



HOUSING: 3Q18 THEMES

IS IT TIME TO GET LONG?



July 11th, 2018

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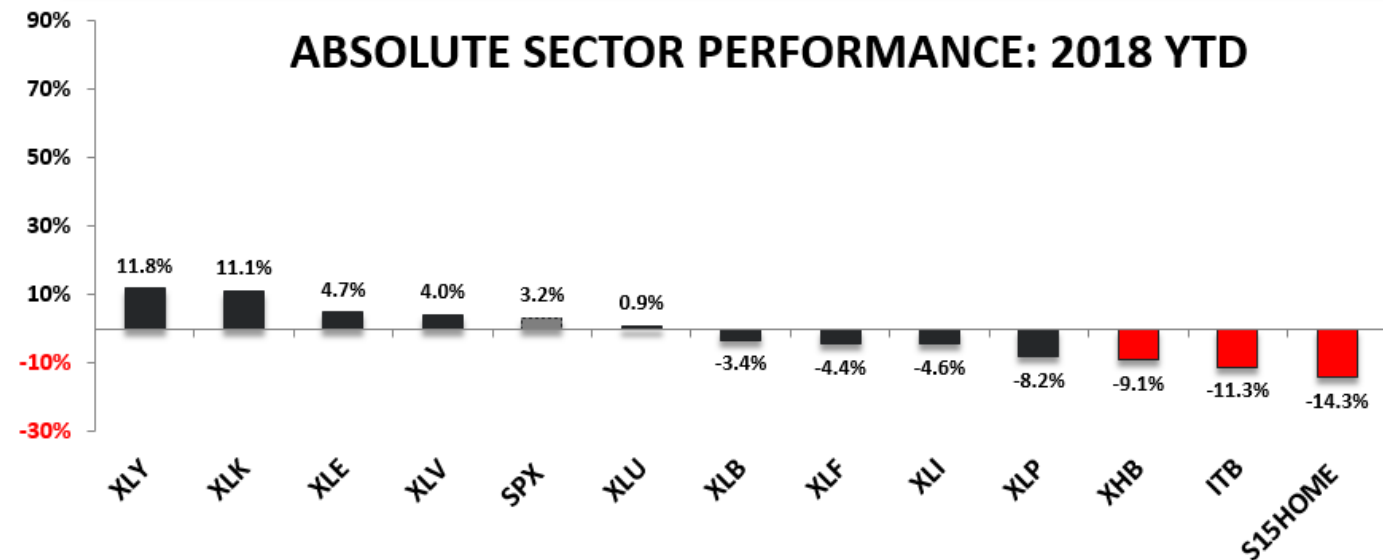
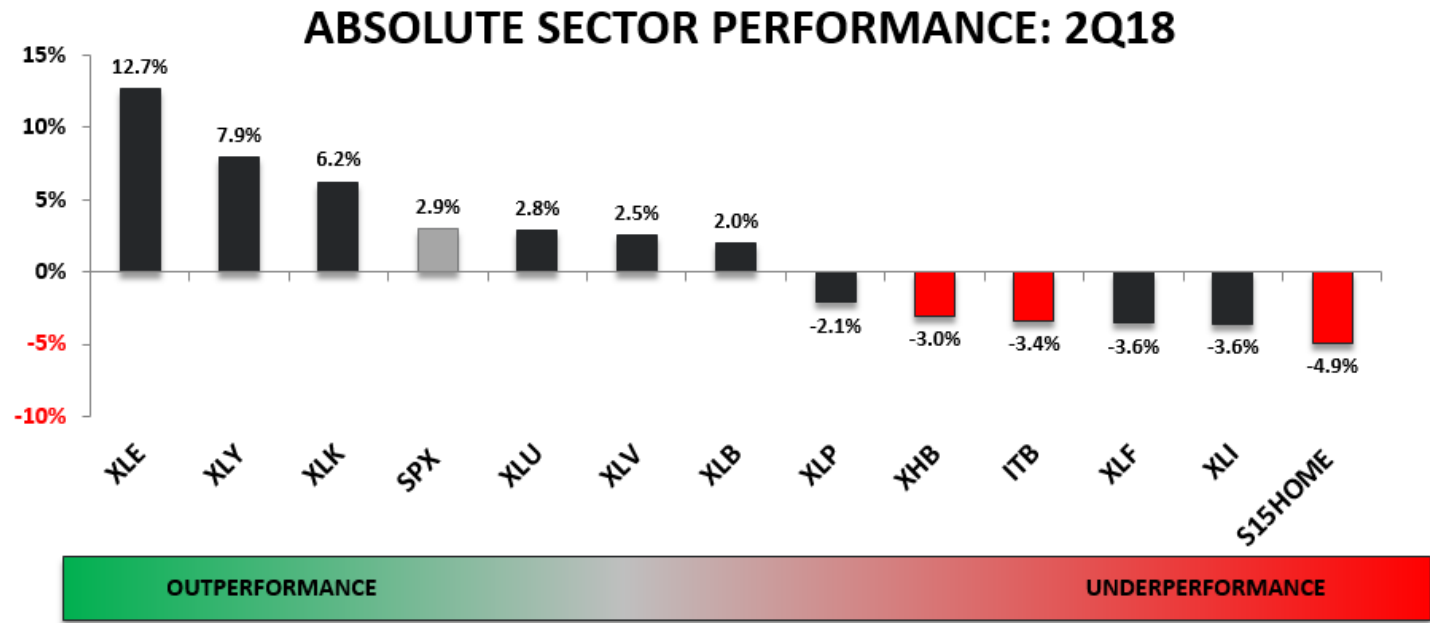
QA@HEDGEYE.COM

**ANSWERED AT THE END OF THE CALL*



SUMMARIZING THE YEAR TO DATE PERFORMANCE

PERFORMANCE: FROM FIRST TO WORST



INDUSTRY YTD PERFORMANCE: BROADLY NEGATIVE

HOUSING: SUBSECTOR PERFORMANCE

HEDGEYE HOUSING

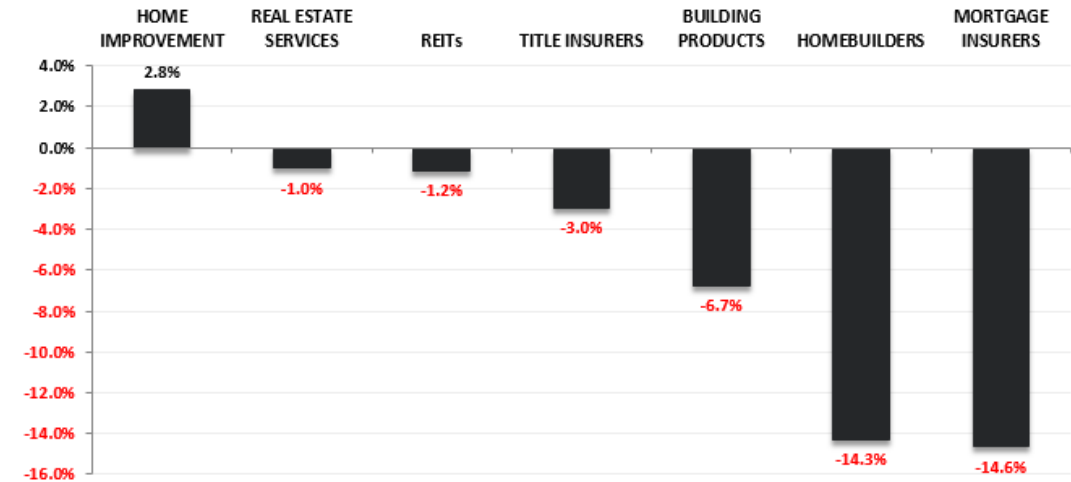
INDEX	Ticker	3Q17 % Chg	4Q17 % Chg	1Q18 % Chg	2Q18 % Chg	2018 YTD % Chg
S&P 500	SPX	4.0%	6.1%	-1.2%	2.9%	3.2%
HOMEBUILDERS						
S&P Homebuilder Index	\$15HOME	9.2%	23.9%	-11.2%	-4.9%	-14.3%
	Relative	5.2%	17.8%	-10.0%	-7.9%	-17.5%
BUILDING PRODUCTS						
S&P Building Products Index	\$15BUILX	-0.7%	2.6%	-5.4%	-4.2%	-6.7%
	Relative	-4.6%	-3.5%	-4.2%	-7.1%	-10.0%
HOME IMPROVEMENT						
S&P Home Improvement Index	\$5HOMI	5.7%	16.0%	-5.9%	9.3%	2.8%
	Relative	1.7%	9.9%	-4.6%	6.4%	-0.4%
REITs						
Apartment REITs*	.REIT U Index	-0.2%	-1.8%	-6.2%	4.9%	-1.2%
	Relative	-4.1%	-8.0%	-5.0%	2.0%	-4.4%
REAL ESTATE SERVICES						
Real Estate Services*	.RESRVCs U Index	7.4%	-21.4%	12.3%	-14.9%	-1.0%
	Relative	3.5%	-27.5%	13.6%	-17.8%	-4.2%
MORTGAGE INSURERS						
Mortgage Insurers*	.MI U Index	11.8%	14.9%	-5.2%	-12.9%	-14.6%
	Relative	7.8%	8.8%	-4.0%	-15.8%	-17.9%
TITLE INSURERS						
Title Insurers*	.TI U Index	-1.0%	12.9%	3.5%	-6.8%	-3.0%
	Relative	-4.9%	6.8%	4.8%	-9.8%	-6.2%
SUBSECTOR AVE						
	Abs	4.6%	6.7%	-2.6%	-4.2%	-5.4%
	Relative	0.6%	0.6%	-1.4%	-7.1%	-8.7%

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

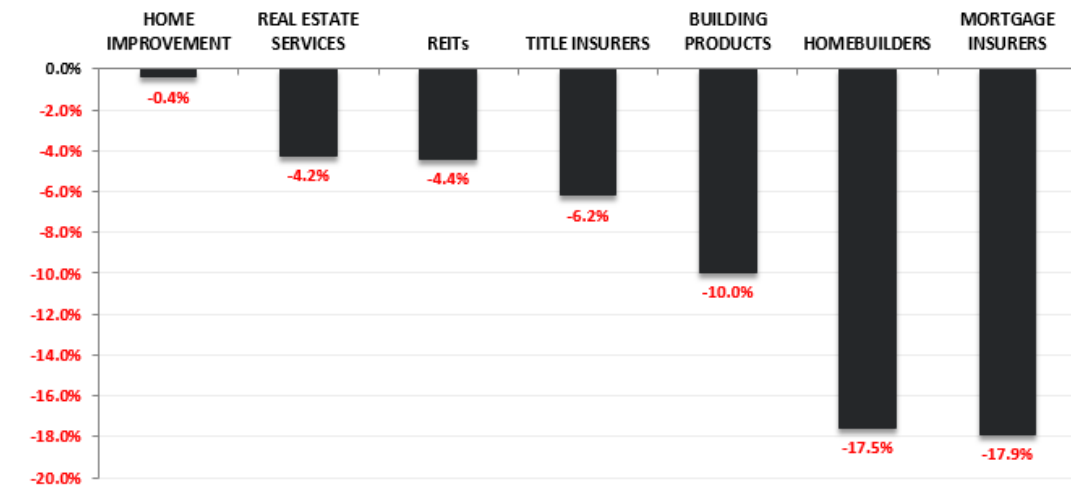
Source: Bloomberg, HEDGEYE

2018 YTD PERFORMANCE

ABSOLUTE



RELATIVE





WHY?

RATES ARE GOING

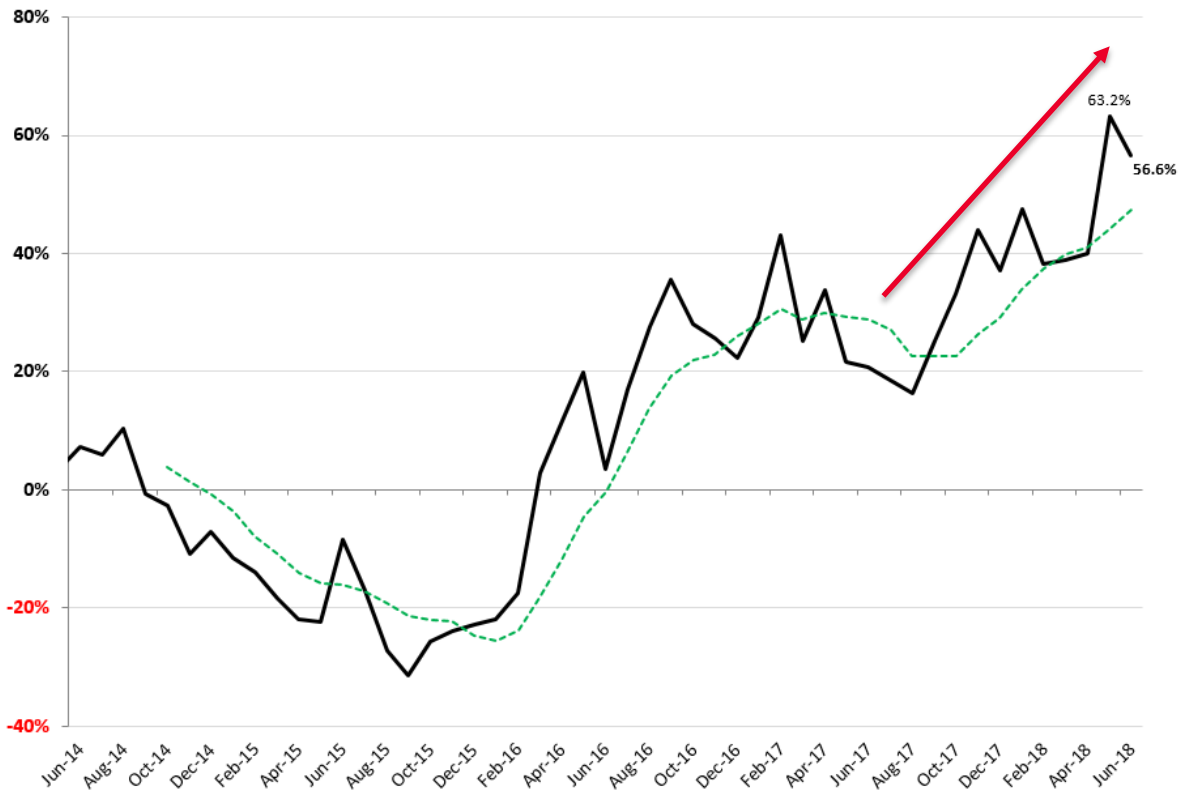
Primary Mortgage Market Survey®

U.S. weekly averages as of 07/05/2018

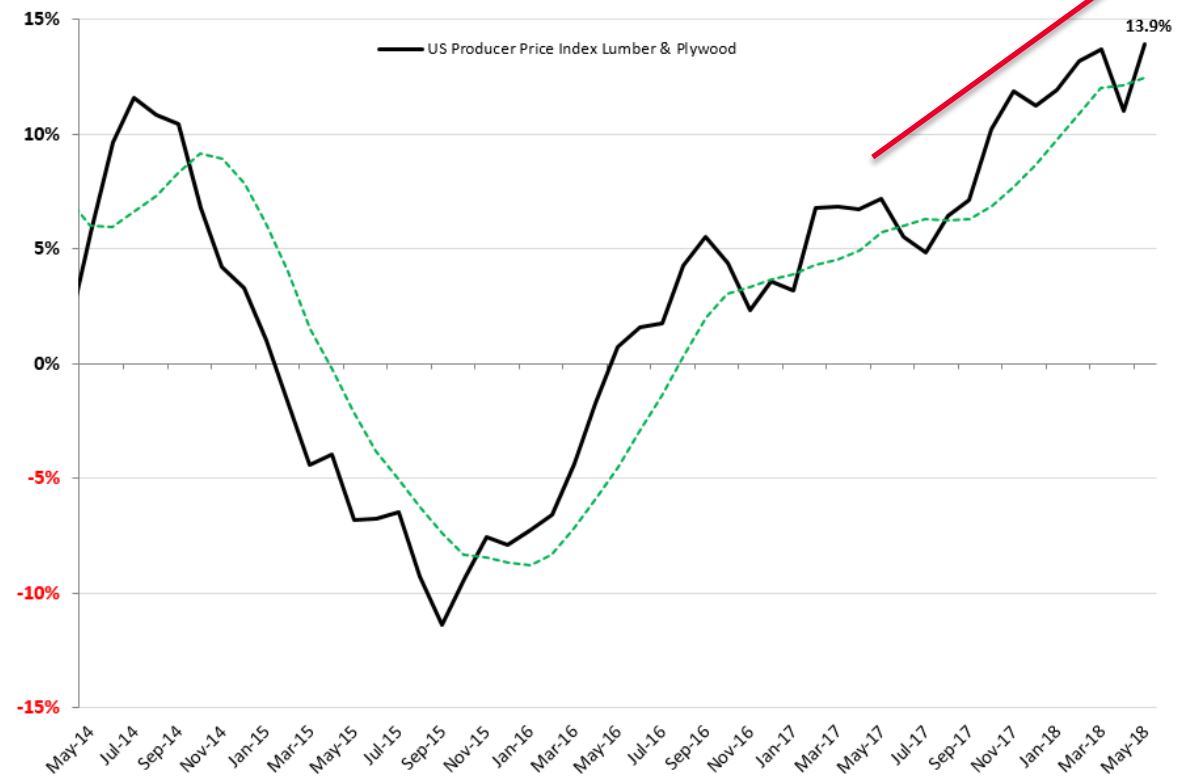


LUMBER PRICES ARE GOING

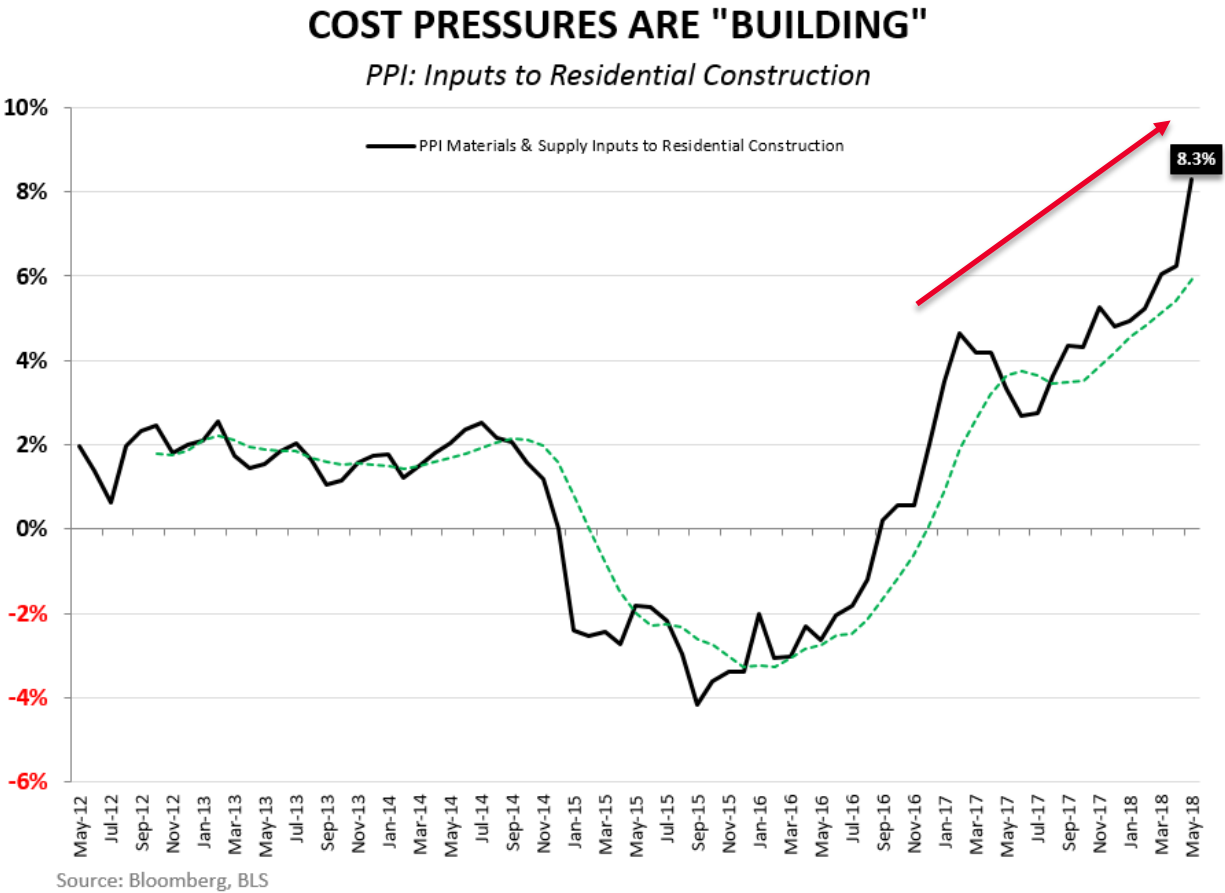
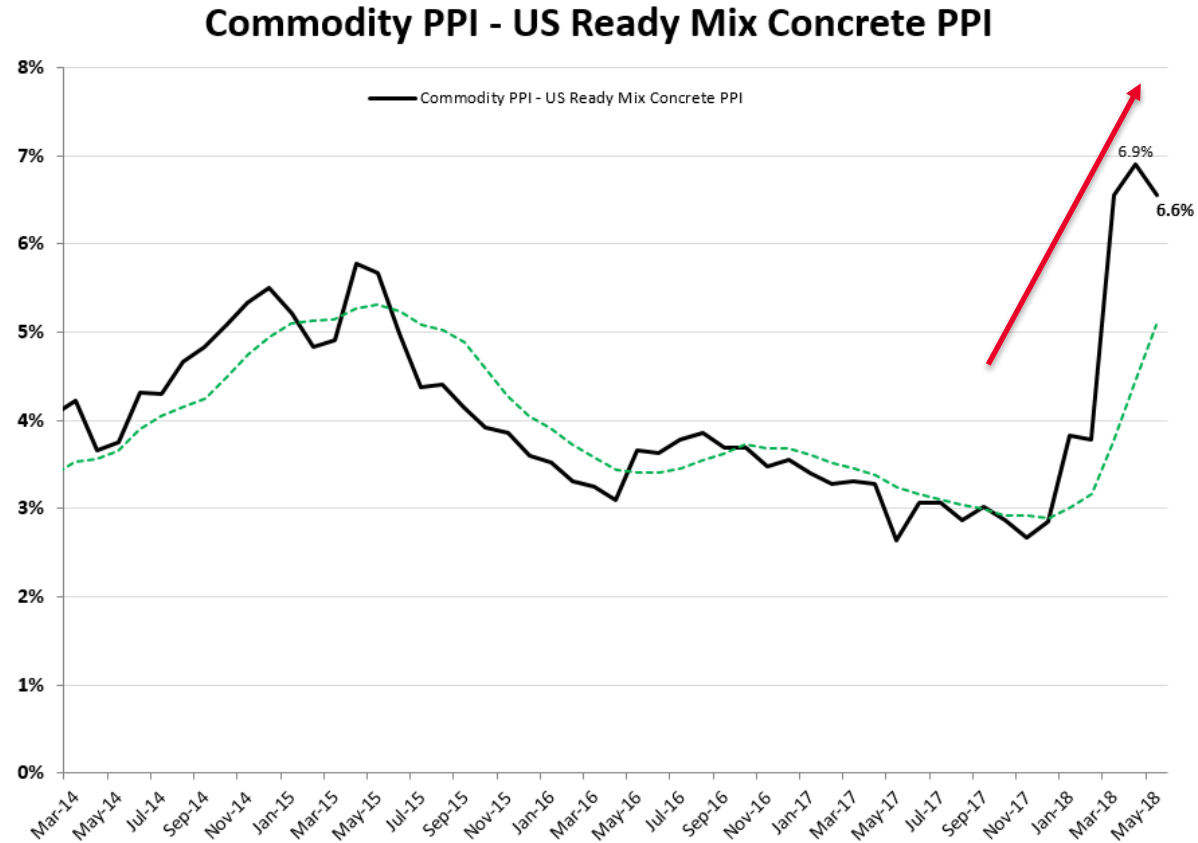
CME Lumber Futures



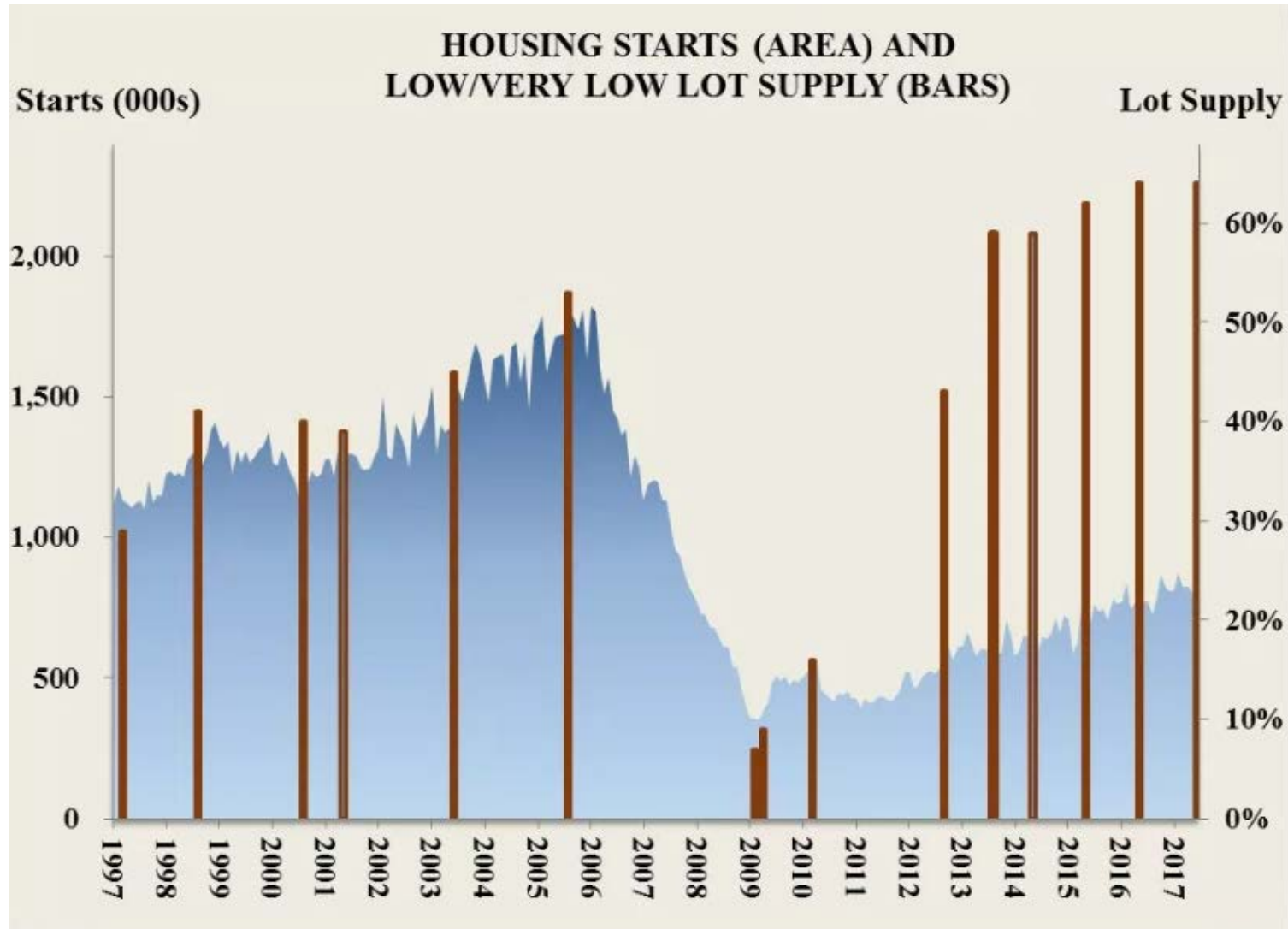
US Producer Price Index Lumber & Plywood, Y/Y %



CONCRETE & COMMODITY INPUT PRICES ARE GOING

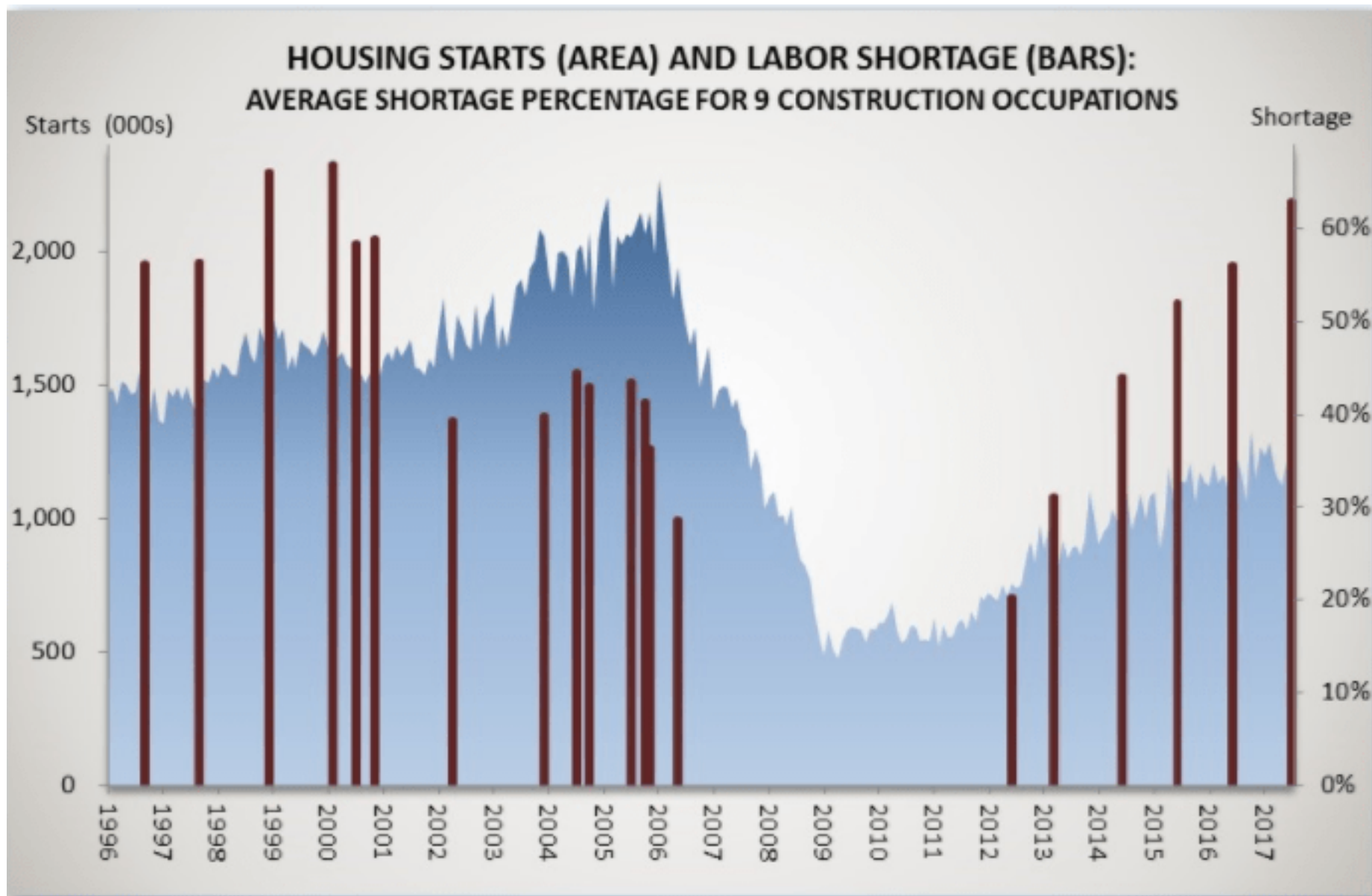


LOT SUPPLY SHORTAGE: HOLDING AT THE ATH



The share of builders reporting lot shortages remained at a 17-year high again in 2017.

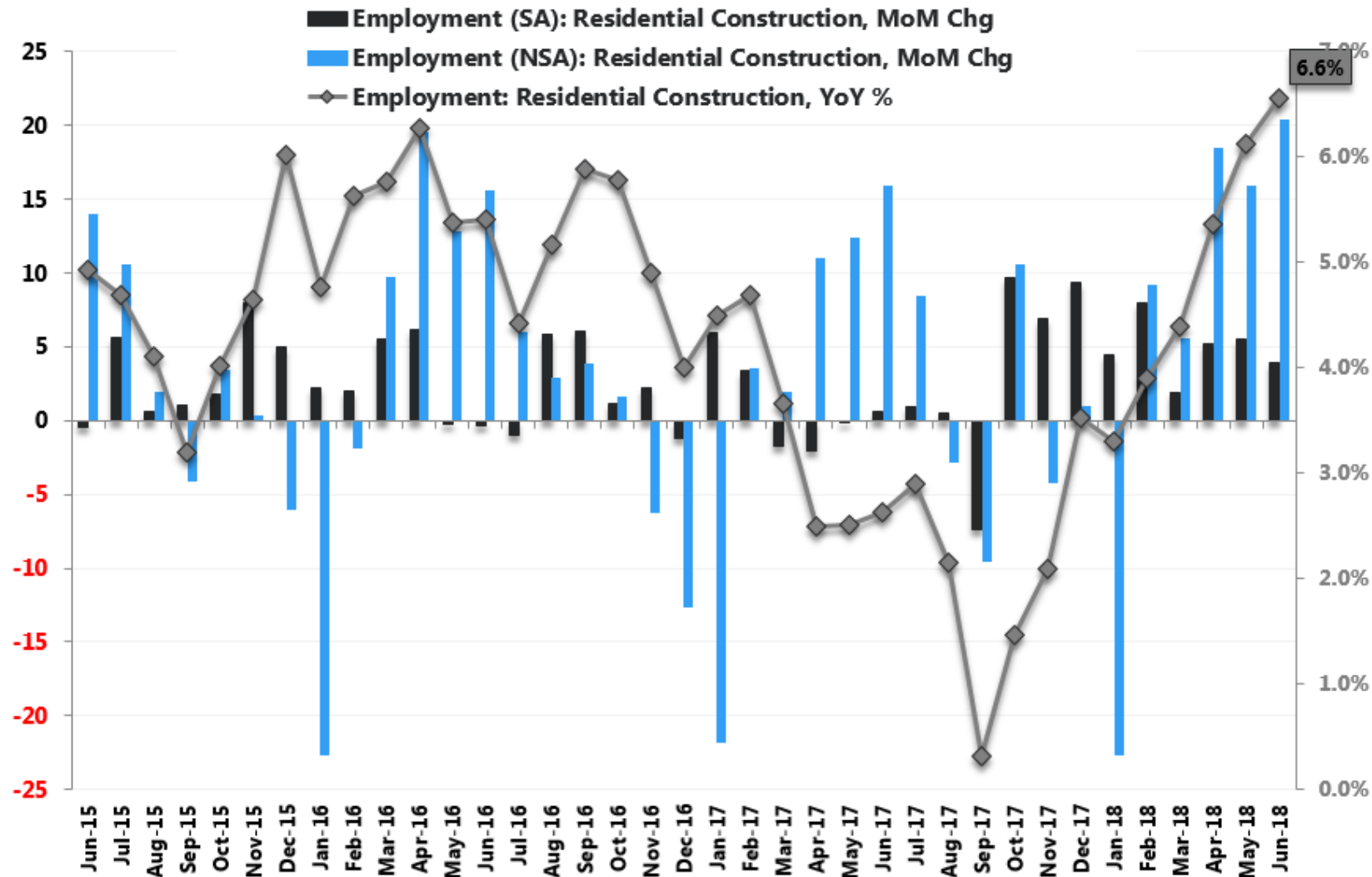
LABOR SUPPLY SHORTAGE: 17 YEAR HIGHS



The share of builders reporting labor shortages rose again in 2017 and currently sits at its highest level since 2000/2001.

RESI CONSTRUCTION EMPLOYMENT = ACCELERATING

RESIDENTIAL CONSTRUCTION EMPLOYMENT



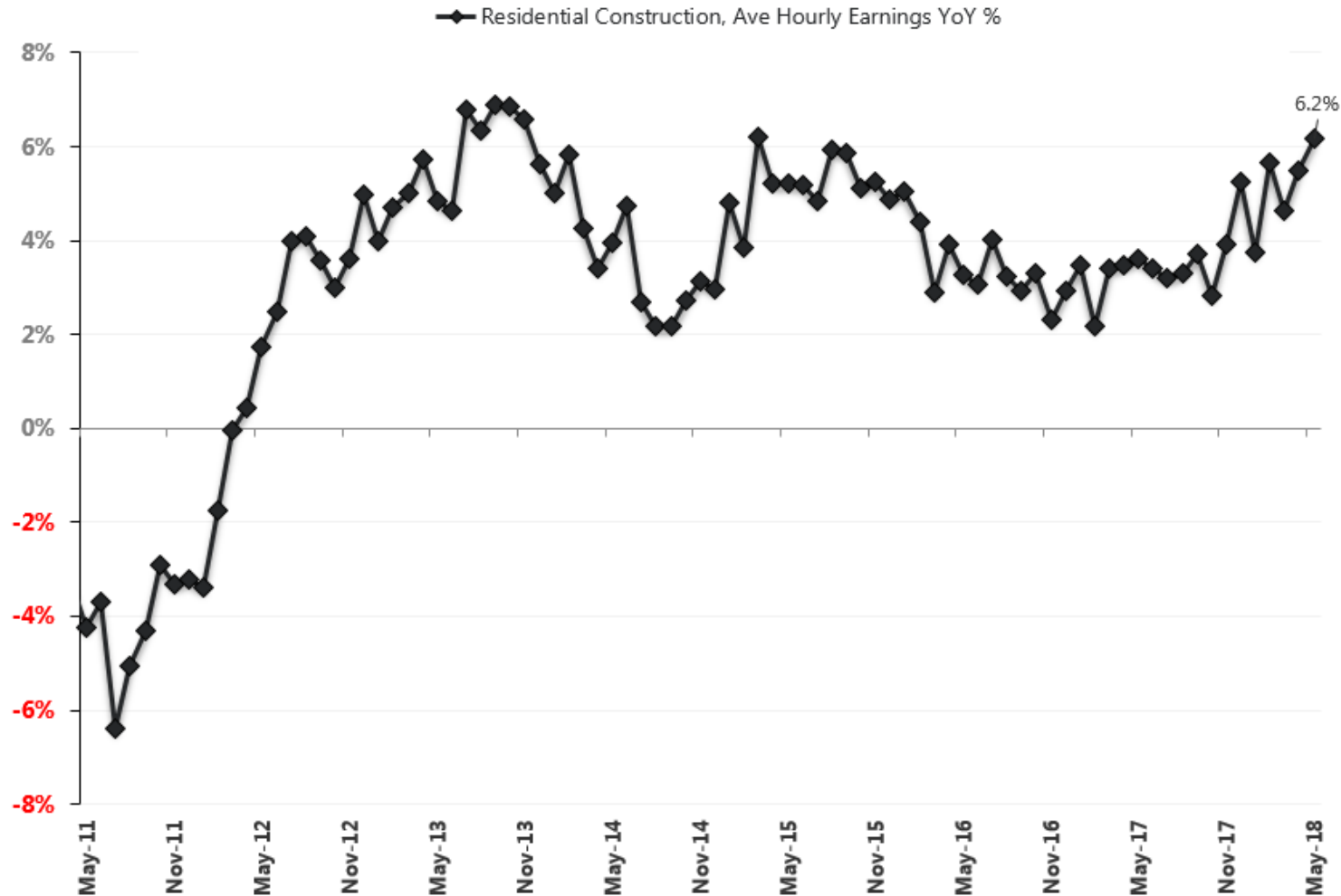
DATA SOURCE: BLOOMBERG, HRM

Residential Construction payroll growth continues to accelerate alongside still strong demand and a continued supply-demand imbalance.

At +6.6% Y/Y in the latest month, resi construction industry employment growth is running at a steep premium to the national average.

RESI CONSTRUCTION WAGE GROWTH = ACCELERATING

RESI CONSTRUCTION: AVE HOURLY EARNINGS



DATA SOURCE: BLOOMBERG, HEDGEYE

At +6.2% Y/Y in the latest month, resi construction industry wage growth is running at a large positive spread to the national average at +2.7% Y/Y.

Accelerating Employment and Wage growth carry varying implications.

On the one hand, it represents a continued renormalization in the construction labor market and will help bring supply to market. On the other hand, the magnitude of wage growth sits as another margin headwind layered atop higher regulatory, land and commodity input costs.



RECENT TRENDS – EXISTING HOMES

THE COMPENDIUM: A MIXED BAG

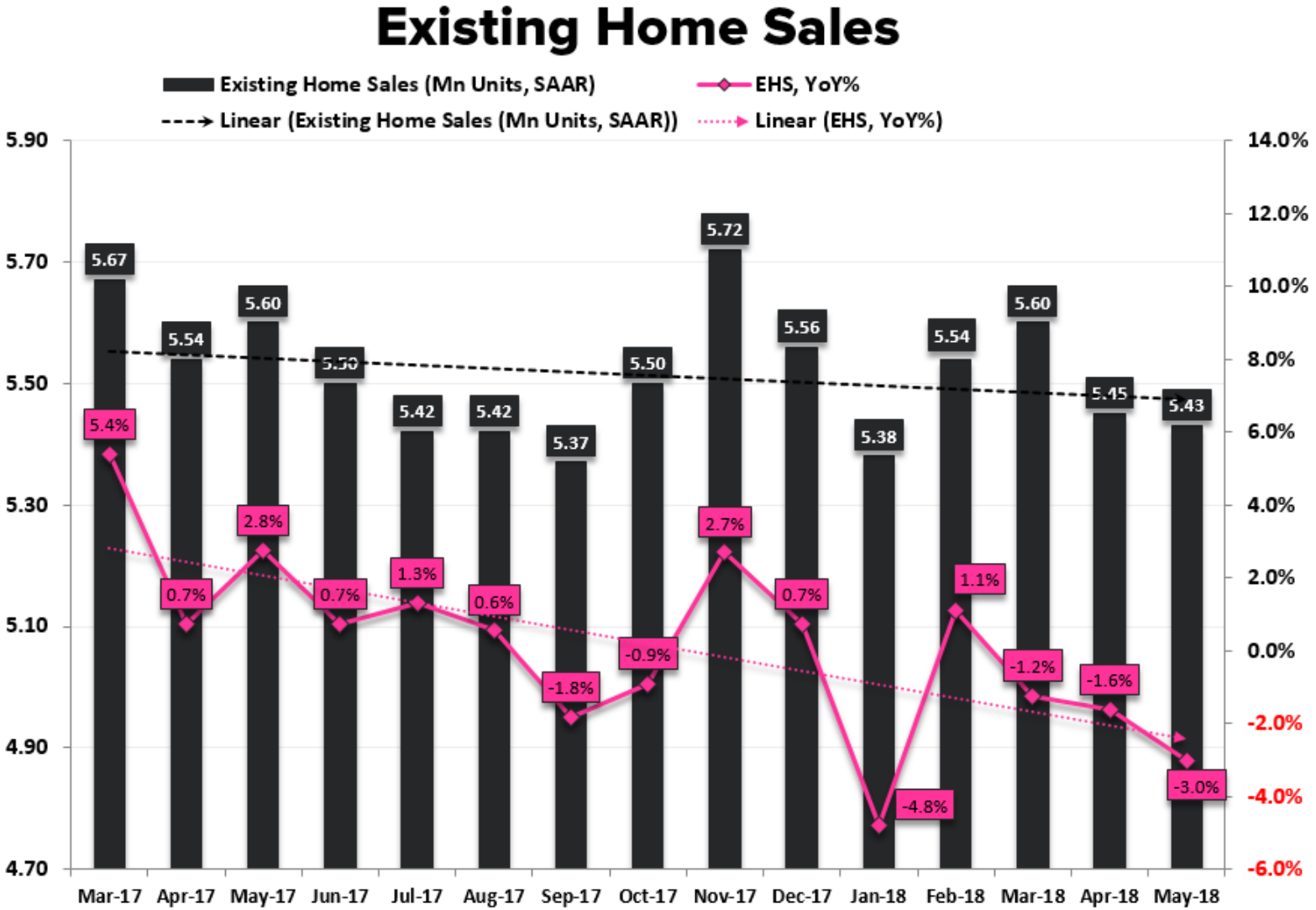
HEDGEYE HOUSING COMPENDIUM

					TRADE/TREND/TAIL			Rate of Change		
					Most Recent Data			Short Term	Intmed Term	Long Term
					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	Apr-18	Worse	6.6%						
	Case-Shiller 20 City HPI MoM SA	Apr-18	Worse	0.2%						
	Corelogic HPI - NSA YoY % Chg	Mar-18	Better	6.7%						
	Corelogic (Ex-Dist.) HPI - NSA YoY % Chg	Mar-18	Better	6.2%						
	FHFA HPI - NSA YoY % Chg	Apr-18	Worse	6.4%						
Supply & Demand: Existing	MBA Purchase Apps Index (Mo. Ave)	Jun-18	Better	250.9						
	NAR: Pending Home Sales (Index)	May-18	Worse	105.9						
	NAR: Existing Home Sales (SAAR)	May-18	Worse	5.43						
	NAR: Existing Home Inv. (millions units)	May-18	Worse	1.85						
	NAR: Existing Home Inv: Months Supply	May-18	Worse	4.09						
Supply & Demand: New Homes	NAHB: HMI	Jun-18	Worse	68						
	Census: Total Starts	May-18	Better	1350						
	Census: SF Starts	May-18	Better	936						
	Census: Total Permits	May-18	Worse	1301						
	Census: SF Permits	May-18	Worse	844						
	Resi Construction Spending (in Billions)	Apr-18	Better	563						
	Census: New Home Sales	May-18	Better	689						
	Census: New Home Inventory (000)	May-18	Worse	298						
Miscellaneous	Interest Rates (30 Year FRM)	Jun-18	Better	4.79%						
	NAR: Affordability Index (Composite)	Apr-18	Worse	145.8						
	ITB Price (EOP)	Jun-18	Better	39.58						
	XHB Price (EOP)	Jun-18	Better	40.69						

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

HEDGEYE

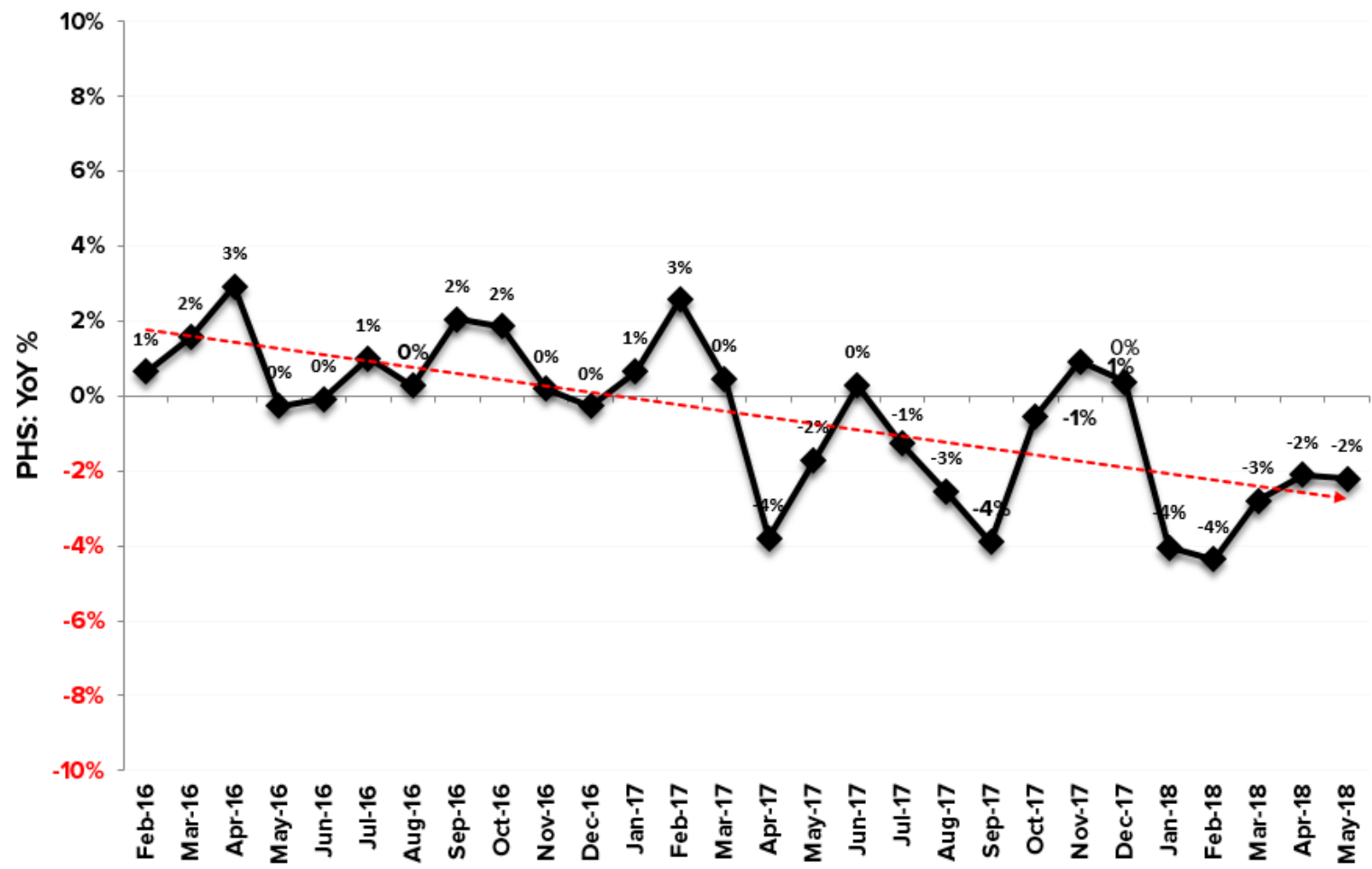
EXISTING HOME SALES VOLUME ↓



DATA SOURCE: NAR, BLOOMBERG

PENDING HOME SALES VOLUME ↓

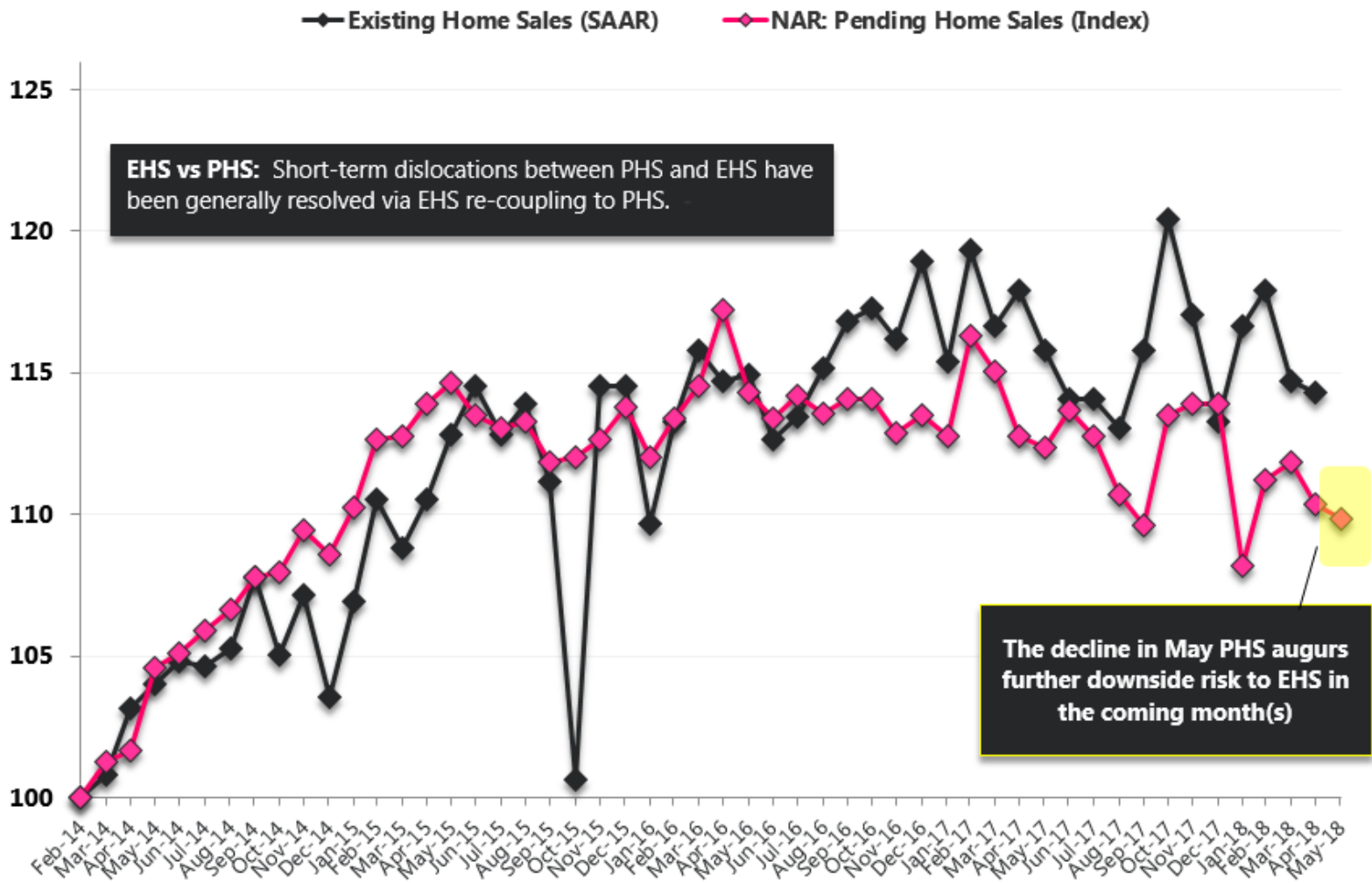
PENDING HOME SALES



DATA SOURCE: BLOOMBERG, NATIONAL ASSOCIATION OF REALTORS

FURTHER NEAR-TERM EHS DOWNSIDE SEEMS LIKELY

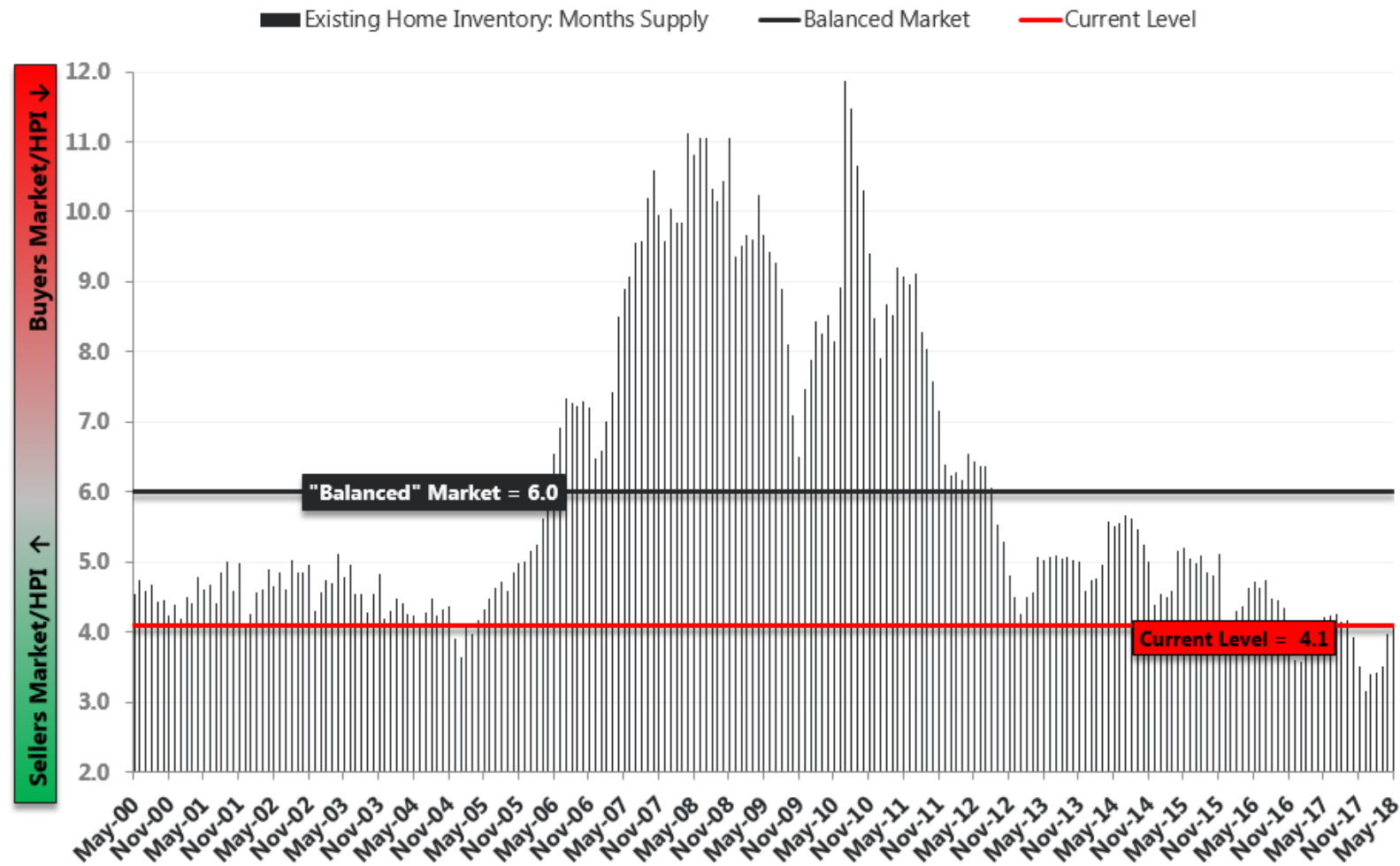
EXISTING HOME SALES (1-MO LAG) VS PENDING HOME SALES, SAAR
GAIN SINCE FEBRUARY 2014 TROUGH



DATA SOURCE: NAR, BLOOMBERG, HEDGEYE

SUPPLY SHORTAGES REMAIN THE CAUSAL FACTOR

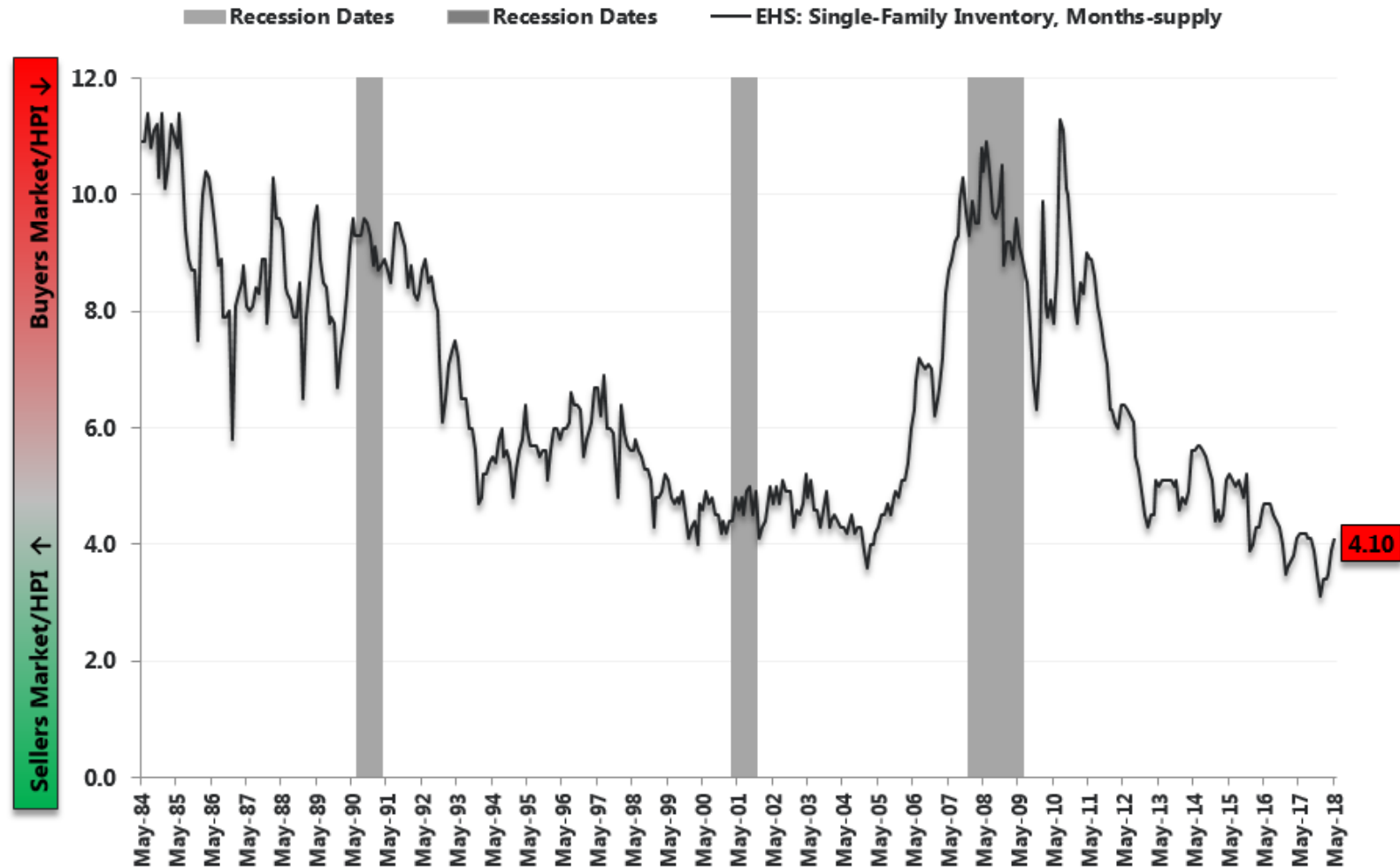
EXISTING HOME INVENTORY: MONTHS SUPPLY



DATA SOURCE: NAR, BLOOMBERG

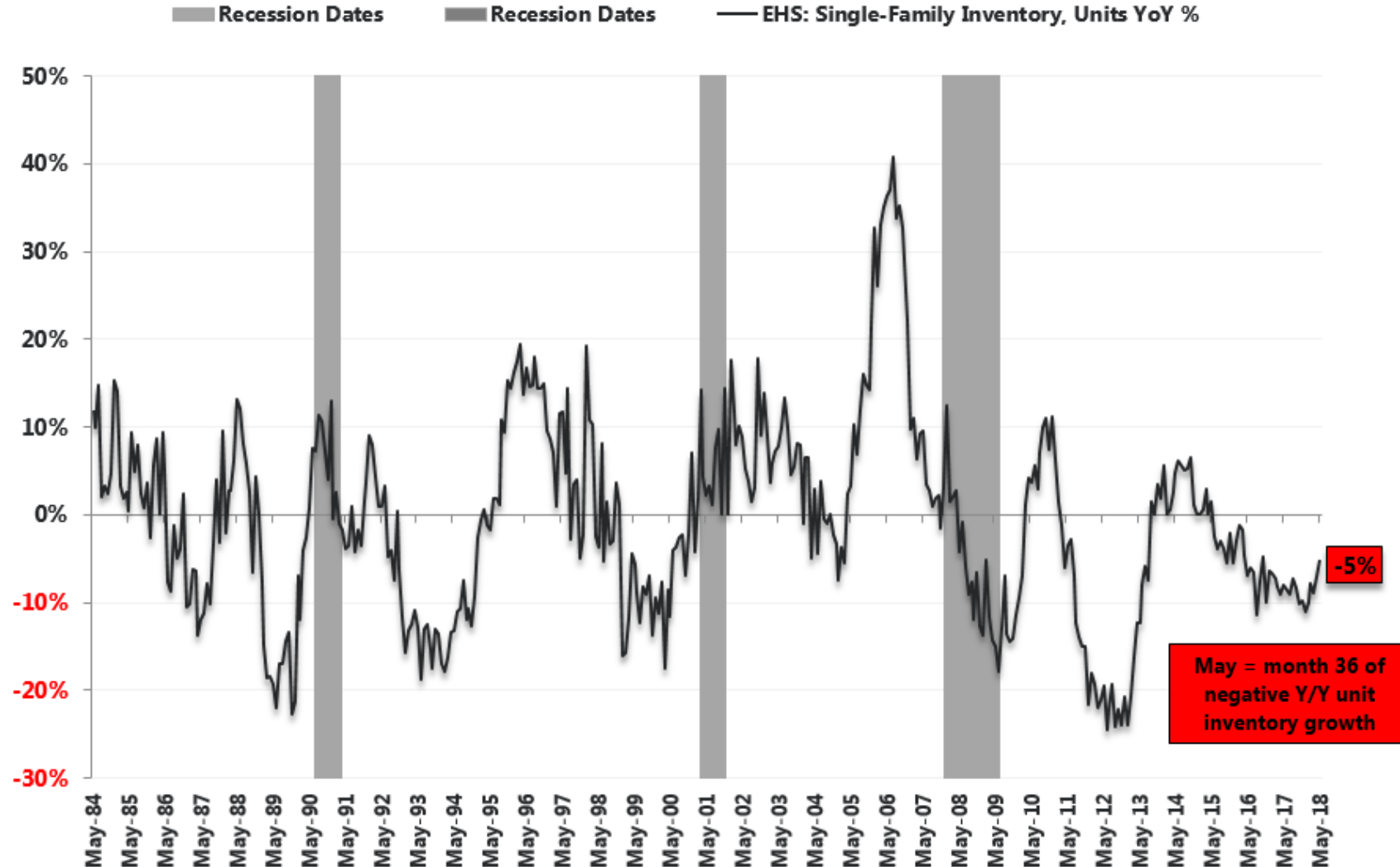
ALL TIME (LOWS) IS A LONG TIME

INVENTORY: SINGLE-FAMILY EXISTING HOMES

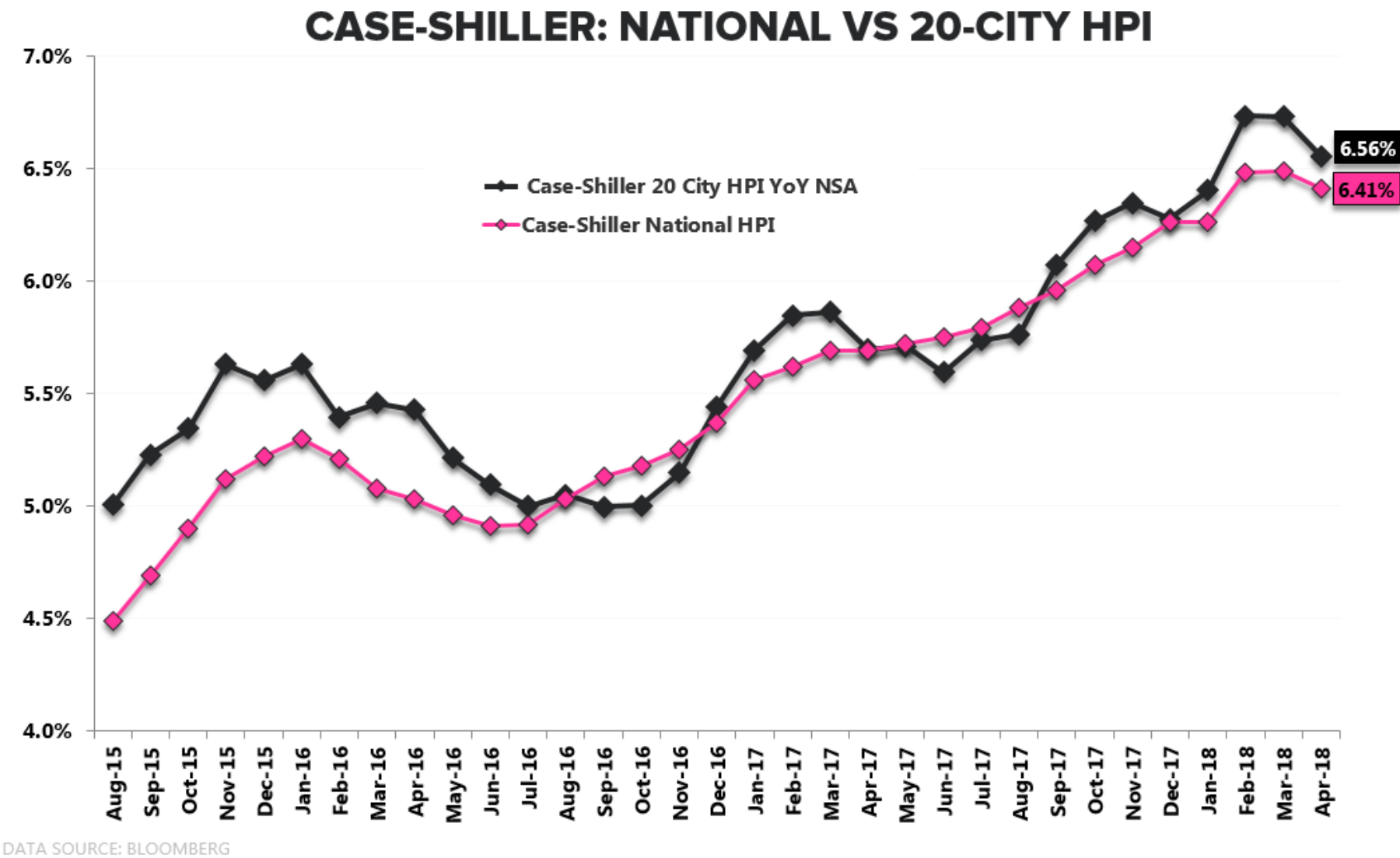


ALTHOUGH RATE OF CHANGE IS IMPROVING ON THE MARGIN

INVENTORY: SINGLE-FAMILY EXISTING HOMES

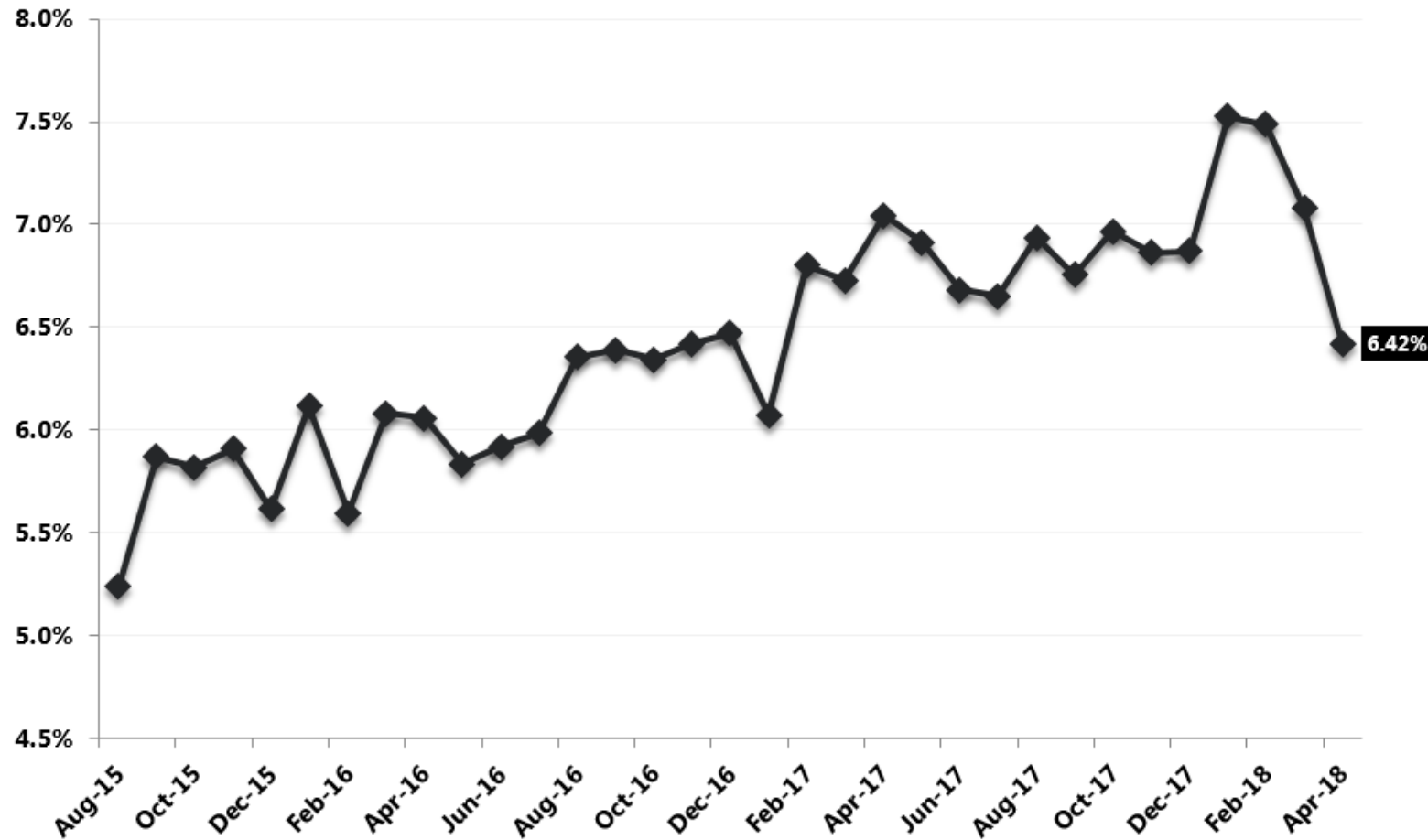


HOME PRICES SHOW RECENT SIGNS OF MODEST COOLING



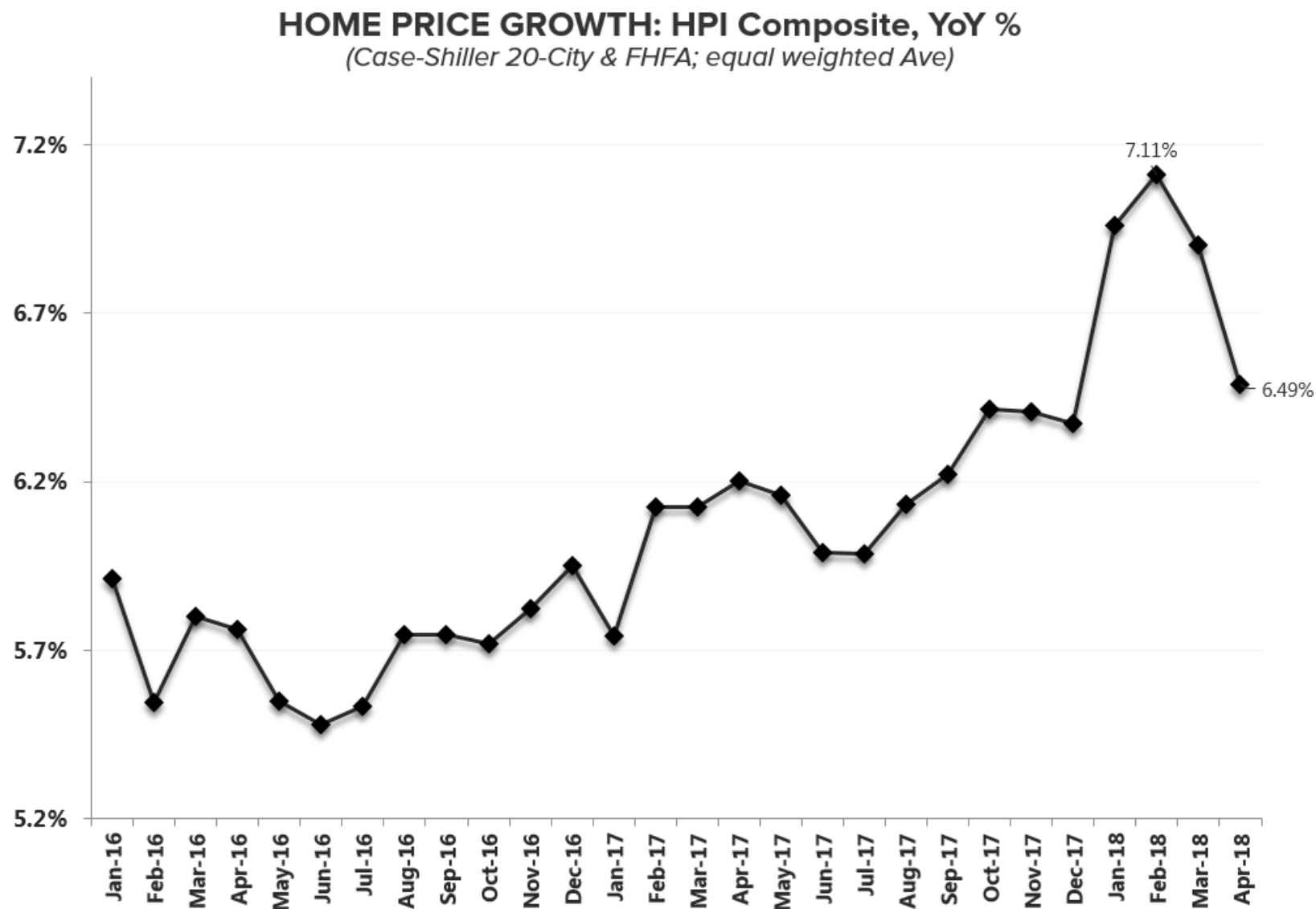
THE CONFORMING MARKET SHOWS THE SAME TREND

HPI: FHFA (NSA) Y/Y %



DATA SOURCE: BLOOMBERG

A HYBRID LOOK AT FHFA & CASE-SHILLER Y/Y TOGETHER



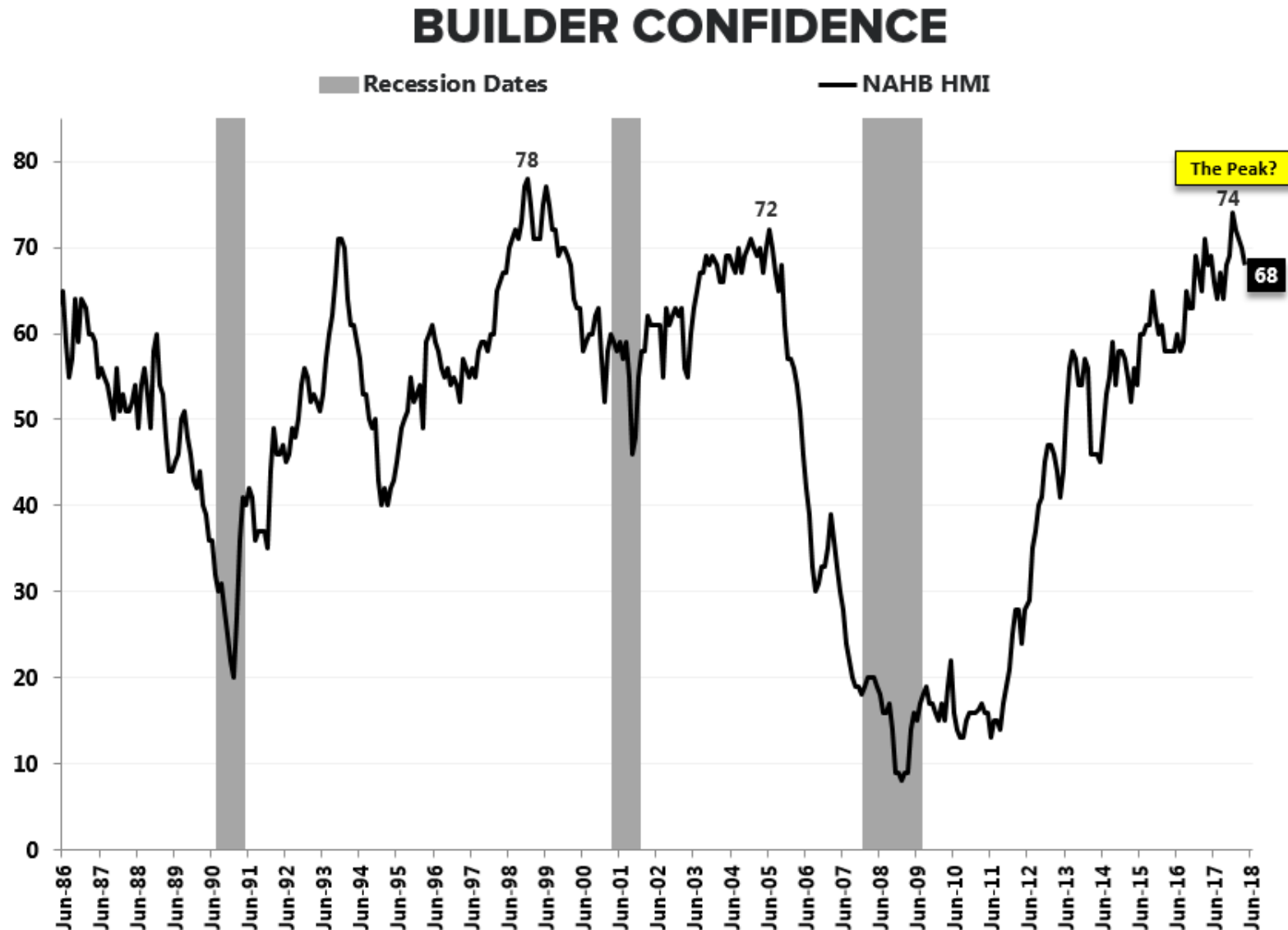
DATA SOURCE: CASE SHILLER, FHFA, BLOOMBERG,HEDGEYE



RECENT TRENDS – NEW HOMES

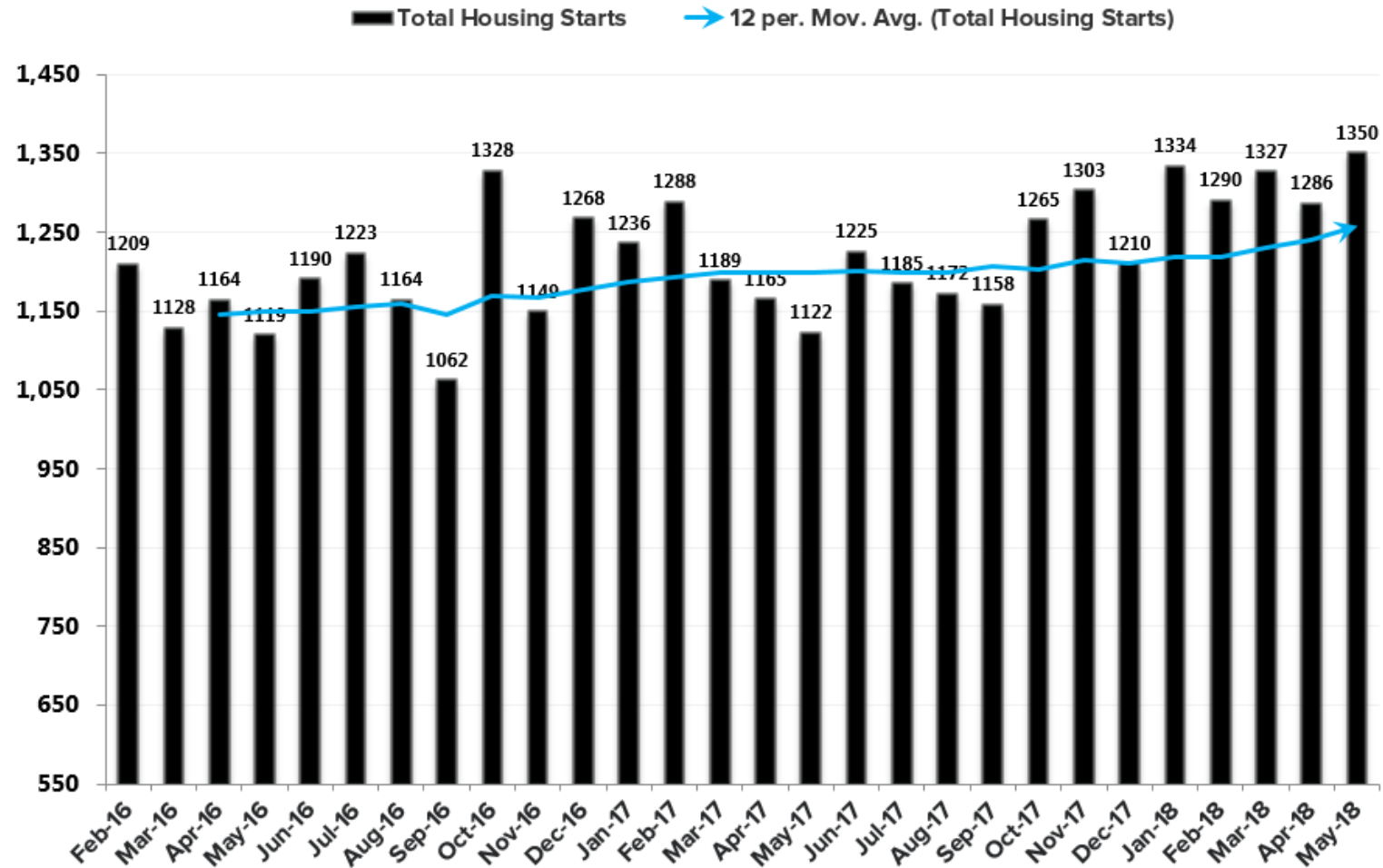


BUILDER CONFIDENCE: PEAK OR PAUSE?

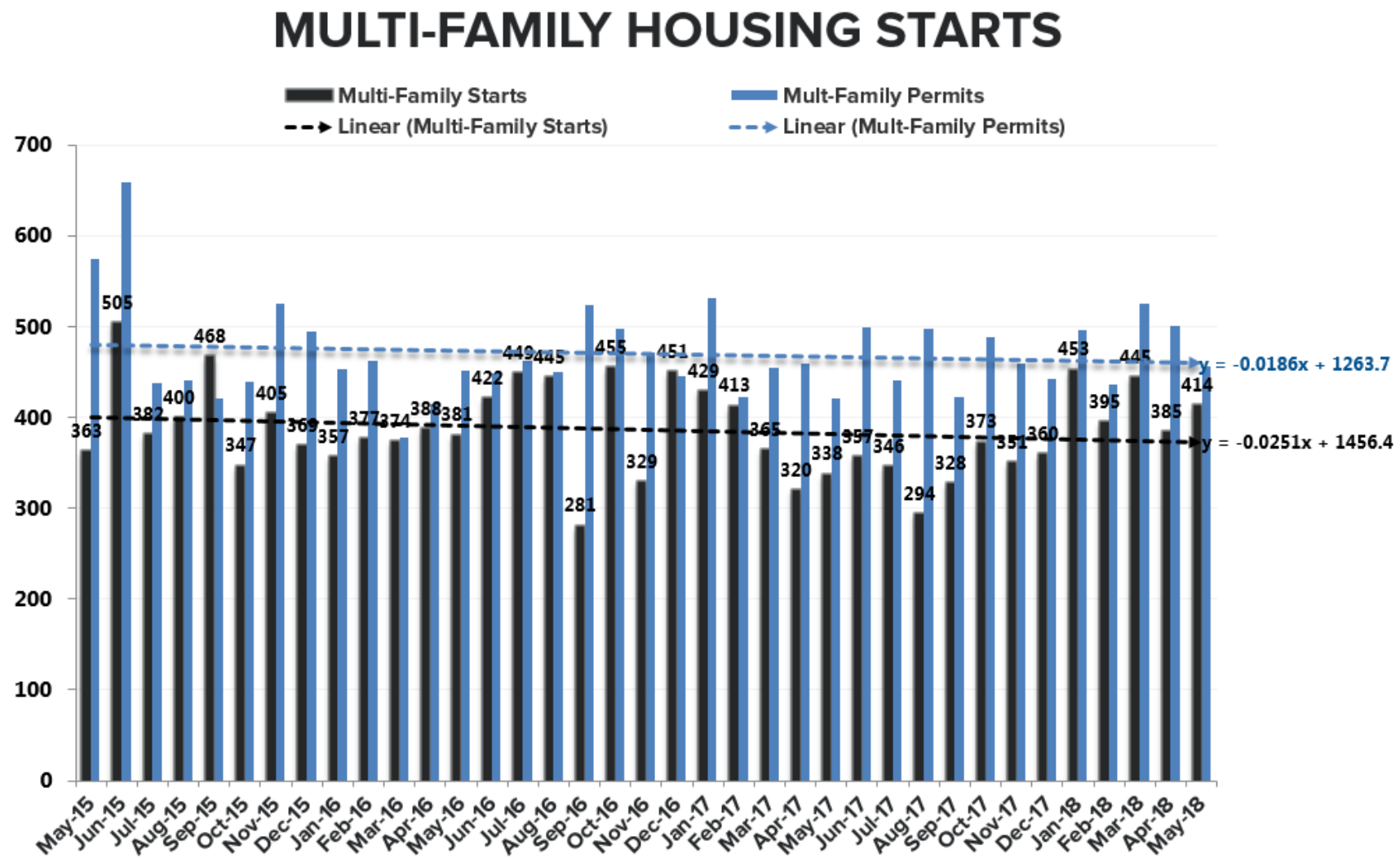


TOTAL STARTS CONTINUE TO →

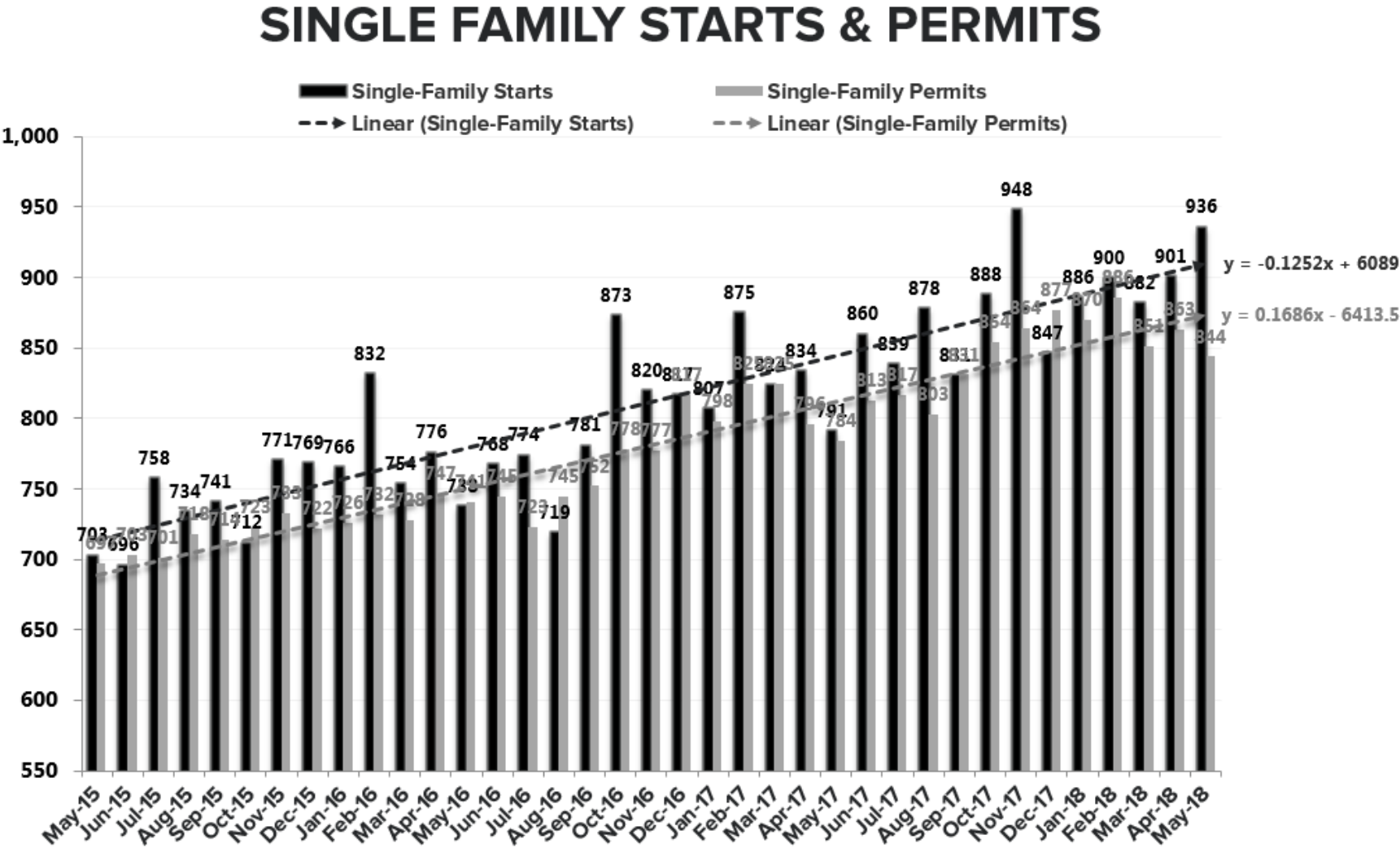
TOTAL HOUSING STARTS



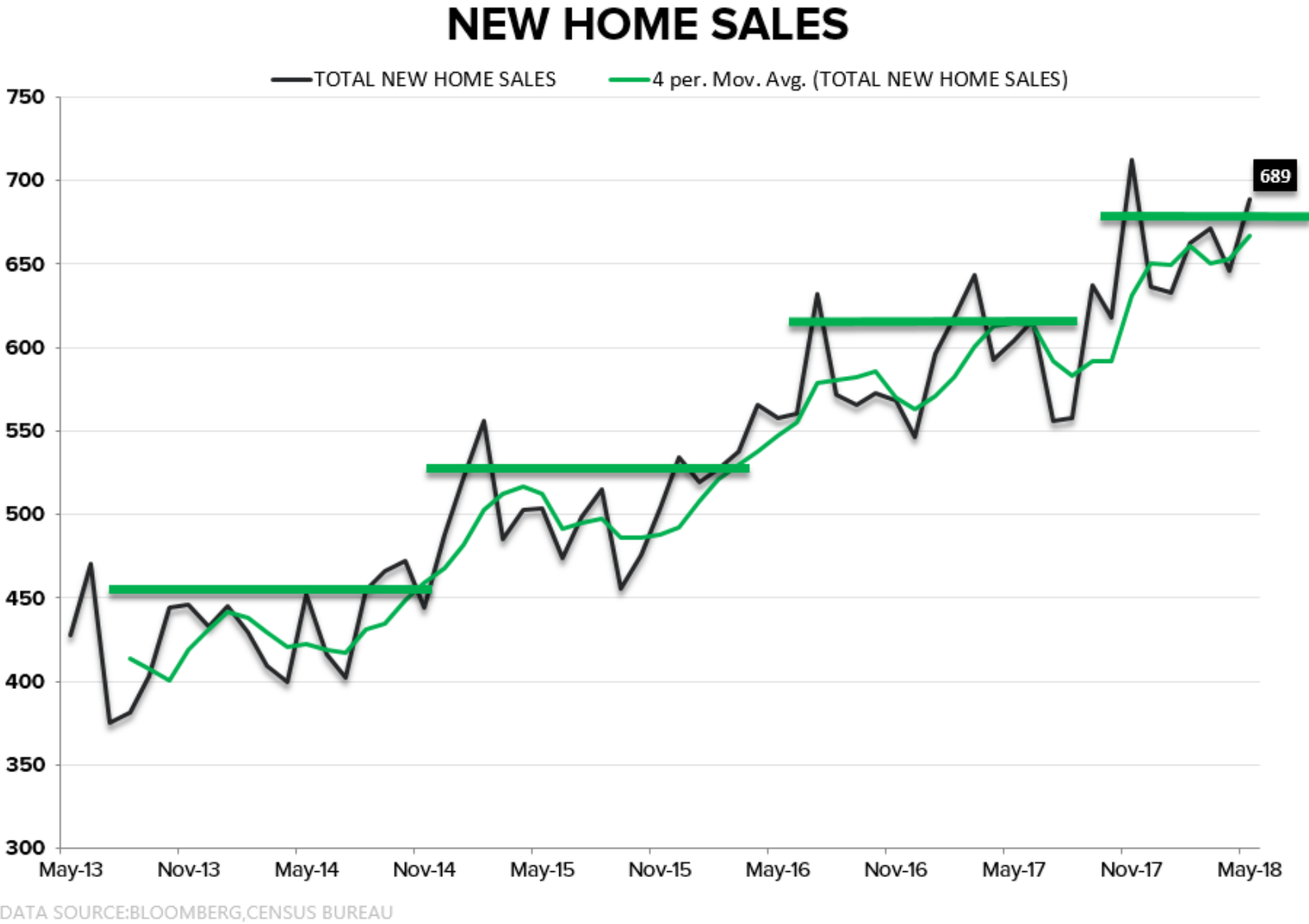
MULTI FAMILY STARTS CONTINUE TO ↓



SINGLE FAMILY STARTS CONTINUE TO



NEW HOME SALES CONTINUE TO STAIR STEP HIGHER

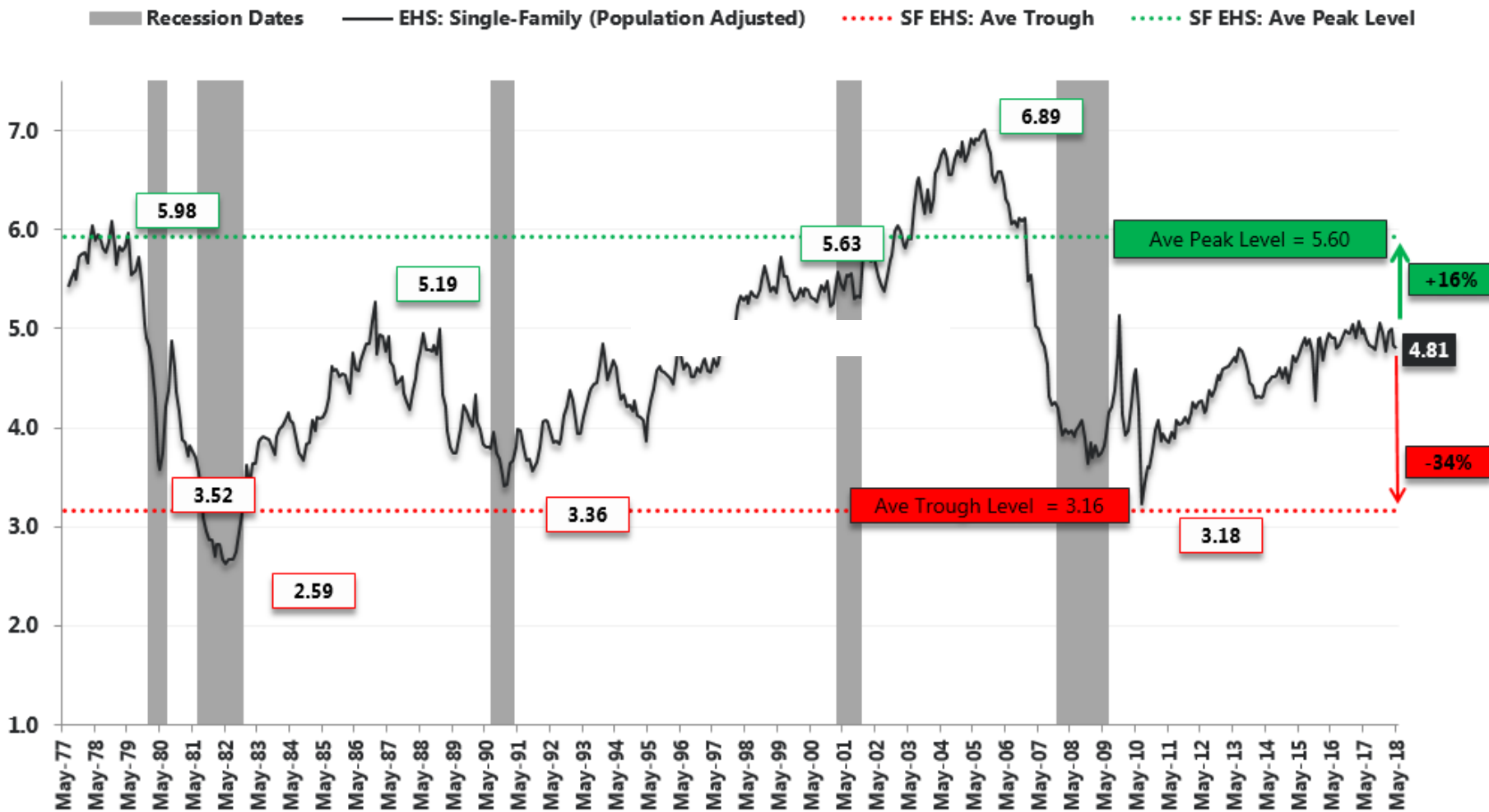




IS THE HOUSING CYCLE NOW FRIEND OR FOE?

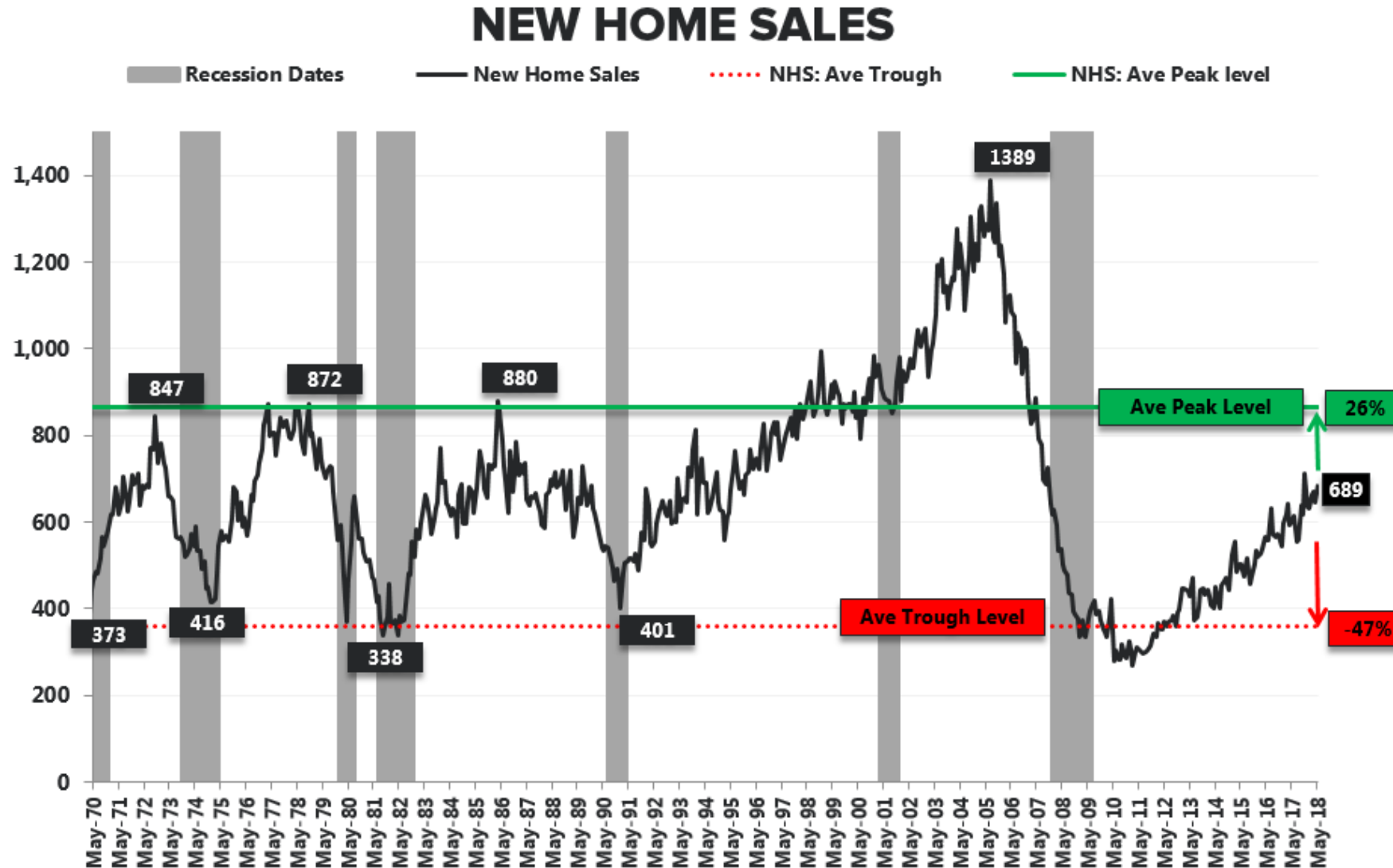
EXISTING HOME SALES UPSIDE IS LIMITED BUT STILL POSITIVE

SINGLE-FAMILY EXISTING HOME SALES POPULATION ADJUSTED



DATA SOURCE: BLOOMBERG, NBER, NAR, HRM

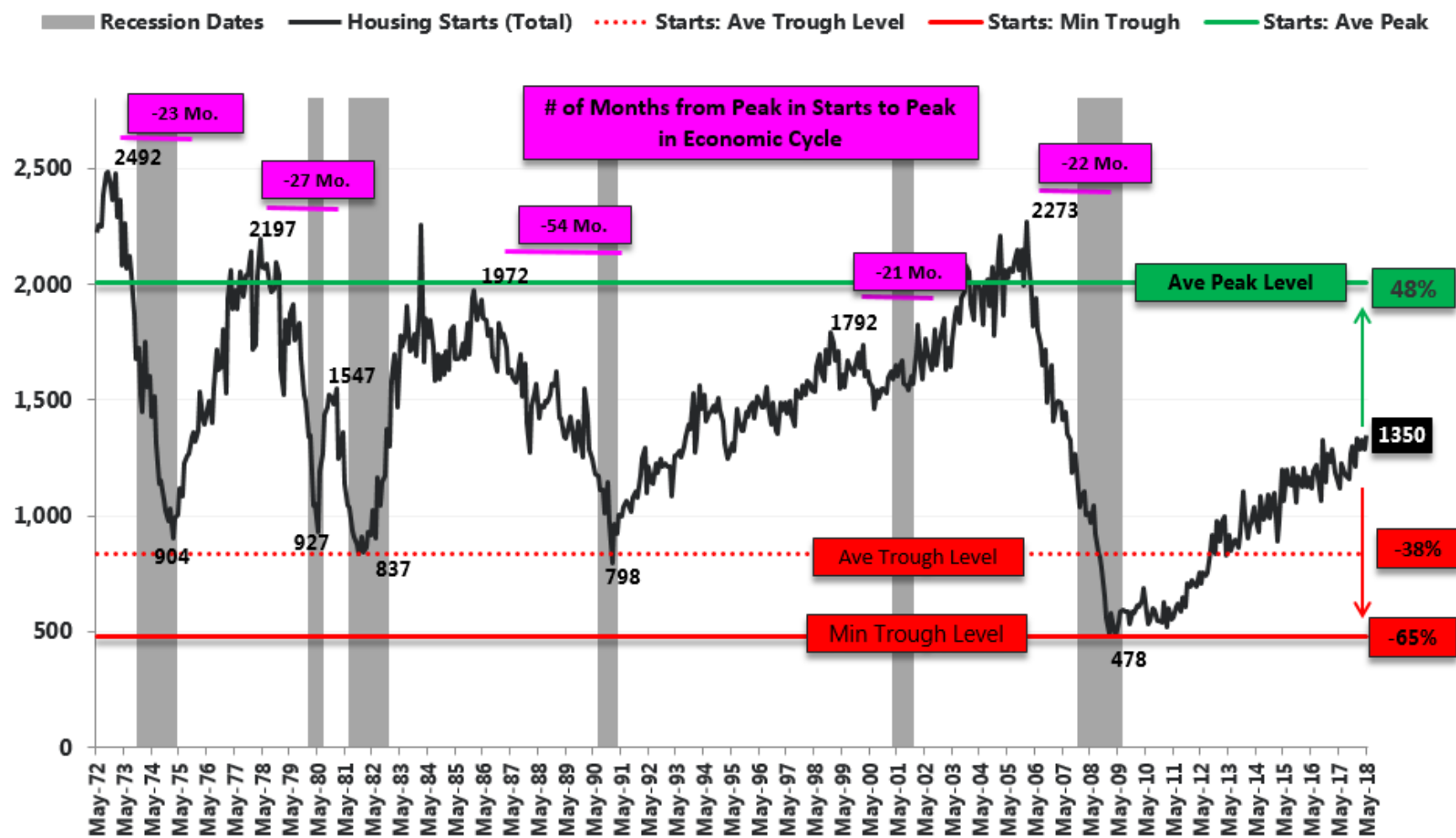
NEW HOME SALES STILL HAVE ~25% UPSIDE TO PRIOR PEAKS



DATA SOURCE: BLOOMBERG, NBER, CENSUS BUREAU, HEDGEYE

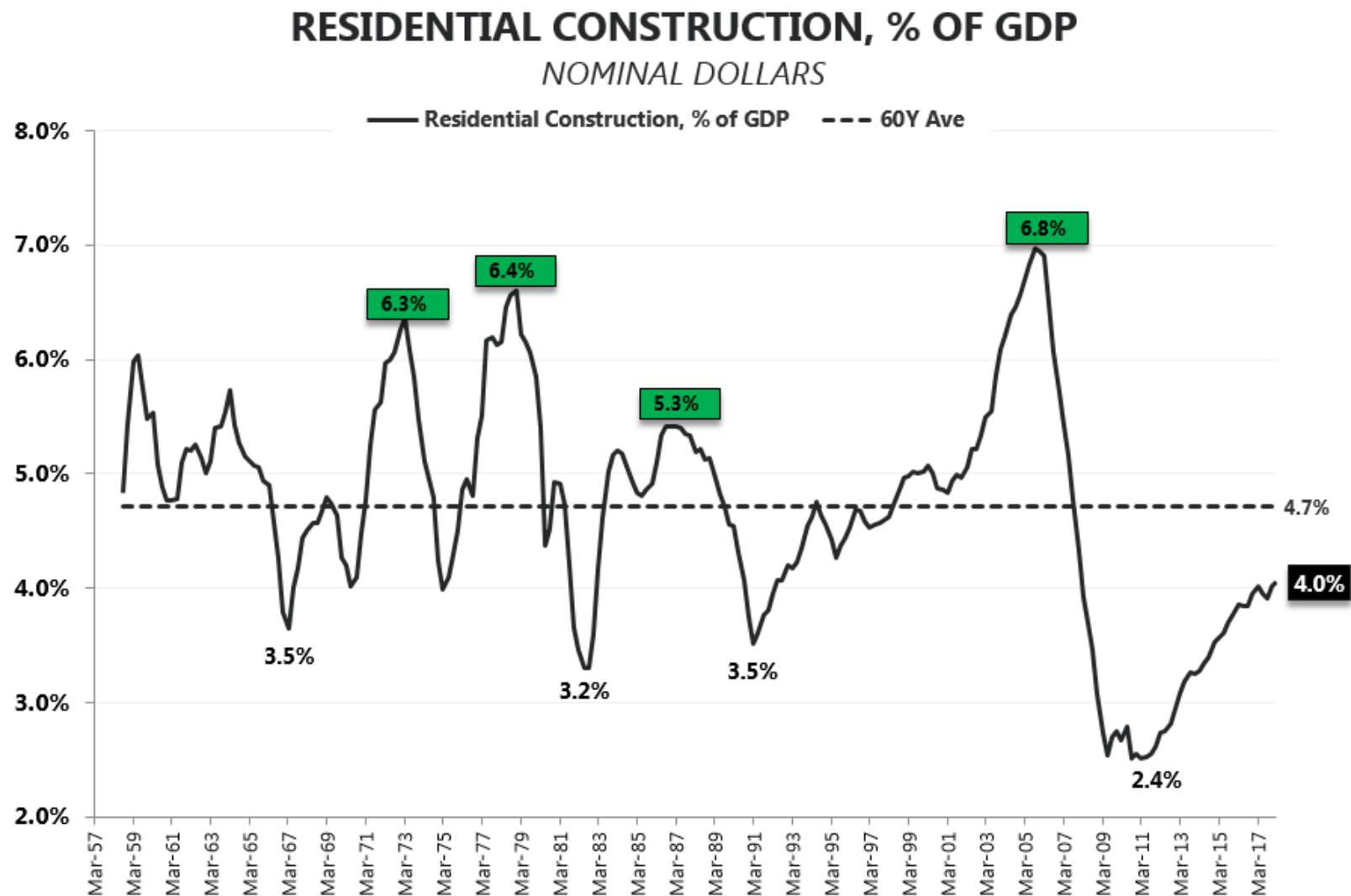
STARTS STILL HAVE ~50% UPSIDE TO PRIOR AVG PEAKS

HOUSING STARTS



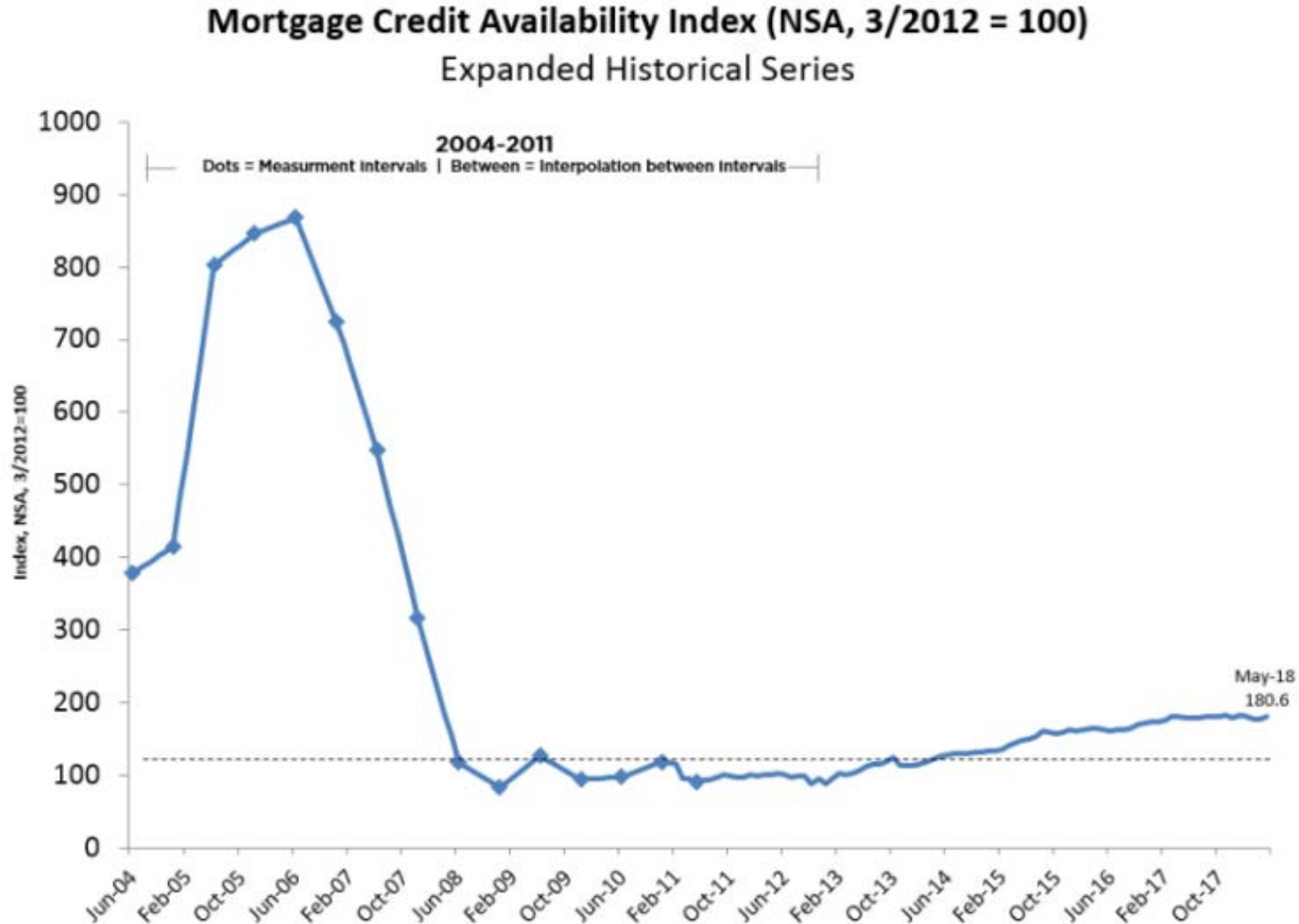
DATA SOURCE: BLOOMBERG, NBER, CENSUS BUREAU, HRM

RESI / GDP REMAINS WAY BELOW PRIOR PEAKS



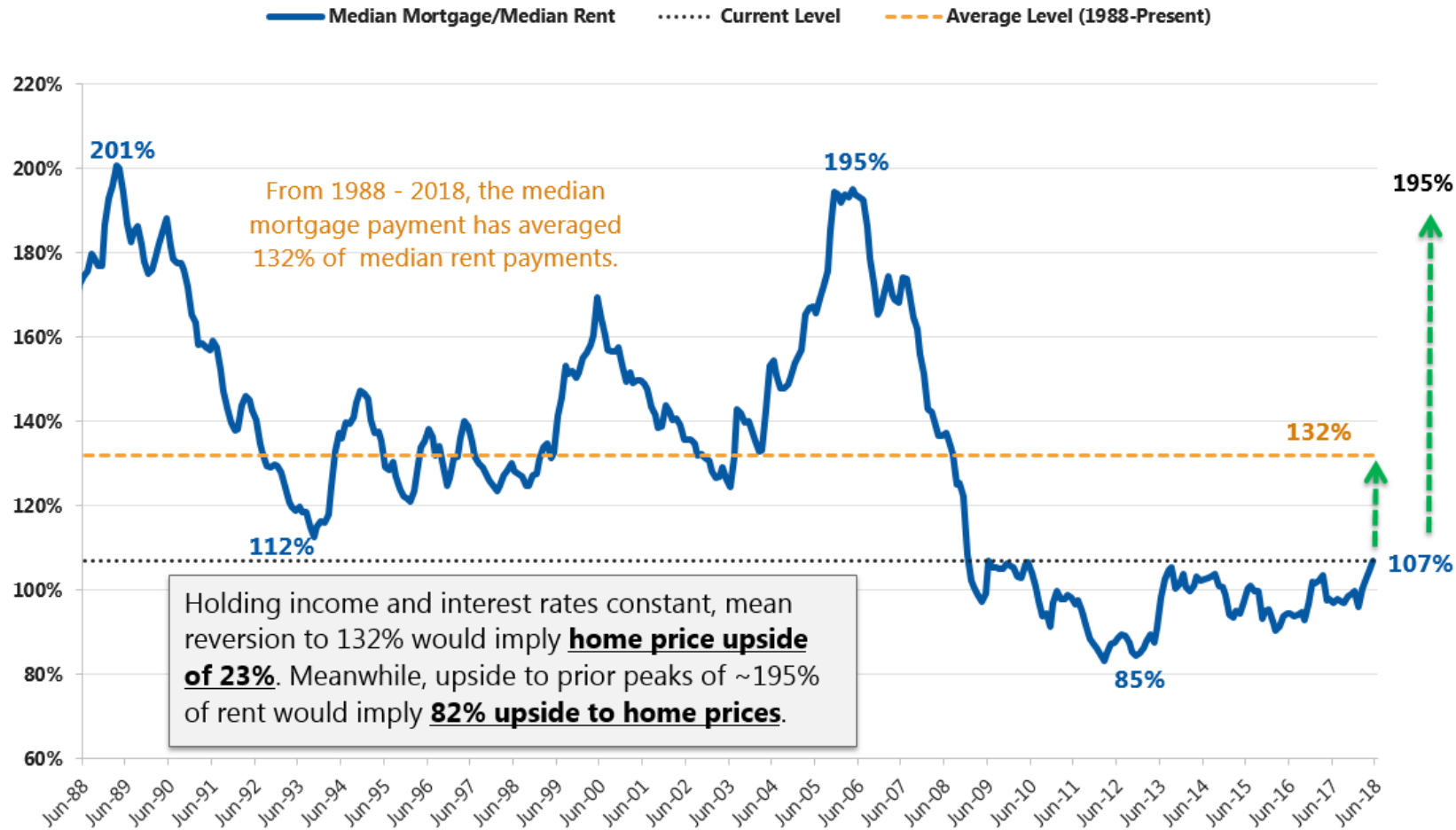
DATA SOURCE: CENSUS BUREAU, BLOOMBERG

THE CREDIT BOX CONTINUES TO EXPAND



AFFORDABILITY DYNAMICS: MORTGAGE VS RENT

RATIO OF MEDIAN MORTGAGE PAYMENT TO MEDIAN RENT

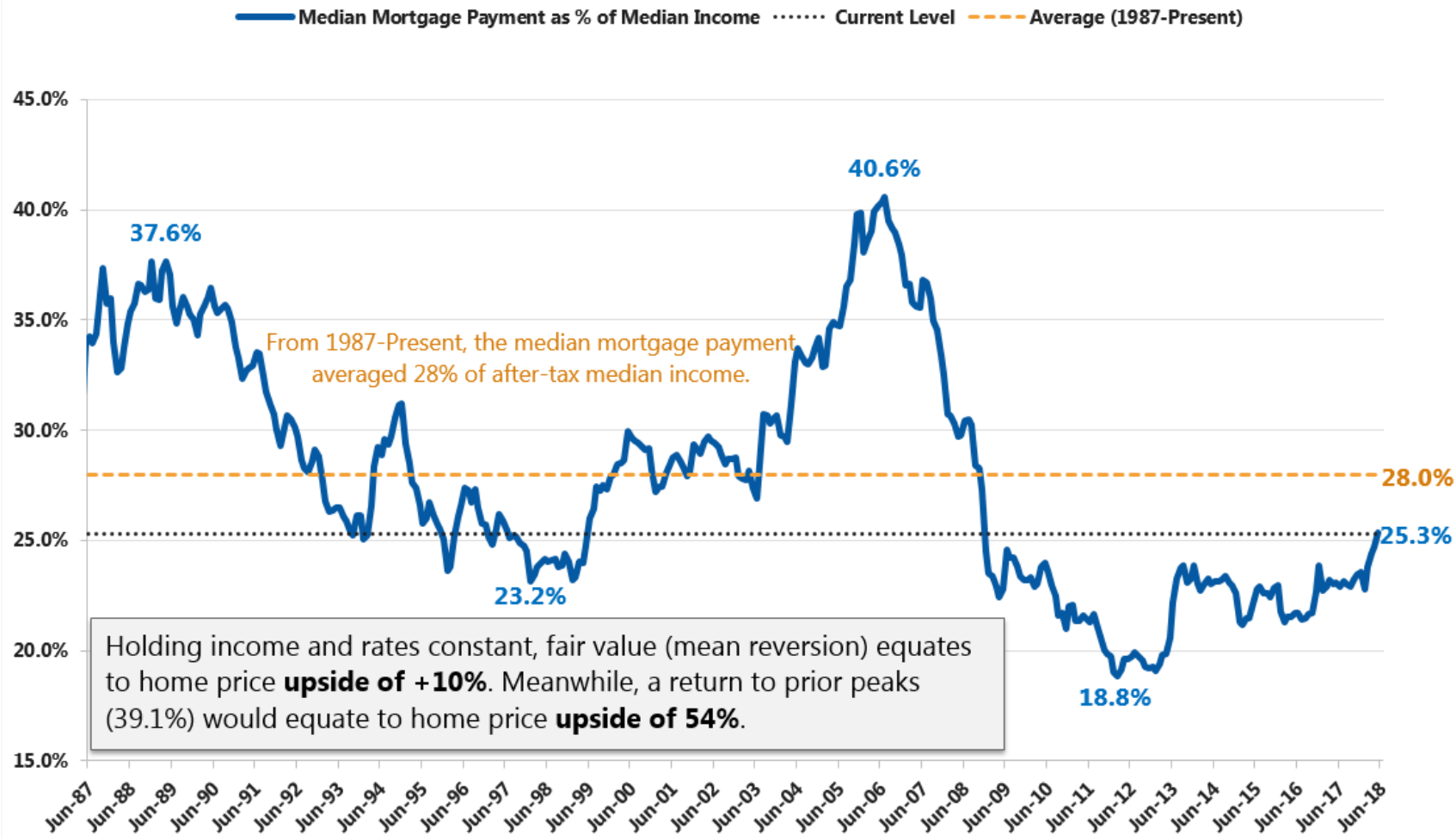


Data Source: Census Bureau, Case-Shiller, Freddie Mac

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AFFORDABILITY DYNAMICS: MORTGAGE VS INCOME

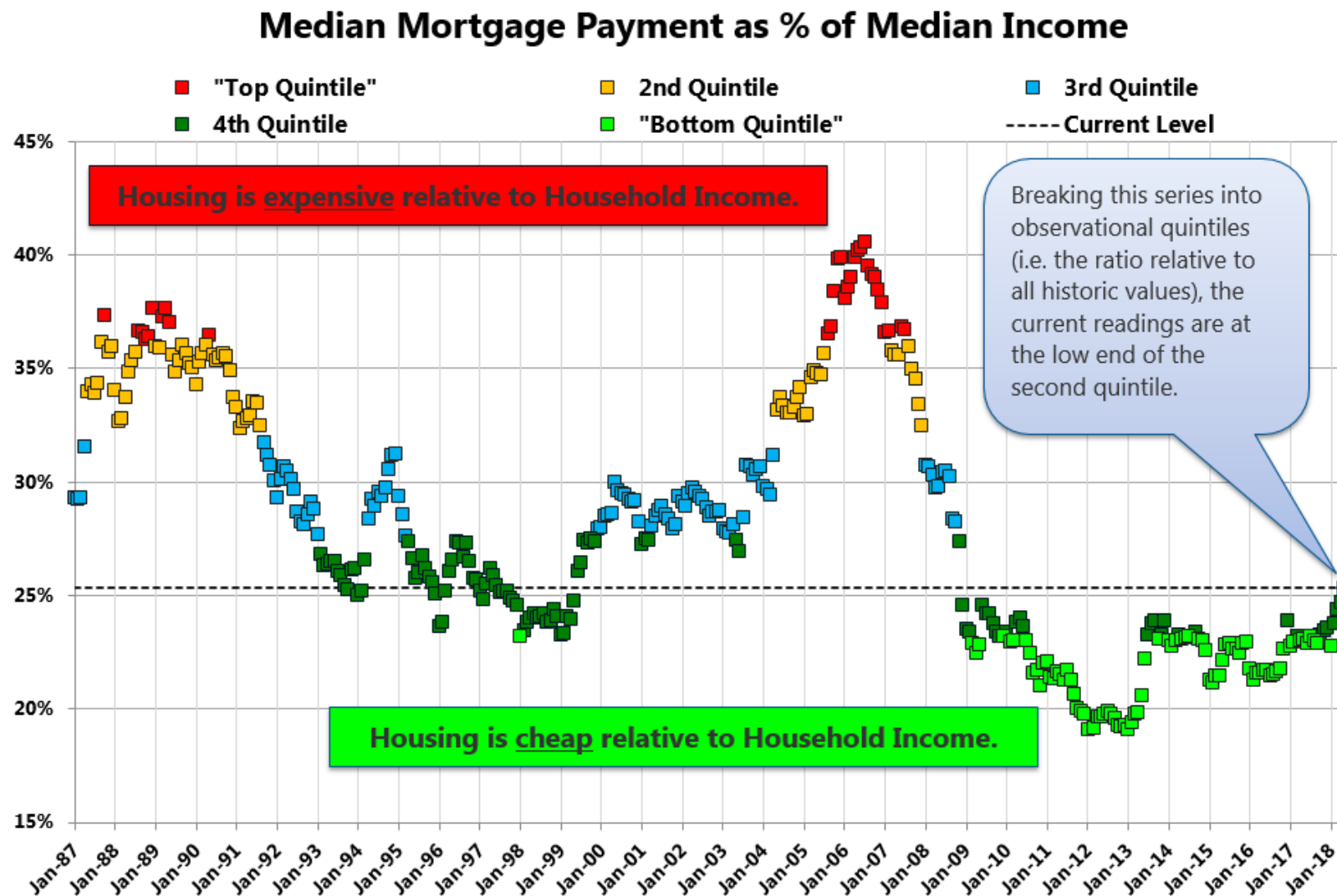
MEDIAN MORTGAGE PAYMENT AS A % OF MEDIAN INCOME



Data Source: Census Bureau, Case-Shiller, Freddie Mac

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AFFORDABILITY DYNAMICS: MORTGAGE VS INCOME



DATA SOURCE: CENSUS BUREAU, CASE SHILLER, FREDDIE MAC

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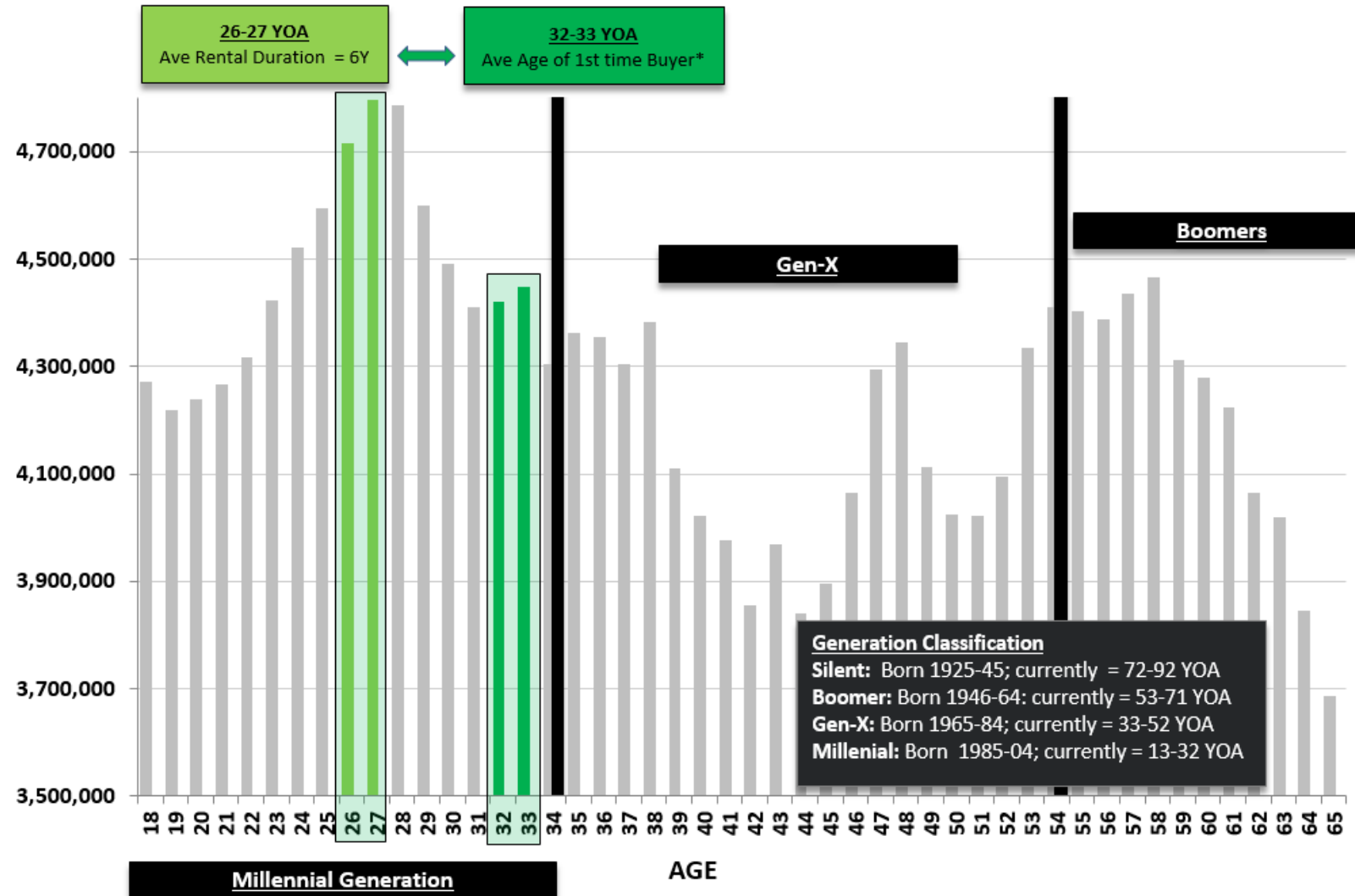
Based on the last 3 decades of data, Housing is still cheap vs national income.

The green quintile bands indicate early cycle and a go-forward tailwind for housing, while the red band signals very late cycle and an incoming correction/crash.

As we can see, the formation of data over the past few months is still in the green.

THE DEMOGRAPHIC DEMAND WAVE

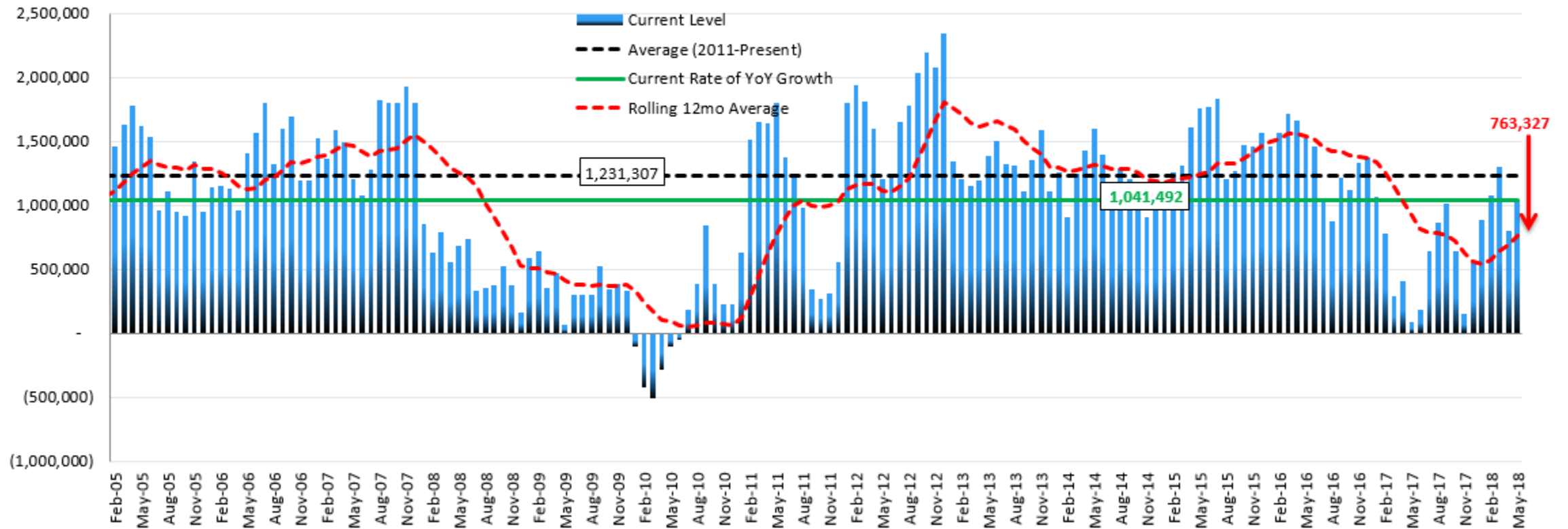
POPULATION DISTRIBUTION & CLASSIFICATION



Knowing that the median first time buyer age is 32/33 is critical because it allows us to look at the coming demographic wave. This chart shows the size of the current 32/33 YOA cohort – roughly 4.4 million. The 26/27 YOA cohort is 4.7 million by comparison. 2019-2023 will see an extraordinary housing bull market.

HH FORMATION: TRENDING HIGHER AFTER ZIKA

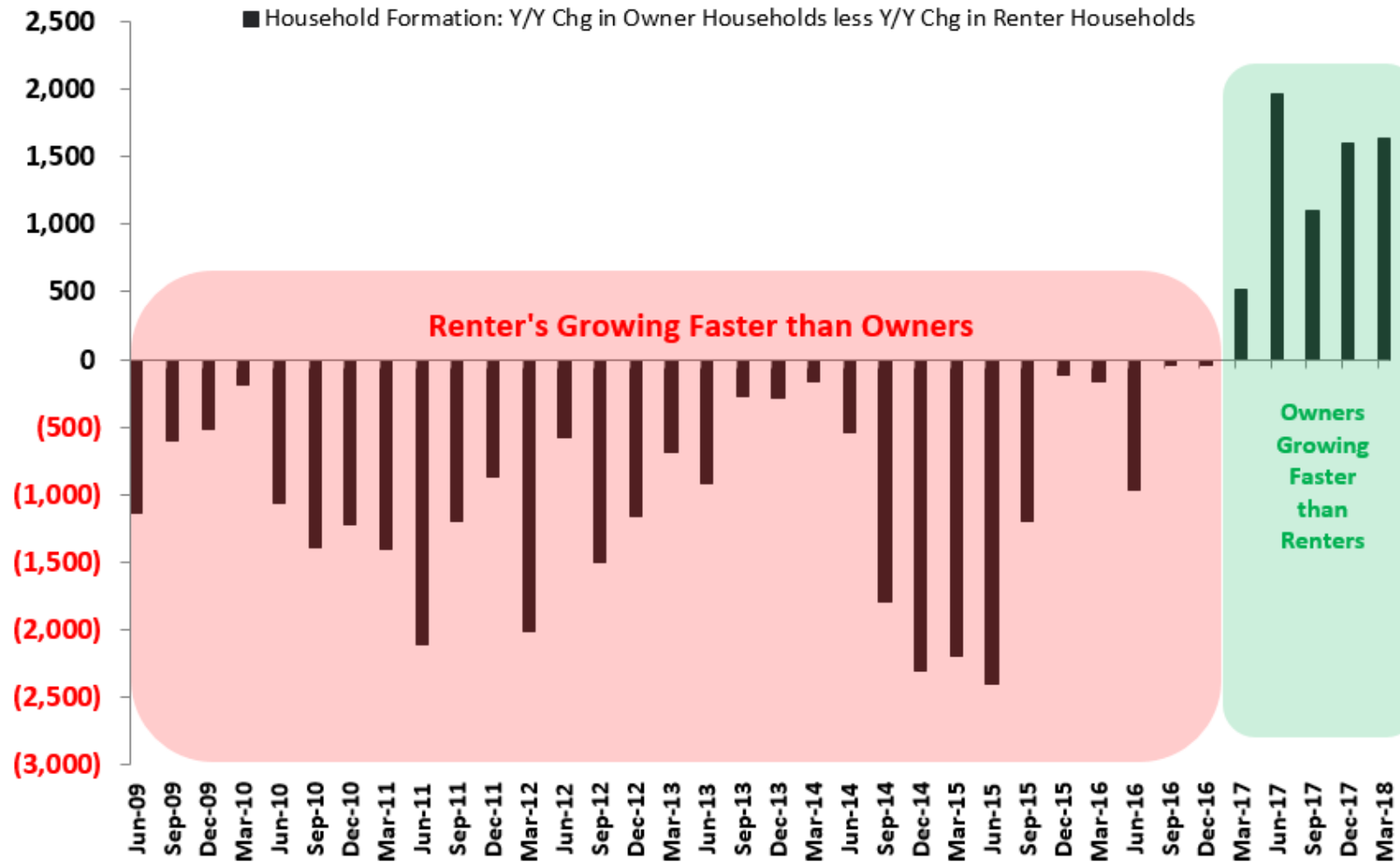
YEAR-OVER-YEAR GROWTH IN US HOUSEHOLDS BY MONTH
(2005-PRESENT)



OWNERSHIP GROWTH: JUST BEGINNING TO REBOUND

U.S. HOUSEHOLD FORMATION BY TYPE

Household Formation: Owner Households less Renter Households



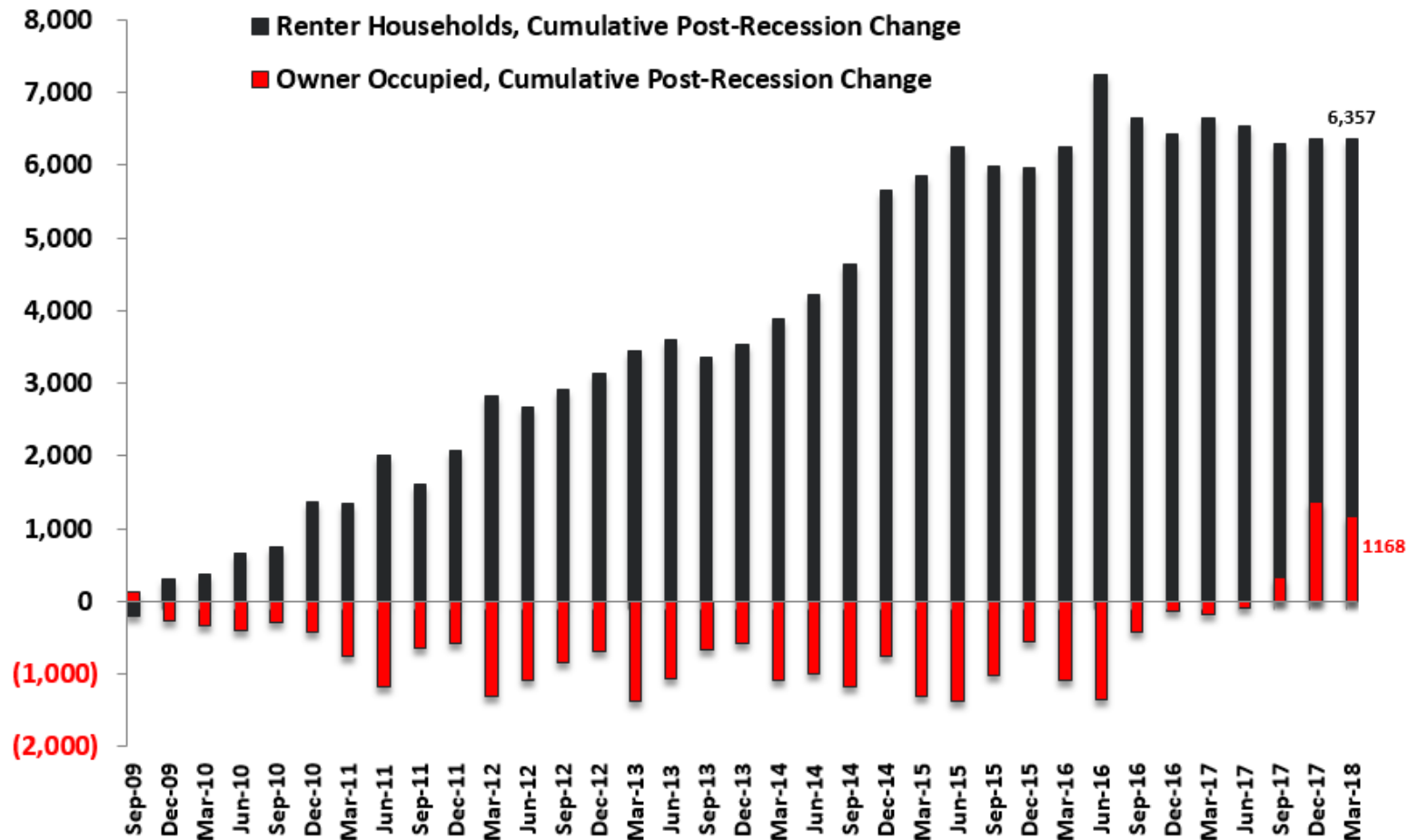
Part and parcel of the acceleration in US homeownership rate growth extends from the transition in Household Formation from predominately renter household growth to owner household growth.

The post GFC trend reversed in 1Q17 and has persisted over the past year with owner household growth outpacing that of renters.

OWNER GROWTH FINALLY EXCEEDING RENTER GROWTH

U.S. HOUSEHOLD FORMATION

Cumulative Change In Households by Type, Post-Recession Period (3Q09-Present)



DATA SOURCE: CENSUS BUREAU, BLOOMBERG

Again, renter household growth predominated following the recession and has only recently begun to shift.

The durability of the expansion will define the forward trend and the flow through impact of household formation on purchase demand.



RATES – IS THE BEAR GOING BACK TO SLEEP?

RATES: COMING BACK FROM INFINITY & BEYOND?

Primary Mortgage Market Survey®

U.S. weekly averages as of 07/05/2018

30-Yr FRM

4.52% ▼ 0.03 1-Wk
▲ 0.56 1-Yr

0.5 Fees/Points

15-Yr FRM

3.99% ▼ 0.05 1-Wk
▲ 0.77 1-Yr

0.4 Fees/Points

5/1-Yr ARM

3.74% ▼ 0.13 1-Wk
▲ 0.53 1-Yr

0.3 Fees/Points

Zoom 1Y 3Y **5Y** 10Y All

07/05/2013 - 07/05/2018

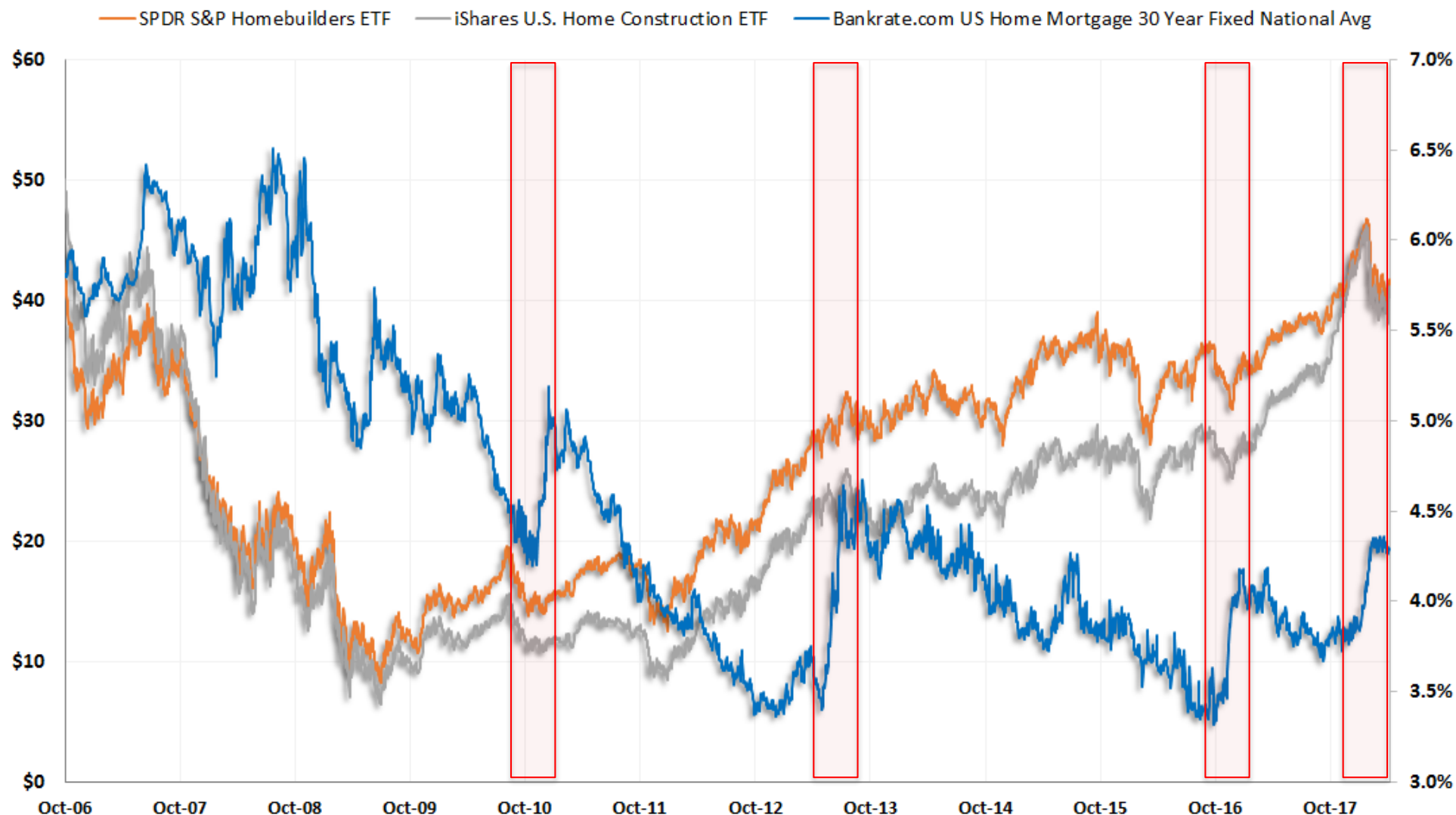


Rates looked poised to blast off in February and again into the end of 2Q, but have been making lower highs more recently.

The extant reality that rates rising (too high/too fast) remains the primary catalyst for rates falling makes it difficult to tactically risk manage exposure during concentrated clustering of rate volatility.

HOME BUILDER STOCKS VS. MORTGAGE RATES

Home Builder Rate Sensitivity

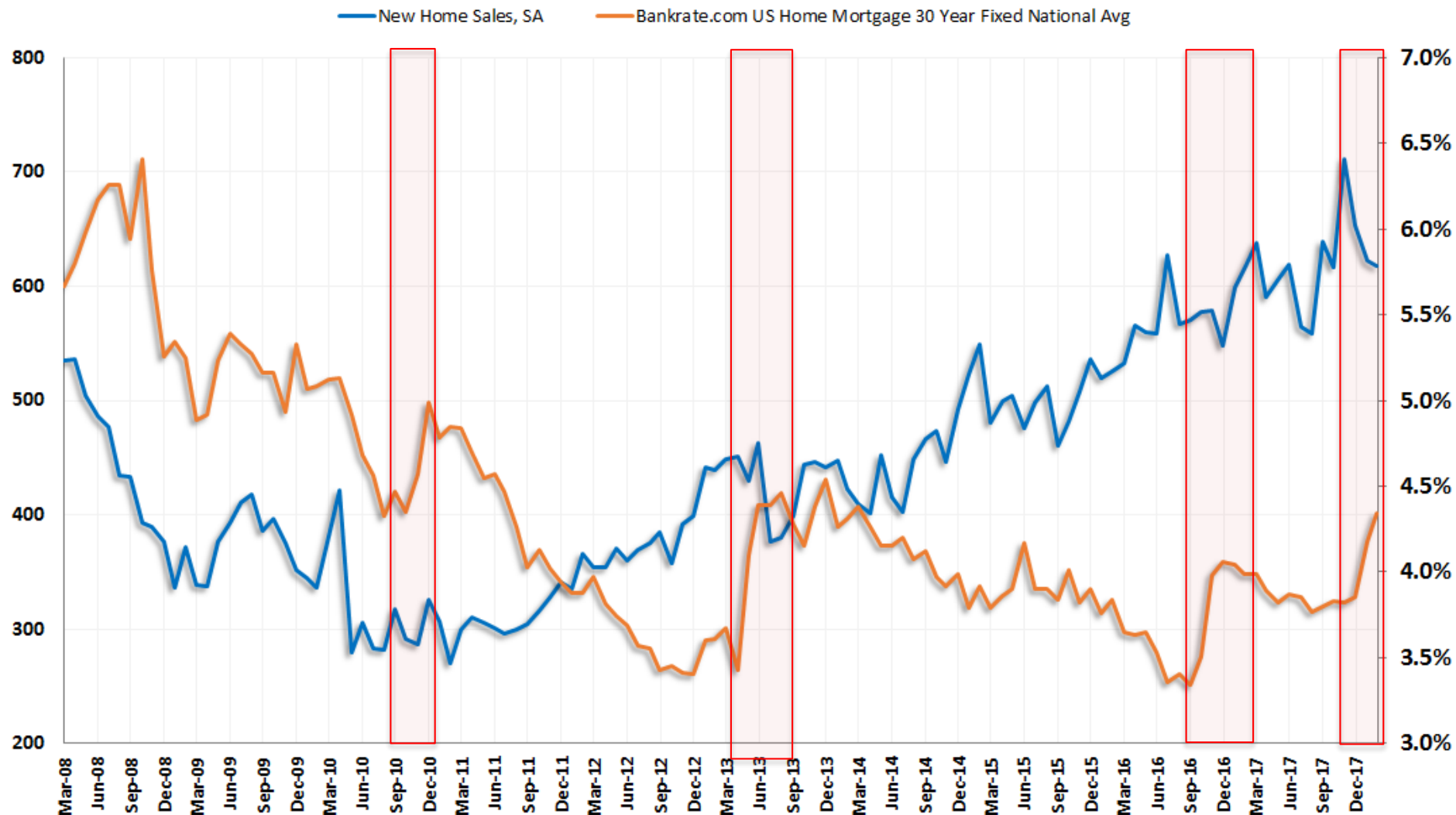


Home Building stocks have historically trended down in the immediate term following a shift up in mortgage rates.

Longer term though, stock downturns would correct themselves with better market data.

NEW HOME SALES ARE VARIABLY SENSITIVE

Home Buyers Long Term Rate Sensitivity



Homebuyers in the new construction market are relatively sensitive in the immediate term to rate changes, with some exception where fundamentals drove demand.

Like in the stocks, unit volume of new homes moves on from the mortgage rate shocks within only a handful of months.

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%.**

THREE CASE STUDIES IN RISING RATES – THE YEAR AFTER

1

DECEMBER 1994 – DECEMBER 1995

The S&P 500 Homebuilding index gained +35% during this 12 month span. Meanwhile, the S&P 500 was also higher by 35%.

Absolute return: +35%. Relative return: 0%.

2

MAY 2000 – MAY 2001

The S&P 500 Homebuilding index gained 75% during this 12 month span, but the S&P 500 lost -14%.

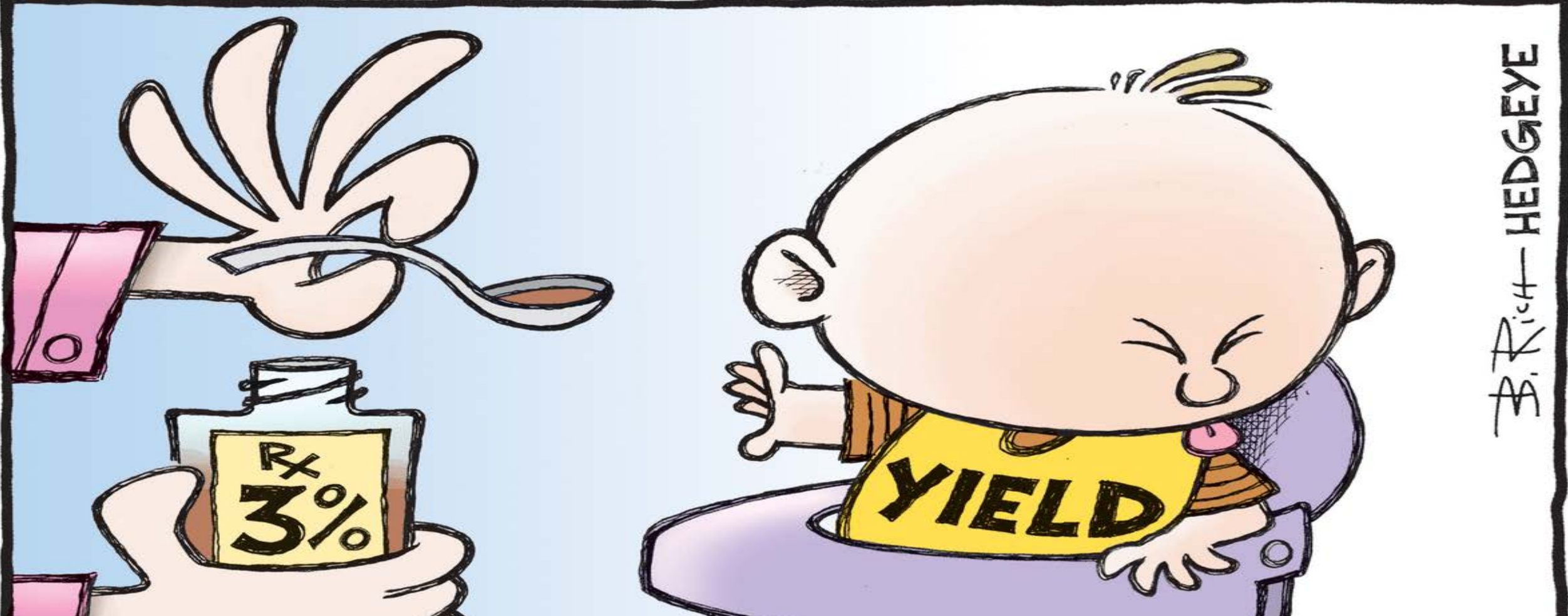
Absolute return: +75%. Relative return: +89%.

3

SEPTEMBER 2013 – SEPTEMBER 2014

The S&P 500 Homebuilding index gained 19% during this 12 month span. By contrast, the S&P 500 was up 22% over the corresponding period.

Absolute return: +19%. Relative return: -3%.



SO, HAVE RATES PEAKED?

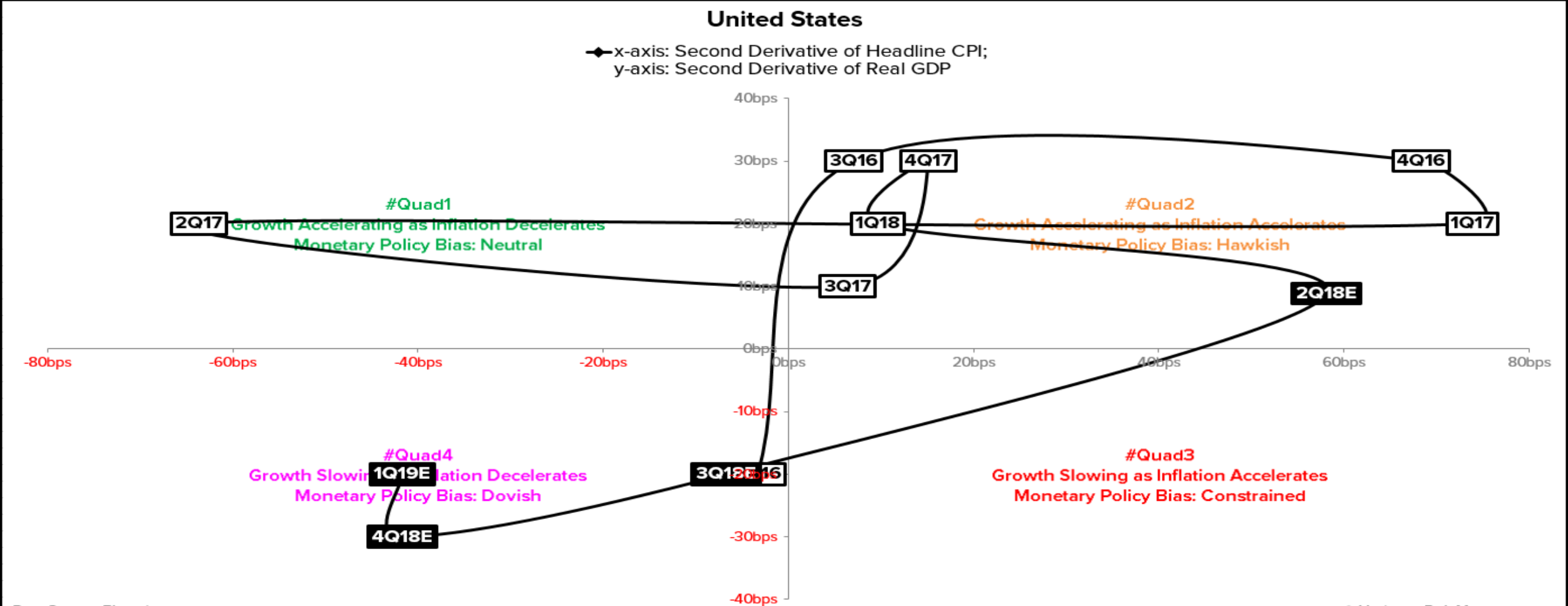
GLOBAL GROWTH: SYNCHRONIZED GROWTH → HARMONIZED SLOWING

WE’VE TRANSITIONED FROM THE “GLOBALLY SYNCHRONIZED RECOVERY” OF 2016/17 TO GLOBAL DIVERGENCES AND A U.S. CENTRIC GROWTH NARRATIVE IN 1H18 AND ARE SET TO FURTHER TRANSITION TO A “GLOBALLY HARMONIZED DECELERATION” AS WE MOVE THROUGH THE BACK HALF OF THE YEAR.

6/28/2018	Hedgeye Macro GIP Model Signals												
	Actuals									Hedgeye Forecasts			
	1Q16	2Q16	3Q16	4Q16	1Q17	2Q17	3Q17	4Q17	1Q18	2Q18E	3Q18E	4Q18E	1Q19E
Argentina	-	-	-	-	-	-	-	-	3	3	4	4	4
Australia	1	1	3	2	3	1	1	3	2	3	1	1	4
Brazil	1	1	1	1	1	1	1	2	4	3	3	3	3
Canada	2	3	1	2	2	1	3	3	3	2	2	4	1
China	3	1	1	2	1	4	3	3	3	4	3	4	3
Eurozone	4	2	2	2	2	1	1	1	4	3	4	4	1
France	1	3	3	2	2	1	1	2	3	3	4	4	1
Germany	1	4	3	2	2	1	2	1	4	3	4	4	1
India	1	3	4	4	4	4	2	2	2	3	4	1	-
Indonesia	4	1	4	3	2	2	1	1	4	3	2	3	1
Italy	1	4	2	2	2	2	1	4	4	4	3	4	4
Japan	4	1	1	2	3	2	2	3	3	4	4	4	1
Mexico	2	1	3	2	3	3	3	3	4	1	1	4	1
Russia	1	1	1	1	1	1	4	4	1	3	2	2	3
South Africa	3	1	1	2	1	1	4	1	4	3	2	4	2
South Korea	4	1	4	3	2	4	2	4	4	3	4	2	4
Spain	4	4	3	3	2	1	4	4	4	3	1	1	1
Turkey	3	1	3	1	2	2	1	3	1	3	4	4	4
United Kingdom	3	3	2	2	2	3	3	3	4	1	4	1	1
United States	3	4	2	2	2	1	2	2	2	2	4	4	4
MODE/MEAN	1	1	1	2	2	1	1	3	4	3	4	4	1

U.S. GROWTH OUTLOOK = QUAD 4

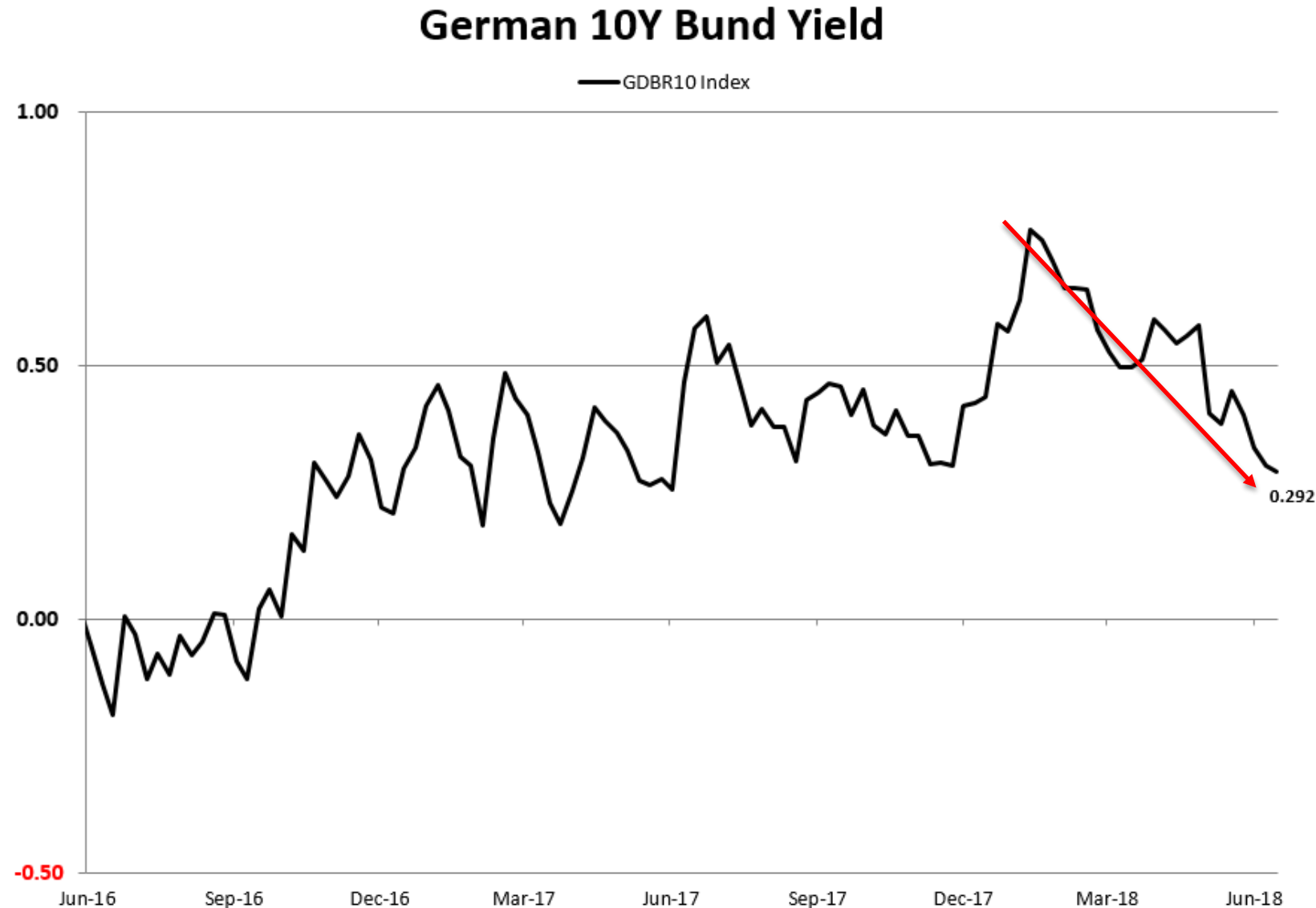
United States	2Q15	3Q15	4Q15	1Q16	2Q16	3Q16	4Q16	1Q17	2Q17	3Q17	4Q17	1Q18		2Q18E	3Q18E	4Q18E	1Q19E	NTM
Real GDP QoQ SAAR	2.70%	1.60%	0.50%	0.60%	2.20%	2.80%	1.80%	1.20%	3.10%	3.20%	2.90%	2.00%	Hedgeye Estimates	3.48%	2.34%	1.68%	1.19%	-
Percentile (T10Y)	56%	41%	26%	31%	56%	69%	46%	33%	79%	82%	72%	46%	Bloomberg Consensus Estimates	3.40%	2.99%	2.62%	2.40%	-
Real GDP YoY	3.30%	2.40%	2.00%	1.40%	1.20%	1.50%	1.80%	2.00%	2.20%	2.30%	2.60%	2.80%	Hedgeye Estimates	2.89%	2.69%	2.39%	2.19%	2.54%
Percentile (T10Y)	95%	59%	54%	33%	23%	38%	56%	62%	64%	67%	74%	87%	Bloomberg Consensus Estimates	2.90%	2.88%	2.87%	2.90%	2.89%
Headline CPI YoY	-0.04%	0.11%	0.47%	1.08%	1.05%	1.12%	1.80%	2.54%	1.90%	1.97%	2.12%	2.21%	Hedgeye Estimates	2.80%	2.73%	2.31%	1.89%	2.43%
Percentile (T10Y)	10%	13%	15%	18%	18%	23%	59%	77%	67%	69%	74%	79%	Bloomberg Consensus Estimates	2.70%	2.75%	2.50%	2.25%	2.55%



Data Source: Bloomberg

© Hedgeye Risk Management

DEVELOPED MARKET YIELDS ARE ALREADY FALLING



Source: Bloomberg

RATE DIFFERENTIALS ARE ALREADY STRETCHED

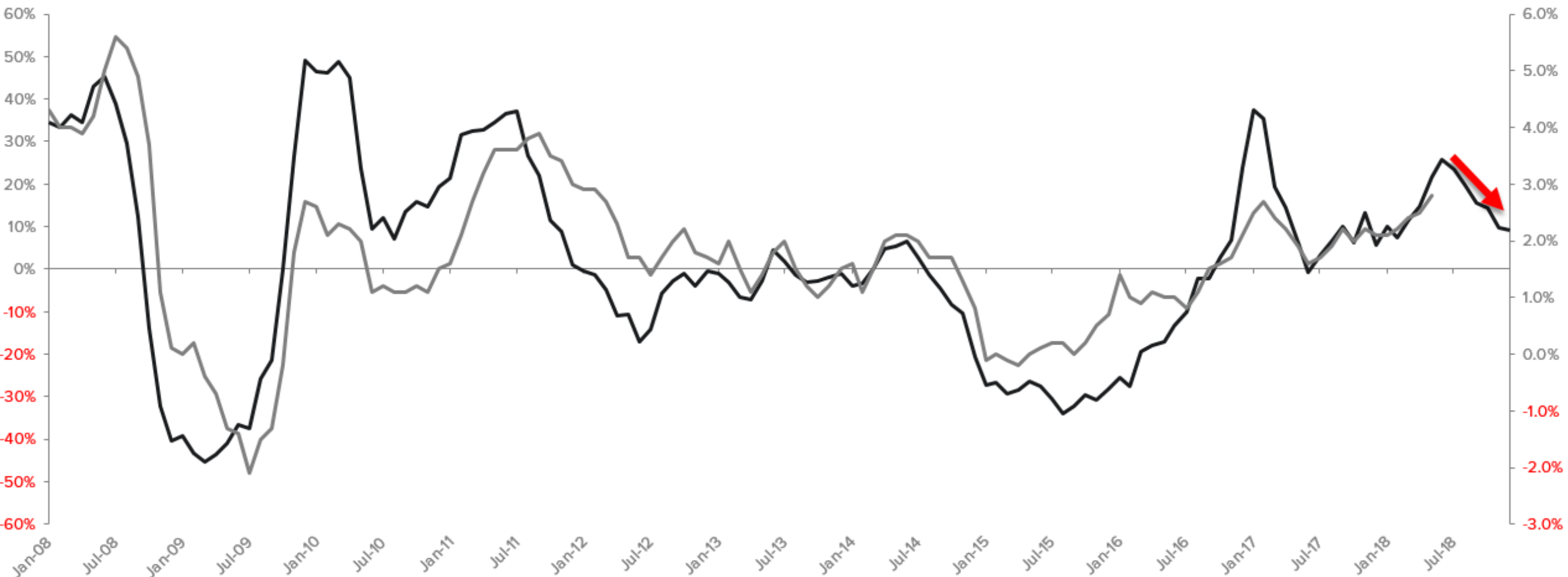
GROWTH AND POLICY #DIVERGENCES HAVE PUSHED RATE DIFFERENTIALS EXTREMELY WIDE. THE SPREAD COULD COMPRESS VIA BUND YIELDS RISING, BUT WITH GROWTH SLOWING IT'S MORE LIKELY BUNDS (& DM YIELDS BROADLY) ACT TO CONSTRAIN THE UPSIDE IN DOMESTIC RATES



DOMESTIC INFLATION IS PEAKING

THE Y/Y GROWTH RATE IN OUR COMMODITY PRICE SAMPLE HAS BEEN A GOOD PREDICTOR OF CPI. WITH HEADLINE INFLATION SET TO PEAK INTO 3Q, THE OUTLOOK IS FOR A CREST AND ROLL IN PRICE GROWTH

Arithmetic Mean of Hedgeye Macro YoY Commodity Price Sample (lhs) U.S. Headline CPI - YoY % Change (rhs)

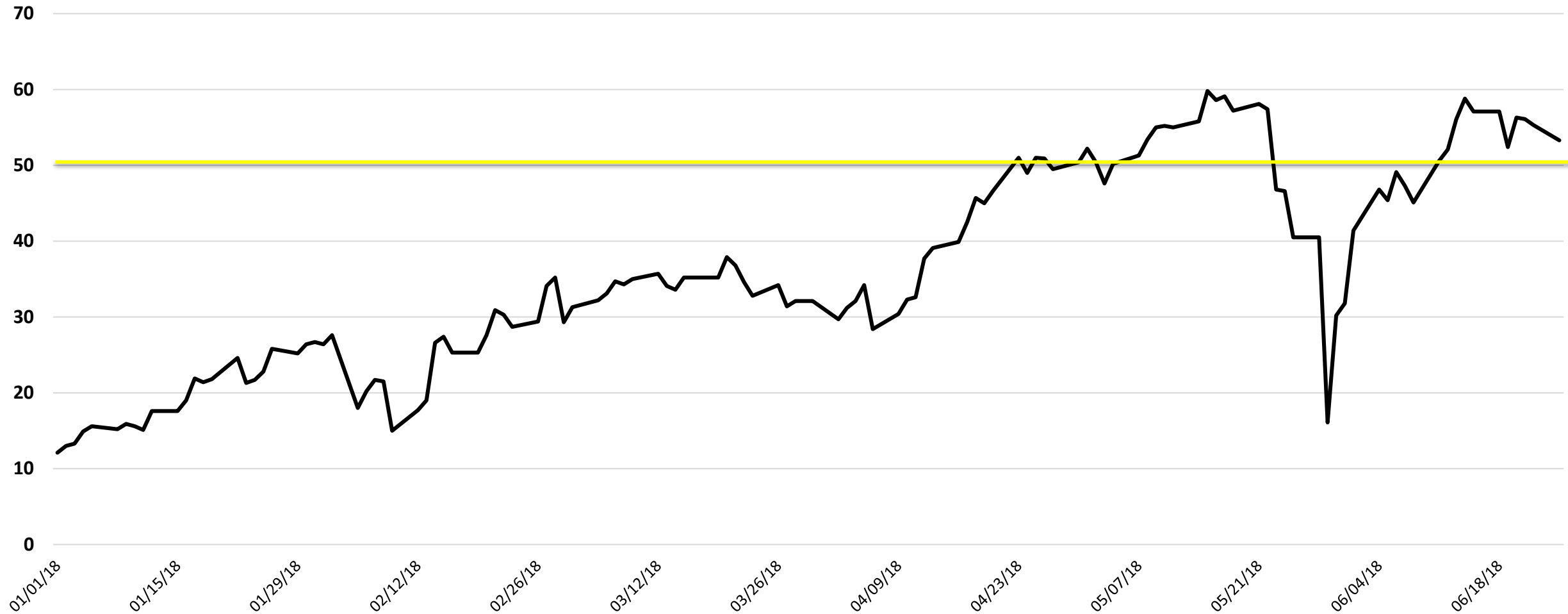


The Hedgeye Macro commodity price sample includes the CRB Index, CRB Raw Industrials Index, Brent Crude Oil and the UN Food and Agriculture Price Index.
YoY deltas are calculated from monthly averages. Forward estimates assume no change to current monthly averages.

A HAWKISH FED HAS NOW BEEN DISCOUNTED

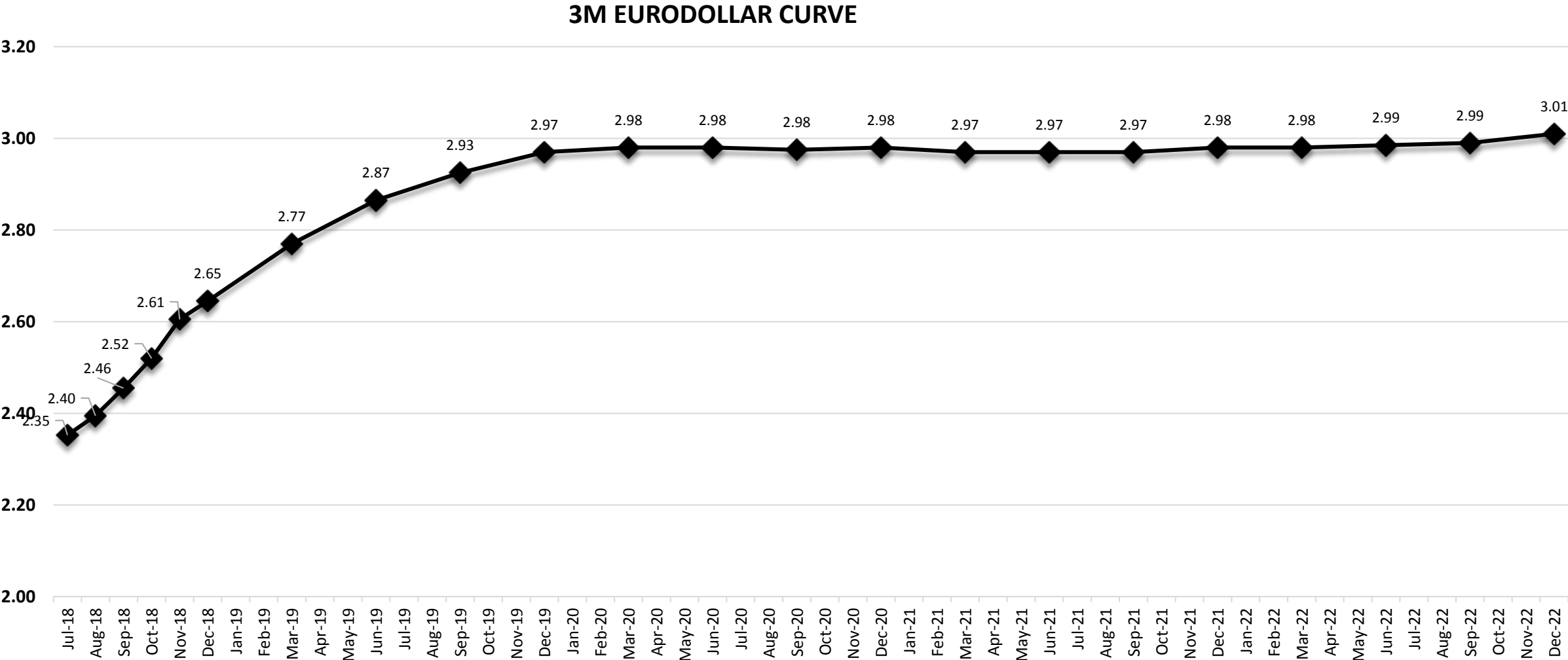
#INFLATION ACCELERATING AND #GROWTH DIVERGENCES HAVE SLOWLY BEEN PRICED INTO POLICY. LOOKING FORWARD, THE BALANCE OF RISK HAS PROBABLY SHIFTED IS IT MORE LIKELY THAT POLICY EXPECTATIONS REPRICE LOWER ALONGSIDE SLOWING GROWTH AND INFLATION OR THAT THE FED UPGRADES ITS OUTLOOK FOR 5 HIKES IN 2018 & A STEEPER PATH FOR 2019?

PROBABILITY OF 4 RATE HIKES IN 2018



BUT HOW MUCH TIGHTENING IS EXPECTED?

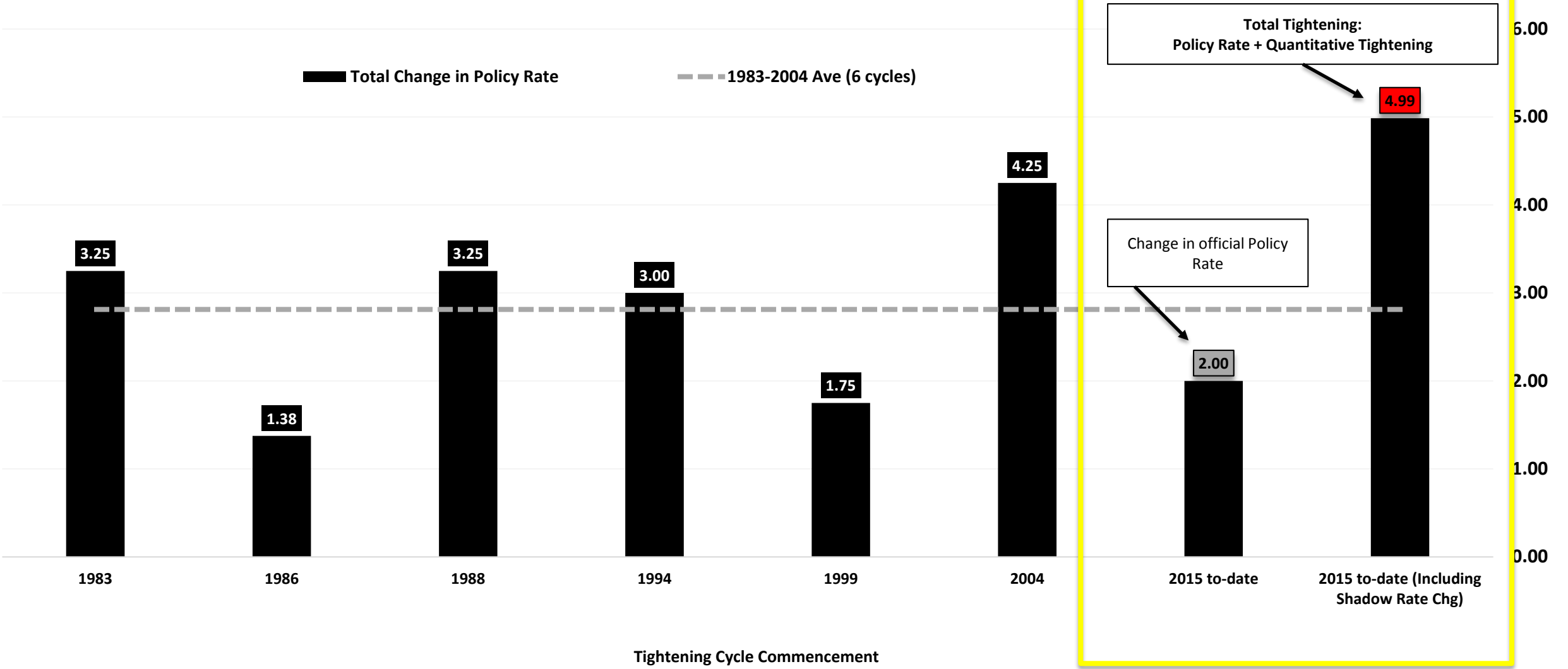
THE EURODOLLAR MARKET SAYS THE FED HAS ANOTHER 75-100BPS LEFT.



BUT WHAT'S THE RIGHT NUMBER?

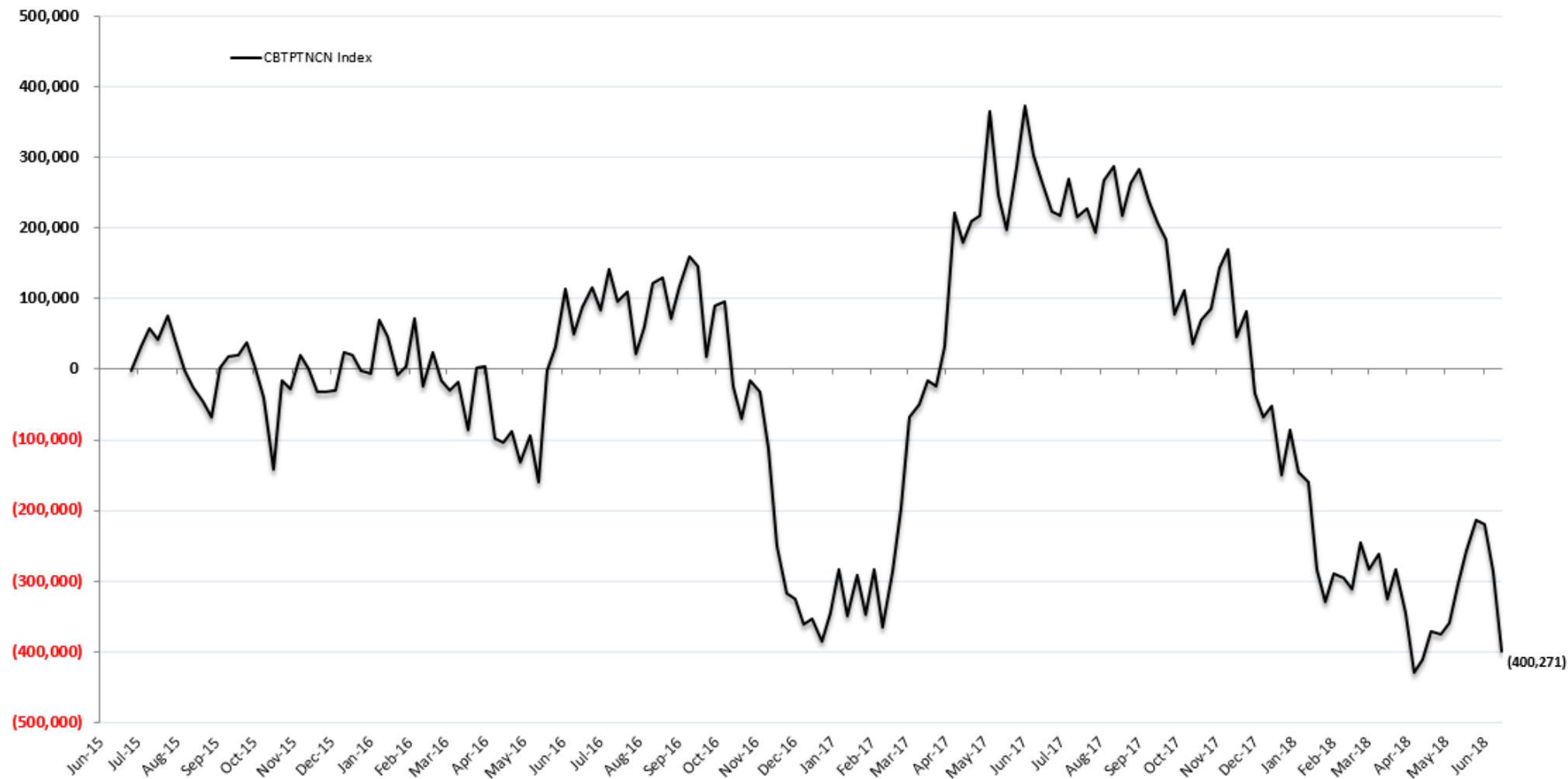
THE MAGNITUDE OF CHANGE IN THE POLICY RATE REMAINS WELL BELOW THAT OBSERVED OVER PRIOR TIGHTENING CYCLES. INCLUDING THE CHANGE IN THE SHADOW RATE (I.E. QT), HOWEVER, THE MAGNITUDE OF TIGHTENING IS ALREADY WELL ABOVE HISTORICAL EPISODES. AND IF THE FED FOLLOWS THROUGH WITH ANOTHER +100BPS, TOTAL TIGHTENING WOULD BE >300BPS MORE (100% MORE) THAN THE HISTORICAL AVERAGE

FED TIGHTENING CYCLES



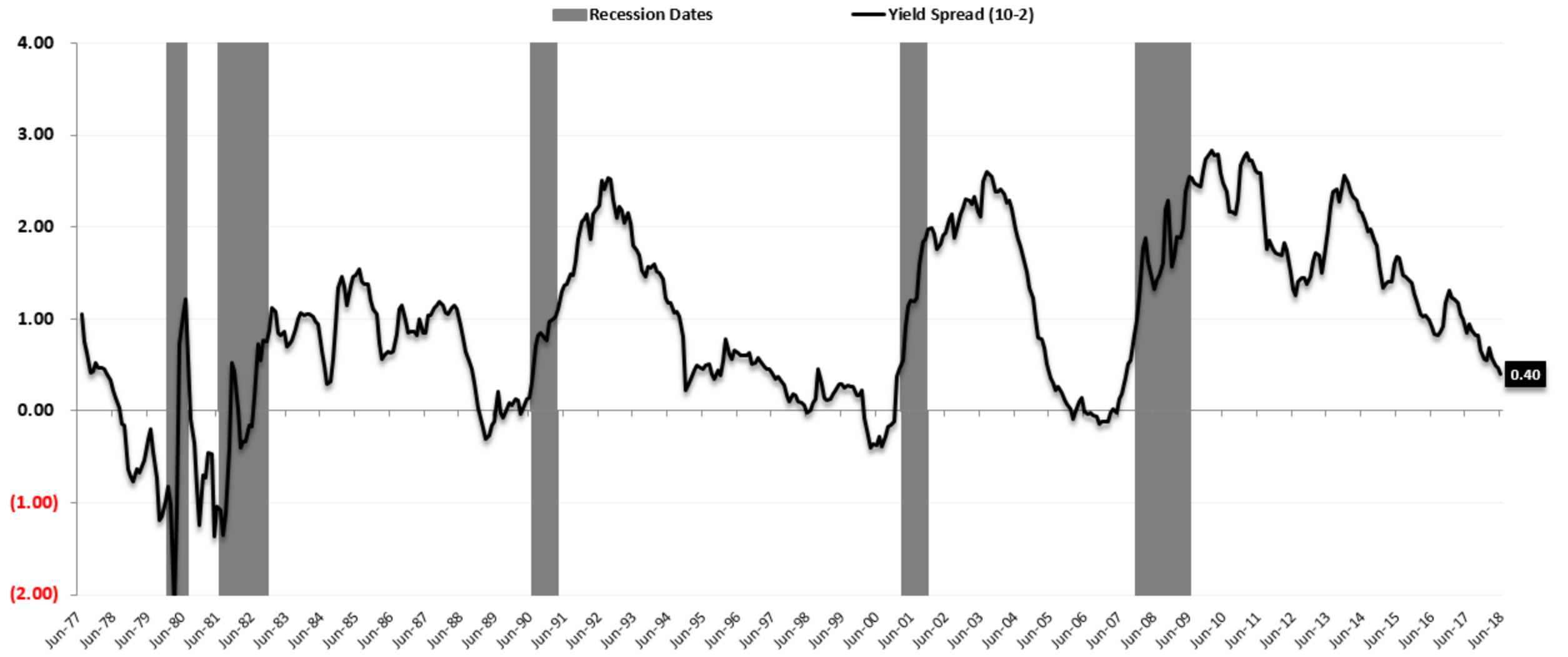
SHORT TREASURIES = CONSENSUS

10Y TREASURY: CFTC NET NON-COMMERCIAL FUTURES & OPTIONS



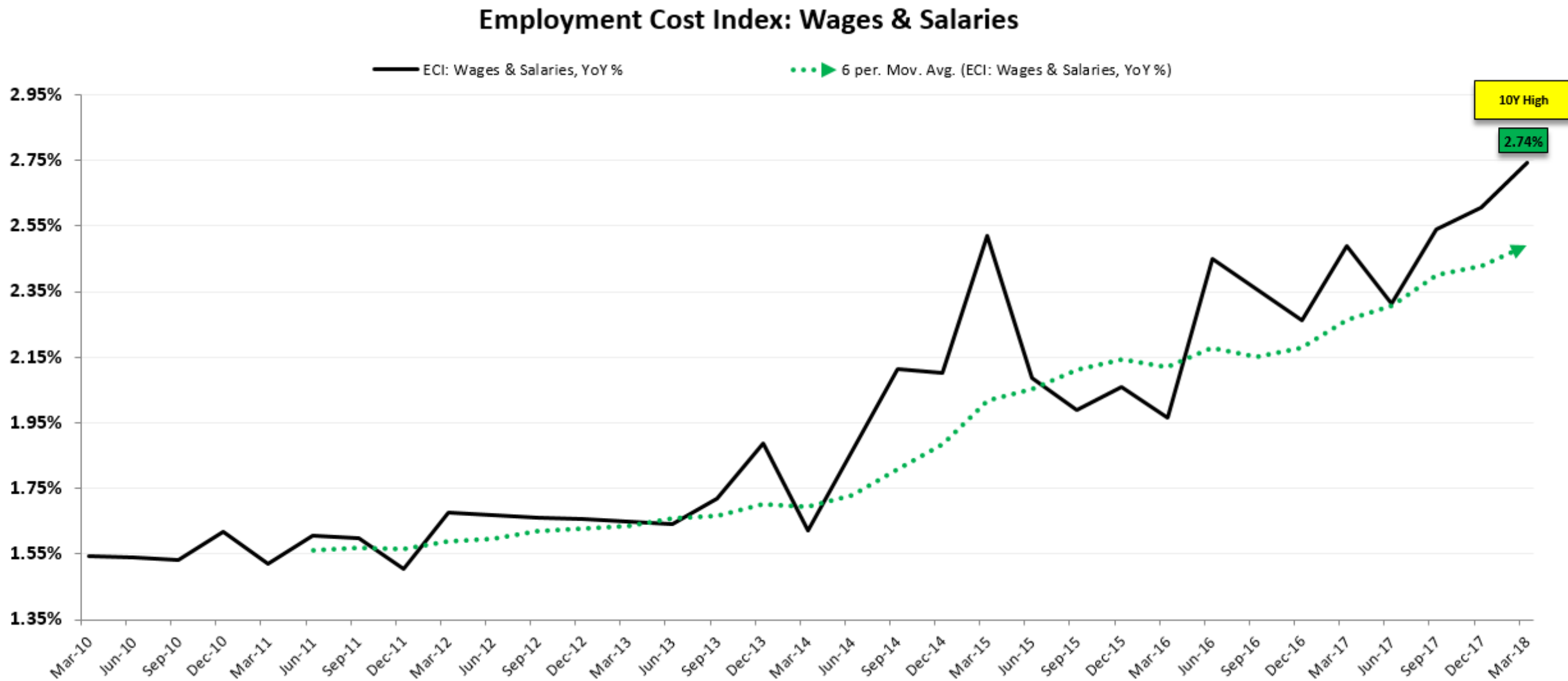
INFLATION EXPECTATIONS ↓ + POLICY TIGHTENING + QUAD 4 = CURVE FLATTENING

IF INFLATION EXPECTATIONS ARE COMING IN ON THE LONG END, REALIZED INFLATION IS SET TO SLOW AND THE FED IS HIKING INTO A PENDING QUAD 4 ENVIRONMENT, DOMESTICALLY & GLOBALLY, CURVE FLATTENING SHOULD REMAIN INTERMINABLE



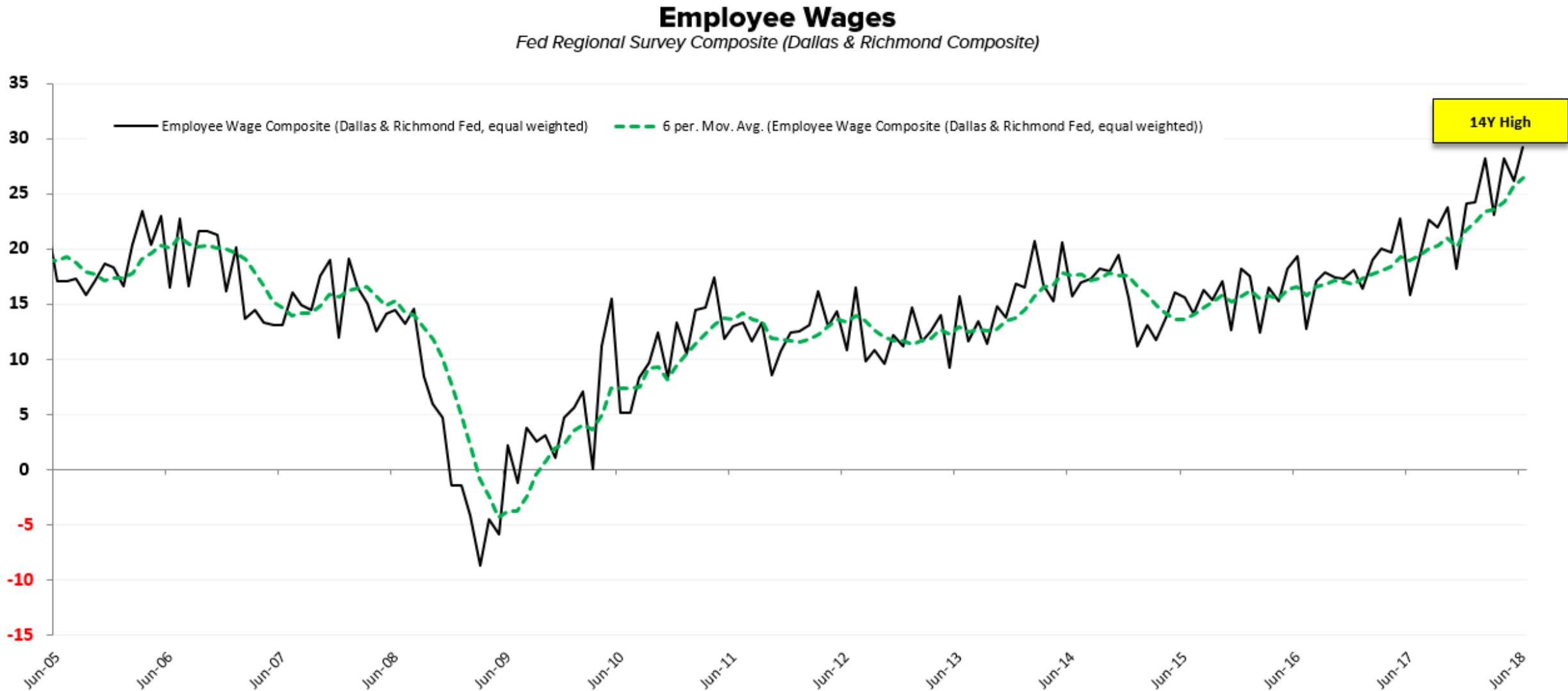
MEANWHILE, WAGE INFLATIONARY PRESSURE IS BUILDING

BOTH THE TOTAL COMPENSATION AND WAGES AND SALARIES SERIES IN THE ECI CONTINUE TO ACCELERATE TO NEW HIGHS



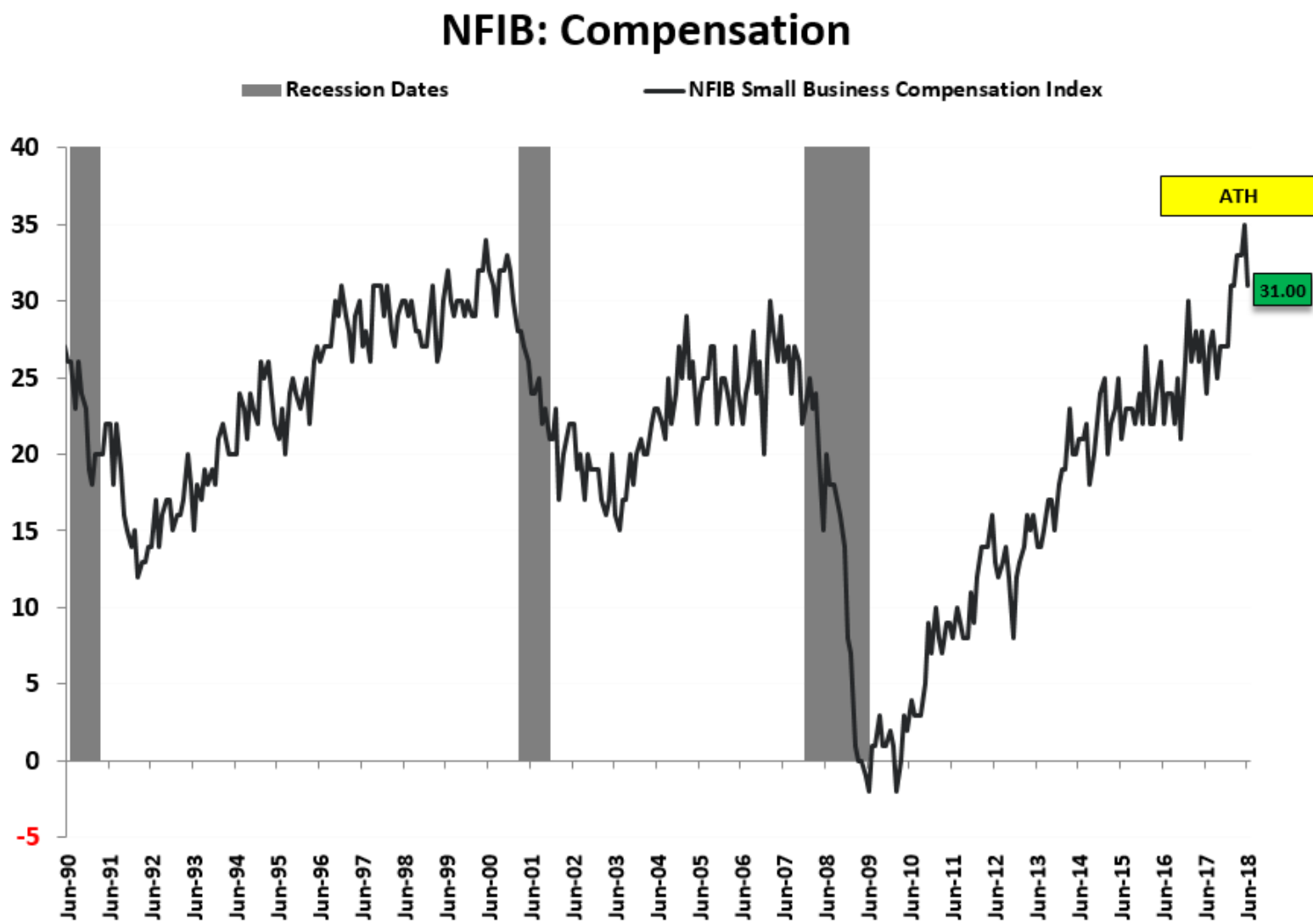
MANUFACTURING WAGES = 14Y HIGHS

THE EMPLOYEE WAGES SERIES FOR THOSE REPORTING IN THE FED REGIONAL SURVEYS CONTINUE TO MAKE HIGHER CYCLE HIGHS



SMALL BUSINESS COMPENSATION = ALL-TIME HIGH

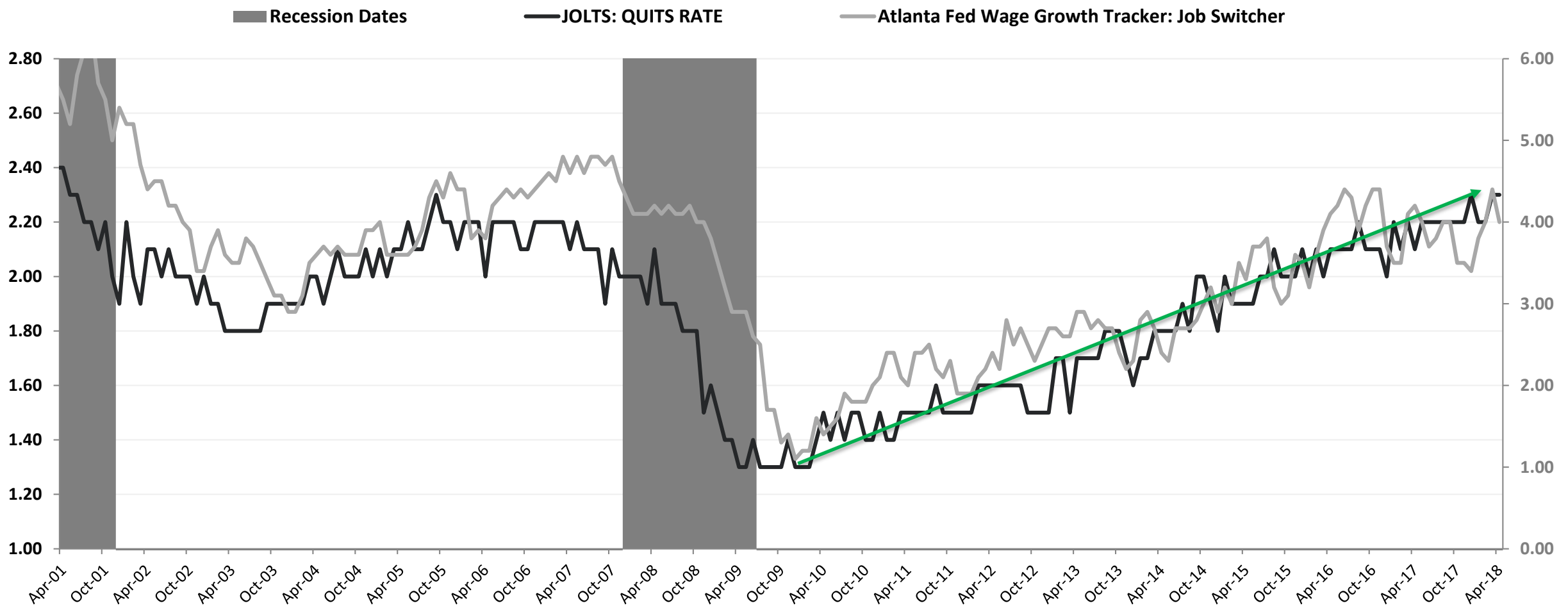
THE NFIB COMPENSATION SERIES MADE AN ATH IN MAY. AN ALL-TIME HIGH MAY NOT BE WHAT IT USED TO BE ON A NOMINAL BASIS, BUT IT'S DIFFICULT TO ARGUE IT'S NOT DIRECTIONALLY INDICATIVE



QUITTING IS BECOMING INCREASINGLY LUCRATIVE

WAGE GROWTH FOR THOSE SWITCHING JOBS IS CURRENTLY RUNNING ~4% Y/Y AND ACCELERATING ... REPRESENTING A SIZEABLE PREMIUM TO THE NATIONAL AVERAGE AND UNDERSCORING THE REALITY OF DEEPENING LABOR SCARCITY, PARTICULARLY FOR WORKERS WITH IN-DEMAND SKILLS

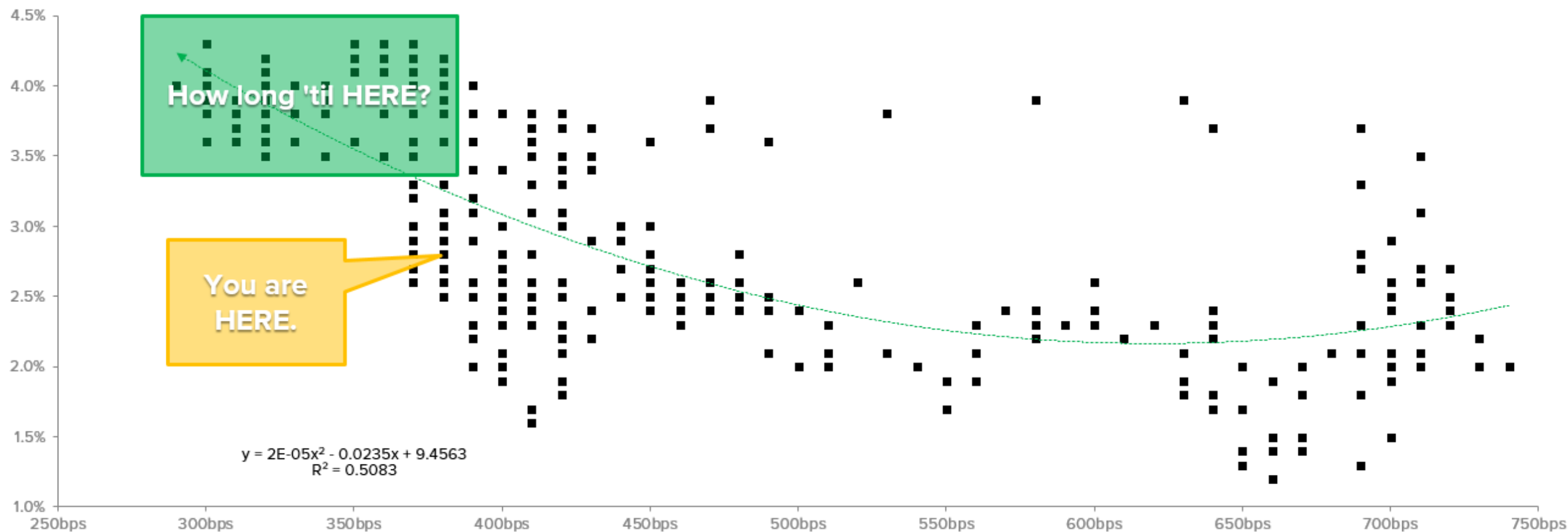
Quits Rate vs Job Switcher Wage Growth



WAGE PRESSURES ARE NON-LINEAR

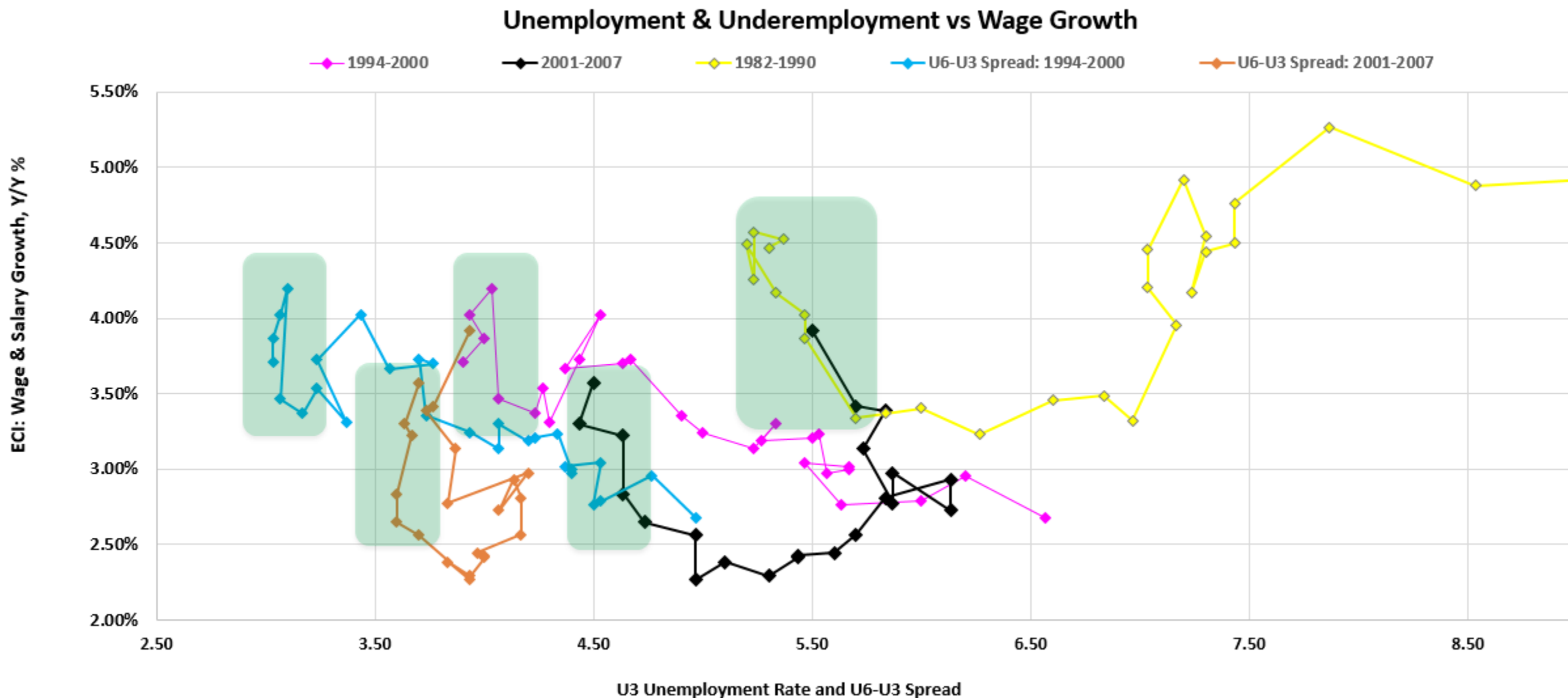
WAGE GROWTH – LIKE MOST THINGS IN THE ECONOMY AND FINANCIAL MARKETS – IS NON-LINEAR. THE CURRENT SPREAD IS RIGHT WHERE THE CURVE BEGINS TO HOOK HIGHER./

■ x-axis: U6 Underemployment Rate SA less U3 Unemployment Rate SA, bps Spread; y-axis: Average Hourly Earnings of Production and Nonsupervisory Workers YoY % Change
Poly. (x-axis: U6 Underemployment Rate SA less U3 Unemployment Rate SA, bps Spread; y-axis: Average Hourly Earnings of Production and Nonsupervisory Workers YoY % Change)



WAGES ALWAYS ACCELERATE AT THE END OF THE CYCLE

BELOW WE PLOT BOTH THE U3 UNEMPLOYMENT RATE AND THE U6-U3 SPREAD AGAINST WAGE AND SALARY GROWTH ACROSS THE PRIOR 3 CYCLES. WHILE THE INFLATION-OUTPUT RELATIONSHIP HAS BROKEN DOWN SINCE 1980, THE SLOWLY-THEN-FASTER CYCLICAL EVOLUTION IN EARNINGS GROWTH HAS REMAINED CONSISTENT ACROSS EXPANSIONS. THE END OF CYCLE ACCELERATION IS HIGHLIGHTED IN THE PLOT BELOW.



RATES ↓ + INCOME ↑ = HOUSING ACTIVITY ↑

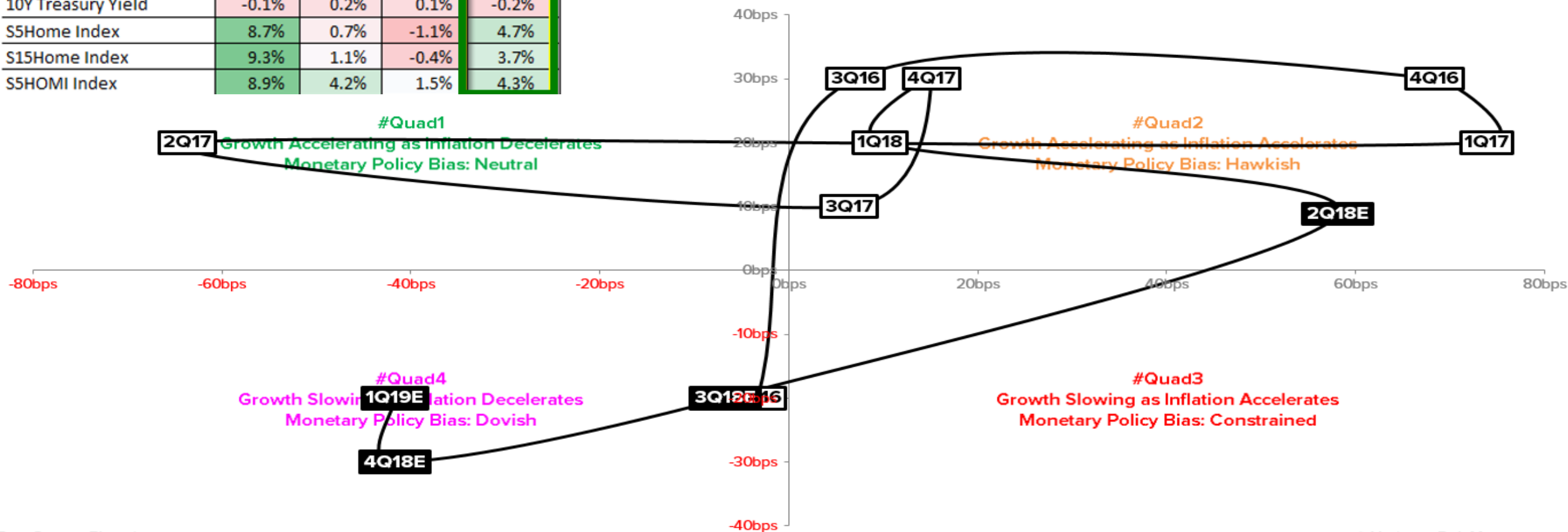
United States	2Q15	3Q15	4Q15	1Q16	2Q16	3Q16	4Q16	1Q17	2Q17	3Q17	4Q17	1Q18	Hedgeye Estimates	2Q18E	3Q18E	4Q18E	1Q19E	NTM
Real GDP QoQ SAAR	2.70%	1.60%	0.50%	0.60%	2.20%	2.80%	1.80%	1.20%	3.10%	3.20%	2.90%	2.00%		3.48%	2.34%	1.68%	1.19%	-
Percentile (T10Y)	56%	41%	26%	31%	56%	69%	46%	33%	79%	82%	72%	46%	Bloomberg Consensus Estimates	3.40%	2.99%	2.62%	2.40%	-
Real GDP YoY	3.30%	2.40%	2.00%	1.40%	1.20%	1.50%	1.80%	2.00%	2.20%	2.30%	2.60%	2.80%	Hedgeye Estimates	2.89%	2.69%	2.39%	2.19%	2.54%
Percentile (T10Y)	95%	59%	54%	33%	23%	38%	56%	62%	64%	67%	74%	87%	Bloomberg Consensus Estimates	2.90%	2.88%	2.87%	2.90%	2.89%
Headline CPI YoY	-0.04%	0.11%	0.47%	1.08%	1.05%	1.12%	1.80%	2.54%	1.90%	1.97%	2.12%	2.21%	Hedgeye Estimates	2.80%	2.73%	2.31%	1.89%	2.43%
Percentile (T10Y)	10%	13%	15%	18%	18%	23%	59%	77%	67%	69%	74%	79%	Bloomberg Consensus Estimates	2.70%	2.75%	2.50%	2.25%	2.55%

Avg Historical Performance by Macro Quadrant, Q/Q %

Exposure	I	II	III	IV
10Y Treasury Yield	-0.1%	0.2%	0.1%	-0.2%
S5Home Index	8.7%	0.7%	-1.1%	4.7%
S15Home Index	9.3%	1.1%	-0.4%	3.7%
S5HOMI Index	8.9%	4.2%	1.5%	4.3%

United States

◆ x-axis: Second Derivative of Headline CPI;
y-axis: Second Derivative of Real GDP



Data Source: Bloomberg

© Hedgeye Risk Management



YOUR SEASONAL SEASONALITY REMINDER



HEADING INTO THE HEADWIND SEASON

Housing Seasonality				
Average Performance by Quarter				
Average Absolute Performance, Trailing 5Y				
Security	1Q	2Q	3Q	4Q
ITB	2.7%	0.9%	1.3%	9.8%
XHB	1.4%	-0.1%	-1.5%	7.0%
S5HOME	3.7%	0.2%	-3.3%	11.6%
LTM				
Security	1Q	2Q	3Q	4Q
ITB	-9.7%	-3.4%	7.7%	19.6%
XHB	-7.8%	-3.0%	3.3%	11.2%
S5HOME	-11.1%	-7.5%	8.5%	24.4%

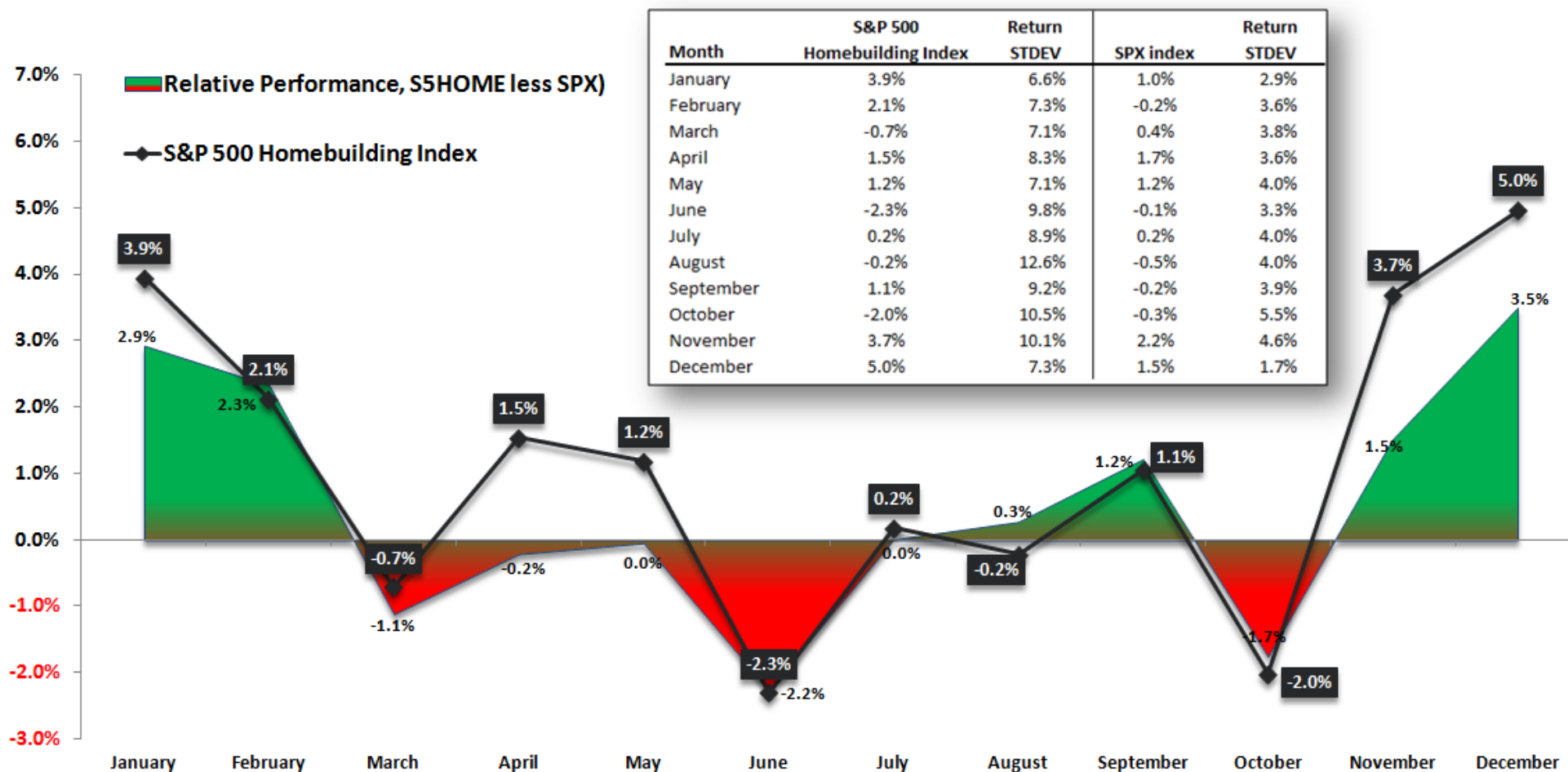
Here's how the seasonality looks on a quarterly basis. It's pretty clear which quarters historically have tended to generate positive and negative P&L.

The seasonal performance trend had been somewhat inconsistent the last couple years but positive 4Q performance has remained consistent with the historical pattern.

BUILDER SEASONALITY (20 YEARS)

HOMEBUILDER SEASONALITY

Ave Performance by Month, 1996-2014



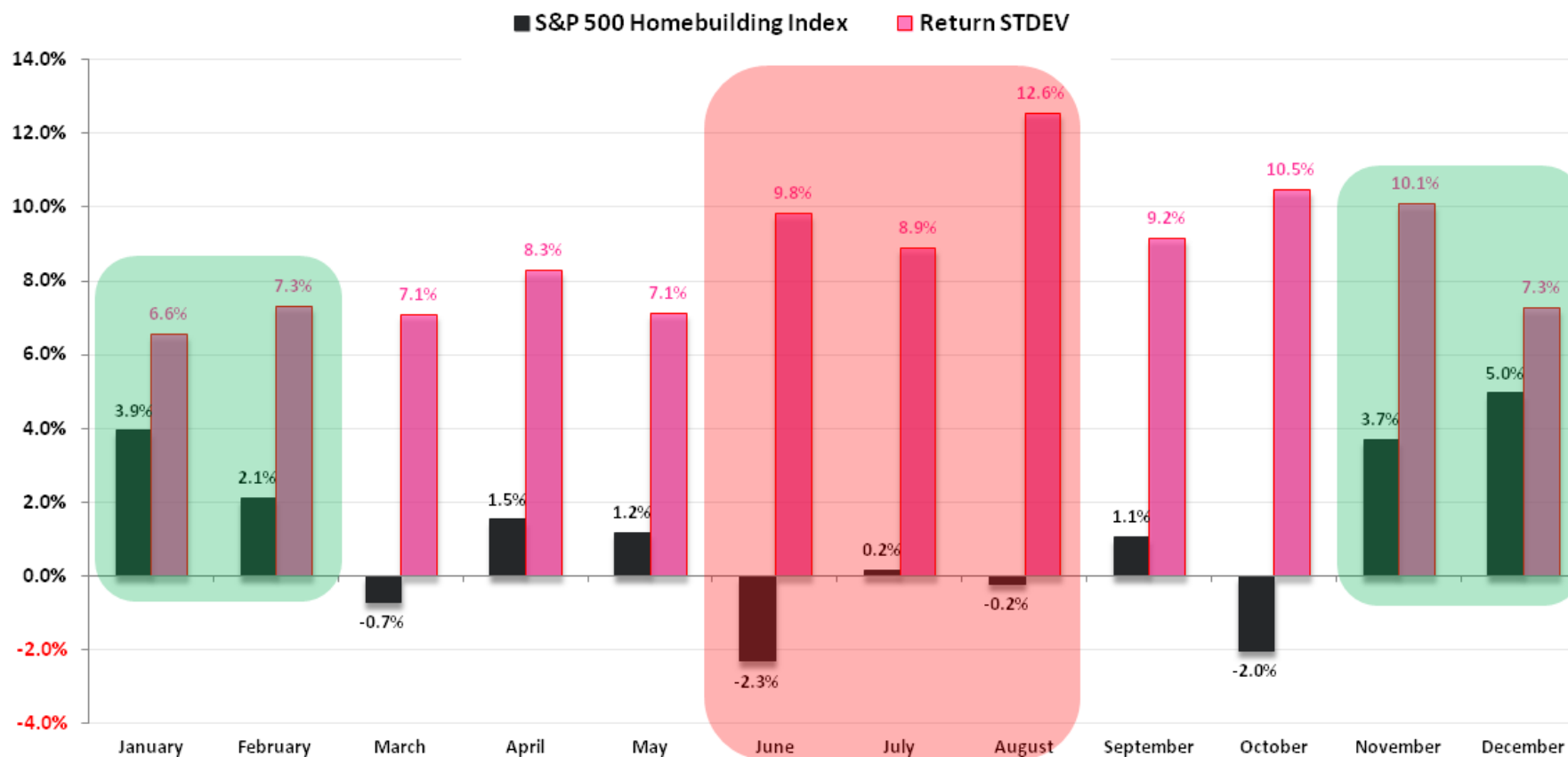
*Performance calculated using average monthly price: sample period = 1996-2014

Incidentally, the last 20 years of housing data show similar seasonal patterns.

VOLATILITY IS SEASONAL AS WELL

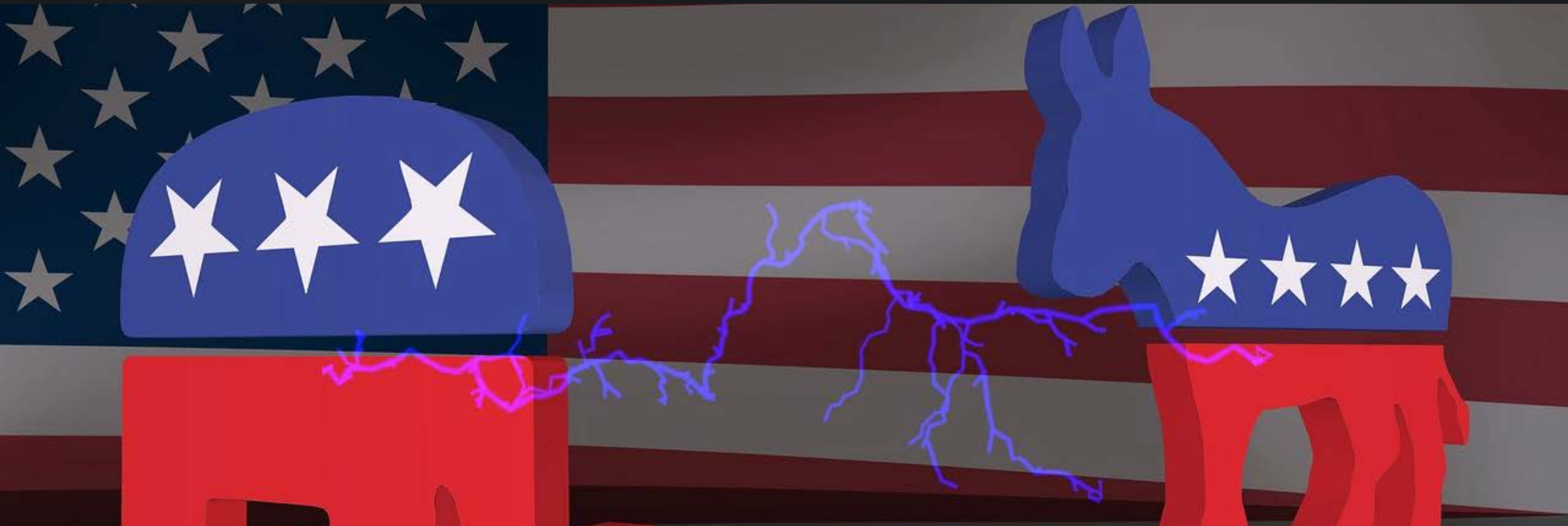
HOMEBUILDER SEASONALITY

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.



ELECTION CYCLE PERFORMANCE ANALYSIS

ELECTION CYCLE SIMPLICITY

THE ELECTION CYCLE: A POLITICO-BEHAVIORAL PHENOMENON

PROMISE THE WORLD

Year 4 (Election Year)



HONEYMOON/DO NO HARM

Year 1



UNLEASH HELL

Year 2



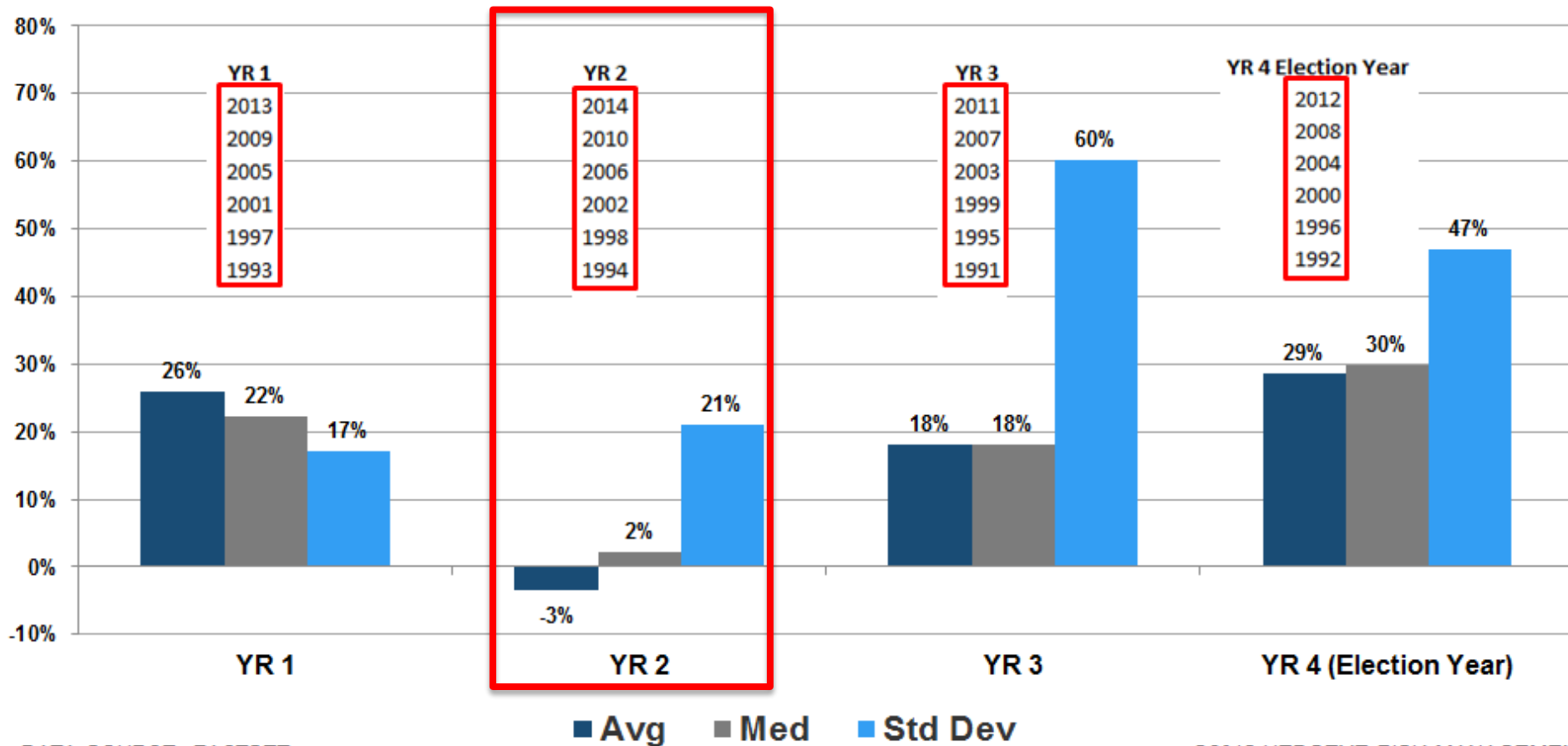
COMPING THE COMP

Year 3



FREQUENTIST 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

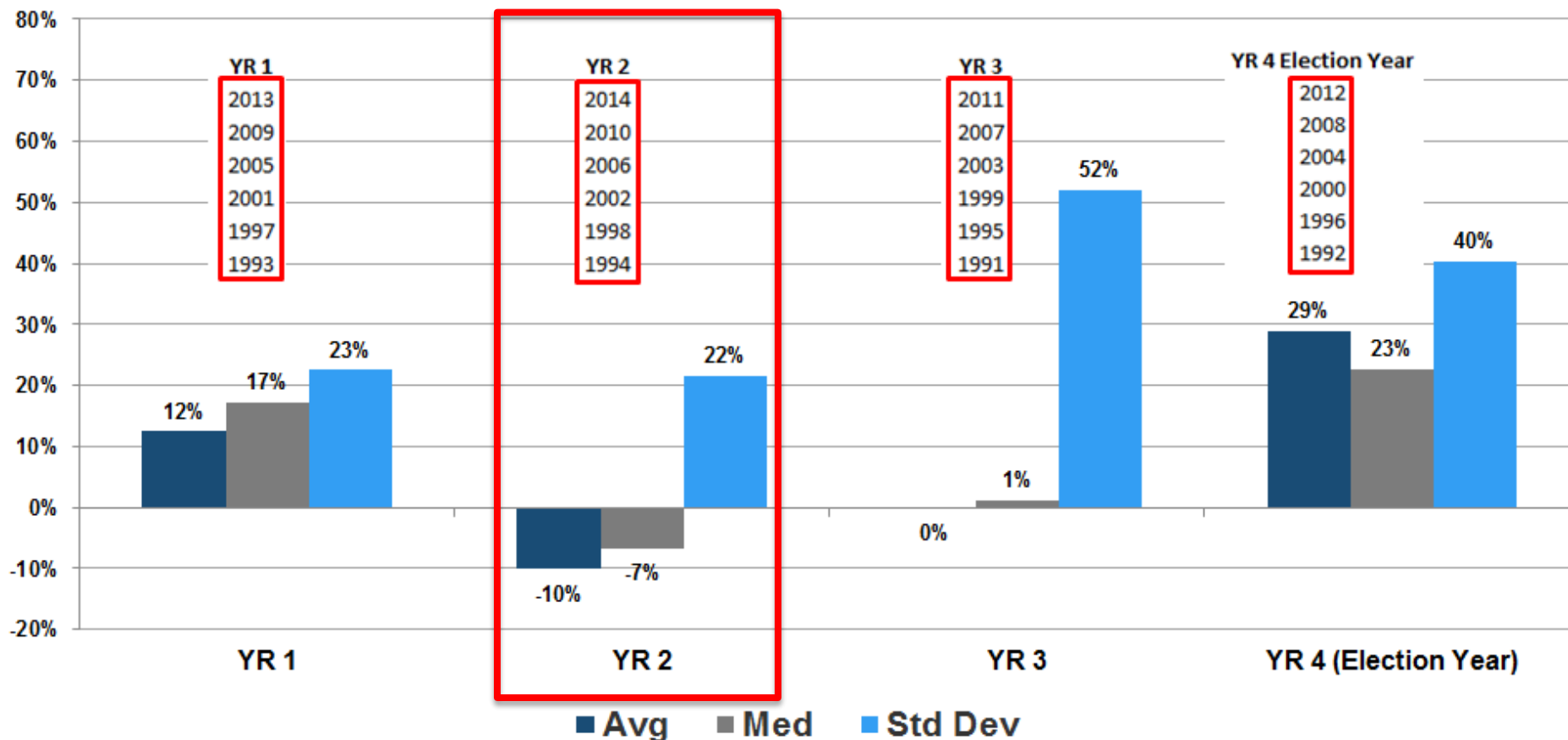
Historically, housing equity price performance has followed a distinct, recurrent pattern over the last 6 election cycles.

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

This has to do with the nature of previous electoral cycles. Candidates promise much on the campaign trail and often entice voters with housing-related tax giveaways. In the past, this has stoked equities higher in the election year and the following year.

FREQUENTIST HOUSING: **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 – historically, Housing equities have outperformed the broader market meaningfully on a relative basis in years 4 (election year) and 1 (year after election) as well.

FREQUENTIST HOUSING: THE DATA

		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

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.

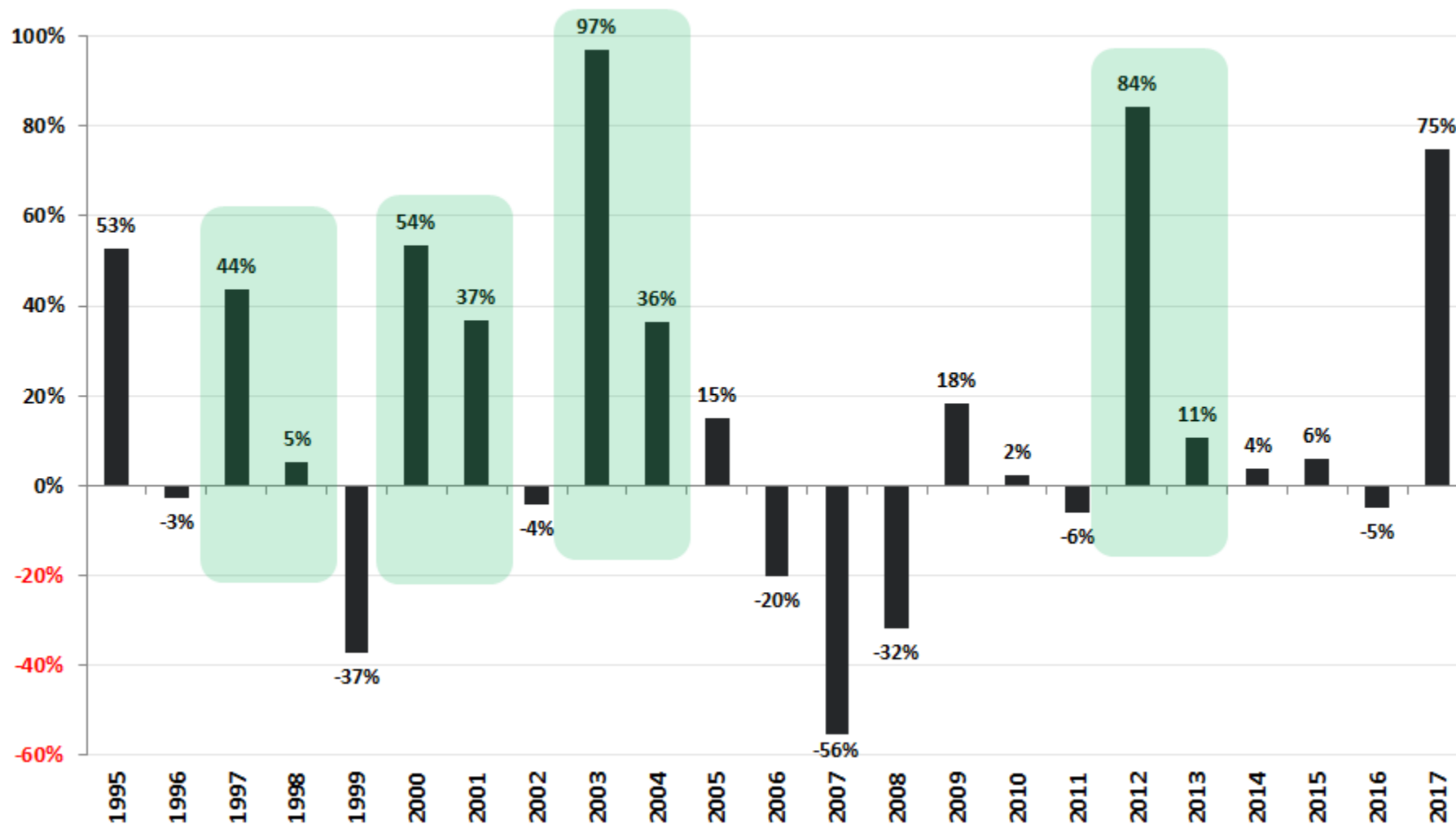
Takeaways: Housing stocks have not performed well this past election year (2016, -5%) in comparison with their election year track record since 1992 (+30%). For now, there does not appear to be an investable post-election pattern.

The key takeaway for us is that yields have tended to rise in non-recessionary post-election periods.

BUILDERS – PERFORMANCE CLUSTERING

HOMEBUILDER PERFORMANCE

S15 Home Index Annual Performance



DATA SOURCE: BLOOMBERG

Builders had a monster year in 2017 with the S15 Home Index up 75% and valuations growing increasingly rich.

Looking historically, valuation and prior year returns have not been catalysts for subsequent performance. In fact, over the history of the series, performance has clustered in multi-year trends with outsized performance years generally being followed by more positive absolute performance in the subsequent year.

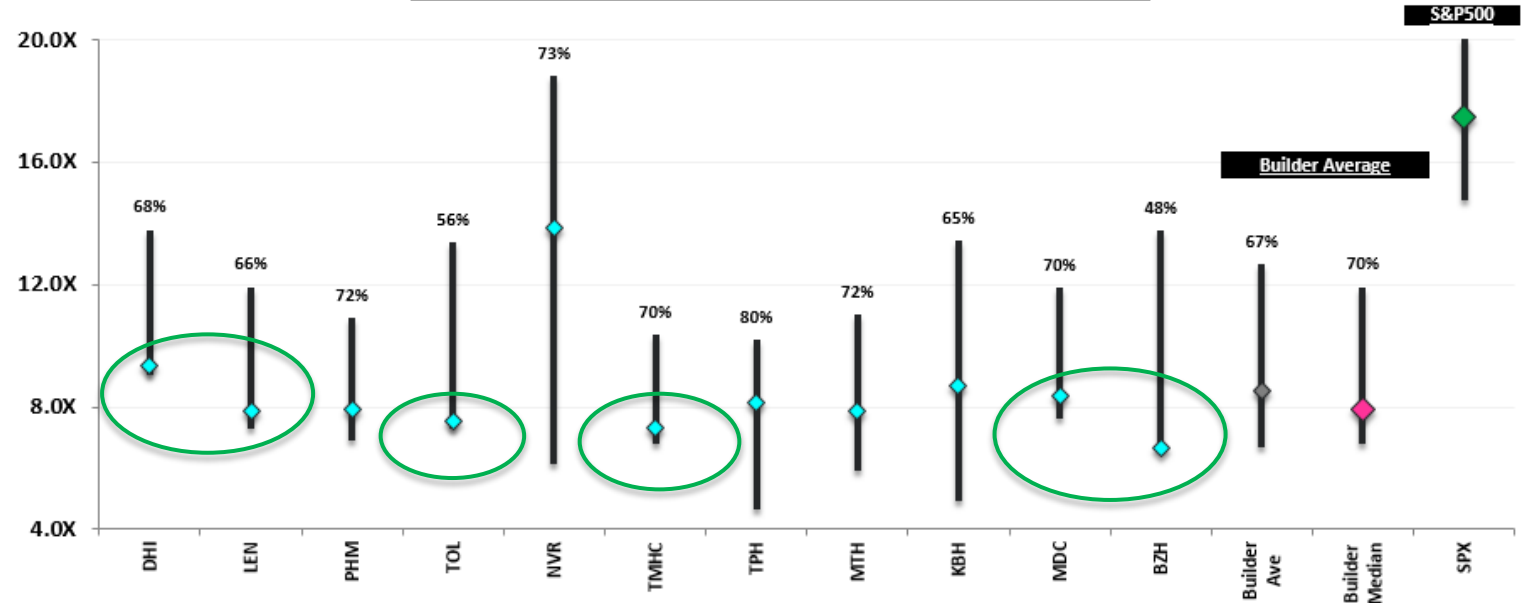


AND VALUATIONS ARE LOW

CHEAP APPEARS CHEAP FOR THE WRONG REASONS

VALUATION		Forward PE					P/TB				
Company	Ticker	Current	5Y Min	5Y Max	% Max	% of Range	Current	5Y Min	5Y Max	% Max	% of Range
DR Horton	DHI	9.4X	9.0X	13.8X	68%	7%	1.9X	1.4X	2.5X	76%	45%
Lennar Corp.	LEN	7.9X	7.3X	11.9X	66%	12%	1.3X	1.2X	2.3X	58%	12%
PulteGroup Inc	PHM	7.9X	6.9X	10.9X	72%	25%	2.0X	1.1X	3.4X	58%	37%
Toll Brothers	TOL	7.5X	7.3X	13.4X	56%	4%	1.3X	1.0X	1.9X	65%	29%
NVR Inc	NVR	13.8X	6.2X	18.8X	73%	61%	7.7X	3.0X	8.5X	90%	85%
Taylor Morrison	TMHC	7.3X	6.8X	10.4X	70%	9%	1.1X	0.7X	2.3X	48%	25%
TRI Pointe Group	TPH	8.2X	4.6X	10.2X	80%	69%	1.3X	0.9X	3.2X	40%	18%
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KB Home	KBH	8.7X	4.9X	13.4X	65%	86%	1.3X	0.5X	3.5X	36%	25%
MDC Holdings	MDC	8.4X	7.6X	11.9X	70%	11%	1.2X	0.8X	1.5X	84%	67%
Beazer Homes	BZH	6.7X	6.7X	13.8X	48%	0%	0.9X	0.3X	2.7X	34%	25%
Builder Ave		8.5X	6.7X	12.7X	67%	28%	1.9X	1.1X	3.1X	58%	35%
Builder Median		7.9X	6.8X	11.9X	70%	12%	1.3X	0.9X	2.5X	58%	25%
SPX		17.5X	14.8X	20.1X	87%	51%					

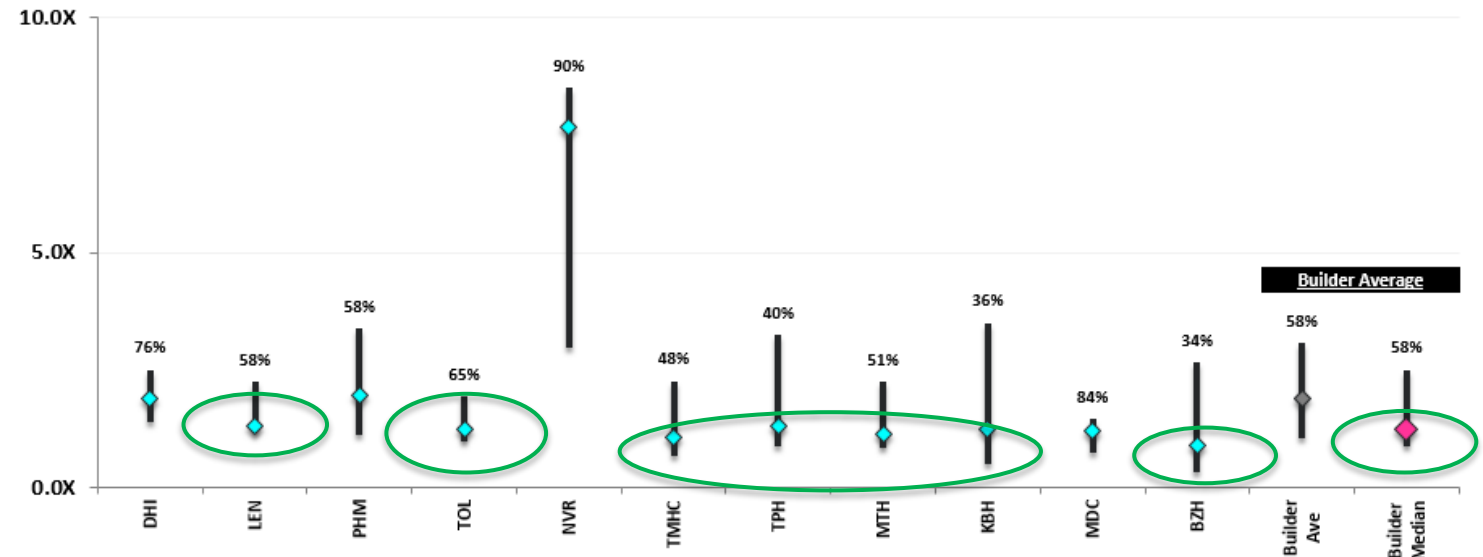
BUILDERS: Forward P/E, % of 5Y Max



BUILDER VALUATIONS ARE NEAR 5-YEAR LOWS

VALUATION		Forward PE					P/TB				
Company	Ticker	Current	5Y Min	5Y Max	% Max	% of Range	Current	5Y Min	5Y Max	% Max	% of Range
DR Horton	DHI	9.4X	9.0X	13.8X	68%	7%	1.9X	1.4X	2.5X	76%	45%
Lennar Corp.	LEN	7.9X	7.3X	11.9X	66%	12%	1.3X	1.2X	2.3X	58%	12%
Pultegroup Inc	PHM	7.9X	6.9X	10.9X	72%	25%	2.0X	1.1X	3.4X	58%	37%
Toll Brothers	TOL	7.5X	7.3X	13.4X	56%	4%	1.3X	1.0X	1.9X	65%	29%
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BUILDERS: P/TB, % of 5Y Max





WHAT IF YOU WERE LITERALLY (VS FIGURATIVELY) UNDERWATER



CLIMATE ▲ → START CONSIDERING THE HOUSING IMPLICATIONS



Perils of Climate Change Could Swamp Coastal Real Estate

Homeowners are slowly growing wary of buying property in the areas most at risk, setting up a potential economic time bomb in an industry that is struggling to adapt.

Waves crashing over an experimental sea wall built to protect homes during high tide in Isle of Palms, S.C., last year.
Mic Smith/Associated Press

FLOOD INSURANCE IS A GROWING RISK

Federal flood insurance costs taxpayers billions without reducing storm damage

Steve Ellis, Opinion contributor

Published 7:00 a.m. ET June 21, 2018

The National Flood Insurance Program costs taxpayers \$30 billion. Congress should incentivize people to mitigate damage and privatize flood insurance.



SOURCE: FEMA

National Flood Insurance Program running out of time, money

MICHELLE BRUNETTI POST Staff Writer Jul 7, 2018 (0)

FLOOD INSURANCE – A **SHORT** & **LONG** TERM RISK

Romano: You better hope I'm wrong about flood insurance



John Romano
Times Columnist

[MORE ARTICLES ►](#)

Published: June 22, 2018

Updated: June 22, 2018 at 05:31 PM

37 — That's how many days remain before the National Flood Insurance Program (NFIP) expires. That doesn't mean existing policies won't remain in effect, but it does mean the government will not renew or write new policies if the program is not extended. Congress has always saved the NFIP in the past, but this is the first time it is not tied to a budget extension. In other words, a program forced to borrow \$36 billion in the last 13 years, must now make a case to live or die on its own.

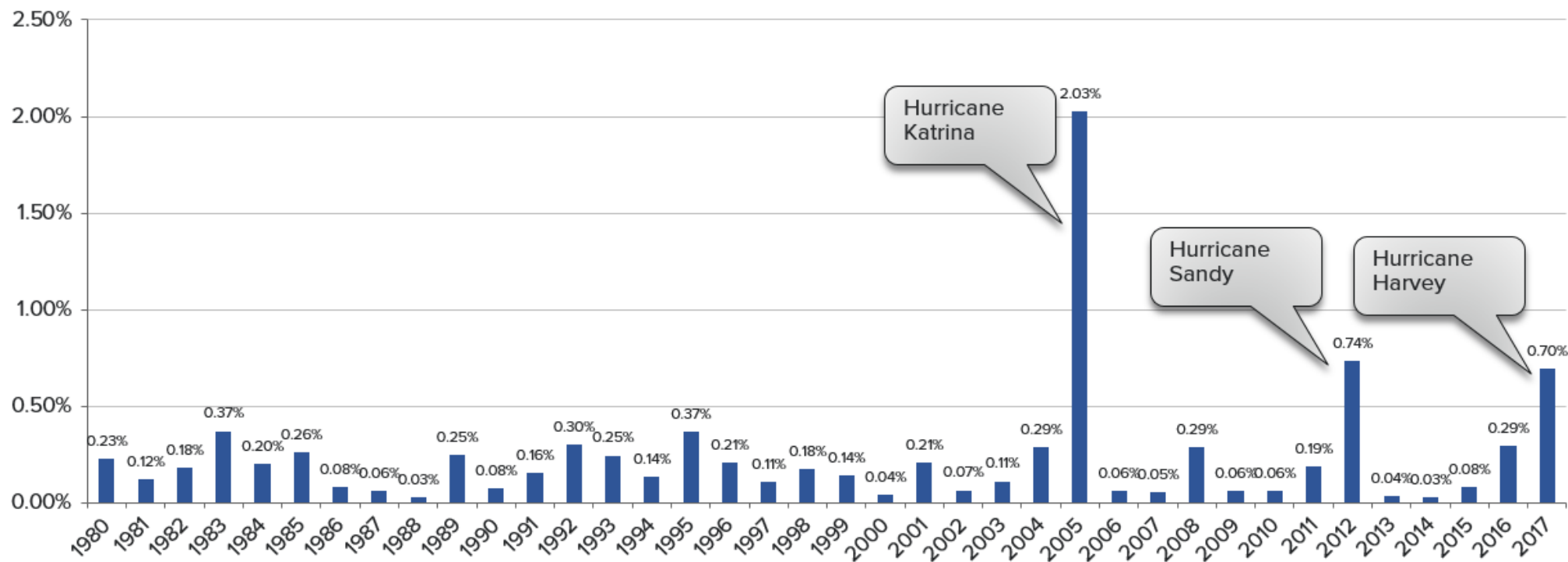
40,000 — The number of home sales that will collapse each month if the NFIP is not renewed, according to the National Association of Realtors. No NFIP usually means no mortgage in high-risk zones. If that happens, it could affect home values in the entire market.

8 — Of the 10 most destructive storms in the last 40 years, eight have occurred since 2001. That could be coincidental. Or it could be because we've allowed developers to overbuild without considering flood implications. Or maybe because, as the National Center for Environmental Information has reported, hurricanes have been stalling over one location and causing historic rainfall. Whatever the reason, you're not wrong if you have the sense that floods have been getting worse.

70 — Percentage of homes damaged by Hurricane Harvey near Houston last year that did NOT have flood insurance, according to an analysis by financial services provider CoreLogic. The percentage of uninsured homes during a devastating flood in Baton Rouge, La. the year before was even higher. Just because you're not in a zone that requires insurance doesn't mean you don't need insurance.

NFIP LOSSES HAVE BEEN RISING

NFIP Losses (% of Insurance in Force) 1980-2017

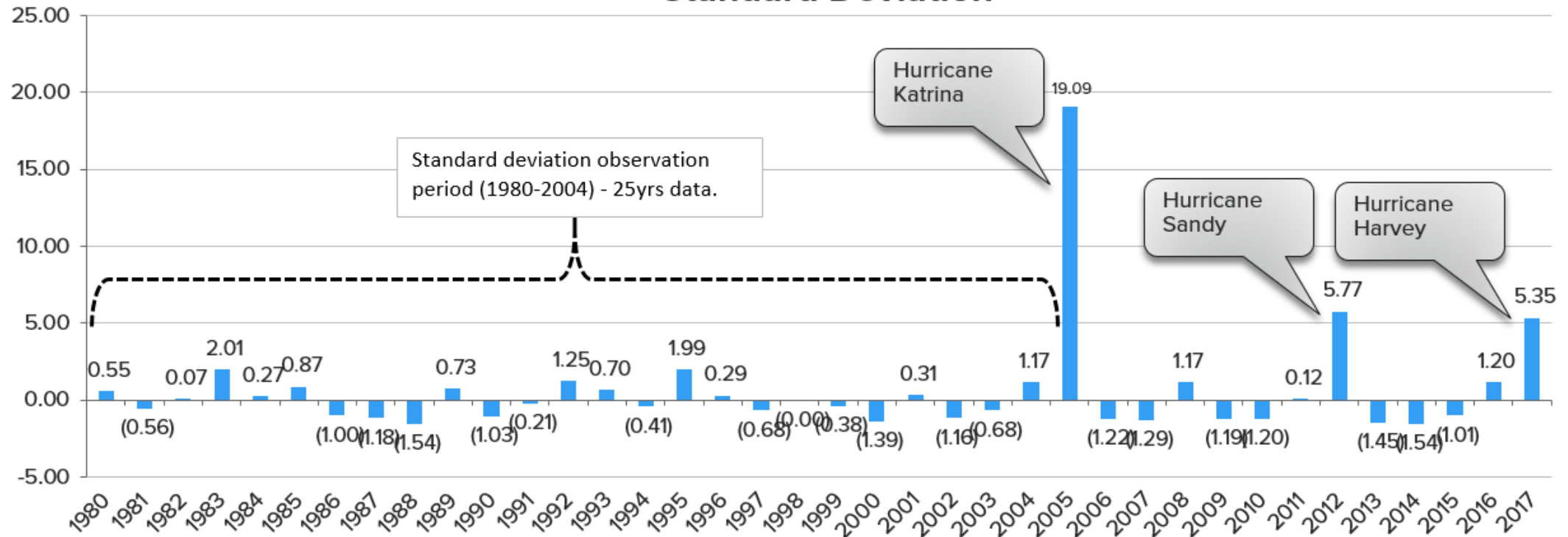


DATA SOURCE: NFIP

© HEDGEYE RISK MANAGEMENT

RIGHT TAIL EVENTS ARE BECOMING MORE COMMON

NFIP Losses (% of Insurance in Force) 1980-2017
Standard Deviation

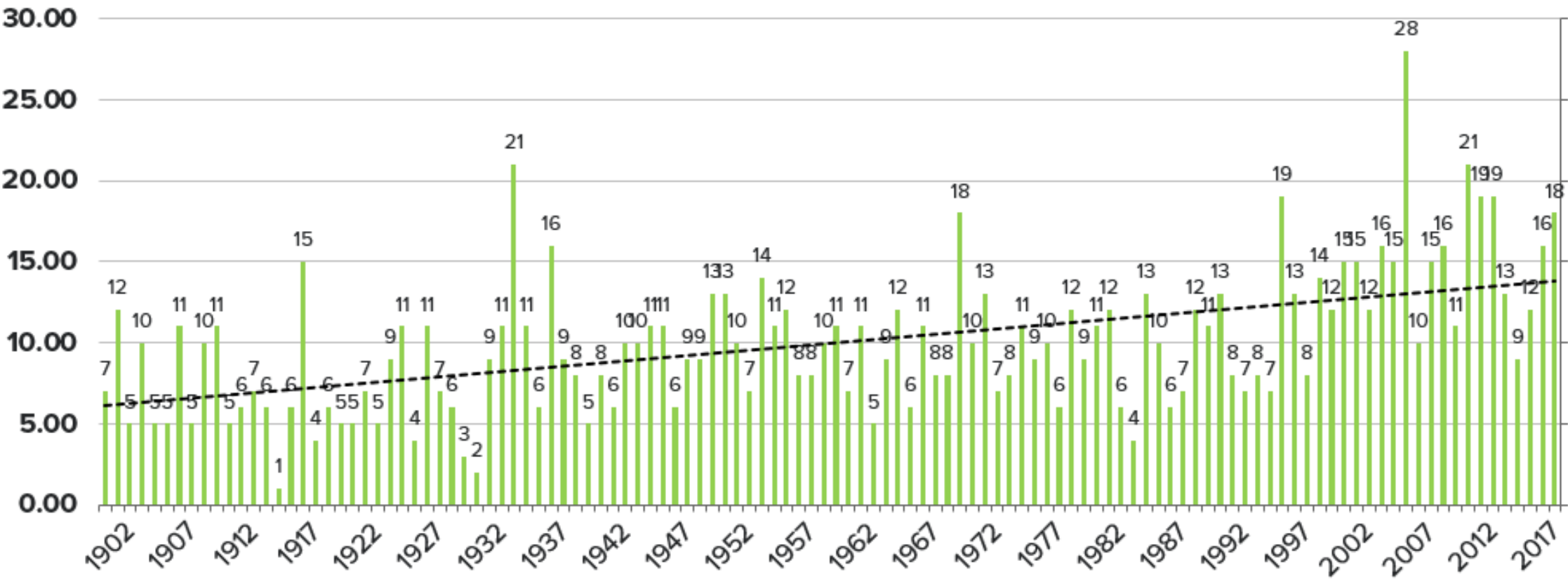


DATA SOURCE: NFIP

© HEDGEYE RISK MANAGEMENT

STORM VOLUME IS INCREASING IN THE NORTH ATLANTIC

Number of Named Storms Per Year in the North Atlantic
1900-Present

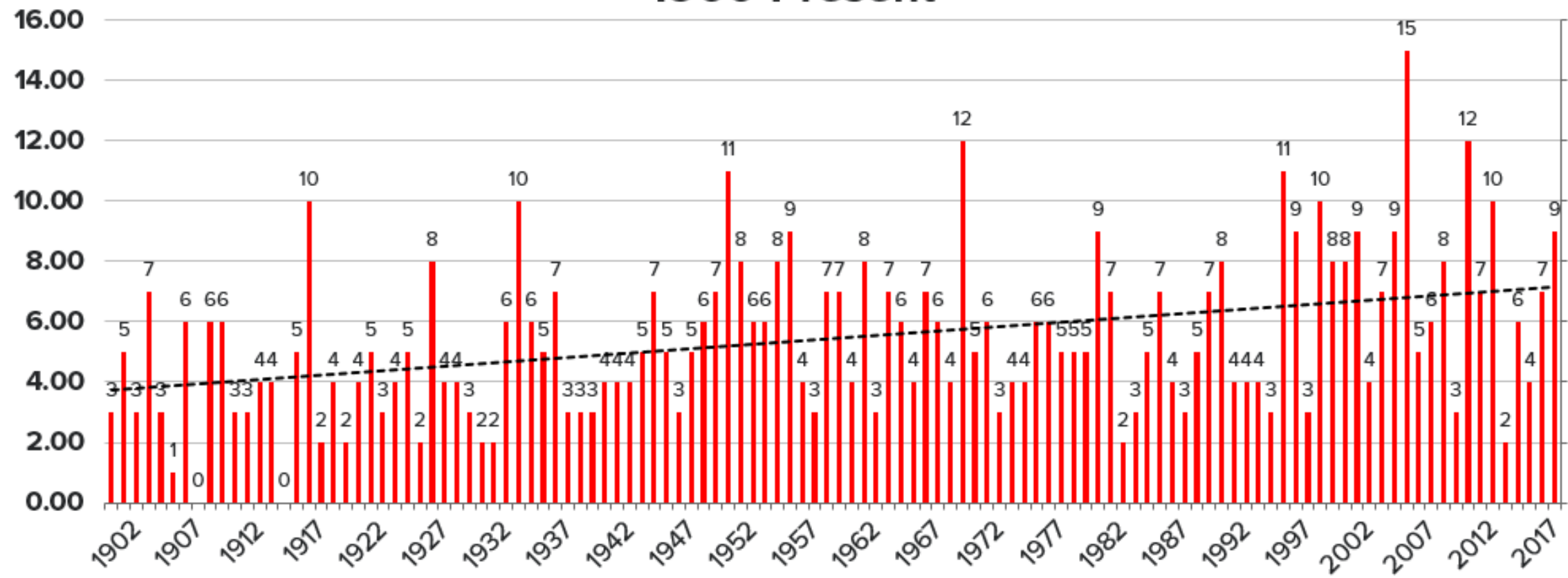


DATA SOURCE: WEATHER UNDERGROUND

© HEDGEYE RISK MANAGEMENT

HURRICANE VOLUME IS INCREASING IN THE NORTH ATLANTIC

Number of Hurricanes Per Year in the North Atlantic
1900-Present

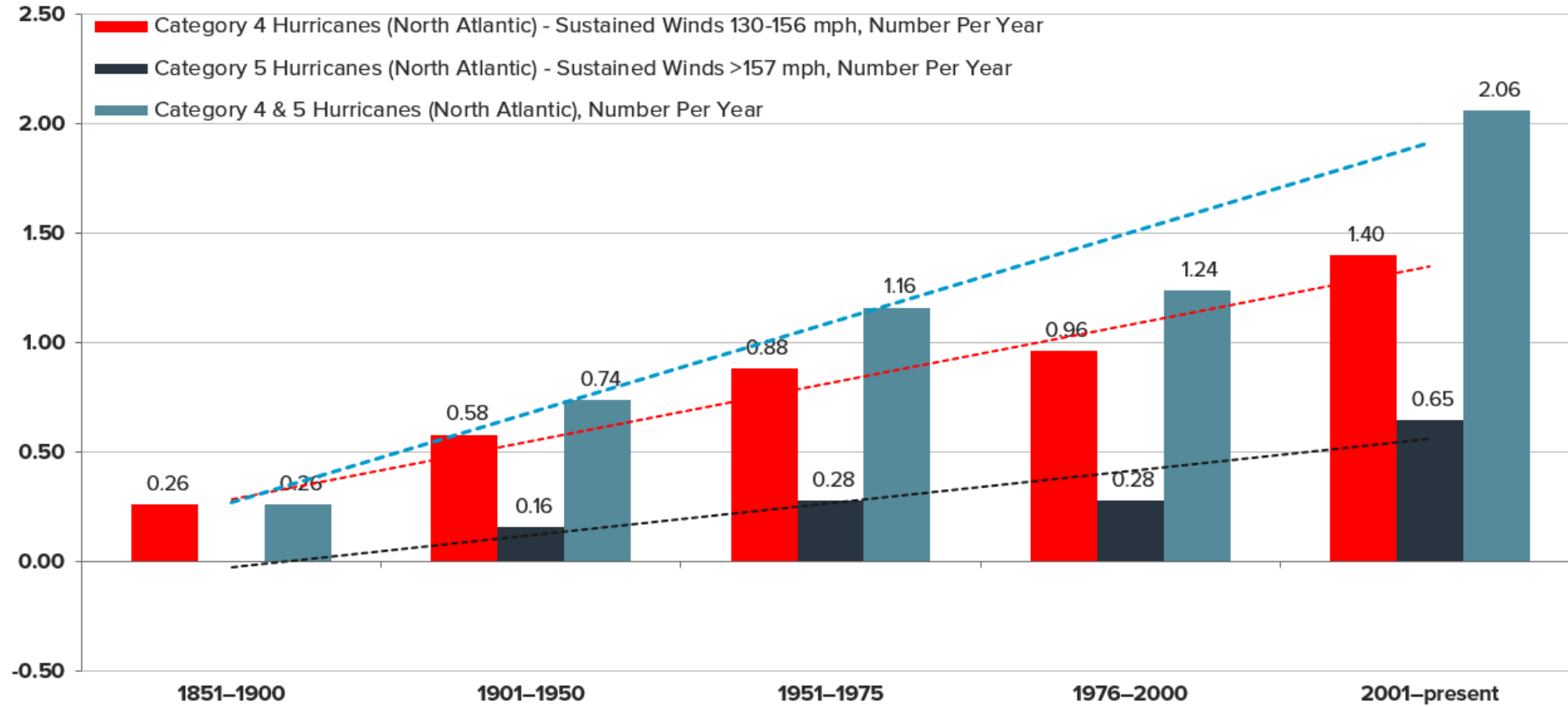


DATA SOURCE: WEATHER UNDERGROUND

© HEDGEYE RISK MANAGEMENT

EXTREME HURRICANE VOLUME (CAT 4 & 5) IS RISING

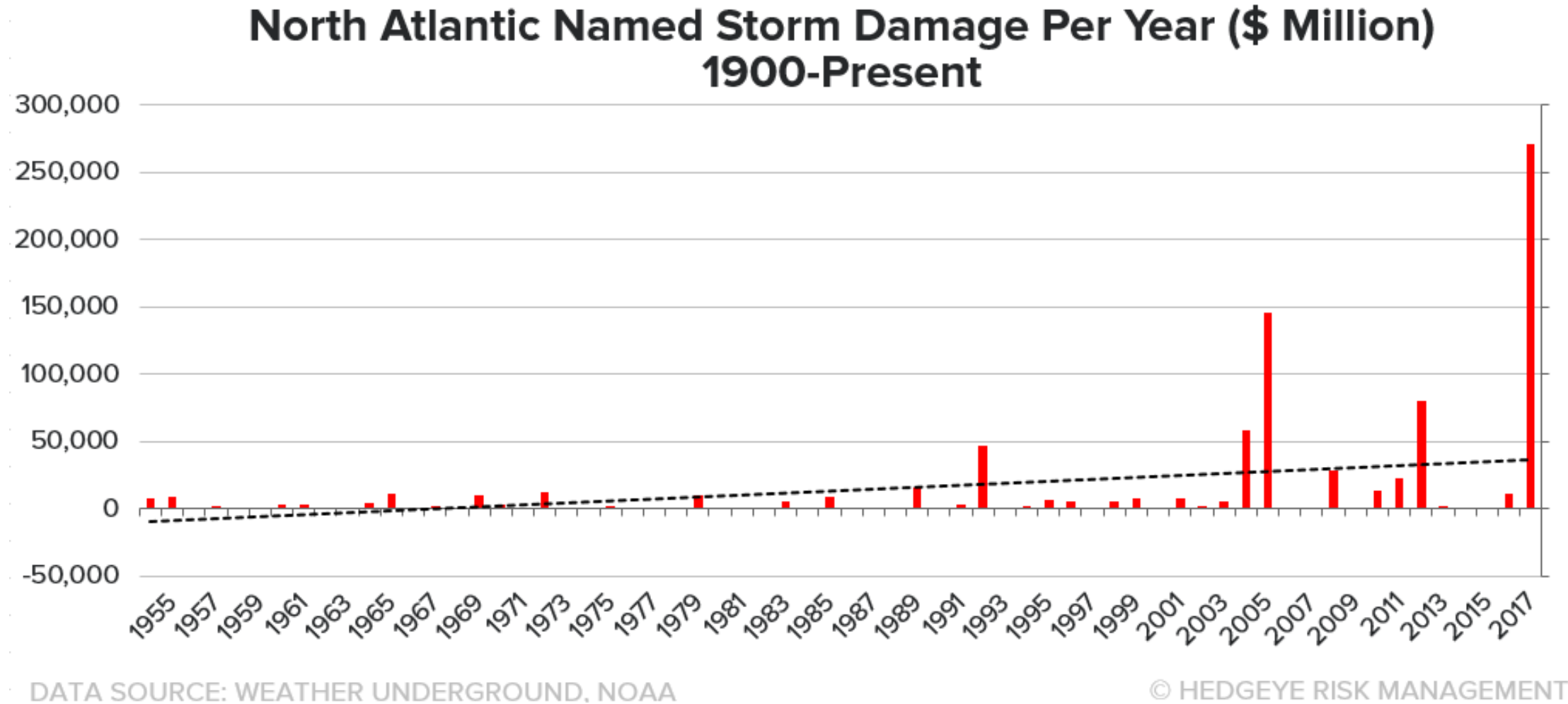
Number of Hurricanes Per Year (Category 4 & 5 Storms Only) in the North Atlantic
1851-Present



DATA SOURCE: WEATHER UNDERGROUND

© HEDGEYE RISK MANAGEMENT

EXTREME HURRICANE VOLUME (CAT 4 & 5) IS RISING



PROPERTIES AT RISK OF STORM SURGE FLOODING

Storm Surge Risk Level	Total Homes Potentially Affected	Total Estimated RCV (U.S. Dollars)
Extreme - Category 1 - 5 storms	806,735	191,170,832,774
Very High - Category 2 - 5 storms	2,509,236	608,263,801,243
High - Category 3 - 5 storms	4,557,089	1,088,338,913,877
Moderate - Category 4 - 5 storms	6,050,936	1,442,435,751,572
Low - Category 5 storms	6,942,499	1,620,652,870,673
Source: CoreLogic 2018		

Table 1 - Total Number of Homes at Risk Nationally and Estimated Reconstruction Cost Value

PROPERTIES AT RISK OF STORM SURGE FLOODING

Storm Surge Risk Level	Atlantic Coast		Gulf Coast	
	Total Homes Affected	RCV (U.S. Dollars)	Total Homes Affected	RCV (U.S. Dollars)
Extreme	456,688	122,684,450,321	350,047	68,486,382,453
Very High	1,438,100	398,084,569,726	1,071,136	210,179,231,517
High	2,506,545	672,405,046,607	2,050,544	415,933,867,270
Moderate	3,460,837	916,771,265,997	2,590,099	525,664,485,575
Low	3,924,023	1,011,558,178,641	3,018,476	609,094,692,032

Source: CoreLogic 2018

PROPERTIES AT RISK OF STORM SURGE FLOODING

Rank	State	Extreme	Very High	High	Moderate	Low*
1	Florida	351,093	1,064,674	1,752,603	2,292,791	2,774,175
2	Louisiana	72,256	207,442	624,521	747,111	817,480
3	Texas	39,109	117,558	253,947	384,944	543,847
4	New Jersey	95,659	278,539	382,065	471,353	N/A
5	New York	75,238	224,558	347,236	462,380	N/A
6	Virginia	26,960	94,378	246,824	366,478	409,129
7	South Carolina	35,934	126,997	209,026	294,239	347,030
8	North Carolina	32,282	95,286	160,831	210,233	259,718
9	Massachusetts	11,048	46,558	102,189	157,898	N/A
10	Georgia	8,887	50,409	105,735	141,518	152,559
11	Maryland	17,824	60,553	99,056	125,417	N/A
12	Mississippi	9,261	30,353	60,620	90,010	101,720
13	Pennsylvania	932	20,815	56,830	83,808	N/A
14	Connecticut	7,167	28,497	46,618	67,207	N/A
15	Alabama	6,379	17,306	32,331	44,744	57,973
16	Delaware	8,901	24,649	40,048	56,418	N/A
17	Rhode Island	1,876	8,153	17,312	26,484	N/A
18	Maine	5,645	7,960	11,851	18,150	N/A
19	New Hampshire	284	4,551	7,446	9,753	N/A

Source: CoreLogic 2018

PROPERTY VALUE AT RISK OF STORM SURGE FLOODING

Rank	State	Extreme	Very High	High	Moderate	Low*
1	Florida	\$68,993,319,371	\$214,615,495,959	\$353,434,047,211	\$458,546,265,943	\$552,417,823,248
2	New York	\$29,069,437,198	\$92,192,934,548	\$142,653,686,948	\$190,523,945,573	N/A
3	Louisiana	\$15,058,006,592	\$44,361,573,373	\$141,431,122,080	\$169,398,148,734	\$186,089,070,917
4	New Jersey	\$27,210,934,630	\$83,140,546,592	\$116,378,523,825	\$146,074,429,226	N/A
5	Texas	\$6,544,802,706	\$20,281,149,088	\$46,590,193,249	\$73,689,714,628	\$103,257,560,067
6	Virginia	\$6,889,209,422	\$23,532,519,915	\$57,147,551,590	\$84,231,366,445	\$95,057,016,309
7	South Carolina	\$10,365,743,962	\$33,689,536,077	\$52,352,428,765	\$70,363,340,488	\$80,775,388,252
8	North Carolina	\$6,502,998,590	\$19,557,292,731	\$33,348,232,464	\$43,887,698,767	\$54,356,018,315
9	Massachusetts	\$2,980,187,240	\$13,363,727,998	\$29,309,257,327	\$46,442,774,460	N/A
10	Georgia	\$2,740,063,841	\$13,213,068,236	\$24,703,010,004	\$31,744,968,374	\$33,763,709,156
11	Maryland	\$4,349,256,919	\$14,483,853,619	\$23,474,382,707	\$29,806,926,424	N/A
12	Connecticut	\$2,559,481,204	\$9,608,686,921	\$15,452,737,215	\$22,111,853,493	N/A
13	Mississippi	\$1,977,375,919	\$6,157,332,097	\$11,913,778,331	\$17,373,187,675	\$19,557,738,154
14	Pennsylvania	\$216,076,484	\$4,664,438,284	\$13,120,822,659	\$19,444,951,459	N/A
15	Delaware	\$2,635,651,997	\$7,021,080,076	\$11,463,739,373	\$16,078,182,995	N/A
16	Alabama	\$1,203,825,492	\$3,124,223,041	\$5,789,839,450	\$7,962,250,197	\$10,139,735,934
17	Rhode Island	\$528,745,488	2,408,462,659	\$5,093,849,517	\$7,809,201,093	N/A
18	Maine	\$1,281,230,692	\$1,914,444,383	\$2,960,376,784	\$4,634,377,599	N/A
19	New Hampshire	\$64,485,027	\$933,435,646	\$1,721,334,378	\$2,312,167,999	N/A

Source: CoreLogic 2018

PROPERTY VALUE AT RISK OF STORM SURGE FLOODING

Rank	Metropolitan Area	Total Homes at Risk	Total Estimated RCV (U.S. Dollars)
1	Miami, FL	788,679	\$156,109,638,962
2	New York, NY	726,048	\$277,316,495,768
3	Tampa, FL	459,082	\$79,154,913,706
4	New Orleans, LA	395,975	\$95,278,109,445
5	Virginia Beach, VA	389,938	\$90,904,781,082
6	Cape Coral/ Fort Myers, FL	318,950	\$63,465,095,946
7	Houston, TX	284,622	\$57,652,653,916
8	Bradenton, FL	254,535	\$49,231,359,219
9	Naples, FL	186,100	\$39,684,021,652
10	Jacksonville, FL	171,332	\$38,495,385,153
11	Philadelphia, PA	165,300	\$41,317,614,113
12	Charleston, SC	149,900	\$37,938,251,071
13	Myrtle Beach, SC	128,155	\$22,792,717,625
14	Boston, MA	126,263	\$34,937,253,340
15	Beaumont, TX	121,379	\$21,026,736,810
	Total	4,666,258	\$1,105,305,027,808

PROPERTY VALUE AT RISK OF STORM SURGE FLOODING



STUDY FINDINGS SUMMARY

- The area of the SFHAs (Special Flood Hazard Areas) will increase by 45 percent nationally on average by the end of this century. In coastal areas, SFHAs will increase by 55 percent. Three-to-four percent of the US population will live in coastal SFHAs by 2100 and 11 percent of the US population will live in riverine (that is, inland) SFHAs. In addition, between \$66 billion and \$160 billion worth of real estate is expected to be below sea level by 2050. By the end of the century, the range is \$238 billion to \$507 billion.
- Florida sits on a substrate of porous limestone that holds Florida's supply of fresh water. As the sea level rises, it infiltrates the limestone underground and contaminates the freshwater supply. A sea wall might stop storm water surges on the surface, but it can't prevent the underground incursion of salt water.
- The economic losses and social disruption may happen gradually, but they are likely to be greater in total than those experienced in the housing crisis and Great Recession. That recent experience illustrated the difficulty of allocating losses between homeowners, lenders, servicers, insurers, investors, and taxpayers in general.
- A large share of homeowners' wealth is locked up in their equity in their homes. If those homes become uninsurable and unmarketable, the values of the homes will plummet, perhaps to zero. Unlike the recent experience, homeowners will have no expectation that the values of their homes will ever recover.
- In the housing crisis, a significant share of borrowers continued to make their mortgage payments even though the values of their homes were less than the balances of their mortgages. It is less likely that borrowers will continue to make mortgage payments if their homes are literally underwater. As a result, lenders, servicers and mortgage insurers are likely to suffer large losses.
- One challenge for housing economists is predicting the time path of house prices in areas likely to be impacted by climate change. Consider an expensive beachfront house that is highly likely to be submerged eventually, although "eventually" is difficult to pin down and may be a long way off. Will the value of the house decline gradually as the expected life of the house becomes shorter? Or, alternatively, will the value of the house—and all the houses around it—plunge the first time a lender refuses to make a mortgage on a nearby house or an insurer refuses to issue a homeowner's policy? Or will the trigger be one or two homeowners who decide to sell defensively?

These bullets are excerpts from a 2016 Freddie Mac report on the risks posed by climate change to shorefront and waterfront property. The author raised numerous relevant questions and points.

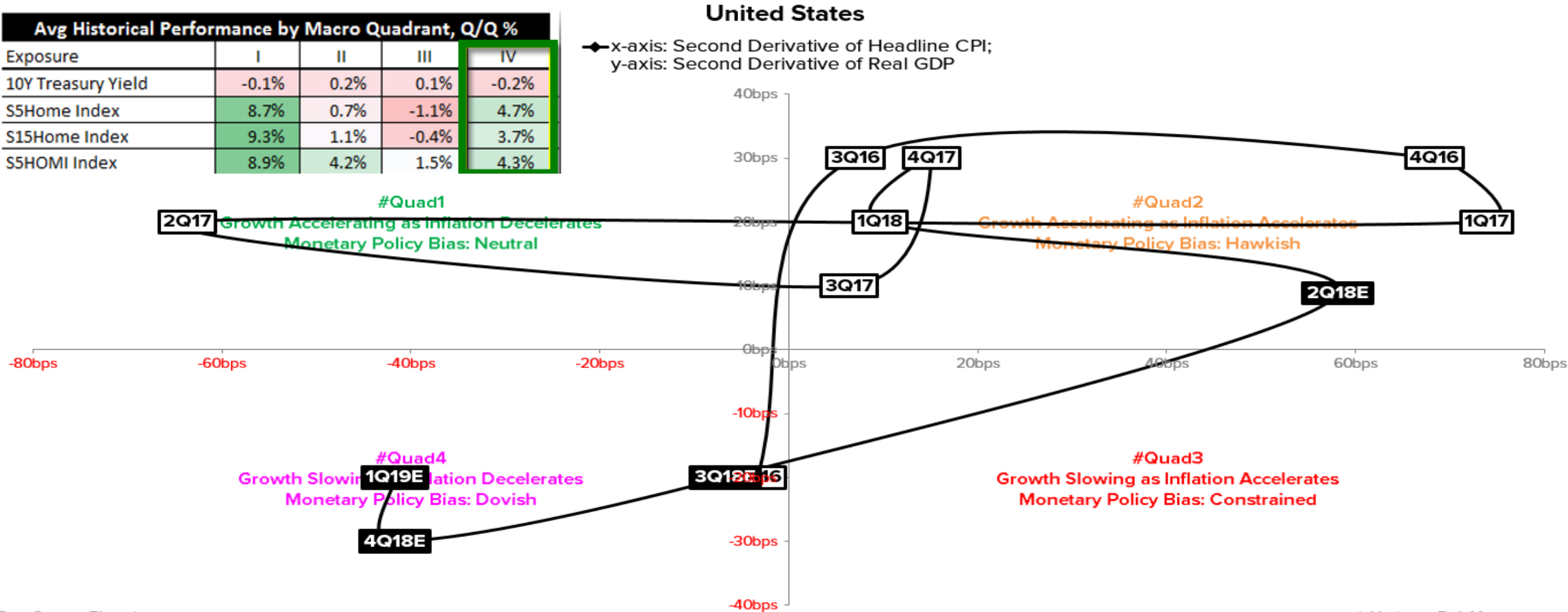


FISHFINDER

RATES ↓ + INCOME ↑ = HOUSING ACTIVITY ↑

United States	2Q15	3Q15	4Q15	1Q16	2Q16	3Q16	4Q16	1Q17	2Q17	3Q17	4Q17	1Q18		2Q18E	3Q18E	4Q18E	1Q19E	NTM
Real GDP QoQ SAAR	2.70%	1.60%	0.50%	0.60%	2.20%	2.80%	1.80%	1.20%	3.10%	3.20%	2.90%	2.00%	Hedgeye Estimates	3.48%	2.34%	1.68%	1.19%	-
Percentile (T10Y)	56%	41%	26%	31%	56%	69%	46%	33%	79%	82%	72%	46%	Bloomberg Consensus Estimates	3.40%	2.99%	2.62%	2.40%	-
Real GDP YoY	3.30%	2.40%	2.00%	1.40%	1.20%	1.50%	1.80%	2.00%	2.20%	2.30%	2.60%	2.80%	Hedgeye Estimates	2.89%	2.69%	2.39%	2.19%	2.54%
Percentile (T10Y)	95%	59%	54%	33%	23%	38%	56%	62%	64%	67%	74%	87%	Bloomberg Consensus Estimates	2.90%	2.88%	2.87%	2.90%	2.89%
Headline CPI YoY	-0.04%	0.11%	0.47%	1.08%	1.05%	1.12%	1.80%	2.54%	1.90%	1.97%	2.12%	2.21%	Hedgeye Estimates	2.80%	2.73%	2.31%	1.89%	2.43%
Percentile (T10Y)	10%	13%	15%	18%	18%	23%	59%	77%	67%	69%	74%	79%	Bloomberg Consensus Estimates	2.70%	2.75%	2.50%	2.25%	2.55%

Avg Historical Performance by Macro Quadrant, Q/Q %				
Exposure	I	II	III	IV
10Y Treasury Yield	-0.1%	0.2%	0.1%	-0.2%
S5Home Index	8.7%	0.7%	-1.1%	4.7%
S15Home Index	9.3%	1.1%	-0.4%	3.7%
S5HOMI Index	8.9%	4.2%	1.5%	4.3%



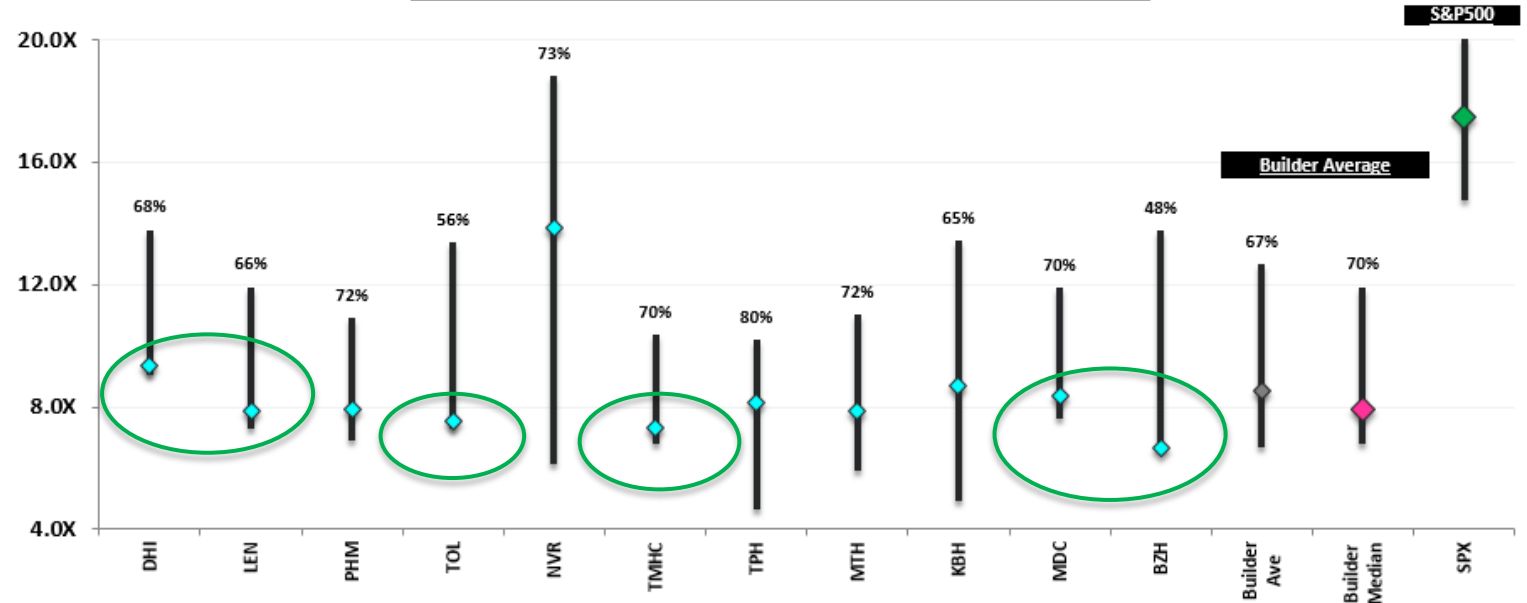
Data Source: Bloomberg

© Hedgeye Risk Management

CHEAP APPEARS CHEAP FOR THE WRONG REASONS

VALUATION		Forward PE					P/TB				
Company	Ticker	Current	5Y Min	5Y Max	% Max	% of Range	Current	5Y Min	5Y Max	% Max	% of Range
DR Horton	DHI	9.4X	9.0X	13.8X	68%	7%	1.9X	1.4X	2.5X	76%	45%
Lennar Corp.	LEN	7.9X	7.3X	11.9X	66%	12%	1.3X	1.2X	2.3X	58%	12%
PulteGroup Inc	PHM	7.9X	6.9X	10.9X	72%	25%	2.0X	1.1X	3.4X	58%	37%
Toll Brothers	TOL	7.5X	7.3X	13.4X	56%	4%	1.3X	1.0X	1.9X	65%	29%
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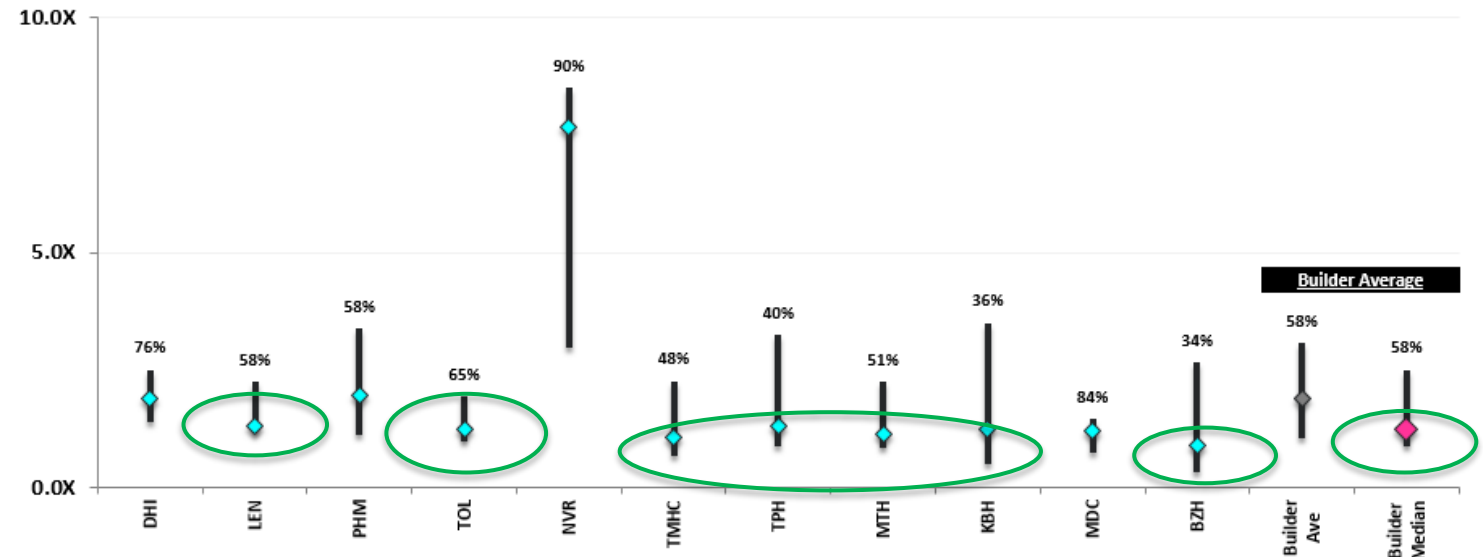
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KB Home	KBH	8.7X	4.9X	13.4X	65%	86%	1.3X	0.5X	3.5X	36%	25%
MDC Holdings	MDC	8.4X	7.6X	11.9X	70%	11%	1.2X	0.8X	1.5X	84%	67%
Beazer Homes	BZH	6.7X	6.7X	13.8X	48%	0%	0.9X	0.3X	2.7X	34%	25%
Builder Ave		8.5X	6.7X	12.7X	67%	28%	1.9X	1.1X	3.1X	58%	35%
Builder Median		7.9X	6.8X	11.9X	70%	12%	1.3X	0.9X	2.5X	58%	25%
SPX		17.5X	14.8X	20.1X	87%	51%					

BUILDERS: P/TB, % of 5Y Max



FOR MORE INFORMATION, CONTACT US AT:

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