

Analysis of Current and Forecasted Demand for Housing in North America

TIMBER MEASUREMENT SOCIETY

Central Meeting

April 9, 2015

Coeur d'Alene, Idaho

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Housing Overview

Factors Influencing Housing Demand

Housing Permits, Starts, and Completions

Existing and New House Sales

Construction Spending

Residential Remodeling

Economic

Demographics

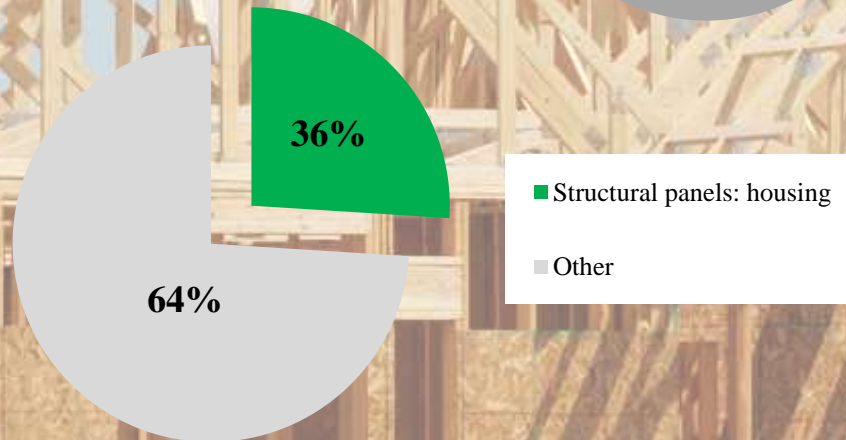
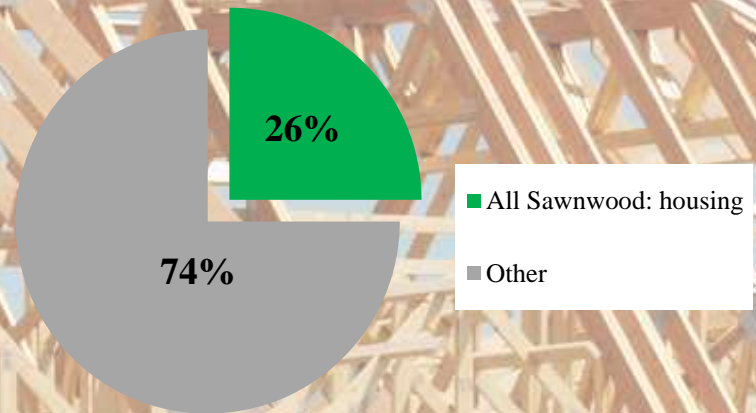
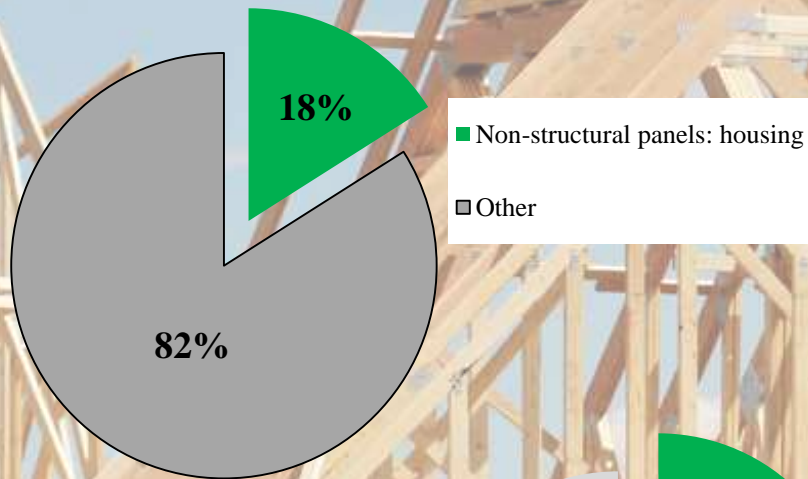
Projections

Threats

Conclusions

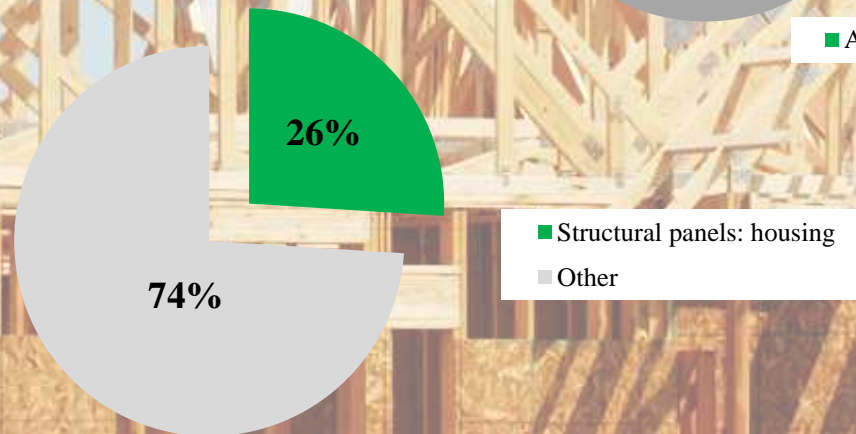
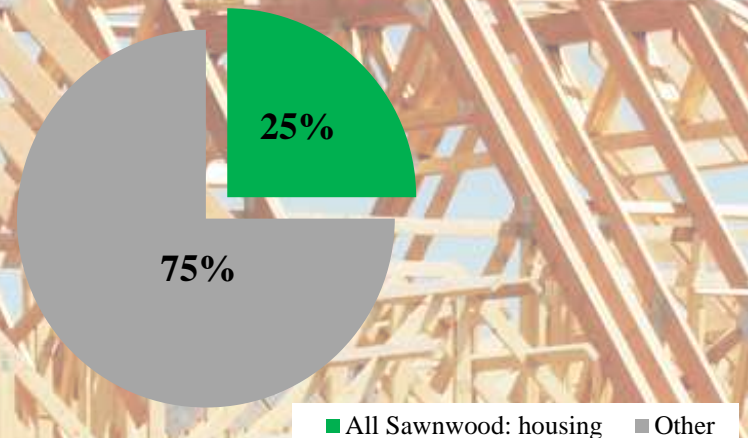
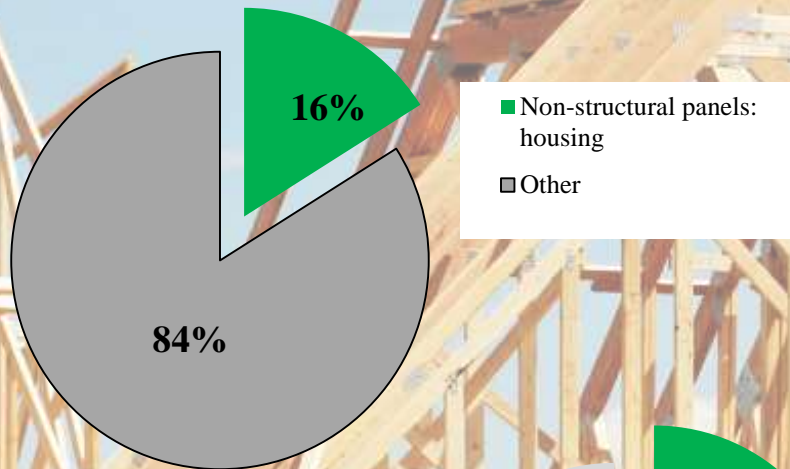
Wood Products Consumption

New Construction Wood Products Usage



Wood Products Consumption

Repair and Remodeling's Wood Products Usage

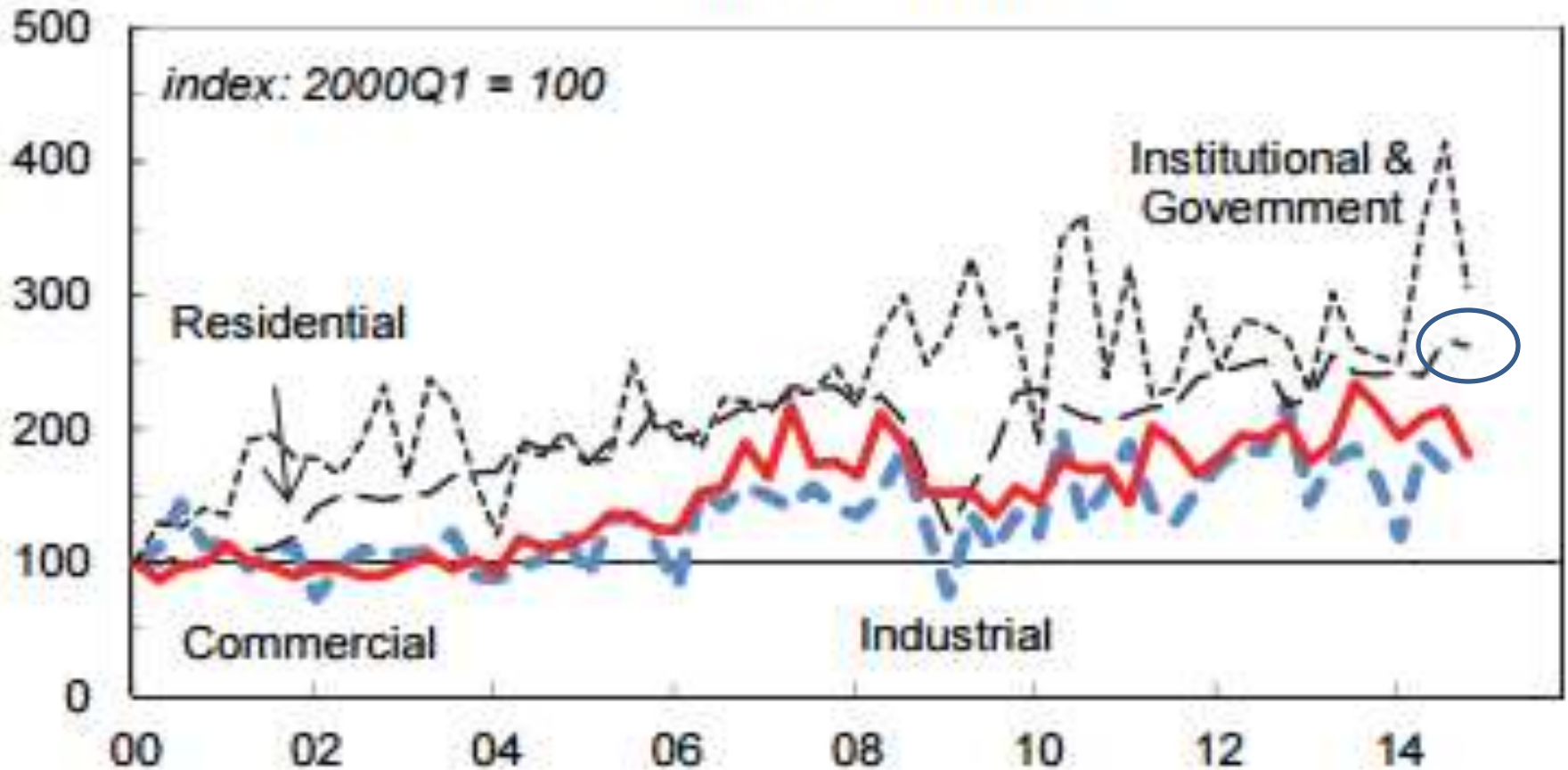


Canada: Housing



Canadian Housing

Building Permits



Source: Statistics Canada, Scotiabank Economics.

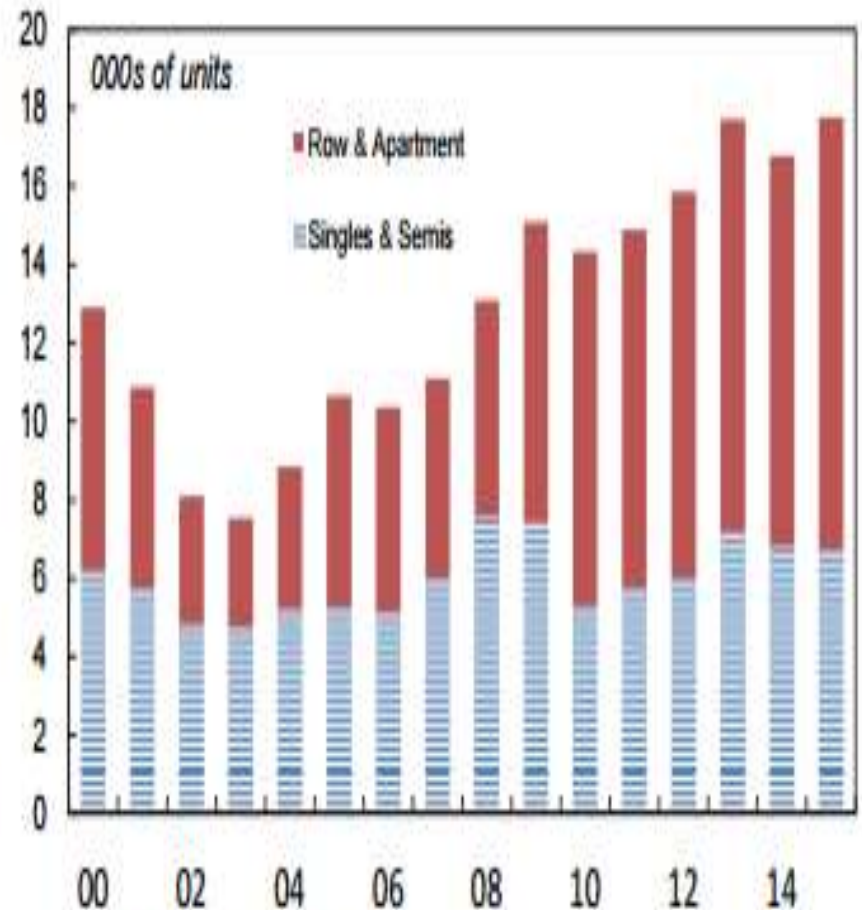
Canadian Housing

New Home Construction



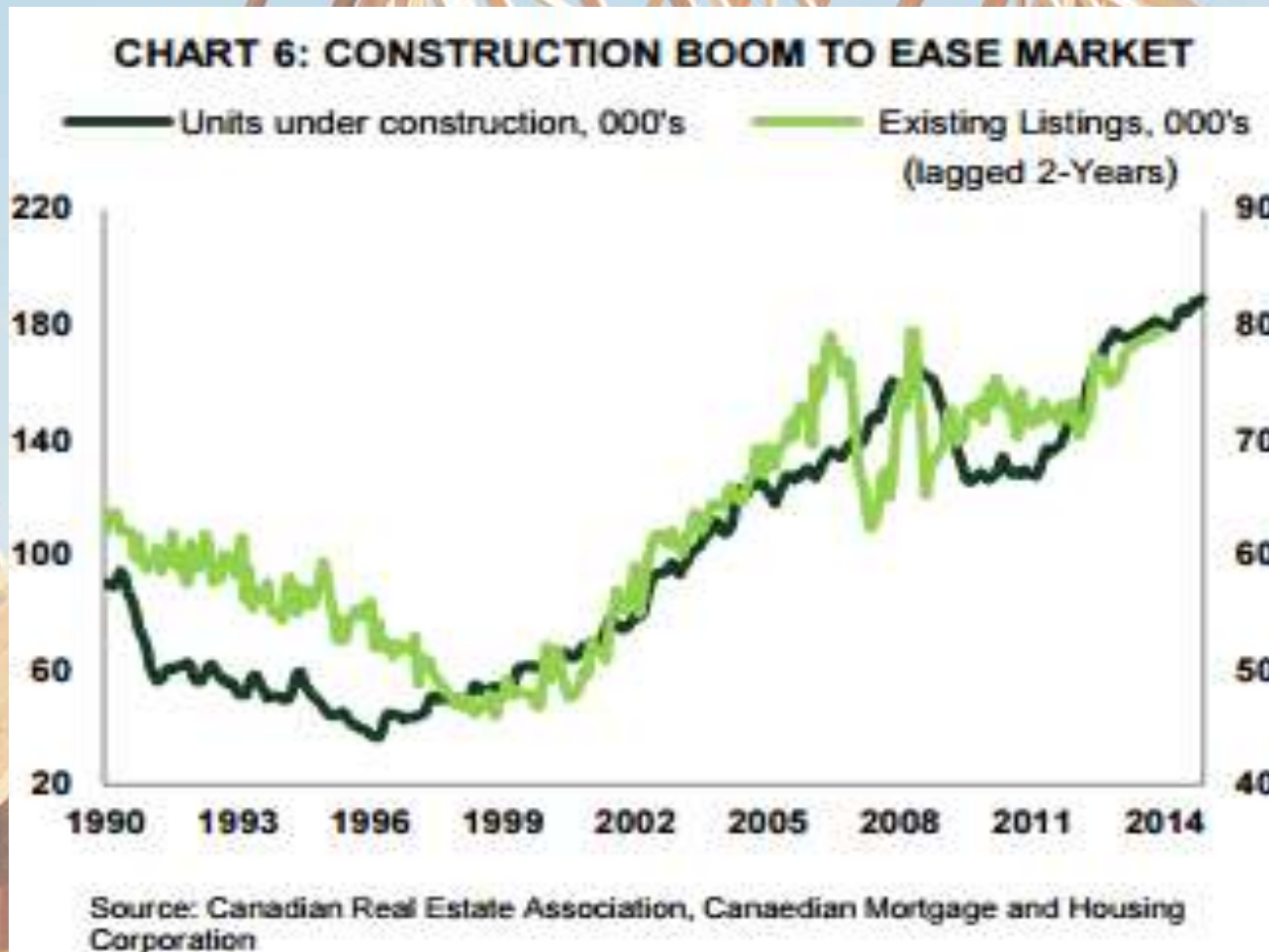
Source: CMHC, Statistics Canada, Scotiabank Economics.

New Home Inventory



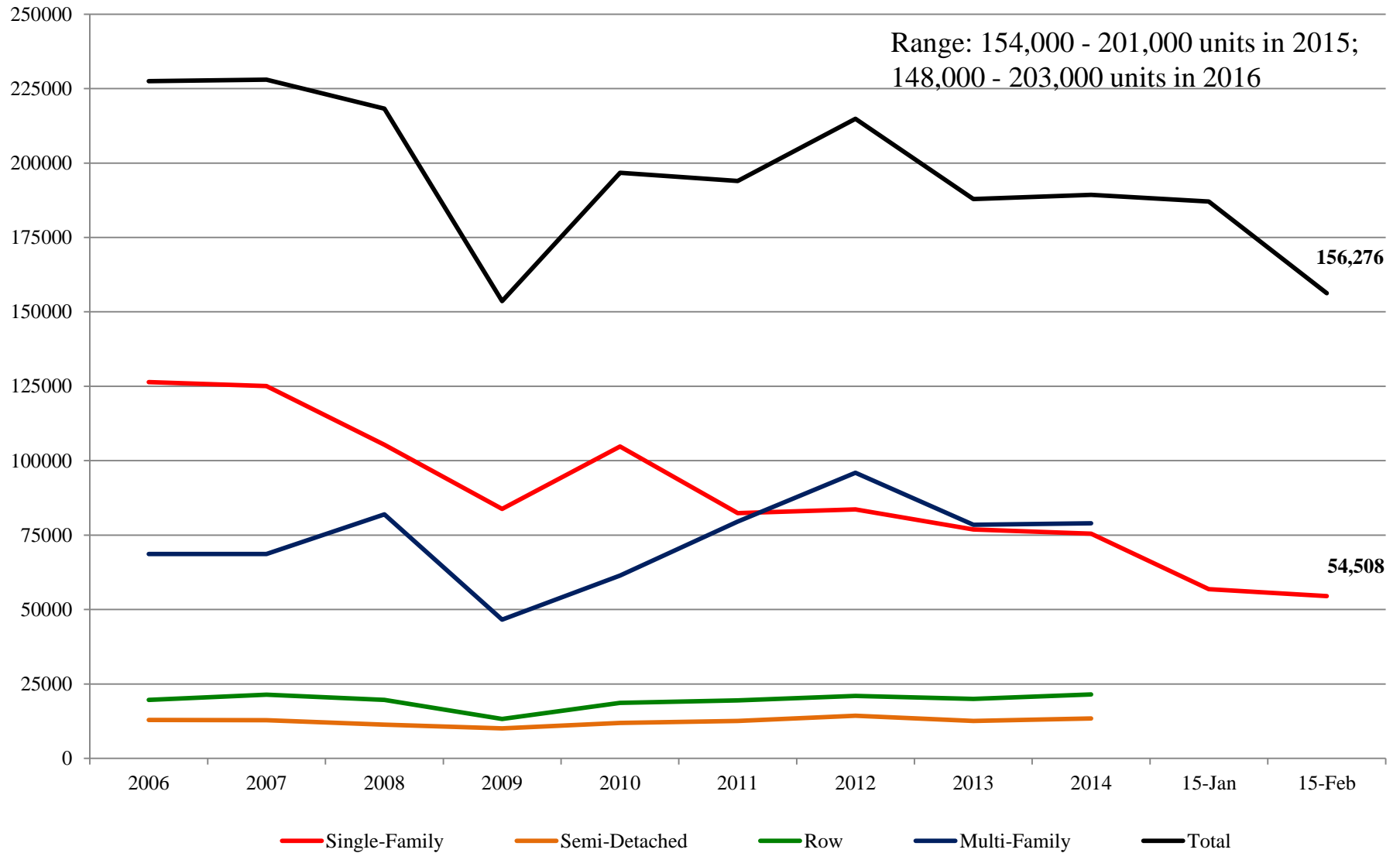
Source: CMHC, Scotiabank Economics.

Canadian Housing



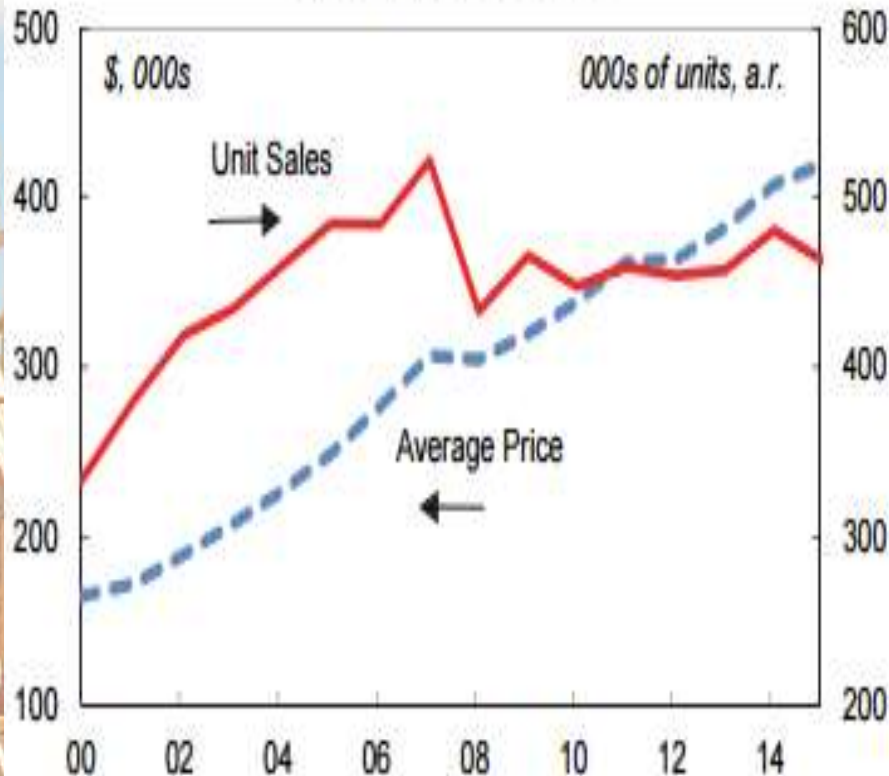
“...we continue to expect a moderation in the Canadian real estate market over 2015 and 2016.”

Canadian Housing Starts



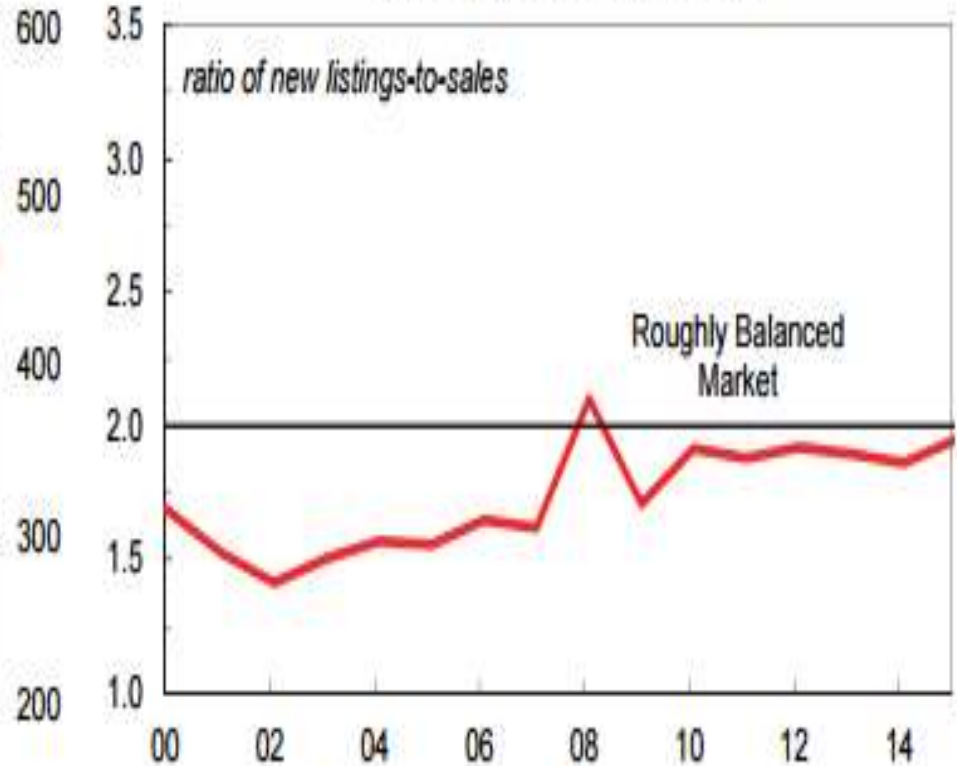
Canadian Housing

Existing Home Sales



Source: CREA, Scotiabank Economics.

Existing Home Inventory



Source: CREA, Scotiabank Economics.

“Canadian home sales and price trends are relatively stable, though tight supply and strong demand continue to fuel bigger price increases in a few high-priced markets. Low borrowing costs are maintaining affordability in the face of high home valuations.”

Canada: Housing Starts

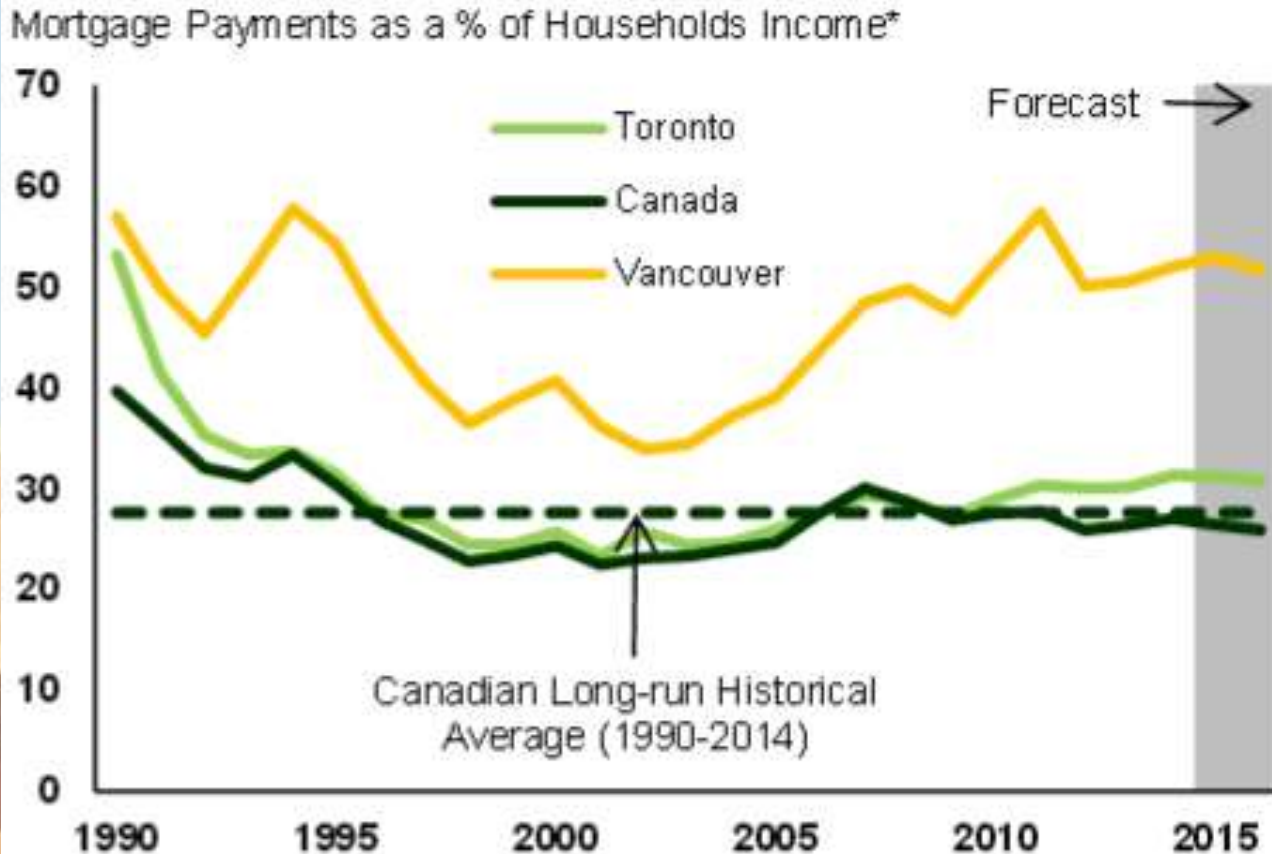
CHART 5: CANADIAN EXISTING HOME SALES
(thousands of units)



Source: Canadian Real Estate Association

Canada: Housing Affordability

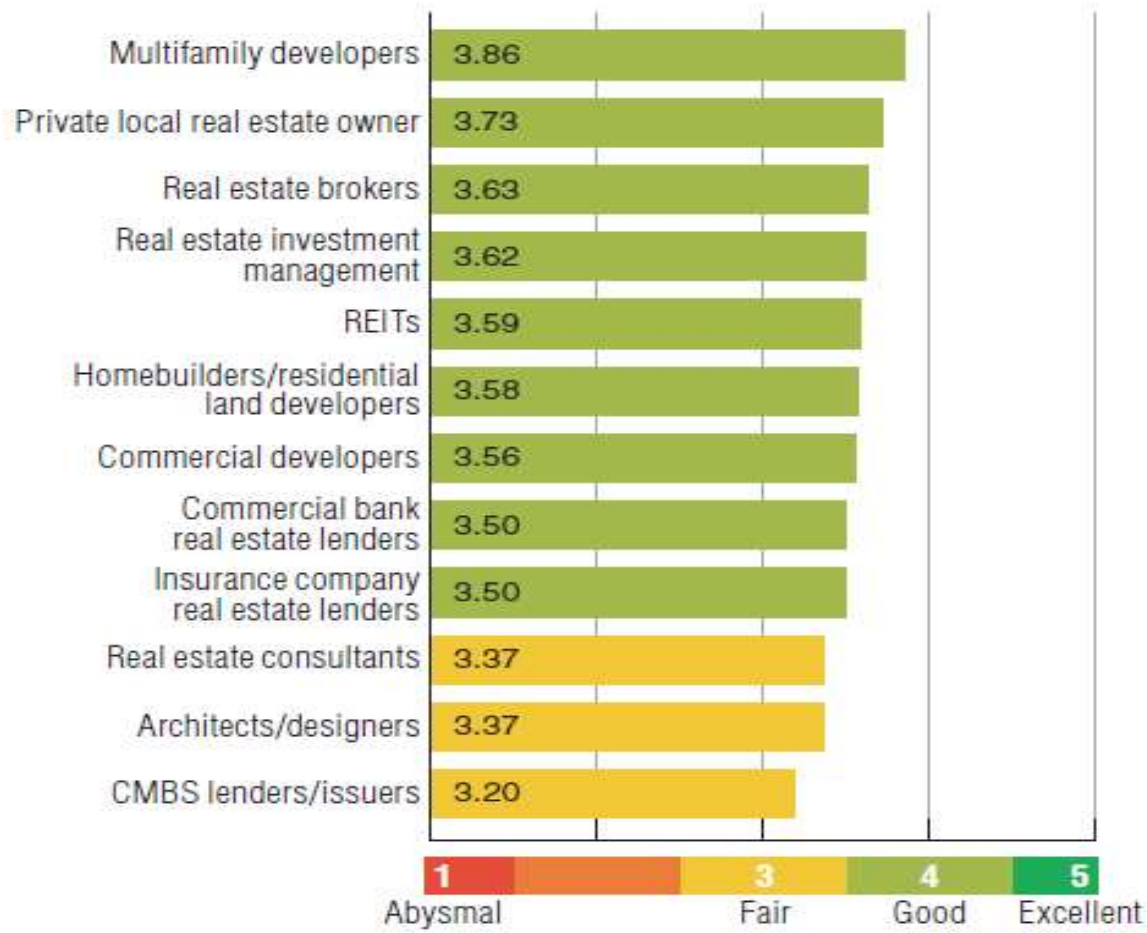
CHART 4: CANADIAN HOUSING AFFORDABILITY INDEX



Source: CREA, Statistics Canada. *Assuming average home price, 25% downpayment, 25 year amortization.

Canada: Housing Starts

Exhibit 5-1 Real Estate Business Prospects for 2015



Source: *Emerging Trends in Real Estate 2015* survey.

Note: Based on Canadian investors only.

United States Housing



North American Housing

Projecting Housing Demand

Housing units = Household formations plus housing units lost

2013: 425,000 household formations + 467,368 demolitions = 892,368 units

Actual production: 764.4 – 892.4 = **128,000 under build**

2014: 684,750 household formations + 450,500 demolitions = 1,135,250 units

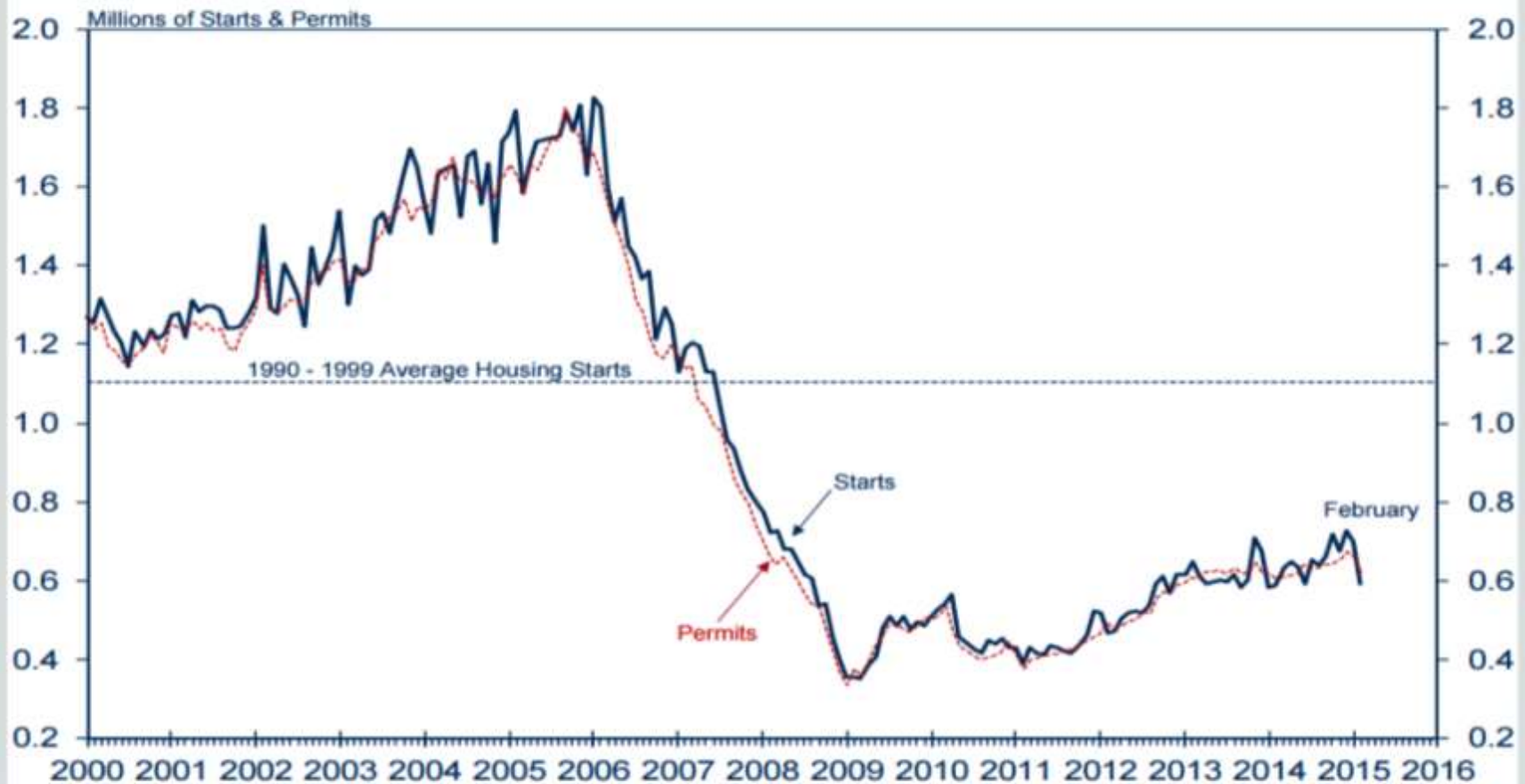
Actual production: 883.8 – 1,135 = **251,200 under build**

United States Housing Forecasts: 2015

(000s)	Single-Family Starts	Multi-Family Starts	Total Starts
APA - The Engineered Wood Association	755	455	1,210
Core Logic	743	381	1,124
Fannie Mae	783	388	1,171
Forest Economic Advisors	753	399	1,152
Goldman Sachs			1,166
Merrill Lynch			1,175
Metrostudy	730	370	1,100
MBA	728	380	1,108
NAHB	804	358	1,162
NAR	783	517	1,300
TD Economics			1,190
Wells Fargo	770	390	1,160
Zillow			1,113

United States Housing

Private Single-Family Housing Starts & Permits



United States Housing



- New Private Housing Units Authorized by Building Permits
- New Private Housing Units Authorized by Building Permits - In Structures with 1 Unit
- New Private Housing Units Authorized by Building Permits - In Structures with 5 Units



Shaded areas indicate US recessions - 2015 research.stlouisfed.org

United States Housing Permits



- New Private Housing Units Authorized by Building Permits
- New Private Housing Units Authorized by Building Permits - In Structures with 1 Unit
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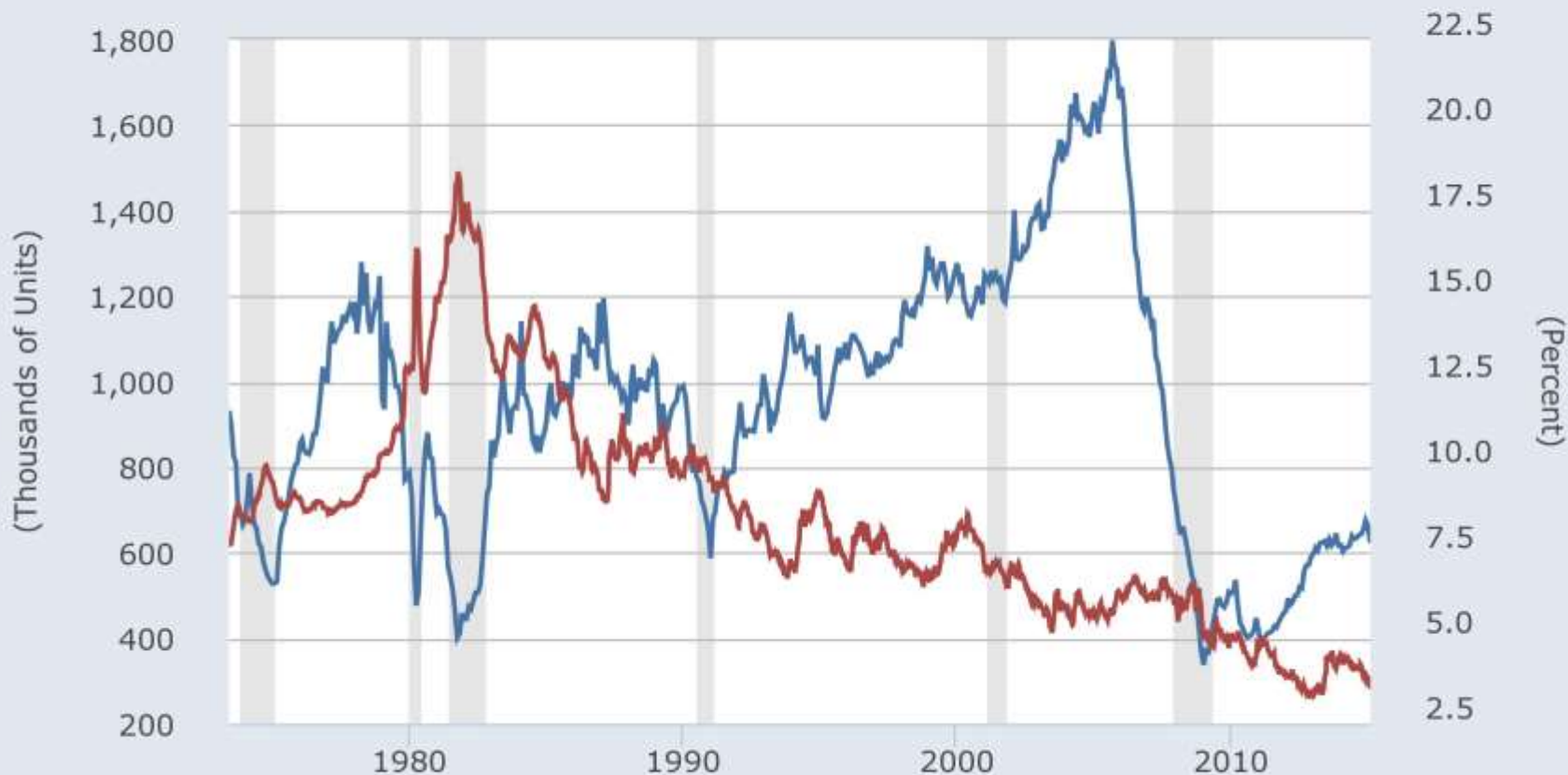


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United States Housing

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- New Private Housing Units Authorized by Building Permits - In Structures with 1 Unit (left)
- 30-Year Fixed Rate Mortgage Average in the United States© (right)



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United States Housing



- New Private Housing Units Authorized by Building Permits - In Structures with 5 Units (left)
- 30-Year Fixed Rate Mortgage Average in the United States© (right)



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United States Housing Starts



- Housing Starts: Total: New Privately Owned Housing Units Started
- Privately Owned Housing Starts: 1-Unit Structures
- Privately Owned Housing Starts: 5-Unit Structures or More

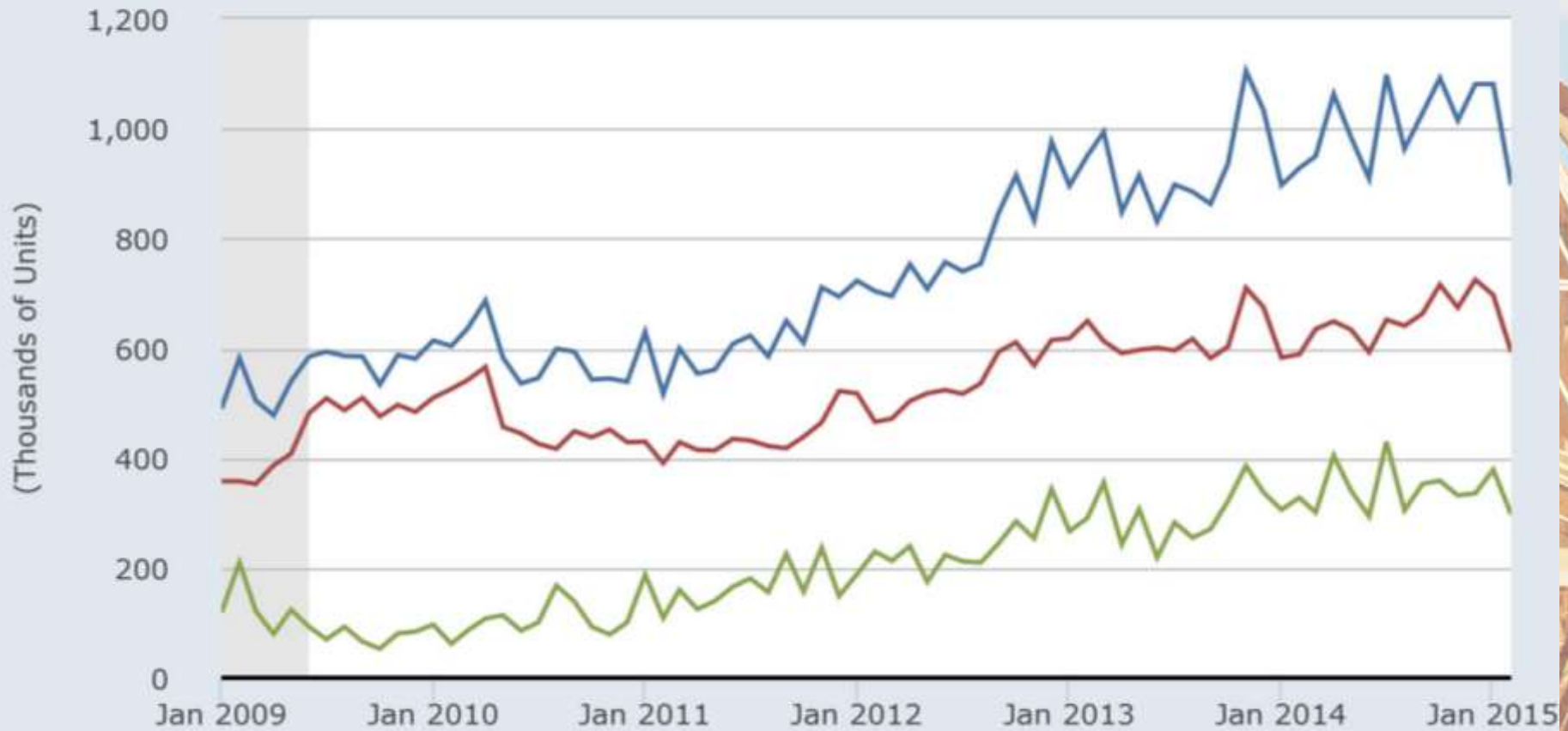


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United States Housing Starts



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United States Housing

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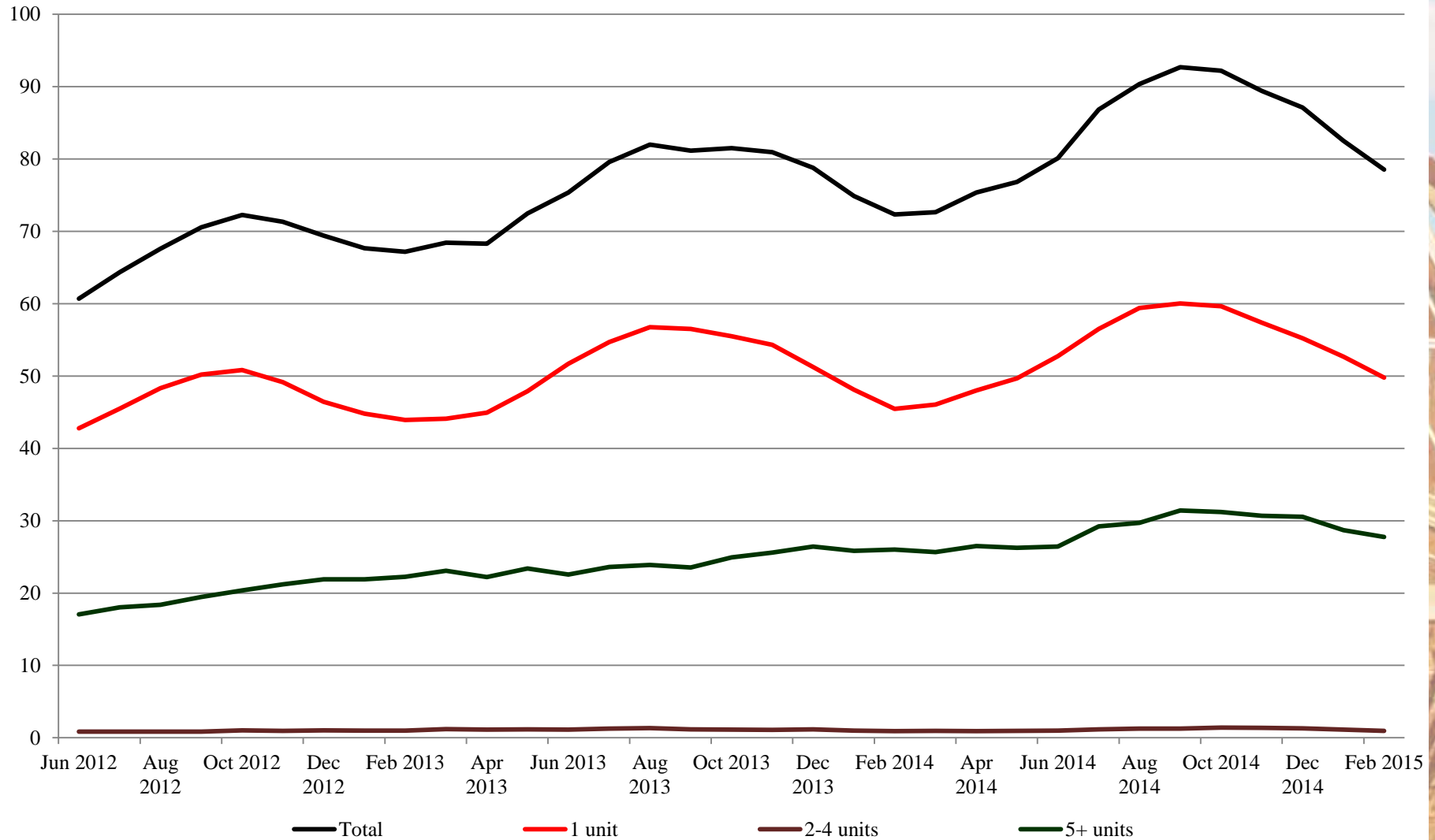
— Privately Owned Housing Starts: 1-Unit Structures (left)
— 30-Year Fixed Rate Mortgage Average in the United States© (right)



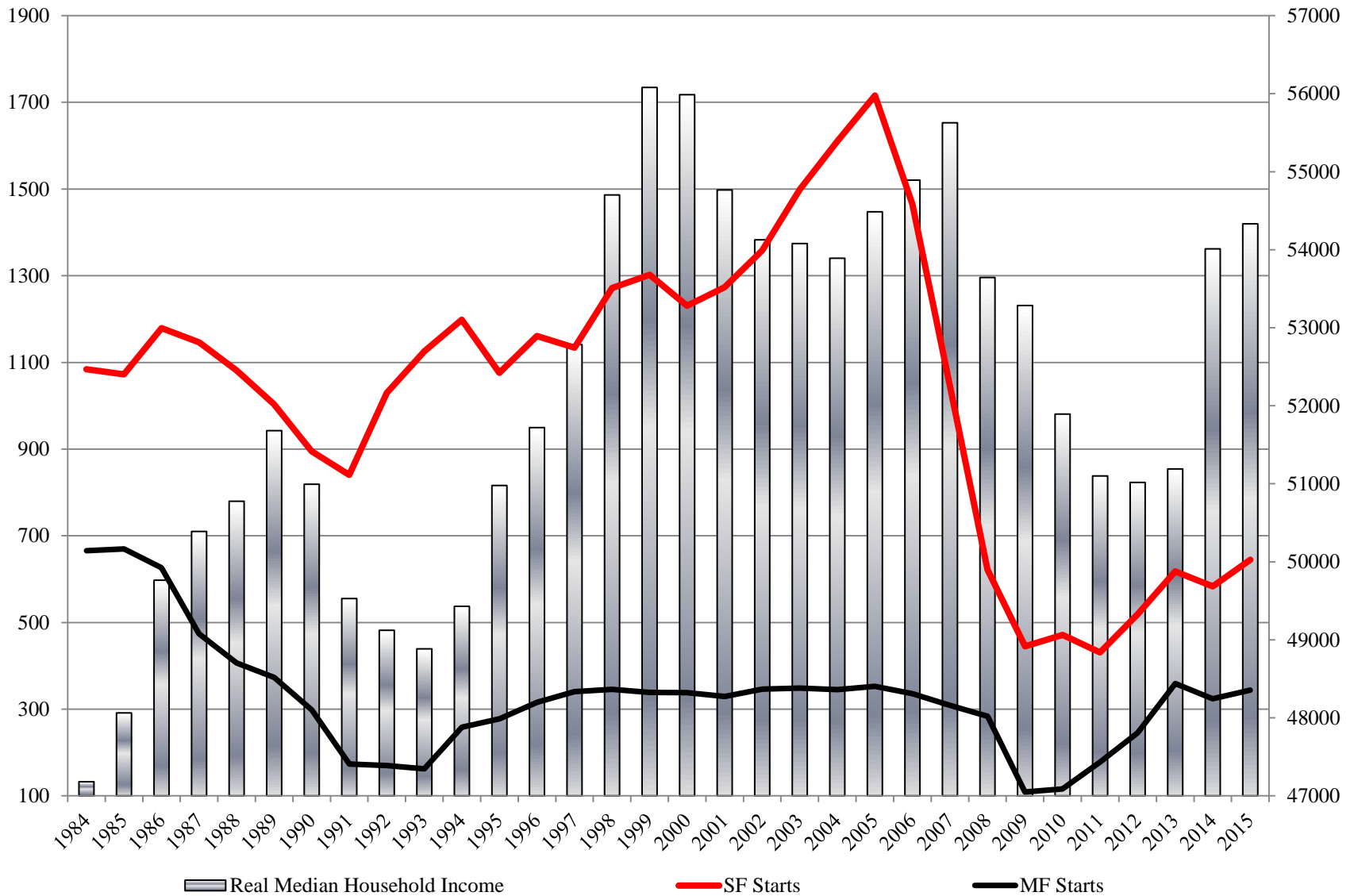
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United States Housing

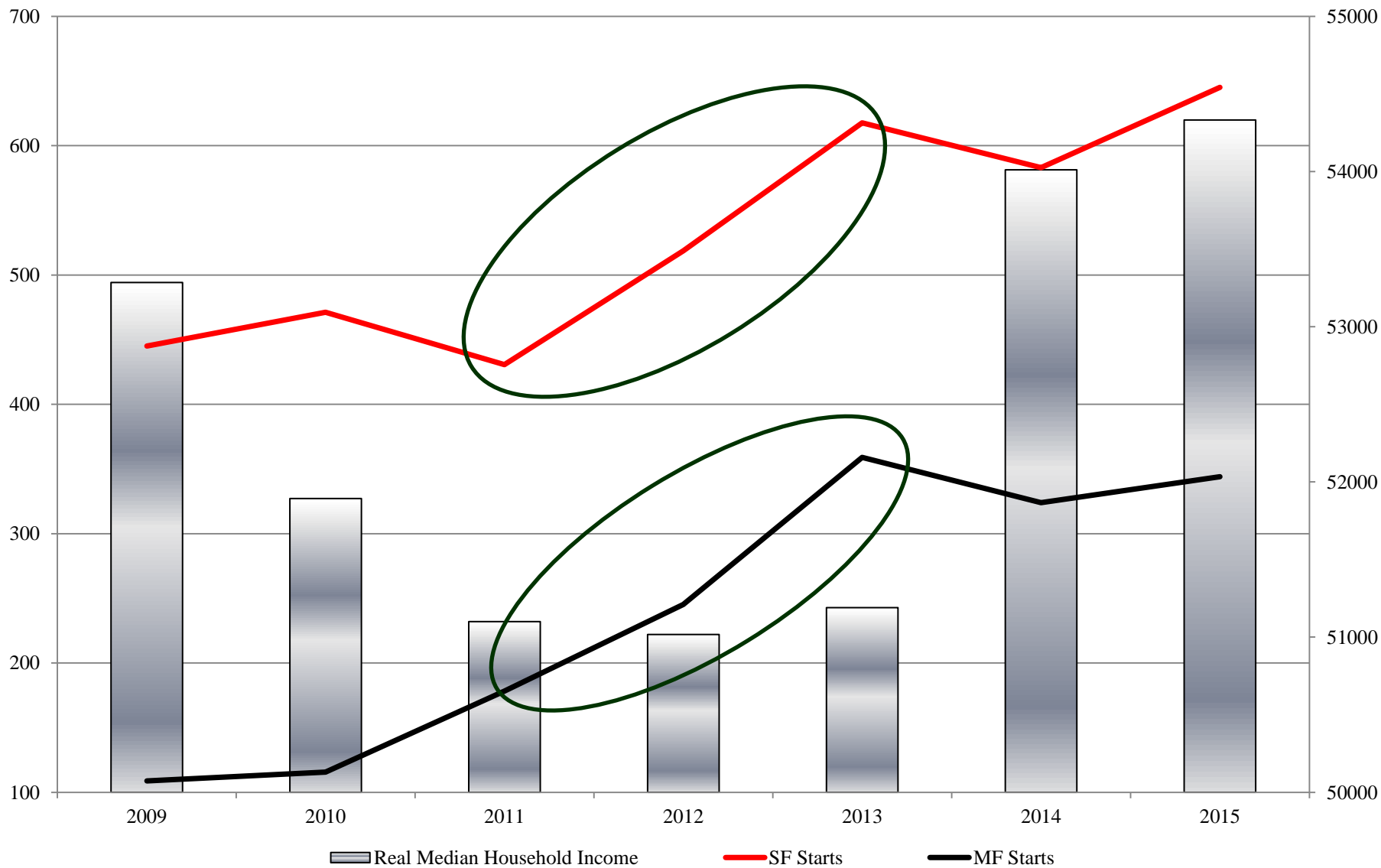
SF starts: Six-month rolling average (unadjusted data)



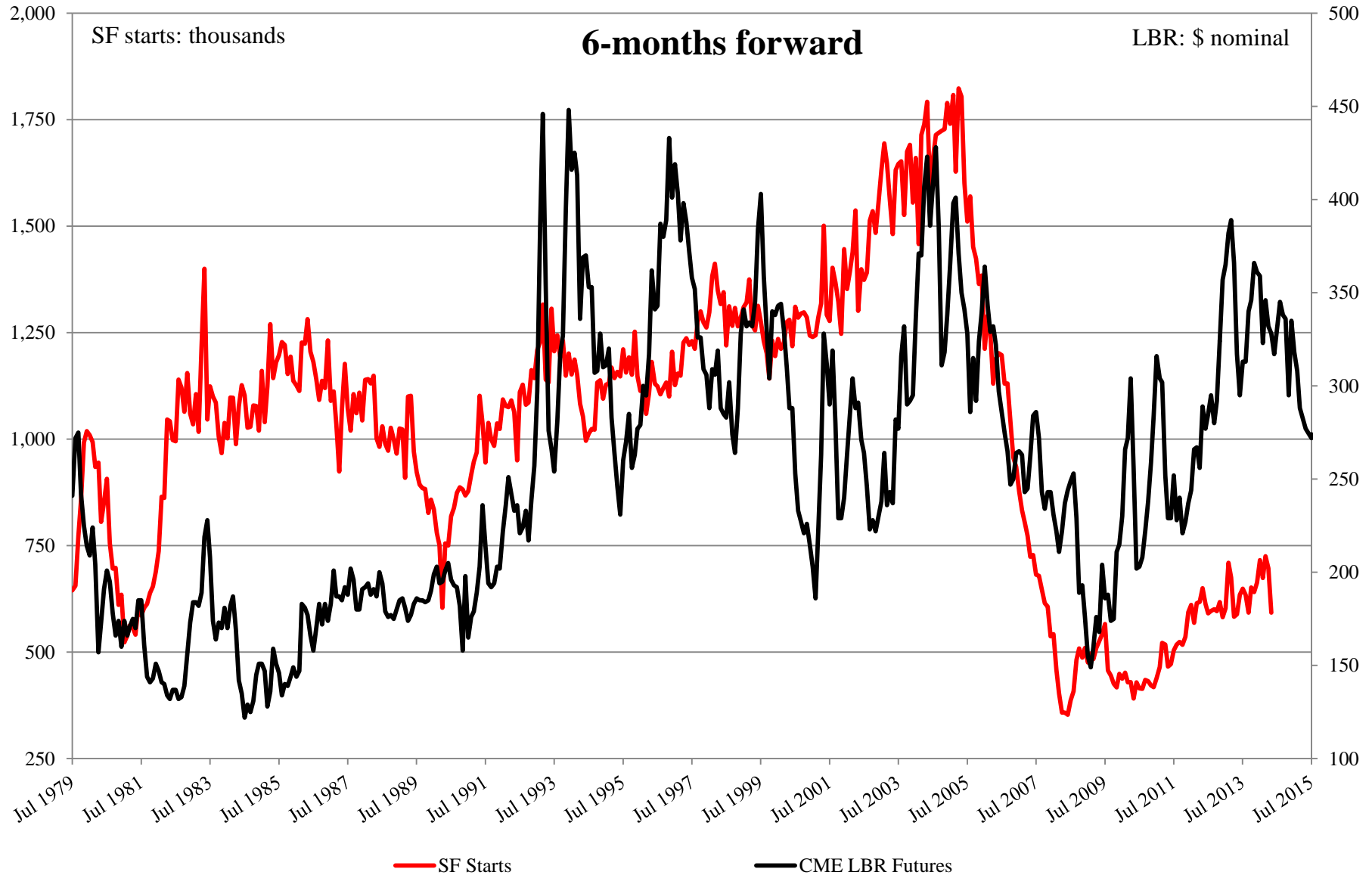
Housing Starts and Median Income



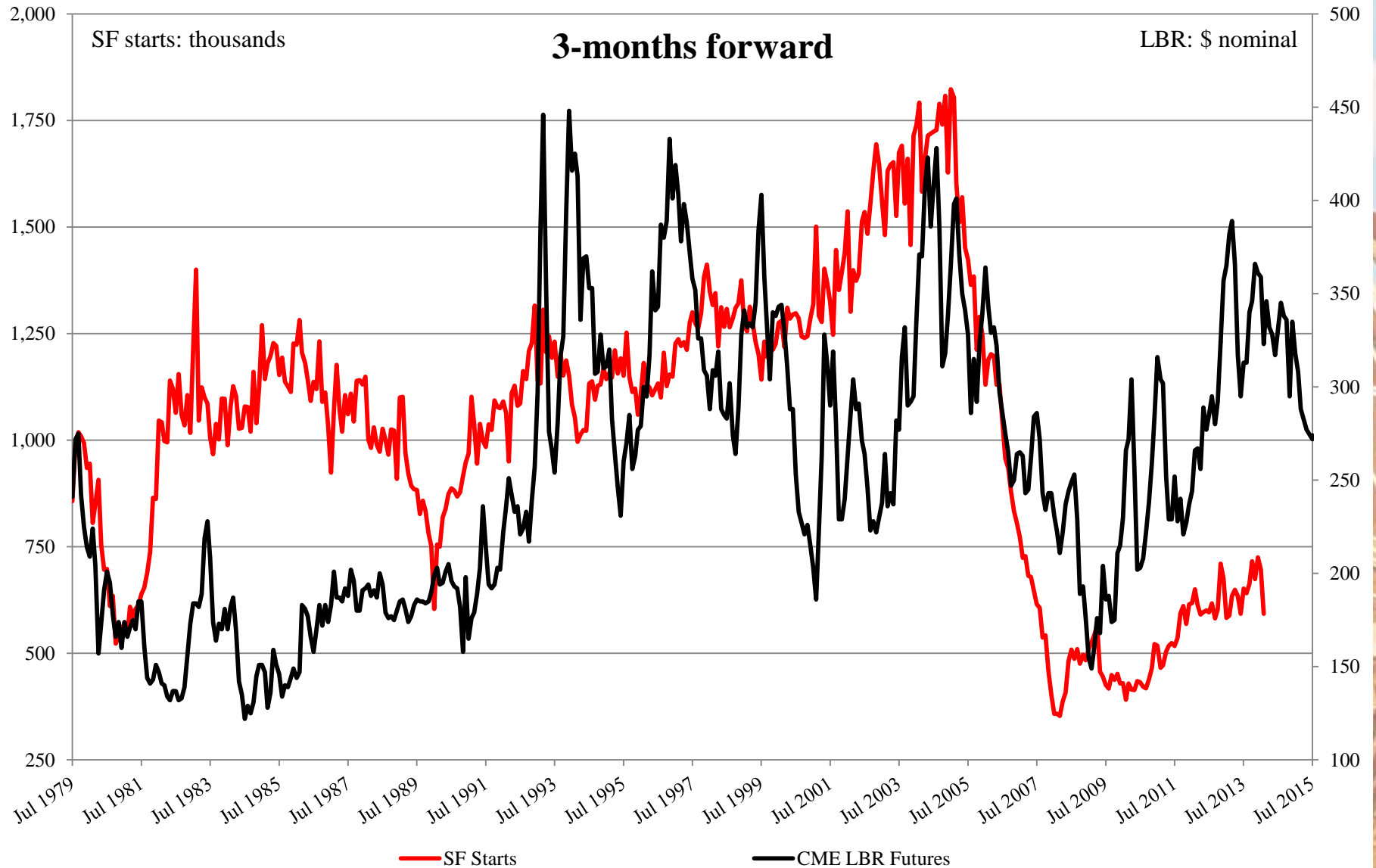
Housing Starts and Median Income



United States Housing



United States Housing



United States Housing



- New Privately-Owned Housing Units Completed: Total
- New Privately-Owned Housing Units Completed: 1-Unit Structures
- New Privately-Owned Housing Units Completed: 5-Unit Structures or More

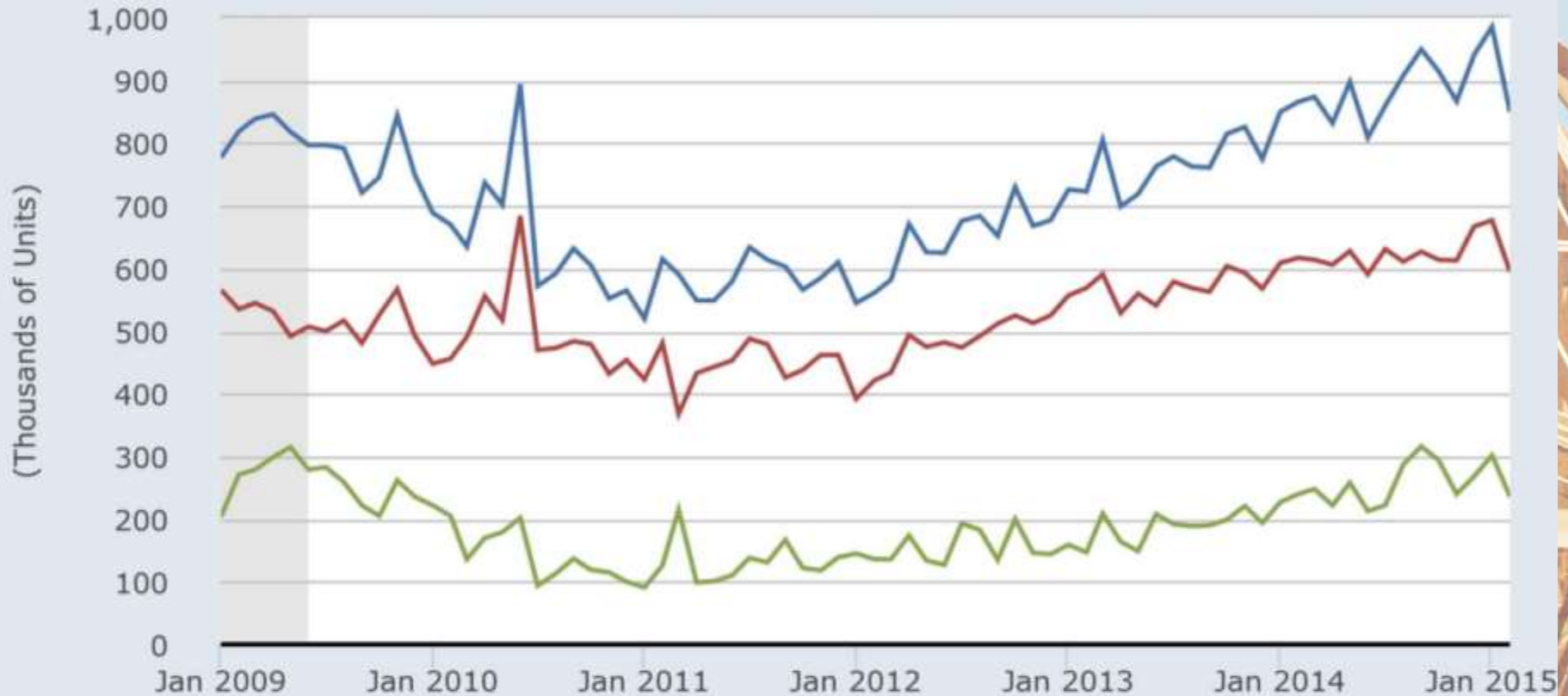


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United States Housing Completions



- New Privately-Owned Housing Units Completed: Total
- New Privately-Owned Housing Units Completed: 1-Unit Structures
- New Privately-Owned Housing Units Completed: 5-Unit Structures or More



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- New Privately-Owned Housing Units Completed: 1-Unit Structures (left)
- 30-Year Fixed Rate Mortgage Average in the United States© (right)



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United States Housing

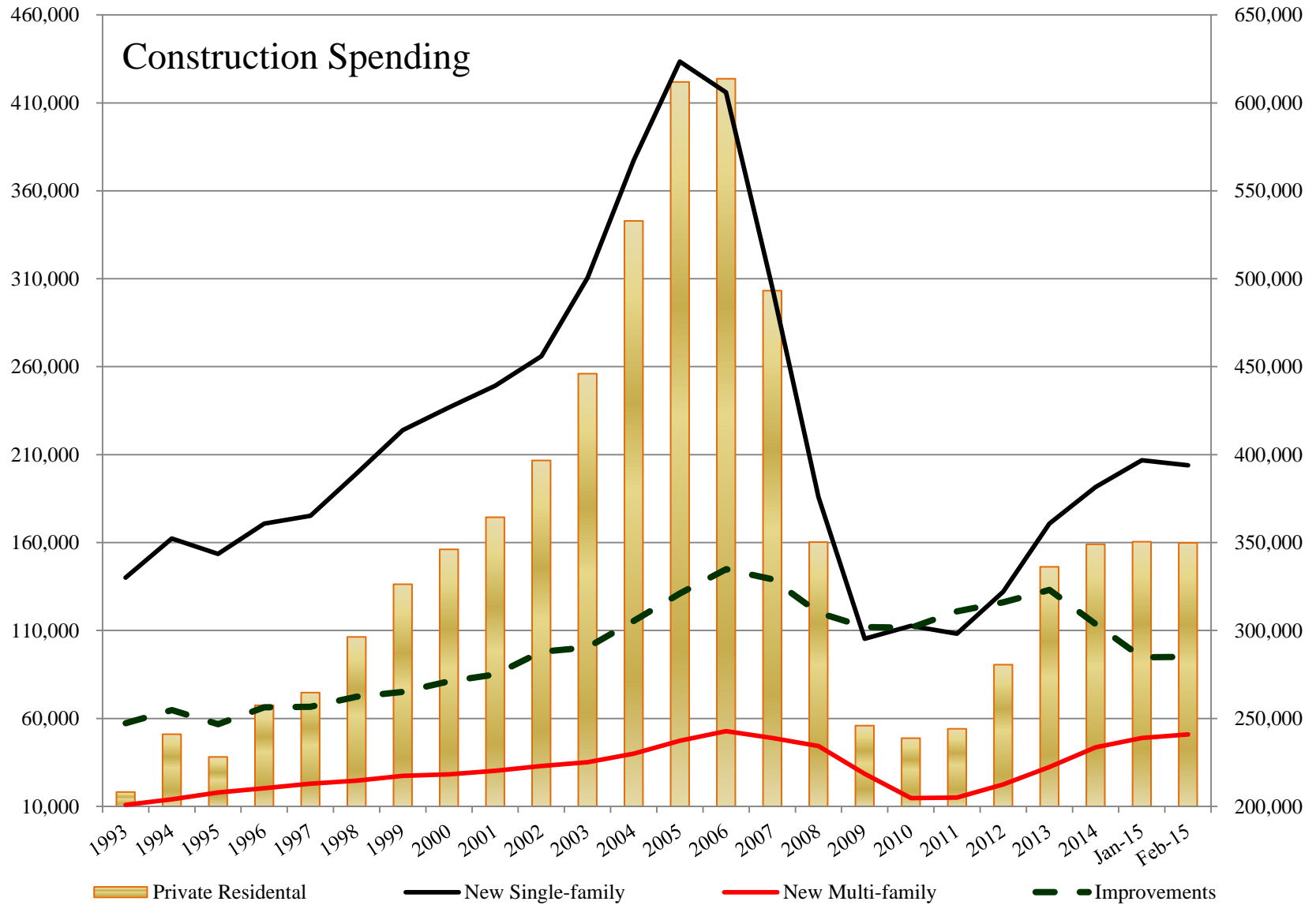


- New Privately-Owned Housing Units Completed: 5-Unit Structures or More (left)
- 30-Year Fixed Rate Mortgage Average in the United States© (right)

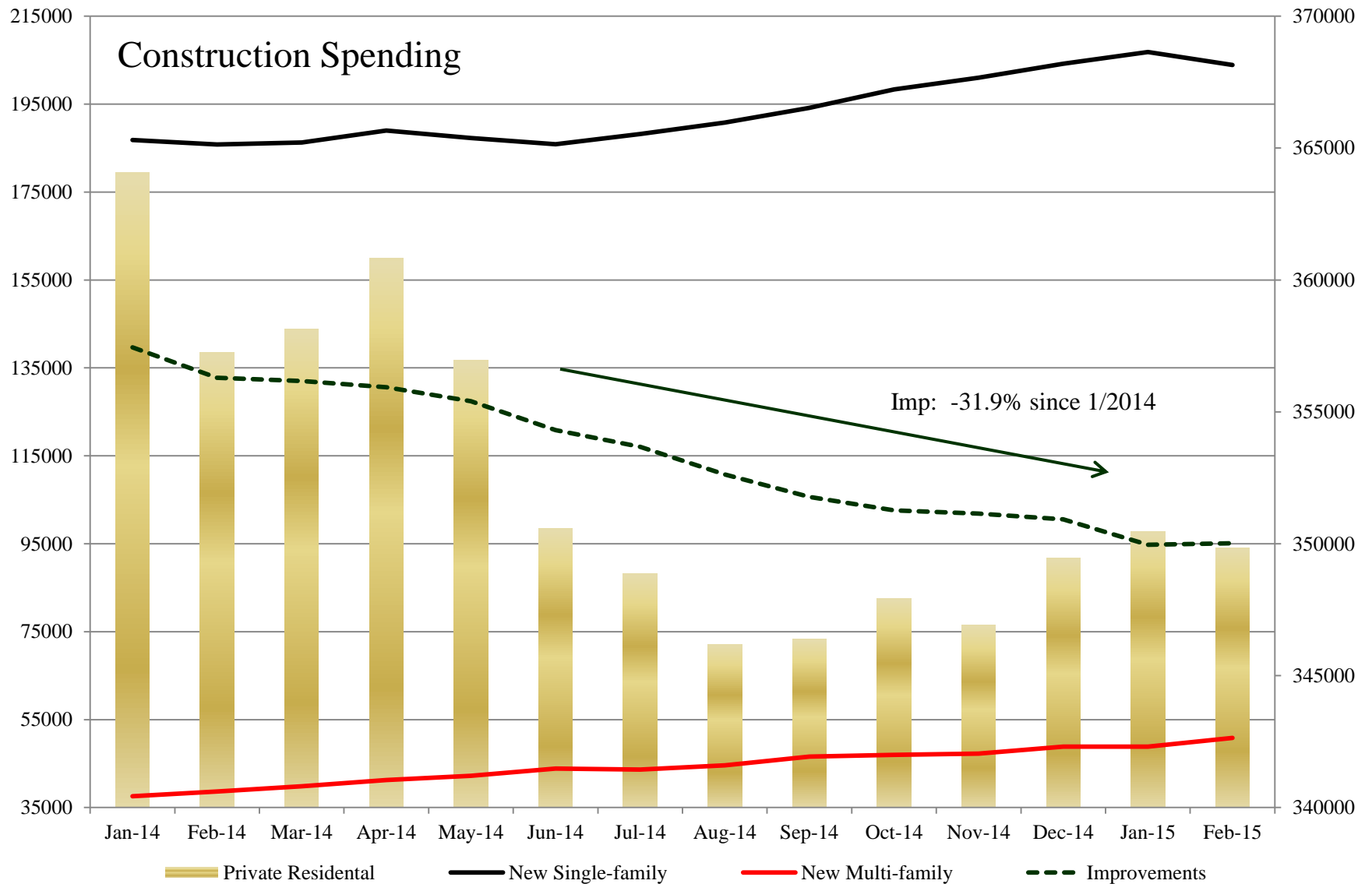


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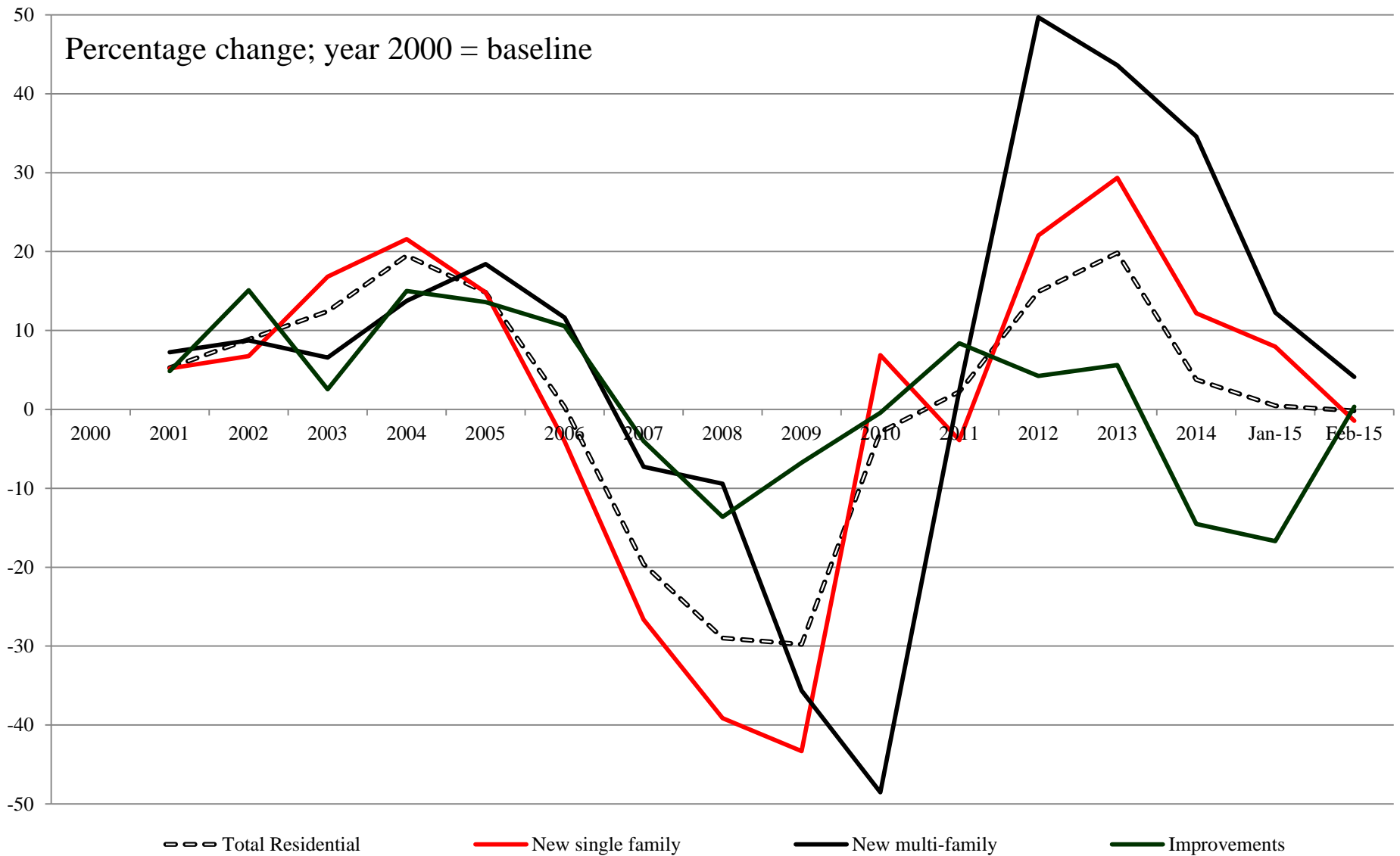
United States Housing



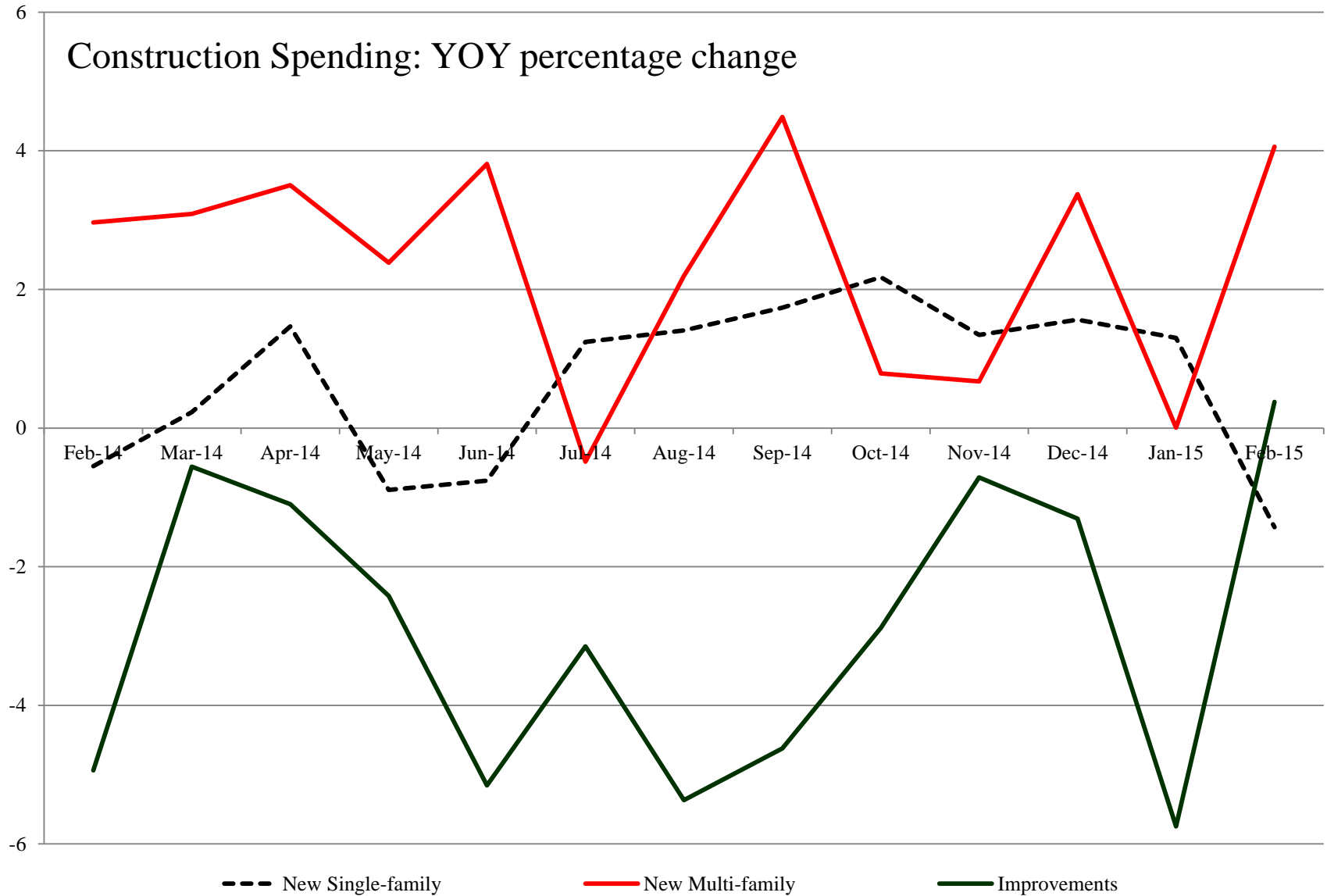
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United States Housing



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New Single-Family Home Sales



United States Housing

Table 1. New Houses Sold and For Sale

[Thousands of houses. Detail may not add to total because of rounding.]

Period		Sold during period ¹				
		United States	North-east	Mid-west	South	West
2014:	February	432	23	56	259	94
	March	403	25	56	233	89
	April	413	21	65	234	93
	May	458	37	75	237	109
	June	409	26	54	228	101
	July	399	23	55	225	96
	August	448	28	52	246	122
	September	456	33	60	247	116
	October	469	24	65	265	115
	November (r)	448	29	58	233	128
	December (r)	479	31	51	271	126
	2015:	January (r)	500	17	62	287
February (p)		539	43	54	316	126

United States Housing

2014:	February	35	2	4	21	8	185	16
	March	39	2	5	23	9	187	16
	April	39	2	5	21	9	188	16
	May	43	2	5	21	11	191	16
	June	38	2	5	21	10	197	17
	July	35	2	5	20	8	206	17
	August	36	3	5	19	10	209	16
	September	37	3	5	20	9	213	17
	October	38	2	6	21	9	213	17
	November (r)	31	2	4	17	8	212	17
	December (r)	33	2	3	20	8	212	18
2015:	January (r)	37	1	4	22	10	212	18
	February (p)	44	1	4	22	11	208	18
	Average RSE (%) [†]	9	25	18	12	16	5	12

43 SAAR → 458 thou

44 SAAR → 539 thou

United States Housing



— New One Family Houses Sold: United States (left)
— 30-Year Fixed Rate Mortgage Average in the United States© (right)



Shaded areas indicate US recessions - 2015 research.stlouisfed.org

United States Housing



— Median Sales Price for New Houses Sold in the United States (left)

— 30-Year Fixed Rate Mortgage Average in the United States© (right)



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United States New House Sales

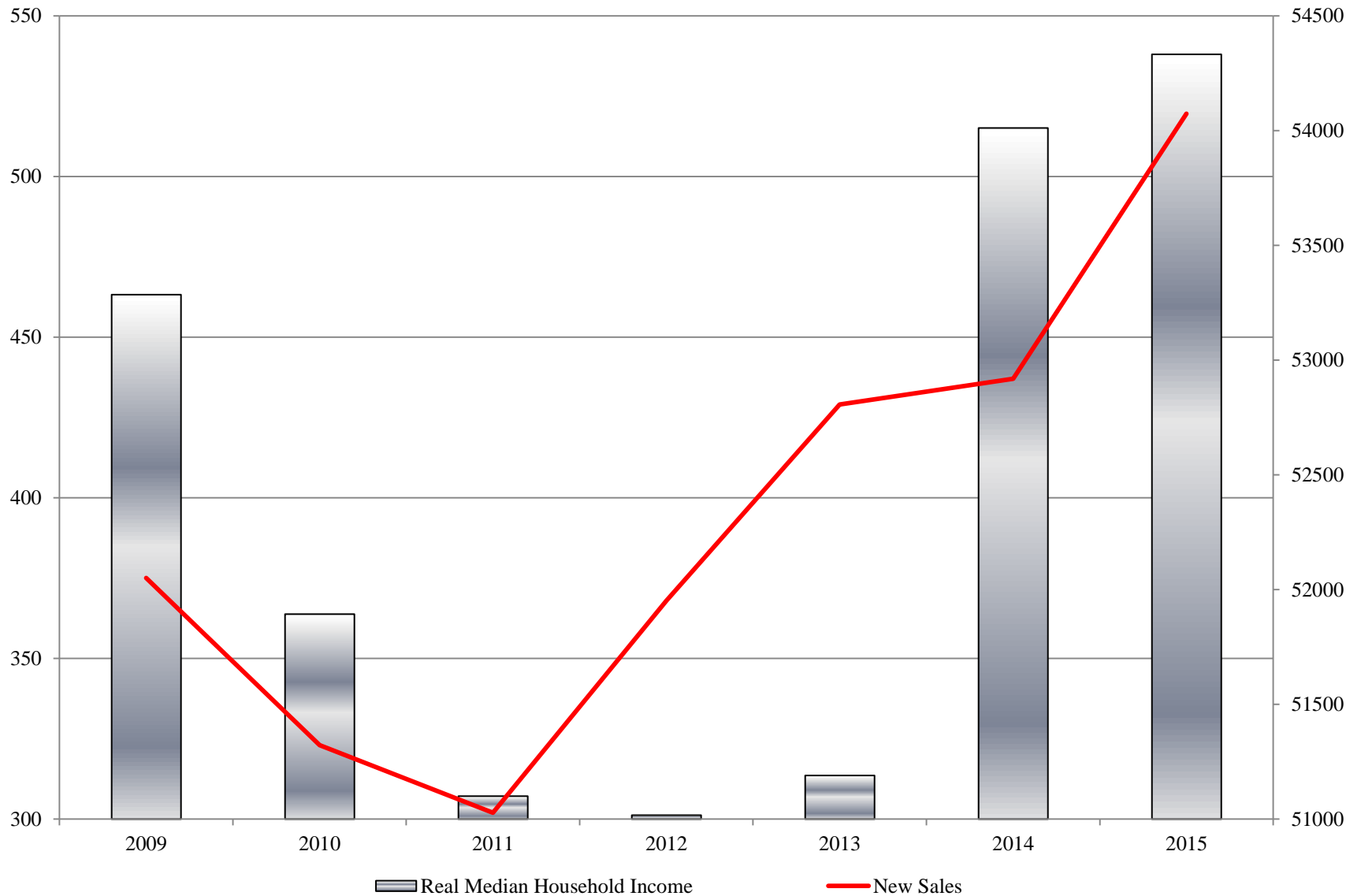


— New One Family Houses Sold: United States (left)
— Real Median Household Income in the United States (right)

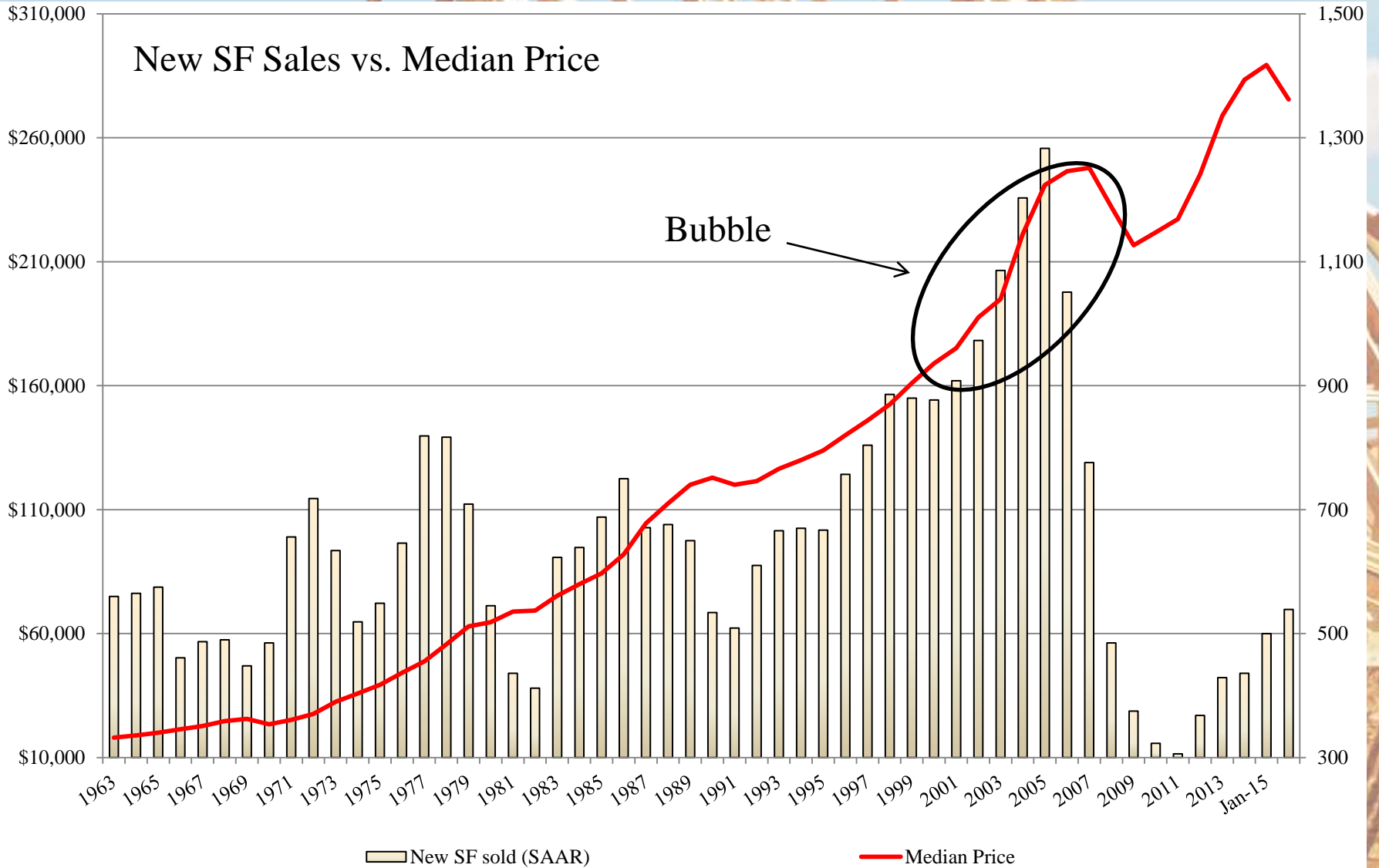


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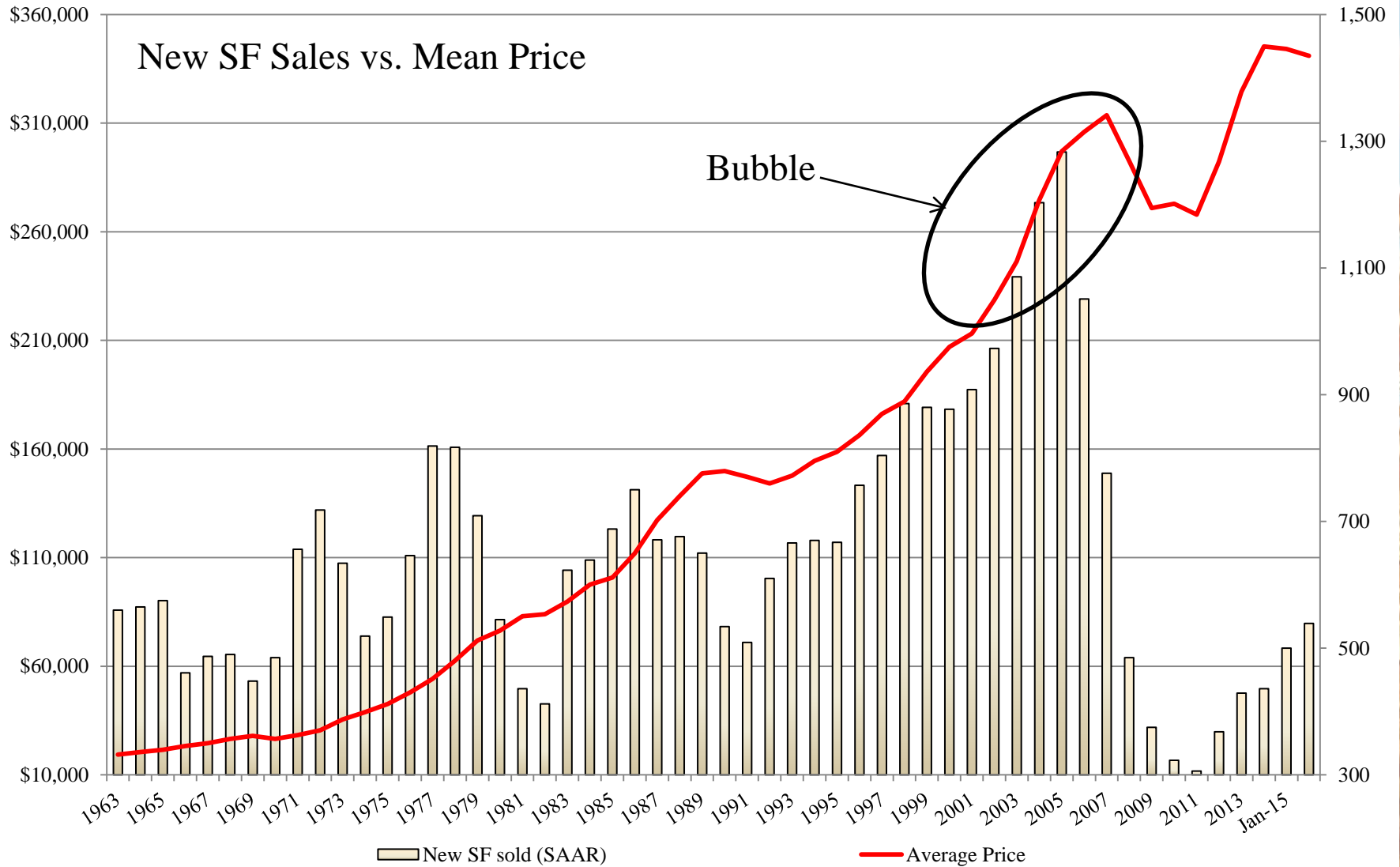
United States Housing



United States Housing



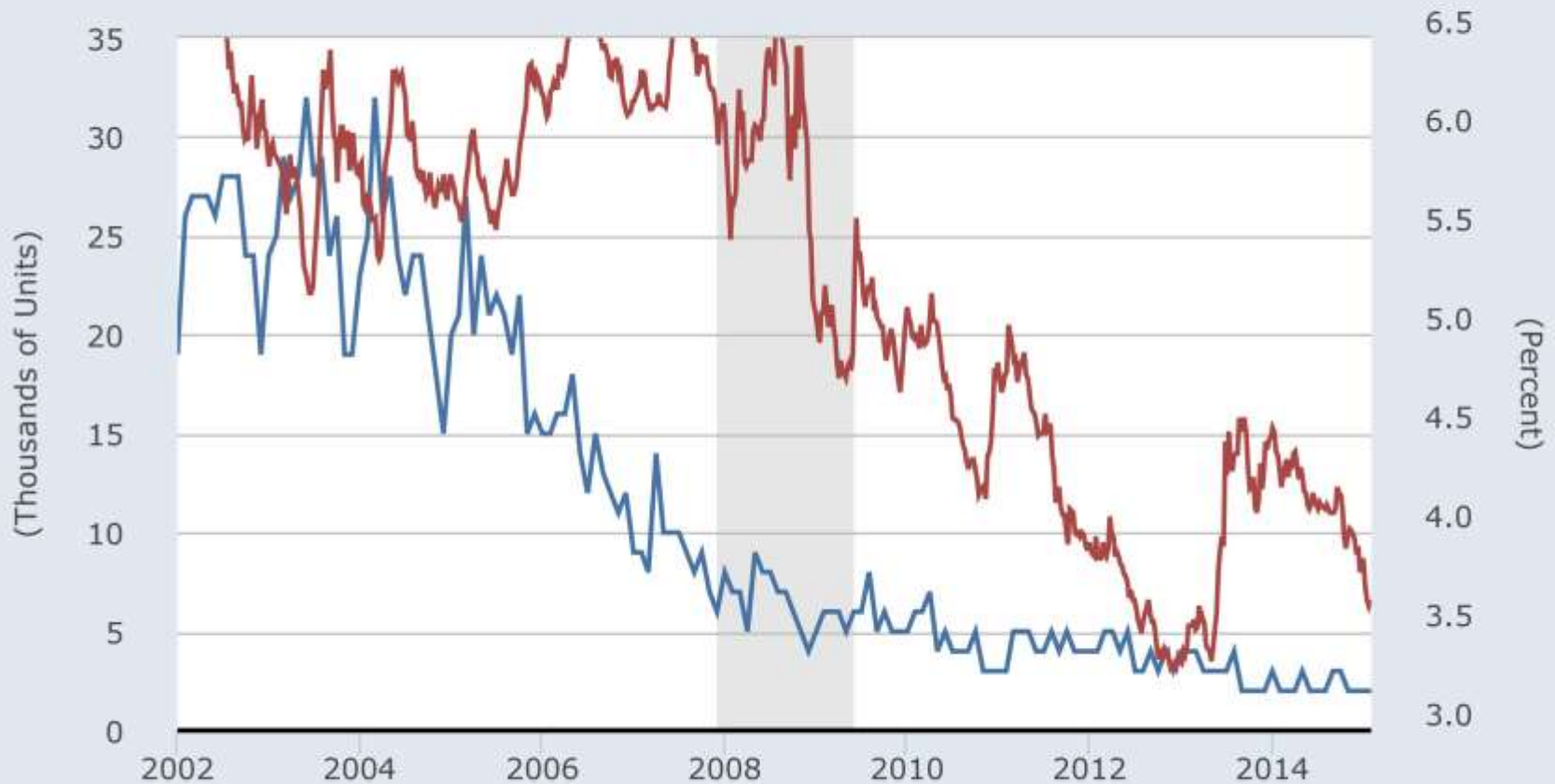
United States Housing



United States Housing

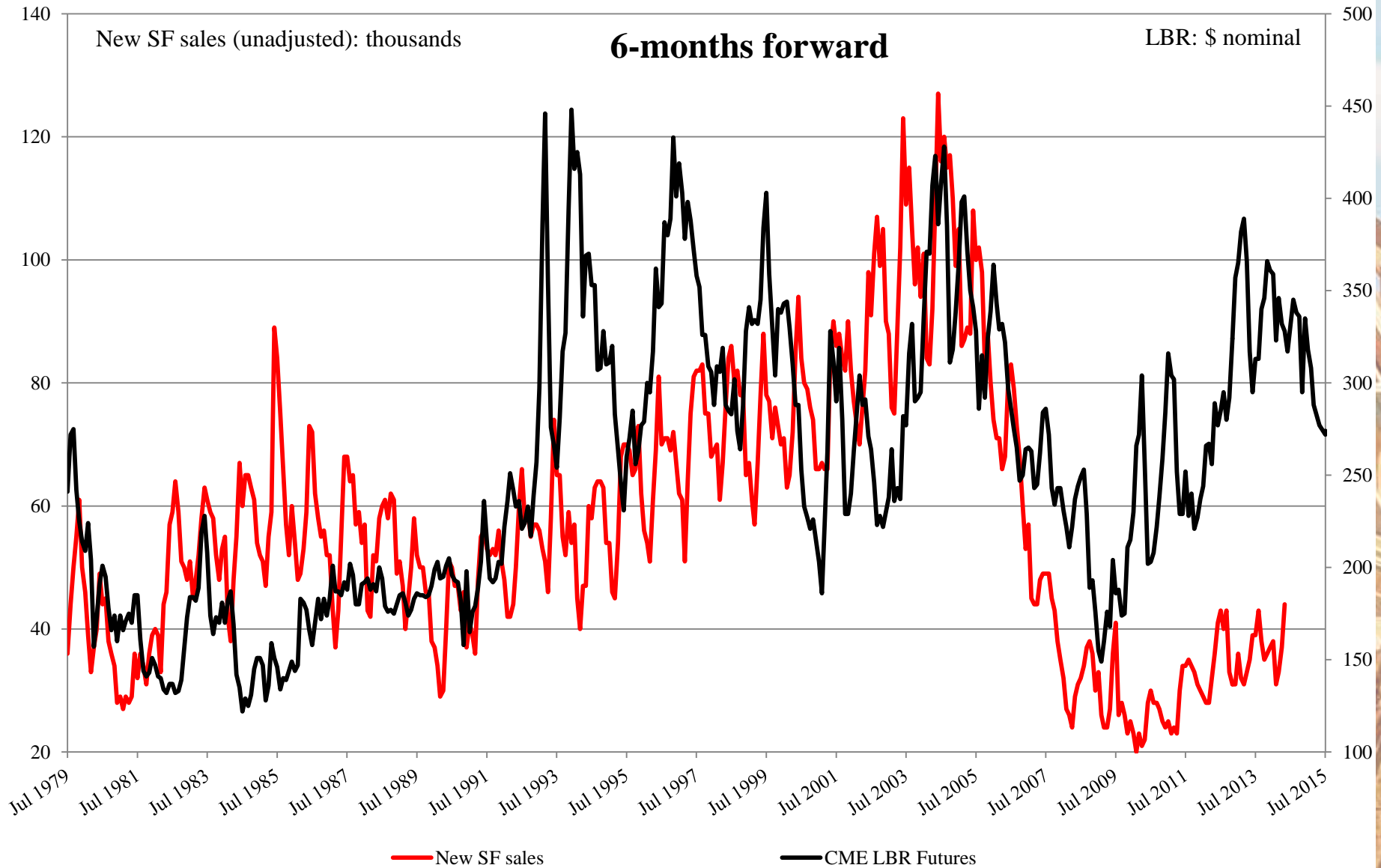
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- New Houses Sold by Sales Price in the United States, Under \$150,000 (left)
- 30-Year Fixed Rate Mortgage Average in the United States© (right)

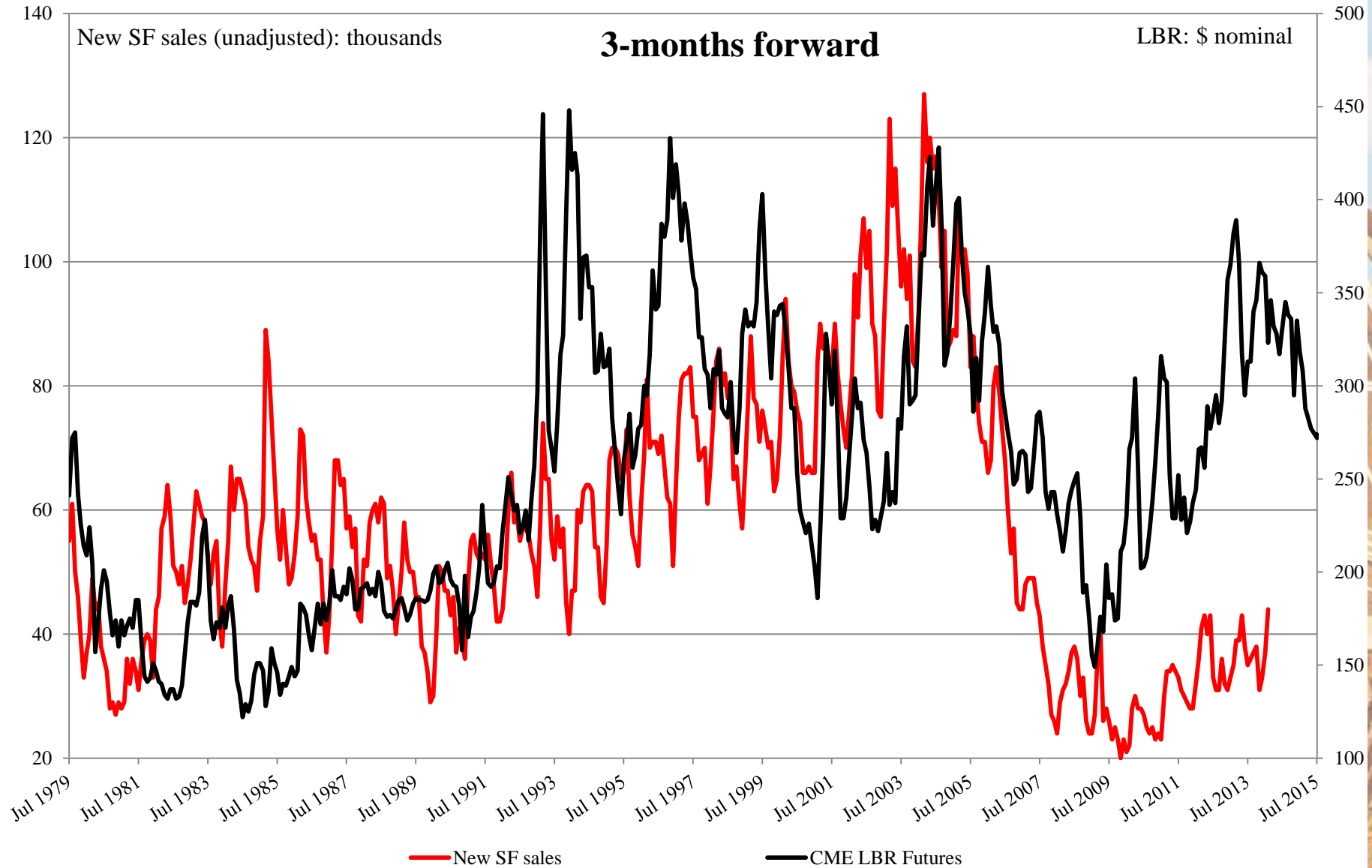


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United States Housing

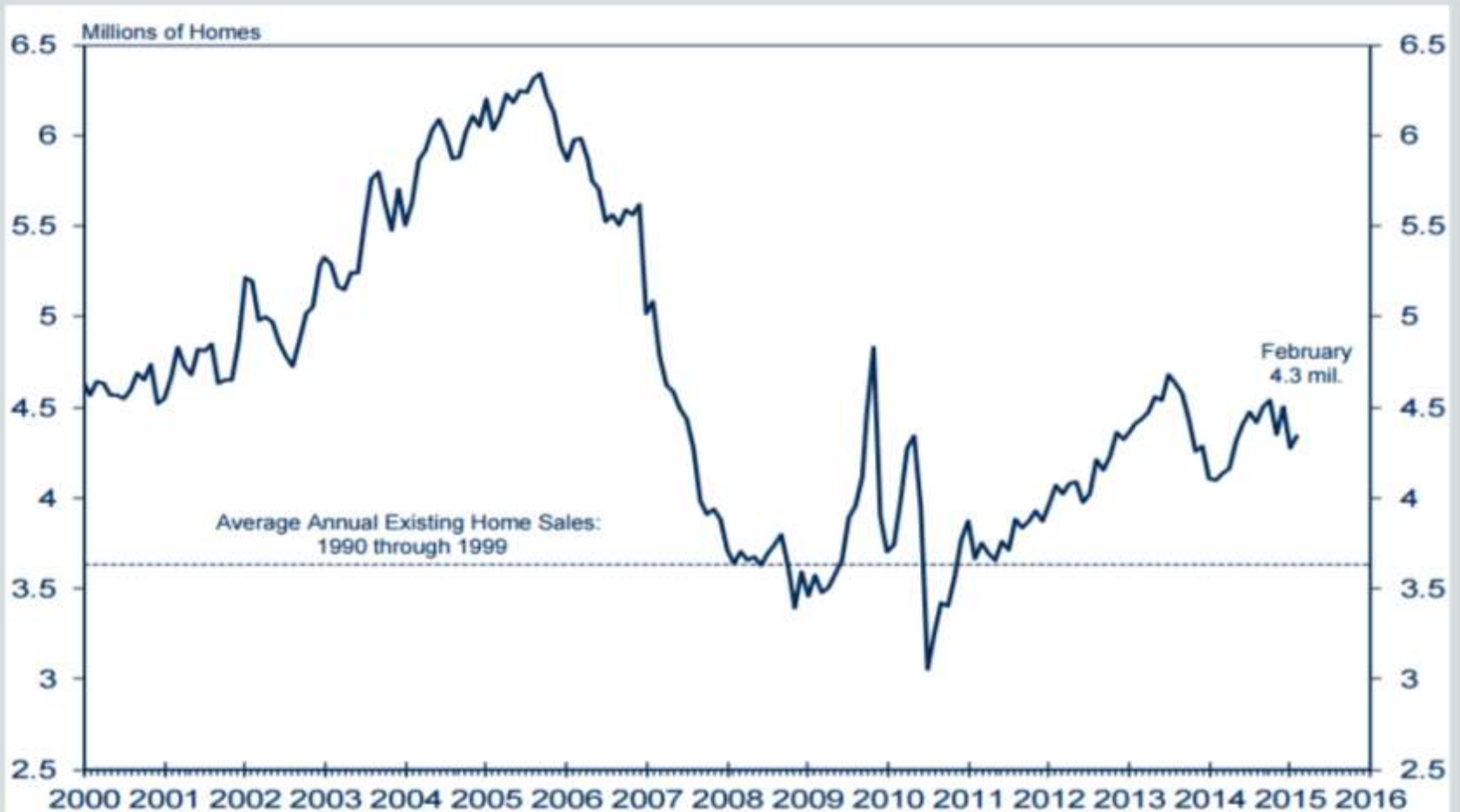


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United States Housing

Existing Single-Family Home Sales



United States Housing



— Existing Home Sales© (left)
— 30-Year Fixed Rate Mortgage Average in the United States© (right)



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United States Housing

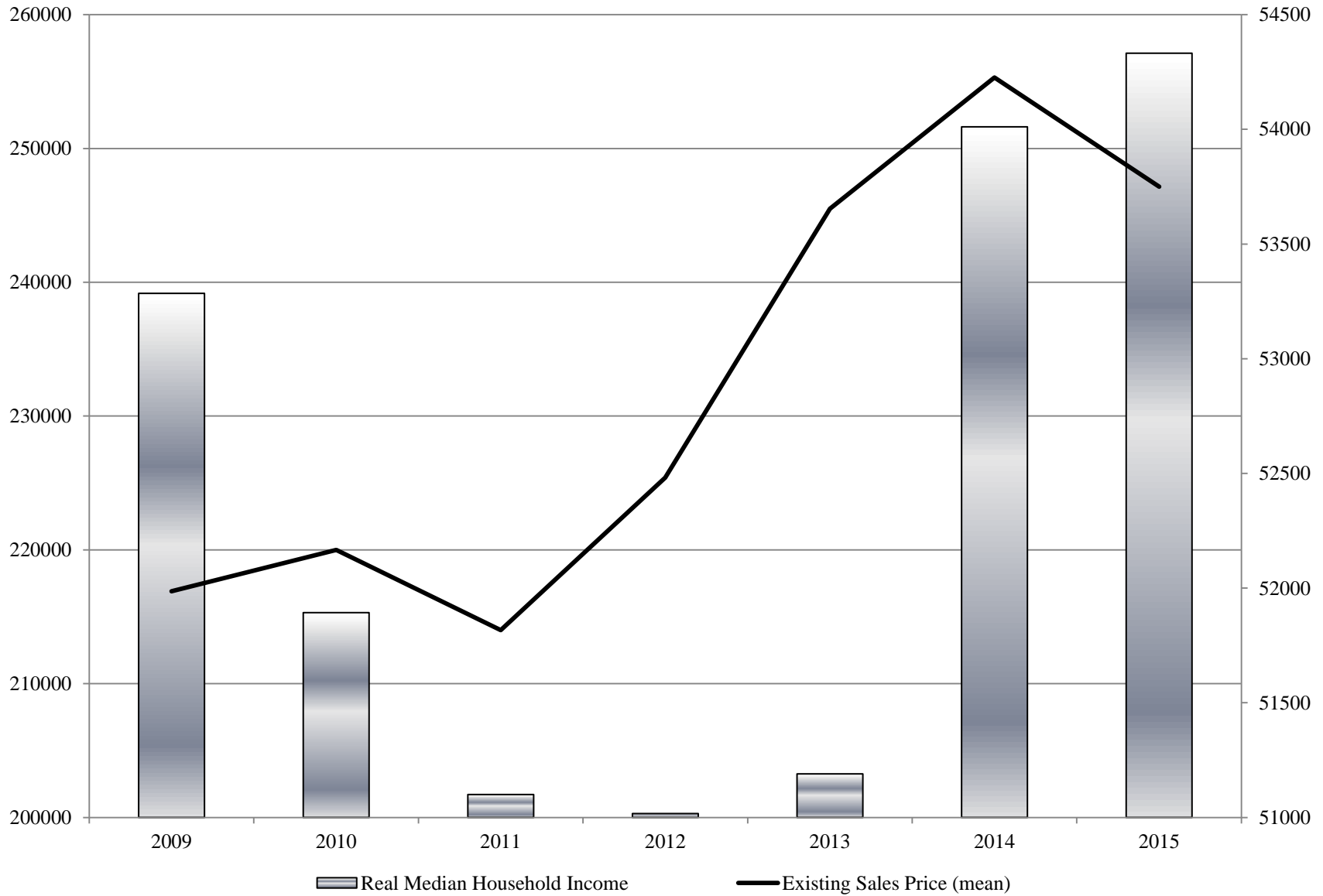


— Median Sales Price of Existing Homes© (left)
— 30-Year Fixed Rate Mortgage Average in the United States© (right)

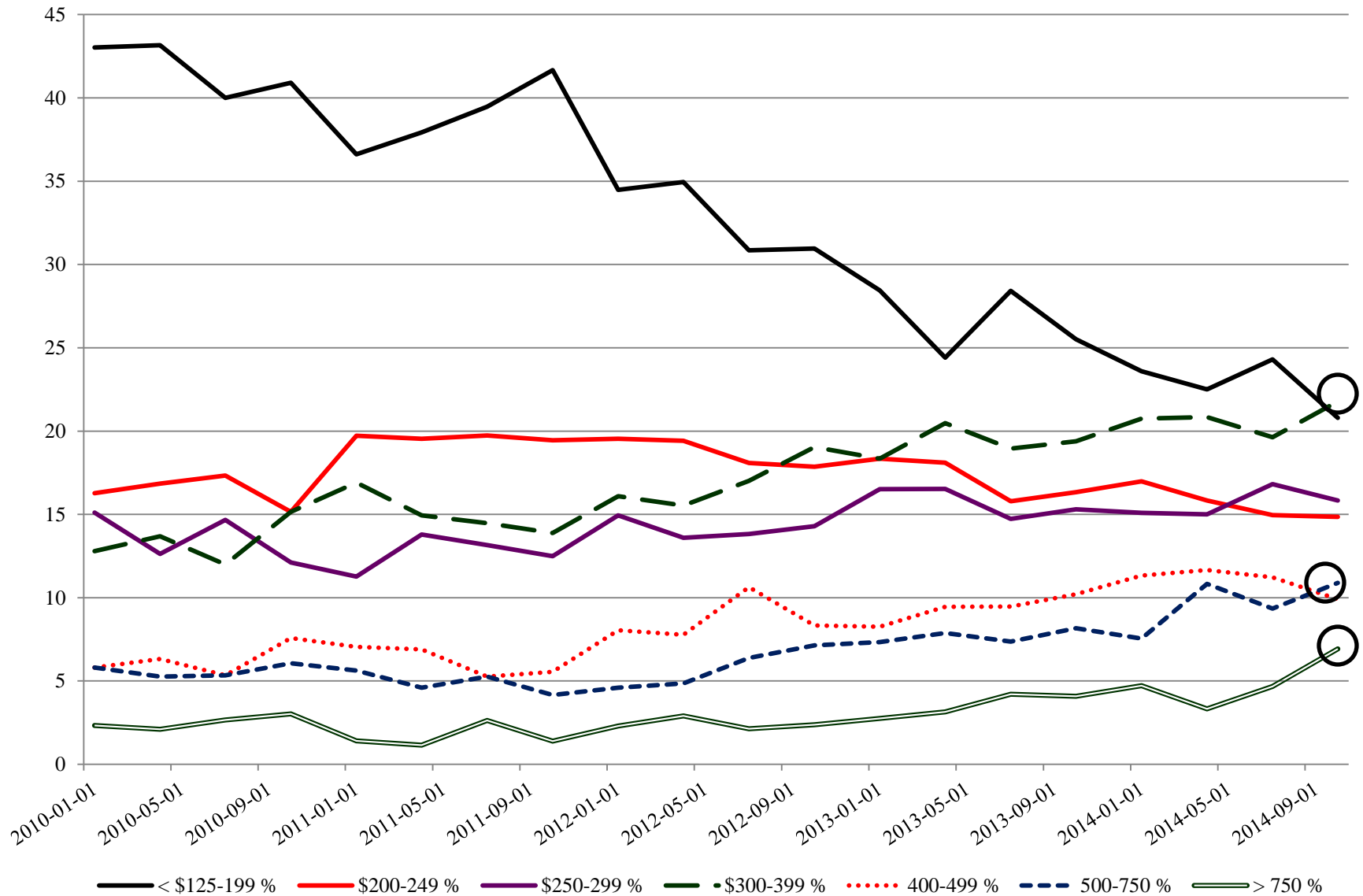


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United States Housing



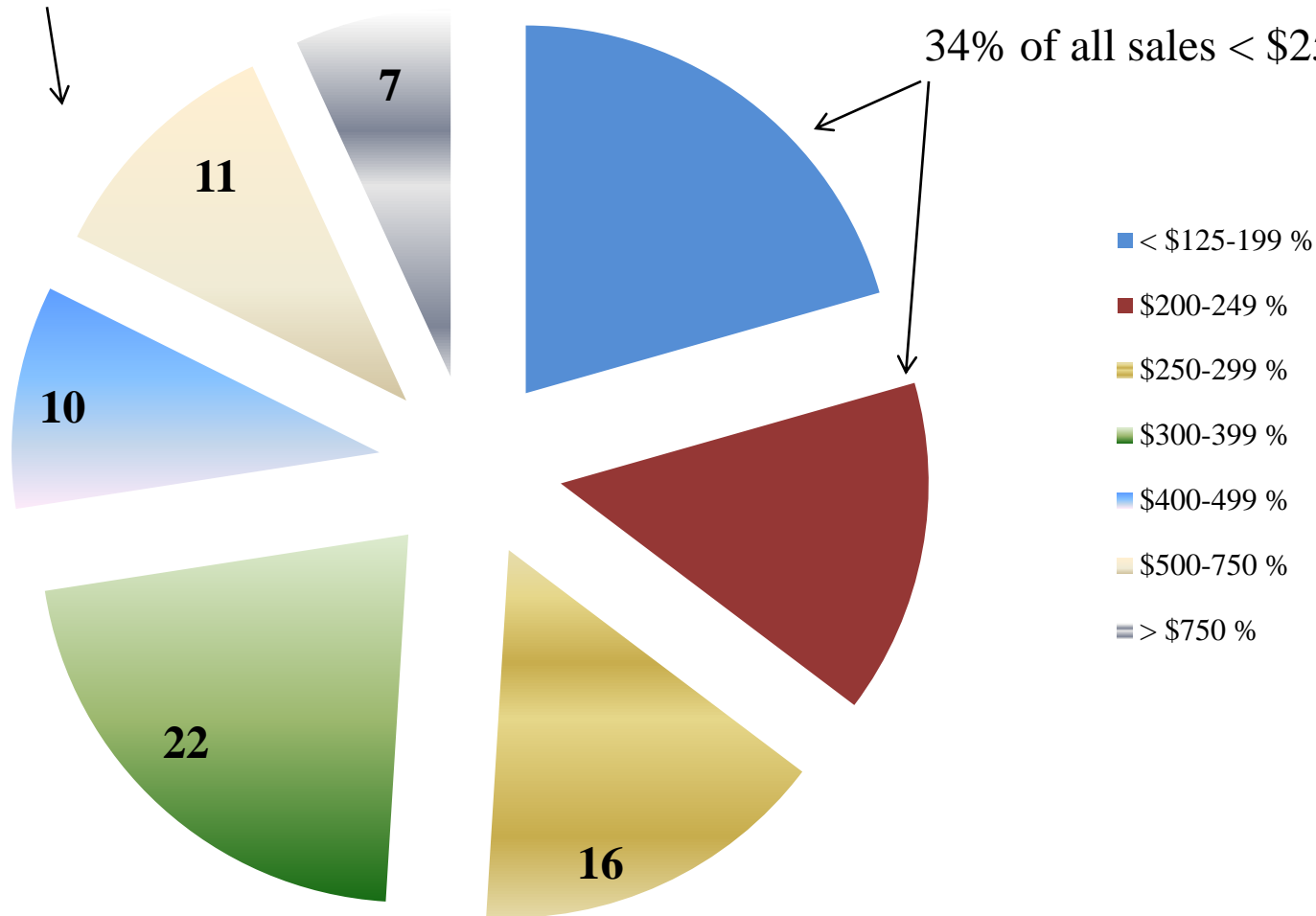
United States Housing



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66% of all sales > \$250,000

34% of all sales < \$250,000



United States Housing

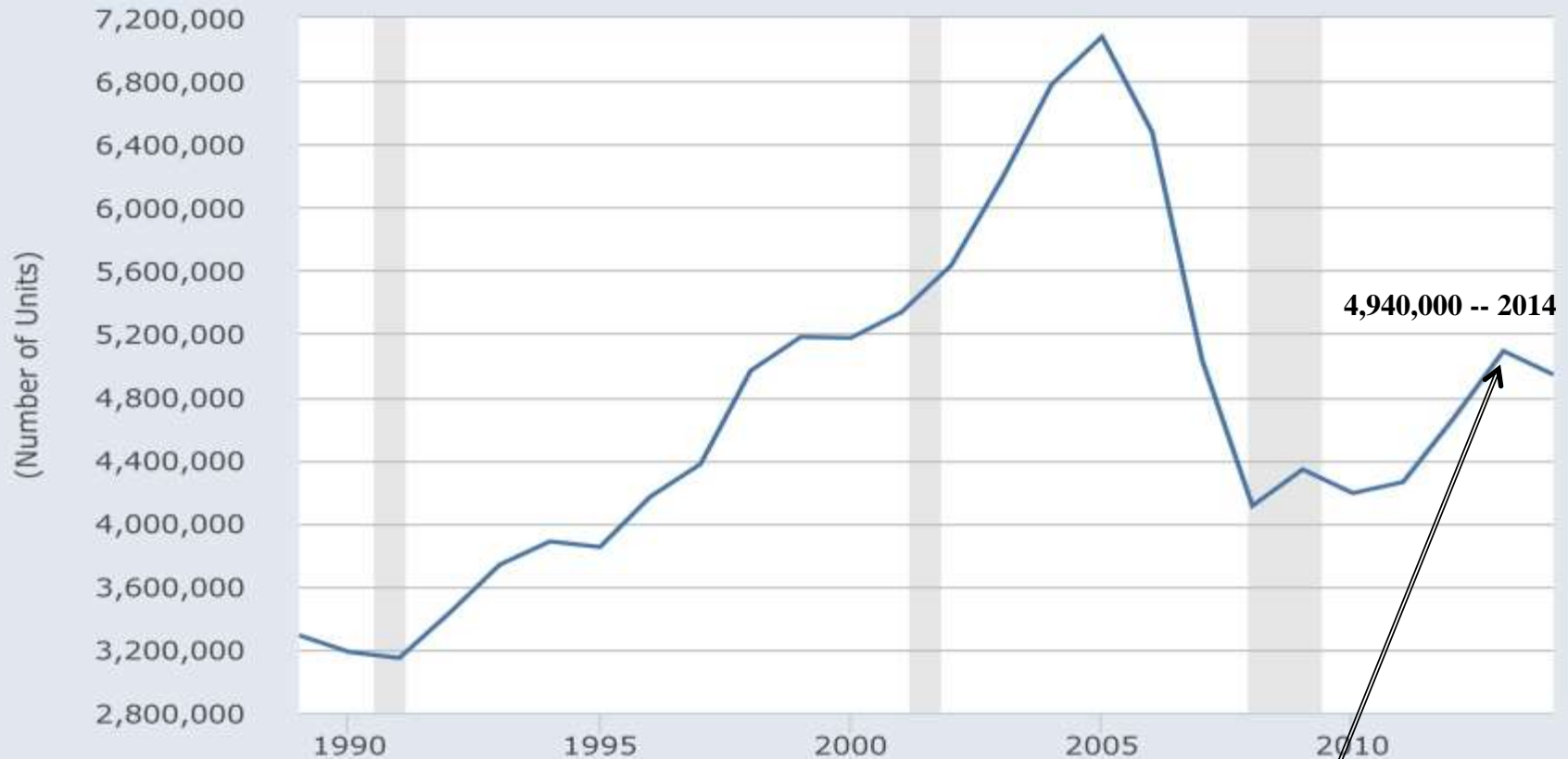
February Residential Sales by Price Range

Price Range	February Share of Total Sales					YoY Pct Change in Share of Sales
	2011	2012	2013	2014	2015	
>\$100 & <=\$50K	15.90%	15.65%	12.97%	10.91%	7.45%	-32%
>\$50K & <=\$100K	18.17%	18.63%	16.76%	14.68%	11.12%	-24%
>\$100K & <=\$200K	28.80%	29.96%	30.38%	30.02%	28.86%	-4%
>\$200K & <=\$300K	15.12%	15.11%	16.32%	17.29%	19.96%	15%
>\$300K & <=\$400K	8.09%	7.78%	8.72%	9.87%	11.67%	18%
>\$400K & <=\$500K	4.11%	4.03%	4.74%	5.46%	6.64%	21%
>\$500K & <=\$750K	4.83%	4.47%	5.27%	6.08%	7.30%	20%
>\$750K & <=\$1MM	1.76%	1.69%	1.81%	2.23%	2.76%	24%
>\$1MM & <=\$2MM	1.58%	1.63%	1.75%	2.15%	2.62%	22%
>\$2MM & <=\$5MM	0.80%	0.71%	0.82%	0.80%	1.19%	48%
>\$5MM	0.86%	0.32%	0.45%	0.51%	0.44%	-15%

United States Housing

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— Existing Home Sales©



Source: National Association of Realtors

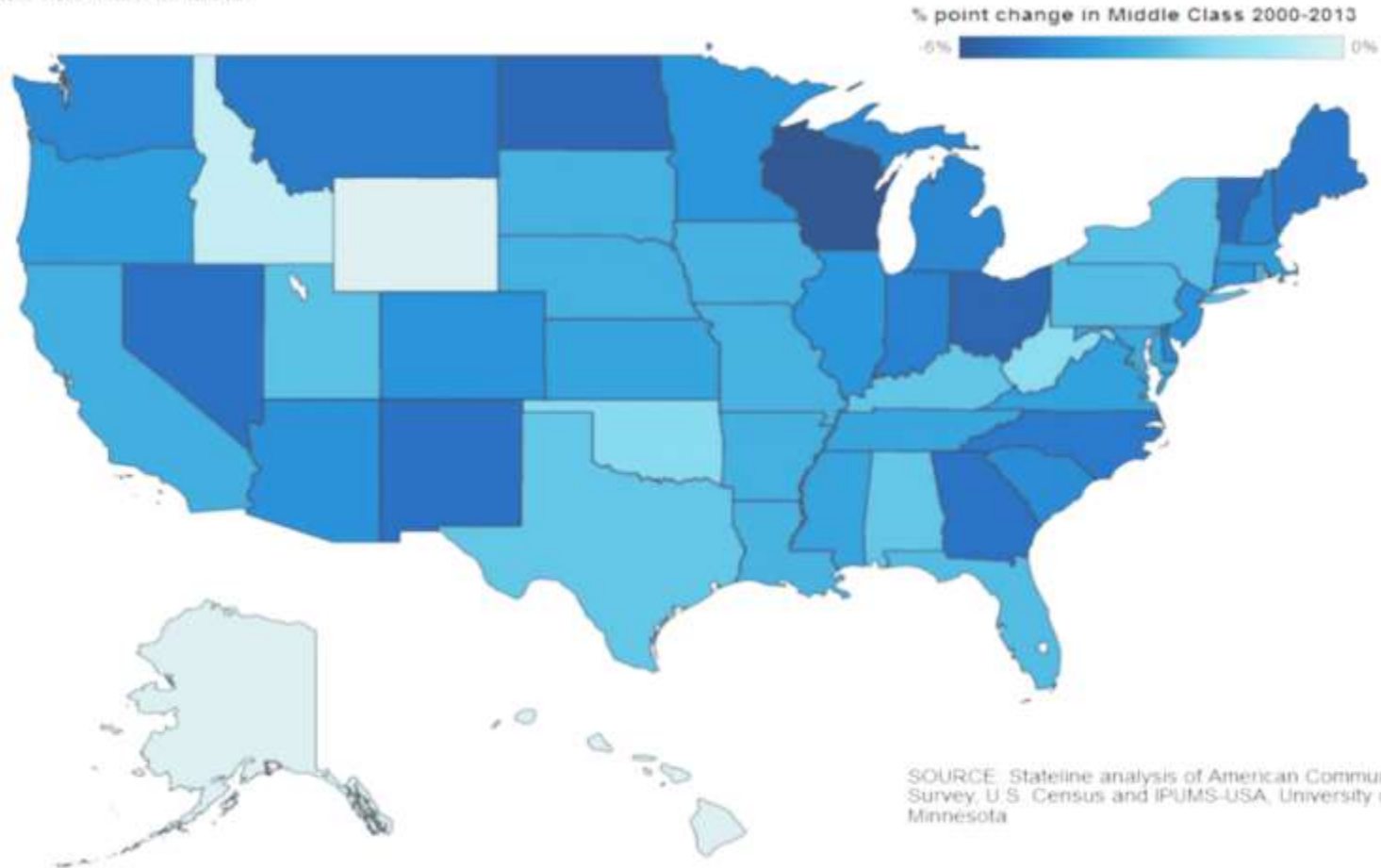
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“...vacation-home sales catapulted to an estimated 1.13 million last year, the highest amount since NAR began the survey in 2003 (22.8%).” Increased 57.4% from 2013.

United States Housing

How America's Middle Class Has Shrunk Since 2000

The struggles of middle-class American families and growing income inequality have risen to the top of the national agenda. A new *Stateline* analysis shows that in all 50 states, the percentage of "middle-class" households—those making between 67 percent and 200 percent of the state's median income—shrank between 2000 and 2013. The change occurred even as the median income in most states declined, when adjusted for inflation. In most states, the growing percentage of households paying 30 percent (the federal standard for housing affordability) or more of their income on housing illustrates that it is increasingly difficult for many American families to make ends meet. Hover over states for details.



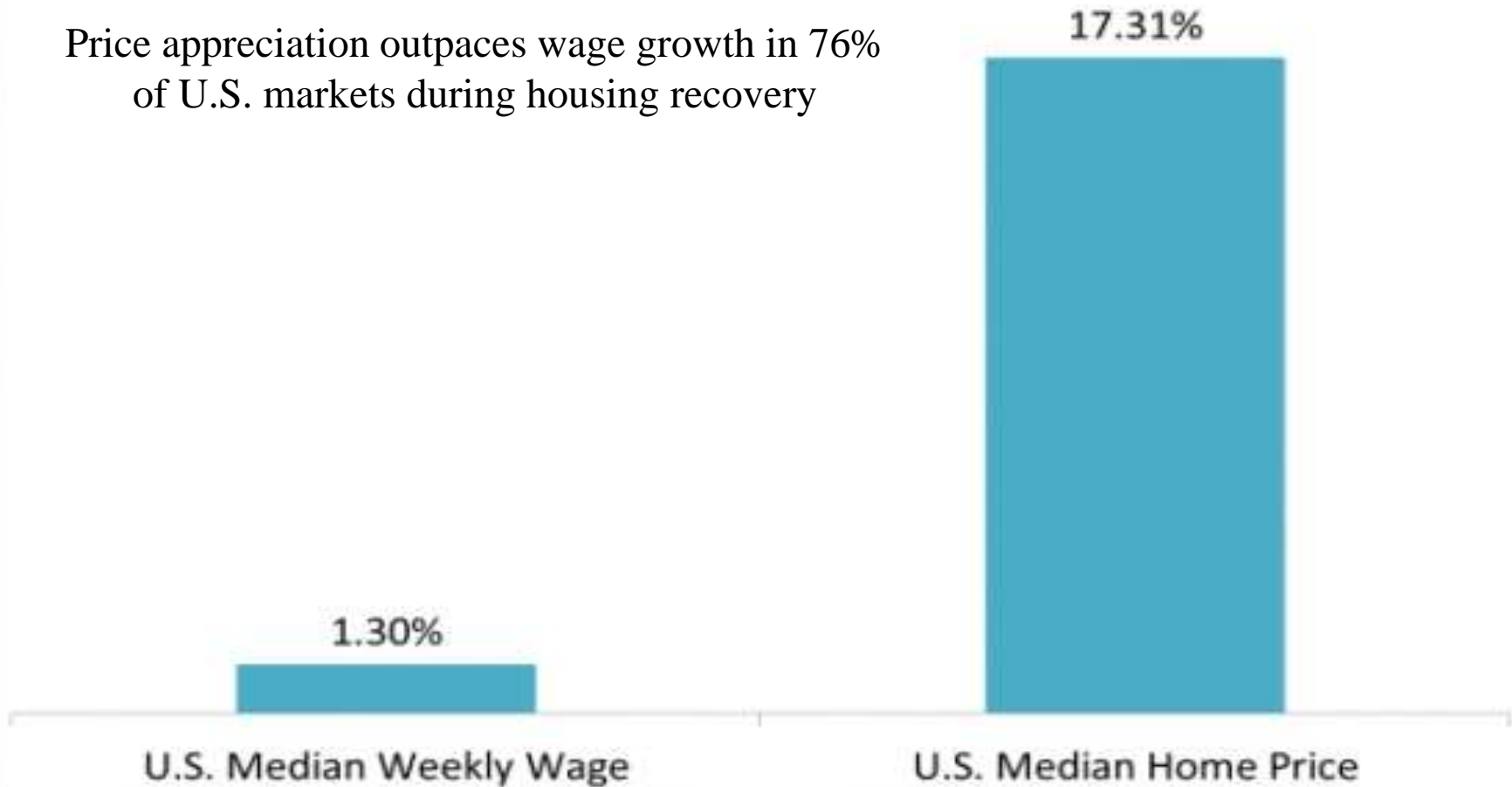
United States Housing

Home Price Appreciation Versus Wage Growth

■ 2012 to 2014 Pct Change

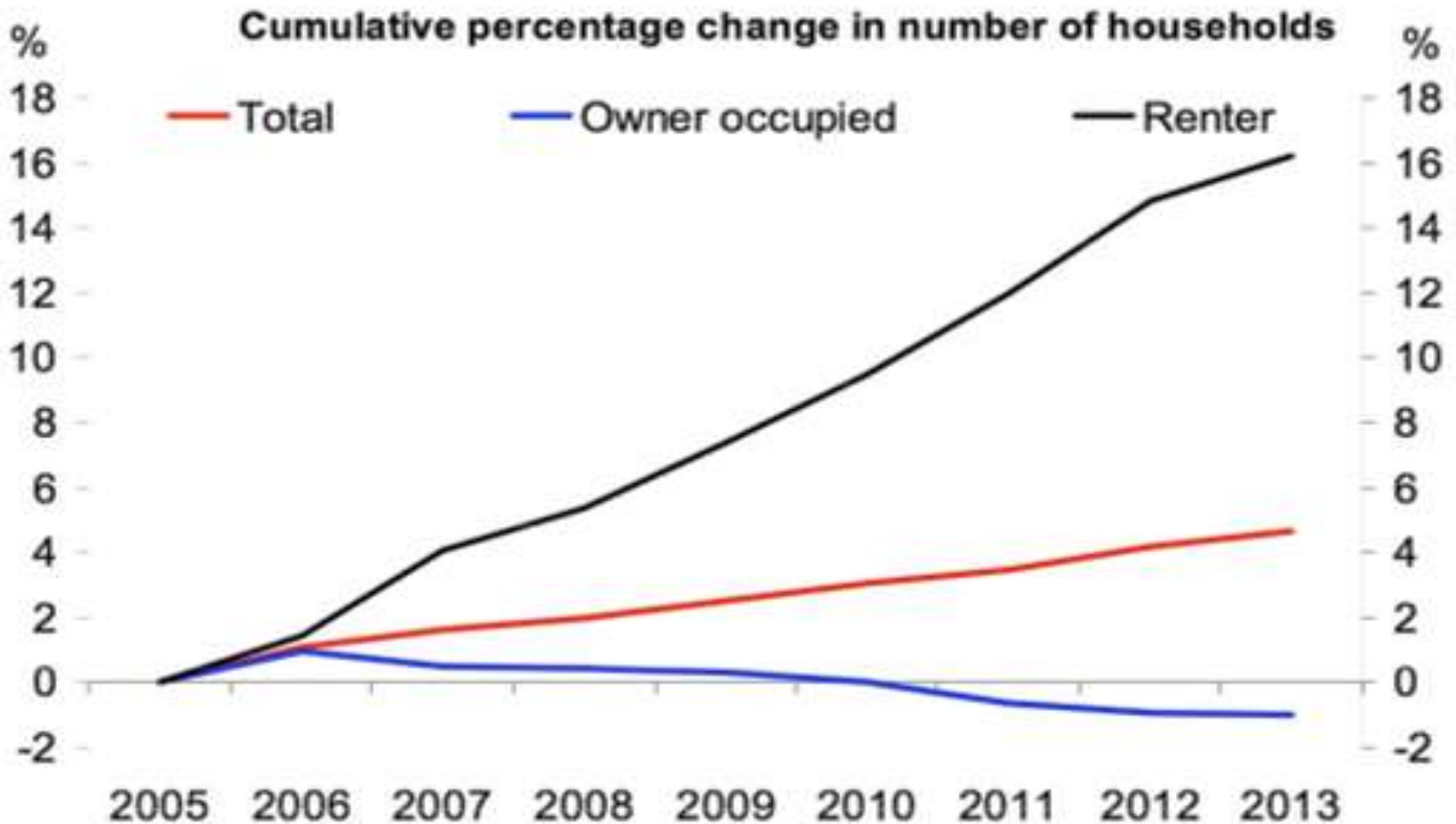
RealtyTrac

Price appreciation outpaces wage growth in 76% of U.S. markets during housing recovery



Household Formation & Renters

All households created during this recovery are renters

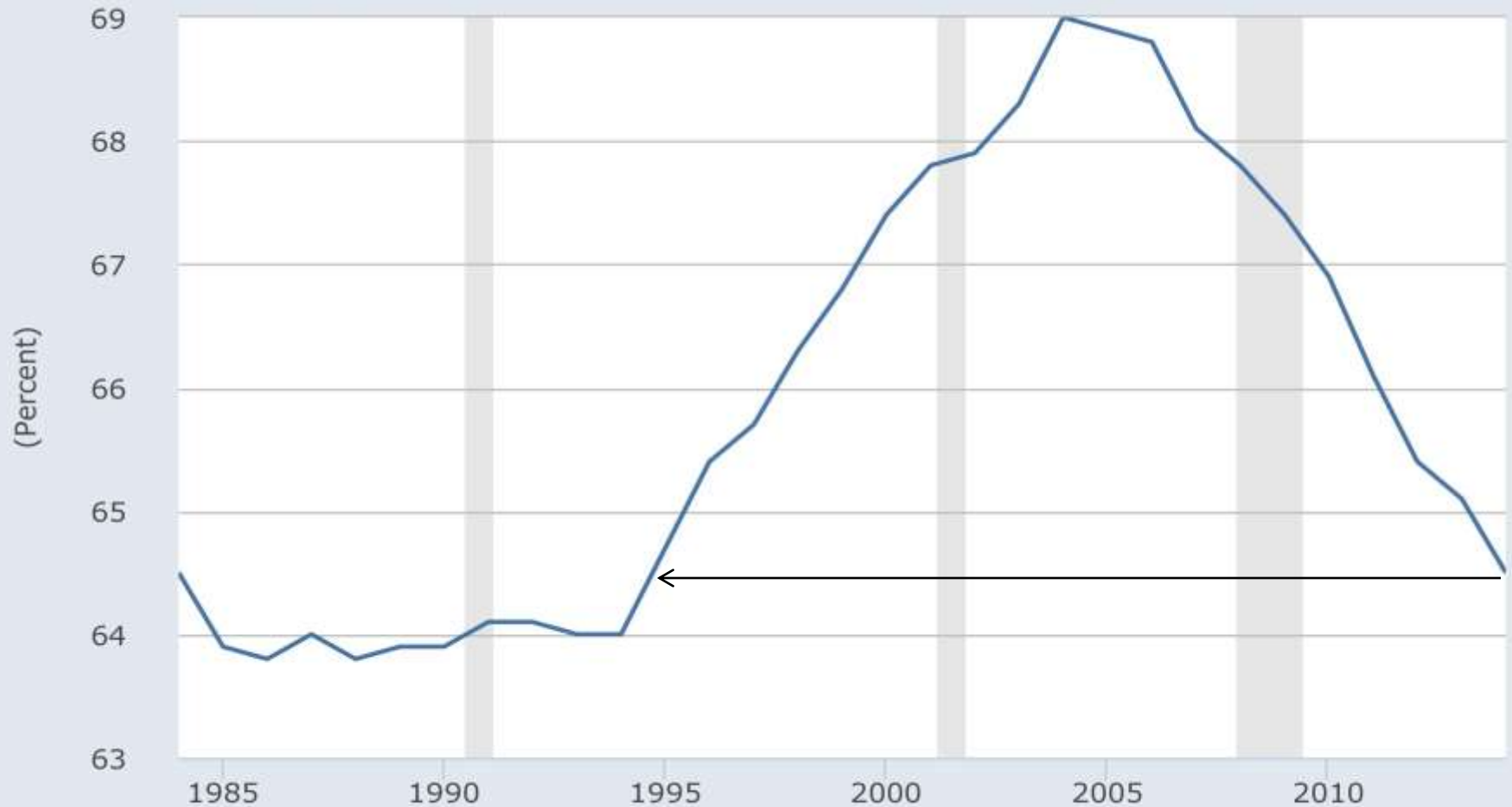


Source: Census, Haver Analytics, DB Global Markets Research

United States Housing

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— Homeownership Rate for the United States

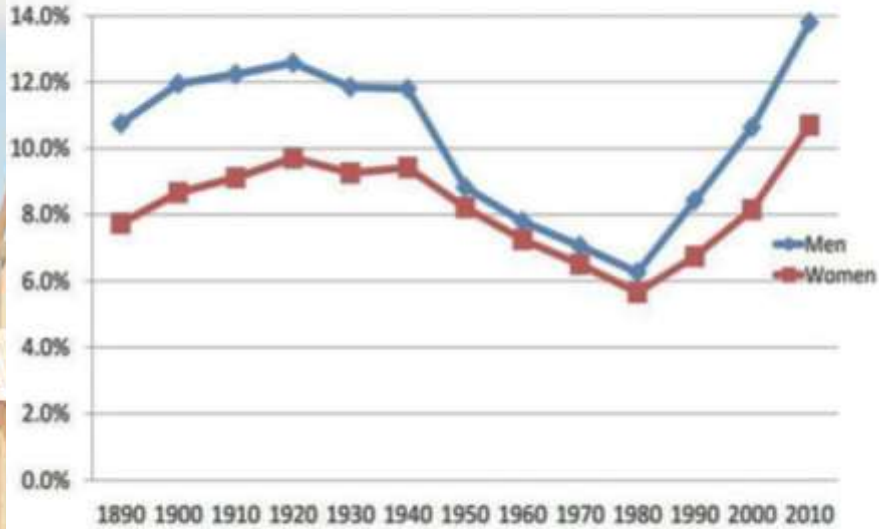


Source: US. Bureau of the Census

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United States Housing Demographics

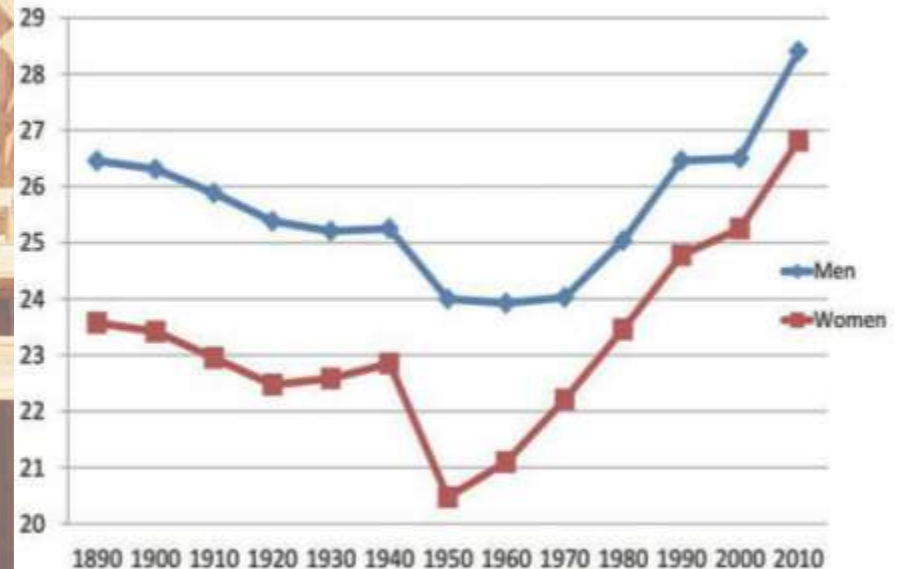
Figure 2. Percent Never Married among Those Aged 35 and Older by Sex: 1890 to 2010



Source: U.S. Decennial Census (1890-2000); American Community Survey (2010). For more information on the ACS, see <http://www.census.gov/acs>

United States
Census
Bureau

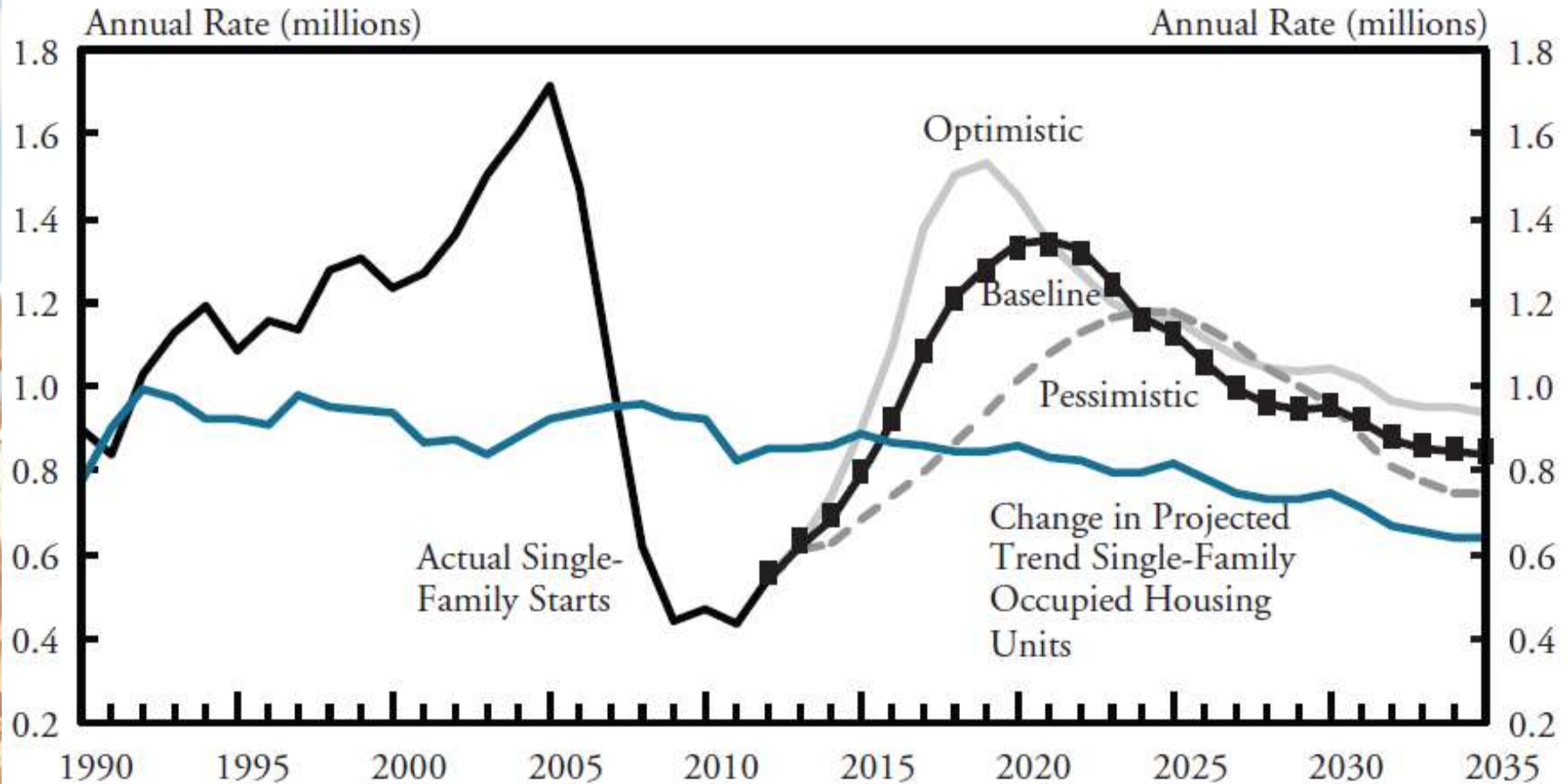
Figure 1. Median Age at First Marriage by Sex: 1890 to 2010



Source: U.S. Decennial Census (1890-2000); American Community Survey (2010). For more information on the ACS, see <http://www.census.gov/acs>

United States
Census
Bureau

Housing Starts & Demographics



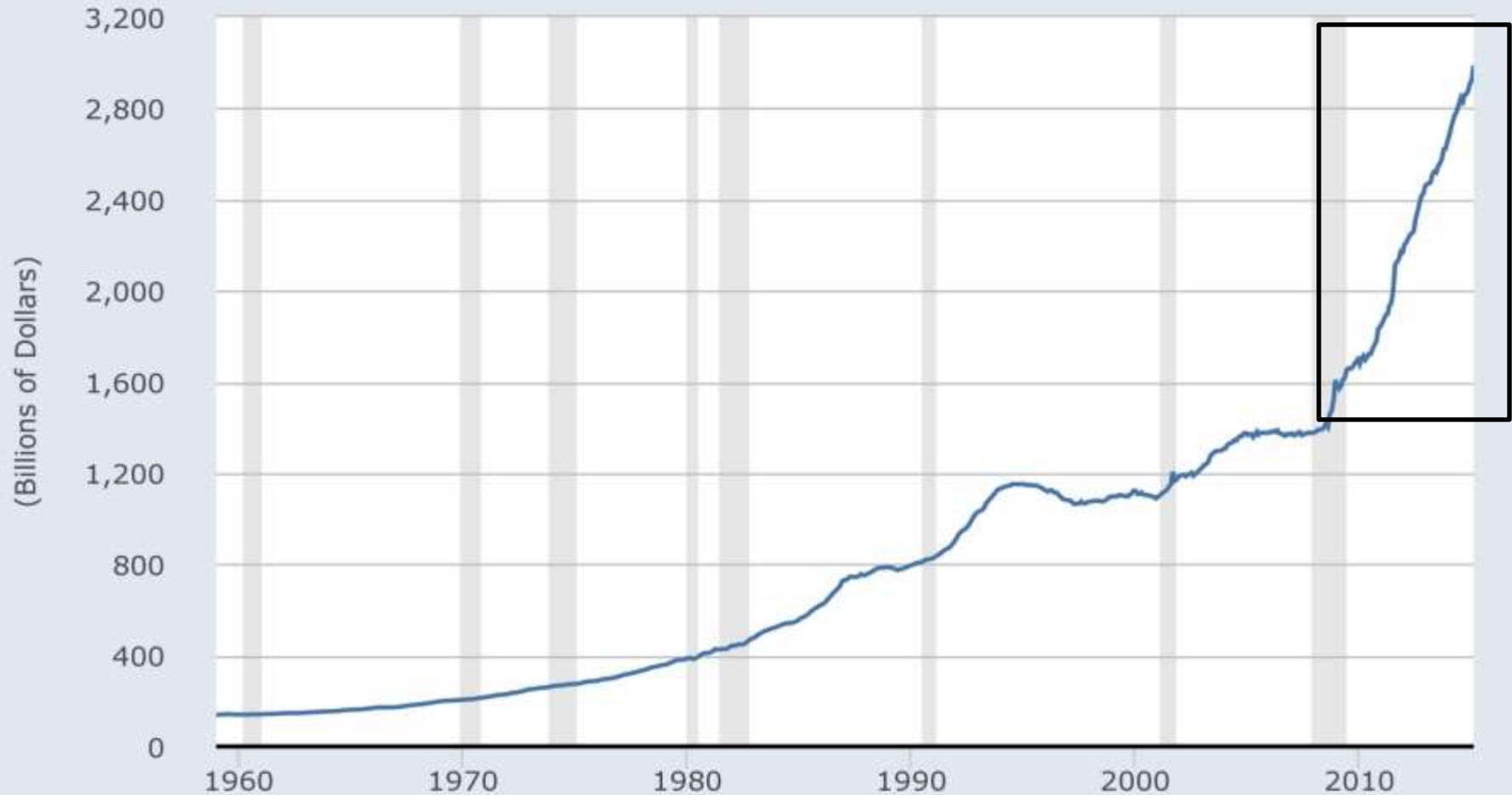
Structural change in the housing market include:

- a dramatic correction in median wealth of U.S. households as home values declined
- declining home ownership rates.

United States Housing

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— M1 Money Stock



Source: Board of Governors of the Federal Reserve System (US)

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— Velocity of M2 Money Stock



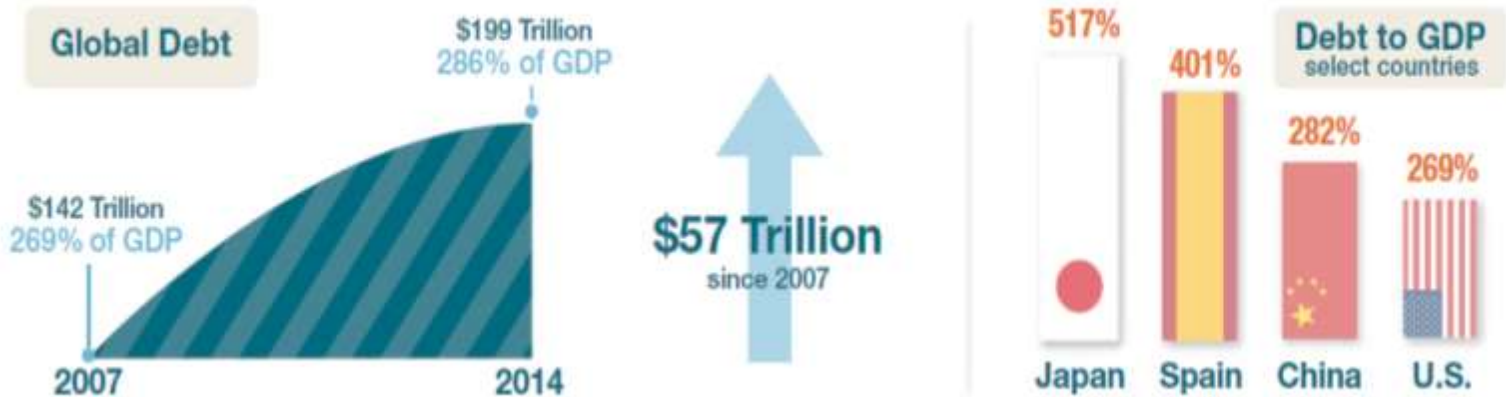
Source: Federal Reserve Bank of St. Louis

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Potential Housing Threats

Seeking stability
in an indebted world

What happened to deleveraging?

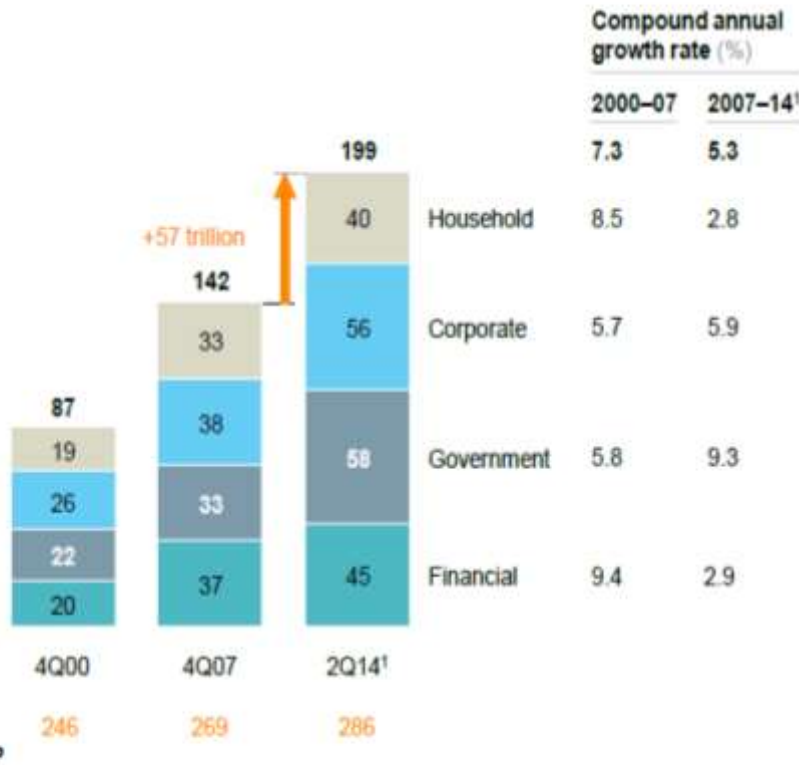


Potential Housing Threats

Exhibit E1

Global debt has increased by \$57 trillion since 2007, outpacing world GDP growth

Global stock of debt outstanding by type¹
\$ trillion, constant 2013 exchange rates



¹ 2Q14 data for advanced economies and China; 4Q13 data for other developing economies.
NOTE: Numbers may not sum due to rounding.

SOURCE: Haver Analytics; national sources; World economic outlook, IMF; BIS; McKinsey Global Institute analysis

“High debt levels, whether in the public or private sector, have historically placed a drag on growth and raised the risk of financial crises that spark deep economic recessions.

Growth in global debt has shifted since 2007, with developing economies accounting for half of new debt.”

Potential Housing Threats

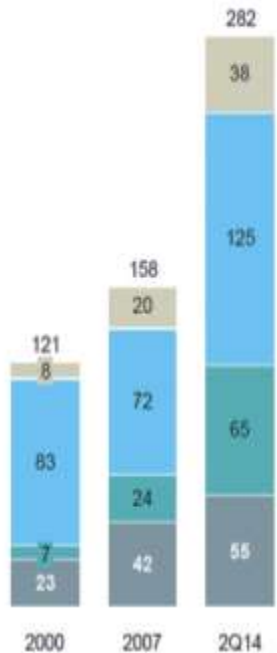
Exhibit E7

China's debt reached 282 percent of GDP in 2014, higher than debt levels in some advanced economies

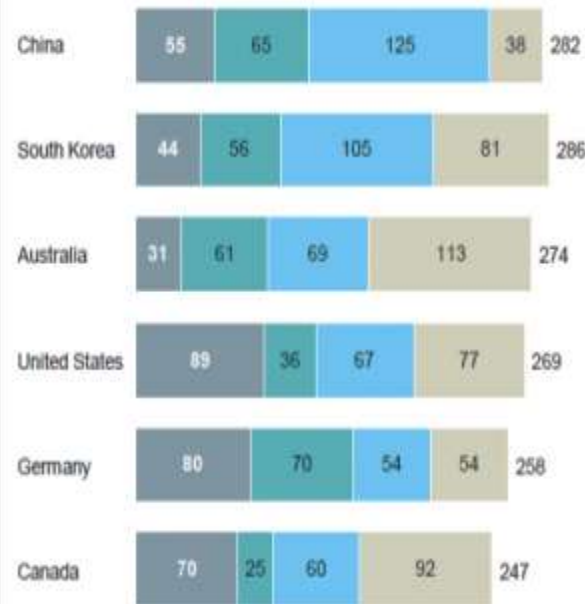
Debt-to-GDP ratio %

Government Non-financial corporate
Financial institutions Households

China



By country, 2Q14



Total debt \$ trillion

Year	2000	2007	2014
Total debt	2.1	7.4	28.2

NOTE: Numbers may not sum due to rounding.

SOURCE: MGI Country Debt database; McKinsey Global Institute analysis

“...three particular areas of potential concern in China: the concentration of debt in real estate, the rapid growth and complexity of shadow banking, and the off-balance sheet borrowing by local governments.

Nearly half of China's debt is related to real estate.”

Threats to Housing

World Debt or “Leverage”

Nothing really has changed – interest rates are lower; yet debt keeps increasing

What’s going to happen in China?

Does the U.S. economy stall or decrease?

Minimal increase in real medium income

Increased closing costs due to new lending regulations

What if there is “no” Eurozone recovery?

Geopolitical events?

Conclusions

Canada – how will the commodity demand/price decline affect housing

Most forecasts call for slightly decreasing starts through 2016

For the Canadian and U.S. housing markets to improve – both economies need to advance in conjunction with increases in real median incomes

United States

higher priced houses appear to be the strongest sector
multifamily housing as well

The opportunity: houses in the \$100 to \$200 thousand price range

The **BIG** question? → Will the U.S. housing market continue to improve?

Questions?

Thank you

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