

BREAN CAPITAL

FHLB Symposium

Scott Buchta – Head: Fixed Income Strategy

Tuesday, August 21st, 2018 – Indianapolis

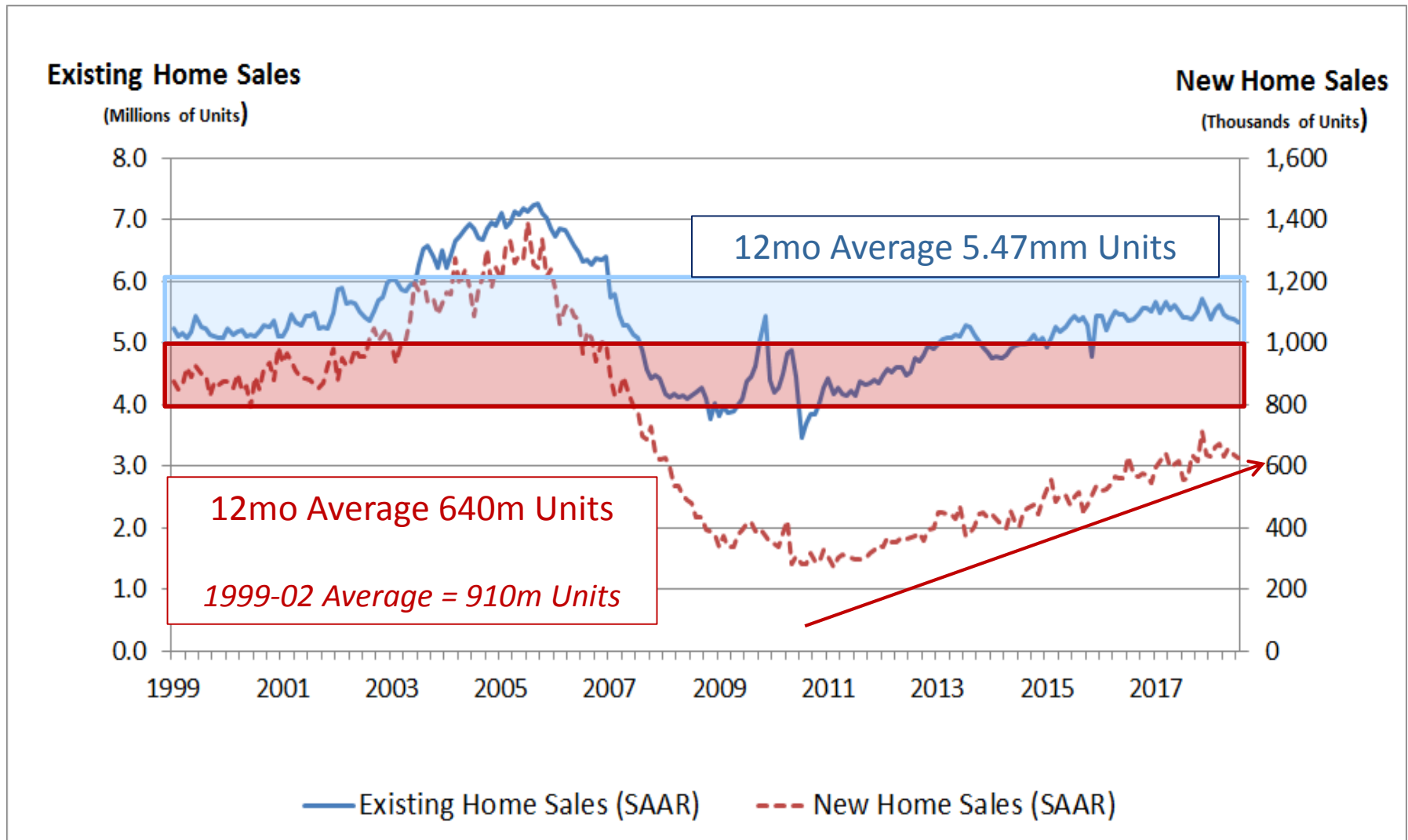
Tuesday August 28th, 2018 – Grand Rapids

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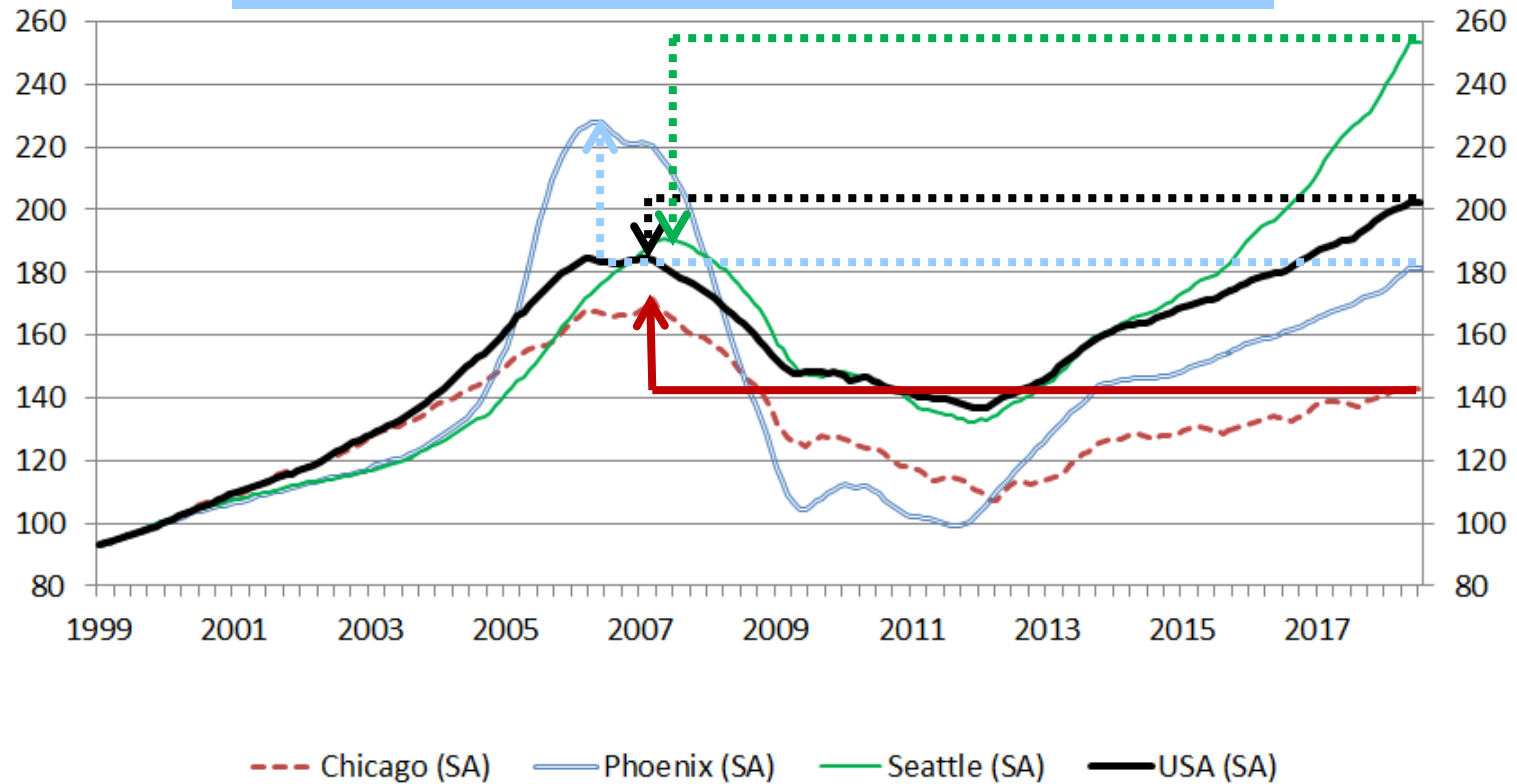
- I. Housing Market Overview
- II. Impact of the Fed's Actions on the Mortgage Market
- III. Interest Rates
- IV. Single-Family Lending Trends
- V. Multi-Family Lending Trends
- VI. Regulatory Update

I. Housing Market Overview

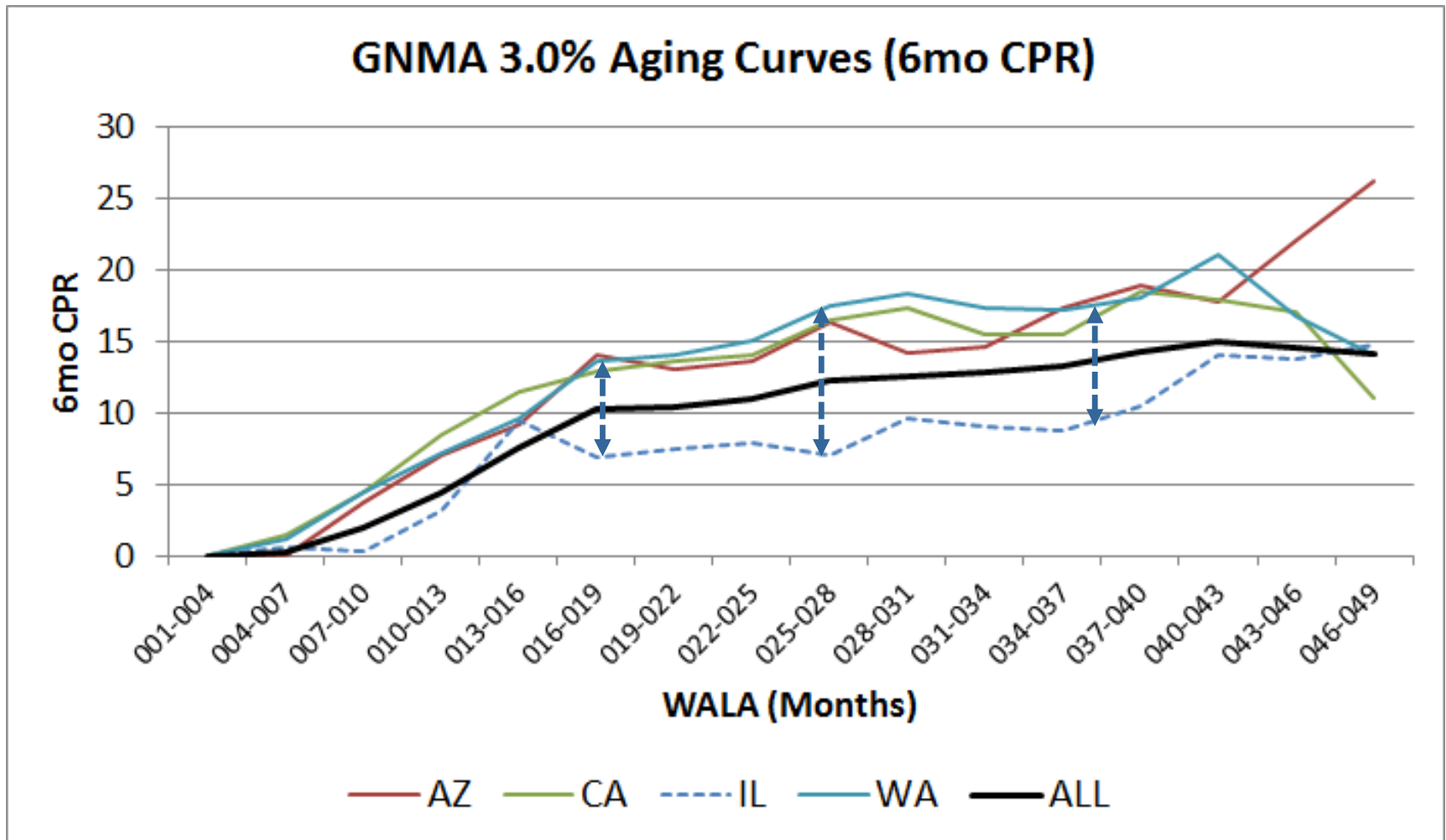


	Chicago	Phoenix	Seattle	USA
Peak vs Trough	-38%	-56%	-30%	-38%
Recovery	33%	82%	91%	48%
Current vs Peak	-20%	-26%	25%	9%

Case-Shiller / S&P Home Price Index



Home Prices Impact Borrower Behavior



Michigan and Indiana Snapshot

FNMA Loan Level Data

Indiana

	Par (mm)	1mo CPR	3mo CPR	6mo CPR	RPI (%)	OLTV	CLTV	HPA 5yr
2013-2014	4,055	14.5	14.0	12.7	109.5	82.2	58.6	
2014-2016	6,156	11.6	11.6	10.1	99.0	82.9	68.5	
2017-2018	5,905	6.9	6.7	6.3	91.3	83.5	78.3	
Total	16,290	10.7	10.7	9.8	102.1	82.0	69.4	4.56

Michigan

	Par (mm)	1mo CPR	3mo CPR	6mo CPR	RPI	OLTV	CLTV	HPA 5yr
2013-2014	7,010	11.6	11.8	11.1	95.7	81.9	53.0	
2014-2016	12,240	10.1	10.5	9.4	92.2	80.8	64.8	
2017-2018	11,560	6.5	6.8	6.6	95.7	81.2	75.9	
Total	31,052	9.1	9.6	9.0	93.8	81.1	66.1	6.53

USA

	Par (mm)	1mo CPR	3mo CPR	6mo CPR	RPI	OLTV	CLTV	HPA 5yr
2013-2014	346,607	11.9	12.3	11.6		76.8	51.3	
2014-2016	564,239	10.6	10.9	10.2		76.9	62.2	
2017-2018	530,910	6.8	6.9	6.9		78.3	73.3	
Total	1,459,699	9.5	9.9	9.6		76.5	63.4	6.21

Headwinds and Tailwinds

Headwinds

Rising Interest Rates

Negative Migration Trends

High Property/Personal Taxes

Stagnant Wage Growth

Tailwinds

Economic Growth (Wages?)

Positive Migration Trends

Household Formation

Limited Supply in Many Areas

Expanding Credit Windows*

Housing Finance Authorities

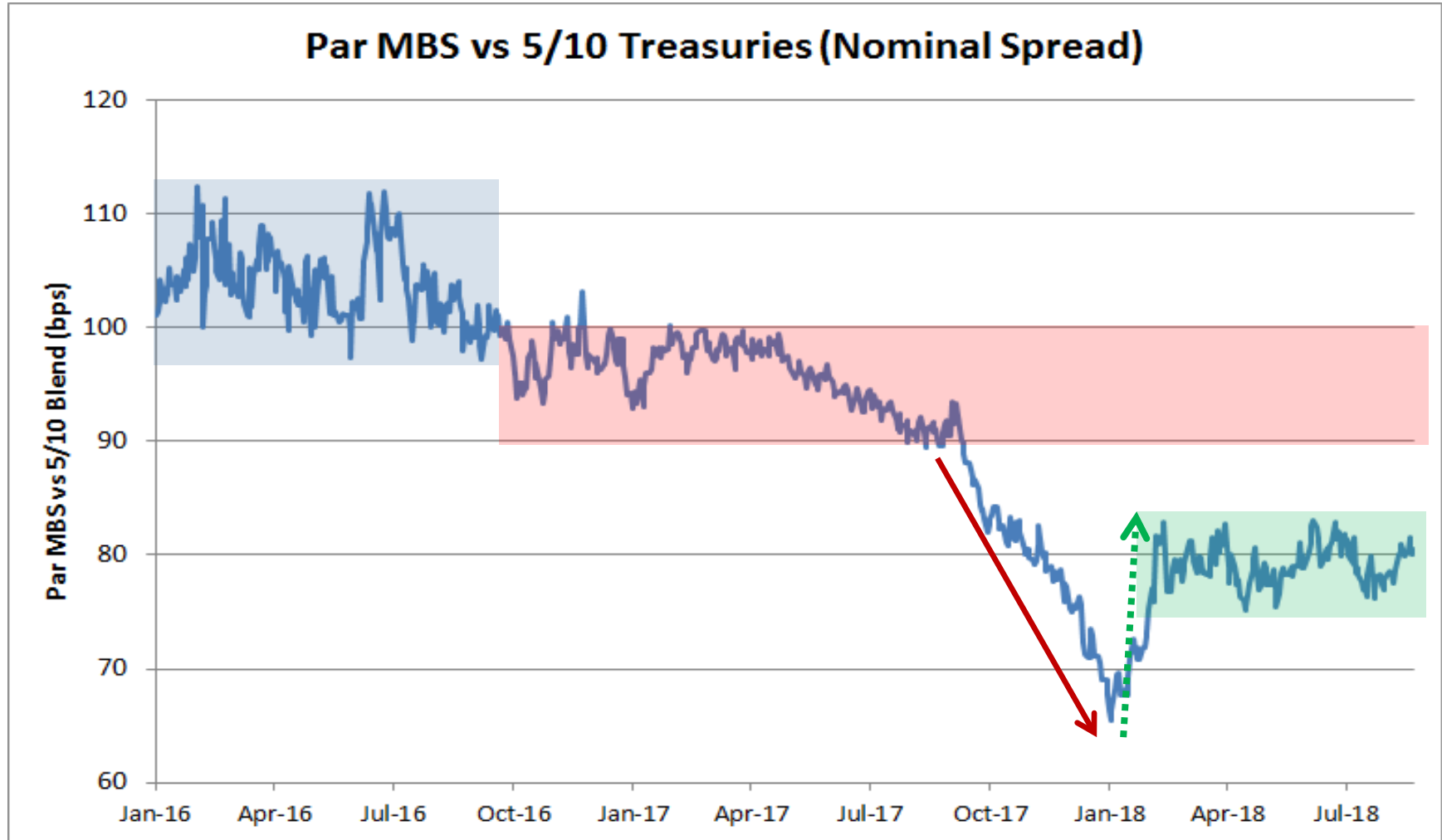
II. Fed Impact

Fed MBS Purchases

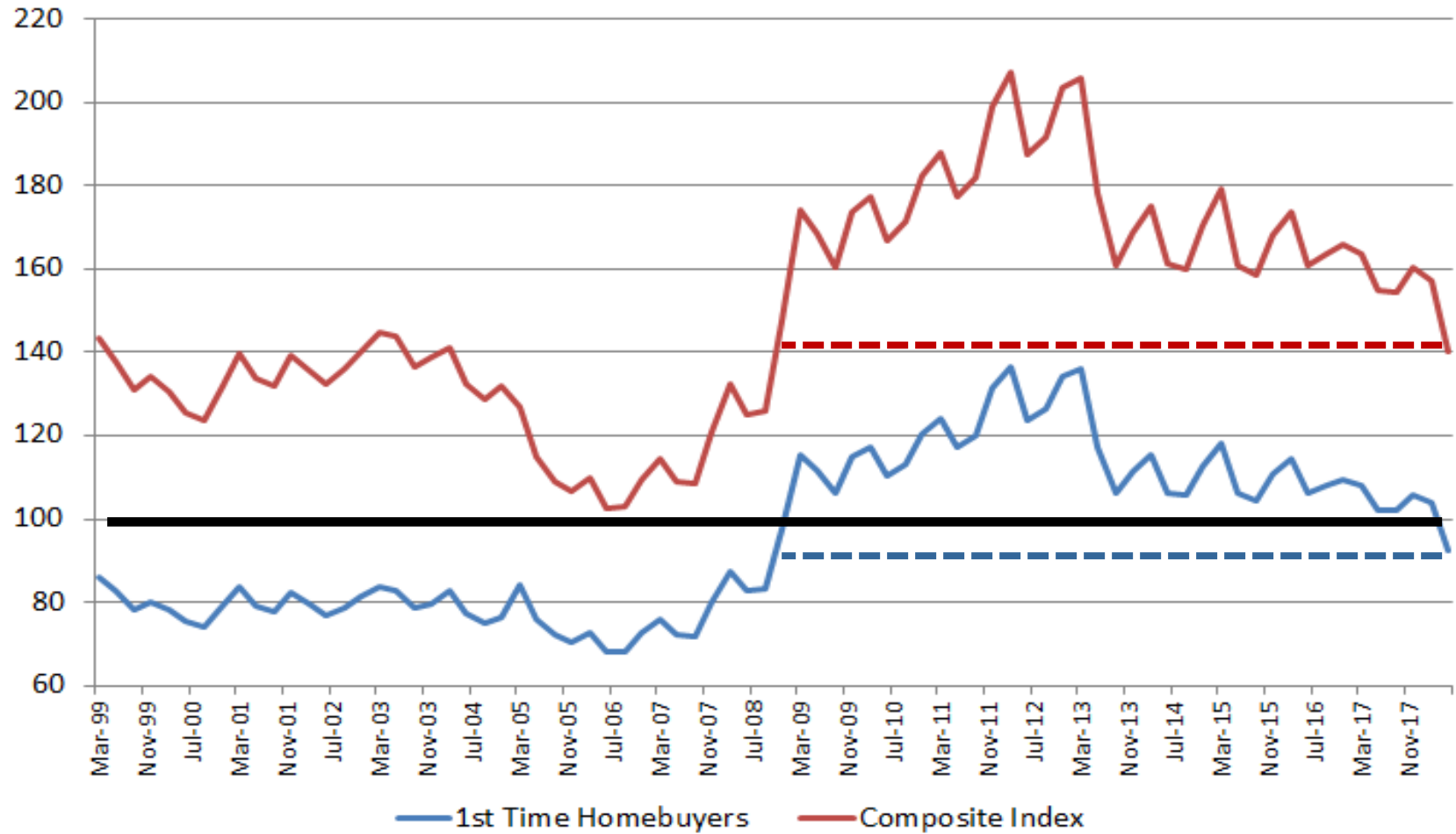
	2017				2018			
	Issuance	Fed	Net	Fed %	Issuance	Fed	Net	Fed %
Jan	131.7	31.0	100.7	24%	100.2	14.9	85.3	15%
Feb	94.5	25.0	69.5	26%	90.2	12.7	77.5	14%
Mar	91.1	18.0	73.1	20%	83.4	11.3	72.1	14%
Apr	91.5	23.0	68.5	25%	91.4	9.2	82.2	10%
May	94.5	24.0	70.5	25%	97.2	8.8	88.4	9%
Jun	105.6	24.0	81.6	23%	100.0	12.5	87.5	12%
Jul	108.2	26.0	82.2	24%	99.6	6.7	92.9	7%
Aug	116.6	28.0	88.6	24%	100.0	5.5	94.5	6%
Sep	111.0	26.0	85.0	23%	100.0	5.0	95.0	5%
Oct	110.9	20.4	90.5	18%	95.0	1.0	94.0	1%
Nov	114.0	24.3	89.7	21%	90.0	0.5	89.5	1%
Dec	107.1	20.0	87.1	19%	85.0	0.0	85.0	0%

* Projected Assuming a 4.875% Effective Mortgage Rate

Mortgage Spreads



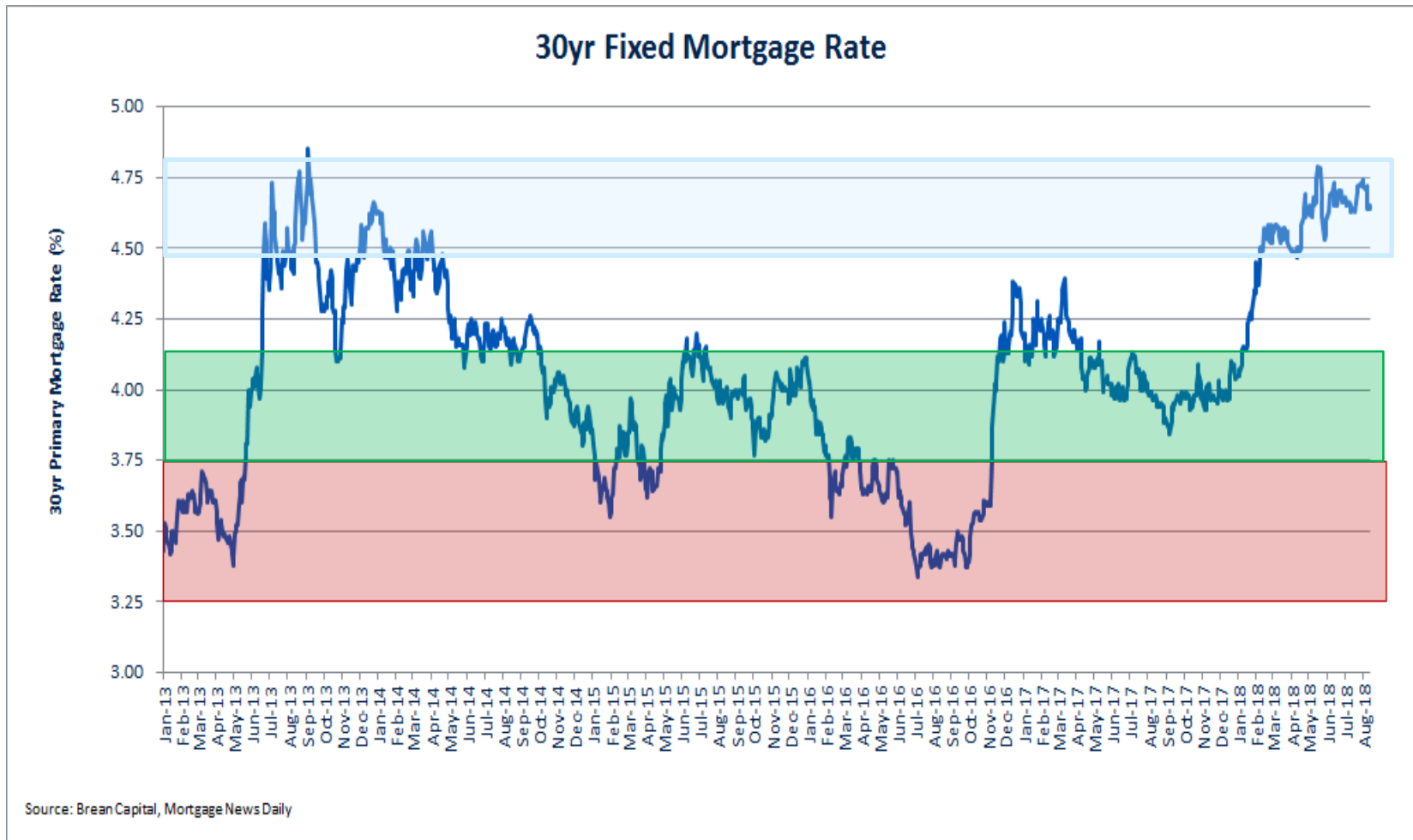
Affordability Indices



Source: Brean Capital, Natl Assoc Realtors

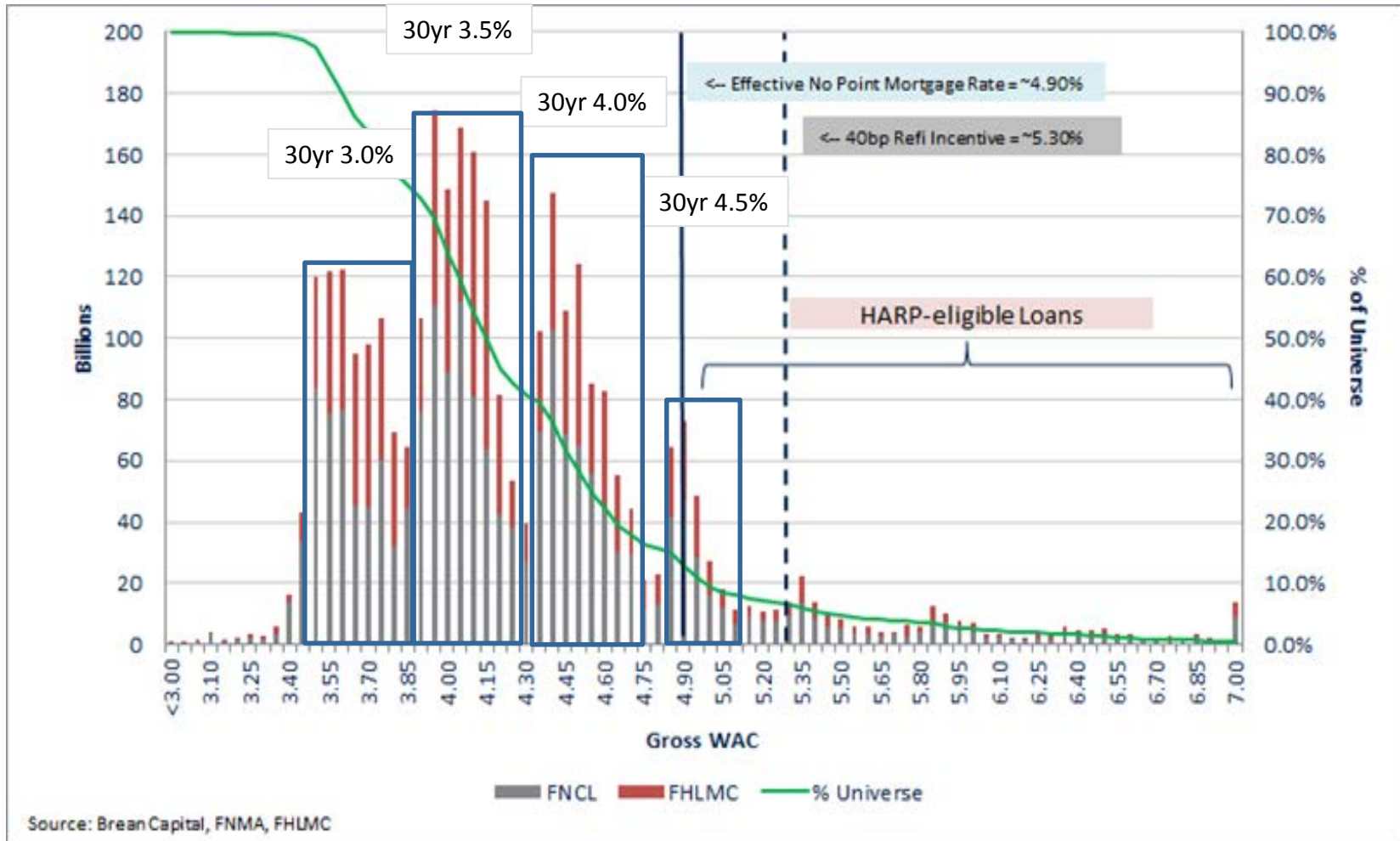
III. Interest Rates & Mortgage Market Snapshot

Mortgage Rates

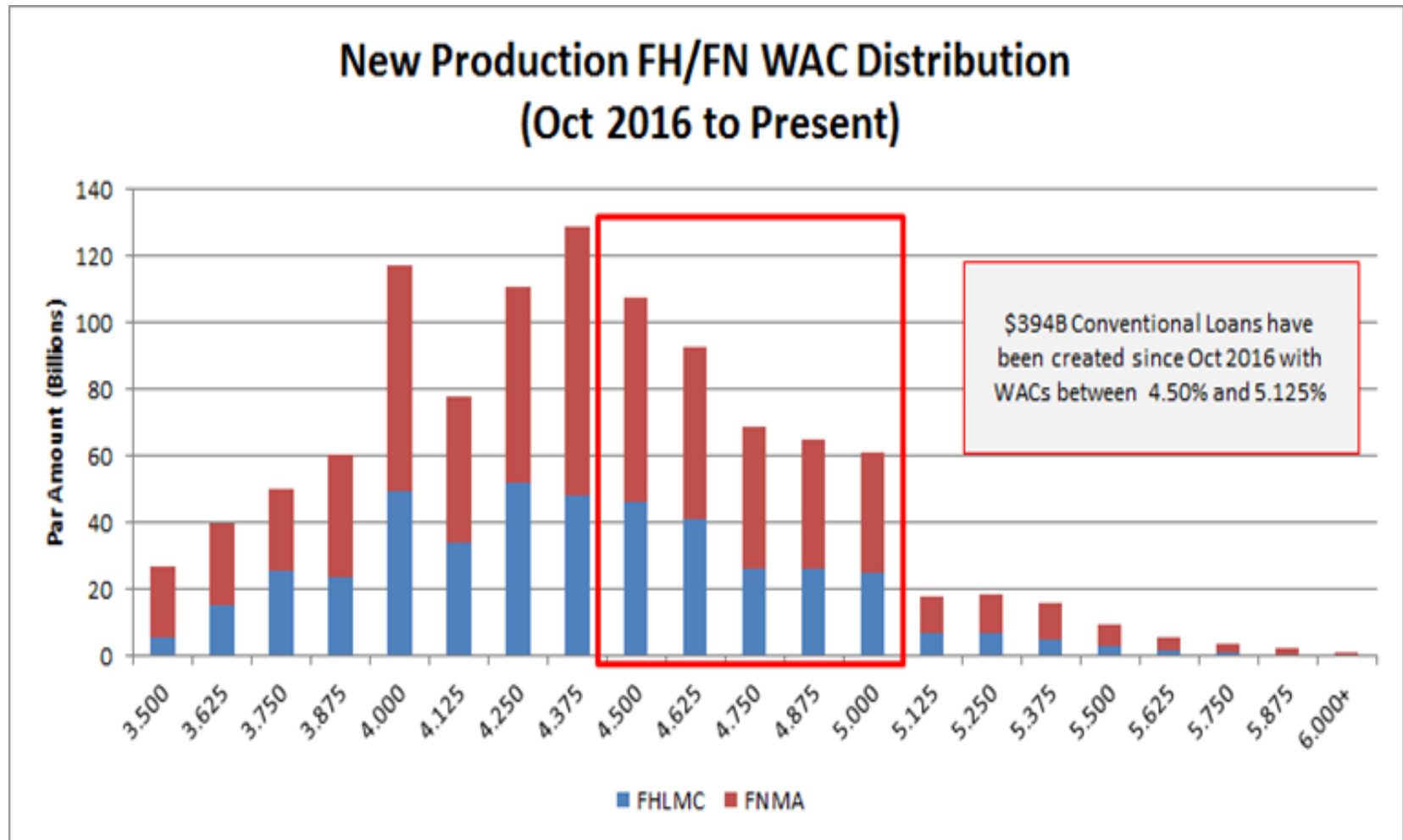


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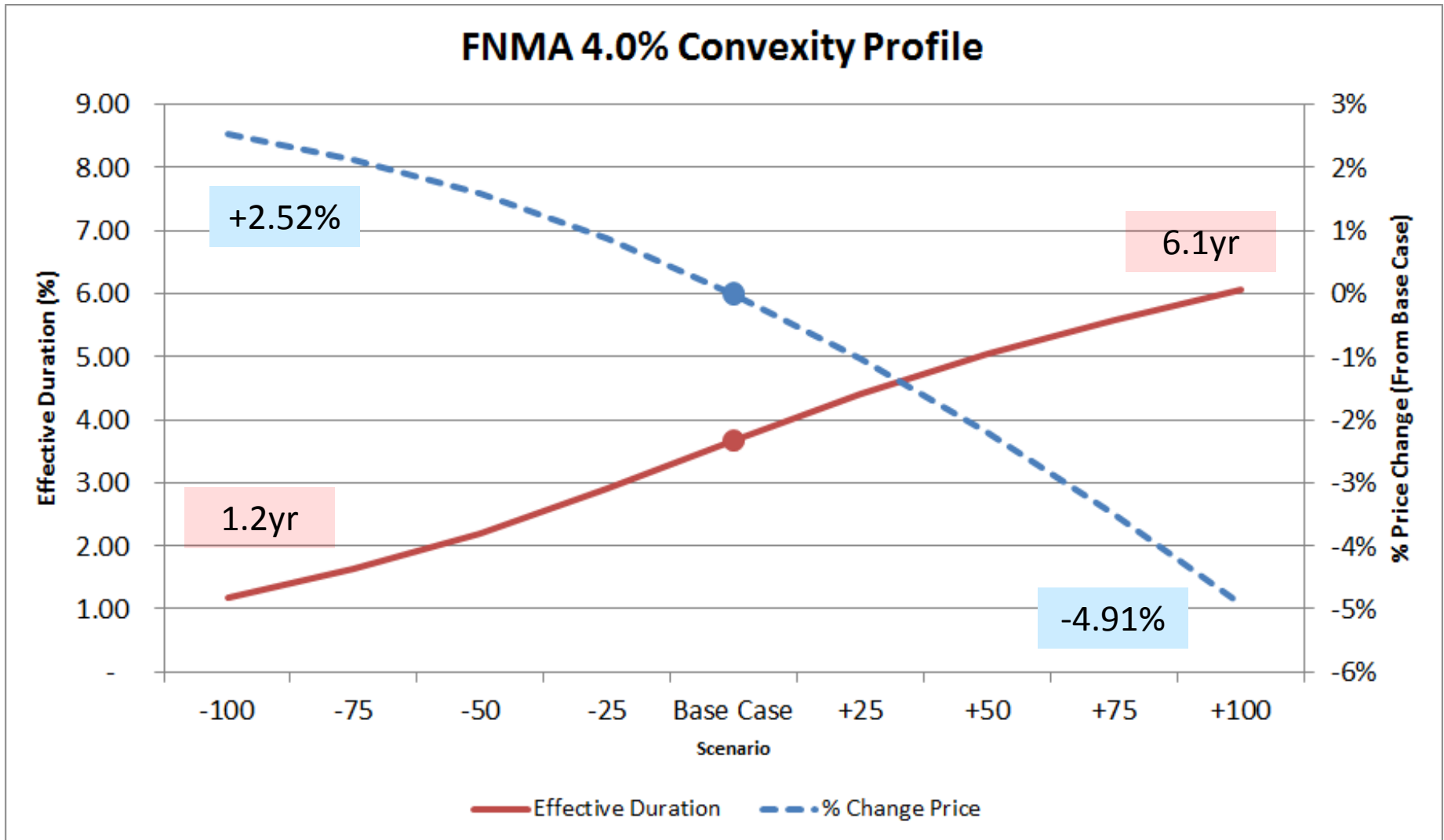
Conventional Refinancing Exposure



Conventional 2016-18 Refi Exposure



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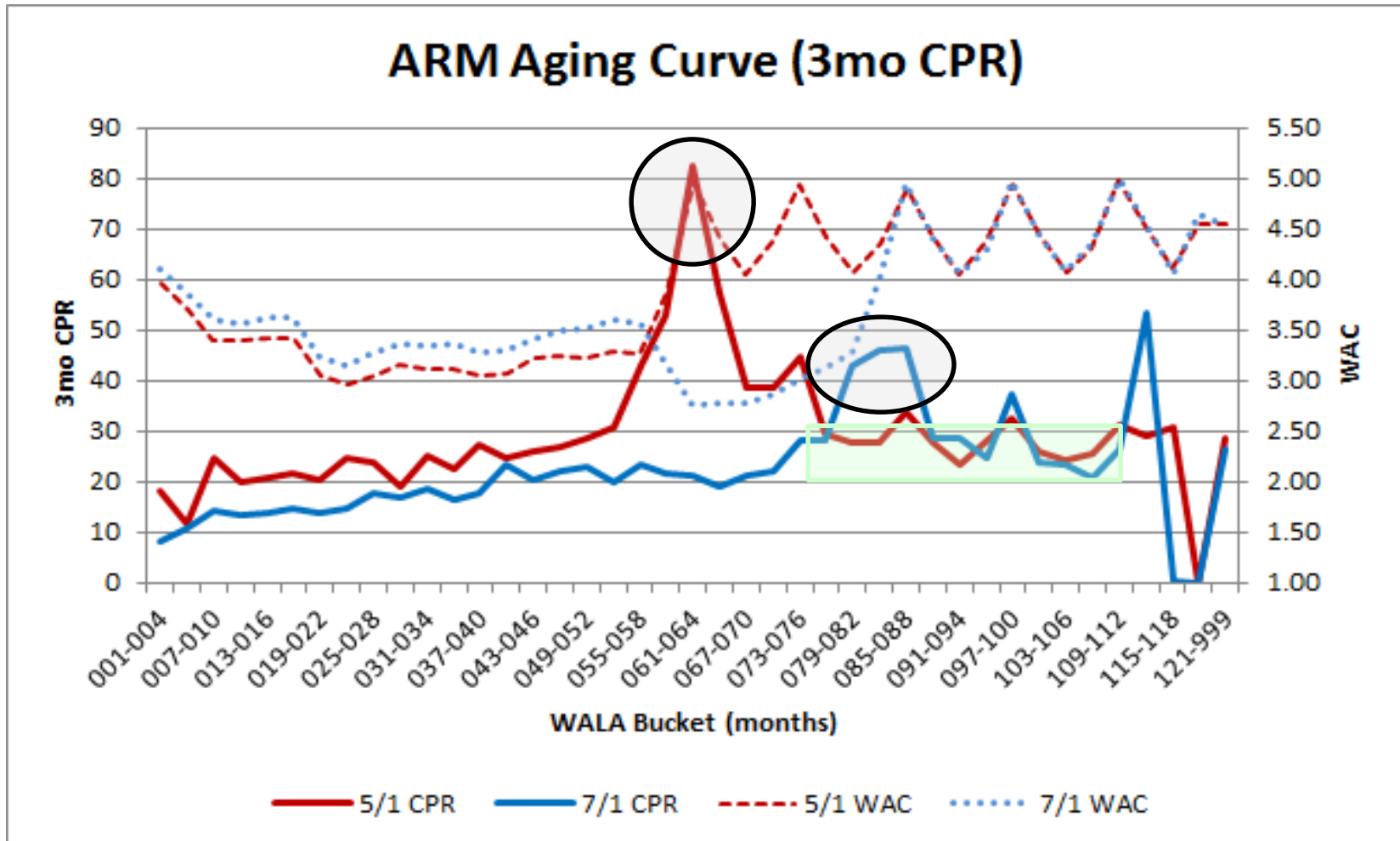
Negative Convexity – FNCL 4.0%

FNCL 4.0s - New Prod @ 101-27	-100	-75	-50	-25	Base Case	+25	+50	+75	+100
Price	104.575	104.167	103.618	102.901	102.000	100.943	99.742	98.421	96.987
% Price Change from Base Case	2.52%	2.12%	1.59%	0.88%	-	-1.04%	-2.21%	-3.51%	-4.91%
Yield	2.21%	2.57%	2.93%	3.29%	3.61%	3.85%	4.05%	4.25%	4.45%
Projected CPR	29.1	25.3	21.1	16.9	12.8	9.7	8.4	7.6	6.9
Effective Duration	1.2	1.6	2.2	2.9	3.7	4.4	5.0	5.6	6.1
Effective Convexity	-2.0	-2.0	-2.6	-3.2	-3.2	-2.6	-2.1	-1.8	-1.4
Effective WAL	3.4	4.0	4.6	5.3	6.1	6.7	7.4	8.0	8.5

*12 Month Horizon/Gradual Curve Shift/Model V99/Yield Curve as of August 15, 2018 (Source: YieldBook)

- We believe that in a sustained rally, prepayment speeds on new production FNMA 4.0% pools may be much higher than what models are currently projecting due to larger loan balances, technological advances, servicer behavior and fewer Fed purchases
- Adding even a modest amount of call protection (LTV, HFA, Seasoning) will help boost performance in the event of a rally
- The Continuous Monitoring of Hedge Performance (actual vs model) will be critical as hedges can significantly out/under perform in both rising and falling rate environments

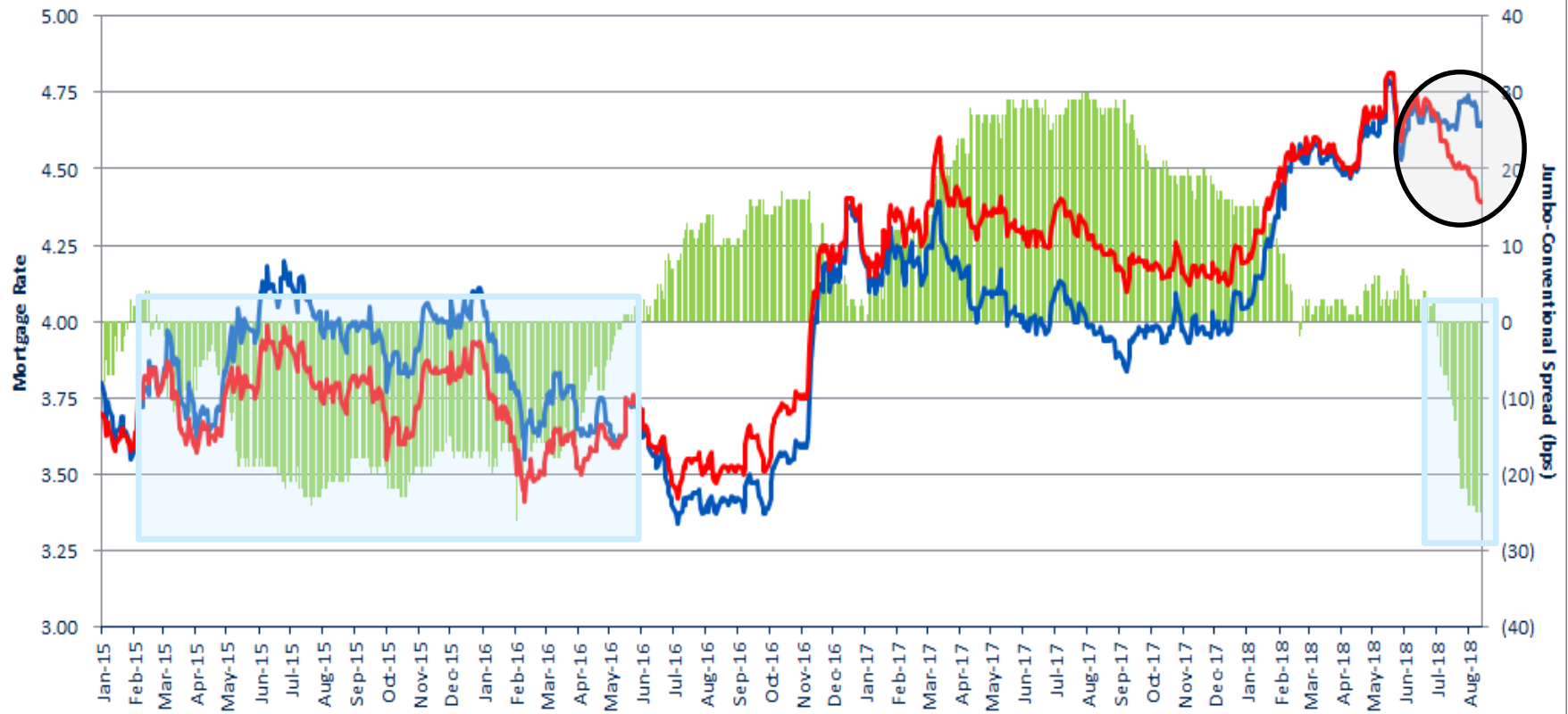
Impact of Rising Rates on ARMs



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Jumbo vs. Conforming Mortgage Rates

30yr Conventional Rate vs. 30yr Jumbo Rate



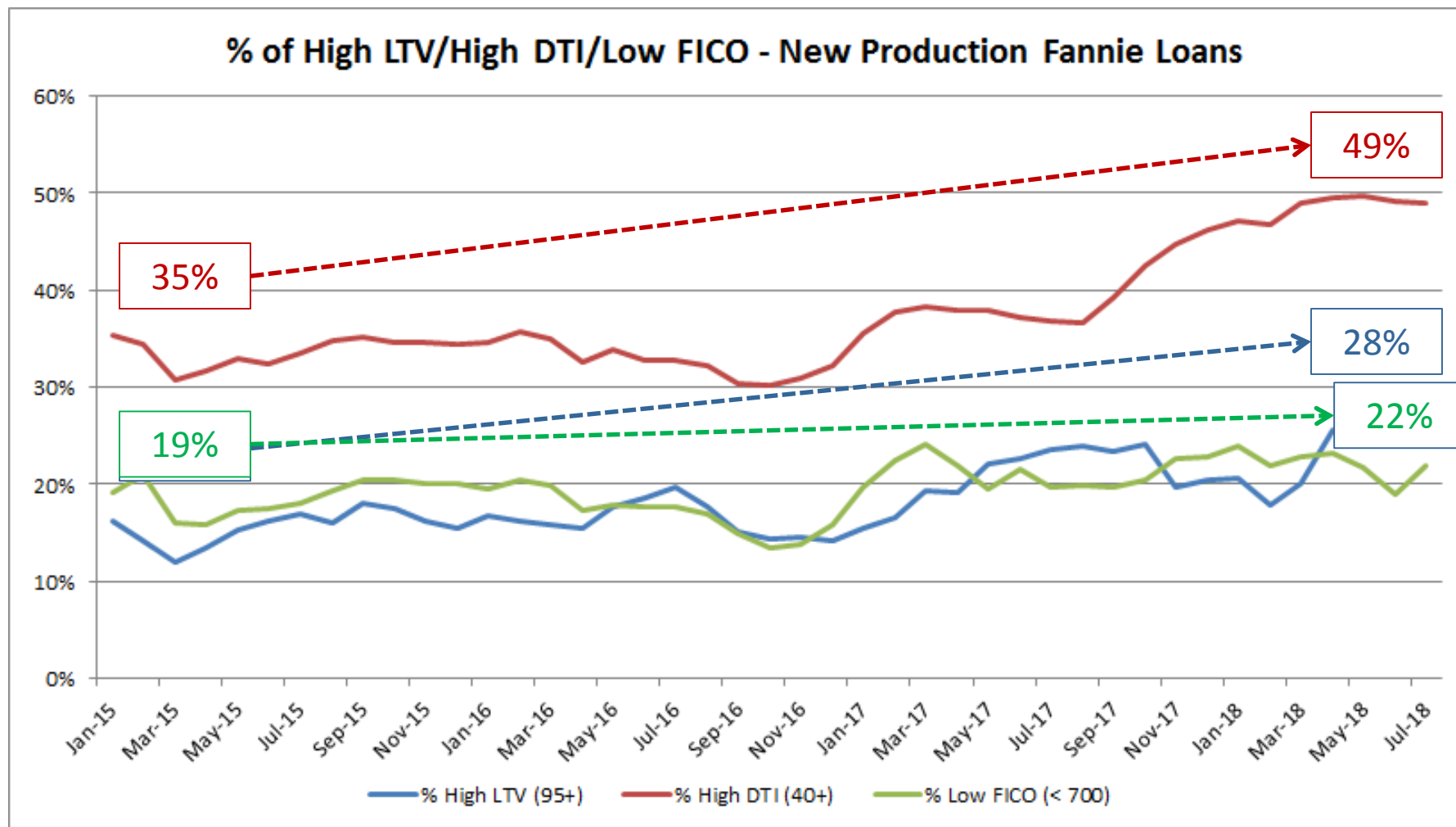
Source: BreanCapital, MortgageNewsDaily

Spread Conv 30yr Rate 30 Yr Jumbo Rate

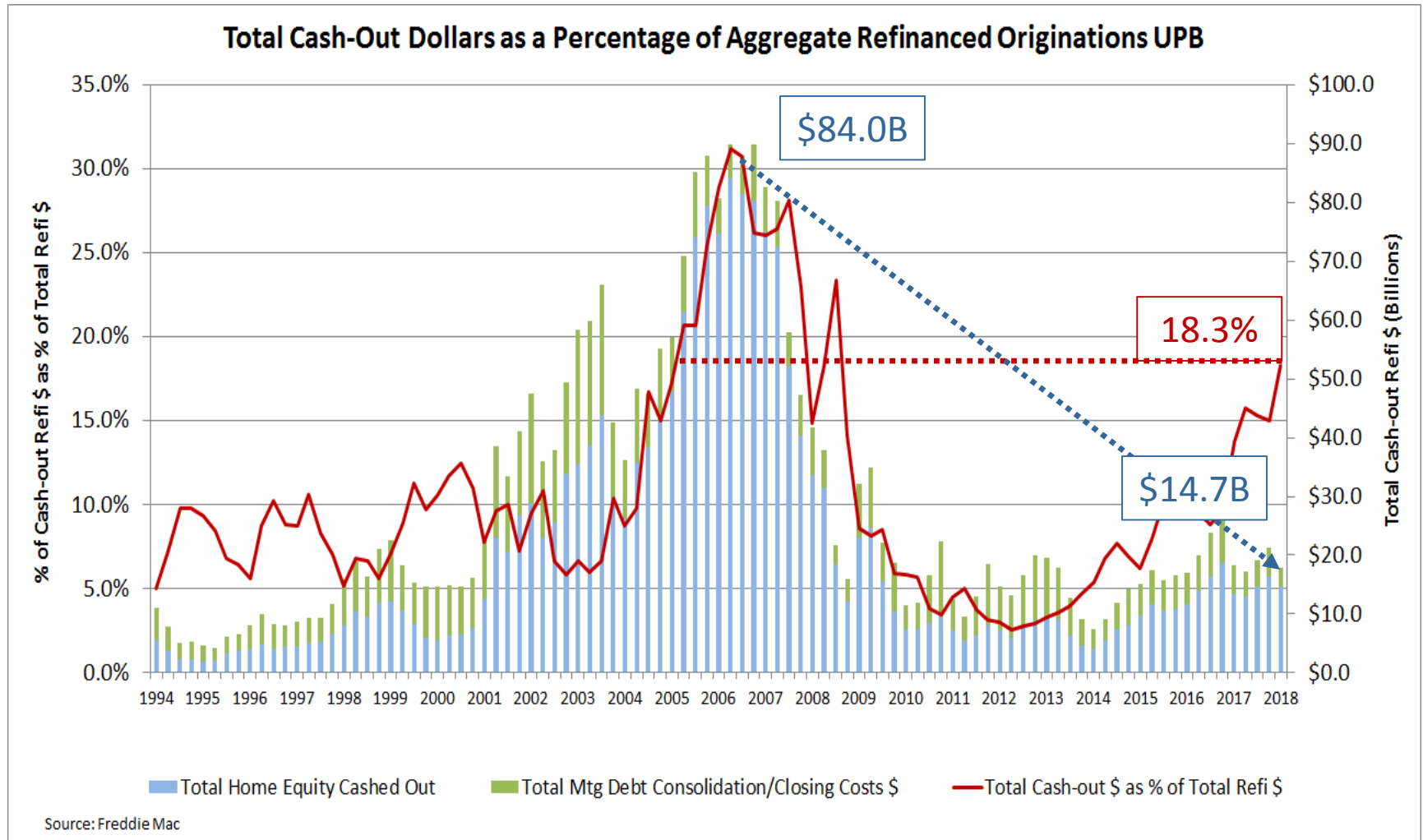
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IV. Single-Family Lending Trends

Risk-Layering



Cash-out Refinancing



V. Multi-Family Lending

Forms of Call Protection

Yield Maintenance (FNMA)

- Prepayment Penalty is calculated by taking the difference between the borrowers WAC and the CMT value to the end of the YM period (1% floor)
- Investor receives par back, and possibly some YM proceeds
- Supplemental Loan Programs are Available
- **Prepays Increase as Interest Rates Increase (Positively Convex – with upside in a sell-off)**

Defeasance (FHLMC)

- Prepayment Penalty is used to replace future cash flows with Treasuries
- Borrower does not receive principal back until the Treasuries mature
- Supplemental Loan Programs are Available
- **Prepayments are very Stable and Predictable (Positively Convex)**

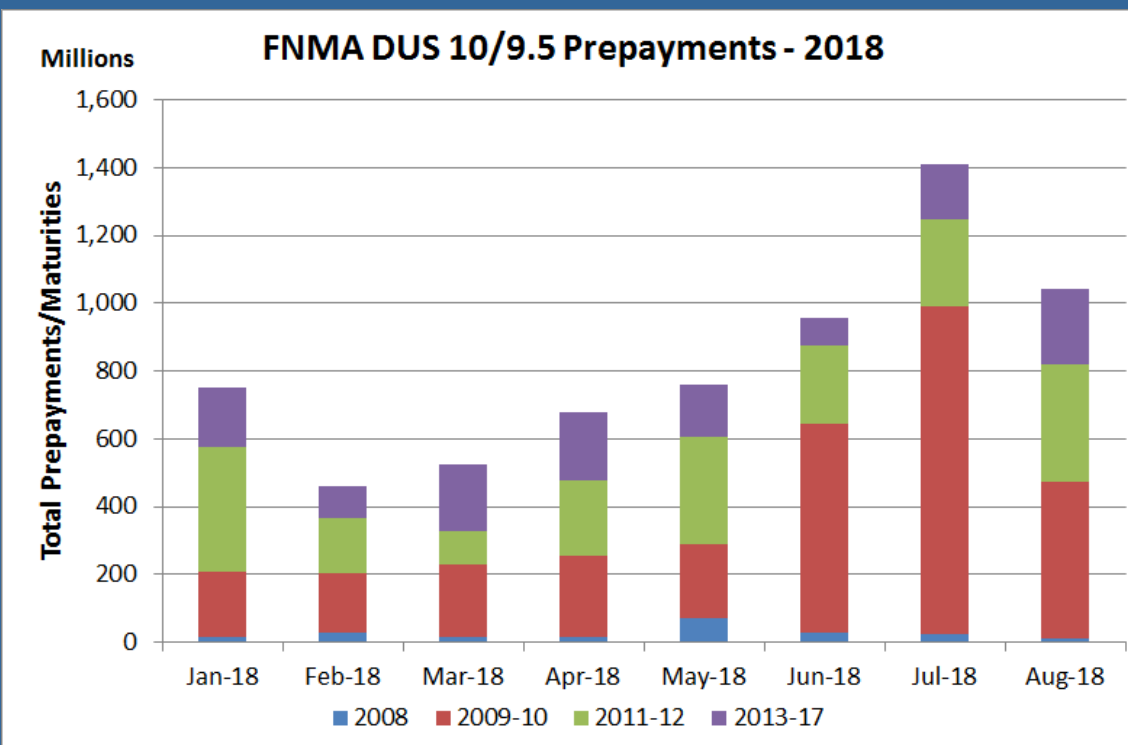
Declining Prepay Penalties (GNMA)

- Often structured as lockout plus a declining penalty balance (usually 1% per year)
- Borrower receives par back, penalties often diverted to IO holder
- **Prepayments are very sensitive to changes in interest rates (Negatively Convex)**

FNMA DUS Prepayments (10yr Mty)

	10/9.5	10/7	Total
2008	209		209
2009	1,479		1,479
2010	1,605	14	1,619
2011	973	83	1,056
2012	1,030	103	1,133
2013	607	24	632
2014	282	12	294
2015	248	19	266
2016	124	26	150
2017	28		28
Total	6,586	280	6,866

Millions of \$



FNMA 10/7 DUS Example

		1) Price-to-Yield				
Settle	08/21/18	H6M	CF	CF	CF	CF
Vary	0	0 CPY	100 CPY	100 V24	100 V30	100 V36
Price	97.6011	3.1426	3.4154	4.0139	3.7720	3.6088
Avg Life		6.60	3.68	2.09	2.59	3.09
Mod Duration		5.94	3.44	2.00	2.46	2.92
Prin Win	Date	5/22-4/25	4/22-4/22	9/20-9/20	3/21-3/21	9/21-9/21
I Spread		35	71	139	112	92

FN AM8389 (3138L9KB7) 2.71% (3.53%) 4/1/25 Mty

- Borrower Built Property in 2008, Refinanced in 2015 (10/7 most likely)
- Current Loan is a 10/7 with a 7yr IO (over 50% payment shock)
- Current LTV estimated to be ~45% (Original LTV in 2015 was 65%)

VI. Regulatory Update

Regulatory Update

GNMA / VA Task Force

- Introduced new guidelines for VA IRRRL Refinances
- The way the law was written adds a new 210 day requirement for all refi loans placed in GNMA pools
- **GNMA speeds should ramp slower, but may have steeper S-Curves around the 50bp NTD threshold**

FINRA Regulation 4210 (MFSTA – Margin Agreements)

- Implementation Date Extended until March 25, 2019 (From June 25, 2018)
- Final Rule still being worked out
- **This regulation (as currently written) will add risk and reduce liquidity in the Agency MBS markets**

CECL (Current Expected Credit Loss)

- Implementation Deadlines:
 - 12/15/19 for SEC filers
 - 12/15/20 for Public Non-SEC filers
 - 12/15/21 for Remaining filers
- **The American Bankers Association has called CECL “the most sweeping change to bank accounting ever.”**

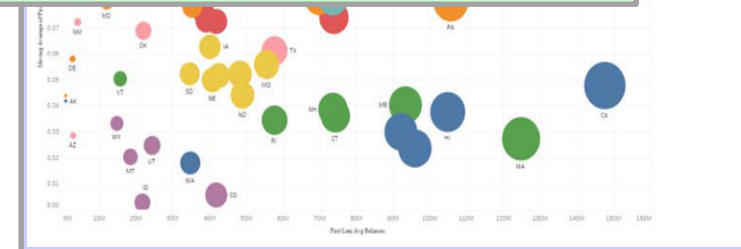
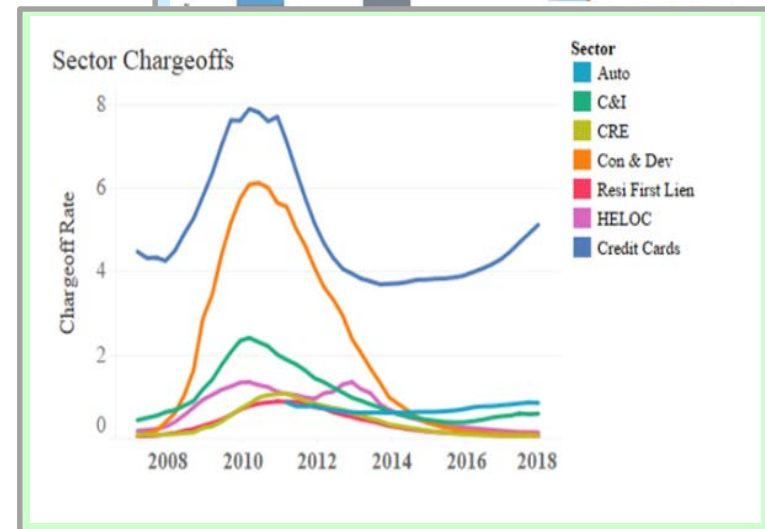
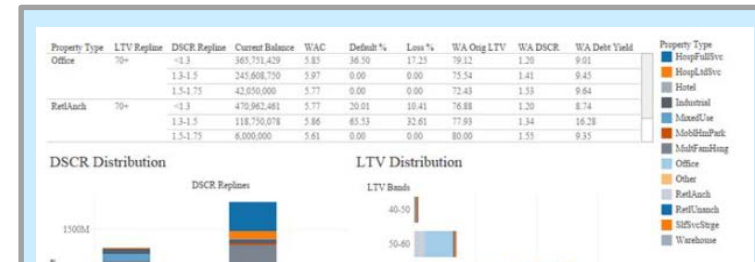
CECL Requirements & Solutions

Requirements

- Existing regime: ALLL is recognized when it is “probable” a loss **has been incurred**.
- CECL: Reflects a current estimate of all **expected** credit losses
- Institutions cannot rely solely on historical performance to estimate losses.
 - Current portfolio composition and macroeconomic environment has to be considered.

Solutions (Brean Strategic Advisors)

- Web-based Software
 - Top-Down Loss Model
 - Bottom-up Loss Model
 - Data Warehouse
- Integrated Reports and Dashboards
- Turnkey
- Affordable



VI. Questions & Answers

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