# DEBT INVESTMENTS

## Corporate Yield Spreads: Default Risk or Liquidity? New Evidence from the Credit Default Swap Market

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The authors use bond prices and credit default swap premiums to determine the composition of corporate yield spreads. Although default risk accounts for most of the spread, there is also a significant time-varying nondefault component directly related to liquidity effects. The results extend earlier research that considers the market price of credit risk to be higher than implied by select structural models.

The authors use credit default swap premiums and associated bond price data to measure the default and nondefault components of bond spreads. Because, contrary to industry assumption, observed credit default swap premiums do not provide direct, unbiased measures of bond default spread components (Duffie, *Financial Analysts Journal*, 1999) and may even diverge from corporate yields, the authors devise a reduced-form model after Duffie and Singleton (*Journal of Finance*, 1997) to directly gauge the size of default segments of yield spreads implied by default swap premiums. Key attributes of the model include: an interest rate process; a Poisson, or jump, process regulating default intensity; and a convenience yield process. Each of the processes is stochastic and independently distributed. The great benefit of the model's configuration is that it easily enables closed-form solutions for bond and swap expectations expressions.

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The authors first apply their method to Enron Corporation corporate bond yields and credit default swap premiums over the year preceding the company's default and bankruptcy filing. Weekly observations are drawn from a cross section of Enron Corporation bonds surrounding the five-year area of the corresponding default swap, and for each observation date, a risk-free discount function is alternately generated from Treasury, Resolution Funding Corporation, and swap curves. The authors show that the implied default intensity, which spikes sharply weeks before bankruptcy, is curve invariant. The liquidity process, consistent over much of the sample period, also falls sharply as the implied default probability intensifies.

With the model estimated, the authors directly solve for the yield spread components. The nondefault component equals the actual bond yield less a model-implied, liquidity-adjusted yield. The default component, then, may be given by subtracting the nondefault component from the bond spread. The authors calculate that, on average, the default component exceeds the swap premium by 6 bps and represents up to 90 percent of the total bond spread. There is, however, significant time variation in both the credit default swap bias and the default component spread percentage.

Applying their technique more broadly, using swap premiums and bond prices of some 68 firms, the authors find that the default proportion of corporate spreads averages from 50 percent to at least 83 percent across ratings and risk-free curves. They also verify that a sizable nondefault component exists that is quickly mean reverting but, unlike the default component, exhibits little ratings-related variation. Prompted by recent research, the authors test whether the cross-sectional differences of the nondefault component are related to illiquidity or tax effects. Weak evidence exists supporting the tax hypothesis, whereas bond-specific illiquidity features clearly influence nondefault spreads. Overall or common changes in nondefault components, moreover, are related to macroeconomic liquidity effects and T-bond specialness. Finally, the incremental costs from liquidity effects may explain why firms use less than the model-implied levels of debt in their capital structures.

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