

# Economic SYNOPSES

short essays and reports on the economic issues of the day

2009 ■ Number 40



## Is the Financial Crisis Over? A Yield Spread Perspective

Massimo Guidolin, *Assistant Vice President and Economist*  
Yu Man Tam, *Senior Research Associate*

**I**ncreasing—but still much debated—evidence indicates the worst of the recent financial crisis is behind us. This marks the first payoff of a series of aggressive and coordinated steps by the Federal Reserve, Treasury, FDIC, and Congress to (i) stem the financial panic following the Lehman Brothers' bankruptcy and (ii) restore the flow of credit. Additional payoffs in the medium term are expected from the Fed's decision to cut its key policy rate to near zero and greatly expand the monetary base.

One of the most popular indicators of financial stress are yield spreads—both default risk spreads (e.g., between Baa- and Aaa-grade corporate debt) and liquidity spreads (e.g., between interbank deposits and Treasury bills). Low bond yields are instrumental to the goals of an expansionary policy: They stimulate growth by reducing costs of capital to firms and households.<sup>1</sup> Yields on T-bills and notes have decreased notably in response to a number of the Fed's credit-easing policies. However, transmission of monetary impulses from Treasury yields to private sector yields—such as short-term interbank deposits and long-term corporate bonds—may be difficult. Default spreads in corporate bonds remain elevated: It has proven difficult to reduce the yields of corporate bonds with a rating below investment-grade. Meanwhile, rates on deposits used to trade short-term funds have followed abnormal paths, reflecting persistent concern for borrowers' solvency.

Do yield spreads now suggest an end to the crisis? The table lists some statistical facts for two key yield spreads. The first, the 3-month London Interbank Offering Rate–Overnight Index Swap (LIBOR-OIS) spread, indicates the magnitude of the liquidity premium for immediate convertibility of an asset into cash. The second spread, the Moody's spread between corporate bonds with Baa and Aaa ratings,

indicates the premium required to compensate for the higher default probability of bonds without an investment-grade rating (such as Baa).

**Our finding is consistent with some recent, substantial volatility in the U.S. corporate bond market and leaves open a possibility that additional, future shocks to default premia may have long-lived effects.**

The mean yield spreads in the table (the coefficient  $\gamma$ ) suggest that the means underwent substantial increases during the financial crisis versus the pre-crisis period with a gradual return since November 2008 toward pre-crisis levels.<sup>2</sup> But a more careful analysis reveals a less-tranquil picture. We have estimated simple dynamic regressions (coefficient  $\beta$  in the table) that capture the speed at which a shock (i.e., an unpredictable change in the current level of a spread) to any of the spreads dissipates.<sup>3</sup> A negative  $\beta$  suggests that a yield spread, once shocked, will return to

### Default Spreads Dynamics

Subsample	Regression coefficients			
	$\alpha$	$\beta$	$\gamma$ (unconditional mean)	$R^2$
<b>3-Month LIBOR-OIS liquidity spread</b>				
12/21/2001–8/10/2007	–0.082	–0.174**	0.109**	0.083
8/17/2001–10/17/2001	0.668**	–0.061	1.068*	0.318
10/24/2008–8/31/2009	–0.026	–0.146**	0.530**	0.415
<b>Moody's Baa-Aaa default spread</b>				
12/21/2001–8/10/2007	0.156**	–0.012**	0.898**	0.030
8/17/2001–10/17/2001	1.132**	0.034	1.048**	0.638
10/24/2008–8/31/2009	0.577**	–0.007	0.104	0.462

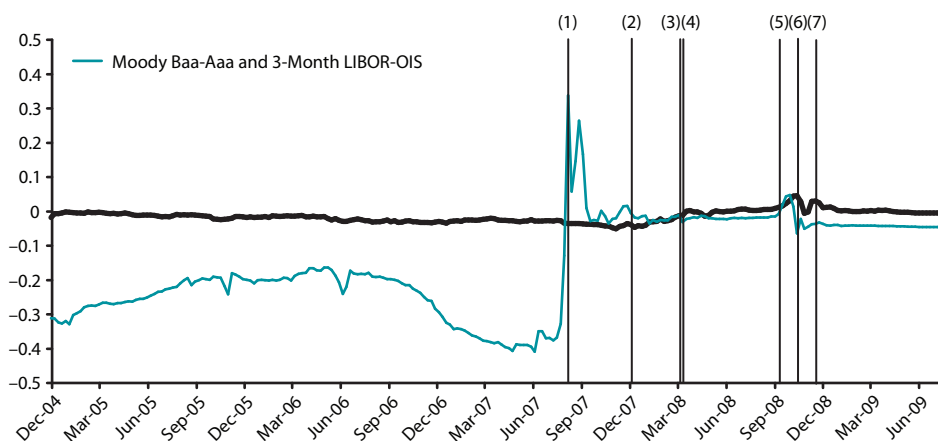
NOTE: \* and \*\* indicate significance at the 10 and 1 percent levels. The model estimated is  $\Delta s_t = \alpha \Delta s_{t-1} + \beta (s_{t-1} - \gamma) + \varepsilon_t$ , where  $s_t$  is the spread at time  $t$ . The dating was obtained by applying the standard Andrews-Quandt break test and selecting dates as averages of break dates for the two series.

its long-run mean; the larger the coefficient (in absolute value), the faster the effect of the shock vanishes.

The table shows that so far the good news is limited to the liquidity (LIBOR-OIS) spread;  $\beta$  returns significantly negative and to levels close to the pre-crisis standards ( $-0.15$  vs.  $-0.17$ ), starting in late 2008.<sup>4</sup> However, recent developments for the default (Moody's Baa-Aaa) spread remain indecisive. While in the pre-crisis period, the  $\beta$  estimate was small in absolute value ( $-0.012$ ) but highly statistically significant, during the crisis  $\beta$  becomes positive. Even though  $\beta$  has returned to negative since December 2008, there is little evidence that it may actually be different from zero. This is consistent with some recent, substantial volatility in the U.S. corporate bond market and leaves open a possibility that additional, future shocks to default premia may have long-lived effects.

Alternatively, the chart shows the estimates of  $\beta$  obtained using a fixed rolling window of 3 years of data. The seven vertical bars denote the timing of seven major events—one date accepted as the onset of the crisis (1) followed by six major policy actions by the Fed. The horizontal, dotted line separates the region of dynamic stability from the instability for the spreads. The crisis has taken both spreads into the instability region (suddenly in the case of the liquidity premium, slowly but inexorably in the case of the default premium), but the Fed's policy interventions managed to lower the liquidity premium to the stability region by November 2008. In the case of the default premium, the goal of stability is being gradually achieved, but the small distance between the border of the stability region and recent  $\beta$  estimates stresses that the recovery from the crisis may still be fragile. ■

**Speed of Mean Reversion Parameter  $\beta$  3-Year Rolling Window Estimates**



NOTE:

- (1) On August 16, 2007, Fitch Ratings downgrades Countrywide Financial Corporation to BBB+, its third-lowest investment-grade rating, and Countrywide borrows the entire \$11.5 billion available in its credit lines with other banks.
- (2) On December 12, 2007, the Fed announces the creation of the Term Auction Facility (TAF).
- (3) On March 11, 2008, the Fed announces the creation of the Term Securities Lending Facility (TSLF).
- (4) On March 16, 2008, the Fed establishes the Primary Dealer Credit Facility (PDCF).
- (5) On September 19, 2008, the FED announces the creation of the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF).
- (6) On October 21, 2008, the FED announces the creation of the Money Market Investor Funding Facility (MMIFF).
- (7) On November 25, 2008, the FED announces the creation of the Term Asset-Backed Securities Lending Facility (TALF).

SOURCE: <http://timeline.stlouisfed.org/>.

<sup>1</sup> See Guidolin, Massimo and Tam, Yu Man. "Taming the Long-Term Spreads." Federal Reserve Bank of St. Louis *Economic Synopses*, No. 26, May 22, 2009; <http://research.stlouisfed.org/publications/es/09/ES0926.pdf>.

<sup>2</sup> Our estimates in the table concern three distinct subsamples: December 2001–August 2007 is the pre-crisis period; August 2007–October 2008 captures the heights of the crisis, culminating with the Lehman Brothers demise in September 2008; November 2008–July 2009 is argued to mark a return to normality.

<sup>3</sup> The model has been applied to alternative definitions of liquidity spreads (e.g., on-the-run vs. off-the-run Treasury). See Meyer, Lawrence H. and Sack, Brian P. "Liquidity Premiums: How Big for How Long?" *Fixed Income Focus*. St. Louis: Macroeconomic Advisers, 2009.

<sup>4</sup> If one believes that fluctuations in risk premia are subject to long and unpredictable swings, care is necessary before drawing strong conclusions about "normal" dynamics of the risk premia as represented by 2001–2007 data. See Anderson, Richard G. (2009). "Bagehot on the Financial Crises of 1825...and 2008." Federal Reserve Bank of St. Louis *Economic Synopses*, No. 7; January 23, 2009; <http://research.stlouisfed.org/publications/es/09/ES0907.pdf>.