

FHLB – INDIANAPOLIS

MAKING LIQUIDITY YOUR NEW BEST FRIEND



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Friends vs. Best Friends

FRIENDS...	BEST FRIENDS...
...save the last slice of pizza for you.	...eat the last slice of pizza directly in front of you while laughing at you
...ring the doorbell before entering your home.	...enters your home uninvited.
...asks permission to take something from the refrigerator.	...blames you that the refrigerator is empty
...help bail you out of jail.	...would be with you in jail while uttering, "Tonight was legendary!"
...borrows your stuff and then returns it a couple of days later.	...loses your stuff and tells you, "I don't know where I left them."
...takes your alcoholic beverage when you've had too much.	...buys the next round of shots.

lolsheaven.com

3 Types of Friendship

1. Friendship of Usefulness

- You hear from them when they need something

2. Friendship of Mutual Interest

- Friendship based on common interest or pleasure. Golf buddies, workout partners, etc.

3. Friendship of Virtue

- Based on mutual respect. Not based on benefit one brings, but just because.

How does your thought on liquidity fit in this structure?

Is higher liquidity a virtuous friend, or a friend of use?

Liquidity Trends Since 2009

Major push for more “asset-based” liquidity

- Investments
- Cash

Reduced reliance on “non-core” funding sources

- Lower volatility in times of capital crisis
- Slower growth in total assets => loans

Reduced margins

- Mix of earning assets changed
- Low market interest rates

Extension risk in bond & loan portfolios

- Rising rate impact on available liquidity?
- Impact on current margin?



Thursday, June 30, 2016 6:00 AM CT

Exclusive

Lower for longer spells bad news for bank margins

Article

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By Nathan Stovall and Chris Vanderpool

Interest rates will likely remain low for the foreseeable future, dashing hopes of material improvement in bank profitability.

The prospect of rate increases recently moved further down the road, and bank stocks sold off considerably in the aftermath as many investors believed higher rates would offer relief for bank margins.



Low interest rates have hindered many financial institutions' profitability, and hopes of notably higher rates now seem to be lying further out on the horizon. This is the first article in a [series](#) exploring the implications of a lower-for-longer scenario.

The consensus among economists polled by *The Wall Street Journal* in June was that the Federal Reserve would only raise short-term rates once this year. But even the prospect of a single rate increase could prove overly optimistic in light of the United Kingdom's decision to [leave](#) the European Union. Many Fed observers believe the uncertainty created by Brexit will prompt the central bank to avoid muddying the waters and hold, if not cut, short-term rates from their current levels.

Given the lower-for-longer outlook, S&P Global Market Intelligence has adopted a more negative outlook and now does not expect material U.S. bank earnings growth in the years to come.

Fewer rate increases could, in theory, allow banks to raise deposit rates more slowly, but renewed focus on liquidity will still cause funding costs to rise, and more quickly than witnessed in past tightening cycles. Any relief that banks receive on the asset side of their balance sheets will likely be short-lived as credit quality begins to deteriorate and emerges as a headwind to earnings.

Tools



Sources

 [Industry Document: Q1'16 US Banking Industry Projections Template 6/22/2016](#)

About This Feature

Proprietary market projections and research that leverage SNL's unrivaled data and subject matter expertise.

What Can You Really Expect to Earn?

“Efficient Earnings Frontier”

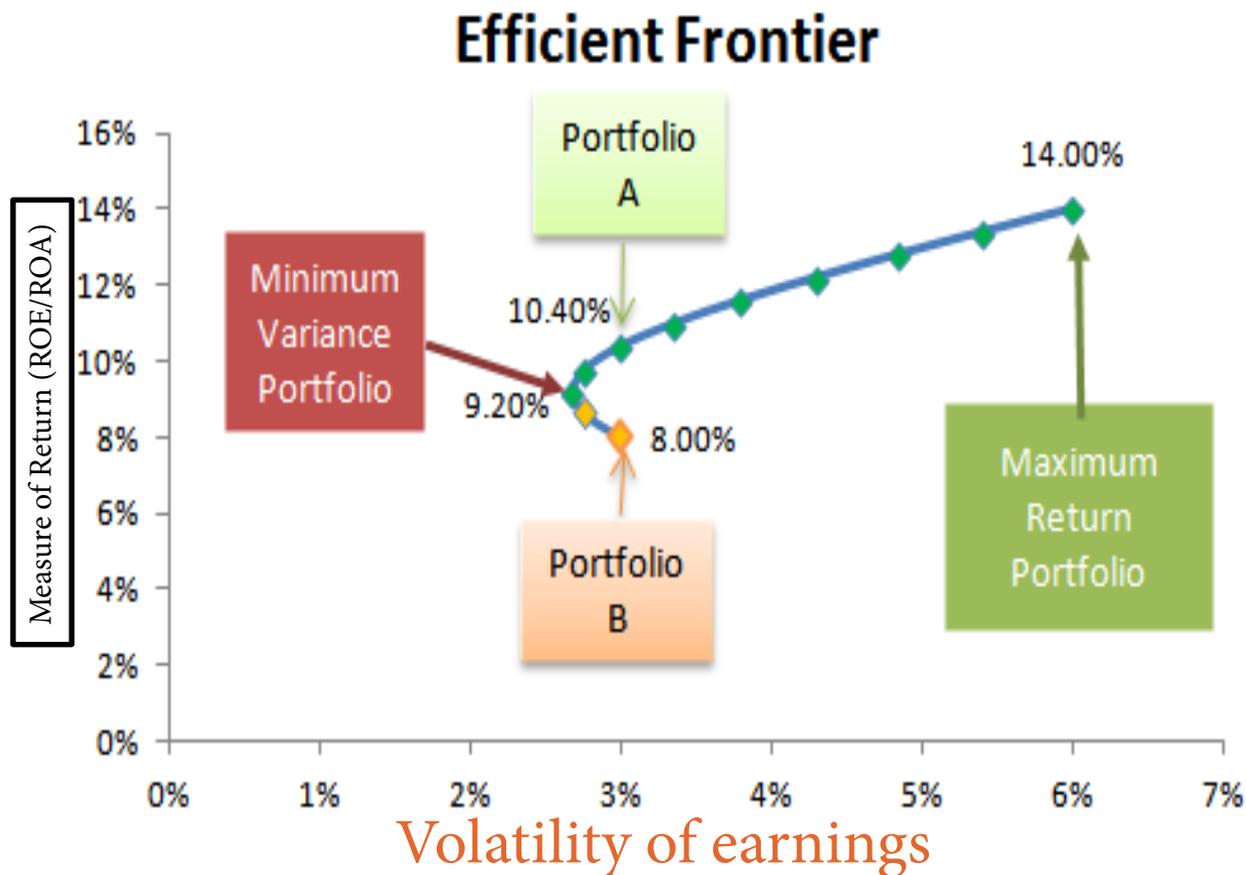
- Concept of risk vs return concept is well accepted
- What’s missing in the “trade-off” talk is concept of *maximum* return.
- “Efficient earnings frontier” defines highest potential return for a defined amount of risk
 - Returns are limited by amount of risk accepted
 - Is THE target for evaluating risk\return trade-offs
 - Returns are not infinite unless risk can be expanded!
 - Think about all your “policy limits”

Optimal Earning Asset Combinations

Mapping each “mix”
vs. earnings
volatility helps show
risk\return options

Most often higher
returns mean
higher volatility

- What strategy has
higher earnings
potential and less “risk”



Where is your current and projected performance vs. actual?
Given your “risk appetite” what is your “domain” of optimal return?

Liquidity Sources

Pools or Reservoirs

- Cash
- Stock of high quality assets that can be converted to cash



Flows

- Loan repayments
- Investment repayments and maturities not in the “HQLA” pool
- Planned deposit growth



Contingent Sources

- Borrowing lines



Liquidity Defined

Common Liquidity Definition:

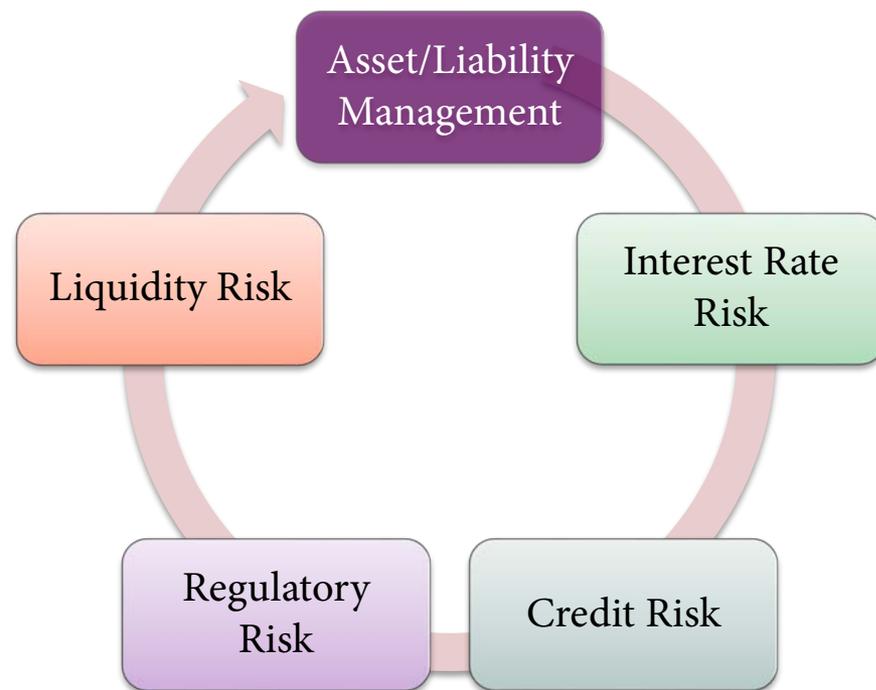
- The ability to meet demands for cash at a reasonable cost.

Liquidity Risk is:

- The risk that the institution may not have sufficient sources of cash to meet demands
 - *What would cause changes in liquidity levels or needs?*

ALM Process measures risks taken versus returns derived.

- Risk is to be **MANAGED**, not **MITIGATED**



Differentiating Liquidity & Funding

Liquidity Management

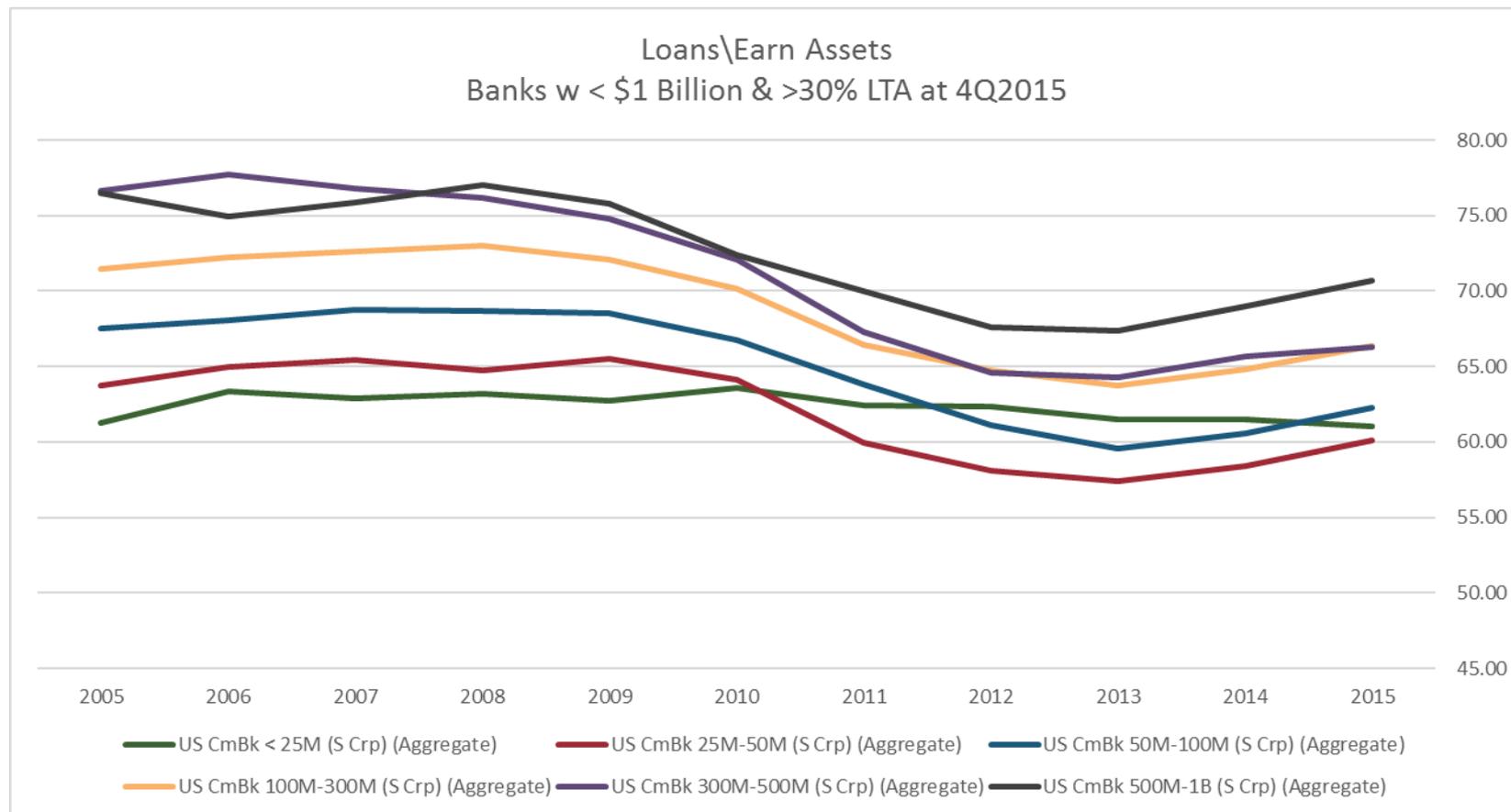
Pools first then flows

- Managing cash flows across the balance sheet to ensure sufficient sources of funds for intended uses of funds.
 - *Sets limits on*
 - Liquid asset levels
 - Acceptable mismatches
 - Use of alternative sources
 - *Refers to (in-)ability to raise sufficient funds to finance needs at any point in time.*
- Risk is in ensuring sufficient pools of funds for “drought” conditions

Funding Management

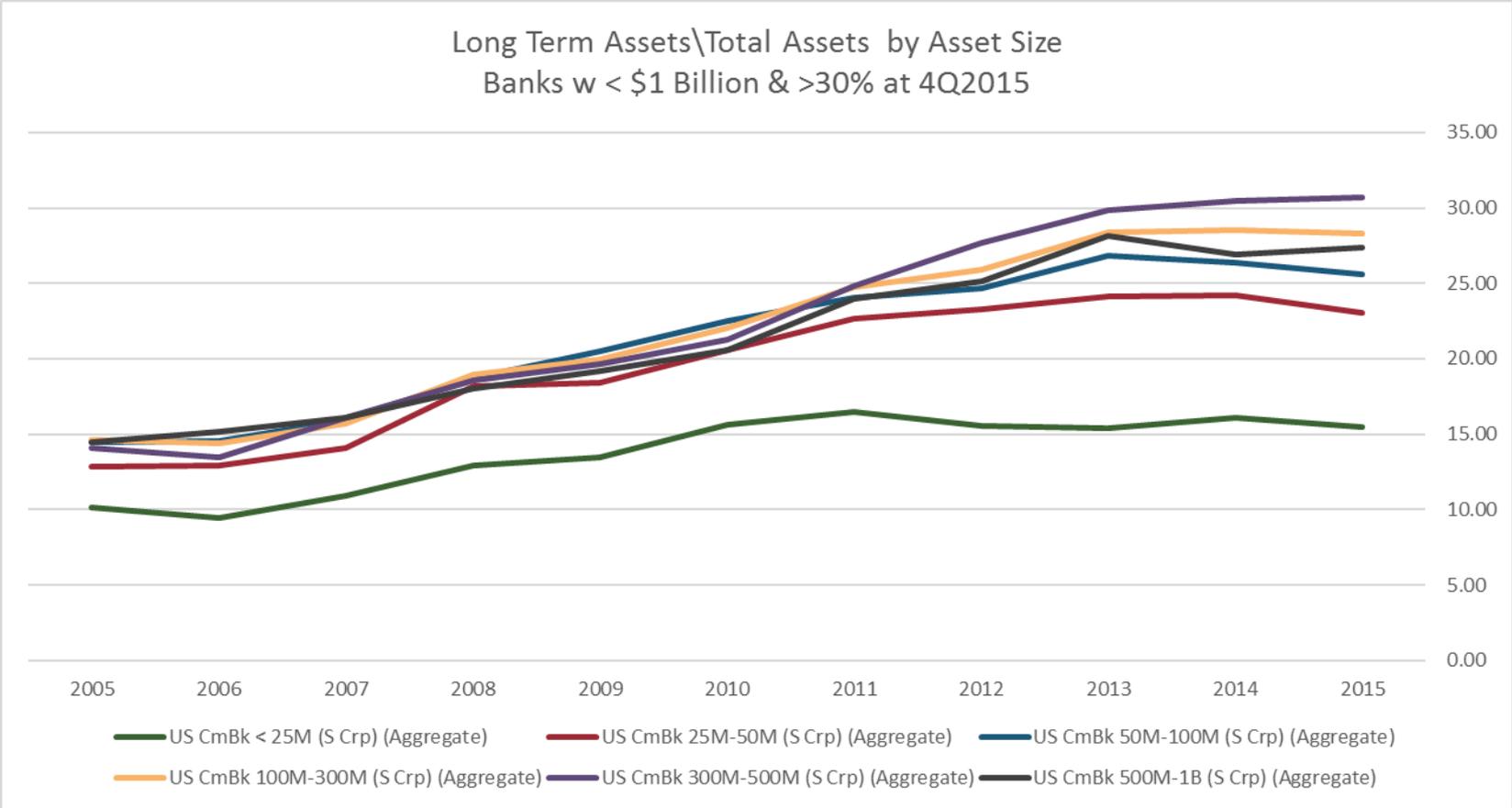
- Flows first, then pools
 - Defined as the process of sourcing liabilities
 - Sets forth how you intend to remain fully funded
 - *at the minimum cost &*
 - *consistent with the overall risk appetite.*
 - *targeted funding mix*
 - Balances cost efficiency & stability.
 - Risk is (in-)ability raise funds in the desired type/term/cost on an ongoing basis

Loans\Earning Assets by Asset Size



Smaller banks not as active in lending markets

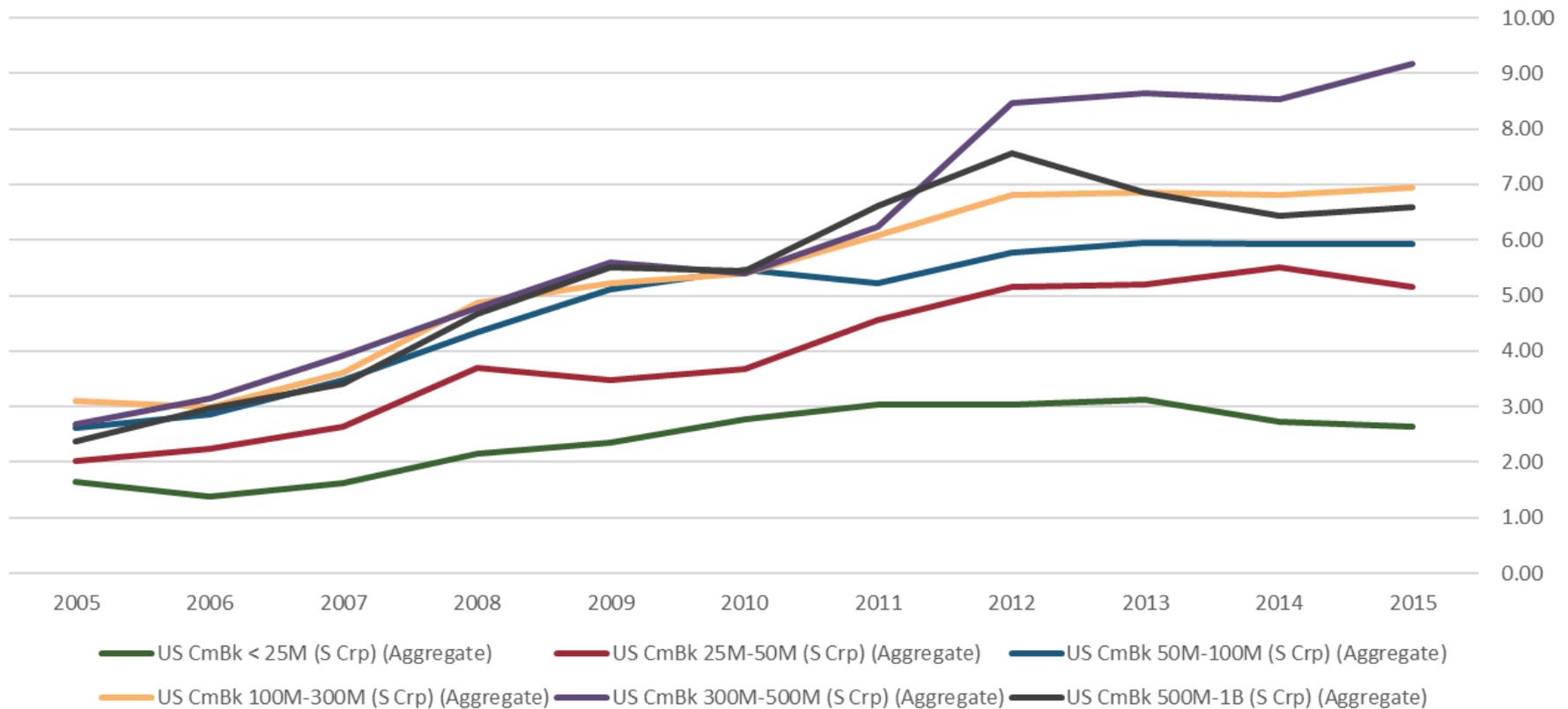
Long Term Assets by Asset Size



All banks holding long-term (>5Yr) assets

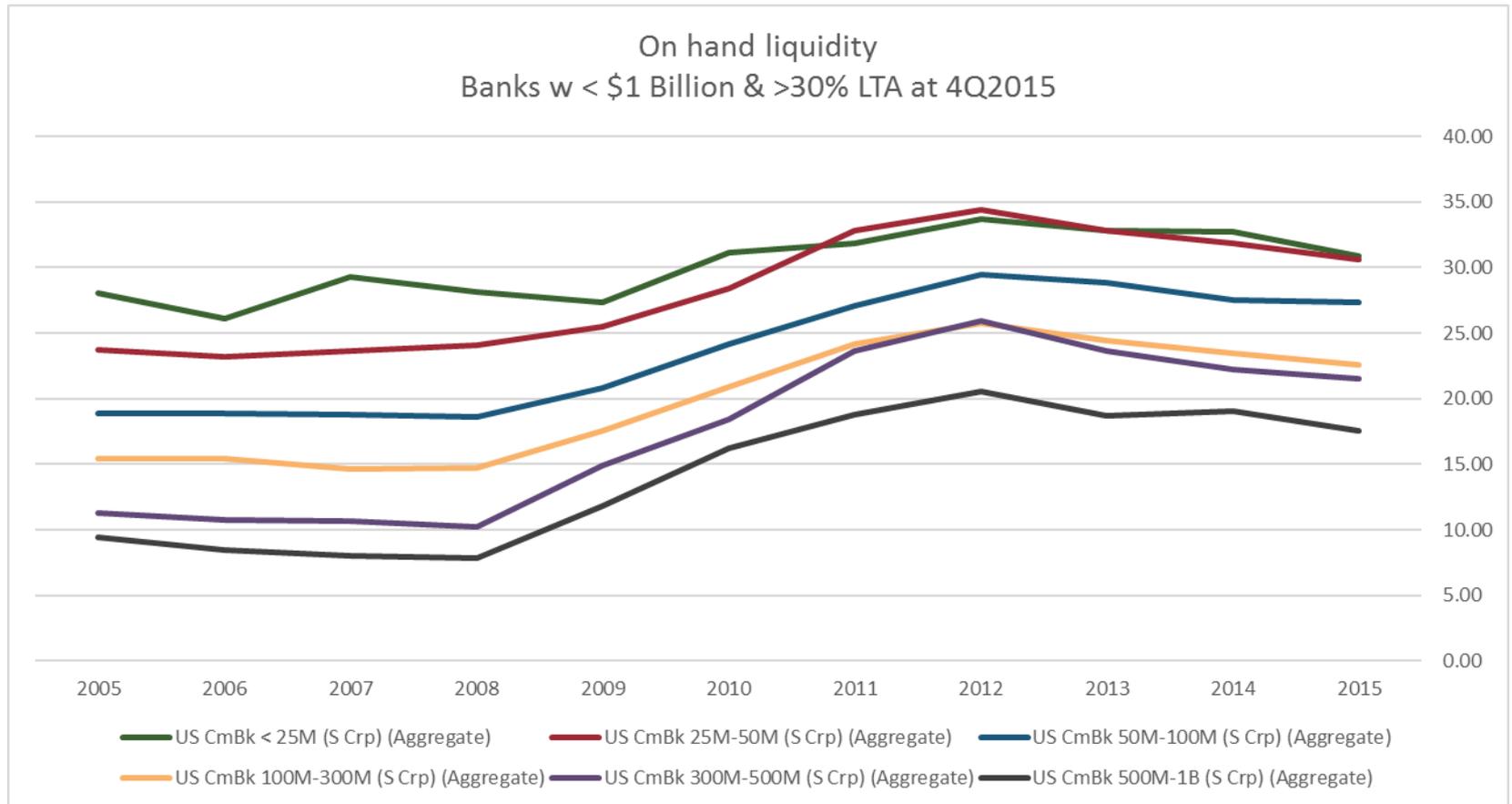
Loans & Pass-thru Securities > 15 Yrs.

Ln and Mtg Pass-Thr Sec > 15 Yrs/ Assets
Banks w < \$1 Billion & >30% LTA at 4Q2015



Growth not coming in RE loans or securities > 15 Yr maturities...so where is it?
Impact on liquidity?

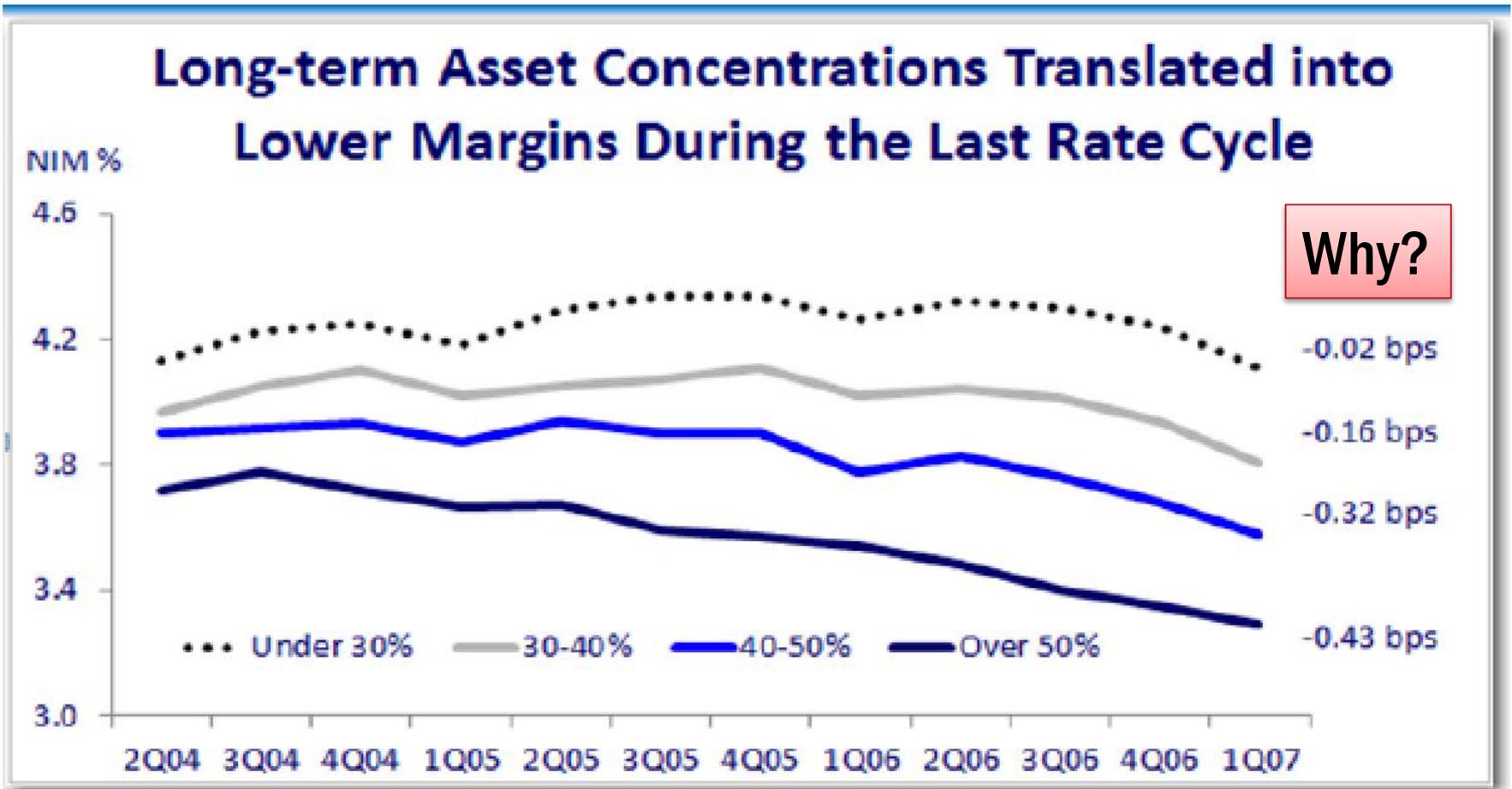
On-hand Liquidity Levels



Smaller banks holding more on-hand liquidity – yield pressures!

What's the Implied Issue?

Why the Concern?

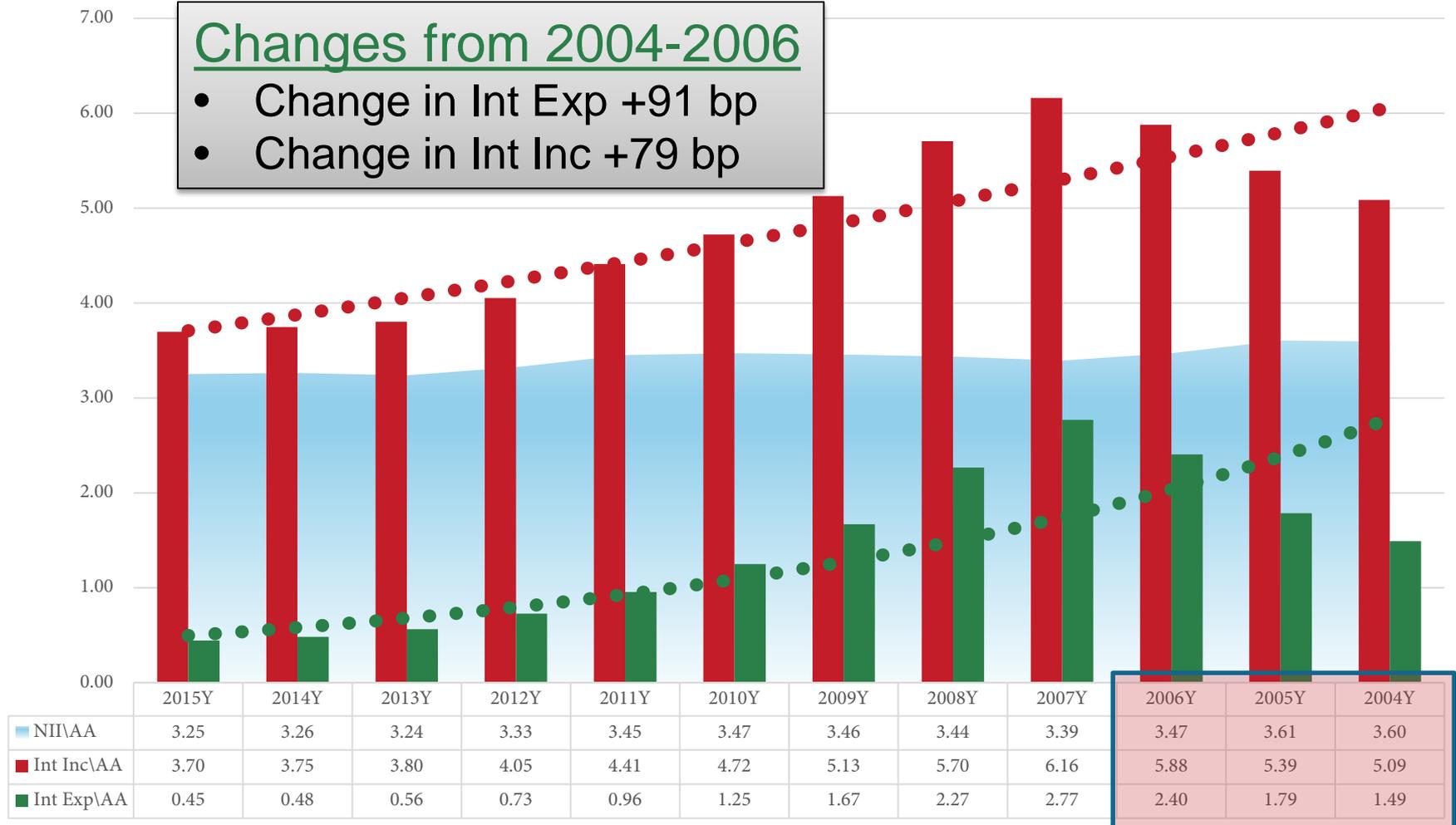


Performance of FI's from 2004 w > 30% LT Assets

Average Performance of Banks < \$1 billion and LT Assets (04) > 30%

Changes from 2004-2006

- Change in Int Exp +91 bp
- Change in Int Inc +79 bp



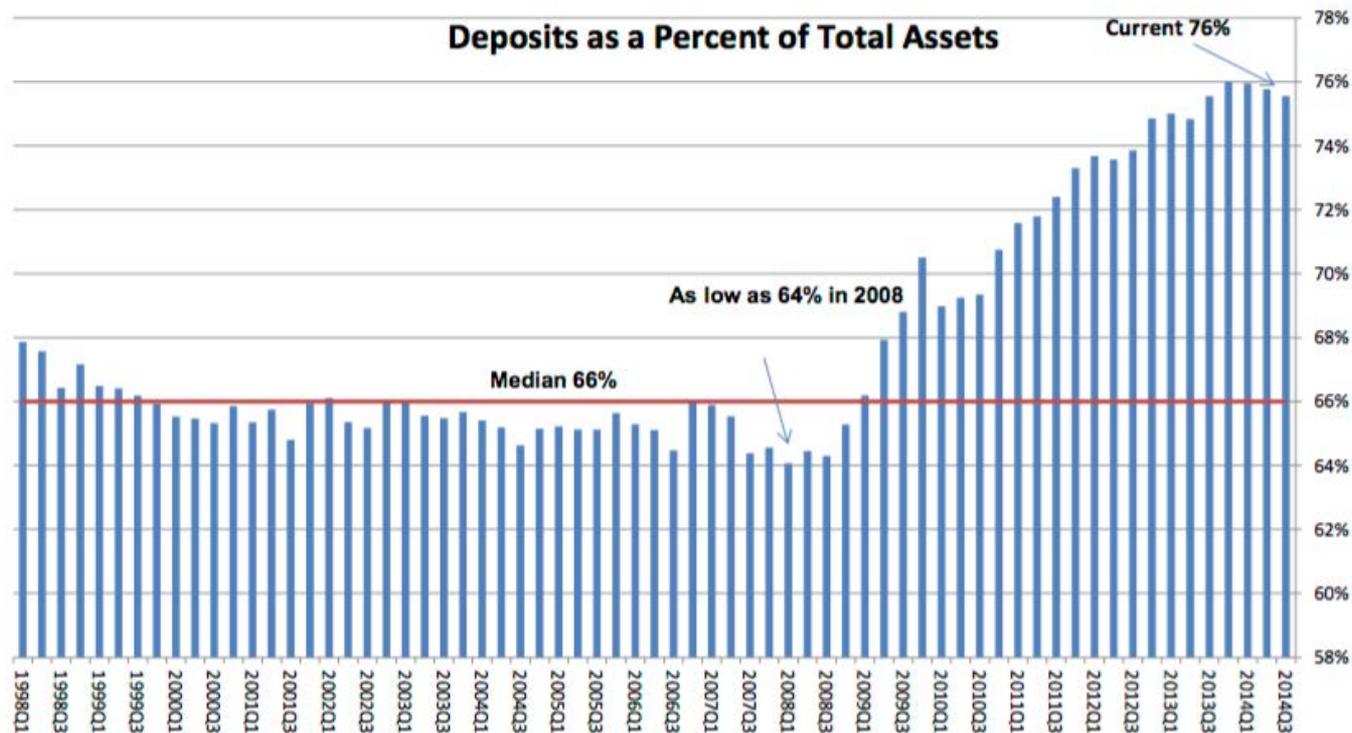
Core deposits – A natural “hedge”?

KEY RISK FACTORS – CORE DEPOSITS

Common Concerns

Deposit risks elevated

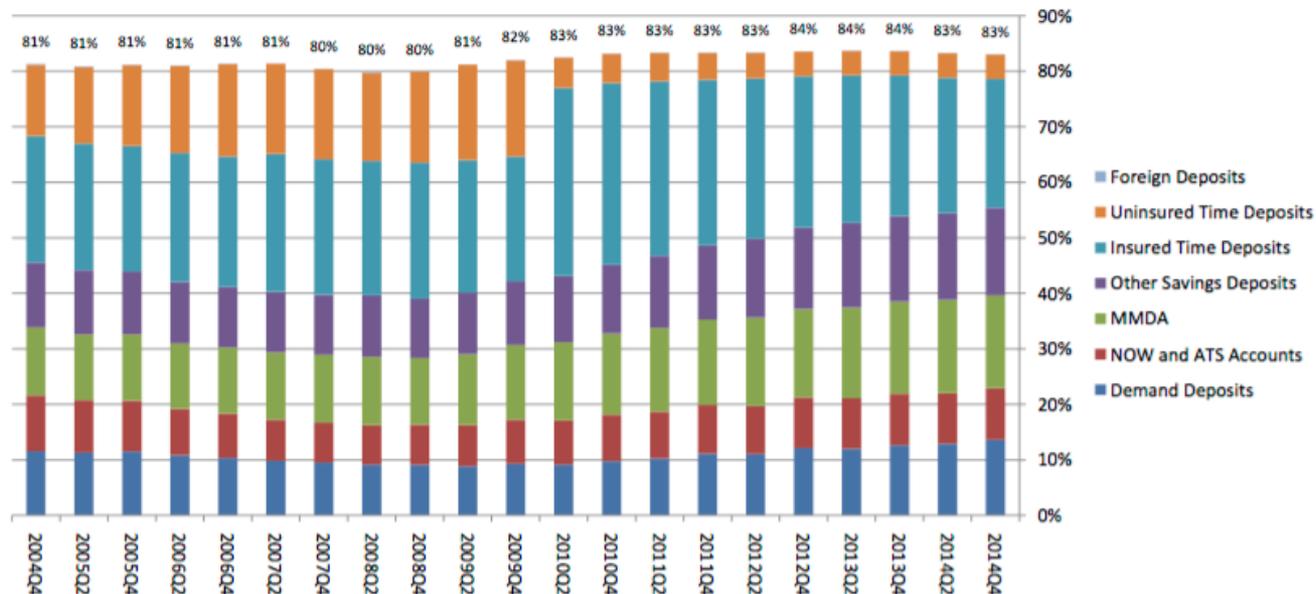
Deposits Experienced Considerable Growth



Common Concerns

Deposit risks elevated

Deposits as a % of Total Assets FDIC-Insured Institutions < \$1 Billion



Funding Questions

How much of our deposit growth since crisis is really “core” funding?

What happens if I am wrong on my core assumption?

What is the regulatory position on NMDs?

Funding Goals

Identify internal issues impacting risk profile and earnings in current non-maturity deposit modeling

How to use results of core deposit study in decision making

What is your rising rate funding strategy?

- Possible strategies
 - *Segmentation to maintain\grow deposits*
 - *Using NMD's for funding LT Assets*

How can I make the loans my borrowers want?

- Using blended funding to fund long-term assets on the cheap

Defining Your Funding Strategy

Concept: Distribute sources by desired “size/mix”

- Define the desirable funding mix in your overall capital plan
- Allocate by % of assets

Must be sure to align this with Liquidity Policy limits

- This is the “game plan” that drives product design, marketing and pricing actions
- Align the expected funding durations with asset allocation decisions or opportunities

Funding Sources	% of Ttl Assets
DDA	10%
NOW	10%
Savings	15%
MMDA	28%
Retail CDs	7%
Brokered CDs	3%
Rate Board CDs	2%
<i>Total Deposits</i>	<i>75%</i>
Borrowings	10%
Equity	12%
Total Funding Sources	97%

Defining Your Funding Strategy

Define for each sector

- Targeted size of balance sheet (optimal)
- Approach to gathering & maintaining
 - *Helps set pricing priority*
 - *Linked to market growth and demographic analysis*
- Purpose for each sector in overall growth strategy
 - *Retention, growth, risk mitigation, etc.*
- Process for determining “how long” deposit can be invested
 - *Aligns your asset allocation decisions*

Regular review of funding strategy to actual

- Balance sheet goal\composition variance
- Assumptions variance on core deposit “life”

2 Most Common Core Study Outputs

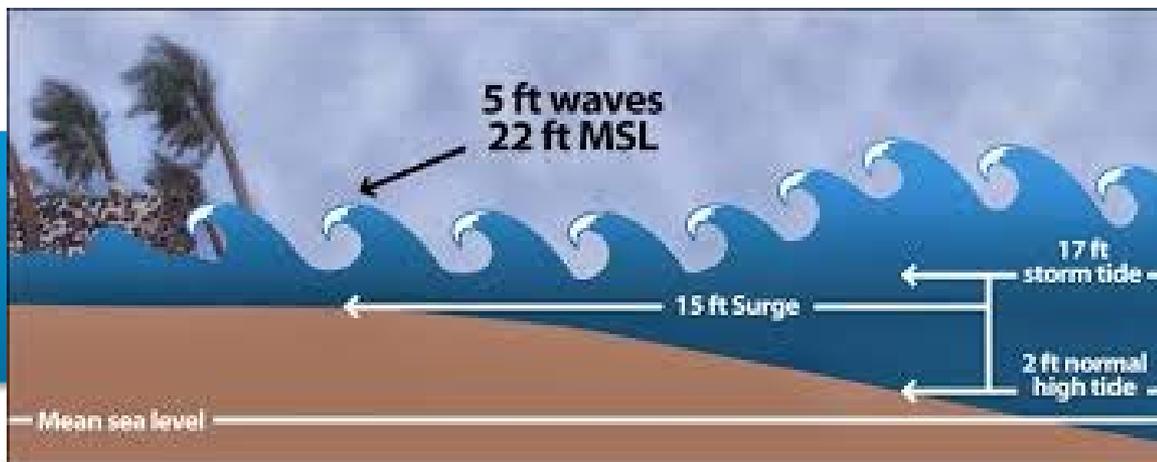
Pricing Betas – how much of & how soon a change in market rates is passed along to deposit customers

- Income at risk analysis
- EVE analysis

Decay rates – The speed at which non-maturity deposits decay off books over time

- EVE analysis
- Liquidity analysis

What's about missing component?
SURGE BALANCES



Pricing Betas

Example:

Assume market rates will increase 200 bp

Your plan is to raise MMDAs rates 1.0% from 0.50% to 1.5%

Your beta would be the change in your offer rate divided by the change in market rates or 50%

- $100 \text{ bp change in offer rate} / 200 \text{ bp change in market rate}$

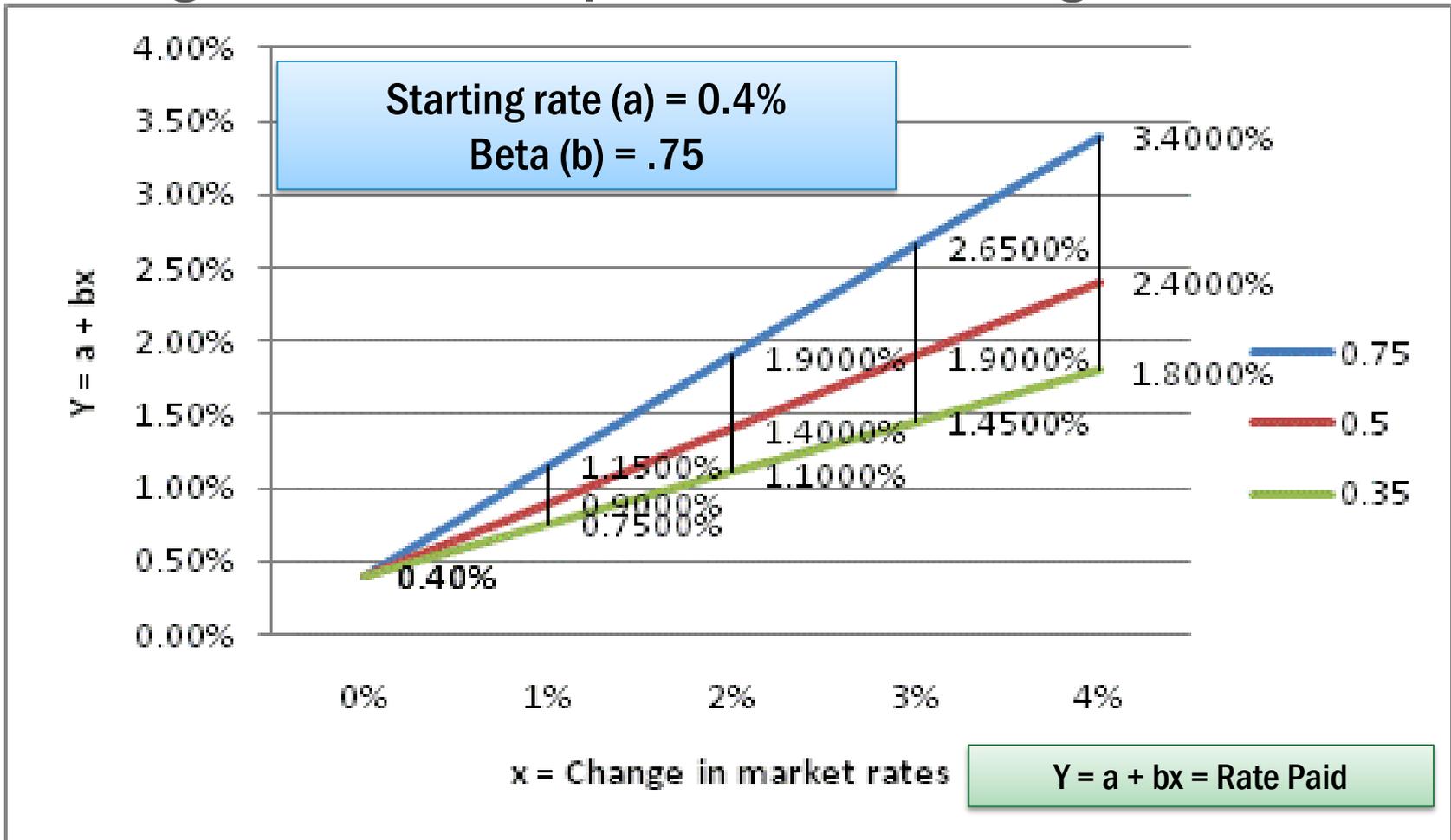
For each change in market rates, your offering rate moves by the “beta” or 50%

- What are your “betas” now?

Betas can be:

- SWAG'd
- Derived statistically from historic data
- Best when they reflect your “plan” for managing funding pools in changing conditions
- *Note betas can be significantly impacted depending on your use of segmentation.*

Pricing Betas – Importance & Segmentation



Questions:

1. Which of these cost of funds profiles would you prefer to have with rising rates?
2. What would that information allow you to do with asset and funding allocation?

Core Study Beta Results

Figure 1-3
Beta Results

Do you separate your “pools by intended pricing actions?

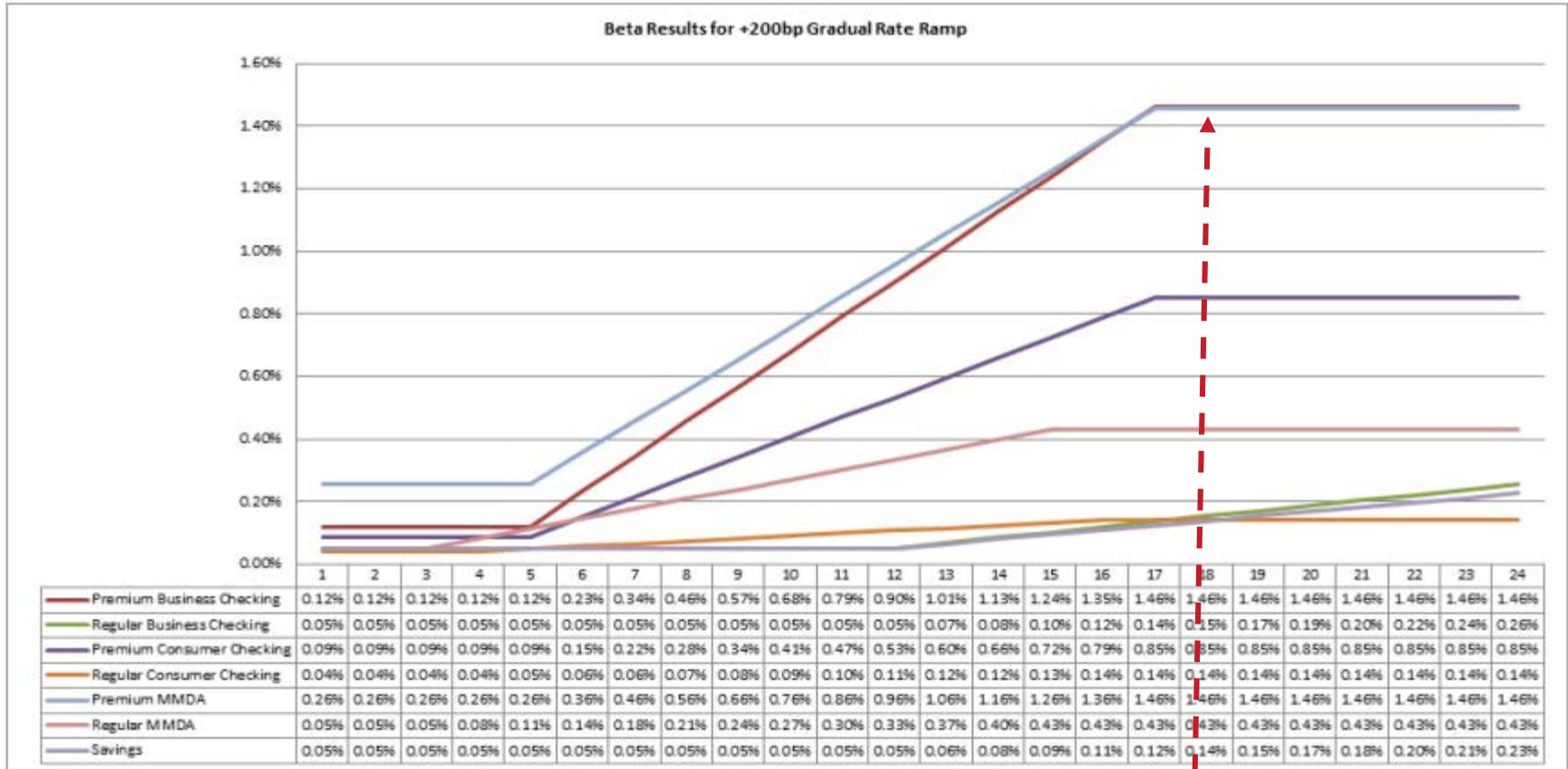
Product Category	Index	Lag (mo)	Position	Corr	Beta	Current Bal	Current Rate
Premium Consumer Checking	Average FHLB Advance - 5 Y	5	4	0.943	0.381	36,972	0.09%
Regular Consumer Checking	Average FHLB Advance - 5 Y	4	12	0.904	0.051	26,805	0.04%
Premium Business Checking	Average FHLB Advance - 12 M	5	2	0.989	0.671	2,941	0.12%
Regular Business Checking	Average FHLB Advance - 12 M	12	10	0.908	0.103	3,134	0.05%
Savings	Average FHLB Advance - 12 M	12	3	0.975	0.088	87,099	0.05%
Premium MMDA	1 Year US Treasury	5	2	0.989	0.601	161,930	0.26%
Regular MMDA	Average FHLB Advance - 2 Y	3	1	0.986	0.189	3,069	0.05%

3 Primary Outputs from a Beta Study

1. What Index does my pricing behavior follow?
2. What is the level of change on that index? The beta?
3. What is the “lag” in my response to market rate changes

Effect of Beta Study on Deposit Rates

200 bp Ramp Over 12 Months



It doesn't matter how long this funding is around, it is variable rate

Surge & Decay

Figure 1-6
Decay and Surge Summary

Product Category	Current Bal	Surge %	Base Decay	Truncation
Consumer Checking	77,342	17.77%	2.01%	120
Business Checking	8,749	34.34%	5.27%	120
Savings	88,222	34.54%	1.60%	120
MMDA	165,001	24.34%	7.30%	120

Surge balances can vary considerably. Betas on surge balances are very high as the customer will reprice the balances for you.

Decay rates seem low until you consider we are looking at balance decays rather than account number decays.

This is just regulatory BS

Most Common Decay Rate Method

Single pool account study

- Most common approach
- Track changes in accounts and balances for one initial study group of accounts over time. Usually pre-crisis start date if available.
- Monitors changes in account balances and # of account on accounts in place at beginning of study
 - *Strengths*
 - Able to correlate changes in actual accounts and balances
 - Recognized as “industry standard”
 - *Weaknesses*
 - Data required from “pre-crisis” starting point (2007 or earlier) for most relevant analysis
 - Ignores all new accounts
 - Applies old account behaviors to all newly opened accounts

Better Decay Rate Methods

Multi Pool (Vintage) Study

- Track initial study group (single pool method) and subsequent pools of new accounts over time
- Track behaviors of newer accounts vs. older more seasoned accounts

– *Strengths*

- Doesn't ignore accounts representing > 50% of total deposit balances in a sector
- Develops better metrics on new account behaviors
- Helps to estimate “surge” deposits vs. “core”

– *Weaknesses*

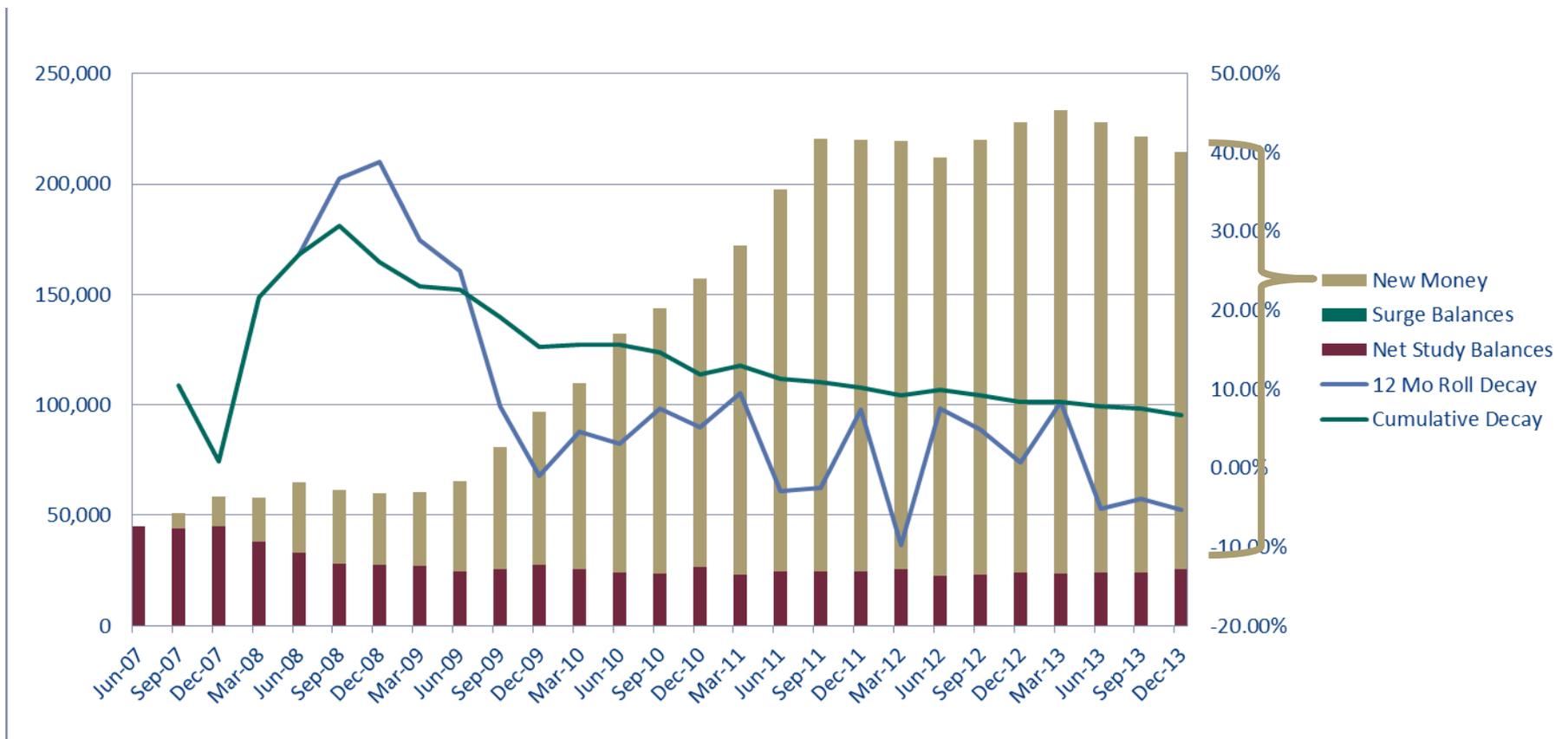
- More data and analysis required
- Many ALM models unable to process outputs properly
- Can be expanded to include other variables



VS

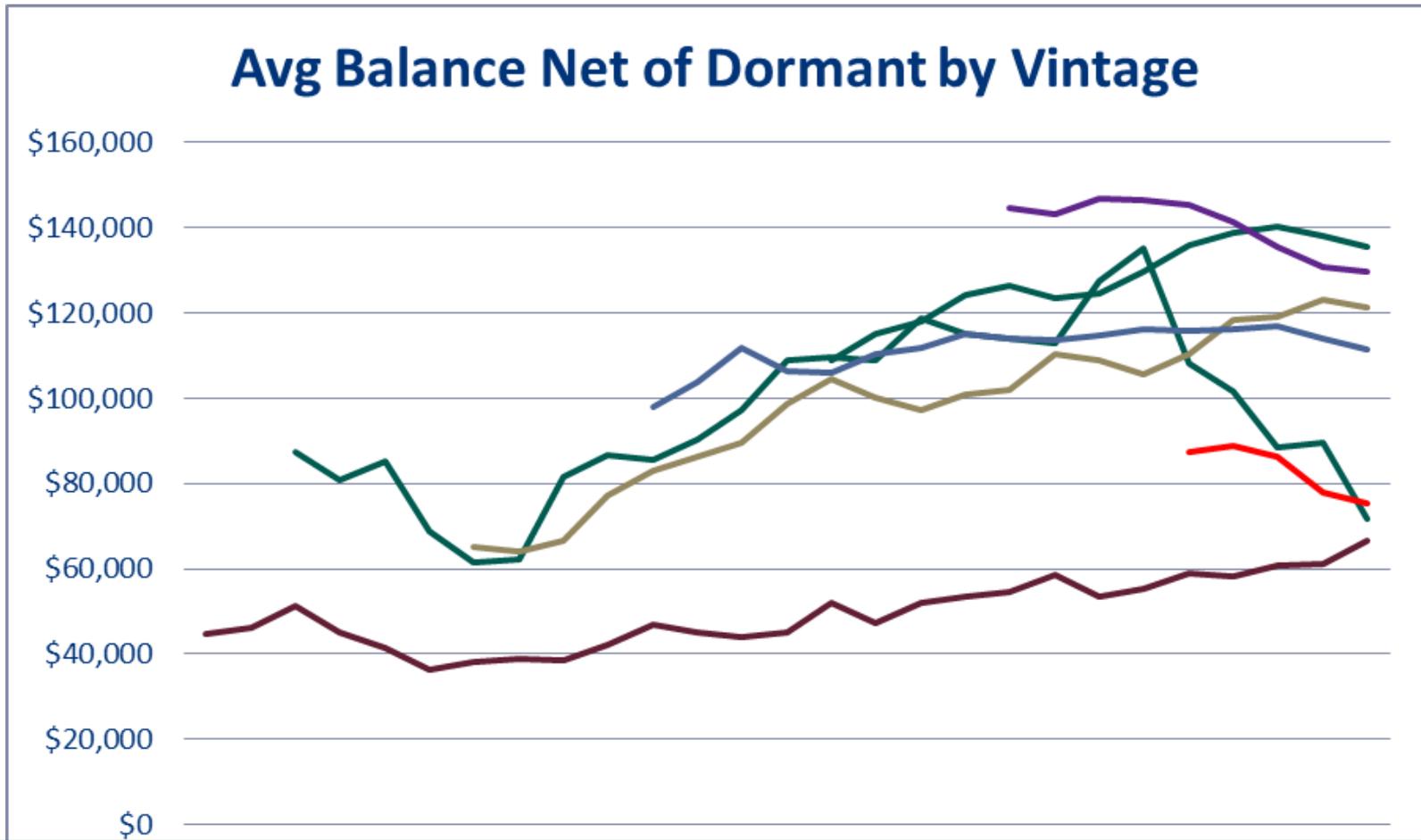


Surge-Adjusted Decays



What happens when the remaining balances from a single pool study group represents an insignificant amount compared to total balances?

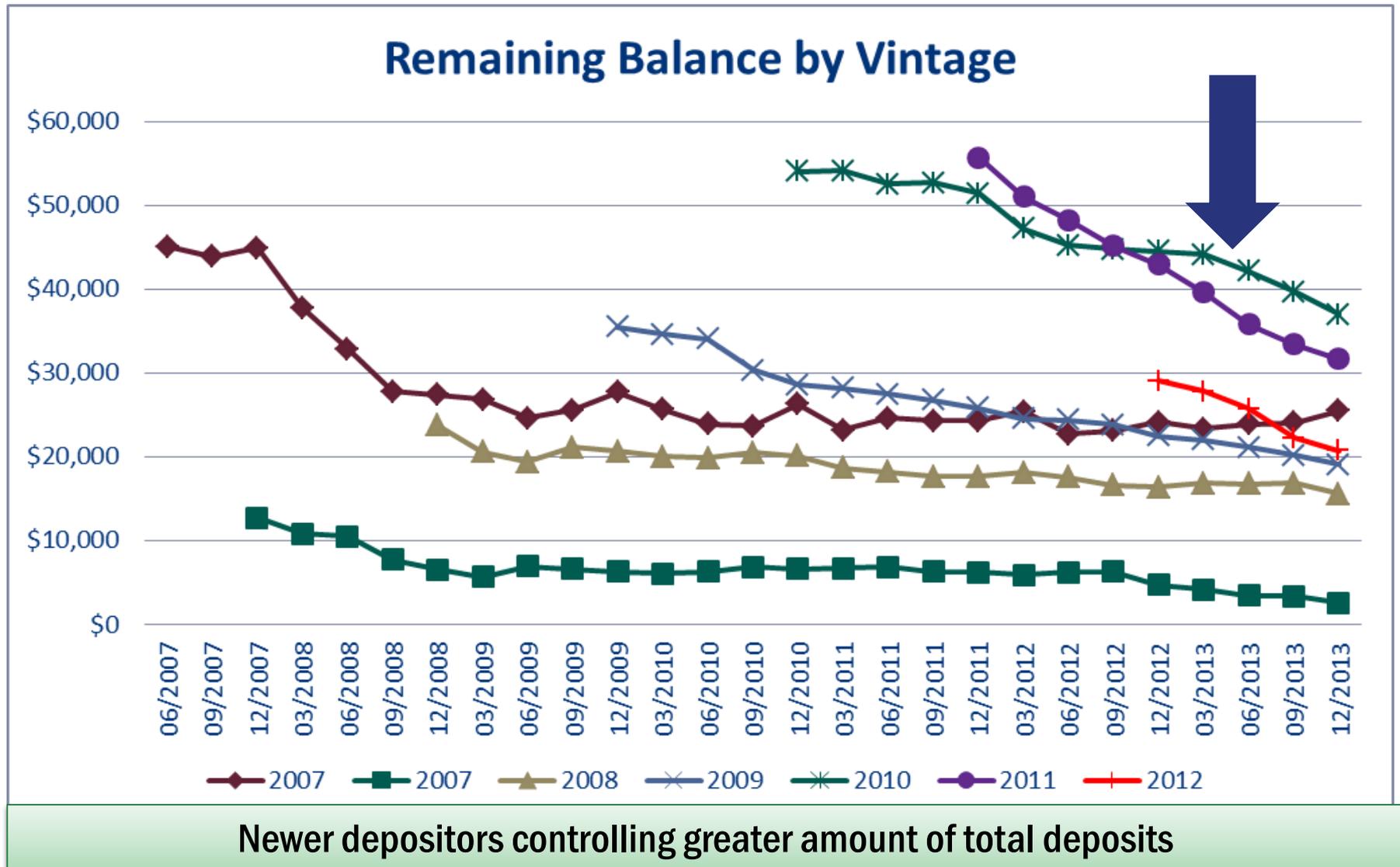
MMDA – Net Avg Balance



Avg balance of newer depositors greater and more ***VOLATILE*** than old study accounts.
Do the new accounts act like the old?

— 2007 — 2007 — 2008 — 2009 — 2010 — 2011 — 2012

MMDA – Remaining Balance



Market Value Sensitivity

Figure 1-7
Market Values by Rate Shock

	Summary Market Value							
	Balances	-200bp	-100bp	Base Case	+100bp	+200bp	+300bp	+400bp
Premium Business Checking	8,749	8,235	7,659	7,178	7,347	7,326	7,279	7,222
Regular Business Checking	8,749	8,234	7,659	7,134	7,042	6,809	6,582	6,365
Premium Consumer Checking	77,342	72,164	66,079	60,980	60,076	58,079	56,174	54,392
Regular Consumer Checking	77,342	72,143	66,058	60,671	58,112	54,676	51,499	48,579
Premium MMDA	165,001	157,193	147,235	140,108	140,202	138,609	136,818	134,995
Regular MMDA	165,001	157,010	147,052	137,820	134,692	130,339	126,129	122,141
Savings	88,222	81,366	74,355	68,227	68,067	65,303	62,648	60,154

Today's market values are well below book.

What will happen if rates go up on accounts with high betas and high surge percentages?

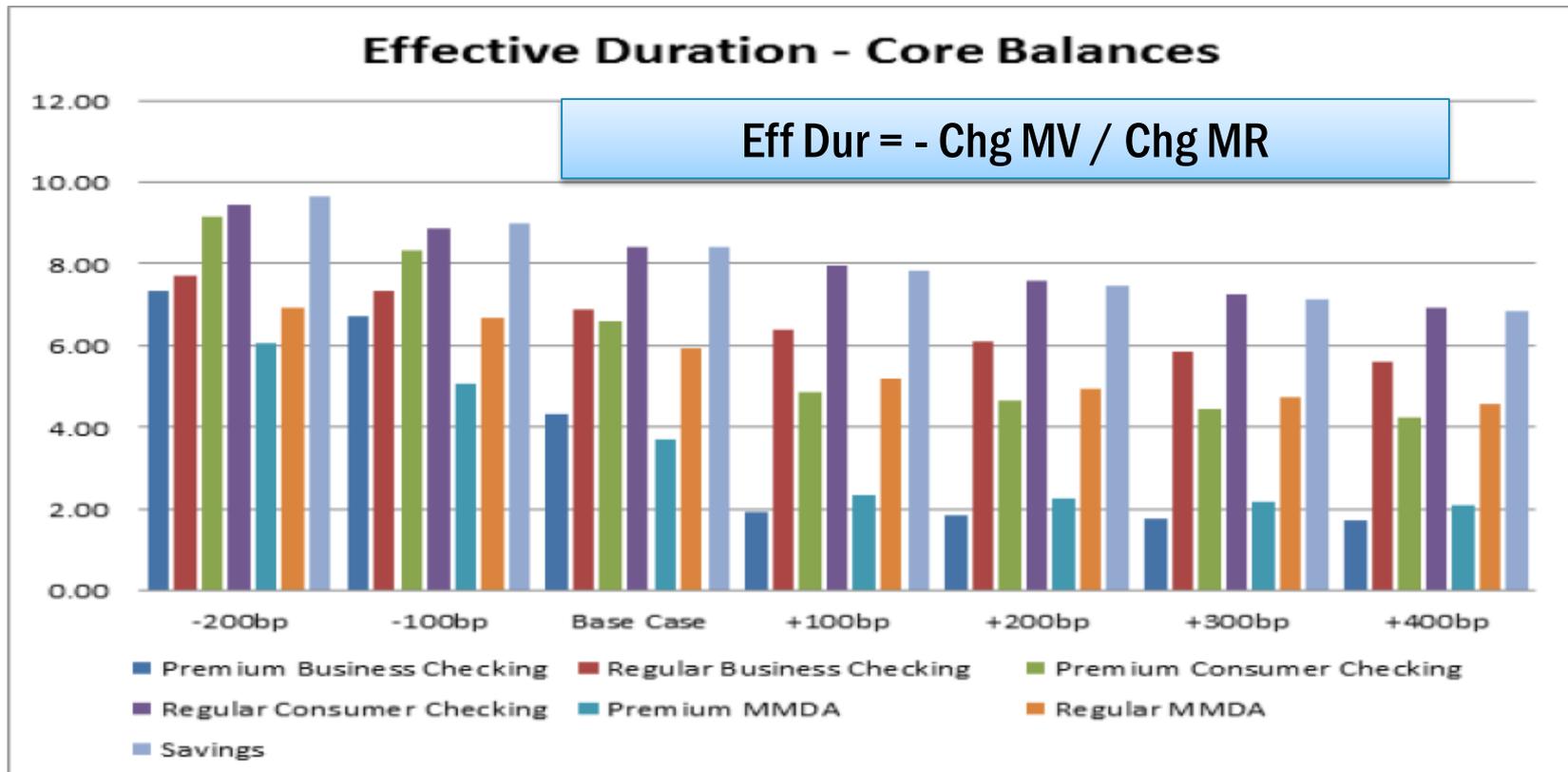
Weighted Average Life Argument

Summary Average Life

	Balances	-200bp	-100bp	Base Case	+100bp	+200bp	+300bp	+400bp
Premium Business Checking	8,749	8.03	8.03	8.03	6.90	6.52	6.28	6.12
Regular Business Checking	8,749	8.03	8.03	8.03	6.90	6.52	6.28	6.12
Premium Consumer Checking	77,342	9.18	9.18	9.18	8.38	8.19	8.06	7.98
Regular Consumer Checking	77,342	9.18	9.18	9.18	8.38	8.19	8.06	7.98
Premium MMDA	165,001	7.51	7.51	7.51	6.81	6.54	6.38	6.26
Regular MMDA	165,001	7.51	7.51	7.51	6.81	6.54	6.38	6.26
Savings	88,222	9.32	9.32	9.32	7.75	7.36	7.12	6.97

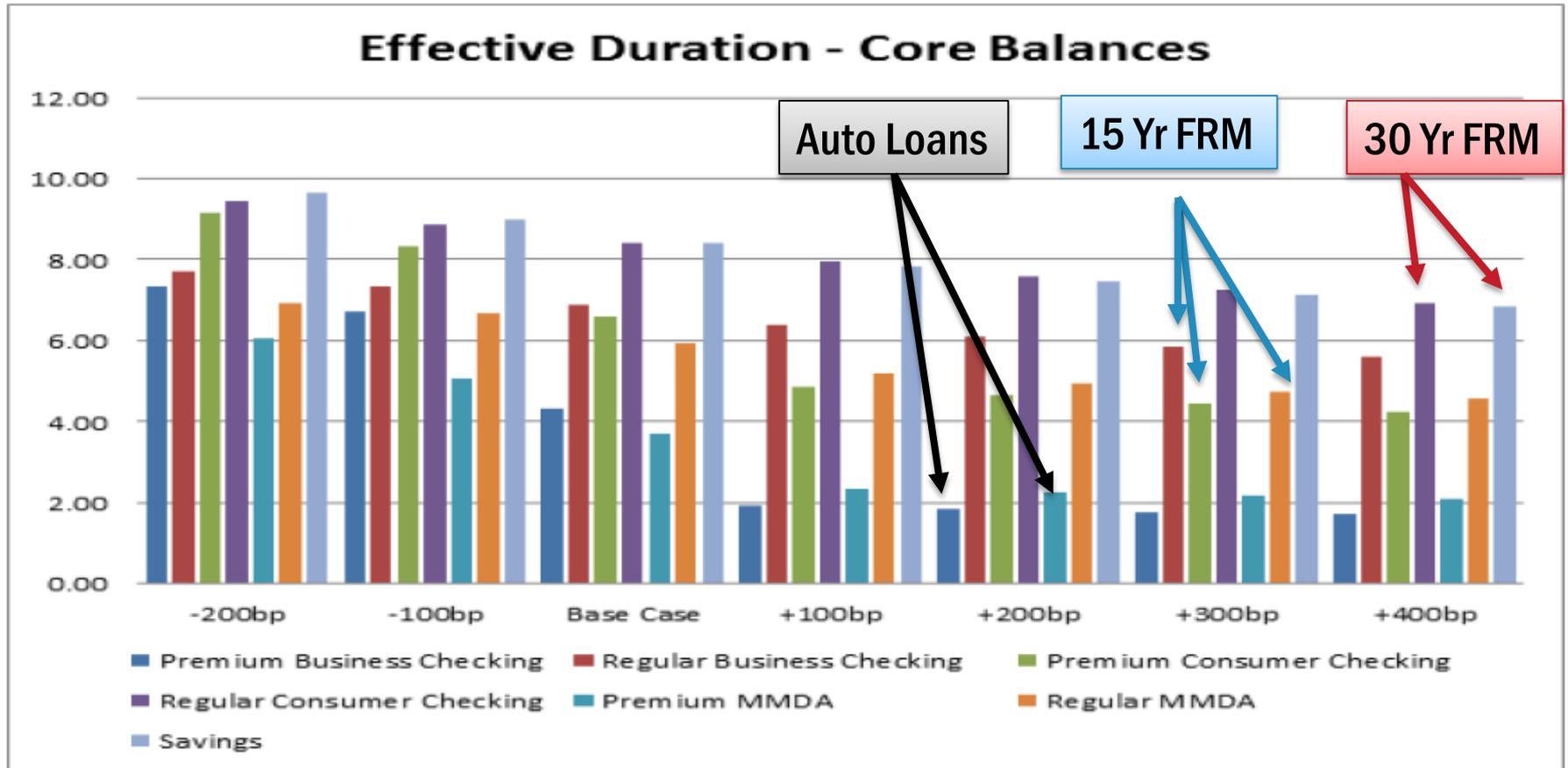
WALs only look at principal life & drop when rates rise as surges run off. Since WALs fail to consider betas (interest expense cash flows), they aren't a very good measure of hedging power of NMDs.

Effective Duration - Core

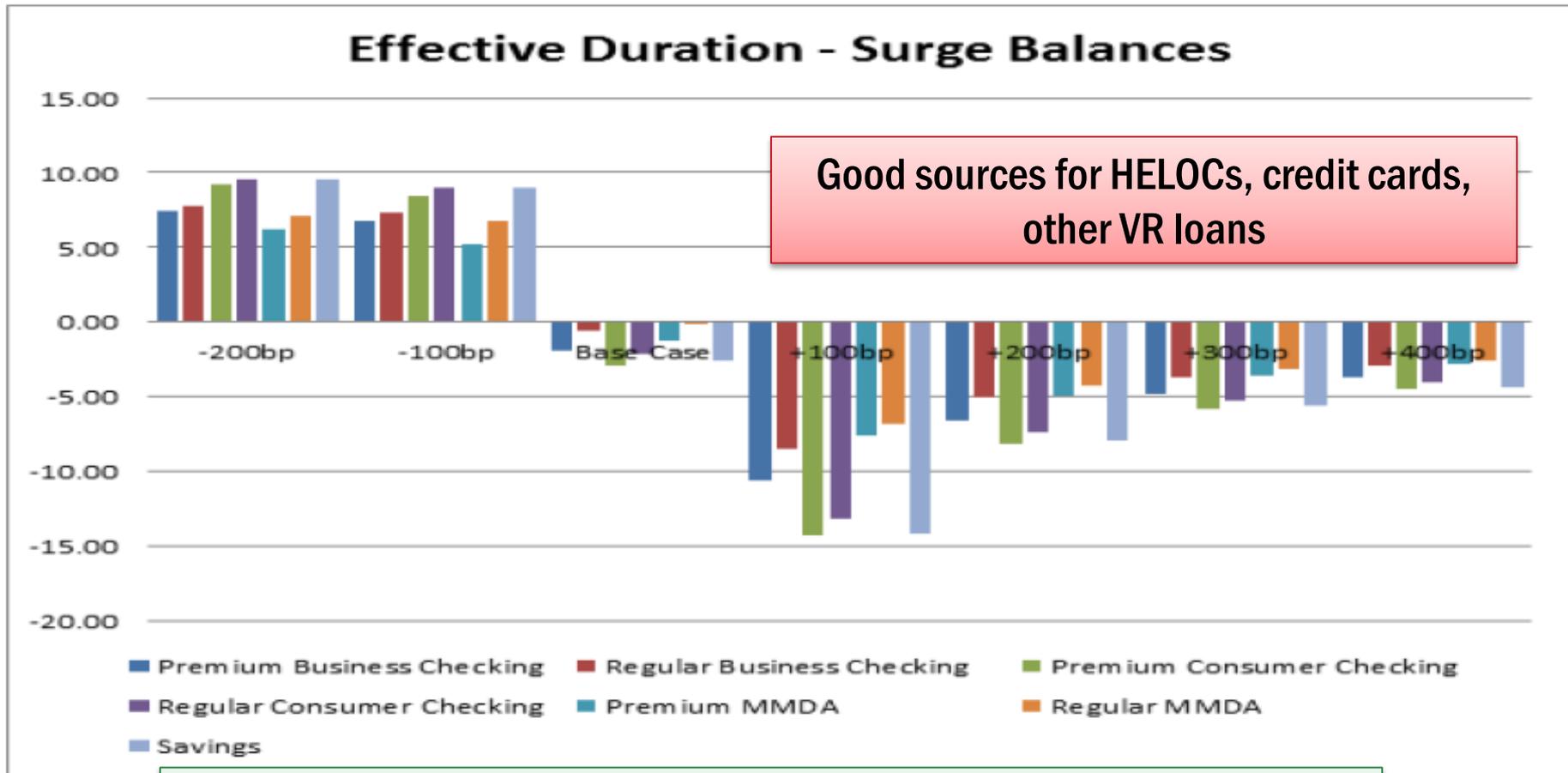


Effective Duration looks at how principal and interest cash flows are impacted by changes in rates. It considers decay rates, surge balances, truncation, and pricing betas. These are effective durations of non-surge (core) balances

Effective Duration - Core



Effective Duration - Surge



Common Mistake in ALM Modeling

Many ALM reports fail to properly apply cost of increasing interest rates on surge balances

- ALM model fails to “break out” the surge balance into separate line item
- Pricing beta used on the account represents the “core” repricing
- Result can be significant underestimation of interest expense in rising rates

What if your surge balances moved by 75-90% of change in market rates?

- Too much money being treated as low cost, long duration
- Does this help explain why we have truncation?



Sensitivity Testing

Unaccounted Cost of Surge

Home First Bank Account	Strategy 1 - Current Beta/Surge				Strategy 2 - Current Beta/Higher Surge			
	Rate	Ret %	Ret \$	Beta	Rate	Ret %	Ret \$	Beta
Business DDA Core	0.53%	100%	14,890	0.24	0.53%	71%	10,570	0.24
Business DDA Surge	1.76%			0.73	1.76%	29%	2,643	0.73
Now Core	0.44%	100%	41,556	0.17	0.44%	64%	26,596	0.17
Now Surge	1.76%			0.28	1.76%	36%	14,960	0.28
MMDA Core	1.24%	100%	10,332	0.41	1.24%	64%	6,612	0.41
MMDA Surge	1.24%			0.41	1.24%	36%	3,720	0.41
Savings Core	0.69%	100%	45,606	0.30	0.69%	64%	29,188	0.30
Savings Surge	2.14%			0.83	2.14%	36%	16,418	0.83
				-				-
<p>Strategy 1 - Current model assumes all \$ stays in current line item and low “beta” applies to all balances in account</p> <p>Strategy 2 - Uses “surge balance” assumptions and premium account betas from core study. Comparing the impact on a 2% immediate change in rates</p>								
				-				-
Total \$ / Average %	0.64%	100%	112,384	25.64%	1.05%	99%	110,707	46.37%

Sensitivity Testing

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				-				-

Strategy 1 – Current model assumes all \$ stays and low “beta” applies to all balances in account

Strategy 2 – Use the “surge balance” assumptions and premium account betas from study. Using a 2% immediate change in rates

				-				-
Total \$ / Average %	0.64%	100%	112,384	25.64%	1.05%	99%	110,707	46.37%

Strategy 1 vs Strategy 2

- Cost up by \$459k annually (+40bp)
- Duration shortens 1.2 Yrs (4.4 Yrs)

Becoming Friends with Liquidity

Don't confuse Liquidity for Funding

- Develop a “funding strategy” for maintain current non-maturity deposits
- Identify your necessary levels for “pools” of funds

Get to know your core funding relationships better

- Identify your long-term hedging potential in non-maturity accounts – core study
 - *Beta analysis*
 - *Decay incorporating new deposit inflow behavior differences*
 - *Surge balance estimates*
- Sensitivity test key variables

Incorporate findings and plans into Contingency Funding plan (CFP)

Outline and document strategic “funding” value of wholesale sources like FHLB borrowing pools” vs. “liquidity”

FARIN Financial Risk Management

Advisory Services

- From education to strategy FARIN can recharge your approach to ALCO

Capital Planning

- Capital plan development
- Integrated stress testing
- Capital buffer calculations

Asset/Liability Management

- Institution managed
- Outsourced
- Hybrid

Core Deposit Analysis

- Vintage analysis
- Sensitivity testing

Credit Services

- ALLL calculation (CECL ready)
- Dual loan grading & migration
- Credit stress testing
- Customer management & tracking

Loan & Deposit Pricing

- Integrate CFO analytics with needs of the front-line
- Strategy development

Data Warehousing

- One data source for all risk analysis

What is Asset\Liability All About?

AMERICAN BANKER.

How Regulators Missed the Mark on Interest Rate Risk

By Steven Abrahams

July 27, 2016

The weakening net interest margins reported this month at many banks should remind the market that bank portfolios in the years ahead will continue to walk up to and over an investment cliff. The bonds and loans in these portfolios will mature, and the banks will likely need to reinvest at much lower interest rates. The cumulative difference in interest income and earnings could be breathtaking.

The investment cliff could eventually cut nearly \$20 billion of income annually from U.S. bank securities portfolios alone, according to our estimates. And those portfolios only account for a fifth of bank assets. If U.S. banks had to reinvest their \$3.4 trillion in securities in similar instruments at today's low rates, their portfolio yield would drop from 2.06% to 1.46%. Although estimates of the investment cliff are imprecise, the prospect is sobering. Every day that a dollar in a bond or loan matures, it rolls off the edge. And this has been happening for years.

The shocking thing is that many banks have done little to prepare. Since early 2011, according to research from Barclays Capital, more than 90% of U.S. banks have set up their balance sheets in anticipation of rising interest rates. To their credit, many bank managers have simply been responding to warnings from

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What is Asset\Liability All About?

SNL



Thursday, July 28, 2016 12:46 PM CT **Exclusive**

Some asset-sensitive banks evaluating, giving up their independence

By [Chris Vanderpool](#) and [Nathan Stovall](#)

A handful of banks positioned to benefit from rising interest rates have decided not to wait any longer and sell to another institution, and others just might follow.

Some asset-sensitive banks announced plans to sell in recent weeks [after Brexit](#) virtually put the prospect of rate hikes on hold for the remainder of the year. In a lower-for-longer environment, it seems clearer today that banks that have positioned their balance sheets for rising rates are unlikely to receive any benefit soon.

Preparing for higher interest rates seemed like a sound proposition with rates near historical lows. The banking industry as a whole stood in an asset-sensitive position at the end of the first quarter, as assets expected to reprice or mature within one year [exceeded](#) similarly rate-sensitive liabilities, with the difference amounting to 31.6% of total assets at the end of the first quarter.

Many banks increased asset sensitivity by building non-maturity deposits and shortening durations on earning assets while often avoiding higher-yielding assets with fixed rates. Those moves would cause earnings to expand when rates move higher, but as rates have remained low, many institutions have given up some earnings in the near term waiting for higher rates to come to pass.