Corporate Yield Spreads and Bond Liquidity

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The authors study the relationship between corporate bond liquidity and yield spreads by using a large, comprehensive sample of corporate bonds and three measures of liquidity. The authors find that liquidity is a prime determiner of yield spreads, explaining up to half of the cross-sectional variation in spread levels and up to two times the cross-sectional variation in spread changes that is explained by the effects of credit rating alone. These findings support the concern in the literature of default risk that neither yield-spread levels nor changes of spreads can be fully explained by default risk determinants.

To test the relationship between corporate bond liquidity and yield spreads, the authors analyze bond-specific liquidity measures for more than 4,000 corporate bonds that span both investment- and speculative-grade categories over a nine-year period. In contrast, most prior researchers in this area used liquidity proxies in their studies.

Data from Bloomberg and Datastream are used to provide three liquidity estimates: the bid–ask spread, the percentage of zero returns, and the limited dependent variable (LOT) model estimates. The LOT model is designed to thoroughly test the relationships between liquidity and both yield-spread levels and yield-spread changes. The authors find a significant association between corporate bond liquidity and yield spreads for each of the liquidity measures. With regard to changes in yield spreads, the authors' analysis shows that an increase in illiquidity is significantly and positively associated with an increase in yield spreads even after controlling for changes in credit rating, macroeconomic influences, and company-specific factors.

Because of the strengths and weaknesses of each liquidity measure, the authors use all three measures. The data span the 1995–2003 period. Using daily data for each bond within each year, the authors

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jointly estimate the bond's return-generating function and liquidity costs applicable to that year. A two-factor model is used to price corporate bonds, including the interest rate and the equity market return. All risk coefficients are scaled by duration to obtain stable estimation coefficients.

Several observations are derived from the analysis: Liquidity costs are demonstrably higher for speculative-grade bonds than for investment-grade bonds, and they increase as maturity increases. Yield spreads generally increase (decrease) with maturity for investment-grade (speculative-grade) bonds. The model appears to be correctly specified. The interest rate coefficient is negative and the equity return coefficient is positive for low-grade bonds, signaling that an improvement in a company's business operation has a positive effect on bond returns. For investment-grade bonds, the LOT liquidity model and the percentage of zero returns explain 6.39 percent and 6.82 percent, respectively, of the cross-sectional variation in the bid–ask spreads. Similar results are obtained for speculative bonds but only for the LOT model estimate.

To further analyze the relationship between liquidity levels and spreads, two separate regressions for each liquidity estimate are presented. The first uses only bond-specific information, whereas the second incorporates corporate and market-specific information. All of these liquidity measures are positively related to the yield spread in all scenarios for both investment- and speculative-grade bonds. The most telling finding is the consistent significance of the liquidity variable regardless of the specification used to define liquidity.

Finally, the authors demonstrate that issue-specific liquidity changes are determinants of yield-spread changes. For investment-grade bonds, the changes in percentage of zero returns and the LOT liquidity measure explain more than 2 percent of the cross-sectional variation in yield-spread changes. For speculative-grade bonds, changes in the LOT liquidity measure and the percentage of zero returns explain 16.89 percent and 5.97 percent, respectively, of the changes in yield spread. Changes in bid–ask spreads have less explanatory power for both categories of bonds.

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