



April 27, 2016

## Weekly Post: Managing Model Risk of Non-Maturity Deposit Accounts

Dear Clients-

You may need to raise your transactional account, savings account, and other non-maturity deposit account offer rates to remain competitive in your market. Your offer rate strategy will affect your projected earnings. Therefore, your EaR report is dependent on how fast you raise your offer rates relative to how fast market rates increase – This is your “beta”.

### Challenges

- How to evaluate the appropriateness of beta assumed in the EaR model?
- How to evaluate the impact of beta on the projected earnings to formulate the offer rate strategy?
- What if the model assumptions are not accurate resulting in unexpected loss in earnings? What is the Model Risk?

### Solution

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, 10 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.

However, the speeds of adjusting your offer rates ( beta) can differ in a rising rate scenario versus the falling rate scenario. This strategy is called “asymmetric beta.” Offer rates should rise slowly when rates rise and decline faster when rates fall.

THC uses your historical offer rates to determine the appropriate benchmark rate, margin, and beta. *For this reason, your firm’s model is institutional specific and does not depend on any peer group averages.*

The EaR report presents projected offer rates under multiple

### Market Wisdom - Art Hilliard\*

Scratch and dent loans continue to dominate in the market. A \$5mm pool traded yesterday to multiple bidders at a Wavg price of 86.28.

- It was an eclectic mix of loans including conforming, jumbo, FHA and bond loans
- In my opinion, the price was surprisingly low considering a 4.22 WaRate, 78.03 WaLTV and a 738 WaFICO.
- We won two loans out of the pool at prices with a 91 and 87 Handle.

Still there are other transactions other than S&D waiting to happen. Some current Axes include:

- Wanted to buy - \$15mm – \$25mm 5/1 Hybrid ARMs in California, WA FICO > 750, WA LTV < 70, WA DTI <40
- Wanted to buy - \$10mm – \$15mm 3/1, 5/1, 7/1 Hybrid ARMs in New Jersey, WA FICO > 700, WA LTV < 70, WA DTI <40
- Wanted to sell – Monthly production building to \$50mm per month, 7/1 CMT ARM, 3.25 Margin, 2/2/6 Caps 100+% LTV, 20% MI, 20 YR amortization.
- TFO gives Banks the opportunity to post their own buy/sell inquiries on TFO, and get exposure to buyers and sellers nationally. Saves a lot of time and effort

**Pool details attached *THC* site *Conf Room***  
<https://www.thcdecisions.com/tro>



interest rate shock scenarios. The tables shown below present the monthly projected offer rates for a Transactional Account and a Savings Account under the base case and also with a interest rate shock of up 100 bps.

**Transactional Account**

months	0	1	2	3	4	5	6	7	8	9	10	11	12
base case	0.11	0.124	0.135	0.149	0.163	0.177	0.193	0.209	0.226	0.244	0.263	0.283	0.304
100 bpt shock	0.110	0.142	0.172	0.203	0.234	0.265	0.297	0.329	0.362	0.396	0.430	0.465	0.501

**Savings Account**

Months	0	1	2	3	4	5	6	7	8	9	10	11	12
base case	0.190	0.201	0.213	0.226	0.241	0.255	0.271	0.287	0.305	0.323	0.342	0.363	0.385
100 bpt shock	0.190	0.220	0.251	0.283	0.315	0.348	0.380	0.414	0.448	0.482	0.518	0.554	0.591

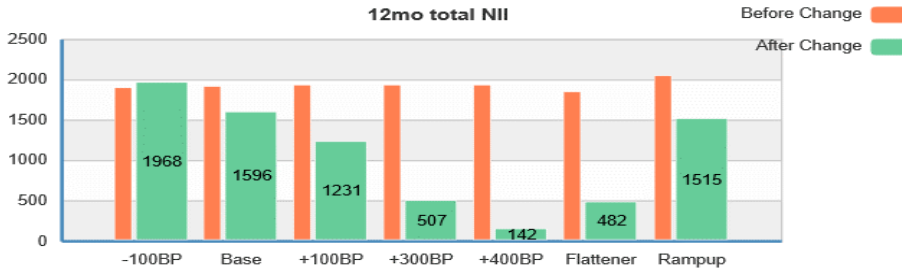
The results show that the offer rates rise gradually under the rate shock scenario. The Board should be aware of the offer rate strategies assumed in the model. To the extent that these projections do not agree with your strategy, then the model assumption can be changed.

The betas can be derived from these projections. The Directors’ Dashboard report generates and displays the betas below. The Transactional Account and Passbook Account betas are 0.20 and 0.21 respectively. The betas are the spread between the offer rates under rate shock and the base case at the end of 12 months. Therefore, the beta is the basis points rise in the offer rate at the end of 12 months for a 100 bpt shock in market rates.

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

**Numerical Example**

In a way, beta is your offer rate strategy that seeks to simultaneously keep your offer rate as low as possible while retaining your customers. Therefore, you may consider simulating alternative betas to evaluate their impact on earnings. The Risk Officer Sensitivity Calculator provides some simulated results. For example, if we assume a beta that is 20 bps higher, your offer rates will rise 20 bps higher under 100 bpt shock and 40 bpt higher under 200 bpt shock. This increase in your funding cost under each rate shock will lower your earnings. Furthermore, the impact on earnings will increase with the size of the rate shocks. The impact on NII over a 12 month period is presented below.



If the market forces you to raise your beta by 20 bpts, then the results show that under a 300 bpt interest rate shock up, the NII can fall from slightly below \$2mm to \$507,000. The impact is clearly significant. *For this reason, regulators are concerned with the model risk impact on your earnings.*

**Conclusions**

Non-maturity deposit accounts are an important funding source. However, in a rate rising scenario, this funding source can affect the earnings significantly. Your customers’ behavior is institutional specific. THC provides you the back-testing of your specific beta and offers you the Sensitivity Calculator to evaluate the model risk. The EaR report also enables you to evaluate and determine if the model assumptions are consistent with your offer rate strategies.

*If you have further questions on deposit account modeling, please do not hesitate to contact THC.*

Regards,  
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