## Introduction

Banks set swap rates for borrowers from rates in the wholesale swap and LIBOR futures markets. A Bank will base the swap rate it offers a borrower on the rate where the Bank can "hedge" itself in these markets, plus a profit margin.

This paper also describes how and why banks use the swap and futures markets to determine swap rates, and how banks hedge themselves and earn a profit margin in the process.

## The Dynamic Market for LIBOR Swap Rates

Just like the stock market, the swap market is dynamic. Swap rates move up and down all day long as the banks in this market trade with one another. Participants determine what rates they are willing to pay and receive for different LIBOR swap maturities. At any single moment, the rates in this market determine the minimum swap rate a bank would be willing to receive from a borrower. Minimum, because the bank would not be willing to receive a lower rate from a borrower than it could receive from another bank in the market for the same swap. This minimum rate, plus a profit margin is the all-in fixed swap rate the bank would be willing to receive from the borrower.

## How a Bank Hedges Itself in the Market

It is important to remember that just because a bank is taking the opposite position in the swap from the customer, the bank is not "betting against" the customer. Although the fixed swap rate the borrower pays may be higher than the LIBOR rate it receives, the bank is NOT making the difference between these two rates; nor does the bank make more money if the client loses money.

The fact is, the moment a bank executes a swap with a customer, the bank locks a profit margin for itself. When the bank agrees to a swap with a customer, it simultaneously hedges itself by entering into the opposite position the swap market (or maybe the futures market), just as a bookie "lays off" the risk of a bet. By hedging itself in this way, whether LIBOR goes up or down, the variable rate the bank receives on its hedge matches the rate it pays to the customer. The bank's profit is the difference between the higher fixed rate the bank receives from the customer and the lower fixed rate it pays to the market on its hedge.
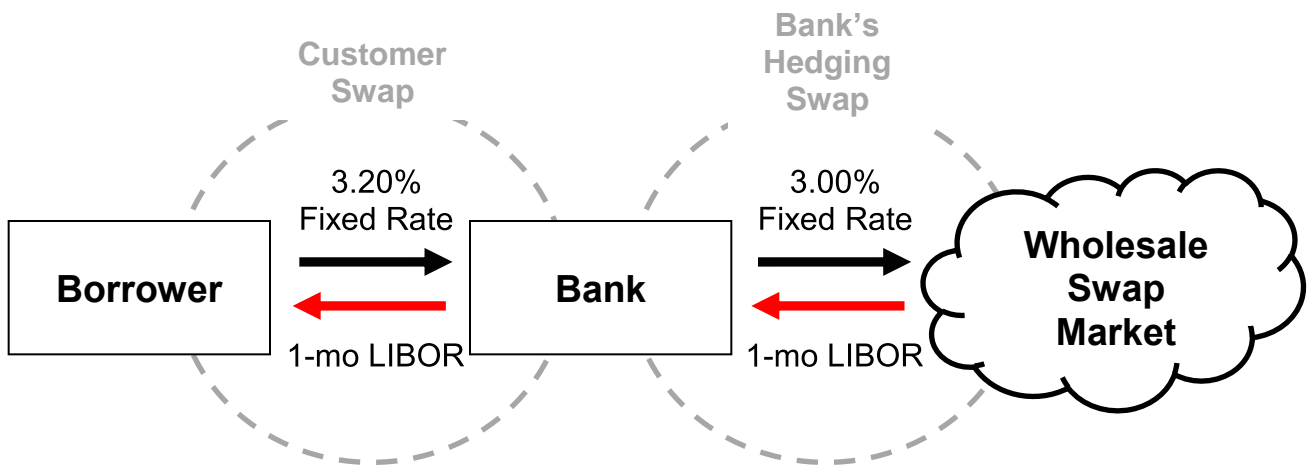
## Example

Suppose a customer wants to lock in his LIBOR cost on a $10 million loan for 5 years. He asks his bank to quote him a rate for a swap where he would pay a fixed rate for 5 years to the bank,

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and the bank would pay him 1-mo LIBOR.  Below are the terms:

| | |
|---|---|
| Notional Principal: | $10,000,000 |
| Fixed Rate Payer: | Customer |
| Fixed Rate: | (described below) |
| Floating Rate Payer: | Bank |
| Floating Rate: | 1-month LIBOR |
| Maturity: | 5 years |

The bank looks in the wholesale swap market to determine what rate it can pay on a swap to hedge itself.  Suppose in the swap market the bank can pay 3.00% for a 5-year swap with another bank.  The bank also decides it wants to earn a profit margin of .20% on the swap with the customer.  The bank therefore offers a rate of 3.20% to the client, and if accepted, simultaneously enters into a swap in the market where it pays 3.00%.  Both transactions are diagramed below.



The Bank's profit margin of .20% is the difference between the rate it charges the client and where it can hedge itself in the swap market.  The margin on this swap is worth $20,000 annually to the bank, or $100,000 in total over 5 years.

**Summary**

As you can see, the bank acts as a middleman between the customer and the wholesale swap market.  It may be that the bank doesn't directly enter in a swap, but rather synthetically hedges itself in the LIBOR futures market.  Either way, a bank will price the swap to the customer where it can lock in a profit which it earns over time.  You could say a bank is no different than a bookmaker in this case.  It doesn't matter whether the client wins or loses on his "bet" on rates, because the bank makes its profit no matter what.

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