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HOUSING INTRODUCTION

HEDGEYE HOUSING COMPENDIUM

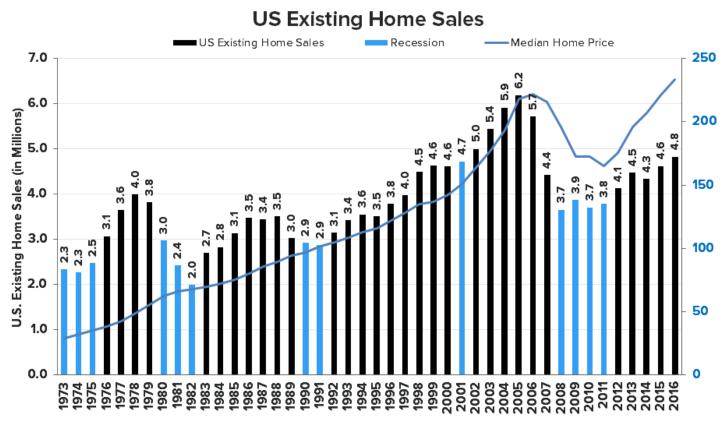
					TRAD	E/TRENI	/TAIL	Rate of Change		ange
					Short	Intmed	Long	Short Intmed		
		\mathbf{M}	ost Recent	Data	Term	Term	Term	Term	Term	Long Term
	-	Period	Latest Data	Last Price	Prior Period	3M Ago	12M Ave	MoM Chg	3M Chg	vs 12M Avg
	Case-Shiller 20 City HPI YoY NSA	Dec-16	Better	5.6%	5.2%	4.9%	5.3%	0.4%	0.6%	0.3%
	Case-Shiller 20 City HPI MoM SA	Dec-16	Better	0.9%	0.9%	0.6%	0.5%	0.0%	0.4%	0.5%
Home Prices	Corelogic HPI - NSA YoY % Chg	Dec-16	Better	7.2%	6.5%	5.3%	5.6%	0.7%	1.9%	1.6%
	Corelogic (Ex-Dist.) HPI - NSA YoY % Chg	Dec-16	Better	6.3%	5.6%	4.6%	4.8%	0.7%	1.7%	1.5%
	FHFA HPI - NSA YoY % Chg	Dec-16	Better	6.0%	6.0%	6.2%	6.0%	0.1%	-0.296	0.1%
	MBA Purchase Apps Index (Mo. Ave)	Feb-17	Worse	224.6	236.0	218.7	225.9	-4.9%	2.7%	-0.6%
Supply & Demand:	NAR: Pending Home Sales (Index)	Jan-17	Worse	106.4	109.5	110.0	109.6	-2.8%	-3.3%	-2.9%
	NAR: Existing Home Sales (SAAR)	Jan-17	Better	5.69	5.49	5.57	5.46	3.6%	2.2%	4.3%
Existing	NAR: Existing Home Inv. (millions units)	Jan-17	Worse	1.69	1.65	2.01	1.95	2.4%	-15.9%	-13.4%
	NAR: Existing Home Inv: Months Supply	Jan-17	Better	3.56	3.61	4.33	4.30	-1.2%	-17.7%	-17.0%
	NAHB: HMI	Feb-17	Worse	65	67	63	62	-2.0	2.0	0.1
	Census: Total Starts	Jan-17	Better	1246	1226	1340	1175	1.6%	-7.0%	6.0%
	Census: SF Starts	Jan-17	Better	823	795	863	786	3.5%	-4.6%	4.7%
Supply & Demand:	Census: Total Permits	Jan-17	Better	1285	1210	1260	1180	6.2%	2.0%	8.9%
New Homes	Census: SF Permits	Jan-17	Worse	808	817	774	751	-1.1%	4.4%	7.6%
New Homes	Resi Construction Spending (in Billions)	Nov-16	Better	470	465	463	457	1.0%	1.5%	2.7%
	Census: New Home Sales	Jan-17	Better	555	535	563	560	3.7%	-1.4%	-0.9%
	Census: New Home Inventory (000)	Dec-16	Worse	259	253	246	242	2.4%	5.3%	6.9%
	•									
	Interest Rates (30 Year FRM)	Jan-17	Better	4.31%	4.36%	3.72%	3.90%	0.0%	0.6%	0.4%
3.61	NAR: Affordability Index (Composite)	Dec-16	Worse	162.8	166.8	166.6	165.9	-2.4%	-2.3%	-1.9%
Miscellaneous	ITB Price (EOP)	Jan-17	Better	28.19	28.02	26.72	26.96	0.6%	5.5%	4.5%
	XHB Price (EOP)	Jan-17	Worse	34.51	34.60	32.82	33.48	-0.3%	5.1%	3.1%
										OEVE

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

HEDGEYE

HOUSING – THE PICTURE





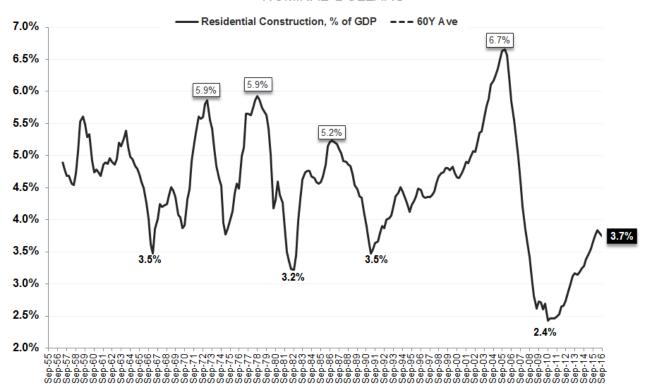
Existing
Home sales
have risen by
"1mn off the
cycle lows,
but remain
slightly below
prior cycle
highs.

Source: Bloomberg, Freddie Mac, NAR, Hedgeye

© Hedgeye Risk Management

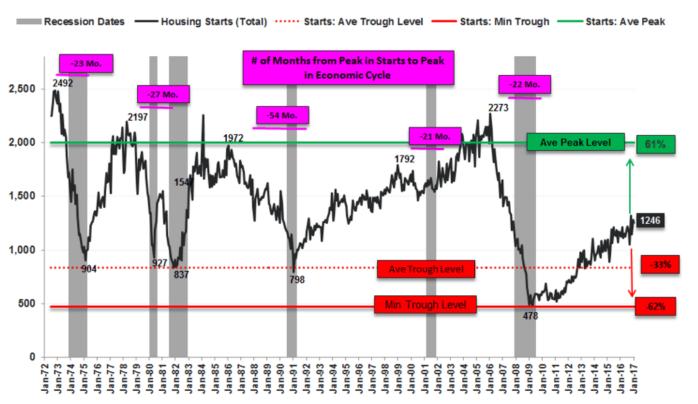
RESIDENTIAL CONSTRUCTION, % OF GDP

NOMINAL DOLLARS



After 5 years of Housing recovery, resi construction remains just 3.7% of GDP a level more consistent with cycle trough levels observed across the last 65 years.

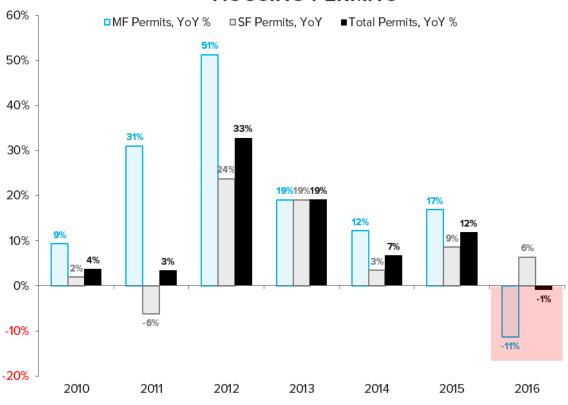
HOUSING STARTS



Asymmetry remains favorable in the new home market with roughly 60% upside to prior cycle peaks vs ~30% downside to prior cycle troughs.

DATA SOURCE: BLOOMBERG, NBER, CENSUS BEREAU, HRM

HOUSING PERMITS



that prevailing in
Starts with the net of
rising SF activity and
falling MF activity
equating to zero
growth in the
headline.
With Permit growth

The trend in Permit

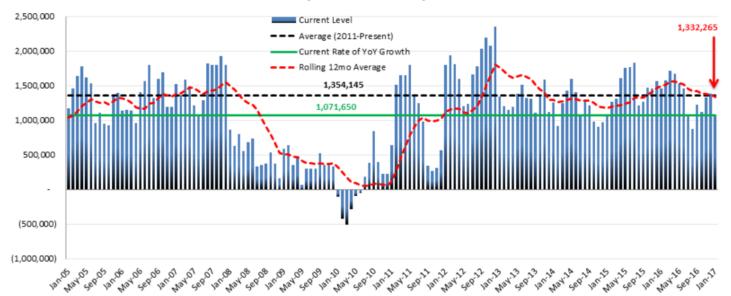
activity is similar to

With Permit growth running at a negative spread to Starts growth YTD nearterm upside in Starts appears constrained.

Source: Bloomberg, Census Bureau, Hedgeye

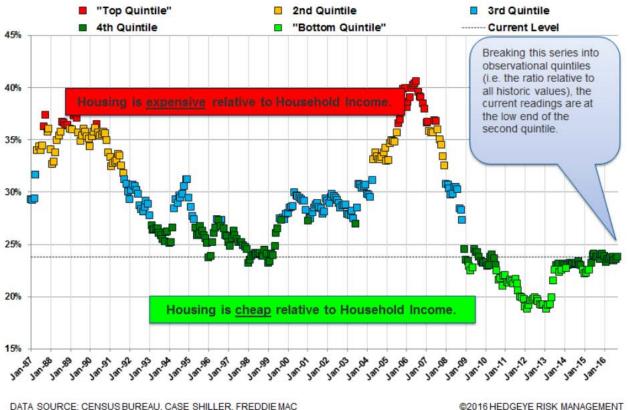
Hedgeye Risk Management





Household formation remains solid, though it has cooled off in the most recent month.

Median Mortgage Payment as % of Median Income

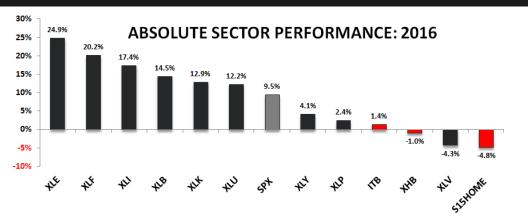


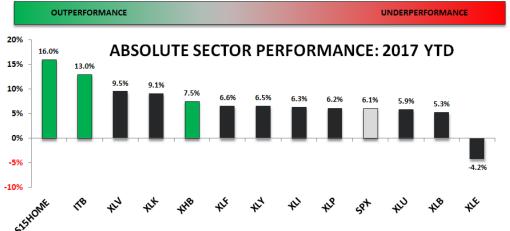
Affordability remains compelling in the longerterm setup.

HOUSING - ZOOMING IN



PERFORMANCE

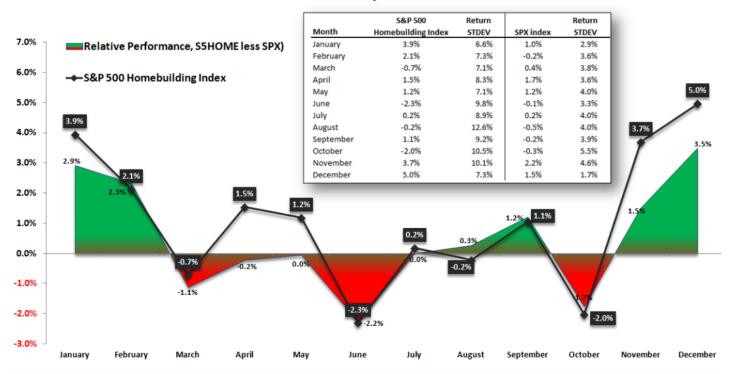




Housing has been among the best performing subsectors since the start of the year, following a 2016 in which it was among the worst.

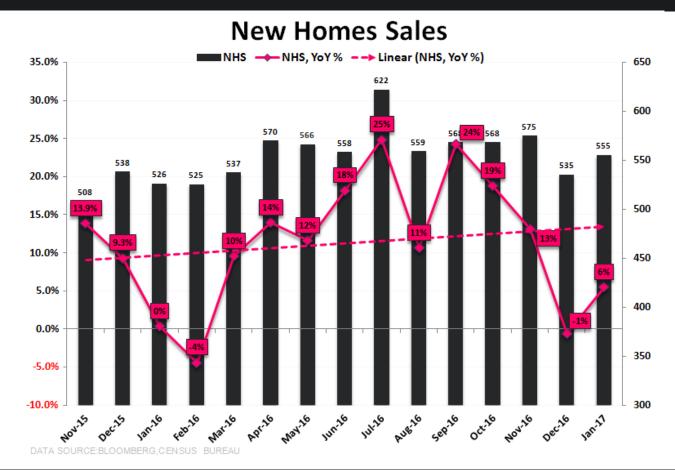
HOMEBUILDER SEASONALITY

Ave Performance by Month, 1996-2014



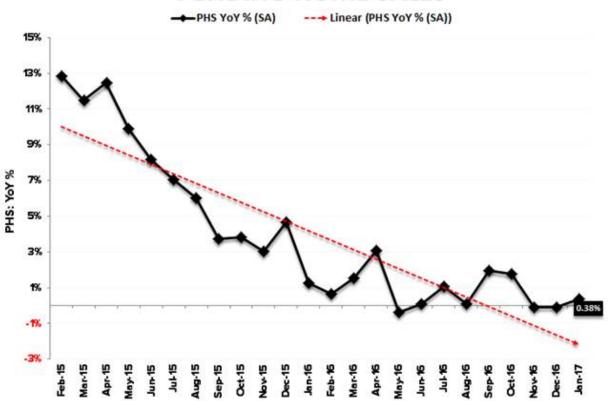
Seasonality is a powerful factor in housing investing.

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



New Home sales have slowed sharply in recent months.





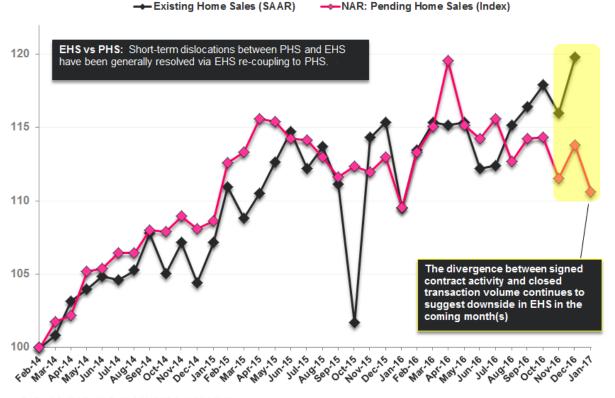
Pending Home Sales have done basically nothing over the last 6months.

Signed contract activity has been +2% or less since May with 4 of those months printing zero or negative growth.

DATA SOURCE: BLOOMBERG, NATIONAL ASSOCIATION OF REALTORS

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

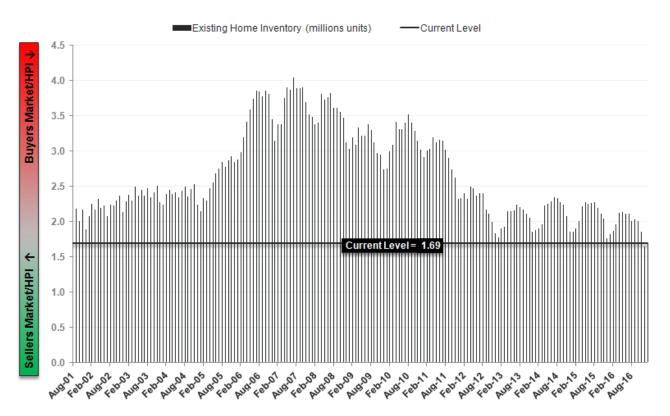




Gravity appears inevitable for Existing Home sales based on the recent trends in signed contract activity.

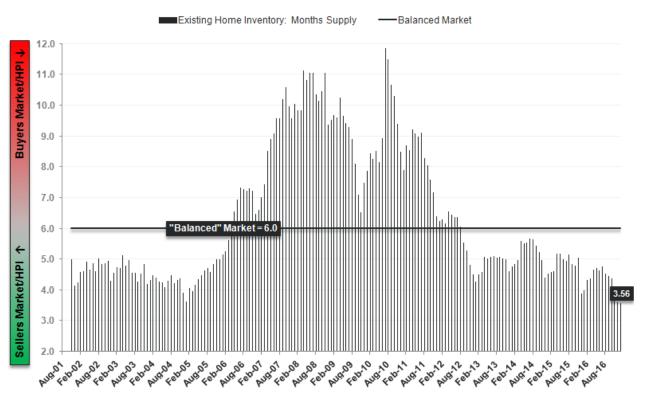
DATA SOURCE: NAR, BLOOMBERG, HEDGEYE

EXISTING HOME INVENTORY: UNITS



Supply is the culprit for weakening volume data with units supply at all time lows.

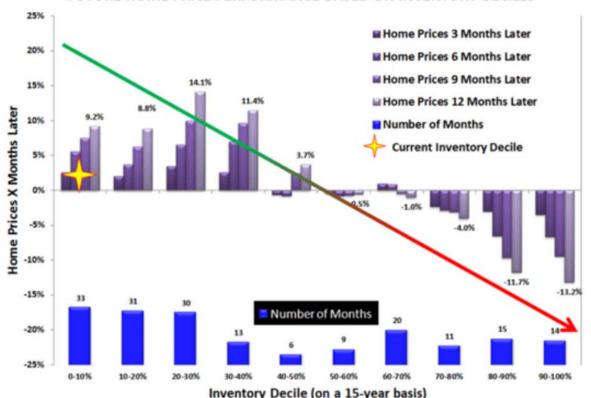
EXISTING HOME INVENTORY: MONTHS SUPPLY



Similarly, months supply is now at the lowest levels on record.

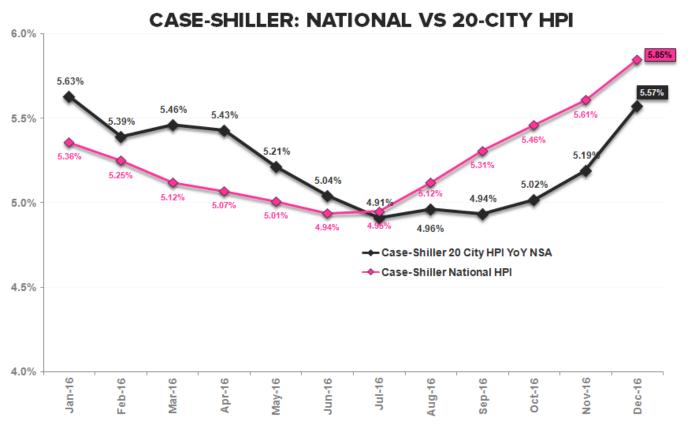
DATA SOURCE: NAR, BLOOMBERG

FUTURE HOME PRICE PERFORMANCE BASED ON INVENTORY DECILES



Historically, when supply has been this tight, HPI has run at/near double digits.

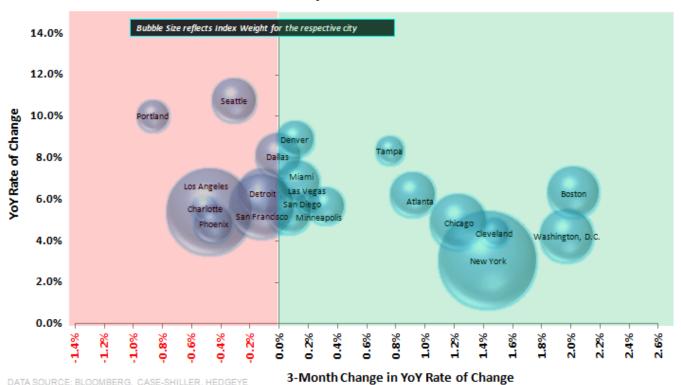
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And we're starting to see that reflected in pricing trends.

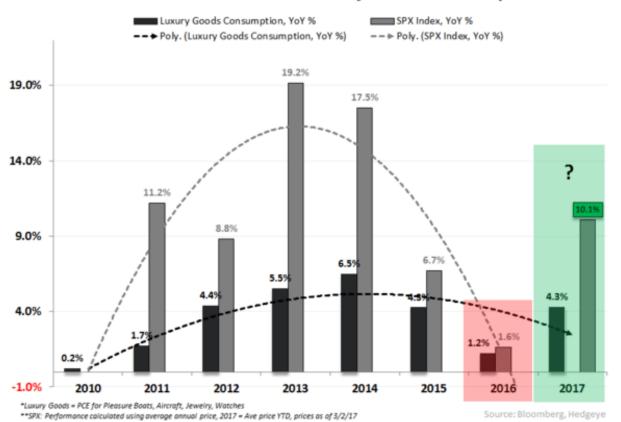
DATA SOURCE: BLOOMBERG

CASE-SHILLER: Acceleration/Deceleration Metro Home Prices



Meanwhile, the heavyweight cities are beginning to re-accelerate.

Asset Price Inflation vs Luxury Goods Consumption*



The high end appears to be inflecting.

THE FULCRUM – INTEREST RATES



THE FULCRUM - INTEREST 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

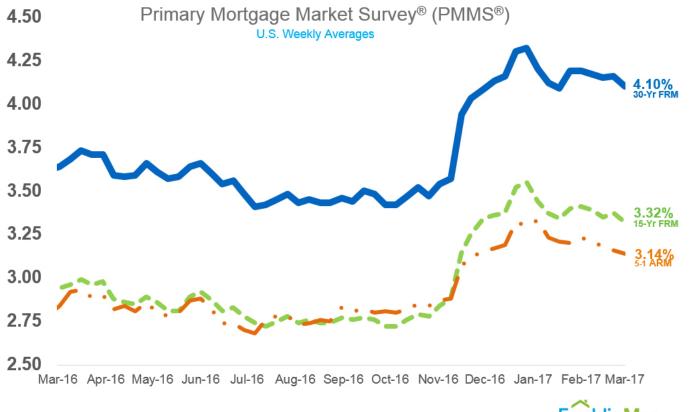
Mortgage Rates rose +180 bps over the span of 19-months. The S&P 500 Homebuilding index lost 29% of its value over that 14 month span, but the S&P 500 was up 44% making the relative underperformance a whopping 73%.

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%.

THE FULCRUM – INTEREST RATES



Mortgage rates have risen by ~60 bps from midlast year.

As of March 2, 2017



THE FULCRUM — INTEREST RATES

Affordability Dynamics

Assumptions:			
\$56,516	Median Household Income, 2015	2014 Average 30 Year FRM	4.21%
\$4,710	Median Household Monthly Income	2015 Average 30 Year FRM	3.90%
\$1,319	Monthly Mortgage PMT @ 28% DTI	Current 30 Year FRM, 1/11/17	3.99%

Relevance	% Chg in Affordability	\$ Chg in Affordability	Purchasing Power: PV of Mo. Payment	30-Year Fixed Rate
	28.8%	\$85,540	\$382,102	1.50%
	24.5%	\$72,573	\$369,135	1.75%
	20.3%	\$60,214	\$356,775	2.00%
	16.3%	\$48,428	\$344,990	2.25%
	12.5%	\$37,187	\$333,748	2.50%
	8.9%	\$26,461	\$323,022	2.75%
	5.5%	\$16,223	\$312,784	3.00%
	2.2%	\$6,447	\$303,008	3.25%
July- August 2016 30 Year FRM Average: 3.42%	0.0%	\$0	\$296,561	3.42%
	-1.0%	(\$2,891)	\$293,670	3.50%
Election Day Average 30 Year FRM: 3.53%	-1.3%	(\$3,984)	\$292,578	3.53%
	-4.0%	(\$11,814)	\$284,747	3.75%
Current 30 Year FRM, 1/11/17: 3.99%	-6.7%	(\$20,009)	\$276,552	3.99%
	-6.9%	(\$20,343)	\$276,219	4.00%
	-9.6%	(\$28,498)	\$268,063	4.25%
	-12.2%	(\$36,299)	\$260,262	4.50%
	-14.8%	(\$43,764)	\$252,797	4.75%
	-17.2%	(\$50,910)	\$245,651	5.00%
	-19.5%	(\$57,753)	\$238,809	5.25%

Source: Bloomberg, Census, NAR, Bankrate



Mortgage rates have increased ~60 bps since mid-2016, shaving ~7% off affordability. Taken together with 6% HPI outpacing 3% income growth, affordability has effectively declined ~10% in the last year.

^{*} Represents monthly mortgage payment at 28% DTI of Median Household Income

THE FULCRUM – INTEREST RATES

LTM Correlation to the 10-Year Treasury Yield

		Avg R Value	Std Dev
1	Large Cap Banks	0.73	0.09
2	Midcap Banks	0.72	0.08
3	I-Banks/Boutiques	0.71	0.11
4	Small Cap Banks	0.65	0.16
5	Mortgage Insurers	0.61	0.12
6	Reinsurers	0.56	0.26
7	Life Insurers	0.52	0.29
8	E-Brokers	0.46	0.39
9	Financial Guaranty	0.41	0.54
10	Auto Insurers	0.37	0.19
11	P&C Insurers	0.35	0.34
12	Mortgage Finance	0.33	0.35
13	Consumer Finance	0.31	0.38
14	Debt Collectors	0.29	0.47
15	CRE Brokers	0.23	0.40
16	Exchanges	0.21	0.30
17	RE Services	0.17	0.50
18	Traditional AMs	0.13	0.35
19	Cards/Payments	0.13	0.35
20	Insurance Brokers	0.12	0.24
21	Alternative AMs	0.09	0.40
22	Homebuilders	0.05	0.42
23	Building Products	(0.06)	0.22
24	Fin Tech	(0.07)	0.42
25	SF REITs	(0.11)	0.06
26	Fin Services	(0.12)	0.28
27	Home Centers	(0.21)	0.29
28	Apartment REITs	(0.24)	0.19
29	Title Insurers	(0.33)	0.31

	Median R Value	Std Dev
Large Cap Banks	0.74	0.09
I-Banks/Boutiques	0.74	0.11
Midcap Banks	0.71	0.08
Small Cap Banks	0.70	0.16
Financial Guaranty	0.68	0.54
E-Brokers	0.61	0.39
Reinsurers	0.61	0.26
Mortgage Insurers	0.61	0.12
Life Insurers	0.57	0.29
Mortgage Finance	0.45	0.35
P&C Insurers	0.45	0.34
Debt Collectors	0.43	0.47
Consumer Finance	0.41	0.38
Auto Insurers	0.40	0.19
Exchanges	0.30	0.30
CRE Brokers	0.23	0.40
Traditional AMs	0.20	0.35
Alternative AMs	0.17	0.40
RE Services	0.17	0.50
Cards/Payments	0.06	0.35
Homebuilders	0.03	0.42
Insurance Brokers	0.03	0.24
Building Products	(0.01)	0.22
SF REITs	(0.08)	0.06
Fin Services	(0.09)	0.28
Fin Tech	(0.15)	0.42
Home Centers	(0.21)	0.29
Apartment REITs	(0.26)	0.19
Title Insurers	(0.49)	0.31

Mortgage	Insurers
Ticker	R Value
MTG	0.74
RDN	0.64
NMIH	0.57
ESNT	0.47
Average	0.61
Median	0.61
Std Dev	0.12

Title Insurers	
Ticker	R Value
STC	0.02
FAF	(0.49)
FNF	(0.52)
Average	(0.33)
Median	(0.49)
Std Dev	0.31

ters
R Value
(0.01)
(0.42)
(0.21)
(0.21)
0.29

R Value 0.52
0.50
0.52
(0.19)
0.17
0.17
0.50

Apartment PEITs

Apartifici	IL INLIIS
Ticker	R Valu
PPS	0.11
ESS	(0.06
EQR	(0.19
AIV	(0.20
UDR	(0.32
AVB	(0.37
MAA	(0.41
CPT	(0.45
Average	(0.24
Median	(0.26
Std Dev	0.19

SF REITs	
Ticker	R Value
AMH	(0.07)
SBY	(0.08)
SWAY	(0.17)
Average	(0.11)
Median	(0.08)
Std Dev	0.06

Homebuil	Homebuilders		
Ticker	R Value		
HOV	0.63		
BZH	0.60		
TOL	0.51		
TMHC	0.40		
WLH	0.31		
MDC	0.27		
КВН	0.03		
MTH	(0.12)		
SPF	(0.32)		
LEN	(0.36)		
PHM	(0.37)		
NVR	(0.38)		
DHI	(0.55)		
Average	0.05		
Median	0.03		

0.42

Std Dev

Building P	roducts
Ticker	R Value
IBP	0.25
PGEM	0.15
AMWD	0.10
USG	0.08
BLD	0.06
AWI	0.03
SWK	(0.05)
ОС	(0.07)
MHK	(0.08)
MAS	(0.26)
FBHS	(0.40)
SHW	(0.46)
Average	(0.06)
Median	(0.01)
Std Dev	0.22

the sensitivity of the various Financials & Housing subsectors to the 10-Year Treasury yield over the past year. We've highlighted the 8 housing sectors. 6 of the 8 are in the bottom quartile for rate sensitivity, meaning that that they are among the most inversely correlated subsectors in the group.

These tables show

Source: Hedgeye, Factset

THE FULCRUM – INTEREST RATES

Absolute Price Performance Since the Election



Mortgage Insurers								
Ticker	Px Chg							
RDN	28%							
MTG	22%							
NMIH	20%							
ESNT	17%							
Average	22%							
Median	21%							
Std Dev	5%							

370
ers
Px Chg
1%
-2%
-4%
-2%
-2%
3%

Home Centers						
Ticker	Px Chg					
HD	8%					
LOW	6%					
Average	7%					
Median	7%					
Std Dev	1%					

RE Service	25
Ticker	Px Chg
RMAX	20%
RLGY	14%
Average	17%
Median	17%
Std Dev	4%
Apartmen	it REITs
Ticker	Px Chg
ESS	4%
EQR	3%

Ticker	Px Chg
ESS	4%
EQR	3%
UDR	3%
AVB	2%
MAA	2%
CPT	2%
AIV	0%
PPS	-4%
Average	2%
Median	2%
Std Dev	2%

SF REITs	
Ticker	Px Chg
SBY	1%
SWAY	-2%
AMH	-4%
Average	-2%
Median	-2%
Std Dev	2%

Homebuil	ders
Ticker	Px Chg
HOV	69%
BZH	31%
MDC	17%
TOL	13%
MTH	12%
NVR	11%
KBH	10%
TMHC	7%
SPF	6%
LEN	5%
PHM	1%
DHI	1%
WLH	-1%
Average	14%
Median	10%
Std Dev	19%

Building Products

Px Chg

19%

18%

17%

15%

11%

Ticker

PGEM

BLD

USG

SHW

MAS

МНК

AWI

SWK

FBHS

Average

Median

Std Dev

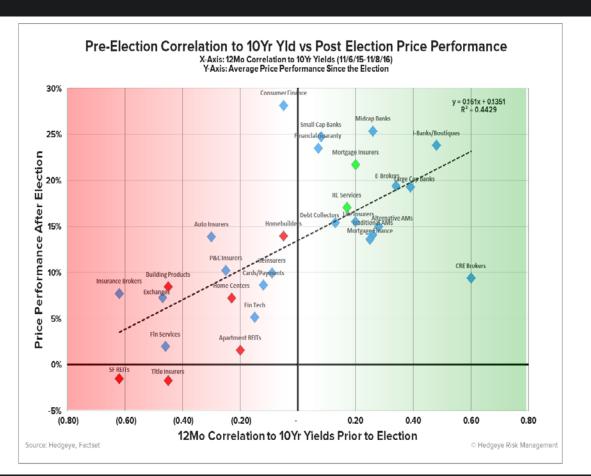
AMWD

Benchmarks							
S&P 500	6%						
XLF	17%						
XHB	7%						
ITB	7%						

For the most part
the Housing
Complex has
performed as one
would expect
given their
respective
sensitivities to
rates. 5 of the 8
Housing
subsectors were
among the
bottom third of
performance.

Source: Hedgeye, Factset

THE FULCRUM - INTEREST RATES

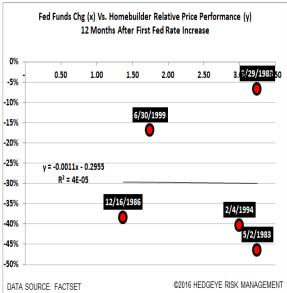


This chart shows the correlation to rates on the x-axis and the post-election price performance on the y-axis. Groups trading to the left of the zero line are those negatively exposed to rates, and vice versa. Groups trading above the regression line are overbought while those below are underbought.

THE FULCRUM – INTEREST RATES

Rate Hike Cycle Fed Funds			10YR Tsy			The	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																							

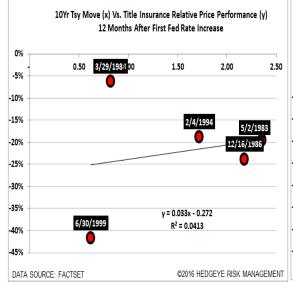
10Yr Tsy Move (x) Vs. Homebuilder Relative Price Performance (y) 12 Months After First Fed Rate Increase 3/29/1983 00 0.50 1.50 2.00 2.50 -5% -10% 6/30/1999 -15% v = -0.1996x + 0.009 $R^2 = 0.8512$ -25% -30% 12/16/1986 -50% DATA SOURCE: FACTSET ©2016 HEDGEYE RISK MANAGEMENT

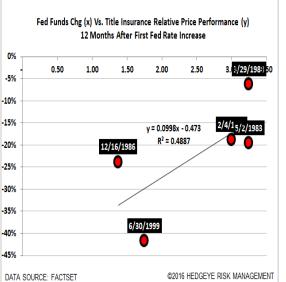


Not surprisingly, homebuilders hate rate hikes, and the strong negative slope (RSQ 0.85) to increases in the 10Yr Tsy show just how sensitive they are. The good news is that small increases in rates have historically produced small decreases in share prices.

THE FULCRUM - INTEREST RATES

Rate Hike Cycle Fed Funds			10YR Tsy			The	Title Insurance / Absolute Performance							Title Insurance / Relative Performance									
Start End	Мо	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																							





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