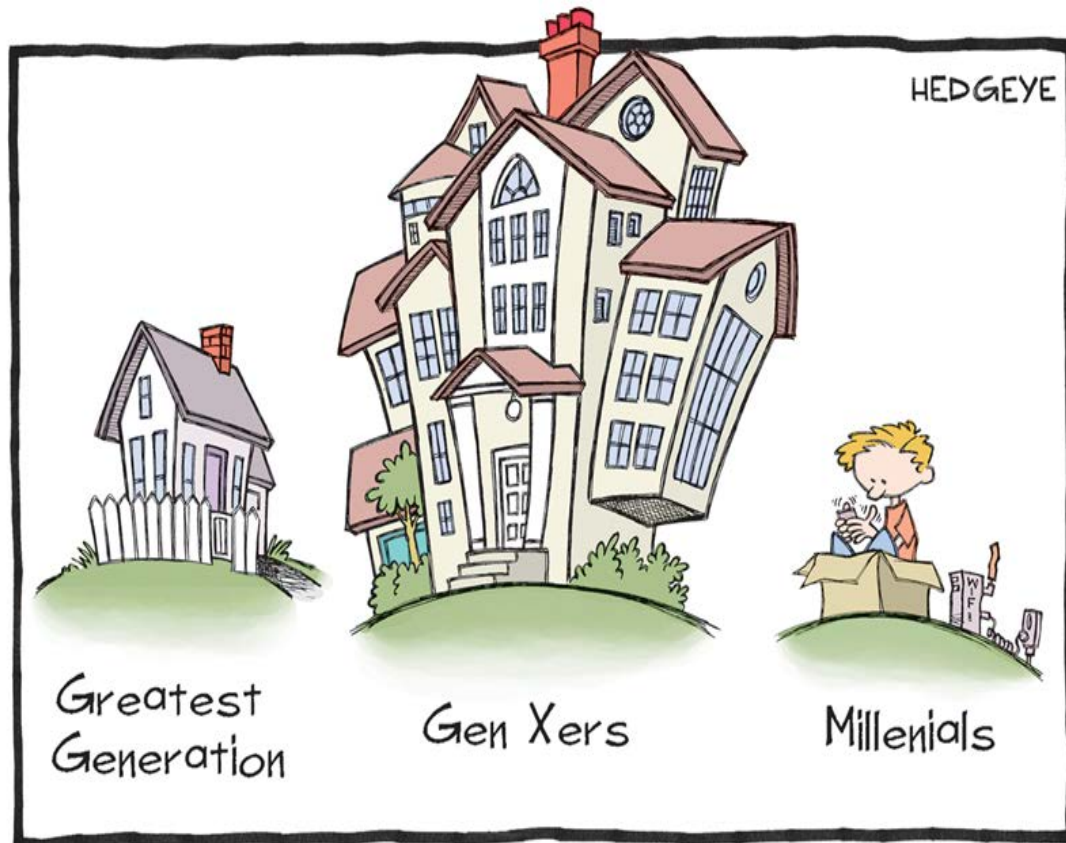




HOUSING: 4Q16 THEMES

EMERGENT RISKS

October 13, 2016



DISCLAIMER

DISCLAIMER

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PLEASE SUBMIT QUESTIONS* TO

QA@HEDGEYE.COM

**ANSWERED AT THE END OF THE CALL*

PROCESS: SIMPLIFYING THE COMPLEX

HEDGEYE HOUSING COMPENDIUM

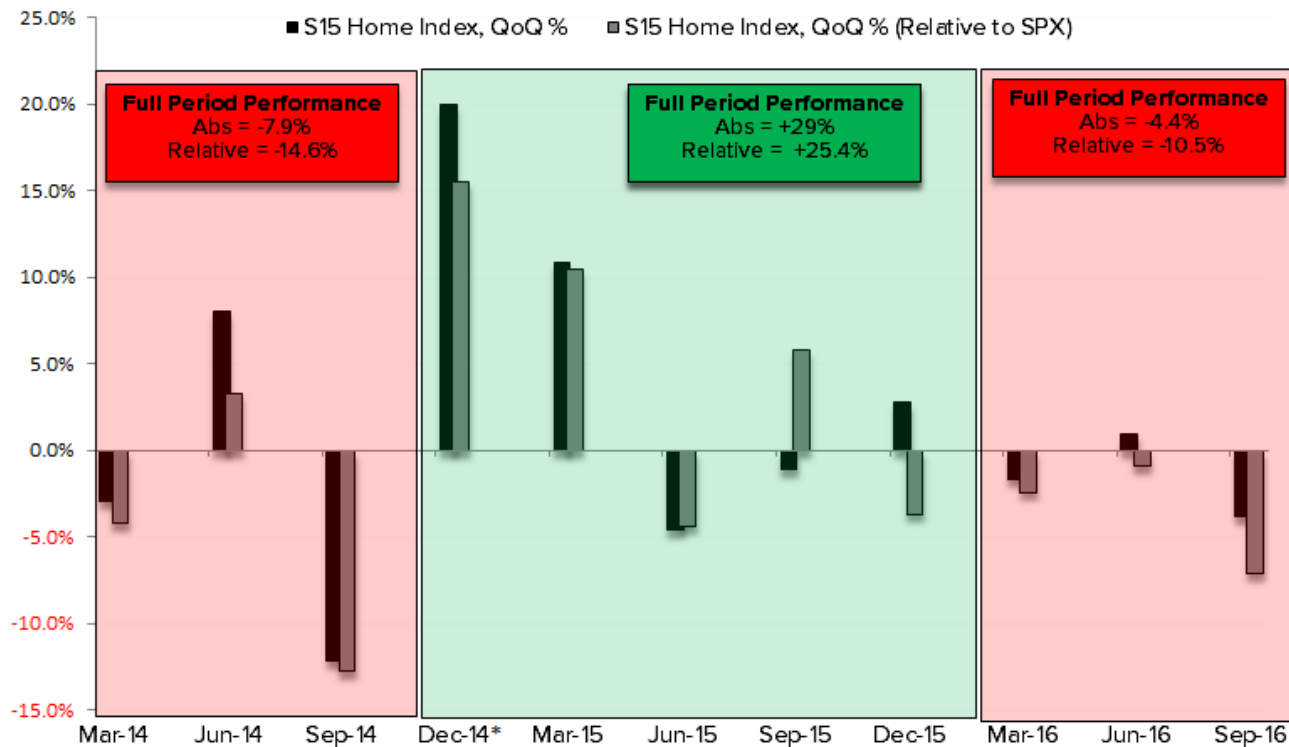
					TRADE/TREND/TAIL			Rate of Change		
					Short Term	Intmed Term	Long Term	Short Term	Intmed Term	Long Term
Most Recent Data										
		Period	Latest Data	Last Price	Prior Period	3M Ago	12M Ave	MoM Chg	3M Chg	vs 12M Avg
Home Prices	Case-Shiller 20 City HPI YoY NSA	Jul-16	Worse	5.0%	5.1%	5.4%	5.3%	-0.1%	-0.4%	-0.3%
	Case-Shiller 20 City HPI MoM SA	Jul-16	Better	0.0%	-0.1%	-0.1%	0.4%	0.1%	0.1%	-0.4%
	Corelogic HPI - NSA YoY % Chg	Jul-16	Better	5.4%	5.0%	5.4%	5.4%	0.4%	0.0%	0.0%
	Corelogic (Ex-Dist.) HPI - NSA YoY % Chg	Jul-16	Better	4.7%	4.3%	4.6%	4.6%	0.4%	0.1%	0.1%
	FHFA HPI - NSA YoY % Chg	Jul-16	Better	5.9%	5.7%	6.1%	5.9%	0.1%	-0.2%	-0.1%
Supply & Demand: Existing	MBA Purchase Apps Index (Mo. Ave)	Sep-16	Better	225.0	216.5	236.1	221.4	3.9%	-4.7%	1.6%
	NAR: Pending Home Sales (Index)	Aug-16	Worse	108.5	111.2	110.8	109.3	-2.4%	-2.1%	-0.7%
	NAR: Existing Home Sales (SAAR)	Aug-16	Worse	5.33	5.38	5.51	5.34	-0.9%	-3.3%	-0.2%
	NAR: Existing Home Inv. (millions units)	Aug-16	Better	2.04	2.11	2.14	2.04	-3.3%	-4.7%	-0.1%
	NAR: Existing Home Inv: Months Supply	Aug-16	Better	4.59	4.71	4.66	4.59	-2.4%	-1.5%	0.1%
Supply & Demand: New Homes	NAHB: HMI	Sep-16	Better	65	59	60	60	6.0	5.0	0.1
	Census: Total Starts	Aug-16	Worse	1142	1212	1128	1155	-5.8%	1.2%	-1.1%
	Census: SF Starts	Aug-16	Worse	722	768	737	759	-6.0%	-2.0%	-4.9%
	Census: Total Permits	Aug-16	Worse	1139	1144	1136	1157	-0.4%	0.3%	-1.6%
	Census: SF Permits	Aug-16	Better	737	711	731	724	3.7%	0.8%	1.8%
	Resi Construction Spending (in Billions)	Aug-16	Worse	456	457	451	448	-0.2%	1.1%	1.6%
	Census: New Home Sales	Aug-16	Worse	609	659	566	543	-7.6%	7.6%	12.2%
	Census: New Home Inventory (000)	Aug-16	Worse	239	233	238	234	2.6%	0.4%	2.0%
Miscellaneous	Interest Rates (30 Year FRM)	Sep-16	Worse	3.68%	3.66%	3.78%	3.90%	0.0%	-0.1%	-0.2%
	NAR: Affordability Index (Composite)	Jul-16	Better	157.1	153.2	163.7	163.2	2.5%	-4.0%	-3.7%
	ITB Price (EOP)	Sep-16	Worse	27.93	28.89	27.35	27.01	-3.3%	2.1%	3.4%
	XHB Price (EOP)	Sep-16	Worse	34.71	36.04	33.59	34.09	-3.7%	3.3%	1.8%

Source: Hedgeye Risk Management, S&P, Corelogic, FHFA, MBA, NAR, NAHB, Census Dept., Factset, Bloomberg

HEDGEYE

CALL CHRONOLOGY

HEDGEYE HOUSING CALL CHRONOLOGY



Data Source: Bloomberg, Hedgeye

*Turned bullish in Nov 2014

Period	Hedgeye Position	S15 Home Performance Absolute	Relative
1Q14	Bearish	-2.9%	-4.2%
2Q14	Bearish	8.0%	3.3%
3Q14	Bearish	-12.1%	-12.8%
4Q14	Bullish	20.0%	15.6%
1Q15	Bullish	10.9%	10.5%
2Q15	Bullish	-4.6%	-4.4%
3Q15	Bullish	-1.1%	5.8%
4Q15	Bullish	2.8%	-3.7%
1Q16	Bearish	-1.6%	-2.4%
2Q16	Bearish	1.0%	-0.9%
3Q16	Bearish	-3.8%	-7.1%

HOUSING- EMERGENT RISKS

1 3Q16/4Q16 – A LOOK BACK & A LOOK AHEAD

Our main call since the start of the year has been that the headwinds that began in 4Q15 would persist and grow stronger throughout 2016. To that end, volume trends have converged to zero while HPI has modestly decelerated in both the existing and new home markets. We expect volume and price trends to be similarly underwhelming through the balance of the year.

2 THE HIGH END HANGOVER

Luxury & High End real estate is struggling for a multitude of reasons. The supply of high end homes has been increasing steadily as demand has been waning, while pricing is beginning to weaken. The trend here looks set to continue and likely worsen.

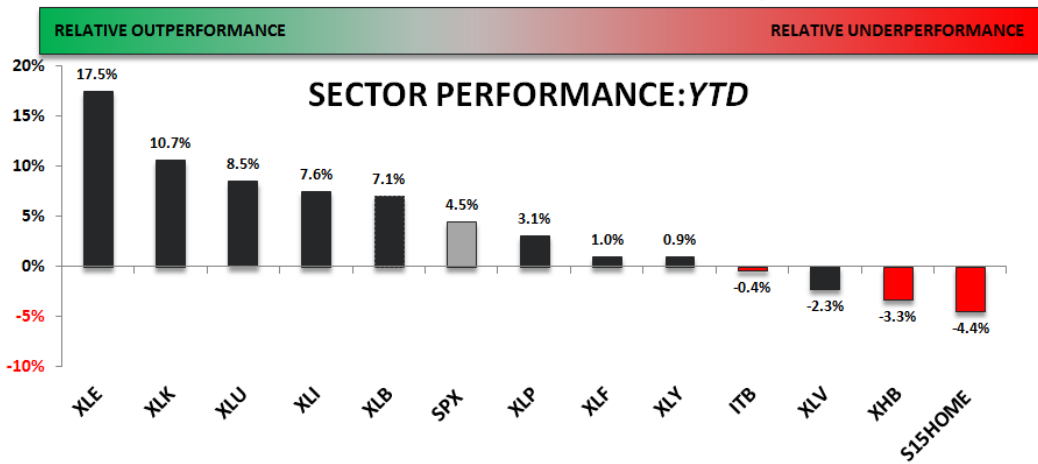
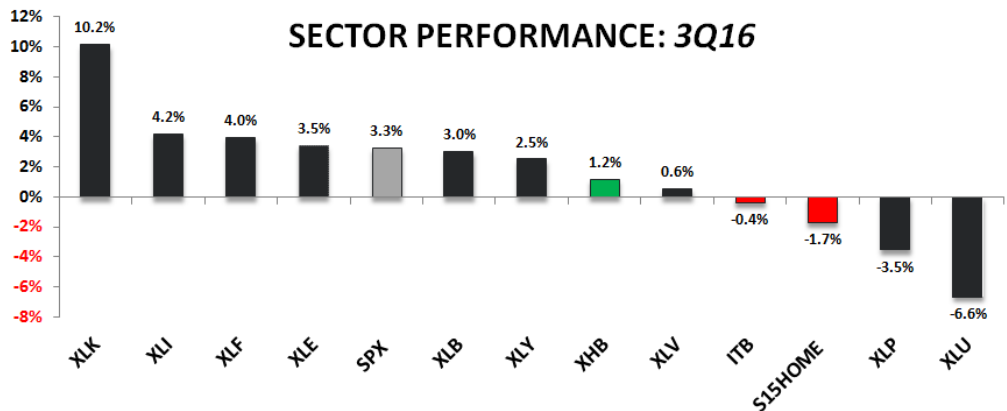
3 HEADACHES & HARBINGERS

Crashing maternity rates, the sharpest slowdown in household formation in 5 years, Zika risks and the broad menagerie of rising rates, the election and global macro risks offer quite the alphabet soup for investors to risk manage.



A LOOK BACK & A LOOK AHEAD

2016: ABSOLUTE & RELATIVE LAGGARD



*YTD Performance as of 10/11/16

Negative absolute and relative returns have characterized performance across the primary housing proxies (XHB, ITB, S15 Home Index) in 2016.

3Q16 & YTD: 2 of 3 industry proxies had negative returns in 3Q16 while all three have negative returns + relative underperformance YTD.

SUBSECTOR PERFORMANCE

Strong Performance from Building Products and MI in 3Q helped drive the only quarter of positive relative performance for the complex in 2016

HOUSING: SUBSECTOR PERFORMANCE

HEDGEYE HOUSING

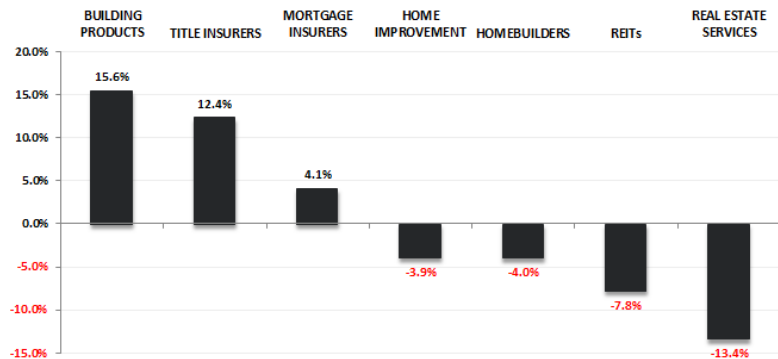
INDEX	Ticker	1Q16 % Chg	2Q16 % Chg	3Q16 % Chg	QTD % Chg	YTD % Chg
S&P 500	SPX	0.8%	1.9%	3.3%	-0.7%	5.4%
HOMEBUILDERS						
S&P Homebuilder Index	\$ISHOME	-2.2%	1.6%	-1.7%	-1.7%	-4.0%
	Relative	-2.9%	-0.3%	-5.0%	-1.0%	-9.3%
BUILDING PRODUCTS						
S&P Building Products Index	\$15BUILX	4.2%	4.5%	7.1%	-0.8%	15.6%
	Relative	3.4%	2.6%	3.7%	-0.2%	10.2%
HOME IMPROVEMENT						
S&P Home Improvement Index	\$SHOMI	0.5%	-1.7%	-2.2%	-0.6%	-3.9%
	Relative	-0.3%	-3.6%	-5.5%	0.1%	-9.3%
REITs						
Apartment REITs*	REIT U Index	2.4%	-0.6%	-2.5%	-7.1%	-7.8%
	Relative	1.7%	-2.5%	-5.8%	-6.4%	-13.2%
REAL ESTATE SERVICES						
Real Estate Services*	RESRVCs U Index	-4.0%	-6.1%	-1.9%	-2.1%	-13.4%
	Relative	-4.8%	-8.0%	-5.2%	-1.4%	-18.8%
MORTGAGE INSURERS						
Mortgage Insurers*	MI U Index	-12.7%	-8.2%	31.1%	-0.9%	4.1%
	Relative	-13.5%	-10.1%	27.8%	-0.2%	-1.2%
TITLE INSURERS						
Title Insurers*	TI U Index	-1.1%	12.4%	2.9%	-1.7%	12.4%
	Relative	-1.9%	10.5%	-0.4%	-1.0%	7.0%
SUBSECTOR AVE						
	Abs	-1.9%	0.3%	4.7%	-2.1%	0.4%
	Relative	-2.6%	-1.6%	1.4%	-1.4%	-4.9%

*Equal Weighted Composites: REITs: AIV, AVB, CPT, EQR, ESS, MAA, PPS, UDR; RE Services: RLG, RMAX; MI: ESNT, MTG, NMIH, RDN; TI: FNF, FAF, STC, BKFS

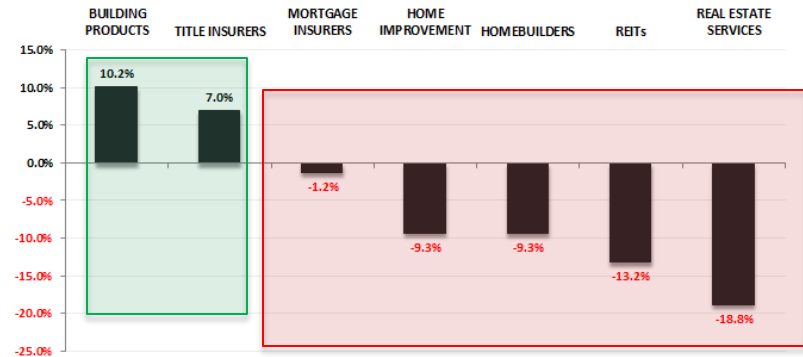
Source: Bloomberg, HEDGEYE

YTD PERFORMANCE

ABSOLUTE

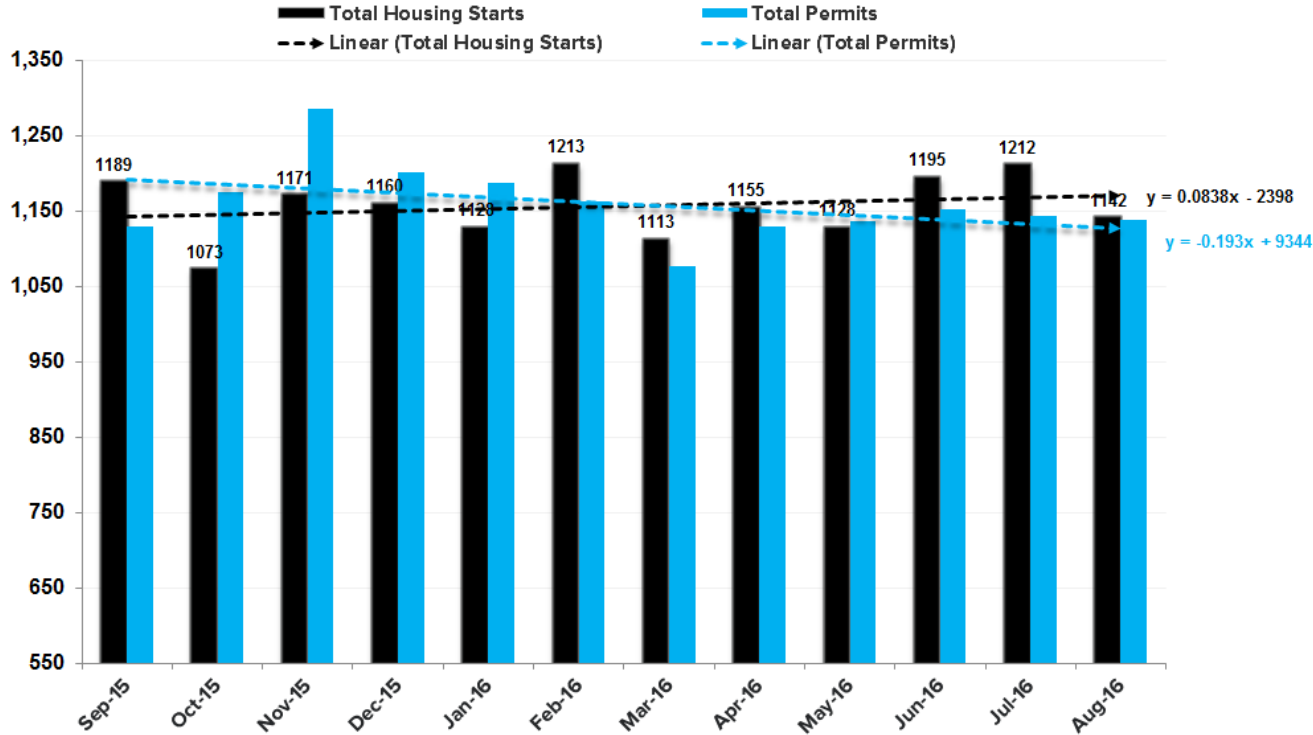


RELATIVE



STARTS: CONVERGENCE TO ZERO

TOTAL HOUSING STARTS

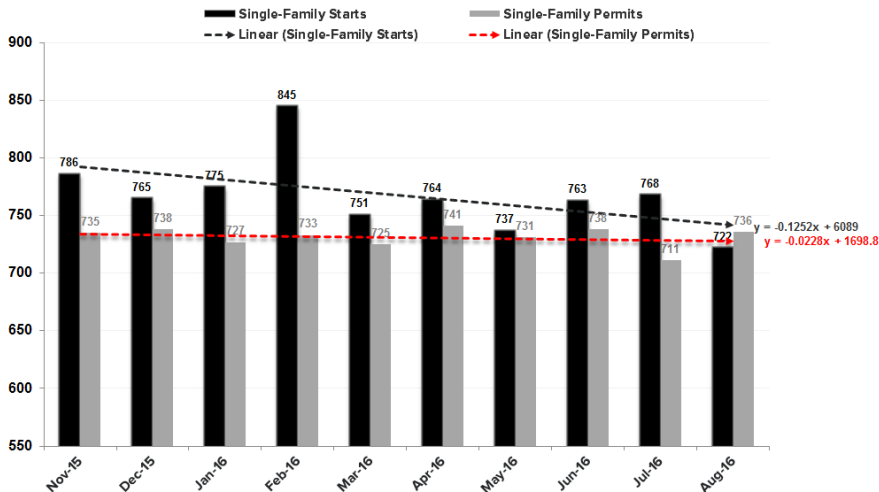


DATA SOURCE: BLOOMBERG, CENSUS BUREAU, HEDGEYE

Total Housing Starts have been dead flat over the TTM. On a year-over-year basis, growth was just +0.9% in August and has been zero or negative in 3 of the last 5 months.

SF = **STALLING**, MF = **NEGATIVE**

SINGLE FAMILY STARTS & PERMITS

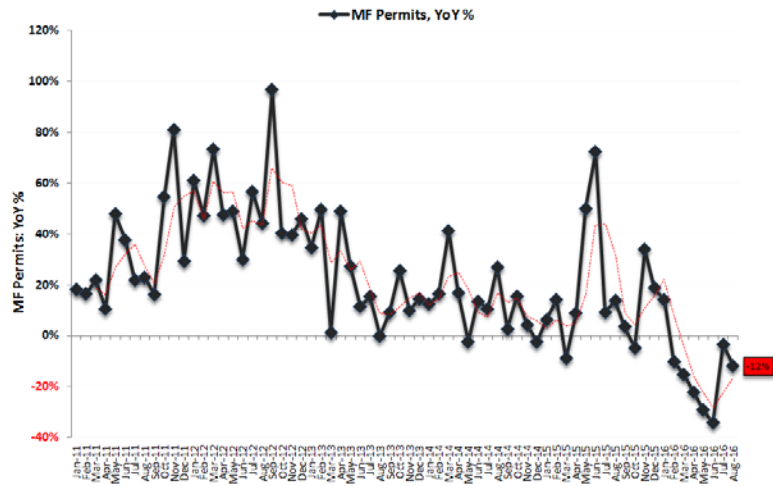


DATA SOURCE: BLOOMBERG, CENSUS BUREAU, HEDGEYE

SINGLE-FAMILY

Single Family Starts have now been flat to down for 10 months. SF Starts in August were negative Y/Y (-1.2%) for the first time since 1Q15 and the trend in permits suggests little near term upside.

MULTI FAMILY PERMITS



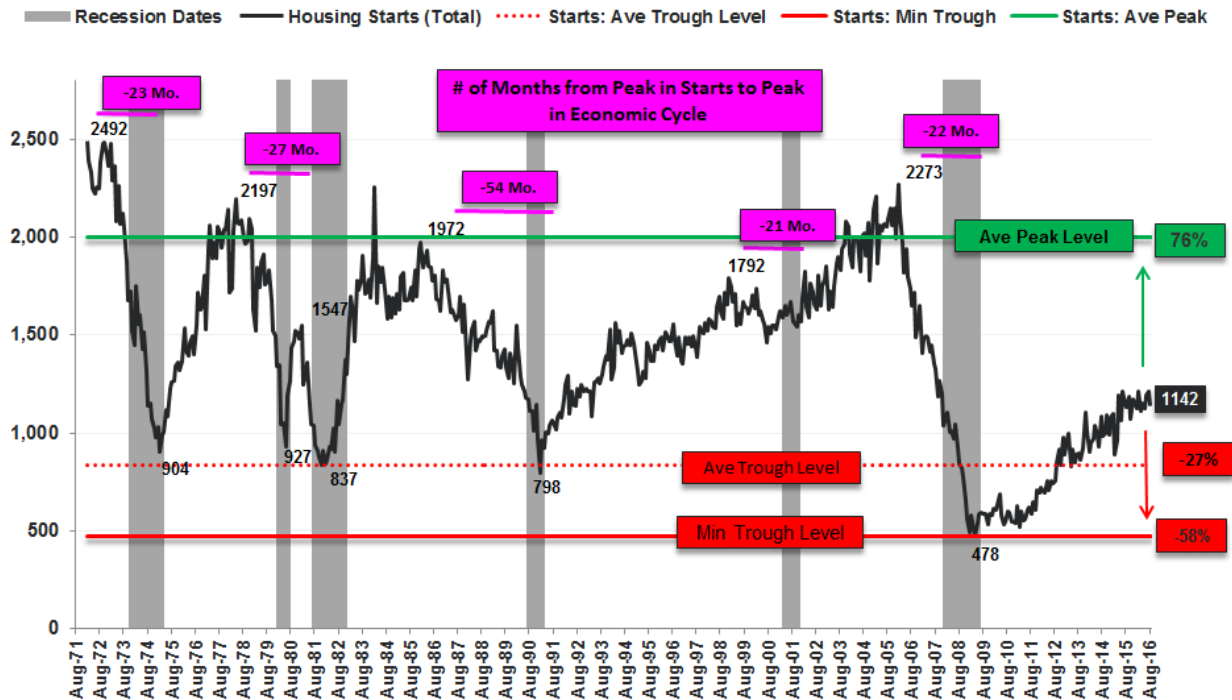
DATA SOURCE: BLOOMBERG, CENSUS BUREAU

MULTI-FAMILY

After averaging >20% annual growth in the preceding 5 years, MF permit activity is down -11% YTD with negative growth in each of the last 7 months.

STARTS: LONG-TERM CYCLE CONTEXT

HOUSING STARTS



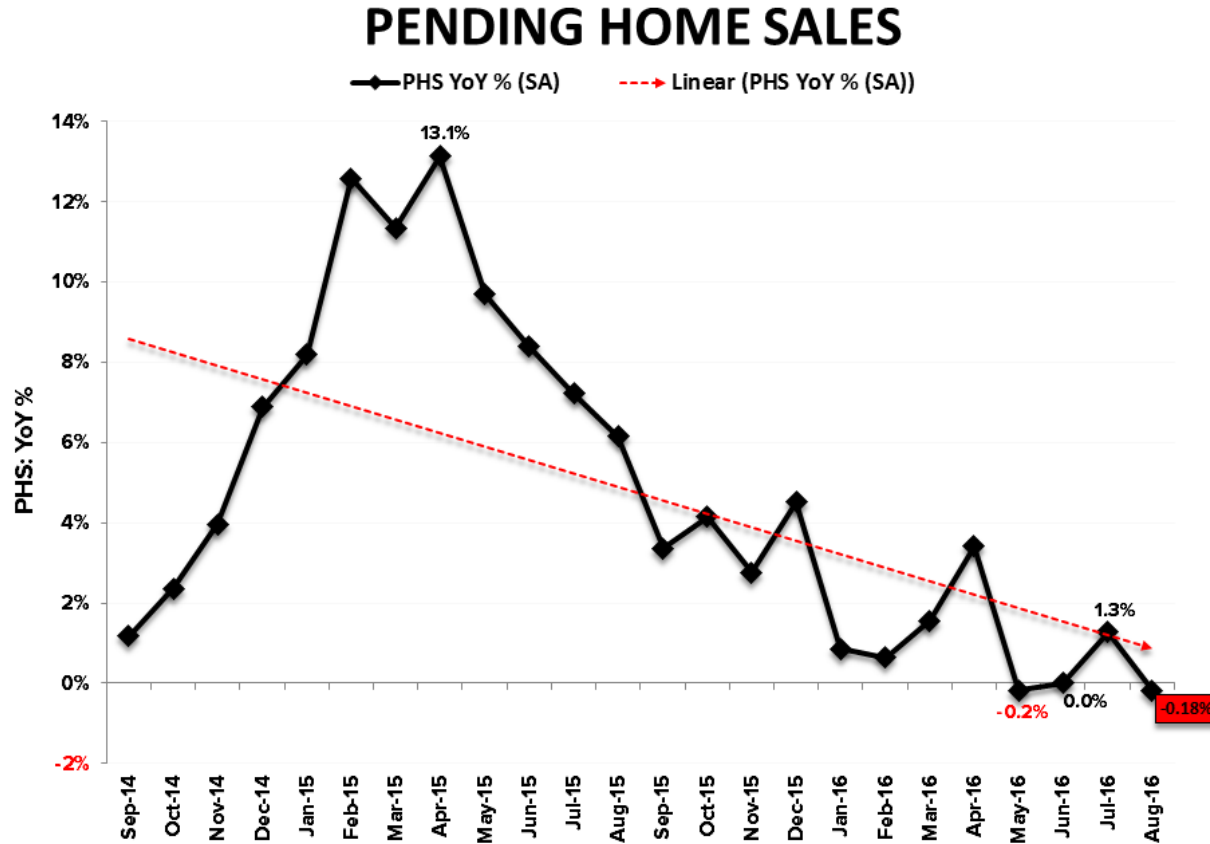
DATA SOURCE: BLOOMBERG, NBER, CENSUS BUREAU, HRM

Historically, Peak Housing Activity is a mid-cycle phenomenon.

Given the lagged and muted recovery in new construction, the housing and broader macro cycles are out of phase in the current expansion.

We are currently 27% above avg trough levels and 76% below avg peak levels observed over the last 7-cycles.

PHS: CONVERGENCE TO ZERO

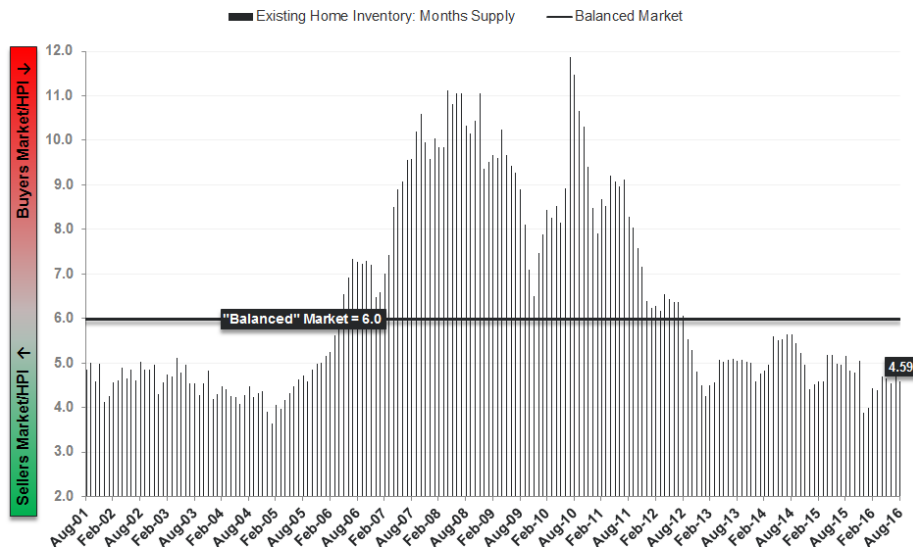


DATA SOURCE: BLOOMBERG, NATIONAL ASSOCIATION OF REALTORS

Growth in Pending and Existing Home Sales has converged to zero and has been negative in 3 of the last 4 months.

EXISTING MKT: SUPPLY STAGNATION

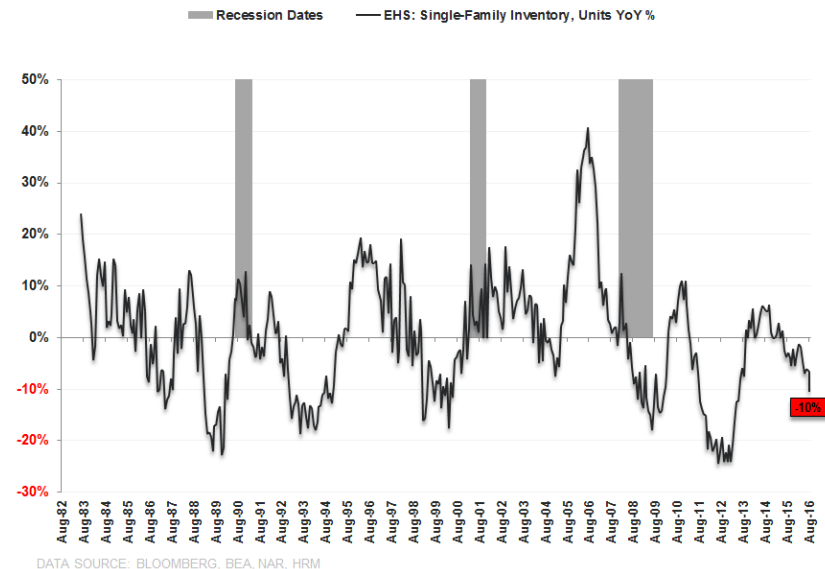
EXISTING HOME INVENTORY: MONTHS SUPPLY



MONTHS SUPPLY

With inventory falling faster than sales in August, months supply fell to 4.59 months, marking the 9th consecutive month under 5-months supply and the 48th month below the conventional balanced market level of 6-months

INVENTORY: SINGLE-FAMILY EXISTING HOMES



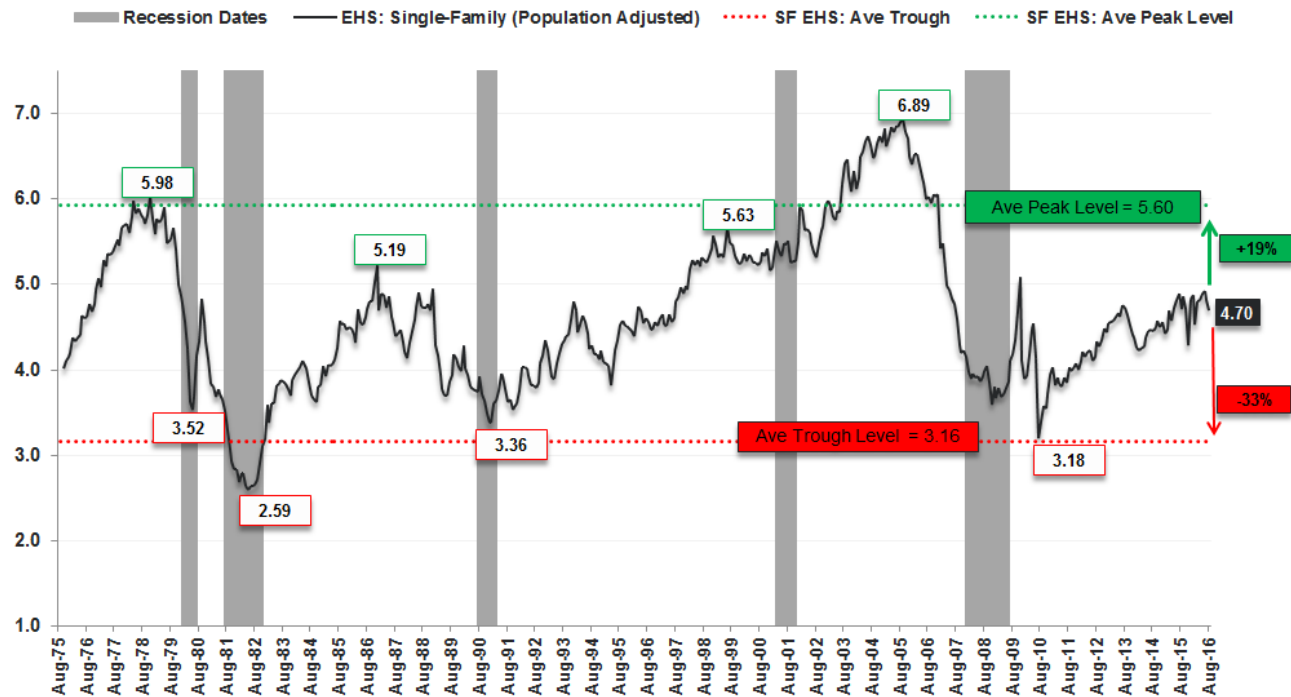
UNIT SUPPLY

Unit supply growth held negative year-over-year for a 15th consecutive month in August and at -10.1% YoY marks the fastest pace of inventory decline since mid-2013.

EHS: UNDERWHELMING, MONTH 18

SINGLE-FAMILY EXISTING HOME SALES

POPULATION ADJUSTED



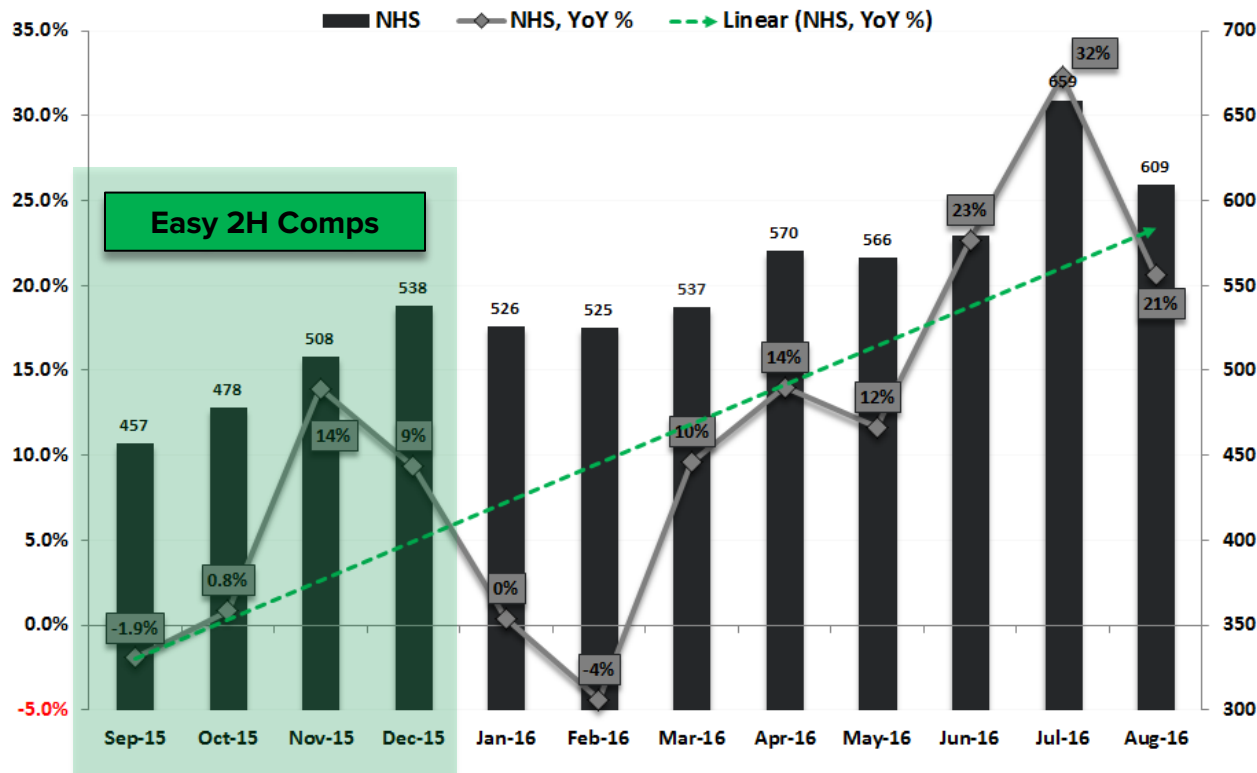
DATA SOURCE: BLOOMBERG, NBER, NAR, HRM

Single and Total Existing Home sales have already mean-reverted back above average levels of activity. The long-term average is 4.53 mn and the series was recently at 4.9 mn. Sales have remained range bound for the past 18 months.

Any next leg higher in existing volumes will require some supply improvement and further strength in both trade-up and 1st time buyer demand.

NHS: 2H SHOULD SLOW

New Homes Sales



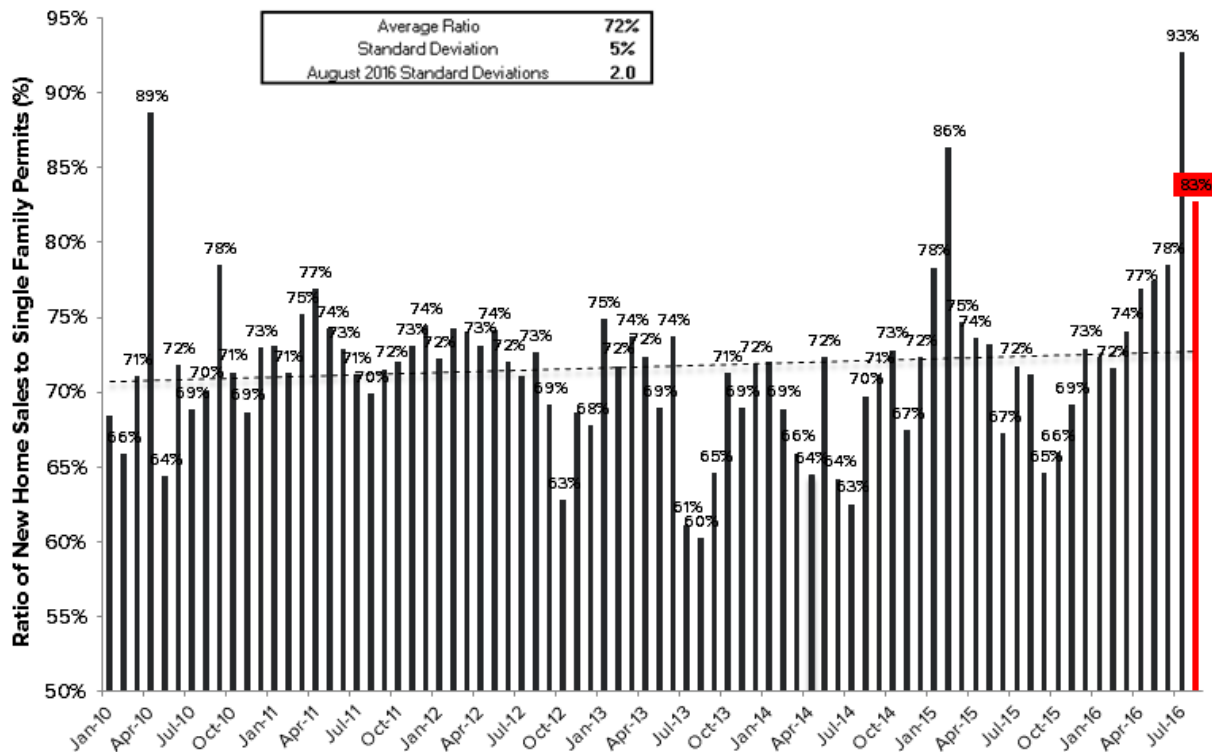
DATA SOURCE: BLOOMBERG, CENSUS BUREAU

Mean reversion upside and cumulative underperformance relative to EHS since 2012 supported relative strength in NHS over the last year.

Base effects should continue to support strong rates of change in NHS over the balance of the year and in Sept/Oct in particular, but sequentially the data should weaken.

NHS: EXPECT BIG MEAN REVERSION ↓

Single Family Housing: Ratio of New Home Sales to SF Permits



DATA SOURCE: CENSUS, HEDGEYE

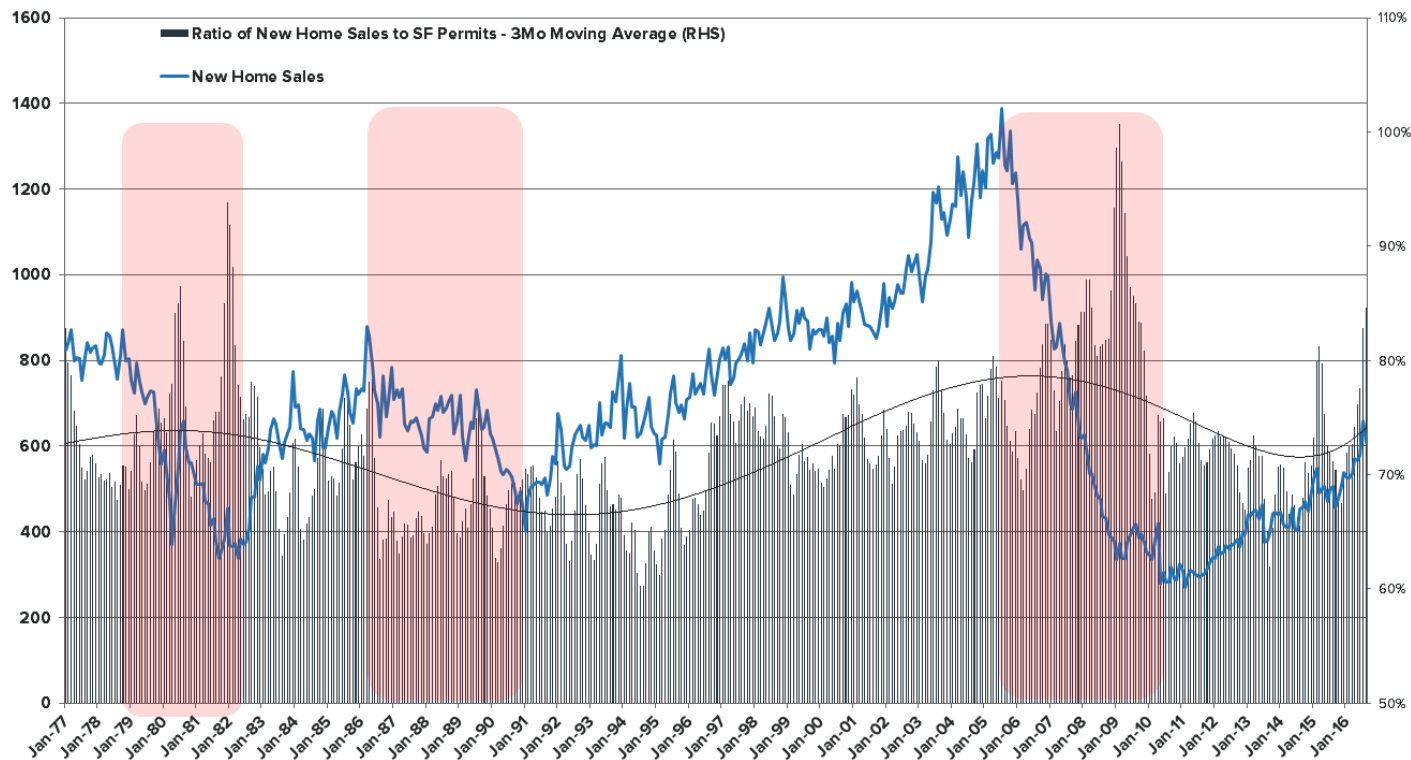
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NHS is derived from the estimate of Starts/Permits and, historically, the ratio of NHS to SF Permits has averaged 72%. In most instances a short-term dislocation and rise in the ratio is followed by negative revisions and mean reversion back to that historically consistent ratio.

We saw just such an example in April when the Easter distortion inflated initial NHS estimates which were subsequently revised down by >12% over the next few months

NHS: A STUDY IN ST DISLOCATIONS

Single Family Housing: Ratio of New Home Sales to SF Permits (1977-Present)



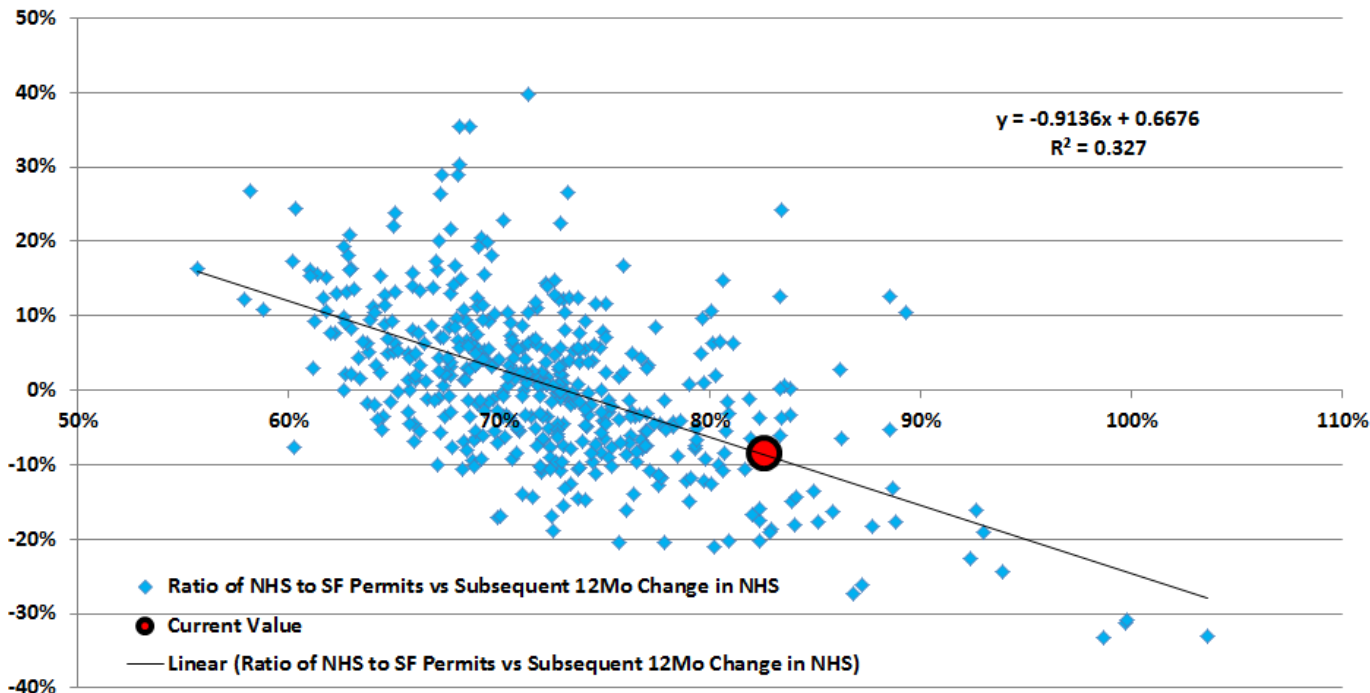
DATA SOURCE: CENSUS DEPT, HEDGEYE

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In most instances a rise in the NHS to SF Permits ratio is followed by negative revisions and declines in reported sales in the subsequent month(s).

NHS: NTM SET TO WEAKEN

Ratio of NHS to SF Permits vs Subsequent 12Mo Change in NHS

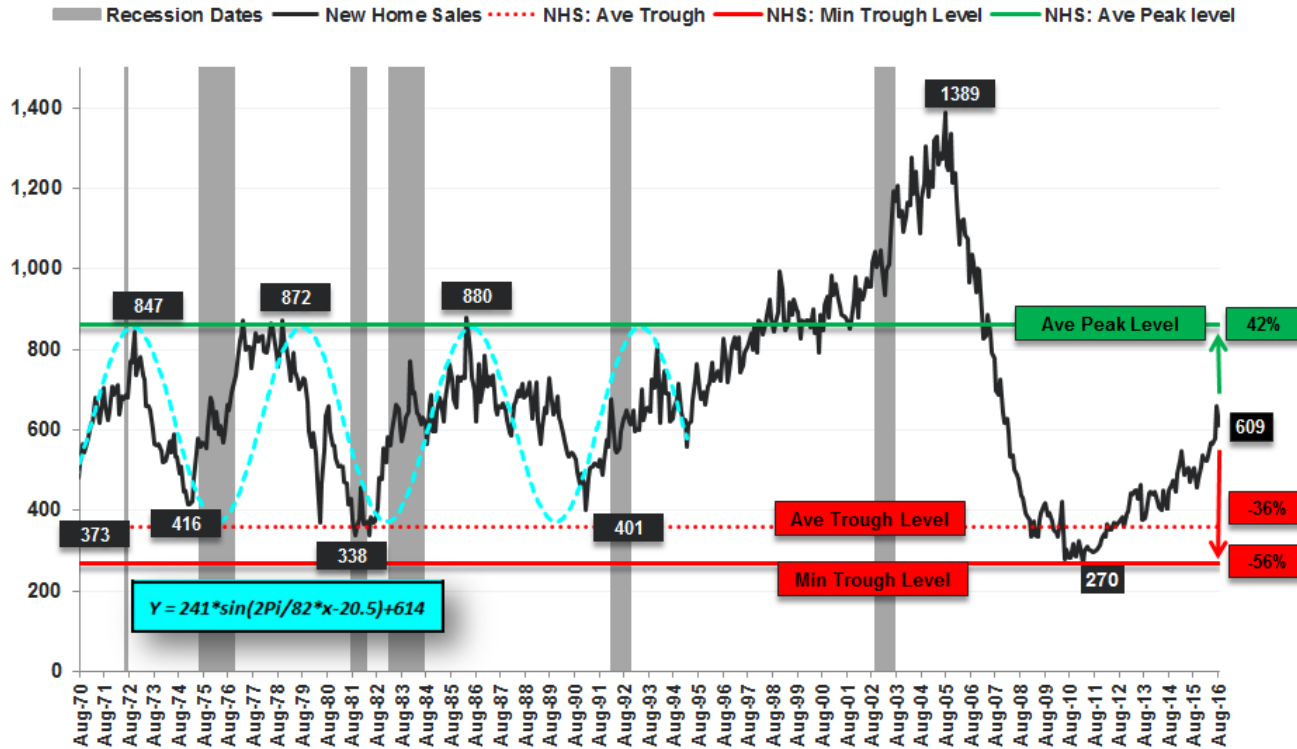


The slope coefficient on the historical relationship between the ratio of NHS to SF permits and subsequent Sales Activity is -9.1%.

Given ratio's of 93% and 83% in the last 2 months, respectively, this implies an approximate -10% decline in NHS over the next 12 months.

NHS: BACK TO BALANCED

NEW HOME SALES



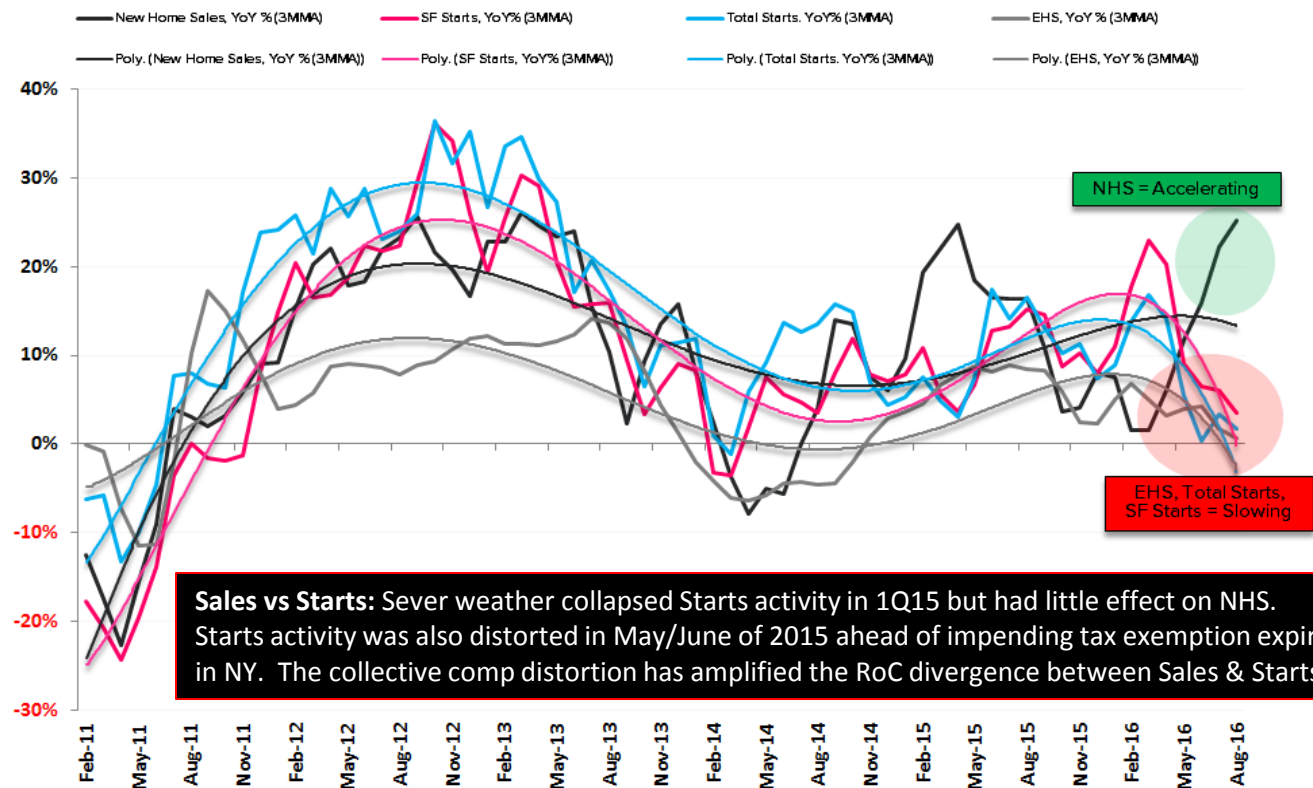
DATA SOURCE: BLOOMBERG, NBER, CENSUS BUREAU, HEDGEYE

NHS (finally) recovered back to LT historical levels of activity in July, leaving the former asymmetry and easy mean reversion upside in the rearview.

At 609K last, the upside/downside to average peak/trough levels is roughly balanced at 42% and 36%, respectively.

IN SHORT: NHS ↑, EVERYTHING ELSE ↓

HOME SALES & STARTS



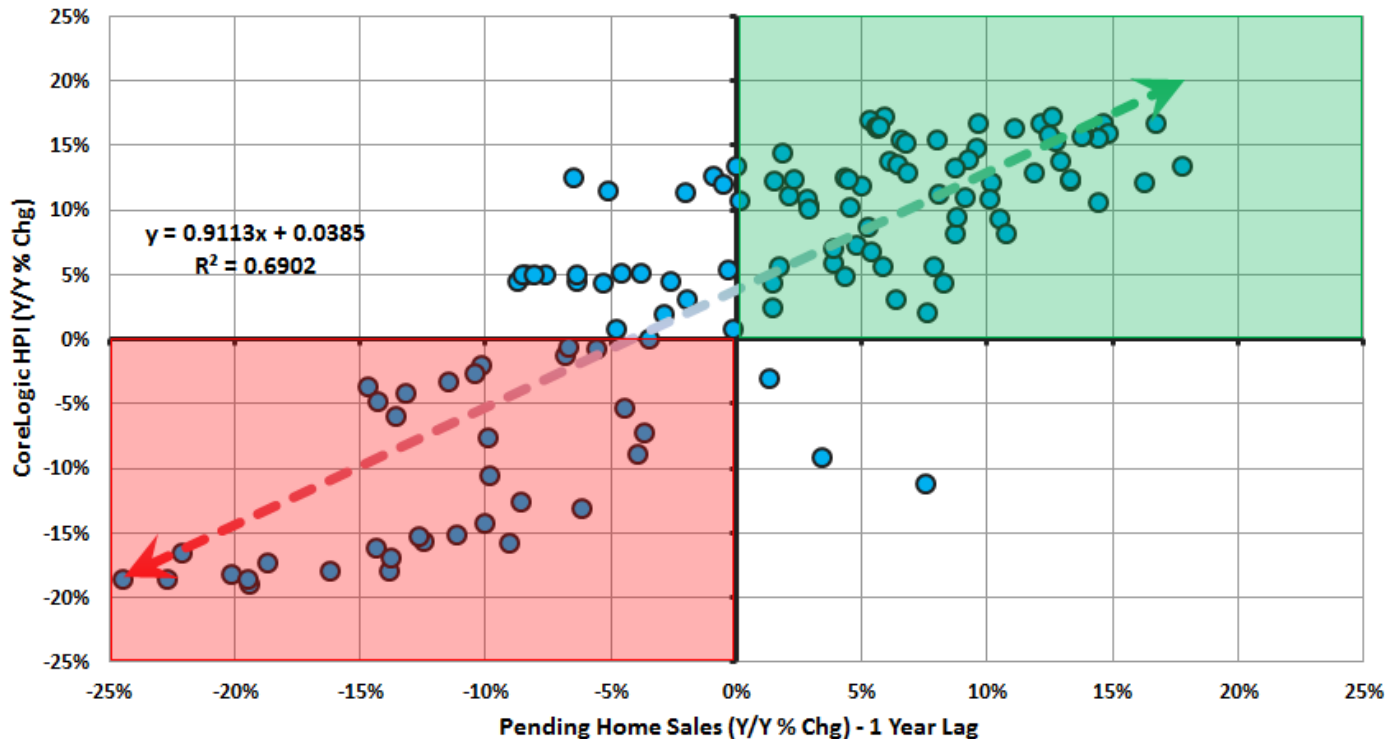
DATA SOURCE: BLOOMBERG, CENSUS BUREAU, NAR, HEDGEYE

Housing's growth "Wave" has crested and rolled earlier this year.

Comp related distortions and likely overestimation in recent months are driving the rate-of-change divergence in NHS.

HPI TUG O' WAR: CASE FOR DOWNSIDE

Pending Home Sales Y/Y Growth (12-Mo Lag) vs. CoreLogic HPI Y/Y Growth
Last 10 Years of Monthly Data



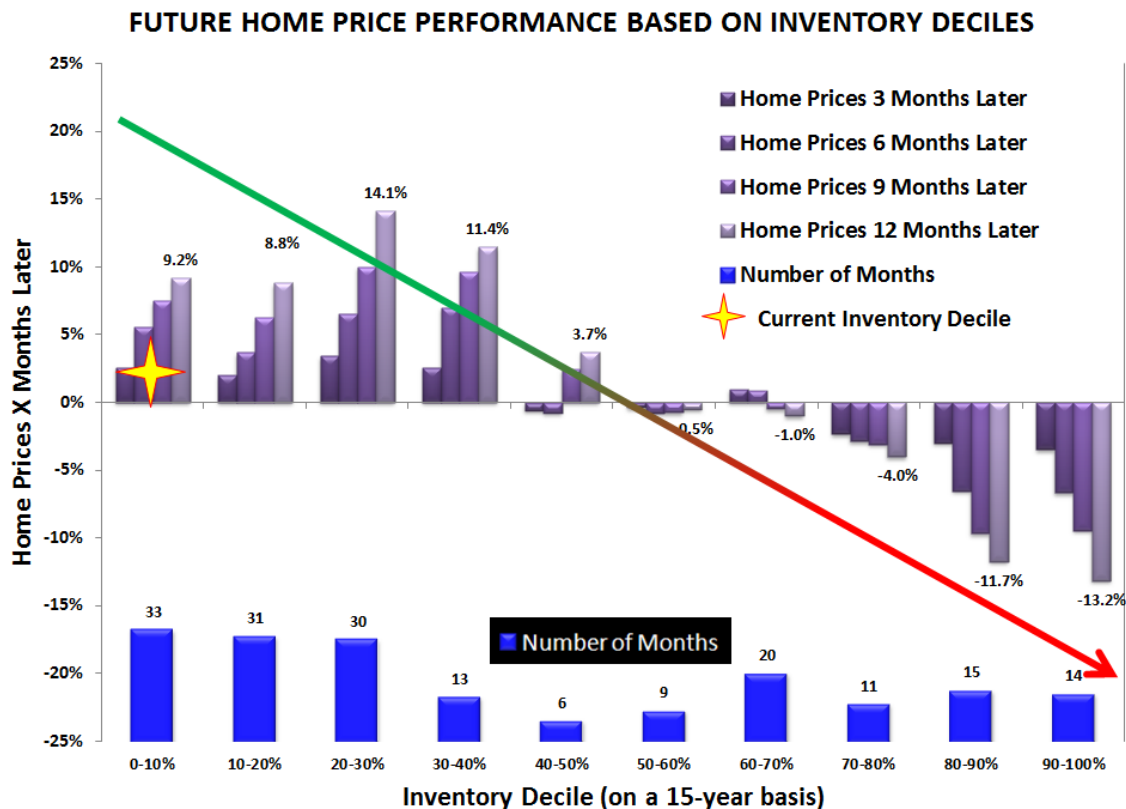
Data Source: CoreLogic, NAR

* Excludes Periods Just Before & After Late-2009 & Early-2010 Tax Credits

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The slope of the relationship between demand growth and price growth is almost one to one, meaning that a 1% deceleration in demand growth has historically correlated with a 91 bps deceleration in HPI.

HPI TUG O' WAR: CASE FOR UPSIDE

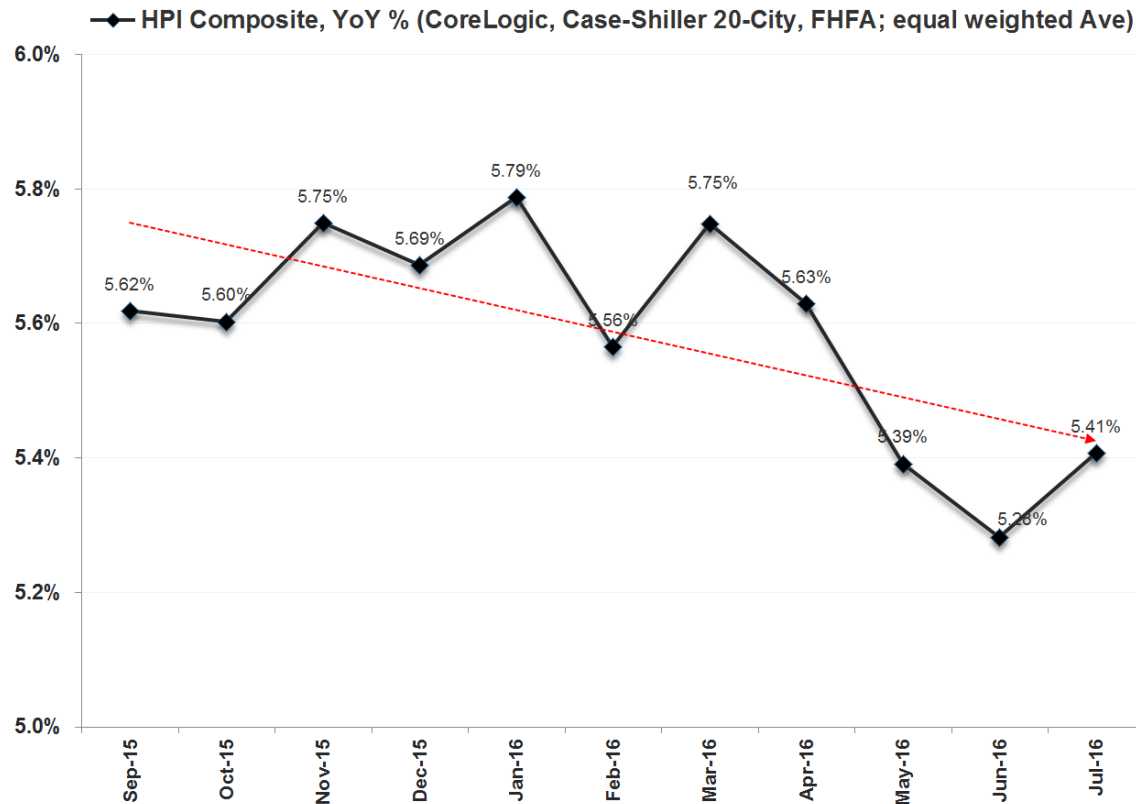


When inventory of existing homes for sale has been in the bottom decile (last 15 years of data), as it is currently, the average subsequent NTM home price change has been +9% with 3% standard deviation.

DATA SOURCE: NAR, CASE SHILLER, HEDGEYE

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(SMALL) ADVANTAGE : FALLING DEMAND



DATA SOURCE: CORELOGIC, CASE SHILLER, FHFA, BLOOMBERG, HEDGEYE

Falling demand has culled a modest advantage in the HPI tug of war as price growth has drifted lower since the start of the year.

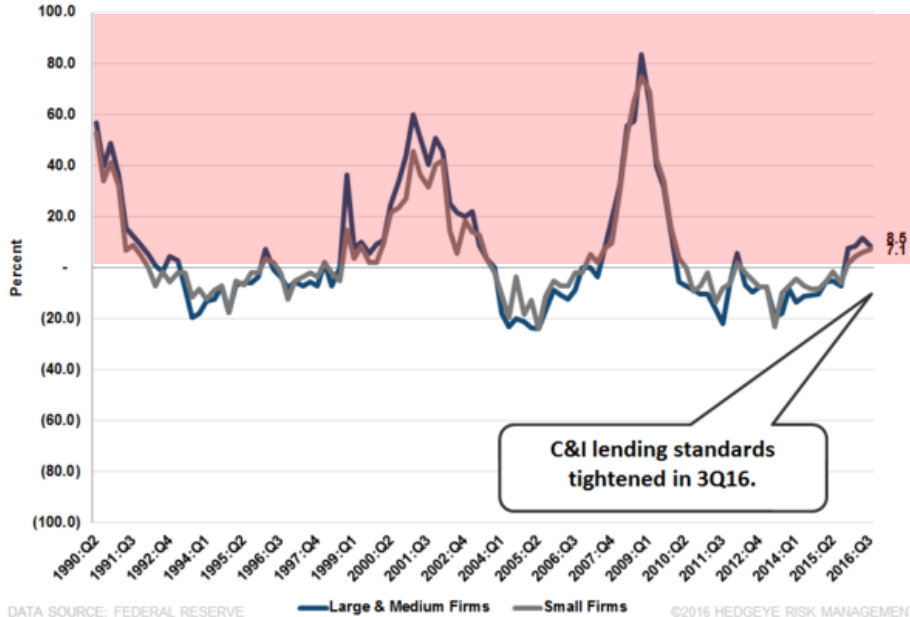


A REMINDER ON THE MACRO

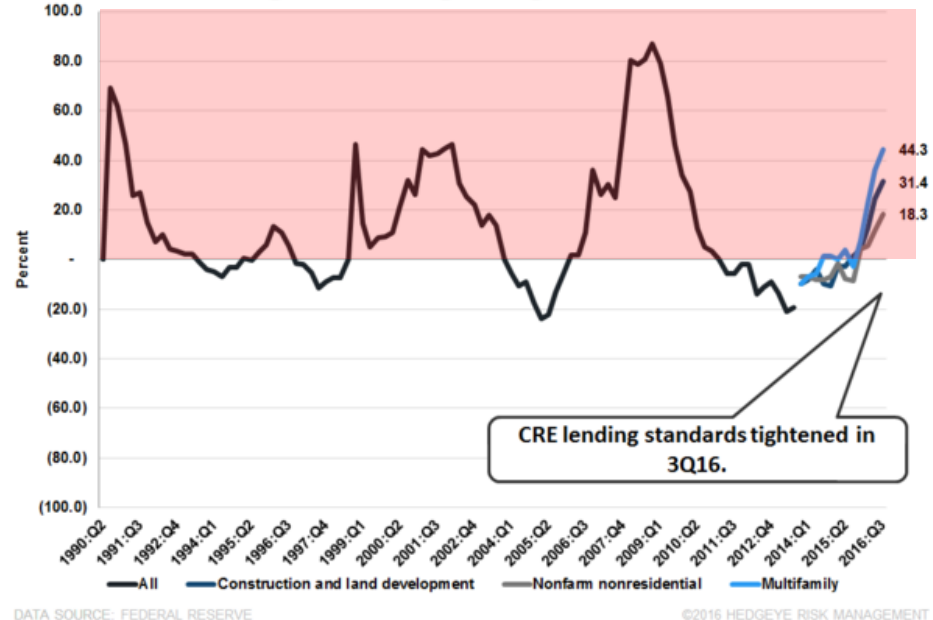
THE CREDIT CYCLE IS PAST PEAK

Access to Credit is Tightening: A net percentage of banks tightened C&I and CRE lending standards for the fourth quarter in a row in 3Q16. While the net percentages are still fairly low, it's the trend inflection that matters.

Net Percentage of Banks Tightening Standards for C&I Loans



Net Percentage of Banks Tightening Standards for CRE Loans

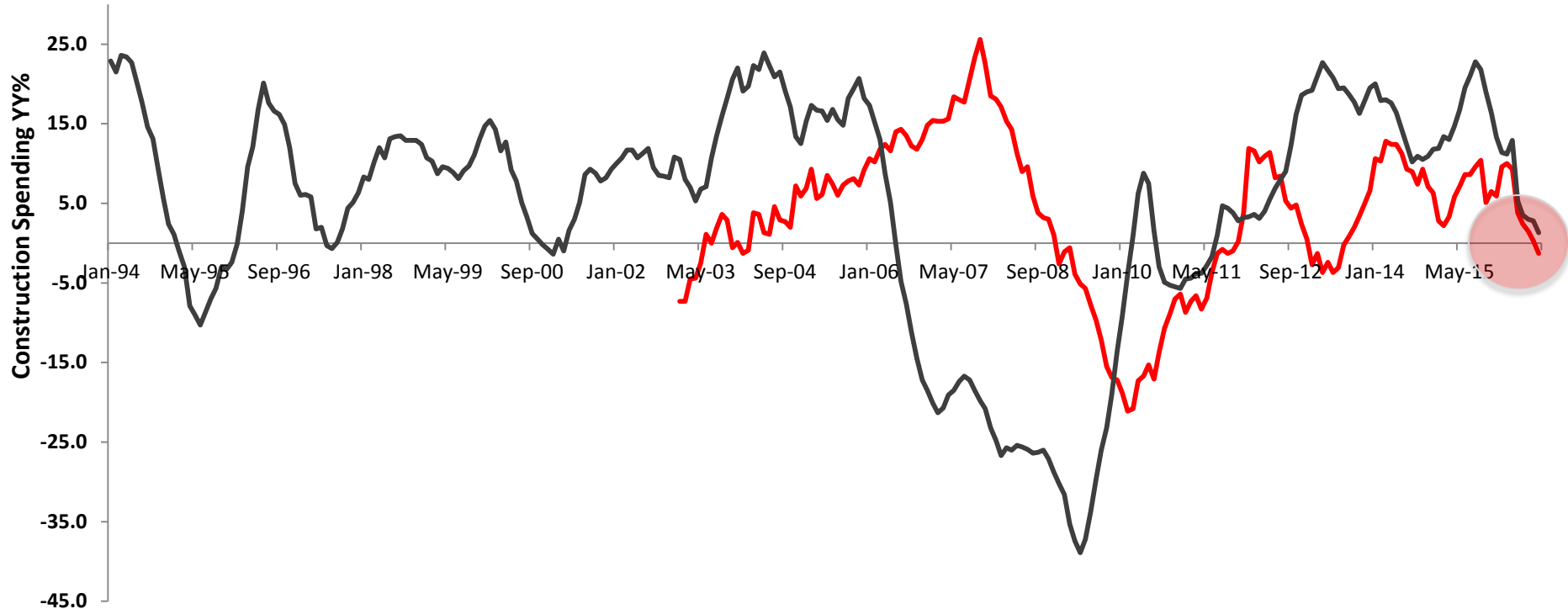


INDUSTRIAL ACTIVITY = ↓

WITH STRUCTURAL HEADWINDS TO RESIDENTIAL CONSTRUCTION COMING OUT OF THE GREAT RECESSION, RECENT DATA SHOWS THE SLOWEST PACE OF GROWTH IN NEARLY 5 YEARS

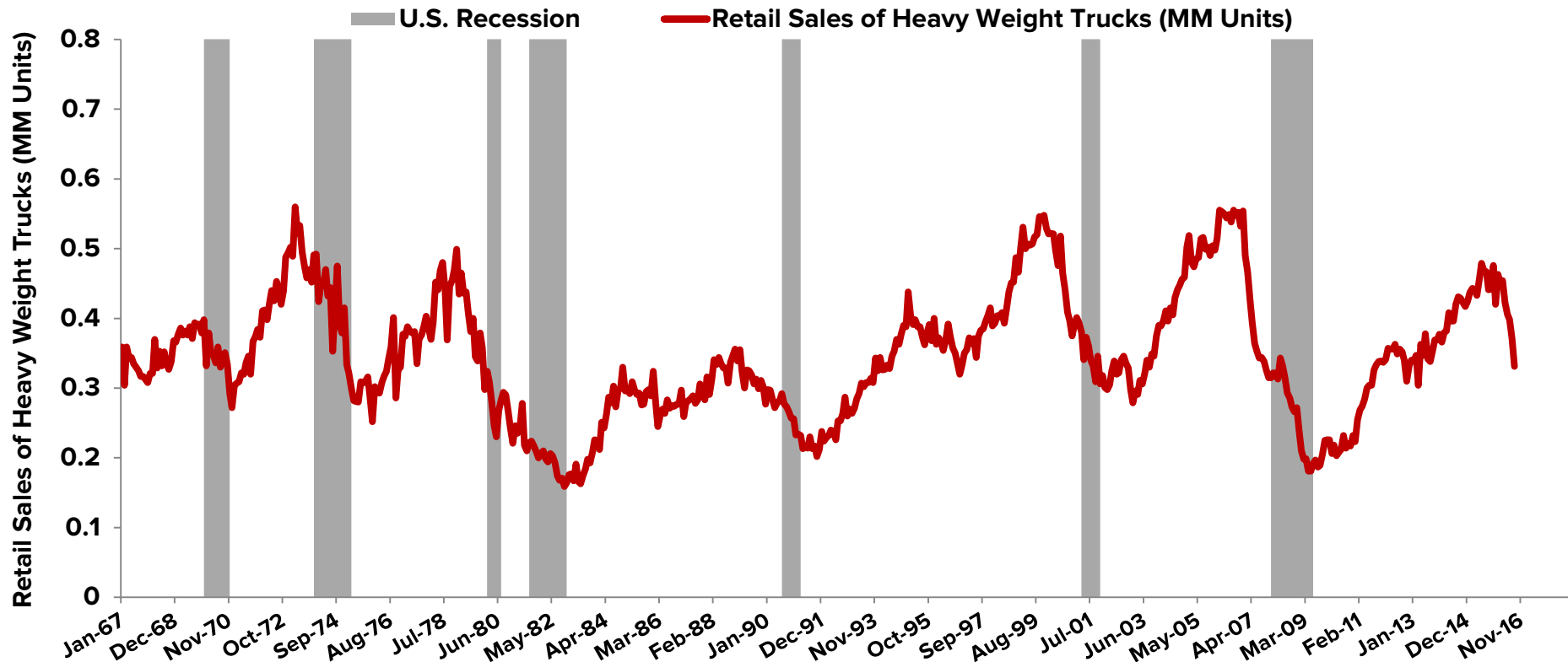
— U.S. Non-Residential Construction Spending Y/Y%

— U.S. Residential Construction Spending Y/Y%

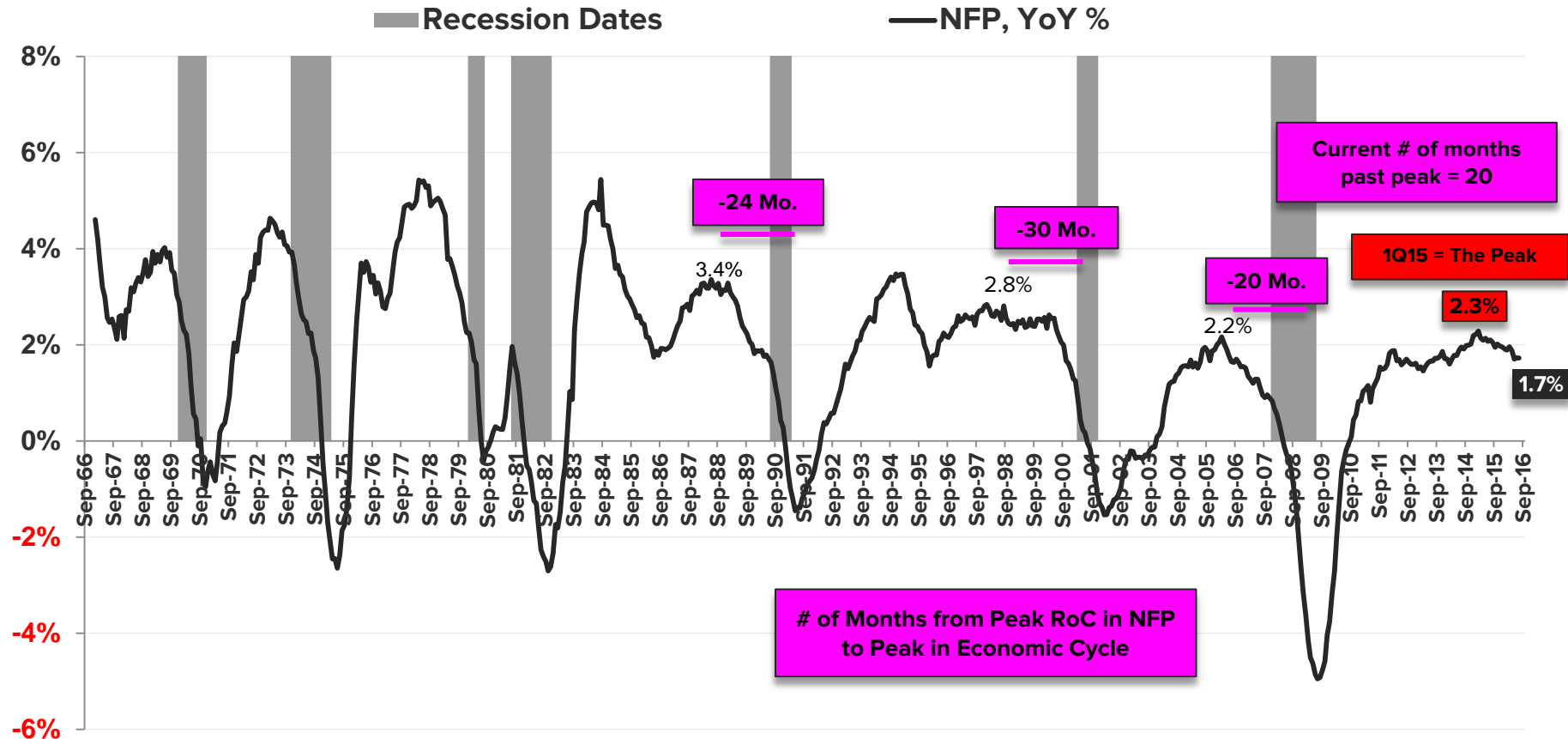


HEAVY TRUCK SALES: LATE-CYCLE COLLAPSE

Retail Sales of Heavy Weight Trucks (MM Units)

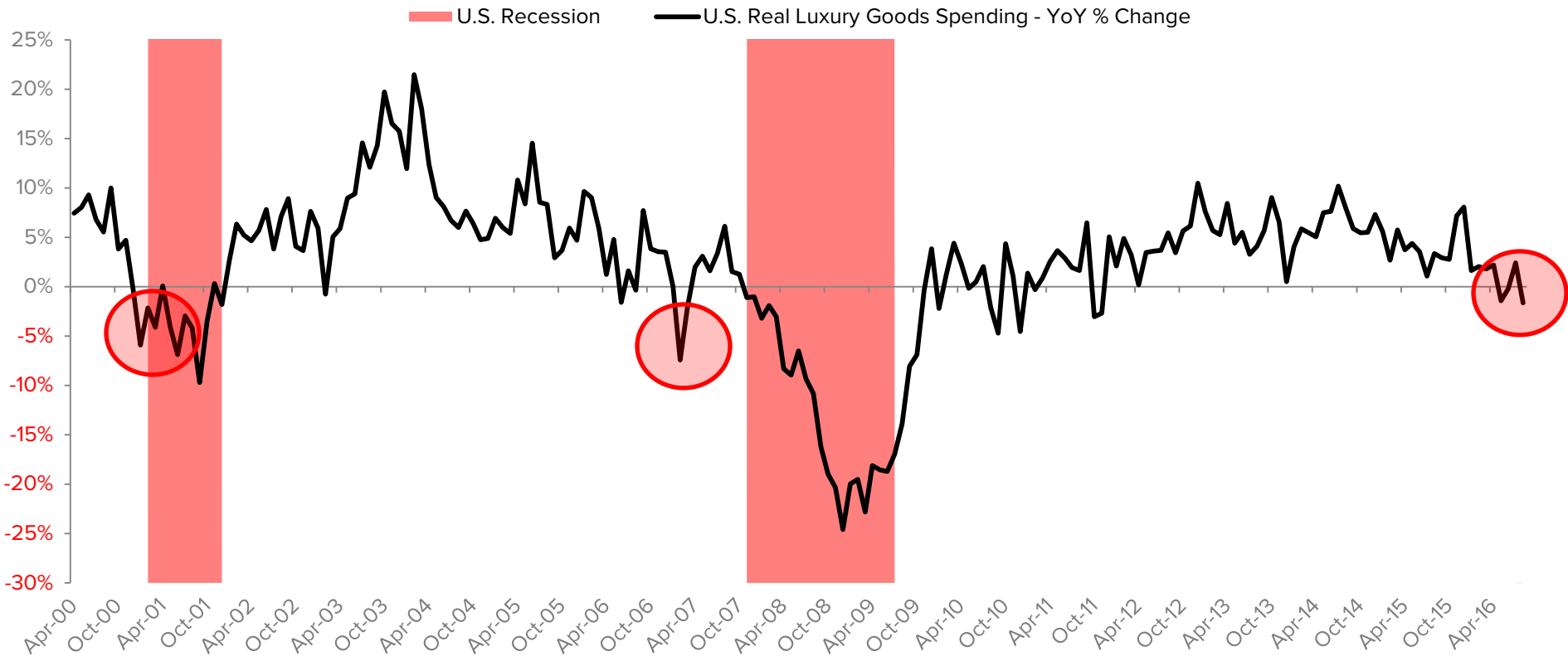


NFP GROWTH: THE CONVERGENCE TO 0%



THE LUXURY CYCLE HAS INFLECTED

SPENDING ON LUXURY GOODS HAS BEEN TRENDING DOWN Y/Y SINCE MAY 2016. THIS IS VERY NEW AND REMINISCENT OF PREVIOUS #LATECYCLE SLOWDOWNS IN SPENDING BY HIGH-END CONSUMERS.

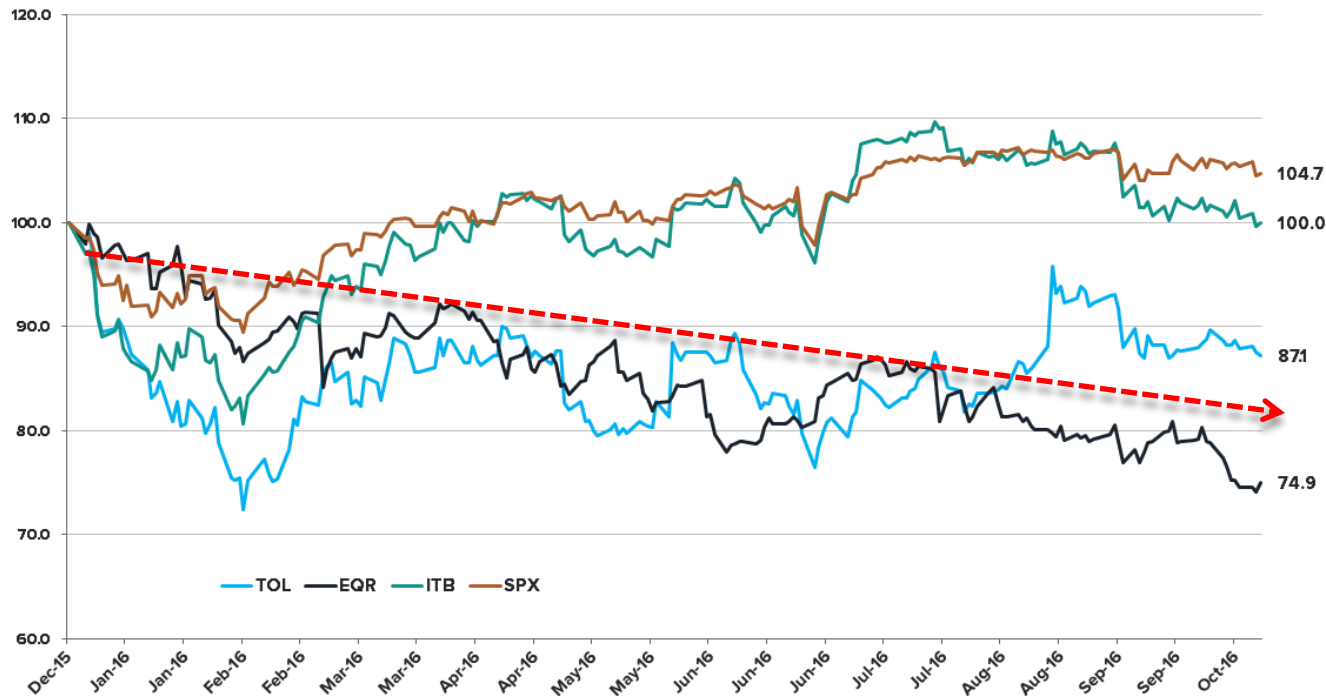




HIGH END → ON ICE

SHORT THE RICH

High End Builders Equity Prices YTD vs The S&P 500 & ITB



Shares of both Toll Brothers (TOL), a builder of luxury homes and Equity Residential (EQR), an Apartment REIT focused on higher end properties are both down YTD and underperforming the industry and market averages

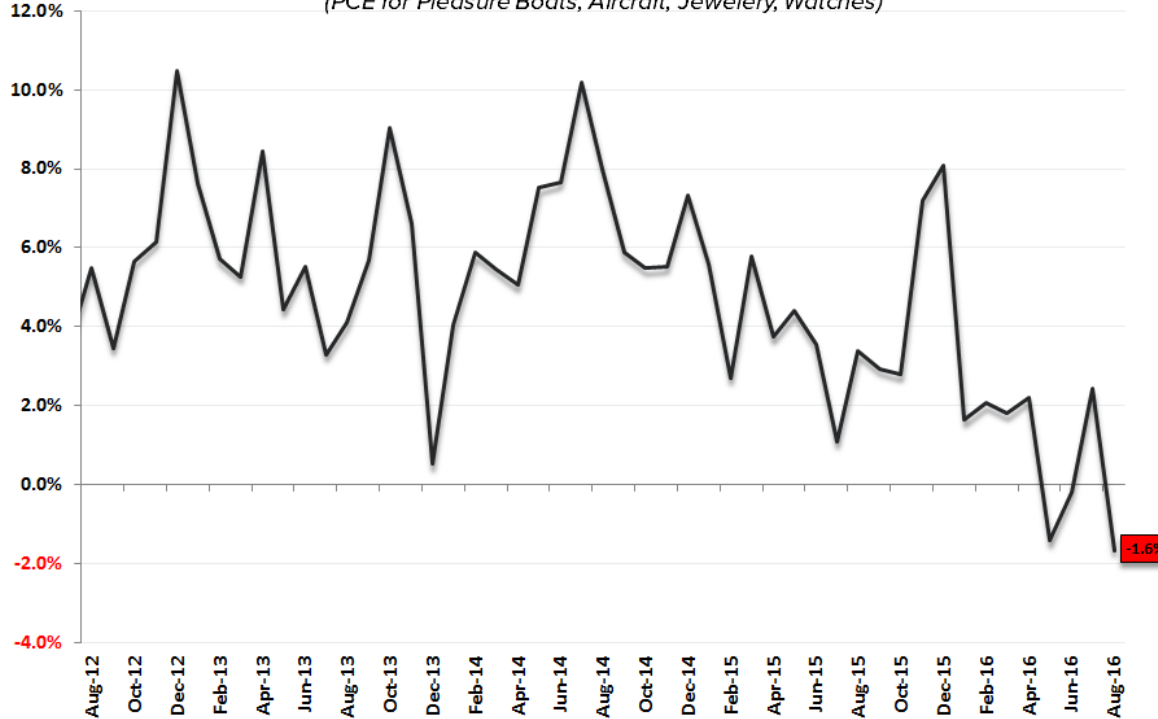
BUILDER ASPS

Among the publicly traded builders, Toll leads the leaderboard on average selling prices.

	Name	EBITDA Margin (%)	Sales per Employee	Orders	Orders (\$)	Avg Orders Price	Backlog	Backlog (\$)	Avg Backlog Price	Closings	Closings (\$)	Avg Closing Price
	Median	8.68%	1.48M	1.57k	929.68M	406.01k	3.14k	1.17B	421.29k	1.51k	605.79M	407.00k
	Average	8.71%	1.49M	2.56k	1.34B	435.95k	4.19k	1.72B	503.71k	55.90k	892.79M	423.02k
100)	Toll Brothers Inc	11.28%	1.07M	1.75k	1.45B	830.84k	5.18k	4.37B	844.34k	1.51k	1.27B	842.70k
101)	TRI Pointe Group Inc	13.46%	2.32M	1.26k	--	--	1.80k	1.03B	570.76k	994.00	556.92M	560.00k
102)	William Lyon Homes	7.56%	1.89M	871.00	--	--	1.09k	575.48M	526.51k	663.00	325.06M	490.30k
103)	Taylor Morrison Home Corp	9.34%	1.86M	2.03k	929.68M	459.10k	3.64k	929.68M	255.27k	1.82k	829.88M	457.00k
104)	MDC Holdings Inc	5.41%	1.56M	1.65k	722.98M	439.23k	3.45k	1.61B	466.67k	1.27k	571.20M	449.10k
105)	CalAtlantic Group Inc	12.54%	1.24M	3.92k	1.75B	446.12k	7.46k	3.43B	459.86k	3.48k	1.56B	447.00k
106)	UCP Inc	2.25%	1.49M	229.00	--	--	339.00	149.31M	440.43k	197.00	81.42M	440.00k
107)	WCI Communities Inc	10.41%	818.02k	268.00	121.80M	454.48k	586.00	304.58M	519.75k	307.00	131.97M	430.00k
108)	Meritage Homes Corp	8.52%	1.84M	2.07k	845.35M	407.79k	3.31k	1.40B	421.29k	1.95k	795.85M	408.10k
109)	Hovnanian Enterprises Inc	3.23%	1.03M	1.47k	593.00M	404.22k	2.97k	1.31B	441.99k	1.57k	640.39M	407.00k
110)	NVR Inc	12.55%	1.20M	4.32k	1.66B	383.90k	8.10k	3.12B	385.40k	3.58k	1.36B	378.50k
111)	PulteGroup Inc	14.70%	1.32M	5.70k	2.14B	375.99k	9.68k	3.75B	387.36k	4.77k	1.75B	367.00k
112)	KB Home	4.93%	1.80M	2.51k	929.59M	370.65k	5.23k	1.85B	353.73k	2.49k	910.11M	365.90k
113)	Lennar Corp	11.92%	1.22M	7.02k	2.57B	365.88k	9.25k	3.44B	372.23k	6.78k	2.46B	363.00k
114)	M/I Homes Inc	8.35%	1.41M	1.35k	--	--	2.28k	842.44M	369.33k	1.04k	377.23M	362.00k
115)	Century Communities Inc	8.68%	1.47M	869.00	--	--	1.07k	406.74M	380.13k	768.00	257.18M	334.90k
116)	Beazer Homes USA Inc	3.99%	--	1.49k	--	--	2.43k	814.60M	335.78k	1.36k	450.98M	330.60k
117)	AV Homes Inc	5.39%	1.68M	685.00	213.30M	--	1.14k	363.33M	--	594.00	184.61M	311.00k
118)	DR Horton Inc	10.59%	1.74M	11.71k	3.44B	293.26k	14.67k	4.38B	298.58k	10.74k	3.12B	293.30k

SHORT THE RICH: LUXURY GOODS ↓

Luxury Goods Consumption, YoY %
(PCE for Pleasure Boats, Aircraft, Jewellery, Watches)

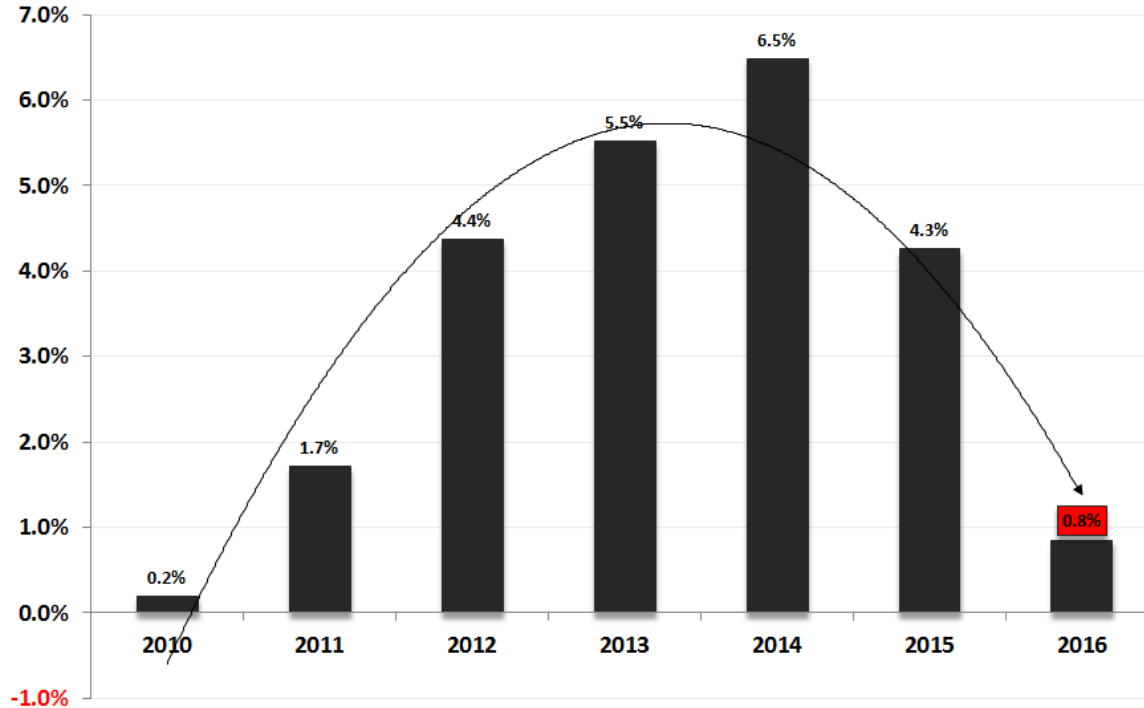


Source: Bloomberg, BEA, HEDGEYE

Spending on luxury goods has been trending down Y/Y since May 2016.

SHORT THE RICH: LUXURY GOODS ↓

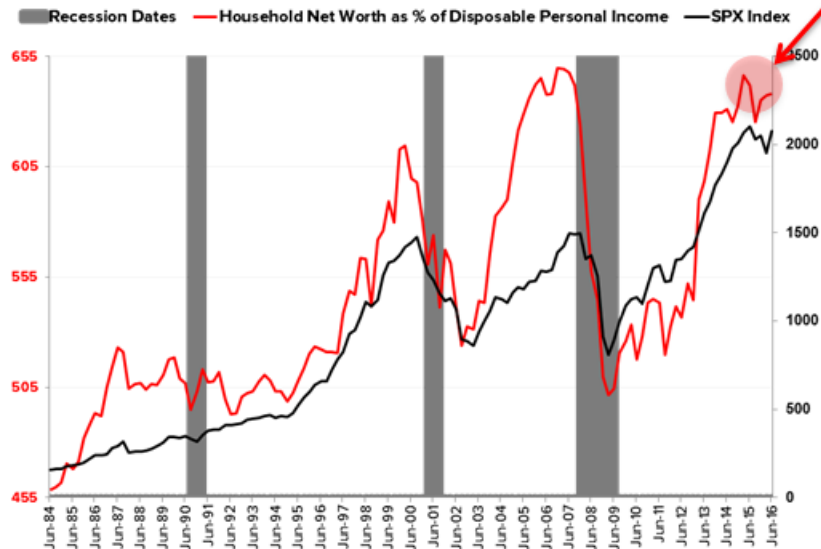
Luxury Goods Consumption, YoY %
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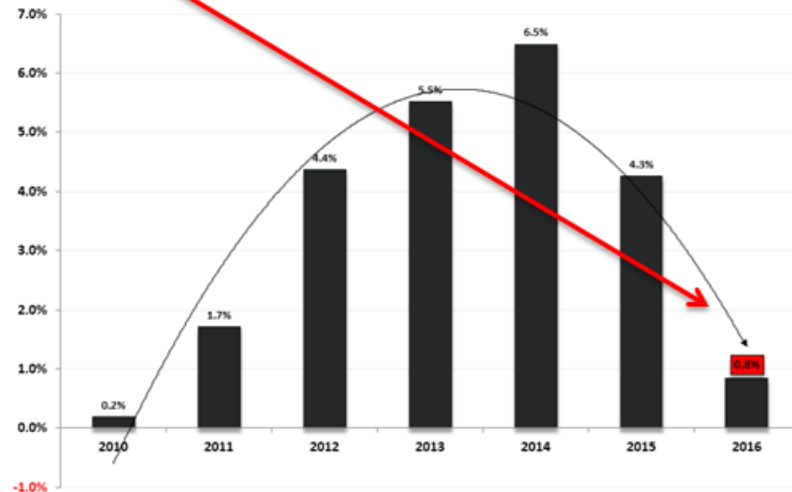
High Ticket discretionary consumption growth has decelerated for a 2nd year in 2016 and currently sits at its slowest pace of growth since 2010.

WEALTH EFFECT = PAST PEAK

This Is Not Coincidence



Luxury Goods Consumption, YoY %
(PCE for Pleasure Boats, Aircraft, Jewelry, Watches)



Past Peak: Asset Price Inflation and
Financial Wealth Creation



Wealth Spending and High Ticket
Discretionary Consumption ↓



YOU ASK FOR (HOUSING) MIRACLES? I GIVE YOU THE FBI.

FINCEN EXPANDS CRACKDOWN

U.S. Expands Real-Estate Data Targeting Order **WSJ**

U.S. to Expand Tracking of Home Purchases by Shell Companies **The New York Times**

Feds Expand Crackdown on Secret Real Estate Deals Beyond Miami, Manhattan

Miami Herald

According to FinCEN's initial findings, "more than 25% of the transactions covered in the initial inquiry involved a beneficial owner who is also the subject of a suspicious activity report, which is an indication of possible criminal activity". - Hedgeye Note July 28, 2016

This is the latest push to crackdown on money laundering in the ultra high end real estate markets.

After 4 months of investigating Miami and New York City, FINCEN decided to expand their investigation to other high end markets.

ILLEGALITY CONFIRMED: NET WIDENED

State	Borough or County	Price Threshold
New York	Manhattan	\$3,000,000
New York	Brooklyn	\$1,500,000
New York	Queens	\$1,500,000
New York	Bronx	\$1,500,000
New York	Staten Island	\$1,500,000
Florida	Miami-Dade	\$1,000,000
Florida	Broward	\$1,000,000
Florida	Palm Beach	\$1,000,000
California	San Diego	\$2,000,000
California	Los Angeles	\$2,000,000
California	San Francisco	\$2,000,000
California	San Mateo	\$2,000,000
California	Santa Clara	\$2,000,000
Texas	Bexar	\$500,000

Source: HousingWire, Hedgeye

The Treasury Department has expanded its crackdown to include parts of: New York, Florida, California, and Texas.

The targeted cities are: New York City, Miami, Palm Beach, Los Angeles, San Francisco, and San Antonio.

TREASURY DEPARTMENT CRACKDOWN

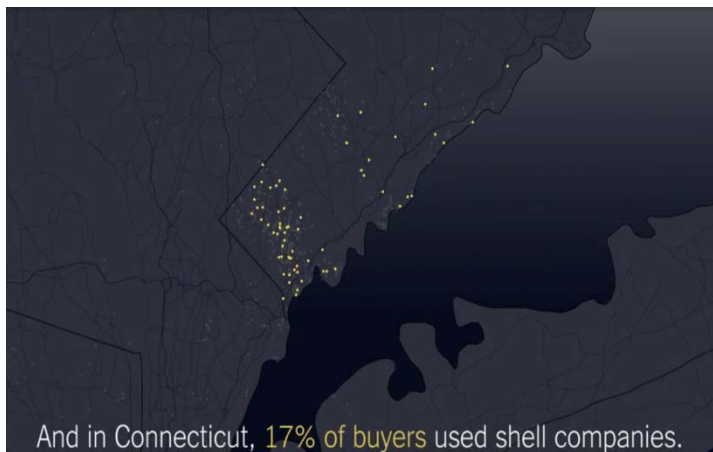
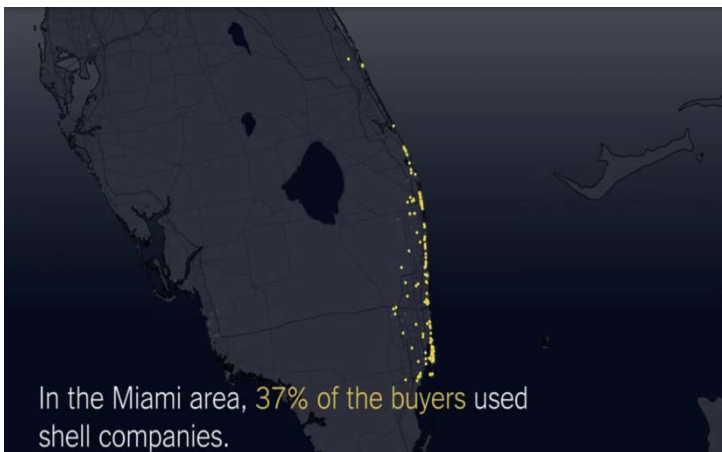
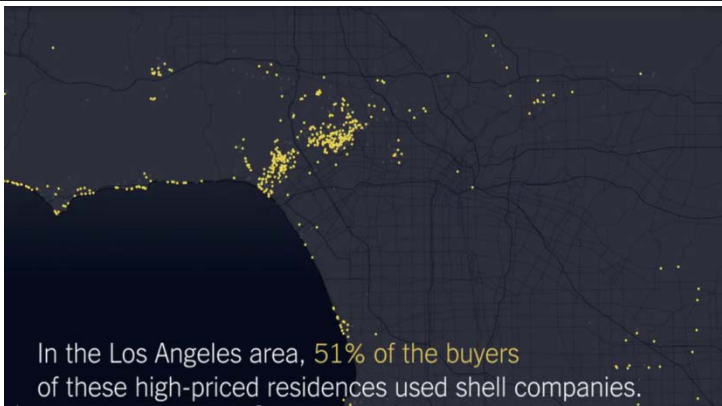
Here are all the residences that sold for over \$5 million from 2000 to 2012 to people using their own names.

Just under half of all purchases over \$5mn are currently done through shell companies, where the ultimate buyer is never identified.

Here are all the residences that sold for over \$5 million from 2000 to 2012 to people using their own names.
And here are the ones sold to shell companies.

Not surprisingly, this has become a haven for money launderers from around the globe.

TREASURY DEPARTMENT CRACKDOWN



In Los Angeles, 51% of buyers are people hiding behind shell companies. In San Francisco, it's 48%. In Miami: 37%. In Connecticut, it's 17% of buyers.

TREASURY DEPARTMENT CRACKDOWN

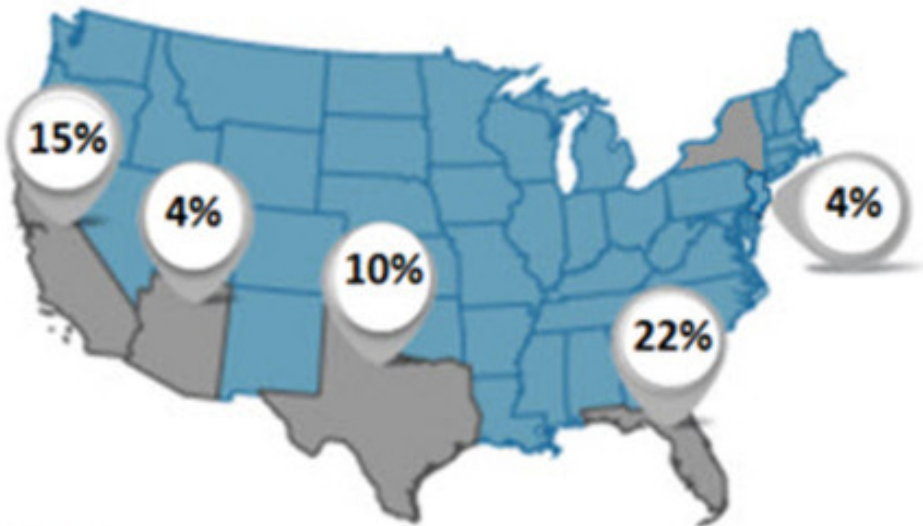
Nationally, 44% of foreign buyers purchasing properties over \$5mn are doing so through shell company LLCs.



Since 2000, 44% of sales over \$5 million were to shell companies.

ACTIVITY: REGIONALLY CONCENTRATED

WHERE IN THE U.S. ARE THEY BUYING?

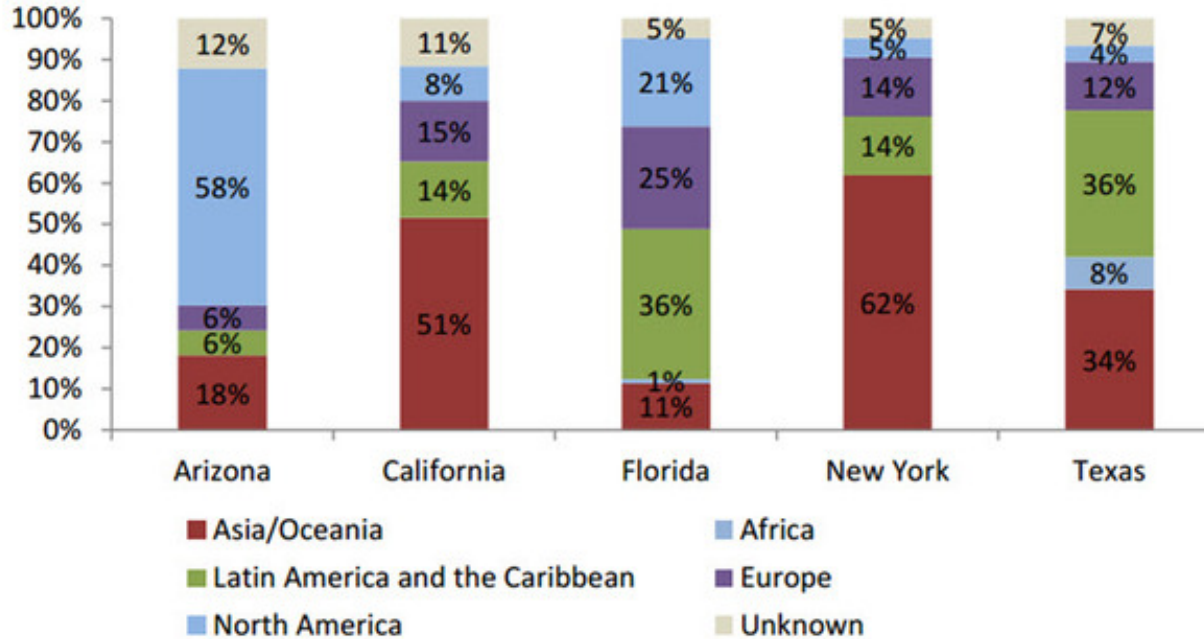


Data Source: NAR, Hedgeye

CA, FL, NY, TX and AZ remain the primary destinations for foreign capital flows into domestic real estate

WHO'S BUYING

Origin of Foreign Buyers in the Major States



Data Source: NAR, Hedgeye

Florida sees most of its inflow from Latin America/Mexico, while California is primarily seeing money come from Asia. Arizona is the snowbird retreat for Canadians, while Texas is primarily driven by Mexico/Latin America.

CHINA INFLECTION

For the first year on record, Chinese purchases of US real estate slowed Y/Y both on a dollar and units basis.

Dollar Volume of Sales to Foreign Buyers from Top Five Countries
(in Billion Dollars)

	2010	2011	2012	2013	2014	2015	2016
Canada	\$17.1	\$13.0	\$15.9	\$11.8	\$13.8	\$11.2	\$8.9
China	\$11.2	\$7.0	\$12.0	\$12.8	\$22.0	\$28.6	\$27.3
India	\$5.0	\$5.1	\$5.2	\$3.9	\$5.8	\$7.9	\$6.1
Mexico	\$6.5	\$4.2	\$6.5	\$3.6	\$4.5	\$4.9	\$4.8
United Kingdom	\$12.1	\$6.5	\$4.4	\$4.2	\$5.8	\$3.8	\$5.5
Total International Sales	\$65.9	\$66.4	\$82.5	\$68.2	\$92.2	\$103.9	\$102.6

China includes buyers from the People's Republic of China, Hong Kong, and Taiwan.

Estimates from 2010 thru 2015 include some commercial transactions. The 2016 estimate includes only residential transactions.

Source: NAR

Share of Top Five Countries to the Total Dollar Volume of International Sales

	2010	2011	2012	2013	2014	2015	2016
Canada	25.9%	19.6%	19.3%	17.3%	14.9%	10.8%	8.7%
China	16.9%	10.6%	14.5%	18.8%	23.9%	27.5%	26.7%
India	7.6%	7.7%	6.3%	5.7%	6.3%	7.7%	6.0%
Mexico	9.8%	6.3%	7.9%	5.2%	4.9%	4.7%	4.6%
United Kingdom	18.3%	9.8%	5.3%	6.1%	6.3%	3.6%	5.3%
Share of Top Five	78.6%	54.0%	53.4%	53.2%	56.2%	54.3%	51.3%

China includes buyers from the People's Republic of China, Hong Kong, and Taiwan.

Figures from 2010 thru 2015 include some commercial transactions. Figures in 2016 includes only residential transactions.

Source: NAR

Number of Properties Purchased by Foreign Buyers from Top Five Countries

	2010	2011	2012	2013	2014	2015	2016
Canada	69,135	48,483	49,486	43,937	43,737	29,423	26,851
China	27,053	18,972	24,743	23,075	37,223	34,327	29,195
India	15,829	14,756	12,371	10,431	12,563	17,270	14,527
Mexico	30,059	14,756	16,495	15,805	20,007	17,910	17,881
United Kingdom	27,053	14,756	12,371	9,483	11,632	8,315	9,150
All Countries	300,585	210,797	206,192	192,500	232,643	208,947	214,885

China includes buyers from the People's Republic of China, Hong Kong, and Taiwan.

Figures from 2010 thru 2015 include some commercial transactions. Figures in 2016 includes only residential transactions.

Source: NAR

Average Purchase Price of Foreign Buyers from Top Five Countries

	2010	2011	2012	2013	2014	2015	2016
Canada	\$247,283	\$269,071	\$321,745	\$269,065	\$314,718	\$380,292	\$332,072
China	\$412,162	\$370,902	\$483,984	\$555,903	\$590,826	\$831,761	\$936,615
India	\$333,333	\$346,354	\$418,966	\$372,656	\$459,028	\$460,156	\$420,352
Mexico	\$214,744	\$283,000	\$396,154	\$225,500	\$224,123	\$274,849	\$266,188
United Kingdom	\$447,143	\$438,889	\$355,921	\$440,833	\$499,242	\$455,592	\$598,182
All Countries	\$311,400	\$315,000	\$400,000	\$354,193	\$396,200	\$499,600	\$477,462

China includes buyers from the People's Republic of China, Hong Kong, and Taiwan.

Figures from 2010 thru 2015 include some commercial transactions. Figures in 2016 includes only residential transactions.

Source: NAR

Median Purchase of Foreign Buyers from Top Five Countries

	2010	2011	2012	2013	2014	2015	2016
Canada	\$200,001	\$177,274	\$171,876	\$182,956	\$212,501	\$196,250	\$222,310
China	\$320,834	\$282,144	\$333,334	\$412,501	\$516,448	\$486,111	\$542,084
India	\$283,334	\$305,557	\$308,334	\$300,000	\$321,430	\$380,000	\$333,372
Mexico	\$134,376	\$168,751	\$200,001	\$156,251	\$141,072	\$171,154	\$176,522
United Kingdom	\$315,001	\$325,001	\$266,668	\$250,001	\$325,001	\$200,000	\$427,348
All Countries	\$219,400	\$228,279	\$274,219	\$225,862	\$268,284	\$284,878	\$277,380

China includes buyers from the People's Republic of China, Hong Kong, and Taiwan.

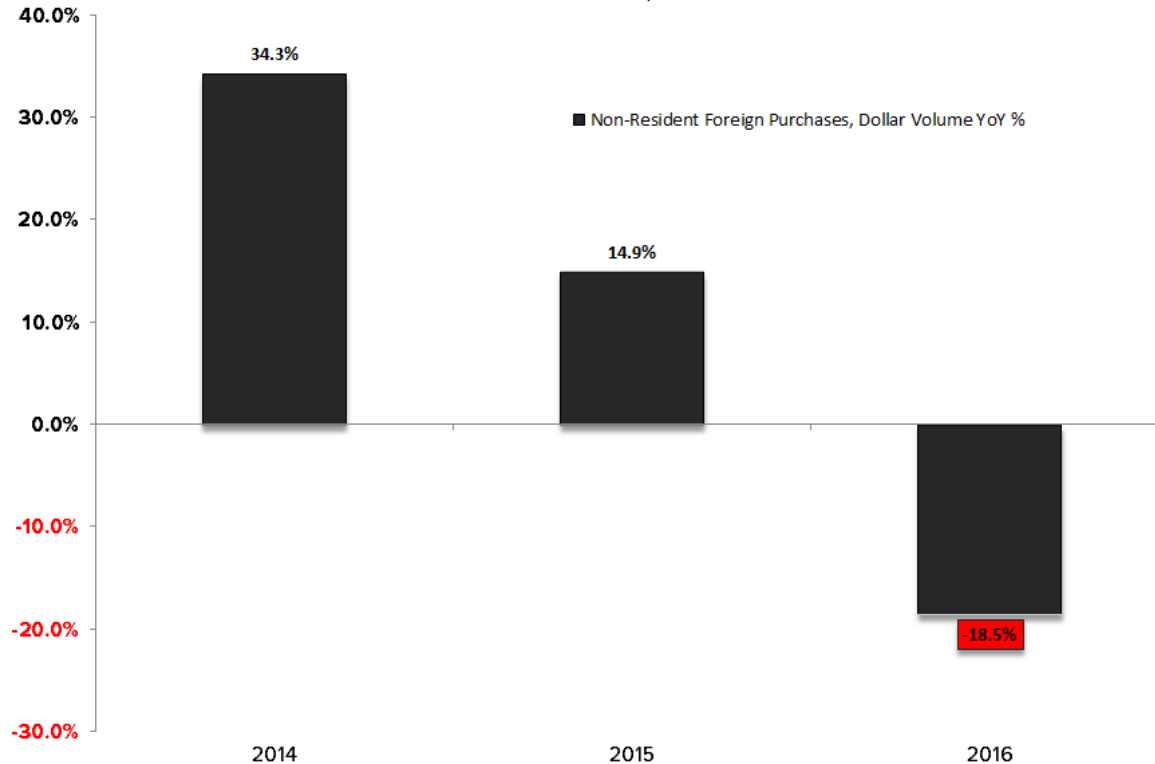
Figures from 2010 thru 2015 include some commercial transactions. Figures in 2016 includes only residential transactions.

Source: NAR

FOREIGN DEMAND =

FOREIGN DEMAND FOR DOMESTIC RESIDENTIAL REAL ESTATE

Dollar Volume, YoY %

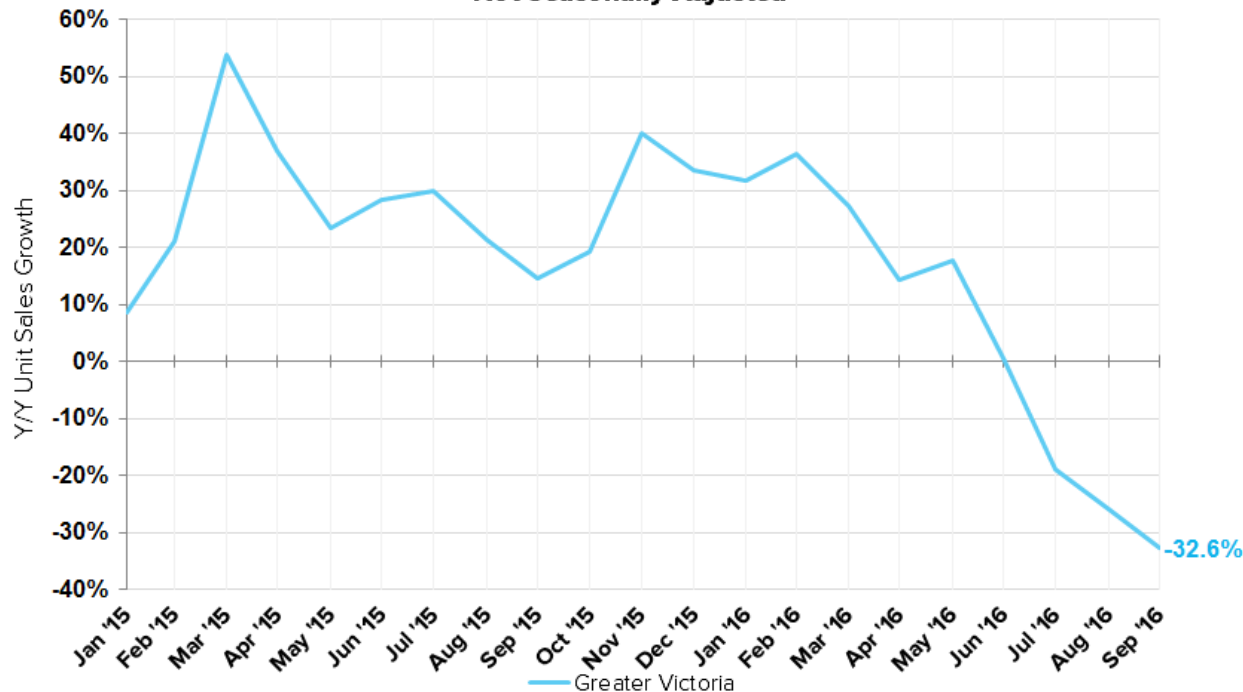


Source: NAR, HEDGEYE

Slow growth and currency depreciation have already impacted foreign demand for domestic real estate. The impact of the Treasury Dept. crackdown should exacerbate the trend.

HOME SALES ↓ IN VANCOUVER

Y/Y GROWTH IN MONTHLY EXISTING HOME SALES, By Geography
Not Seasonally Adjusted



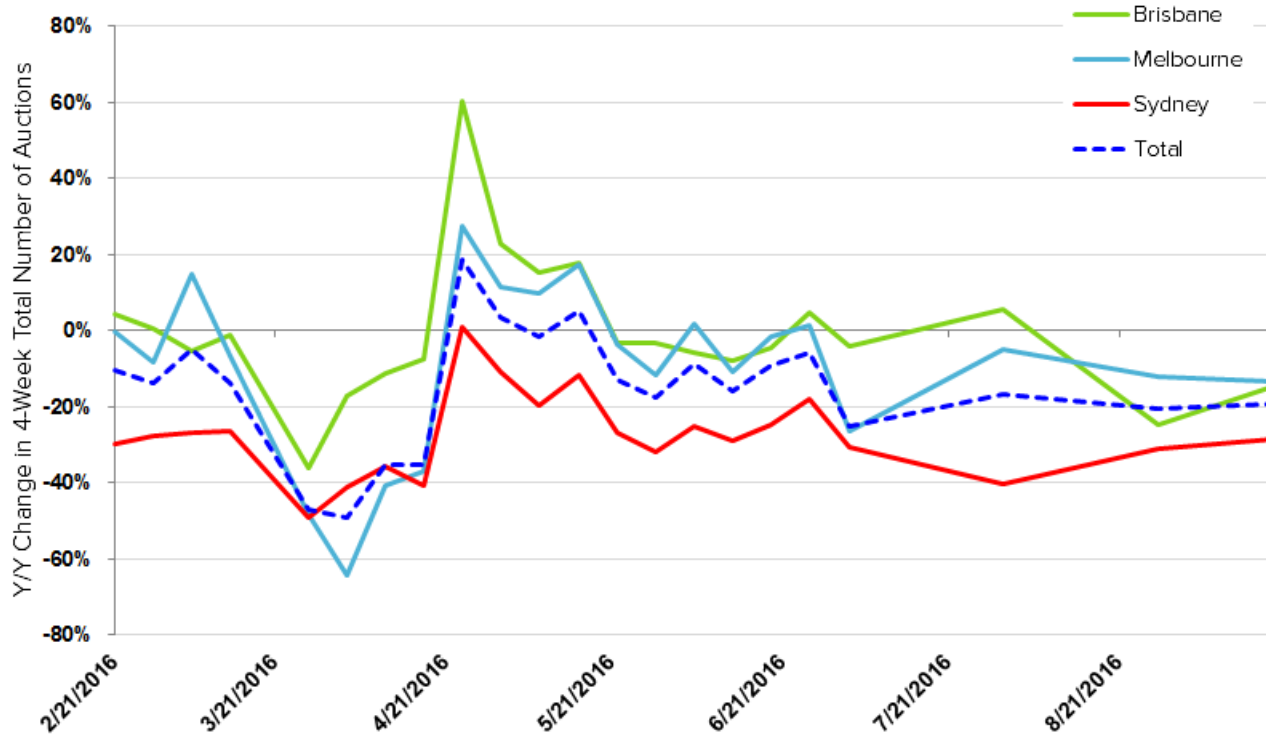
Source: TREB, CREB, GMREB, REBGV

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There is a global trend occurring here. Y/Y growth in Monthly Existing Home Sales for the Greater Victoria area are down **-32.6% Y/Y**

AUSTRALIA: DEMAND TRENDS ↓

NUMBER OF AUCTIONS, ROLLING 4 WEEK TOTAL
Y/Y Change



Source: CoreLogic RP Data

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Home auctions were down an average of -20% Y/Y in Australia's major cities.



HIGH END → ON FIRE



THE HIGH END IN THE NEWS

Manhattan's Luxury Real Estate Slowdown Is Spreading to Other Price Tiers

**Bloomberg
Business**

Luxury homes are piling up in wealthy suburbs **boston.com**

There Are All Kinds of Signs of a High-End Real Estate Slowdown

**Bloomberg
Business**

The McMansion's day has come and gone **Chicago Tribune**

California home sales come tumbling back down to earth

HW HOUSINGWIRE

Home Prices in the Bay Area Push Builders, Buyers to More Distant Suburbs **WSJ**

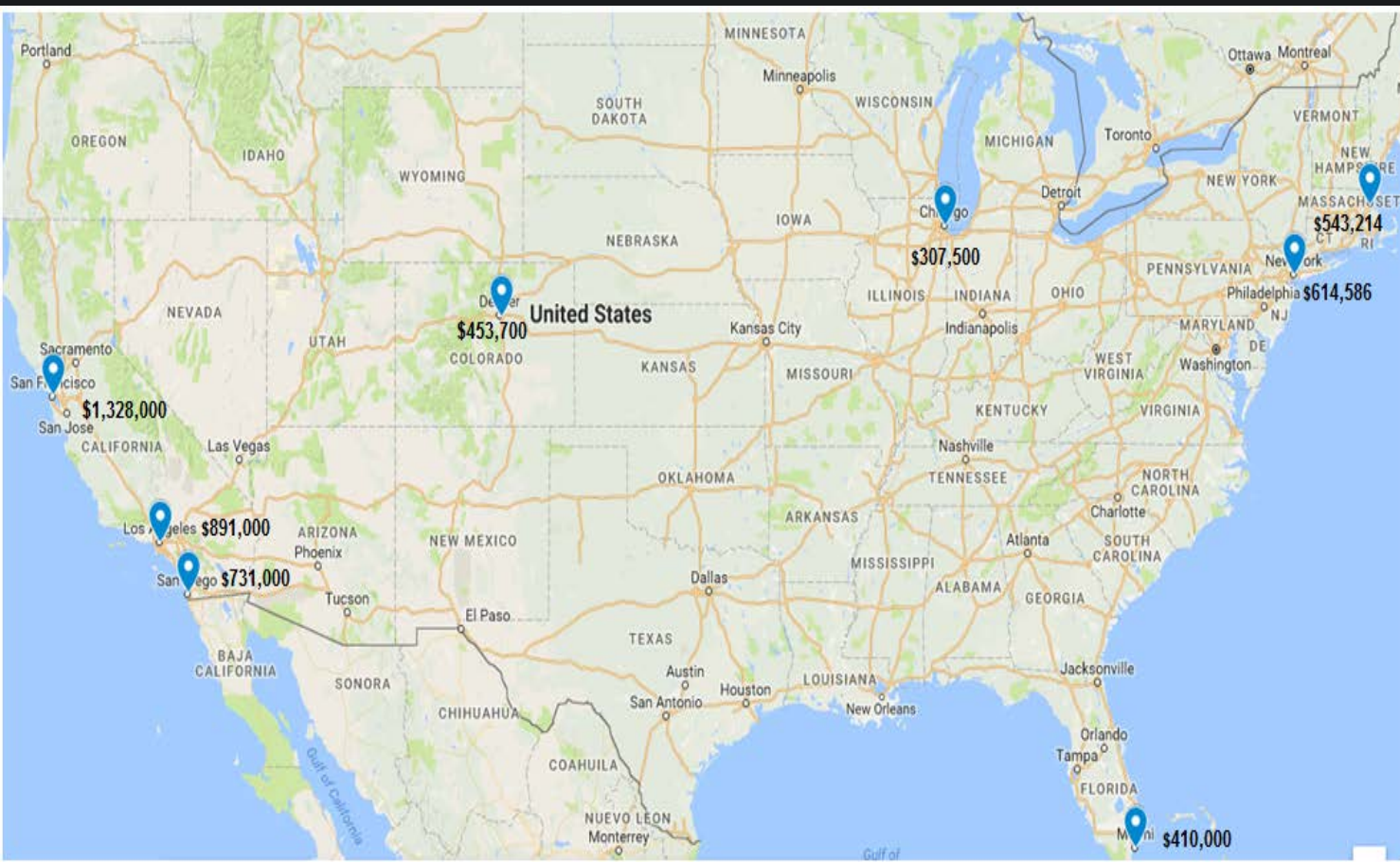
As international billionaires get nervous, sales in L.A.'s ultra-luxury housing market slow **LA Times**

WHAT IS THE HIGH END?

City	State	Total Sales	1%	5%	10%	1% S Threshold	5% S Threshold	10% S Threshold
San Francisco	CA	18,831	188	942	1,883	\$6,000,000	\$3,000,000	\$2,300,000
New York	NY	147,787	1,478	7,389	14,779	\$16,000,000	\$3,350,000	\$1,850,000
Los Angeles	CA	84,482	845	4,224	8,448	\$10,250,000	\$2,600,000	\$1,700,000
Washington	DC	26,272	263	1,314	2,627	\$3,250,000	\$2,000,000	\$1,275,000
Boston	MA	20,620	206	1,031	2,062	\$4,150,000	\$1,800,000	\$1,200,000
San Diego	CA	48,600	486	2,430	4,860	\$3,000,000	\$1,500,000	\$1,145,000
Miami	FL	20,335	203	1,017	2,034	\$4,700,000	\$1,450,000	\$875,000
Denver	CO	44,693	447	2,235	4,469	\$2,100,000	\$925,000	\$700,000
Chicago	IL	100,757	1,008	5,038	10,076	\$3,000,000	\$1,000,000	\$685,000
Las Vegas	NV	117,190	1,172	5,860	11,719	\$2,500,000	\$630,000	\$425,000
10 City Average		62,957	630	3,148	6,296	\$5,495,000	\$1,825,500	\$1,215,500

Based on recently sold Zillow data, these are the breakpoints for the top 1%, 5% and 10% of the ten largest US markets.

HIGH END – THE TOP 20%

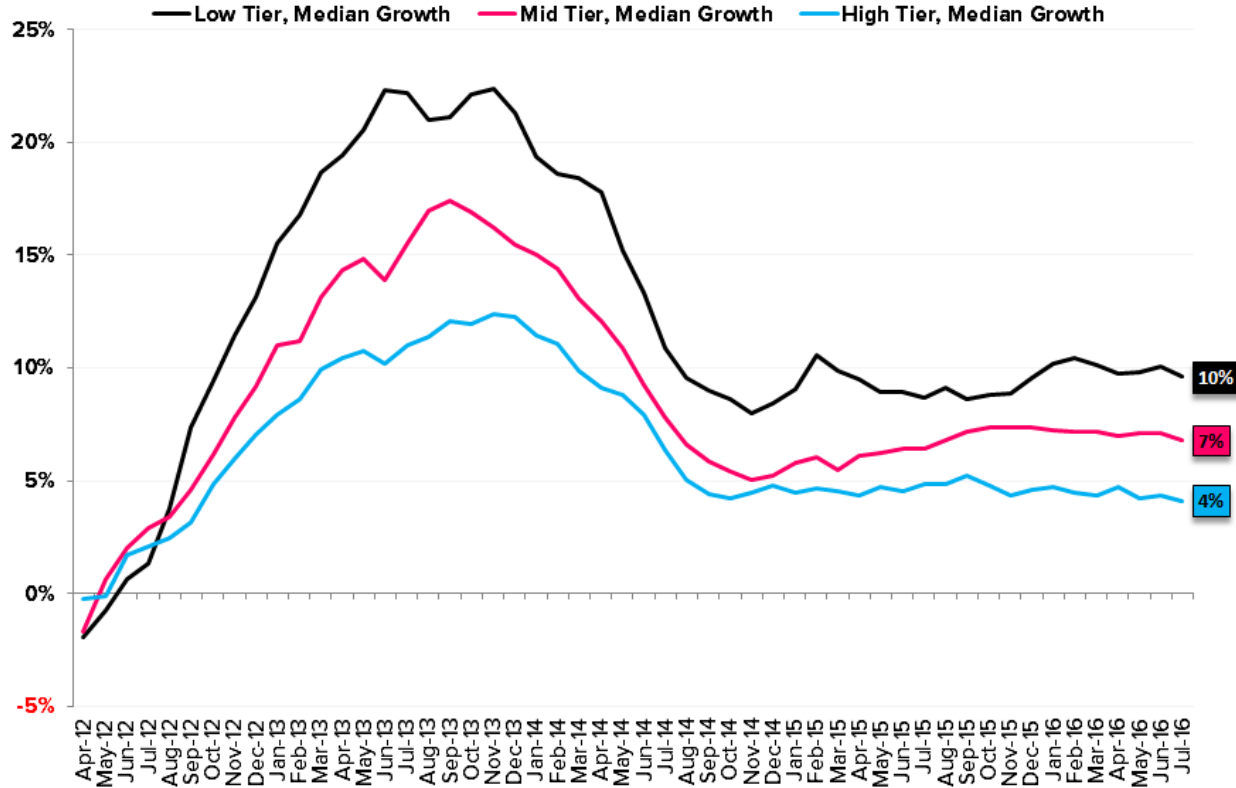


Here's a snapshot of the 20th percentile breakpoints for the 8 largest Case-Shiller defined major metro areas.

Nationally, the top 20% of real estate begins at ~\$660K.

HPI BY PRICE TIER

HPI By Price Tier, YoY % Chg

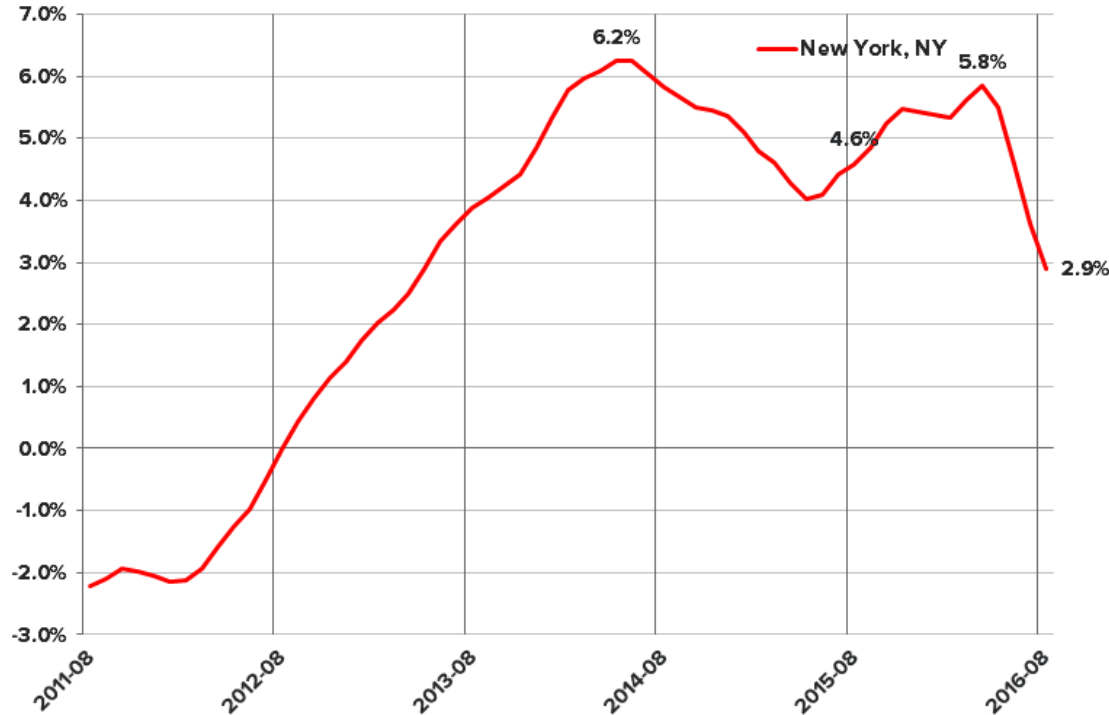


The top tier for home prices has been appreciating at roughly half the rate of the bottom tier for the past ~3 years.

The low end of the market has been the primary driver of HPI improvement.

NYC HPI: SOMETHING IS GOING ON

NYC Home Prices Y/Y Chg - Top Tier



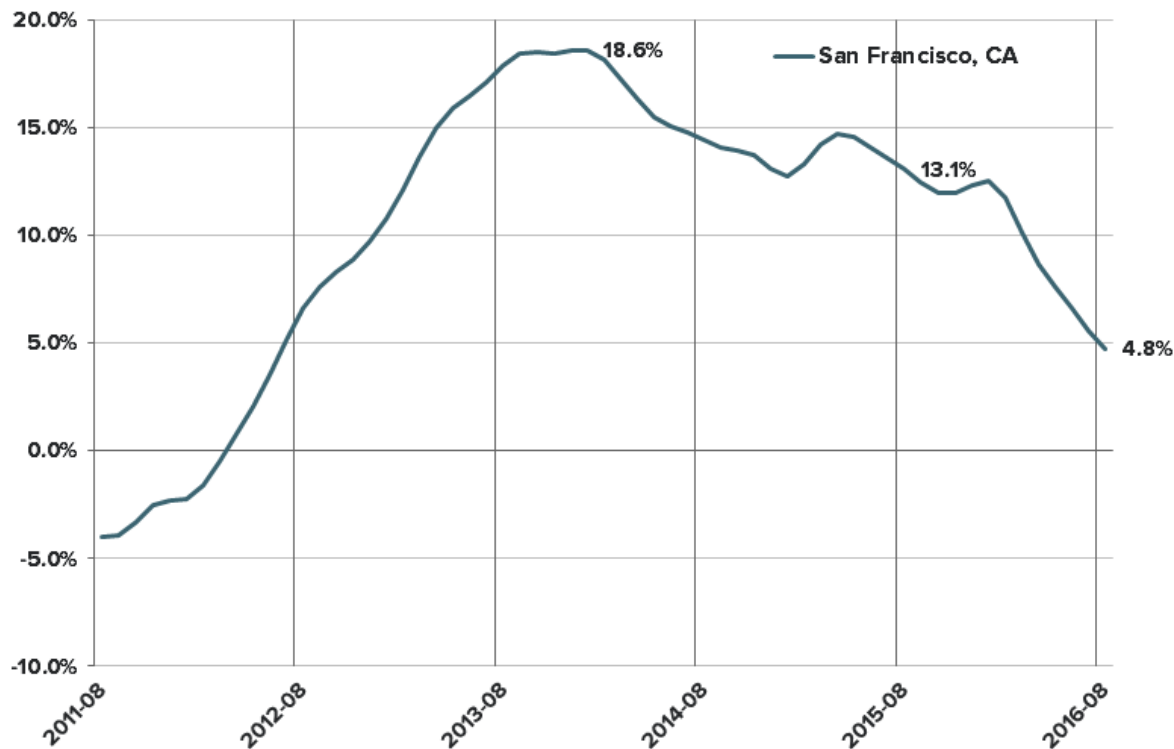
DATA SOURCE: ZILLOW, HEDGEYE

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Home Price growth in NYC's top tier has slowed conspicuously in recent months, decelerating a full -260bps in the last three months alone.

SF: HIGH END HPI IN STEADY RETREAT

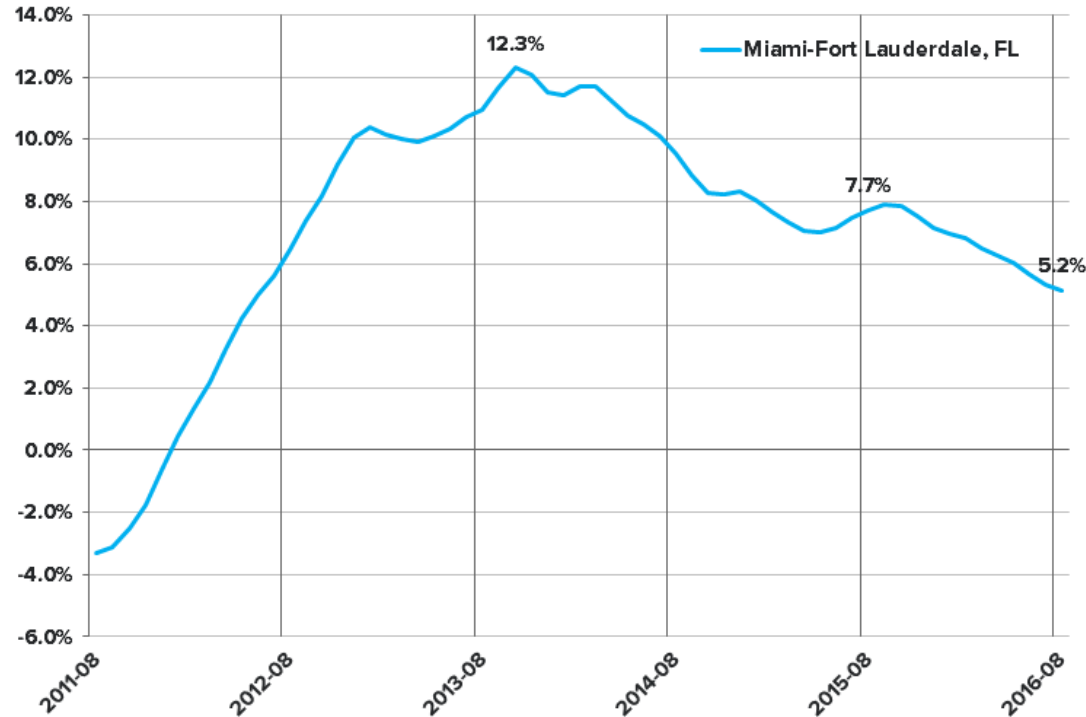
SF Home Prices Y/Y Chg - Top Tier



2nd derivative HPI trends in San Francisco's high end have worsened in 2016. Price growth has decelerated -830bps over the past year with HPI growth now at its slowest pace since housing's recovery began in 2012.

MIAMI TOP TIER: A SLOW BLEED

Miami Home Prices Y/Y Chg - Top Tier

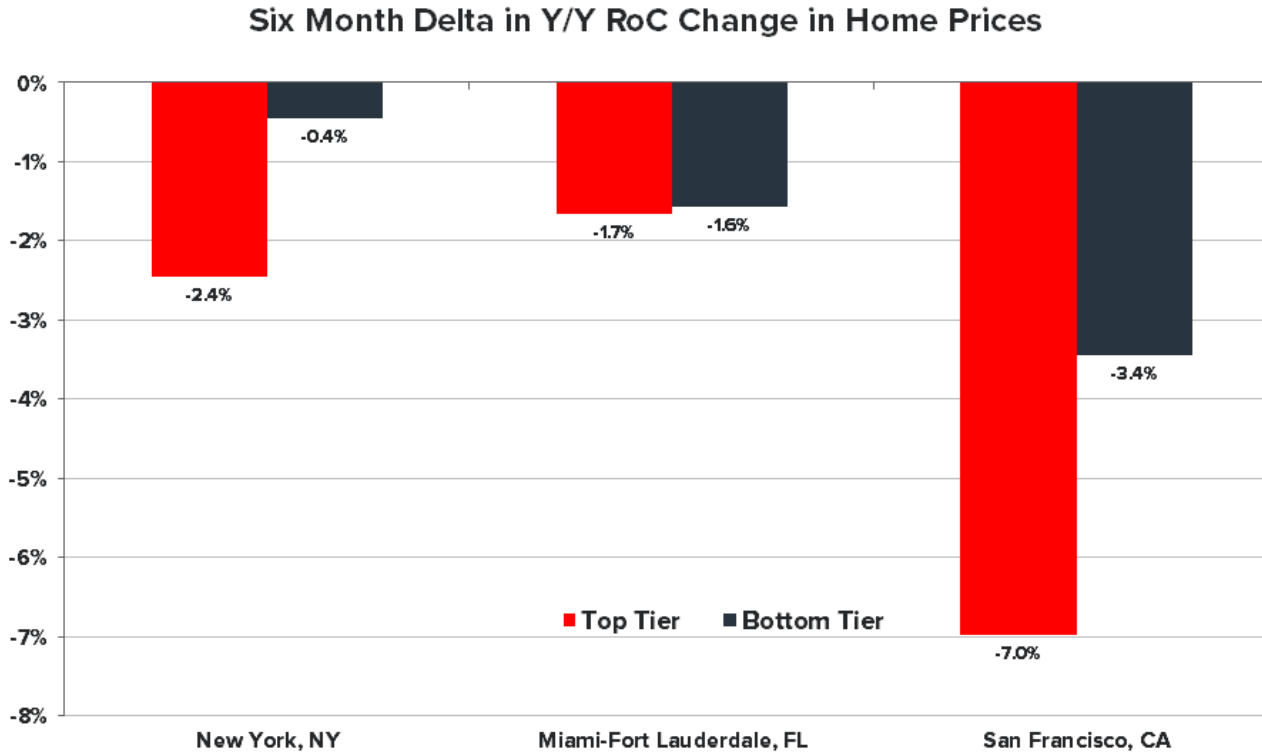


DATA SOURCE: ZILLOW, HEDGEYE

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While not as sharp as the slowdown's observed in NYC and San Fran, Home Price Growth in Miami's top tier continues its steady southward march to lower, multi-year lows.

HPI ↓: TOP TIER > BOTTOM TIER



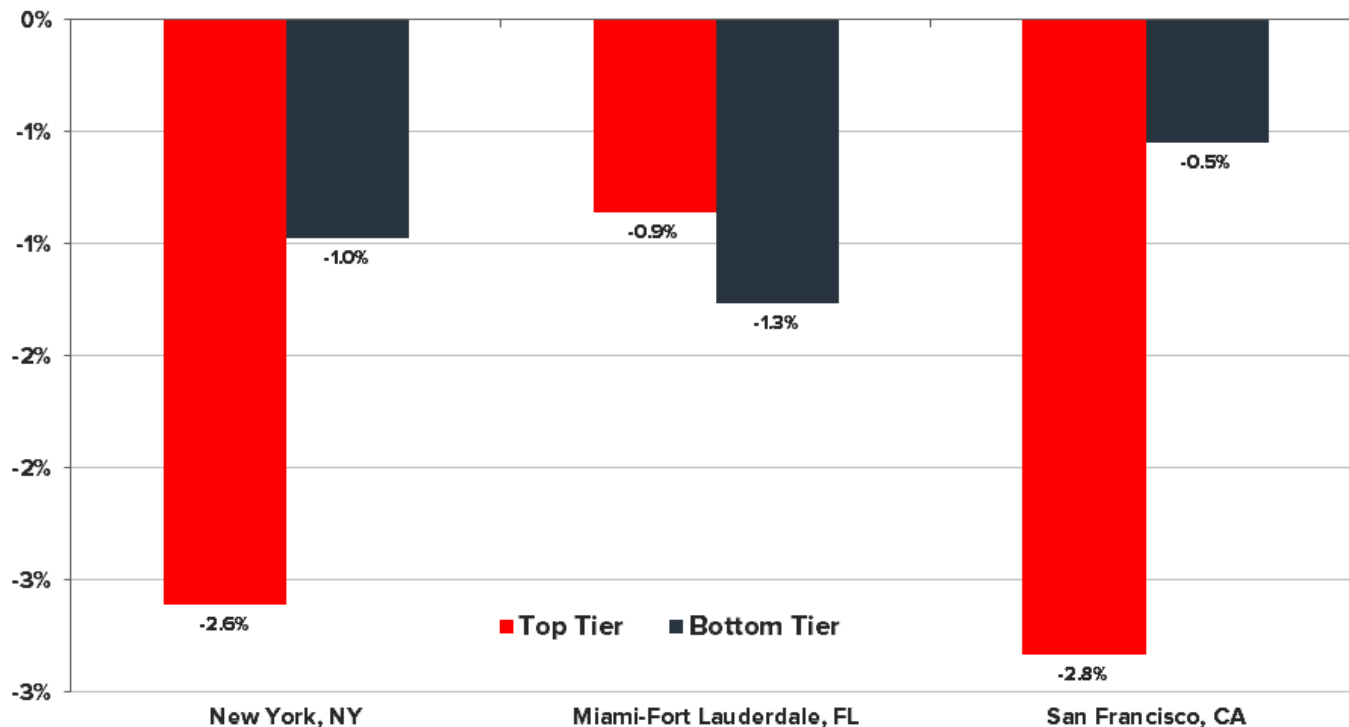
DATA SOURCE: ZILLOW, HEDGEYE

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Price growth is slowing across tiers but the magnitude of slowdown at the high end is significantly greater in key markets.

TOP TIER HPI: NEGATIVE DIVERGENCE

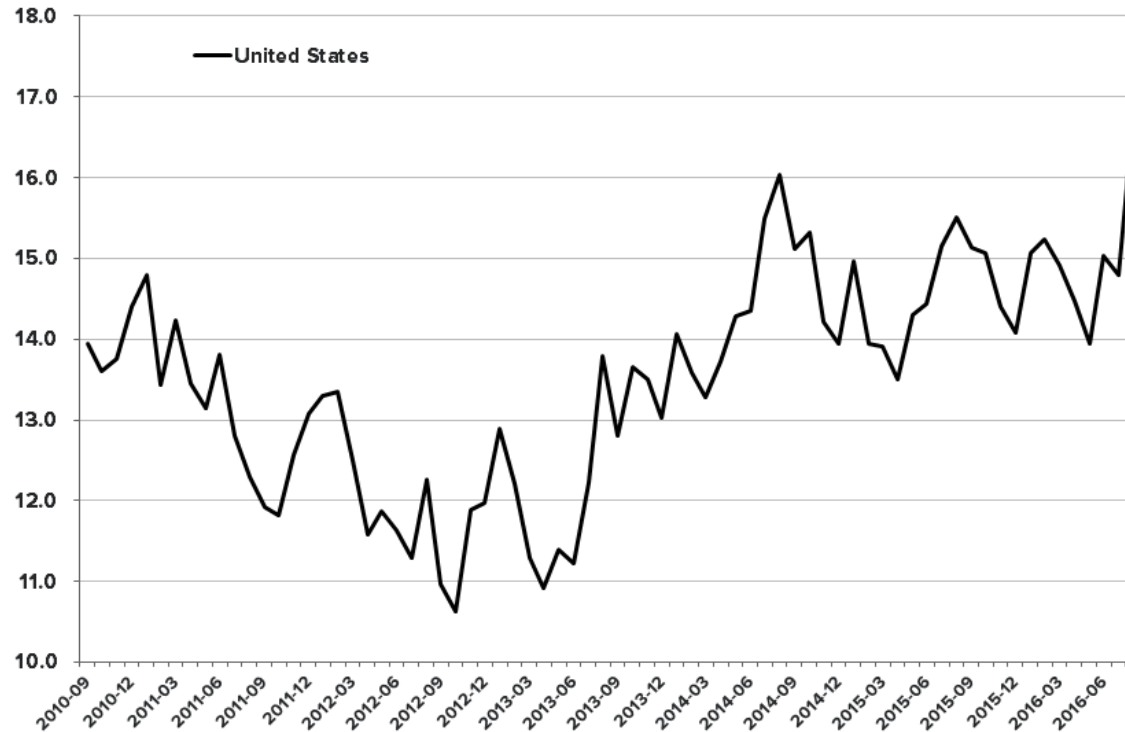
Three Month Delta in Y/Y RoC Change in Home Prices



The pace of price deceleration has quickened in recent months. The Y/Y rate of change in price growth has decelerated - 260bps and - 280bps in just three months in NY and San Francisco, respectively.

PRICE CUTS = **CYCLE HIGHS**

Percentage of Top Tier Homes Seeing Price Cuts

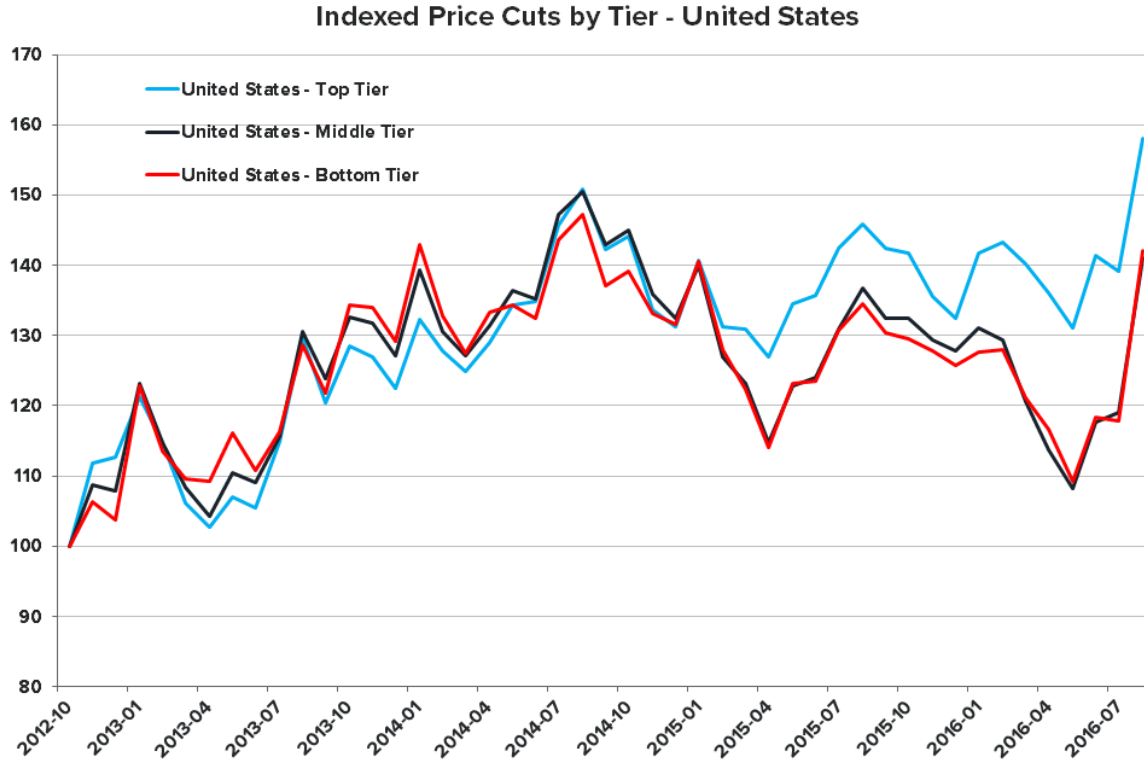


DATA SOURCE: ZILLOW, HEDGEYE

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Nationally, price cut trends among top tier homes have recently surged.

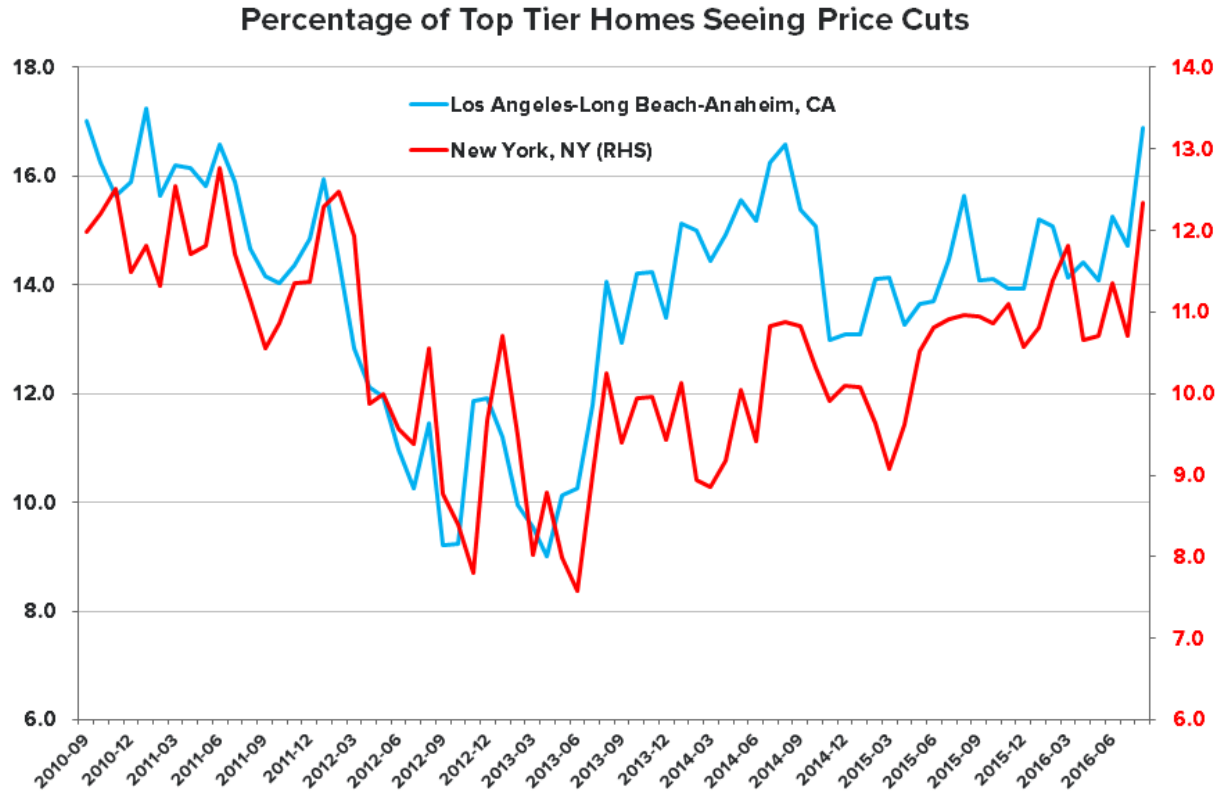
TOP TIER = **NEGATIVE** DIVERGENCE



The percentage of listings seeing price cuts is rising across all price tiers but the trend in the top tier is showing a negative divergence. Price cuts in the Top Tier are at a cycle high on an absolute basis while the spread between the Top and Middle/Bottom Tiers continues to widen.

LA & NY: PRICE CUTS

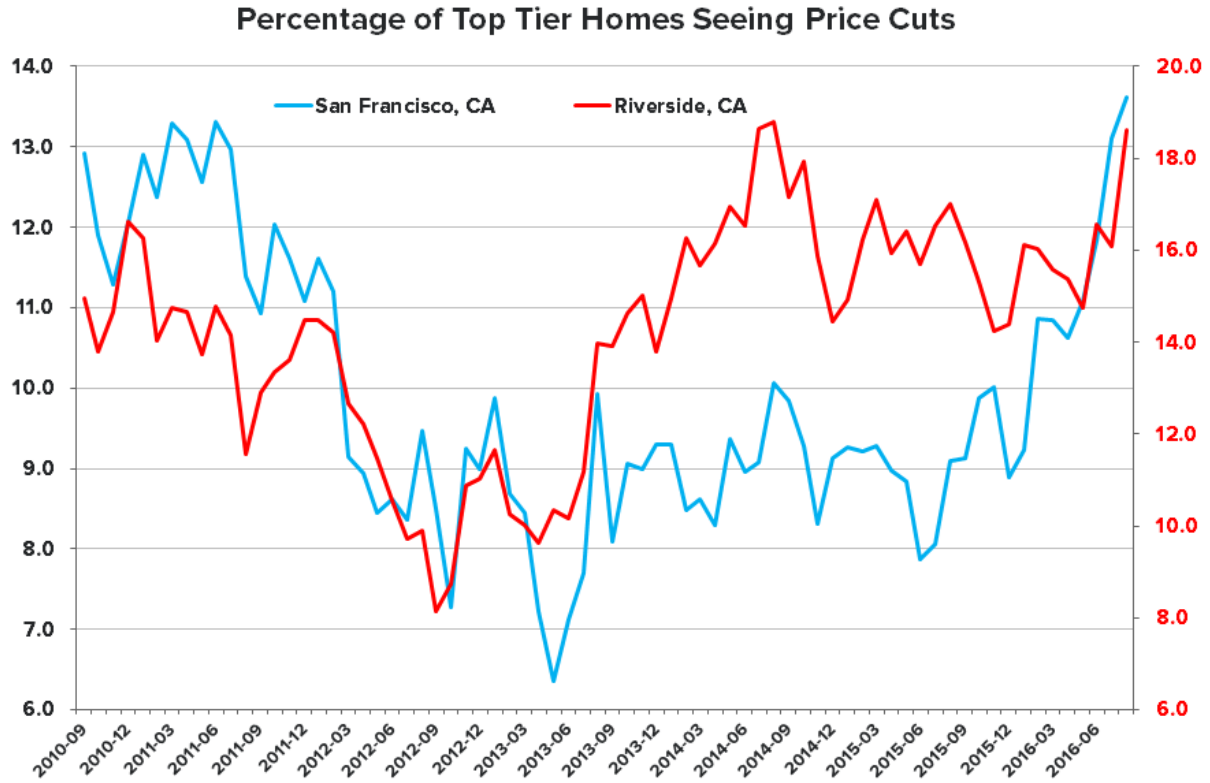
The most recent pop in price cuts is notable but the rising trend has been in place for a over a year now.



DATA SOURCE: ZILLOW, HEDGEYE

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SAN FRAN & RIVERSIDE: PRICE CUTS

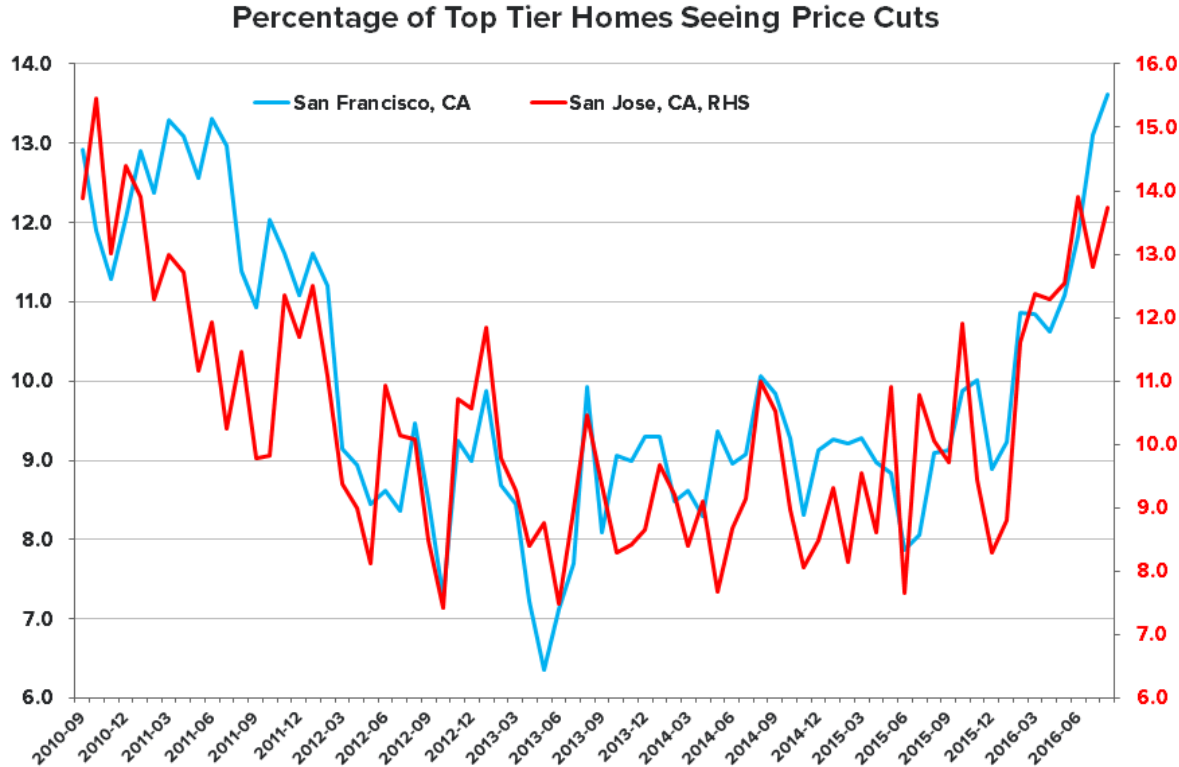


The percentage of listings seeing price cuts in San Francisco has gone vertical over the last couple quarters and made a new cycle high in August.

DATA SOURCE: ZILLOW, HEDGEYE

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SF AND SAN JOSE: PRICE CUTS



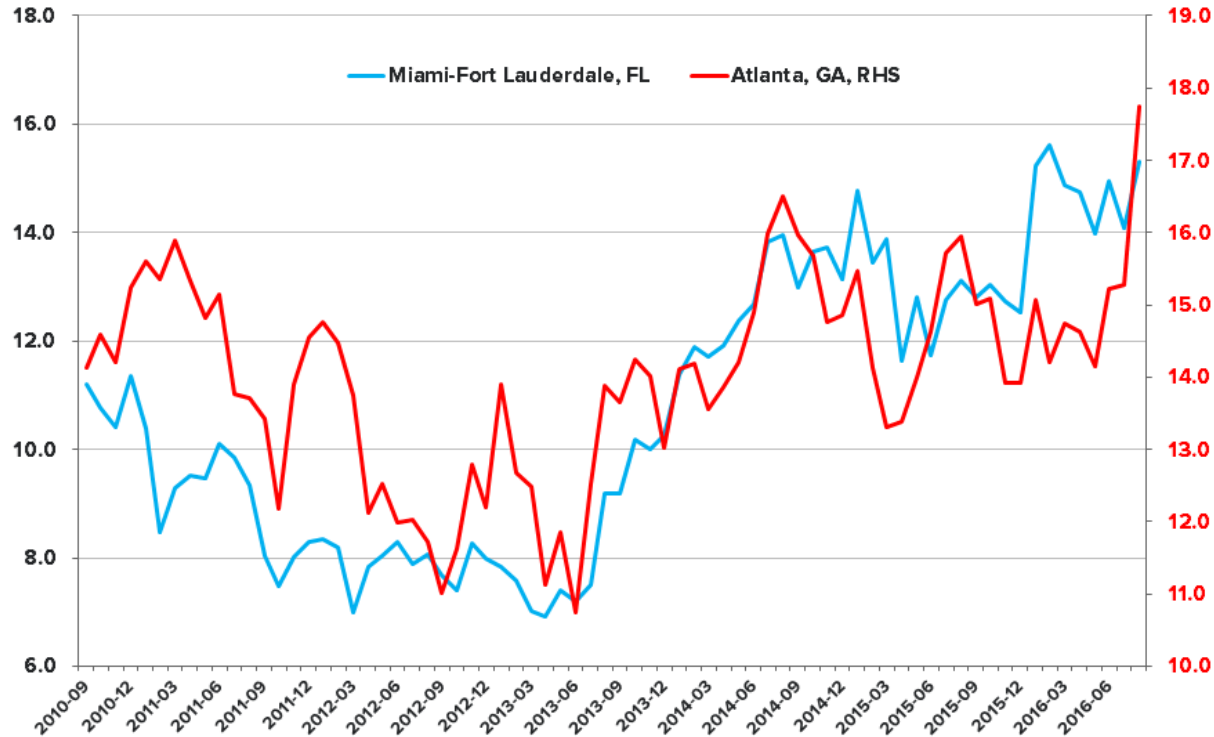
DATA SOURCE: ZILLOW, HEDGEYE

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The price cut trend across the bay area and hot bed CA markets continues to accelerate.

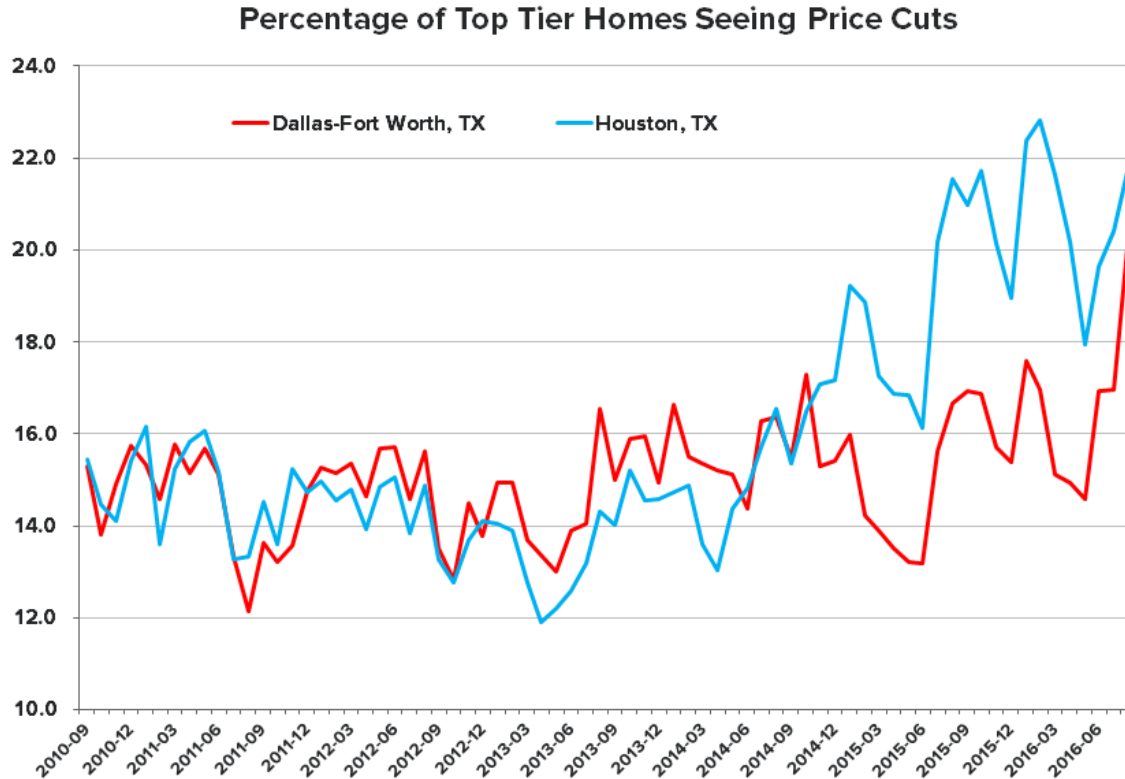
MIAMI & ATLANTA: PRICE CUTS

Percentage of Top Tier Homes Seeing Price Cuts



The % of listings seeing price cuts in Miami and Atlanta has risen since inflecting in mid-2013. The trend has accelerated notably in 2016.

HOUSTON & DALLAS: PRICE CUTS

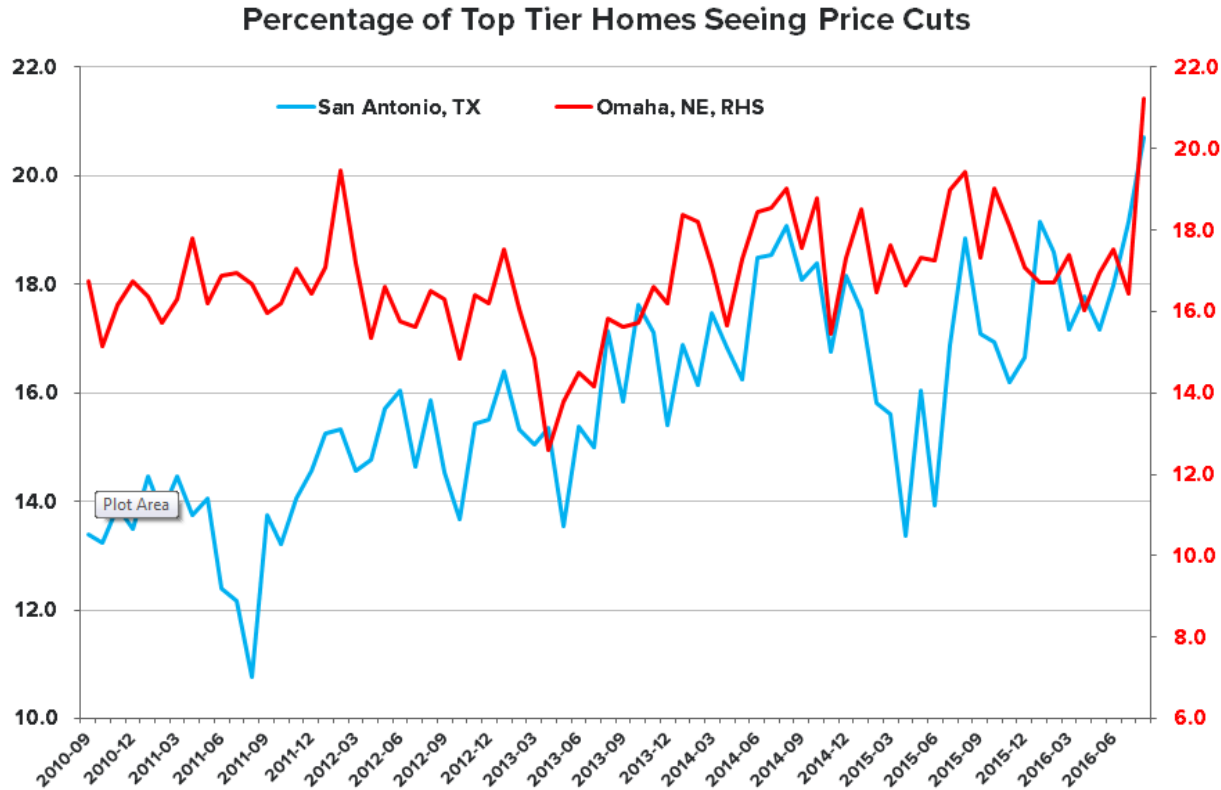


Price cut trends in Texas have shown significant acceleration over the last year and sit at or near the cycle highs as of the latest data.

DATA SOURCE: ZILLOW, HEDGEYE

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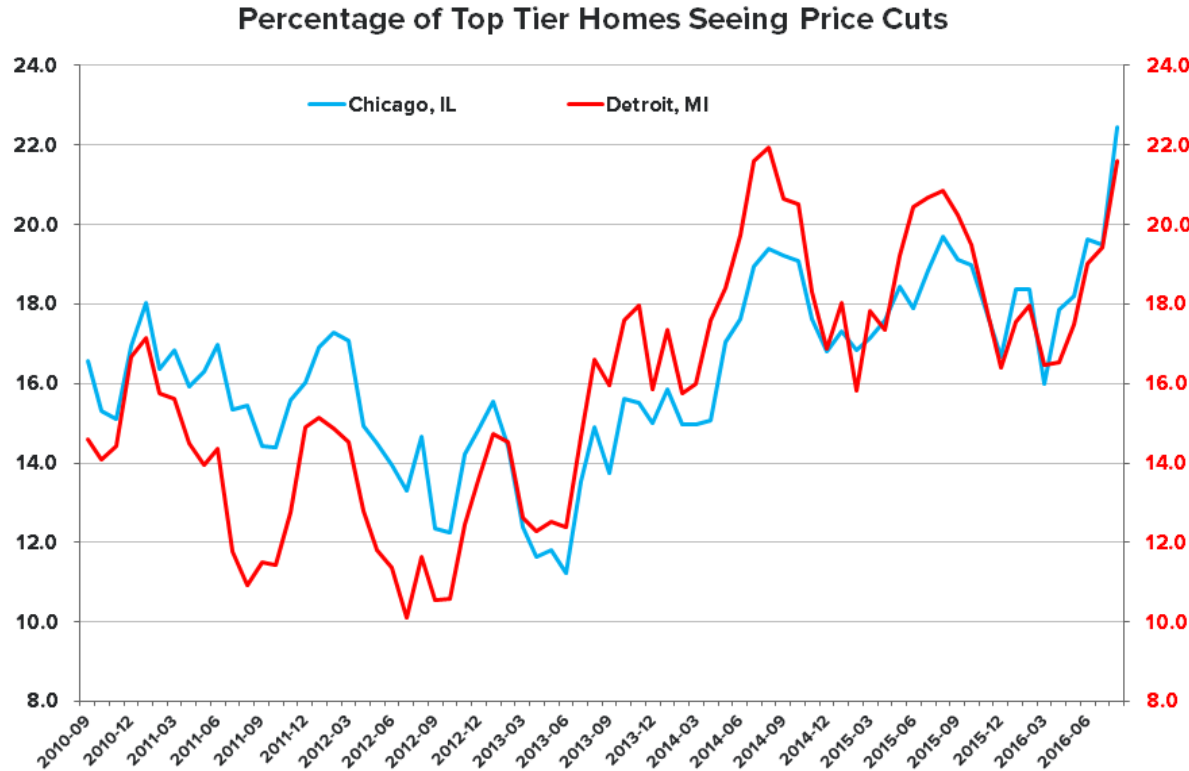
OMAHA: PRICE CUTS



Price cut trends San Antonio and Omaha continuing to deteriorate with both currently sitting at cycles highs.

CHICAGO & DETROIT: PRICE CUTS

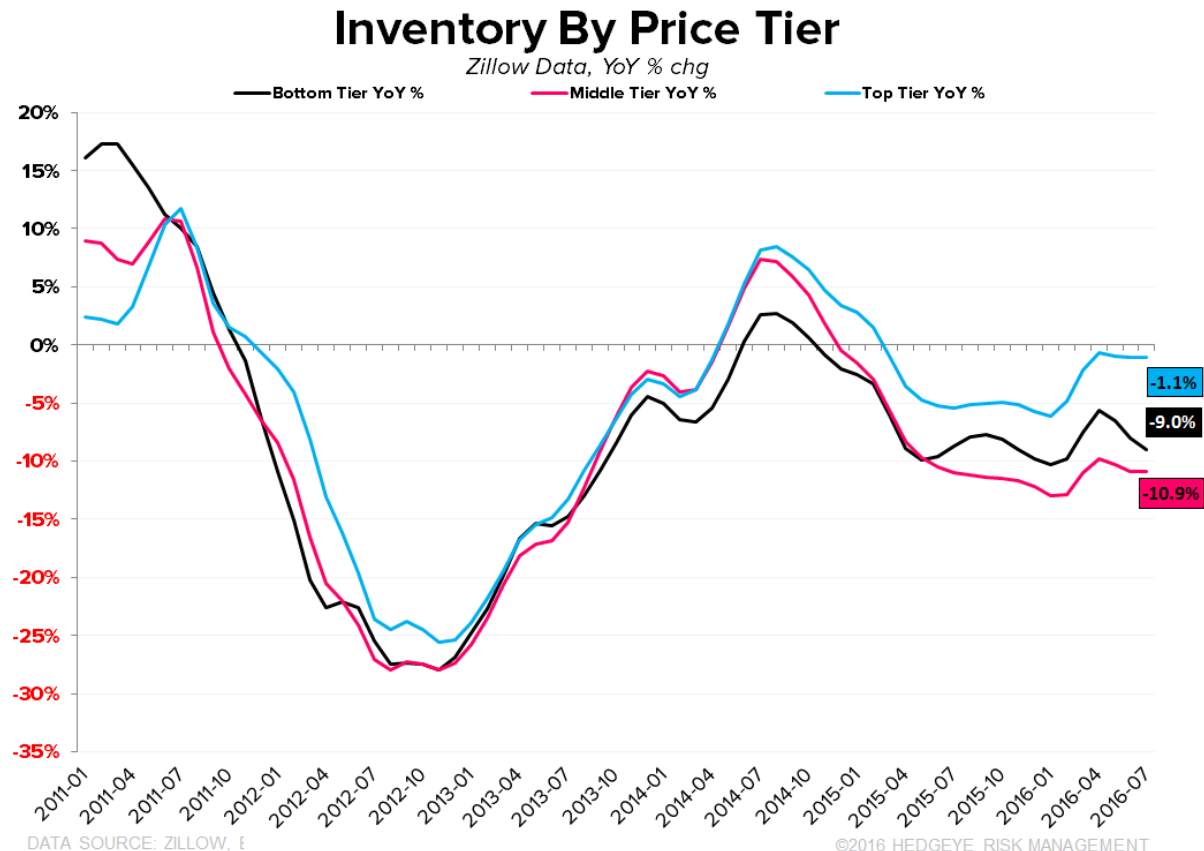
Same story in the Midwest. Chicago and Detroit – the percentage of listings seeing price cuts continues to trend higher and has broken to new highs in recent months.



DATA SOURCE: ZILLOW, HEDGEYE

©2016 HEDGEYE RISK MANAGEMENT

INVENTORY BY PRICE TIER

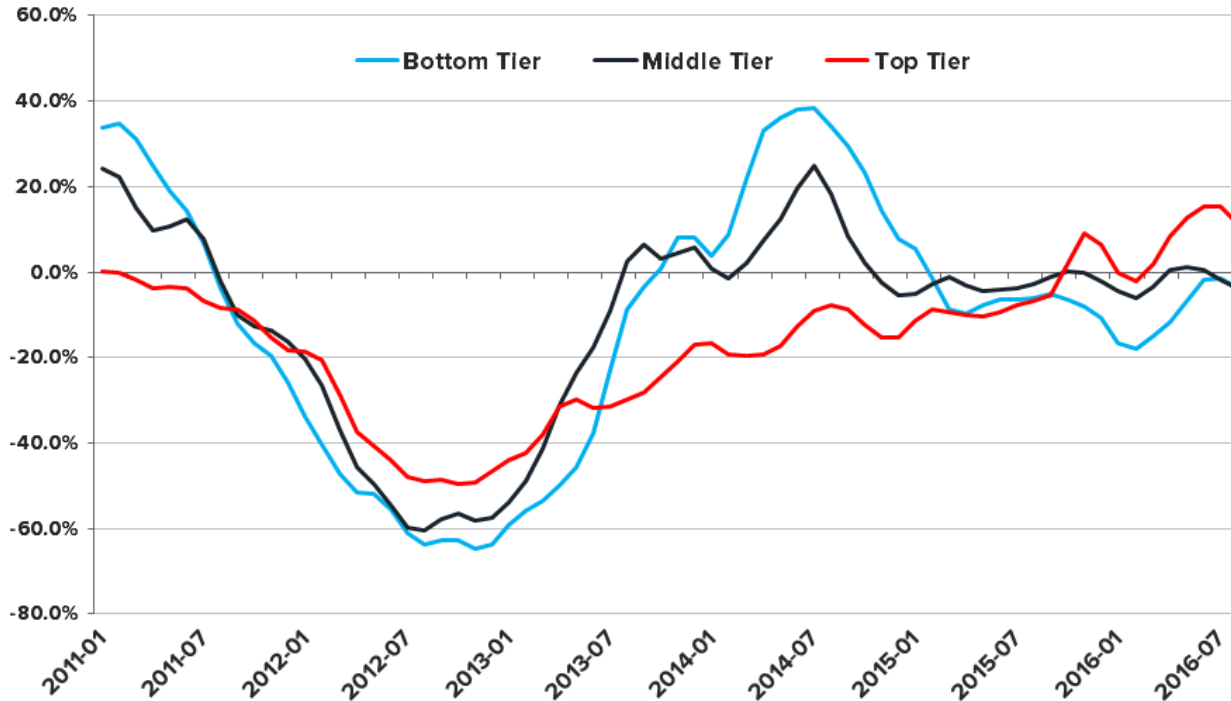


Inventory growth remains negative year-over-year across price tiers. The supply trend in the top tier, however, has inflected and is improving relative to the trend in the middle/bottom tiers.

The national trend is also belied by starker trends in many high profile, high end markets.

SAN FRAN: TOP TIER DIVERGENCE

San Francisco Inventory Y/Y Chg by Price Tier



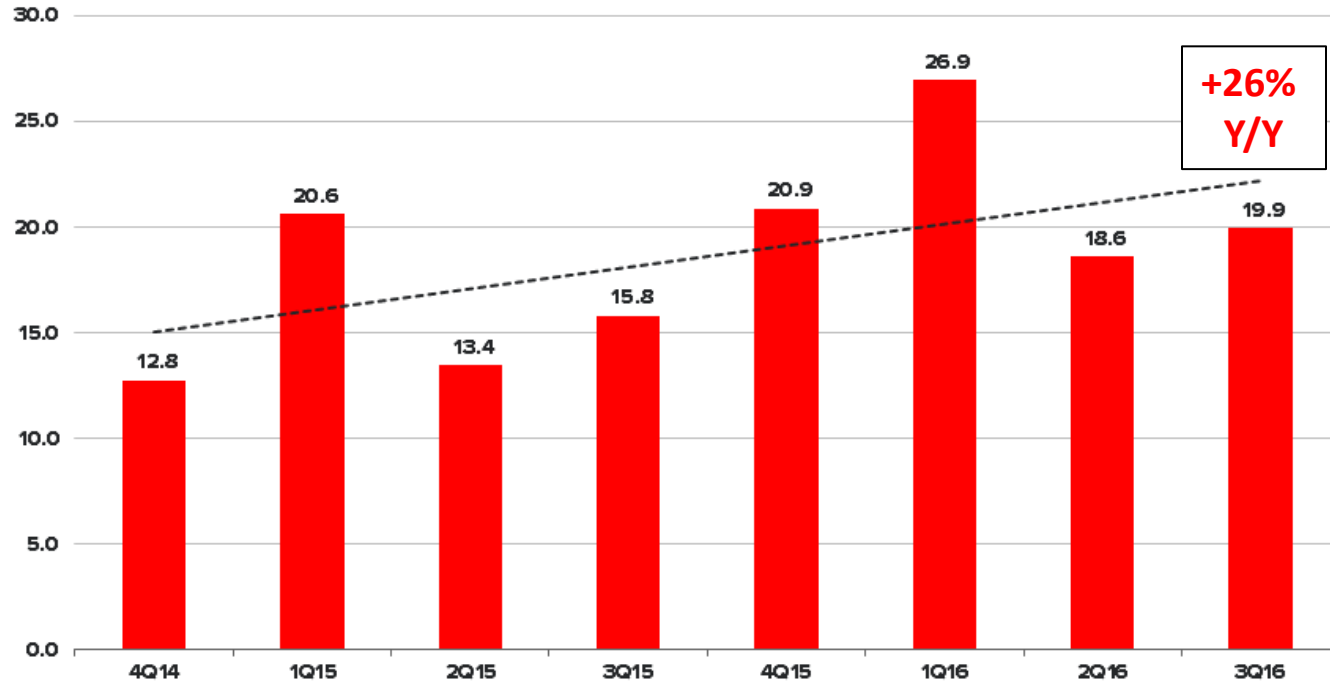
DATA SOURCE: ZILLOW, HEDGEYE

©2016 HEDGEYE RISK MANAGEMENT

For example, in San Francisco, inventory growth in the Top Tier both is positive and growing at rising premium to growth in the middle/bottom tiers.

NEW CANAAN: MONTHS SUPPLY

New Canaan Months Supply



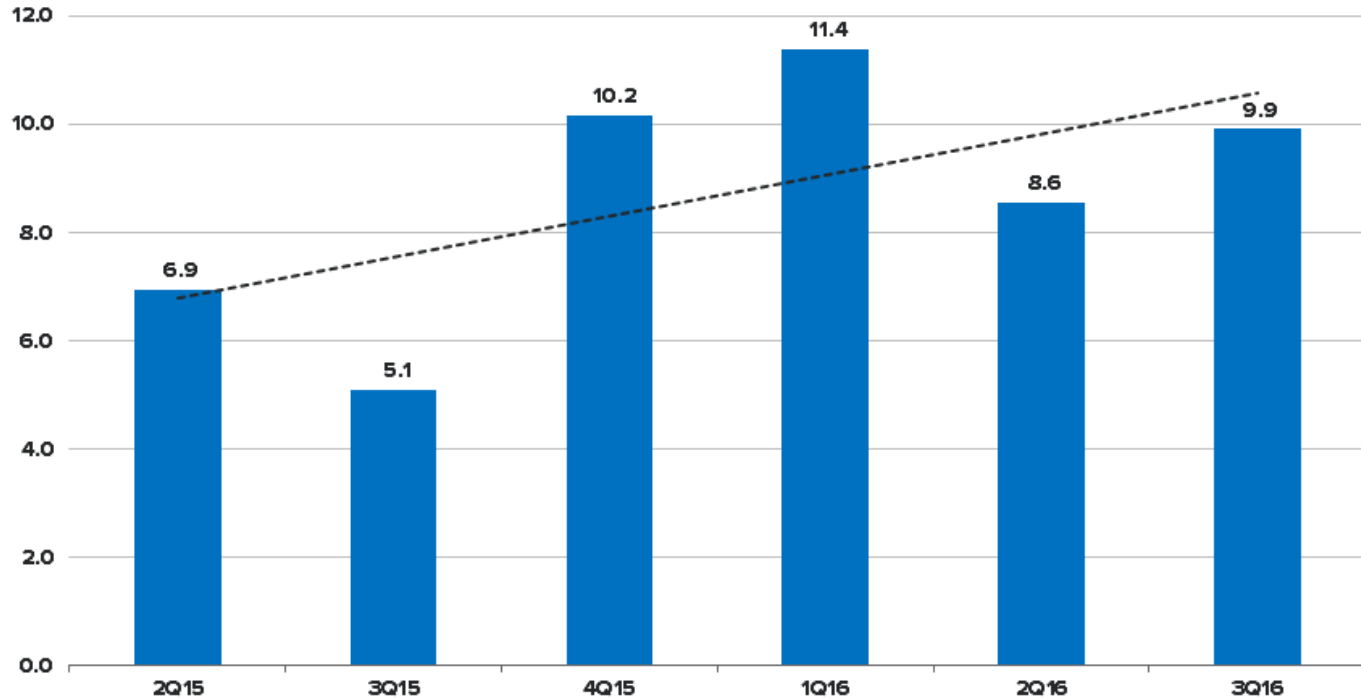
DATA SOURCE: MLS, HEDGEYE

©2016 HEDGEYE RISK MANAGEMENT

Inventory in New Canaan continues on an upward trend. Months supply hit 20 months in the third quarter and is now up +26% YoY.

DARIEN: MONTHS SUPPLY

Darien Months Supply



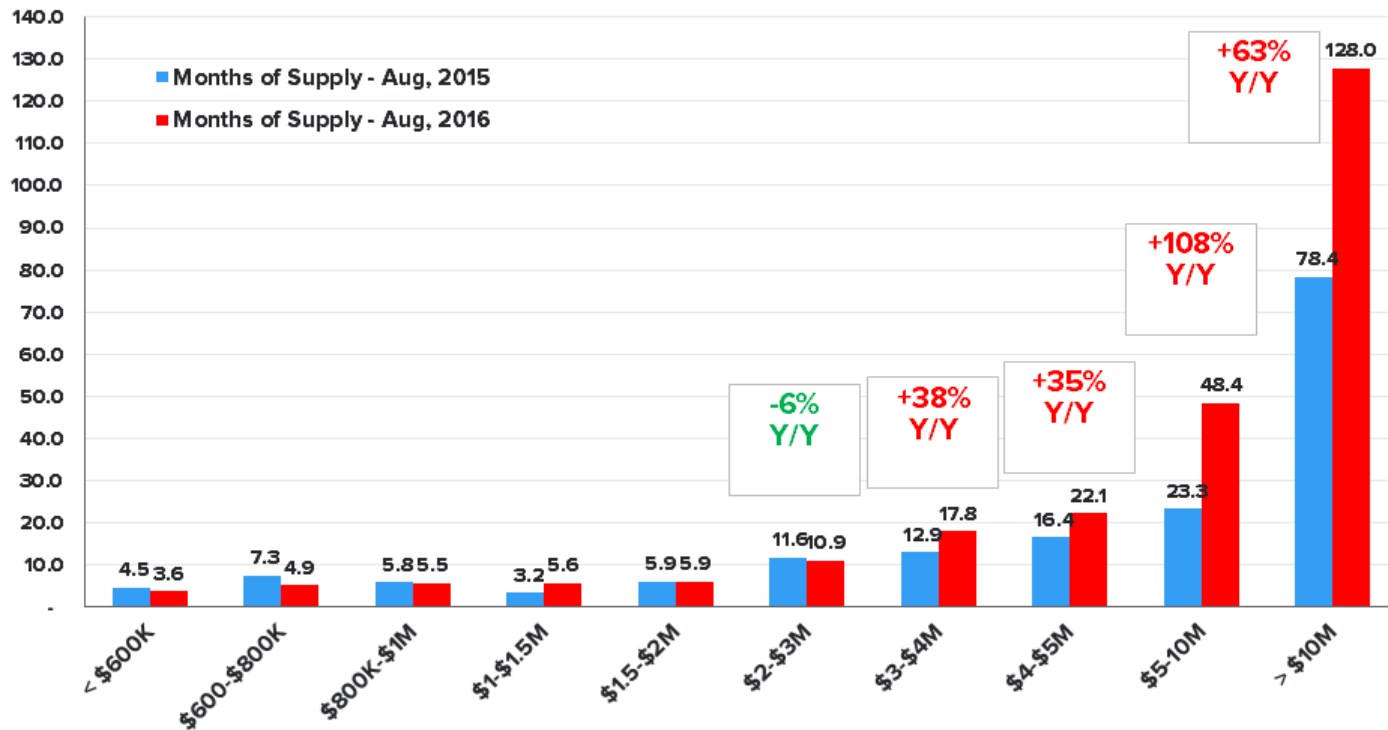
DATA SOURCE: MLS, HEDGEYE

©2016 HEDGEYE RISK MANAGEMENT

Months Supply of inventory in Darien was up >54% YoY in the last two quarters.

GREENWICH: SUPPLY MELT UP!

Greenwich Months Supply



DATA SOURCE: MLS, HEDGEYE

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Yes, units on the vertical axis is **months supply!**

Months Supply of inventory is up significantly for price points >\$3M and currently sits at a 48 and 128 months in the \$5-10M and >\$10M price tiers, respectively.



GOTHAM



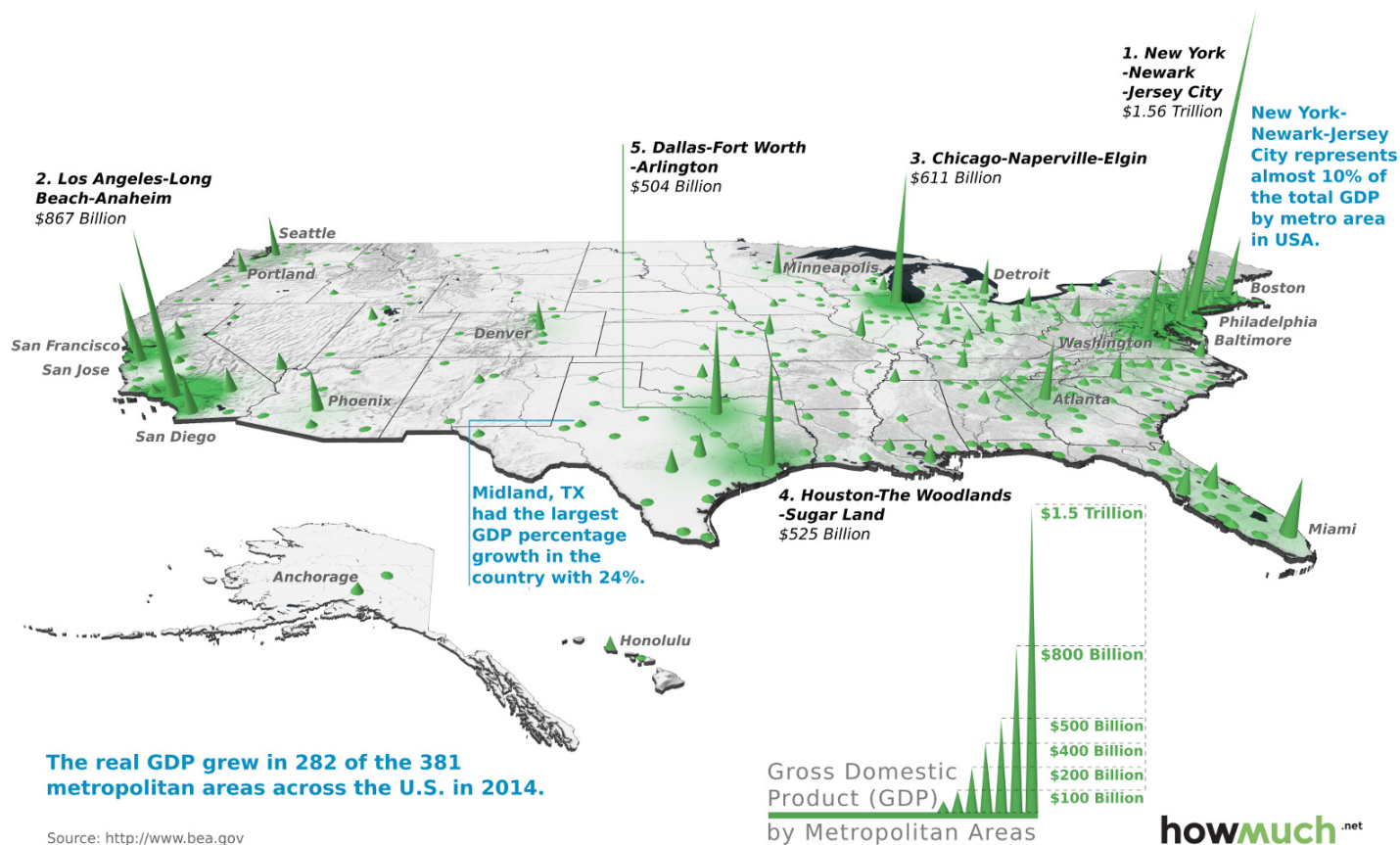
HISTORIC MEDIAN HOME PRICES

County:	State	Median Home Price**	YoY Change	2013 Price	3Y Change	3Y CAGR	2011 Price	5Y Change	2006 Price	10Y Change
Fairfield	Connecticut	\$392,100	0.2%	\$374,000	4.8%	0.4%	\$387,000	1.3%	\$494,000	-20.6%
Bergen	New Jersey	\$432,800	3.2%	\$396,000	9.3%	2.9%	\$397,000	9.0%	\$506,000	-14.5%
Passaic	New Jersey	\$295,100	4.4%	\$267,000	10.5%	1.3%	\$284,000	3.9%	\$394,000	-25.1%
Bronx	New York	\$385,000	-3.0%	\$369,500	4.2%	1.1%	\$373,000	3.2%	\$380,000	1.3%
Kings	New York	\$648,600	11.1%	\$490,000	32.4%	12.7%	\$453,000	43.2%	\$454,000	42.9%
Nassau	New York	\$466,200	4.0%	\$408,000	14.3%	4.5%	\$409,000	14.0%	\$508,000	-8.2%
New York	New York	\$1,155,700	6.9%	\$850,000	36.0%	13.3%	\$795,000	45.4%	\$777,000	48.7%
Queens	New York	\$455,200	10.1%	\$378,000	20.4%	6.2%	\$380,000	19.8%	\$467,000	-2.5%
National Average	National Average	\$380,716	5.4%	\$315,695	20.6%	7.9%	\$303,157	25.6%	\$391,693	-2.8%

** 2016 Data as of 2Q 2016

Manhattan and Brooklyn were largely insensitive to the housing slowdown while Fairfield, Bergen and the Bronx underperformed the national average.

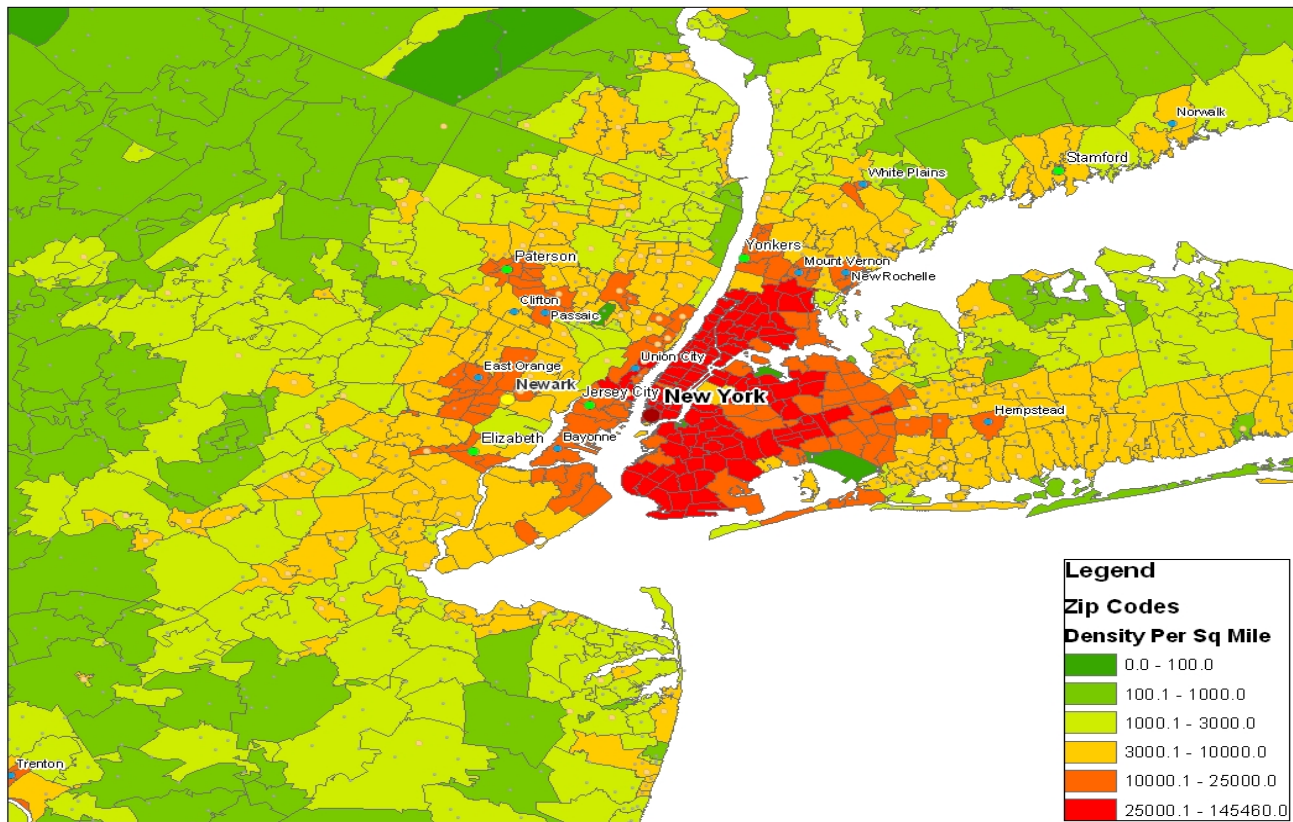
\$1.5 TRILLION IN GDP



The New York metro is the largest GDP in the US. This MSA accounts for almost 10% of the total GDP by metro area in the US.

Source: <http://www.bea.gov>

7% OF TOTAL US POPULATION



Census:

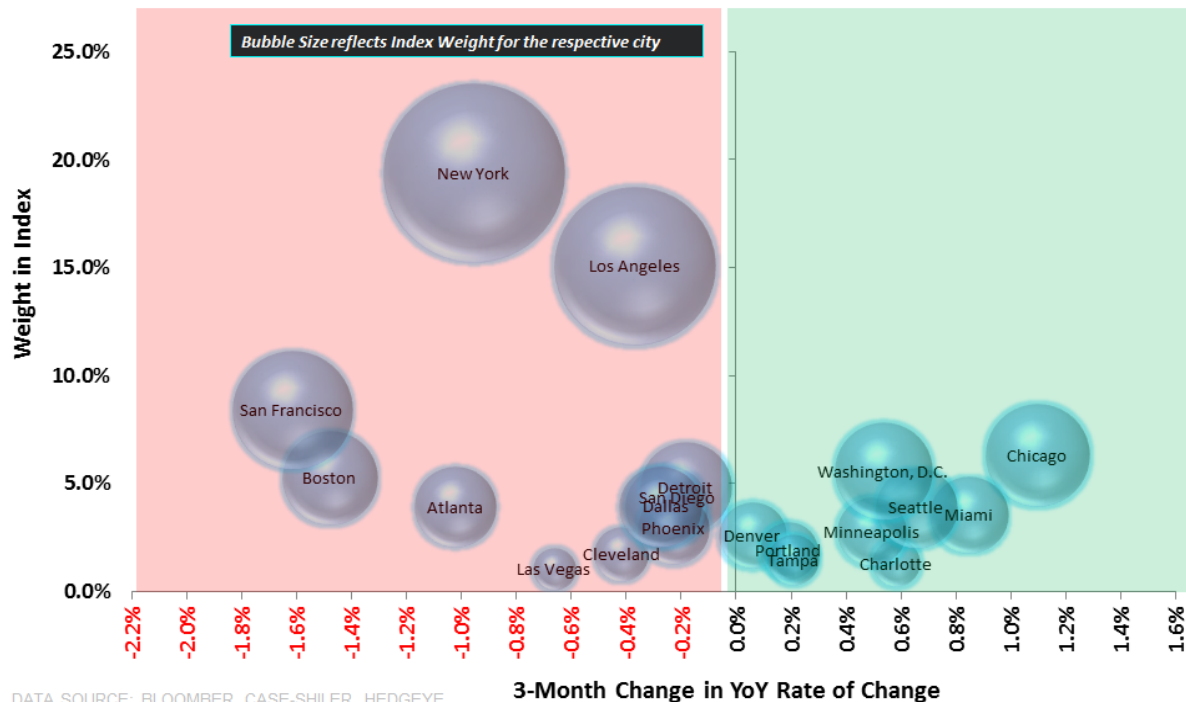
2010- 23,076,664

2015- 23,723,696

The New York Metro Area accounts for approximately 7% of the US population.

HPI = SLOWING

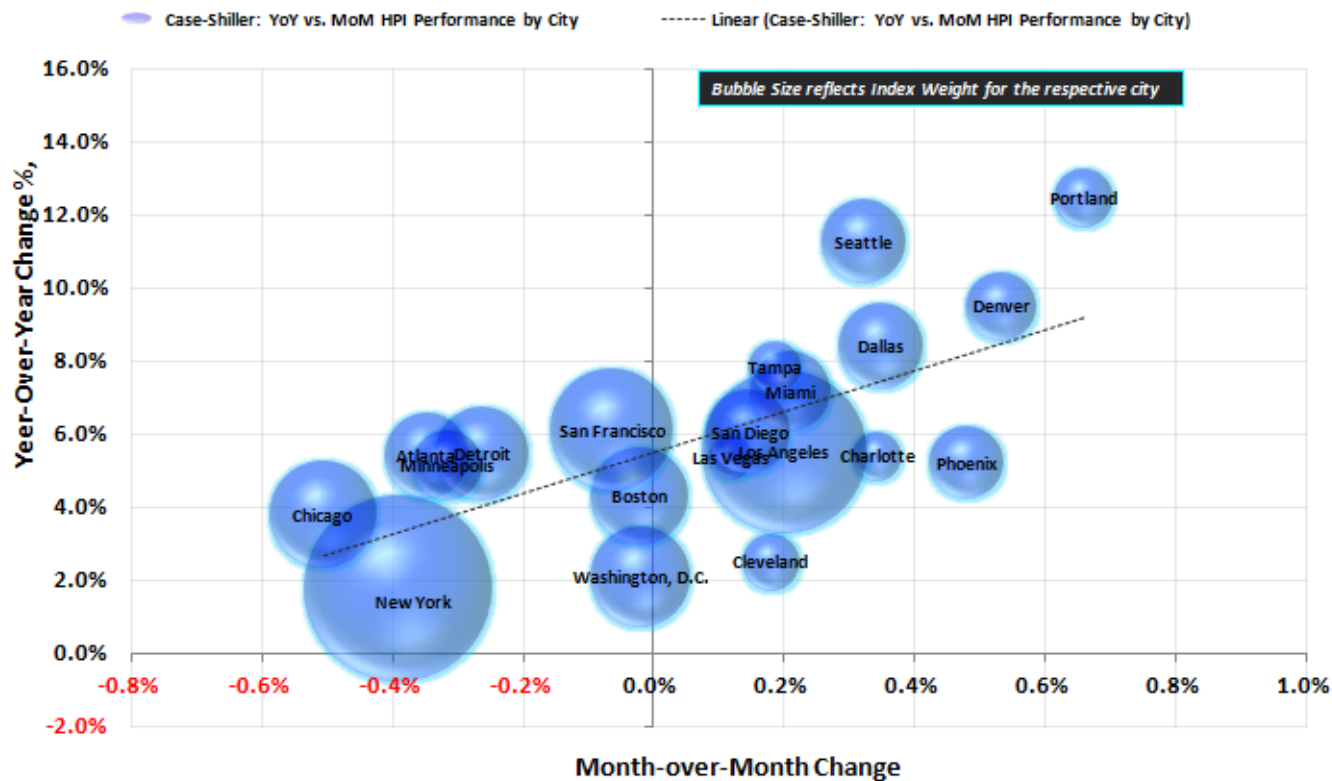
CASE-SHILLER: 2nd Derivative Trend vs City Weight in Index



New York carries the highest weight in the Case-Shiller 20-city index at 19.4%. MoM growth has been negative in each of the last 3 months and YoY growth has been slowing for the past 8 months

NY: MOM = ↓, YOY = SLOWING

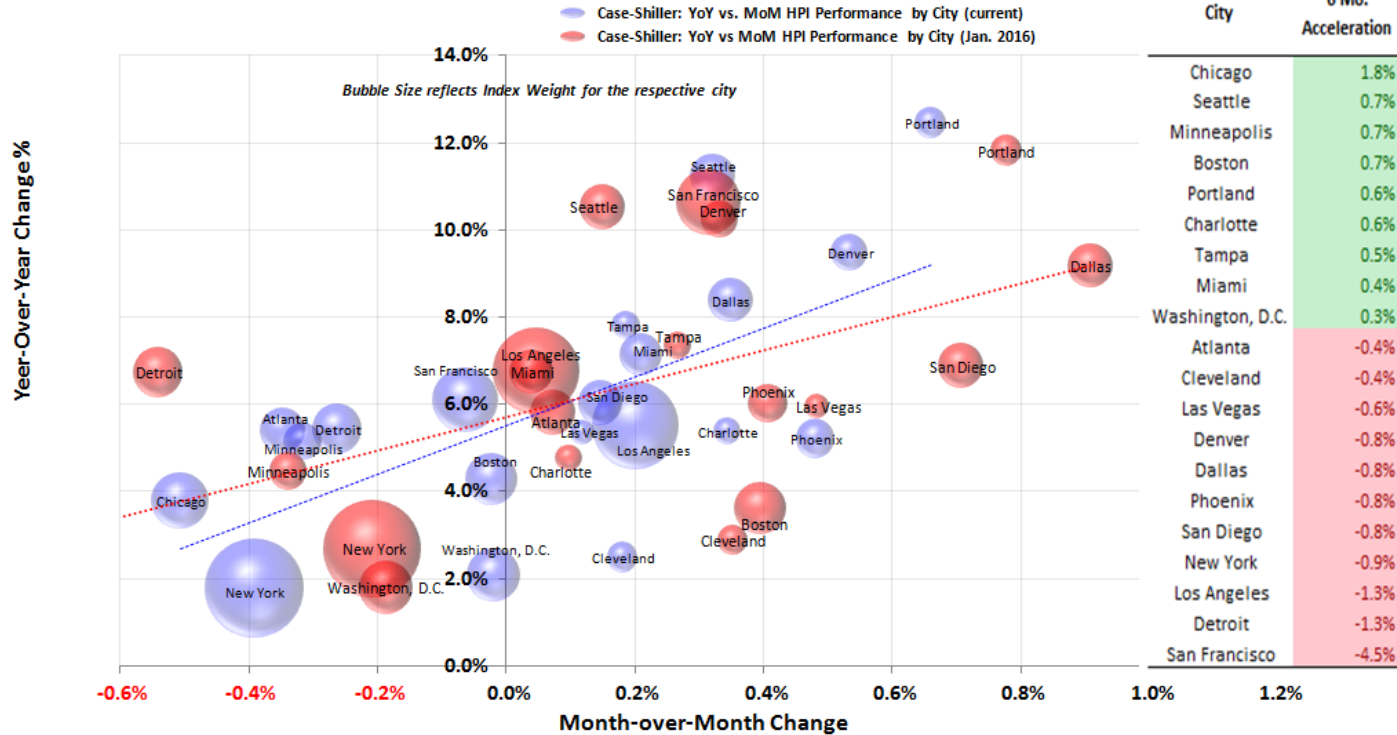
CASE-SHILLER: YoY vs. MoM HPI PERFORMANCE BY CITY



MoM growth has been negative in each of the last 3 months and YoY growth has been slowing for the past 8 months

CASE SHILLER: HPI EVOLUTION

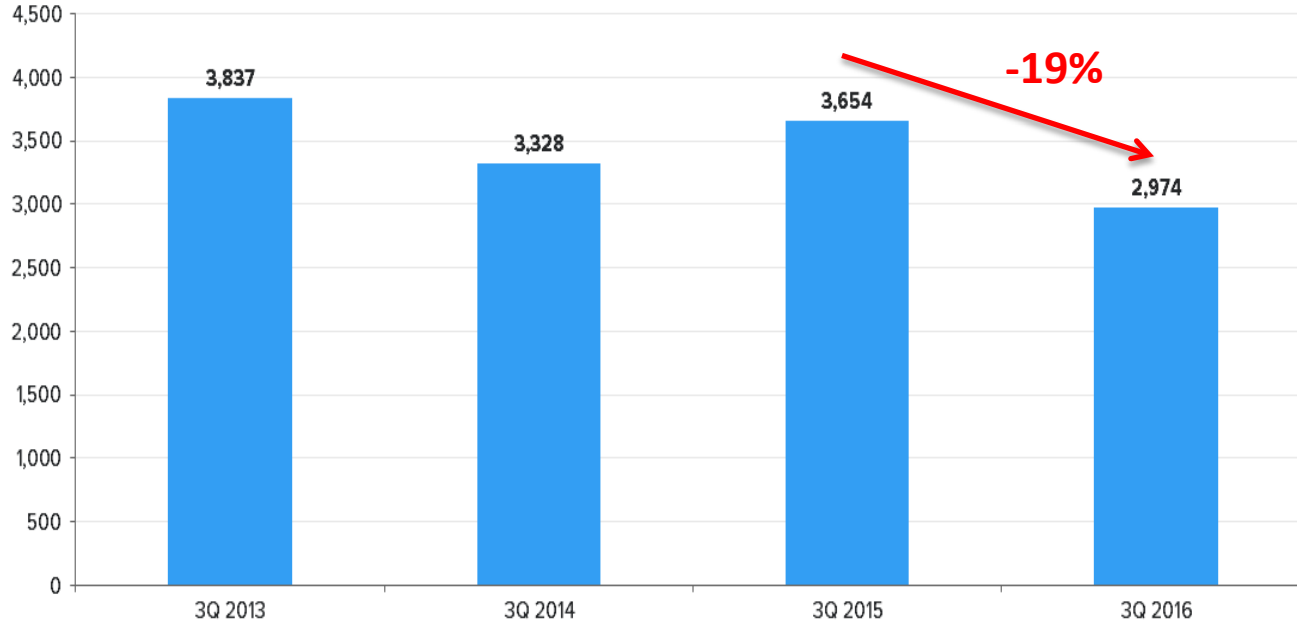
CASE-SHILLER: YoY vs. MoM HPI PERFORMANCE BY CITY



The index heavyweights in the Case-Shiller index dominate the trend and they are currently slowing. New York, LA, and San Fran alone represent a collective 43% weighting in the index and each has slowed notably over the last 6 months.

MANHATTAN: VOLUME ↓

Manhattan Apartment Resale Volume Q3 2016



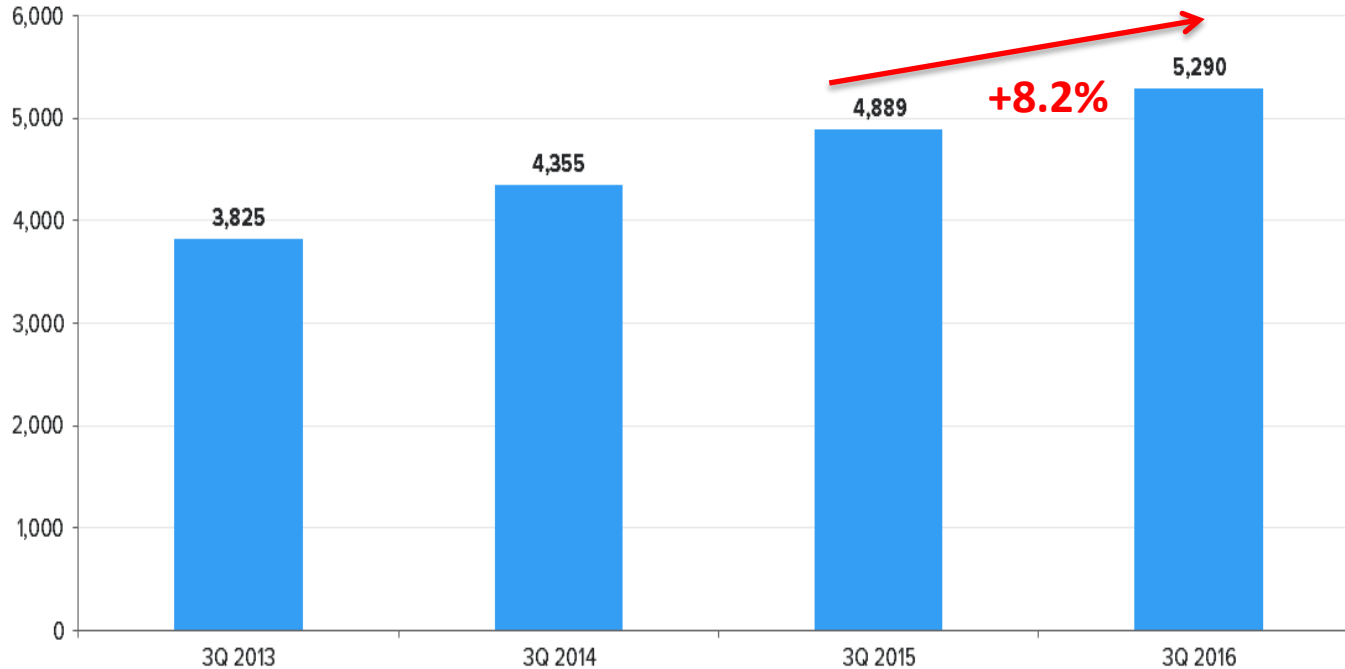
Source: Miller Samuel, Douglas Elliman, Bloomberg, Hedgeye

© Hedgeye Risk Management

Resale Volume in Manhattan showed a notable decline in 3Q16, dropping -19% YoY

MANHATTAN: SUPPLY ↑

Manhattan Apartment Resale Listings- Q3 2016



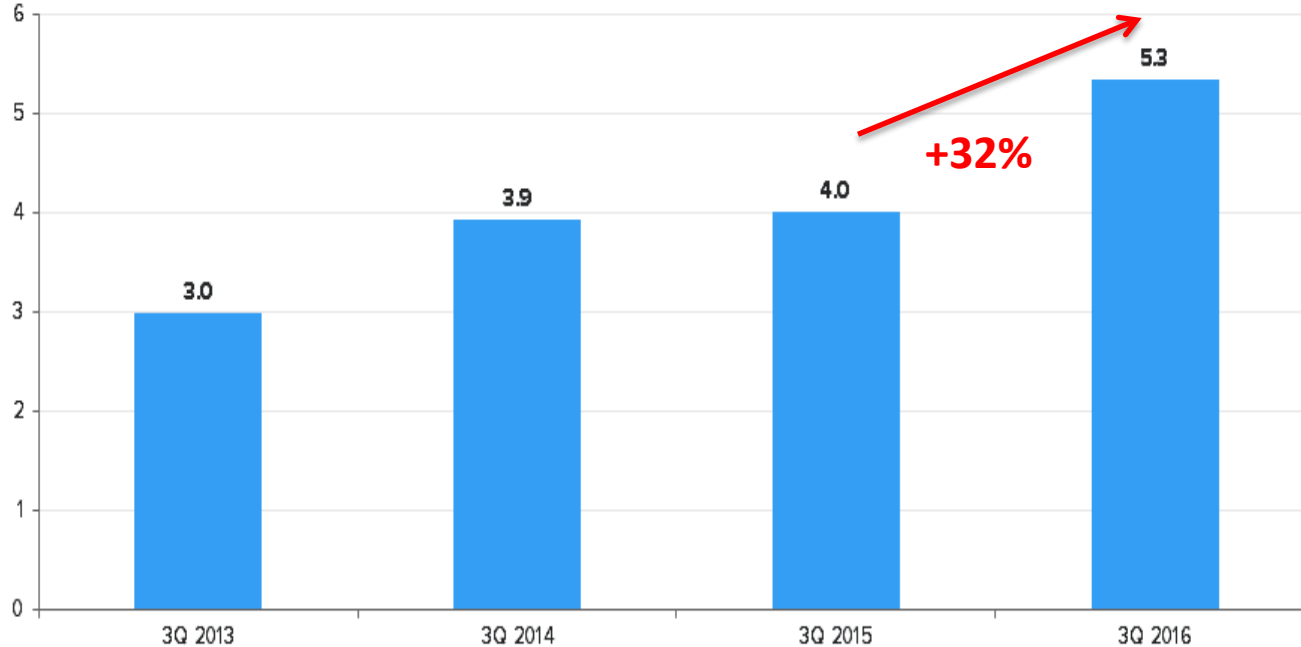
Source: Miller Samuel, Douglas Elliman, Bloomberg, Hedgeye

© Hedgeye Risk Management

Apartment Inventory continues to build. Resale inventory increased +8% YoY in 3Q16 and is up ~40% since 2013.

MANHATTAN: MONTHS SUPPLY

Manhattan Apartment Resale Months of Supply Q3 2016



Source: Miller Samuel, Douglas Elliman, Bloomberg, Hedgeye

© Hedgeye Risk Management

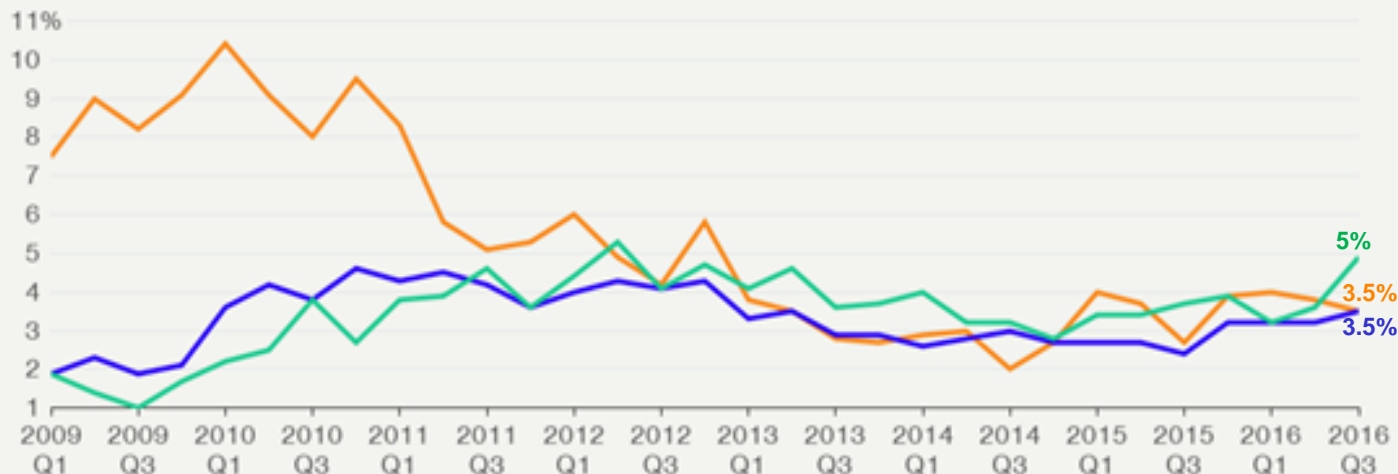
Lower demand and rising supply has driven a 32% YoY increase in month supply which currently sits at a multi-year high of 5.3 months.

MANHATTAN HIGH END: PRICE CUTS ↑

Manhattan's Luxury Market Slowing Down

Percent of sales in the top tier falling

Price cut more than 10% Price cut 10% Price cut 5%



DATA SOURCE: STREETEASY, BLOOMBERG, HEDGEYE

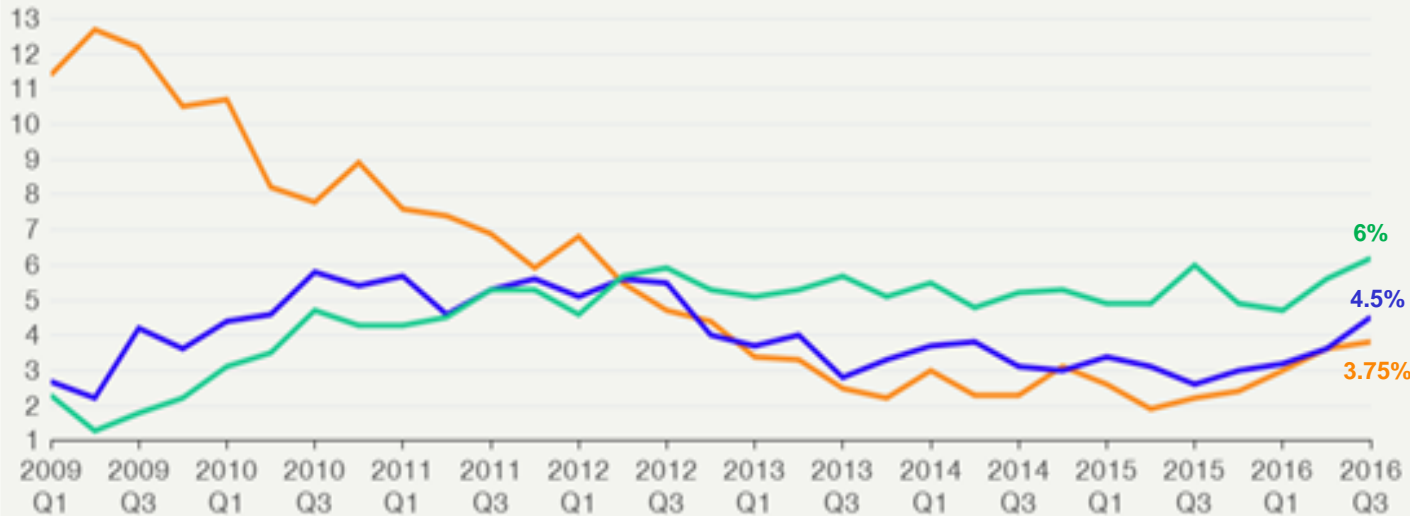
©2016 HEDGEYE RISK MANAGEMENT

In Manhattan, the high end, or the Top 20% of apartments/homes currently fall in the range of \$2.7M and above. Since Q1 2016, many of the listings in this price tier have experienced significant price cuts.

MANHATTAN HIGH END

Manhattan's Second Highest Price Bucket Slowing Down

Price cut more than 10% Price cut 10% Price cut 5%



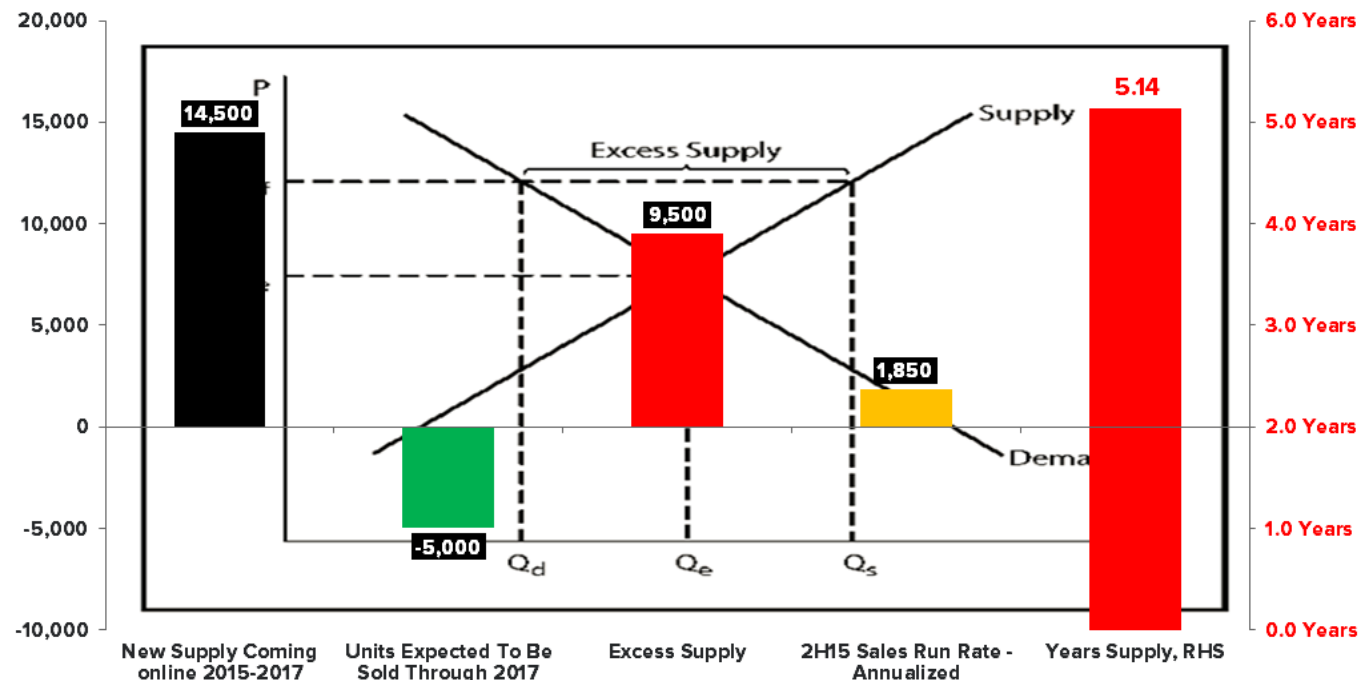
DATA SOURCE: STREETEASY, BLOOMBERG, HEDGEYE

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Meanwhile luxury real estate in Manhattan in the \$1.2M-\$2.7M range, or the next 20%, have experienced a rapid increase in the number of significant price cuts in order find a buyer.

INVENTORY: IMPENDING OVERSUPPLY

Manhattan's Looming OverSupply Problem

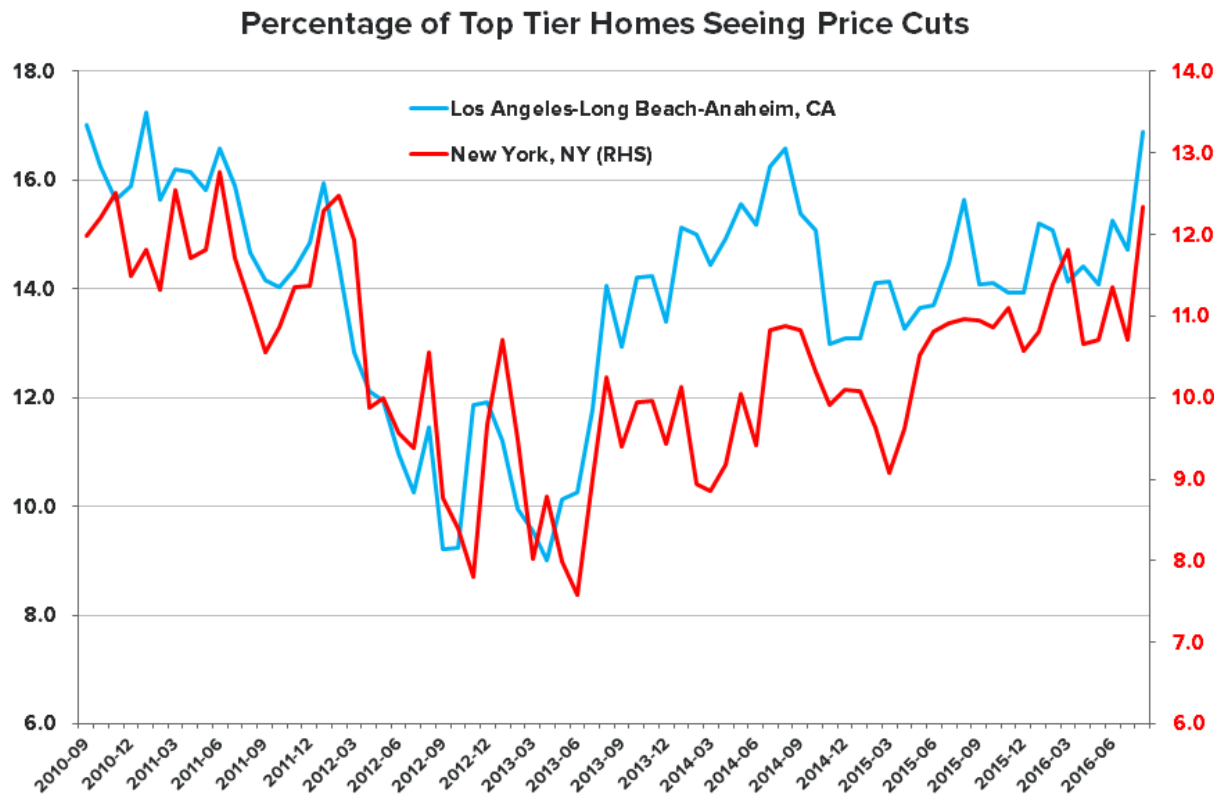


Pipeline supply will continue to grow at a premium to demand, driving excess supply higher. Years supply should continue to move higher through 2017.

DATA SOURCE: MILLER SAMUEL, REAL DEAL, HEDGEYE

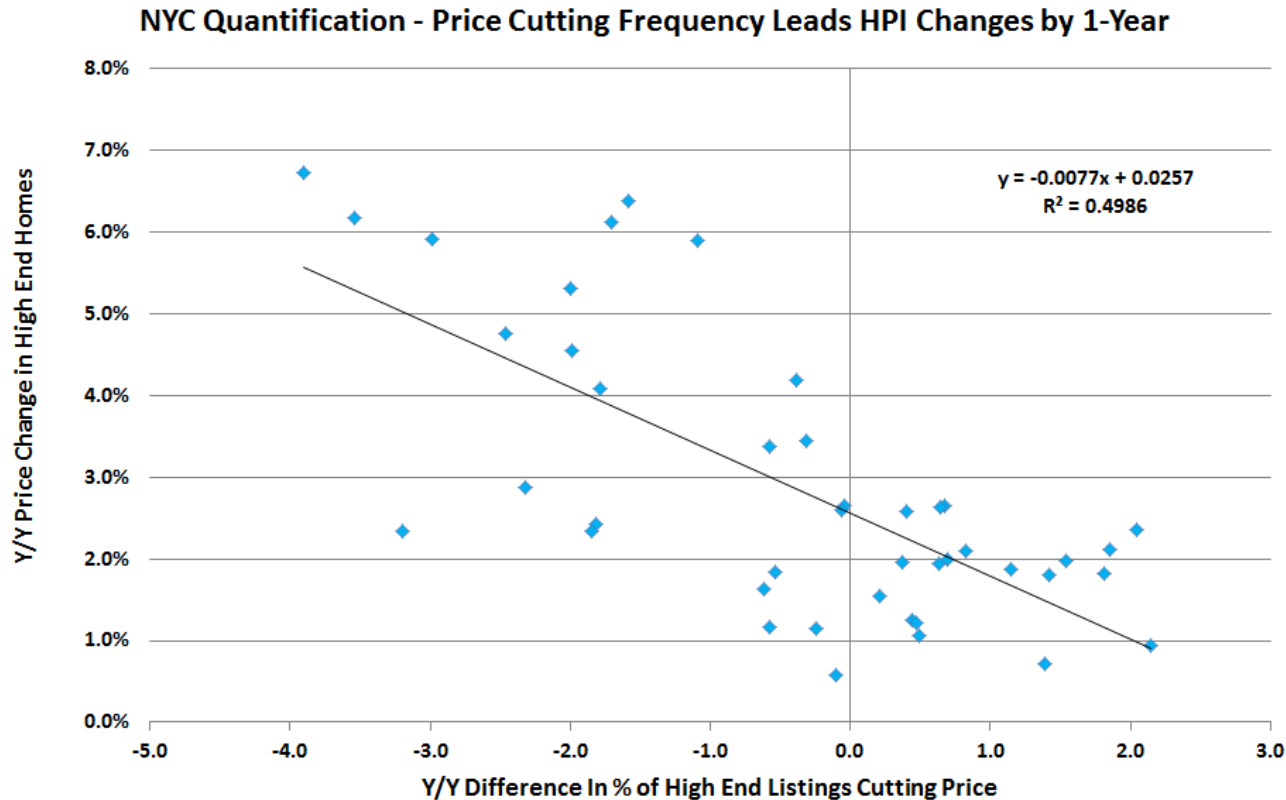
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NY & LA: PRICE CUTS = **CYCLE HIGHS**



Reminder The percent of listings in NY and LA seeing price cuts has been trending higher and has popped to new cycle highs in recent months

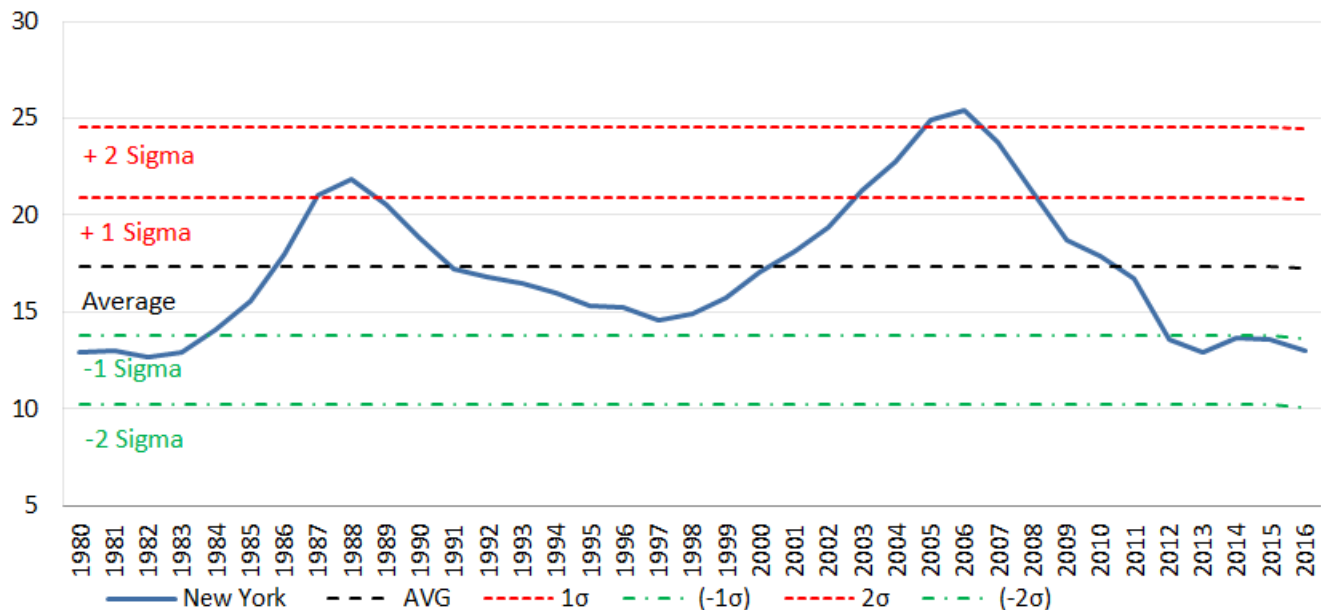
PRICE CUTS → HPI DECELERATION



Historically the YoY change in the % of listings seeing price cuts leads rate of change in home prices by a year.

HISTORIC PRICE TO RENT RATIO

New York: Home Price to Rent Ratio (1980-2015)

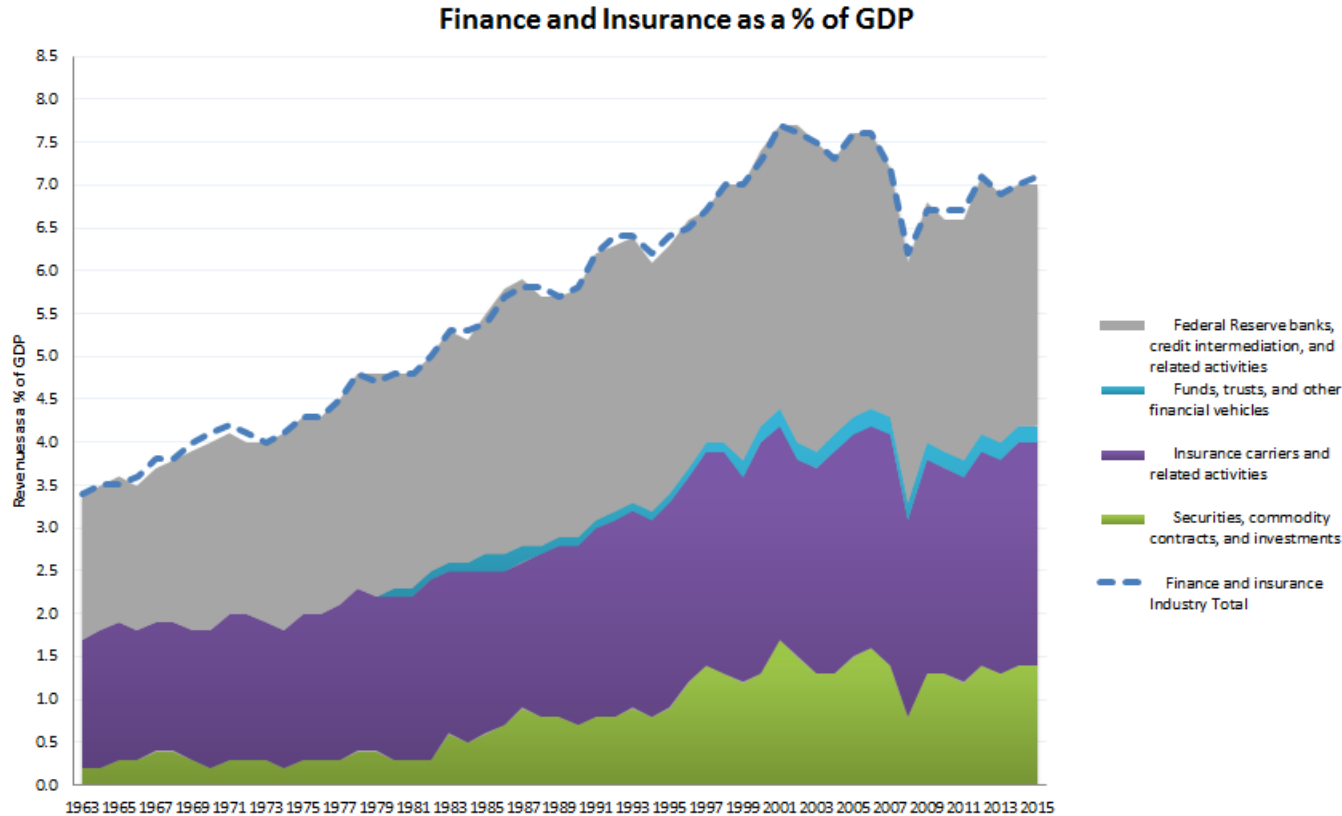


DATA SOURCE: THE ECONOMIST, ZILLOW, HEDGEYE

©2016 HEDGEYE RISK MANAGEMENT

Price to Rent ratios in the New York Metro are currently below the long term average.

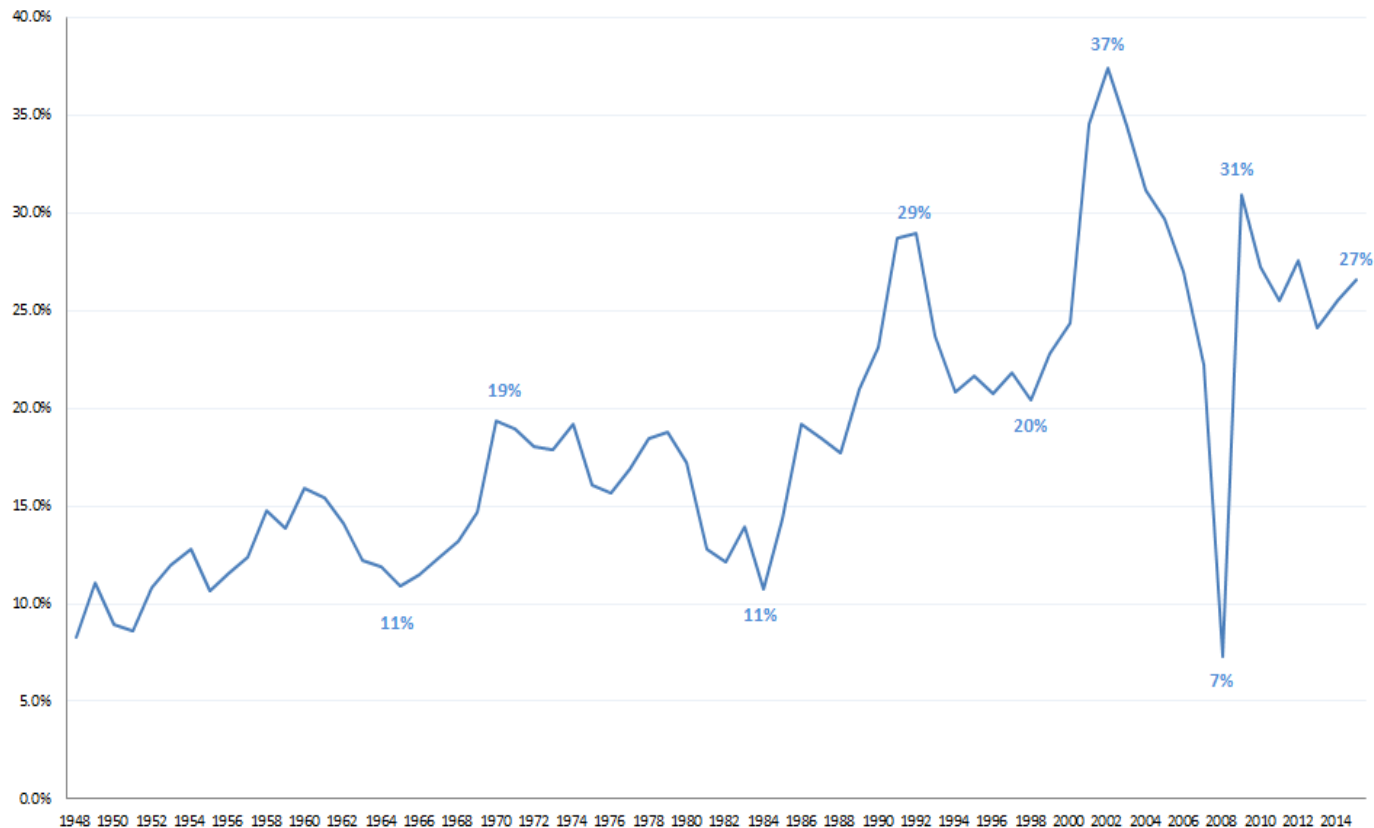
FINANCE AS A SHARE OF GDP



Revenues from the Financial Services and Securities Industries account for 7% of the US GDP.

FINANCE AS A SHARE OF PROFITS

Finance as % of Domestic Corporate Profits

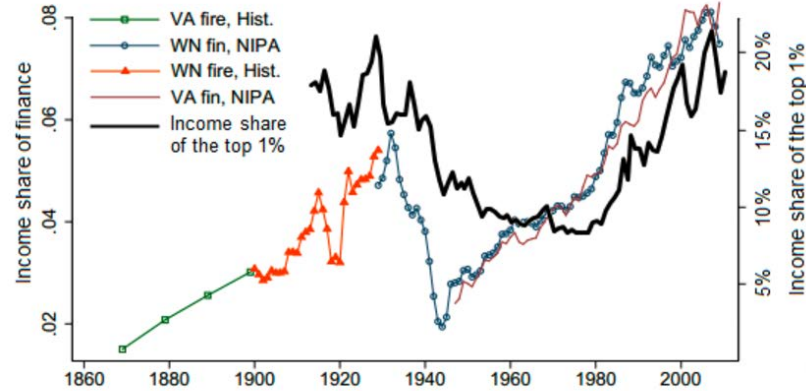


Financial Industry profits account for approximately 27% of all Domestic Business Profits.

This is up from 11% in the early 1980's but down from the peak over 27% recorded at the turn of the century.

THE RISE OF FINANCE & INEQUALITY

Economic data suggests a strong correlation between an expanding financial industry and rising income inequality

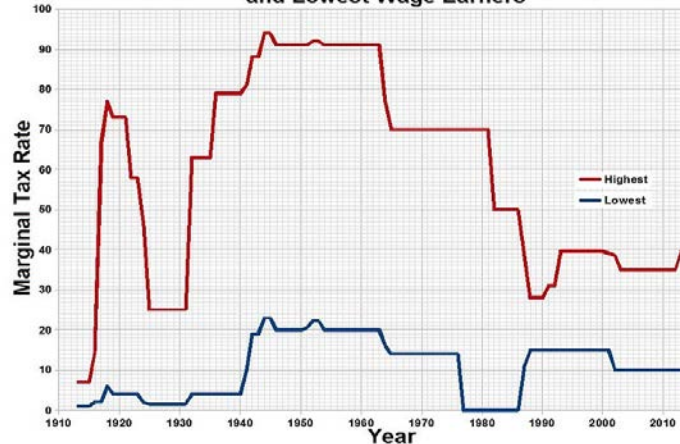


Note: Original graph from Philippon (left scale) has been reformatted and overlaid with income share data including capital gains (right scale).

Original notes: VA is value added, WN is compensation of employees, "fin" means finance and insurance, "fire" means finance, insurance, and real estate. For "NIPA", the data source is the BEA, and for "Hist" the source is the Historical Statistics of the United States.

Source: Philippon (2012), Piketty and Saez

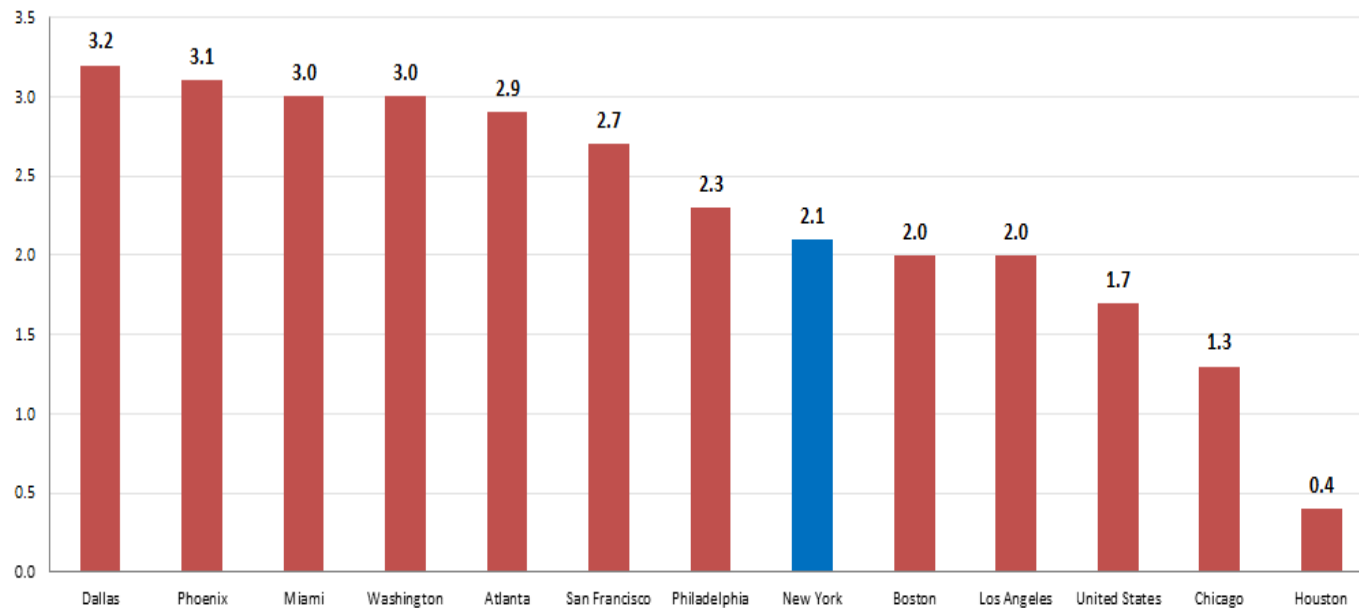
Historical Marginal Tax Rate for Highest and Lowest Wage Earners



The financialization of the economy has been supported by the decline in marginal tax rates and the 35 year interest rate cycle.

NATIONAL EMPLOYMENT TRENDS

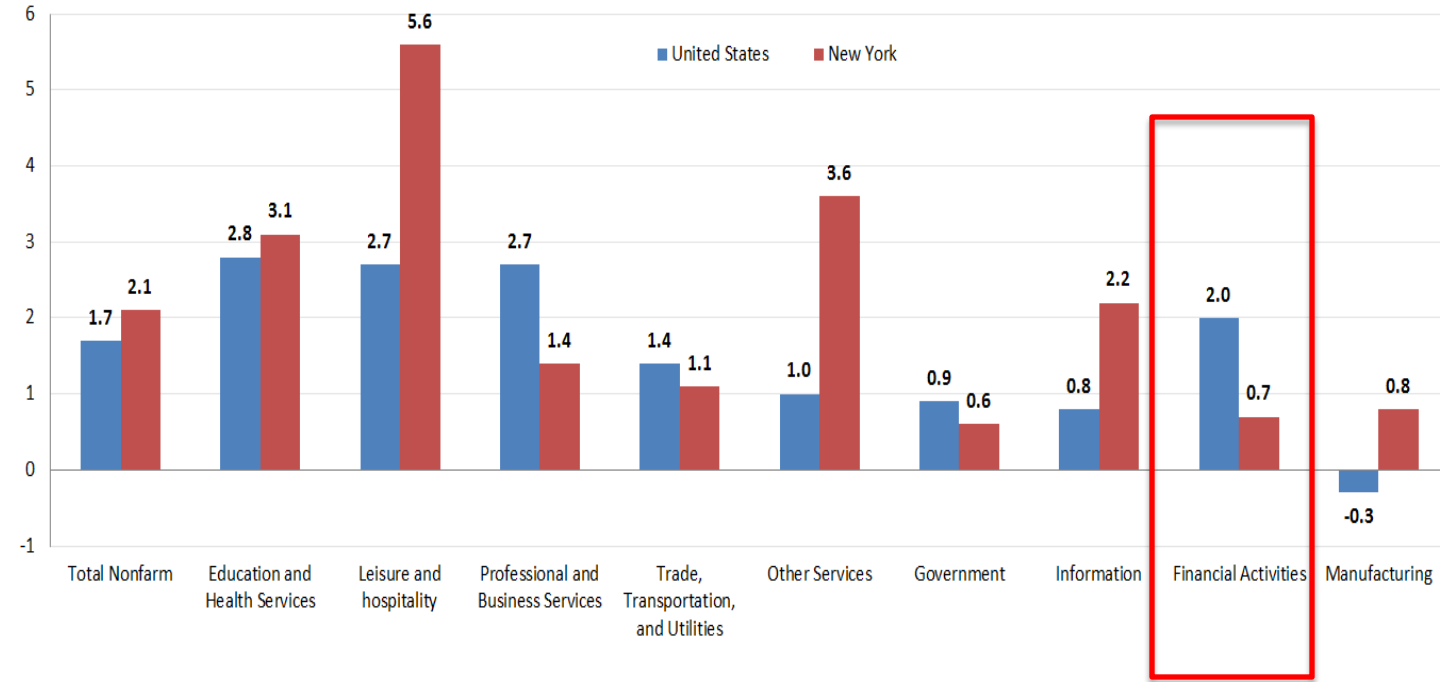
Employment Y/Y RoC by Metro Area



New York employment continues to grow a tick above the National average in rate of change terms, but NY employment is growing slower than other major hubs.

NEW YORK METRO EMPLOYMENT

New York Employment Y/Y RoC by Industry

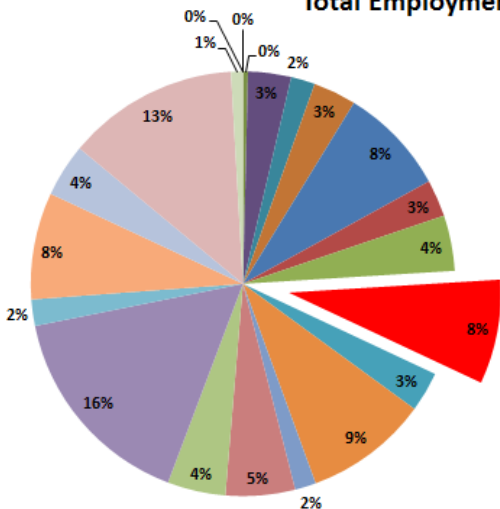


Leisure and Hospitality employment has outpaced the rest of New York industries.

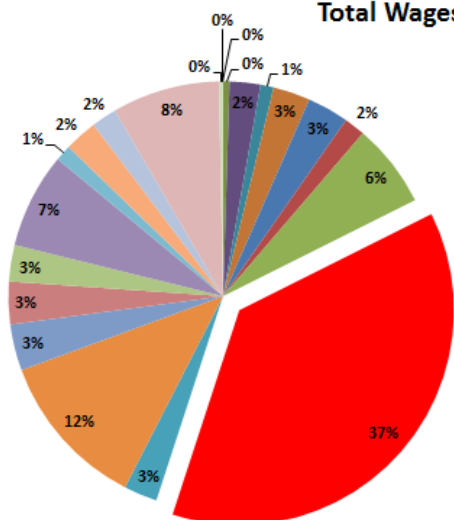
FINANCE JOBS: THE 800 LB GORILLA

The Financial Services and Insurance industry only account for **8% of total employment**. However, this sector accounts for **37% of total wages**.

Total Employment



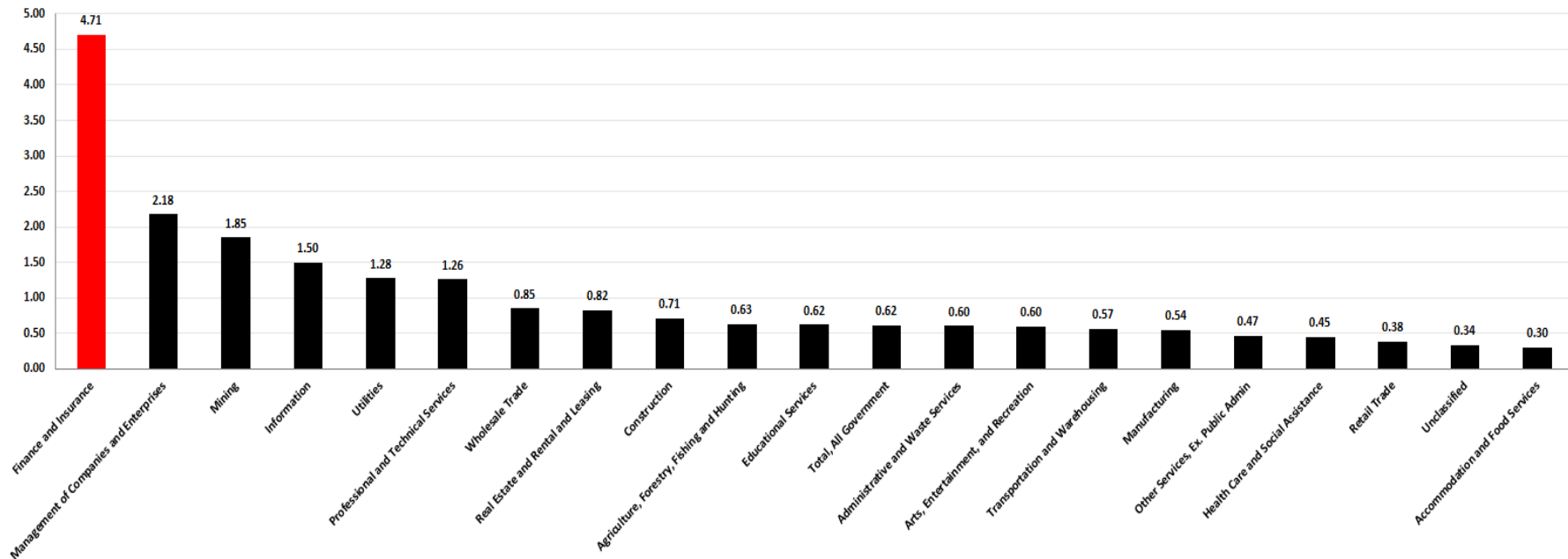
Total Wages



- Agriculture, Forestry, Fishing and Hunting
- Mining
- Utilities
- Construction
- Manufacturing
- Wholesale Trade
- Retail Trade
- Transportation and Warehousing
- Information
- Finance and Insurance
- Real Estate and Rental and Leasing
- Professional and Technical Services
- Management of Companies and Enterprises
- Administrative and Waste Services
- Educational Services
- Health Care and Social Assistance
- Arts, Entertainment, and Recreation
- Accommodation and Food Services
- Other Services, Ex. Public Admin
- Total, All Government
- Unclassified

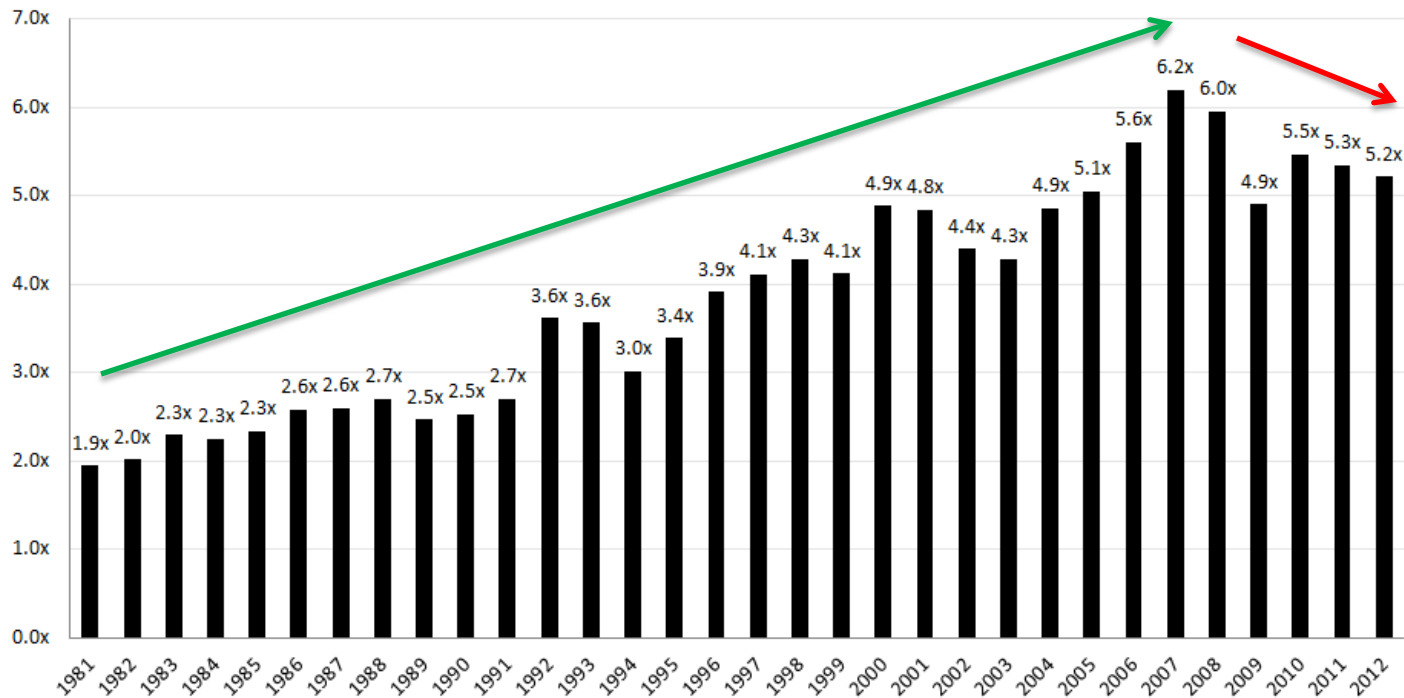
AND THE REAL BREADWINNER IS...

Ratio of Total Wages to Total Employment: NYC



FINANCE: GOTHAM'S AGING KING

Ratio of Average Salaries: Finance and Other Private Sector



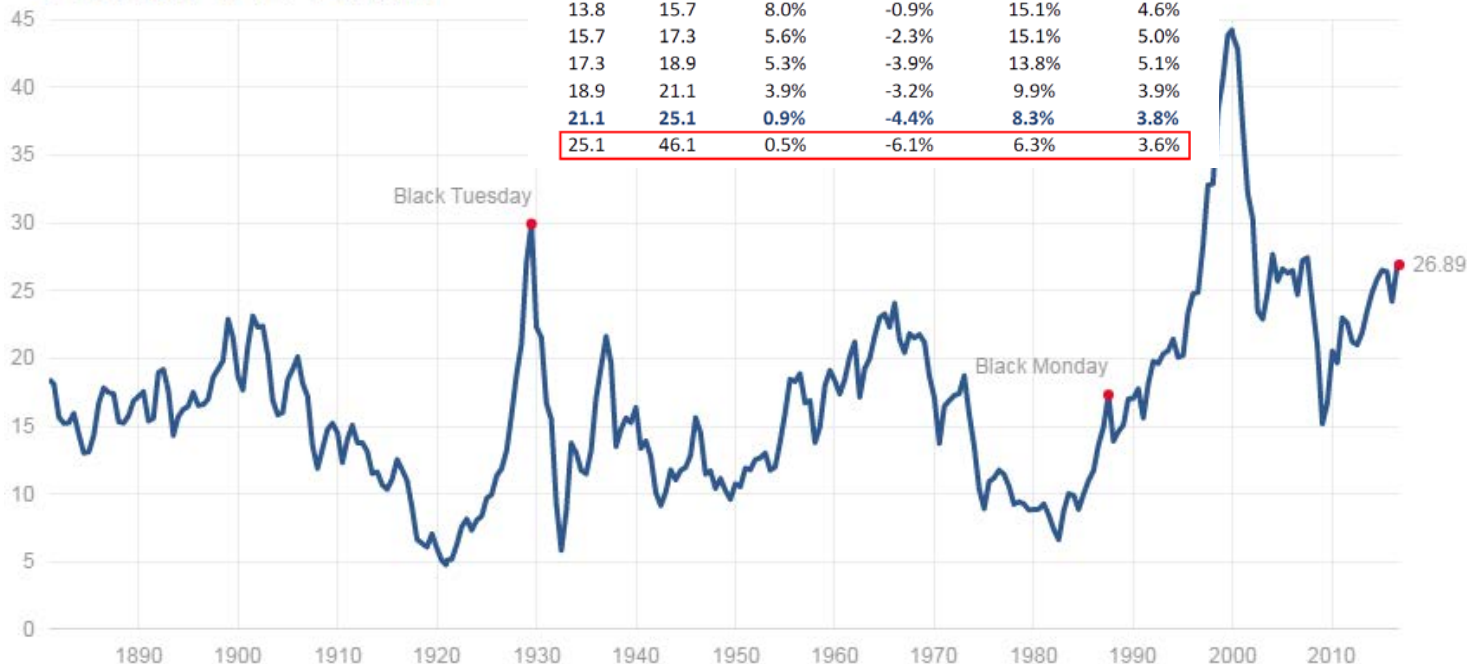
Note the inflection that occurred post the Great Recession.

MEANWHILE, THE MARKET'S VALUATION IS STRETCHED

Results For S&P 500 From Different Starting Shiller P/E's 1926-2012

Starting P/E		Avg. Real	Worst Real	Best Real	Standard
<u>Low</u>	<u>High</u>	<u>10 Yr Return</u>	<u>10 Yr Return</u>	<u>10 Yr Return</u>	<u>Deviation</u>
5.2	9.6	10.3%	4.8%	17.5%	2.5%
9.6	10.8	10.4%	3.8%	17.0%	3.5%
10.8	11.9	10.4%	2.8%	15.1%	3.3%
11.9	13.8	9.1%	1.2%	14.3%	3.8%
13.8	15.7	8.0%	-0.9%	15.1%	4.6%
15.7	17.3	5.6%	-2.3%	15.1%	5.0%
17.3	18.9	5.3%	-3.9%	13.8%	5.1%
18.9	21.1	3.9%	-3.2%	9.9%	3.9%
21.1	25.1	0.9%	-4.4%	8.3%	3.8%
25.1	46.1	0.5%	-6.1%	6.3%	3.6%

Shiller PE Ratio



It's worth mentioning that on a CAPE Ratio (Shiller P/E) basis, the market is at 26.9x and is trading above valuation levels seen 95% of the time over the last 135 years.

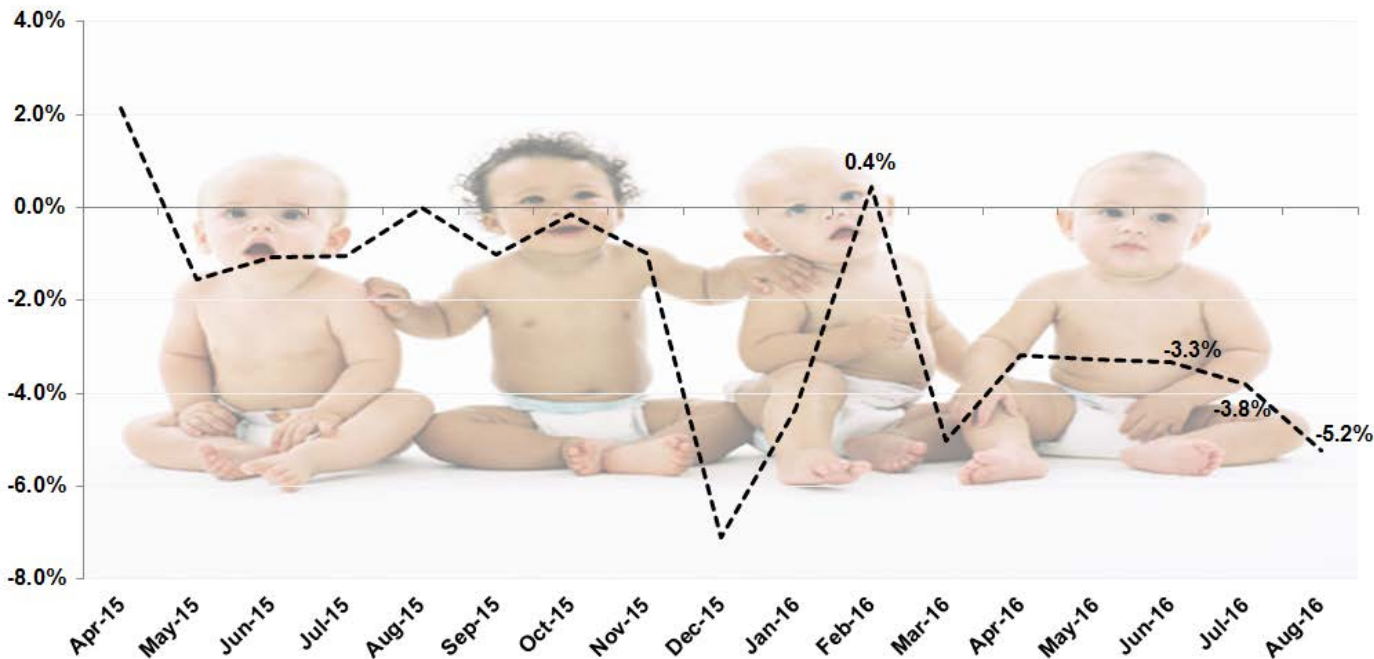
AQR has analyzed the prospective market returns in the decade following various levels of CAPE valuation and has found that when the market is in the 10th decile, as it is today, the expected forward real return is just 0.5% per year for the next decade.



Declining Birth Rates: Where's Baby?

US BIRTH TRENDS = ↓

BIRTH TRACKER: USA- Y/Y RATE OF CHANGE



DATA SOURCE: HEDGEYE MATERNITY TRACKER

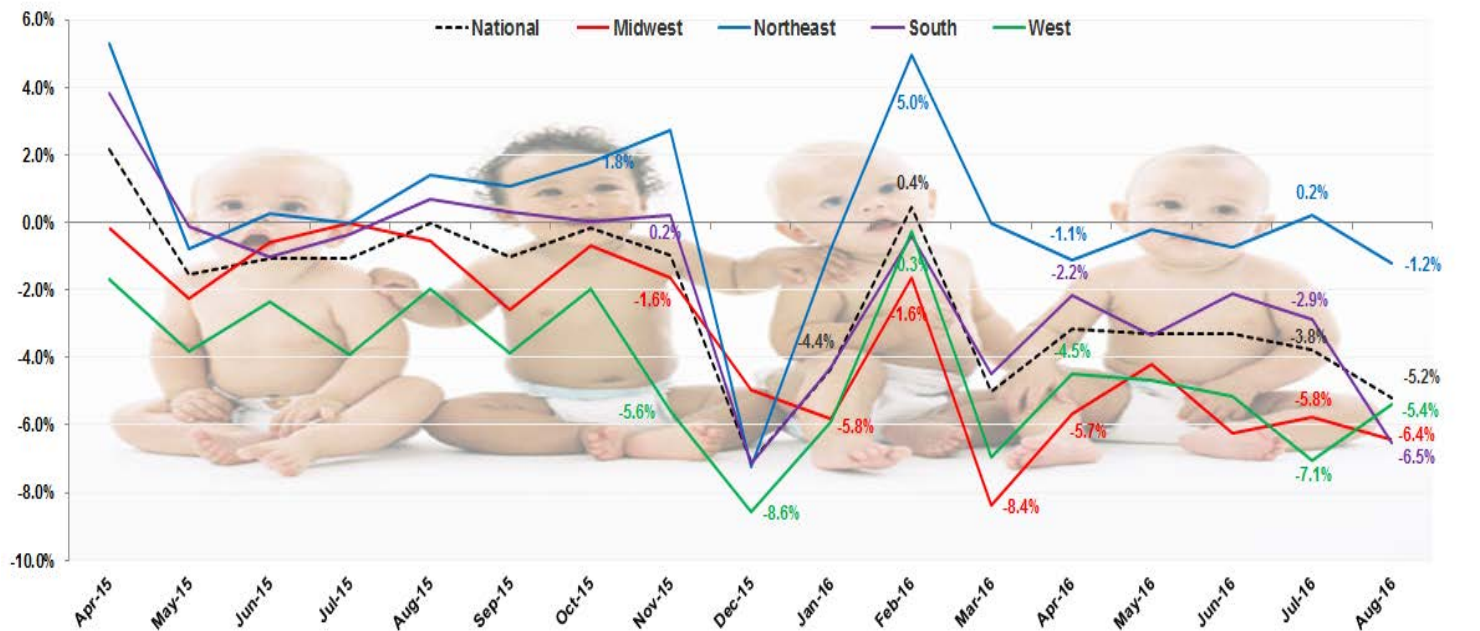
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Nationally, birth rates declined - 5.2% in August.

With the exception of the Northeast Census region, the other three census regions saw a Y/Y Roc that was worse than the national average.

BIRTH RATES BY REGION

BIRTH TRACKER: UNITED STATES BY CENSUS REGION- Y/Y RATE OF CHANGE



DATA SOURCE: HEDGEYE MATERNITY TRACKER

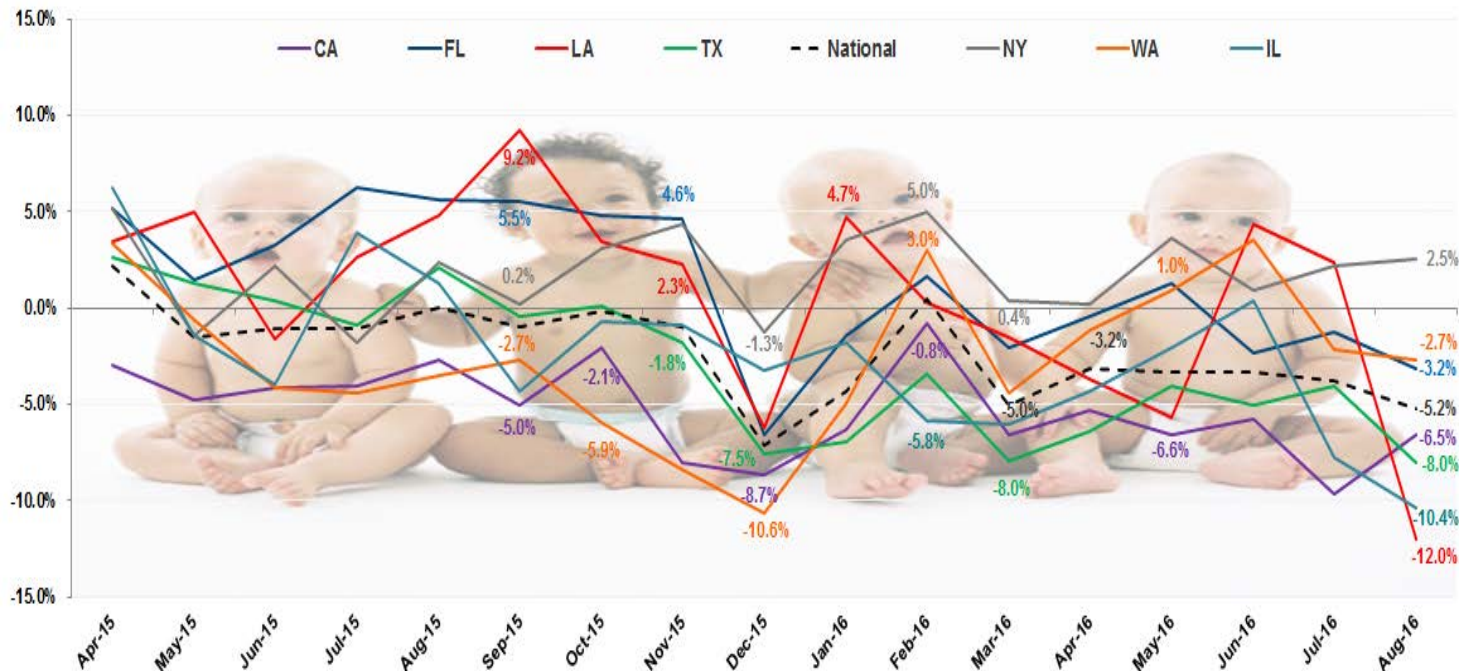
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Nationally, birth rates declined - 5.2% in August.

With the exception of the Northeast Census region, the other three census regions saw a Y/Y Roc that was worse than the national average with the South showing a notable slowdown

BIRTH RATES CONTINUED

BIRTH TRACKER: SELECTED STATES VS. NATIONAL AVERAGE-Y/Y RATE OF CHANGE



DATA SOURCE: HEDGEYE MATERNITY TRACKER

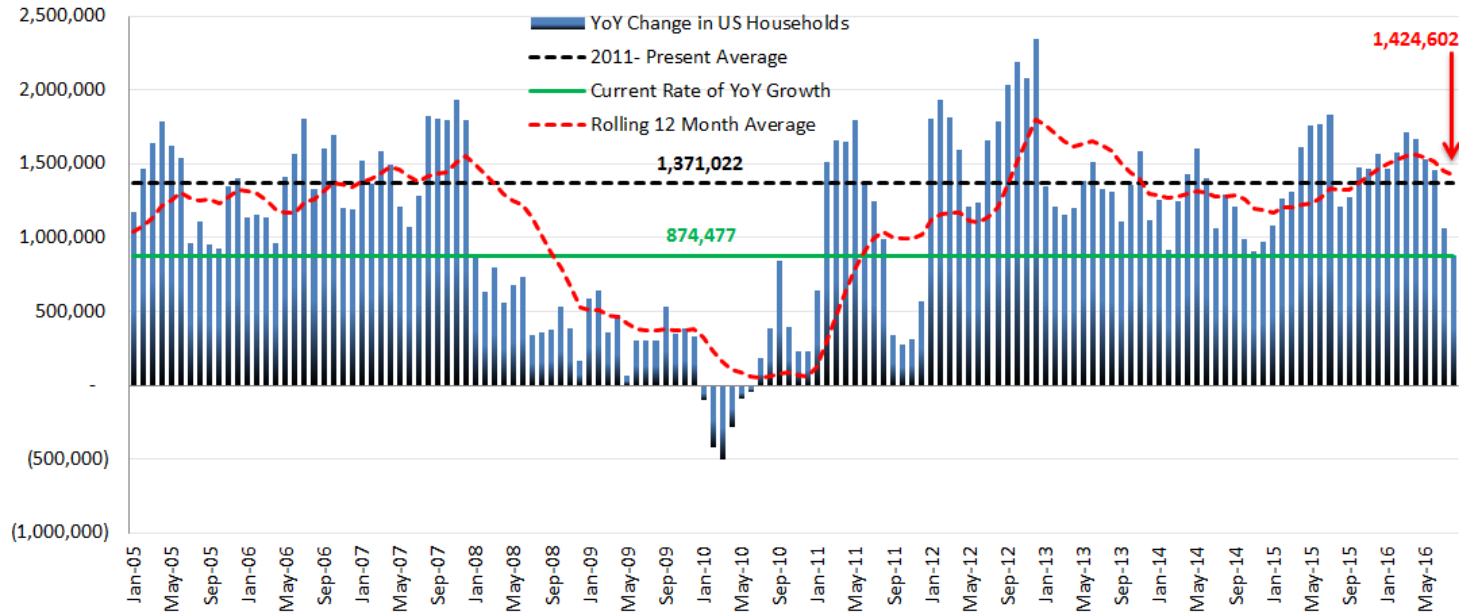
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On a state level, birth rates are declining across the country.

The data for New York (in Gray) represents the minority, as just 7 of the contiguous United States exhibited a **Positive Y/Y Roc in August.**

HH FORMATION: MULTI YEAR LOW

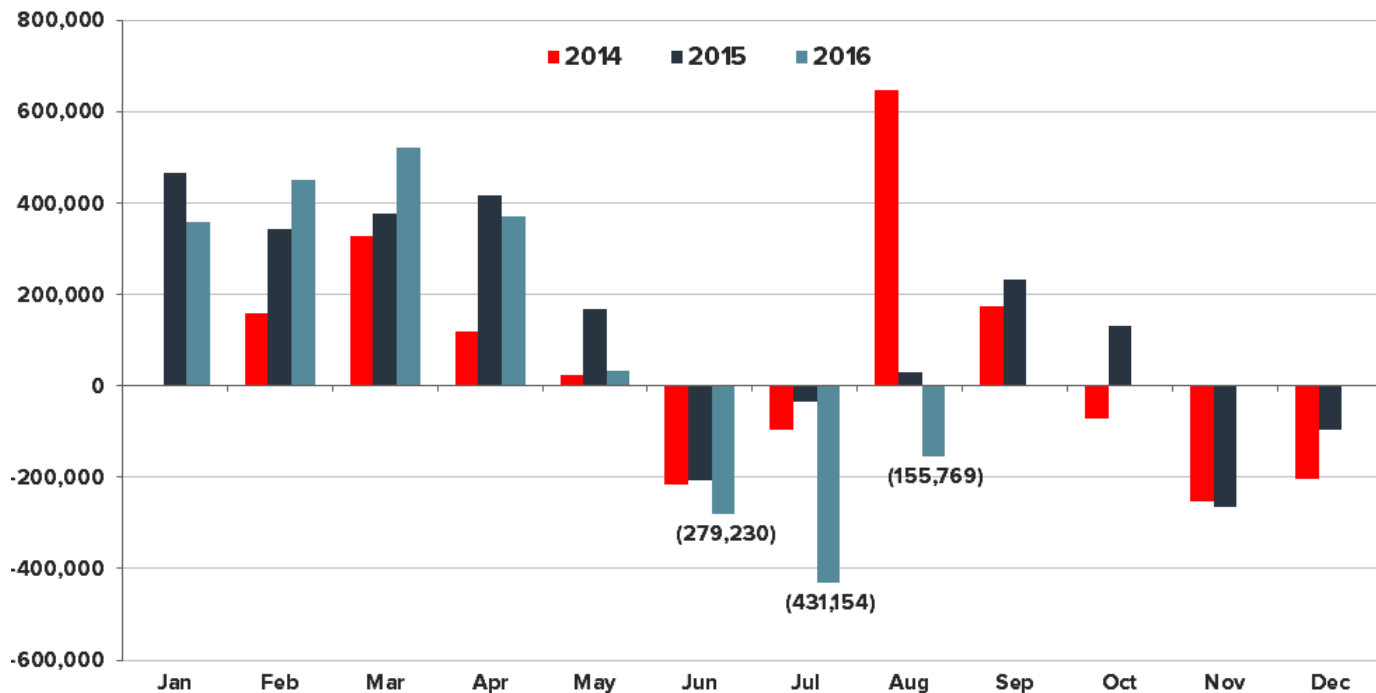
YEAR-OVER-YEAR GROWTH IN US HOUSEHOLDS BY MONTH
(2005-PRESENT)



Less households have been formed in 2016, and the current YoY growth rate is far below both the 2011-Present Average, and the Rolling 12 Month Average.

HH FORMATION: MULTI-MONTH SLOWING

Sequential Change in Household Formation: 2014, 2015, 2016



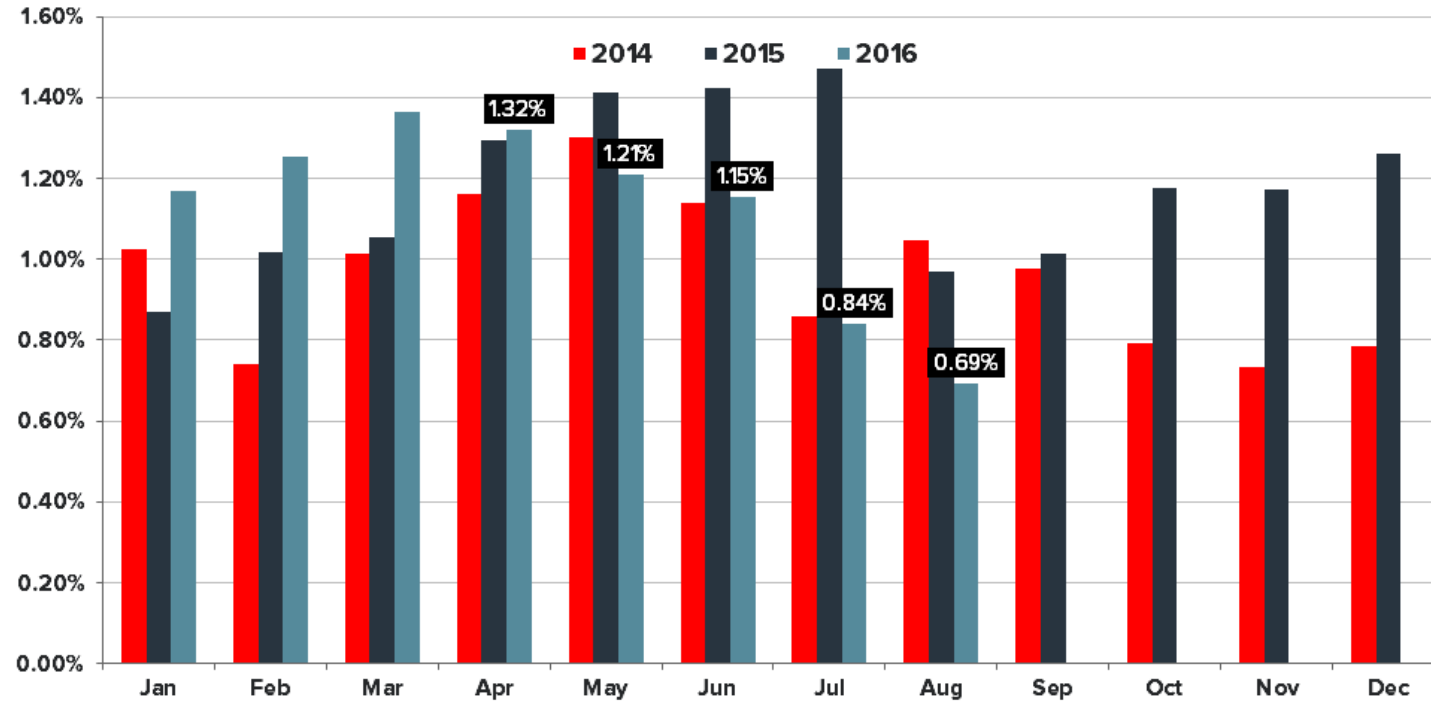
DATA SOURCE: CENSUS, HEDGEYE

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Household formation trends have been slowing for the last 6 months with meaningful declines in July and August

GROWTH AT MULTI-YEAR LOWS

Y/Y % Change in Household Formation: 2014, 2015, 2016



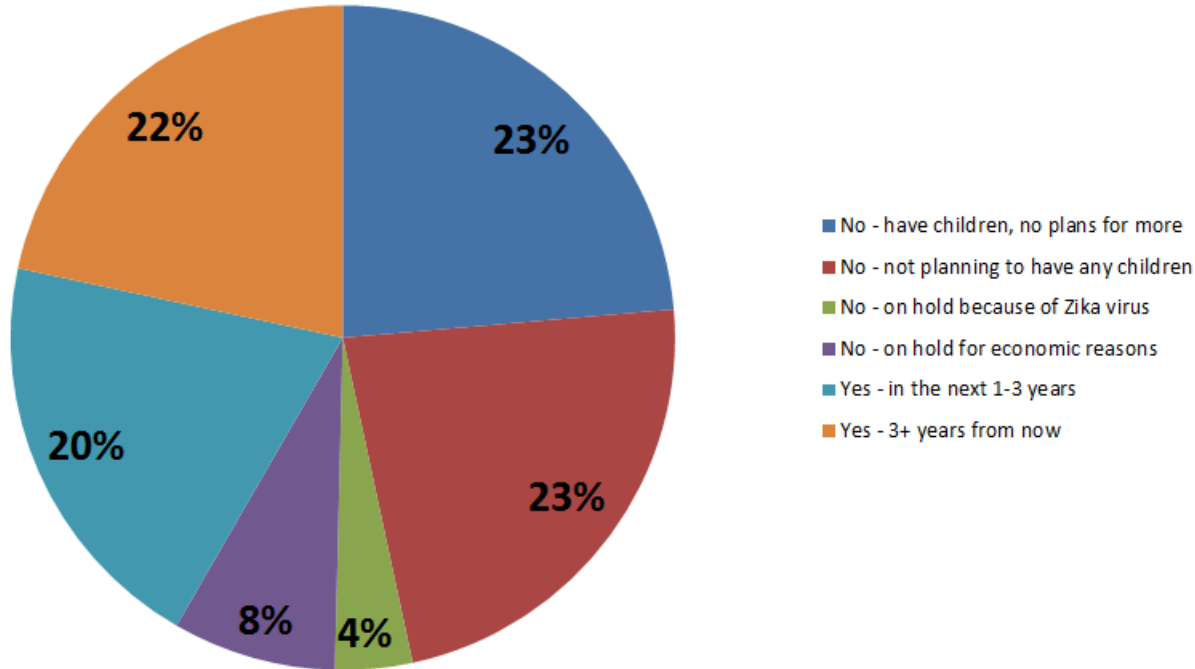
The current YoY growth rate is far below both the 2011-Present Average, and the Rolling 12 Month Average.

DATA SOURCE: CENSUS, HEDGEYE

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HEDGEYE MATERNITY SURVEY

Hedgeye Maternity Survey Results: Nationally

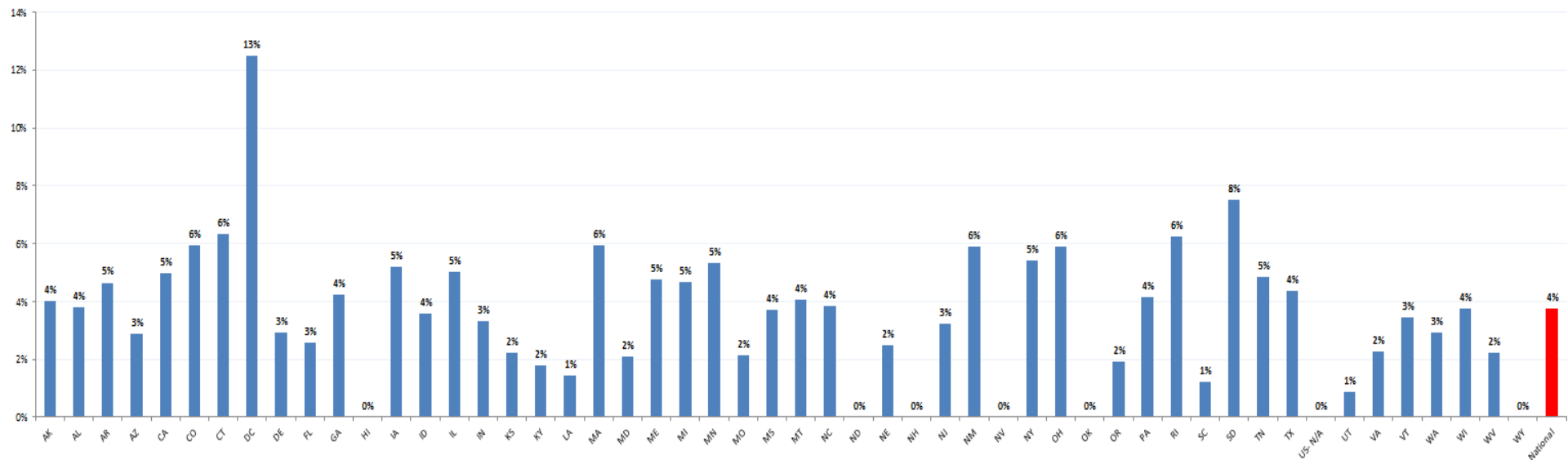


Hedgeye conducted a survey of 5,000 women between the ages of 18 and 34 nationwide.

Each participant was given six possible choices for the question:
Are you planning to have children?

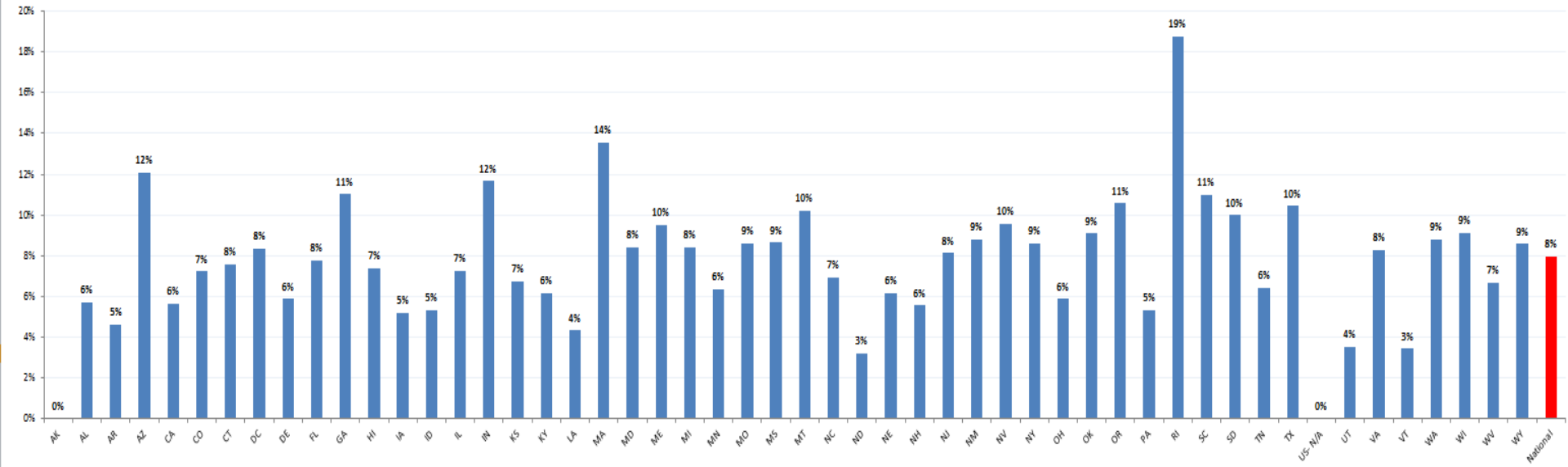
MATERNITY SURVEY RESULT

No - on hold because of Zika virus



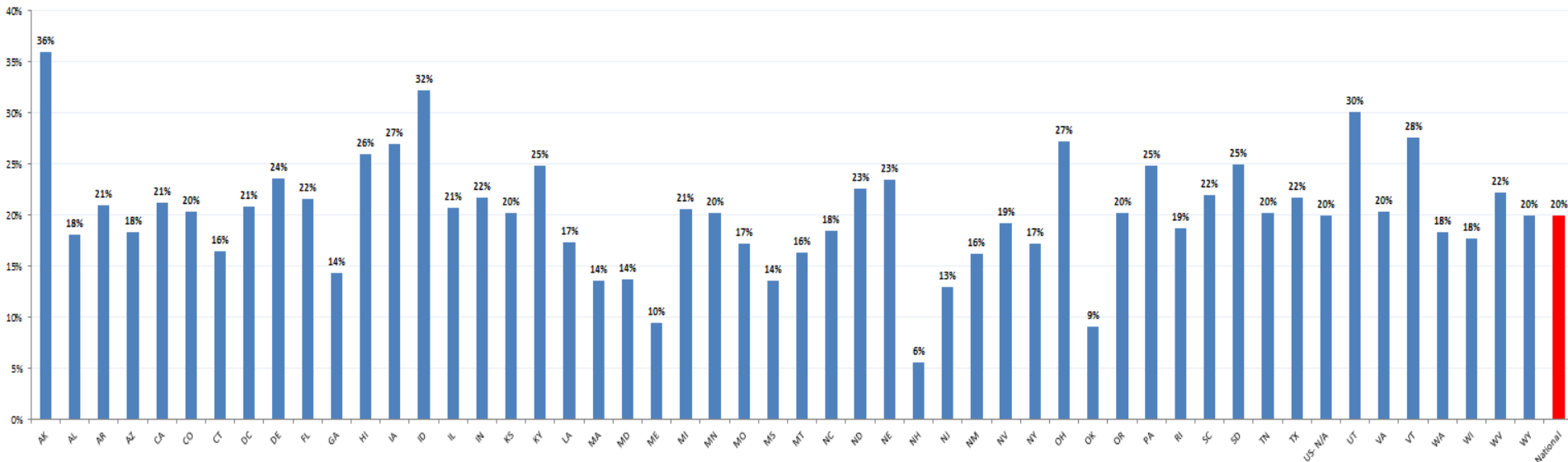
MATERNITY SURVEY RESULTS

No - on hold for economic reasons



MATERNITY SURVEY RESULTS

Yes - in the next 1-3 years



ZIKA **VIRUS**



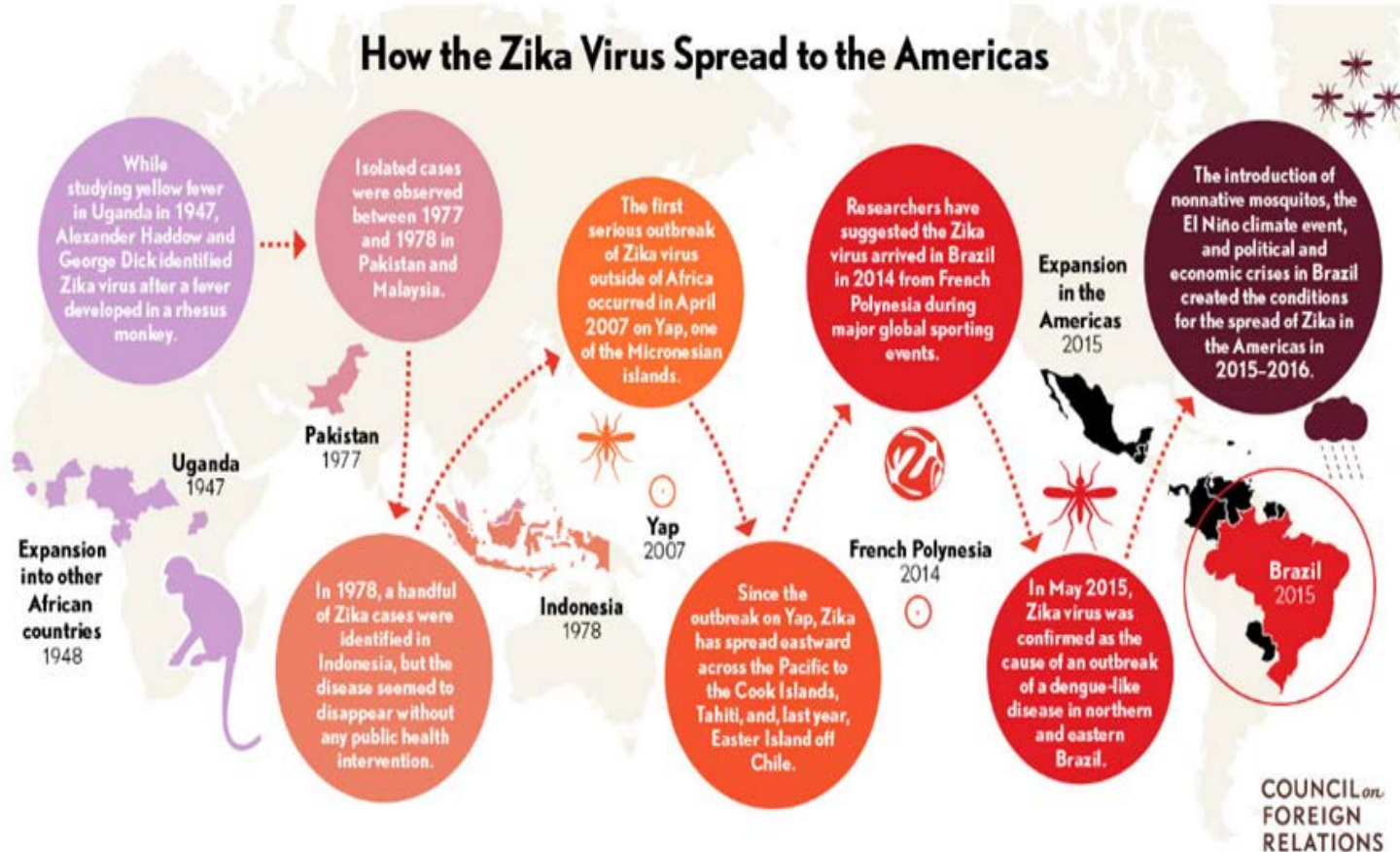
Zika

WHAT IS THE ZIKA VIRUS?

- The Zika virus is primarily spread to people who have been bit by an infected mosquito. Infected individuals do not always show symptoms, but the most common symptoms include: fever, rashes, joint pain, and red eyes.
- The virus can be transmitted sexually, and can cause serious birth defects in babies born to mothers who were infected with the Zika virus during their pregnancy.
- Links between the Zika Virus and Guillain-Barré syndrome (GBS) have also been proven. GBS is a rare disorder that can cause muscle weakness and sometimes paralysis.
- A vaccine or treatment for Zika does not currently exist. Therefore, people who live in or are traveling to areas with Zika should take steps to prevent infection.

THE SPREAD OF THE ZIKA VIRUS

How the Zika Virus Spread to the Americas



The Zika Virus is not a new phenomenon, it was first detected in Uganda in 1947.

In May 2015, the Virus first reached the Americas, with an outbreak being confirmed in Brazil.

In January 2016, the first case was documented in the United States.

THE ZIKA VIRUS IN THE NEWS

Fla. Finds Zika virus in U.S. mosquito for first time



FDA Recommends Universal Testing of US Blood Supply for Zika Virus

PHARMACY PRACTICE NEWS

U.S. Funding for Fighting Zika Virus Is Nearly Spent, C.D.C. Says The New York Times

US study finds Zika virus in tears of mice



Zika zone triples in Miami Beach after more cases found Miami Herald

We must protect pregnant women from the Zika Virus Miami Herald

Where the Zika Virus Can Thrive and Take Its Toll in the United States WSJ

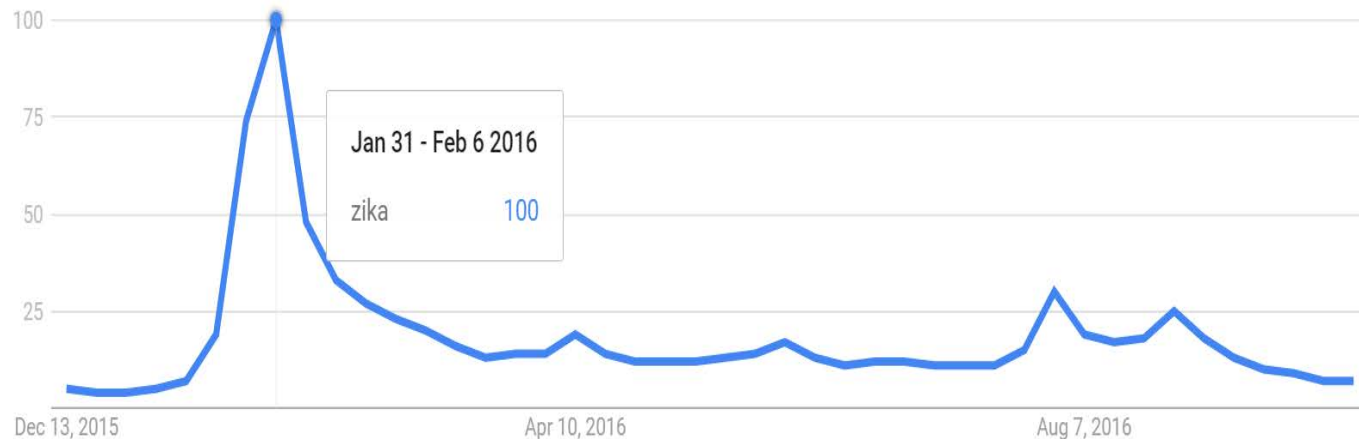
CDC lifts travel ban as Miami neighborhood declared Zika Free



ZIKE IN THE NEWS

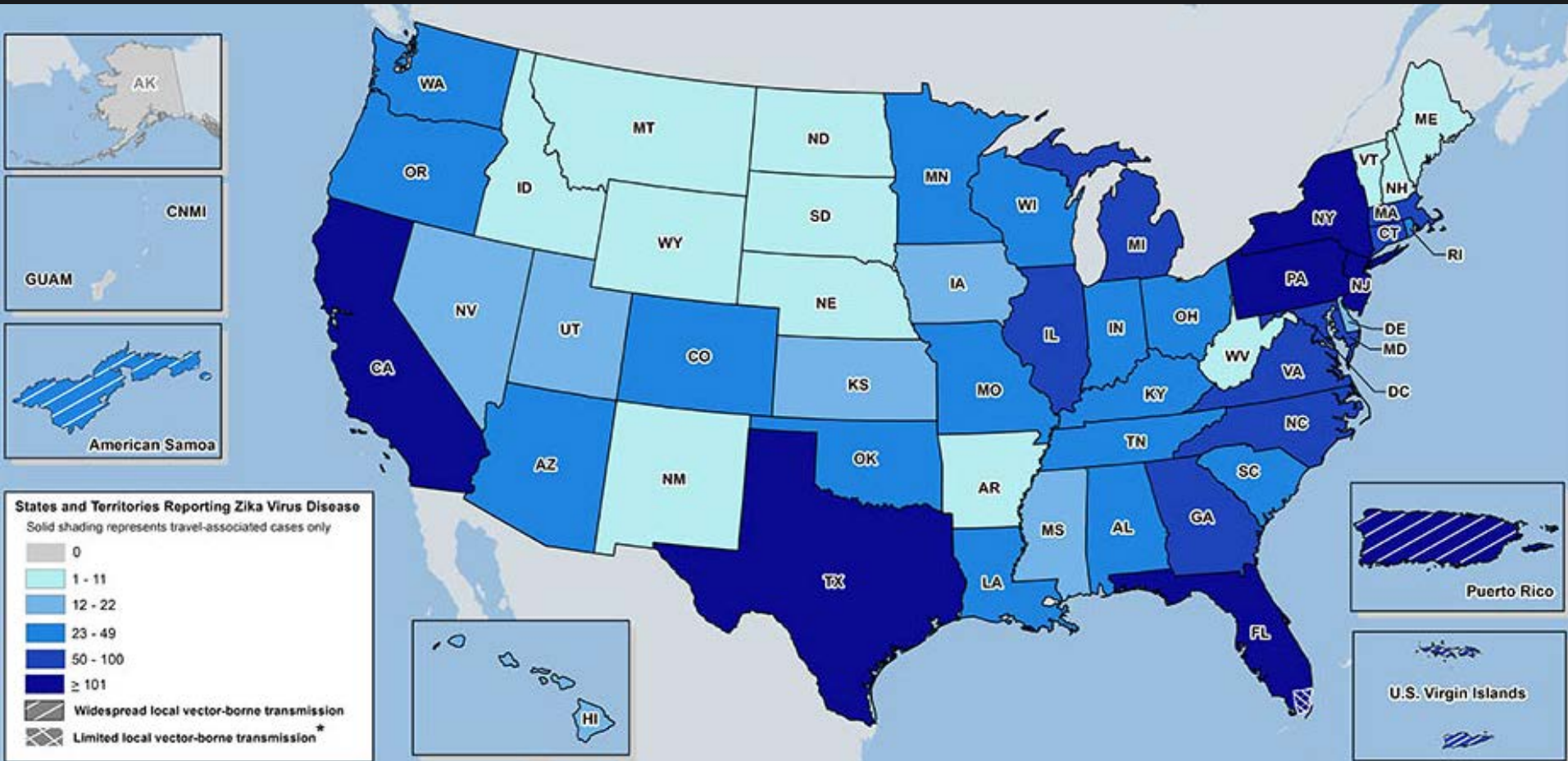
Interest over time ?

Google Trends: “Zika”

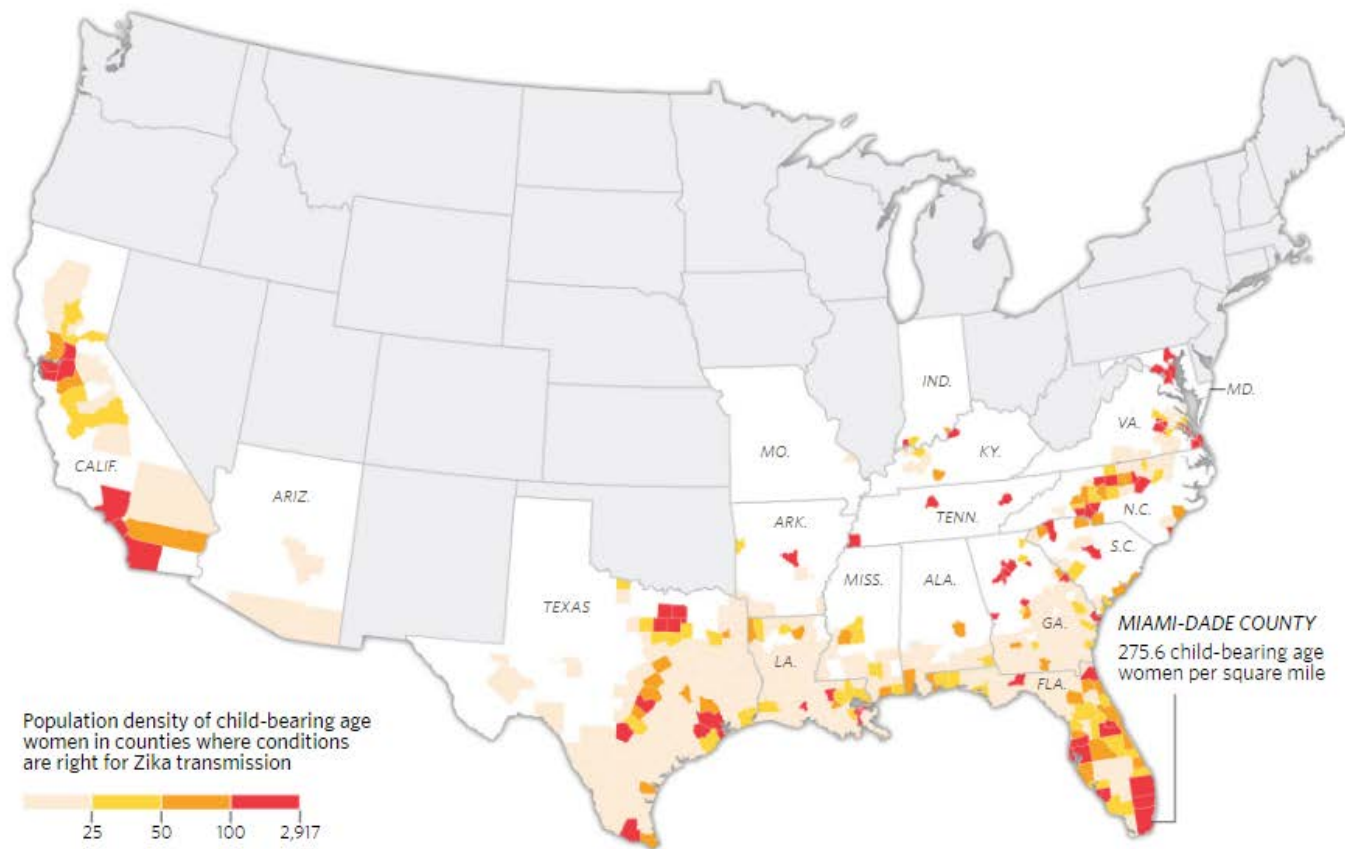


Search Trends peaked into the Olympics and have been flat to down subsequently.

ZIKA IN THE UNITED STATES



WHO'S MOST VULNERABLE?

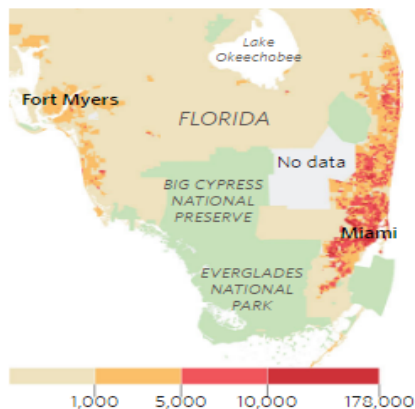


Though the Zika virus is present in 49 states, Florida is the only state that has contracted locally acquired cases.

All 43 locally acquired cases in the U.S. have originated in the Sunshine State.

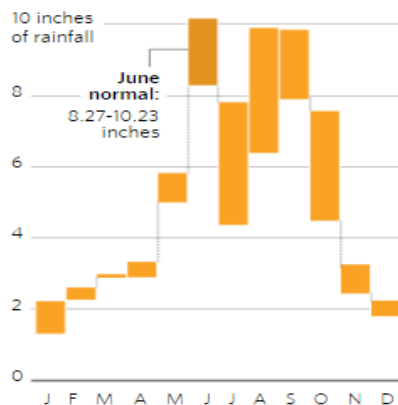
MIAMI: THE FIRST BITE

People per square mile
in Florida



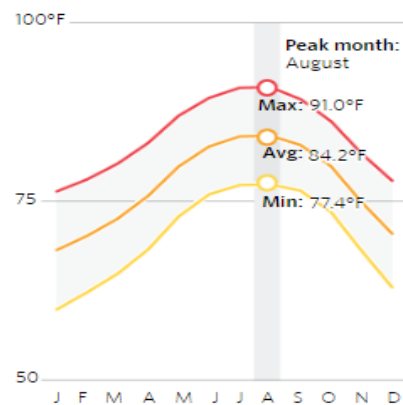
Urban environments are a related risk factor: there are lots of man-made places where water can pool, creating a mosquito nursery, and the insects like to bite people.

Monthly precipitation normals,
Miami, Fla.*



High rainfall is a key factor, since it creates the standing water mosquitoes use to lay their eggs. Researchers cited evidence that higher rainfall can heighten the risk of dengue, another mosquito-born virus.

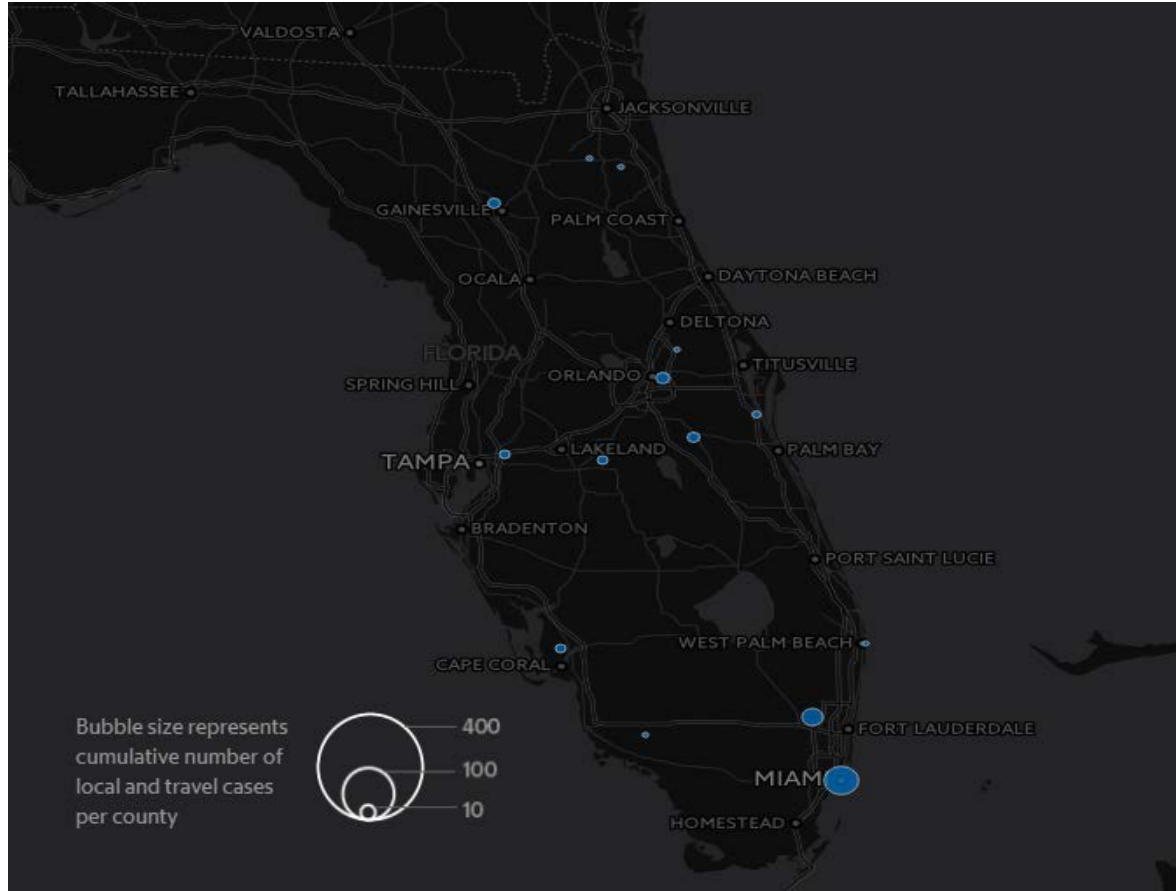
Monthly temperature normals,
Miami, Fla.*



Mosquitoes also need the right temperature—between 55.4°F to 95°F depending on the breed of mosquito—to survive long enough to lay eggs, seek blood meals and incubate the virus. *Ae. aegypti* lives up to 10 days. *Ae. albopictus* 25 days.

"The mosquitoes that transmit Zika are warm-weather mosquitoes... The warmer it is the faster they develop... Other key factors: Rain, travel to and from Zika-affected areas in the Caribbean and Latin America, and humans." — Jorge Ray, Florida Medical Entomology Lab

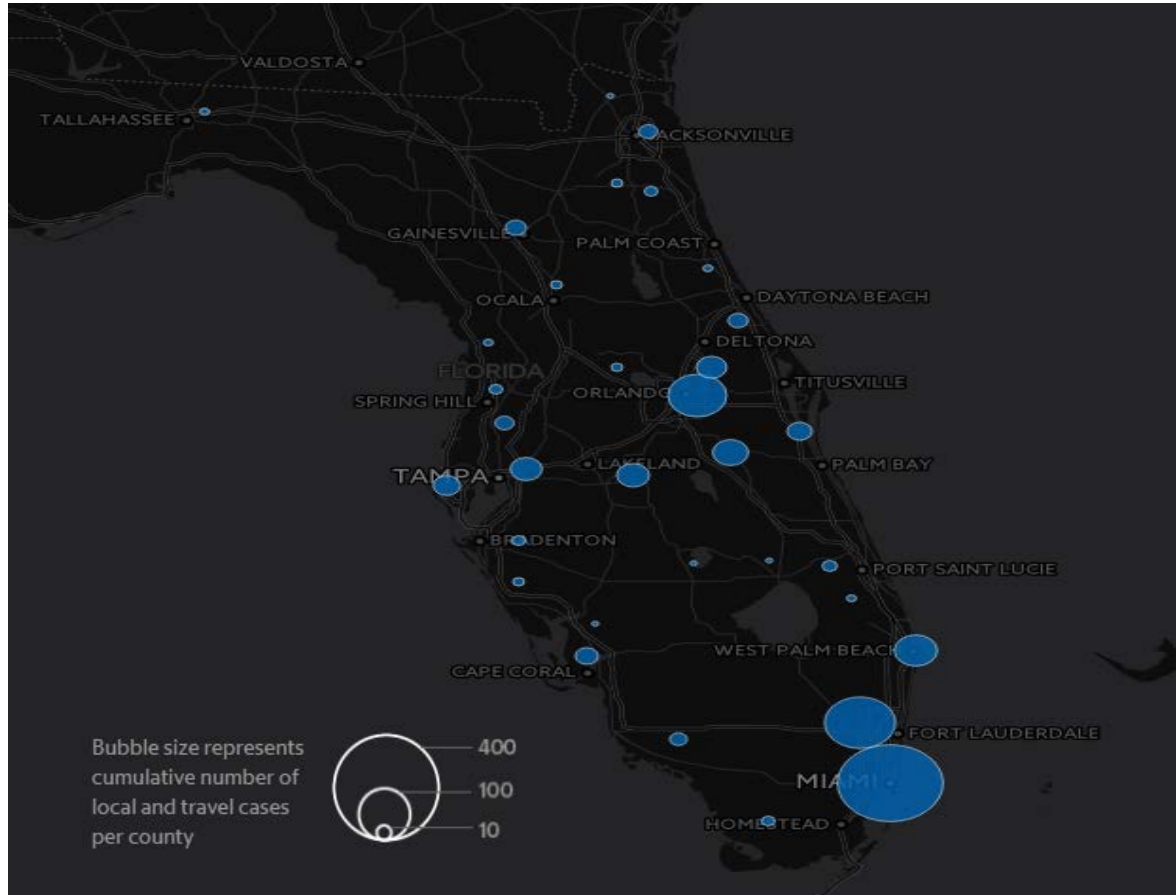
ZIKA IN FLORIDA – MID APRIL



The Zika Virus continues to Spread in Florida, and Miami is currently the epicenter for locally acquired cases.

However, the flooding caused by the most recent hurricane could be a catalyst for the migration of Zika infected mosquitos to other areas.

ZIKA IN FLORIDA – MID-OCTOBER



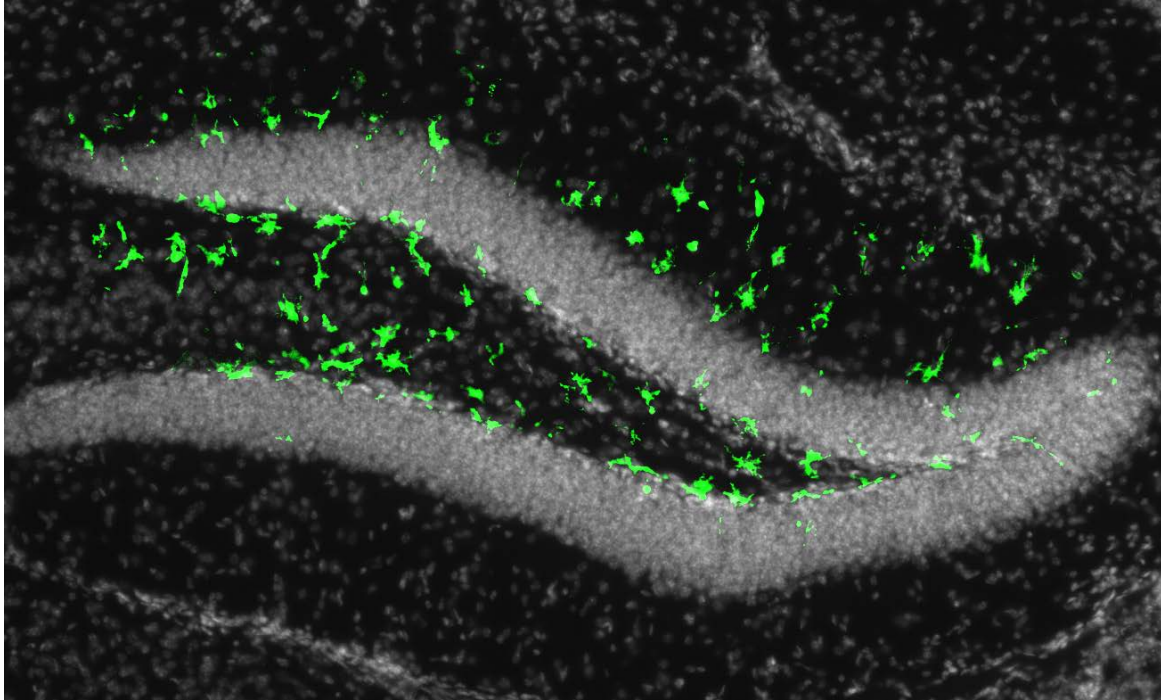
The Zika Virus continues to Spread in Florida, and Miami is currently the epicenter for locally acquired cases.

However, the flooding caused by the most recent hurricane could be a catalyst for the migration of Zika infected mosquitos to other areas.

ZIKA: THE RISK TO ADULTS

Zika infection may affect adult brain cells

August 18, 2016

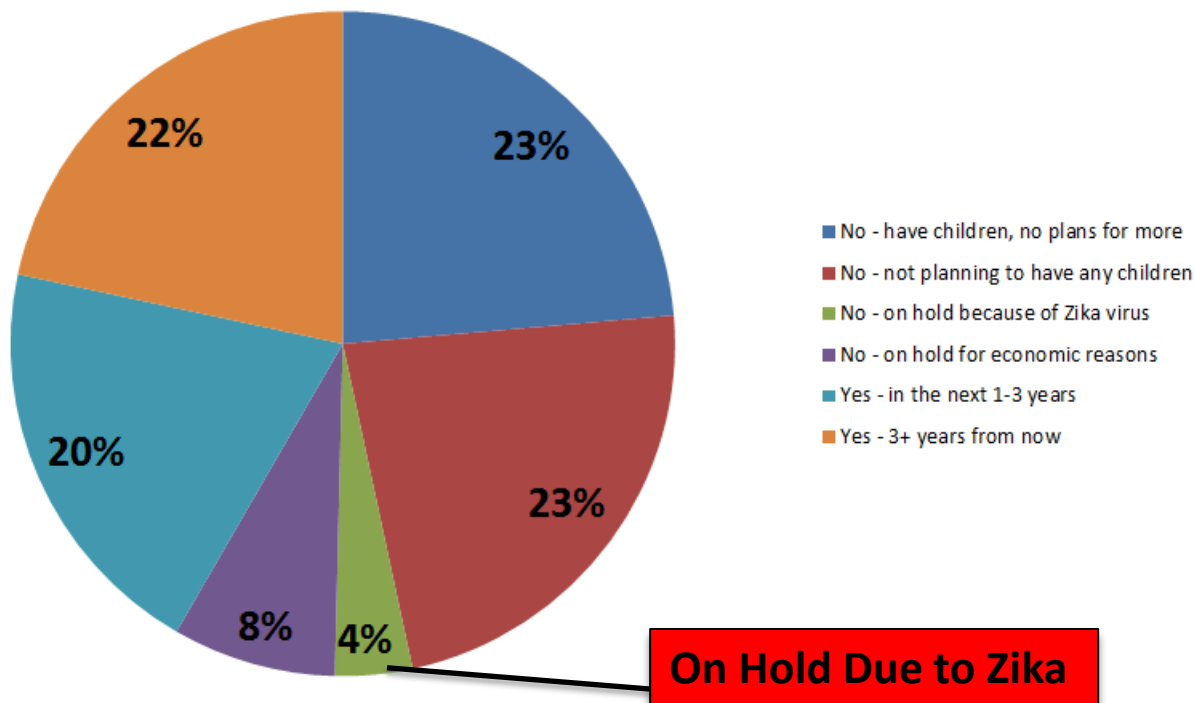


Early research suggest Zika may act on progenitor cells responsible for maintaining neuroplasticity in adults.

The loss of these cells could increase risk of diseases like dementia and Alzheimers

BIRTHS: ON HOLD DUE TO ZIKA?

Hedgeye Maternity Survey Results: Nationally



According to our survey results 4% of respondents indicated they have delayed pregnancy due to concerns over Zika

ZIKA: QUANTIFYING THE IMPACT

Hedgeye Survey Questions & Responses	Total	No - have children, no plans for more	No - not planning to have any children	No - on hold because of Zika virus	No - on hold for economic reasons	Yes - in the next 1-3 years	Yes - 3+ years from now
National	4,976	1,176	1,144	187	396	996	1,077

Deterred by Zika	187
Planning on having children soon	996
Total	1183

Numerator - Zika's Deterrant Effect	187
Denominator - (Planning to have children soon + Zika's Deterrant Effect)	1183

Zika's potential impact on maternity rates (Numerator / Denominator)	15.8%
--	-------

Number of births (2014), CDC	3,988,076
Zika's potential impact	(630,406)

Source: Hedgeye, CDC

The potential impact to births stemming from Zika concerns is not inconsequential at almost 16%.

ZIKA HURRICANE

NATIONAL

OCTOBER 9, 2016 1:36 PM

As Hurricane Matthew moves out, Zika could move in

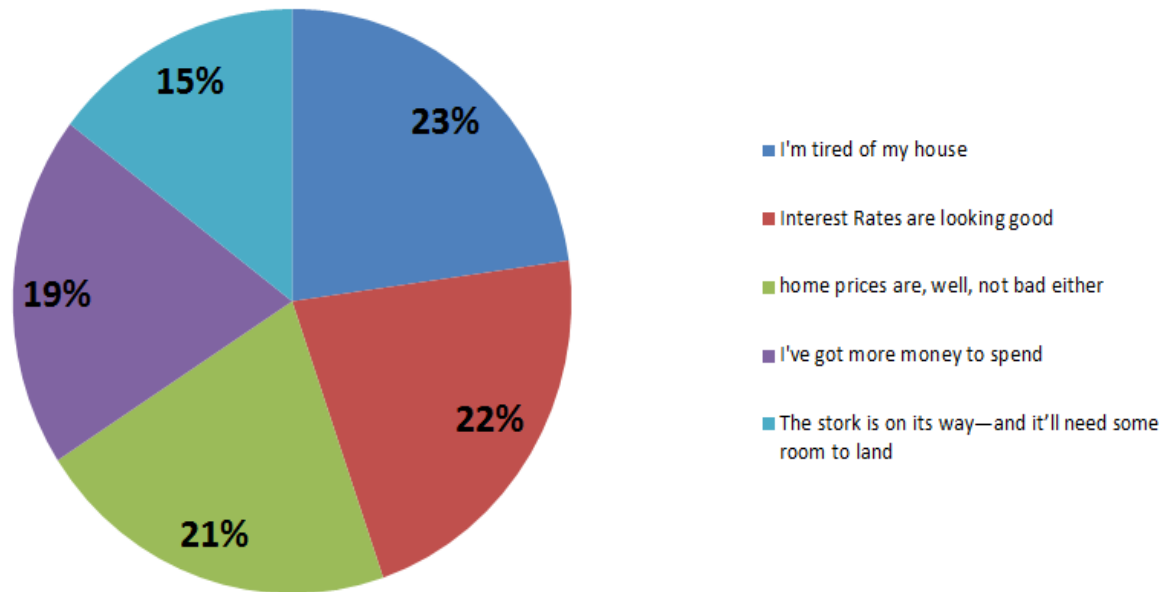
“It knocks a lot of stuff down so you just have a lot more things in which the mosquito can breed,” said Philip Stoddard, a Florida International University [biology professor](#) and the mayor of South Miami. “A damaged rain gutter, for instance, now becomes a rain collector. Every little object that blows off a house or even a chair flipped over on a porch becomes a container for mosquitoes to breed.”

Most adult mosquitoes won't survive the gusts of wind, and flooding will wash away young mosquitoes. Those that survive, however, will lay new eggs near standing water that will hatch over and grow over the next week, likely boosting the bug population.

It's worth noting that there is some concern that Hurricane Matthew may exacerbate the spread of Zika.

THE STORK IS COMING, CALL OUR AGENT

Reason for Buying a New Home



DATA SOURCE: NAR, HEDGEYE

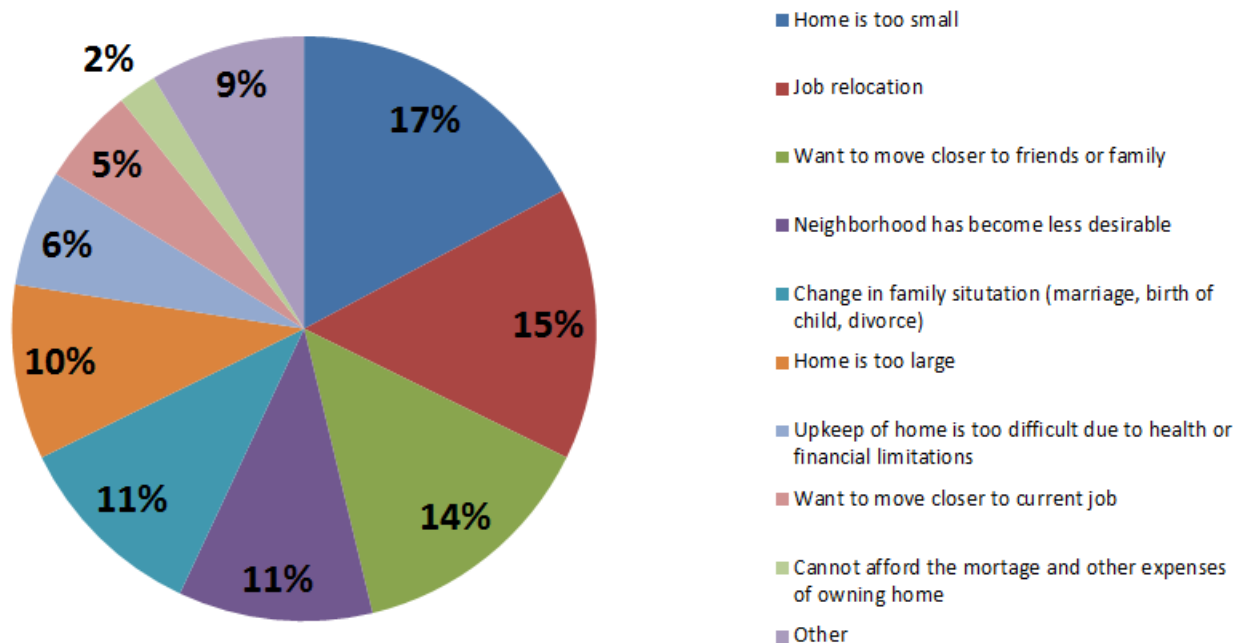
©2016 HEDGEYE RISK MANAGEMENT

In 2015, the NAR conducted this survey and targeted it towards potential home buyers.

15% of the surveyed population noted a baby on the way as their primary reason for purchasing a new home.

WHY DO PEOPLE SELL THEIR HOMES?

Primary Reason for Selling Previous Home



DATA SOURCE: NAR, HEDGEYE

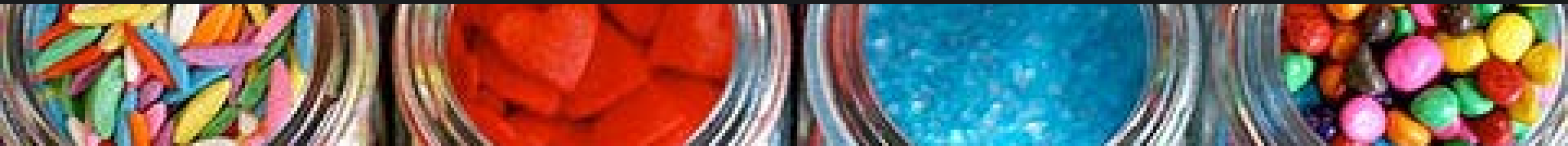
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In 2015, the NAR surveyed people selling their current homes.

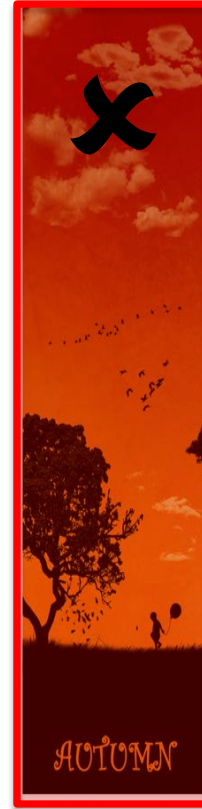
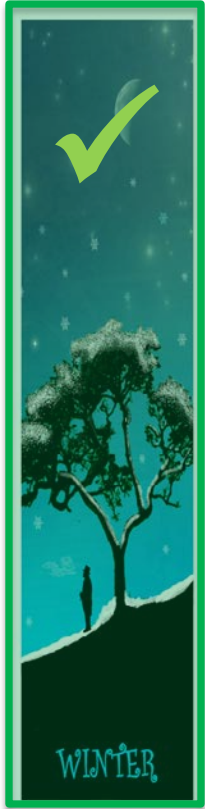
This particular survey has been completed annually since 2005, and the results have been consistent with a standard deviation of +/- 2%.



APPENDIX



PERCEPTION & REALITY



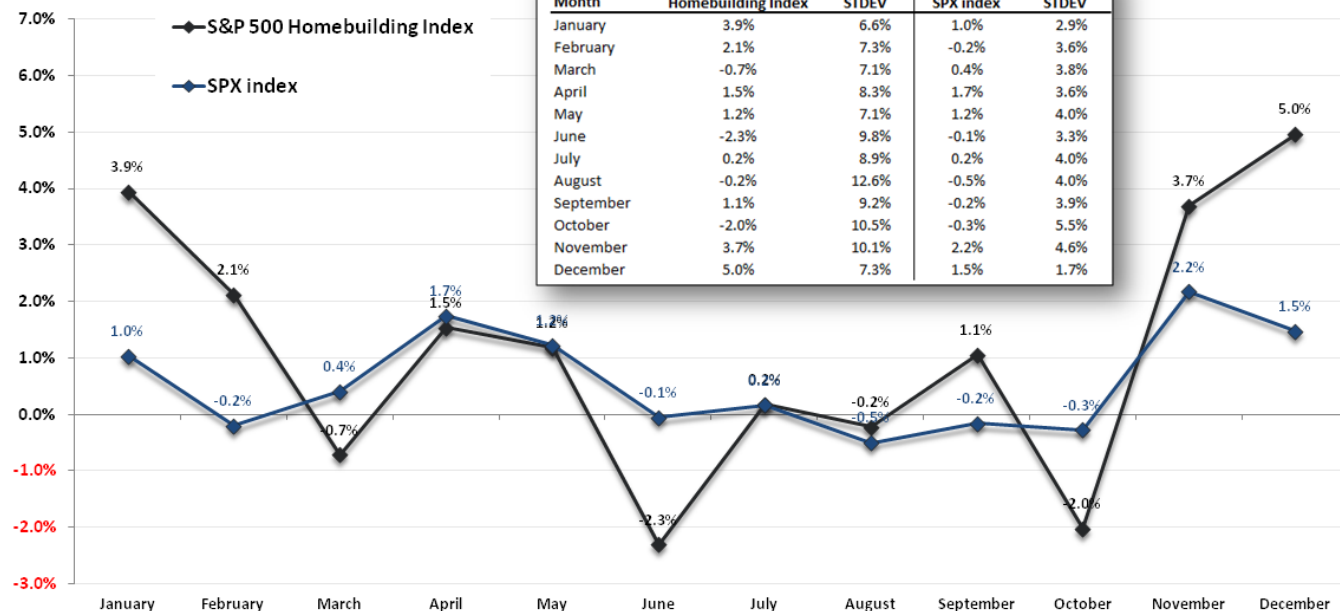
Like it or not,
seasonality is a
real consideration
in this sector.

BUILDER SEASONALITY IS REAL

HOMEBUILDER SEASONALITY

Ave Performance by Month, 1996-2014

Month	S&P 500 Homebuilding Index	Return STDEV	SPX index	Return STDEV
January	3.9%	6.6%	1.0%	2.9%
February	2.1%	7.3%	-0.2%	3.6%
March	-0.7%	7.1%	0.4%	3.8%
April	1.5%	8.3%	1.7%	3.6%
May	1.2%	7.1%	1.2%	4.0%
June	-2.3%	9.8%	-0.1%	3.3%
July	0.2%	8.9%	0.2%	4.0%
August	-0.2%	12.6%	-0.5%	4.0%
September	1.1%	9.2%	-0.2%	3.9%
October	-2.0%	10.5%	-0.3%	5.5%
November	3.7%	10.1%	2.2%	4.6%
December	5.0%	7.3%	1.5%	1.7%



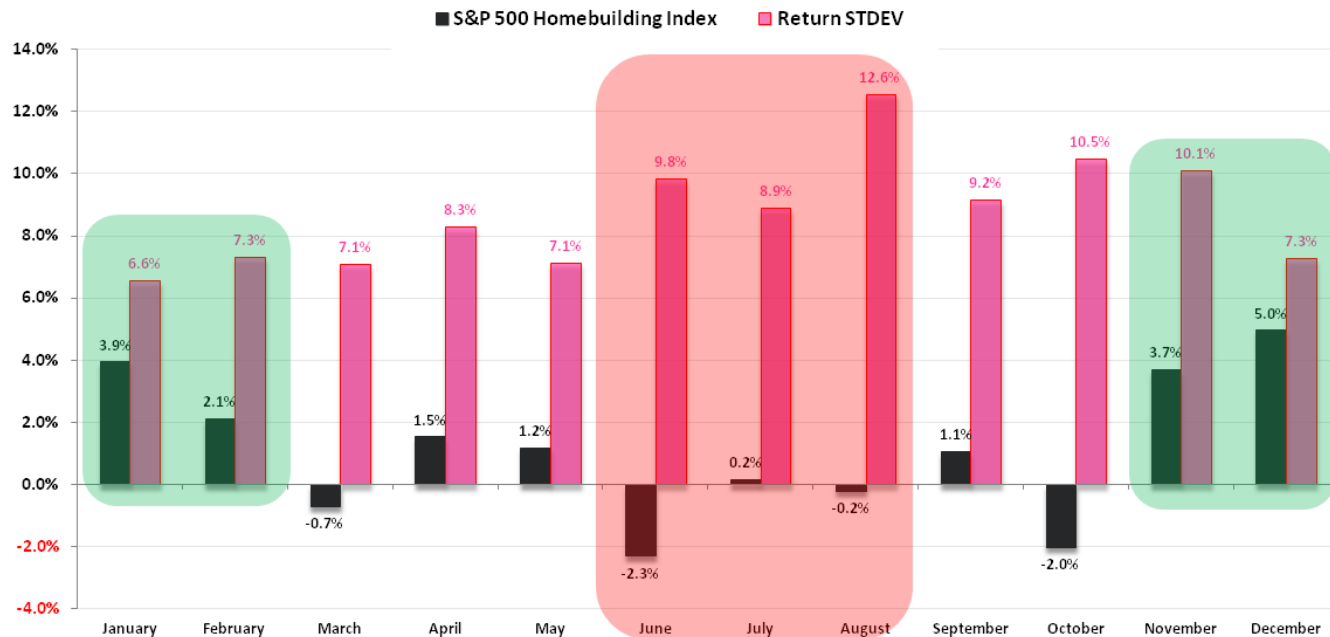
*Performance calculated using average monthly price: sample period = 1996-2014

Everyone knows that housing is seasonal, but not everyone realizes that the stocks are very seasonal as well.

VOLATILITY IS SEASONAL AS WELL

HOMEBUILDER SEASONALITY

Ave Performance by Month, 1996-2014



*Performance calculated using average monthly price; sample period = 1996-2014

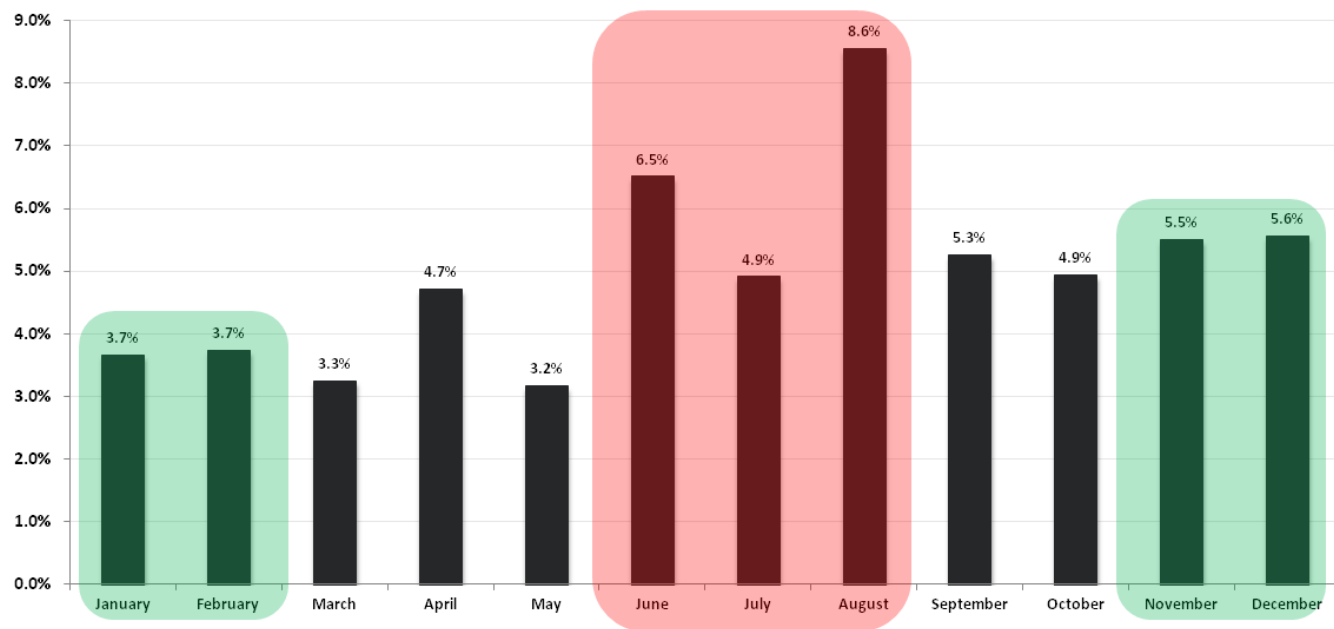
Seasonality isn't just pronounced in the returns, but also in the volatility of returns.

VOLATILITY SEASONALITY CONT'D

HOMEBUILDER SEASONALITY

Excess Volatility in Monthly Return Volatility

Ave by Month, 1996-2014



**Performance calculated using average monthly price; sample period = 1996-2014*

This chart shows volatility of builder returns relative to the the underlying volatility of market returns.

SEASONALITY IN THE LAST FIVE YEARS



The prior charts looked at 20 years of seasonality trends, while this one looks at the last five years.

QUARTERLY SEASONALITY

Housing Seasonality <i>Average Performance by Quarter</i>				
<i>Average Absolute Performance, Trailing 6Y</i>				
Security	1Q	2Q	3Q	4Q
ITB	7.3%	0.9%	-4.9%	13.6%
XHB	7.9%	-0.6%	-3.5%	11.6%
S5HOME	8.2%	2.1%	-5.8%	16.2%
<u>YTD</u>				
Security	1Q	2Q	3Q	4Q
ITB	-0.1%	2.1%	-0.4%	?
XHB	-1.0%	-0.9%	1.2%	?
S5HOME	-1.6%	1.0%	-3.8%	?

Here's how the seasonality looks on a quarterly basis. It's pretty clear which quarters generate positive P&L and which don't.



ELECTION CYCLE

DEEP SIMPLICITY → UNDERPINNING

THE ELECTION CYCLE:

A POLITICO-BEHAVIORAL PHENOMENON

PROMISE THE WORLD

Year 4 (Election Year)



HONEYMOON/DO NO HARM

Year 1



UNLEASH HELL

Year 2



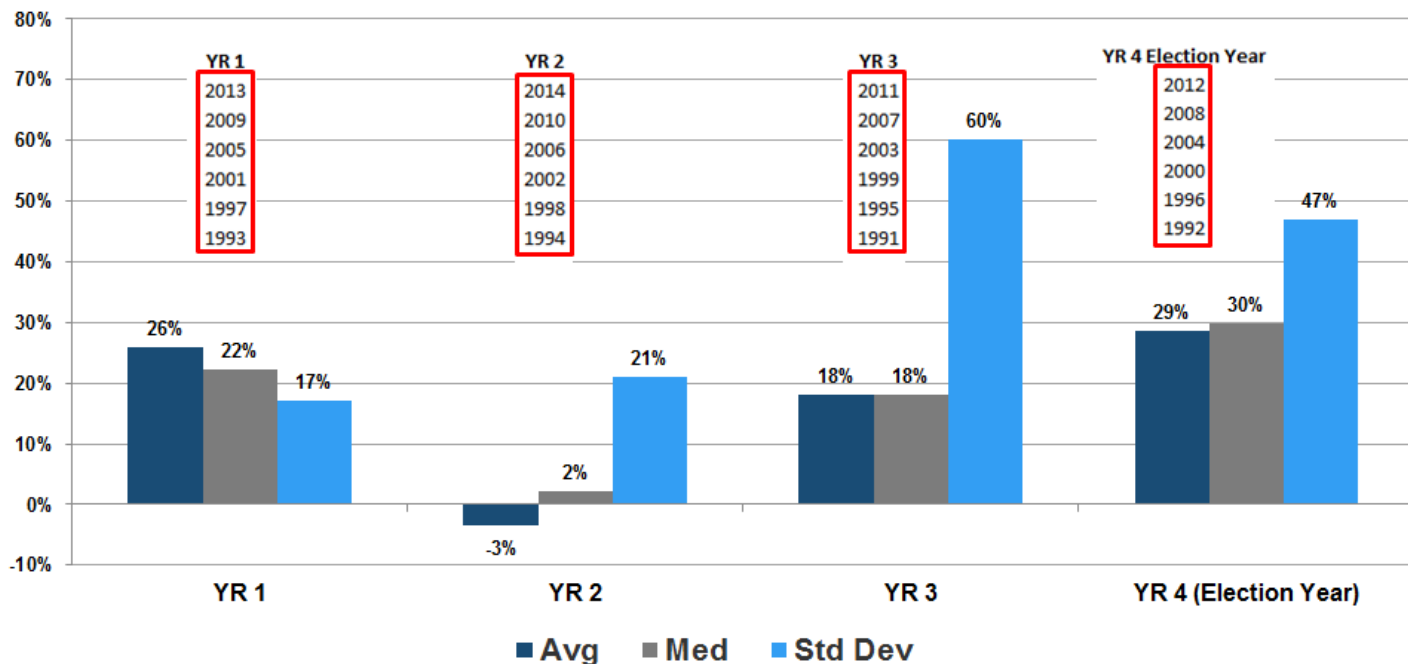
COMPING THE COMP

Year 3



HOUSING: ELECTION YR 4 + YEAR 1 = ↑

HOUSING: LAST 6 ELECTION CYCLES PERFORMANCE ANALYSIS
AVERAGE ABSOLUTE RETURNS (1991-2014)



DATA SOURCE: FACTSET

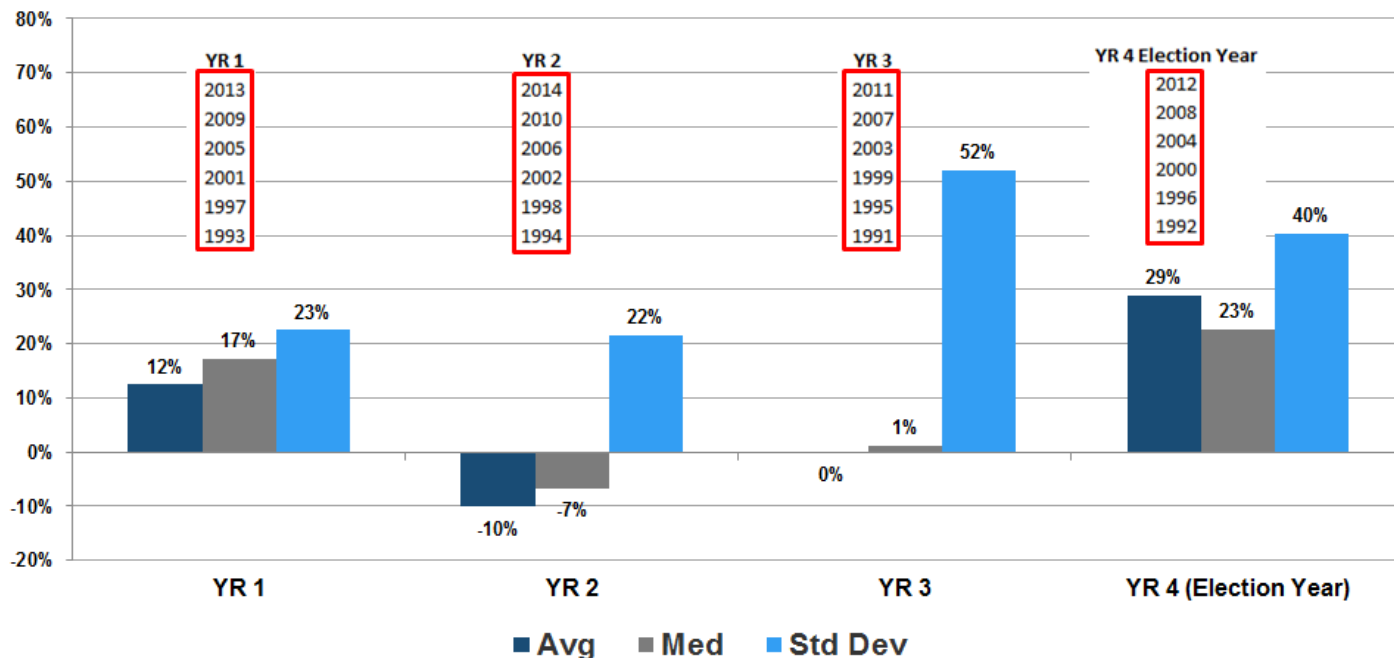
©2015 HEDGEYE RISK MANAGEMENT

Housing performance has followed a distinct, recurrent pattern over the last 6 election cycles.

Absolute performance is consistently (very) strong in Election Years and Year 1.

ABSOLUTE + RELATIVE PERFORMANCE

HOUSING: LAST 6 ELECTION CYCLES PERFORMANCE ANALYSIS AVERAGE RELATIVE RETURNS VS S&P 500 (1991-2014)



DATA SOURCE: FACTSET

©2015 HEDGEYE RISK MANAGEMENT

It's not just beta – Housing outperforms meaningfully on a relative basis in years 4 and 1 as well.

CYCLE BY CYCLE

Here's a look at Housing stock performance by year since 1990. Election years are bordered with the averages at the bottom of the table.



		Price				Y/Y Change in Price (%) - Absolute				Relative Performance vs S&P 500		
		S&P 500	XHB	ITB	Builder Index	S&P 500	XHB	ITB	Builder Index	XHB	ITB	Builder Index
12/31/1990	+2	330.22	na	na	61.15							
12/31/1991	+3	417.09	na	na	102.70	26.3%			67.9%			41.6%
12/31/1992	Election Year	435.71	na	na	130.73	4.5%			27.3%			22.8%
12/31/1993	+1	466.45	na	na	155.10	7.1%			18.6%			11.6%
12/31/1994	+2	459.27	na	na	100.00	-1.5%			-35.5%			-34.0%
12/31/1995	+3	615.93	na	na	137.19	34.1%			37.2%			3.1%
12/31/1996	Election Year	740.74	na	na	138.49	20.3%			0.9%			-19.3%
12/31/1997	+1	970.43	na	na	218.93	31.0%			58.1%			27.1%
12/31/1998	+2	1,229.23	na	na	264.71	26.7%			20.9%			-5.8%
12/31/1999	+3	1,469.25	na	na	176.72	19.5%			-33.2%			-52.8%
12/31/2000	Election Year	1,320.28	na	na	274.75	-10.1%			55.5%			65.6%
12/31/2001	+1	1,148.08	na	na	348.96	-13.0%			27.0%			40.1%
12/31/2002	+2	879.82	na	na	345.46	-23.4%			-1.0%			22.4%
12/31/2003	+3	1,111.92	na	na	681.10	26.4%			97.2%			70.8%
12/31/2004	Election Year	1,211.92	na	na	905.03	9.0%			32.9%			23.9%
12/31/2005	+1	1,248.29	na	na	1,138.92	3.0%			25.8%			22.8%
12/31/2006	+2	1,418.30	37.39	42.37	900.98	13.6%			-20.9%			-34.5%
12/31/2007	+3	1,468.36	19.35	17.63	363.61	3.5%	-48.2%	-58.4%	-59.6%	-51.8%	-61.9%	-63.2%
12/31/2008	Election Year	903.25	11.98	9.81	217.14	-38.5%	-38.1%	-44.4%	-40.3%	0.4%	-5.9%	-1.8%
12/31/2009	+1	1,115.10	15.11	12.01	254.48	23.5%	26.1%	22.4%	17.2%	2.7%	-1.0%	-6.3%
12/31/2010	+2	1,257.64	17.39	13.18	267.89	12.8%	15.1%	9.7%	5.3%	2.3%	-3.0%	-7.5%
12/31/2011	+3	1,257.60	17.10	11.88	265.74	0.0%	-1.7%	-9.9%	-0.8%	-1.7%	-9.9%	-0.8%
12/31/2012	Election Year	1,426.19	26.60	21.16	539.02	13.4%	55.6%	78.1%	102.8%	42.1%	64.7%	89.4%
12/31/2013	+1	1,848.36	33.30	24.82	587.06	29.6%	25.2%	17.3%	8.9%	-4.4%	-12.3%	-20.7%
12/31/2014	+2	2,058.90	34.12	25.88	648.92	11.4%	2.5%	4.3%	10.5%	-8.9%	-7.1%	-0.9%
Averages:	Election Year					-0.2%	8.7%	16.9%	29.9%	21.3%	29.4%	30.1%
	+1					13.5%	25.7%	19.9%	25.9%	-0.9%	-6.7%	12.4%
	+2					6.6%	8.8%	7.0%	-3.5%	-3.3%	-5.1%	-10.0%
	+3					13.9%	-13.7%	-17.1%	11.8%	-10.7%	-14.1%	-2.1%
Averages:	All Years					9.5%	4.6%	2.4%	17.6%	-2.4%	-4.6%	8.1%

Source: Factset



RECESSION RISK

HOUSING IN RECESSIONS: LAST 50 YRS

U.S. ECONOMIC & HOUSING CYCLE PROFILE

1969-Present (7 Cycles)

Economic Cycle				Housing Cycle													
Economic Cycle	Cycle	Recession	Subsequent	Starts	Starts	Peak-to-Trough	NHS	NHS	Peak-to-Trough	SF EHS***	SF EHS***	Peak-to-Trough	*HPI: Peak-to-Trough, %		Fed Funds	Fed Funds	Policy
Peak	Trough	Duration (Mo.)	Expansion (Mo.)	Peak Level	Trough Level	Decline, %	Peak Level	Trough Level	Decline, %	Peak Level	Trough Level	Decline, %	Nominal	Real	Peak Level	Trough Level	Cushion
Dec-69	Nov-70	11	36	1769	1085	-39%	566	373	-34%	1.71	1.37	-20%	7.6%	2.4%	9.2	3.7	-5.5
Nov-73	Mar-75	16	58	2494	904	-64%	843	416	-51%	2.50	2.06	-18%	13.2%	-8.6%	12.9	5.2	-7.7
Jan-80	Jul-80	6	12	2197	927	-58%	872	370	-58%	4.15	2.48	-40%	4.4%	-12.2%	17.6	9.0	-8.6
Jul-81	Nov-82	16	92	1547	837	-46%	659	338	-49%	3.40	1.86	-45%	1.3%	-12.2%	19.1	8.5	-10.6
Jul-90	Mar-91	8	120	1972	798	-60%	880	401	-54%	3.89	2.62	-33%	-3.1%	-14.4%	9.9	2.9	-6.9
Mar-01	Nov-01	8	73	1792	1463	-18%	995	793	-20%	4.87	4.63	-5%	4.9%	4.2%	6.5	1.0	-5.6
Dec-07	Jun-09	18	79	2273	478	-79%	1389	270	-81%	6.34	3.06	-52%	-27.4%	-35.7%	5.3	0.1	-5.2
Average			65	2006	838	-47%	886	423	-44%	4.53	2.93	-27%	0.14%	-10.7%	12.5	5.1	-7.5
Current			79	1173			490			4.15					0.36		
UPSIDE / DOWNSIDE vs Historical Ave				71%	-29%		81%	-14%		37%	-14%						
UPSIDE / DOWNSIDE vs Historical MAX/MIN				113%	-59%		183%	-45%		66%	-38%				Current Policy Cushion =		
																	-0.36

HOUSING PEAKS & TROUGHS: NUMBER OF MONTHS (+/-) vs. ECONOMIC PEAK/TROUGHS

Economic Cycle	Cycle	Recession	Subsequent	Starts	Starts	Duration of	NHS	NHS	Duration of	SF EHS	SF EHS	Duration of	**HPI: Decline, # of Mo.		Fed Funds	Fed Funds	Policy
Peak	Trough	Duration (Mo.)	Expansion (Mo.)	Peak Month	Trough Month	Decline, Mo.	Peak Month	Trough Month	Decline, Mo.	Peak Month	Trough Month	Decline, Mo.	Nominal	Real	Peak Level	Trough Level	Cushion
Dec-69	Nov-70	11	36	10	9	12	25	8	28	11	7	15	0	0	3	-5	
Nov-73	Mar-75	16	58	21	0	37	12	1	27	8	1	23	0	34	-9	-3	
Jan-80	Jul-80	6	12	20	1	25	33	2	37	13	1	18	0		-4	-1	
Jul-81	Nov-82	16	92	5	11	10	10	13	13	9	5	20	0	38	0	-4	
Jul-90	Mar-91	8	120	53	1	60	51	1	58	42	2	48	8	90	15	-22	
Mar-01	Nov-01	8	73	26	15	19	27	16	19	20	1	27	0	0	7	-26	
Dec-07	Jun-09	18	79	22	1	39	28	-21	67	26	-14	58	67	74	4	-26	
Mean				22	5	29	27	3	35	18	0	30	11	39	2	-12	
Median				21	1	25	27	2	28	13	1	23	0	36	3	-5	
Notes:				STARTS/NHS/EHS All Peak Mid-Cycle & Trough Ahead of Eco Trough. The Latest Cycle is the Notable Exception as Housing Activity Lagged the Broader Recovery													

*HPI: Chg in Prices during cycles in which Home Prices did not decline are measured over duration of the recession

** HPI: Represents absolute duration of decline in months, not relative to peak/trough in the economic cycle

*** Upside/Downside averages calculated using population adjusted sales volume. Table values reflect unadjusted sales

Source: NBER, BEA, BLOOMBERG, CENSUS BUREAU, NAR, Robert Shiller, HEDGEYE

HOUSING IN RECESSIONS: LAST 25 YRS

HOUSING EQUITY CYCLE PROFILE

1990-Present (3 Cycles)

Economic Cycle		S&P500			Housing Complex							
Economic Cycle Peak	Cycle Trough	S&P500			Homebuilders (S\$HOME)		Building Products (S\$BUILX)		Home Improvement (S\$HOMI)		UDR (REIT Proxy)	
		Peak	Trough	% Change	Peak-to-Trough Decline, %		Peak-to-Trough Decline, %		Peak-to-Trough Decline, %		Peak-to-Trough Decline, %	
					Absolute	Relative	Absolute	Relative	Absolute	Relative	Absolute	Relative
Jul-90	Mar-91	369	295	-20%	-53%	-33%	-39%	-19%	-42%	-22%	-34%	-14%
Mar-01	Nov-01	1527	777	-49%	-39%	11%	-61%	-12%	-58%	-8%	-20%	29%
Dec-07	Jun-09	1565	677	-57%	-91%	-34%	-84%	-27%	-57%	-1%	-77%	-21%
Average				-42%	-61%	-19%	-61%	-19%	-52%	-10%	-44%	-2%

HOUSING EQUITY PEAKS & TROUGHS: NUMBER OF MONTHS (+/-) vs. ECONOMIC PEAK/TROUGHS

Economic Cycle Peak	Cycle Trough	S&P 500		Homebuilders		Building Products		Home Improvement		UDR (REIT Proxy)	
		Peak Month	Trough Month	Peak Month	Trough Month	Peak Month	Trough Month	Peak Month	Trough Month	Peak Month	Trough Month
Jul-90	Mar-91	0	5	9	5	9	5	0	5	11	4
Mar-01	Nov-01	12	-11	-4	2	22	13	11	-15	8	12
Dec-07	Jun-09	2	3	29	7	10	3	10	3	10	3
AVERAGE		5	-1	11	5	14	7	7	-2	10	6

Source: NBER, BEA, BLOOMBERG, CENSUS BUREAU, NAR, Robert Shiller, HEDGEYE

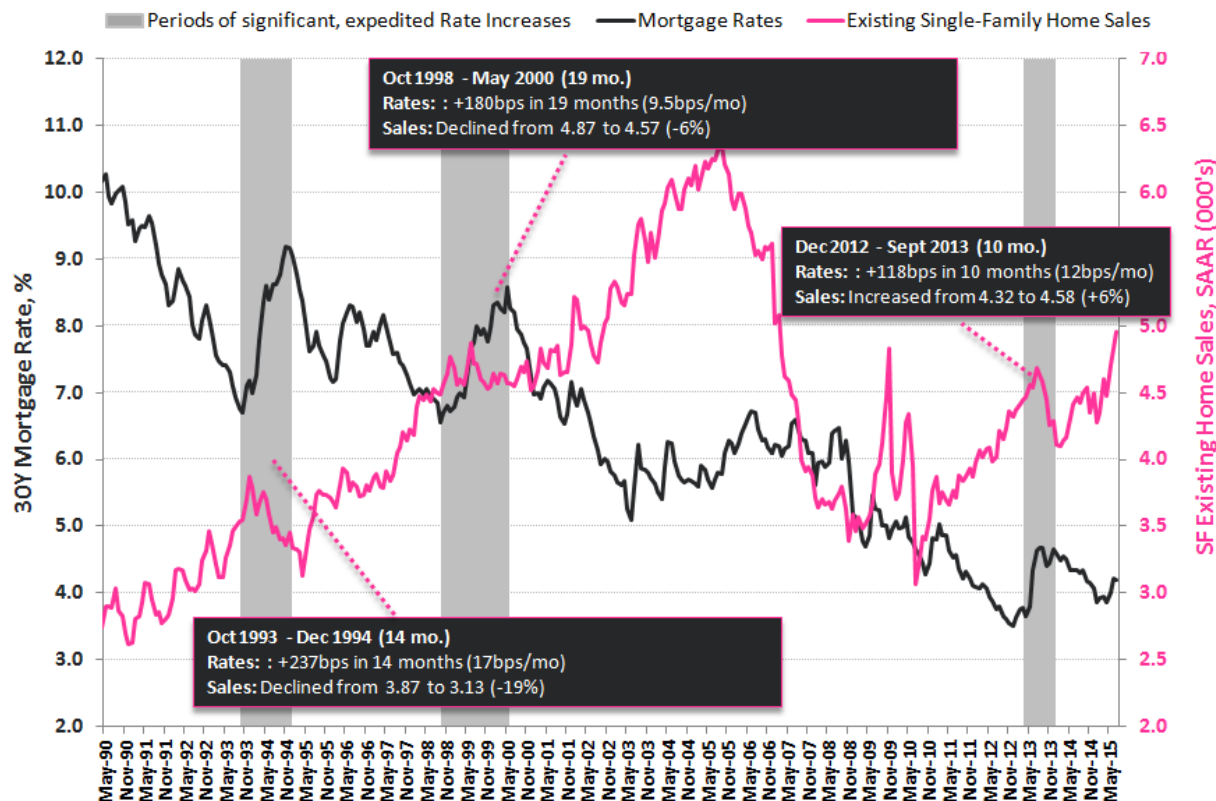


RATES!

RATES RISK

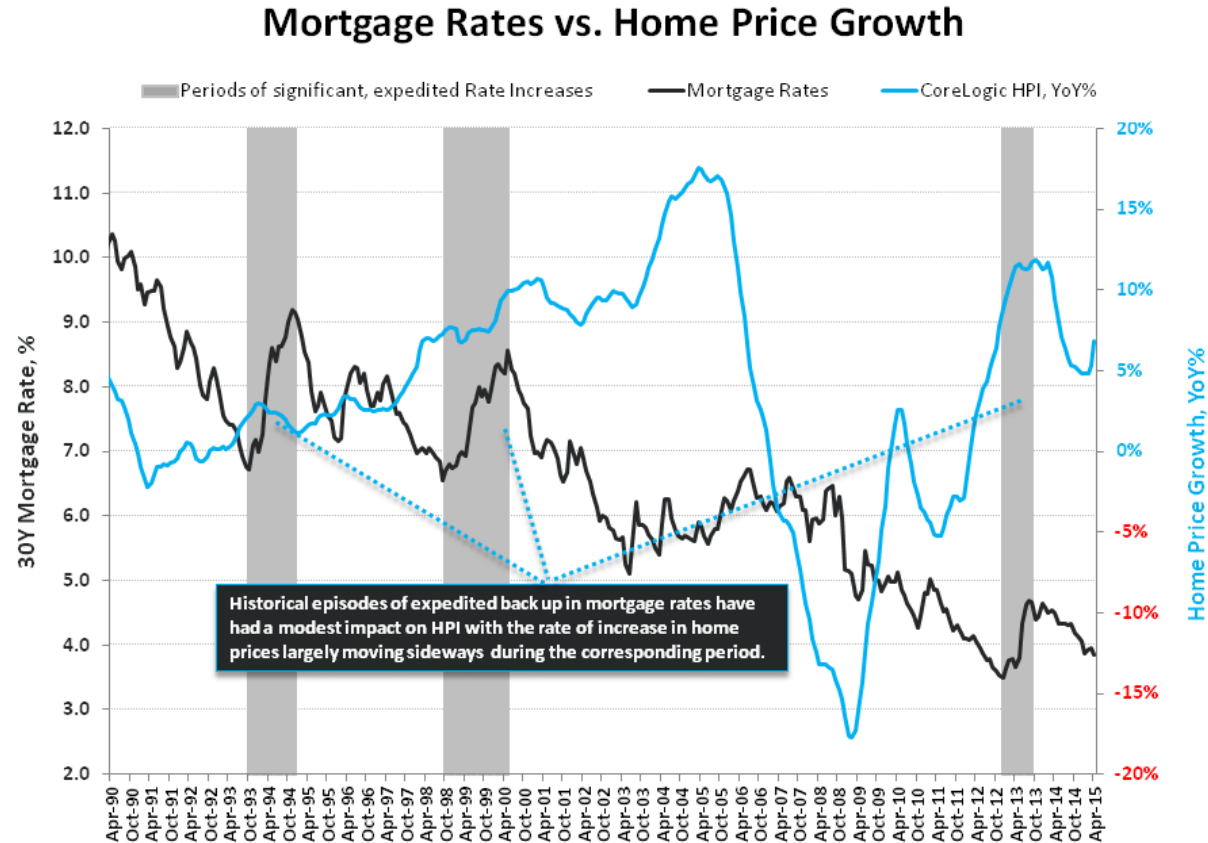
MORTGAGE RATES VS HOME SALES

Mortgage Rates vs. Home Sales



Mortgage rates rose by an average of 180 bps over an average of 14 months in the 3 historical periods of rapid rate rise. In the current instance, mortgage rates have not moved (yet).

MORTGAGE RATES VS HPI



Historically, Home Prices have stabilized from a rate of change perspective during periods of expedited rate increase.

THREE CASE STUDIES IN RISING RATES

1

OCTOBER 1993- DECEMBER 1994

Mortgage Rates rose +240 bps over the span of 14-months. **The S&P 500 Homebuilding index lost 33% of its value over that 14 month span.** By contrast, the S&P 500 was flat over the corresponding period.

2

OCTOBER 1998 - MAY 2000

Mortgage Rates rose +180 bps over the span of 19-months. **The S&P 500 Homebuilding index lost 29% of its value over that 14 month span,** but the S&P 500 was up 44% making the **relative underperformance a whopping 73%.**

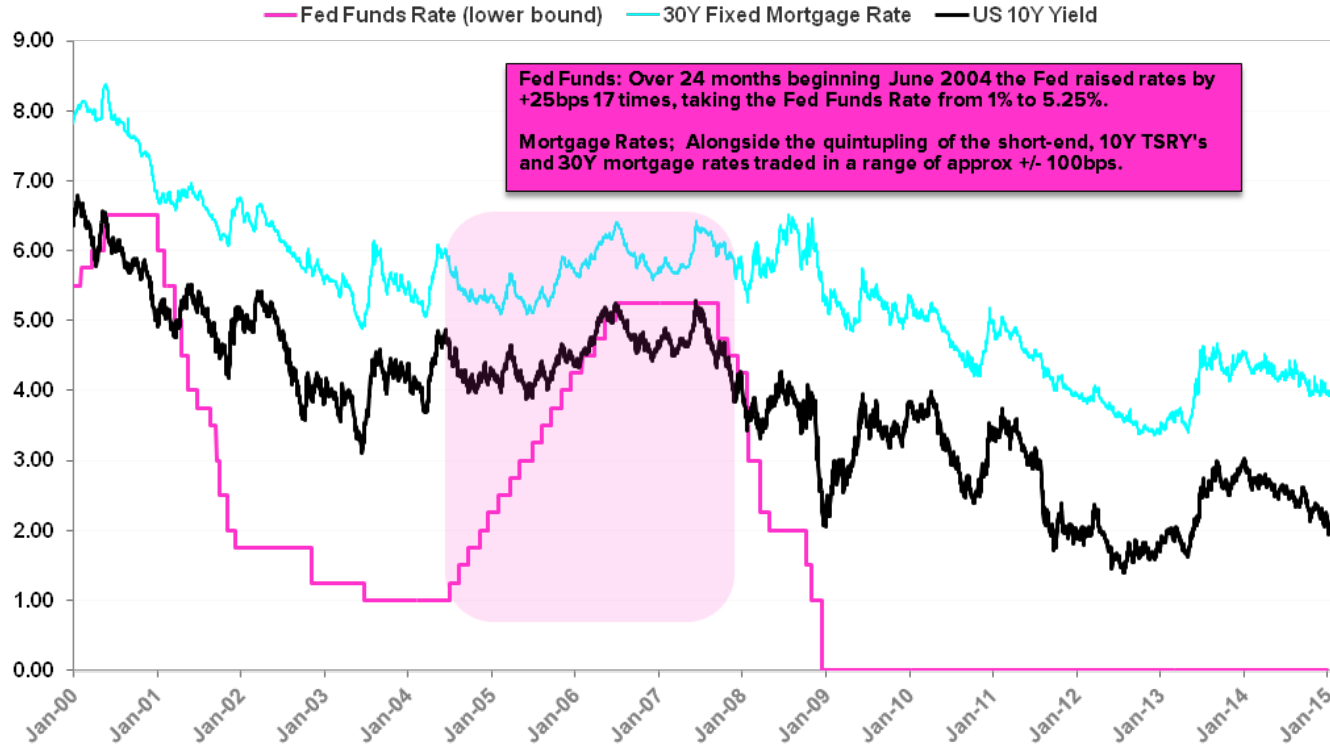
3

DECEMBER 2012 – SEPTEMBER 2013

Mortgage Rates rose +120 bps over the span of 10-months. **The S&P 500 Homebuilding index lost 3% of its value over that 14 month span.** By contrast, the S&P 500 was up 19% over the corresponding period so the **relative underperformance was 22%.**

WHAT IF THE FED TIGHTENS?

POLICY NORMALIZATION: A NON-CATALYST FOR THE LONG END?



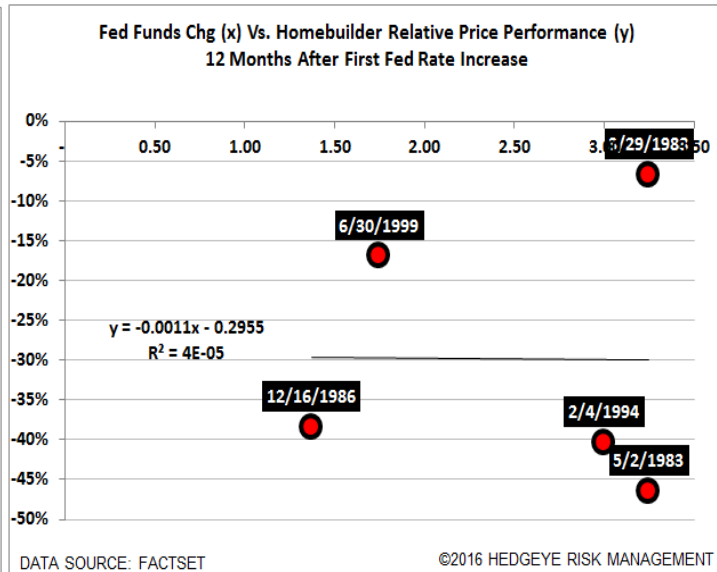
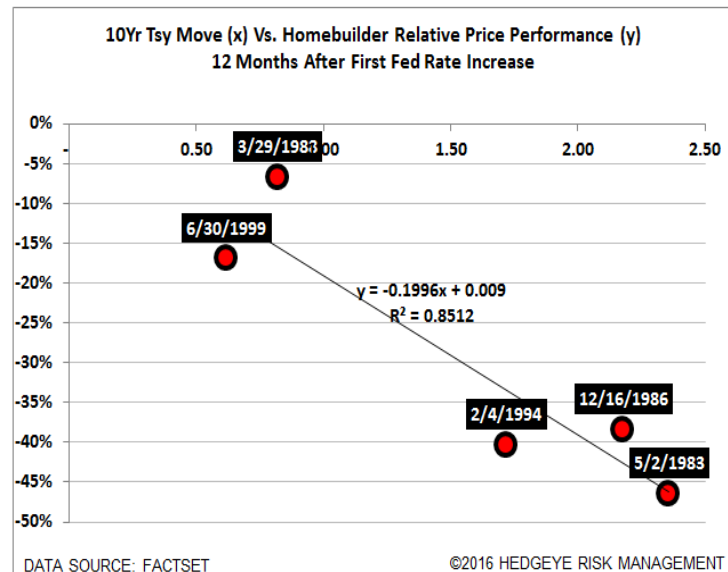
DATA SOURCE: BLOOMBER, HRM

In the last period of Fed tightening, the Fed raised rates 25 bps every meeting for 17 straight meetings. The mortgage rate, however, essentially went sideways during this period.

HOMEBUILDERS

Rate Hike Cycle			Fed Funds			10YR Tsy			The Curve?		Homebuilders / Absolute Performance								Homebuilders / Relative Performance							
Start	End	Mo	Start	End	Change	Start	End	Change	Delta	Direction	T-6	T-3	T-1	T-0	T+3	T+6	T+12	T-6	T-3	T-1	T-0	T+3	T+6	T+12		
6/30/2004	6/29/2006	24	1.00	5.25	4.25	4.62	5.20	0.58	(3.67)	Much Flatter	4%	-11%	0%	0%	14%	38%	86%	1%	-12%	-2%	0%	16%	32%	82%		
6/30/1999	5/16/2000	11	4.75	6.50	1.75	5.81	6.43	0.62	(1.13)	Flatter	-7%	13%	2%	0%	-17%	-19%	-12%	-19%	7%	-4%	0%	-10%	-25%	-17%		
2/4/1994	2/1/1995	12	3.00	6.00	3.00	5.94	7.66	1.72	(1.28)	Flatter	22%	17%	3%	0%	-18%	-28%	-39%	17%	15%	3%	0%	-14%	-26%	-40%		
3/29/1988	2/24/1989	11	6.50	9.75	3.25	8.56	9.38	0.82	(2.43)	Much Flatter	-28%	13%	-6%	0%	5%	-6%	6%	-7%	8%	-5%	0%	1%	-10%	-7%		
12/16/1986	9/4/1987	9	5.88	7.25	1.37	7.12	9.30	2.18	0.81	Much Steeper	-4%	21%	1%	0%	52%	20%	-39%	-6%	14%	-1%	0%	36%	-1%	-38%		
5/2/1983	8/21/1984	16	8.50	11.75	3.25	10.26	12.62	2.36	(0.89)	Near Parallel	60%	22%	13%	0%	-13%	-29%	-47%	47%	8%	7%	0%	-13%	-30%	-46%		
Average:		14	2.81			1.38			(1.43)		8%	13%	2%	0%	4%	-4%	-7%	5%	7%	0%	0%	3%	-10%	-11%		
Median:		11	3.13			1.27			(1.21)		0%	15%	1%	0%	-4%	-13%	-25%	-3%	8%	-1%	0%	-4%	-17%	-28%		

Source: Factset

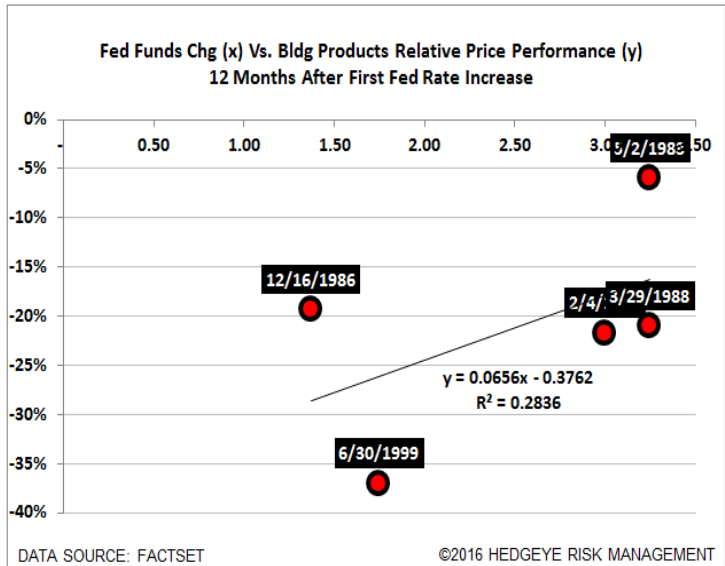
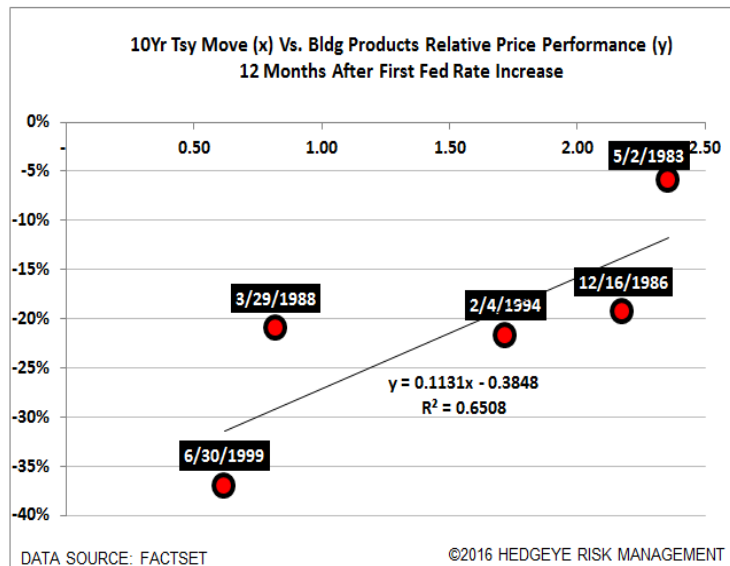


Not surprisingly, homebuilders hate rate hikes, and the strong negative slope (RSQ 0.85) to increases in the 10Yr Tsy show just how sensitive they are. The good news is that small increases in rates have historically produced small decreases in share prices.

BUILDING PRODUCTS

Rate Hike Cycle			Fed Funds			10YR Tsy			The Curve?		Building Products / Absolute Performance								Building Products / Relative Performance							
Start	End	Mo	Start	End	Change	Start	End	Change	Delta	Direction	T-6	T-3	T-1	T-0	T+3	T+6	T+12		T-6	T-3	T-1	T-0	T+3	T+6	T+12	
6/30/2004	6/29/2006	24	1.00	5.25	4.25	4.62	5.20	0.58	(3.67)	Much Flatter	12%	-1%	8%	0%	6%	37%	28%		9%	-2%	6%	0%	9%	32%	24%	
6/30/1999	5/16/2000	11	4.75	6.50	1.75	5.81	6.43	0.62	(1.13)	Flatter	-1%	7%	-2%	0%	-21%	-20%	-32%		-12%	1%	-7%	0%	-14%	-26%	-37%	
2/4/1994	2/1/1995	12	3.00	6.00	3.00	5.94	7.66	1.72	(1.28)	Flatter	33%	16%	7%	0%	-9%	-18%	-20%		29%	14%	6%	0%	-6%	-17%	-22%	
3/29/1988	2/24/1989	11	6.50	9.75	3.25	8.56	9.38	0.82	(2.43)	Much Flatter	-21%	16%	4%	0%	5%	-16%	-9%		0%	11%	5%	0%	2%	-20%	-21%	
12/16/1986	9/4/1987	9	5.88	7.25	1.37	7.12	9.30	2.18	0.81	Much Steeper	-3%	12%	1%	0%	20%	13%	-20%		-6%	4%	-1%	0%	5%	-8%	-19%	
5/2/1983	8/21/1984	16	8.50	11.75	3.25	10.26	12.62	2.36	(0.89)	Near Parallel	24%	22%	-3%	0%	-9%	-7%	-6%		11%	9%	-9%	0%	-10%	-8%	-6%	
Average:		14	2.81			1.38			(1.43)		7%	12%	2%	0%	-1%	-2%	-10%		5%	6%	0%	0%	-2%	-8%	-14%	
Median:		11	3.13			1.27			(1.21)		6%	14%	3%	0%	-2%	-12%	-14%		5%	6%	2%	0%	-2%	-12%	-20%	

Source: Factset

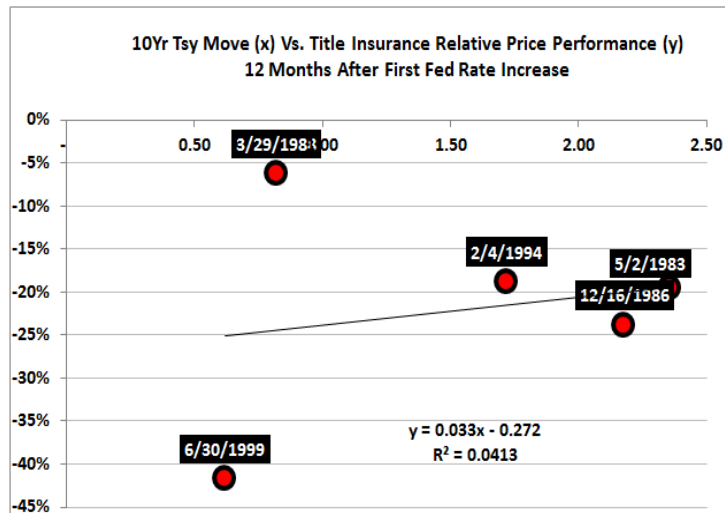


Building products companies consistently underperform when rates rise just like homebuilders. However, the slope is positive, which makes no sense. We take it on face value that there's an adverse relationship here, but that's about it.

TITLE INSURANCE

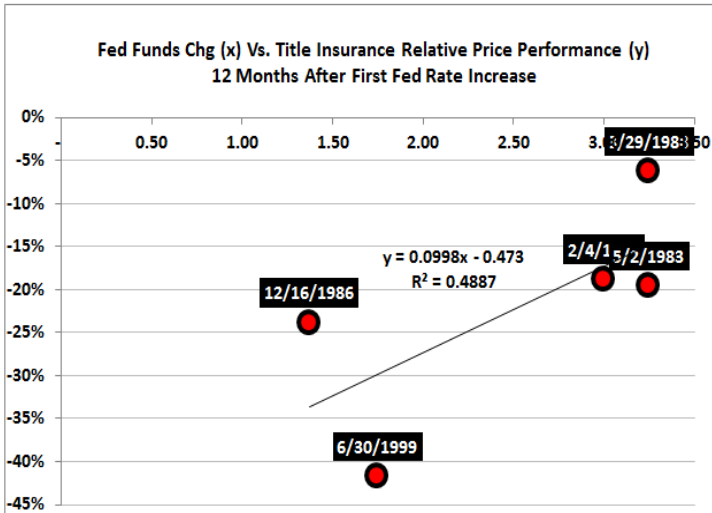
Rate Hike Cycle			Fed Funds			10YR Tsy			The Curve?		Title Insurance / Absolute Performance								Title Insurance / Relative Performance							
Start	End	Mo	Start	End	Change	Start	End	Change	Delta	Direction	T-6	T-3	T-1	T-0	T+3	T+6	T+12	T-6	T-3	T-1	T-0	T+3	T+6	T+12		
6/30/2004	6/29/2006	24	1.00	5.25	4.25	4.62	5.20	0.58	(3.67)	Much Flatter	-17%	-16%	-1%	0%	15%	24%	24%	-20%	-16%	-3%	0%	18%	18%	20%		
6/30/1999	5/16/2000	11	4.75	6.50	1.75	5.81	6.43	0.62	(1.13)	Flatter	-27%	27%	9%	0%	-24%	-33%	-37%	-39%	21%	3%	0%	-18%	-40%	-42%		
2/4/1994	2/1/1995	12	3.00	6.00	3.00	5.94	7.66	1.72	(1.28)	Flatter	15%	3%	-3%	0%	-2%	-15%	-17%	10%	1%	-3%	0%	2%	-13%	-19%		
3/29/1988	2/24/1989	11	6.50	9.75	3.25	8.56	9.38	0.82	(2.43)	Much Flatter	-10%	16%	10%	0%	0%	1%	6%	11%	11%	11%	0%	-3%	-3%	-6%		
12/16/1986	9/4/1987	9	5.88	7.25	1.37	7.12	9.30	2.18	0.81	Much Steeper	-22%	4%	-12%	0%	16%	0%	-25%	-25%	-4%	-14%	0%	1%	-21%	-24%		
5/2/1983	8/21/1984	16	8.50	11.75	3.25	10.26	12.62	2.36	(0.89)	Near Parallel	82%	58%	37%	0%	6%	0%	-20%	68%	44%	32%	0%	6%	0%	-20%		
Average:		14				2.81			1.38	(1.43)	3%	15%	7%	0%	2%	-4%	-11%	1%	9%	4%	0%	1%	-10%	-15%		
Median:		11				3.13			1.27	(1.21)	-14%	10%	4%	0%	3%	0%	-18%	-5%	6%	0%	0%	1%	-8%	-19%		

Source: Factset



DATA SOURCE: FACTSET

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DATA SOURCE: FACTSET

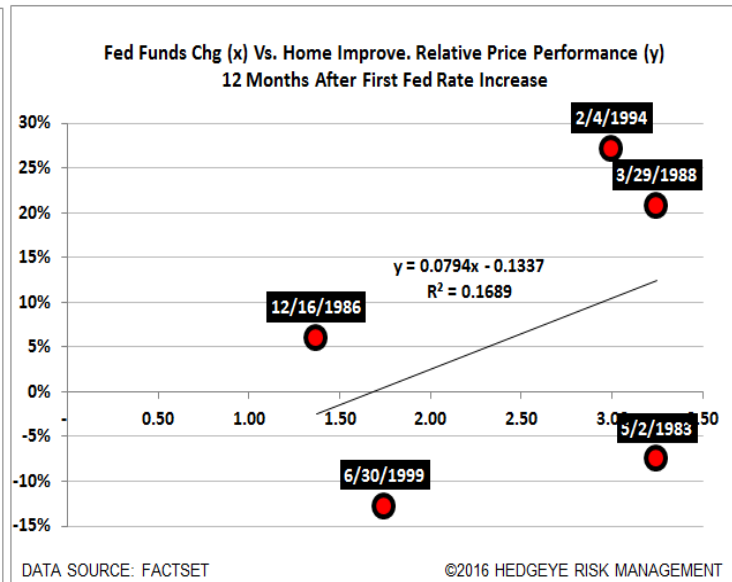
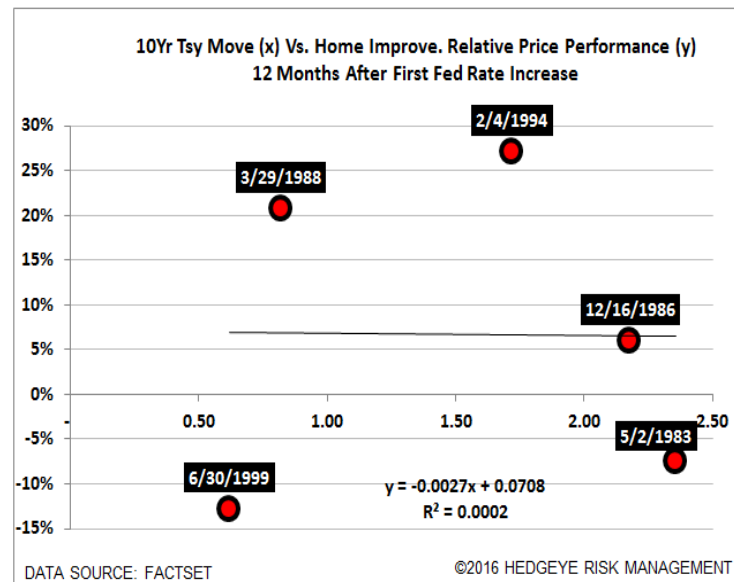
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Title insurers also underperform amid rising rates, but like building products companies they do so in a non-linear, low-RSQ way.

HOME IMPROVEMENT CHAINS

Rate Hike Cycle			Fed Funds			10YR Tsy			The Curve?		Home Improvement / Absolute Performance							Home Improvement / Relative Performance													
Start	End	Mo	Start	End	Change	Start	End	Change	Delta	Direction	T-6	T-3	T-1	T-0	T+3	T+6	T+12	T-6	T-3	T-1	T-0	T+3	T+6	T+12							
6/30/2004	6/29/2006	24	1.00	5.25	4.25	4.62	5.20	0.58	(3.67)	Much Flatter	-1%	-5%	-2%	0%	6%	14%	11%	-4%	-6%	-4%	0%	9%	8%	6%							
6/30/1999	5/16/2000	11	4.75	6.50	1.75	5.81	6.43	0.62	(1.13)	Flatter	8%	-1%	12%	0%	-8%	28%	-8%	-4%	-8%	6%	0%	-1%	22%	-13%							
2/4/1994	2/1/1995	12	3.00	6.00	3.00	5.94	7.66	1.72	(1.28)	Flatter	21%	9%	0%	0%	19%	16%	29%	16%	7%	-1%	0%	23%	18%	27%							
3/29/1988	2/24/1989	11	6.50	9.75	3.25	8.56	9.38	0.82	(2.43)	Much Flatter	-10%	21%	5%	0%	12%	9%	33%	11%	16%	5%	0%	9%	5%	21%							
12/16/1986	9/4/1987	9	5.88	7.25	1.37	7.12	9.30	2.18	0.81	Much Steeper	-13%	12%	4%	0%	22%	42%	5%	-16%	4%	2%	0%	7%	21%	6%							
5/2/1983	8/21/1984	16	8.50	11.75	3.25	10.26	12.62	2.36	(0.89)	Near Parallel	75%	26%	13%	0%	30%	3%	-8%	61%	13%	7%	0%	30%	2%	-8%							
Average:		14				2.81			1.38	(1.43)								13%	10%	5%	0%	14%	19%	10%	11%	4%	3%	0%	13%	13%	7%
Median:		11				3.13			1.27	(1.21)								4%	11%	4%	0%	15%	15%	8%	3%	6%	4%	0%	9%	13%	6%

Source: Factset

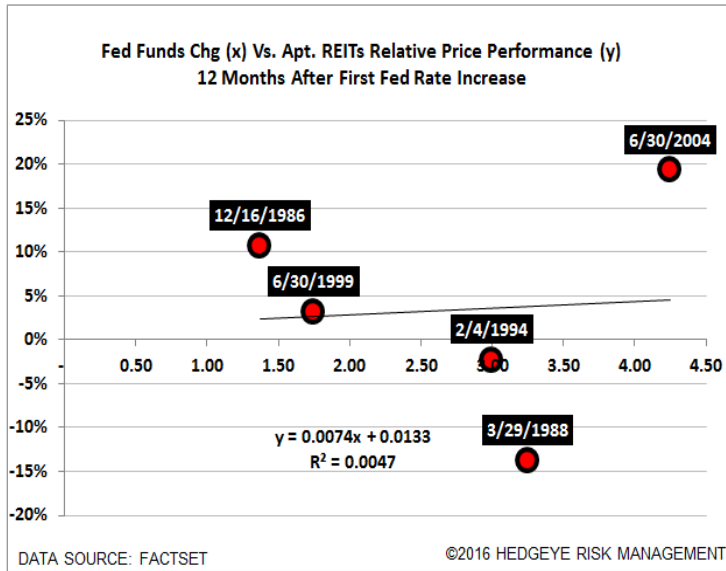
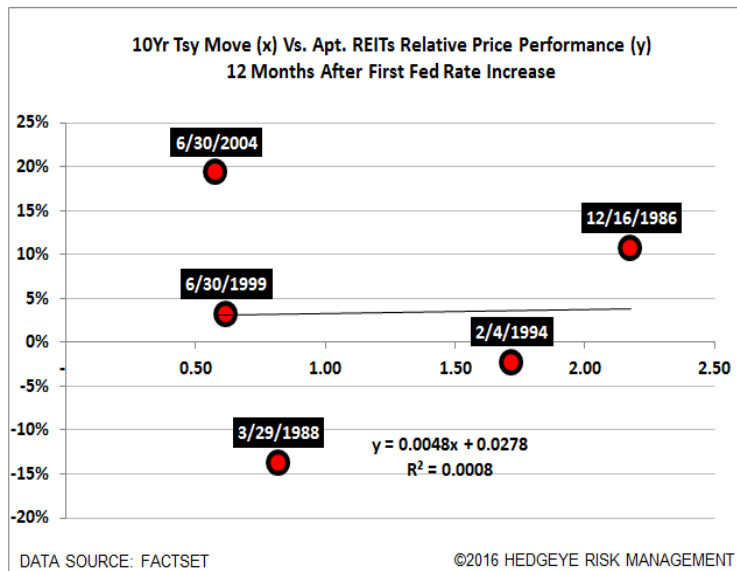


Home improvement chains also tend to perform respectably during higher rate periods.

APARTMENT REITS

Rate Hike Cycle			Fed Funds			10YR Tsy			The Curve?		Apartment REITs / Absolute Performance							Apartment REITs / Relative Performance						
Start	End	Mo	Start	End	Change	Start	End	Change	Delta	Direction	T-6	T-3	T-1	T-0	T+3	T+6	T+12	T-6	T-3	T-1	T-0	T+3	T+6	T+12
6/30/2004	6/29/2006	24	1.00	5.25	4.25	4.62	5.20	0.58	(3.67)	Much Flatter	4%	1%	2%	0%	3%	19%	24%	1%	0%	0%	0%	6%	13%	19%
6/30/1999	5/16/2000	11	4.75	6.50	1.75	5.81	6.43	0.62	(1.13)	Flatter	10%	16%	3%	0%	-7%	-9%	8%	-2%	10%	-3%	0%	0%	-15%	3%
2/4/1994	2/1/1995	12	3.00	6.00	3.00	5.94	7.66	1.72	(1.28)	Flatter	2%	-9%	-1%	0%	6%	1%	0%	-3%	-11%	-2%	0%	10%	2%	-2%
3/29/1988	2/24/1989	11	6.50	9.75	3.25	8.56	9.38	0.82	(2.43)	Much Flatter	-3%	4%	0%	0%	-4%	1%	-1%	18%	-1%	1%	0%	-8%	-3%	-14%
12/16/1986	9/4/1987	9	5.88	7.25	1.37	7.12	9.30	2.18	0.81	Much Steeper	9%	0%	-2%	0%	20%	16%	10%	6%	-8%	-4%	0%	4%	-4%	11%
5/2/1983	8/21/1984	16	8.50	11.75	3.25	10.26	12.62	2.36	(0.89)	Near Parallel	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Average:		14				2.81				(1.43)	4%	2%	0%	0%	3%	6%	8%	4%	-2%	-1%	0%	2%	-1%	3%
Median:		11				3.13				(1.21)	4%	1%	0%	0%	3%	1%	8%	1%	-1%	-2%	0%	4%	-3%	3%

Source: Factset



Apartment REITs tend to be much better relative performers when rates rise. What's more, these tables and charts don't reflect total return so the dividend would be in addition to this performance.



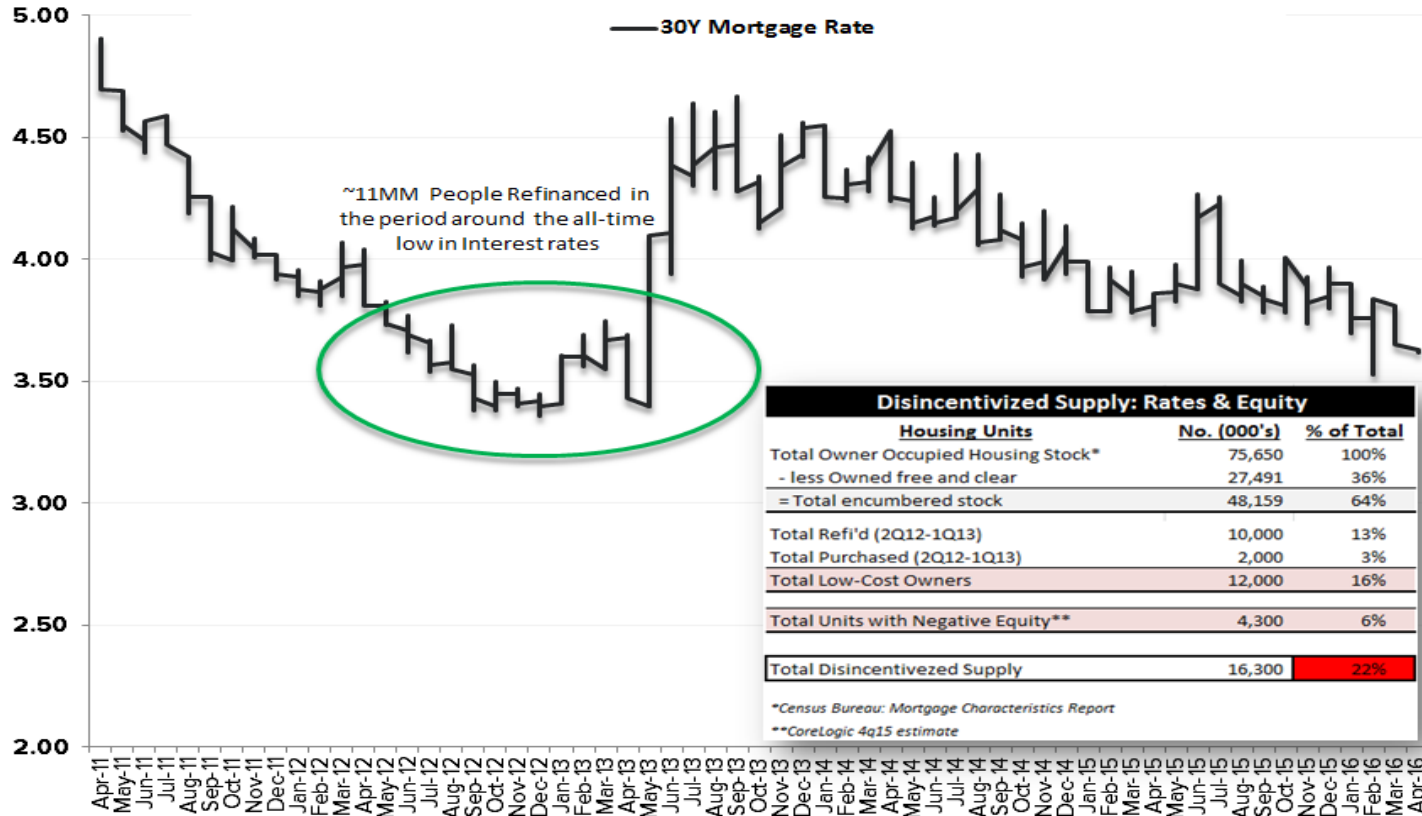
SUPPLY SIDE ECONOMICS

INVENTORY: THE WHY OF SUPPLY

- **Low Rates**
- **Negative/Low Equity**
- **Tighter Credit**
- **Home Price Spreads**
- **Demographics**
- **Investors**

SUPPLY: RATE RETICENCE

30Y Mortgage Interest Rate



The 30yr bull market in rates has come to an end, meaning that people with low rates locked in are now, on the margin, disincentivized from moving.

SUPPLY: EQUITY OVERHANG

Under Equity

Properties with less than 20 percent equity



UNDERWRITING
CONSTRAINTS MAY
MAKE IT MORE DIFFICULT
FOR UNDER-EQUITIED
BORROWERS TO OBTAIN
NEW HOME FINANCING.

18.9%

of mortgaged residential
properties are under-equited

Borrowers with less than 20-percent home equity are referred to as under-equited. Of the 46.3 million properties with a mortgage currently with equity, approximately 9.5 million, or 18.9 percent, have less than 20-percent equity.

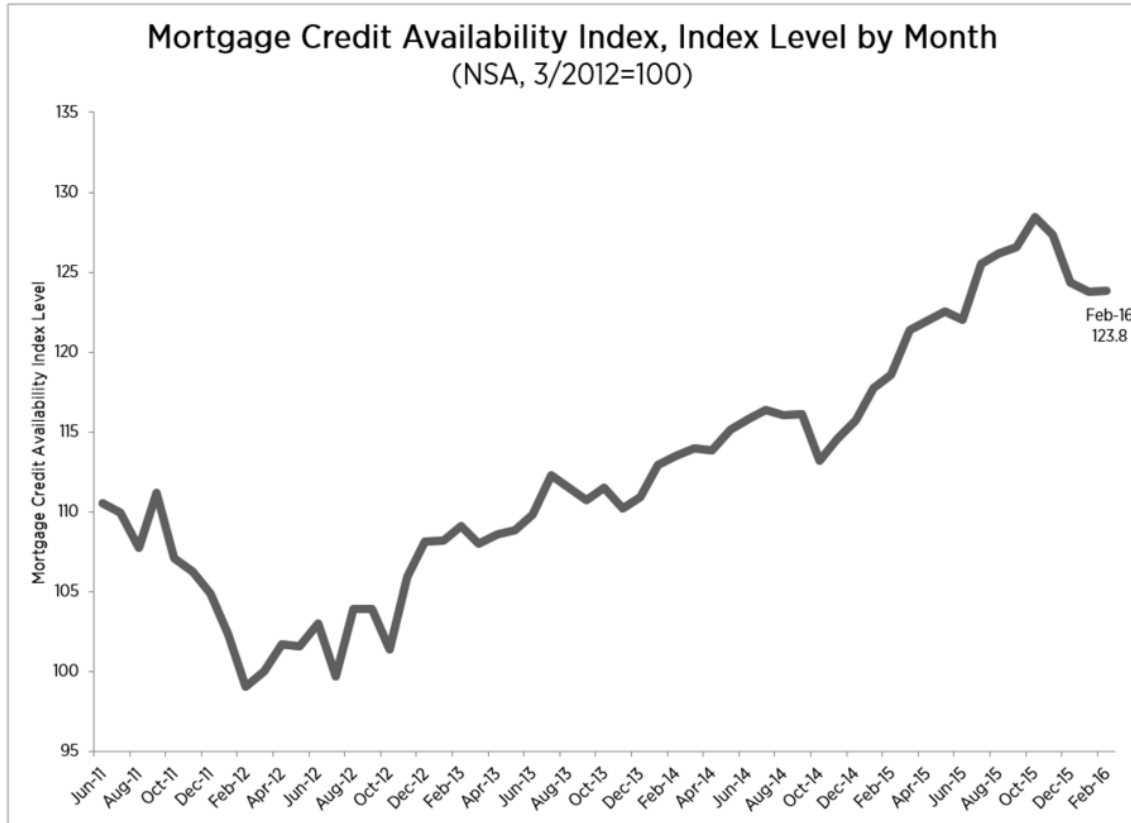
2.3%

of residential properties are
near-negative equity

Additionally, at the end of the fourth quarter, 1 million homes, or 2.3 percent, had less than 5 percent equity. This is referred to as near-negative equity, which puts these properties at risk should home prices fall.

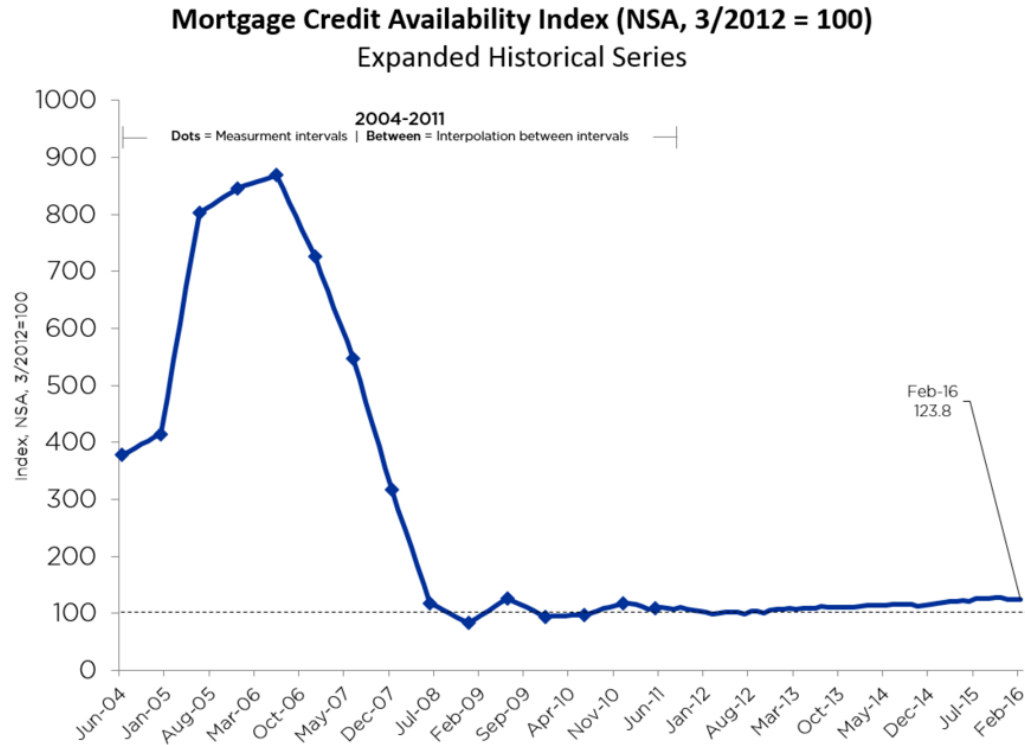
Beyond the aforementioned 16mn in supply, there's a further 9mn owners who have sub-20% equity from a combination of low down payment recent buyers and those who've recently emerged from negative equity positions.

SUPPLY: CREDIT CONSTRAINTS



Meanwhile, mortgage credit availability, which had been on a long-term upswing, recently negatively inflected.

SUPPLY: CREDIT CONSTRAINTS

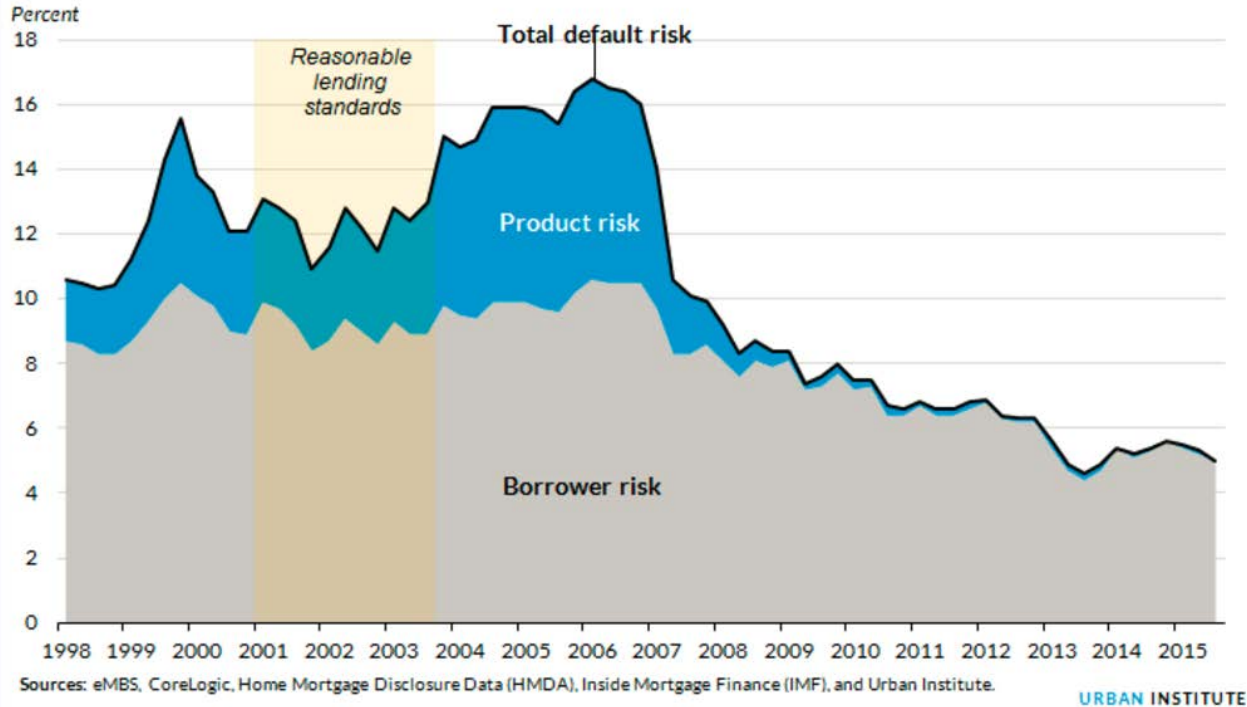


This is simply a longer-term snapshot of credit availability for some added perspective.

Source: Mortgage Bankers Association; Powered by Ellie Mae's AllRegs® Market Clarity®

SUPPLY: CREDIT CONSTRAINTS

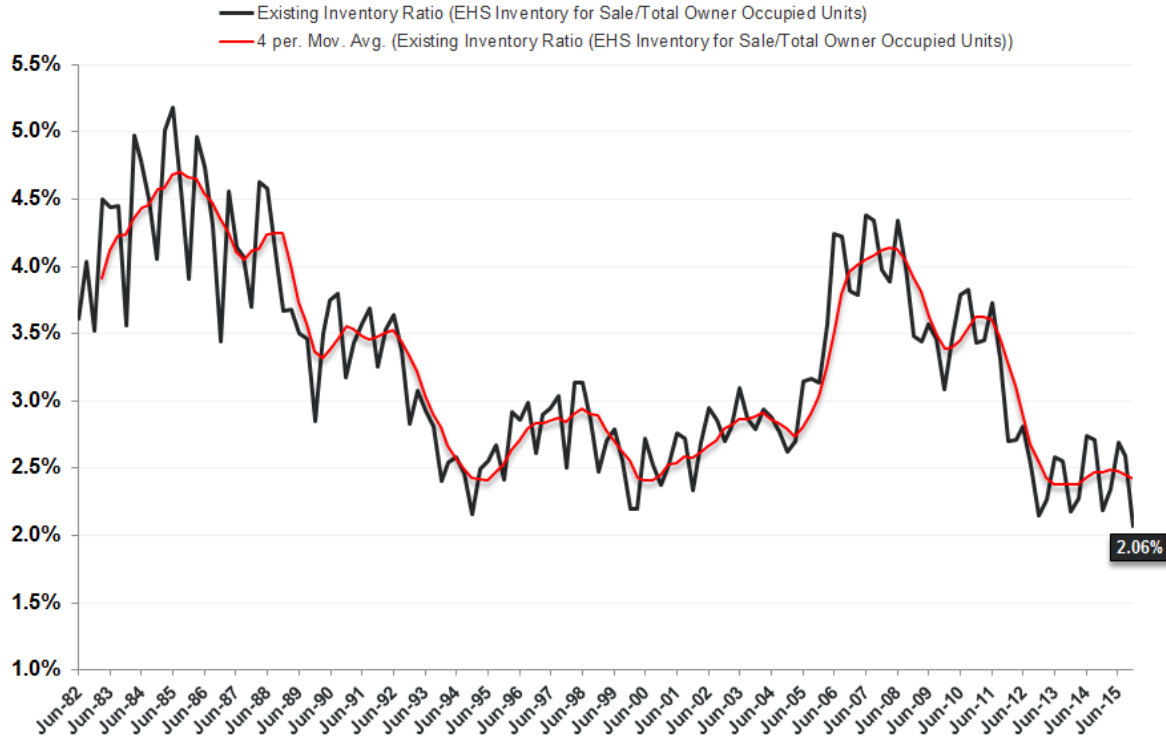
Default Risk Taken by the Mortgage Market, Q1 1998–Q3 2015



Standards remain well below long-term equilibrium.

SUPPLY: LONG-TERM LOWS

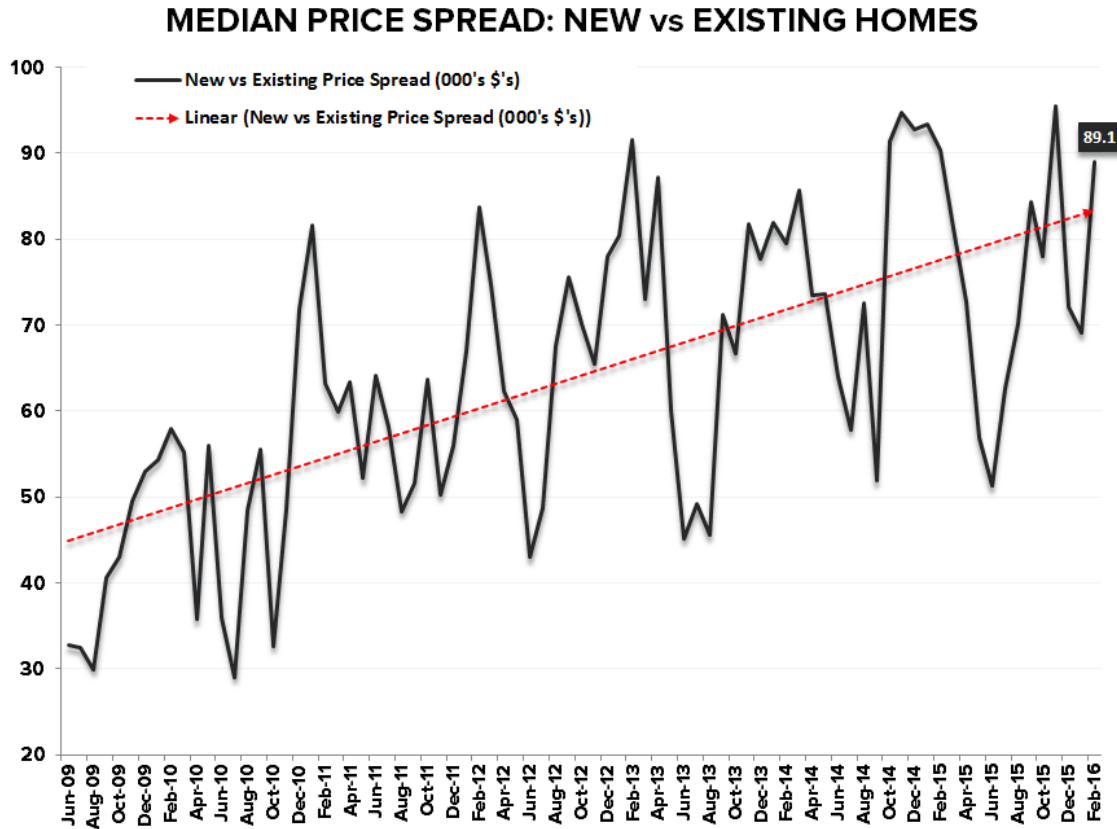
EXISTING MARKET: SINGLE-FAMILY INVENTORY RATIO



DATA SOURCE: NAR, BLOOMBERG

If we look back even further to 1982, we find that inventory is the tightest its been in almost 40 years.

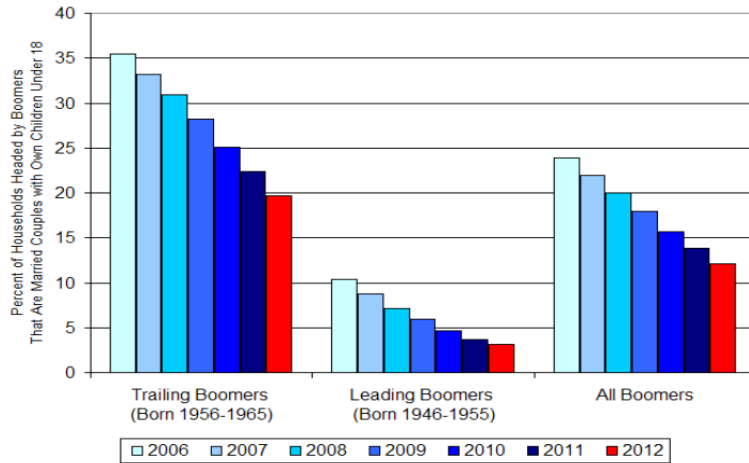
SUPPLY: PREMIUM SPREADS



New home price premiums over existing homes have increased 70-80% since 2009 vs. a ~25% price increase in existing homes. This makes it harder for entry level buyers to get in or would be trade-up buyers.

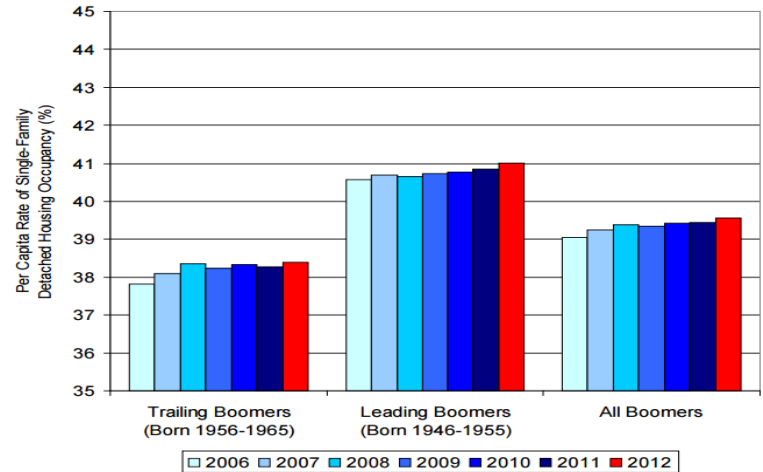
BOOMERS → AGING IN PLACE

Exhibit 1. The Nuclear Family Household Has Become Much Less Common Among Boomers



Source: U.S. Census Bureau, American Community Survey Public Use Microdata Sample

Exhibit 2. So Far, Boomers Are Staying in Single-Family Detached Homes



Source: U.S. Census Bureau, American Community Survey Public Use Microdata Sample

**BOOMERS' FAMILIES ARE
GETTING SMALLER...**

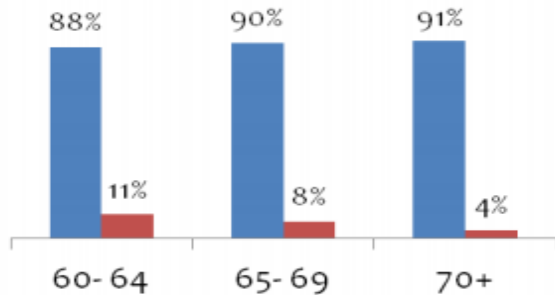


**BUT THE SHARE LIVING IN
SINGLE-FAMILY DETACHED
HOMES IS UNCHANGED**

BOOMERS → AGING IN PLACE

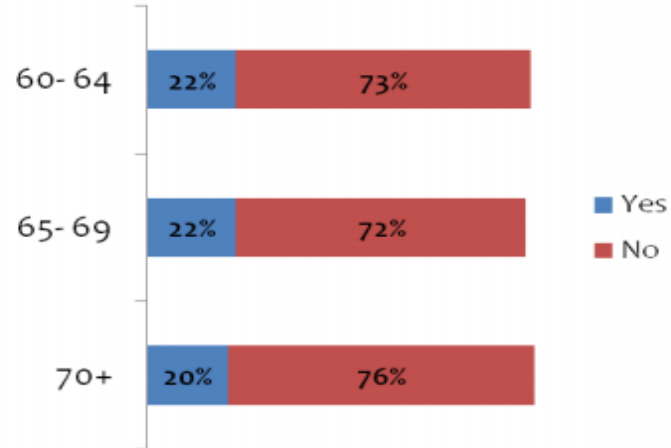
- Close to nine in 10 older Americans intend to continue living in their current homes for the next five to 10 years

Do you intend to continue living in your current home for the next five to 10 years?



If yes...

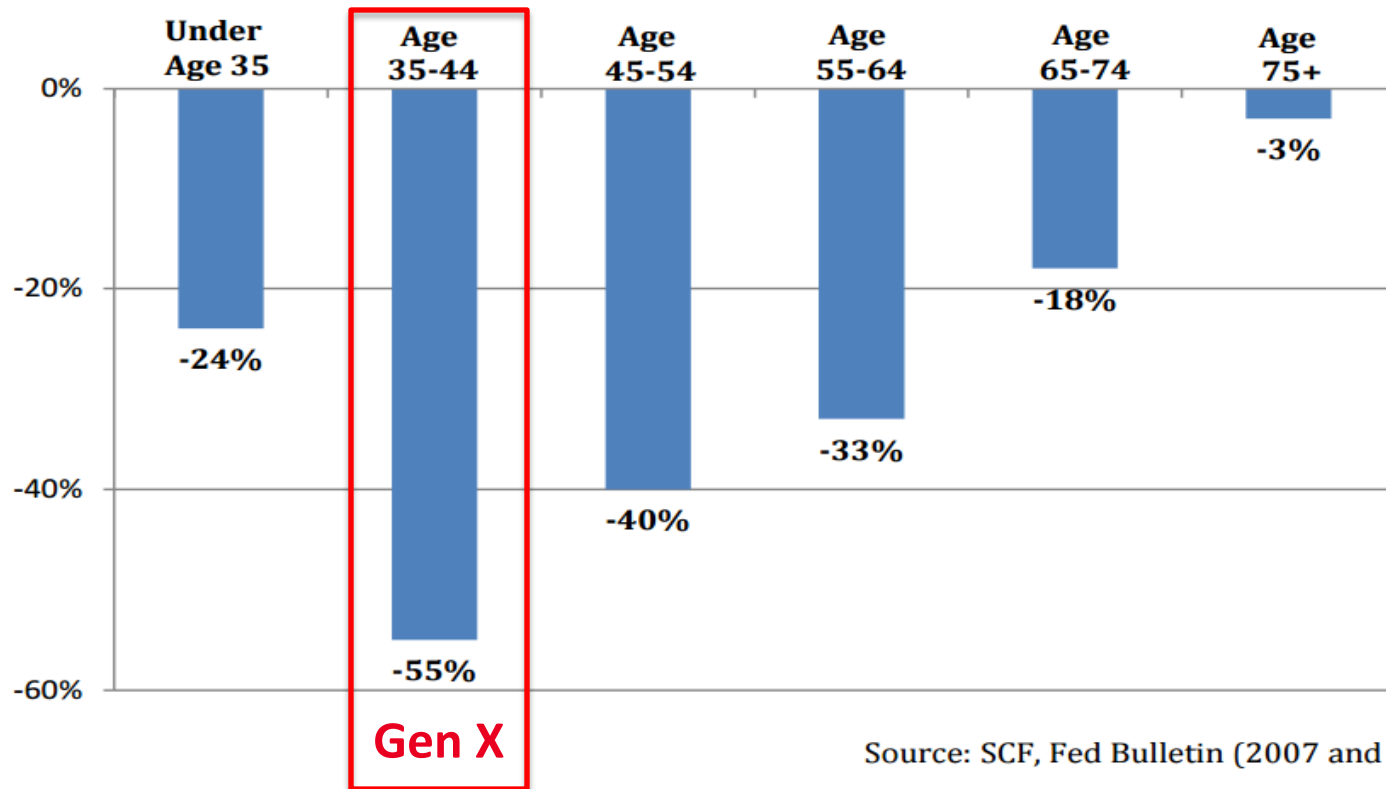
IF YES: Do you plan to make any modifications to your home to help you age in place? (N= 903)



SOURCE: AARP (2012)

GEN X IN TROUBLE

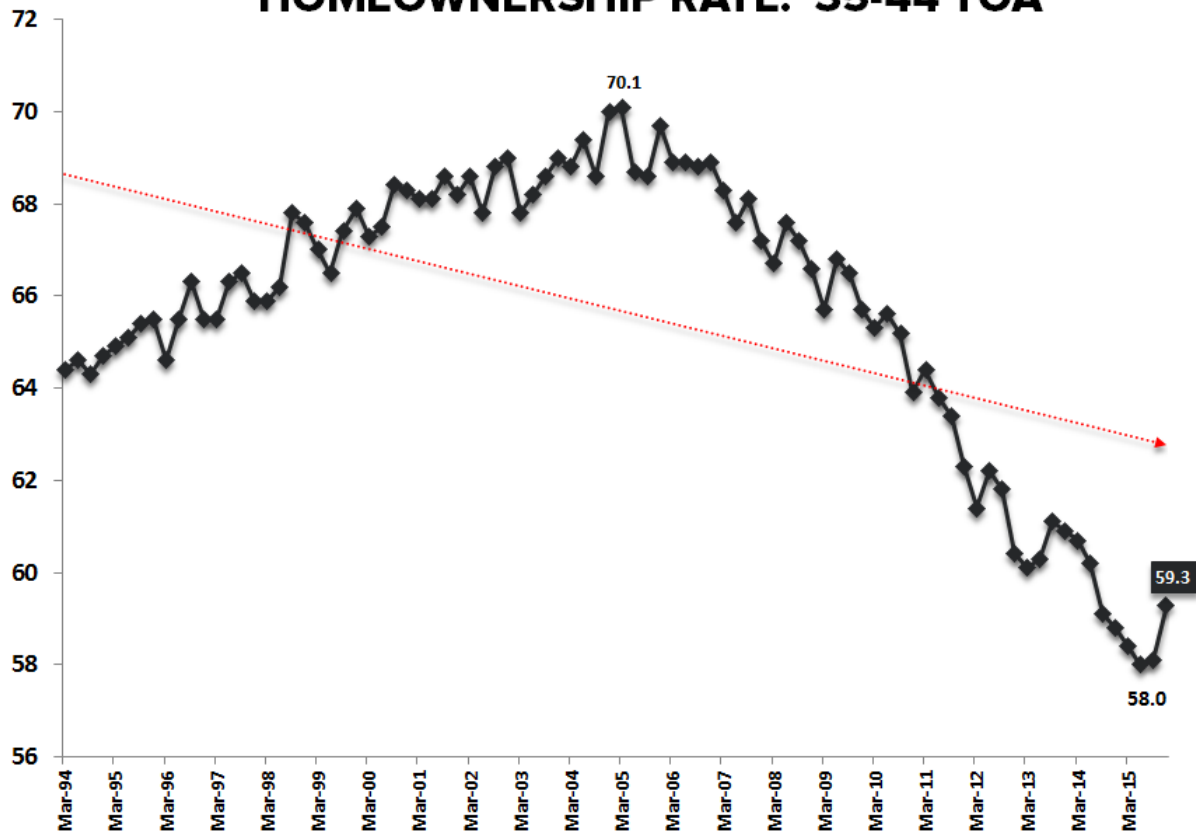
Figure 9: Change in Real Median Household Net Worth, by Age: 2007 to 2010



Source: SCF, Fed Bulletin (2007 and 2010)

GEN X IN TROUBLE

HOMEOWNERSHIP RATE: 35-44 YOA

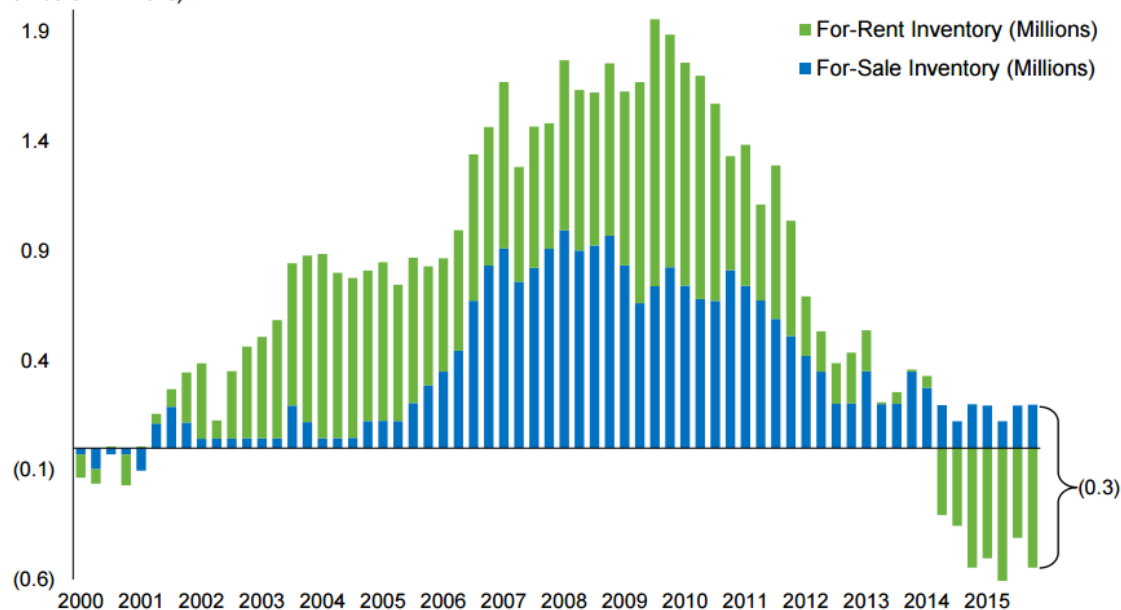


RENTAL INVENTORY → STILL NEGATIVE

Vacant housing over/undersupply



Surplus/Shortage of Vacant Homes
(Numbers in Millions)



Source: Freddie Mac calculations using U.S. Census Bureau data. Negative values reflect shortage or undersupply relative to the historical benchmark. The over/undersupply of vacant housing was estimated based on the average vacancy rate from 1994Q1 to 2003Q4. 2015 data as of December 31, 2015.

Stepped up investor activity and the conversion of single family owner occupied to rental units has created a longer-term shortage in for-rent inventory that has yet to show signs of inflecting.

FOR MORE INFORMATION, CONTACT US AT:

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