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Challenges and Opportunities in the Mortgage Market

Prepared for: South Florida Bond Traders Association

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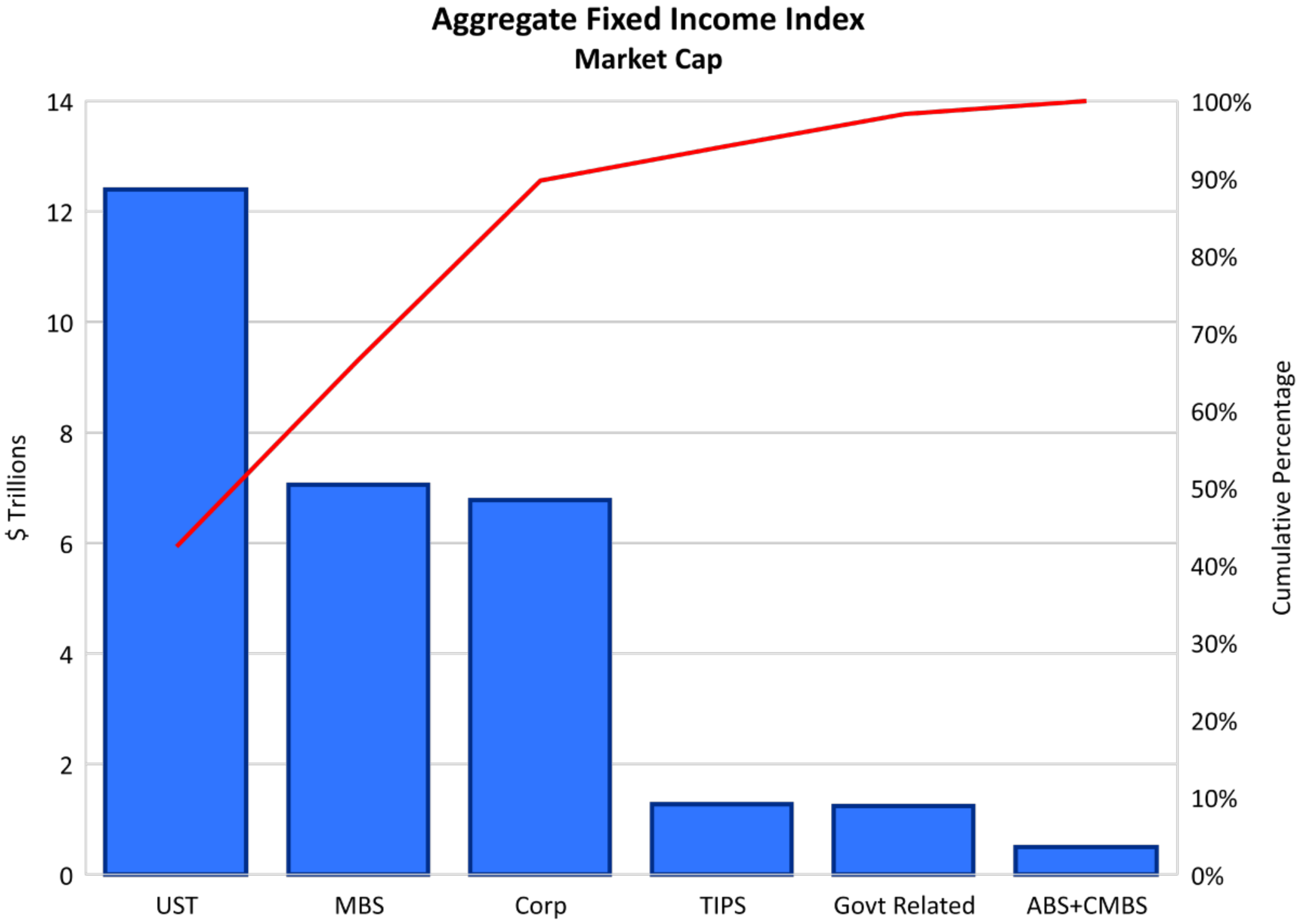
Walt Schmidt, CFA, Senior Vice President
Alexis Vilimas, Vice President
Tagbo Ugo-Obi, Analyst
Mortgage Strategy Group

1. **Market Structure**
2. Prepayments
3. Relative Value

MBS Market is Largest "Spread Sector" in Fixed Income



- Treasury market dominates fixed income at ~70% larger than each of the two main spread sectors.
- UST, MBS, and Corp together comprise ~90% of taxable fixed income universe.
- Tax-free muni sector is $4 trillion, but not in aggregate index.

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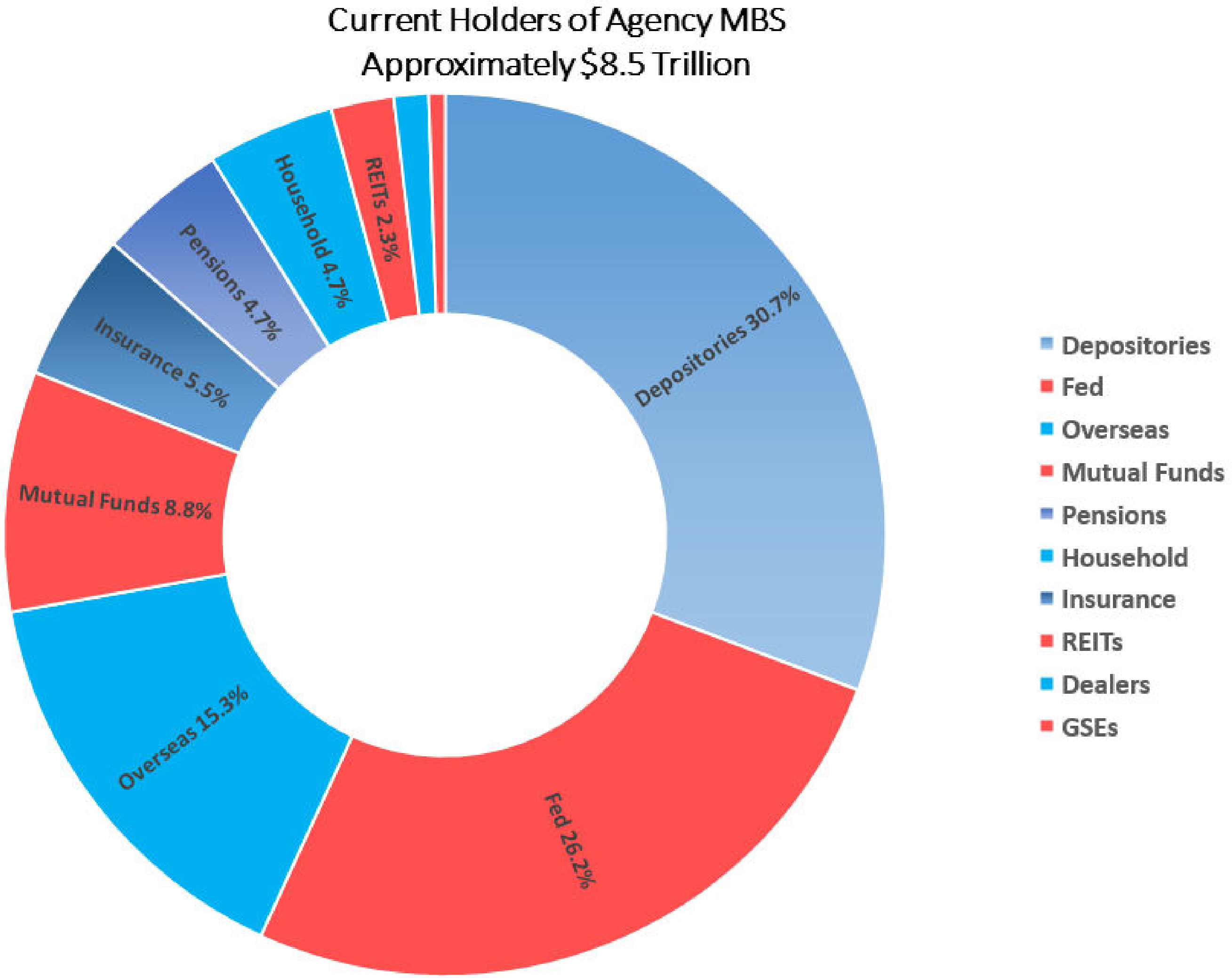
Source: FHN Financial, FRB NY

Current State of Funding for the Agency MBS Market



- Ownership structure dominated by banks and then the Fed, but that is changing.
- Overseas investors and asset managers have been the main marginal buyers, and banks are re-emerging.
- Hedge funds, pensions, and insurance cos. can move markets during any given session.

Source: FHN Financial, Federal Reserve, Bloomberg, Various Company Disclosures

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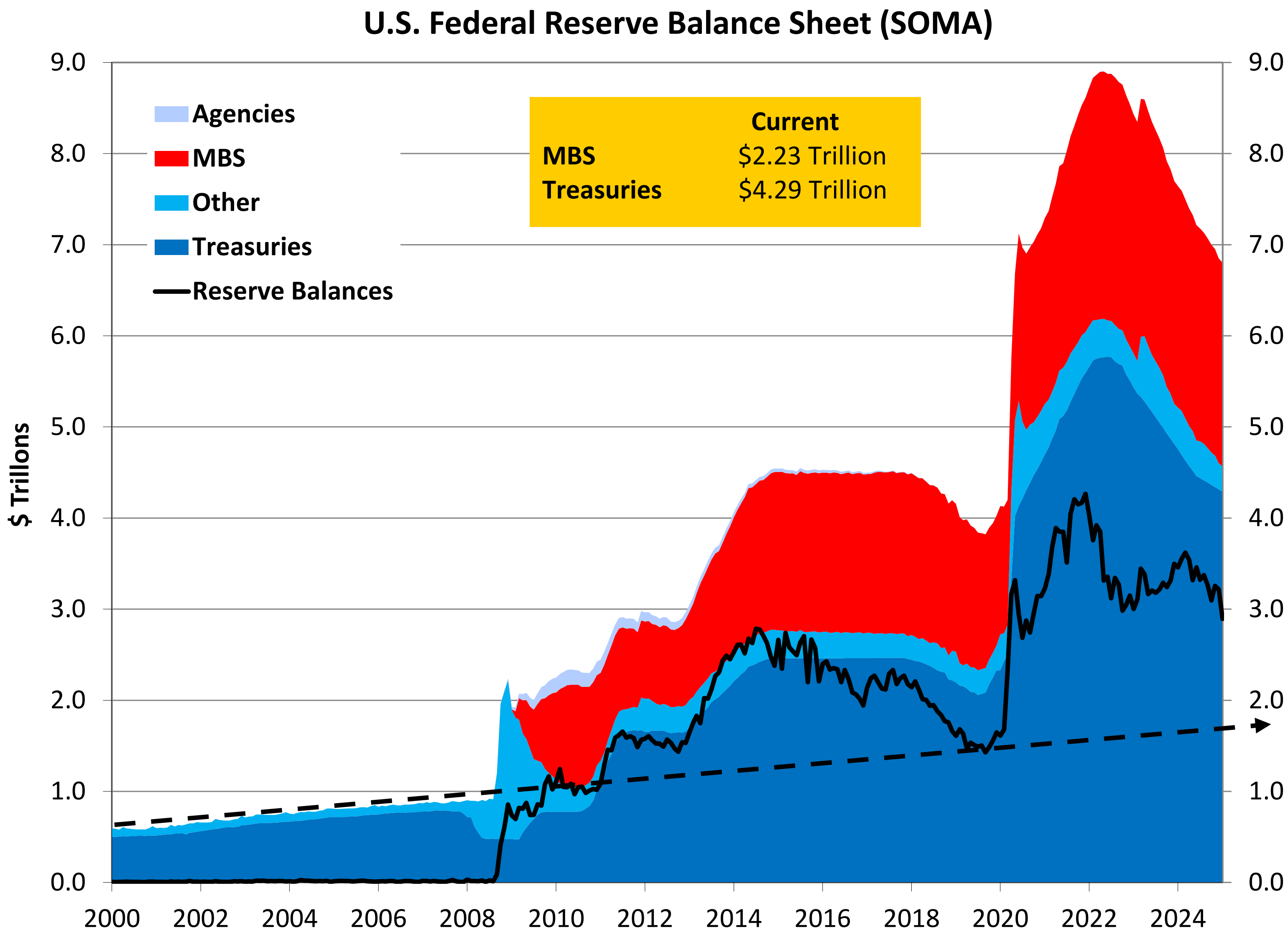
Historically Intrusive QE4 Has Resumed Run-Off Mode



- The era of QE has brought dramatic changes to the Fed's balance sheet.
- The real monetary effect is in reserve balances and how quickly those are leveraged in the economy.
- At pre-QE run-rate, balance sheet should be *only* $2 trillion or less.

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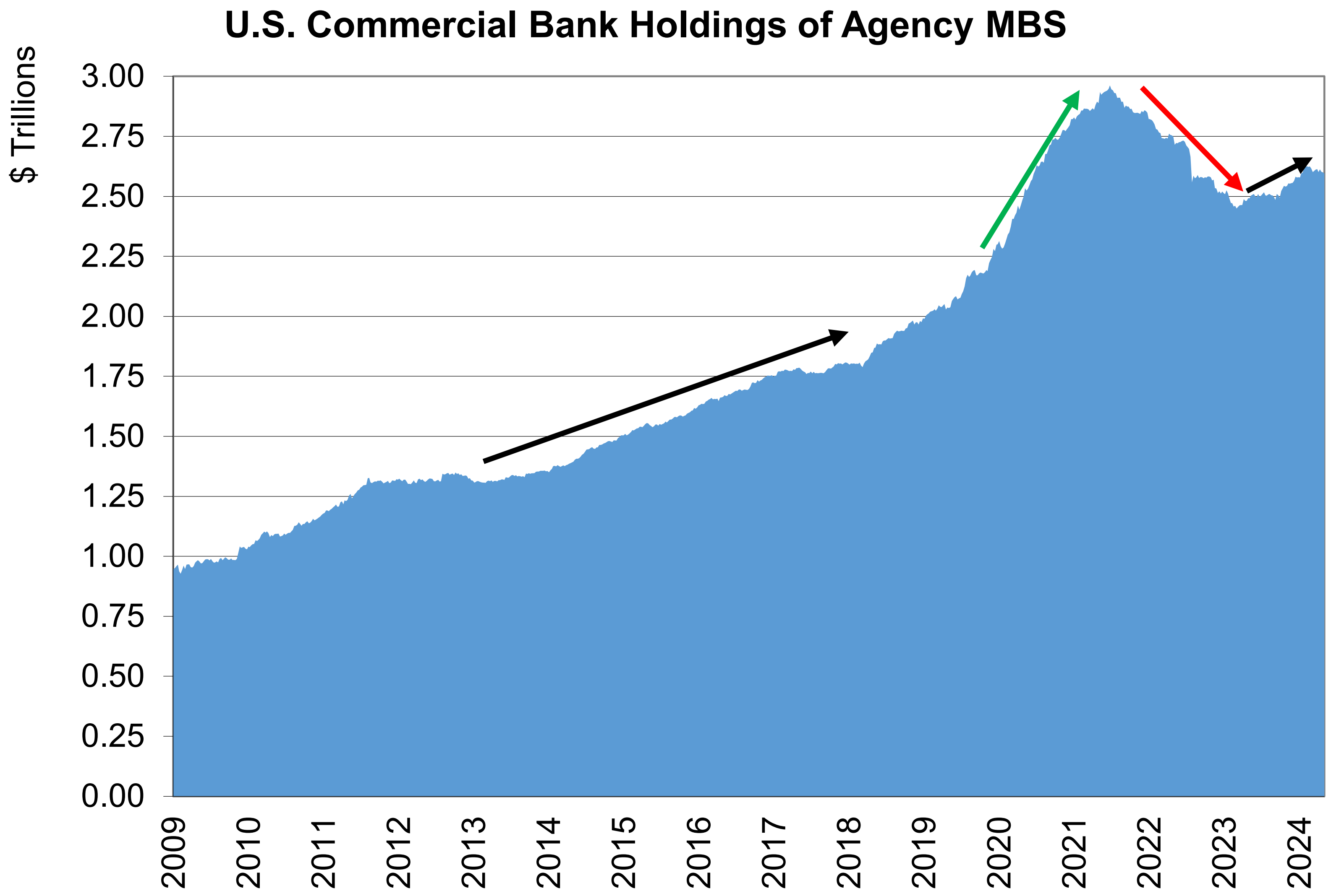
Source: FHN Financial, FRB NY

Banks Adding Lately After Long Period of Roll-off



- Banks have added consistently since late last year.
- Still room to add if the curve steepens from here.
- Boom/bust cycle with pandemic lockdowns may be over.

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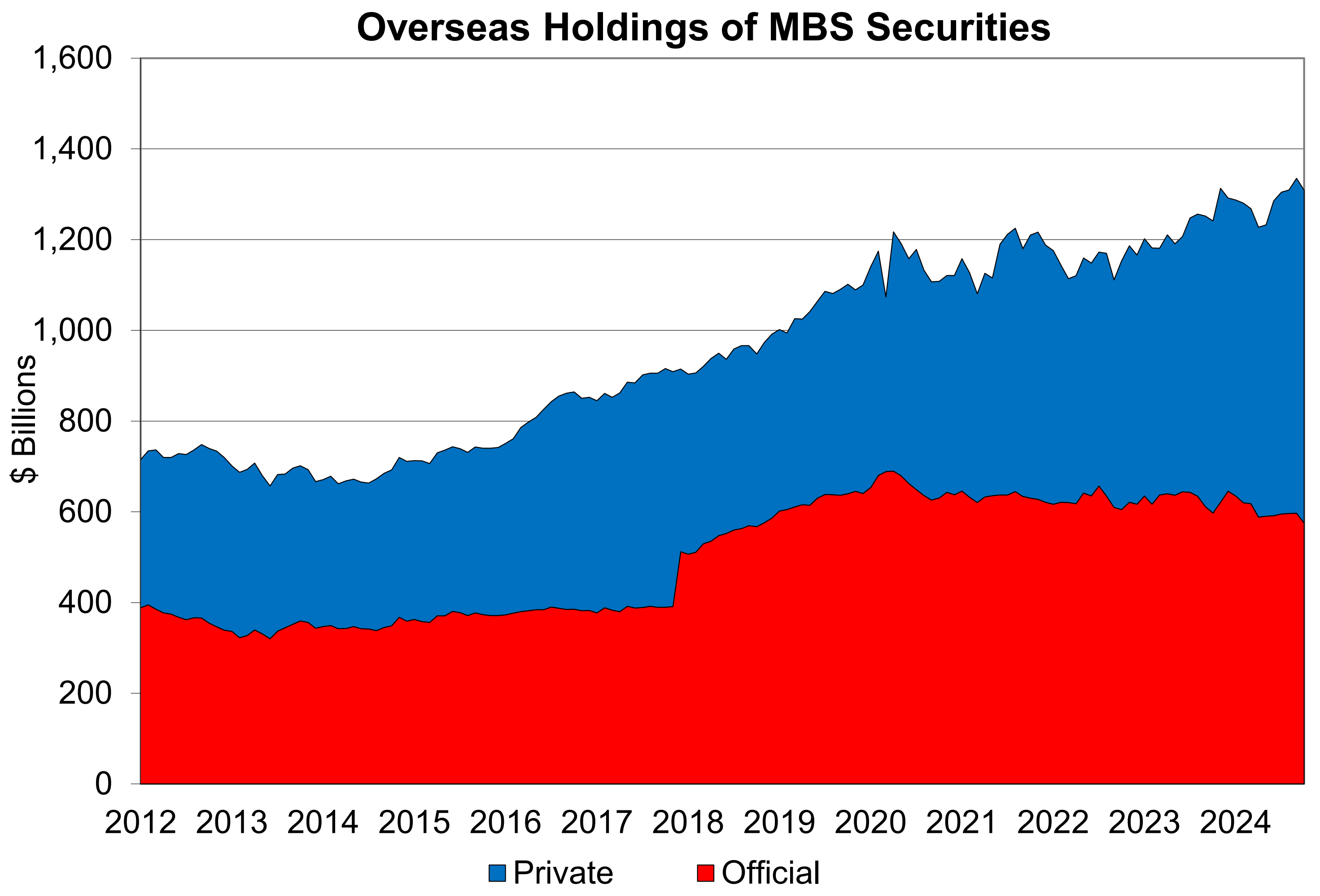
Source: *FHN Financial and US Treasury*

Foreign Holdings of MBS Moved Noticeably Higher in Recent Period



- Carry trade for Asia-based investors.
- Demand may weaken if the USD weakens.
- Demand best when currency markets not in flux – hedging costs are lower.

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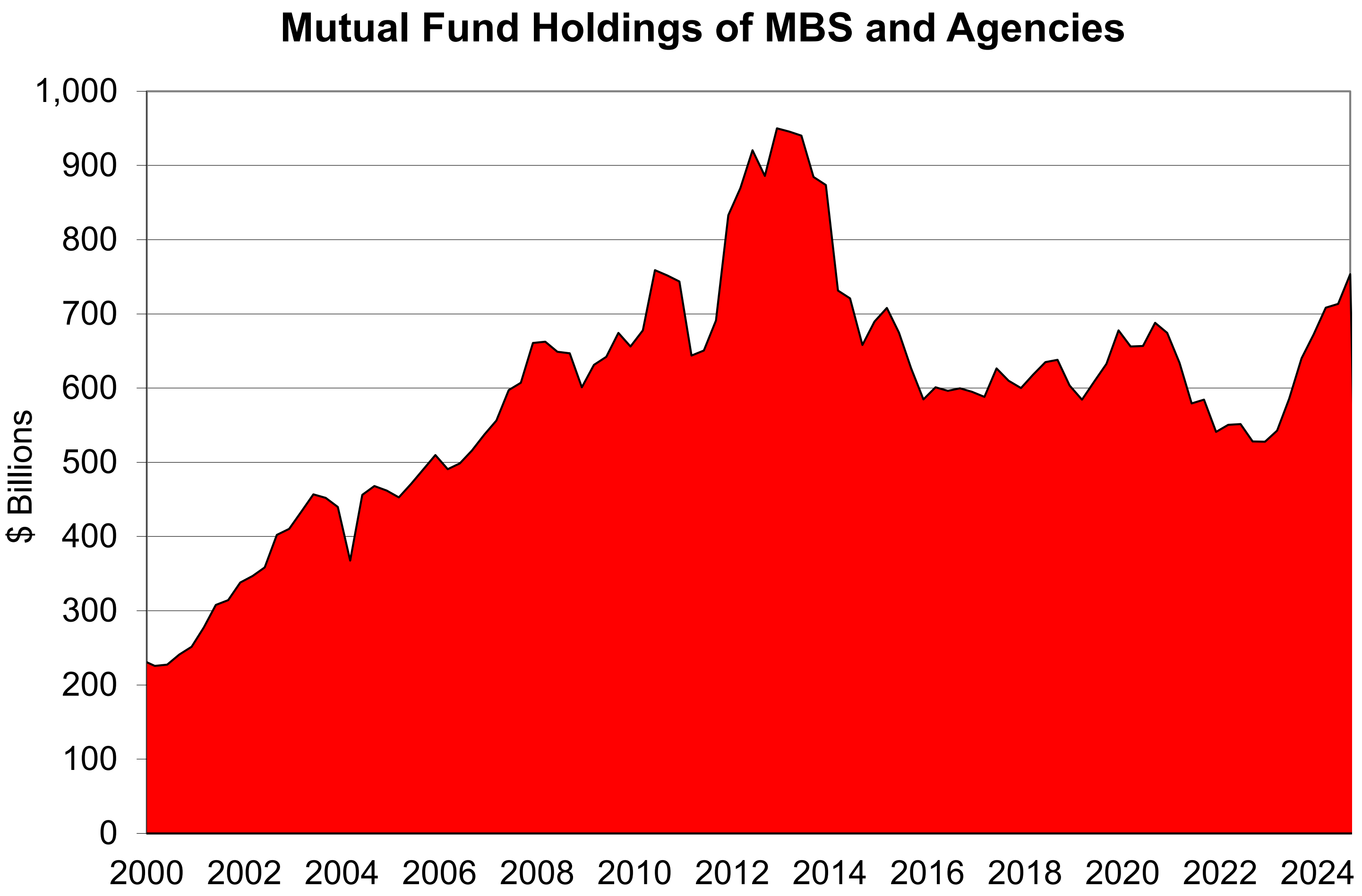
Source: FHN Financial and US Treasury

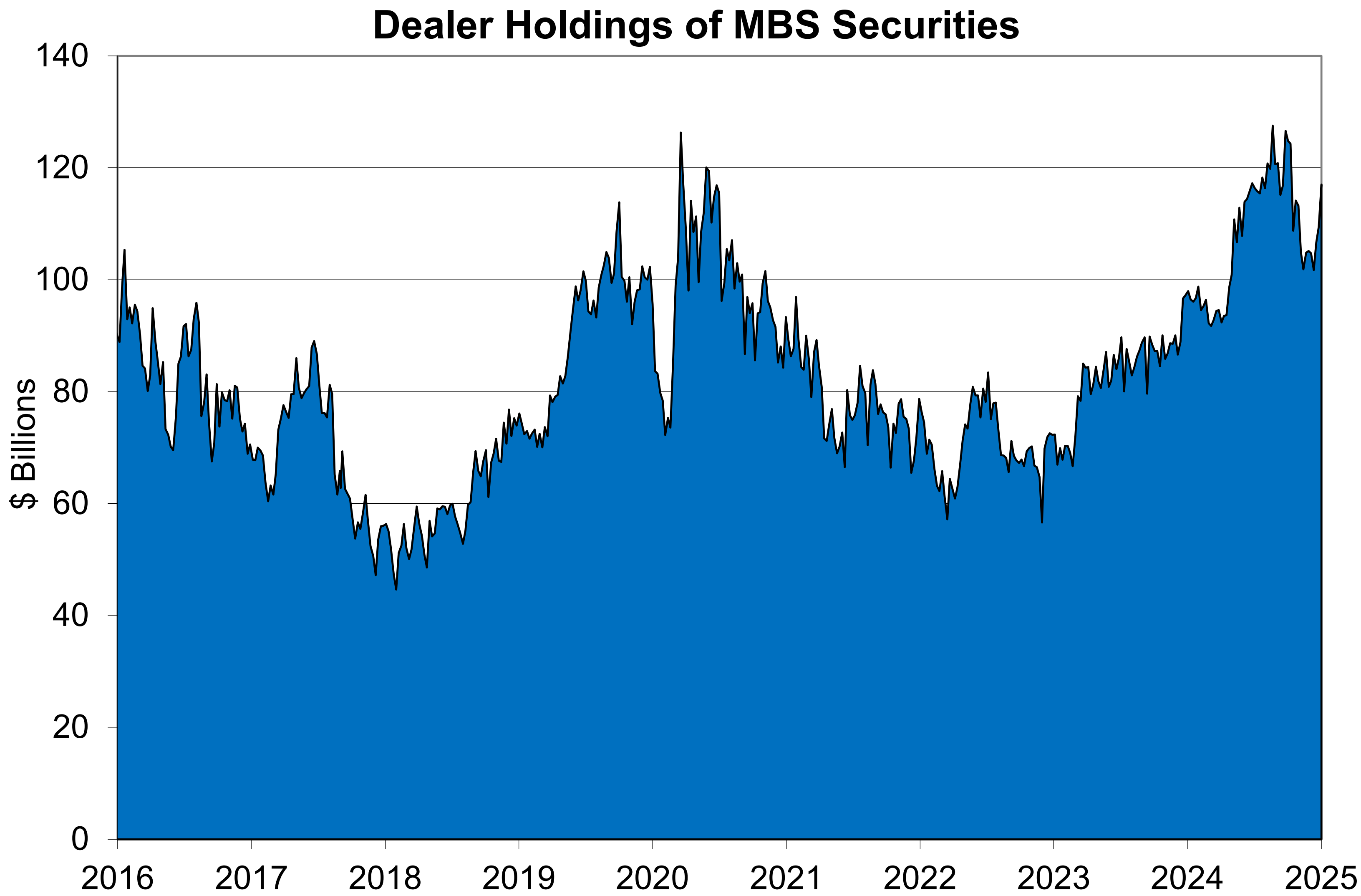
Money Managers Growing Allocations Again, Are "Swing Vote"



- Asset managers longer than at any time since 2013.
- Tend to move in and out more quickly than banks.
- Historically tight corporate credit valuations make MBS relatively attractive.

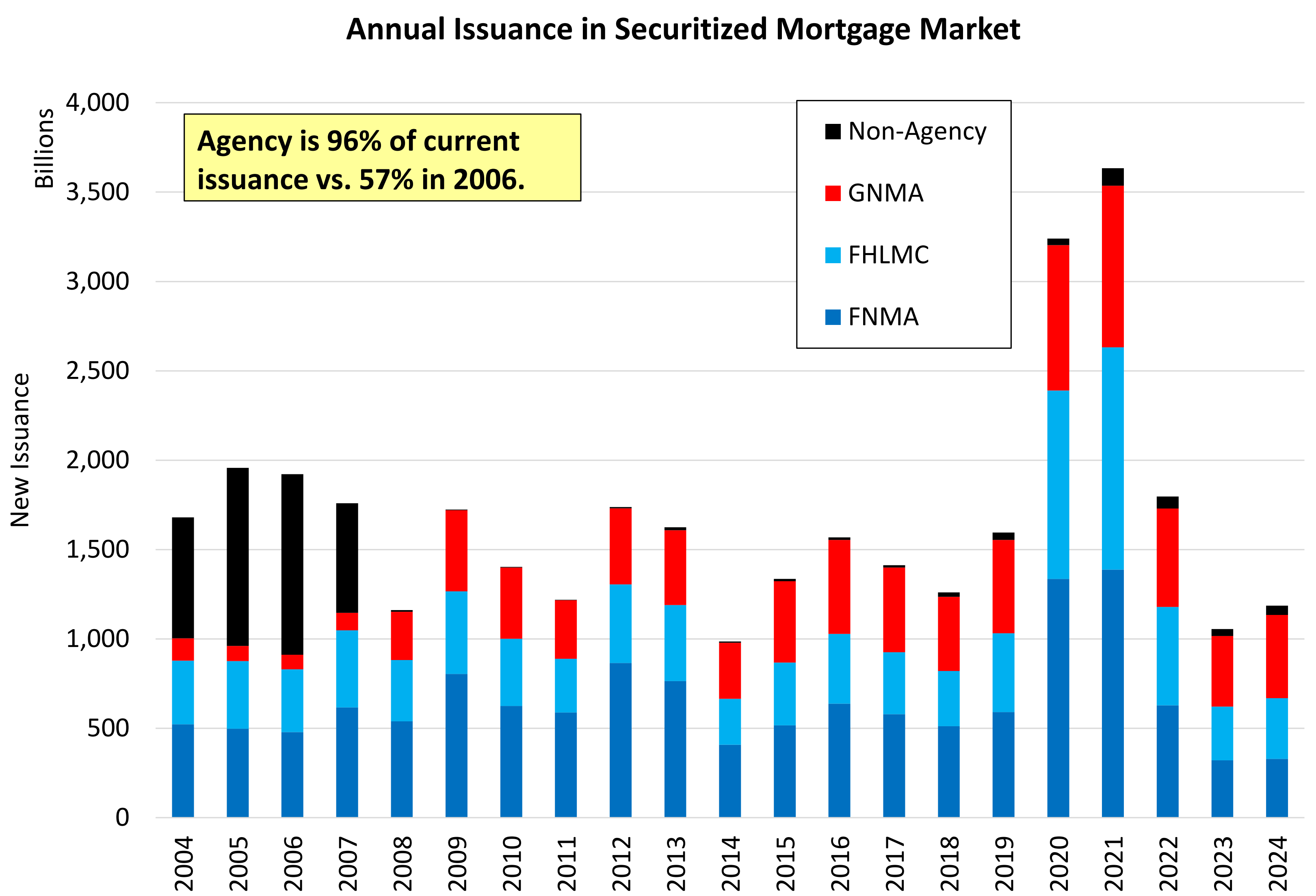
Source: FHN Financial and Federal Reserve

Dealer Balance Sheets Remain Very Supportive After Small Pullback at YE



- Dealers also very long from historical perspective.
- Have financed slightly larger MBS production in anticipation of bank loss/reinvestment trades.
- Not much room to add before year-end if it is just a “loss” trade.

Record Issuance in '20 & '21 Has Been Quickly Reversed



- Gross issuance may not reach 2020 and 2021 levels for years, even decades.
- With Fed about-face, market "borrowed" issuance from current and future years in 2020 and 2021.

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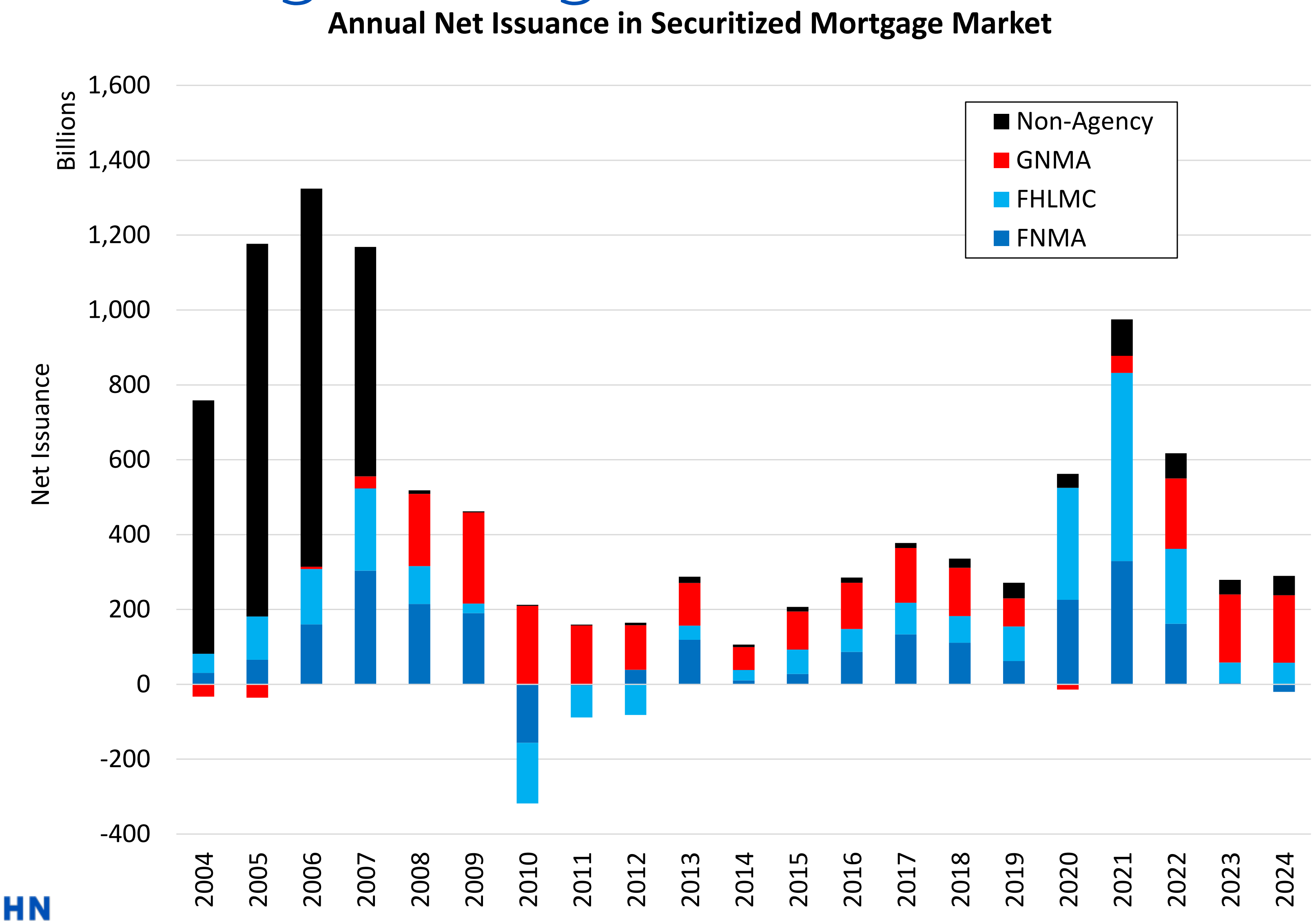
Source: FHN Financial, CPRCDR

Net Annual Agency MBS Issuance Finding a Range in $200-$300 Billion Area



- Normally, ***net issuance*** increases when prepayments decline.
- Net issuance in 2023 was short of $300 billion.
- Now dominated by Ginnie despite faster prepays in that sector.

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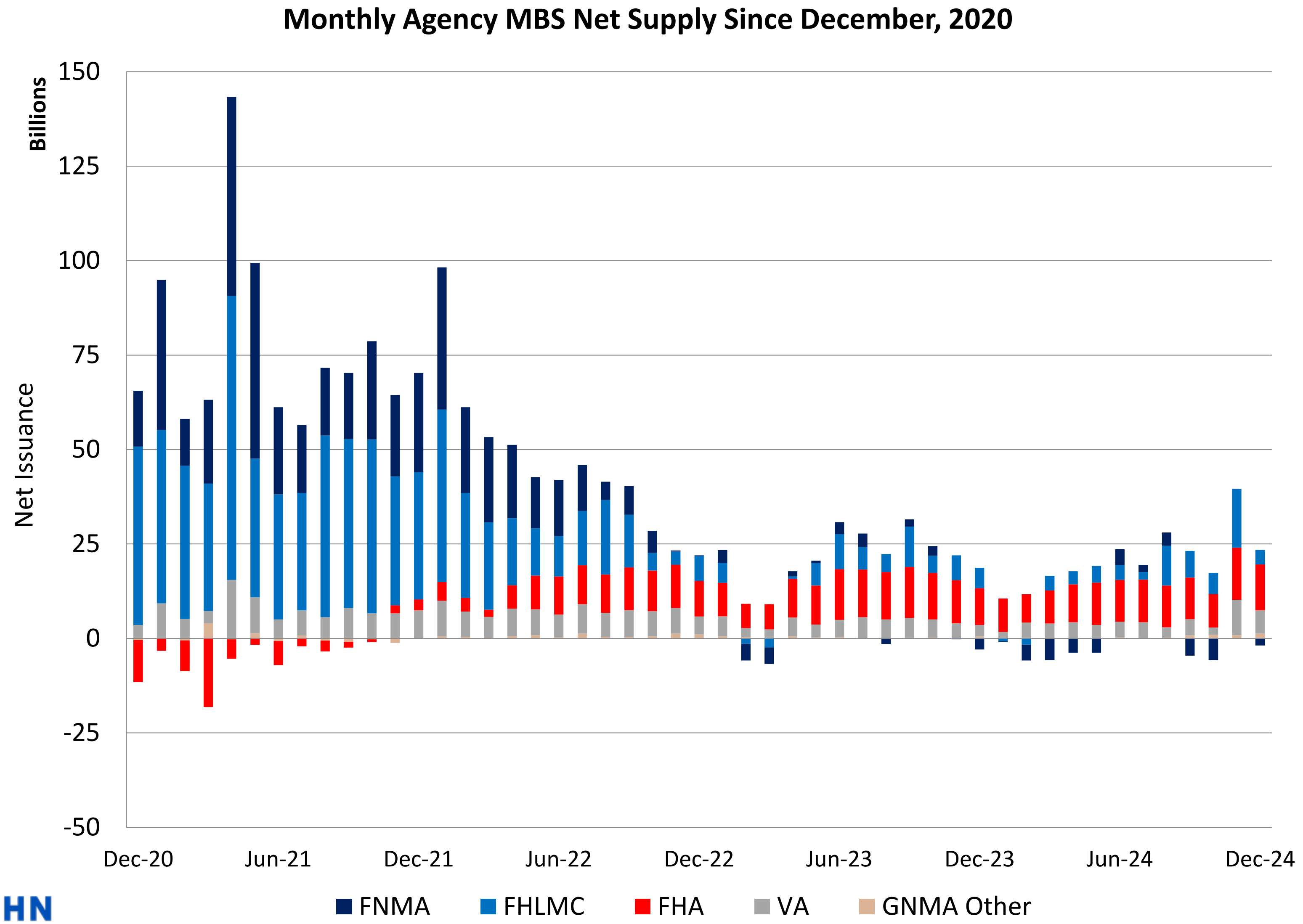
Source: FHN Financial, CPRCDR

Current Trend Just Under $20 bln/mo; Back to Trend After Big Bump in November



- Monthly detail highlights how dramatically net issuance has declined.
- There is a little bit of strength returning during the past few months after ***almost negative*** net issuance in February and March.
- Faster prepayments last month pushed supply lower.

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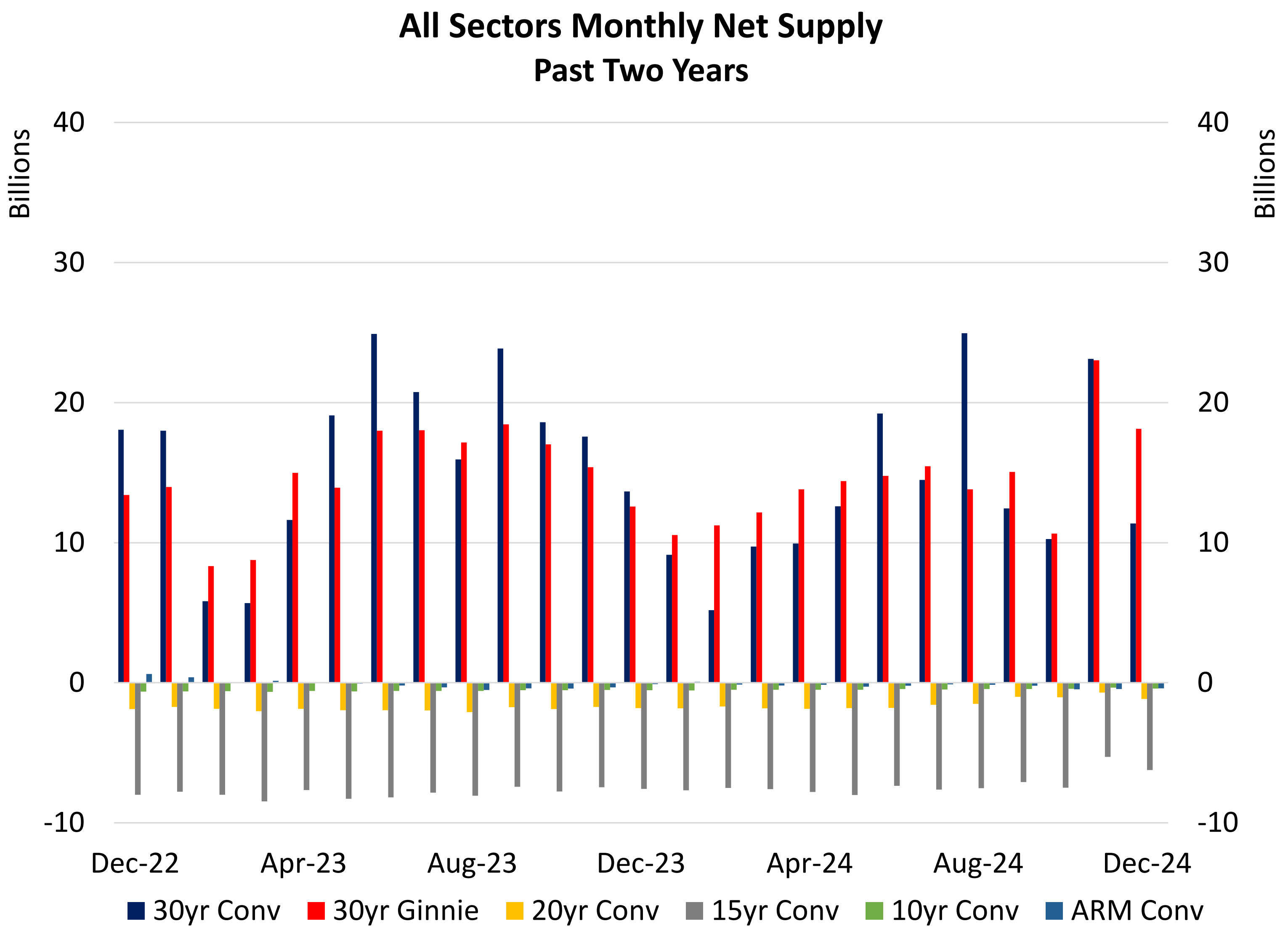
Source: FHN Financial, CPRCDR

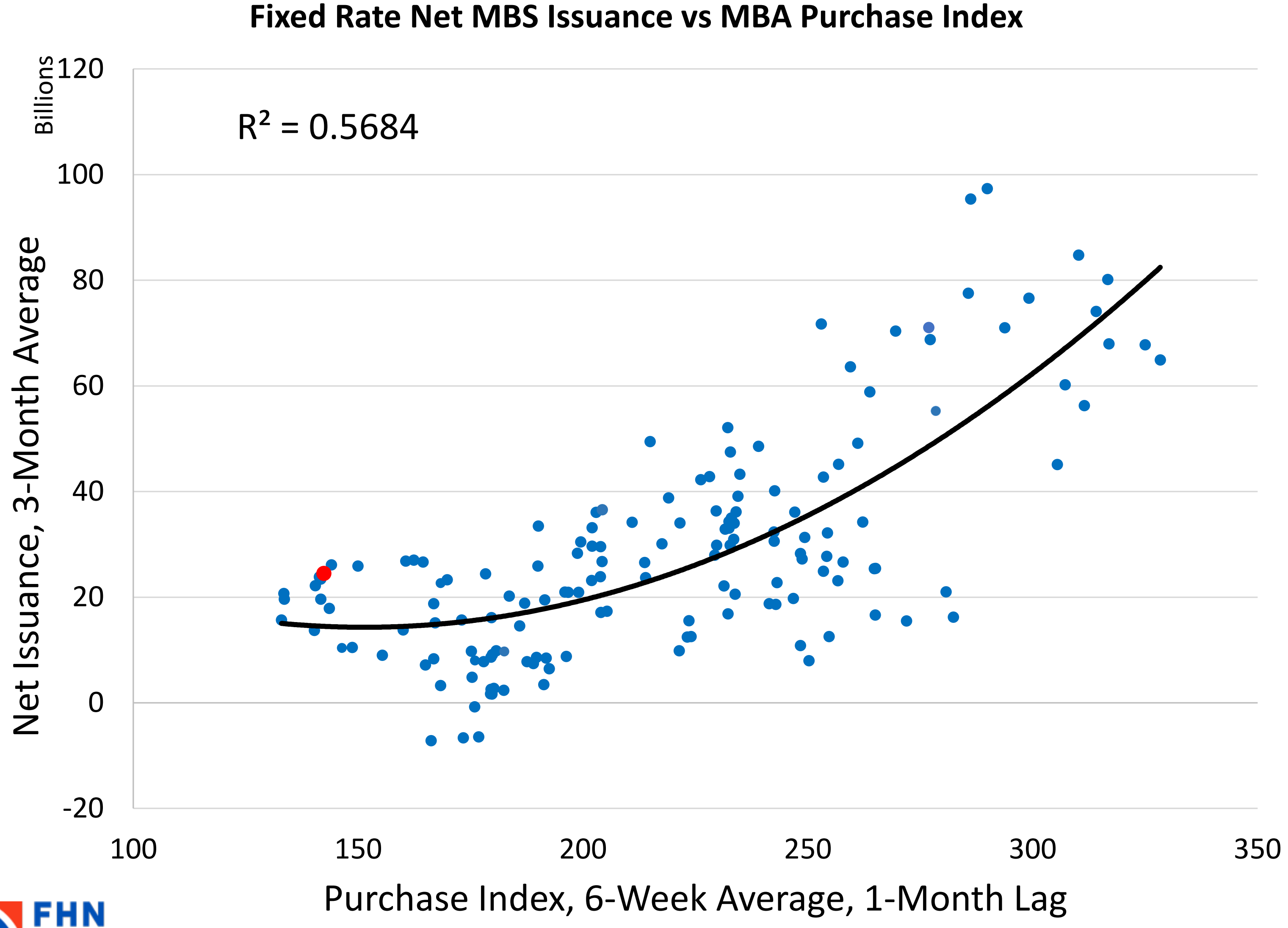
Shorter Am Schedule MBS In Run-Off Mode



- 30yr conventional net issuance rebounding after very slow 1H24.
- Ginnie net issuance remains robust despite fast prepays.
- All shorter-am and ARM product is zero or negative net issuance.

Source: FHN Financial, CPRCDR

Net Issuance Performing Near the Level Predicted by Purchase Index



- The MBA's purchase index, properly lagged, is a good predictor of net issuance.
- Current level of purchase index plumbing new lows to create new data points.

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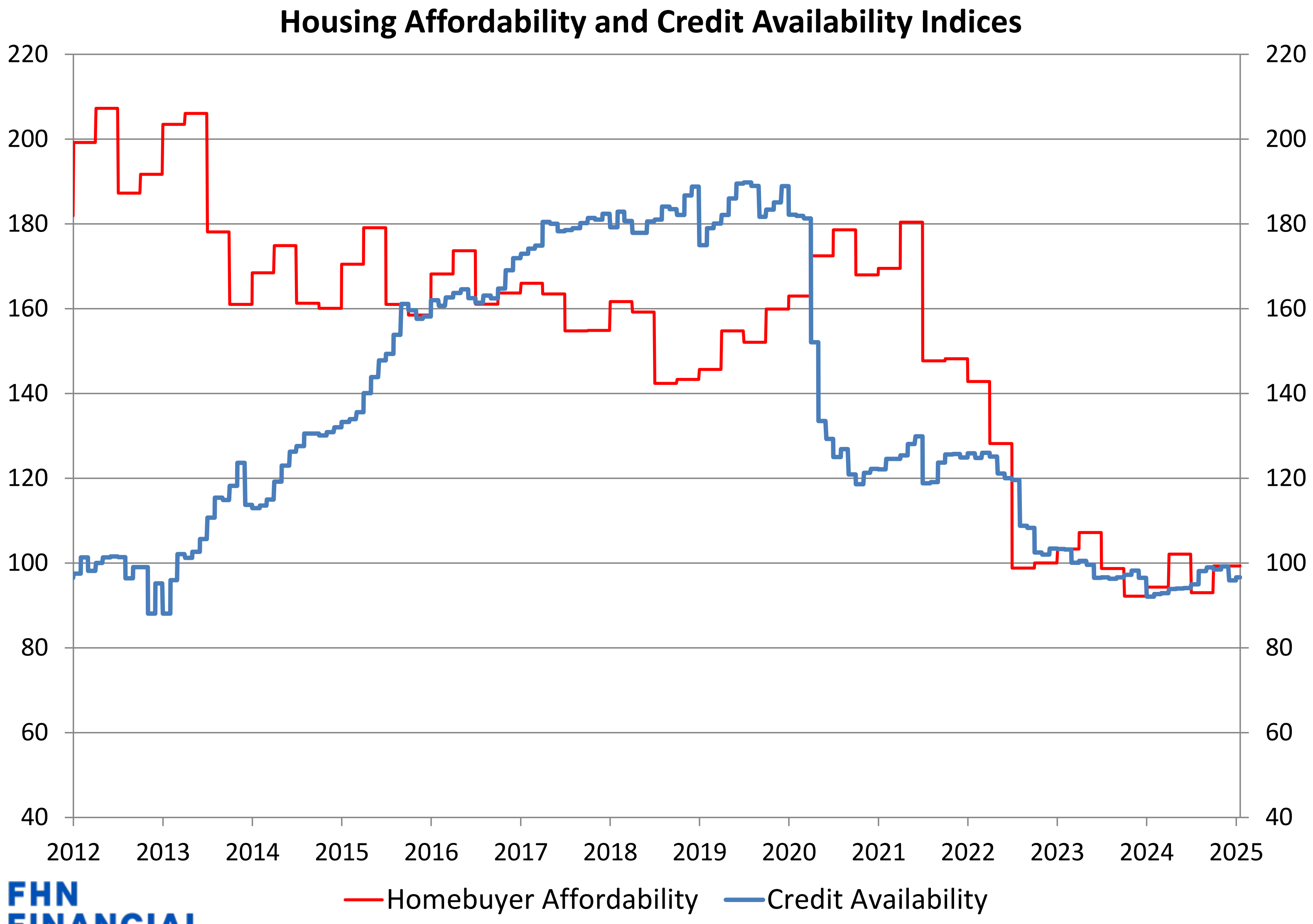
Source: FHN Financial, Bloomberg, CPRCDR

Net Supply Not Likely to Be a Headwind for MBS As Long As Housing Affordability is Difficult



- Affordability is a function of both interest rates and home prices.
- Credit availability is a function of rates and the general lending environment.

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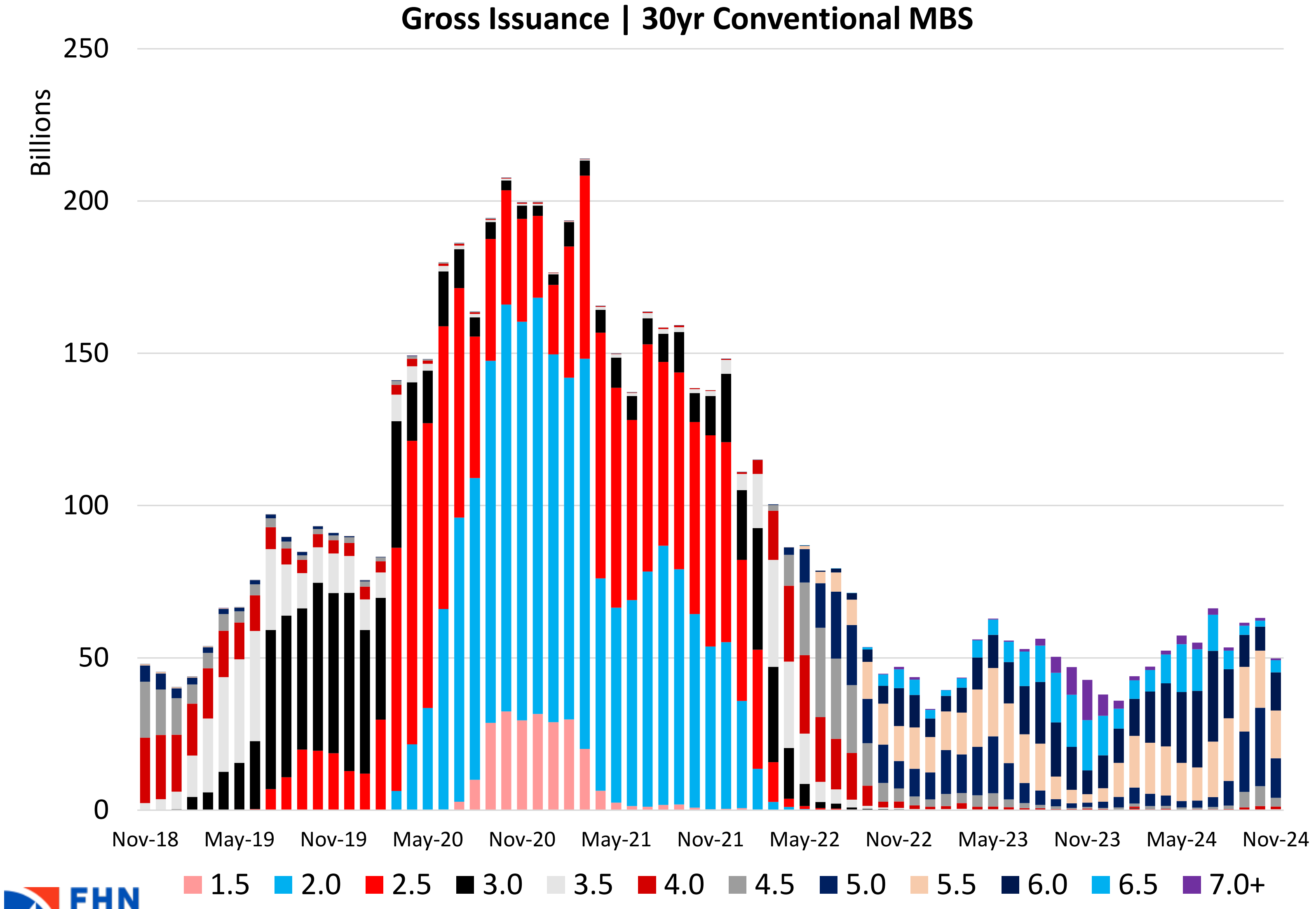
Source: FHN Financial, Bloomberg, NAR, MBA

Coupon Profile of Monthly Issuance Has Been Volatile Through QE/QT



- Issuance was dominated by two coupons during height of pandemic lockdowns.
- During the past 36 months, at least $5 billion has been issued at least once in *11 different coupons.*

Source: FHN Financial, CPRCDR

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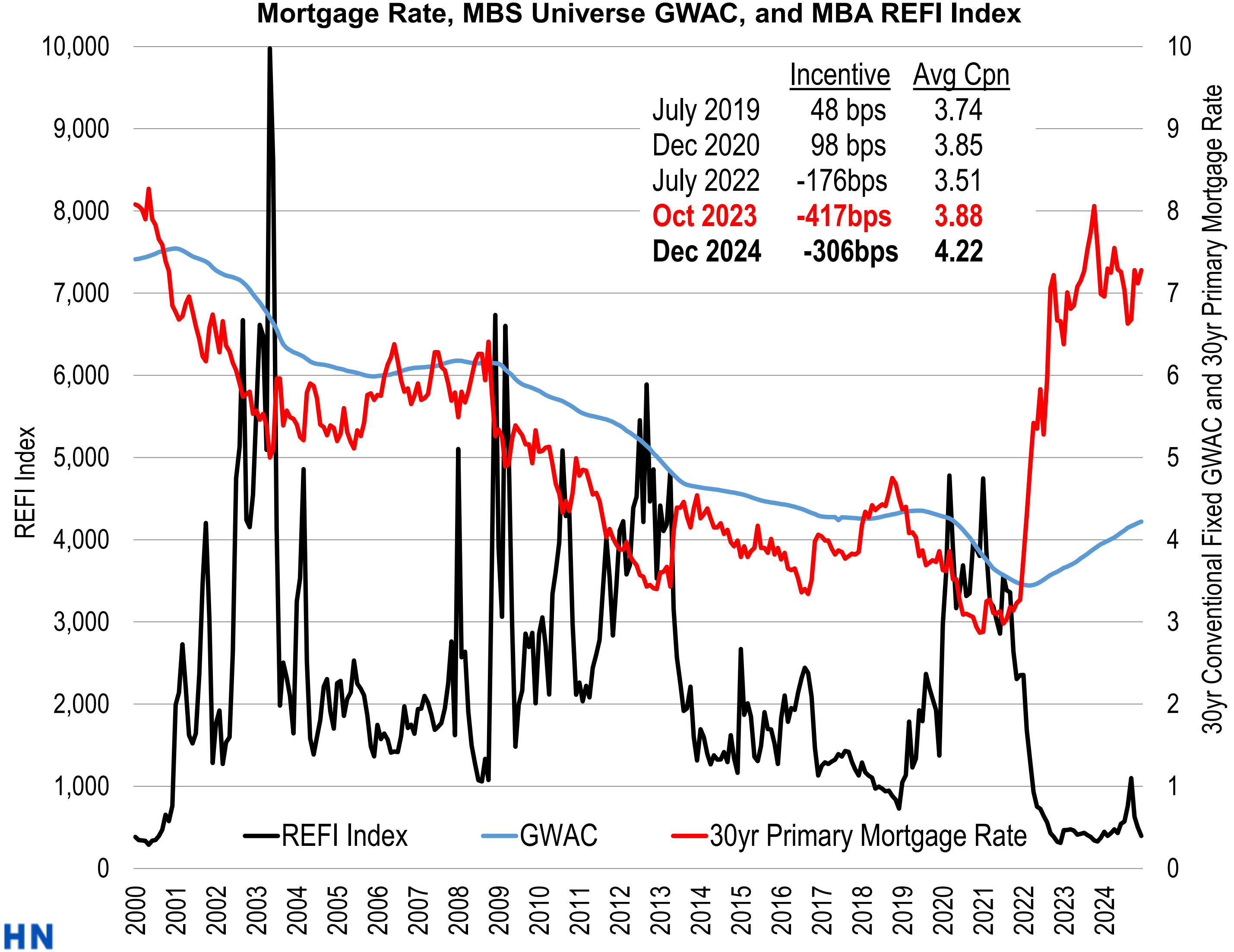
Big Picture Has **NOT** Changed Much: Rates Up, Refi's Down, Incentive VERY Negative



- REFI index still near long-term historical lows.
- Average borrower is paying 4.22% on their mortgage.
- Compared to the 7.10% rate a borrower would lock in today, the average borrower has NEGATIVE 288bps of rate incentive.
- *75% of homeowners have a mortgage with an interest rate of 4.5% or lower.*

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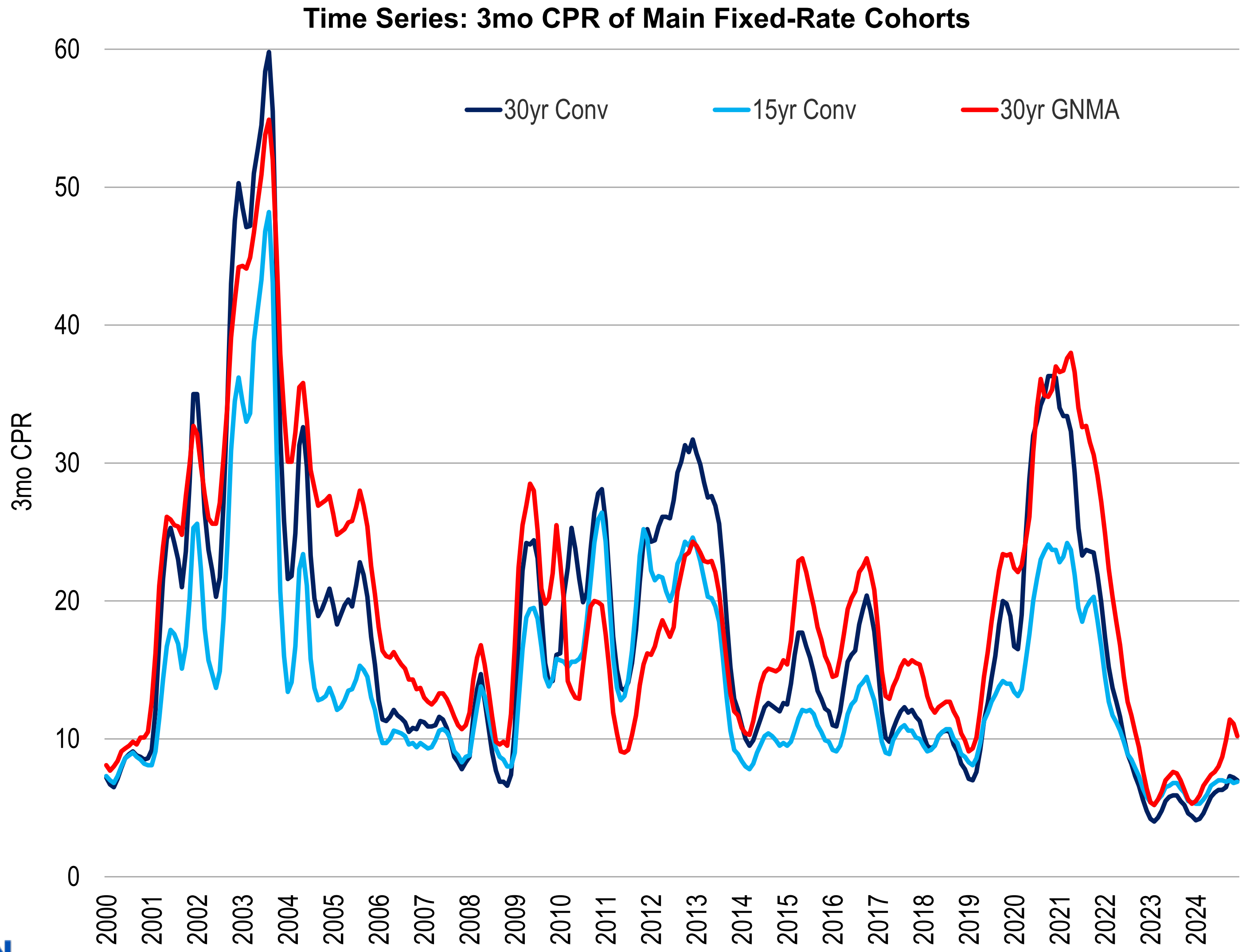
Source: FHN Financial, Bloomberg, and CPRCDR

Aggregate Prepay Speeds Just Off "Modern MBS" All-Time Lows



- 2023 was the single slowest year in 20 over years.
- 2024 was the second slowest year.
- Speeds up slightly for conventionals, rebounding faster for Ginnie driven by VA streamline refinancing.
- Year-over-year, speeds up 40% for 30yr UMBS, 20% for 15yr UMBS, and 65% for G2 30yr.

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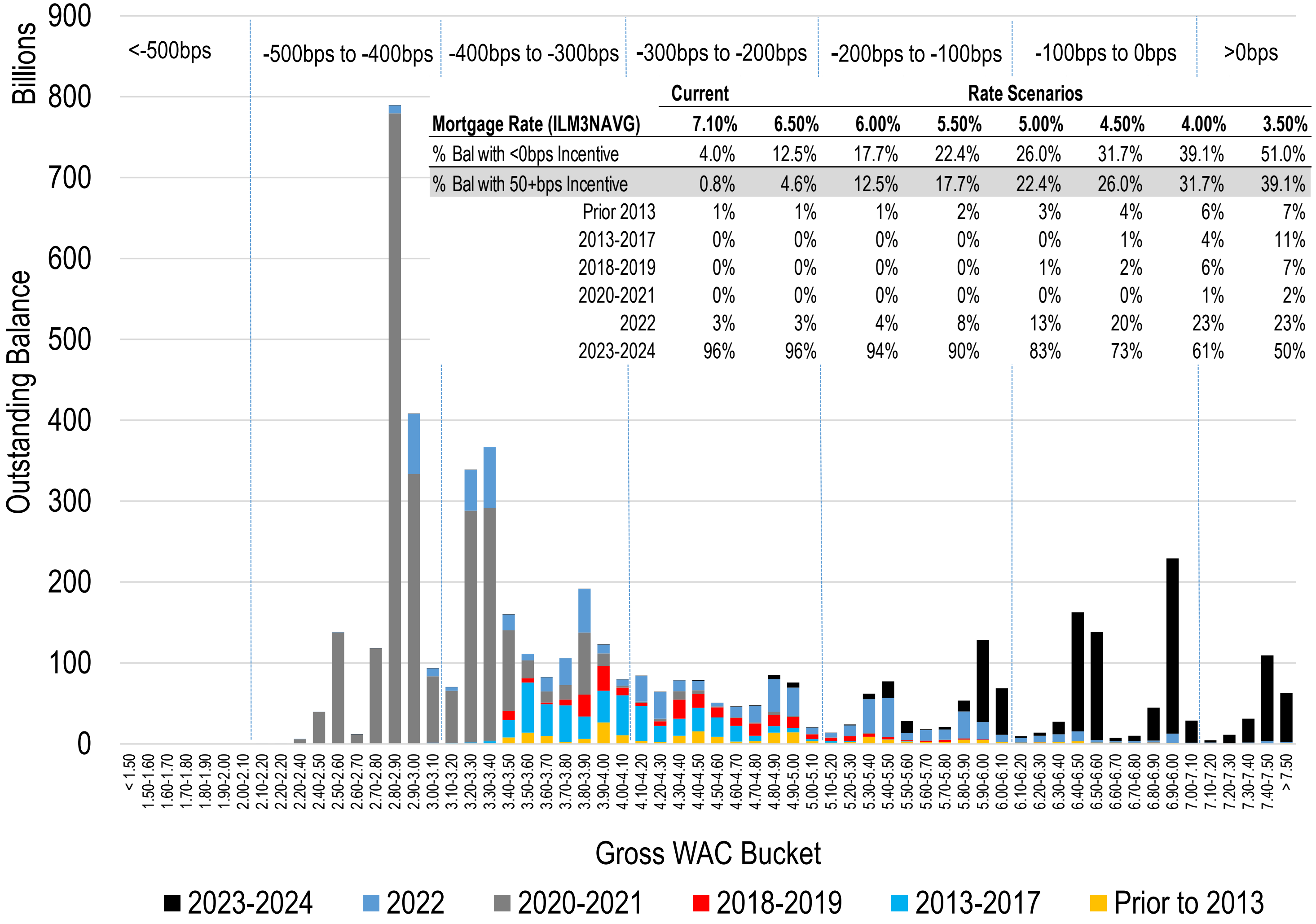
Source: FHN Financial and CPRCDR

Less than 5% of the MBS Market In-The-Money

30yr Conventional Stack by WAC by Vintage



	Current	Rate Scenarios						
Mortgage Rate (ILM3NAVG)	**7.10%**	**6.50%**	**6.00%**	**5.50%**	**5.00%**	**4.50%**	**4.00%**	**3.50%**
% Bal with <0bps Incentive	4.0%	12.5%	17.7%	22.4%	26.0%	31.7%	39.1%	51.0%
% Bal with 50+bps Incentive	0.8%	4.6%	12.5%	17.7%	22.4%	26.0%	31.7%	39.1%
Prior 2013	1%	1%	1%	2%	3%	4%	6%	7%
2013-2017	0%	0%	0%	0%	0%	1%	4%	11%
2018-2019	0%	0%	0%	0%	1%	2%	6%	7%
2020-2021	0%	0%	0%	0%	0%	0%	1%	2%
2022	3%	3%	4%	8%	13%	20%	23%	23%
2023-2024	96%	96%	94%	90%	83%	73%	61%	50%

- Only 4% of balance has any incentive and less than 1% is refinanceable.
- Rates would have to fall ~200 basis points from here, near 5.0%, before 20% of the balance would have at least 50bps of incentive.
- 20% of current balance is in 2022-2024 30yr 6.0s, 6.5s, and 7.0s.

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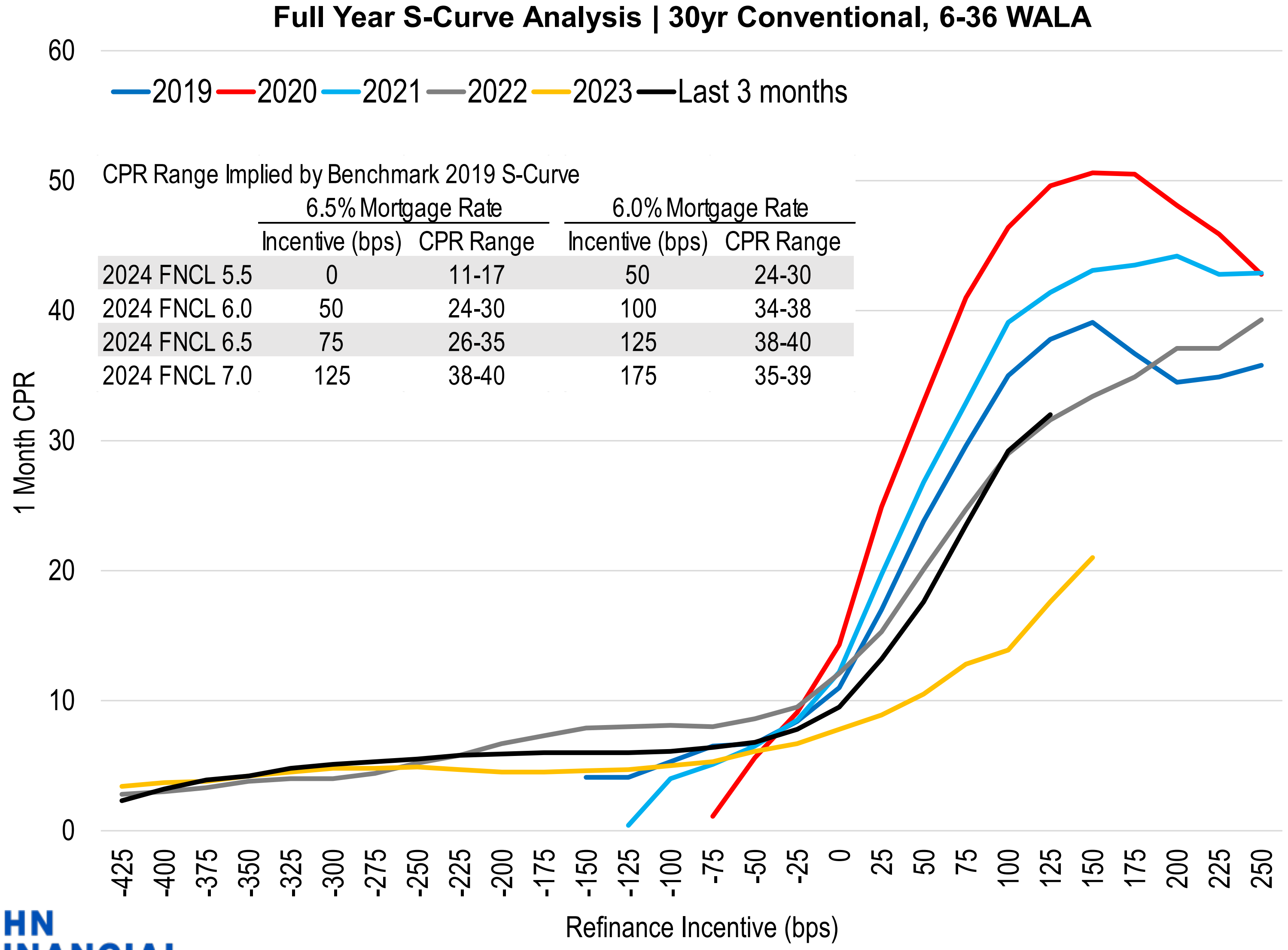
Source: FHN Financial, Bloomberg, and CPRCDR

Current S-Curve Starting to Regain Shape; Prepays Again a Concern for Some MBS



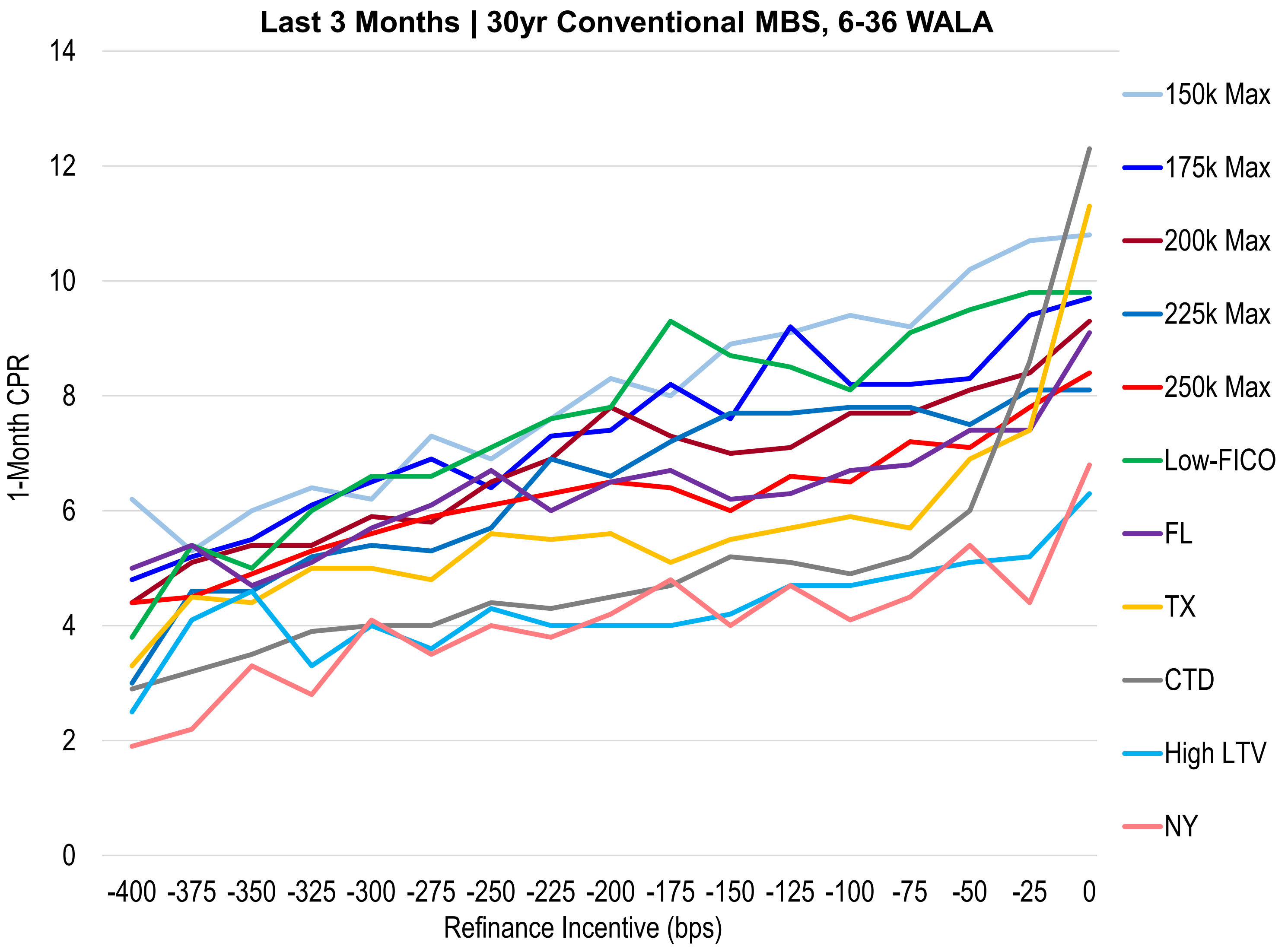
CPR Range Implied by Benchmark 2019 S-Curve

	6.5% Mortgage Rate		6.0% Mortgage Rate	
	Incentive (bps)	CPR Range	Incentive (bps)	CPR Range
2024 FNCL 5.5	0	11-17	50	24-30
2024 FNCL 6.0	50	24-30	100	34-38
2024 FNCL 6.5	75	26-35	125	38-40
2024 FNCL 7.0	125	38-40	175	35-39

- Current s-curve resembles 2022.
- 2019 s-curves establish a floor for baseline speeds in a decreasing rate environment.
- Based on the benchmark s-curve, if rates fall to 6.0%, speeds would peak near 30 CPR, 38 CPR, and 40 CPR for FNCL 5.5, FNCL 6.0 and FNCL 6.5, respectively.

Source: FHN Financial and CPRCDR

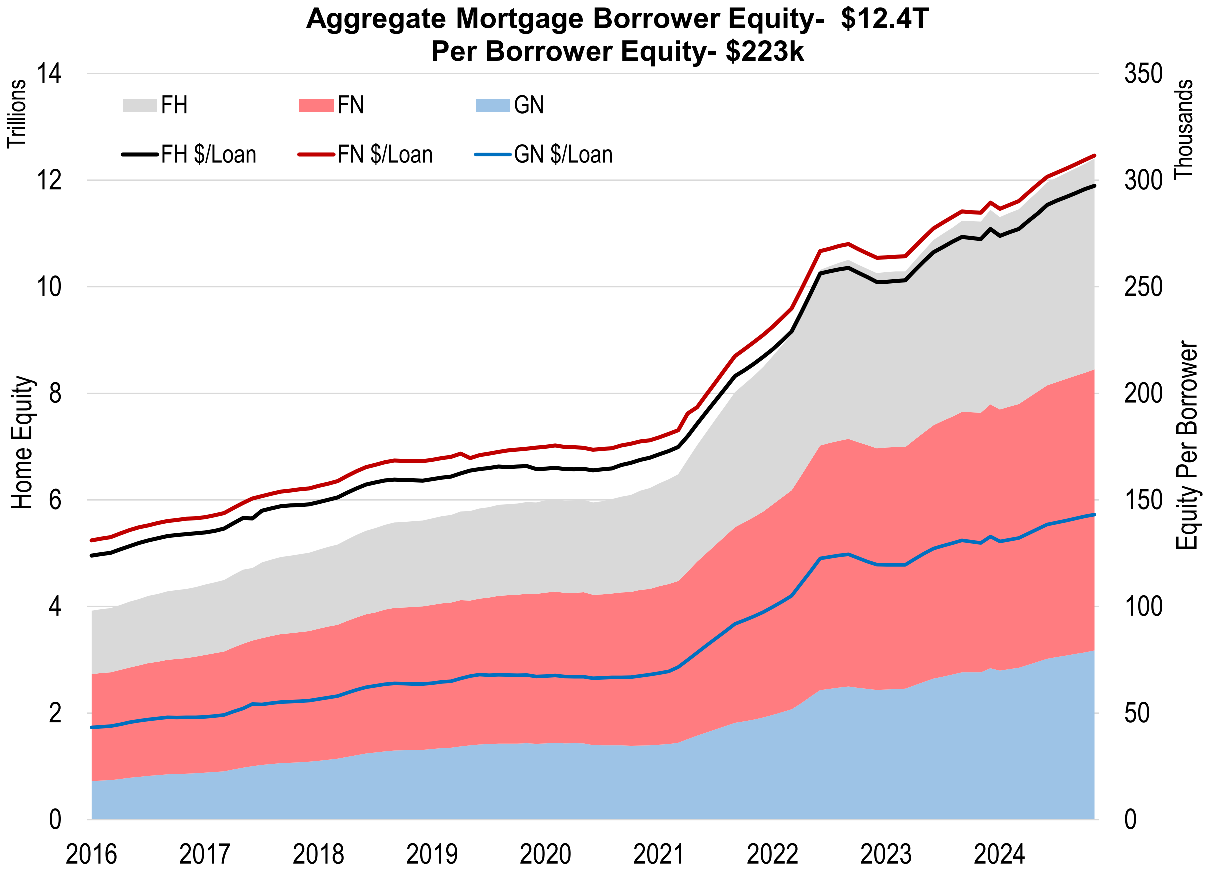
Extension Protection in LB, FL, TX, and Low-FICO

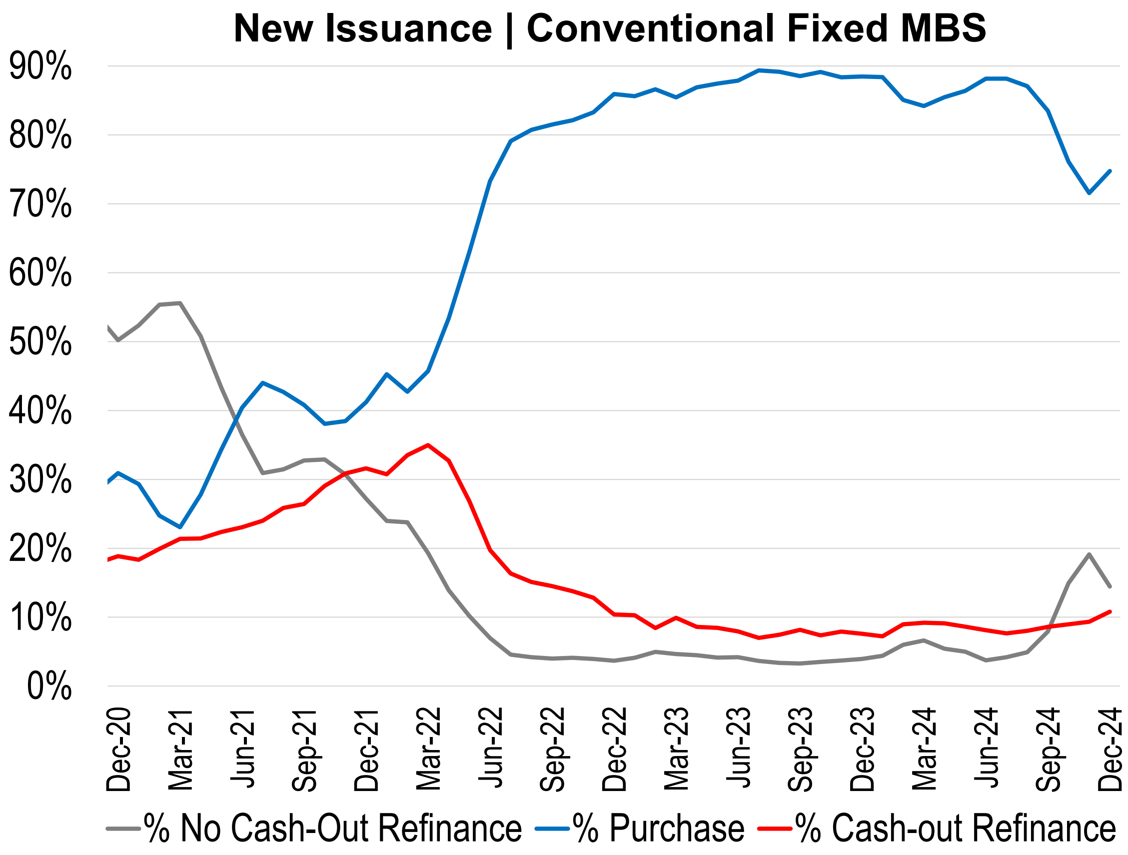


CTD: Nonbank, >300k Loan Size, FICO>740, LTV<75

- Florida and low-FICO loans print speeds as fast or faster than 175k/200k max loans for lower payups.
- Texas turnover speeds are slower, tracking 250k max speeds.
- Reason for faster discount speeds in FL and TX is changing from inbound migration to higher inventory levels.

Home Equity High but Cash-outs Low





- Homeowners have 75% more equity in their homes since the beginning of 2021.
- The average borrower in a conventional loan has $304k in equity while the average borrower in an FHA/VA loan has $143k in equity.
- High mortgage rates have prevented a surge in cash-out refinancing. Purchase is dominating with a minor uptick in refinancing at the beginning of 4Q24.

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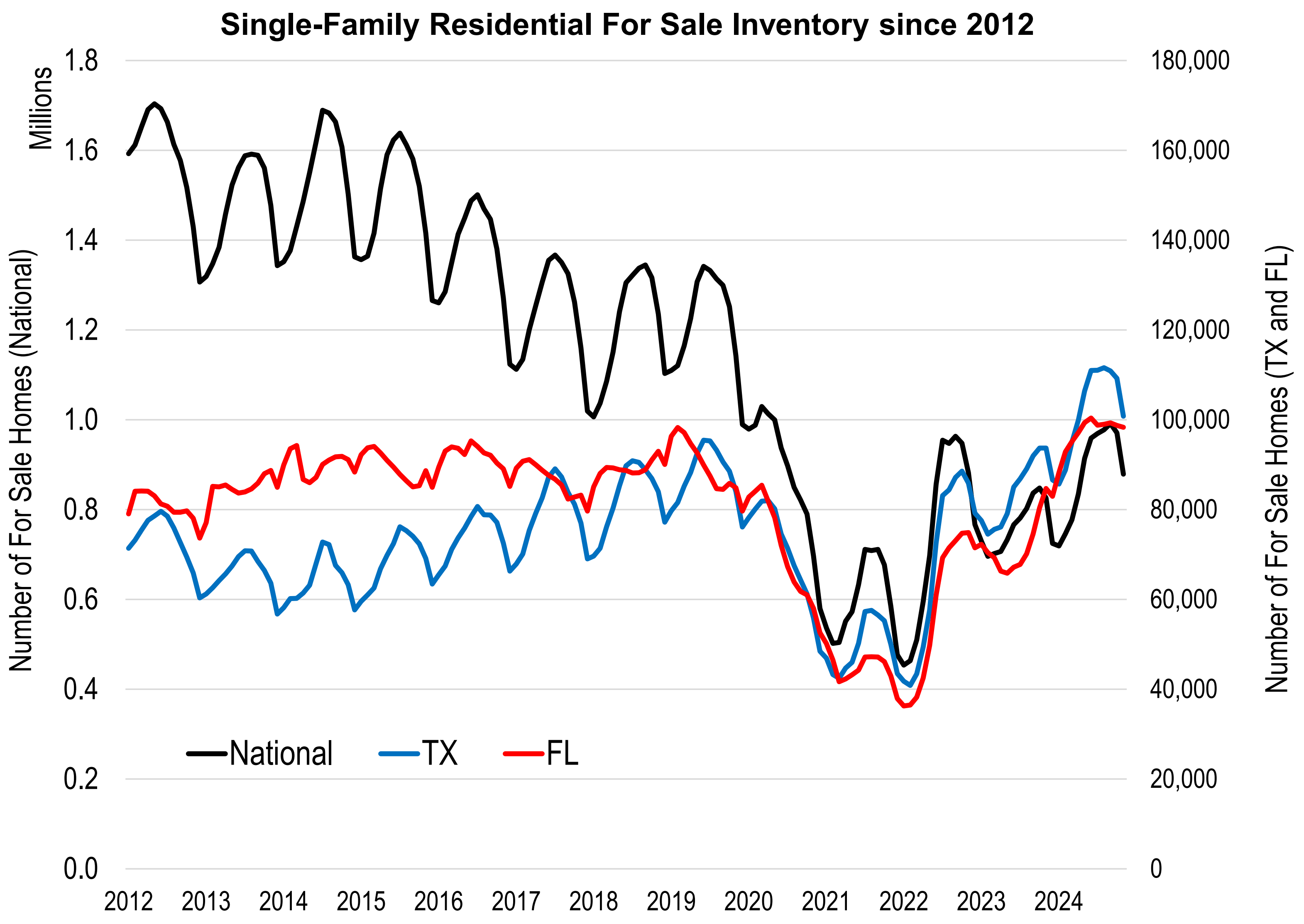
Source: FHN Financial and CPRCDR

"Migration" GEOs are now "High Inventory" GEOs



- National inventory levels still depressed.
- Many employers are enforcing return to office polices. Demand from out-of-state homebuyers in FL and TX is weaker.
- Number of homes for sale in FL and TX has surpassed pre-pandemic levels due to *excess supply from homebuilders* and *changing borrower costs*.
- Higher inventory levels drives faster turnover speeds.

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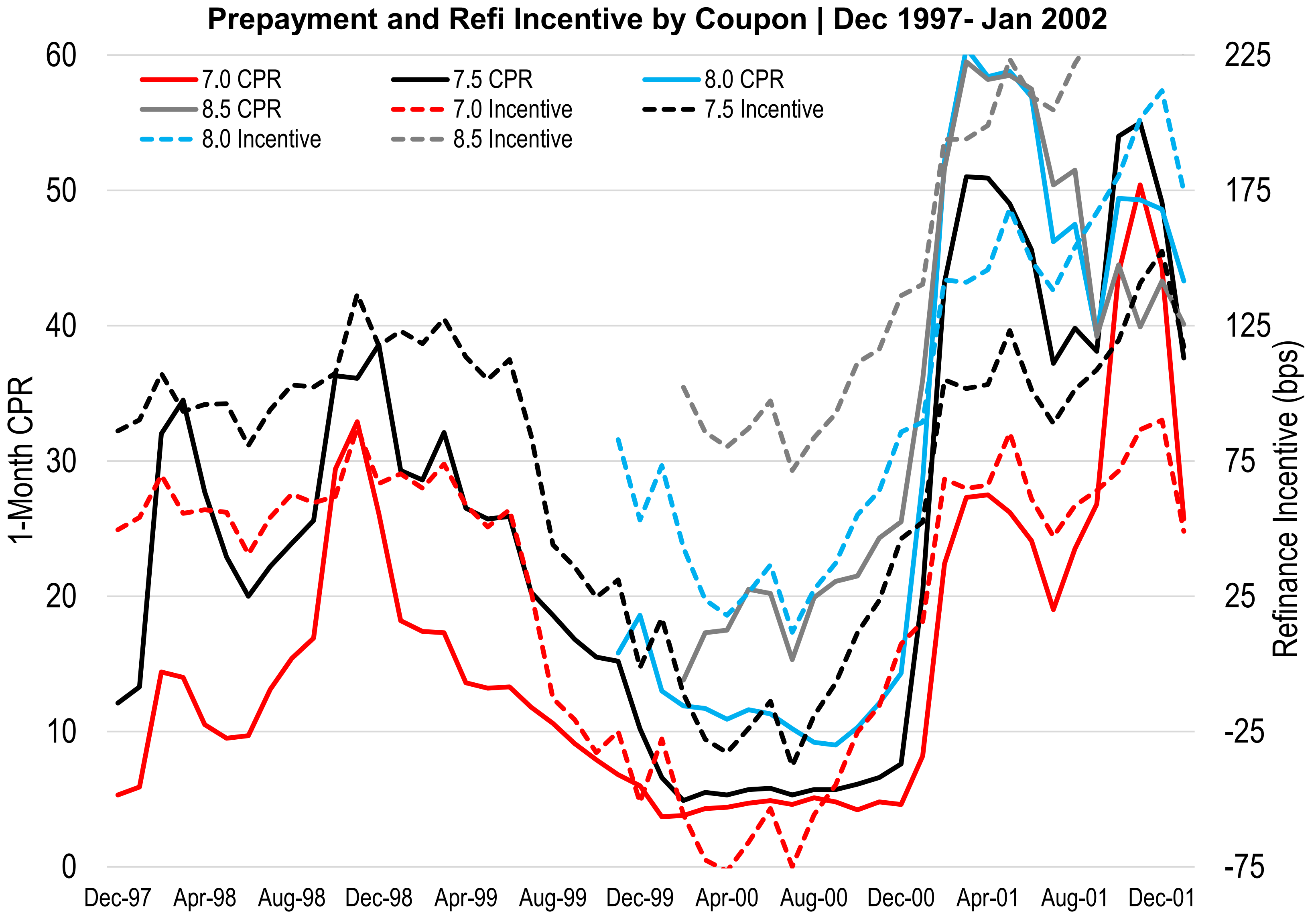
Source: FHN Financial and Redfin

When will "*low-rate memory*" lock-in burn out?



- 1998-2000 episode provides some insight.
- Low WALA/high coupon borrowers in 2000 were slower to refinance with modest levels of incentive due to "*low-rate memory*" lock-in effect.
- Current borrowers have seen a PATTERN of short-lived rate rallies and speeds were faster following the most recent rally. The lock-in effect related to "*low-rate memory*" may be burning off.

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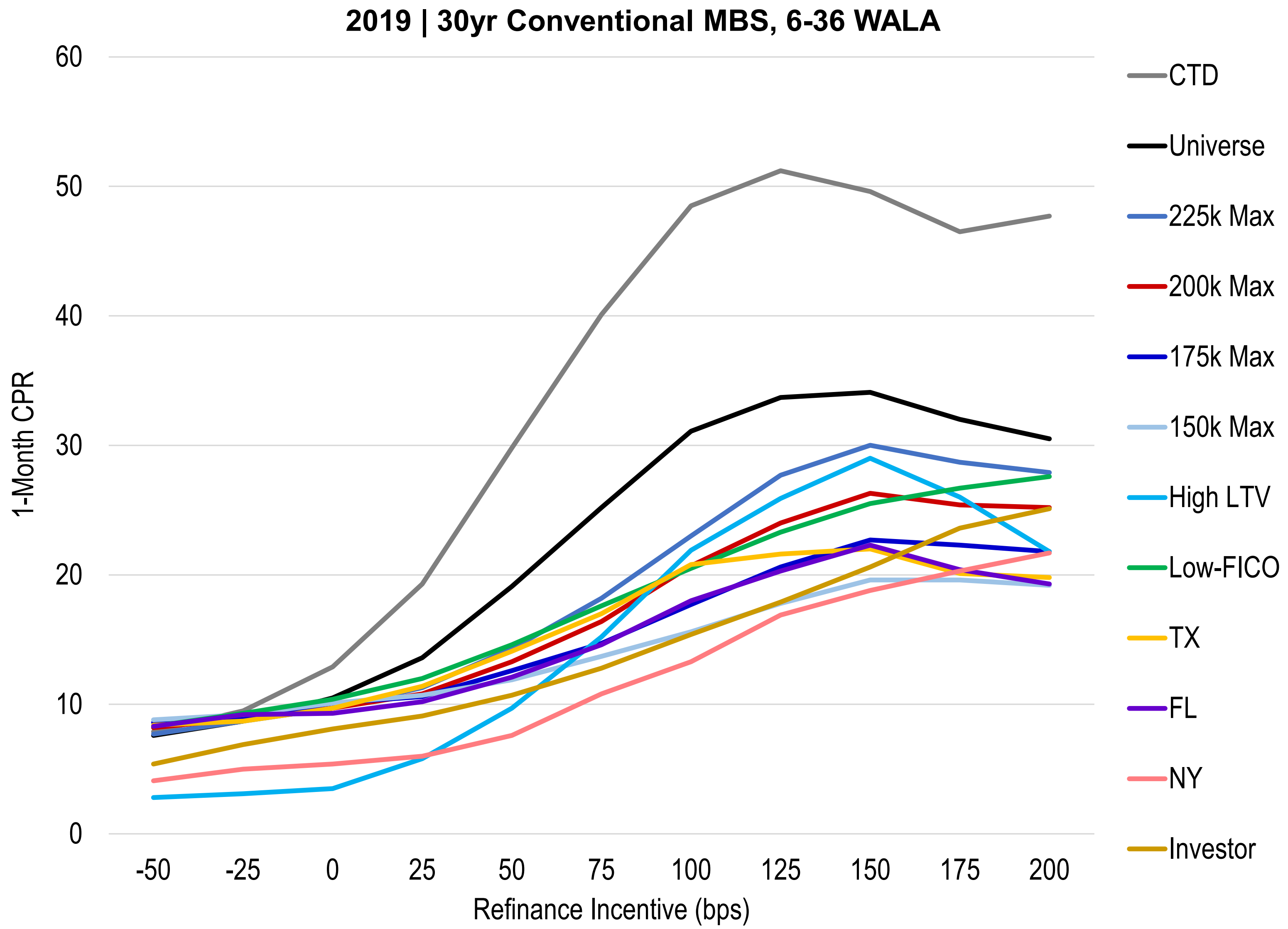
Source: FHN Financial and CPRCDR

Call Protection Stories in a Rally



CTD: Nonbank, >300k Loan Size, FICO>740, LTV<75

- Focus is on lower payup story collateral: Low FICO, FL, TX, and Investor
- LB, GEO, and low FICO combined make up 75% of spec pool issuance.
- FL speeds are in line with 175k Max. TX call protection is slightly less robust.
- Using 2019 prepayments as a guide, an investor can get nearly the *same amount of call protection* in low FICO pools as 200k Max *for two-thirds of the current payup*.

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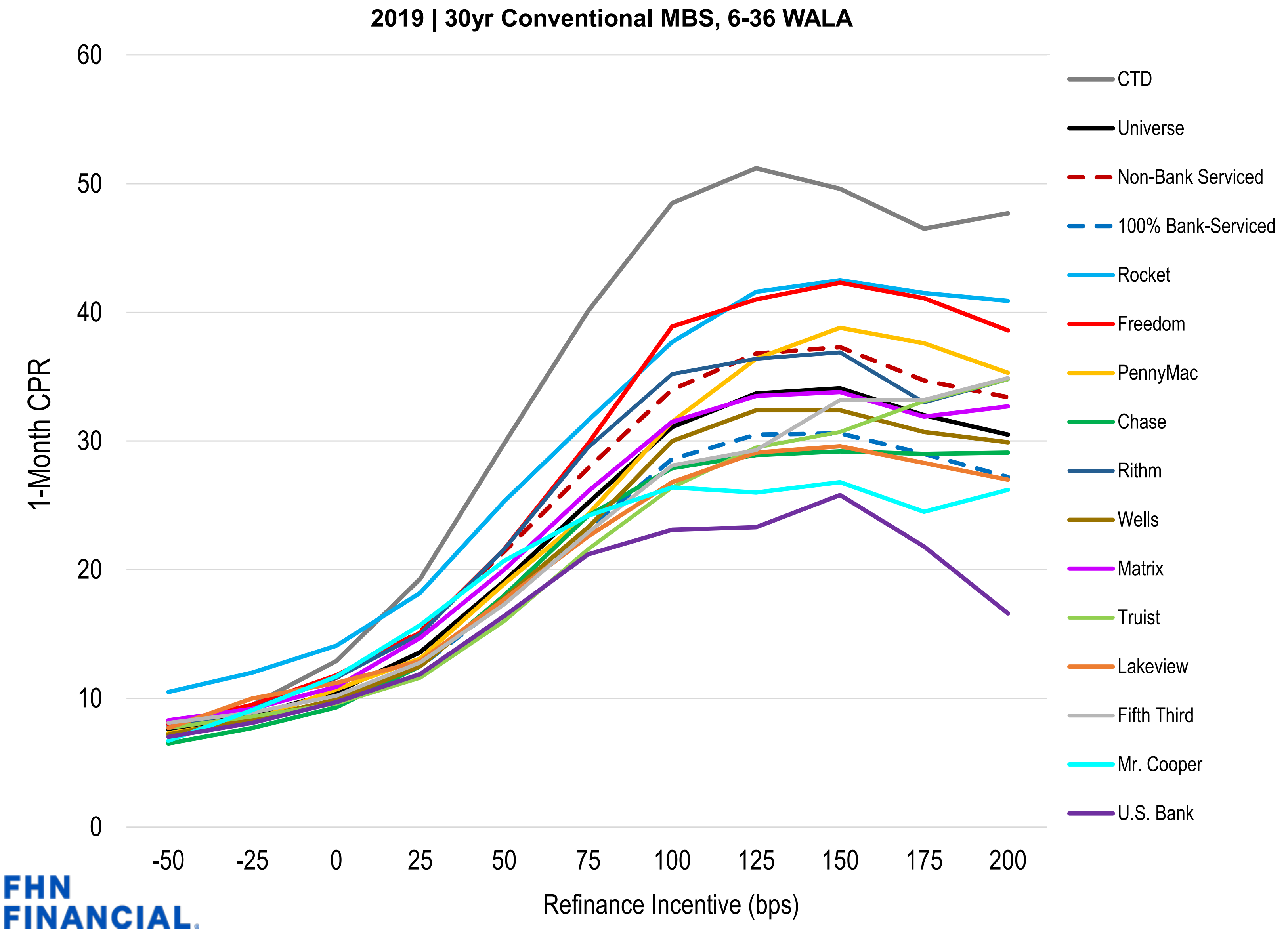
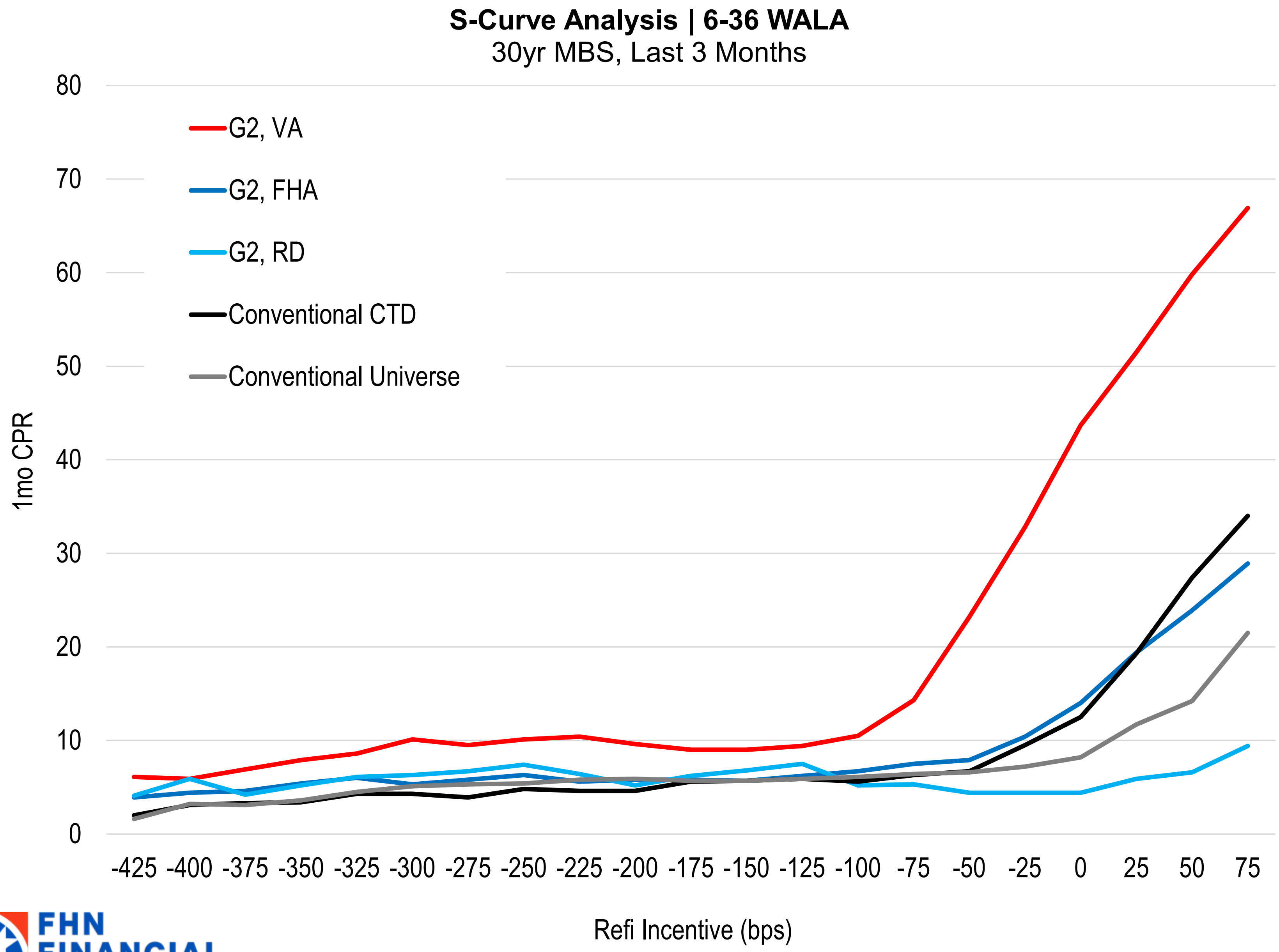
Source: FHN Financial and CPRCDR

Servicer Prepays Very Important in a Rally



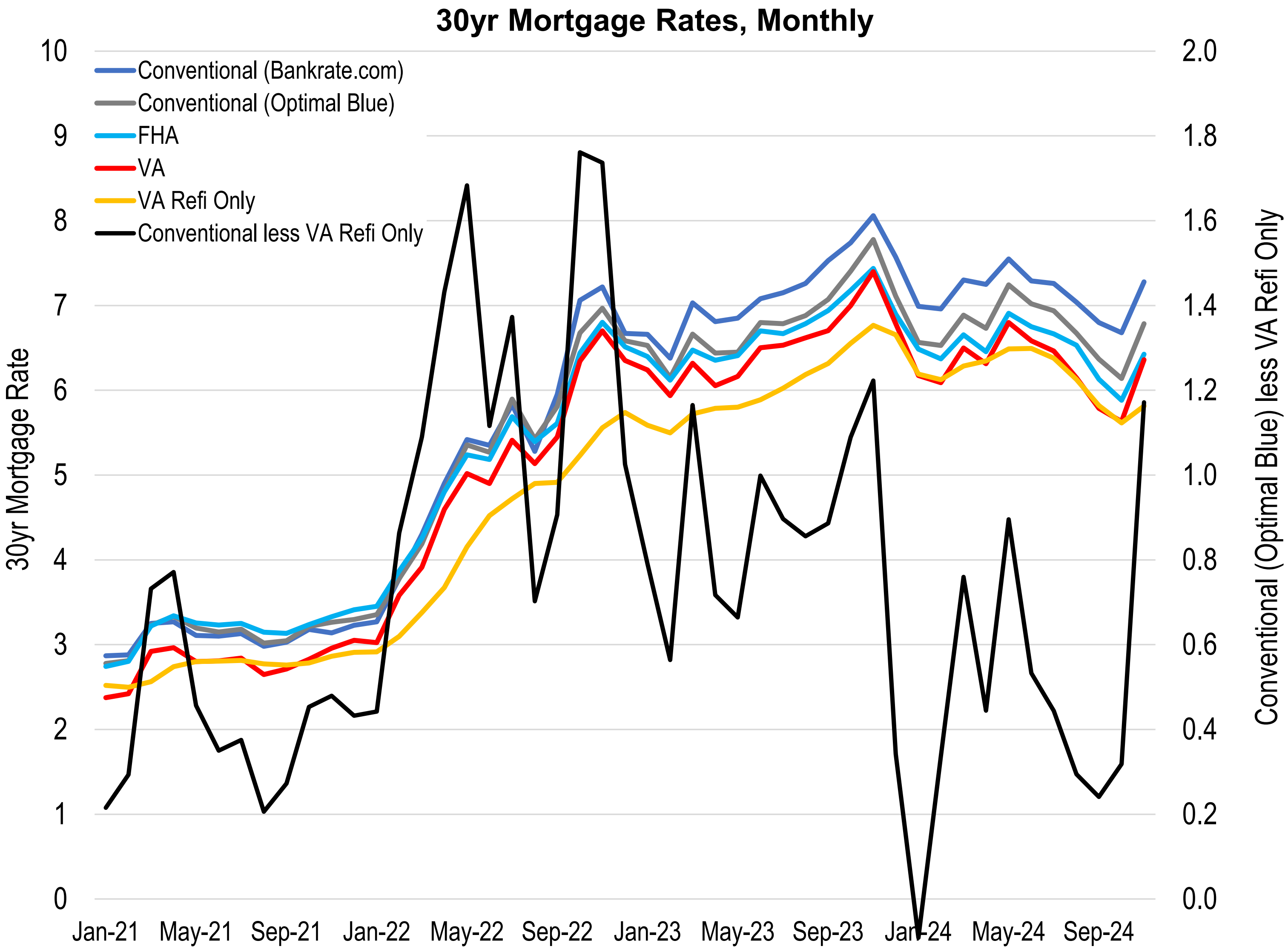
- Average large bank servicer almost 10 CPR slower than non-bank at the top of the S-curve.
- Fairly wide variance among non-bank servicers.
- *Loans serviced by Rocket are faster than average with and without incentive.*

Dramatic Prepay Discrepancies within Ginnie MBS



- VA is almost a different sector given how differently it prepays.
- VA speeds are MUCH faster across all incentives due to high levels of cash-out refinancing and very aggressive servicers.
- Premium coupons in VA space is NOT recommended.
- RD provides good call protection, but it is very small.

G2 Speeds Faster-than-Expected Last Year. Why?



- Answer: The real driving rate for VA borrowers was lower than many recognized.
- WAC on new issue VA refi loans is a proxy for the VA refi-only rate.
- The average interest rate on VA refinanced mortgages was lower than the average conventional rate published by Optimal Blue in 2022 by 110bps, in 2023 by 85bps, and in 2024 by 60bps.

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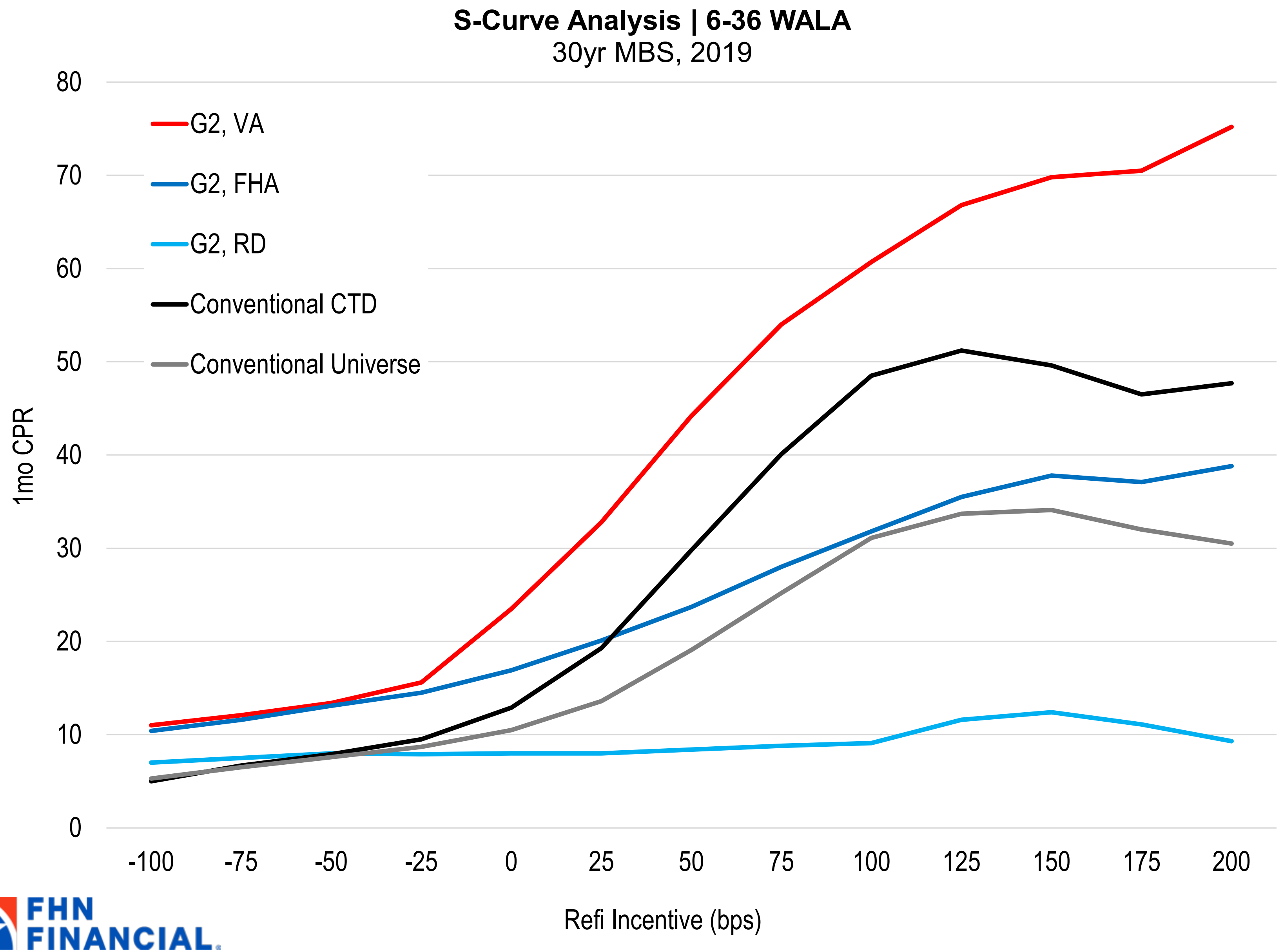
Source: FHN Financial, Bloomberg, and CPRCDR

Very Fast VA Speeds Are NOT New



- VA collateral was very fast in 2019, our proxy for the “next” rally.
- FHA not very different than conventional.
- VA s-curve makes conventional TBA proxy look like a nice payup story.

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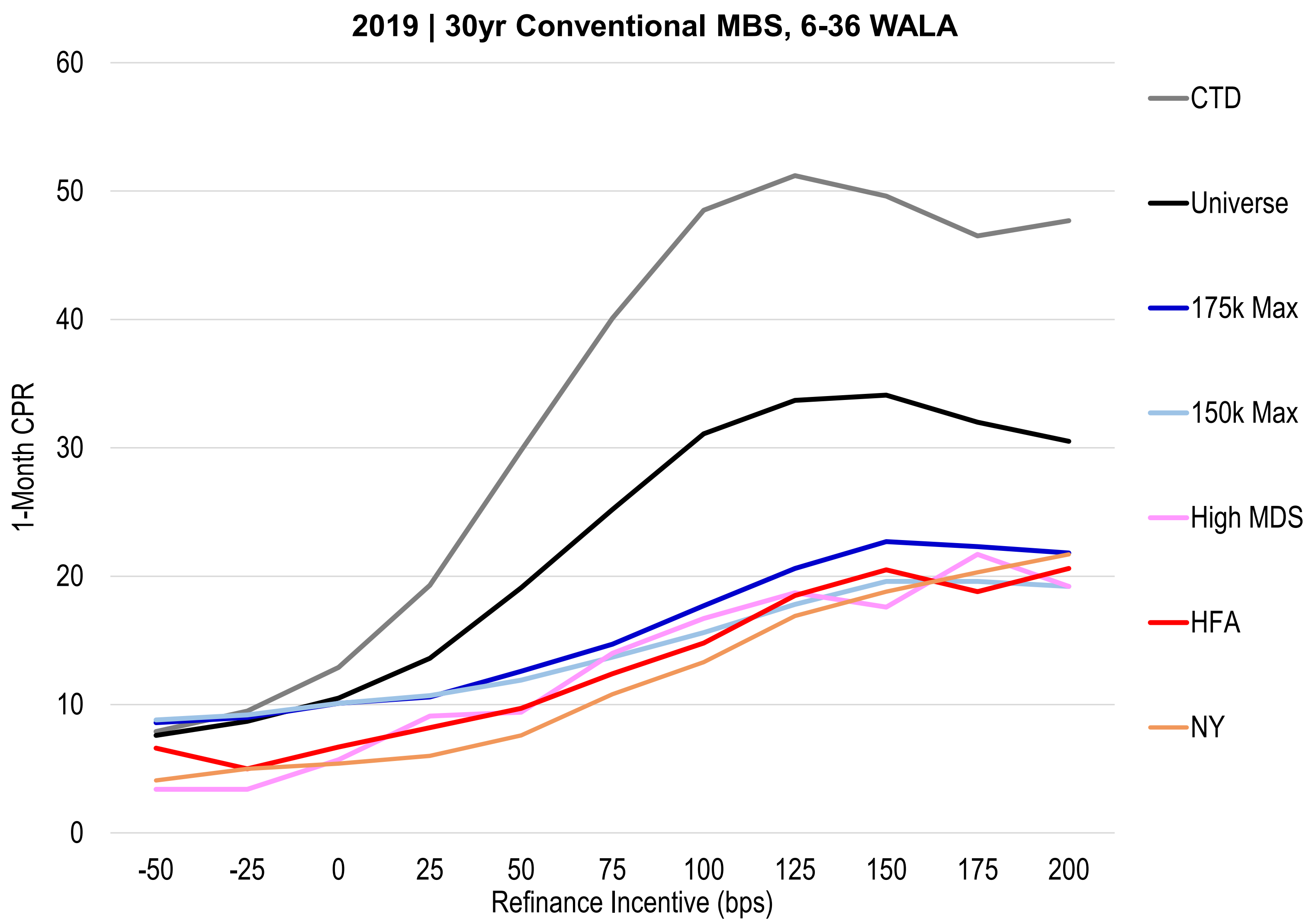
Source: FHN Financial and CPRCDR

Value in "*Off-Brand*" Collateral When Available



High MDS >=2 Mission Density Score, Excluding Spec Pools (Loan Balance and NY)
CTD: Nonbank, >300k Loan Size, FICO>740, LTV<75

Housing Finance Agencies (HFAs)

- More than 3,000 HFAs nationally.
- Single-borrower, single-state, single servicer, high-LTV, DPA.
- Feature very strong call protection, second only to NY.
- HFA pools under 1% of monthly issuance.

High Mission Density Score (MDS)

- Steeper convexity profile than NY.
- GSEs score every new pool along social dimensions.
- Only 10% of new issuance in 2024 qualified as a high MDS pool.

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Source: FHN Financial and CPRCDR

Key Prepayment Takeaways

- **Aggregate speeds are just off of their all-time lows due to faster seasonal turnover.** Ginnie Mae speeds are leading the way due to surge in VA prepays.

- **75% of borrowers have mortgage rates at or below 4.5%.** The average borrower is still almost 300 bps out-of-the-money.

- **Recent, premium production speeds could see a material increase if mortgage rates decline** to 5.5% or lower.

- We believe **2019 is the best benchmark for where speeds could reach if rates decrease going forward.**

- **Value is in lower payup call protection stories** including, low FICO, Florida, Texas, and HFA.

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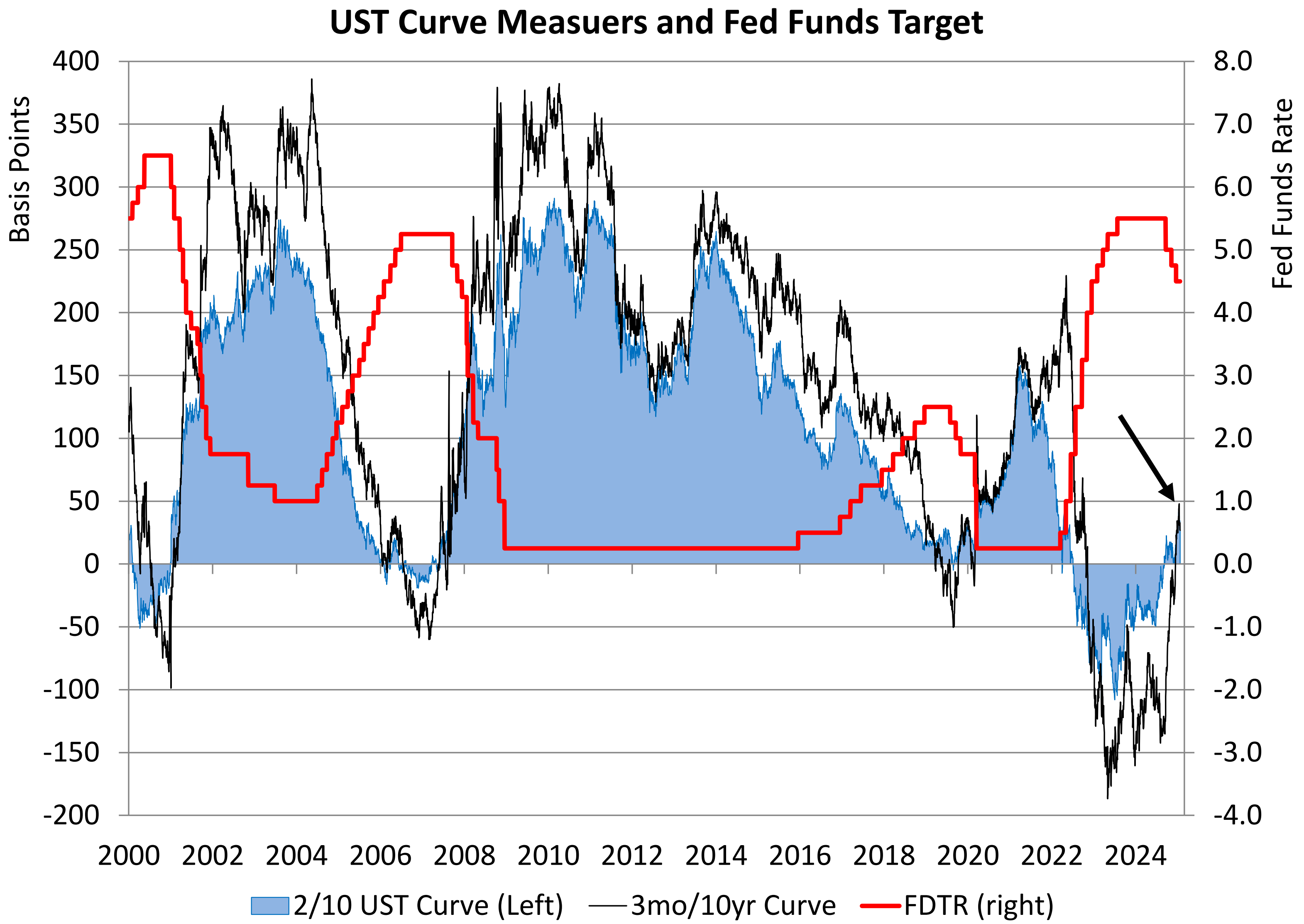
Three Basic Levers to Pull In Fixed Income

- **Duration:** Yield curve has embarked on its return to “normal” after an unusually long period of inversion.
- **Credit:** Bloomberg/Barclays High Grade Index OAS/Spread is at historical lows.
- **Optionality:** The BofA MOVE index has declined, but it is still above fair value. Selling options still makes sense.

Volatile Curve Shape, Both Curves Now Positive



- Fed Funds target rate now coming down after highest since late 2000.
- Quick FOMC policy response in 2022 to inflation caused inverted Yield Curve.
- Curve shape going forward is an indicator of the market's expectation for Fed rate policy.
- Both curve measures now positive by ~30 basis points.

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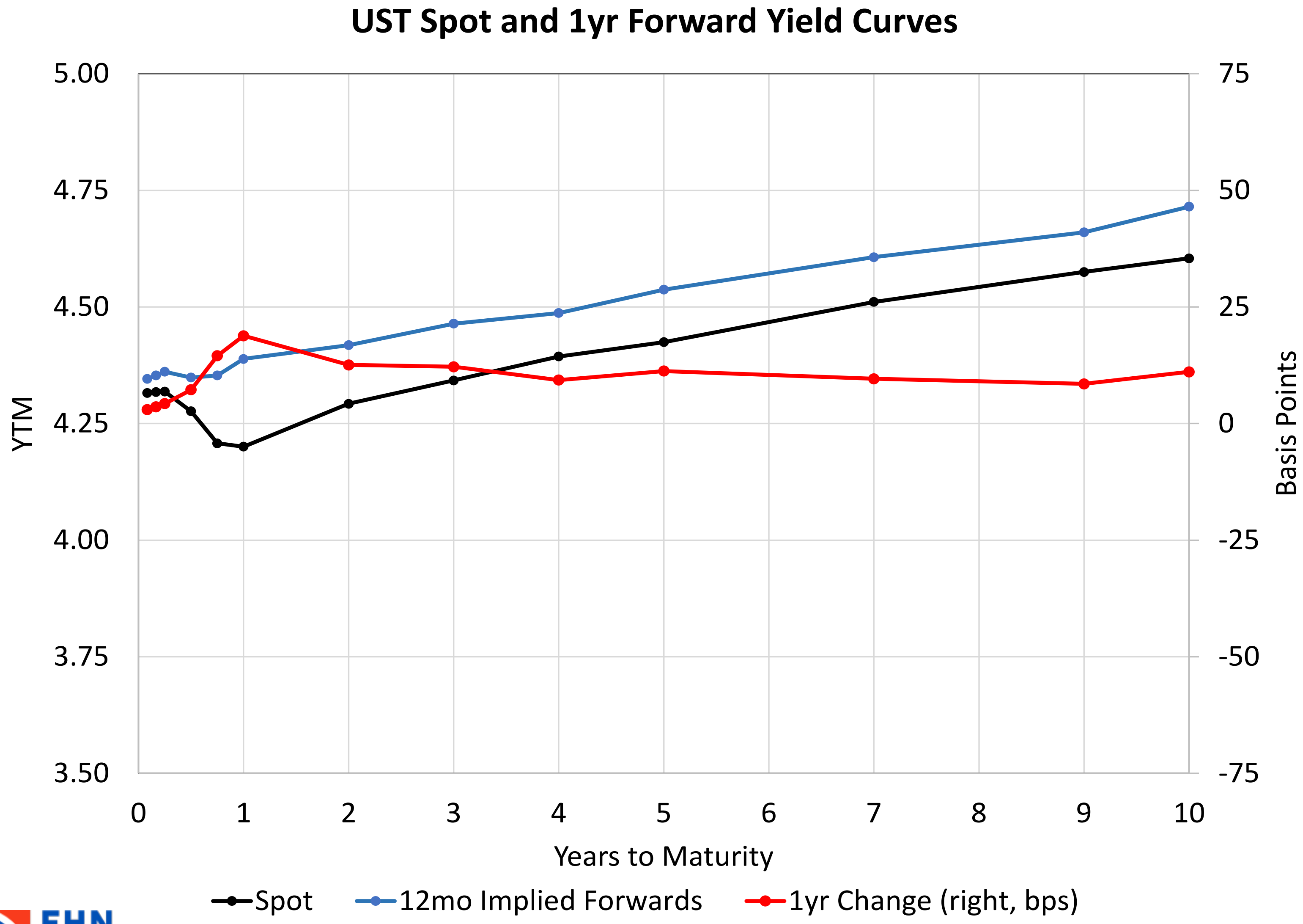
Source: FHN Financial and Bloomberg

Very Flat Forward Curve After A Long Period of Inversion



- Forward Curve is an ***arbitrage-free*** math formula.
- It is ***neither*** a fundamental economic projection ***nor*** a technical market analysis.
- Inverted yield curves ***always*** produce bull steepener forward curves.
- The curve, both static and forward, have been "flattening" lately.

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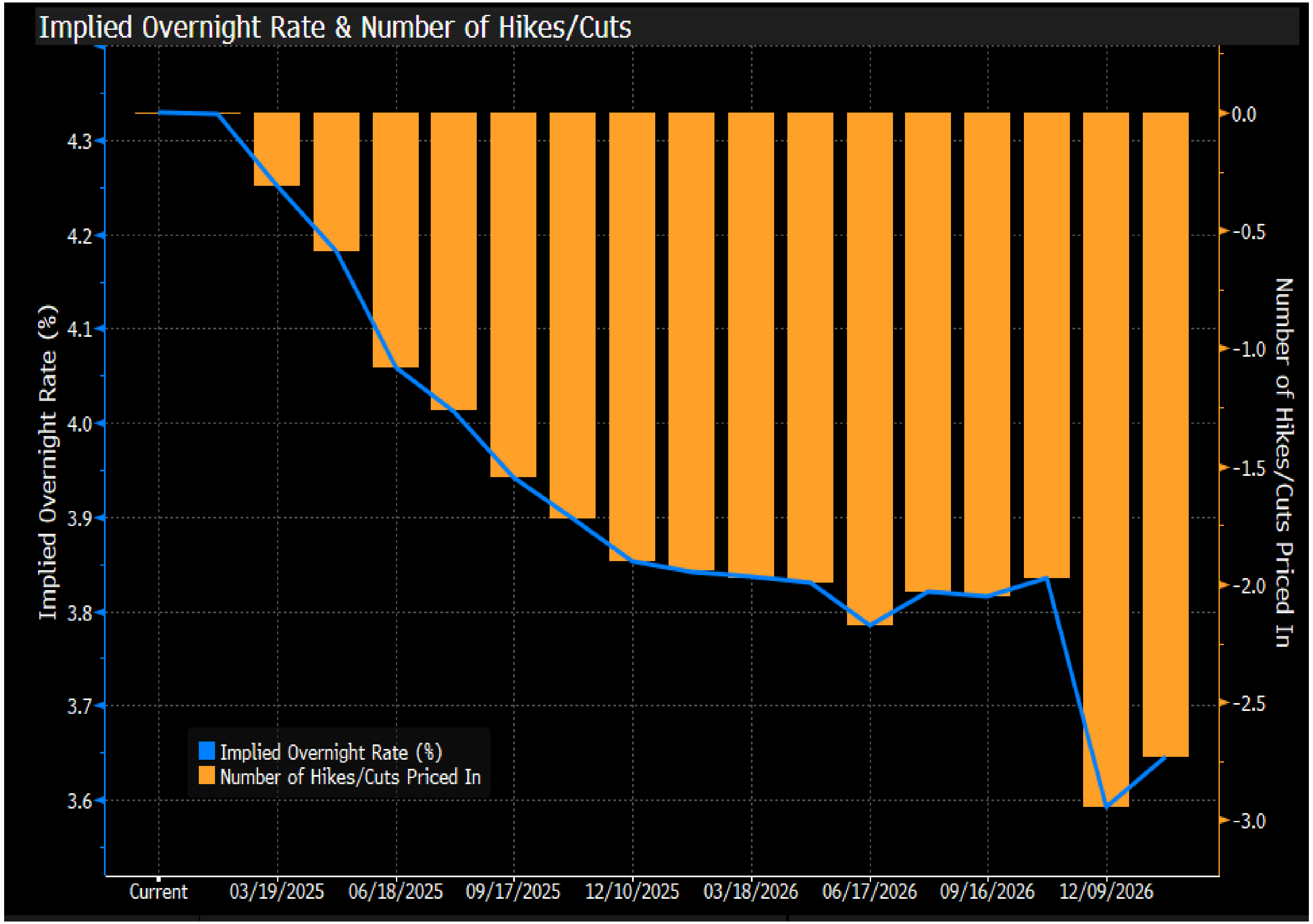
Source: FHN Financial and Bloomberg

"Almost" Two Cuts Priced in by Year-End



- Not much conviction for a cut at any one meeting in 2025.
- The implied rate at Y/E is now 3.85%.
- Market now expects a bottom of 3.59% in December, 2026. Previously, market had anticipated a 2%-handle in late-2025.

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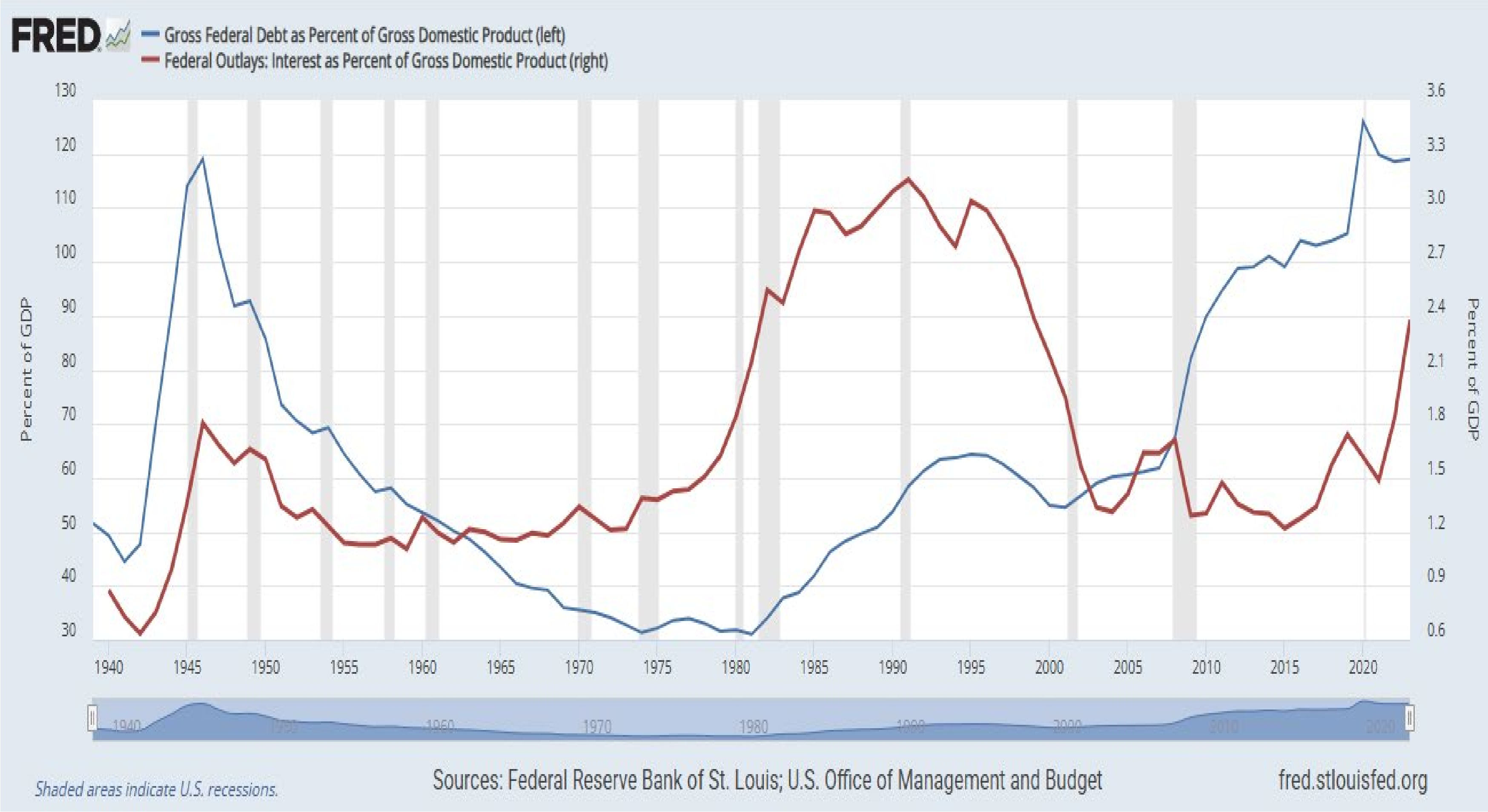
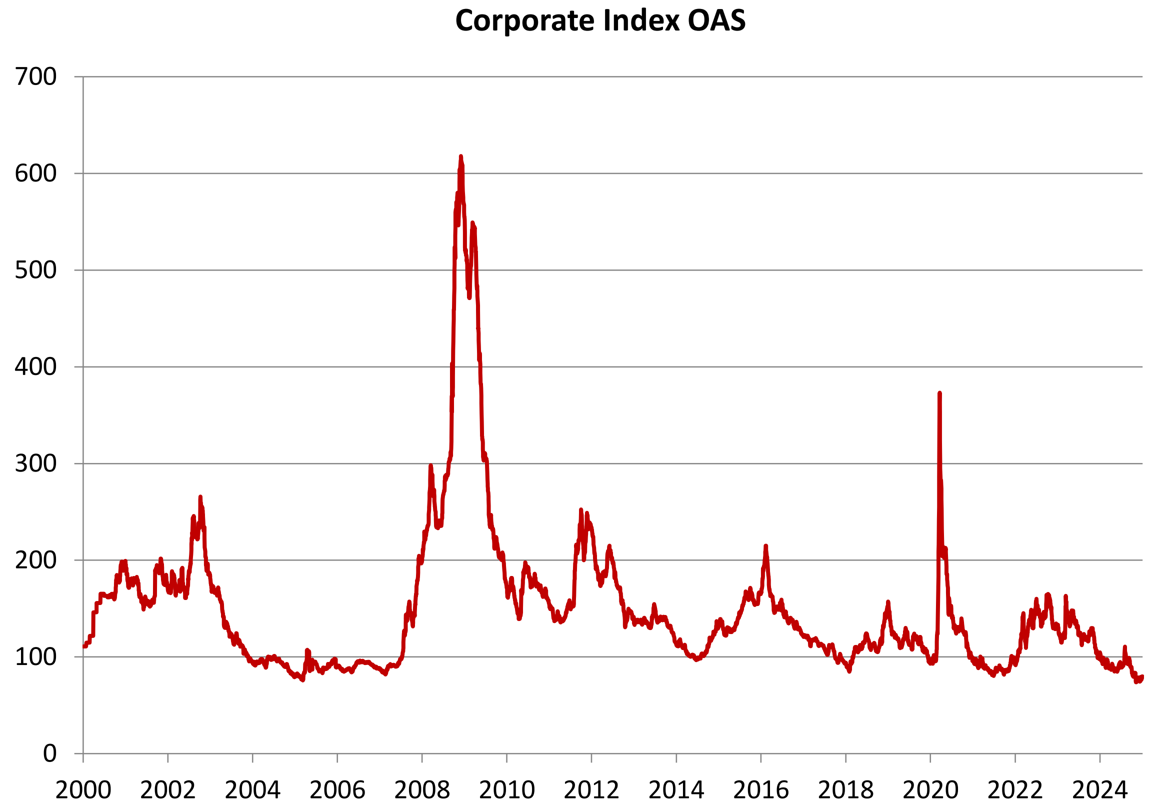
Source: FHN Financial and Bloomberg

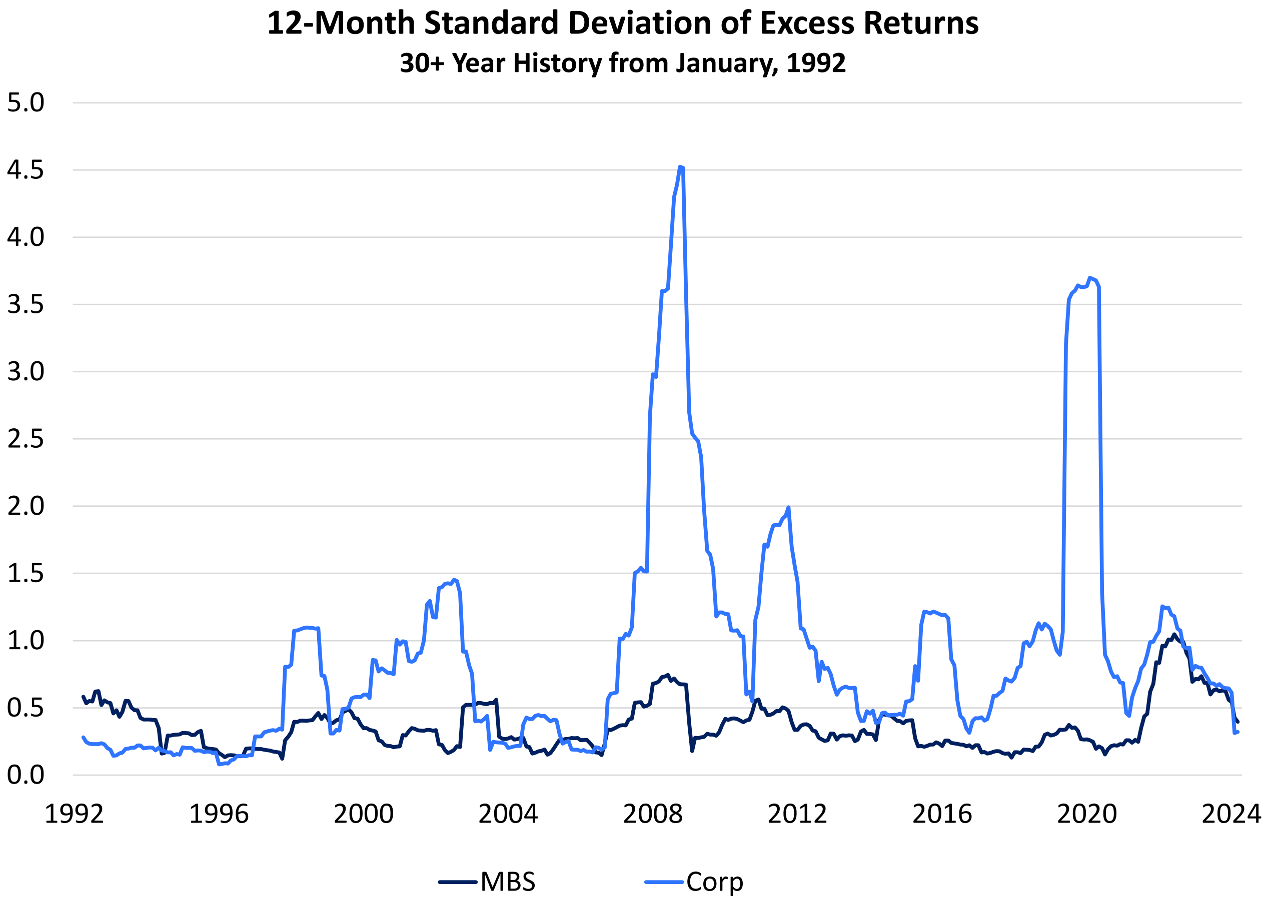
Macro-Economic Backdrop Still Points to Steepener



- Federal Debt now more than $30 trillion outstanding.
- Higher debt levels and rising rates – *both relative to GDP* - can create a vicious cycle.
- Desire to term out debt when rates are still relatively low creates a *steepener bias.*
- Crowding out creates a tightening bias for spread product.

Corporate Market OAS At All-Time Tights; Corporate Spreads/Returns Much More Volatile





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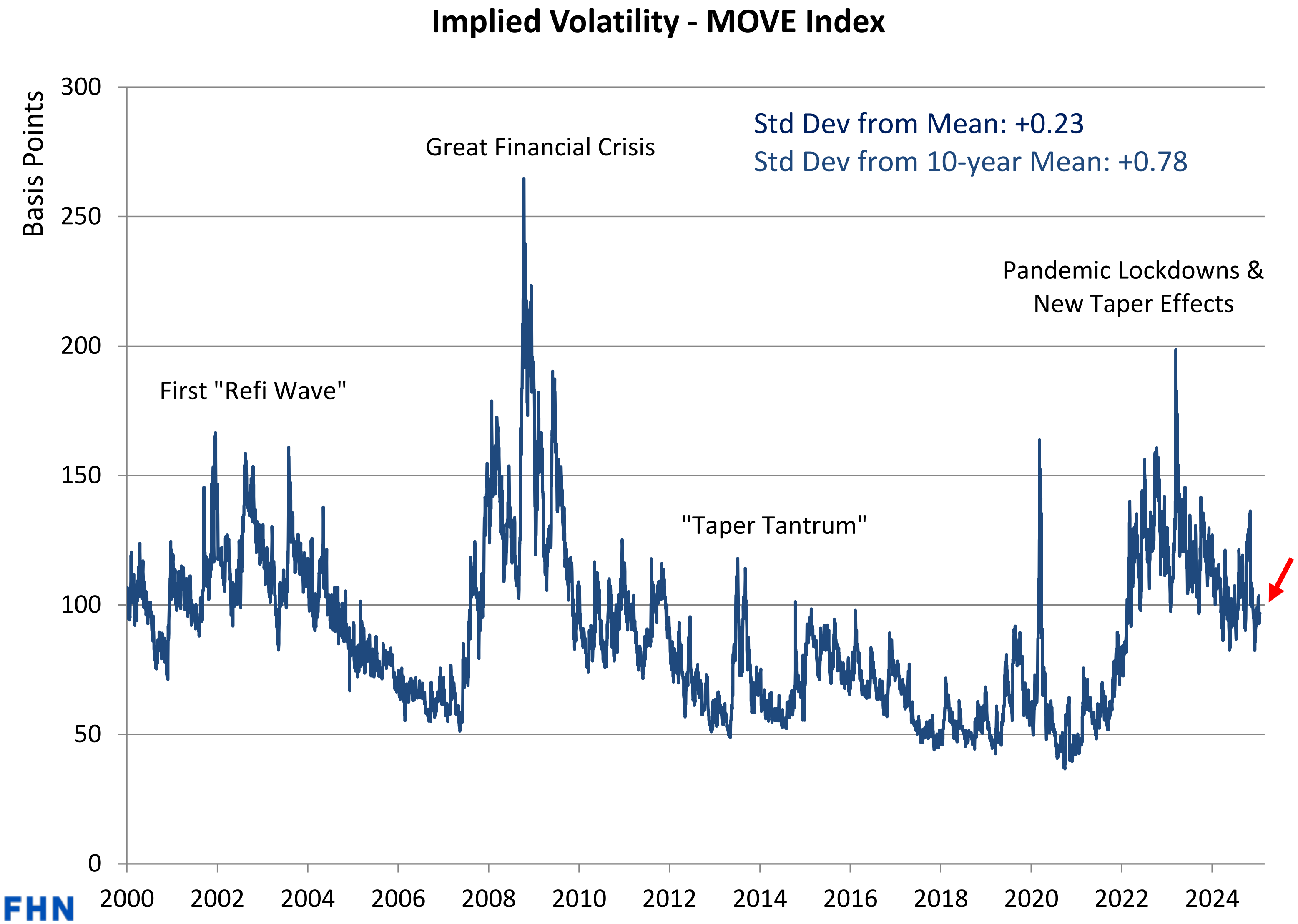
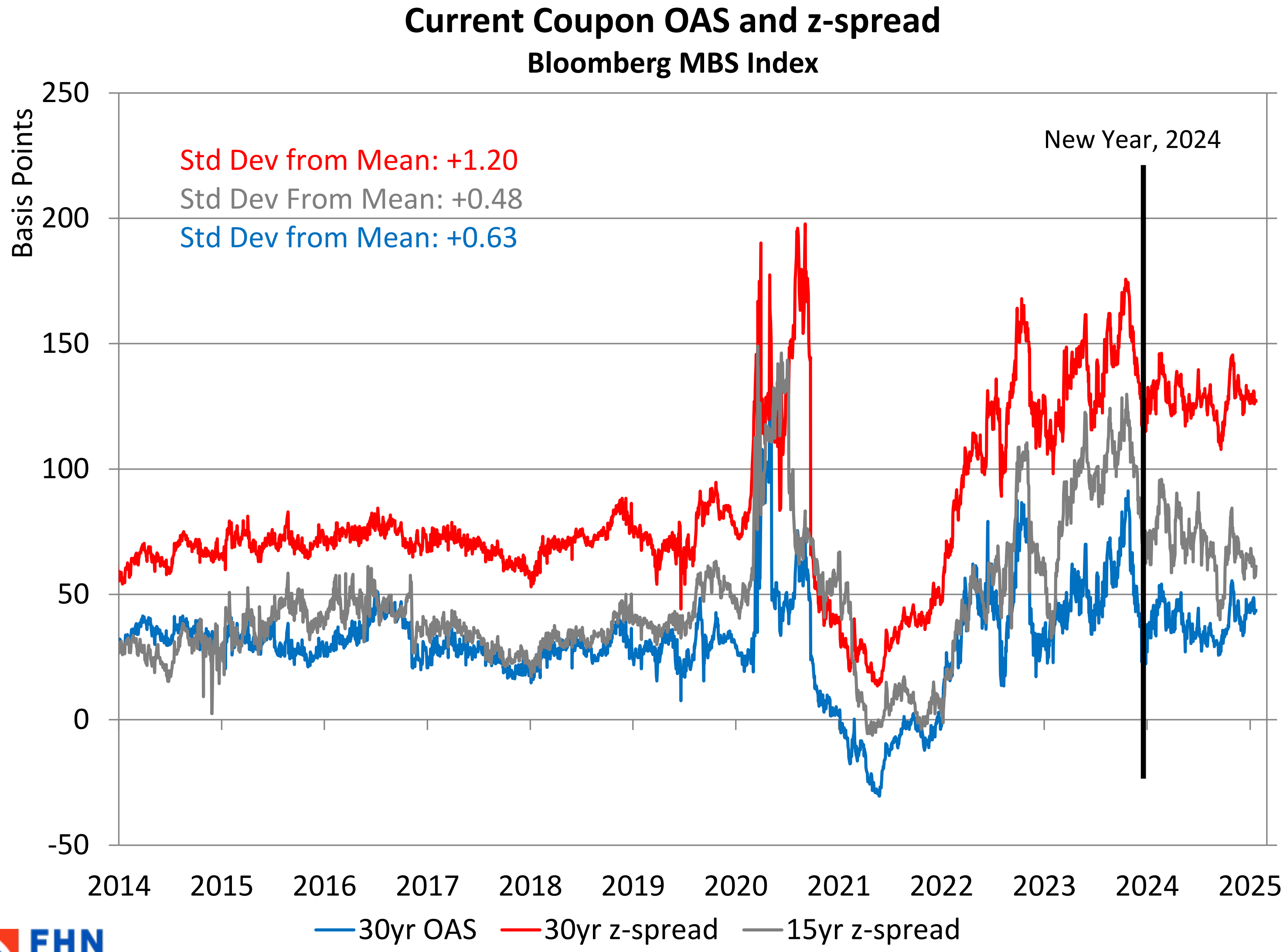
Implied Volatility Has Settled from Recent Peak, Still Somewhat Elevated



- Main driver of MBS spreads is *implied volatility.*
- MBS is *long* a FN/FH bullet, and *short* options to the mortgage borrower.
- *Implied volatility* drives the price of those options.
- Better to be a *seller of options* when implied volatility is high.

Recent Pullback in MBS Valuations; Expect MBS Spreads to "Grind" Tighter If FOMC Cuts More



- 30yr CC spreads still wide based on 10yr lookback.
- 15yr has performed, not as wide vs. its own history.
- OAS now fair value based on still-high implied vol.
- 30yr current coupon z-spread 2.11 standard deviations (48 bps) wide vs. Corp OAS (average back to 2013 is negative).

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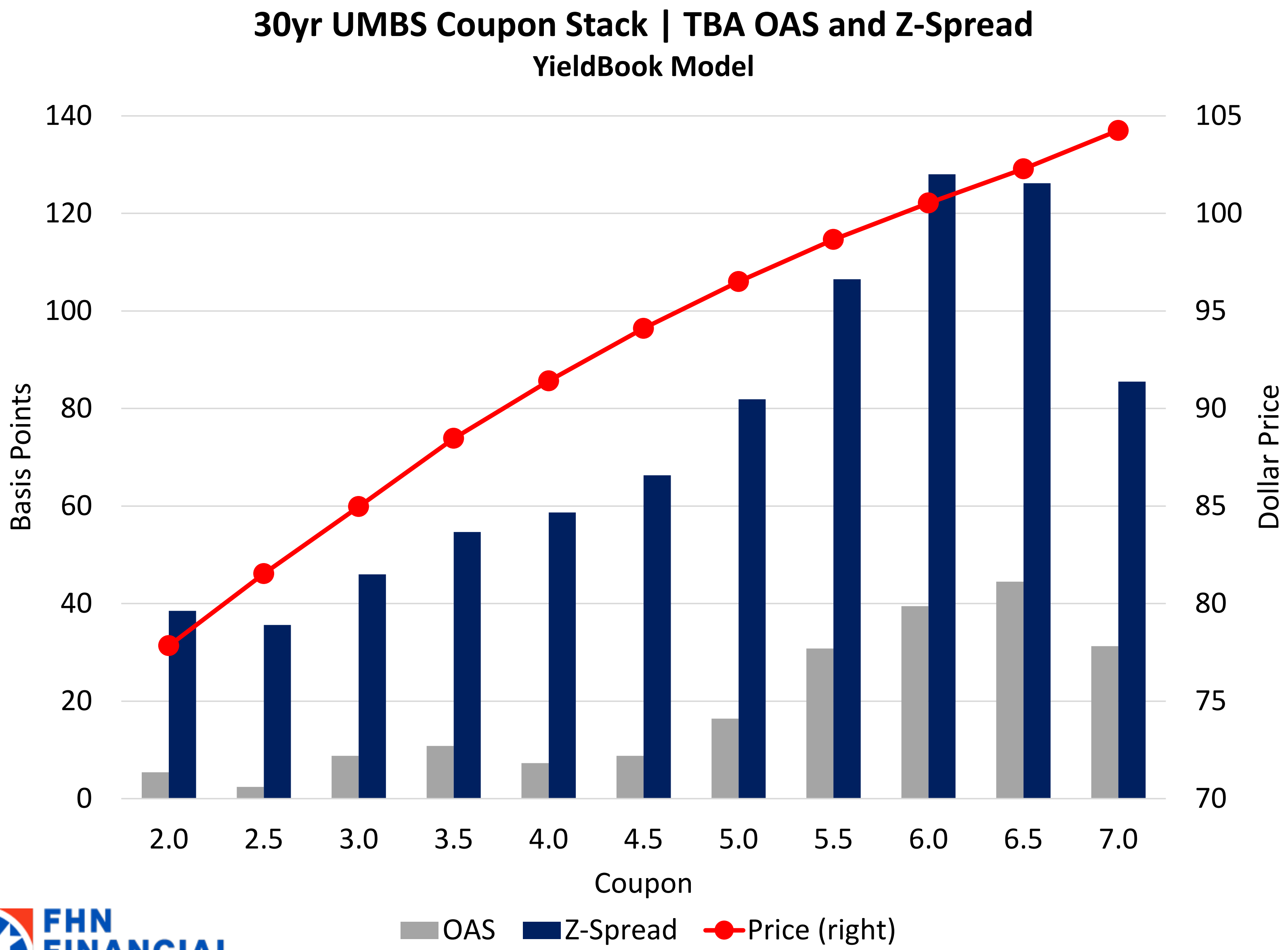
Source: FHN Financial and Bloomberg

Dissimilar Spread and OAS Value Across Coupon Stack



- Carry value remains in the highest coupons, *15yrs lag significantly*.
- Overall index similar to 30yr 3.5s and 4.0s if one wants to replicate with few line items.
- Index still dominated by lowest coupons, but higher coupons in 30yr markets are steadily growing.

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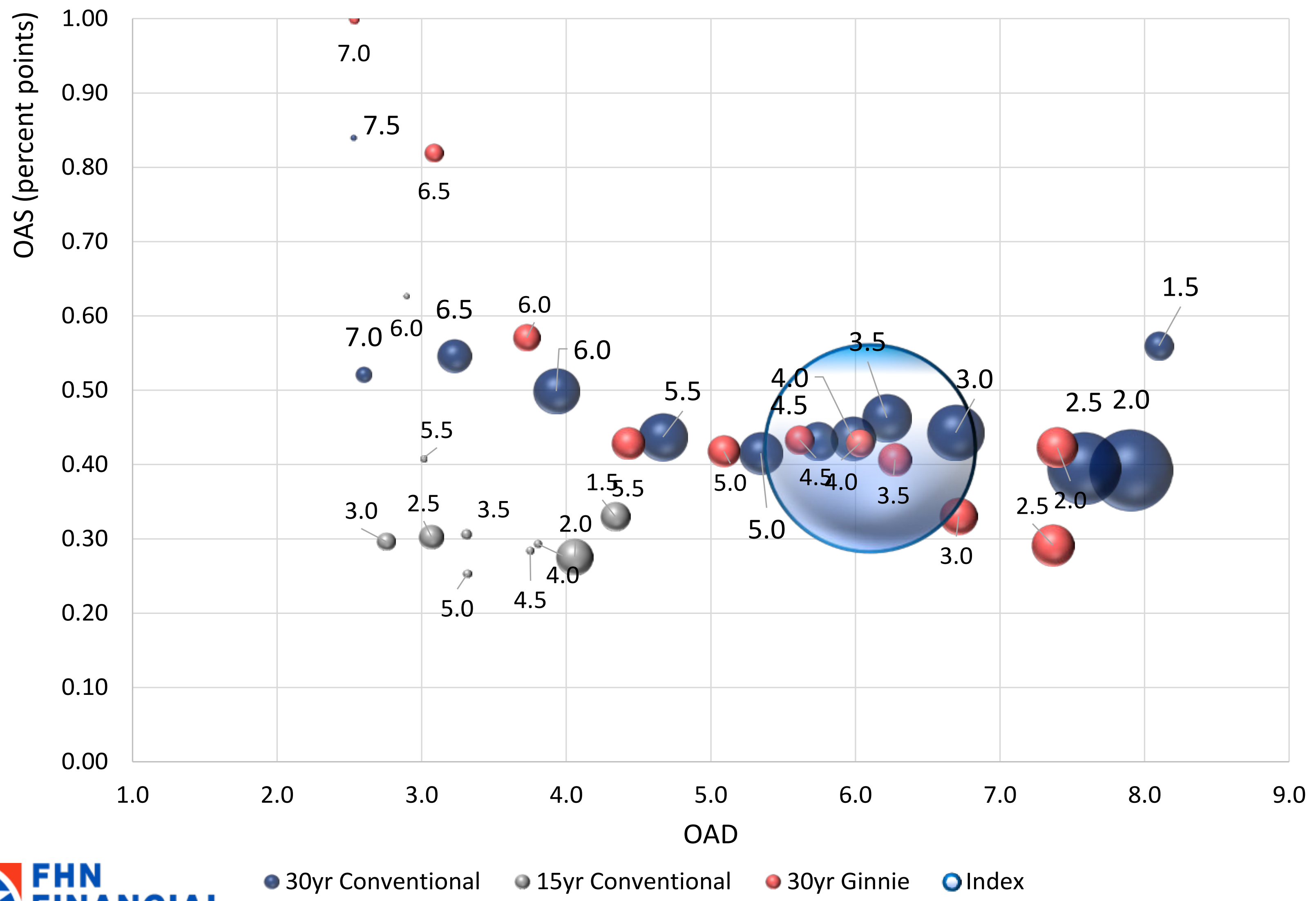
Source: FHN Financial and Bloomberg

Index OAS RV Picture Strongly Favors UIC

Index OAS vs. OAD for Coupon Stack



- Most of the stack is flat out to the 5.0 coupon.
- All of the OAS value is in the premiums.
- OAS model likes high-coupon *seasoned* (i.e. index-constituent) Ginnie. ***We prefer CMO floaters for carry.***

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Yield Curve Positioning "Cheat Sheet"

Curve Steepener

- Up-in-coupon.
- IO/IIO.
- Tight Window.
- 15yr vs. 30yr.
- Hybrid ARM vs. Passthru.
- CMO vs. Passthru.
- Bullet vs. Barbell.

Curve Flattener

- Down-in-coupon.
- Floater
- Wide Window.
- 30yr vs. 15yr.
- Passthru vs. Hybrid ARM.
- Passthru vs. CMO.
- Barbell vs. Bullet.

MBS Market Still Quite Wide vs. Rates/Corps/Munis

- **CURRENT COUPON MBS spreads are still cheap to fair:** At least one standard deviation wide, depending on lookback.
- **Prepays shot higher in October, but they have settled since:** Rates immediately backed up after mid-September. The current coupons ARE highly callable in the event of another rally, *so pay attention to call protection*.
- **Figure out the STEEPENER:** Down-steep and up-steep produce very different outcomes/relative value points. Small additions/payups for convexity with fuller coupons can go a long way to enhance TRR. Some CMOs and hybrid ARMs have good steepener partials. *CMO (and other) Floaters if the curve remains relatively flat.* **15/30 is a steepener, but it is quite expensive.**
- **Diversification and Dollar-Cost Averaging remain steadfast recommendations.**

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