

Risk Management Advisory Services

Interest Rate Hedge Consultants

Structuring, Pricing, Valuation and Education



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DERIVATIVE SPREADS - The credit imbroglio has not only affected loan spreads - "liquidity premiums" ranging from 25 bps to 90 bps depending on the tenor of the deal, for commercial bank transactions have been cited - but the crisis has also had a causal relationship on where derivative transactions are being priced in the marketplace. As would be expected, spreads have widened for some borrowers.

However, understanding how swap exposure is calculated and what it means, can help to ensure that spreads remain reasonable and most importantly, justifiable.

Swap Exposure - While there may indeed be instances where a financial institution has a valid argument for charging a wider spread for a derivative transaction in today's market, arguably to compensate the bank for the risk profile, it's important to understand that derivative exposure is not the same as loan exposure. An increase in spread needs to be carefully vetted.

For example, the maximum loss that a bank can have on a loan is equal to the amount that it lends. It lends you a \$1mm. Excluding any other fees and such, its maximum exposure is \$1mm. Theoretically, and one may argue some-

what simplistically, the bank's required return, or to put it another way, its spread above its cost of funds, is a direct function of the underlying collateral and the borrower's ability to pay back the loan. It is also based on what the market will bear, which at times can distort spreads, either positively or negatively.

A derivative transaction is quite different. While there is indeed a correlation to the above mentioned criteria, a key component of risk assessment for an interest rate derivative is the current levels of interest rates, the forward expectation of rates and the underlying volatility.

Take a pay-fixed swap for example. From the bank's perspective, it has unidirectional risk. When underwriting the swap exposure, the bank is primarily concerned with falling interest rates. Why? Because if swap rate rates rise and the borrower defaults, the swap has positive value to the bank. That is, the swap has gained in value. Assuming that the swap is cross-defaulted and cross-collateralized to the loan, the bank can use that value to offset its loan exposure.

In order to derive an absolute number, a bank typically calculates the exposure such that it captures 95% of all probable outcomes associated with falling interest rates. Or to put it another way, a 95% confidence interval. On a 2 yr swap, the

exposure may be as small as 2%-3% of the loan amount, whereas a 10 yr swap may be as high as 12% - 15%. The peak or maximum exposure generally occurs somewhere between a third of the way through to a bit less than half way through the life of the transaction.

Hence, while the borrower's ability to repay the debt and make good on any periodic swap settlements, will indeed influence the spread, the level of interest rates and the underlying volatility have just as great of an impact. Generally speaking, if you start from a point of relatively low interest rates, the exposure to the bank on the transaction will be less than if interest rates were higher. There's less chance of rates moving lower.

RAROC - Return on Risk Adjusted Capital. This is a model that takes into account the derived swap exposure, as would be calculated above, and factors in the client's credit profile to determine an appropriate return to the bank given the presumed exposure. It provides an indication of the required hurdle rate or number of basis points above the bank's mid-market rate.

By calculating the swap exposure and using that value to drive the RAROC, a reasonable spread can be computed for a given transaction. It provides a good benchmark for pricing discussions.

MARKET BENCHMARKS

Treasuries				LIBOR				SIFMA: Tax-Exempt Rates			
	Current	Month Ago	Year Ago		Current	Month Ago	Year Ago	SIFMA Setting		SIFMA Swap ⁽¹⁾	
2 Yrs	2.58%	2.44%	4.85%	1-Month	2.46%	2.45%	5.32%	Current	1.55%	3 Yrs	2.86%
3 Yrs ⁽²⁾	2.82%	2.70%	4.86%	3-Month	2.79%	2.67%	5.36%	Last	1.66%	5 Yrs	3.16%
5 Yrs	3.30%	3.21%	4.90%	6-Month	3.13%	2.88%	5.38%	52 Wk Avg	2.89%	10 Yrs	3.59%
10 Yrs	3.96%	3.92%	5.00%	9-Month	3.23%	2.99%	5.39%	% 1-ML	62.94%	15 Yrs	3.82%
30 Yrs	4.50%	4.63%	5.10%	12-Month	3.35%	3.10%	5.39%	% 3-ML	55.53%	20 Yrs	3.92%

Spot Starting LIBOR Swap ⁽³⁾				Forward Starting LIBOR Swap ⁽³⁾				% of LIBOR Swap ⁽³⁾			
	Current	Month Ago	Year Ago	(FWD Premium bps)	3 Yrs	5 Yrs	10 Yrs	67% LIBOR		70% LIBOR	
2 Yrs	3.47%	3.22%	5.21%	6 Mos Fwd	25.6	18.6	12.0	3 Yrs	2.56%	3 Yrs	2.67%
3 Yrs	3.81%	3.55%	5.24%	12 Mos Fwd	55.2	39.8	25.0	5 Yrs	2.80%	5 Yrs	2.92%
5 Yrs	4.17%	3.95%	5.33%	18 Mos Fwd	74.7	55.5	34.4	10 Yrs	3.10%	10 Yrs	3.24%
10 Yrs	4.63%	4.46%	5.50%	24 Mos Fwd	88.5	67.3	41.5	15 Yrs	3.24%	15 Yrs	3.39%

5/25 yr ⁽⁴⁾	7/25 yr ⁽⁴⁾	10/25 yr ⁽⁴⁾	15/15 yr ⁽⁴⁾	Fed Funds	Prime	JPY	Eur
4.15%	4.38%	4.58%	4.60%	2.00%	5.00%	105.92	1.5880

Note: If amortizing, the % LIBOR swap rate is lower.

Note: (1) Semi, 30/360 (2) Interpolated Yield (3) Monthly, Act/360 (4) Monthly, Act/360 - Mtg. Style Amortization @ 6.00%

Prices based on current market conditions and subject to change. Transaction size and structure along with credit risk considerations will effect ability to achieve market pricing.