

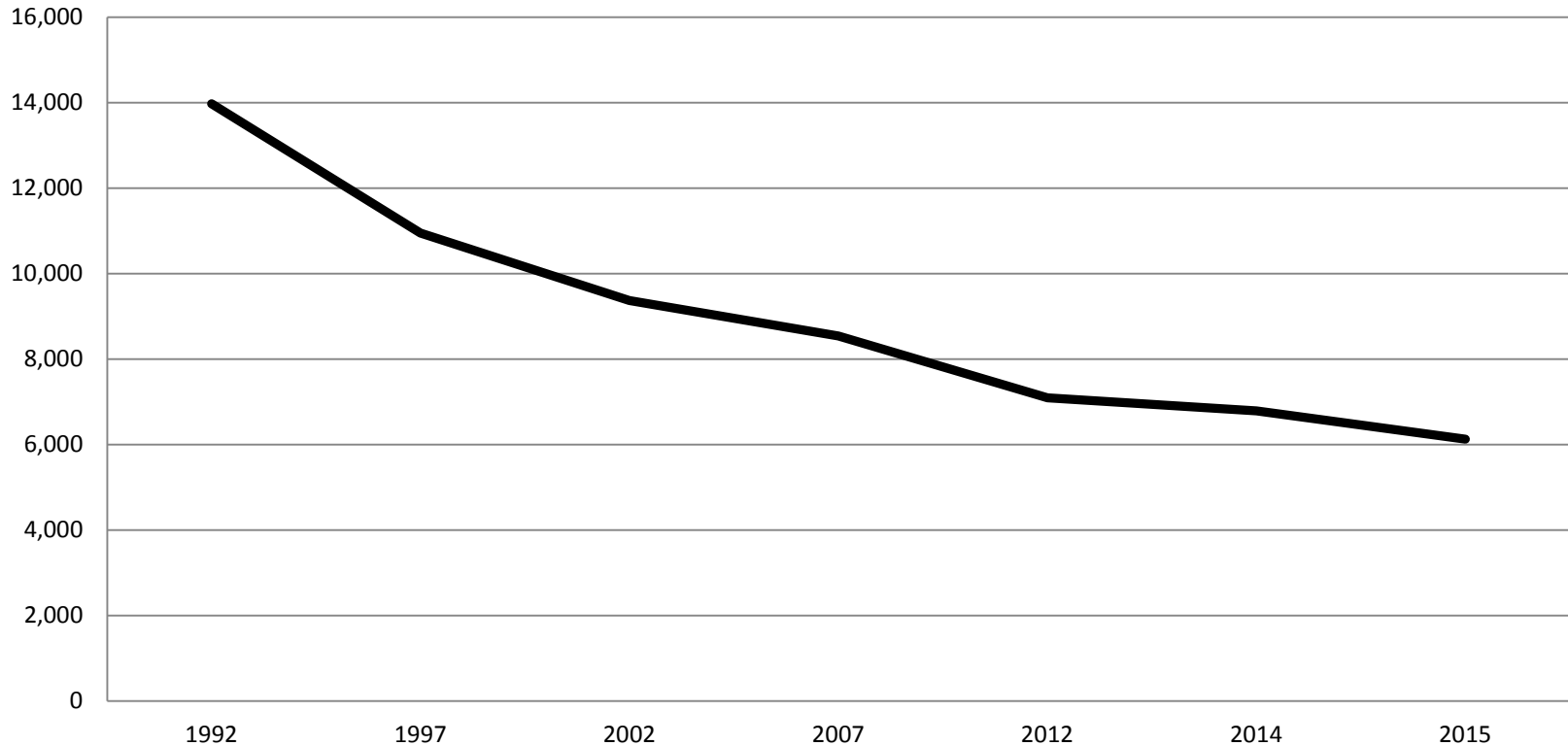
Structuring Term Loans – How to Manage Interest Rate and Credit Risk

April 2016



Which Banks Survive

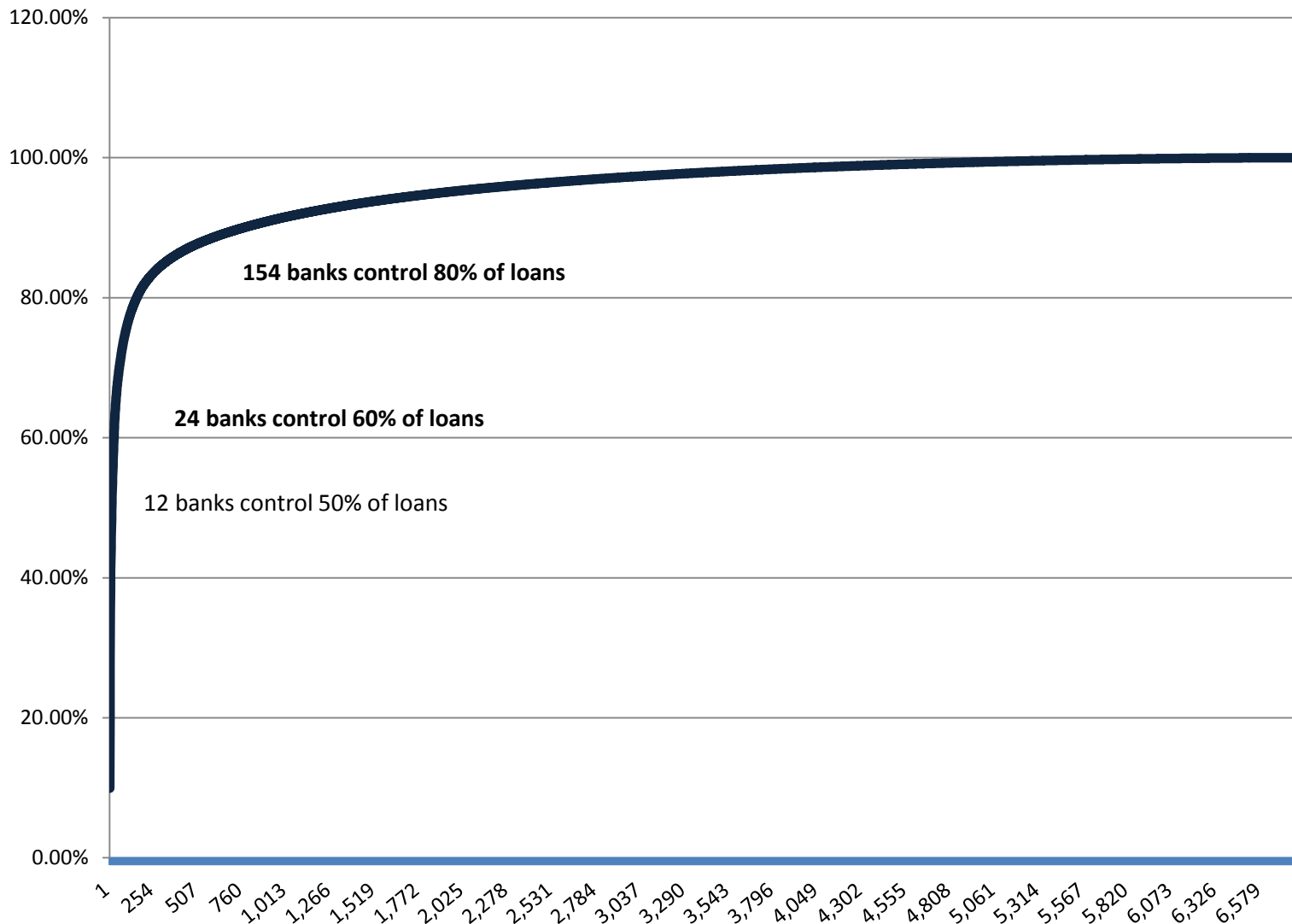
Number of Banking Charters



56% Decline

Industry Concentration

Loans booked by all banks 12/31/15

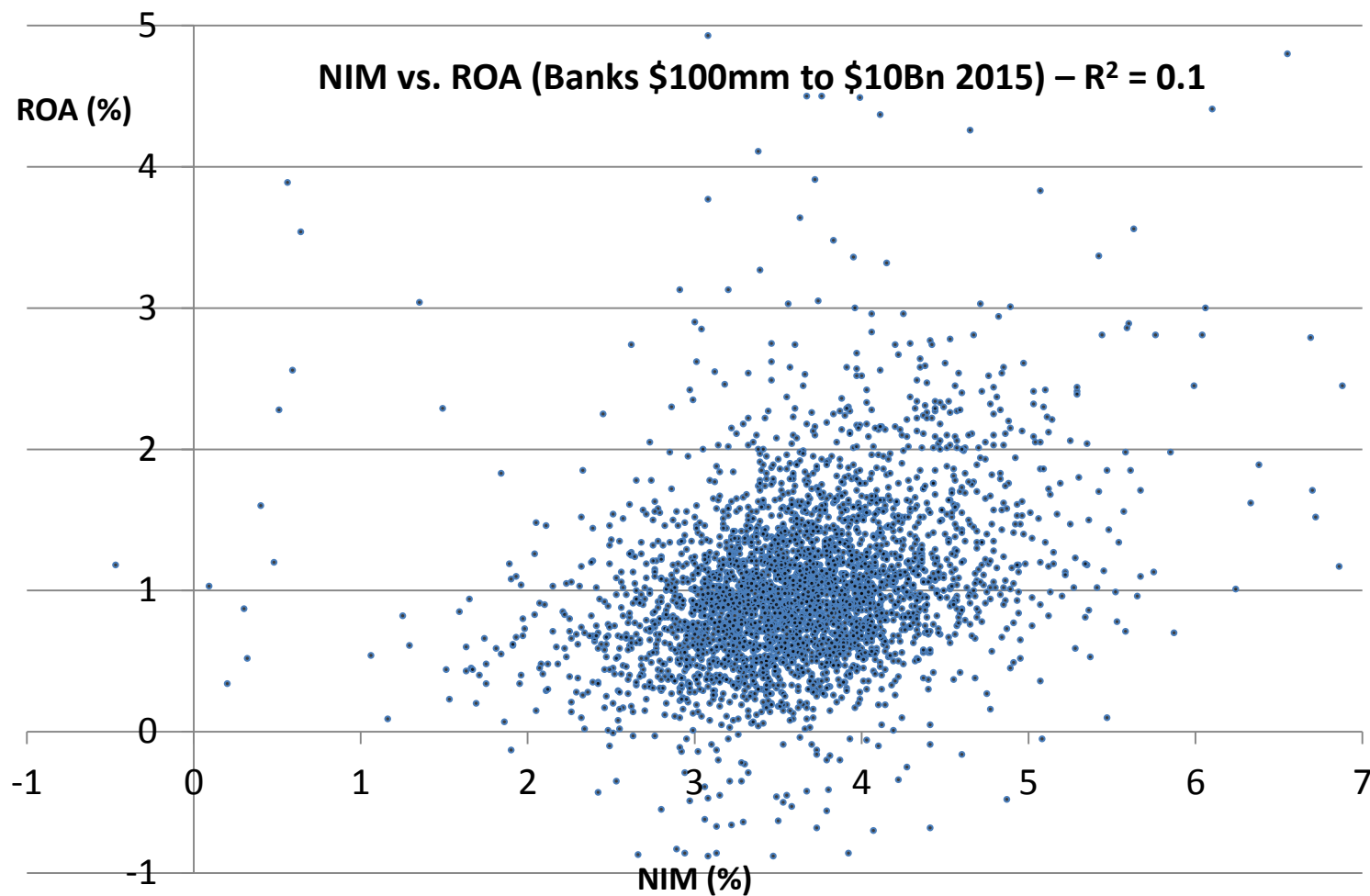


Community banks must change performance measure

NIM is misleading



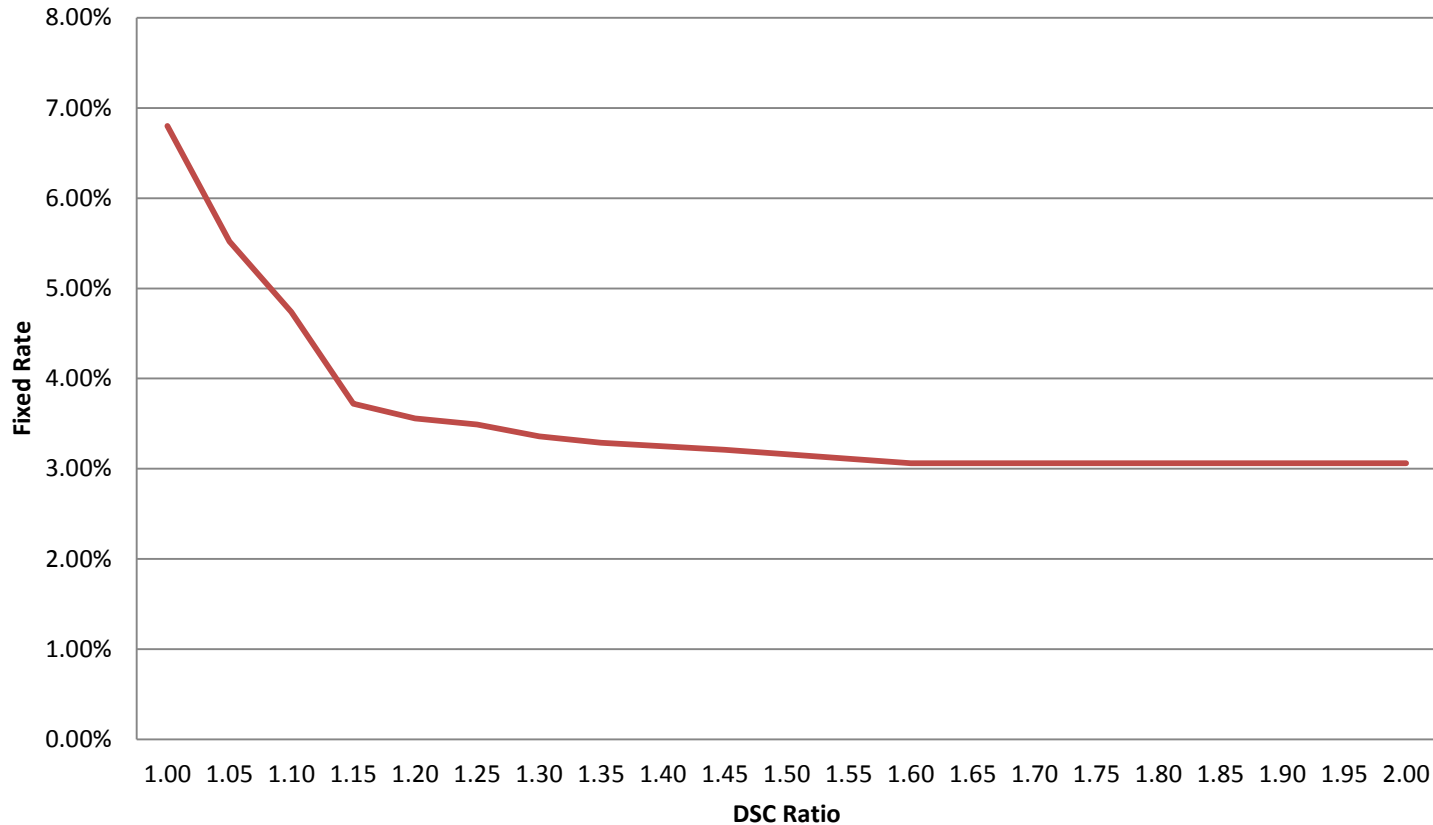
NIM Correlation with ROA



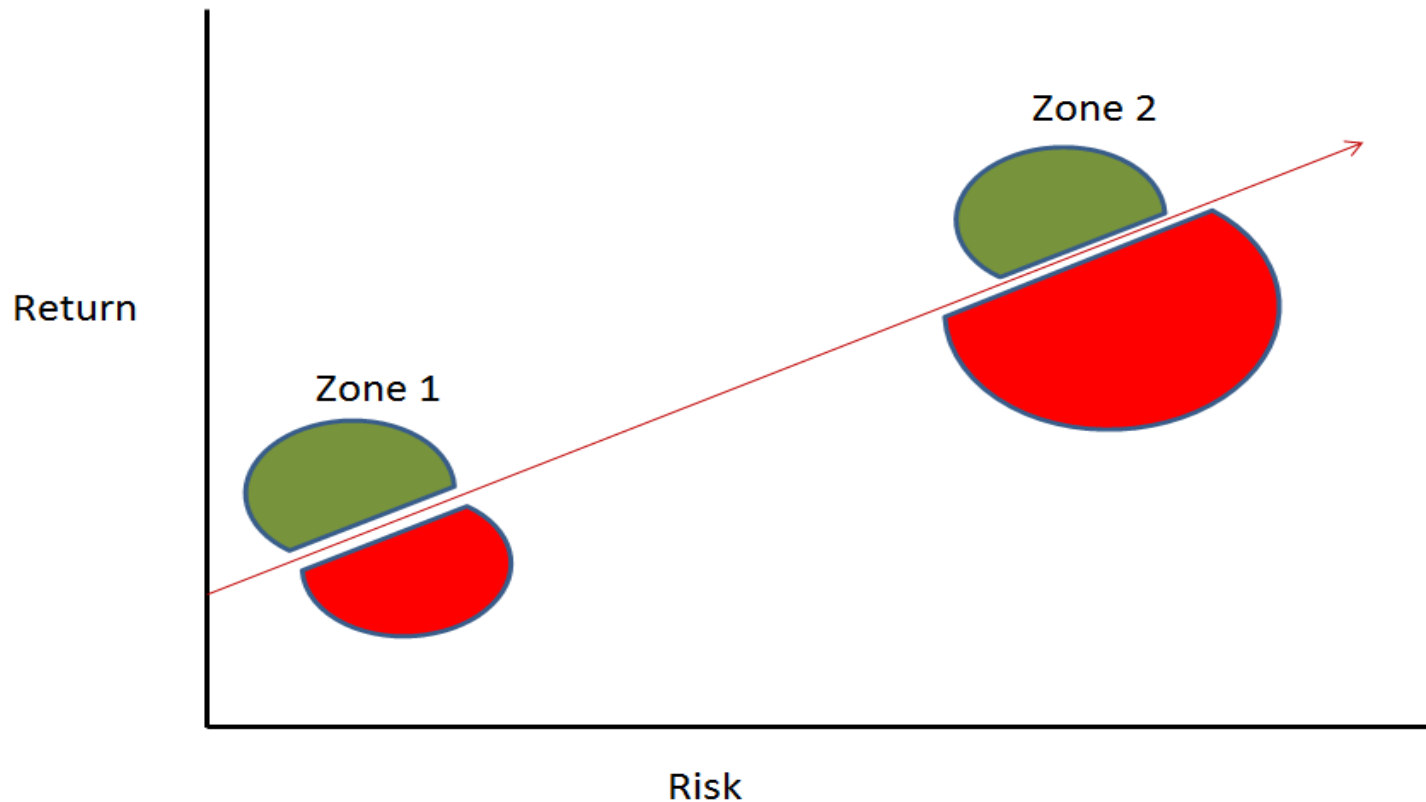
- **Credit Risk**
- **Loan Size**
- **Total Relationship**
- **Interest Rates**

\$1 million 25 due 5 , office building, 75% LTV

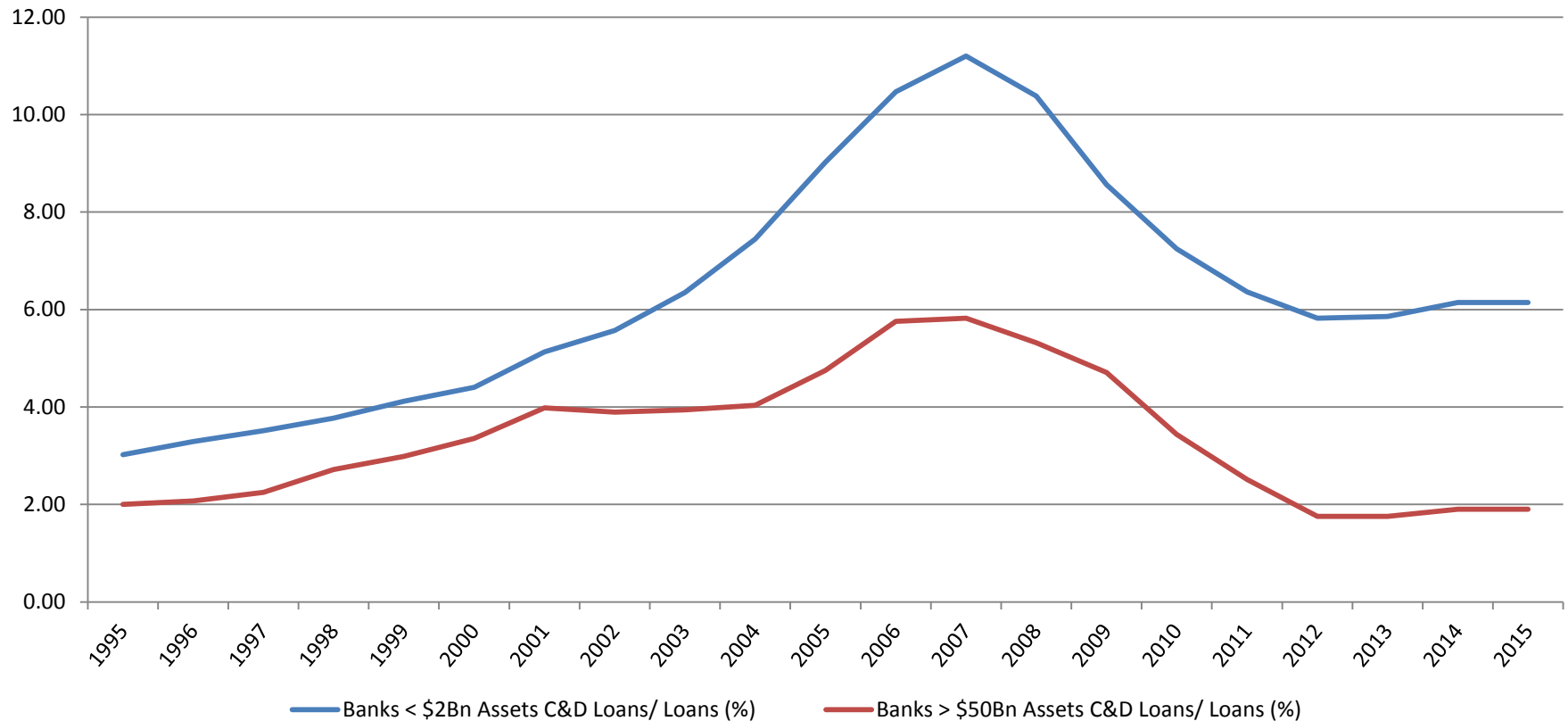
Rate to Solve for 16% RAROC



What business are banks in? Risk for reward?

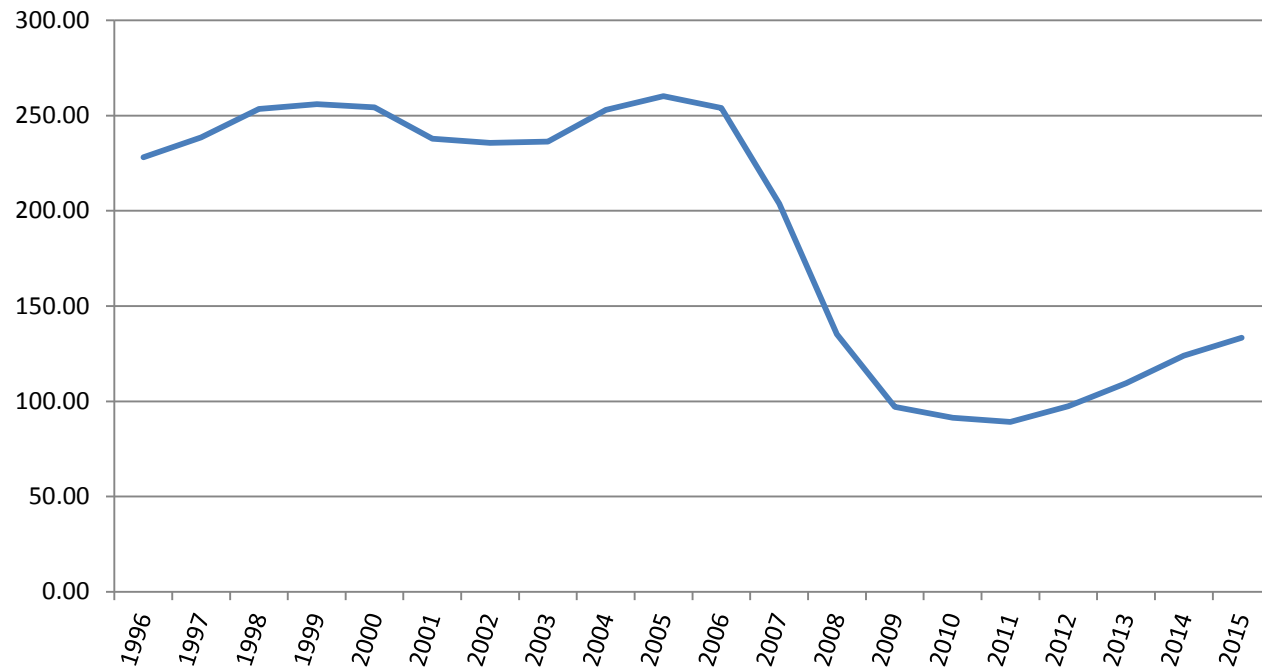


C&D Loans as % of all Lending

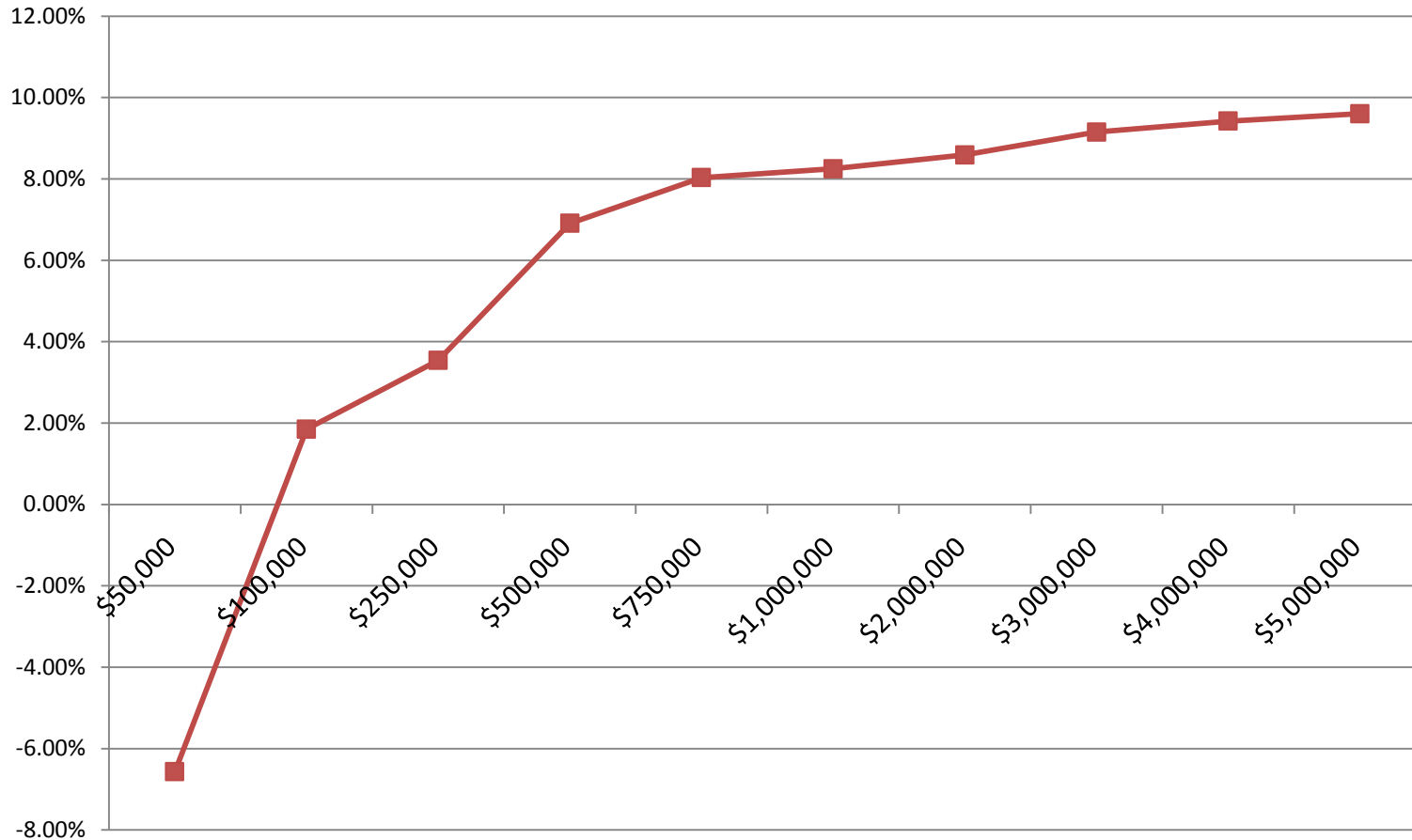


Bank \$100mm to \$10Bn

Reserves/NPA(%)



ROE vs. Loan Size



Total Relationship – Cross Sell

	Net Income / Yr	ROE (Risk adjusted)
Just Loan @ 2% Spread	\$16,424	9.2%
Plus: 50bp upfront fee	\$17,211	9.7%
Plus: \$100k Checking	\$17,972	10.0%
Plus: \$60k Per DDA	\$18,643	10.2%
Plus: Referral for \$50k DDA	\$18,940	10.4%
Plus: International Services (CSB)	\$26,798	14.7%
Plus: Lockbox	\$28,322	15.5%
Plus: Payables Management	\$30,618	16.8%
Just Loan @ 2.25% Spread	\$18,690	10.5%
Just Loan @ 2.50% Spread	\$20,970	11.7%

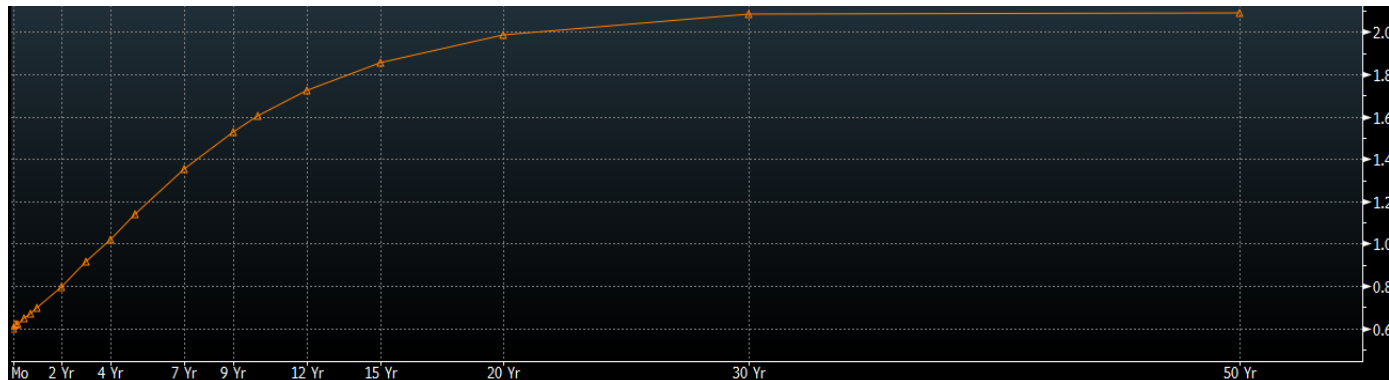


Interest Rate Risk

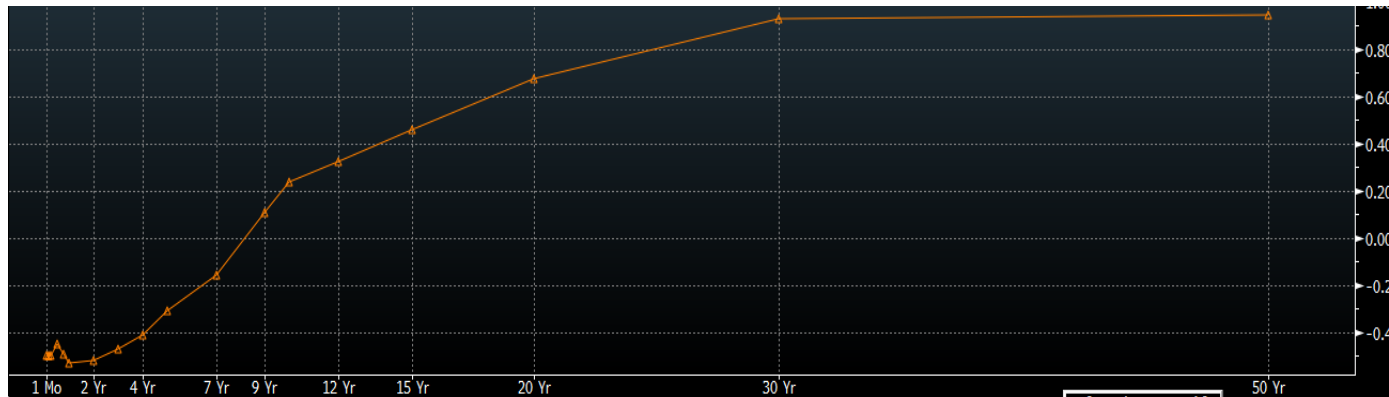




USD Term Structure

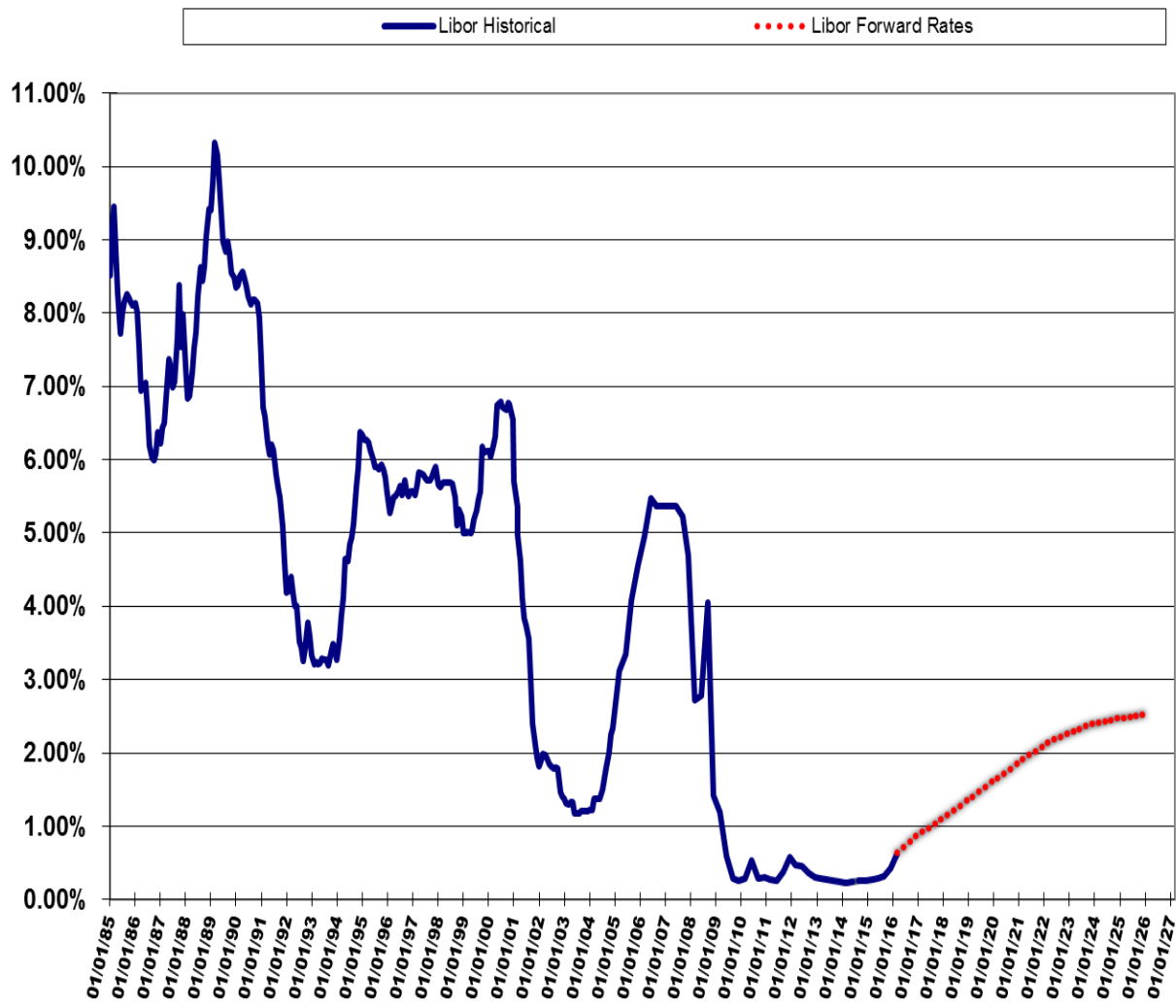


EUR German Term Structure



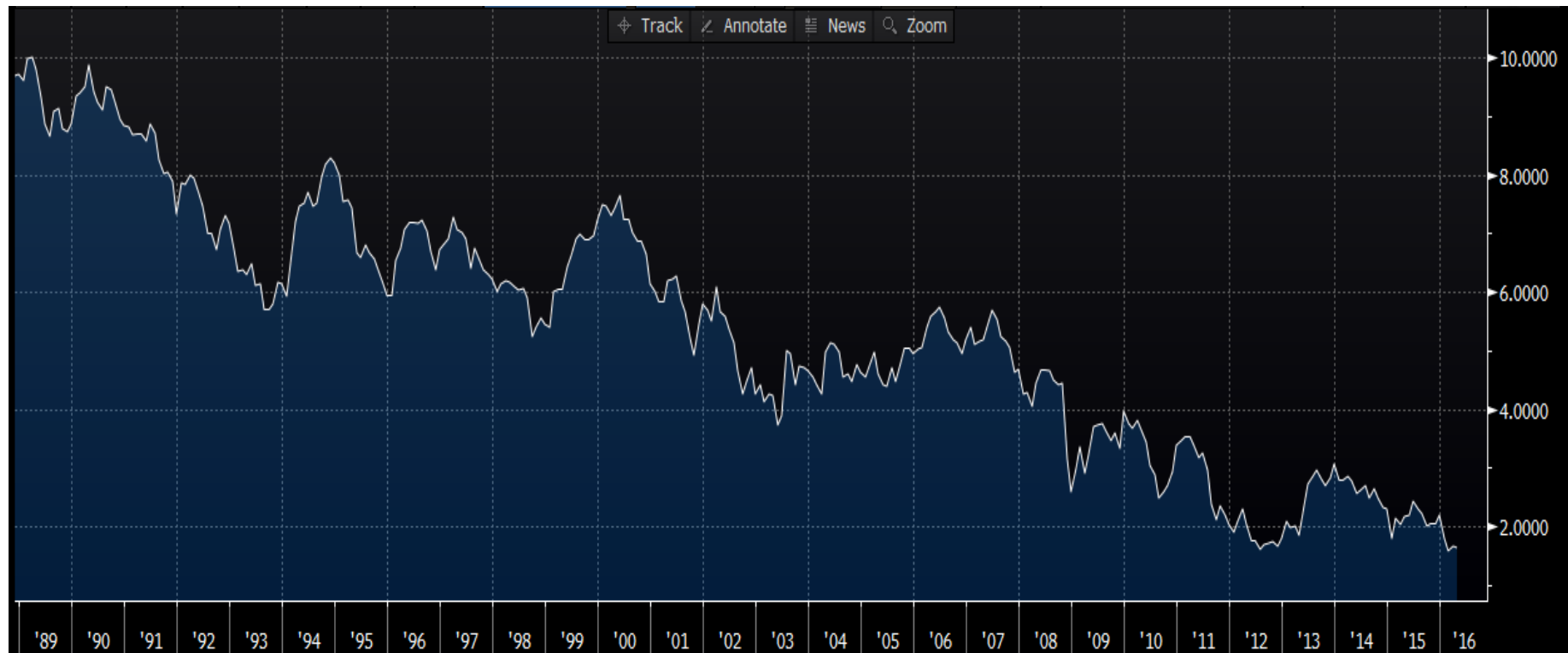


Interest Rate Risk – Borrower Behavior



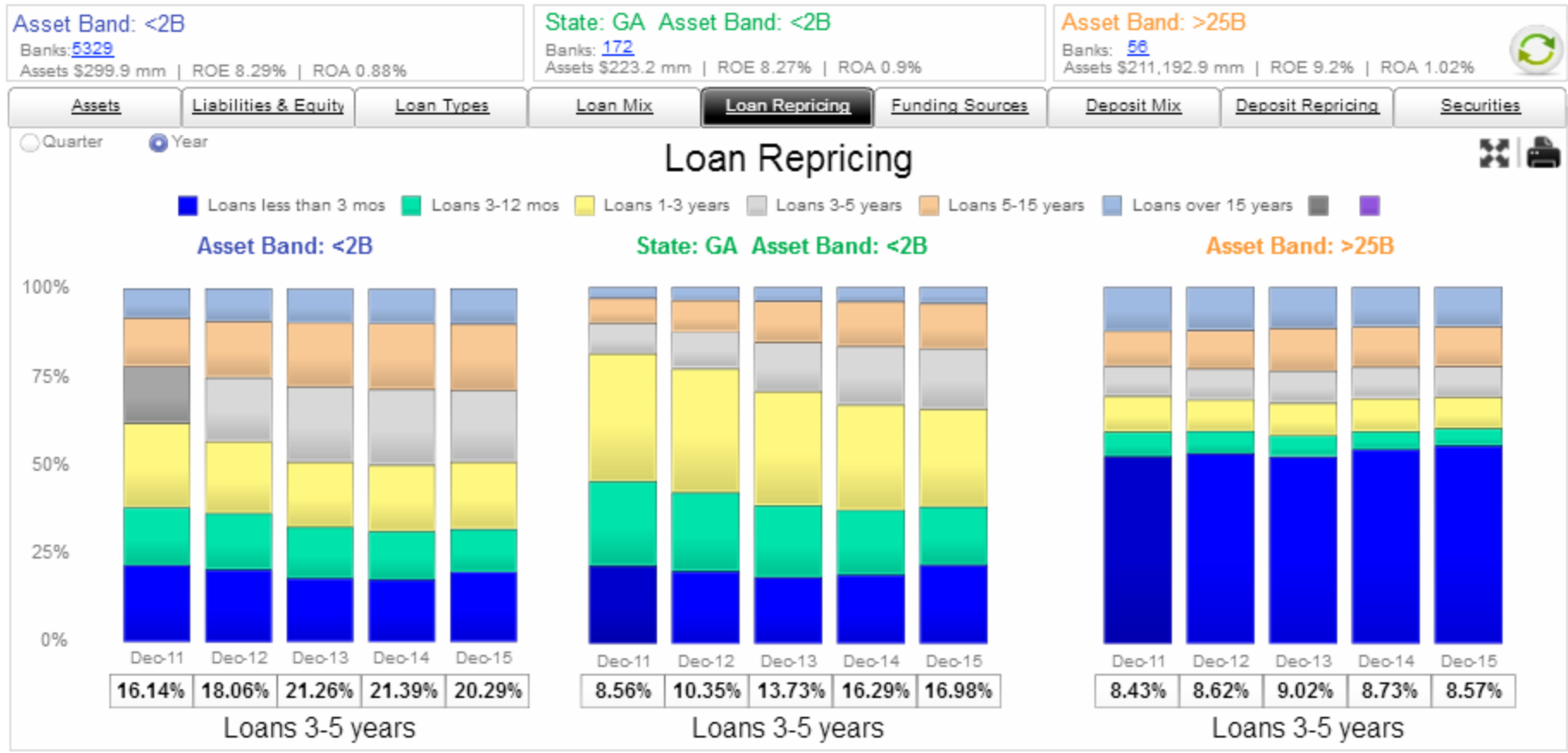


Historical 10 Year Swap Rates



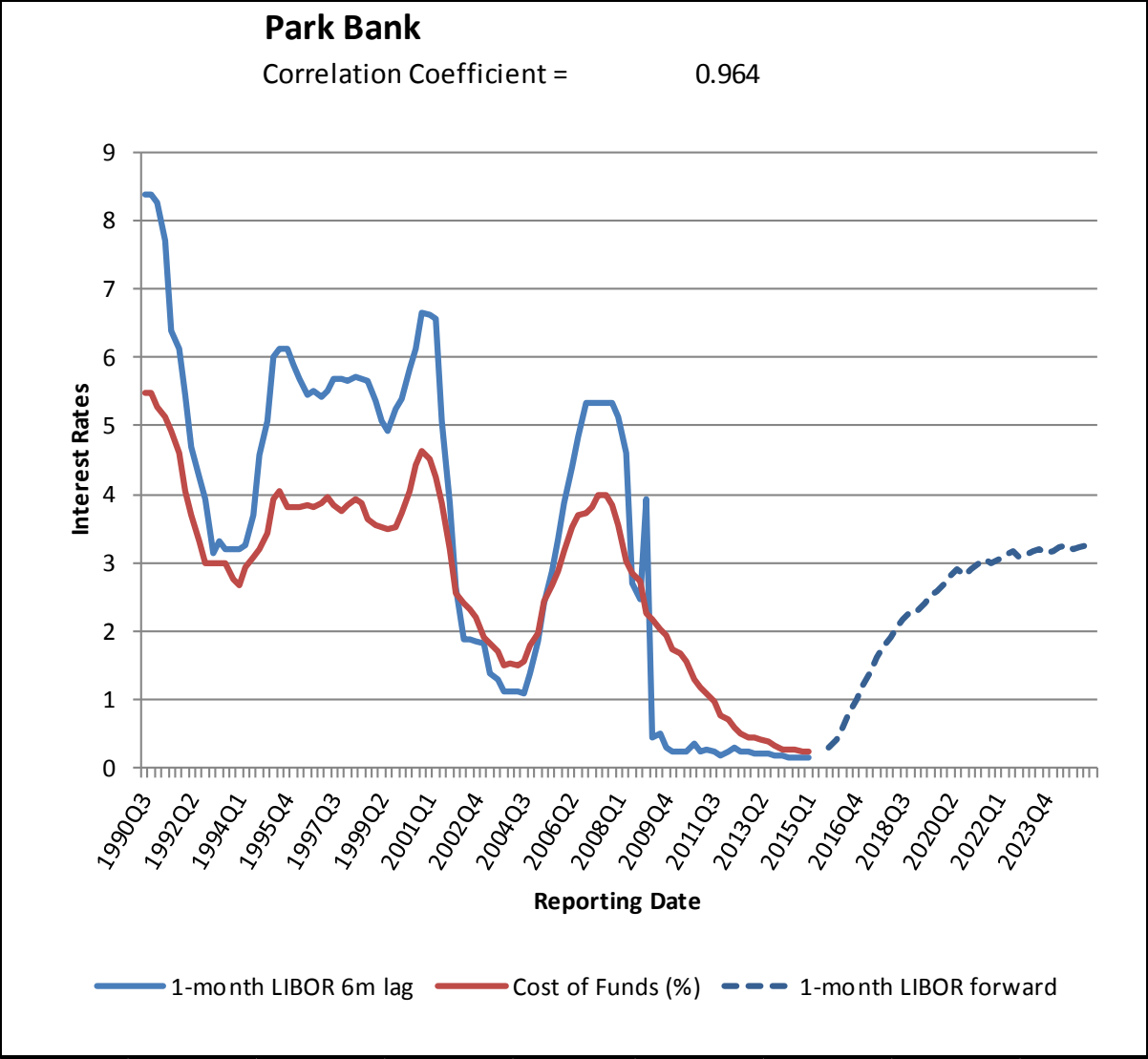


Interest Rate Risk – Banks' Response





Interest Rate Risk – Driving Behavior

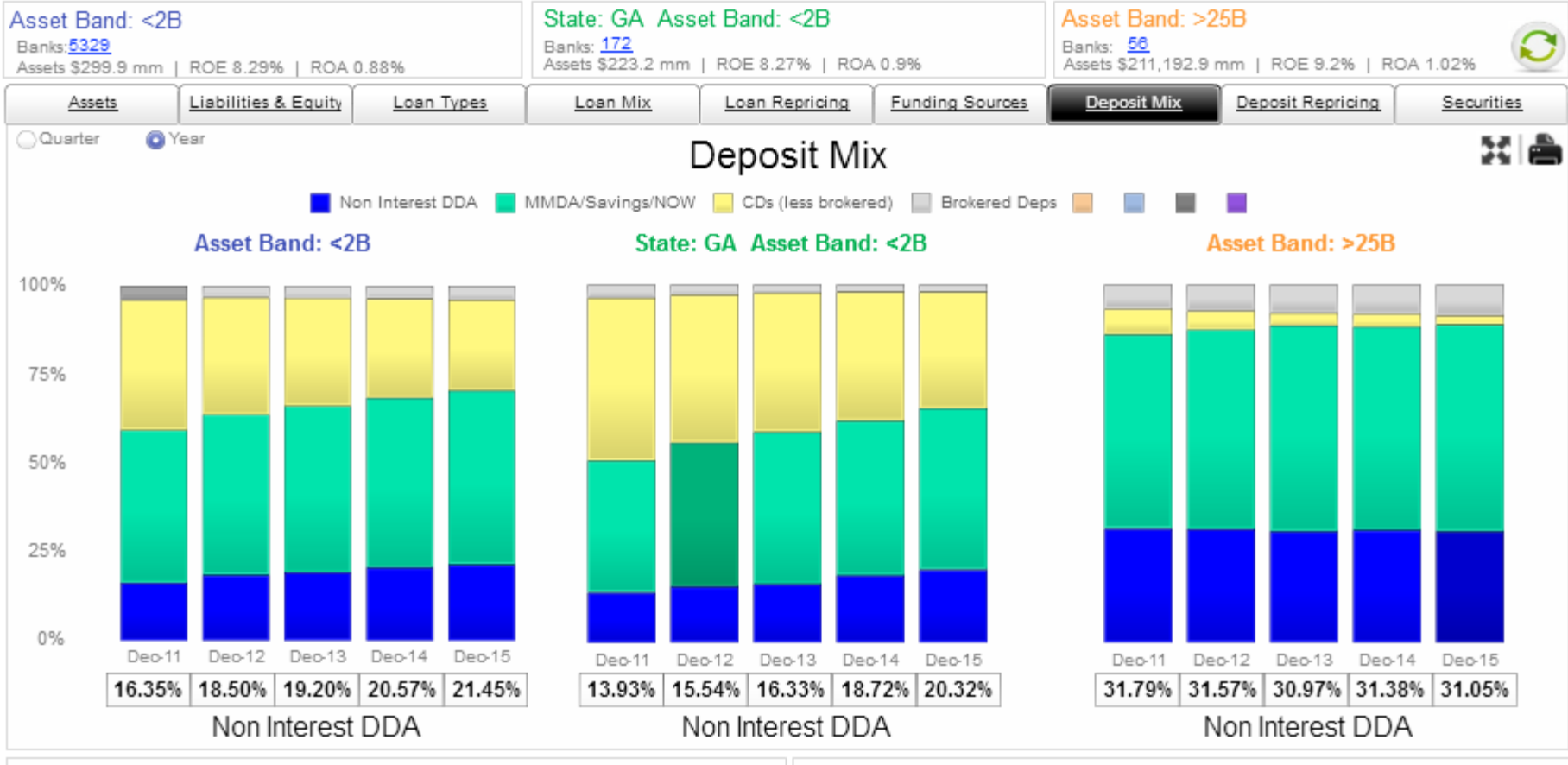


All Banks R2

= 0.923144

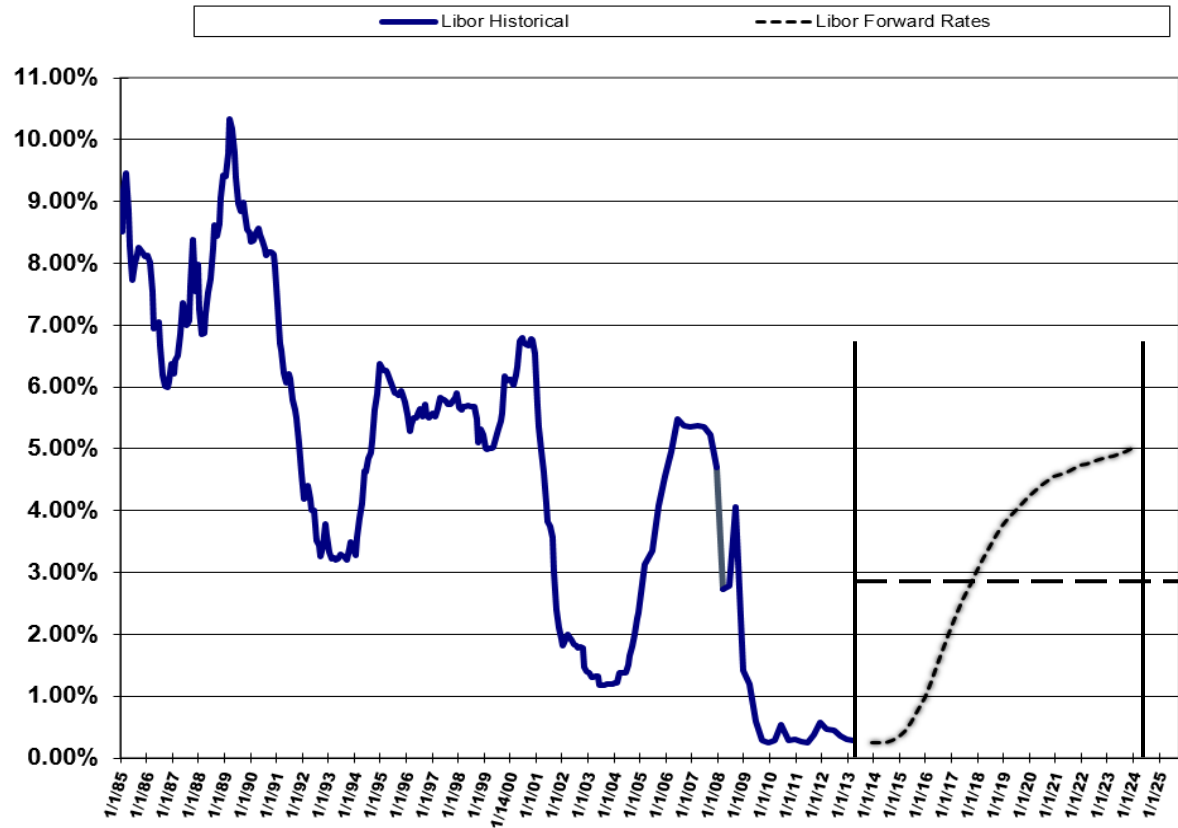


Interest Rate Risk – Banks’ Response





Interest Rate Risk – Swaps



The average of expected floating rates for the next 10 years is also known as the 10 year hedge rate. The average of expected LIBOR is a special case of a hedge rate, called a swap rate.



Interest Rate Risk – Why Banks Hedge

Interest Rate Risk

Mitigate interest rate risk by boarding a variable rate asset

Fixed Rate Loan Demand

Meet market demand while enhancing credit quality through stabilization of borrower cash flow

Generate Fee Income

Proactively market a long term fixed rate lending program and drive new business

Intense Competition

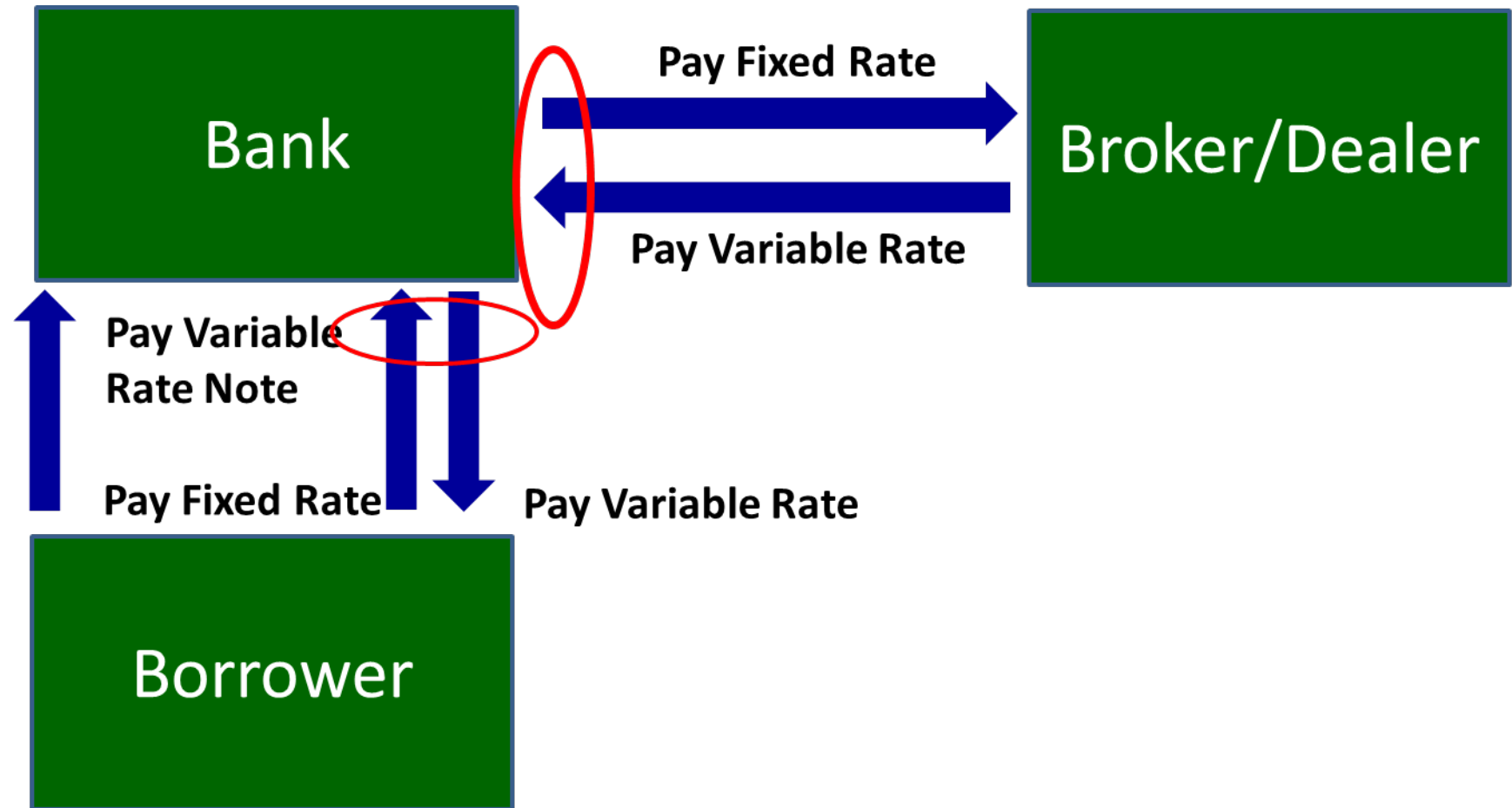
No longer does the bank have to be concerned with aggressive structures from national lenders

Existing Loans At Risk

Defend and cultivate strongest bank relationships with new long term facilities

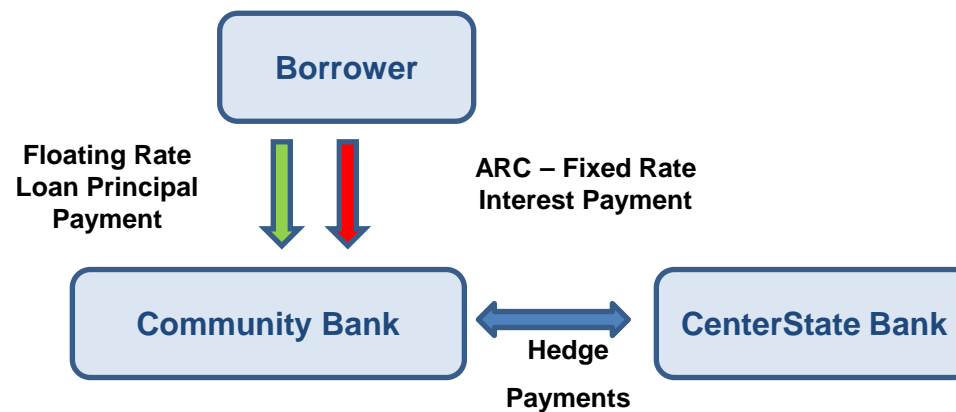


Interest Rate Risk – Swaps

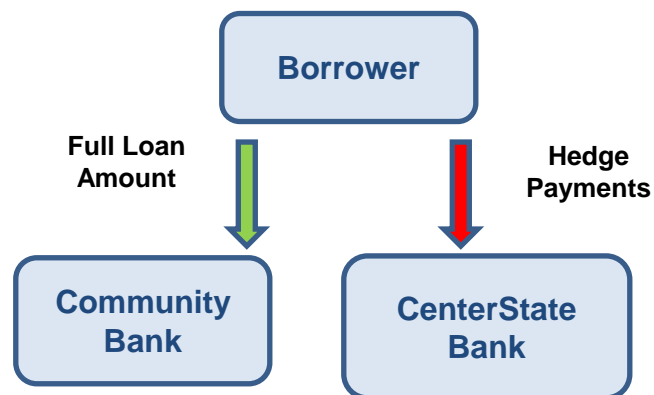




Cash Flow Diagram



Credit Exposure





Interest Rate Risk – ARC

	ARC	vs.	Swaps
General:			
Fee Generation	✓		✓
Swap/Hedge Portability	✓		✓
Hedges for Unique Structures	✓		✓
Hedges for Forward-Starting Structures	✓		✓
Accounting:			
<u>No</u> Hedge Effectiveness Accounting	✓		✗
<u>No</u> Call Report Derivative Disclosure	✓		✗
<u>No</u> Derivative Capital Allocation	✓		✗
<u>No</u> Dodd-Frank Reporting	✓		✗
Documentation:			
<u>No</u> ISDA Documentation for Bank	✓		✗
<u>No</u> ISDA Documentation for Borrower	✓		✗
Collateral Requirement:			
<u>No</u> Independent Amount (\$500k +)	✓		✗
<u>No</u> Additional Cash & Securities	✓		✗
Simplified Borrower Experience	✓		✗

- ✓ ARC has all of the same capabilities of any swap program
- ✓ ARC eliminates all derivative accounting headaches for banks
- ✓ ARC eliminates all documentation and settlement headaches for borrowers
- ✓ ARC eliminates the requirement for loan officers to explain a complex transaction

A simplified platform for borrowers and loan officers results in more transactions booked.



Interest Rate Risk – Swaps Pricing

$$A + B = C$$

Floating Index + Credit Spread = Floating Rate to Bank
or

Swap Rate + Credit Spread = Fixed Rate From Borrower

	3yr final	4yr final	5yr final	6yr final	7yr final	8yr final	9yr final	10yr final	12yr final	15yr final	20yr final
3yr Am.	1.00%	-	-	-	-	-	-	-	-	-	-
5yr Am.	1.06%	1.12%	1.15%	-	-	-	-	-	-	-	-
7yr Am.	1.08%	1.16%	1.23%	1.27%	1.29%	-	-	-	-	-	-
10yr Am.	1.09%	1.18%	1.27%	1.34%	1.41%	1.46%	1.49%	1.50%	-	-	-
15yr Am.	1.10%	1.20%	1.28%	1.38%	1.46%	1.53%	1.59%	1.64%	1.70%	1.77%	-
20yr Am.	1.10%	1.19%	1.28%	1.38%	1.48%	1.54%	1.62%	1.68%	1.78%	1.90%	1.95%
25yr Am.	1.10%	1.20%	1.28%	1.39%	1.48%	1.56%	1.64%	1.71%	1.82%	1.96%	2.04%
30yr Am.	1.10%	1.20%	1.29%	1.39%	1.49%	1.57%	1.65%	1.72%	1.84%	1.98%	2.08%



Interest Rate Risk – Prepayment

Estimated unwind cost/benefit to borrower over life of hedge with yield maintenance

- \$1MM original loan balance at 4.18% fixed, 1mo LIBOR + 2.50% floating
- 10yr final maturity / 20yr amortization

ARC Termination Scenario

Input Change
Increments:

0.25%

Termination Calculations

Initial balance: \$ 1,000,000

Amortization Term (yrs): 20

Commitment Term: 10

Initial Hedge Rate: 1.68%

Fixed Rate to Borrower: 4.18%

Starting Date: 4/11/16

Borrower

Signature

Prepayment Hedge Rate vs. Initial Hedge Rate

PV of Loan	Remaining Term	-0.75%	-0.50%	-0.25%	0%	0.25%	0.50%	0.75%	Rate Movement
		0.930%	1.180%	1.43%	1.68%	1.93%	2.1800%	2.430%	Prepayment Hedge Rate
	10yrs	(\$59,554)	(\$39,254)	(\$19,406)	\$0	\$18,975	\$37,528	\$55,670	
	9yrs	(\$52,582)	(\$34,695)	(\$17,170)	\$0	\$16,823	\$33,306	\$49,457	
	8yrs	(\$45,799)	(\$30,251)	(\$14,987)	\$0	\$14,715	\$29,162	\$43,348	
	7yrs	(\$39,218)	(\$25,933)	(\$12,861)	\$0	\$12,654	\$25,105	\$37,356	
	6yrs	(\$32,853)	(\$21,747)	(\$10,797)	\$0	\$10,646	\$21,144	\$31,495	
	5yrs	(\$26,717)	(\$17,705)	(\$8,800)	\$0	\$8,696	\$17,289	\$25,781	
	4yrs	(\$20,824)	(\$13,815)	(\$6,874)	\$0	\$6,808	\$13,551	\$20,229	
	3yrs	(\$15,190)	(\$10,089)	(\$5,026)	\$0	\$4,989	\$9,941	\$14,857	
	2yrs	(\$9,830)	(\$6,537)	(\$3,260)	\$0	\$3,244	\$6,471	\$9,682	
	1yrs	(\$4,761)	(\$3,170)	(\$1,583)	\$0	\$1,578	\$3,153	\$4,723	



Prepayment Options:

- 1. Borrower receives fee**
- 2. Borrower pays fee**
- 3. New Borrower takes loan and hedge**
- 4. Borrower takes loan/hedge to another property -
Preservation of Low Rates for Future Growth**



Interest Rate Risk – Alternatives to Hedging

	CD or FHLB funding	Swaps
Interest Rate Risk	<ul style="list-style-type: none">• Effective in managing IRR but replaces bank's low cost of funding with higher cost liability• Intended as source of funding not IRR management	<ul style="list-style-type: none">• Effective in managing IRR and bank keeps low cost funding sources• When rates rise, bank may experience widening NIM as retail deposit costs lag
Accounting	<ul style="list-style-type: none">• Fixed rate loan• FHLB borrowing or CD liability• Restricted assets pledged to FHLB	<ul style="list-style-type: none">• Floating rate loan• No hedge accounting for ARC• Derivative accounting, no income variability
Structure Flexibility	<ul style="list-style-type: none">• Limited flexibility	<ul style="list-style-type: none">• Bank can structure amortizing hedges and forward starting hedges
Prepayment	<ul style="list-style-type: none">• Expensive prepayment cost to bank under most circumstances	<ul style="list-style-type: none">• If borrower prepays the loan, ARC will pay a fee to borrower if rates are higher at time of prepayment, conversely, if rates are lower, borrower pays fee to ARC
Liquidity	<ul style="list-style-type: none">• Bank must pledge collateral for FHLB borrowing and future liquidity is jeopardized	<ul style="list-style-type: none">• No loss of liquidity
Cost	<ul style="list-style-type: none">• Lower starting NIM• Reduces bank's future liquidity with FHLB or the market• Eliminates bank's short-term funding and retail deposit advantage	<ul style="list-style-type: none">• Lower starting NIM• Management team must understand and implement ARC program



Interest Rate Risk – FHLB Cost

FHLBank Atlanta Rate Indications as of April 11, 2016					
FRC (<\$5mm)		Rate		FRC Hybrid (\$5mm+)	
1 Mo		0.38		1 Mo	N/A
3 Mo		0.48		3 Mo	N/A
6 Mo		0.58		6 Mo	0.60
12 Mo		0.77		12 Mo	0.79
18 Mo		0.85		18 Mo	0.87
2 Yr		0.92		2 Yr	0.94
3 Yr		1.10		3 Yr	1.12
5 Yr		1.47		5 Yr	1.49
7 Yr		1.85		7 Yr	1.87
10 Yr		2.41	10 Yr	2.43	
Act/360 12 months or less; Act/Act greater than 12 months; Monthly Interest; Asymmetrical Prepay			Act/360; Quarterly Interest; Symmetrical Prepay		



Interest Rate Risk – Loan or Portfolio

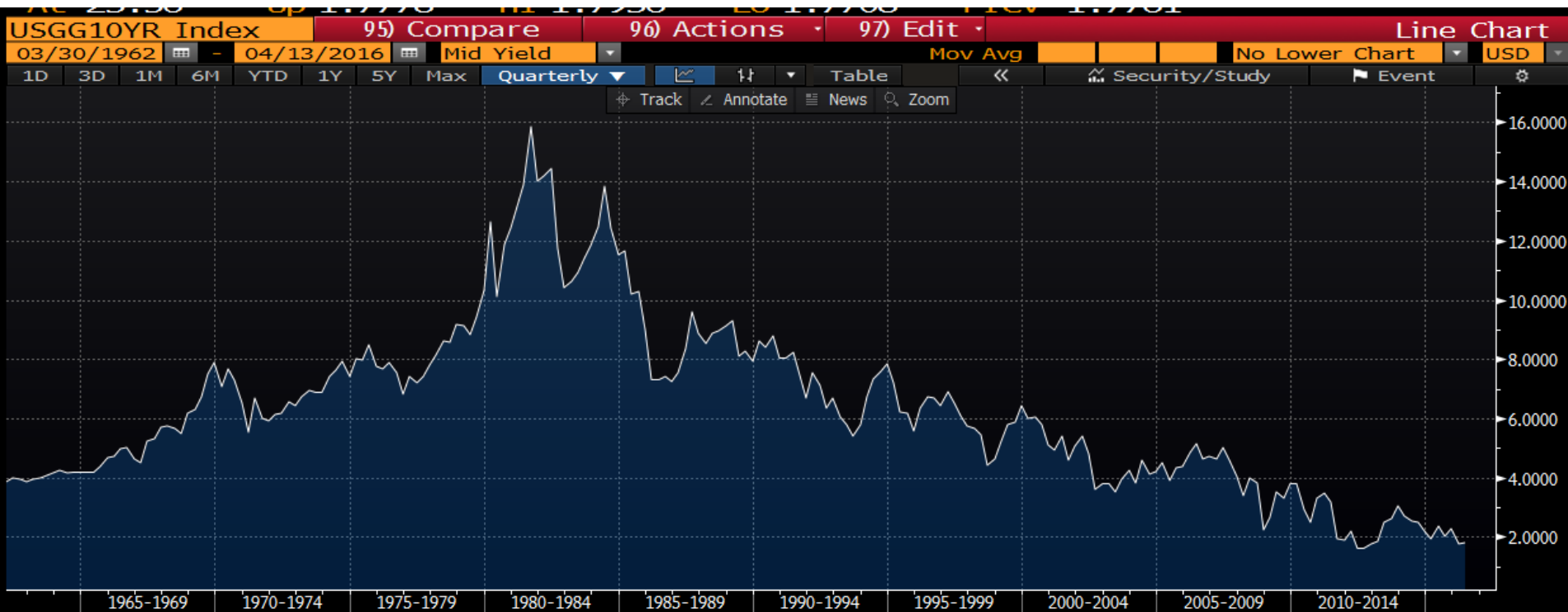
	Loan Level	Balance Sheet
Description	Each loan is hedged individually	A set of assets or liabilities are hedged
Instruments available	Swap, cap, floor, cancellable features and combinations	Swap, cap, floor, cancellable features and combinations
Execution and size	Available on loans as small as \$500k with costs borne by borrower	Efficiency is created with hedge size greater than \$10mm
Advantages	<ul style="list-style-type: none">• Does not require an all-or-none decision• Simple accounting• May be added in small amounts as balance sheet, interest rates and marketing opportunities change• Cost of prepayment shifted to borrower• Marketing support for lenders and more disciplined pricing for bank• Ability to generate fees	<ul style="list-style-type: none">• Borrower or depositor is not involved in hedging process• Large and immediate hedge impact• Cheaper execution• Most effective for existing balance sheet GAP mismatch
Disadvantages	<ul style="list-style-type: none">• Not immediately effective for existing balance sheet GAP issues• Requires lenders to market and understand product	<ul style="list-style-type: none">• Possibly complex accounting• Extensive ALM analysis required to achieve an effective strategy• Transfer repayment and convexity risk from borrowers and depositors to bank• More execution risk (one hedge trade vs. many and management must make one large decision on timing, instrument type, and notional amount)



Interest Rate – Selected Risks to Hedging

- 1. Matching Notionals**
- 2. Accounting**
- 3. Counterparty Risk – VAR, MPE, LEA**
- 4. Operational Risk**
- 5. Spilled milk stories and how to avoid them**

Interest Rate Risk – Practical Considerations



Interest Rate Risk – Practical Considerations to Launching a Hedge Program

- 1. Are you competing with banks that offer hedges?**
- 2. How many hedged loans will you offer per year?**
- 3. How many existing loans benefit the bank if interest rates rise?**
- 4. Do you have lenders that can explain the symmetrical prepayment provision?**
- 5. Is it the right product for your customer?**



Bank Logo

Borrower

Fixed Rate Pricing

- Principal Amount of Loan: \$1,000,000
- Approximate Start Date: February 20XX
- Prepayment Provisions: Symmetrical Yield Maintenance

(prepayment example shown on next page)

Fixed Term	Current Fixed Rate	Hedge-based Pricing
5yr / 25yr mtge am	3.500%	5yr Swap + 2.500%
7yr / 25yr mtge am	3.710%	7yr Swap + 2.500%
10yr / 25yr mtge am	3.950%	10yr Swap + 2.500%
15yr / 25yr mtge am	4.160%	15yr Swap + 2.500%

- Rates are near historical lows. The chart to the right shows current market expectations of future 1-month LIBOR.

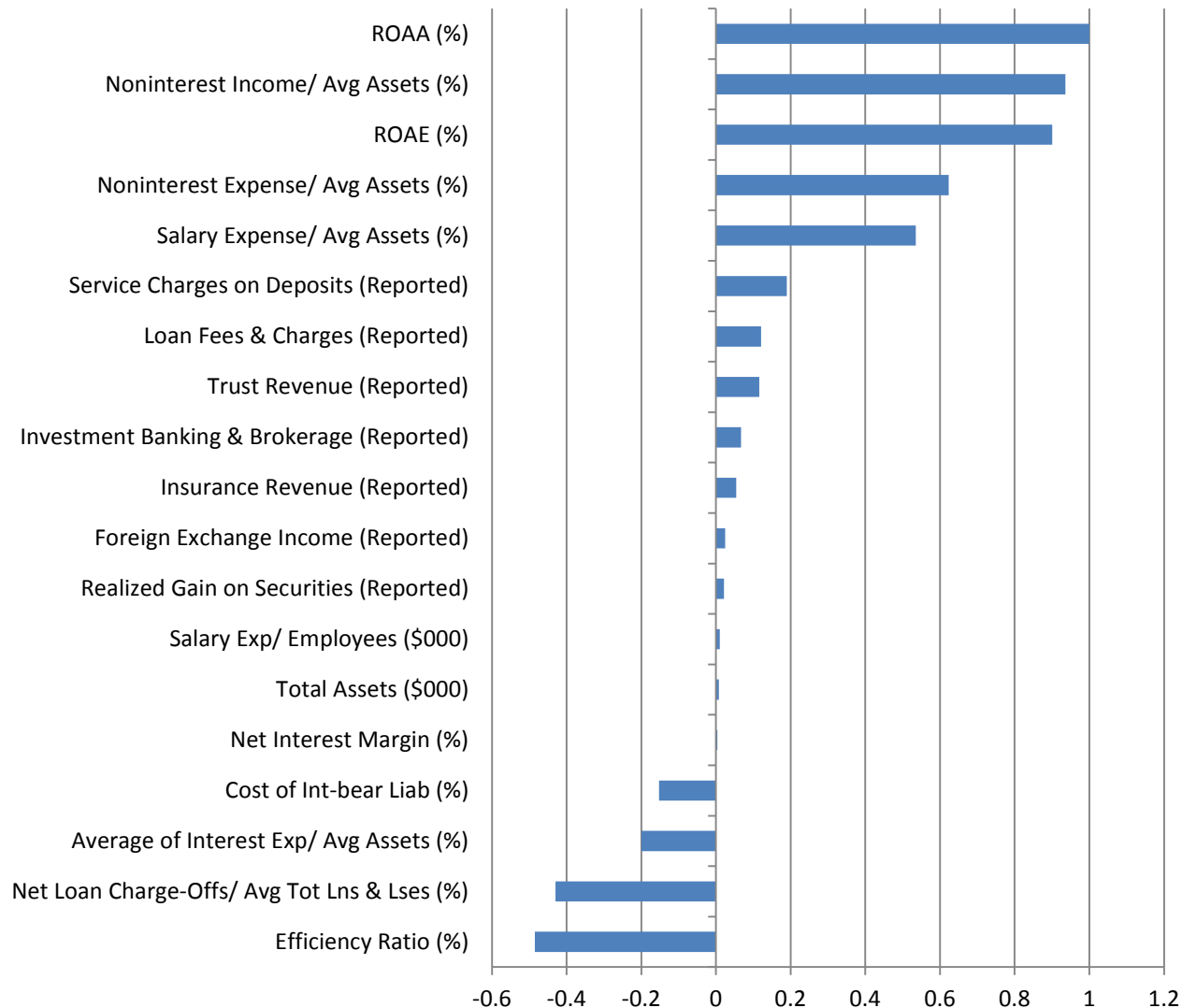
- By fixing the loan rate, a borrower creates cash flow certainty in a rising interest rate environment.





1 - What Drives Bank Performance?

Correlation to ROAA all banks (\$100mm to \$10Bn)



Thank You!

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