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Hedging a Loan with a LIBOR Floor

When hedging a loan with a LIBOR floor, a borrower has to use a swap with a matching floor built in. This makes the swap more complicated and expensive. We were recently asked by a client to analyze using a swap vs. a cap to hedge a loan with a floor. We determined that using a cap would be superior to a swap, even though the cap required an up-front payment.

Background

During the last several years of the current low-rate environment, many lenders have been requiring LIBOR floors in variable rate loans in order to boost the banks' returns. For example, a loan may be priced at LIBOR + 3.00% with a 1.25% LIBOR floor. The floor forces the borrower to pay 1.25% for LIBOR instead of the current low rate of .25%.

If LIBOR rises above the floor level of 1.25% though, the loan's rate will become variable again. Many borrowers with multi-year term loans want to hedge this rate risk. There are two ways to do this: buy a cap at 1.25% (or higher) or enter into a swap with an embedded floor at 1.25% (the embedded floor is needed to offset the floor in the loan, since at low rate levels the borrower would otherwise pay the floor rate *plus* the swap's fixed rate).

Pricing Analysis

	<u>2-year</u>	<u>4-year</u>	
<u>Plain vanilla swaps:</u>	.46%	.73%	
<u>Swaps with built-in floors:</u>	1.37%	1.55%	(floor costs built-in)
<u>1.25% Caps:</u>			
Floor rate:	1.25%	1.25%	
1.25% cap; per annum cost:	<u>.07%</u>	<u>.26%</u>	(up-front costs of .135% and 1.04%)
All-in capped rate:	1.32%	1.51%	

The swapped scenarios turn out to be a little more expensive than the capped scenarios, because the bank has to charge for the credit risk of the swap. Like many borrowers, our client initially liked the idea of a swap instead of a cap, since he would not have any up-front cost; but after looking at some analysis, he realized the cap was more attractive.

The real advantage of the cap vs. the swap is if the client has to terminate (or refinance) early. Since the swap rate has the sizable cost of the floor built into it, the swap rate is significantly above market. To terminate the swap early the client might have to pay a penalty of as much as 1.00%/per year, since this would be how much “out-of-the-money” the swap rate would be. In a termination the bank will charge the original profit margin of the swap, *and* could charge the cost of the embedded floor.

A cap on the other hand, wouldn't have to be terminated if the loan was paid off early. It is an asset the client gets to keep since it was purchased. In fact, the client might actually get some money back from selling the cap back to the bank after paying off the loan.

Summary

Like many structures in the derivatives world, a more complicated structure is typically a more expensive structure. Even though the swap with the built-in-floor seems less expensive since it has no up-front cost, it carries the risk of a large future termination payment. The alternative cap can never have a negative value, and can be sold back to the bank if it is not needed in the future.

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