PARLIMENT
CONSULTING SERVICES

Challenging Financial Paradigms

CD Wars

A Report From The Front

By Thomas J. Parliment, Ph. D.

(crackle, crackle, hiss).. .ñHelloò.(crackle, hiss),. .ñHello, can you hear me?ò

Yes, Dr. Tom, go ahead, weôre receiving you.

(crackle, crackle) ñIôm here at Blankety Bank. Thereôs confusion everywhere.ò

ñManagement is scurrying around trying to prevent the abduction of their depositors by enemy bankers, alien credit unions, and by the great, unwashed hordes of infidel money market funds.ò

ñThe Almighty Fed has been raining rate increases on the battle scene for months now, andé BOOMé SPIZAYF. . .ROAAAR. . .Oh mi-gosh. Here comes another Fed Discount Rate Tornado whirling through the city.ò

ñIn the flood waters of rising rates, assets are rapidly sinking underwater. Iôm watching as sweating CFOôs strain to pile ñheld to maturityôsandbags around their portfolios. But everywhere I can see swarming, infectious FASB-rats and packs of mongrel broker-dogs gnawing and clawing at the sandbags destroying the bankôs historically safe HTM bunkers.ò

.Crackle. . .hiss. .ñPanicking marketing executives are frantically reinforcing Non-Rate Sensitive Shields around their precious stores of Passbook and Transaction accounts. Here at Blankety Bank theyôre worried sick that rogue ñBerserk-Bankersôwill start shooting rate-lasers at their NRS Shields, triggering their own automatic Rate-Response System and leaving everyoneôs core deposits in shambles.ò

ñIôm looking out of the second floor balcony and.. .Oh, noé ! donôt believe what Iôm seeing. A huge, mechanical monstrosity, a juggernaut of regulatory steel and legislative high-impact ceramics is flattening community bankers and indiscriminately shooting at everything that looks remotely profitable. Itôsé .Itôs ROBO-REGULATOR. Well, perhaps the rising-rate waters will slow its progress.ò

ñItôs clear that the primary weapons being used in this war are the CD Canons. They range in size from the rapid-fire 3-6 month machine pistols to the intermediate-range 1-2 year howitzers and include the longer-range 3-5 year siege guns .crackle é crackleé The fighting is only intensifying, laying waste to years of hard-won profitability.ò

Crackle. . .hissss. . .ñWell, things are getting too hot for me and here comes the special Consultants Evacuation Helicopter to pluck me out of this mess. At least I think itôs a CEH. . .Oh yeah, it is, I can see the large $ painted on the side. Iôm out of hereò

ñRobo-regulatorò I know, I know. You think Iôve flipped-out. Well, itôs two weeks before Christmas, Iôm stuck babysitting with several handfuls of grandchildren and a video recorder. So, yes, Iôve flipped-out.

Is Marginal-Cost Pricing Still Relevant

Deposit rate competition is getting crazy out there and once again, my ñincremental-costò approach to pricing retail deposits is coming under attack. Managers are extolling the infinite value of customer relationships as they ignite CD rate firefights. Iôve been accused of being a tired, old man proclaiming defunct deposit pricing theories. So do you think I feel old, tired, and ready to give up the fight. Like Hell!

Thereôs nothing wrong with the theory of marginal-cost pricing. Itôs been around long before I came into banking and itôll be around long after I leave. As interest rates rise and the yield curve flattens, a different set of operating strategies emerges é aggressive CD pricing. But marginal-cost theory is still defining the set of profitable break-even points for these aggressive retail pricing tactics.

Letôs take a look at a simplified case study to illustrate some of the tactics pertinent to your deposit pricing strategies in this rate environment.

In The Beginning...

Weôre going to review the pricing tactics at a financial institution with $200 million in total deposits.

$100 million in deposits are in the form of Passbook balances which all reprice immediately as a result of any rate change imposed by the institution. (Any immediately repriceable transaction account would serve to make our point here.) $100 million in deposits are in the form of 6-month CDs subject to repricing as the balances roll to maturity. (Complicating our example with a larger number of longer-term accounts wouldn't change the essentials of the analysis.) Our case study, displayed in Figures 1 through 5, also shows the rates paid on the deposits, annualized interest expenses, and the incremental costs of the pricing alternatives being examined.

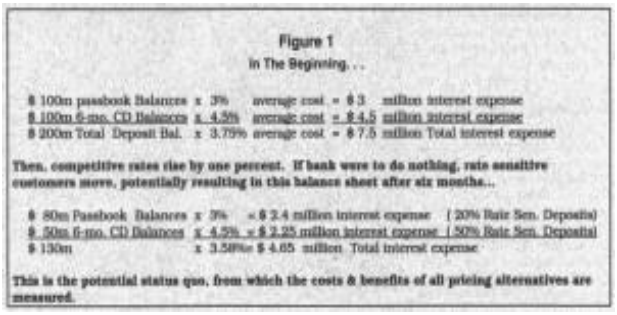

Figure 1
In The Beginning. . .

$ 100m passbook Balances x 3% average cost = $ 3 million interest expense
$ 100m 6-mo. CD Balances x 4.5% average cost = $ 4.5 million interest expense
$ 200m Total Deposit Bal. x 3.75% average cost = $ 7.5 million Total interest expense

Then, competitive rates rise by one percent. If bank were to do nothing, rate sensitive customers move, potentially resulting in this balance sheet after six months...

$ 80m Passbook Balances x 3% = $ 2.4 million interest expense (20% Rate Sen. Deposits)
$ 50m 6-mo. CD Balances x 4.5% = $ 2.25 million interest expense (50% Rate Sen. Deposits)
$ 130m x 3.58%= $ 4.65 million Total interest expense

This is the potential status quo, from which the costs & benefits of all pricing alternatives are measured.

We start, in Figure 1, with the institution paying 3% on Passbooks and 4.5% on 6-month CDs. These rates are approximately 200 basis points below the yields on comparable investment alternatives that are available in the money markets. The competition kicks in. Competitive rates move higher by one-percent over a six-month period. This could be the result of either a rise in the rates of treasury instruments, or a narrowing of the 200 basis point spread between rates on retail deposits and similar-duration treasury instruments. Our institution must react to either provocation.

However, in order for us to be able to analyze the costs and benefits of alternative pricing responses, we must imagine, deduce, speculate, or hallucinate something about the effects on deposit balances of doing nothing. What if our institution doesn't respond to the competitive rate increase by raising its own rates? What might happen to deposit balances? The result will depend on the rate sensitivity of the depositors. The result will differ from institution to institution, and from market to market. My partner has written a whole series of articles in F&P describing a methodology by which institutions can measure and monitor core deposit decay rates. I recommend them to you.

Anyway, some assumption about rate sensitivity must be made, well-informed or otherwise. Of course, the degree of rate sensitivity will differ between Passbook/Transaction type balances where liquidity and convenience are of primary importance, and the more rate-sensitive CD depositor. I'm assuming that 20% of the Passbook balances will be subject to moving to higher paying alternatives, either inside or outside of the institution. Probably many of the Passbook balances will be moving into CDs where the "rate- bribe" after a competitive rate increase will be 2.5-3.0%.

Core Deposit Sensitivity

Gauging which competitive rate that core depositors are actually responding to is an intriguing exercise. Given reasonable assumptions about decay rates, institutions may consider the average lives of core deposit accounts to be 2-3 years. From the institutionôs perspective in our example, a 3% Passbook is priced from 3.5-4.0% below comparable-duration wholesale borrowing alternatives. Clearly these core deposits have increased value to the institution facing either a rising-rate environment, or a positively-sloped yield curve.

The depositors themselves, however, may view their alternative deposit instrument as a liquid, short-term investment such as a money market fund. If so, as long as there is a positively-sloped yield curve, the rate differential between the Passbook and the competitive alternative remains about 2% for our case study institution. Perhaps this 2% rate differential represents the perceived value that the depositor places on the liquidity, convenience, and other non-rate sensitive features of the Passbook.

In a positively-sloped yield curve environment, depository institutions clearly benefit from the discrepancy between the duration of competitive alternatives as perceived by the depositor (shorter-term, lower yield), and as perceived by the institution (longer-term, higher yield). Unfortunately, this discrepancy vanishes when the yield curve flattens. Institutions face the nasty reality of being forced to raise rates on core deposits to simply maintain the 2% rate differential that the depositor is willing to pay for the non-rate sensitive features of the account.

CD Sensitivity

As far as the CDs are concerned, Iôm assuming that over six months 50% of the 6-month CDs potentially roll out of the bank, or shift to higher-rate products (if theyôre available) within the bank. Obviously this assumption will depend on whether the bankôs CDs are competitively priced within the range of rate alternatives available to the depositor. It is assumed that our case study institution is priced in the middle of that competitive range. It may be that some of the maturing CD depositors just arenôt paying attention to the roll date.

As a result, the total deposits at our case study institution will potentially fall to $130 million, costing $4.65 million in total interest expense. This represents the status quo that would result if the institution makes no response to the movement in competitive rates. Even though the institution may have no intention of letting this occur, itôs essential that this alternative state of the world be used as a starting point for our analysis.

Paying Up For Existing Balances

In Figure 2, Pricing Alternative A is examined. The institution increases the rates on the existing account structure. By raising the Passbook rate from 3.0% to 3.25%, $10 million of the $20 million

in Passbook balances can be retained that might have moved out of this account. Standing on its own, the incremental cost of the Passbook pricing decision is 5.25% ($525,000 of additional interest expense divided by $10 million in additional balances).

Past articles on marginal cost pricing have focused on the analysis of immediately repriceable balances. Clearly, raising Passbook Rates to 5.0% to retain $20 million in balances would cost the institution an unacceptable marginal cost of 13% ($2.6 million additional interest expense / $20 million additional balances).

However, it would appear that even a cost of 5.25% on the margin isnôt a bad bargain for core depositsðif thatôs what the $10 million in retained Passbook balances truly represents.

Similarly, we can review the CD pricing decision on a standalone basis. Raising the rate on the existing line of 6 month CDs from 4.5% to 5.5% forces all of the maturing CD balances to increase in cost to a total expense of $6.050 million. Thus we pay-up for all of the maturing balances including those balances that might have been retained without the rate hike. Assuming we pick up our own $10 million of fleeing Passbook balances along with the $50 million of potentially lost CD balances, the incremental cost of this $60 million is 6.31% Given that the 6-month T-Bill was 6.56% at the time of this example, you can add another 30-40 basis points to reach the wholesale cost of borrowing. The marginal cost of the CD pricing decision is still a cost-effective decision at the margin.

Now, if you calculate the marginal cost of the pricing decisions taken together, you get the 6.18% expense shown in Figure 2. This is still clearly below the incremental cost of any equal duration wholesale funding alternatives that Iôm aware of.

But we can still do better.

Paying-Up On New Off-Maturity Accounts

The idea of not paying-up for ólold moneyô just ónew moneyôis a well-accepted marketing approach. And Pricing Alternative B shown in Figure 3 illustrates such a strategy.

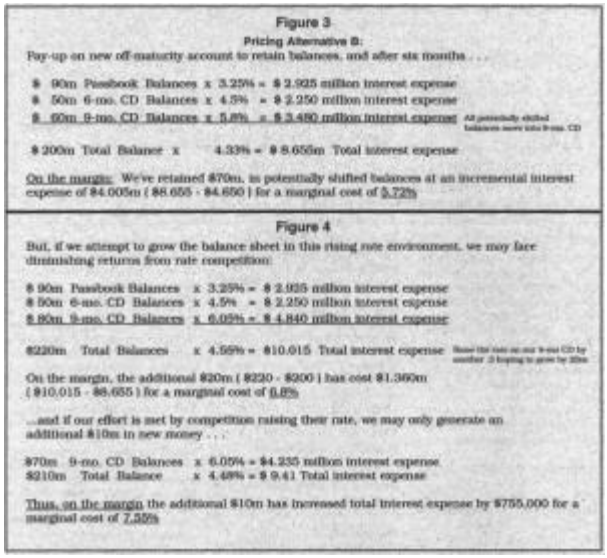

Figure 3

Pricing Alternative B:

Pay-up on new off-maturity account to retain balances, and after six months . . .

$ 90m Passbook Balances x 3.25% = $ 2.925 million interest expense
$ 50m 6-mo. CD Balances x 4.5% = $ 2.250 million interest expense
$ 60m 9-mo. CD Balances x 5.8% = $ 3.480 million interest expense — All potentially shifted balances move into 9-mo. CD

$ 200m Total Balance x 4.33% = $ 8.655m Total interest expense

On the margin: We've retained $70m, as potentially shifted balances at an incremental interest expense of $4.005m ($8.655 - $4.650) for a marginal cost of 5.72%

Figure 4

But, if we attempt to grow the balance sheet in this rising rate environment, we may face diminishing returns from rate competition:

$ 90m Passbook Balances x 3.25% = $ 2.925 million interest expense
$ 50m 6-mo. CD Balances x 4.5% = $ 2.250 million interest expense
$ 80m 9-mo. CD Balances x 6.05% = $ 4.840 million interest expense

$220m Total Balances x 4.59% = $10.015 Total interest expense — Raise the rate on our 9-mo CD by another .3 hoping to grow by $20m

On the margin, the additional $20m ($220 - $200) has cost $1.360m ($10.015 - $8.655) for a marginal cost of 6.8%

...and if our effort is met by competition raising their rate, we may only generate an additional $10m in new money . . .

$70m 9-mo. CD Balances x 6.05% = $4.235 million interest expense
$210m Total Balance x 4.48% = $ 9.41 Total interest expense

Thus, on the margin the additional $10m has increased total interest expense by $755,000 for a marginal cost of 7.55%

A new 9-month competitively priced CD is introduced at 5.8%, 100 basis points under the treasury curve. Into this account, we attract all of our ëantsyô balances while leaving 50% of the 6-month CD balances priced at 4.5%. This tactic may only work for one maturity cycle. But, hey, Iõll take it for now and play the tactic on other accounts latter. In any event, as the figure shows, the marginal cost of this pricing decision is 5.72%!

After seeing the marginal costs in Figures 2 and 3, some readers are thinking, ñThere goes the rationale for using marginal costs as justification for using wholesale funding alternatives.ò But that was never the focus of marginal cost analysis as applied to deposit pricing decisions. As can be seen from the comparison of retail pricing strategy A with retail pricing strategy B, the objective of marginal cost analysis is to identify lesser-cost funding decisions, period.

Now with that understood, letõs move on to analyze some additional situations. So far weõve only succeeded in retaining deposit balances. What if we really need to grow the balance sheet in a rising-rate environment?

Attempts To Grow The Balance Sheet

If we attempt to grow the balance sheet in this rising-rate environment, we may face diminishing returns from retail rate competition.

Figure 4 shows the results of attempting to raise an additional $20 million in new balances. The offer rate on the 9-month CD is raised by 30 basis points to 6.05%, increasing the interest expense on this account to $4.84 million. On the margin, this pricing tactic costs the institution 6.8%. And if the effort to raise new money is met by the competition raising their rates, then less new money will be forthcoming for any given increase in our rates. This example shows the

marginal cost of this pricing decision increasing to 7.55% if only $10 million is generated in new balances.

Finally in Figure 5, CD pricing becomes increasingly aggressive. Successively higher marginal funding costs must be faced. Attempting to attract longer-term balances with higher rate, longer-term CDs we move out on the yield curve. The institution offers 6.75% 3-year CDs, attempting to raise $80 million. The incremental interest expense of this decision generates $20 million in new balances at a marginal cost of 9.6% and, depending on the competitive response to these retail pricing initiatives, marginal costs can push into double-digit range. Such a result would force the institution to consider alternative funding sources.

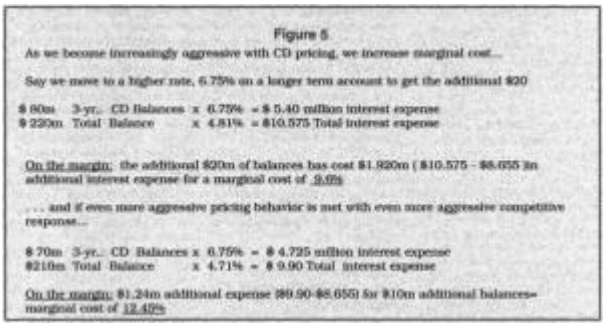
Figure 5
As we become increasingly aggressive with CD pricing, we increase marginal cost...
Say we move to a higher rate, 6.75% on a longer term account to get the additional $20
$ 80m 3-yr.. CD Balances x 6.75% = $ 5.40 million interest expense
$ 220m Total Balance x 4.81% = $10.575 Total interest expense
On the margin: the additional $20m of balances has cost $1.920m ($10.575 - $8.655)in additional interest expense for a marginal cost of 9.6%
. . . and if even more aggressive pricing behavior is met with even more aggressive competitive response...
$ 70m 3-yr.. CD Balances x 6.75% = $ 4.725 million interest expense
$210m Total Balance x 4.71% = $ 9.90 Total interest expense
On the margin: $1.24m additional expense ($9.90-$8.655) for $10m additional balances= marginal cost of 12.40%

Generalizing About Aggressive CD Pricing Strategies

Does this case study permit us to generalize about an aggressive CD pricing strategy?

No! Not really. There are just too many variables starting with the degree of rate sensitivity of your depositor base and ending with the extent of competitive response characterizing your deposit market. But, the case study does introduce some pretty interesting and testable hypotheses.

Given that an institution has been able to take advantage of a long period of low-interest rates to lower its average cost of deposits, the marginal cost of an aggressive CD pricing strategy to retain existing deposit balances may be lower than the alternative cost of wholesale funding sources.

Institutions which attempt to grow the balance sheet via a strategy of increasing their market share of the retail deposit market through the tactic of rate competition may quickly enter an era of diminishing returns. Alternative funding sources such as acquisition and borrowing may prove to be more cost-effective.

And through all this, marginal cost analysis is the analytical technique permitting financial institutions to discover least cost funding strategies. Hmmm. I have to admit wondering if it is ever appropriate to choose a retail funding option that does not possess the least cost at the margin? But for now, ñHey Kids, give me a break. If I have to watch RoboCop one more time é ò