THC Financial Engineering
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Weekly Post: **Business Model**

Dear Clients:

Challenge:

I have discussed the risk and return tradeoffs in implementing sector rotation and liability strategies. These strategies affect the balance sheet liquidity, capital and EVE ratios and interest rate risks exposures impact our earnings. Our asset/liability management has to take these multiple risk drivers into account to create strategies to enhance our profitability. The key is to determine our business model that we pursue and the acceptable level of risk and earnings.

- What are our current risks, if any and what is an appropriate level?
- Is there a business model for peer group comparison?

Solution:

Let me first explain what I mean by a "business model" within the context of this Post. A business model identifies the income sources, funding level and operating expenses to generate the target return on equity. This return can be calculated: spread income, non-interest cost and loss ratio. The Business Model is:

ROE = (margin * leverage + funding cost - non interest cost - loss rate) *(1 - tax rate)

Spread Income is the product of the margin and leverage; funding cost is the weighted average of cost of funding, and non-interest cost is the ratio of non-interest expenses to capital. Therefore the key "dials" to manage profitability are margin, leverage and operating cost.

We can now benchmark these dials with your peer group and evaluate alternative balance sheet strategies based on this comparison.

Numerical Example

We use a peer group of savings bank between $100 million and $300 millions and consider the banks with average return on equity using CALL data. The results are presented below

Return on Equity	margin(%)	leverage	funding cost(%)	Net Non-interest cost(%)	Loss rate(%)	tax rate(%)
3.26	3.32	7.46	0.67	20.01	0.67	31.6

- Note: 3.26 = (3.32*7.46 +0.67 – 20.01 -0.67)*(1-0.316)
- Margin (net interest margin) = interest income/assets - interest cost/liabilities
- Leverage = asset/equity

- funding cost = interest cost/liabilities
- net non-interest cost = (non-interest cost - non-interest income)/equity
- loss rate = loss/equity
- THC Risk Officer™ Dashboard provides you the Business Model in the forward looking basis.

The results show that a 0.1% increase in margin would lead to a 0.746% increase in before tax income. Likewise, an increase in leverage by 1 (ie the total asset increase by the capital value), the before tax return would increase by 3.32%.

The Table enables us to consider the trends of key dials of your bank suggesting whether you should change your margin, capital ratio or manage your non-interest costs. The liability strategy would lower the capital ratio (or increase the leverage) and the sector rotation would increase the margin, leaving the capital ratio unchanged. For example, the XYZ bank may consider increasing the leverage since the leverage is relatively low.

- You might like to review and monitor the business model quarterly results in your Risk Officer ™

Conclusion

By comparing and monitor our business model with that of the peer group, we can better understand our situation and develop strategies to adjust the key dials of our balance sheet performance dashboard to enhance our profitability.

Do not hesitate to contact THC if you want to discuss your business model and would like to receive more information on the peer group comparison.

Regards,

Tom Ho

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