DERIVING DEFENDABLE EXIT PRICING

Starting in 2018, institutions that file with the SEC, such as publicly traded banks, must disclose the fair value of certain instruments in accordance with FASB ASC Topic 820. One major change in 820 is "defining fair value as an exit price, which reflects the price that would be received to sell an asset in an orderly transaction between market participants at the measurement date." A methodology is given below for how to use ZM and typical ALM modeling assumptions coupled with credit and liquidity assumptions to derive an exit price.

Frequently EVE/NEV results are derived by calculating the contractual cash flows for a given rate scenario (such as base case with an implied forward curve), those cash flows are further adjusted with prepayment speed assumptions, and finally, a price is solved for by discounting the prepayment adjusted cash flows using a discount curve such as LIBOR/swap or U.S. Treasury plus an option adjusted spread (OAS).

One method for determining the OAS used in the aforementioned discounting to derive a price is by taking a sample pool of recently originated instruments for a given category, calculating the weighted average parameters for that pool of instruments, setting up a generic repricing instrument in the ALM model that reflects those weighted average parameters, set the price to 100, solve for OAS and then push that OAS across all instruments in that given category and solve for price when running EVE/NEV. This approach could be considered an "entry price" methodology, which does not take into account liquidity and credit migration adjustments to arrive at an "exit price," which will be discussed below.

For example, suppose that on June 30, 2018 an institution has $100mm of Home Equity Lines of Credit that all float with the U.S. Prime rate and $20mm of these loans were originated, or had a change in terms, over the last 6 months. In MS Ex-

cel one can list the individual parameters for each of the loans in this $20mm sample pool such as spread to Prime and current balance. Next, calculate the weighted average spread to Prime of the sample pool. In ZM, create a generic HELOC repricing instrument with this average spread, set the price to 100 and solve for OAS using June 30, 2018 market data. The key assumption here is that the institution was happy to make these recent loans so they are priced at par. When the model is loaded with all $100mm of these HELOCs, that OAS from the sample pool is applied to every HELOC instrument and set to solve for price for the standard EVE/NEV modeling run. Perhaps half of those HELOCs were originated a few years ago at spreads considerably greater than those of the recent sample. This technique will price those legacy assets at a premium and vice versa if spreads have instead expanded recently.

It should be noted that this technique can also apply to less homogenous instrument categories by calculating parameters such as origination spread based on maturity or next reprice date for fixed-rate and adjustable rate coupons, respectively. Other parameters could include floors, initial teaser spreads, and amortize through dates. Then a generic can be constructed based upon the weighted averages of these extra parameters.

Additionally, say you have 4- and 5-year fixed-rate auto loans grouped together or 3/1, 5/1, and 7/1 ARMs all in one category. Select the index which corresponds to the majority of the loans in that category and calculate the weighted average spread at origination for all loans in the sample pool relative to this proxy index. Finally, use that proxy index and weighted average spread for the generic instrument.

The EVE/NEV results from the aforementioned technique do not typically include a liquidity premium or account for migration in credit quality. However, by adjusting the OAS of each instrument according to assumptions for liquidity and current credit rating and rerunning the EVE / NEV simulation, an exit price can be calculated.

Clearly each institution will need to get comfortable with their own assumption set for liquidity premium and credit grade and be able to defend it to the regulators and auditors. One method is to look at the spread between the FHLB bullet advance curve and UST curve on the valuation date and increase the OAS of each instrument based on the weighted-average life of each instrument from the original EVE / NEV run.

Next, compare the current credit grade of each instrument versus the average credit grade for a given sample pool and further adjust the OAS accordingly if the credit grade has deviated up or down. The additional spread to be added for an instrument that has deteriorated in quality might be subjective and based on the chief credit officer or ALCO's opinion, it may be derived from Allowance for Loan and Lease Loss, or even from broker quotes (if you routinely sell loans for example). For example, suppose a grade 3 credit is 90% of what the bank originates and if it was a grade 4 perhaps the bank would still consider making the loan but at an increased spread of 50 basis points or if a grade 2, then 50 basis points tighter. Using this general pricing logic becomes more subjective as the credit quality deteriorates further since most banks are not in the business of lending to low credit borrowers.

Alternatively, a third OAS adjustment could be made based on the balance of each instrument with those larger balances likely being more liquid and hence smaller balance instruments would have a higher OAS adjustment. However, one can argue that balance has already been taken into account when calculating the weighted average spread of the sample pool. On a given day, a $1mm commercial loan is likely to be priced tighter at origination than a $100k commercial loan and consequently the weighted average spread that was used to derive the original OAS used for that category in the EVE/NEV simulation has already captured variations in balance.

Considering that exit pricing was recently implemented in 2018 for SEC filing banks, there is a lack of meaningful guidance and a general consensus on how to calculate it. As long as key assumptions are reasonable, logical, and documented, the framework that is chosen for your institution should be defensible and then tweaked according to feedback from regulators, auditors, and peers.

About the Author

Phillip Reschke is Client Experience Manager for ZM Financial Systems and has more than 15 years' experience in capital markets, ALM and funds transfer pricing. He previously served as an Officer and ALCO Member responsible for all aspects of ALM/IRR and liquidity, from model assumptions to ALCO packet creation and finally presentation to ALCO. For more information visit w3.zmfs.com or email sales@zmfs.com.