US, strong growth in personal consumption was the key factor behind the economy exceeding its pre-crisis peak

US Real GDP



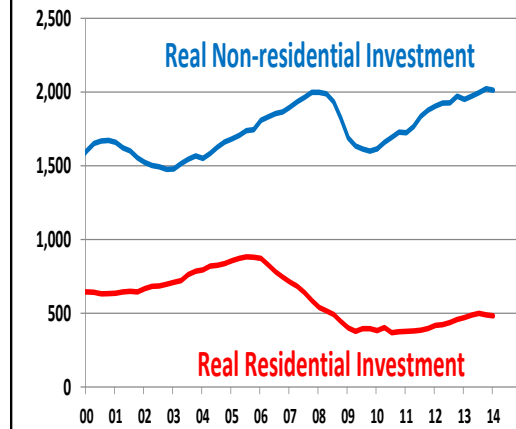
Real Personal Consumption

Bil 2009 USD, SAAR



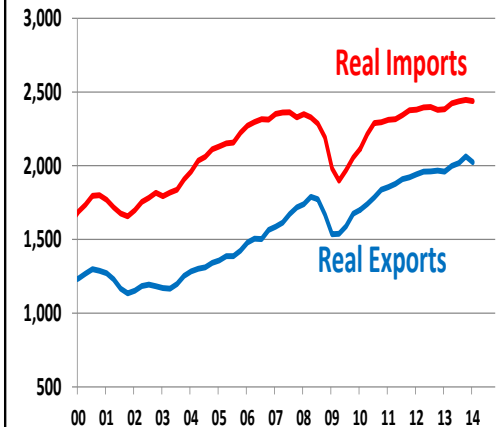
Real Investment Spending

Bil 2009 USD, SAAR



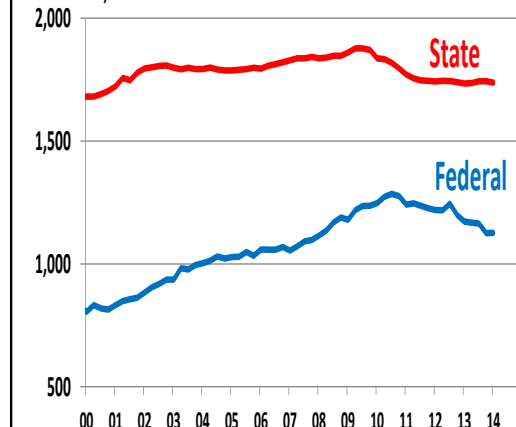
Real Exports and Imports

Bil 2009 USD, SAAR



Real Federal and State Gov't Spending

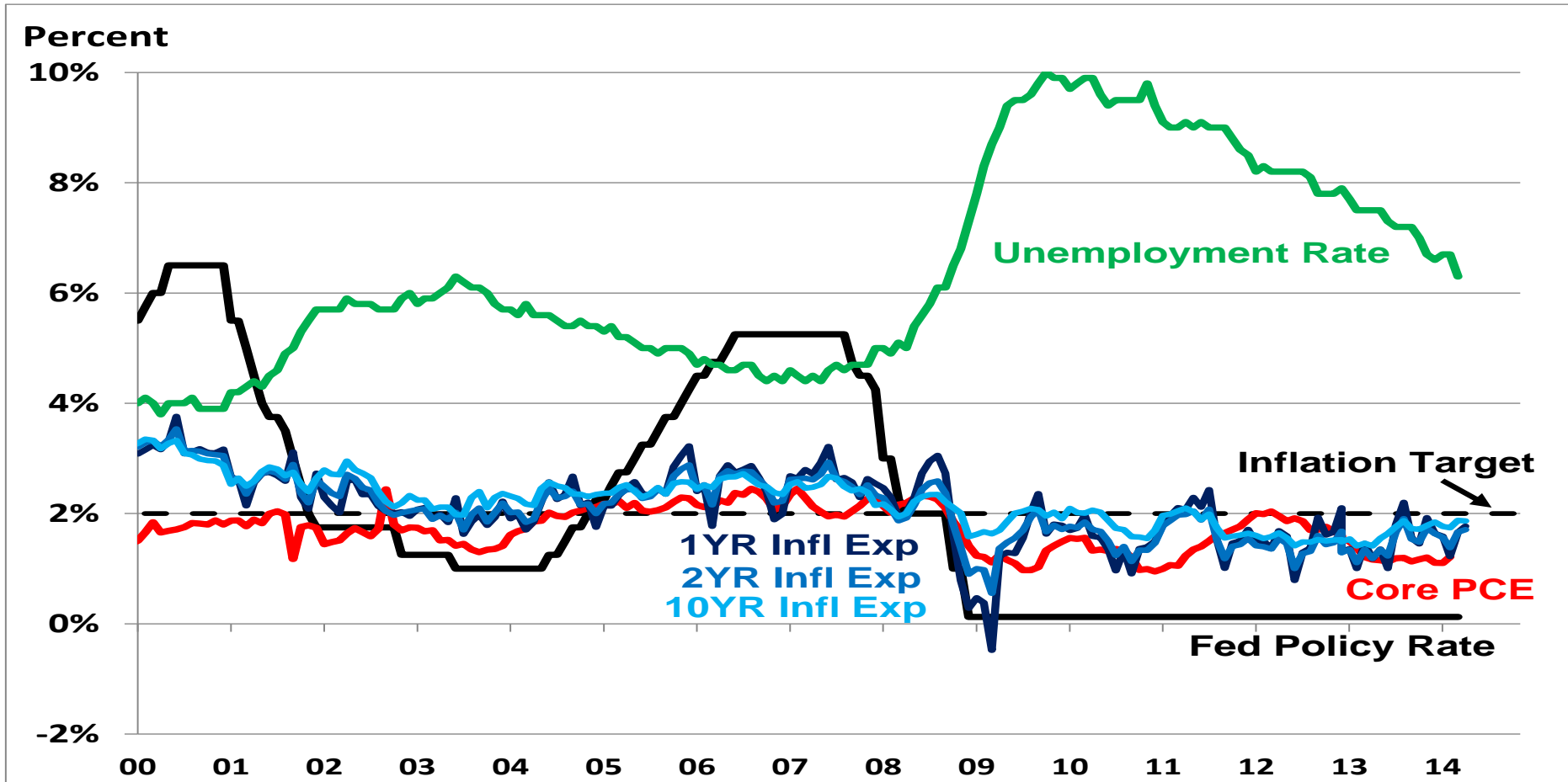
Bil 2009 USD, SAAR



Core PCE inflation is largely contained; albeit, long-term inflation expectations are rising

- Higher Core PCE inflation generally follows rising inflation expectations
- Policy rates tend to rise as inflation expectations exceed 2%

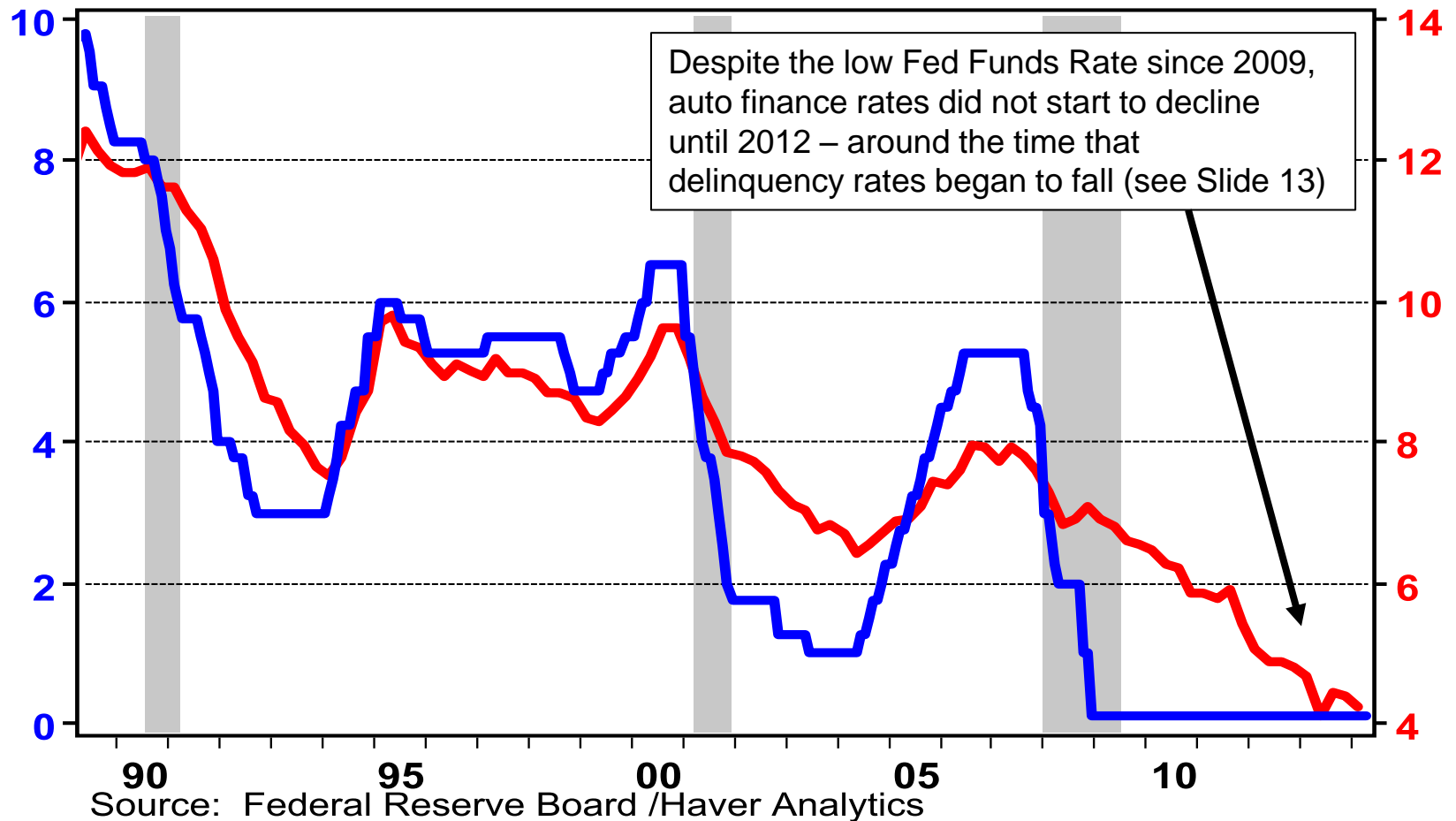
Federal Reserve Policy Rate versus Inflation and Unemployment Rates



Low Fed Funds Rate currently supporting low auto finance rates

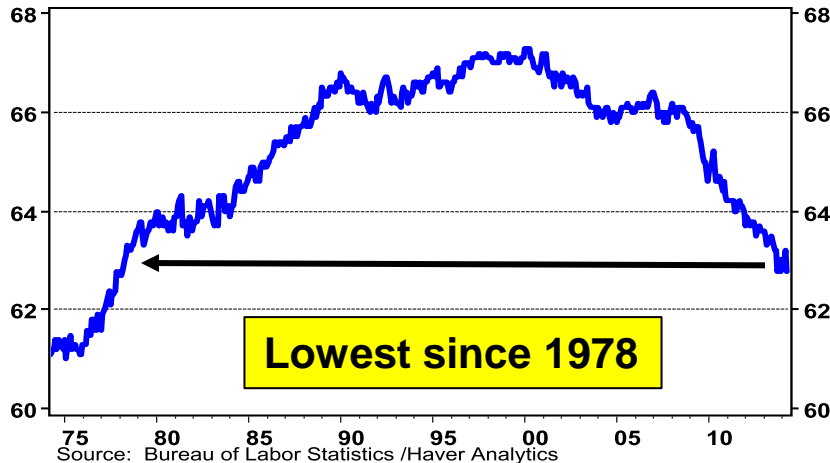
← **Federal Open Market Committee: Fed Funds Target Rate**
EOP, %

Commercial Bank Interest Rates →
48- Month New Car Loans, NSA, %

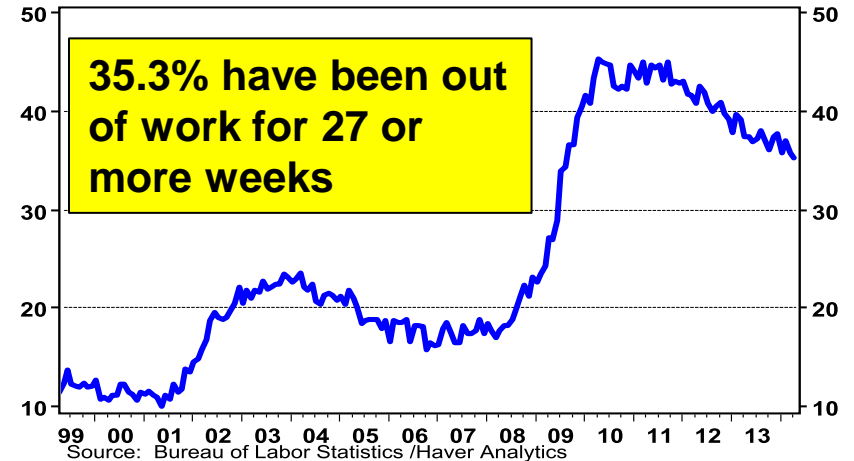


Several indicators suggest that significant labor market slack still exists

Civilian Participation Rate: 16 yr +
SA, %



Unemployed for 27 Weeks and Over
SA, % of Civilians Unemployed



Work Part Time: For Economic Reasons: All Industry
SA, Thous



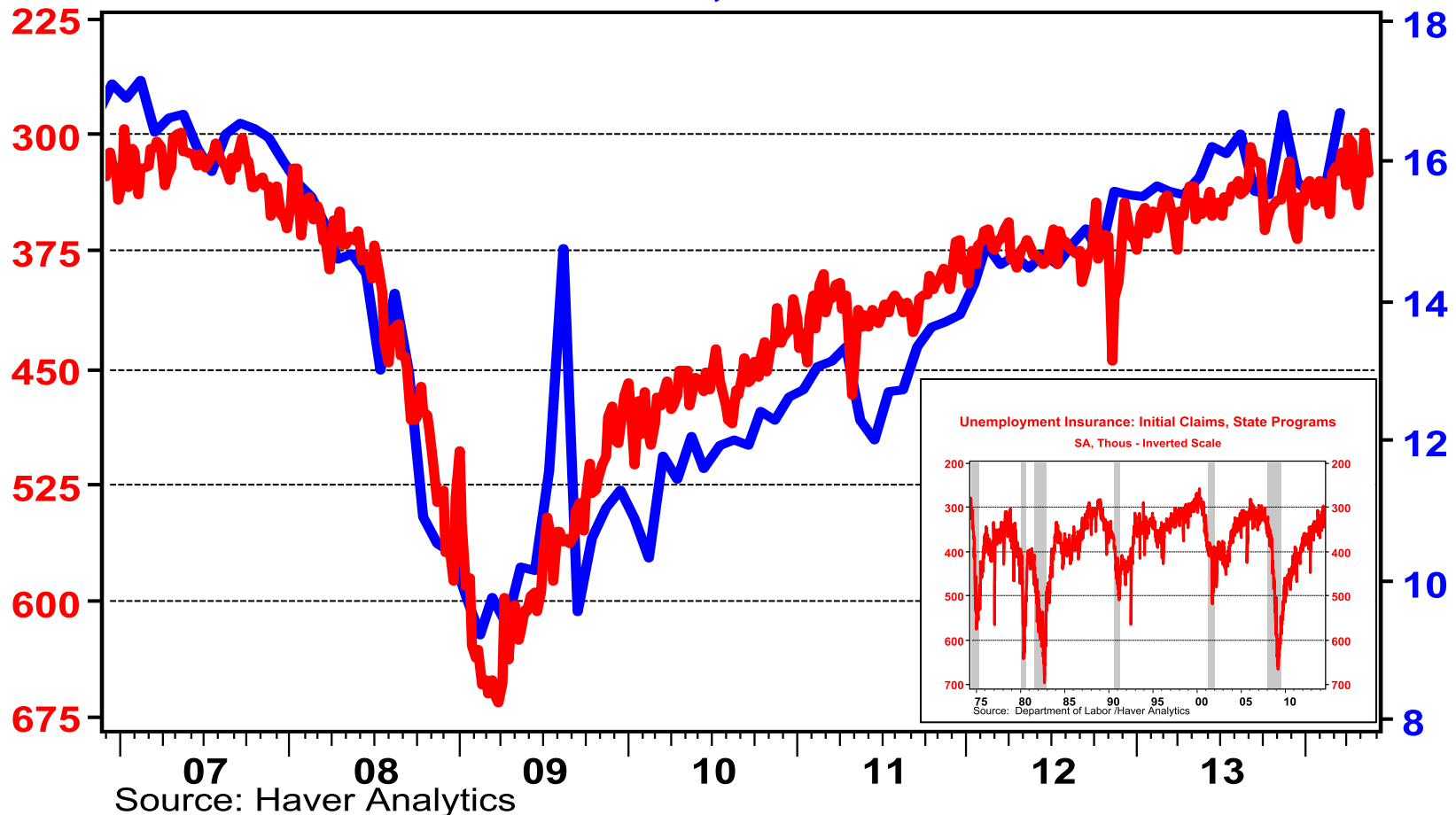
Appraisal Pres Sit: Employment, Jobs Hard to Get
% Respondents; SA



Initial unemployment claims have fallen to a level consistent with previous expansions, and are consistent with total new vehicle sales

← Unemployment Insurance: Initial Claims, State Programs
SA, Thous - Inverted Scale

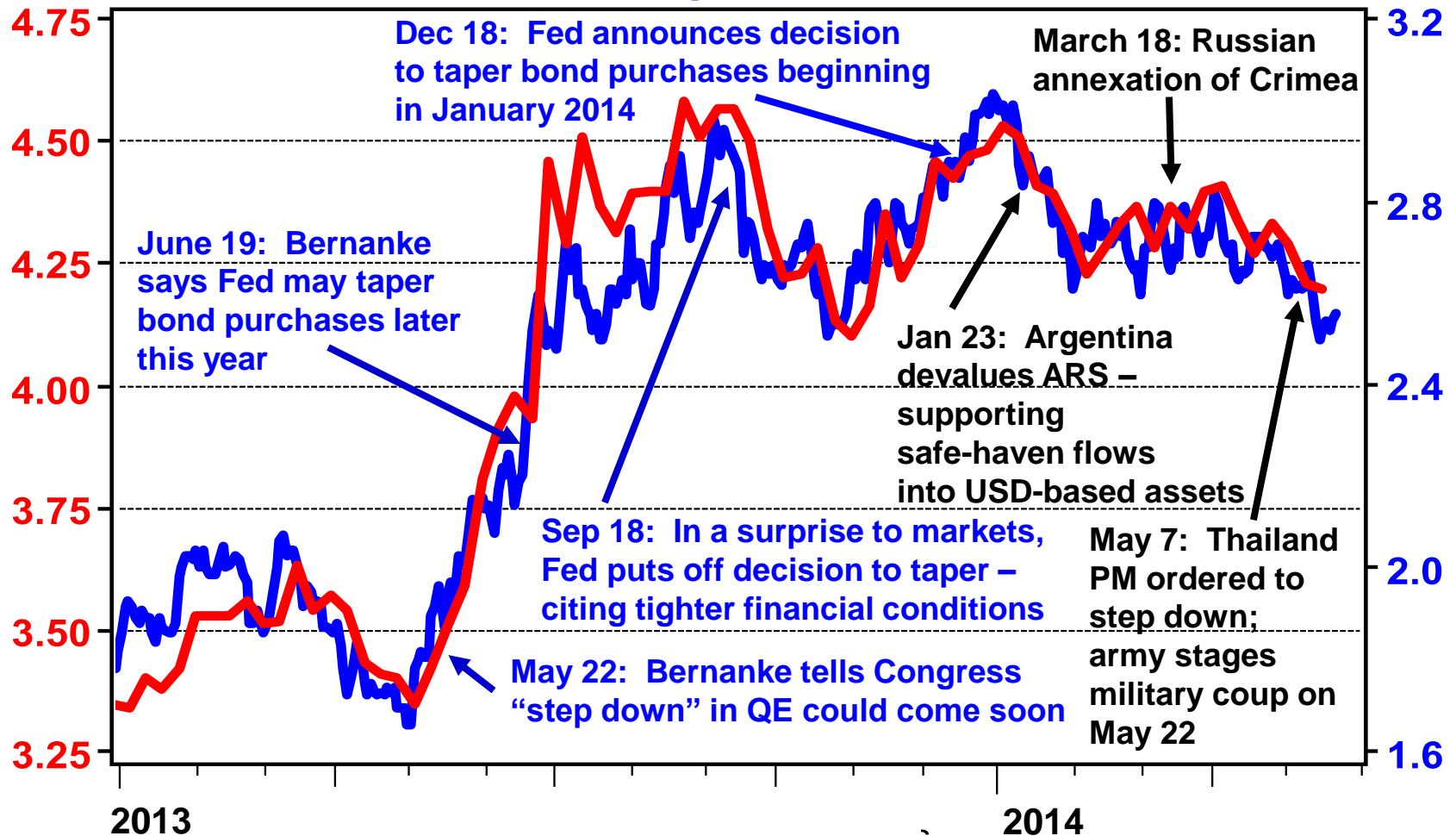
Total New Vehicle Sales →
SAAR, Millions



Despite Fed tapering, 10-year bond yields have declined – especially as emerging market risks have increased

← **Conventional 30-Yr Mortgages, FHLMC**
Avg, %

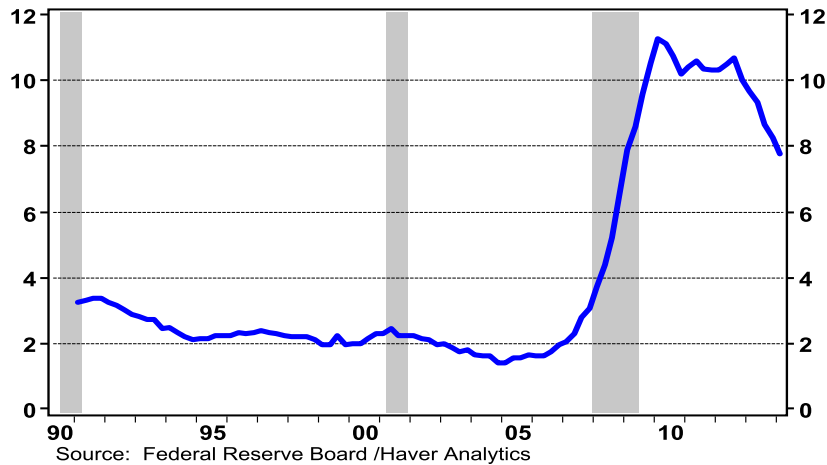
10-Year Treasury Note Yield at Constant Maturity →
Avg, % p.a.



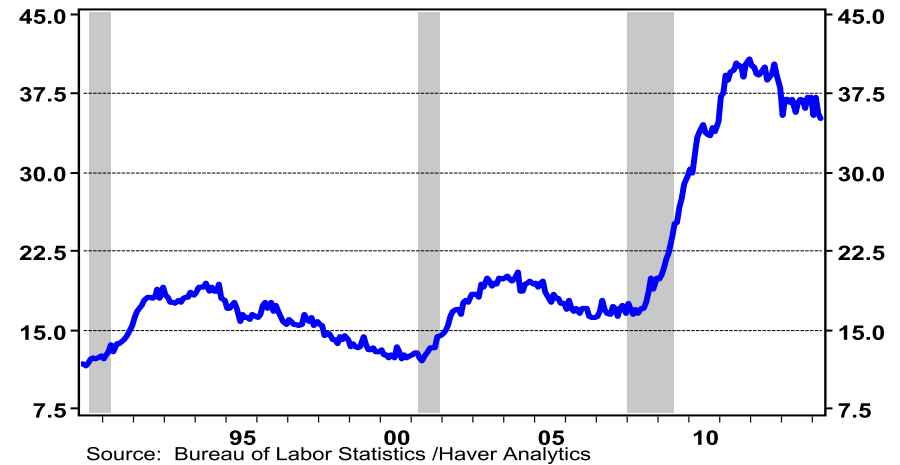
Sources: Federal Reserve Board, Haver Analytics

The collapse of the housing market has had a broad negative impact on lending, labor mobility, construction, and household wealth – thus reflecting the broad influence the sector has on the overall economy

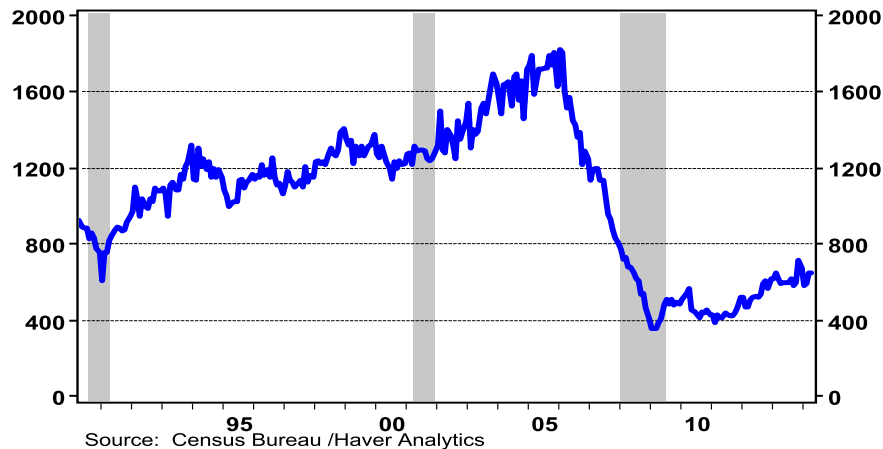
Delinquency Rate: Residential Real Estate Loans
All Commercial Banks, SA, %



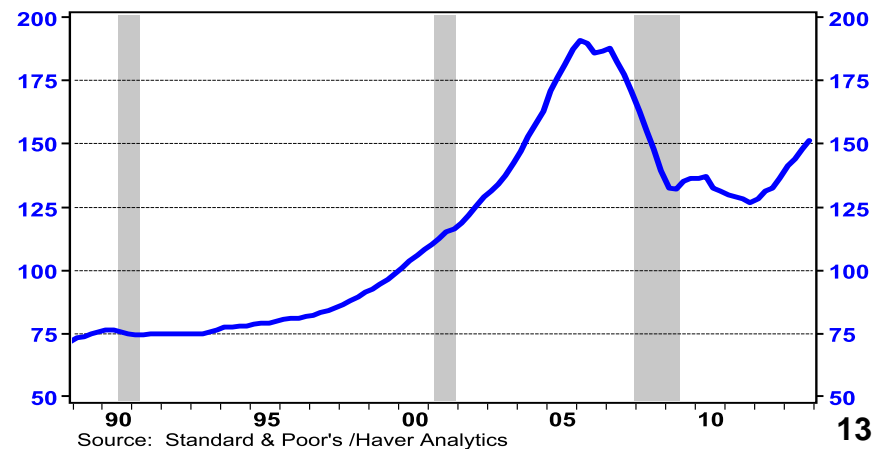
Average {Mean} Duration of Unemployment
SA, Weeks



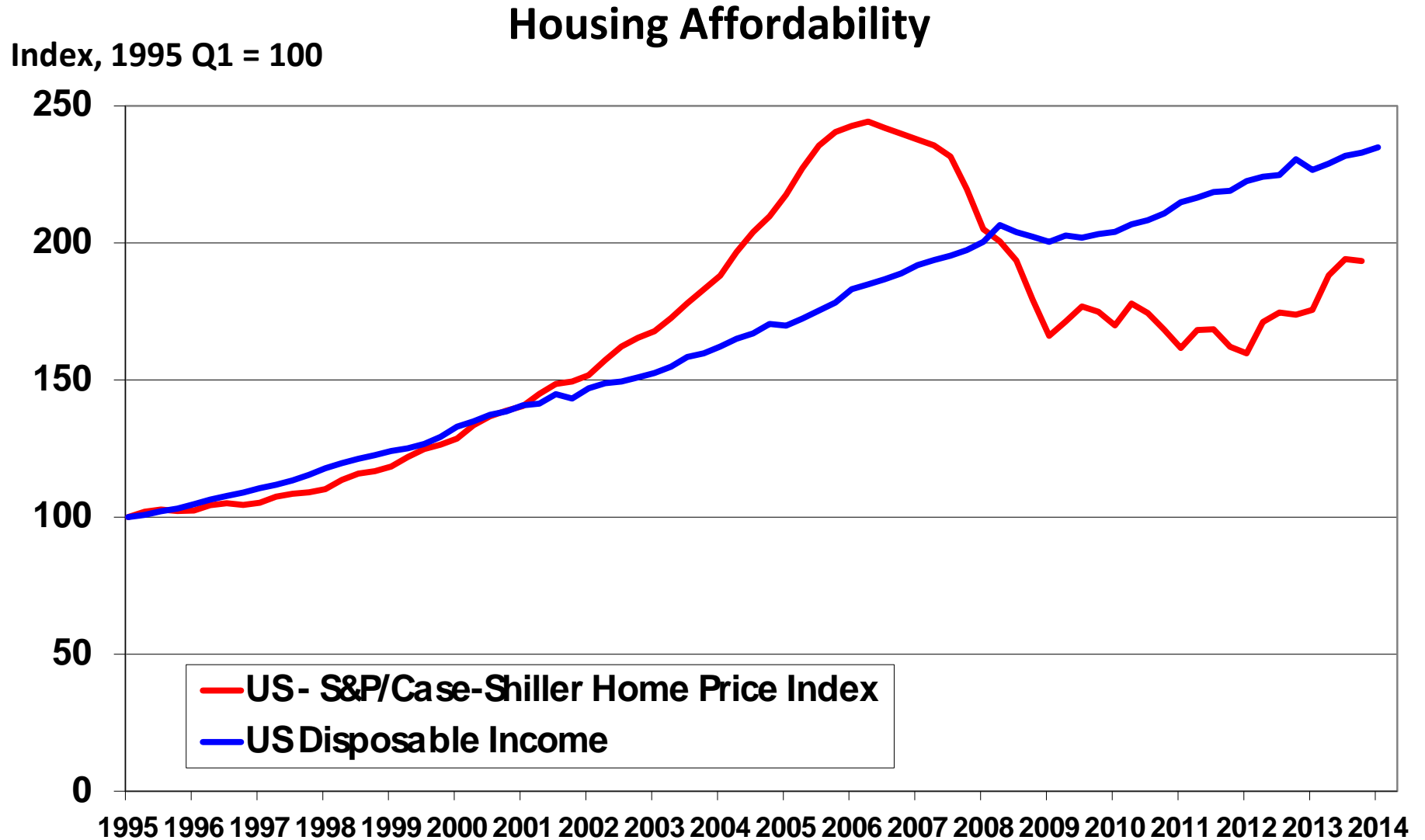
Housing Starts: 1 Unit
SAAR, Thous.Units



S&P/Case-Shiller Home Price Index: U.S.
SA, Q1-00=100



Despite rising prices, home ownership remains affordable

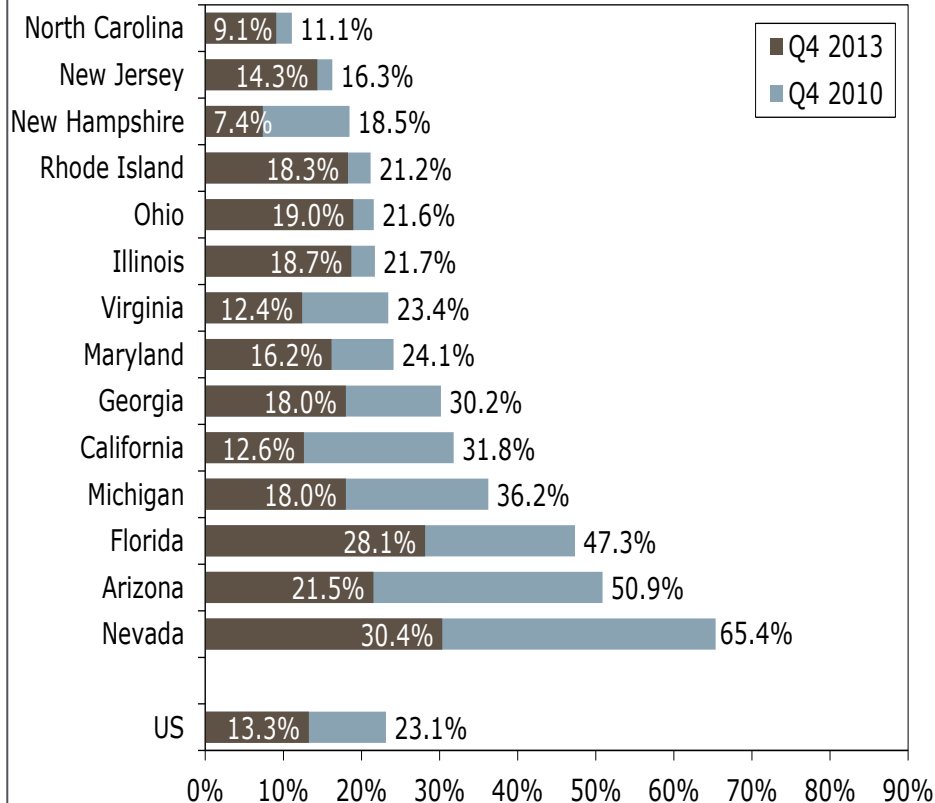


While rising prices pose a risk to home purchases, it will continue to help those current owners who are under water on their mortgages

- To the extent that negative equity has restricted labor mobility, rising home prices may help relax some of those constraints

Negative Equity by State

Percent of Mortgages Outstanding



Source: CoreLogic and Wells Fargo Securities, LLC

LIGHT VEHICLE SALES BY STATE

	2013	% Change 2010 - 2013
1 CALIFORNIA	1,713,829	55%
2 TEXAS	1,424,648	56%
3 FLORIDA	1,101,613	36%
4 NEW YORK	929,679	24%
5 OKLAHOMA	699,555	7%
6 PENNSYLVANIA	622,954	23%
7 ILLINOIS	612,287	24%
8 OHIO	571,719	31%
9 NEW JERSEY	546,205	18%
10 MICHIGAN	540,852	26%
11 GEORGIA	435,444	33%
12 NORTH CAROLINA	402,380	33%
13 VIRGINIA	375,649	24%
14 ARIZONA	356,536	64%
15 MASSACHUSETTS	333,012	24%

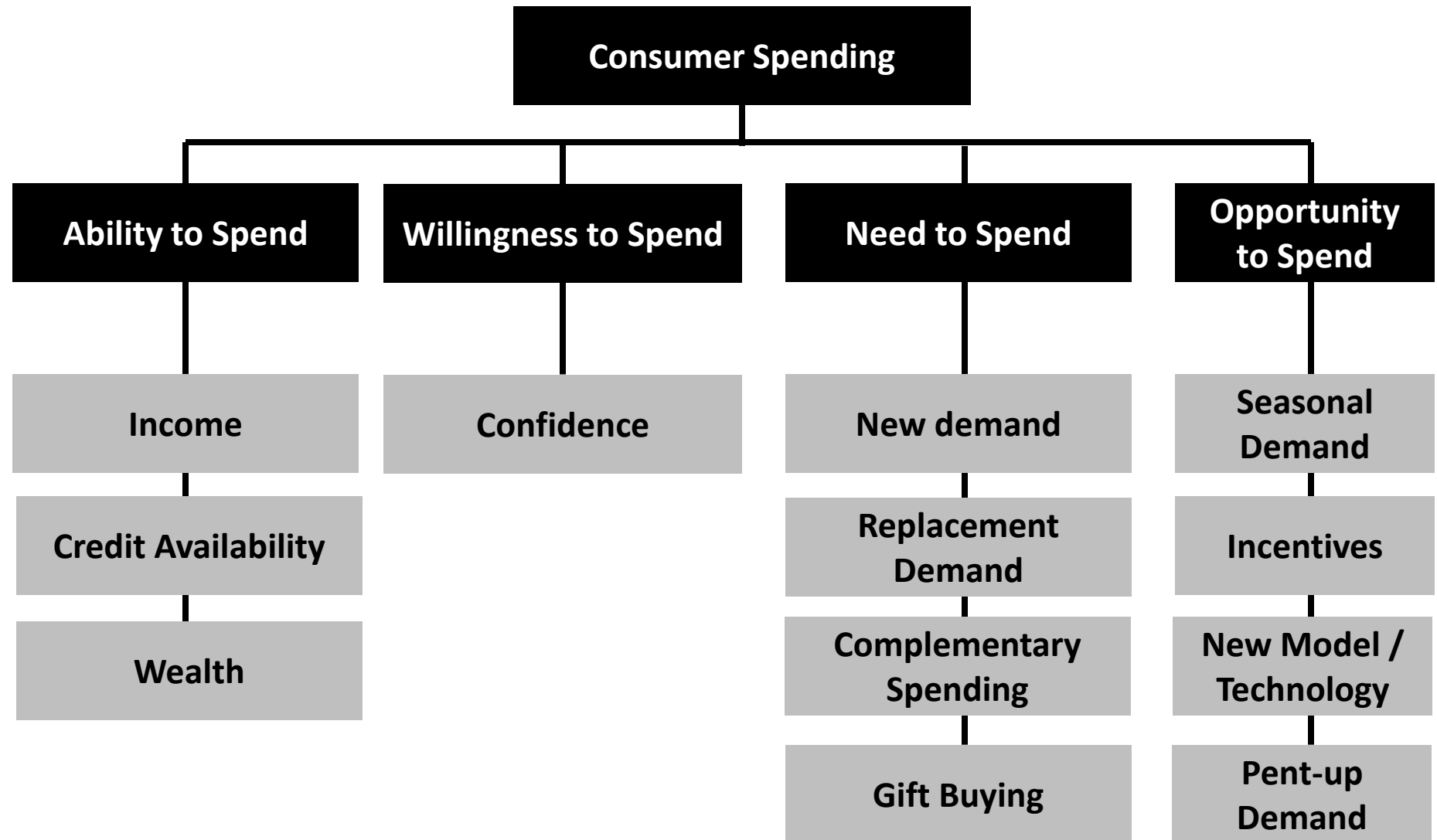
TOTAL LIGHT VEHICLE SALES 15,402,924

TOP 15 AS A % OF TOTAL 69.2%

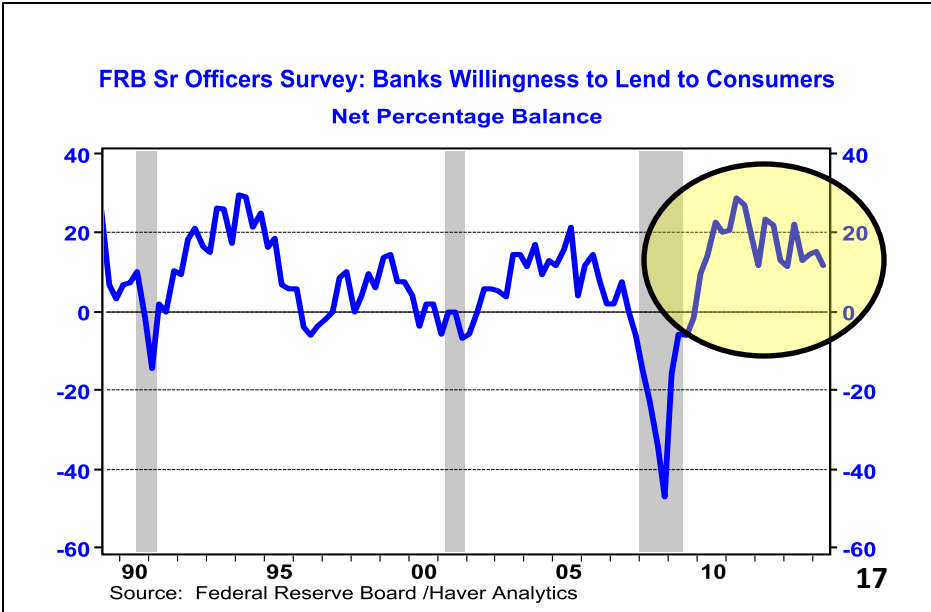
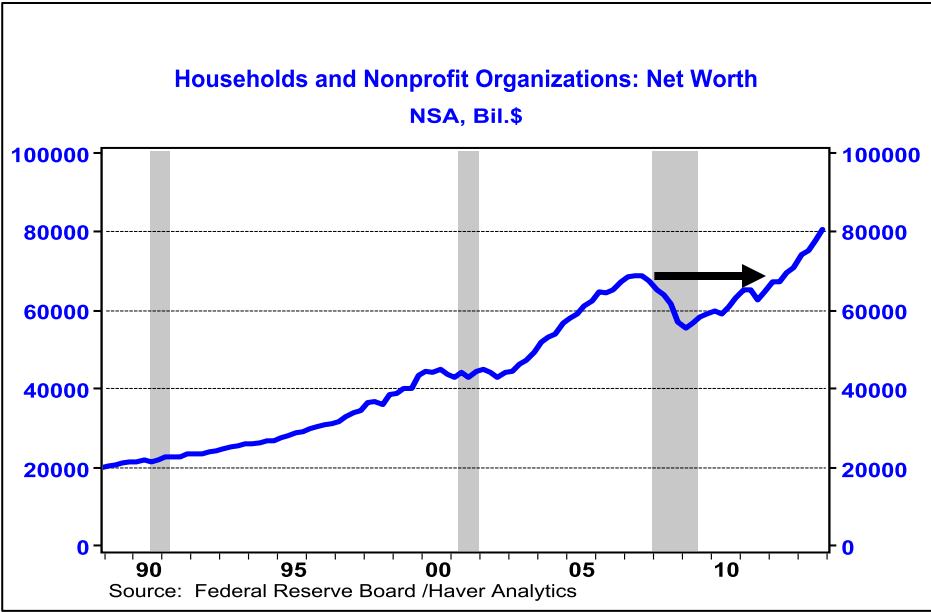
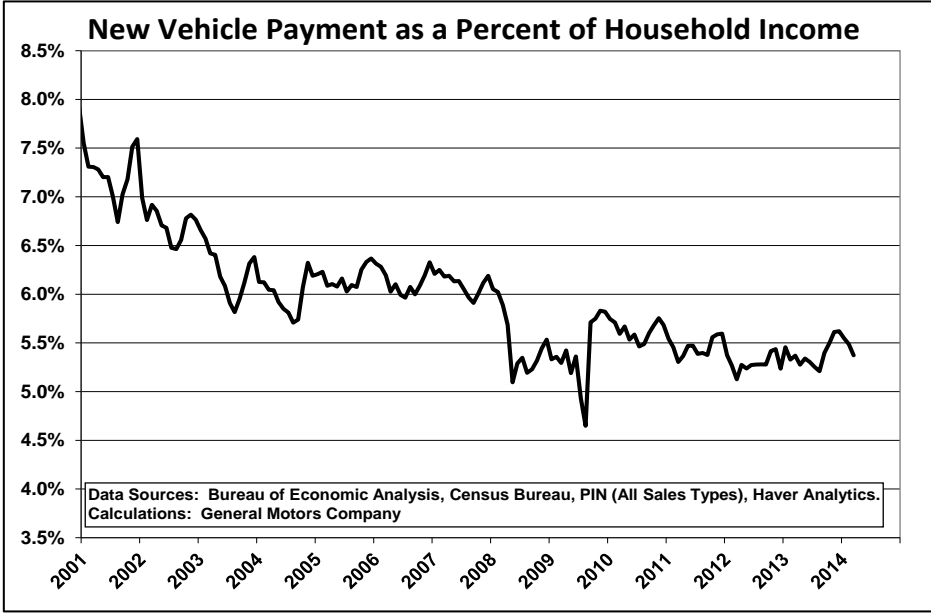
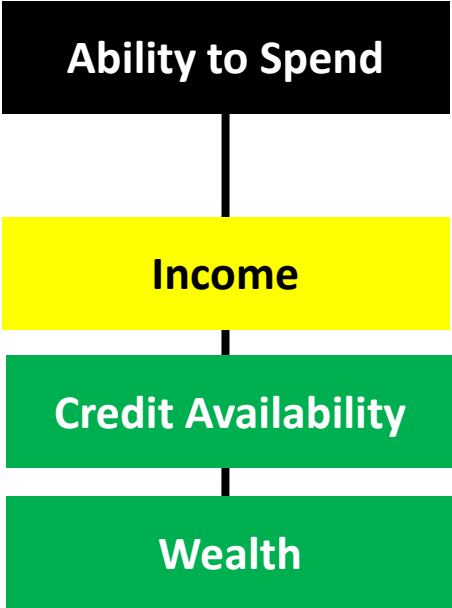
Red text denotes states with high negative equity

Source: Polk; Calculations: General Motors Company

Expanded Katona Paradigm for Explaining Consumer Spending



Households' Ability to Spend strongly supported by favorable credit conditions and rising household wealth, while income gains have been generally modest

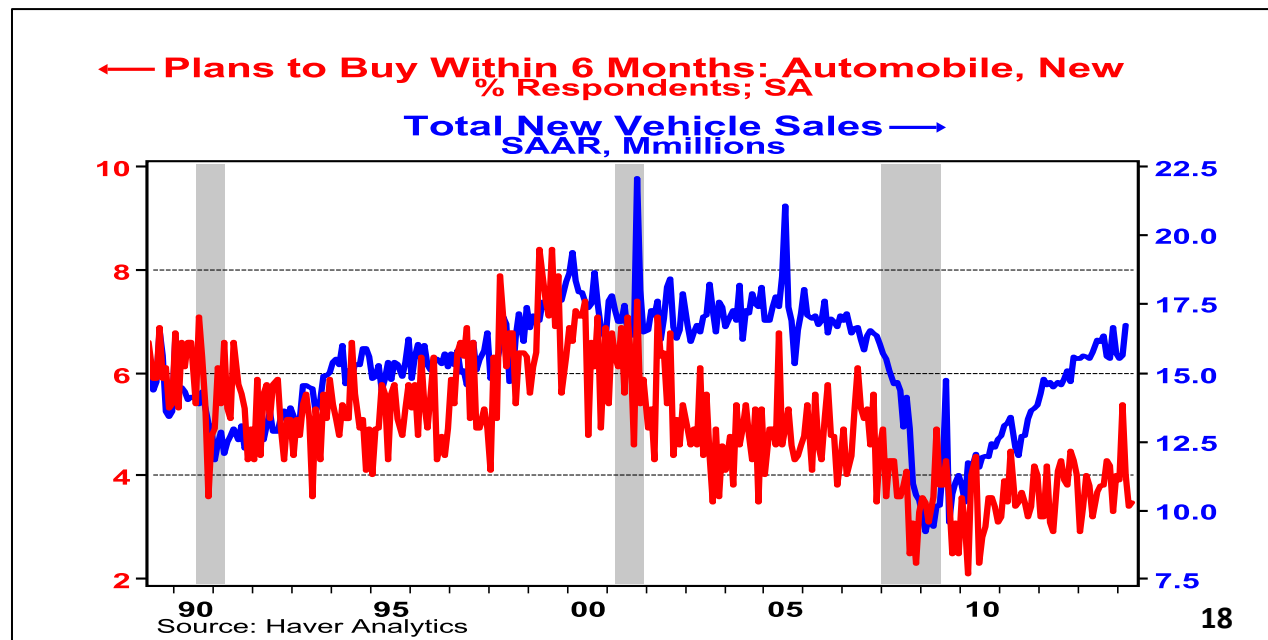
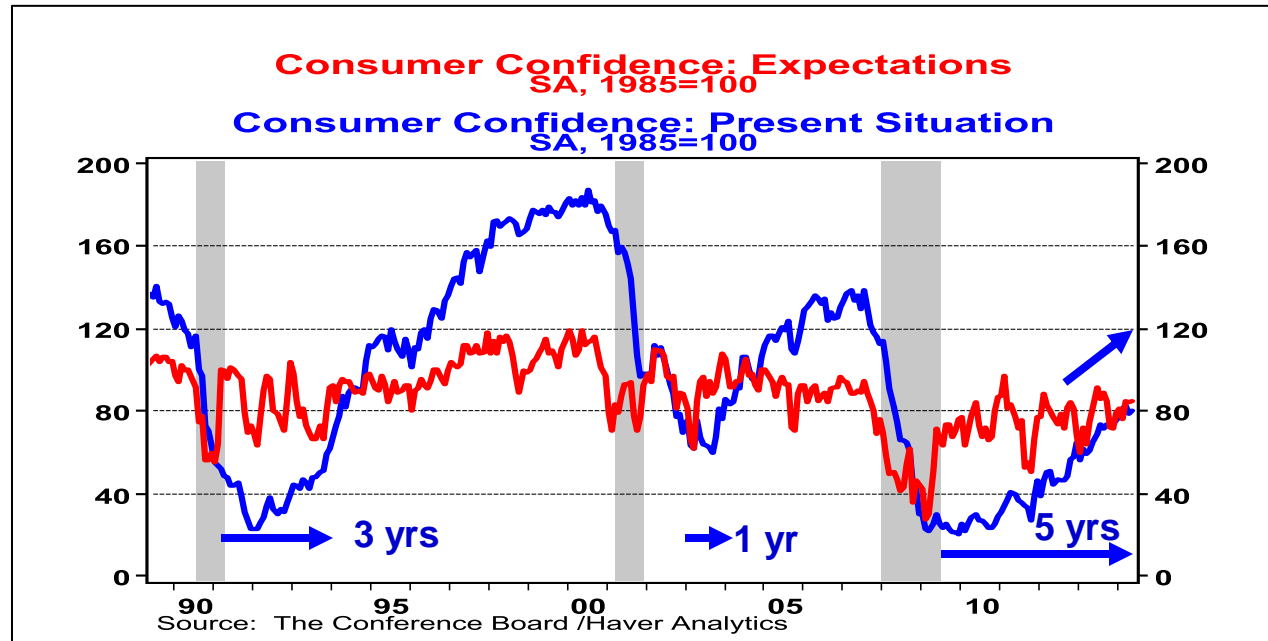


Consumer Confidence still has upside in this cycle

Willingness to Spend

Confidence

- In the current cycle, it has taken longer for households to feel better about the present situation relative to future conditions
- Further upside regarding the present situation should favorably spill over into improving conditions for new vehicle purchases



On net, Need to Spend is favorable to the vehicle sales outlook

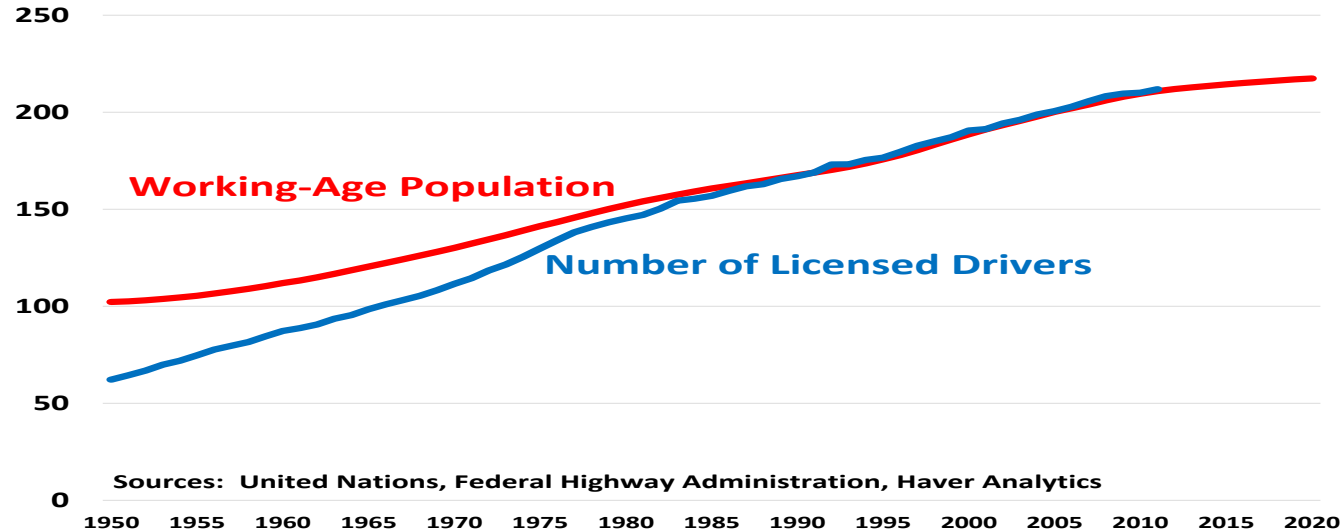
Need to Spend

New demand

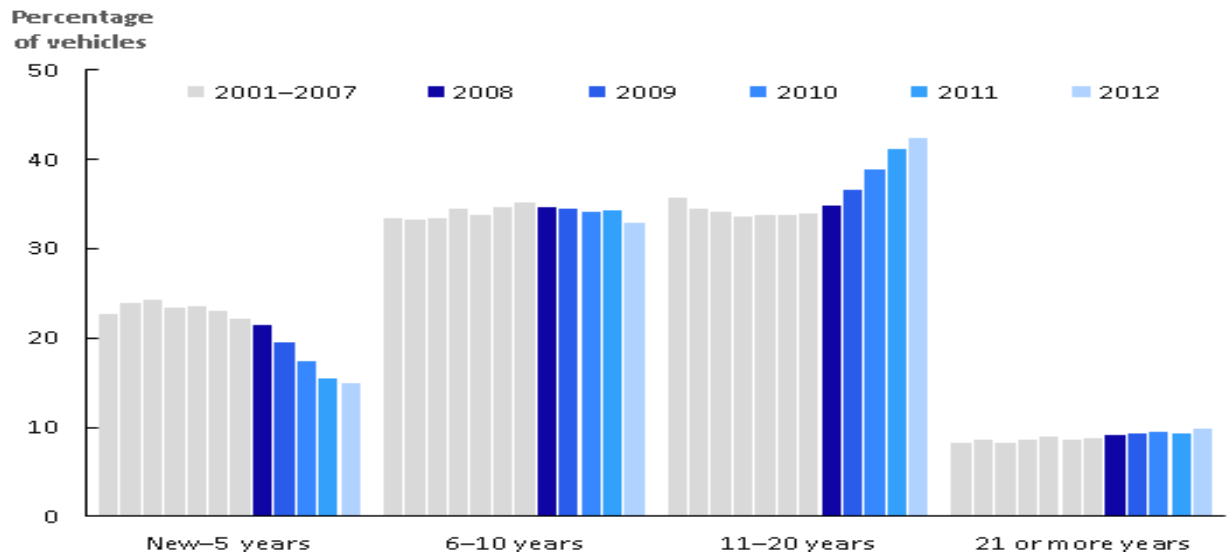
**Replacement
Demand**

- Rising working-age population supports growth in new licensed drivers
- Age of vehicle parc supports Need to Spend; albeit, some of the increase could be structural
- Given current slack in the labor market, further declines in the unemployment rate could likely support cyclical scrappage

Working-Age Population versus Number of Licensed Drivers
Millions

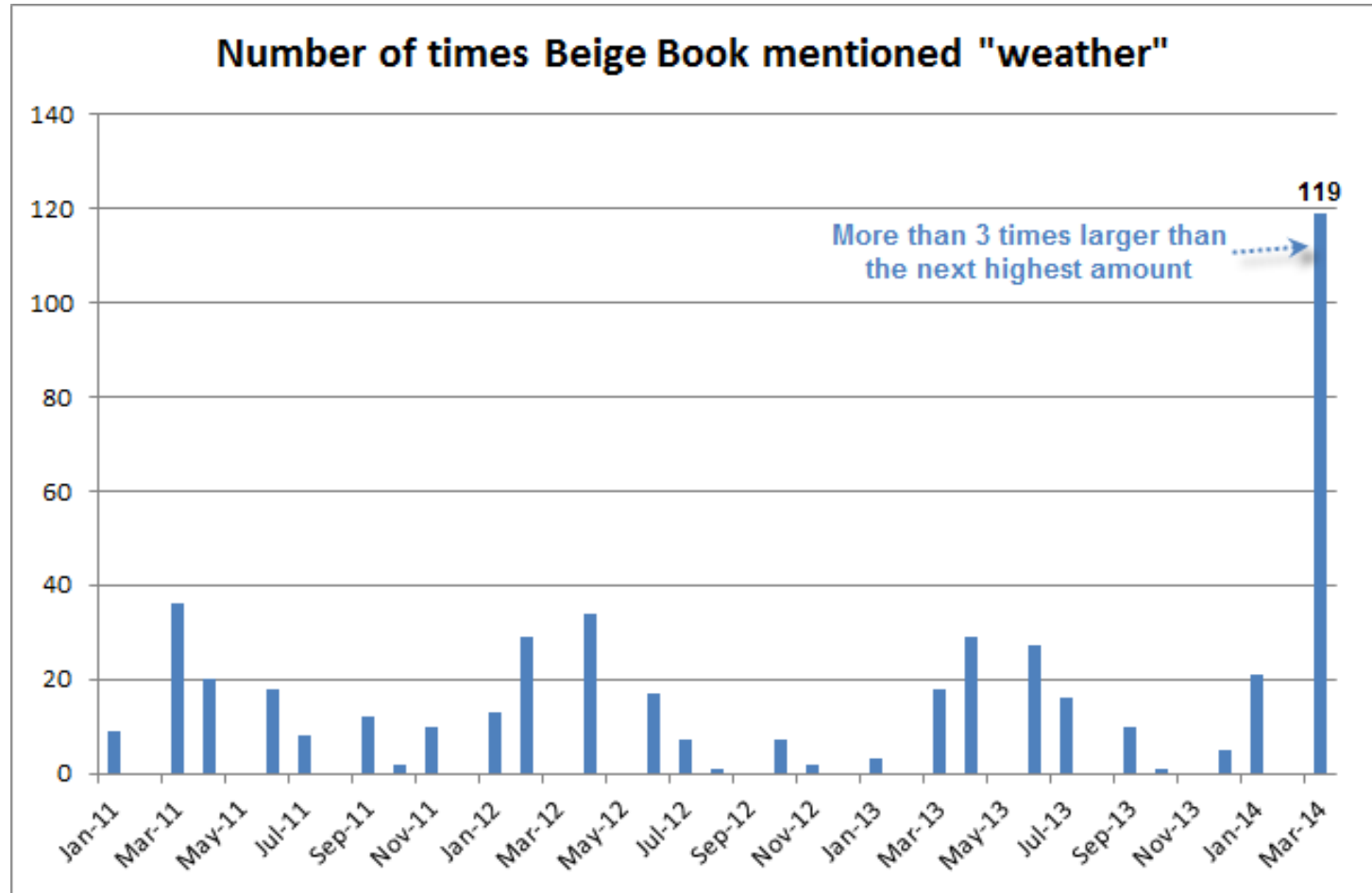


Share of vehicles, by age, 2001–2012



Source: U.S. Bureau of Labor Statistics.

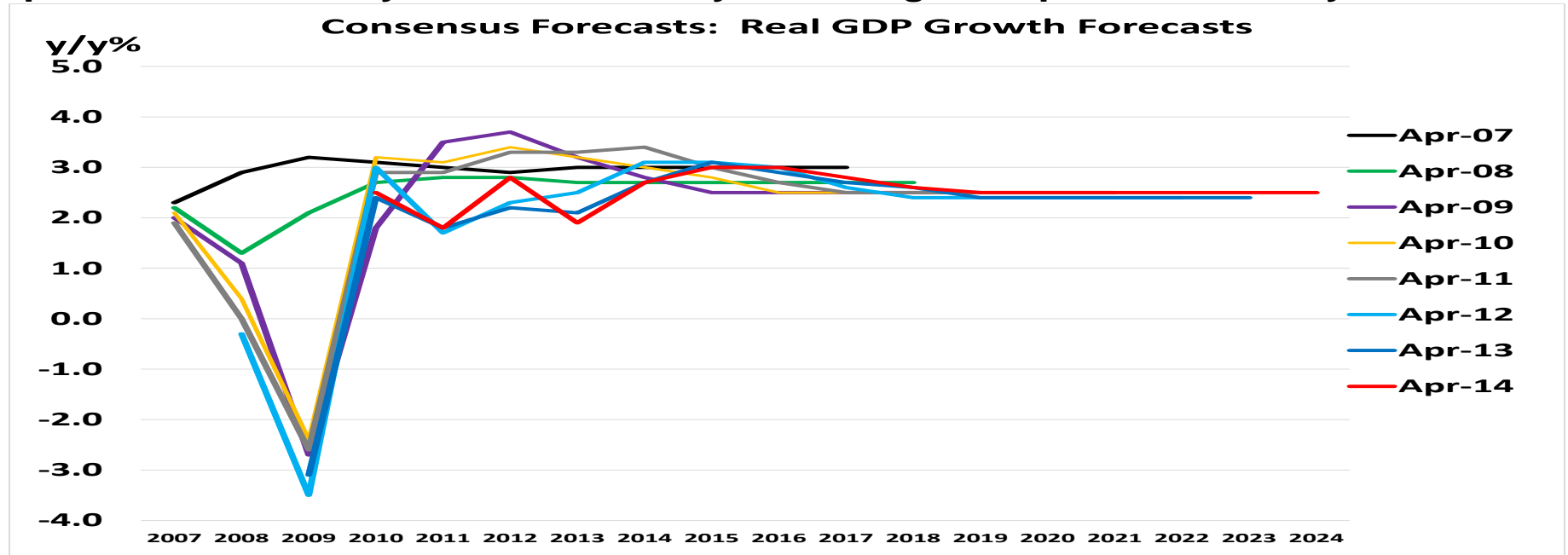
The weather was mentioned 119 times in the March 5, 2014 release of the Beige Book



Sources: Federal Reserve, FOREX.com

* Likely provides a better explanation of near-term developments rather than longer term drivers of vehicle sales

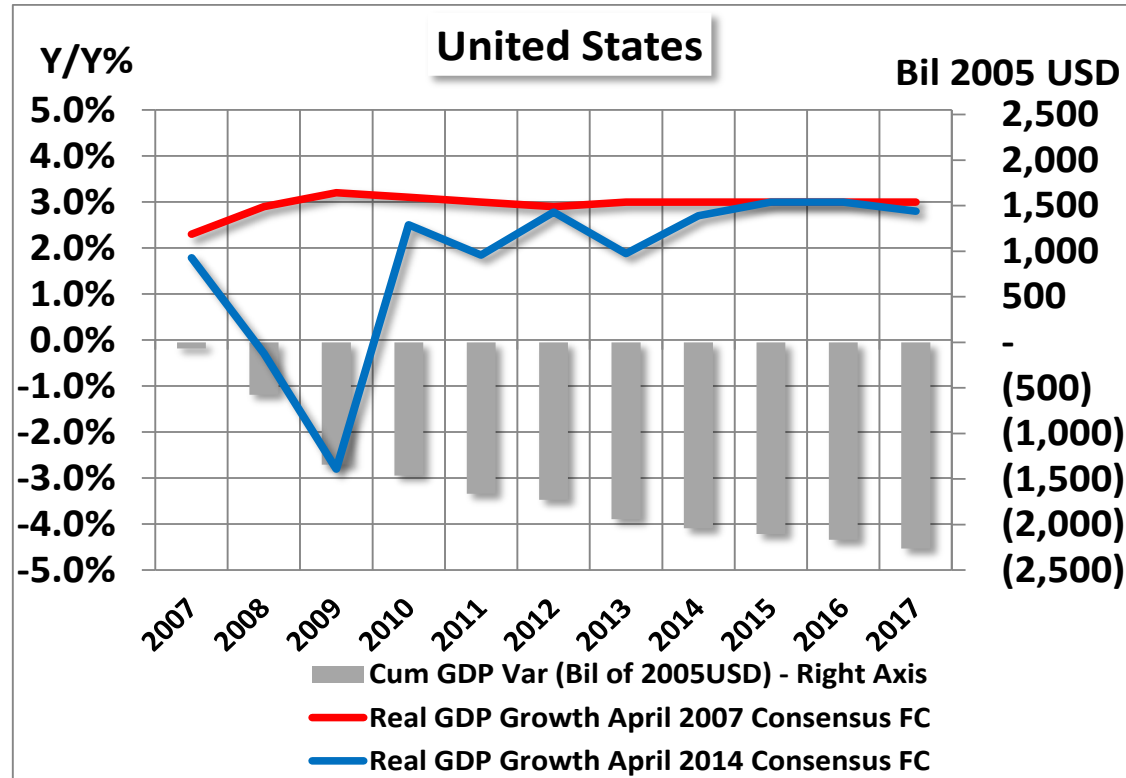
Consensus long-term US real GDP growth outlook has been downgraded; albeit, the 2015-17 economic forecast surveyed in April 2014 reflects a gradual return to optimism since the years immediately following the April 2007 survey



United States: Real GDP Growth																		
Date of Consensus Forecast	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Apr-07	2.3	2.9	3.2	3.1	3.0	2.9	3.0	3.0	3.0	3.0	3.0							
Apr-08	2.2	1.3	2.1	2.7	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7						
Apr-09	2.0	1.1	-2.7	1.8	3.5	3.7	3.2	2.8	2.5	2.5	2.5	2.5	2.5					
Apr-10	2.1	0.4	-2.4	3.2	3.1	3.4	3.2	3.0	2.8	2.5	2.5	2.5	2.5	2.5				
Apr-11	1.9	0.0	-2.6	2.9	2.9	3.3	3.3	3.4	3.0	2.7	2.5	2.5	2.5	2.5	2.5			
Apr-12		-0.3	-3.5	3.0	1.7	2.3	2.5	3.1	3.1	3.0	2.6	2.4	2.4	2.4	2.4	2.4		
Apr-13			-3.1	2.4	1.8	2.2	2.1	2.7	3.1	2.9	2.7	2.6	2.4	2.4	2.4	2.4	2.4	
Apr-14				2.5	1.8	2.8	1.9	2.7	3.0	3.0	2.8	2.6	2.5	2.5	2.5	2.5	2.5	2.5

The downgrading of the real GDP growth outlook from the April 2007 Consensus Forecast to the April 2014 Consensus Forecast results in a cumulative loss of real GDP of nearly USD2.3 trillion from 2007 to 2017

- Absent “catch-up” growth, short-term economic risks can have long-term permanent negative consequences on real GDP
- “Loss” of real GDP reflects, in part, significant pent-up demand yet to be released

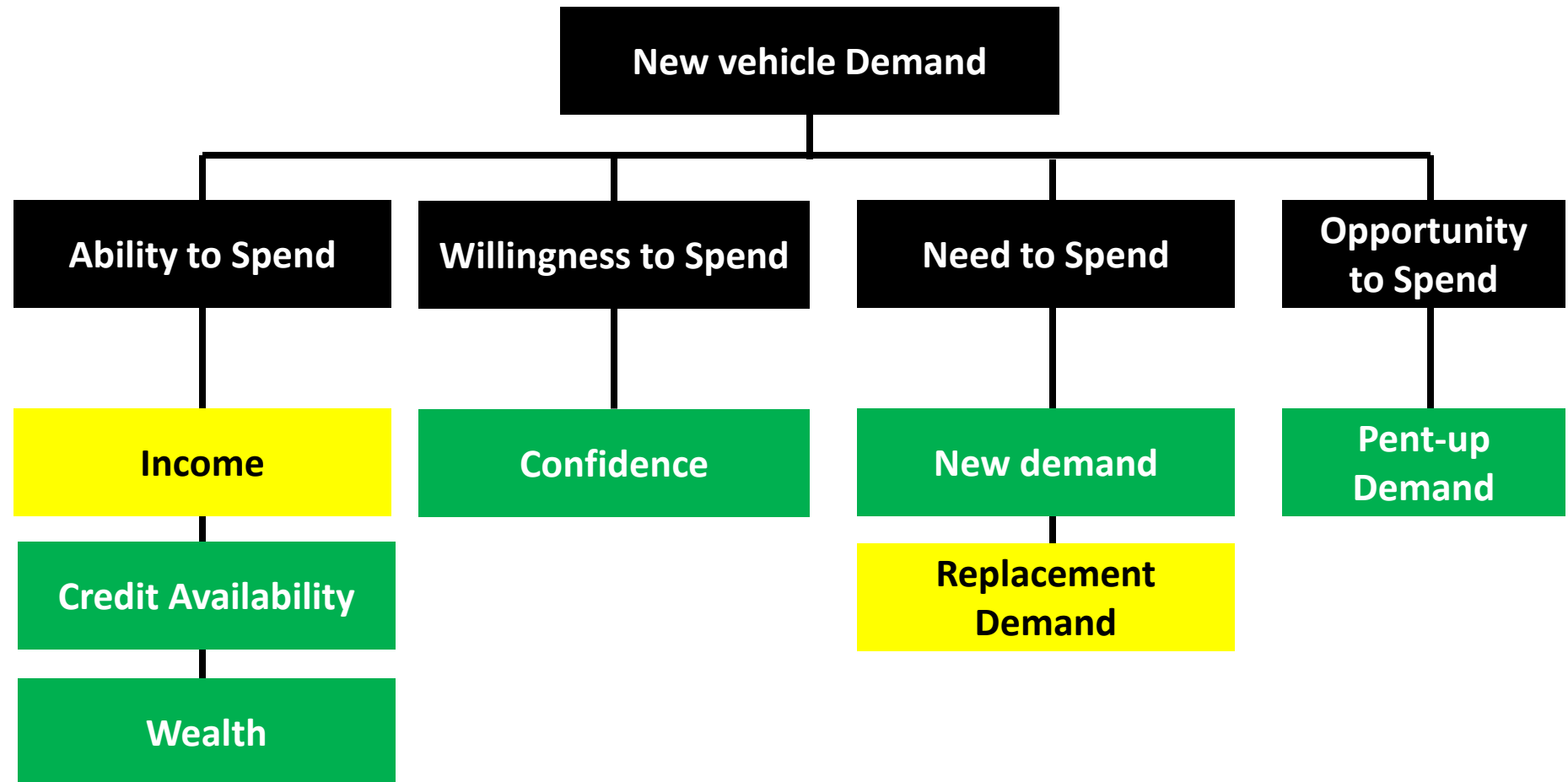


	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Real GDP Growth April 2007 CF - Left Axis	2.3%	2.9%	3.2%	3.1%	3.0%	2.9%	3.0%	3.0%	3.0%	3.0%	3.0%
Real GDP Growth April 2014 CF - Left Axis	1.8%	-0.3%	-2.8%	2.5%	1.8%	2.8%	1.9%	2.7%	3.0%	3.0%	2.8%
Cum GDP Var (Bil of 2005USD) - Right Axis	(69)	(576)	(1,342)	(1,463)	(1,663)	(1,728)	(1,940)	(2,041)	(2,103)	(2,166)	(2,262)

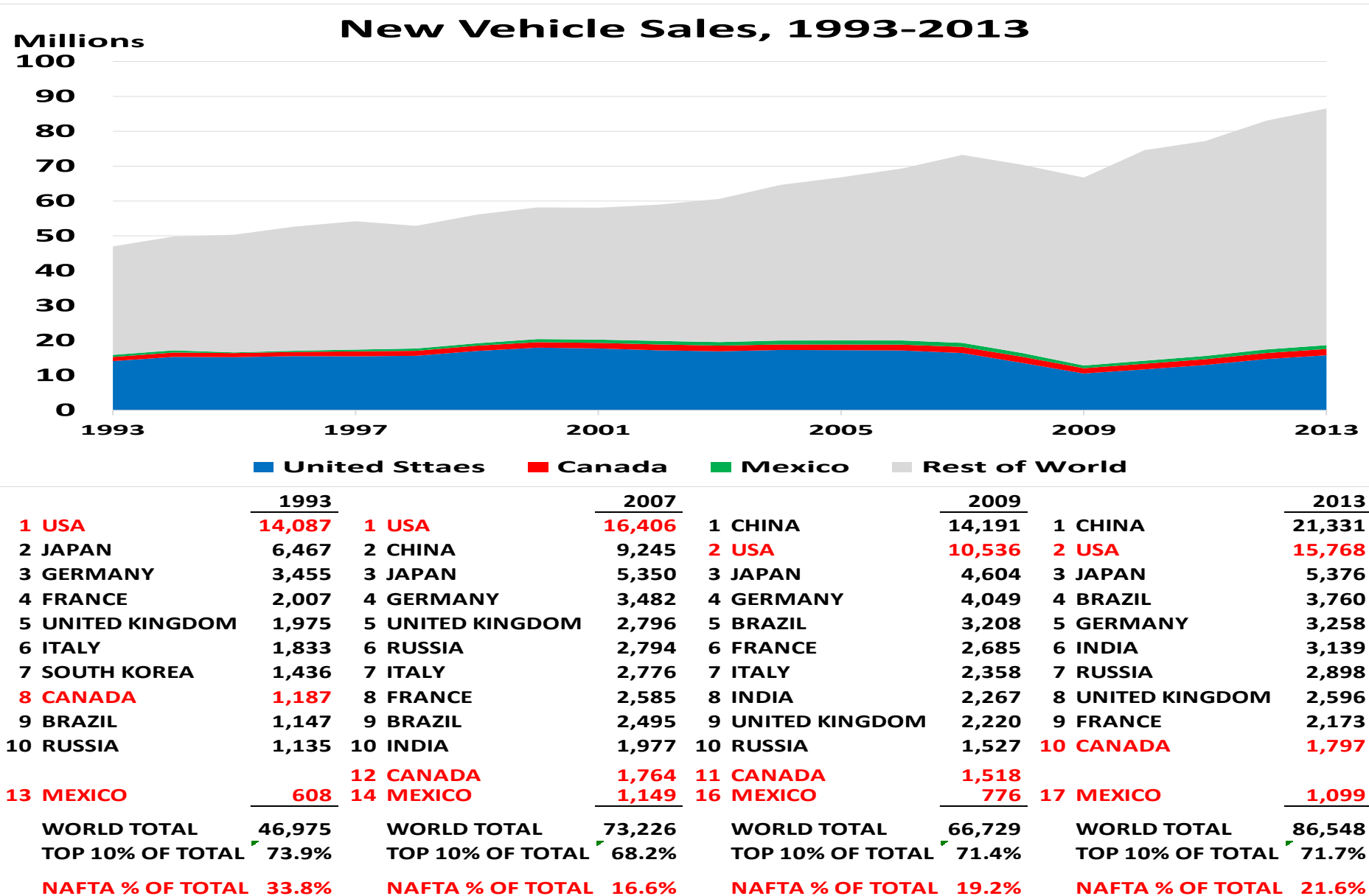
Sources: World Bank, Haver Analytics, Consensus Economics (various issues)

Calculations: General Motors Company

US New Vehicle Sales Outlook



New vehicle sales among NAFTA countries accounts for roughly one-fifth of global vehicle sales; upside potential remains



Source: Polk; Calculations: General Motors Company

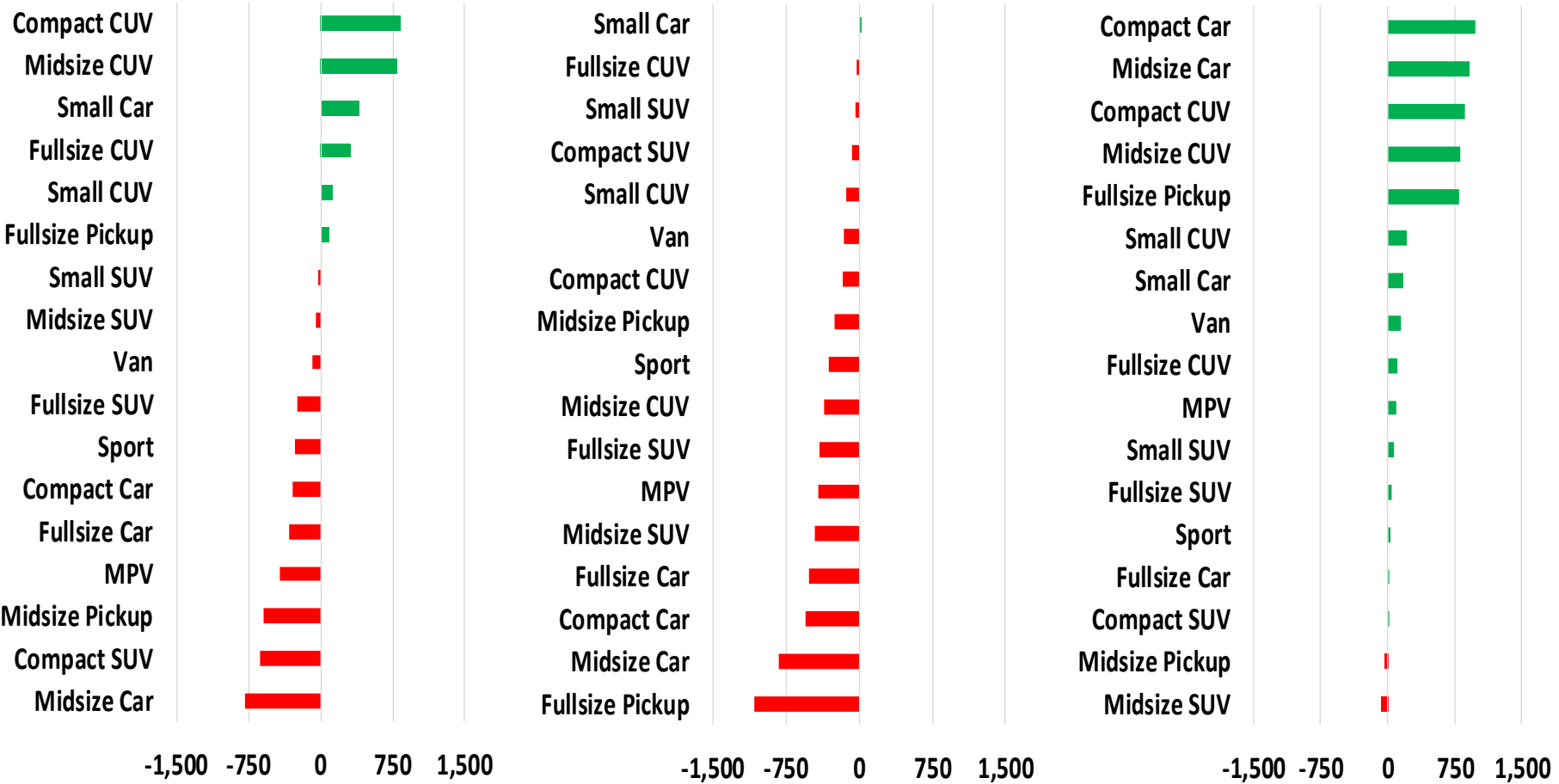
Segment shifts in 2009-13 reflect stronger preferences for increased fuel economy and affordability. Increase in Fullsize Pickups reflects partial recovery from the recession and gradually improving housing market

Segment Changes, Thousands

2000-07

2007-09

2009-13



Source: IHS Automotive; Calculations: General Motors Company

Summary

- **Global backdrop reflects significant downside risks**
- **US economy still transitioning from crisis**
 - Global risks are muting the impact of the Federal Reserve's tapering
 - Rising inflation expectations – to the extent they are sustained – likely supports rate hikes in 2015; policy rate normalization should be balanced against still-persistent labor market slack
 - Improving credit conditions and bank balance sheets could limit the impact of policy rate normalization on auto finance rates
 - Housing market still correcting from past imbalances; with the sector's outlook biased toward the upside, its strong multiplier effect is expected to provide underlying support to the broader economy
- **US vehicle demand fundamentals are generally favorable; absent a negative shock, economic drivers point toward a sideways to upward new vehicle sales forecast trajectory**
 - Consensus Forecasts reflect gradually improving medium-term outlook
 - Improving fundamentals should help release pent-up demand

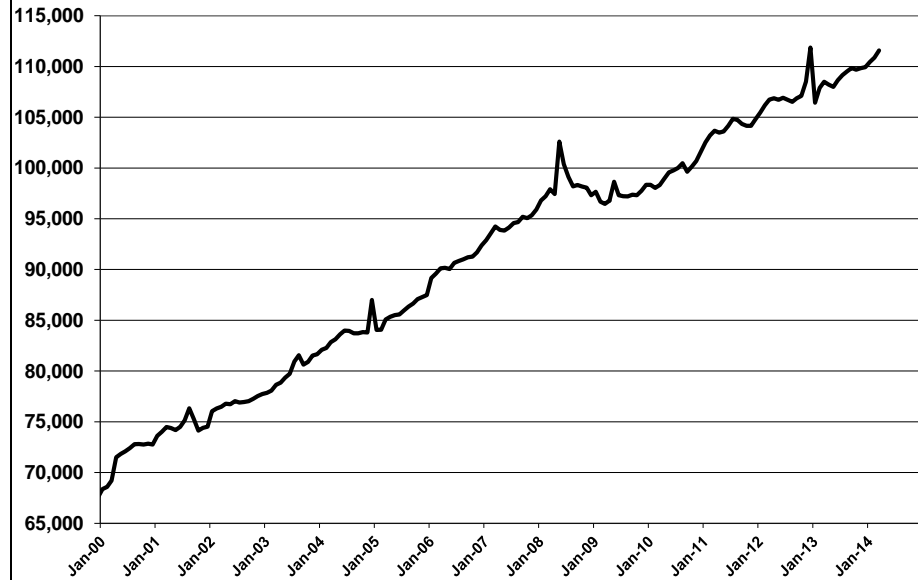
Thank You for Your Attention!



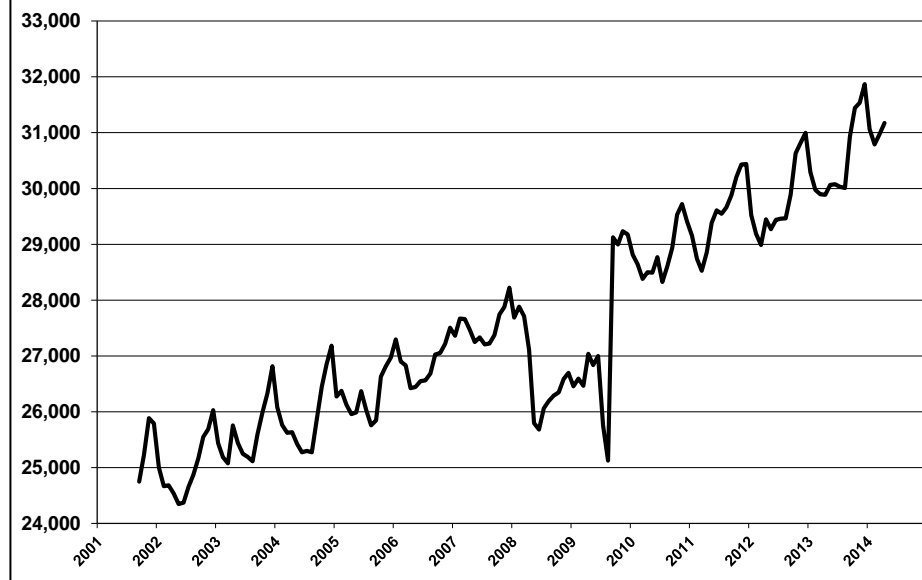
Back-up Chart

Components of New Vehicle Payments as a % of HH Income

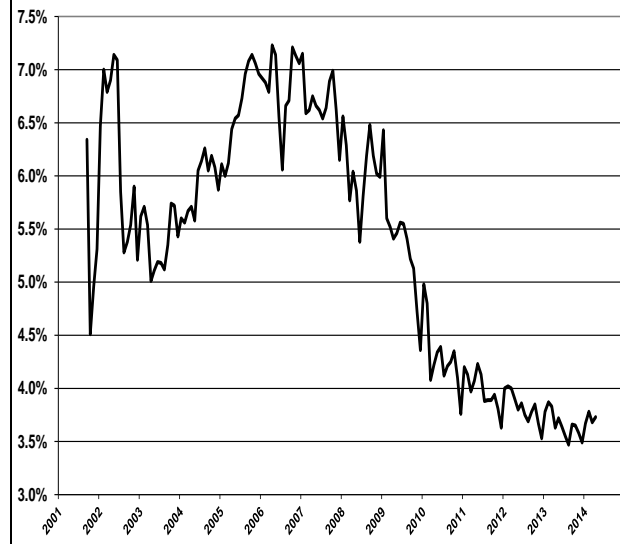
Disposable Income per Household



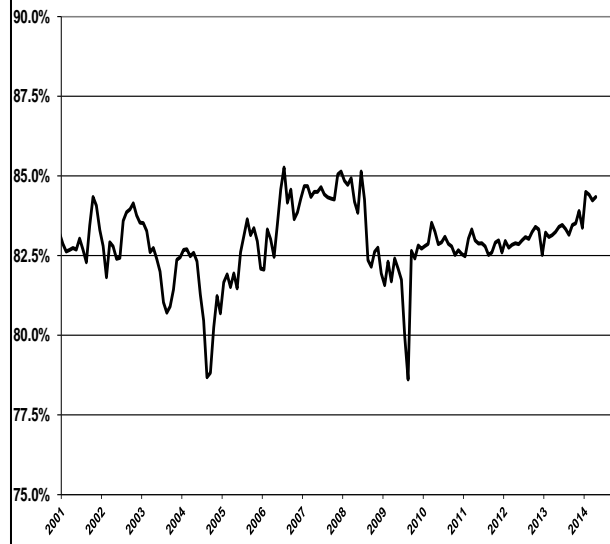
Vehicle Price Less Customer Cash Rebate



Finance Rate



Percent Financed



Term

