Developing an Appropriate Investment Program for a Steep Yield Curve Environment

Federal Home Loan Bank Seattle
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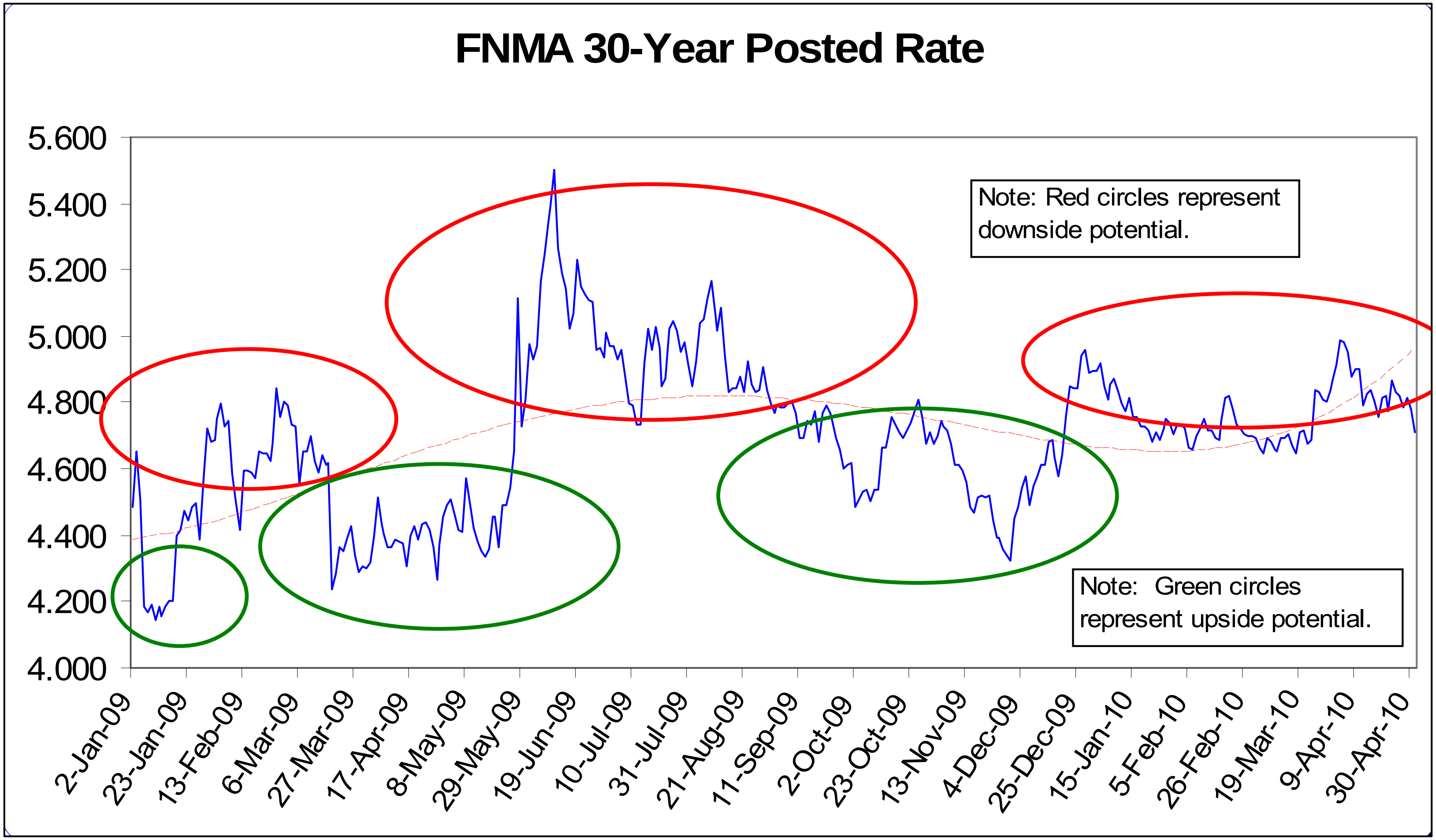
Interest Rate Risk (IRR)

Rising Interest Rate Risk ("IRR")

Low interest rates in recent periods and the impending rise in interest rates have pushed exposure to interest rate risk (IRR) to the forefront of regulatory agency concerns.

- The January 2010 release of the FFIEC *Advisory on Interest Rate Risk Management:*
  - Intended to raise awareness of the regulatory agencies' concern
  - Reiterates importance of effective corporate governance, policies and procedures, risk measuring and monitoring systems, stress testing, and internal controls related to the IRR exposures of depository institutions
  - Not only focuses on identifying and measuring IRR, but also on taking action to control IRR
- Plans must be in place to deal with the overall effect of rising interest rates on the balance sheet.

Looming Risk Of Rising Rates



Renewed Focus On Liquidity & Funding

Excerpt from the March 17, 2010 press release in connection with the Joint Interagency *Policy Statement on Funding and Liquidity Risk Management:*

"Given the recent market turmoil, the agencies are reiterating the importance of effective liquidity risk management for the safety and soundness of financial institutions. This policy statement emphasizes the importance of cash flow projections, ***diversified funding sources*** (emphasis added), stress testing, ***a cushion of liquid assets*** (emphasis added), and a formal, well-developed contingency funding plan as primary tools for measuring and managing liquidity risk. The agencies expect each financial institution to manage funding and liquidity risk using processes and systems that are commensurate with the institution's complexity, risk profile, and scope of operations."

Impact on Institutions

Balance Sheet

- Loan management focus shifts
  - Return to vanilla lending
  - Decline in new originations
  - Disruptions in the secondary market – puts pressure on liquidity
- Changing loan portfolios
  - Credit issues become “priority one” due to property devaluations and through-the-roof delinquencies, defaults, and foreclosures
  - Adjustable-rate loan production reaches record lows
  - Consumer demand primarily for long-term fixed rate
  - Trend to increasing volatility and extension

Income

- Falling portfolio yields
  - New low-coupon originations
  - Downward ARM re-pricings
- Unsustainable margin levels due to artificially low cost-of-funds
- Historically high credit losses on all loan types
- Rising cost to service due to increased collection efforts and mandated modification programs
- Re-capitalization of FDIC insurance fund

Capital

- Anemic earnings
- Property devaluations
- Growth in non-performing assets
  - Exotic and non-standard loan types
  - Defaults triggered by ARM roll payment shock
  - HELOC & Second Liens
  - CRE
- Escalating credit losses
- Capital erosion
- Limited and expensive sources of outside capital

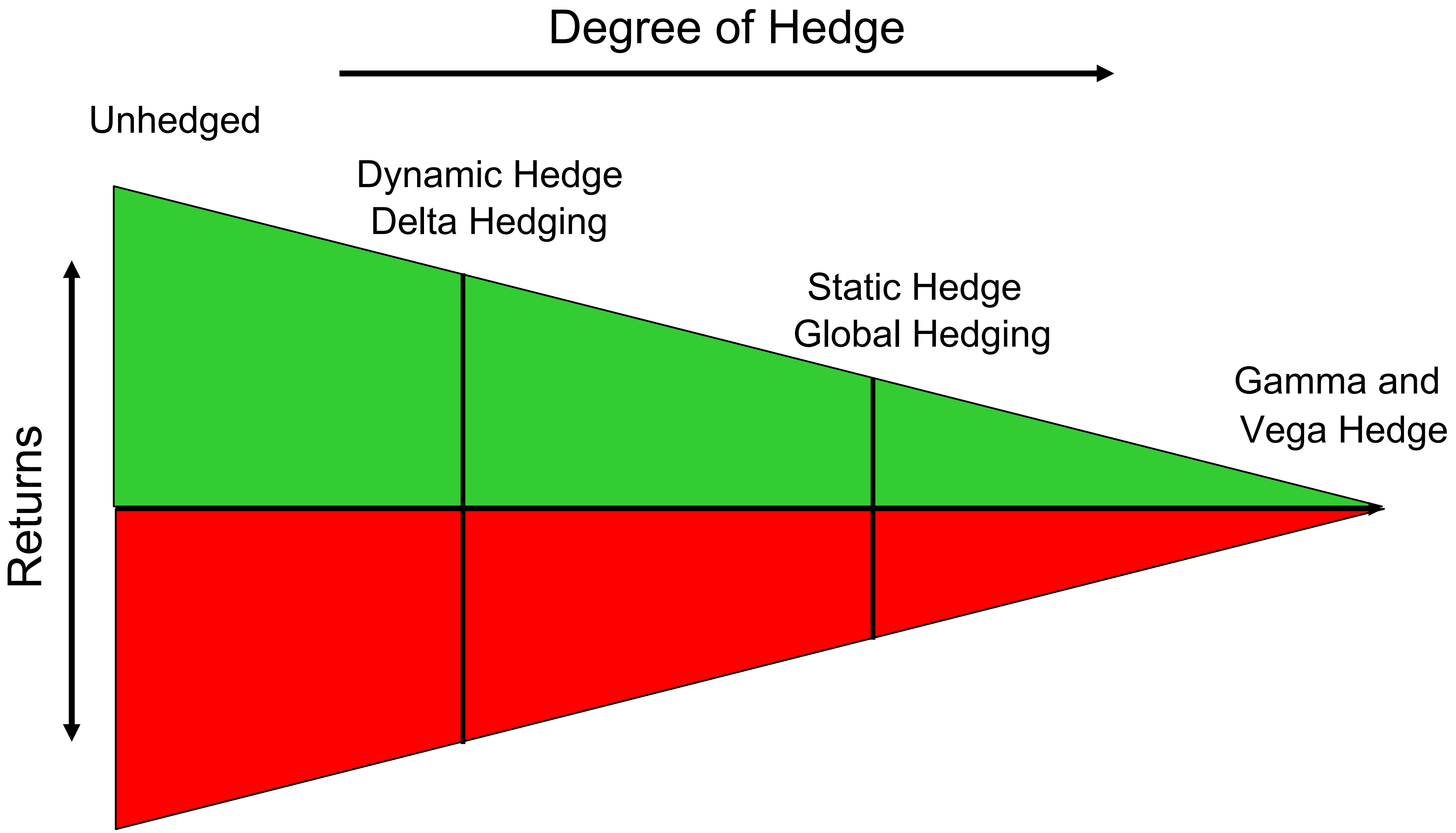
Impact on Origination Game Plan

- Vanilla lending is back to stay
- Decline in originations (fewer eligible loans)
- Continued erosion in liquidity
- Stronger credit management focus
- Trend towards a higher risk loan portfolio
  - More extension risk
  - Decline in yield
  - Likely decline in value
  - Rising cost to service loans
  - Growth in NPA

Loan Portfolio Tactics in 2010

- Proactive balance sheet management
  - Better understanding of the current and future economic performance of the loan portfolio
  - Utilize “all” fixed-income investments (loans as well as bonds)
- Heightened focus on credit management
  - Layered risk trends
  - Property value trends
- Ensure a balanced portfolio for the future
  - Appropriate adjustments to the loan portfolio policy
  - Appropriate re-balancing of existing portfolio

Return Variance Under Different Hedging Strategies



Solutions

Determine Strategic Options

- Identify problematic segments of your portfolio
- Evaluate multiple strategic solutions
- Simulate each solution via financial modeling
- Evaluate alternatives
- Implement best strategy or combination of strategies

Strategy Menu Overview

BALANCE SHEET MANAGEMENT STRATEGIES

Objective: Interest Rate Risk Reduction
Shorten and/or Dilute Duration

BALANCE SHEET

ASSETS

Maturity	Short	Mid	Long
Yield	Adj.		Fixed
Risk	Low	Mid	High

LIABILITIES

Term	Long	Mid	Short
Cost	Fixed		Adj.
Risk	Low	Mid	High

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LIABILITIES

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- **Asset Strategy:**
  - Sell longer duration loans and buy shorter term securities
  - Swap fixed yield loans for variable yield loans

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BALANCE SHEET

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LIABILITIES

Term	Long **Increase**	Mid	Short **Reduce**
Cost	Fixed **Increase**		Adj. **Reduce**
Risk	Low	Mid	High

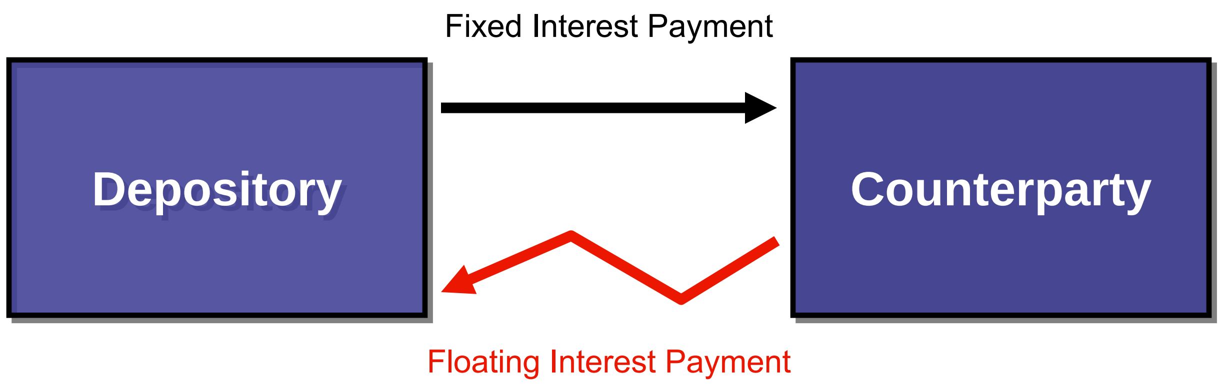
- **Asset Strategy:**
  - Sell longer duration loans and buy shorter term securities
  - Swap fixed yield loans for variable yield loans
- **Liability Strategy:**
  - Swap variable cost for fixed cost
  - Purchase interest rate cap

“Plain Vanilla” Products

- Interest rate swaps
  - Spot / forward starts
  - Bullet / amortizing
  - Cash settle swaps / swaptions
- Interest rate options
  - Caps
  - Floors
  - Collars / corridors
- Active indices
  - Treasury
  - LIBOR
  - Prime
  - Fed Funds

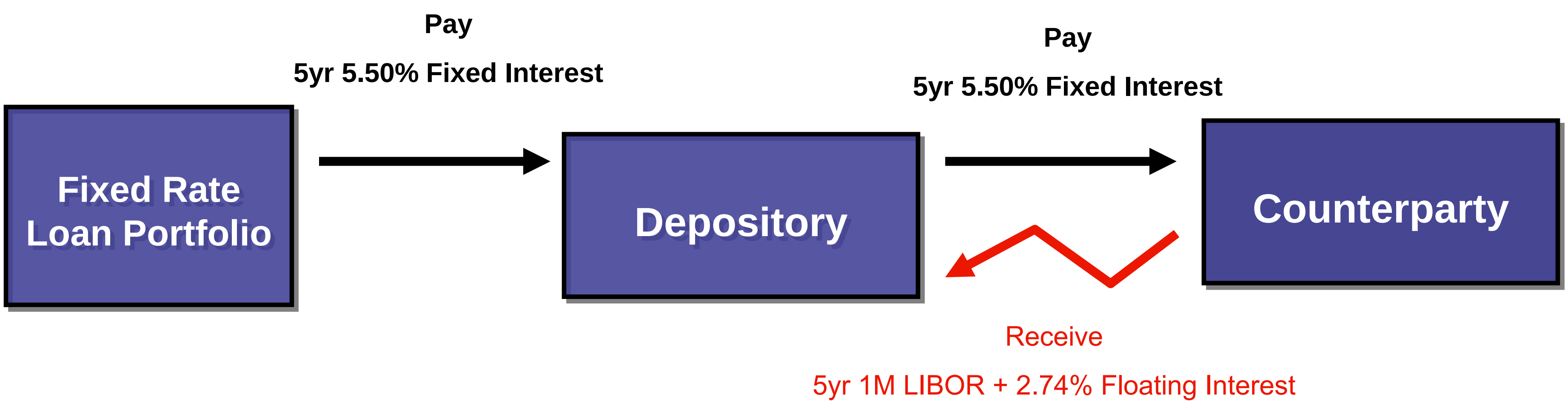
Interest Rate Swap

- An exchange of floating-for-fixed or fixed-for-floating interest payments between two parties
- There is no exchange of principal
- There is no up-front cost
- Swaps allow for depositories to shift interest rate exposure



Hedging Fixed Rate Assets

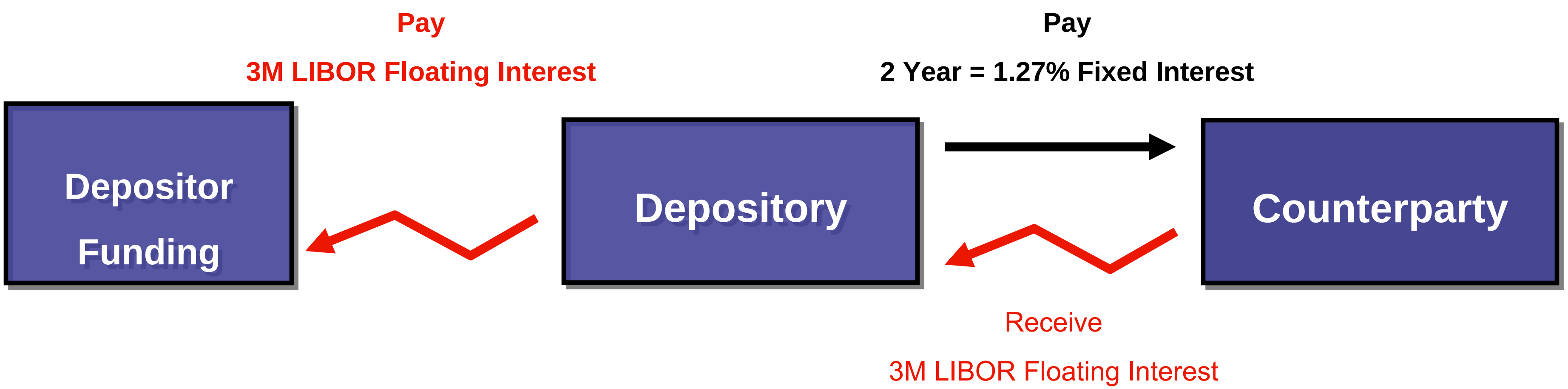
- Converts fixed-rate exposure to floating-rate position
- Asset yields will rise as interest rates rise
- Prospects: fixed-rate securities, fixed-rate mortgage loans, and fixed-rate commercial loans



Note: Classified as a Fair Value hedge

Hedging Adjustable Rate Liabilities

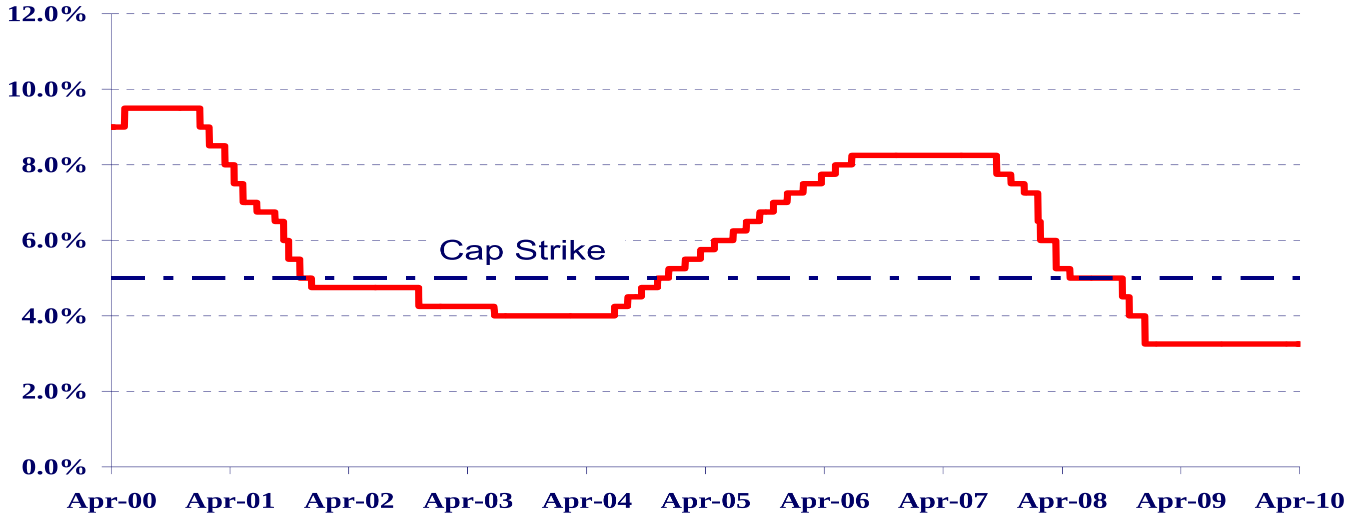
- Converts adjustable-rate exposure to long-term fixed-rate position
- Hedges depository's cost to rising rates
- Swap gains in value as interest rates rise
- Prospects: indexed adjustable rate deposits



Note: Classified as a Cash Flow hedge

Products And Strategies

Interest Rate Caps



<u>Highlights:</u>

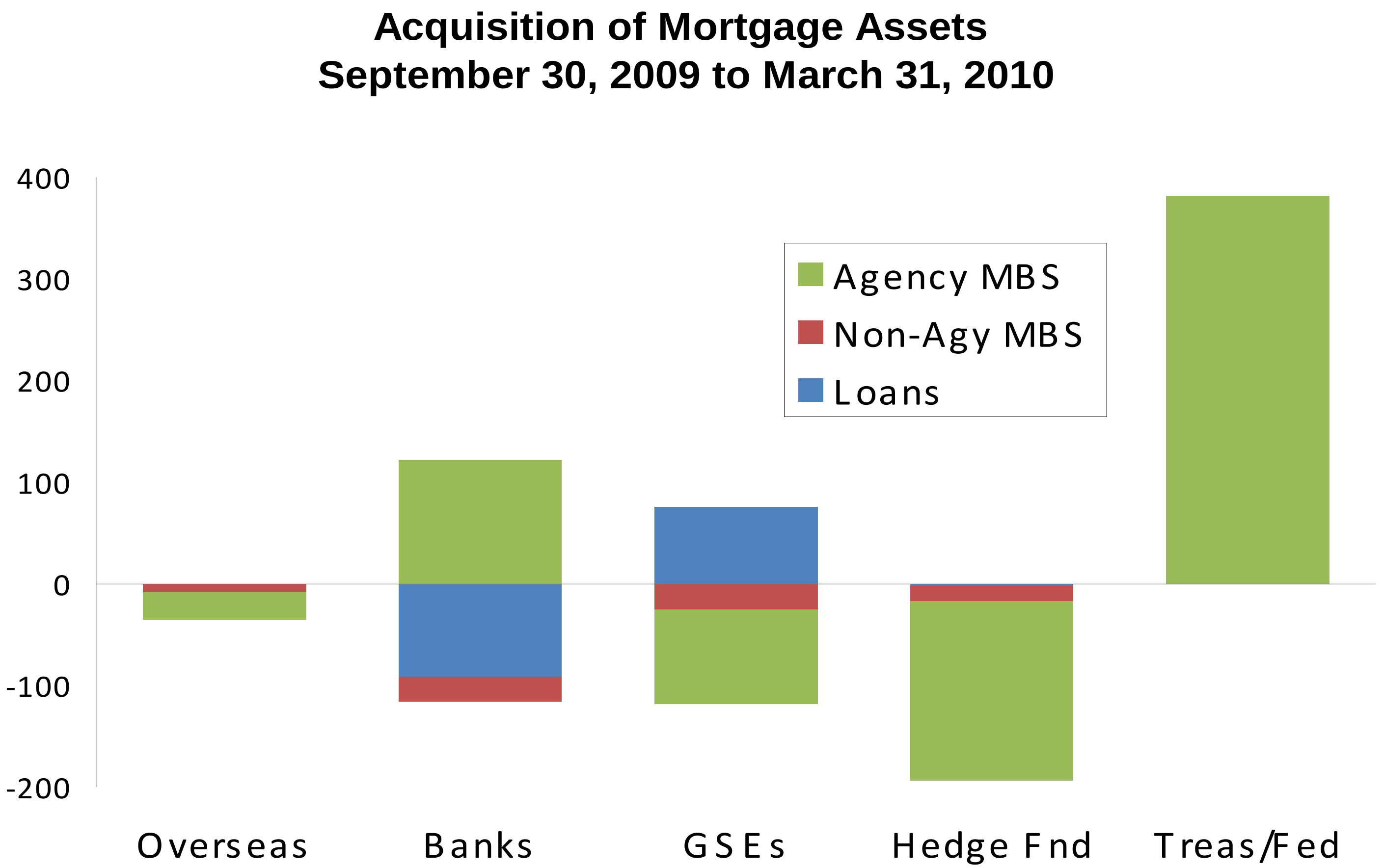
- Caps can be used as insurance against rising rates
- Bank sets a cap strike rate based on an index
- If rates rise above the strike interest income will accrue to the bank
- The cap becomes more valuable as rates rise and can be realized
- Candidates: liability sensitive institutions or banks with fixed rate assets

* Stand alone derivative that would be accounted for similar to a prepaid asset. Initial outlay to be amortized over life of cap. Thought of as an insurance policy against rising rates.

Strategy Menu Analysis

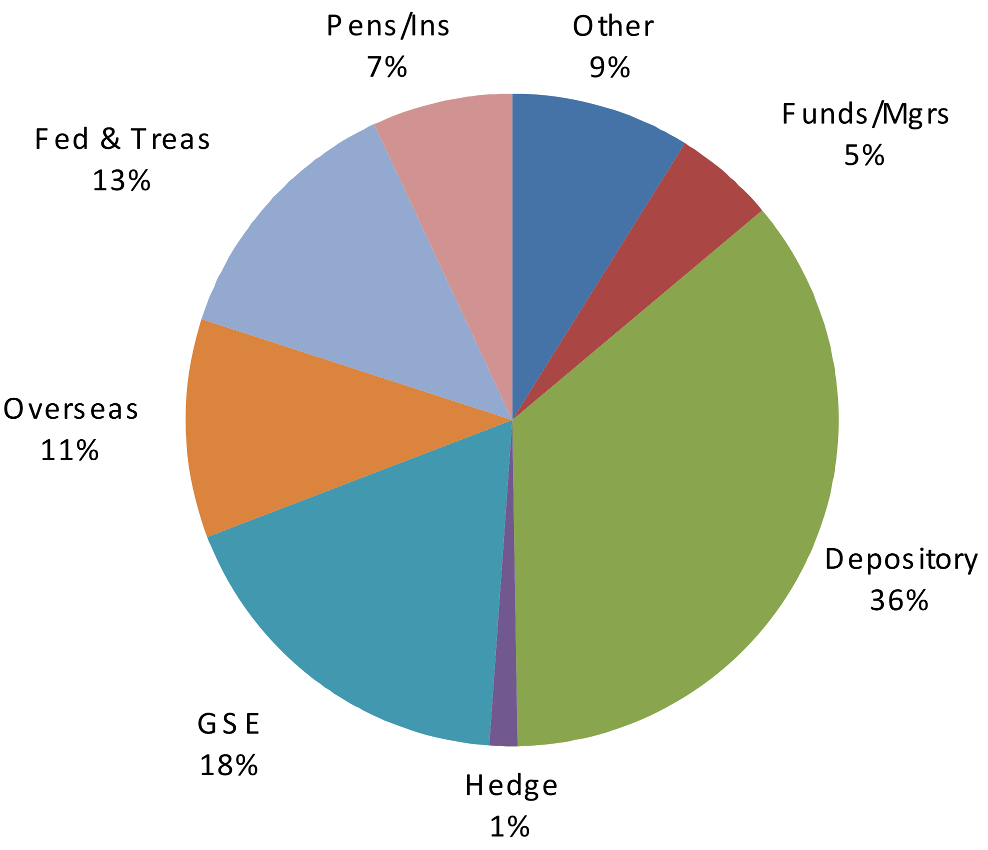
- Negotiated agency securitizations
  - Prime-quality long / low loans
  - Typically price at a premium
- Private market whole loan sales
  - Prime-credit “non-agency eligible” seasoned loans
  - Originated to be held in portfolio
  - Typically price at breakeven
- Private market whole loan purchases
  - Low risk, prime credit whole loans
  - Premium yields compared to bonds
- Balance sheet management hedges *(“Plain Vanilla Products”)*
  - Convert fixed loans to floating rate
  - Extend duration of short term liabilities

Banks Own a Lot of Mortgage Assets

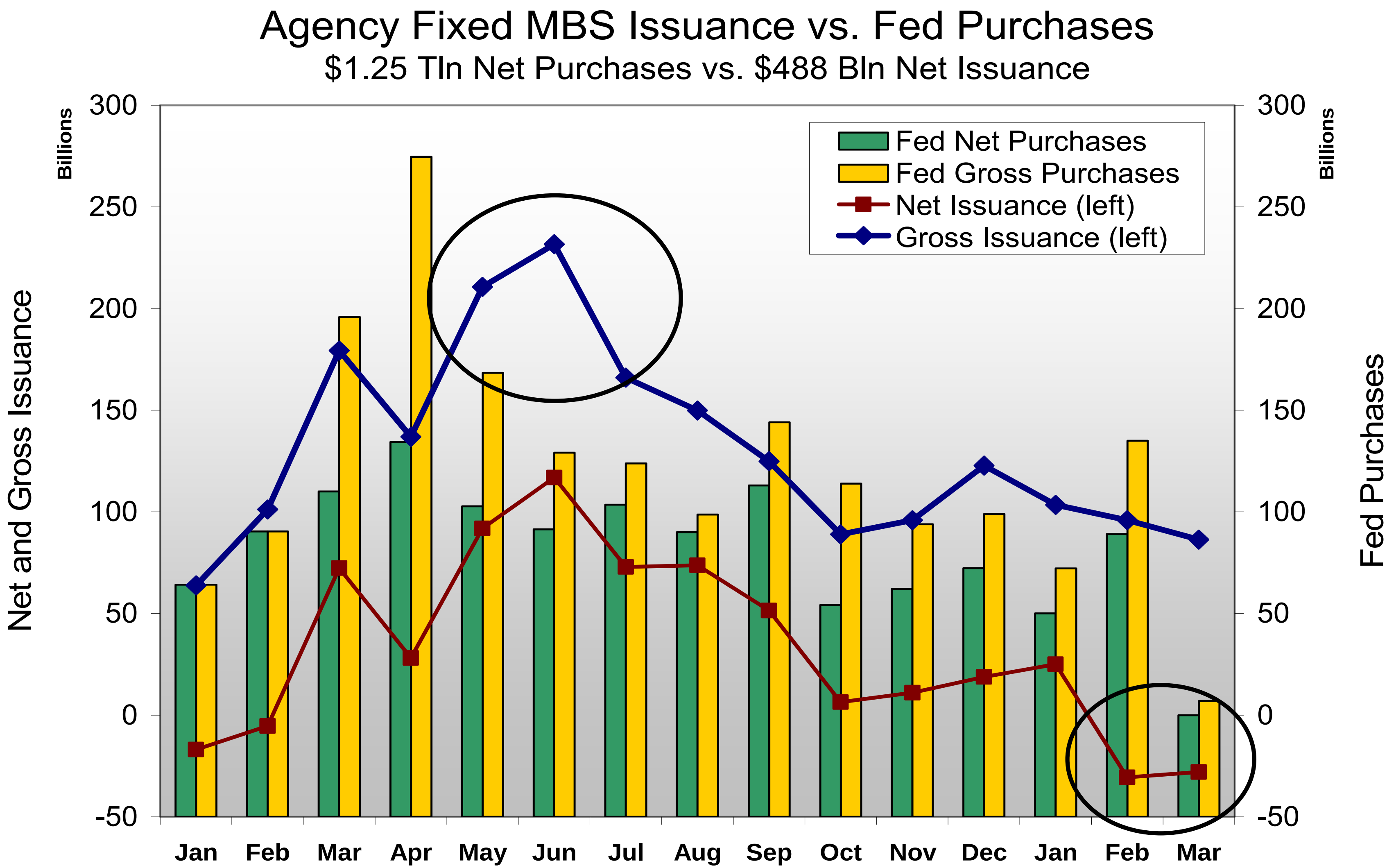


Banks Own a Lot of Mortgage Assets

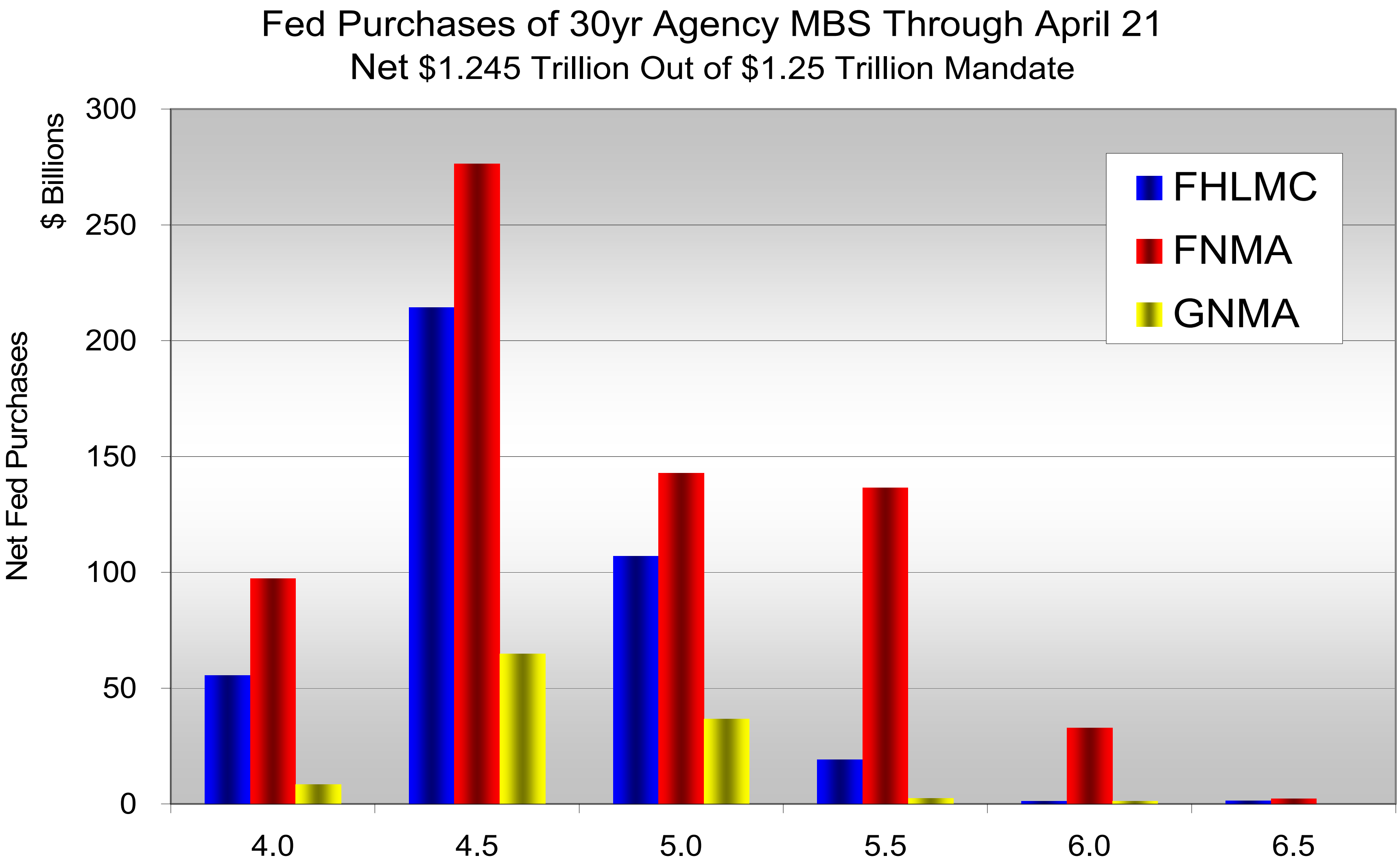
Share of Single Family Mortgage Funding as of March, 2010 ($9.7 Trillion)



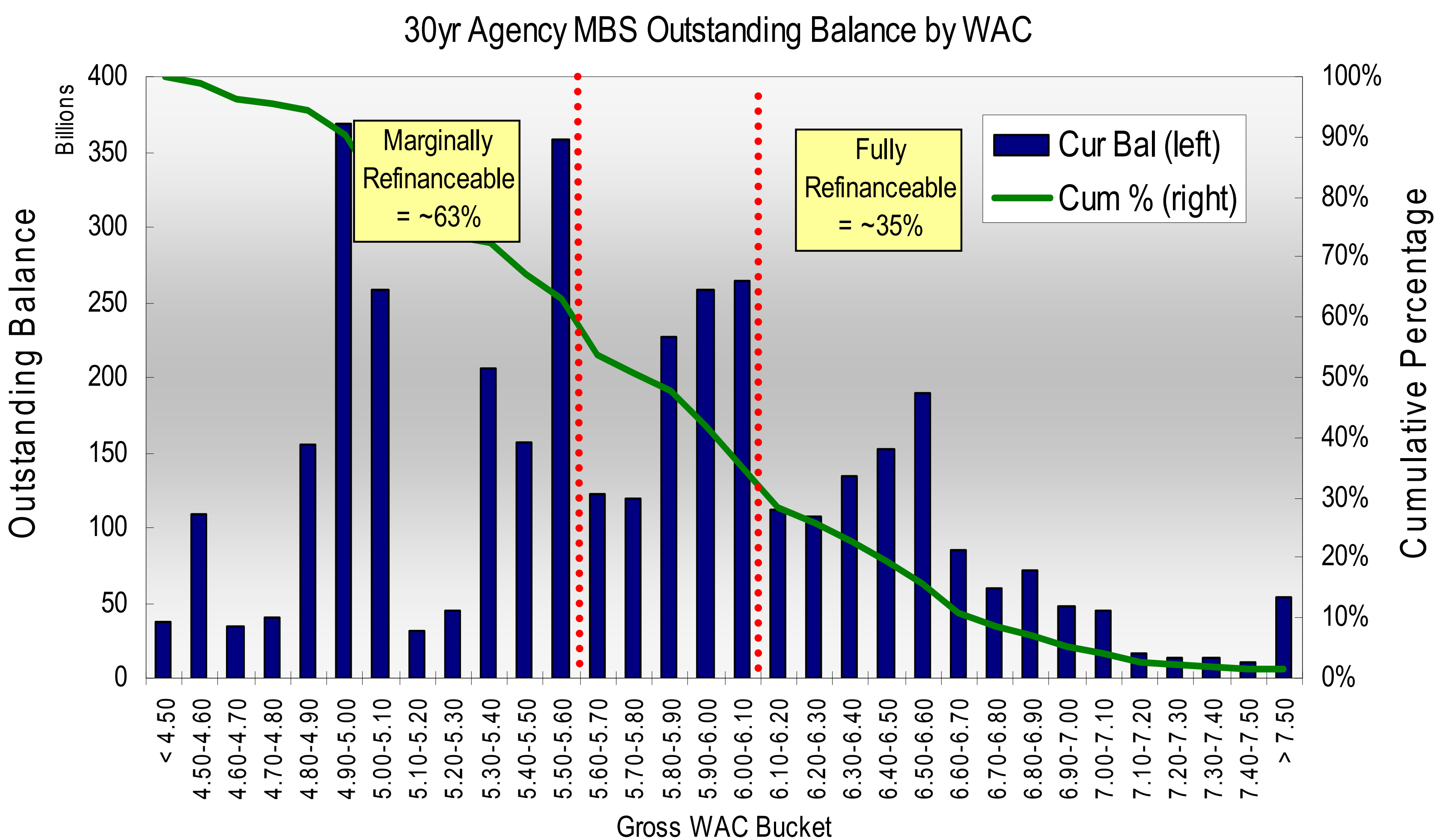
Net MBS Supply Will Likely Be Flat in 2010



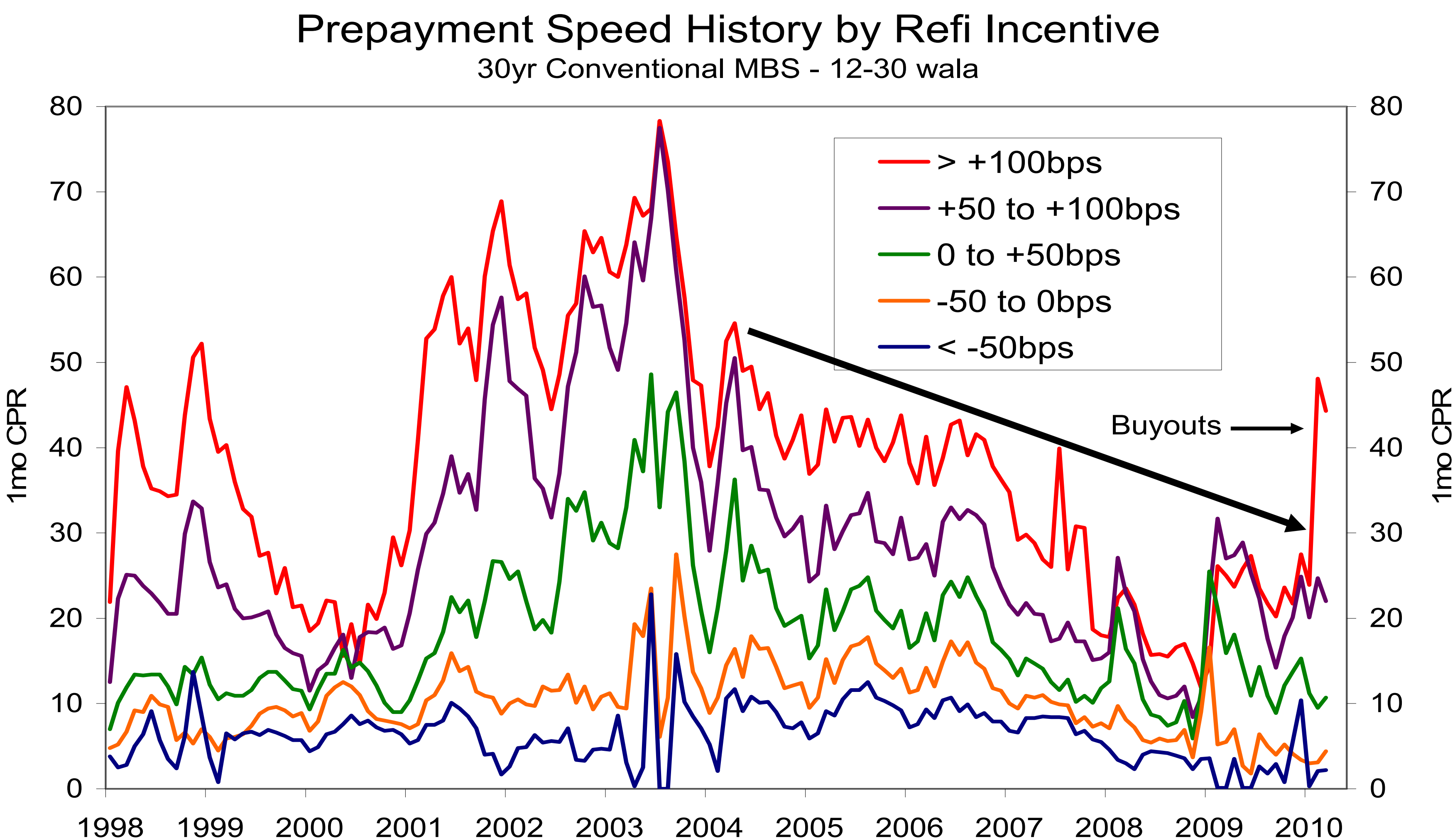
The Fed Owns Most of the 4.5 Float



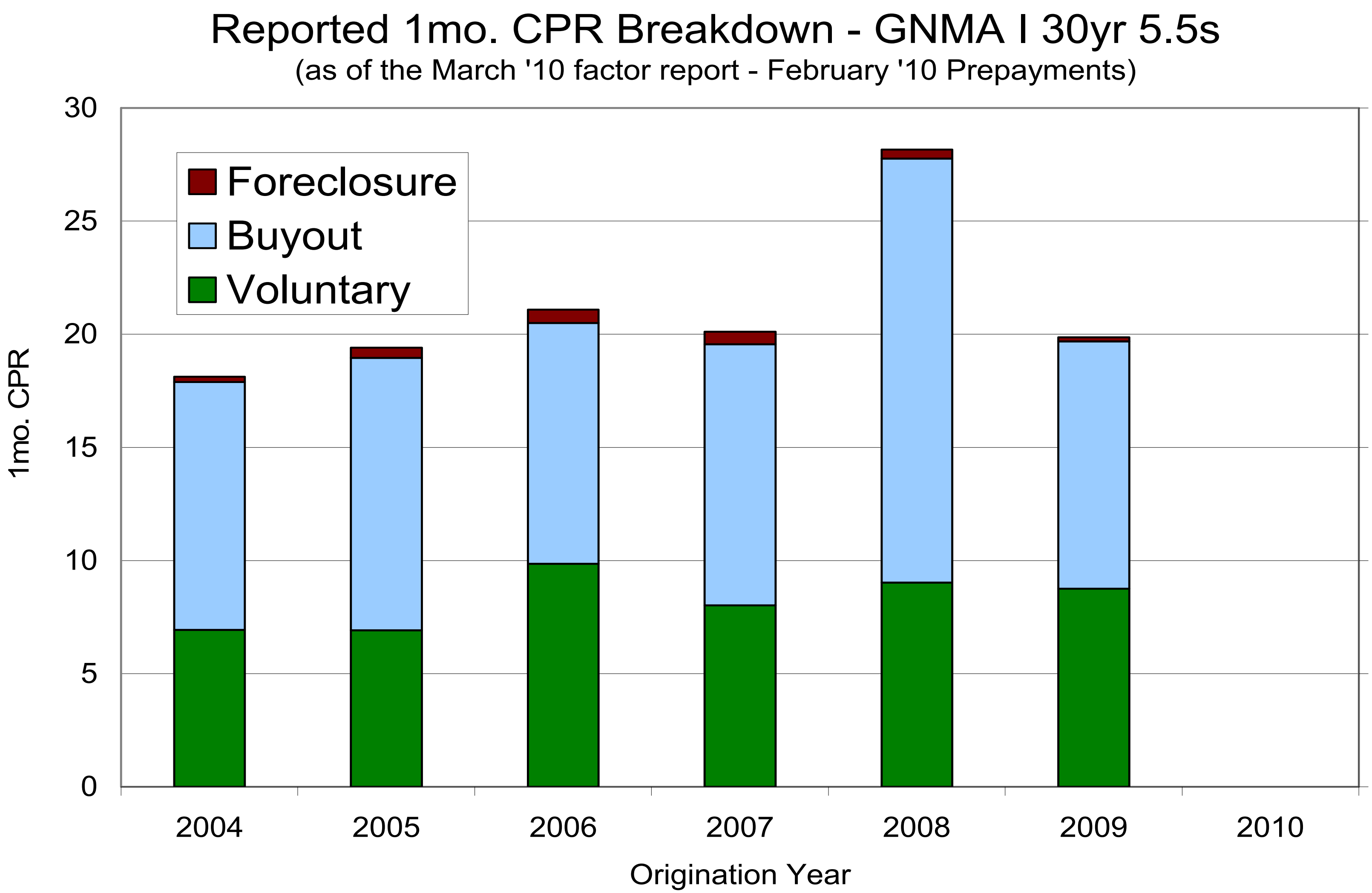
MBS Market "Out of the Money"



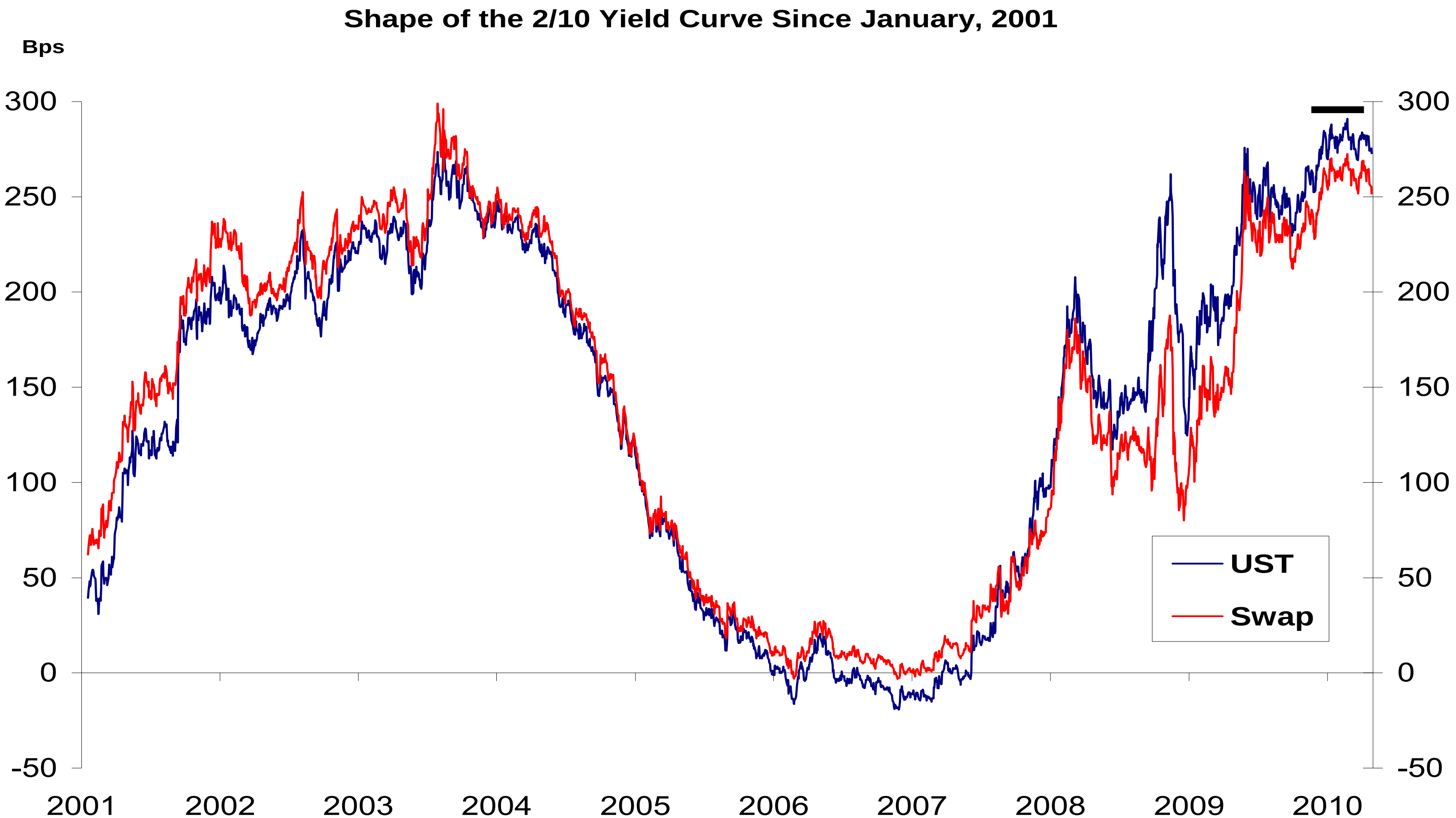
General Trend is For Slower Speeds



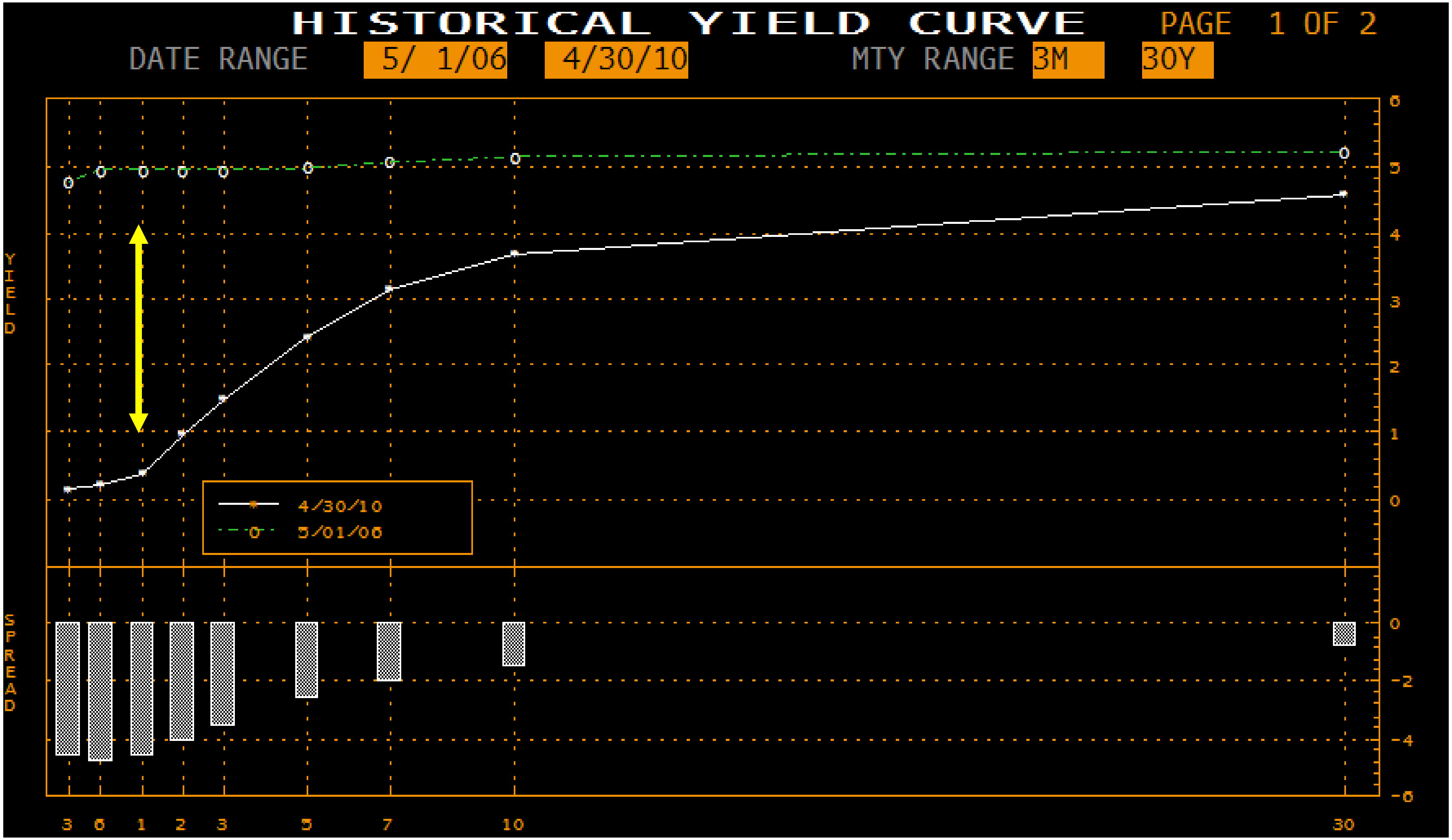
Buyouts Still an Issue for GNMA MBS



Historically a Very Steep Yield Curve

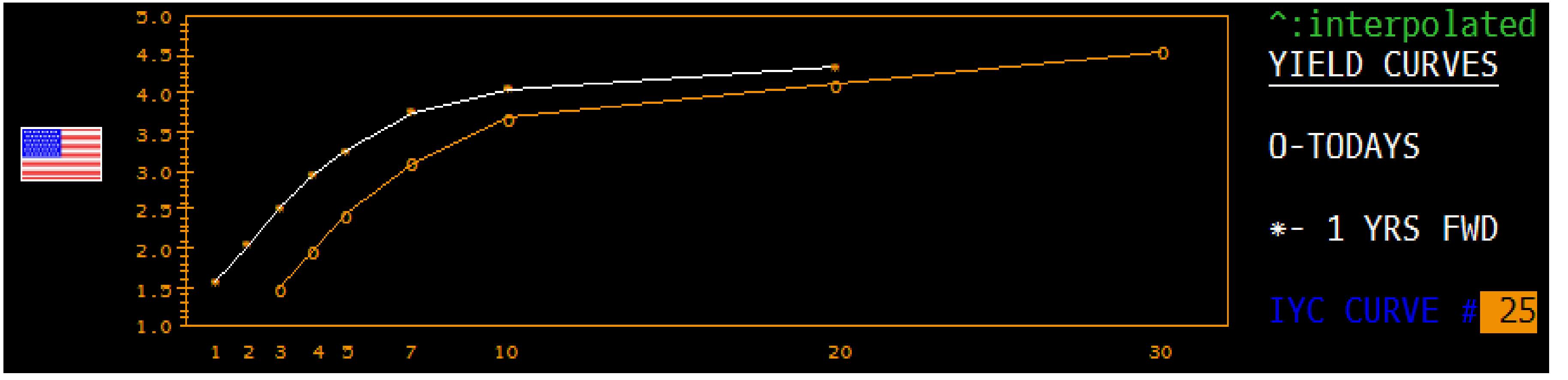


UST Curve Compared to 4 Years Ago

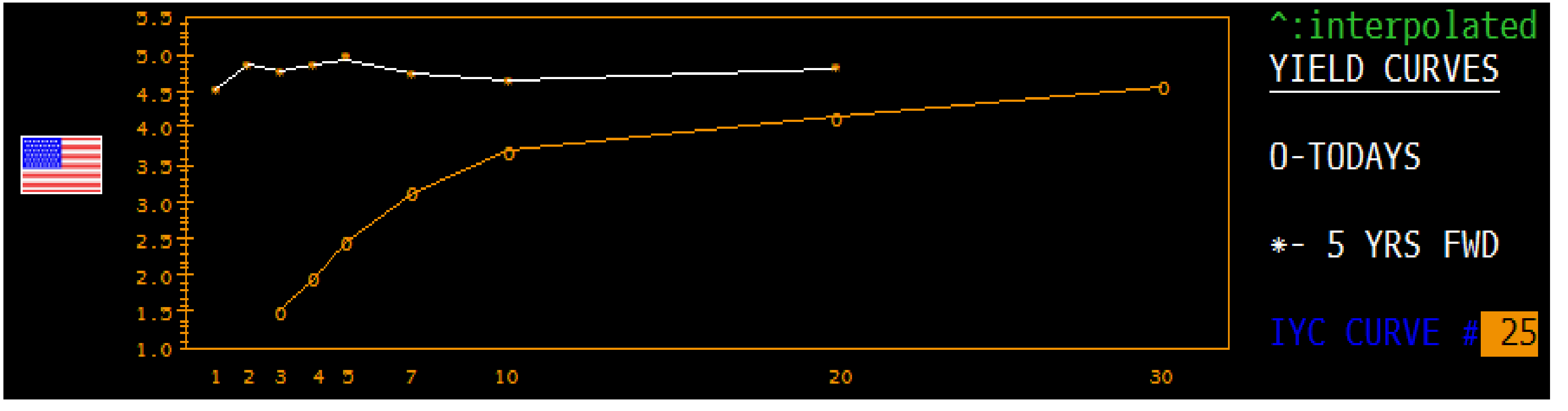


Forwards Point to a Higher/Flatter Curve

One Year Forward

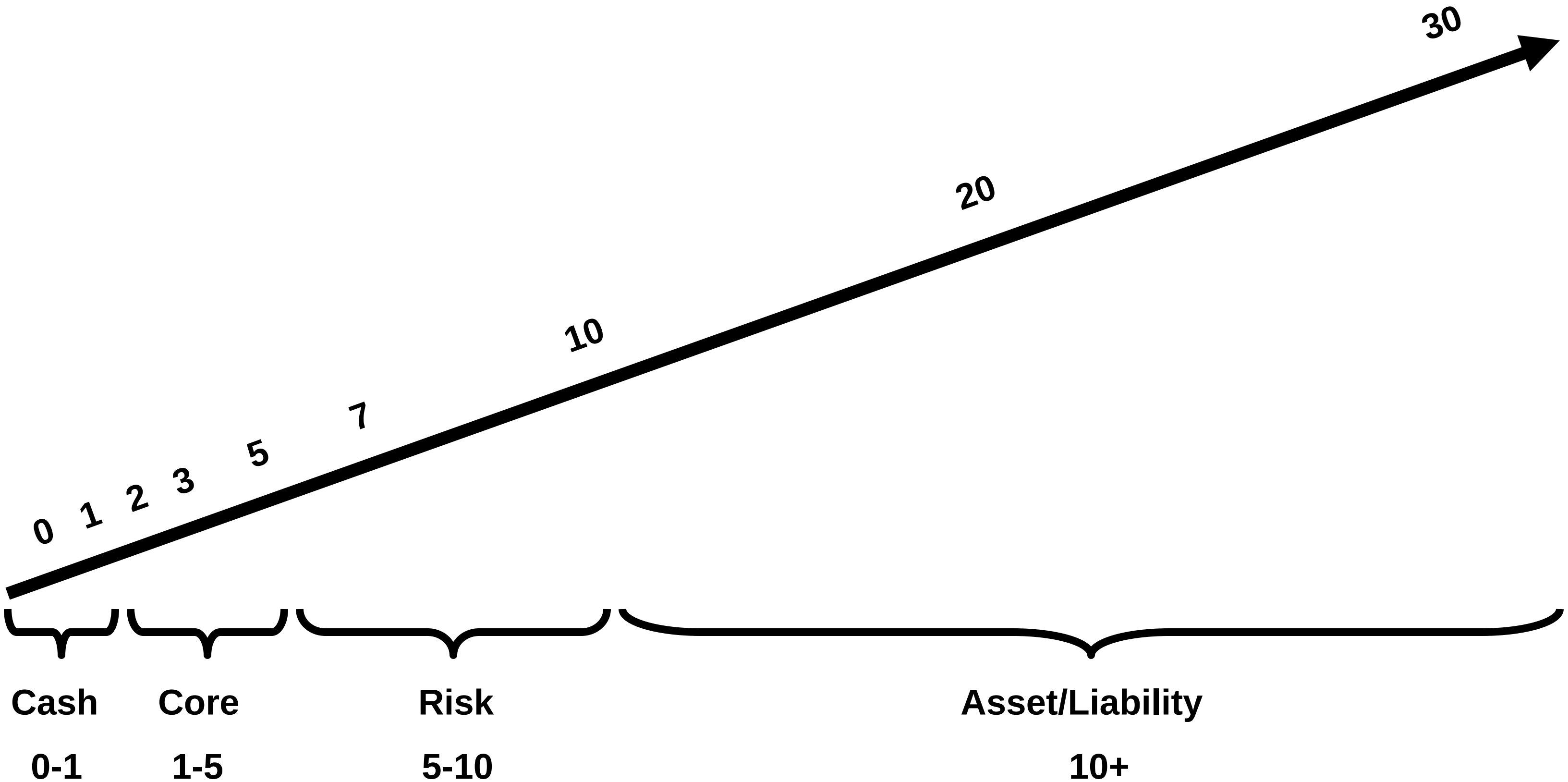


Five Years Forward

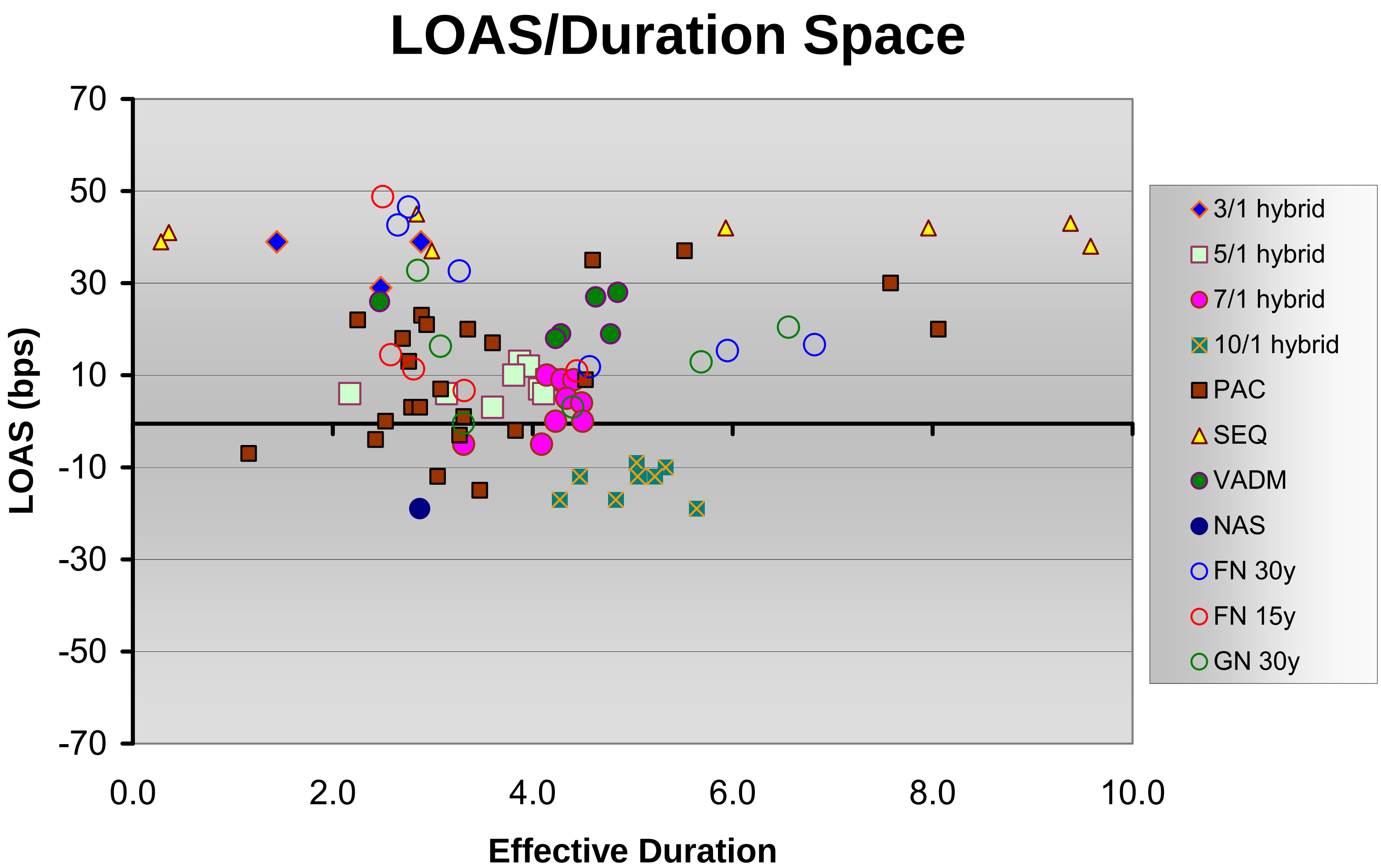


Depository Investing and the Curve

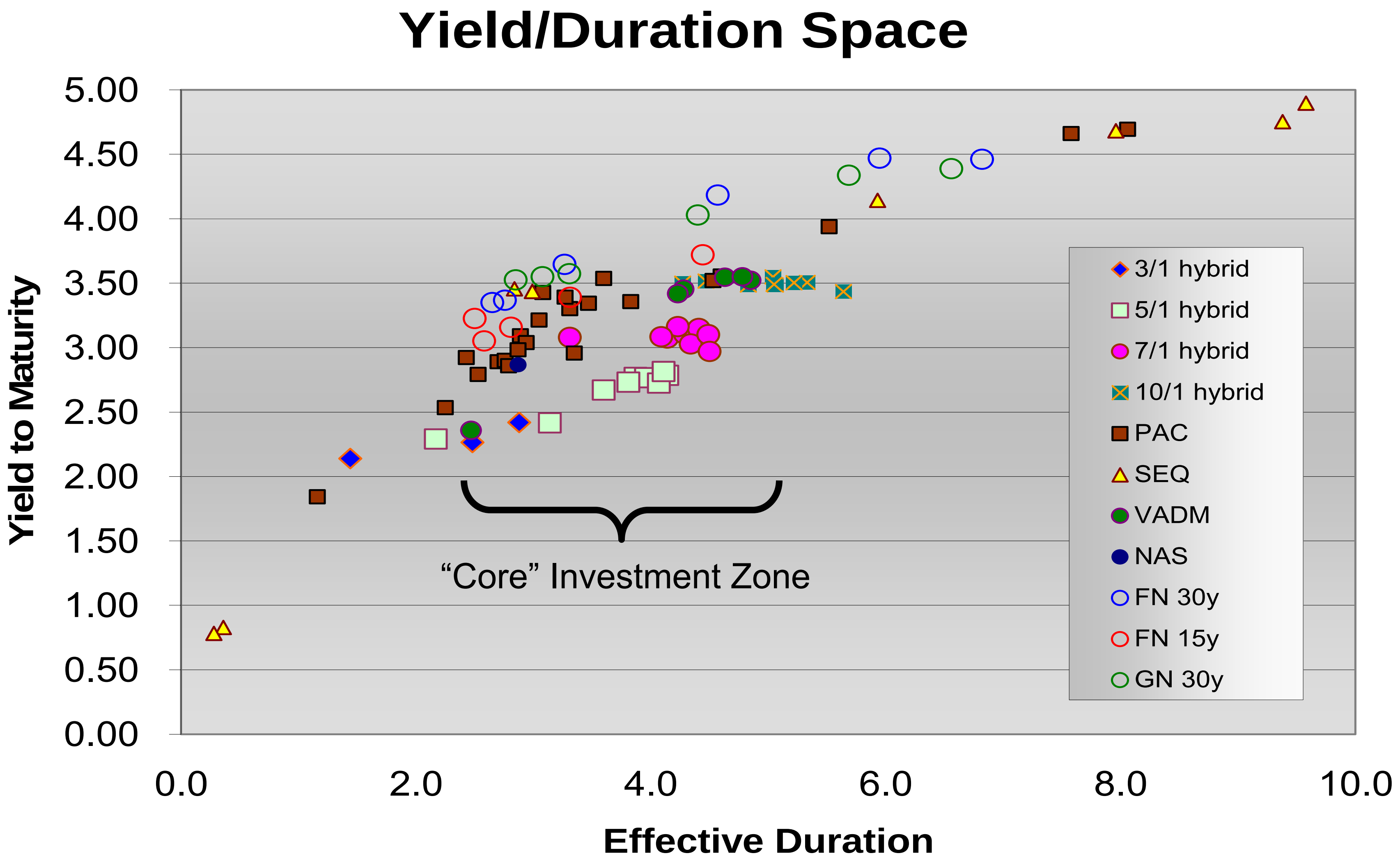
One Year Forward



How a Money Mgr Looks at the World

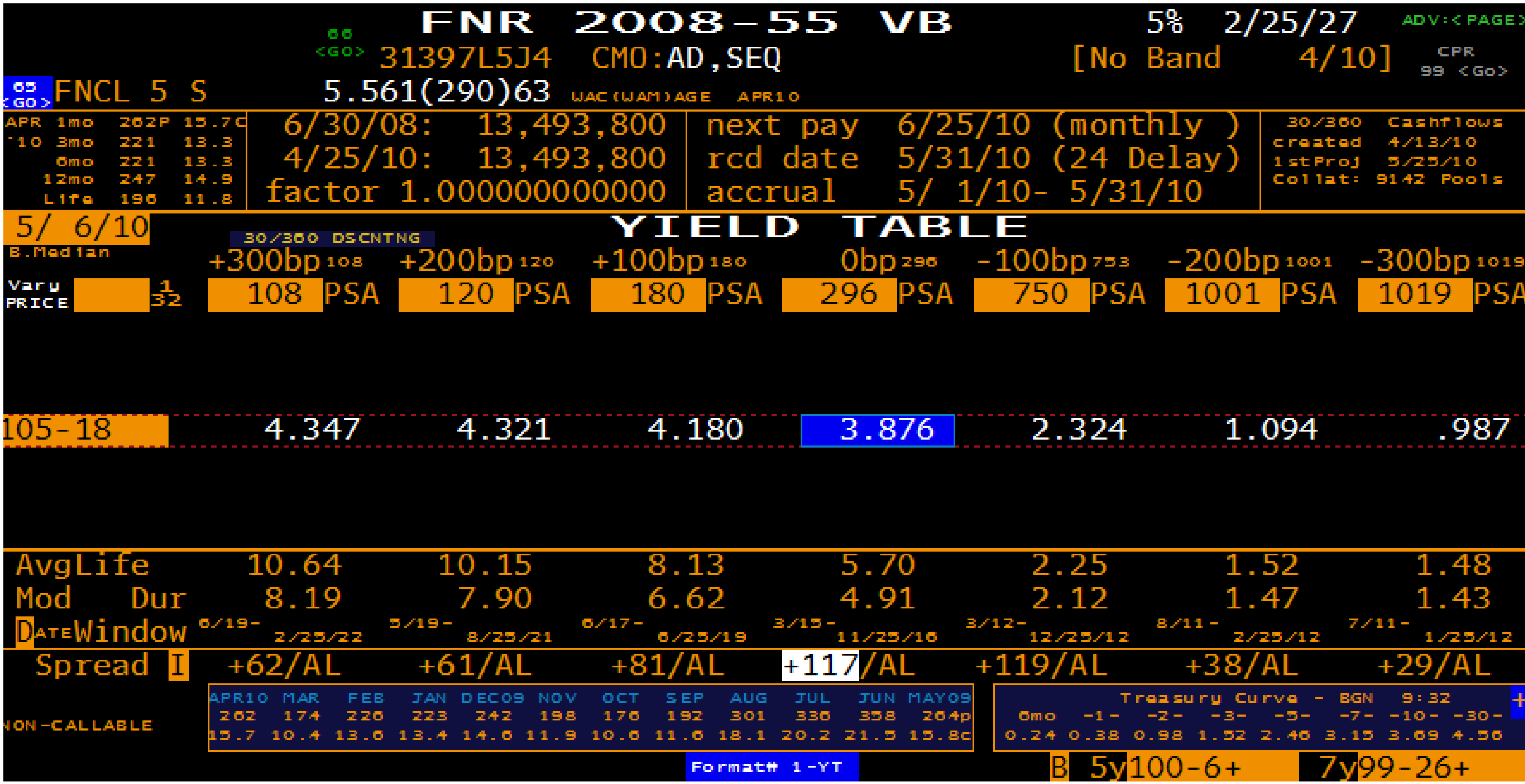


Same Menu from a Bank's Perspective



Two Choices in the Middle of the Curve

I. CMO: FNR 2008-55 VB, a 5.70-year VADM



Locked Out with Very Tight Pay Window

I. CMO: FNR 2008-55 VB, a 5.70-year VADM

Bloomberg CMO PROJECTED CASH FLOWS Pg 3 of 3

5.0000% 2/25/27 FNR 2008-55 VB AD,SEQ

Final Pmt 12/25/2018

Price 105-18 Accrued 0.0833 for 6 days Interest Shortfall Pmt 12/yr 24 Delay

BYield 4.1301 Acc Date 5/ 1/2010

Settle 5/ 7/10 12.0 CPR 0.0% Pmt Date 6/25/2010

Apr10 Factor 1.0000000000

Total Org Face 13,493,800.00

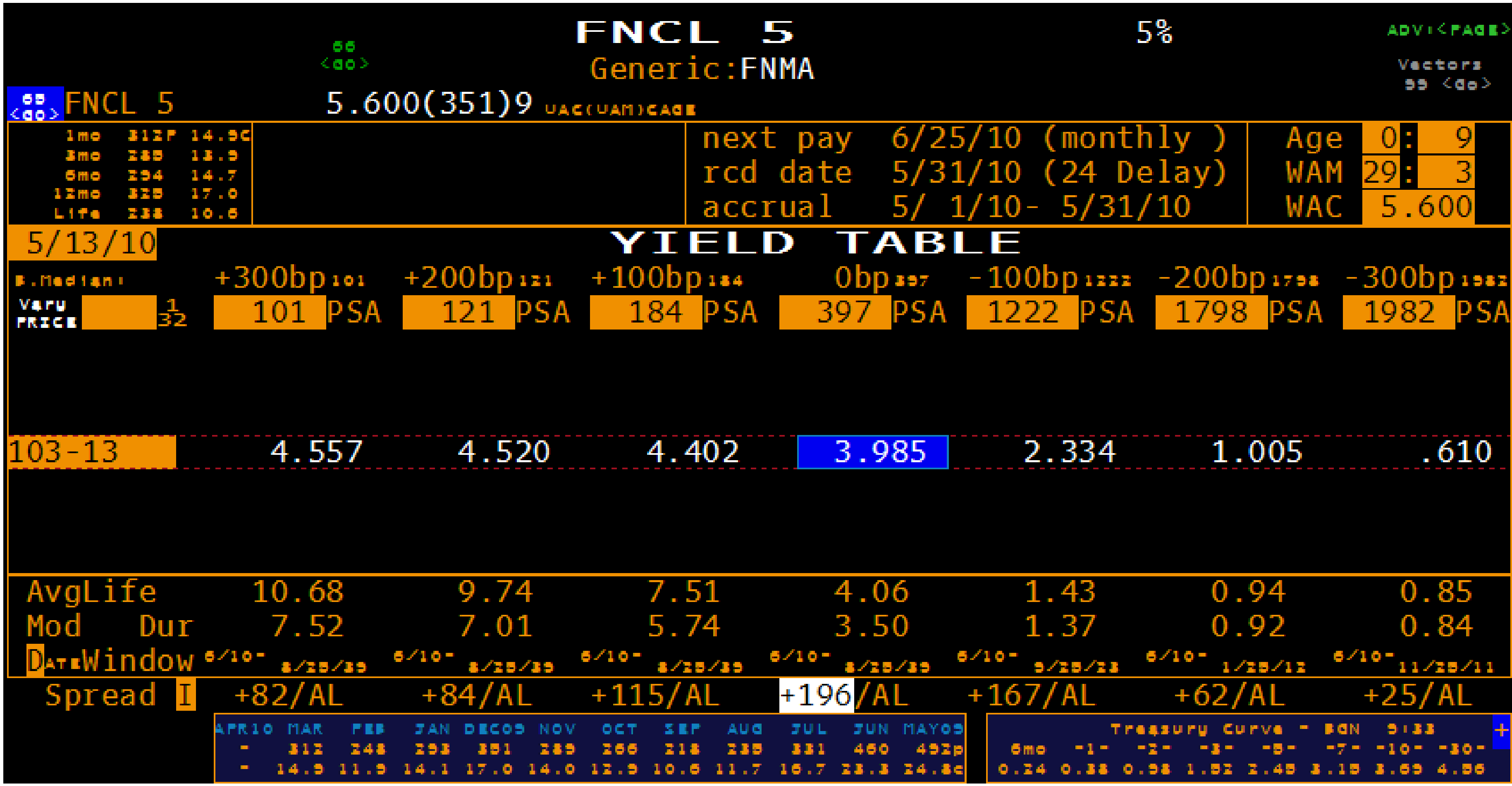
Your Org Face 10,000,000.00

Y Year First prin. pmt. 12/25/16 Prev. Bal.= 10,000,000

No.	Date	Coupon	Interest	Principal	Cashflow	Balance
1	5/25/11		499,999	0	499,999	10,000,000
2	5/25/12		499,999	0	499,999	10,000,000
3	5/25/13n		499,999	0	499,999	10,000,000
4	5/25/14n		499,999	0	499,999	10,000,000
5	5/25/15n		499,999	0	499,999	10,000,000
6	5/25/16		499,999	0	499,999	10,000,000
7	5/25/17		478,355	2,418,921	2,897,277	7,581,079
8	5/25/18		258,811	5,148,312	5,407,123	2,432,767
9	12/25/18n		36,008	2,432,767	2,468,775	0

Two Choices in the Middle of the Curve

II. Passthru: Generic FNMA 30yr 5.0



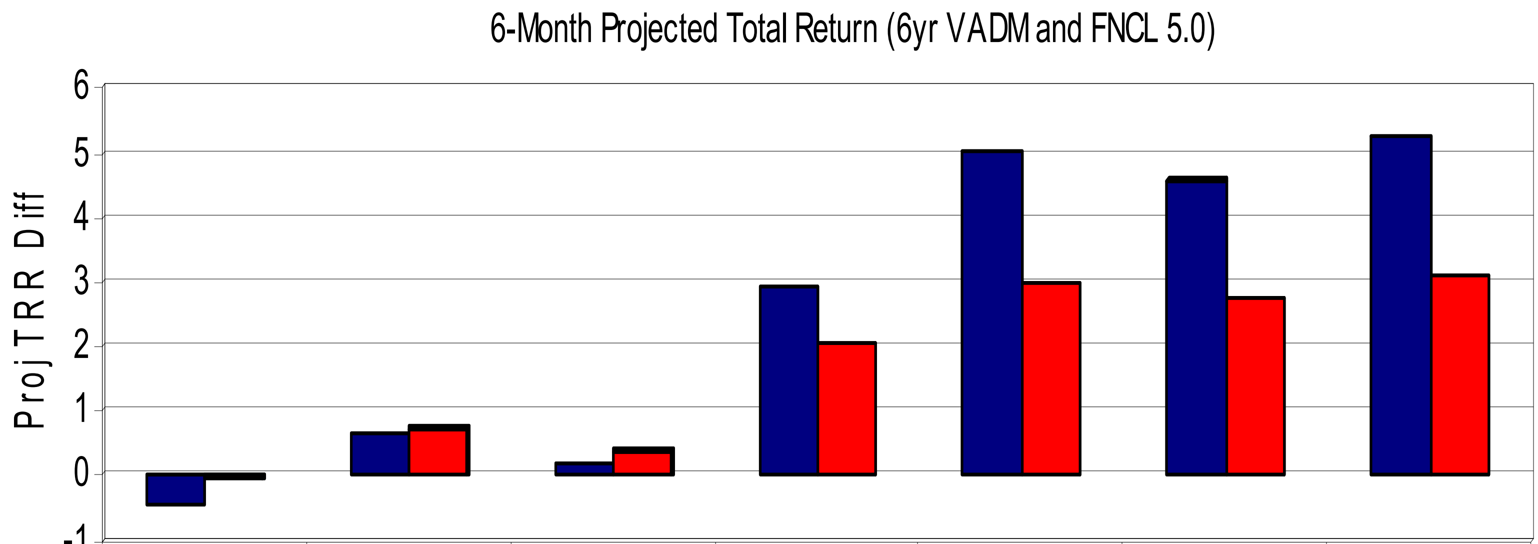
At First, the Trade Looks Unattractive

	CMO	Passthru	Difference
Price	105-18	103-16	2-02
Avg Life	5.70	4.70	1.00
YTM	3.88	4.06	-0.19
I-Spread	123.30	173.50	-50.20

Dynamic Measures Look Better

	CMO	Passthru	Difference
Price	105-18	103-16	2-02
Avg Life	5.70	4.70	1.00
YTM	3.88	4.06	-0.19
I-Spread	123.30	173.50	-50.20
Eff Dur	5.08	3.20	1.88
Z-Vol OAS	71.30	74.50	-3.20
Opts Cost	38.80	54.40	-15.60
OAS	32.50	20.10	12.40

Large Asymmetrical Returns Favor CMO



	upstp	upflat	up50	base	dn50	dnflat	dnstp
CMO	-0.46	0.64	0.18	2.9	5.02	4.58	5.23
Passthru	-0.07	0.71	0.38	2.05	2.95	2.74	3.09

Legend (6mo):

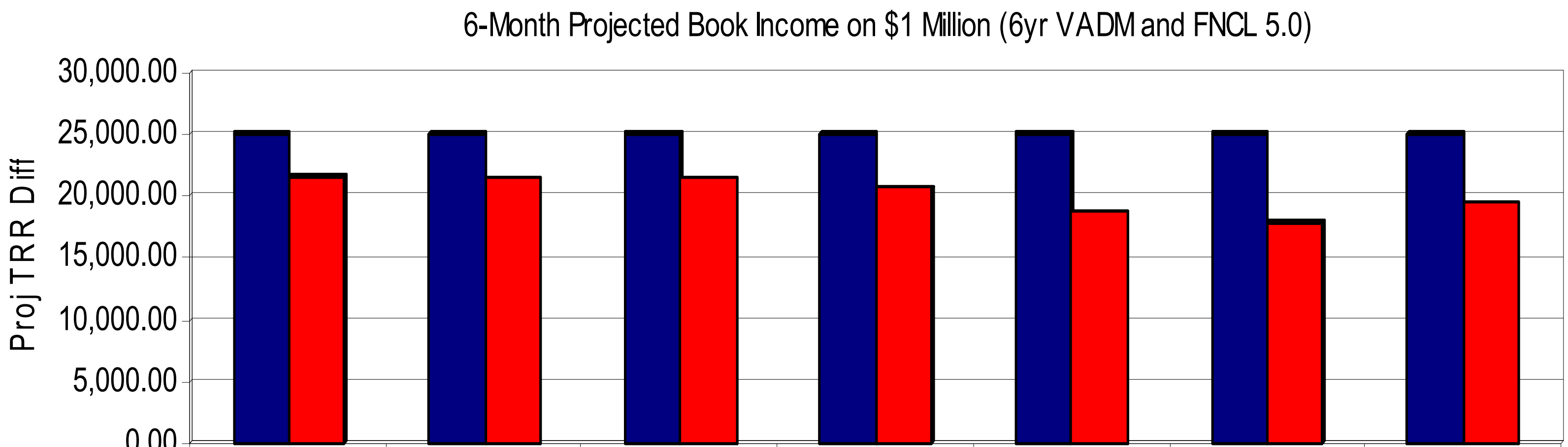
upsteep - 1moL up 25bps, 5yr swap up 50bps, 10yr swap up 75bps | upflat - 1moL up 75bps, 5yr swap up 50bps, 10yr swap up 25bps

dnsteep - 1moL dn 75bps, 5yr swap dn 50bps, 10yr swap dn 25bps | dnflat - 1moL dn 25bps, 5yr swap dn 50bps, 10yr swap dn 75bps

All analytics performed on Polypaths using the AFT, Inc. prepayment model. LIBOR term structure rate shifts are ramped to a 6 month horizon.

Total Return analytics assume constant-OAS pricing to a 6-month horizon.

Lockout “Protects” Book Income



	upstp	upflat	up50	base	dn50	dnflat	dnstp
CMO	25,000.00	25,000.00	25,000.00	25,000.00	25,000.00	25,000.00	25,000.00
Passthru	21,572.81	21,407.45	21,503.50	20,654.76	18,729.43	17,876.08	19,396.75

Legend (6mo):
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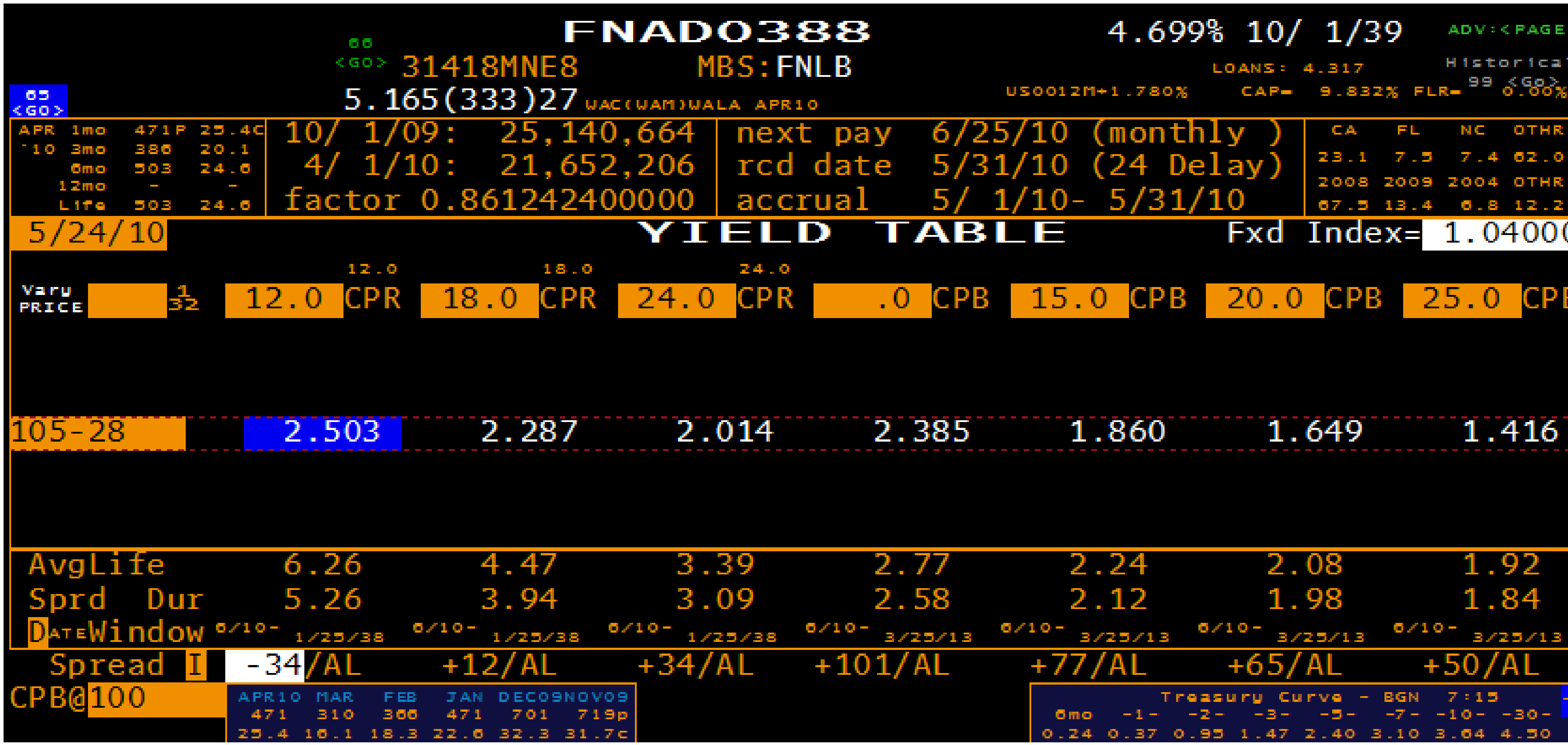
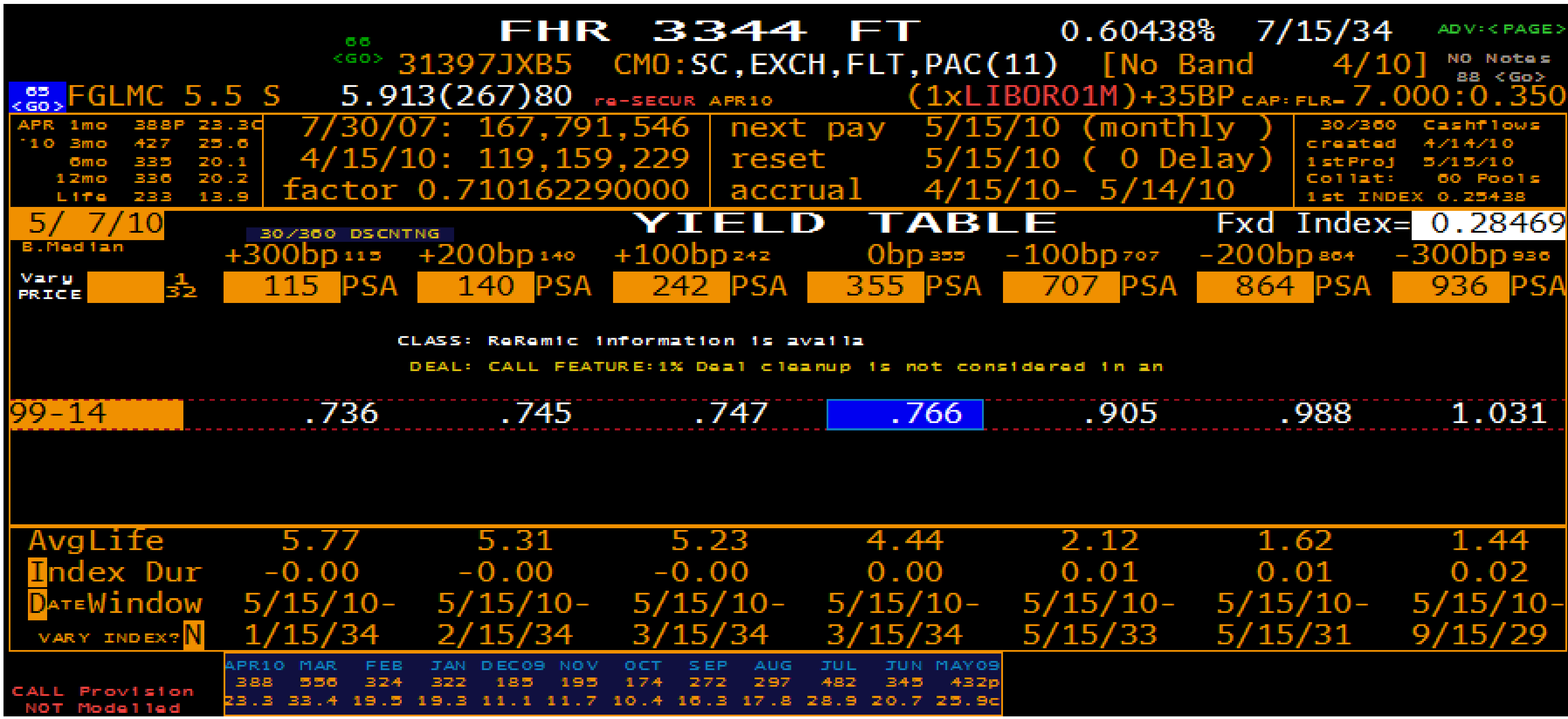
On the Front End – Hybrid ARMs or Floaters?

I. Seasoned 5X1 with 35 Months to Roll and 5/2/5 Cap Structure



On the Front End – Hybrid ARMs or Floaters?

II. CMO Floater with 7% Life Cap



YTM Profile Depends on Rate Outlook

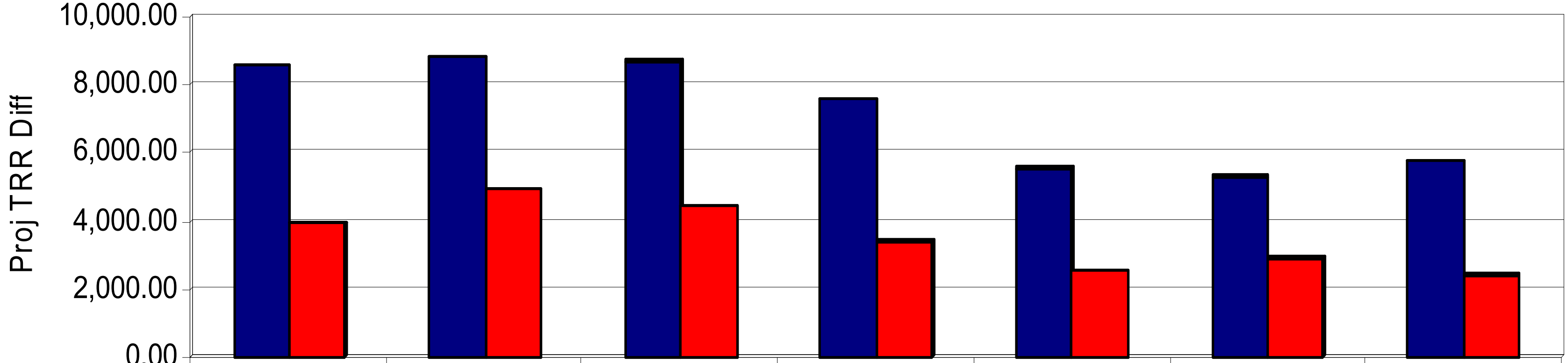
Yield In Different Rate Scenarios

	Hybrid ARM	Floater	Difference
Base	2.01	0.77	1.24
+50	2.21	1.27	0.94
+100	2.42	1.77	0.64
+150	2.63	2.25	0.38
+200	2.83	2.75	0.08
+250	3.04	3.26	-0.22
+300	3.24	3.77	-0.53

Assumes 24 CPR on Hybrid ARM and 296 PSA on Floater

Choice is Easy Based on Book Income

6-Month Projected Book Income on $1 Million (6yr VADM and FNCL 5.0)



	upstp	upflat	up50	base	dn50	dnflat	dnstp
ARM	8,577.34	8,814.27	8,681.67	7,547.85	5,552.61	5,298.49	5,764.30
Floater	3,904.42	4,926.15	4,415.55	3,392.69	2,526.01	2,880.43	2,400.36

Legend (6mo):

upsteep - 1moL up 25bps, 5yr swap up 50bps, 10yr swap up 75bps | upflat - 1moL up 75bps, 5yr swap up 50bps, 10yr swap up 25bps

dnsteep - 1moL dn 75bps, 5yr swap dn 50bps, 10yr swap dn 25bps | dnflat - 1moL dn 25bps, 5yr swap dn 50bps, 10yr swap dn 75bps

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Investment "Takeaways"

- Curve is historically steep and the next MAJOR move will be a flatter curve.
- MBS assets are and should remain a core holding for financial institutions given government backing/risk weighting and available yield.
- The "sweet spot" for banks on the curve (2-3yrs) is picked over and offers relatively little value.
- Take advantage of steep curve and a VERY benign prepayment environment to BARBELL purchases in the 1yr and 5yr partials.
- Lockout and coupon. Lockout and coupon. Lockout and coupon.

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