

## How LIBOR Affects the Enterprises

LIBOR is the average interest rate that financial institutions around the world, such as Barclays Bank, estimate it would cost them to borrow money from other institutions. Each day, a group of large banks are polled, the top and bottom four estimates are dropped, and the average interest rate is published. Then, banks around the world use that interest rate to benchmark their loan making and borrowing.

In total, LIBOR is involved in calculating payments for over \$300 trillion.

For example, many mortgage lenders rely on LIBOR to determine the interest rates they charge for adjustable-rate mortgages. Taking into account the borrower's profile, a lender might add 2-3 percentage points to LIBOR.

LIBOR is also involved in more complicated financial products, such as floating-rate investments that do not pay a fixed rate (e.g., a savings account that pays 2% each year) but instead fluctuate. For example, if LIBOR is at 1%, a bond may advertise itself as LIBOR + 1, which means that it pays 2% interest that month and 3% the next month if LIBOR rises to 2%.

### Enterprises' Floating-Rate Investments

The enterprises purchase, guarantee, and own large volumes of fixed-rate assets because they buy mortgages. Predominantly, these mortgages relate to 30-year fixed-rate loans, which opens the enterprises to the interest rate risk associated with fluctuations in prevailing interest rates.

To balance that risk, the enterprises make floating-rate investments, primarily bonds and interest rate swaps.

**Floating-rate bonds:** For example, on entering conservatorship, Freddie Mac held approximately \$299 billion in floating-rate bonds that pay prevailing rates of interest according to agreed schedules.

**Interest rate swaps:** Since homeowners generally prefer stable payments, the enterprises' mortgage portfolios have more fixed-rate loans than floating-rate ones (i.e., adjustable-rate mortgages). To offset risk, the enterprises trade some of their fixed-rate interest revenue for other institutions' floating-rate interest revenue, which leads to a stable combined portfolio whether interest rates rise or fall.

In large part, LIBOR determines how much the enterprises receive from their hundreds of billions of dollars of floating-rate investments. Each month or quarter, the interest rate payments are recalculated based on LIBOR's current value, so a small change can have large effects on the enterprises' bottom lines.

## Lower LIBOR = Higher Losses

Barclays Bank admitted to systematically underestimating how much other banks would charge to loan it money, on the basis that lenders charge higher interest rates for borrowers that represent higher risk. This projected a false picture of the bank's financial condition during the recent financial crisis. That is, high-risk investment requires a high return. In this case, Barclays Bank's low LIBOR estimates projected the bank's soundness by identifying it—at least in its own opinion—as low risk. However, while the maneuver strengthened Barclays Bank, it weakened investment earnings that depended on LIBOR.

Currently, several lawsuits are underway that will help determine how widespread the practice was, but one way to gauge the effect of LIBOR manipulation on the enterprises' investments is by comparing its performance to another benchmark rate, the Federal Reserve's eurodollar deposit rate (Fed ED). Like LIBOR, this benchmark rate is determined by polling financial institutions—in this case, a larger cross section of financial institutions—to measure short-term borrowing costs. Historically, the two rates performed nearly identically; from 2000 to mid-2007, for example, the two rates mirrored each other.

However, as Figure 1 (see below) demonstrates, in early 2007 as the financial crisis deepened, LIBOR and Fed ED began to diverge. By the end of September 2008, LIBOR was 3% lower than Fed ED. For the enterprises, that could have meant 3% less return on hundreds of billions of dollars of investments if the LIBOR rate was manipulated.

**Figure 1. LIBOR vs. Fed ED 2006-2010**

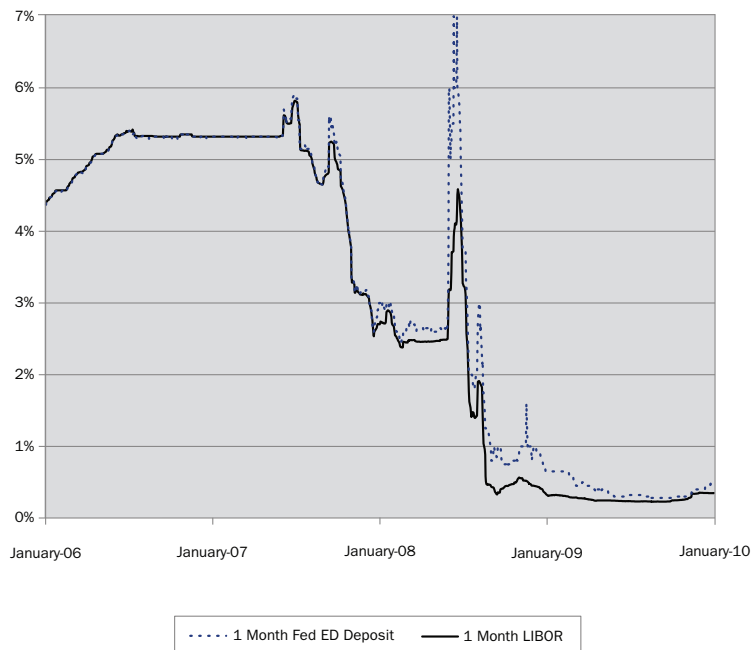


Figure 1 Source: Federal Reserve Bank of St. Louis, *1-Month London Interbank Offered Rate (LIBOR), Based on U.S. Dollar (USD1MTD156N)*. Accessed: April 11, 2013, at <http://research.stlouisfed.org/fred2/series/USD1MTD156N>. Federal Reserve Bank of St. Louis, *Graph: 1-Month Eurodollar Deposit Rate (London) (DED1)*. Accessed: April 11, 2013, at [www.research.stlouisfed.org/fred2/graph/?id=DED1](http://www.research.stlouisfed.org/fred2/graph/?id=DED1).