Weekly Post: Applications of Economic Value of Equity (EVE) Report December 8, 2016

Dear Clients-

Despite the importance of the EVE report and EaR regulatory report as articulated in *Interest rate risk regulatory report, 2010 Interagency Guidelines*, the concepts and the applications of economic valuation of the balance sheet often remain unappreciated. (EVE is equivalent to Net Equity Value).

While EVE report is important for regulatory reasons: required for ALCO review by regulation, described in the Interest Rate Risk Management Policy, and monitored relative to your policy limits quarterly, EVE report is also important for managing the balance sheet. The purpose of this Post is to describe some of the applications of the EVE report.

Challenges

- What does Economic Value of Equity (EVE) mean?
- How do you define duration?
- How should I use the EVE report to manage my bank?

Solution

EVE is the estimated the value of the balance sheet when auctioned in the market. By way of contrast, the book equity does not represent the valuation of the balance sheet in the market place. Attaining low cost deposit account funding and originating high credit adjusted income from loans will increase the EVE, but not book equity. Typically, the EVE ratio is higher than the Tier 1 capital ratio because of the intangible value of the deposit accounts, with the cost of funding lower than that of the capital market rates.

The economic valuation simulates the net value of the asset and liability economic values under parallel rate shocks from -100 bpts to + 400 bpts. In particular, these simulations determine the duration of the EVE.

Consider the EVE report for the hypothetical bank below.

Market Wisdom - Art Hilliard*

TFO - Just got easier

TFO has been enhanced to show loan portfolios on the home page.

- Institutions can see entire portfolios that are offered
- Each portfolio gives clients the opportunity to drill down into generic data and analytics
- Then go into the "Loan Transactions Network" at the top of the home page and use search criteria to customize portfolios to meet specific balance needs

See the sample screen shot from the home page below.

- The THC Risk-Adjusted Performance (TRAP) report provides in depth analysis on the pool.
- Select the arrow to see the TRAP report

Loan ID	Des	Cmt	
2341	$12.4...	SBA lo...	
2338	$10.1...	10mm...	

- By clicking on the document icon, clients can see any pool summaries if provided
- Summaries provide pool descriptions and summary data

It is a great marketing tool for sellers. At a glance, buyers can see all of the loan inventory. Note the diversity in the pools being offered.

Art Hilliard has been in the mortgage industry for 30 years. He has originated, managed secondary marketing, securitizations and settlements, provided mortgage financial advisory and performed multiple mortgage portfolio sales and acquisitions. He was past president of the Illinois Mortgage Bankers Association.

Economic Value of Equity

Sector	Coupon	Maturity	Dn 100BP	Dn 50BP	Base	Up 50BP	Up 100BP	Up 200BP	Up 300BP	Up 400BP	Flattener	Face Value	Accrued Interest	BC/FV (%)	Dur
ASSETS	3.99	8.01*	277,470	274,098	270,364	266,734	263,225	256,560	250,308	244,388	257,319	256,866	19.88	105.25	2.73
ASSETS (With Derivatives)	3.99	8.01*	277,470	274,098	270,364	266,734	263,225	256,560	250,308	244,388	257,319	256,866	19.88	105.25	2.73
LIABILITIES	0.49	1.25*	223,638	221,833	220,136	218,543	216,988	213,937	211,023	208,249	213,640	221,832	-	99.24	1.49
Economic Value of Equity	2.42	6.31*	53,831	52,265	50,228	48,192	46,237	42,624	39,285	36,139	43,679	35,034	19.88	143.37	8.16

Duration is calculated as the % change in value under a 100 bpt shock. Consider the asset, the duration is (270,364-263,225)/270,364 in % which is approximately 2.73, as reported below. The EVE duration is the weighted average of the asset and liability durations. Using the numerical example below, the EVE duration is 2.73(270,364/50,228) – 1.49 (220,136/50,228) = 8.16, as reported below.

The higher the duration, the greater is the balance sheet is liability sensitive. This summary of interest rate risk exposure enables ALCO to draw the risk and return tradeoff in managing the balance sheet. Duration is widely used in ALCO. I often discuss the duration target with clients in our quarterly cycle reviews.

Numerical Example

THC economic valuation methodology follows the FASB fair valuation Level II procedure. Therefore, the economic values are benchmarked to capital market valuations. For example, THC valuation of securities should be similar to the marked-to-market valuations for the Available For Sale (AFS) values. Likewise, the loan values are benchmarked to market loan value.

The simple 'spread off a benchmark rate' cannot estimate the economic value of balance sheet instruments under alternative yield curve level, since the yield curve is not flat and the weighted-average-life of most loans, investment and borrowings depend on the yield curve level. The THC financial model uses the option-adjusted spread (OAS). This spread is estimated and is isolated from the option value and the yield curve shape. Therefore, the OAS enables THC clients to compare the profitability of loans versus that of investments using the OAS measure. The higher the OAS, the higher the profit margin.

Base Information	Yield Attribution(%)					Interest Rate Risk	
Face Value	YTM	time value	option spread	credit spread	clean OAS	eff.dur	eff.con
	[1]=[2]+[3]+[4]+[5]	[2]	[3]	[4]	[5]		
'Real Estate Loan -> 1-4 FAMILY FIRST MORTGAGES							
2,950	**1.571**	**0.103**	**-0.020**	**0.374**	**1.114**	**0.32**	**-1.39**
176	0.902	0.192	-0.033	0.382	0.360	0.68	-1.47
393	1.548	0.188	-0.037	0.384	1.014	0.67	-1.47
187	2.154	0.184	-0.035	0.384	1.621	0.64	-1.53
150	2.417	0.180	-0.032	0.384	1.885	0.61	-1.56
129	1.042	0.296	-0.026	0.385	0.387	0.62	-1.62
463	0.716	0.064	-0.021	0.369	0.304	0.24	-1.89
187	1.256	0.053	-0.015	0.369	0.849	0.16	-1.51
171	1.653	0.043	-0.009	0.369	1.250	0.11	-1.08

For this reason, the EVE and Assumption Report along with Investment Portfolio Analytics, Loan Performance Analytics, Single Securities Analysis in Trade Simulation and other reports provide both the OAS (to measure the profit margin) and duration (to measure the risk). This presentation enables you to decide on the risk and return tradeoffs of each balance sheet item.

An example from the THC Loan Performance Analytics report is presented above. The results show that the 1-4 family mortgage loan pool has a profit margin of 111.4 basis points, net of the cost in hedging the interest rate risk, credit risk reserve, and the potential loss to the borrower's prepayment option. The loan pool has a duration of less than 3 months. You can use this simplified approach to compare alternative use of funds, such as investment in securities, or buying/selling your loans.

As I noted in a previous Post, the risk and return tradeoff must depend on your balance sheet and your risk preference. Since the EVE report provides you the duration of each balance sheet sector as well as the balance sheet duration, EVE report is central for you to evaluate any transactions.

Conclusion:
Use your EVE report to identify your EVE duration and to determine the main contributors to your balance sheet risk. The durations will enable you to optimize your risk and return tradeoff in adjusting your balance sheet to enhance performance.

If you have any questions regarding the EVE report, please do not hesitate to contact THC. Use the Conference Room, Homepage Risk Officer, to send us your comments and questions. All your posts are anonymous.

Regards,
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THC is NOT a broker-dealer. THC only offers an analytical platform for clients to work together to meet your customers' needs or your balance sheet requirements. THC does not collect any commission.

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