



January 12, 2016

Weekly Post **Balance Sheet Management: a THC Solution**

Dear Clients-

To many people, the phrase "risk and return analysis" might sound like a cliché. However, for bankers like yourselves risk and return analysis while simple in concept can actually be a little more complex to implement. In practice, in order to achieve optimal balance, you need to evaluate many different balance sheet strategies and risk factors. Attempting to achieve the highest performance while meeting policy limits and regulatory requirements can cause "risk and return" to take on a more complex dimension in banking.

THC Expert System was designed to help you manage many of the decision making complexities associated with balance sheet management. Based on years of research, an extensive database, THC ALM models, practical banking experience and cloud-based technology, THC Expert System enables you to evaluate a large number of possible implementable balance sheet strategies and provides you with a list of recommended strategies to meet your specific needs. These recommended strategies are market-based and institutional specific providing you with a powerful tool to help you better manage the complex task of implementing optimal balance sheet strategies.

Challenge

You are constantly being faced with a broad range of balance sheet strategies. Asset strategies include changing your asset mix of loan volume, securities, cash and adjusting asset durations. Liability strategies include diversifying funding sources and duration.

- How to determine the optimal balance sheet strategy while taking into consideration the various risk factors involved?

Solution

THC Expert System considers the impact of each balance sheet strategy on your dashboard numbers. The Expert System then matches the strategies to your balance sheet needs, which is calculated using a peer group comparison and other "institutional specific cultural" factors. The matching provides a list of strategies with their scores. Strategies that have higher scores are more appropriate to your institution.

THC Expert System considers the following risk factors using CALL data, as defined below:

Before-tax return on equity: $ROE = \text{Before tax income to equity}$

Expense ratio = $\text{Net non-interest income to equity}$

Margin = $\text{weighted average interest rate} - \text{weighted average interest cost}$

Leverage (multiple) = $\text{total asset to equity}$



Duration = the Economic Value of Equity duration from the EVE report. Unlike the risk factors above, the duration is determined by THC models.

As an illustration, THC research first groups the banks by total asset size and then stratifies each subgroup by their ROE. The below table considers all the insured savings banks are having assets between \$100 million and \$300 million. There are 243 banks as of 2015Mar cycle, and ROE ranks them.

Ranking	ROE	non-int cost	margin	leverage	duration
A	12.40%	32.75%	3.15%	8.85	3.2
B	2.51%	23.12%	2.82%	7.69	4.2
C	1.51%	20.78%	2.49%	7.58	1.5
D	0.54%	25.56%	2.53%	8.02	3.5
E	-13.68%	47.96%	2.87%	10.98	2.3

THC Expert System uses such peer group tables to determine a set of strategies that will optimize your performance.

Numerical Example

Consider a hypothetical bank for illustration. This example evaluates six strategies and calculates the score of each strategy based on the needs of this bank. The strategy with the greatest score is the best strategy highlighted in green.

Expert System

Market rates

Time	1yr	3yr	5yr	7yr	10yr
Agency(%)	2.30	1.98	2.39	4.58	
CD(%)	0.87	1.78	2.35	2.66	

Financial ratio & strategy matrix, it is to specify the weight of the financial ratios on each strategy

Strategy No.	1	2	3	4	5	6
Buy	Loan	Loan	Loan	Agency	Agency	Agency
Funding	Cash	CD	Securities	Cash	CD	Securities
Short Term/Asset	10.00	0.00	0.00	10.00	0.00	0.00
Loan/Asset	0.00	0.00	0.00	1.00	1.00	1.00
EVE Ratio	0.00	10.00	0.00	0.00	10.00	0.00

Duration Input

Strategy No.	1	2	3	4	5	6
Buy	Loan	Loan	Loan	Agency	Agency	Agency
Buy Duration	NA	NA	NA	3.00	3.00	3.00
Buy Yield(%)	3.50	3.50	3.50	1.98	1.98	1.98
Funding	Cash	CD	Securities	Cash	CD	Securities
Funding Duration	NA	3.00	NA	NA	3.00	NA
Funding Yield(%)	0.00	1.78	NA	0.00	1.78	NA

Matrix

Bank Info			Current Dashboard					Score						Dashboard after the best strategy	
ABANUMBER	Bank Name	Peer Group	Sell Securities Yield(%)	Short term/ Asset (%)	Loan/ Asset (%)	EVE Ratio (%)	ROE (%)	Strategy 1	Strategy 2	Strategy 3	Strategy 4	Strategy 5	Strategy 6	Strategy Size/ Asset(%)	ROE
1000000000	Insurity, banks	103	2.07	5.59	81.57	22.93	1.25	0.56	2.29	0.00	1.37	3.11	0.82	5.00	1.29



In this case,-THC Expert System suggests that the 5th strategy is the best strategy because the strategy has the highest score. The ROE increases from 1.25% to 1.29%. You can now go to Trade Simulation or Financial Simulations to use the comprehensive ALM analysis. Note that the Expert System uses the CALL data, while the Trade Simulation numbers are based on economic values. The corresponding numbers may differ slightly. An example illustrates the simulation below.

Descriptions	update date	Performance Dashboard										
		Economic Values			capital			Nil and Earnings 12mo Projections			performance(%)	
		assets	loans	deposits	EVE	EVE ratio(%)	duration	Nil	earnings	margin (%)	ROA	ROE
buy \$10mil Inve		106,698	91,362	71,521	32,848	30.79	3.48	3,944	430	3.51	0.40	1.31
buy \$5.0mil Inve	01/13 15:36	111,732	91,362	76,556	32,848	29.40	3.45	3,960	443	3.35	0.40	1.35

Conclusions

Balance sheet management cannot narrowly focus on a stylized “risk and return” trade off. You need to evaluate continually many implementable strategies to enhance your performance, while simultaneously managing multiple risk factors. THC Expert System is the perfect solution to help you more efficiently implement optimal balance sheet strategies.

If you like to learn more about THC Expert System or evaluate your strategies, please do not hesitate to contact my colleagues or me.

Regards,

Tom Ho

Tom.ho@thomasho.com

1-212-732-2878

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