December 20, 2015

Weekly Post: **Adjusting Interest Rate Risk Exposure: Prospective and Retrospective Evaluation**

Dear Clients-

The Fed's raising of interest rates may prompt institutions to consider evaluating and adjusting their interest rate risk exposure. Given the current upward sloping yield curve, a less asset sensitive balance sheet [higher duration] enhances yields, but the tradeoff incurs higher interest rate risk. This weekly post describes how you may set your duration target with reference to the historical duration trends and your view of interest rates.

Challenge

Interest risk exposure can be adjusted by changing your asset mix, investment strategies or funding strategies.

- If we have a view of the expected interest rates projections, how should we position the balance sheet duration to match that view?
- Have banks adjusted their balance sheet durations in anticipation of rising rates?

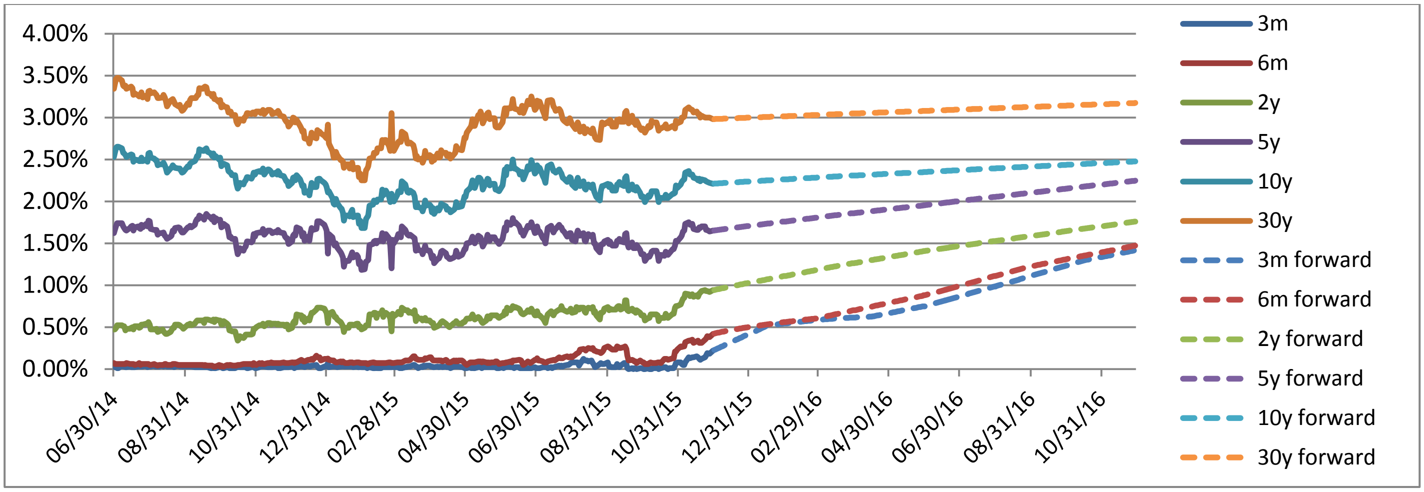
Solution

Regulatory guidelines use the "forward rates" as the base case projection of interest rates. These forward rates have this implication: if the yield curve follows the forward rates projection, then the value of an asset or liability (based on the yield curve) would have the same re-invested value at any future date, irrespective of its maturity. For example, a one-year loan or two-year loan would have the same re-invested value in 3 years, if credit and liquidity spreads are not taken into account. Forward rates do not bias the Earnings-at-Risk (EaR) analysis by the balance sheet duration exposure, and this is the reason for their use in the EaR or other financial projection reports for the base case.

We can also use forward rates to adjust our balance sheet exposure. Longer balance sheet duration would lead to outperformance if we believe the projected rates should be lower than the forward rates. The outperformance can still be accomplished in a rate rising scenario as long as the rates are below the forward rates. This is because the reinvested income cannot exceed to the higher interest rates of longer term loans.

Forward rates can be used as a breakeven scenario to draw risk and return tradeoff in adjusting the duration.

The graph below shows the historical trends and the current forward rates of the Treasury Rates. The results show that since June 2014, the 5-year and 10-year rates have not changed significantly, but the 2-year rate has increased over 50 basis points, particularly after October 2015, when the market anticipated the Fed's decision of raising the Fed Fund's rate. The results also show that all the forward rates continue to rise, with the short rates rising faster and the curve flattening.



Numerical Example

The yield curve has been significantly upward sloping, resulting in forward rates higher than most institution's expectation the last six years. For this reason, the historical duration of the balance sheet has been positive ranging from 4.35 to 2.65. However, after five years of the Fed controlling the short term rates, institutions have anticipated the continual rising and flattening of the yield curve over the past 12 months and reduced their duration. The table below shows that the balance sheet duration gradually fell to the lowest level of 2.65. The shows that balance sheets are responding to the changes in rate expectations.

Cycles	Duration	EVE Ratio	Loan/Deposit	ROE
2015 September	2.65	18.22	102.42	1.84
2015 June	2.98	18.42	99.92	2.12
2015 March	2.12	17.87	86.46	1.23
2014 December	3.11	18.75	88.00	-0.02
2014 September	4.35	17.59	87.81	1.48

Note that the EVE ratio has not changed much during this period, only increasing slightly. Institutions have enhanced earnings as the 12 month projected earnings to EVE (return of equity ROE) has improved from 1.48% to 1.84%. The main contributor to the higher earnings comes from the increase of the loans outstanding balance as the loan/deposit ratio increased from 87.81% to 102.42%, even as the duration of the balance sheet has been lowered, thus exerting downward pressure on earnings.

Conclusions

Optimally adjusting your interest rate risk duration can enhance earnings while managing risk. The projected forward rates and the historical duration trends can be used for your ALCO discussion. Of course, the target duration should be institutional specific depending on the constraints of the customers' demand and risk management policies.

Your Management Dashboard Report available in THC Risk Officer can assist you with this ALCO discussion.

Please do not hesitate to contact THC to analyze your balance sheet duration to optimize your performance.

Regards,

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