April 13, 2016

Weekly Post: Adjusting the EVE Ratio to Enhance Earnings

Dear Clients-

Simply put, the economic value of equity (EVE) or net economic value (NEV) is the estimated value of the balance sheet on an as-is basis, isolated from any future loan productions or any transactions. Unlike Tier 1 capital, which is accounting based, EVE is forward looking, taking expected prepayment of loans, decay of deposits and other changes of the cashflows into account.

EVE ratio is the proportion of EVE to the economic value of the total assets. EVE ratio is important for regulatory purposes and is also important in managing your balance sheet performance.

Challenges

- EVE ratios tend to range from 10% to 25%, a significantly wide range. Why?
- How do the interest rate shocks affect my EVE ratio?
- How can I leverage the balance sheet to originate loans? How do we properly assess the risk profiles?

Solution

The EVE target ratio depends on some factors. Smaller institutions tend to have a higher EVE ratio because their credit risks and funding facilities tend to be less diversified. But my in-depth discussions on ALM with some of THC clients suggest that the individual institution's perception of risk by far the most important factor. Often a high EVE ratio is used to attain safety and soundness when management is particularly risk averse, and the benefits of leveraging the balance sheet to enhance profitability is not objectively evaluated. Let me illustrate an evaluation with a numerical example below.

Suppose a bank has $100mm and $20mm economic value of total asset and EVE respectively. The EVE ratio is 20%. The bank is considering adding on $10mm of 30 yr fixed rate mortgage loans and funding with FHLB advances.

The loan rate is 3.785% with a duration 5.59, FICO of 720, 75% LTV, and owner occupied. Based on the FHLB (Chicago) rates, the funding rate for an equivalent duration is around 1.59%. Thus, the margin is 2.195%. The net interest income (NII) is estimated to be $219,000. The impact on EVE ratio willlowered to 18.18% (= $20mm/$110mm). Note the 18% EVE ratio should still be completely adequate.

Market Wisdom - Art Hilliard*

Story of a Lone Loan

A single scratch and dent, 30 yr fixed rate conventional, conforming loan sold at 91.40

- A good price considering a 650 FICO
- Offsetting the low FICO was a 4.99% rate (high yield) and a 65% LTV (lowers risk)
- Lesson one - Buyers will pay up for loans that fit their sweet spot. TFO does a lot of this work by matching sellers' loans with buyers' purchase criteria
- Lesson two – Don't run from size. Sellers should not withold a transaction because they think it is too small. There is a buyer for any size and type of loan

Loan details attached *THC* site *Conf Room*
https://www.thcdecisions.com/tro

THC Financial Engineering
WWW.THOMASHO.COM

FHLB Chicago Asof: 04/11/16 Browse FHLB file Import FHLB file Export FHLB rates

Bullet	3M	4M	6M	1Y	1.5Y	2Y	2.5Y	3Y	4Y	5Y	6Y	7Y	10Y	15Y	20Y
Bullet	0.45		0.55	0.80		0.93		1.13	1.34	1.49	1.69	1.87	2.41	2.93	3.24

THC Financial Officer (TFO)

The table below summarizes the EVE ratio and NII over a range of loan volumes.

Loan production (mm)	EVE ratio	NII
$ 10.00	18%	$ 219,000.00
$ 20.00	17%	$ 438,000.00
$ 30.00	15%	$ 657,000.00
$ 40.00	14%	$ 876,000.00
$ 50.00	13%	$ 1,095,000.00

The results show that the impact of leveraging the balance sheet on earnings is significant.

Numerical Example

Of course, the above example has ignored some practical considerations. To do so, let me consider a hypothetical bank. Using Risk Officer/Trade Simulation, I simulated a $387mm bank originating $10mm loans and funding with FHLB using the example above. The results are given below:

Performance Dashboard												
Economic Values			capital			NII and Earnings 12mo Projections			performance(%)		u400	
assets	loans	deposits	EVE	EVE ratio(%)	duration	NII	earnings	margin (%)	ROA	ROE	EVE u...	NII u400
387,055	280,074	323,386	54,274	14.02	8.79	10,203	1,850	2.54	0.48	3.41	-51.48	12.00
397,055	290,054	323,386	54,274	13.67	8.86	10,412	2,044	2.53	0.51	3.77	-52.34	11.88

The transaction lowers the EVE ratio from 14.02% to 13.67%, a drop of 0.35%, which is not significant. Since the transaction matches the loan duration and the funding duration approximately, the EVE duration inceases by 0.07 year only. The EVE under 400 bpt shock only worsen by 1%. The NII increases by $209,000 annually. Now, let me note:

- My previous post has discussed that your funding should be an ongoing process, not just matching loan origination in isolation. Fundings should be used to manage the entire balance sheet duration. The above example serves only to illustrate the impact of NII after adjusting for interest rate risk and does not suggest that such a funding strategy should be used in general.
- Originating a 30 year fixed rate loan does not have to increase the EVE duration significantly. As discussed in my previous post, the prepayment risk of the loan (option risk) is managed by adjusting your EVE duration monthly or quarterly
- In today's environment, there is a lack of loan demand in some regions to leverage up the balance sheet. However, this analysis may also indicate that you do not need to sell the loans to other banks or agencies. You can still keep the loans on the balance sheet while managing the interest rate risk.
- I have also discussed in a prevous Post that using a robust ALM model, interest rate, and liquidity risks can be measured, monitored and managed. For this reason, you may consider releasing some

risk capital and reconsider the optimal level of EVE ratio for your institution, weighing the cost and benefit of holding excess capital.

Conclusions

Using our ALM risk management model, you may evaluate the optimal level of your EVE ratio. THC Trade Simulation and Financial Simulation can assist you in evaluating alternative approaches in enhancing income. By quantifying risks under stress scenarios, you can examine this risk and return tradeoff in your ALCO meetings, your Board meeting and your onsite regulatory visits.

If you have further questions on the use of Trade Simulation and Financial Simulation to determine the appropriate level of EVE ratio, please do not hesitate to contact THC.

Regards,
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