



Federal Home Loan Bank of Indianapolis Shareholder Symposium

Pricing at the Margin: The Key to Successful Balance Sheet Management

Thomas J. Parliment, Ph.D., Chairman & CEO
Parliment Consulting Services, Inc.

www.parlimentconsulting.com

508-277-1998

Issues That Must Be Considered:

- Economic context of decision making
- Managing risks in the context of an income target
- Current “red flags” for specific types of risk

Nevertheless

The very definition of financial health for any economic organization is its capacity to produce a sustainable growth in net income

The Essence of Capitalism

$$\text{ROE} = \text{ROA} \times \text{Leverage}$$

$$\frac{\text{Net Income}}{\text{Capital}} = \frac{\text{Net Income}}{\text{Assets}} \times \frac{\text{Assets}}{\text{Capital}}$$

Return on Investment = Productivity of Assets X How Many \$ of Assets Can Your Capital Control

$$12\% = 1\% \times 12$$

Will You Give Up Interest Margin to Gain Net Revenue?

Interest Margin	Projected Loan Volume	Projected Revenue	Breakeven Loan Vol Req to Generate \$4 million in Revenue
3.60%	\$120,000	\$4,320	\$111,111
3.80%	\$110,000	\$4,180	\$105,263
4.00%	\$100,000	\$4,000	\$100,000
4.20%	\$90,000	\$3,780	\$95,238
4.40%	\$80,000	\$3,520	\$90,909

- Perhaps. It depends on the structure of the additional loans.
- How responsive is loan demand to interest rates in your market?
- Remember, more creditworthy customers are sensitive to rate and structure.

Is Your Focus on Interest Margins Costing You Revenue Growth?

PERHAPS...

–If the % reduction in Interest Margin resulting from the reduced price on additional loans

IS LESS THAN...

–The % increase in the volume of the additional loans generated by the reduced price

**THEN, YES, YOU ARE COSTING
YOURSELF REVENUE GROWTH**

MARGINAL REVENUE OF LOANS

Are Your Loans “Well Priced” at the Margin?

A Quick Look at Cost and Risk Adjusted Pricing

Wholesale Equivalent		Retail Equivalent At the Margin	
Overnight	0.25	Credit Risk "A" Credit	0.25
Matched Duration Treasury (3 Year)	1.00	Liquidity Risk	0.00
Matched Duration Equivalent Investment (3 Year PAC)	2.00	Operating (Servicing) Expense	0.25
		Required Marginal Yield to be Indifferent Between Loan and Investment	2.50

Interest Rate Risk

Option Risk

CAREFUL! This is NOT the actual loan rate

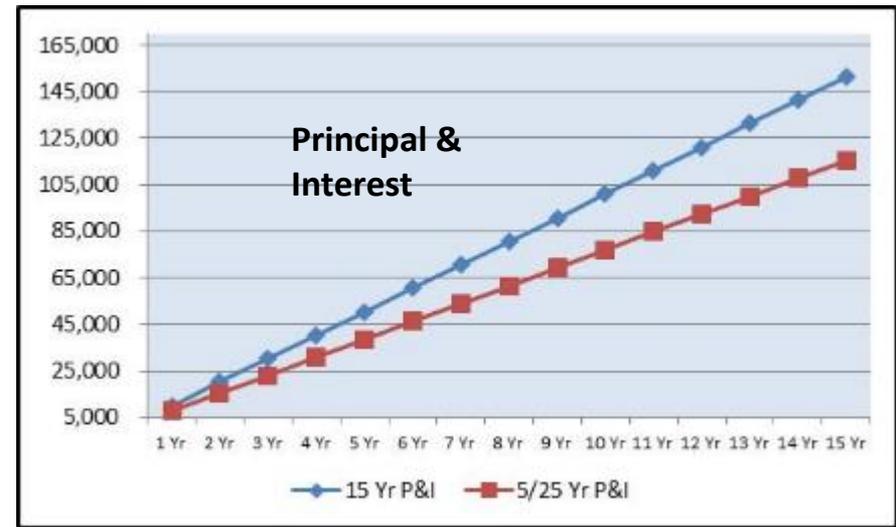
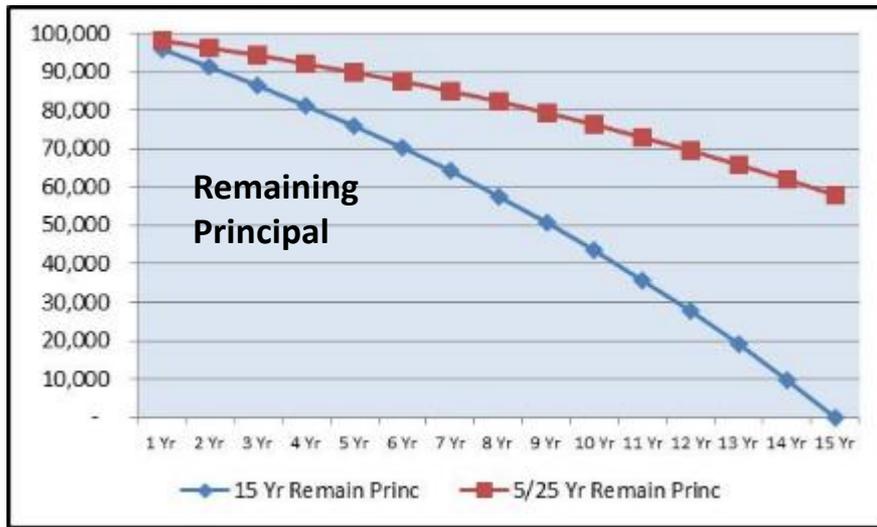
Break-even Yields Assuming Cannibalization of Current Portfolio

Amount	Yield	Interest Income	Change in Balances	Change in Interest Income	Marginal Yield
1,000,000	4.50%	45,000			
2,000,000	3.50%	70,000	1,000,000	25,000	2.50%
3,000,000	3.50%	105,000	2,000,000	60,000	3.00%
4,000,000	3.50%	140,000	3,000,000	95,000	3.17%
5,000,000	3.50%	175,000	4,000,000	130,000	3.25%
6,000,000	3.50%	210,000	5,000,000	165,000	3.30%
7,000,000	3.50%	245,000	6,000,000	200,000	3.33%

Marginal (Incremental) Yield = Change in Interest Income/Change in Balances

If we start with \$1 million of loans at a 4.50% yield, the interest income is \$45k. The institution has to originate approximately \$2 million net new loans at 3.50% to reach break-even of 2.50% (indifferent between the wholesale investment vs. the retail loan on a cost- and risk-adjusted basis).

Cash Flow Differences Between 15 Year and 5/25 Year Fixed Rate Loans



	1 Yr	2 Yr	3 Yr	4 Yr	5 Yr	6 Yr	7 Yr	8 Yr	9 Yr	10 Yr	11 Yr	12 Yr	13 Yr	14 Yr	15 Yr
15 Yr Remain Princ	95,741.21	91,221.99	86,426.43	81,337.62	75,937.63	70,207.43	64,126.83	57,674.40	50,827.41	43,561.73	35,851.76	27,670.32	18,988.58	9,775.97	0.00
15 Yr Prin+Int	10,093.89	20,187.79	30,281.68	40,375.58	50,469.47	60,563.37	70,657.26	80,751.16	90,845.05	100,938.95	111,032.84	121,126.74	131,220.63	141,314.53	151,408.42
5/25 Yr Remain Princ	98,206.64	96,303.61	94,284.21	92,141.33	89,867.41	87,454.44	84,893.92	82,176.82	79,293.57	76,234.02	72,987.37	69,542.19	65,886.34	62,006.93	57,890.30
5/25 Yr Prin+Int	7,694.98	15,389.96	23,084.94	30,779.93	38,474.91	46,169.89	53,864.87	61,559.85	69,254.83	76,949.82	84,644.80	92,339.78	100,034.76	107,729.74	115,424.72

The total principal plus interest cash flows for the 15 year amortizing loan (\$50,469) represents approx ½ of the original \$100k loan. In effect, institution will have had half of the loan proceeds to reinvest through the first 5 years of the loan. It could have reinvested this \$50k into any investment on the yield curve. The present value of all of these cash flows for the 15 year loan equals a duration of approximately 5 years. Since the duration of the cash flows of the 5/25 loan will be equal to the call, that is the balloon at 5 years, they are approximately equal.

Duration Based Pricing

Macaulay Duration (Years) of Fixed Rate Term Loans
(Assumes 4.5% coupon and 36 month CPR ramp)

Prepayment (CPR)	Contractual Terms in Years				
	30 Yr Term	25 Yr Term	20 Yr Term	15 Yr Term	10 Yr Term
0%	11.75 years	10.25 years	8.6 years	6.7 years	4.7 years
2%	8.9 years	8.2 years	7.1 years	5.9 years	4.25 years
4%	7.5 years	7.0 years	6.25 years	5.3 years	4.0 years
6%	6.6 years	6.2 years	5.7 years	4.8 years	3.8 years

MARGINAL COST OF DEPOSITS

What If Retail Market Rates Rise 100bp? Will You Move 100bp In Order to Hang Onto Balances?

Product Group			Current Balance	Current Rate	Current Int Exp	New Rate	Retain %	Total Forecast	Forecast Int Exp
Certificates of Deposits						Rates up 100bp			
UP 100 bp	Comp Ave FHLB								
12 Mo	1.35 1.84	12 Month	73,394	0.20%	147	1.20%	100%	73,394	881
24 Mo	1.59 2.03	24 Month	14,633	0.40%	59	1.40%	100%	14,633	205
36 Mo	1.77 2.42	36 to 60 Month	29,816	1.23%	367	2.23%	100%	29,816	665
48 Mo	1.95 2.73								
60 Mo	2.14 2.97								
Totals:			117,843		572			117,843	1,750
Weighted Cost:				0.49%		1.49%			

	Current	Proposed	Change	Due to	Due to
Balance	117,843	117,843	0	Rate	Volume
Weighted Cost of Deposits	0.49%	1.49%	1.00%	<u>Change</u>	<u>Change</u>
Interest Expense	572	1,750	1,178	1,178	0

Moving all CDs by 100bp increases interest expense by almost \$1.2 million annualized.

What is the True Incremental Cost of Paying Up for Non-Rate Sensitive Balances?

Product Group			Current Balance	Current Rate	Current Int Exp	New Rate	Retain %	Total Forecast	Forecast Int Exp
Certificates of Deposits						Rates to Mkt Ave		NRS Balances	
UP	Comp		73,394	1.20%	881	1.10%	95%	69,724	767
100 bp	Ave	FHLB	14,633	1.40%	205	1.30%	95%	13,901	181
12 Mo	1.35	1.84	29,816	2.23%	665	2.00%	95%	28,325	567
24 Mo	1.59	2.03							
36 Mo	1.77	2.42							
48 Mo	1.95	2.73							
60 Mo	2.14	2.97							
Weighted Cost:			117,843	1.49%	1,750	1.35%		111,951	1,514

	Current	Proposed	Change	Due to Rate Change	Due to Volume Change
Balance	117,843	111,951	-5,892		
Weighted Cost of Deposits	1.49%	1.35%	-0.13%		
Interest Expense	1,750	1,514	-236	-157	-80
Gross Mgnl Savings of Reduced Deps			4.01%		

Marginal Cost or Savings = Change in Interest Expense Divided by Change in Balances

The marginal savings is 4.01%. In other words, it costs you 4.01% to hang onto the \$5.9 million of rate sensitive balances. FHLB 5 year advances (up 100 bp rate environment) are 2.97%. Note: This analysis does not evaluate cannibalization from or to non-maturity deposits.

Marginal Impact of Paying Up for All Balances

Non-Rate Sensitive Customers		Rate Sensitive Customers		Marginal Cost of Paying Up for All Balances
Percent	Balances	Percent	Balances	
95%	\$111,951	5%	\$5,892	4.01%
90%	\$106,059	10%	\$11,784	2.68%
85%	\$100,167	15%	\$17,676	2.24%
80%	\$94,274	20%	\$23,569	2.02%
75%	\$88,382	25%	\$29,461	1.88%

The higher the proportion of deposit balances that you can retain at a lower relative price (non-rate sensitive balances), then the greater the marginal savings of not paying up to retain a relatively small proportion of rate sensitive balances.

Note: The more non-rate related features you invent or create OR the greater the perceived value of these features, then the less rate sensitive the customer will be. And, relationship pricing should always be evaluated.

So What Are Your Options?

1. Continue current pricing. The marginal cost is 4.01%.
2. Offer a **Tiered** Special to retain balances. The marginal cost of this choice is 1.29 (next slide)%.

Or do you take the opportunity to extend maturities?

3. Take the opportunity to change deposit mix by extending duration either retail or wholesale:
 - a. Retail:
 - i. Longer term CDs (maybe a 3 or 5 Year Bump-up)
 - ii. Longer duration transaction accounts
 - b. Wholesale:
 - i. Extend maturity and hedge rising interest rates by borrowing from the FHLB for 5 years at 2.97%.

**Include in your
ALCO package!**

Retain Rate Sensitive Balances with Defensive Tiered Special

Product Group	Product Group	Current Balance	Current Rate	Current Int Exp	New Rate	Retain %	Total Forecast	Forecast Int Exp
Certificates of Deposits		NRS Balances						
	12 Month	69,724	1.10%	767	1.10%	100%	69,724	767
	24 Month	13,901	1.30%	181	1.30%	100%	13,901	181
	36 to 60 Month	28,326	2.00%	567	2.00%	100%	28,326	567
Proposed Tiered Special		Balance Distribution						
	18 Mo Spec to \$25k				1.15%	18%	1,061	12
	18 Mo Spec to \$75k				1.20%	27%	1,591	19
	18 Mo Spec to \$150k				1.30%	25%	1,473	19
	18 Mo Spec to \$400k				1.40%	18%	1,061	15
	18 Mo Spec >= \$400k				1.50%	12%	707	11
Totals:		111,951		1,514			117,843	1,590
Weighted Cost:			1.35%		1.35%			

UP	Comp	
100 bp	Ave	FHLB
12 Mo	1.35	1.84
24 Mo	1.59	2.03
36 Mo	1.77	2.42
48 Mo	1.95	2.73
60 Mo	2.14	2.97

This Tiered Special is based on balances. It could incorporate relationship pricing as well, such as a higher rate with direct deposit checking.

	Current	Proposed	Change	Due to Rate Change	Due to Volume Change
Balance	111,951	117,843	5,892		
Weighted Cost of Deposits	1.35%	1.35%	0.00%		
Interest Expense	1,514	1,590	76	-4	80
Gross Mgnl Cost of New Deps			1.29%		

Marginal Cost or Savings = Change in Interest Expense Divided by Change in Balances

You can retain the \$5.9 million rate sensitive balances with a Defensive Tiered Special at a marginal cost of 1.29% vs. 4.01%.

Contact us for a Strategic Financial Planning Session

Thomas J. Parliment, Ph.D., Chairman & CEO
tparliment@parlimentconsulting.com

Janet Lockwood, President
jflockwood@parlimentconsulting.com

www.parlimentconsulting.com

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