

# 2024 SFBTA

## The Fixed Income Group at RJ O'Brien

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Fixed Income Group A Division of RJ O'Brien

# Hedge Dexterity with Transitioning Fed

- Curve, Rates & the history lesson of the Boy King, c. 1990-94



- Curve location and basis become super important
- Knowledge of hedge alts & carry becomes hypercritical



# Front End Traders– Hedge Vehicles

- 1mo Fed Funds (out to about 2yrs)
- 1mo SOFR futures (out to 1y+)
- 3mo T-Bill futures (out to 2y)
- 3mo SOFR futures (out to 7y)
- Treas: 2y, 3y, 5y



# Front End(cont.) Risk Stacking Out the Strip

Hedge a 2yr PAC (or any hard final short bond)

Could use a 2y swap futures or 2y T (fut. or cash)

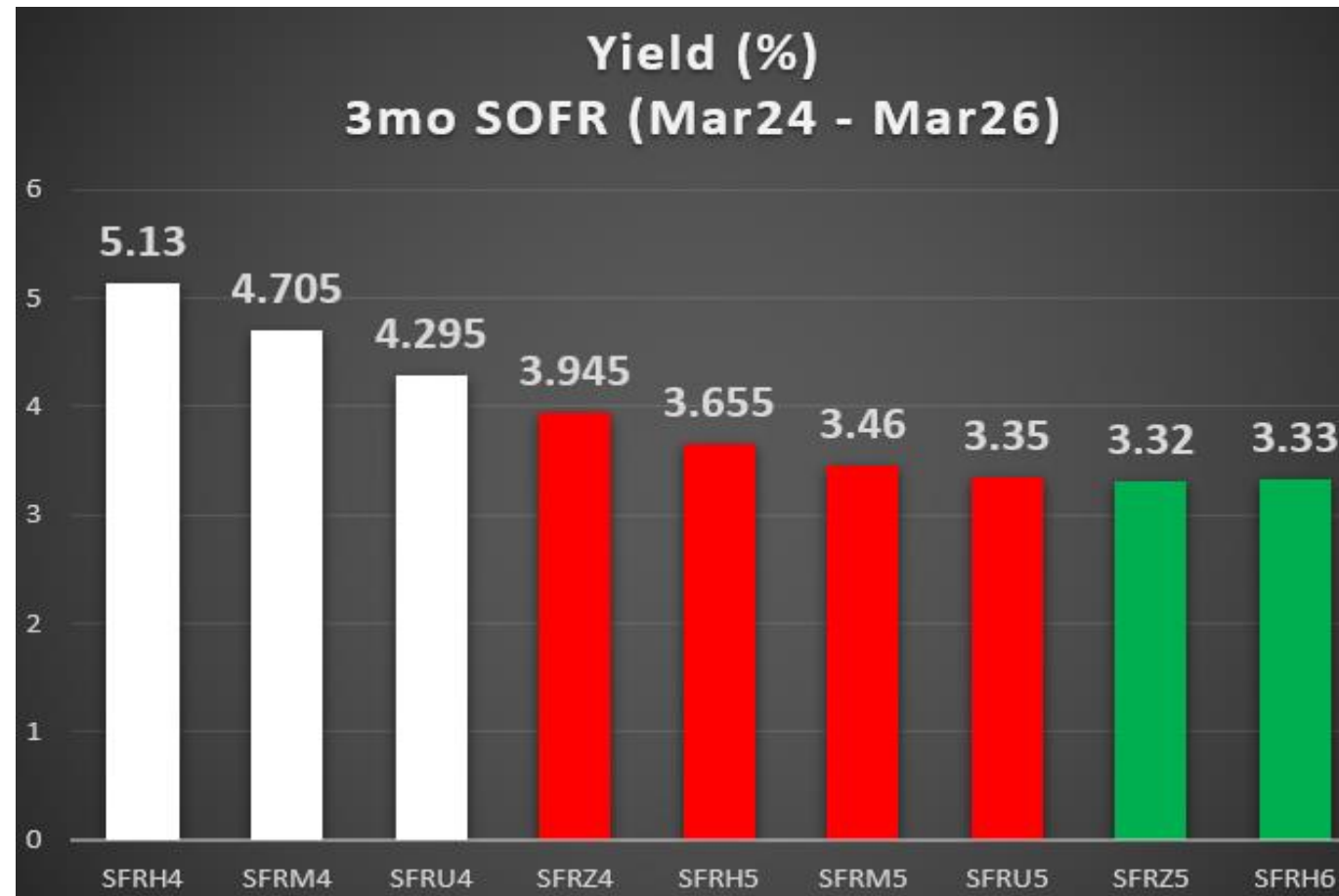
OR

Place 12.5% of risk in each of first 8 quarterly SOFR futures

→ I'd either SHORT 50% of risk in each of last 2 REDs

Or

Buy 1y/Sell 2y Swap Fut

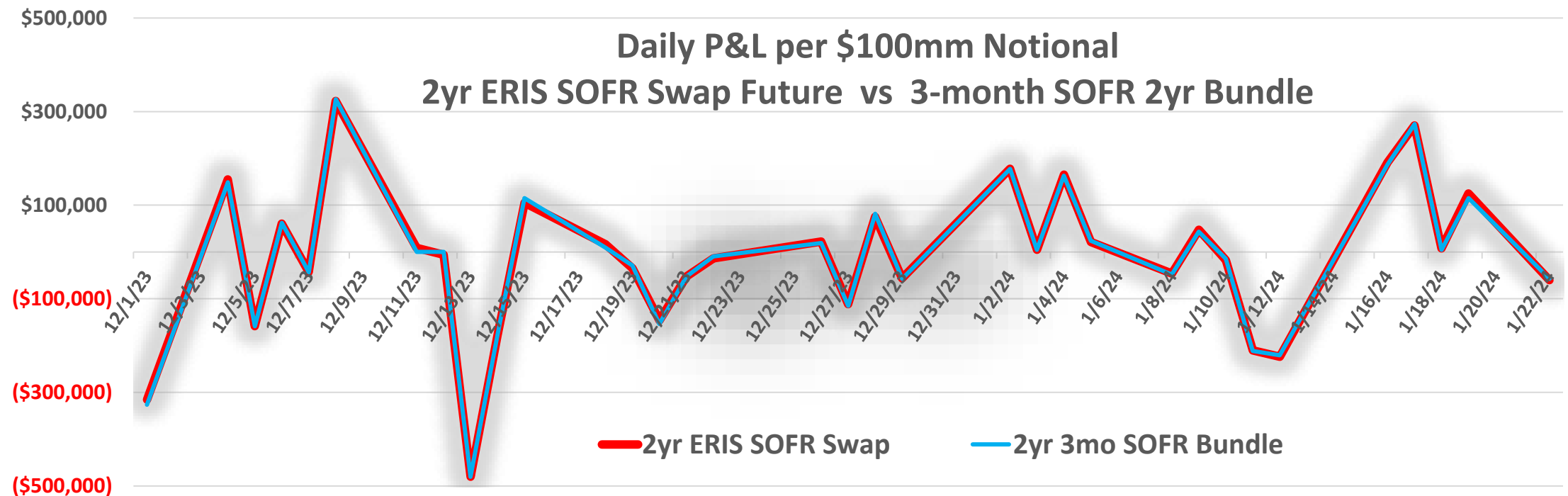


# Best Execution

## 3m SOFR vs 2yr Swap

- 2yr Bundle is 96% of ERIS Swap futures for ~ dv'01 equivalent size
- Pay-Fixed \$100 million notional comparison
- ERIS SOFR Swap Notional per contract = \$100,000
- 3-Month SOFR Notional per contract = \$1,000,000

Contract	BB Symbol	Bid	Ask	Day Px Chng	Day BP Chng	DV'01/\$100mm	\$ Chng per \$100mm
2 Year ERIS SOFR Swap Future	YITH24	99.87	99.878	-0.05625	2.90	\$19,414.38	-\$56,250.00
2 Year 3-month SOFR 2yr Bundle	SFR2YH4	95.973	95.978	-0.03	3.00	\$19,200.00	-\$57,600.00



# Eris SOFR Margin up to 65% lower than Cleared Interest Rate Swaps



Initial Margin for \$100 million position (1,000 futures contracts)

Tenor	Eris Ticker	Swap Start Date	Unadjusted Swap End Date	Coupon (%)	Eris SOFR	Cleared Swap (Receive Fixed)	Cleared Swap (Pay Fixed)	Eris Savings
1-year	YIAH24	2024-03-20	2025-03-20	4.25	\$325,000	\$870,444	\$832,284	61-63%
2-year	YITH24	2024-03-20	2026-03-20	4.00	\$600,000	\$1,540,426	\$1,661,283	61-64%
3-year	YICH24	2024-03-20	2027-03-20	4.50	\$800,000	\$2,101,409	\$2,362,543	62-66%
4-year	YIDH24	2024-03-20	2028-03-20	4.75	\$1,050,000	\$2,621,829	\$3,058,308	60-66%
5-year	YIWH24	2024-03-20	2029-03-20	4.25	\$1,125,000	\$3,031,266	\$3,633,495	63-69%
7-year	YIBH24	2024-03-20	2031-03-20	4.25	\$1,450,000	\$4,051,083	\$4,703,772	64-69%
10-year	YIYH24	2024-03-20	2034-03-20	4.25	\$1,775,000	\$5,743,647	\$5,905,730	69-70%
30-year	YIEH24	2024-03-20	2054-03-20	4.00	\$3,700,000	\$14,152,721	\$11,058,980	67-74%



# Carry In Inverted Curve Environment

- How do I get paid?
- What does the firm pay (aka 'What do I get charged')?

Coupon, Repo/Reverse, Balance Sheet Charges, Bid/Ask spreads?



# FIG Anticipated 30-Day Carry Grid

RJO FIG Futures Anticipated Carry Grid				
Tenor	2 Year	5 Year	7 Year	10 Year
30 Day Treasury Futures Carry per unit of DV'01:	(\$4.97)	(\$3.06)	(\$2.04)	(\$1.53)
30 day Eris Swap Futures Carry per unit of DV'01:	(\$12.38)	(\$4.59)	(\$3.25)	(\$2.22)
Carry Favors Long in:	Treasury	Treasury	Treasury	Treasury
Treasury Futures:	2YR Note TUH4 Comdty	5YR Note FVH4 Comdty	10YR Note TYH4 Comdty	Ultra-10YR Note UXYH4 Comdty
DV'01:	\$37.80	\$42.91	\$64.14	\$91.39
Eris Swap Futures:	2YR Swap YITH24 Comdty	5YR Swap YIWH24 Comdty	7YR Swap YIBH24 Comdty	10YR Swap YIYH24 Comdty
DV'01:	\$19.43	\$45.46	\$61.92	\$84.65
Hedge Ratio:	TU:YIT	FV:YIW	TY:YIB	UXY:YIY
	1:1.95	1:0.94	1:1.04	1:1.08

\*See Full Disclaimer at <https://www.rjobrien.com/legal/disclaimer/>

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# 30-Day Carry Calculations

Fwd Cash Px Deliv	Px @ Deliv	Px MID	Carry till Delivery (32nds)	Days till Delivery	30 Day Carry (32nds)	30 Day Carry Per Contract	30 Day Carry Per DV'01
\$ 98.39	\$ 107.71	\$ 107.88	(5.48)	39 Days	(4.22)	\$ (131.81)	\$ (3.07)

(A) Fwd Cash Px =  
PRICE(Settlement, Maturity, Rate, YTM, Redemption (Par=\$100), Frequency (2), Basis (3).

(B) Future Price at Delivery = (A) / Conversion Factor

(C) Carry Till Delivery in Ticks = ((B) – Current Future Mid Price)\*32 = Carry till Delivery (Ticks)

(D) 30 Day Carry Conversion per Contract =  
(C) \* (30 / Days till Delivery)

30 Day Carry Per Unit of DV'01 =  
30day Carry / DV'01 of Current Futures Contract  
(FVH4 DV'01 = \$42.90)

\*Checking Carry Calculation Accuracy: Compare to Bloomberg CMS page (right). (FVH4 Comdty) CMS <Go> , then adjust the amber “DLV” box to the Settlement Date and hit <Go> . The carry calculation should match within a ½ tick, based on rounding of the CMS Page.

VIEW

B-Basis, C-basis Chg

H-Horizon bond price

V-BPV

S-CTD B.P. Spread

P-P&L 32nds

CTD Scenario Analysis

CTD Basis

0. 32nds

Stl

1/23/24

Dlv

3/ 1/24

PARALLEL YIELD SHIFTS (BP)

4

-50

0

50

100

Price:

107-17+

109-27

107-23

105-20+

103-19+

Chng:

- 11

+1-30

- 05+

-2-08

-4-09

Risk:

4.19

4.29

4.20

4.10

4.01

FVH4

107-28<sup>3</sup>/<sub>4</sub>

Issue

Price

Src

Yield

Basis

Basis at Contract Horizon (32nds)

1) T 3 <sup>5</sup>/<sub>8</sub> 05/31/28

2) T 4 06/30/28

3) T 4 <sup>1</sup>/<sub>8</sub> 07/31/28

4) T 4 <sup>3</sup>/<sub>8</sub> 08/31/28

5) T 4 <sup>5</sup>/<sub>8</sub> 09/30/28

6) T 4 <sup>7</sup>/<sub>8</sub> 10/31/28

7) T 4 <sup>3</sup>/<sub>8</sub> 11/30/28

8) T 3 <sup>3</sup>/<sub>4</sub> 12/31/28

98-11<sup>3</sup>/<sub>4</sub>

99-27+

100-12<sup>3</sup>/<sub>4</sub>

101-14<sup>3</sup>/<sub>4</sub>

102-16+

103-20<sup>5</sup>/<sub>8</sub>

101-19<sup>3</sup>/<sub>8</sub>

98-26<sup>1</sup>/<sub>8</sub>

BGN

BGN

BGN

BGN

BGN

RJOS

BGN

BGN

4.037

4.034

4.028

4.023

4.029

4.026

4.007

4.016

-6.3

-1.4

4.1

9.1

12.5

17.9

24.4

26.7

.0

3.8

8.9

13.4

16.0

20.6

28.2

31.9

.0

4.8

11.1

16.5

20.2

25.9

35.4

40.9

.0

3.9

9.1

13.6

16.3

21.0

28.7

32.5

.0

3.1

7.2

10.9

12.7

16.4

22.4

24.5

.0

2.4

5.4

8.2

9.2

12.0

16.4

16.8

## 2 Relatively New Resi Mort Futures: Primary (Rate Lock) and 2ndary (TBA)

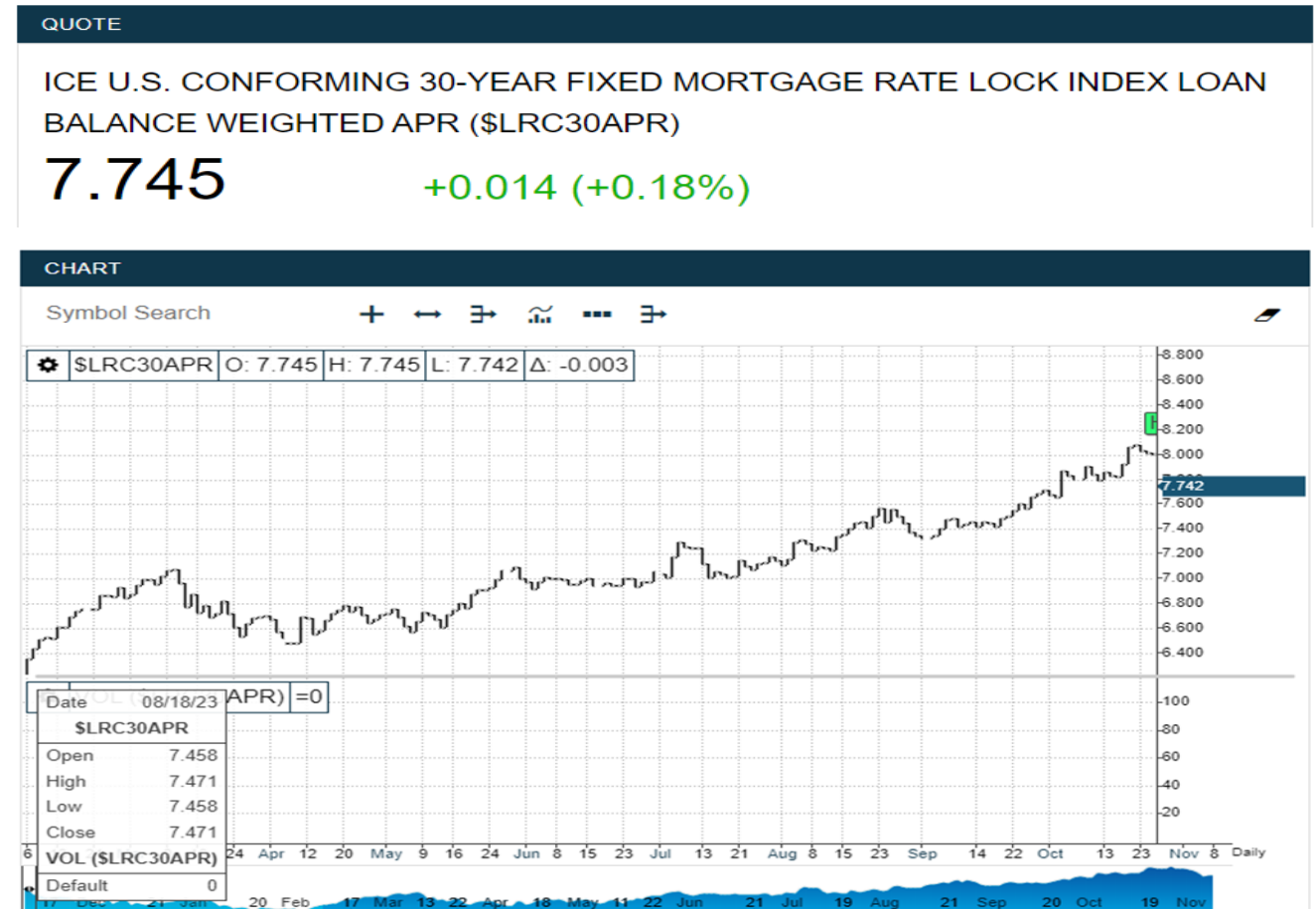
- RL Futures: Good proxy for Premium TBA without squeeze risk
  - Another basis to exploit
  - Better product for portfolio, rel val or risk manager than trader
  - Cash Settled on TBA SIFMA dates
  - FIXED DV01 !
  - Option-convenient
- TBA futures:
  - Margin mitigation
  - Opportunity to provide liquidity– outright and block
  - Delivery Into TBA at 72hr



# ICE U.S. 30 Year Conforming Residential Mortgage Rate Lock Index

The Index tracks rates on first lien, single family U.S. residential mortgage loan applications where borrowers and lenders have committed to lock-in the interest rate prior to close.

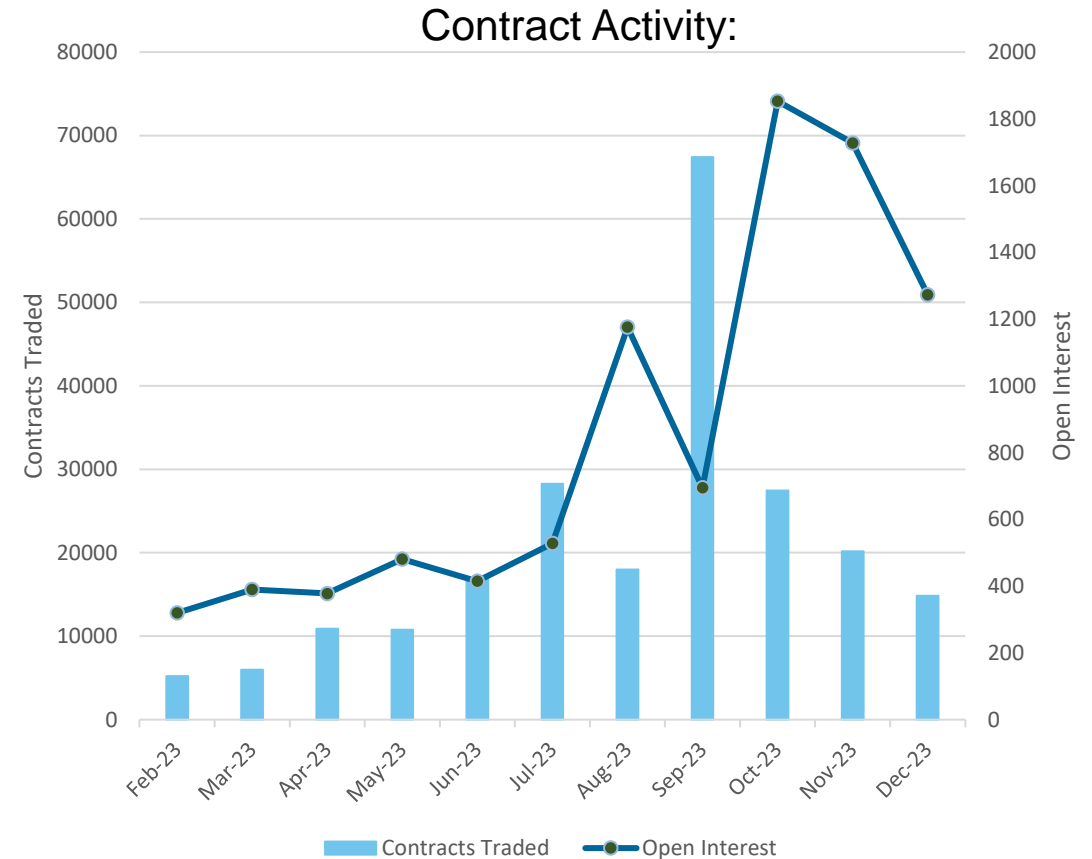
- Reflect the actual 30 year Conforming primary mortgage lending market
- The rate lock index is calculated based on the loan balance weighted average of qualifying loans.
- The index includes both new purchase and refinance loans, including cash-out refinance loans.
- The Index excludes Construction loans, non-primary residences loans, Jumbo loans and those originated through a government program, such as FHA, VA and USDA.
- Produce more reliable projections and risk analytics for MBS investors



# ICE U.S. 30 Year Residential Mortgage Rate Lock Index Futures

A more refined risk management tool for mortgage interest rate prepayment and duration exposure using primary market rates.

- Contracts are cash-settled and track the ICE U.S. Conforming 30-year Fixed Mortgage Rate Lock Index which is based on robust data from the ICE Mortgage Technology (IMT) platform which supports nearly one out of two mortgages originated in the United States.
- Offers 6 Serial monthly contracts
- Contracts track where futures market participants believe the final daily Locked Rate will be on the last trading day of a serial contract.
- The serial contracts of the strip provide a 6-month forward view of the ICE U.S. Conforming 30 year Fixed Mortgage Loan primary rate.



# ICE U.S. 30 Year Residential Mortgage Rate Lock Index Futures—6 mos fwd trade

Description ↑	Bid	Ask	Yest Settle	Rate Equiv.
1) Spot			6.981	
2) Feb24	93.130	93.165	93.100	6.900
3) Mar24	93.195	93.235	93.165	6.835
4) Apr24	93.250	93.290	93.215	6.785
5) May24	93.300	93.345	93.265	6.735
6) Jun24	93.345	93.395	93.315	6.685
7) Jul24	93.390	93.445	93.365	6.635



# Index Level Analysis

Primary Rate = Rate Lock Yield (LRC30APR Index)  
Secondary Rate = Par TBA Yield (MTGE FNCL Index)

Yield Spread Above 160 bps, favors:

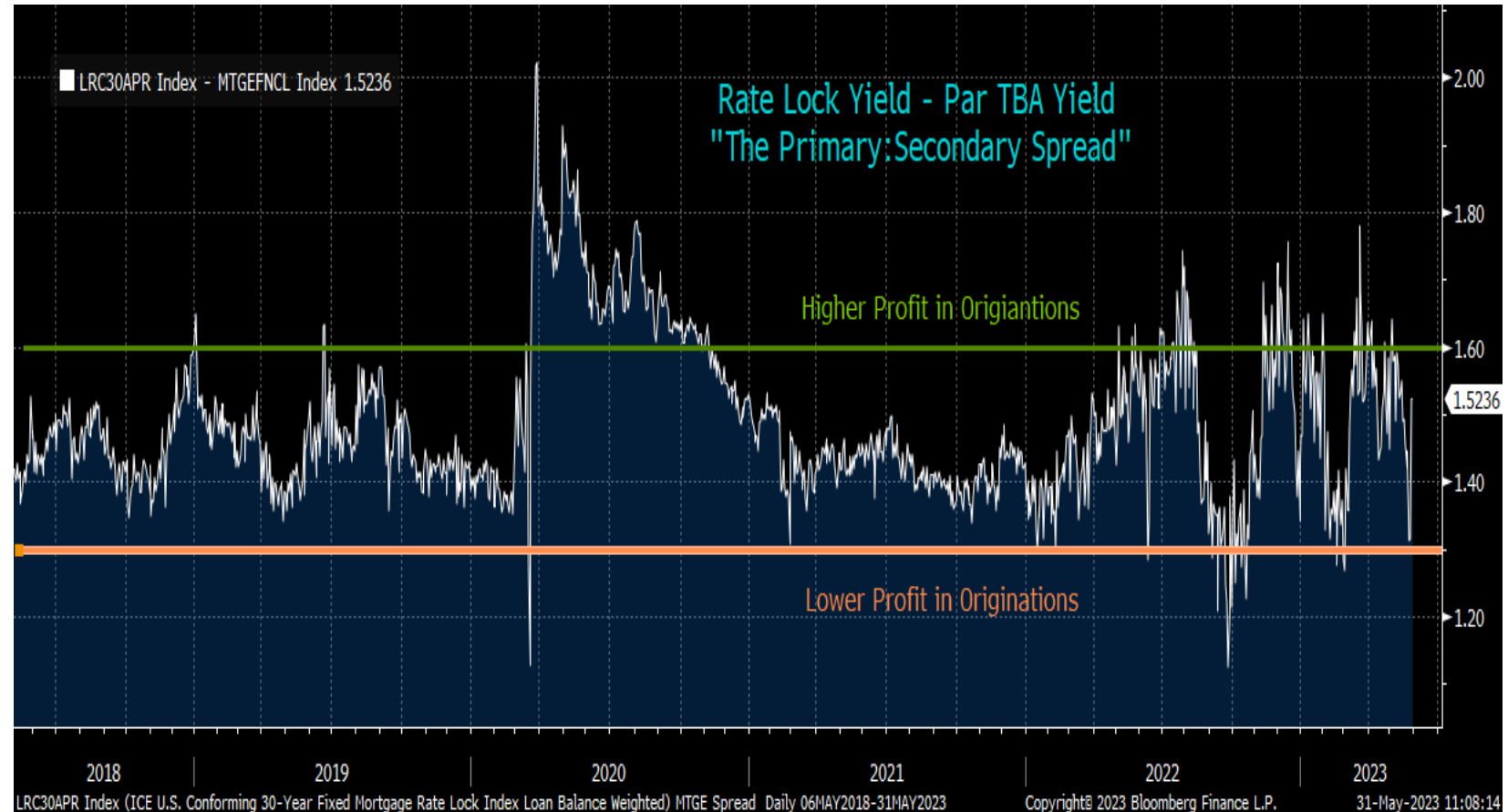
- BUY Primary (RL Futures)
- SELL Secondary (TBA)
- Room to improve pricing

Between 135-160bps, favors:

- Balanced

Below 135bps, favors:

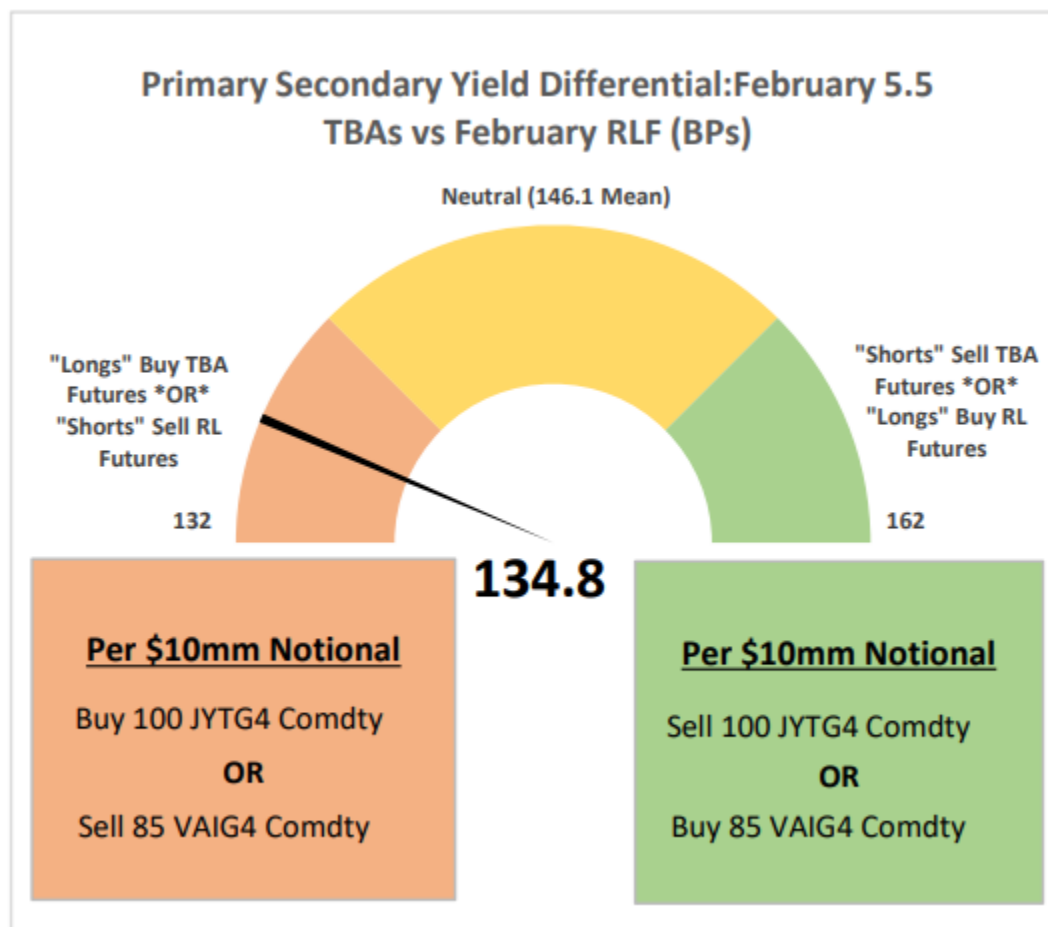
- SELL Primary (RL Futures)
- BUY Secondary (TBA)
- Reduce aggressive pricing



Rate Lock Futures offer insight into PRICING and a Hedge Alternative



# Primary/Secondary Yield Spread



## Methodology

- Take the difference between the implied yield on the Rate Lock Future (Primary) and the YTM on the applicable TBA (Secondary) to give **Primary:Secondary Yield Differential**
- Using historical data, examine where, in percentile terms, today's level sits among the recent Low-High range
- Given strong tendency towards mean reversion of this Yield Differential (YD)...
  - When the YD level sits in the lower quartile (Orange on "The Meter"), it's likely Yield Differentials will widen and so "Longs" are better served buying TBA Futures (Vs Rate Lock Futures) and vice versa for "Shorts"
  - Conversely, when the YD level sits in the upper quartile (Green), it is likely Yield Differentials tighten and so "Longs" should buy Rate Lock Futures and "Shorts" sell TBA Futures
- Hedge Ratios in green and orange boxes calculated using DV01

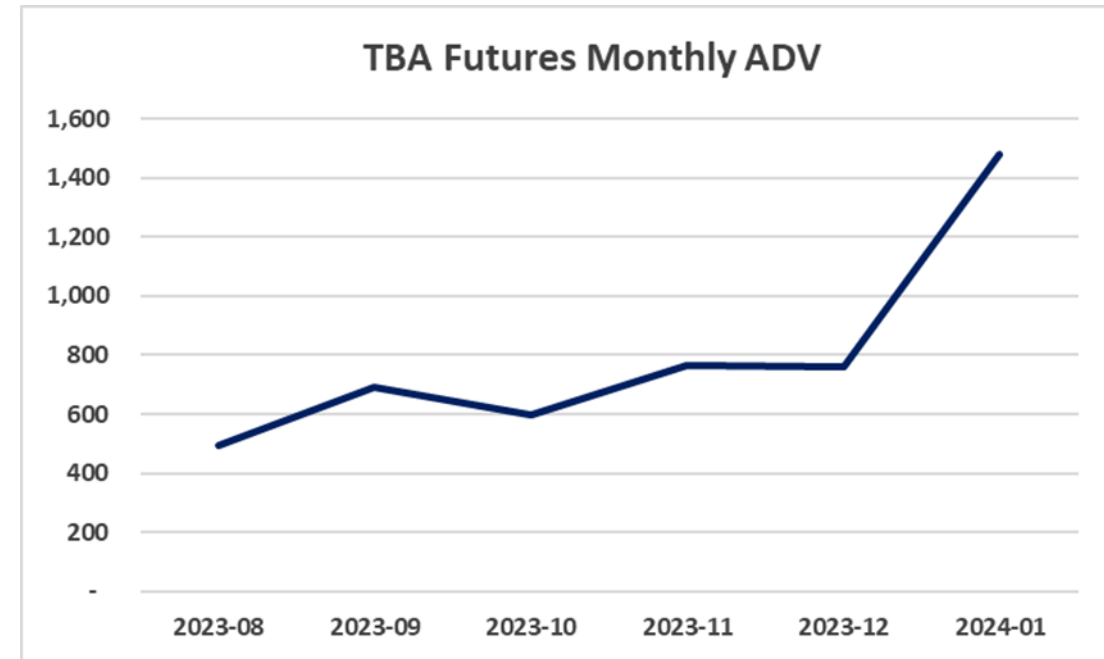




# CME TBA Futures

## KEY FEATURES:

- Transparent Price Discovery
- Expanded Trading Access
- Central Counterparty Clearing
- Inter-Commodity Spread Trading
- \$100k Contract Size
- TBA Market Access Via Futures Contract
- Margin Efficiencies/Margin Offsets



Source: CME Group



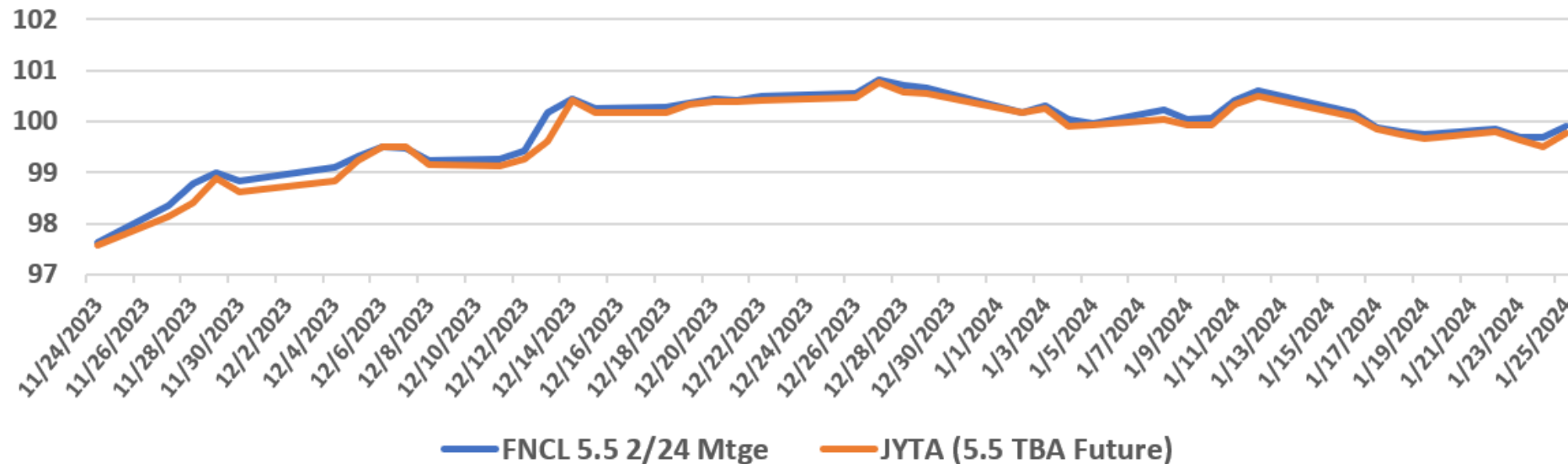


# TBA Futures vs Cash TBAs

## TBA Future 2023 Trade Recap:

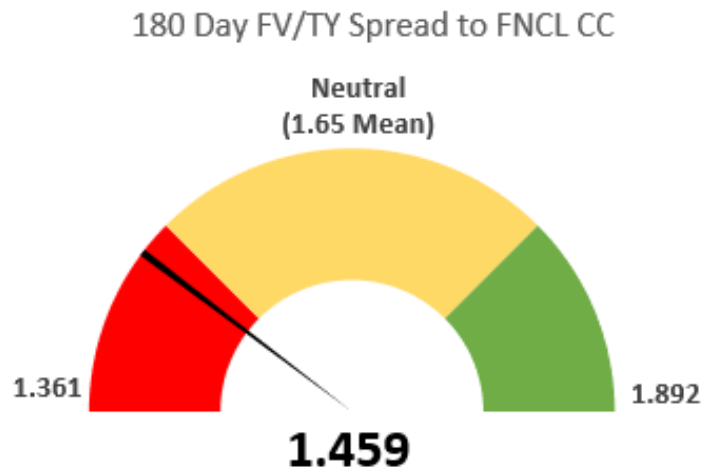
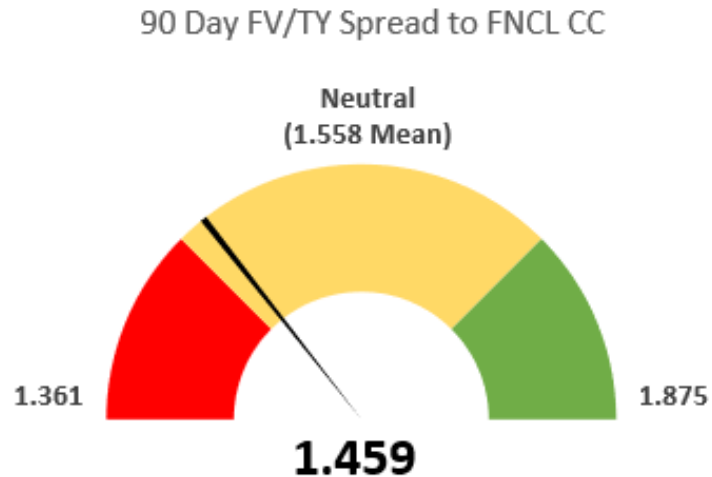
- Over \$10BB notional traded
- OI grew 70% in Dec'23 to close the year at a record 4,300 contracts
- ADV exceeded 750 contracts (\$75MM) in both Nov'23 and Dec'23
- Offsetting risk margin (non-bank levered finance firms)

**TBA Futures vs Cash Price History (5.5 coupon)**



# Mortgage – Treasury Yield Spread

## Yield Differential on FNCL Index and Blend of FV + TY



### Methodology

- Using INDEX level yields compare Mortgage Treasury Spreads over different time frames
- We expect mean reversion as with Primary-Secondary Spreads.
- When Mortgage Treasury Spreads are **TIGHT**:  
**Longs** prefer to **BUY TREASURIES** and  
**Shorts** prefer to **SELL TBAs**
- When Mortgage Treasury Spreads are **WIDE**:  
**Longs** prefer to **BUY TBAs** and  
**Shorts** prefer to **SELL TREASURIES**



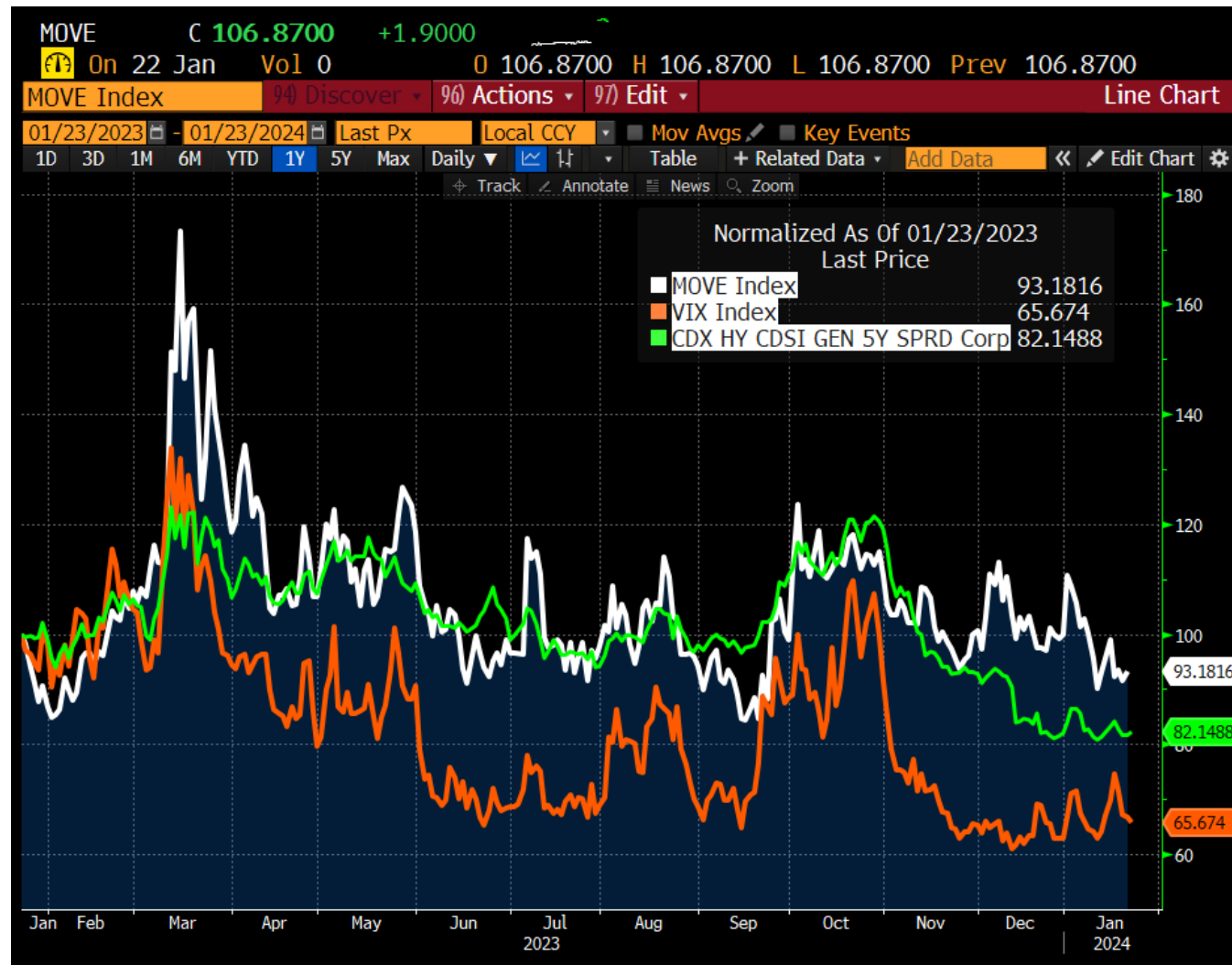
# Option Implied Volatility & Spreads

- iVol
- Credit (esp. HY)
- Liquidity
- “Markets are deepest when options are cheapest...”
- → YES! I know this is a mortgage session. Less liquid mort tranches (esp. non-agency RMBS and CMBS) see much wider bid/ask in Vol surges. Ask the non-QM traders!

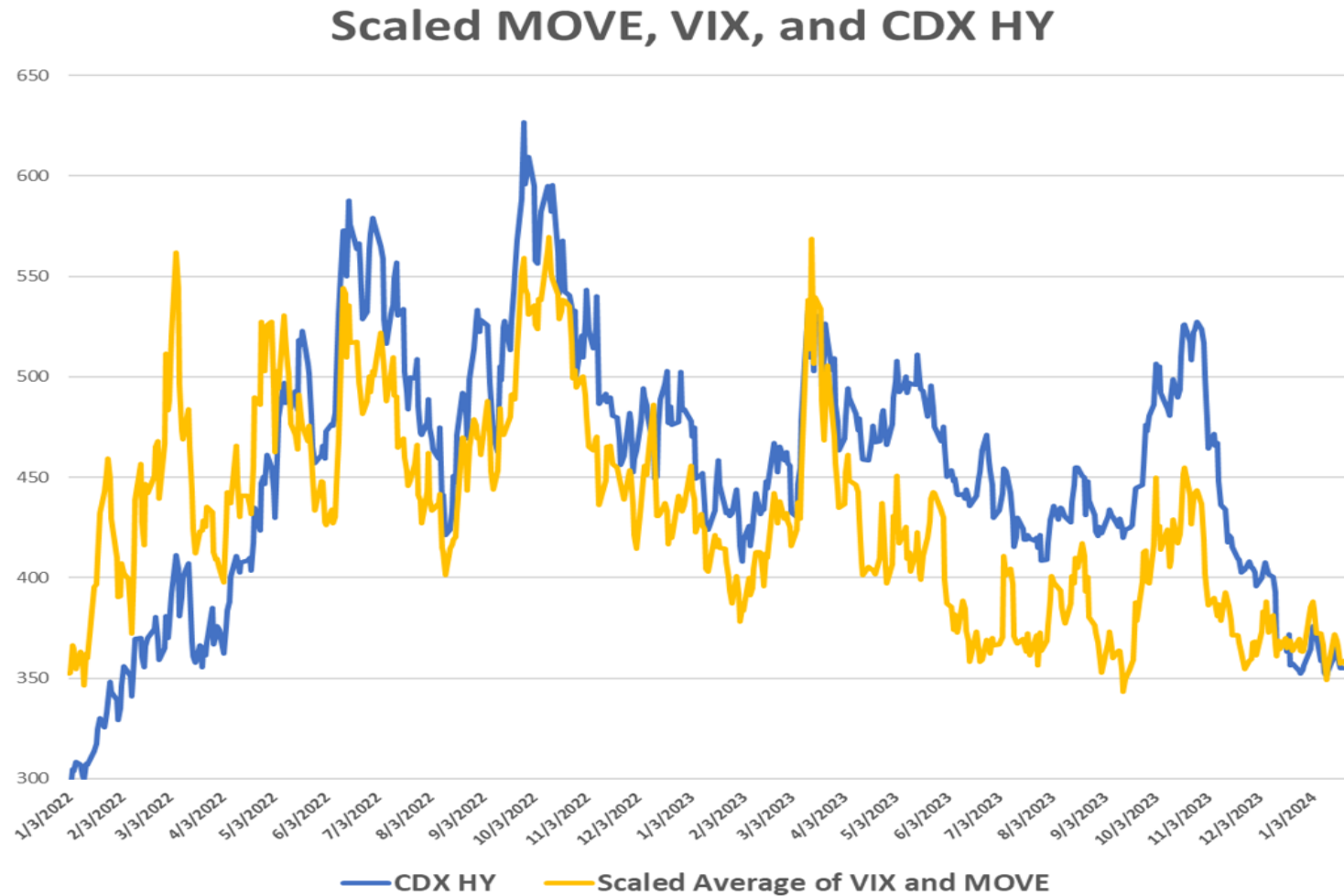


# MOVE Index vs VIX vs CDX HY

- Relationship between vol & credit spreads....as vol goes high, spreads widen.



# iVol, Credit (HY esp.) & Liquidity– 3 Peas in a Pod



# CBOE CFE iBoxx Futures (IG & HY)

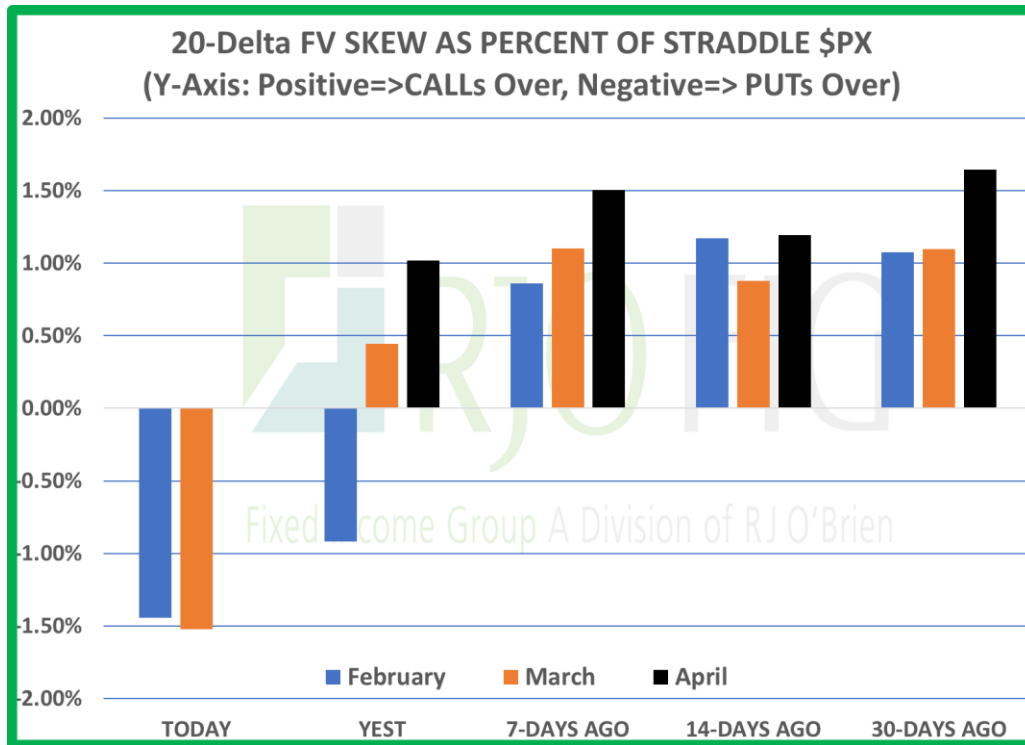
- iBoxx iShares Corp Bond Index Futures
- Unlike ETFs that trade super rich/cheap AND you can get called out of shorts, not so with the futures
- One-stop shop: duration and spread
- Same underlying index as LQD and HYG
- Similar leverage as TRS but no ISDA required



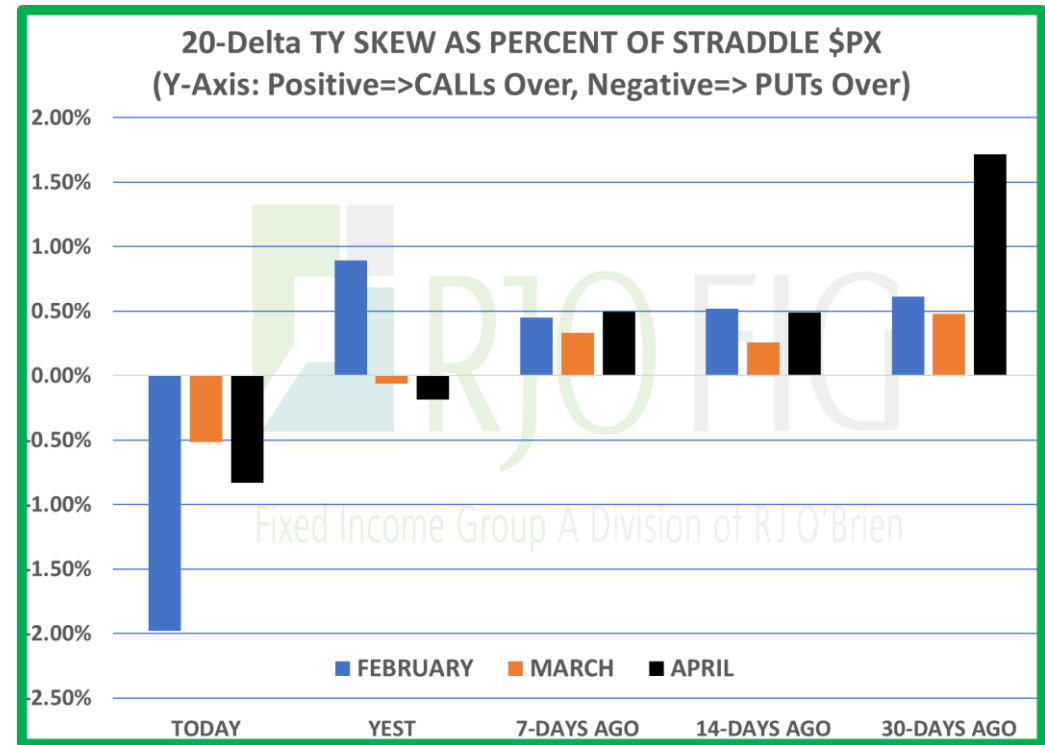
# TREASURY SKEWS

## Are Puts Cheaper than Calls, or Vice Versa?

Historically (30D) Calls were more expensive.  
Puts flipped to being more expensive over last week



Pattern holds on TY and US, as well as FV.  
Front and back months have more extreme swings



Y-Axis: Positive → CALLs Over, Negative → PUTs Over



# Menu of Options Offered

## SOFR Options:

- Highly liquid
- Monthly options out 4 years
- Short Dated/Mid-curve
- Weekly Short Dated/Mid-curve
- 1mo & 3mo SOFR options listed

## Treasury Options (highly liquid):

- FV, TY, US
- ATM strikes regularly 100k+ Bid/Offer size
- Weekly options, with M, W, and F expiries

## Treasury Options (liquid):

- TU, UXY
- ATM strikes regularly 10k+ Bid/offer size
- Weekly options, with M, W, and F expiries

Open Int	Volume	Last	QS	+	C Qty	C Bid	C Ofr	C Qty	Strike	P Qty	P Bid	P Ofr	P Qty	+	QS	Last	Volume	Open Int
- 10-Year U.S. Treasury Note Option Mar24, 31.3 days, F: 111'070									ATM	111.000000 ▼ ▲		10 strikes - +						
10-Year U.S. Treasury Note Future Mar24										1,364	111'070	111'075	2,446	+	-	111'070	489,426	4,641,749
8,750			QS	+	1,091	2'23	2'25	59	109.00	499,901	0'10	0'11	448,712	+	QS	0'10	3,993	47,854
17,392			QS	+	1,526	1'60	1'63	1,530	109.50	523,535	0'15	0'16	366,085	+	QS	0'15	87	44,532
16,110	61	1'38	QS	+	12,219	1'36	1'38	15,516	110.00	481,854	0'22	0'24	459,308	+	QS	- 0'22	7,283	92,513
31,827	21	1'17	QS	+	12,844	1'14	1'16	7,041	110.50	414,550	0'32	0'34	398,791	+	QS	0'32	2,420	46,873
48,394	209		QS	+	212	0'60	0'61	115,520	111.00	247,250	0'45	0'47	229,201	+	QS	↑ 0'45	2,712	44,818
25,691	3,608	0'46	QS	+	180,327	0'44	0'45	42,097	111.50	876	0'62	0'63	105,776	+	QS	↑ 0'57	714	20,133
42,331	606	↓ 0'32	QS	+	390,983	0'31	0'33	399,197	112.00	4,693	1'17	1'18	35	+	QS	1'08	133	25,032
39,353	482	- 0'22	QS	+	406,745	0'22	0'23	182,992	112.50	4,011	1'39	1'41	3,910	+	QS	↑ 1'33	2	13,244
38,516	2,080	- 0'16	QS	+	527,976	0'15	0'16	82,473	113.00	1,506	2'00	2'02	1,485	+	QS	↑ 1'57	118	8,493
34,394	3,785	0'11	QS	+	520,110	0'10	0'12	506,436	113.50	1,085	2'27	2'29	1,065	+	QS	2'24	1	6,727





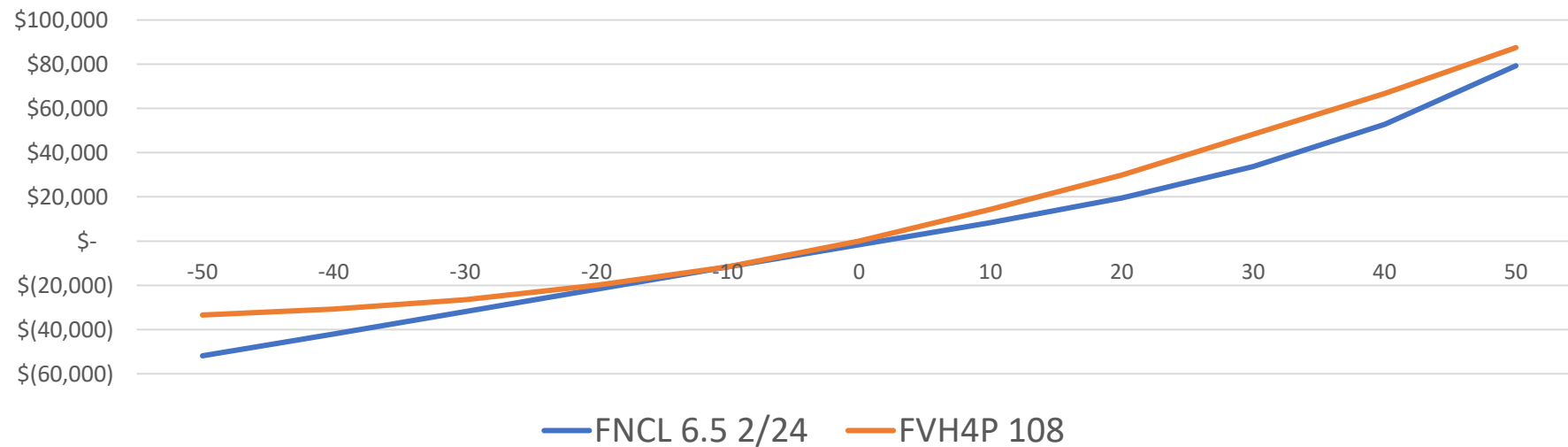
# First a Generic, Then Some Specific Mortgage Hedge Examples...



# FNCL 6.5 vs Long FV Put Options

POSITION DURATION MANAGEMENT Page 1 of 3												
Mode: A Cash, Hedge, AGGREG.				Settle 1/26/24				<div>Buy .00 Sel -10 271 701.39</div>				
"MACRO" Portfolio? N				Recompute Fut/Opt Hedge N								
Inflation = 0.0 ? N												
Tkr	Cpn	Mty	<Key>	Price	EqvYld	ModDur	Cvx	Val01	MM	Par	1mlnMV	BPV
FNCL	6½	2/24		102-08+	5.6584	2.89	.15	.0297	Sel	-10	-10	-2.97M
Futures/Options				Price	Proxy Issue			Num Contr				
FVH4				107-21	3½ 5/28			.0427			n/a	
FVH4P 108.00				'46+	4.54%IV -.60del			.0254Long	50		n/a	-1.27M

\$10MM FNCL 6.5 vs FVH4P 108 (Instantaneous Shock)



# GNR 2006-10 ZT Mtge

GNR 2006-10 ZT		102-18+ / 102-21 <sup>7</sup> / <sub>8</sub>		Yield 5.166/5.134		BVAL	
As of 24 Jan		Prepay 147PSA		WAL 3.73 Collateral 100.0% G2SF 6%		BAM TOAS 87.9	
GNR 2006-10 ZT Mtge		Send		Page 1/4		Security Description	
100% G2SF 6.0 S		6.437(107)241		CUSIP 38374MYT0		Pool Level ▾ 95 Buy 90 Sell	
1) Bond Summary		2) Group Summary		3) Comments		4) Deal Summary	
Issuer		Government National Mortgage...		6) Pro   DSCO »		7) Docs   DSCO »	
Series		06-10		Class ZT		Mty 03/20/2036 14	
10) Class Description		Z, SEQ		FIGI		BBG000B1GCL7	
16) Servicer		Midfirst Bank (16.3%)		17) Lead Mgr		Bank of America	
18) Trustee		Wells Fargo Bank					
Current		Original		Payment Details			
Bal USD		11,133,197		Bal USD		8,779,000	
Fct (Jan 24)		1.268162337		WAL		19.6Yrs@ 238 PSA	
Cpn (Jan 24)		6.00000%		1st Coupon		6.00000%	
Class/Grp Pct		100.00%		Class/Grp Pct		2.12%	
Beg Accrue		01/01/2024		1st Pay		04/20/2006	
End Accrue		01/31/2024		1st Settle		03/30/2006	
				Dated Date		03/01/2006	
				Priced		03/23/2006	
				Next Pay		02/20/2024	
				Rcd Date		01/31/2024	
				Pay Day		20th	
				Frequency		Monthly	
				Pay Delay		19 Days	
				Day Count		30/360	
				Calendar		US	
				Call		1.00% Deal Call	
						CPR	
						PSA	
						1m	
						3m	
						6m	
						12m	
						Life	
						Additional Information	
						DTC Book Entry, DTC Same Day, TRACE	
						Min Size	
						Increment	
						1,000	
						1	



# GNR 2006-10 ZT Mtge – Swap Future Hedge

FIRST PAYMENT Dt: 1/26/2024

GNR 2006-10 ZT Mtge
MTG FACE AMT
\$ 10,000,000

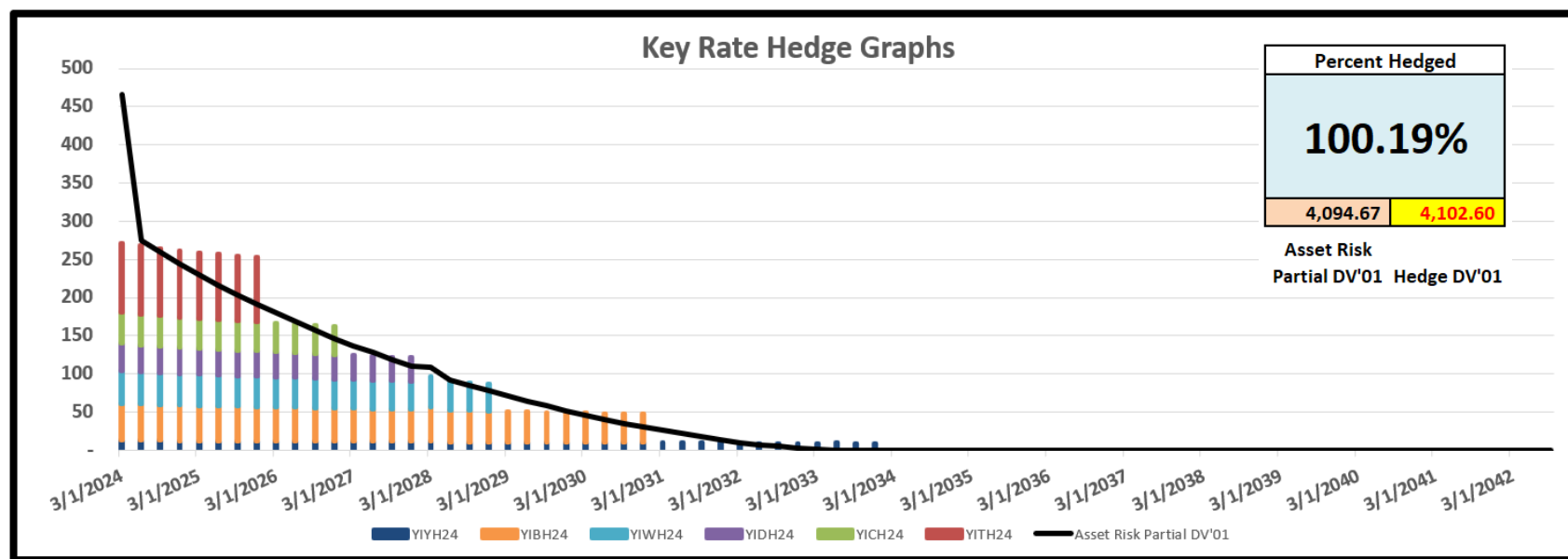
GNR 2006-10 ZT Mtge
GNR 2006-10 ZT Mtge
YLD CNV ASK
5.05
px ask
102.9415665
MTG EQV CPR
8.82
MTG PREPAY SPEED
147
MTG PREPAY TYP
PSA

ERIS Swap Futures			
OUTRIGHT/Bullet Hedge (1 curve pnt)			
2yr	SELL 211	YITH24	
	OR		
3yr	SELL 141	YICH24	
	OR		
5yr	SELL 89	YIWH24	
	OR		
10yr	SELL 48	YIYH24	

ERIS Swap Futures			
Amortizing Swap (trade all)			
2yEris	SELL 36	YITH24	0
3yEris	SELL 16	YICH24	0
4yEris	SELL 14	YIDH24	0
5yEris	SELL 17	YIWH24	0
7yEris	SELL 19	YIBH24	0
10yEris	SELL 5	YIYH24	0

Asset DV'01 \$	4,095
Asset DV'01 per \$1mm \$	327.73

ERIS	
EXISTING HEDGE	Initial Margin Requirement
-36	-\$21,600
-16	-\$12,800
-14	-\$14,700
-17	-\$19,125
-19	-\$27,550
-5	-\$8,875
	-\$104,650
Margin % of Face:	-1.05%



# GNR 2006-10 ZT Mtge – UST Future Hedge

FIRST PAYMENT Dt: 1/26/2024

GNR 2006-10 ZT Mtge
MTG FACE AMT
\$ 10,000,000

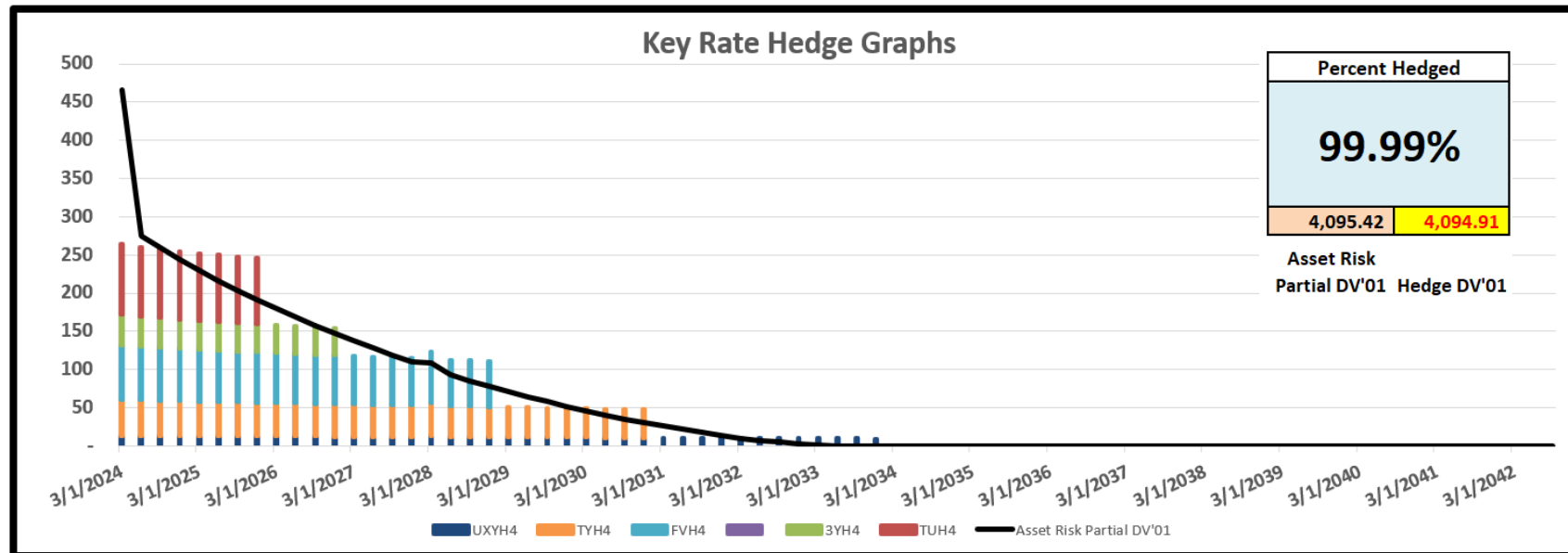
GNR 2006-10 ZT Mtge
GNR 2006-10 ZT Mtge
YLD CNV ASK
5.05
px ask
102.9415665
MTG EQV CPR
8.82
MTG PREPAY SPEED
147
MTG PREPAY TYP
PSA

Treasury Futures			
OUTRIGHT/Bullet Hedge (1 curve pnt)			
2yr	SELL 109	TUH4	
	OR		
3yr	SELL 73	3YH4	
	OR		
5yr	SELL 96	FVH4	
	OR		
10yr	SELL 45	UXYH4	

Treasury Futures				
Amortizing Swap (trade all)				Hedge Adjust
2yTreas	SELL 19	TUH4		0
3yTreas	SELL 8	3YH4		0
5yTreas	SELL 30	FVH4		0
7yTreas	SELL 18	TYH4		0
10yTreas	SELL 5	UXYH4		0

Asset DV'01 \$	4,095
Asset DV'01 per \$1mm \$	327.78

Treasury	EXISTING HEDGE	Initial Margin Requirement
	-19	-\$21,850
	-8	-\$12,800
	-30	-\$42,000
	-18	-\$38,250
	-5	-\$15,000
		-\$129,900
Margin % of Face:		-1.30%



# FHR 4586 EC MTGE

FHR 4586 EC		90-03 <sup>3</sup> <sub>4</sub> / 90-07 <sup>1</sup> <sub>8</sub>		Yield 4.691/4.660		BVAL	
As of 24 Jan		Prepay 140PSA		WAL 4.27 Collateral 100.0% FGLMC 5%		BAM TOAS 45.6	
FHR 4586 EC Mtge		Send		Page 1/4		Security Description	
100% FGLMC 5.0 S		5.593(126)223		CUSIP 3137BPKY4		Pool Level 95 Buy 90 Sell	
1 Bond Summary		2 Group Summary		3 Comments		4 Deal Summary	
Issuer Freddie Mac		6 Pro   DSCO »		7 Docs   DSCO »		16 Servicer	
Series 4586		Class EC Mty 05/15/2046 14		ISIN US3137BPKY48		17 Lead Mgr	
10 Class Description		EXCH, PT		FIGI BBG00CXCZWZ3		18 Trustee	
						WELLS FARGO BANK, NATI...	
						Nomura Securities Intern...	
						Freddie Mac	
Current		Original		Payment Details			
Bal USD 26,561,582		Bal USD 154,640,314		Next Pay 02/15/2024		1m 8.05 134	
Fct (Jan 24) 0.171763630		WAL 4Yrs@ 300 PSA		Rcd Date 01/31/2024		3m 6.76 113	
Cpn (Jan 24) 2.00000%		1st Coupon 2.00000%		Pay Day 15th		6m 7.15 119	
Class/Grp Pct N/A		Class/Grp Pct 100.00%		Frequency Monthly		12m 8.17 136	
Beg Accrue 01/01/2024		1st Pay 06/15/2016		Pay Delay 14 Days		Life 16.62 277	
End Accrue 01/31/2024		1st Settle 05/31/2016		Day Count 30/360		Additional Information	
		Dated Date 05/01/2016		Calendar US		TRACE	
		Priced 05/11/2016		Call Non-Callable			
						Min Size 1,000	
						Increment	



# FHR 4586 EC MTGE – Swap Future Hedge

FIRST PAYMENT Dt: 1/26/2024

FHR 4586 EC MTGE
MTG FACE AMT
\$ 10,000,000

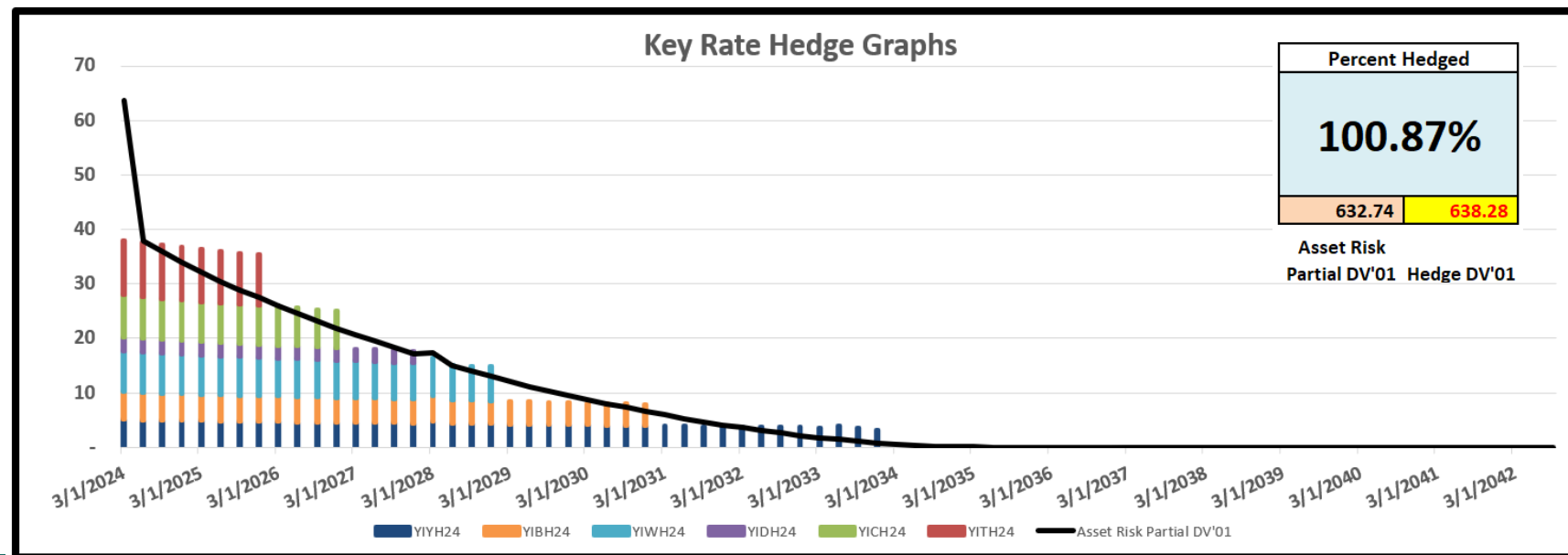
FHR 4586 EC MTGE
FHR 4586 EC MTGE
YLD CNV ASK
4.569
px ask
90.5227356
MTG EQV CPR
8.4
MTG PREPAY SPEED
140
MTG PREPAY TYP
PSA

ERIS Swap Futures			
OUTRIGHT/Bullet Hedge (1 curve pnt)			
2yr	SELL 33	YITH24	
	OR		
3yr	SELL 22	YICH24	
	OR		
5yr	SELL 14	YIWH24	
	OR		
10yr	SELL 7	YIYH24	

ERIS Swap Futures			
Amortizing Swap (trade all)			
2yEris	SELL 4	YITH24	Hedge Adjust
3yEris	SELL 3	YICH24	0
4yEris	SELL 1	YIDH24	0
5yEris	SELL 3	YIWH24	0
7yEris	SELL 2	YIBH24	0
10yEris	SELL 2	YIYH24	0

Asset DV'01	\$	633
Asset DV'01 per \$1mm	\$	373.30

ERIS	
EXISTING HEDGE	Initial Margin Requirement
-4	-\$2,400
-3	-\$2,400
-1	-\$1,050
-3	-\$3,375
-2	-\$2,900
-2	-\$3,550
	-\$15,675
Margin % of Face:	-0.16%



# FHR 4586 EC MTGE – UST Future Hedge

FIRST PAYMENT Dt: 1/26/2024

FHR 4586 EC MTGE
MTG FACE AMT
\$ 10,000,000

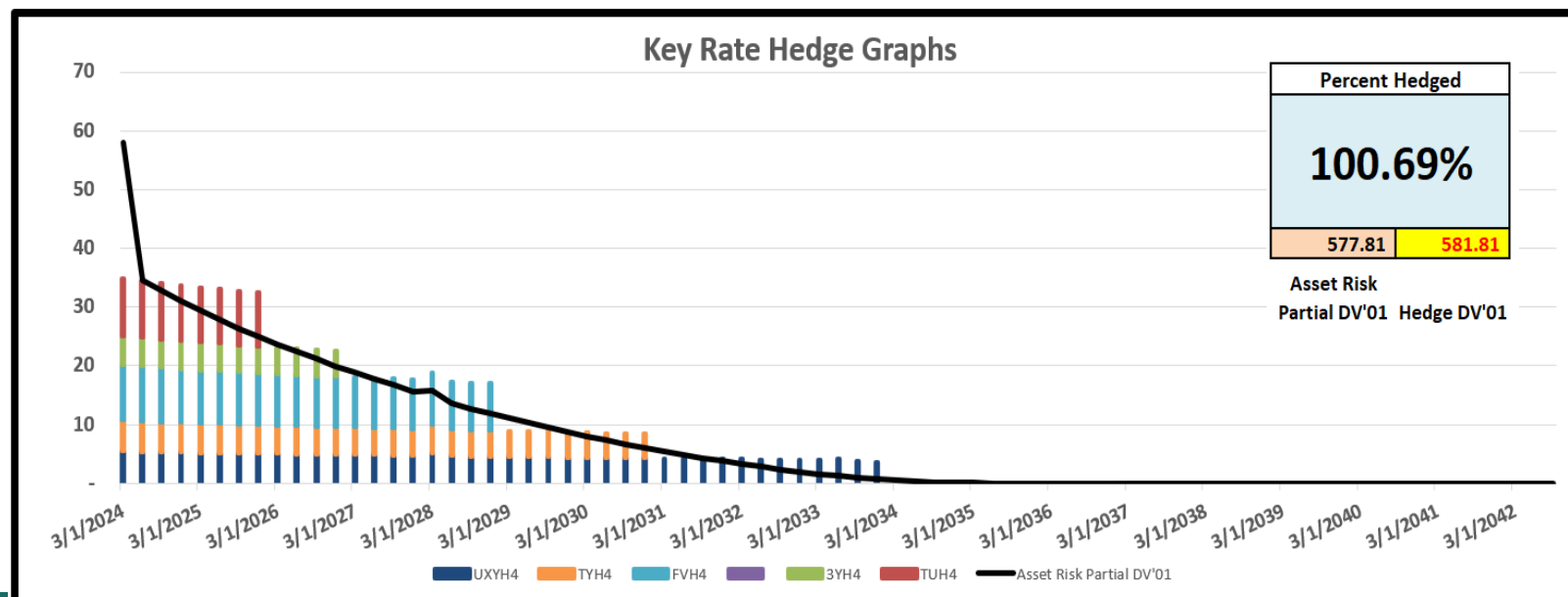
FHR 4586 EC MTGE
FHR 4586 EC MTGE
YLD CNV ASK
4.569
px ask
90.5227356
MTG EQV CPR
8.4
MTG PREPAY SPEED
140
MTG PREPAY TYP
PSA

Treasury Futures			
OUTRIGHT/Bullet Hedge (1 curve pnt)			
2yr	SELL 15	TUH4	
	OR		
3yr	SELL 10	3YH4	
	OR		
5yr	SELL 14	FVH4	
	OR		
10yr	SELL 6	UXYH4	

Treasury Futures				
Amortizing Swap (trade all)				Hedge Adjust
2yTreas	SELL 2	TUH4		0
3yTreas	SELL 1	3YH4		0
5yTreas	SELL 4	FVH4		0
7yTreas	SELL 2	TYH4		0
10yTreas	SELL 2	UXYH4		0

Asset DV'01 \$	578
Asset DV'01 per \$1mm \$	340.89

Treasury	
EXISTING HEDGE	Initial Margin Requirement
-2	-\$2,300
-1	-\$1,600
-4	-\$5,600
-2	-\$4,250
-2	-\$6,000
	-\$19,750
Margin % of Face:	-0.20%





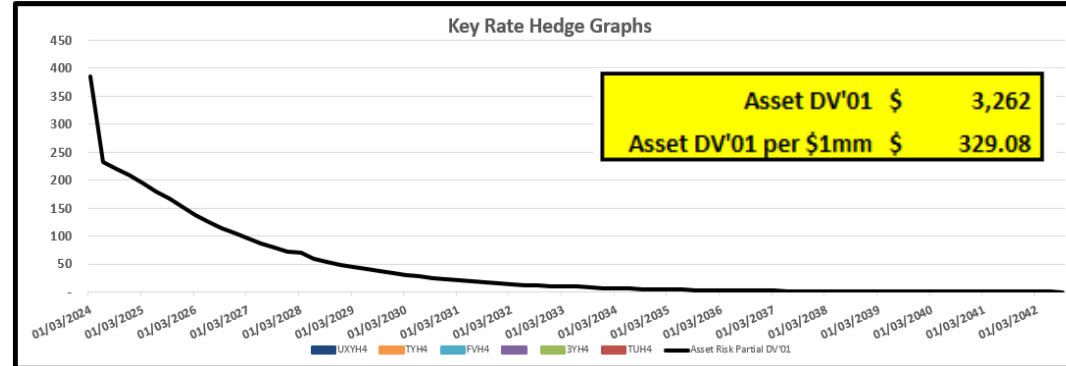
# Eris & US Treasury Future Markets

Ticker	Change o	Bid Sz	CTD Fwd YTM Bid	Bid	Ask Pric	CTD Fwd YTM Ask	Ask Sz	Last Tra	Volume
▼ 2yr Futures (4)									
YITH24	-.1175	1000		99.8950	99.9025		100	s99.8812	91
YICH24	-.1575	600		101.8100	101.8200		300	s101.7800	142
TUH4	- 03	1466	4.460259	102-18 <sup>3</sup> / <sub>4</sub>	102-18 <sup>7</sup> / <sub>8</sub>	4.457967	689	102-18 <sup>7</sup> / <sub>8</sub>	489,667
3YA	- 03 <sup>7</sup> / <sub>8</sub>	12	4.113921	104-29+	104-29 <sup>5</sup> / <sub>8</sub>	4.110973	16	104-29 <sup>5</sup> / <sub>8</sub>	6,540
▼ 5yr Futures (4)									
YIDH24	--	1300		103.5800	103.6200		800	s103.5450	11
YIWH24	-.1350	1900		102.3400	102.3700		150	102.3500	491
FVH4	- 04 <sup>1</sup> / <sub>4</sub>	1737	4.047475	107-22+	107-22 <sup>3</sup> / <sub>4</sub>	4.045576	929	107-22 <sup>3</sup> / <sub>4</sub>	933,965
▼ 7yr Futures (3)									
YIBH24	-.1900	800		103.2000	103.2600		800	s103.1600	124
TYH4	- 06	2395	4.089492	111-04	111-04+	4.086992	3464	111-04	1,394,944
▼ 10y Futures (3)									
YIYH24	-.1800	1000		104.1400	104.2000		150	s104.0700	985
UXYH4	- 06	907	4.131655	115-06	115-06+	4.129912	320	115-06	367,192
▼ 20-30y Futs (3)									
TWEH4	--		4.504891			4.504891		s125-16c	
USH4	- 02	510	4.321930	119-24	119-25	4.319574	973	119-24	306,204
WNH4	- 01	278	4.542401	125-20	125-21	4.540888	374	125-20	187,686

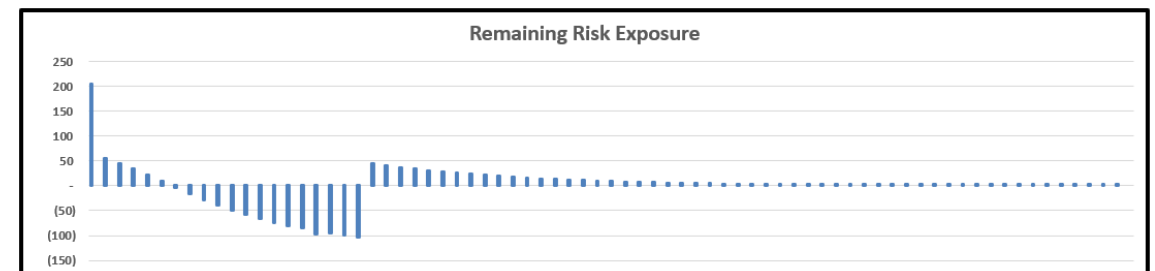
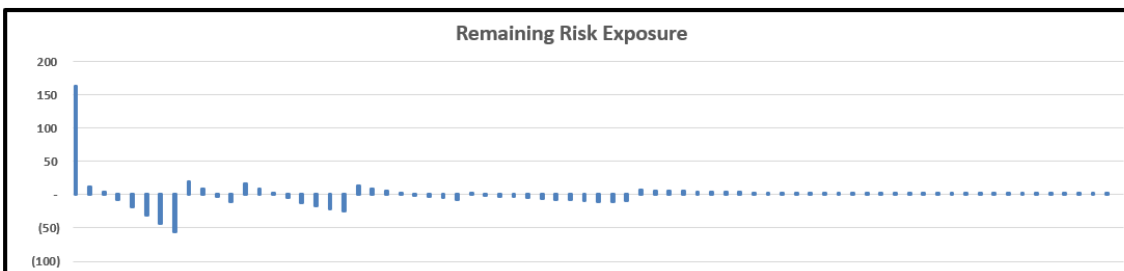
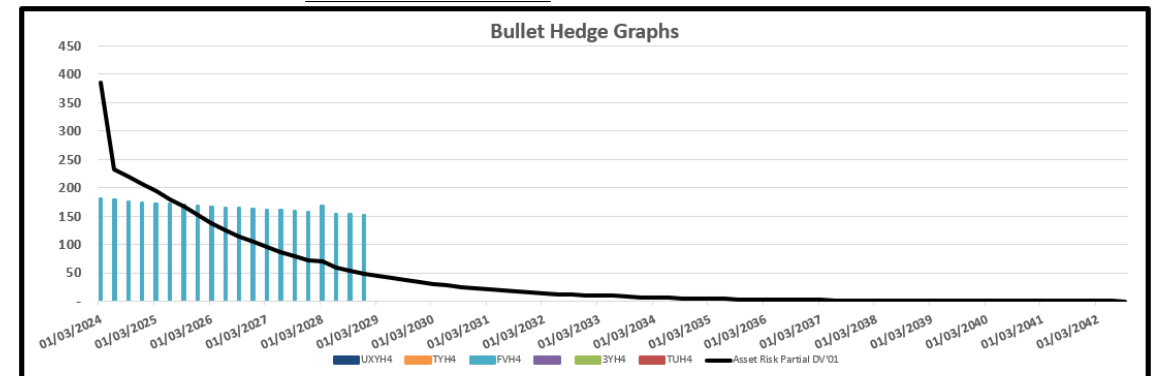
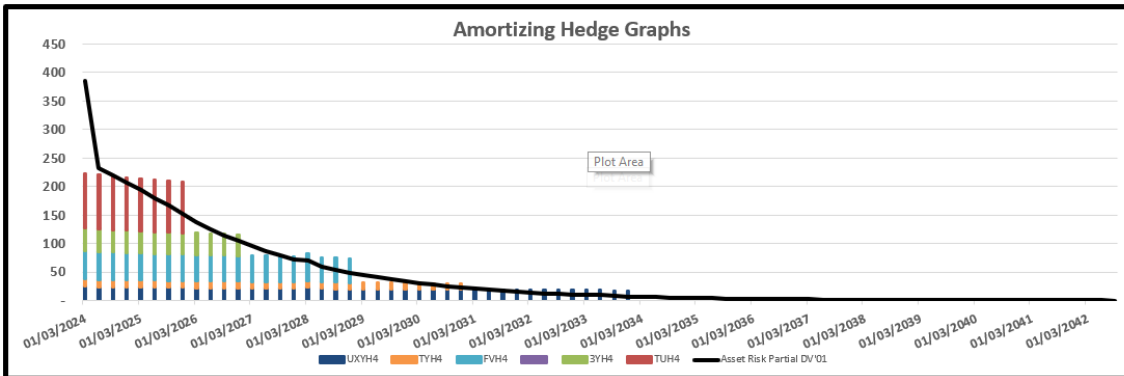


# Hedging UMBS (\$10mm FNCL 6.5 02/24)

Treasury Futures		
Amortizing Swap (trade all)		
2yTreas	SELL 19	TUH4
3yTreas	SELL 8	3YH4
5yTreas	SELL 21	FVH4
7yTreas	SELL 5	TYH4
10yTreas	SELL 9	UXYH4



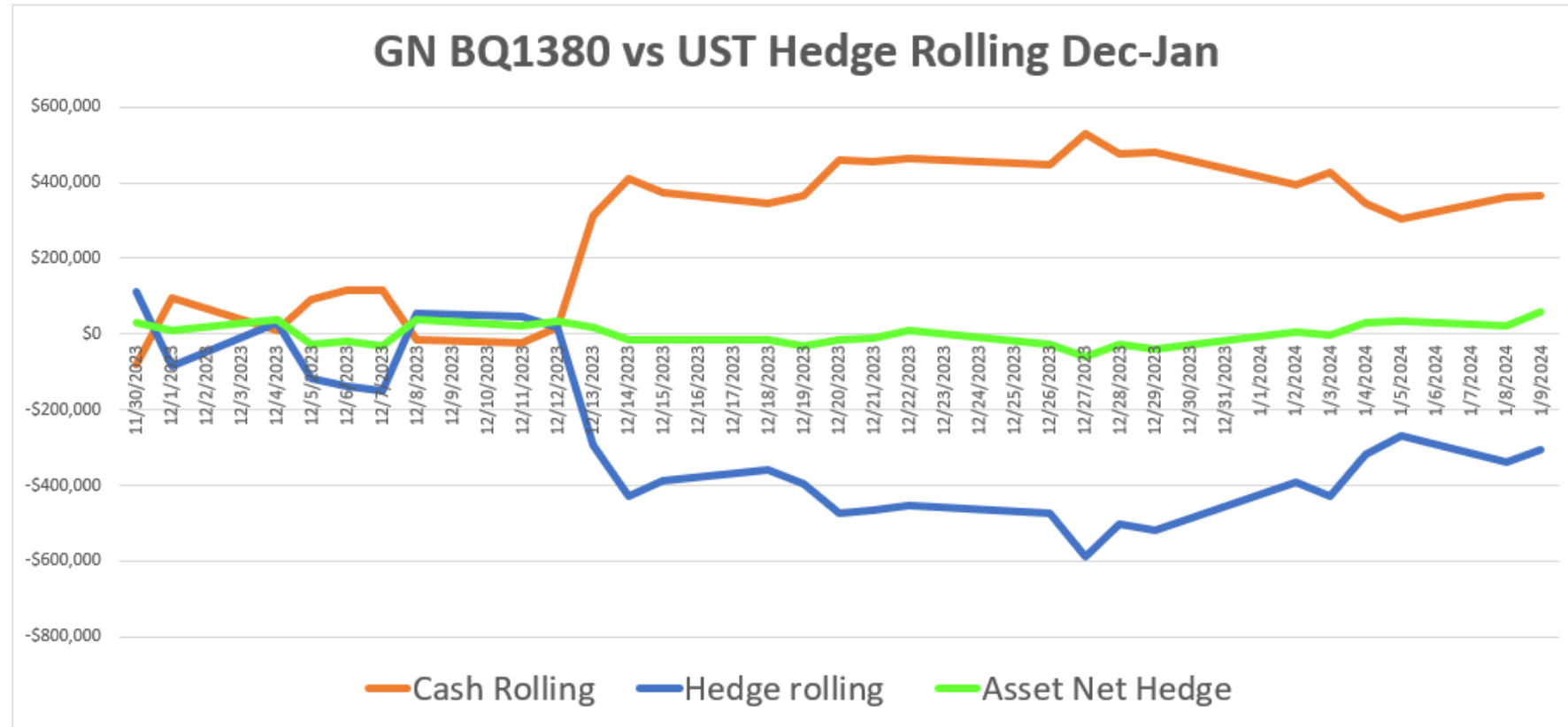
Treasury Futures		
OUTRIGHT/Bullet Hedge (1 curve pnt)		
2yr	SELL 87	TUH4
	OR	
3yr	SELL 58	3YH4
	OR	
5yr	SELL 76	FVH4
	OR	
10yr	SELL 36	UXYH4



# Hedging Ginnie Project Loan (CMBS)

## GN BQ1380 - \$50mm Original Amount

Treasury Futures		
Amortizing Swap (trade all)		
2yTreas	SELL 62	TUH4
3yTreas	SELL 0	3YH4
5yTreas	SELL 88	FVH4
7yTreas	SELL 80	TYH4
10yTreas	SELL 16	UXYH4



# THANK YOU!! Any Questions?

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