



May 4, 2016

Weekly Post: Impact of Non-Maturity Deposit Account Decay Rate on Performance

Dear Clients-

Decay rate is the proportion of non-maturity deposit accounts closed over a set period relative to the balance outstanding. Another way to think about the decay rate is that it is the opposite your retention rate. For example, a decay rate of 15 equates to a retention rate of 85.

Recently, regulators have increasingly been asking for deposit studies" backtesting" non-maturity deposit accounts, the "beta" and the "decay rates." The regulatory guideline requires each bank or credit union use a non-maturity deposit account model that is consistent with the institution's customers' behavior and the institution's offer rate strategies.

In my opinion, the projection of offer rates is your strategy based on knowledge of your your customers. Last week, I showed that the offer rate can affect your earnings significantly. This post will discuss the "decay rate" and how the decay rate affects your performance.

Challenges

- How does an increase in withdrawal rate affect your liquidity management?
- How much cash or cash equivalent should you hold to ensure sufficient funds for unexpected withdrawals of funds?
- How should you explain the model assumptions to your Board as you discuss your offer rate strategies?

Solution

The THC non-maturity deposit account model is based on a Federal Reserve Bank research paper authored by O'Brien. The model assumes that your offer rate is set as a margin off a benchmark comparator rate. For example, ten bpt below the one year Treasury rate. When this "comparator rate" is higher than your current offer rate, then you will gradually raise your offer rate to that of the comparator. Likewise, when the comparator rate is below your current offer rate, you will gradually lower your offer rate.

Market Wisdom - Art Hilliard*

Data Makes the World Go Around

Having accurate data is critical to the success of a portfolio transaction. A surprise in the form of inaccurate data can cause an investor to "Kick" loans from a pool or change the price to accurately reflect risk.

Buyers of pools use the loan data file (AKA "Tape" for those old schoolers) to:

- Price the pool. This is the price that the buyer and seller will initially agree to
- In due diligence, they will verify that the data in tape agrees with the physical loan file. Any discrepancies could cause the loan to be kicked from the pool or repriced lower because they have uncovered additional risk

Sellers should take the critical step of verifying that the data in their electronic file agrees with the data in their physical loan files.

THC can support sellers by:

- Providing free, online Excel file formats sellers can use for portfolio sales
- Providing access to securely drop their Excel files off on THC
- Loading the tape on the system, performing valuation, and doing portfolio analytics with reports
- Making sellers more competitive in the market by providing buyers access to loan data and reporting

Eliminate surprises. They are deal killers...
<https://www.thcdecisions.com/tro>



Your decay rate would likely increase when your offer rates are lower than your competitors' rates. Customers may also make withdraws for reasons unrelated to interest rates.

The EaR report presents projected decay (or withdrawals) under multiple interest rate shock scenarios. The tables below show the present monthly projected offer rates for a Transactional Account. A flat growth assumption is used whereby any withdrawal each month is replaced by new accounts. These results describe clearly the projected withdrawal in \$ and %.

Transaction Accounts

Balance	7,050	7,050	7,050	7,050	7,050	7,050	7,050	7,050	7,050	7,050	7,050	7,050	7,050
Interest		1	1	1	1	1	1	1	1	1	2	2	2
Non-Interest Cost		11	11	11	11	11	11	11	11	11	11	11	11
Implied Rate(%)		0.12	0.14	0.15	0.16	0.18	0.19	0.21	0.23	0.24	0.26	0.28	0.30
Withdrawal		93	94	96	97	97	98	99	100	101	102	103	105
New Account		93	94	96	97	97	98	99	100	101	102	103	105
Offer Rate of new Account(%)		0.14	0.15	0.16	0.18	0.19	0.21	0.23	0.24	0.26	0.28	0.30	0.33
monthly decay rate		1.32%	1.34%	1.36%	1.37%	1.38%	1.39%	1.40%	1.42%	1.43%	1.45%	1.47%	1.48%
monthly average		1.40%											
annualized decay		15.58%											

The average of the monthly decay rates over six months, one year and two year are reported in the assumption report below.

Decay of non-maturing deposits (Monthly)	Base Case (%)				Up 100bp (%)			
	1mo	6mo	1yr	2yr	1mo	6mo	1yr	2yr
Non-Maturing Accounts								
Savings Account	1.44	1.49	1.53	1.59	1.78	1.81	1.84	1.86
Transaction Account	1.32	1.36	1.40	1.45	1.61	1.64	1.66	1.68
Retail CD	2.97	2.97	2.97	2.97	2.97	2.97	2.97	2.97
Non-Int Bearing Acct	2.97	2.97	2.97	2.97	2.97	2.97	2.97	2.97
Total Non-Maturing Accounts	1.42	1.47	1.51	1.56	1.73	1.76	1.79	1.81

Offer Rate Change (12mo)	100bpt Shock Up	-100bpt Shock Down	Annual Decay Rate
Non-Interest			0.30
Trans. Account	0.20	0.22	0.16
Passbook Account	0.21	0.23	0.17

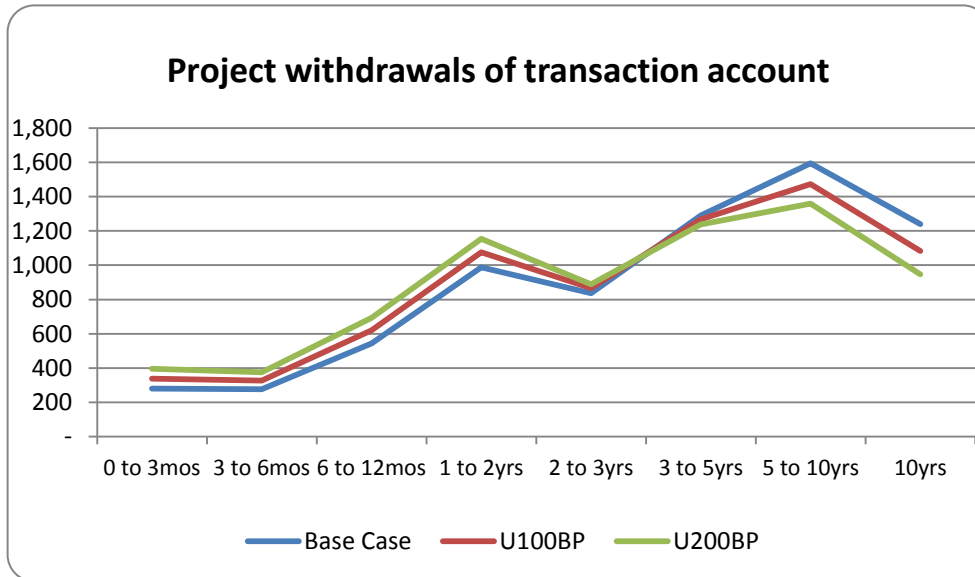
The average monthly rate of 1.40% is 15.58% annually. The annual decay rate is reported in your Directors Dashboard Report, as reported here.

The projected withdrawal rates in the EaR report provides clear explanation of the model assumptions for regulators and the Board.

Numerical Example



In the above example, the transactional account balance is \$7,050 with an annualized decay rate of 17%, the THC maturity gap report can depict the projected cashflows under interest rate shocks. The results show that when rates are shocked up, the withdrawal rate increases since the offer rates do not adjust immediately in step with the market rate.



The results show that the withdrawals of the first year exceeds \$1,000; consistent with the reported decay rate of 17% (17% of \$7,050 is \$1,198). However, the withdrawal amount falls gradually over time. There is an outstanding balance of \$1,200 by year 10.

Note that the duration (value sensitivity to the rate change) is around

two years which is significantly shorter than the average life for the transactional account. The transactional account is rate sensitive reducing the duration.

Decay is an important non-maturity deposit account risk measure because it enables you to monitor the risk of run-on-the -bank or your needs for holding cash and cash equivalent in the event of a sudden withdrawal of deposits. The Contingency Funding Plan report considers the combined withdrawal risk and interest rate risk in moderate, severe and crisis scenario.

Conclusions

Different customers’ behavior incurs different liquidity risk as it relates to your balance sheet. You need to hold cash and cash equivalent to manage the withdrawal risk. However, holding excess cash hurts your earnings. You need to identify your customers’ withdrawal behavior and stress test the impact of decay rates on your liquidity adequacy.

If you have further questions on the decay rate of deposit account modeling, please do not hesitate to contact THC.

Regards,
Tom Ho
Tom.ho@thomasho.com
1-212-732-2878

*Art Hilliard is the Principal at AJHilliard Company assisting banks, credit unions, and mortgage companies with mortgage advisory and asset sales and acquisitions.



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