

## The Impact of LIBOR Floors on Bank Loans:

### It's Anyone's Guess What Will Transpire When Rates Rise

- > LIBOR floors set minimum levels below which bank loan coupons cannot fall.
- > Near-zero short-term interest rates led to the widespread use of LIBOR floors.
- > We see two possible price scenarios occurring when rates rise — one positive and one negative.



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## Executive Summary

### “If you fall, I’ll be there” — a floor

Like a lot of jokes, good or bad, truth is at the core of the statement above, whether with respect to gravity or the protective financial mechanism launched in the loan market following the financial crisis of 2008 — the LIBOR<sup>1</sup> floor (herein referenced simply as the “floor”). Instead of relating to a falling object, however, we apply the quote to short-term interest rates (e.g., LIBOR) and a derivative instrument (the floor) that is conditionally declaring its presence should rates drop.

The advent of the use of LIBOR floors with institutionally-traded bank loans<sup>2</sup> occurred for two main reasons: 1) the floating-rate nature of interest payments made on loans, and 2) the unprecedented drop in LIBOR to near zero (more on these topics later). The combination of these two factors helped drive loan prices violently lower during the 2008 crisis and nearly shut down the rapidly-growing market.

Today, however, with short-term rates expected to rise, loans face an unprecedented interest rate backdrop. Because most loans now include a floor, the anticipated near-term performance of the asset class is in question. LIBOR floors take center stage in this analysis, with the primary concern being whether they will help or hurt loan performance going forward.

Not surprisingly, two schools of thought regarding the anticipated behavior of floor-based loan pricing pervade the market. On one hand is the view that floors temporarily transform loans into fixed-rate paying instruments (like high yield bonds) and, based on historical evidence that will be presented later on in this paper, will help preserve principal value as rates rise. On the other hand is the belief that floors will have a negative effect on prices as rates rise, leading to principal losses.

Because floors are a relatively new feature for loans, there is no historical guide investors can use to decide which school to follow as they implement their investment processes. Getting this call right will likely determine whether bank loans are winners or losers over the next year or so as LIBOR rises from near-zero to a more normalized level.<sup>3</sup>

To explain the merits of the opposing arguments, this paper is broken down into four sections. The first section addresses LIBOR and its importance as a reference rate.<sup>4</sup> The second section explains the mechanics of loan pricing and why the “discount margin” is important to the debate. In the third section, the introduction and use of LIBOR floors in loan pricing is profiled. And, in the final section, each school of thought is described in the context of a rising rate environment.

<sup>1</sup> LIBOR stands for the London Interbank Offered Rate (a detailed description will follow) and consists of rates quoted in 5 currencies over 7 time periods. For this paper, any reference to LIBOR specifically refers to the 3-month USD LIBOR rate.

<sup>2</sup> For the purposes of this paper, institutionally-traded bank loans (referred to as “bank loans” or simply “loans”) are defined as U.S. Dollar-denominated non-investment grade syndicated term loans that comprise the “leveraged loan market”.

<sup>3</sup> According to its forward curve (per the Chicago Mercantile Exchange), 3-month USD LIBOR is expected to rise to around 1.0% by March 2017.

<sup>4</sup> A “reference rate” is an independent metric that determines a payment amount for a financial contract. With bank loans, the reference rate is typically 3-month USD LIBOR.

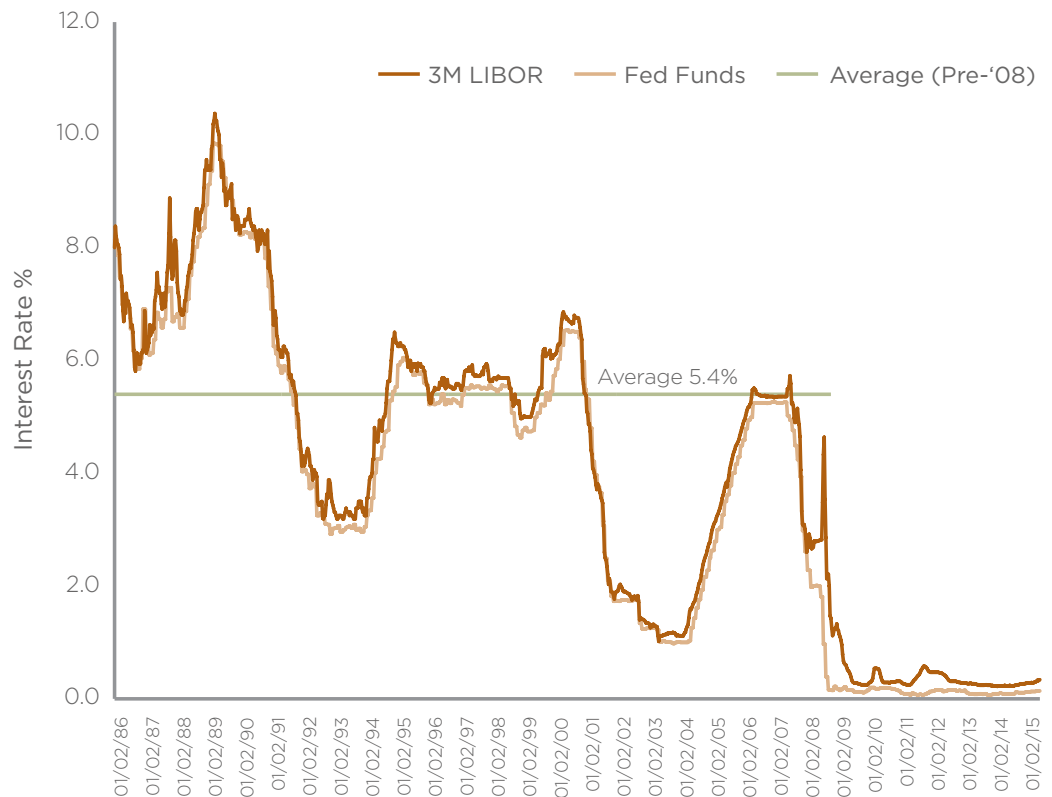
## Section 1: The “L” Word

### *LIBOR Tends to Track the U.S. Federal Funds Rate*

Since its official introduction in 1986, next to the revitalized “James Bond” movie franchise, LIBOR has arguably been the most popular U.K. export. Aside from being the functional rate at which U.K. banks charge one another for interest on short-term loans, LIBOR is widely used as the reference rate for a myriad of financial contracts around the world. According to the U.K. Treasury, over \$360 trillion of global financial contracts use LIBOR as the reference rate.

In U.S. banking terms, 3-month LIBOR is the virtual equivalent of the U.S. Federal Funds rate (“fed funds rate”), which is the interest rate banks charge each other for overnight deposits and one of the few “open market” financial tools influenced by the U.S. Federal Reserve Bank (“the Fed”) when implementing its monetary policy.

**Exhibit 1: 3-Month LIBOR and the U.S. Federal Funds Rate, 1986 to Present**



Source: U.S. Federal Reserve Bank of St. Louis  
Past performance does not guarantee future results.

As shown in Exhibit 1, LIBOR has closely tracked the fed funds rate, displaying nearly a one-to-one correlation over its history. Like the fed funds rate, the absolute level of LIBOR has varied dramatically, ranging from a low of 0.2% to a high of 10.6%. However, it was not until the aftermath of the 2008 financial crisis that LIBOR fell through its then-historical low of 1.0%. It has remained there ever since.

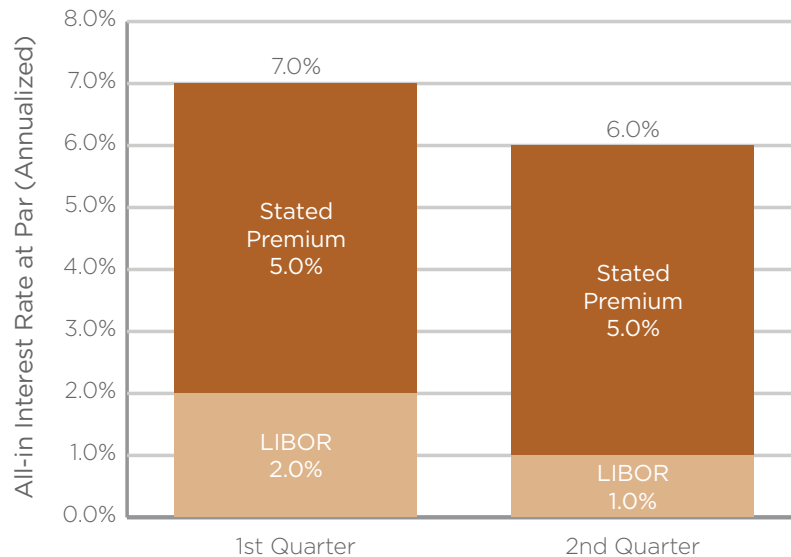
Ultimately, the new-normal condition of near-zero LIBOR was the impetus for issuers to offer floors, which we will discuss further in Section 3 of this paper.

## Section 2: Loan “Coupons” Float with LIBOR

### *Designed to Provide a Hedge*

To understand the nuances of the LIBOR floor debate, one must understand the mechanics of floating-rate interest payments (or “coupons”) inherent in virtually all institutionally-traded bank loans. In general, nearly all debt obligations originated by a bank on behalf of a corporate borrower involve an interest payment that is set, in part, by market conditions.<sup>5</sup>

### **Exhibit 2:** \$100mm “L+500” Bank Loan at Par<sup>6</sup> (no floor)



In the example above, the stated interest rate on the \$100 million loan is 500 basis points (bps), or 5.0%, above the prevailing LIBOR rate.<sup>7</sup> This means that for each 3-month interest period, the bank that arranged the loan locks in the rate at which the borrower will pay interest for the upcoming quarter by adding 500 bps to the reference rate for such period. As we see in the left-hand column of the chart, if LIBOR is 2.0% on the first day of the first interest period (1st Quarter), the total borrowing cost (“all-in rate”) for the next ninety days would be set at 7.0%, or \$1.75 million.<sup>8</sup>

On the first day of the subsequent interest period, the interest rate is reset (the “coupon-reset date”) using the same calculation. Since LIBOR is subject to change, the all-in rate for this interest period may be higher or lower depending on whether LIBOR has moved. If, as seen in the right-hand column of the chart, LIBOR drops to 1.0% by the first day of the following interest period (2nd Quarter), the all-in rate declines by the same 1.0% to 6.0% (1.0% + 500 bps), for a new borrowing cost of \$1.5 million.

<sup>5</sup> Historically, banks have borrowed (i.e., compensated depositors) at a variable interest rate based on an underlying short-term rate that rises and falls based on market conditions. Consequently, to offset the variability of the cost of the capital the bank is able to lend, it usually matches the interest payments it receives based on such an underlying rate. For a typical bank loan, a borrower’s interest payment, or “coupon”, is fixed and reset on a 3-month basis.

<sup>6</sup> Loans that pay cash “coupons” almost always will have a par value of 100 cents on the dollar.

<sup>7</sup> In loan market terminology, LIBOR is shortened to simply “L”.

<sup>8</sup> 7.0% is an annualized rate. For simplicity, the quarterly interest payment is calculated as \$100mm X (0.07/4).

With a reference rate that rises and falls depending on market conditions, bank loans contain a natural hedge against short-term interest rate volatility. As a result, the investor has mitigated their interest rate risk and may ultimately isolate (and be compensated for) the two primary remaining risks of investing in corporate debt, namely credit and liquidity risk.

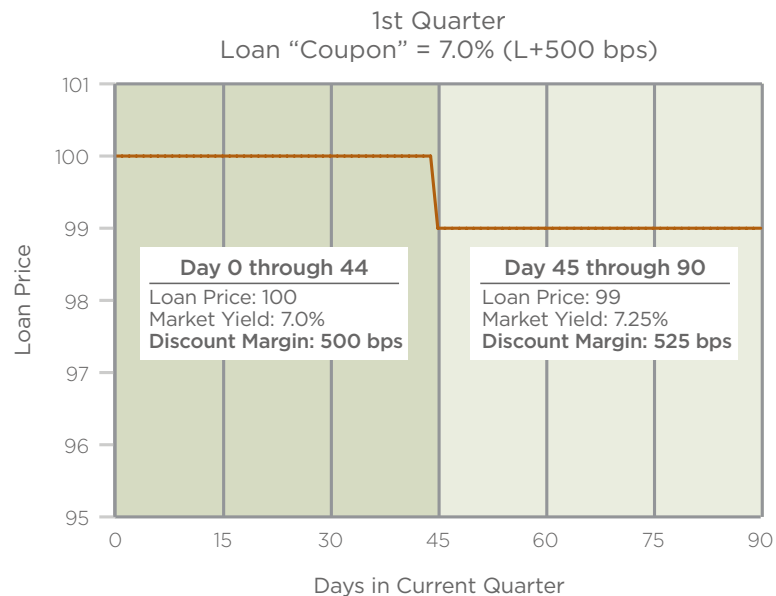
*The “Discount Margin” Reflects Market-Adjusted Risks*

There are three main risks to investing in a corporate debt instrument, each of which requires some sort of premium rate to attract investment; interest rate risk, default (or credit) risk, and liquidity risk. With bank loans, interest rate risk is effectively neutralized since the all-in rate is fixed for only ninety days at a time, and therefore regularly adjusts to the market rate. Consequently, the extra rate, or risk premium, that investors receive above the reference rate primarily reflects the idiosyncratic credit and liquidity risks germane to a specific issuer.

As with any investment that carries risks, the magnitude of such risks can ebb and flow over time and, with markets being relatively efficient, the risk premia usually adjusts accordingly. So it is no surprise that the dollar price of a bank loan can fluctuate as credit-specific risks and market conditions change. Such fluctuations often result in the “market yield”<sup>9</sup> of a bank loan being different from the all-in rate calculated for a quarter.

In the parlance of the bank loan market, the spread difference between the market yield and the reference rate is referred to as the “discount margin”.

**Exhibit 3:** Discount Margin Calculation



Using our L+500 example and assuming LIBOR of 2.0%, if the loan trades at par (100) at the beginning of the quarter (days 0-44 in Exhibit 3), the market yield will be equal to its all-in rate (7.0%). In such a case, the discount margin is simply equal to the stated premium over the reference rate of 500 bps.

<sup>9</sup> The market yield of a loan is typically calculated as the yield to the worst call price, based on a 3-year retirement or maturity, whichever comes first.

However, if, during the quarter (on day 45 in the example above), the loan trades down to 99 due to an earnings disappointment, the market yield would go up (let's assume to 7.25%), resulting in a higher discount margin, in this case 525 bps.

The reason the discount margin is critical is because, from a purist's perspective, it is the true yield premium needed for an investor to own the loan. Barring any unexpected credit or liquidity events, the discount margin should remain relatively stable. As we address later, this perspective drives one side of the argument as to whether floors may hurt loan prices if LIBOR was to trend upward in a cycle of rising rates.

## Section 3: The Floor Enters the Building

### *At First, No Floor No Problem*

The loan market as we now know it is relatively new, tracing its short history back to the mid-1990s. As observed in Exhibit 1, LIBOR hovered around its long-term average of 5.4% during the formative years of the loan market. This stability established a relatively high absolute threshold that investors expected for loan "coupons".

In other words, since LIBOR stayed in the mid- to high-single digits for many years, investors did not demand protection from a near zero rate scenario. A reasonable premium over a mid-single digit LIBOR was all that was required to attract investors to the loan asset class even as LIBOR fell steadily from 2001 to late 2003, when it hit a historic low of 1.0%.

In mid-2004, with the U.S. economy heating up, the Fed began a series of rate hikes that brought the fed funds rate target from 1.0% to 5.25% in 2006. LIBOR followed along with this rise in virtual lockstep, topping out at approximately 5.5%, where it remained through the middle of 2007.

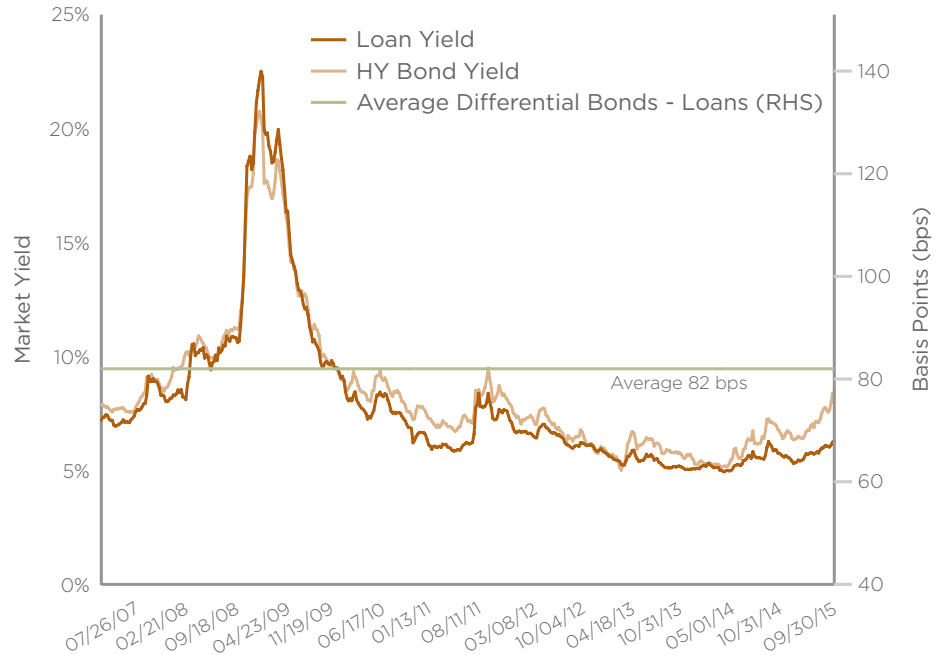
Meanwhile, the institutional loan market was booming and generating new issuances at a historic pace. In fact, from year-end 2003 through 2007, nearly \$1 trillion of new bank loans were issued, almost quadrupling the amount of all institutionally-traded loans outstanding.

### *Near-zero LIBOR Nearly Sunk Loans*

Because bank loans typically reside at the top of an issuer's capital structure, have relatively short maturities, and are usually accompanied by some security claim on underlying company assets, prices generally hover within a few points of par, assuming no significant changes in credit quality, liquidity, or the overall market risk premium.

During the period of economic growth in the mid-2000s, as LIBOR rose from 1.0% to 5.5%, investors were more than willing to accept an appropriate spread over the reference rate since, at or near par, the market yield of loans was attractive when compared to other similarly-rated, below investment-grade corporate debt instruments, namely high yield bonds.

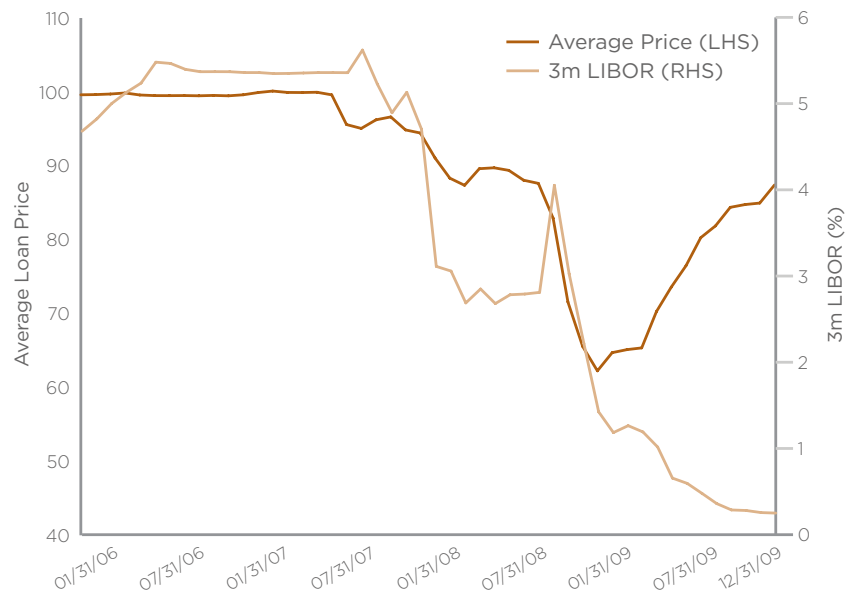
**Exhibit 4:** Absolute Yields of High Yield Bonds and Loans, 2007 to September 30, 2015



Source: JP Morgan  
 Past performance does not guarantee future results.

As displayed in Exhibit 4, the market yields of bonds and loans generally stay within close proximity to each other and, on average, have maintained a spread differential of 82 bps over the past eight years.

However, as LIBOR plunged following the 2008 financial crisis, the all-in rate provided by the combination of a near-zero reference rate and the stated premium (500 bps in our earlier example) did not offer adequate compensation with loan prices at or near par. To maintain the requisite market yield for investors to remain in loans, prices needed to adjust downward; and, as shown in Exhibit 5, they did so in a big way, going from around par to the low 60's.

**Exhibit 5: Average Loan Price and LIBOR, 2006 to 2009**

Source: Credit Suisse, U.S. Federal Reserve Bank of St. Louis  
Past performance does not guarantee future results.

While investors could (and did) adjust prices lower to reach appropriate market yields, a difficult challenge awaited any prospective borrower that desired to issue a new par or near-par loan once the primary market re-opened for business.

### *Floors Bridged the Gap Between Investors and Issuers*

The price of a heavily discounted loan (e.g., one trading at 70 cents on the dollar) primarily impacts holders (as opposed to issuers) since holders expect to be paid off at par when the loan is retired.<sup>10</sup> In this example, if the investment works out and the loan is paid off at par, the 30 “points” of principal appreciation contributes a significant part of the total return generated by that investment.

Conversely, the issuer of an existing par loan is generally unaffected by the market price since it presumably had already borrowed money at 100 cents on the dollar and had always been obligated to pay back that principal amount. However, as the 2008 financial crisis subsided and new loan financings again became possible, borrowers were at a disadvantage if they sought to issue a new loan at par. Not only would they have to offer a comparably high yield, but they would have to incentivize a potential buyer to pay 100 cents on the dollar rather than a more palatable 70 or 80 cents as was available in the secondary market.<sup>11</sup>

<sup>10</sup> Assuming the holder is not pursuing a distressed strategy.

<sup>11</sup> Dollar price is important to principal protection in a downside scenario (i.e., risking 70 cents versus 100 cents).

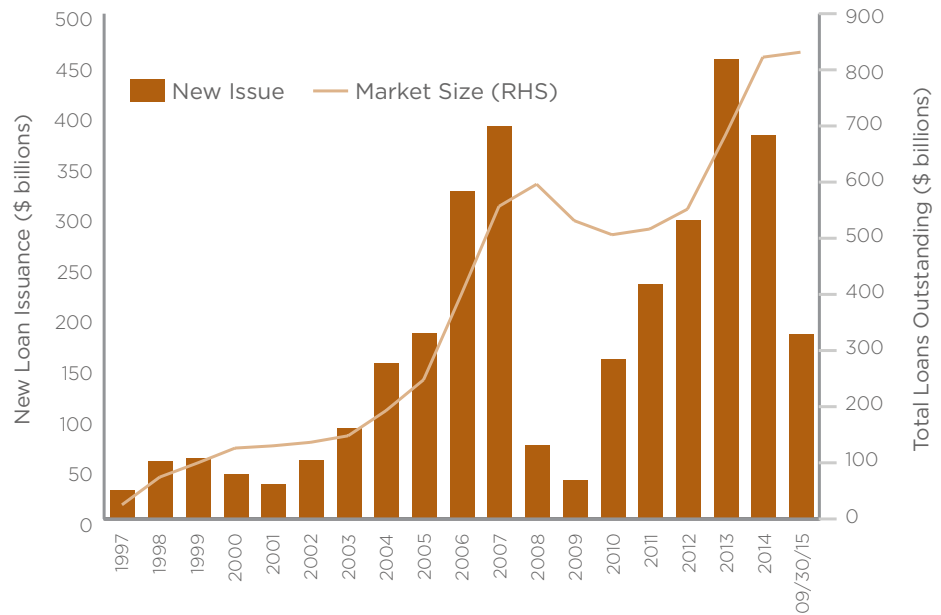


Another disadvantage prospective issuers faced was LIBOR's depressed level; at all-time lows and near zero, it had no place to go but up. Consequently, if a loan was priced at L+1000 bps to yield around 10.0% and LIBOR were to return to its long-term average of around 5.0%, the issuer would be facing a 50% increase in interest payments. Such variability in financing costs could seriously strain the operating performance of the issuer.

Prospective issuers needed to find a way to offer a competitive absolute yield, limit any discount to par, and avoid taking on a high degree of reference rate-driven re-pricing risk.

*Floors were the Key to Re-Opening the Loan Market*

**Exhibit 6:** Growth of the Loan Market, December 1, 1997 to September 30, 2015

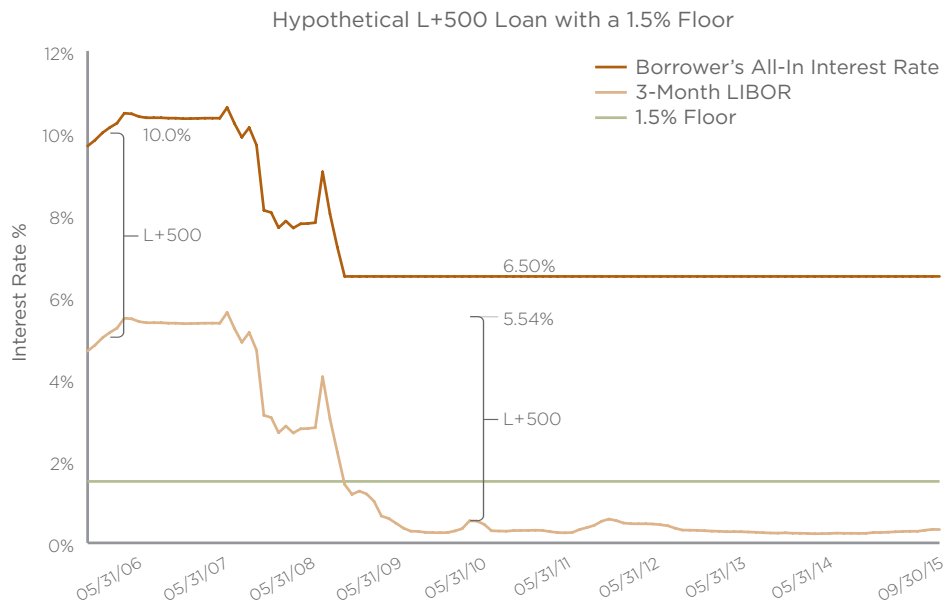


Source: BofA Merrill Lynch  
 Past performance does not guarantee future results.

After anemic new issuance volumes in 2008 and 2009, Exhibit 6 shows how the bank loan market re-opened robustly in 2010, inspired by a novel and protective floating-rate feature, the LIBOR floor. The floor established a minimum level at which the reference rate could not fall below, ensuring that the absolute yield of bank loans would never drop as precipitously as during the financial crisis due to short-term rates. Alternatively, should LIBOR rise above a certain level, the all-in rate on the loan would still float and be uncapped on the upside.

As illustrated in Exhibit 7, investors view the floor as necessary only when LIBOR falls below the floor rate. Going back to our original L+500 example, if a 1.5% LIBOR floor is added to the terms of that loan, the all-in rate paid by the borrower can never fall below 6.5% (1.5% + 500 bps). When LIBOR is above the floor of 1.5%, the all-in rate is calculated using the market rate of LIBOR plus 500 bps; however, if LIBOR drops below the floor rate of 1.5%, the all-in rate is calculated using the floor rate of 1.5%, plus 500 bps, or 6.5%.

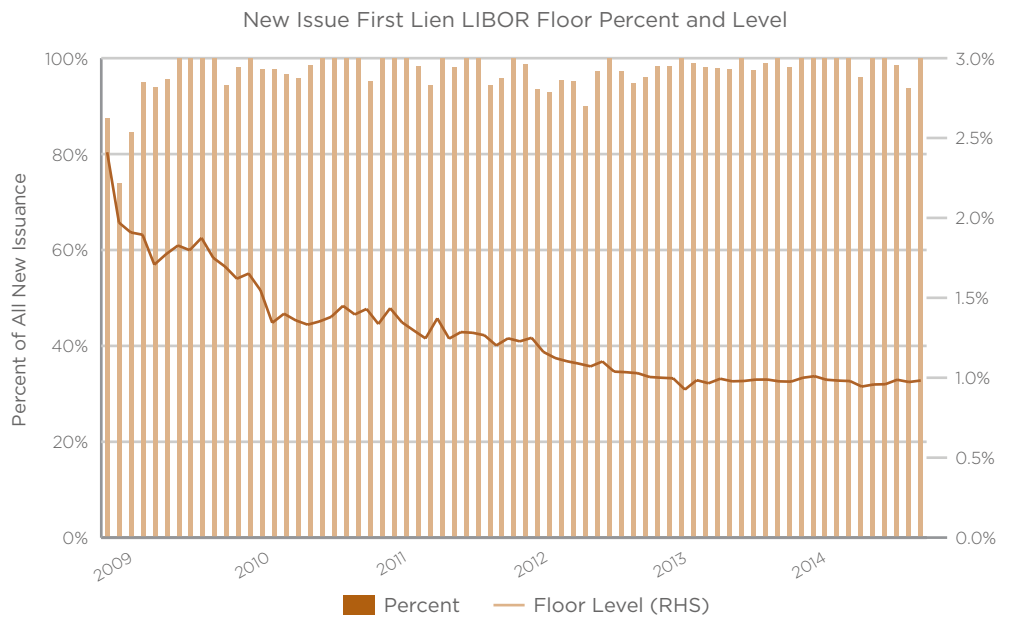
**Exhibit 7: Building a LIBOR Floor**



Past performance does not guarantee future results.

To further illustrate, using Exhibit 7, in May of 2006, with LIBOR at approximately 5.0%, the all-in rate for the borrower would have been L+500, or 10%. But in May 2010, LIBOR was at 0.54%; so instead of using LIBOR (to arrive at a 5.54% rate), the floor rate of 1.5% would have been substituted into the calculation, leading to the all-in rate of 6.5%.

**Exhibit 8: Floors Have Become an Essential Part of the Loan Market\***



Source: S&P LCD  
 \* For the period December 1, 2009 through September 15, 2015.  
 Past performance does not guarantee future results.

As displayed in Exhibit 8, once the loan market availed itself again to prospective issuers in late 2009, investors quickly warmed to the floor feature, and by June of 2010, every newly issued loan had one. In fact, through the following five years, 90%-100% of all new loans included a floor. Moreover, with interest rates staying at historic lows, the floor rate declined from a 2.4% average in late 2009<sup>12</sup> to 1.0%, and more recently, even lower.

## Section 4: The Two Schools

### *The Fixed-Rate School: If it Doesn't Float it's Fixed*

As we saw back in Exhibit 1, LIBOR dropped below 1.0% in October 2008 and has since remained below 1.0%. As nearly all loans now include a floor of 90 bps or better, the floating-rate feature of loans' coupon pricing mechanism has been meaningless for quite some time. Furthermore, according to the forward LIBOR curve, which is a measure of investors' expectation of future levels, LIBOR is not expected to reach 1.0% until March of 2017, another 17 months from now.

Given that the LIBOR floor has set a lower limit on loan "coupons", a reasonable argument can be made that until LIBOR reaches the market's average floor rate of around 1.0%, loans are effectively fixed-rate debt instruments and are more akin to high yield bonds.

Floors have done their job to protect investors in a declining rate environment, but the consensus is that rates will begin to rise, mainly due to the Fed's guidance for a higher fed funds rate target. As we have shown, the fed funds rate has a strong correlation to LIBOR's direction. Based on history, LIBOR is expected to rise along with the fed funds rate and, as noted, most loan "coupons" will not begin to truly float until LIBOR rises above 1.0%. With LIBOR currently at around 30 bps, there are almost 70 bps of further rate increases to go while loans remain in today's fixed-rate condition. Simple bond math suggests that higher interest rates will result in lower prices for all fixed income instruments, and, given their circumstances, loans temporarily fall into that category.

However, we are not dealing with ordinary fixed income instruments. Loans are below investment-grade corporate debt obligations and historically we have seen that the interest rate sensitivity of similarly-rated fixed-rate debt instruments (including high yield bonds) is much lower than investment-grade fixed income investments like high grade corporate bonds and asset-backed securities.

<sup>12</sup> Some early floors reached 3.0% and above. In fact, in May 2009, Ashland Inc. issued an \$830 million loan rated Ba2/BB- that included a 3.25% floor.

**Exhibit 9:** High Yield Bond Performance in Periods of Rising Rates\*

3-months ending:	Increase in 5-year Treasury Yields	HY Bond Spreads Beg Month	HY Bond Return	Spread Tightening / Widening	HY Bond Returns next 3 months
Jun-09	0.90%	1531bp	22.5%	-512bp	15.1%
Jan-02	0.90%	991bp	4.0%	-171bp	3.0%
Mar-90	0.81%	790bp	-2.6%	4bp	5.7%
May-08	0.95%	765bp	4.0%	-115bp	-3.4%
Aug-03	1.18%	746bp	3.3%	-152bp	6.2%
Mar-92	1.00%	729bp	8.2%	-239bp	2.5%
Dec-10	0.74%	659bp	3.2%	-82bp	4.2%
Feb-99	0.74%	611bp	0.2%	-32bp	2.2%
Jan-00	0.74%	605bp	2.3%	-65bp	-1.4%
Jun-04	0.99%	499bp	-0.4%	-47bp	4.4%
Jul-13	0.70%	469bp	-1.1%	25bp	3.0%
Apr-96	1.18%	461bp	0.9%	-80bp	1.9%
May-88	1.05%	458bp	0.5%	-41bp	1.0%
May-87	1.44%	425bp	-2.8%	-107bp	4.1%
Nov-94	0.98%	405bp	-0.8%	8bp	5.5%
Apr-94	1.61%	370bp	-4.8%	9bp	1.1%
<b>Average</b>	<b>0.99%</b>	<b>657bp</b>	<b>2.3%</b>	<b>-100bp</b>	<b>3.8%</b>

Source: JP Morgan

\* For the period February 1, 1987 through October 1, 2013.

Past performance does not guarantee future results.

If we accept the premise that until LIBOR exceeds the average floor rate, loans will behave like high yield bonds in a rising rate environment, there is good news. As shown in Exhibit 9, in the 16 instances since the late 1980's when 5-year U.S. Treasury yields rose 70 bps or more over a three-month period, high yield bonds generated an average positive return of 3.8%.

In all but four of the 16 periods studied, the spread over Treasuries (effectively, bonds' discount margin) tightened. On average, in fact, the entire amount by which the underlying Treasury rate rose was offset by spread tightening, which drove the high yield bonds' positive returns.

Presumably, the reason that high yield bond spreads tightened is the same reason that interest rates rose. As U.S. economic activity heats up and puts upward pressure on inflation, rates usually rise. However, a stronger economy is usually also beneficial to U.S. corporations and improves their creditworthiness. This perceived improvement is particularly significant for high yield bonds which carry higher default risk as they are typically unsecured and reside lower in a corporate capital structure. With improved issuer credit worthiness, the risk of default is lower and high yield bond issues appear safer, leading investors to require less risk premium (spread). Spread tightening results.

With loans operating essentially as fixed rate debt instruments until LIBOR rises above roughly 1.0%, a strong argument may be made that loans will display similar spread tightening and at least partially offset any negative effect from a rising reference rate.

### *The Discount Margin School: The Discount Margin Will Trip Loan Prices*

The flip side to the sanguine outlook for loans in a rising rate environment centers on the discount margin we examined earlier.

As defined, the discount margin is the difference between the market yield of the loan and the reference rate, and is the basis on which loans are traded. So, assuming that a L+500 loan with a 1.5% floor trades at par (yielding 6.5%), and LIBOR is at 30 bps, the discount margin at which the loan would be quoted is 620 bps, or L+620.

If we accept the notion that the discount margin reflects the compensation investors demand for credit (default) and liquidity risks, then unless the creditworthiness of the issuer or the liquidity of the loan changes, the discount margin should theoretically remain constant regardless of LIBOR. So if LIBOR rises from its current levels to 70 bps (a 40 bps increase) and investors require the same discount margin, the loan price has to decline for it to yield 40 bps higher, or 6.60% from 6.20%.

Moreover, in a rising interest rate environment, bank loan holders expect the quarterly coupon to reset higher and provide additional current cash income. However, as long as LIBOR remains below the floor, the coupon will not increase which may further raise the yield required by investors and, in turn, put additional downward pressure on loan prices.

Analyzed in this context, LIBOR floors act as a detriment to loan pricing. Since the all-in rate cannot reset higher to arrive at an appropriate discount margin, the loan price will need to decline. Such a development, albeit temporary, would still create a substantial headwind to the near-term performance of loans.

## Summary

Introducing the concept of a floor, or a minimum reference rate, to set a bottom limit on LIBOR partially alleviates the negative impact of the floating-rate interest calculation for loans. However, upon analysis, the solution that floors offer appears directionally-oriented in that it only accomplishes its objective when rates decline and/or remain below the floor level.

What remains to be seen is how floors will impact loan prices when LIBOR rises, as is expected with the looming increase in short-term interest rates signaled by the Fed. After years of near-zero interest rates and unprecedented monetary policy actions, including multiple quantitative easings, the investment community is now in an environment rarely, if ever, seen before. Charting through this new territory safely requires both experience in varied interest rate environments as well as a thoughtful, agile and forward-thinking strategy.

While we don't claim to have the perfect solution, for us, developing and executing a strategy to meet the coming challenges will always be predicated on one main tenet — knowledge. By dedicating the necessary time, effort, and discipline to building our expertise in not only the companies we follow, but the individual debt instruments they issue, we believe that we can formulate a reasonable plan to successfully navigate through uncertainties anticipated to arise in connection with rising interest rates. Only time will prove us right or wrong, but whatever choices we make, we will always ground our decisions in the knowledge we acquire from our due diligence process.

No one knows how the bank loan saga will unfold, but identifying and understanding the key factors at hand is necessary to manage through any scenario. Until now, LIBOR floors have been a friend to investors but going forward we must maintain an unbiased and balanced view to avoid being tripped up by them.

## Appendix

*BPS:* Stands for basis points. A basis point is one one-hundredth of one percent (0.0001).

*Coupon:* The stated interest rate paid on a bond. Coupon payments for high yield bonds are typically made semi-annually.

*High Yield Bond:* A high yield bond is a debt security issued by a corporate entity where the debt has lower than investment grade ratings. It is a major component – along with leveraged loans – of the leveraged credit market.

*Investment Grade:* investment grade are those securities rated Baa3/BBB-/BBB- or above by Moody's, S&P, and/or Fitch, respectively.

*Spread:* The yield of a bond minus the yield of the government bond that matches the maturity (or appropriate call date) of the bond.

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bond payments that are received during the month are retained in the index until the end of the month and then are removed as part of the rebalancing. Cash does not earn any reinvestment income while it is held in the index. Information concerning constituent bond prices, timing and conventions is provided in the BofA Merrill Lynch Bond Index Guide, which can be accessed on Bloomberg (IND2[go], 4[go]), or by sending a request to [mlindex@ml.com](mailto:mlindex@ml.com). The index is rebalanced on the last calendar day of the month, based on information available up to and including the third business day before the last business day of the month. No changes are made to constituent holdings other than on month end rebalancing dates. Inception date: December 31, 1997.

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It's Anyone's Guess What Will  
Transpire When Rates Rise

### ABOUT DDJ CAPITAL MANAGEMENT

DDJ Capital Management's goal is to consistently produce attractive long-term investment returns, while minimizing downside risk for our investors, which include:

- > Corporate pension accounts and public retirement plans
- > Endowments and foundations
- > Insurance companies
- > Other institutional clients

The underpinning of DDJ — a disciplined investment philosophy, coupled with a commitment to exhaustive credit research — has remained constant since our founding in 1996. Our highly skilled team is steadfast and focused on executing our strategy to identify strong risk-adjusted investment opportunities in the leveraged credit markets.

For information on DDJ's investment capabilities, please contact:

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