

# Discussion of “Liquidity Risk Premia in Corporate Bond Markets” by Frank de Jong and Joost Driessen

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# Outline

- ✚ Introduction and summary of the paper
- ✚ Main insights of the paper
- ✚ General comments
- ✚ Specific comments
- ✚ Suggestions for improvement
- ✚ Extensions of the paper

# Introduction and Summary of the Paper

- ✚ Corporate bonds are extremely illiquid. Less than 200 issues (out of more than 23,000 issues) trade at least once a day, every day. Empirical work in this area, timely and relevant.
- ✚ Empirical study of pricing of liquidity risk in the corporate bond markets.
- ✚ Relates corporate bond returns to fluctuations in treasury bond and equity market liquidity, based on the notion that corporate bonds are a synthesis of the riskless asset and equity.
- ✚ Explains part of the credit spread of corporate bond indices.

# Introduction and Summary of the Paper (Contd)

- ✚ Methodology: Black, Jensen and Scholes, two-stage procedure:
  - ✓ First stage: Excess returns on bonds are regressed on market risk and liquidity risk factors, to estimate the "betas."
  - ✓ Second stage: *Expected* excess returns (computed from yields adjusted by probability of default and loss rates) are regressed on the betas and the risk premia of the factors are computed.

# Introduction and Summary of the Paper (Contd)

## Key variables used:

- ✓ Use corporate bond indices for different maturities and credit ratings.
- ✓ Compute expected return using estimates of historical default rates (S&P) and loss rates (Altman and Kishore (1998)).
- ✓ Compute the treasury bond expected return, assuming zero default and loss.
- ✓ Compute expected excess returns using an equivalent duration zero-coupon bond.
- ✓ Market risk factors: returns on various equity indices, changes in the volatility index.

# Introduction and Summary of the Paper (Contd)

- ✓ Equity liquidity measured by (median) Amihud measure within three different market indices.
- ✓ Treasury liquidity measured by bid/ask spread of the 10-year T-bond.
- ✓ Use the changes in the liquidity variables to explain corporate bond returns.
- ✓ US data and smaller European data set.

# Main Insights of the Paper

- ✚ Bond market returns are sensitive to shocks in aggregate liquidity.
- ✚ Aggregate liquidity risk (from equity and treasury markets) is priced and explains a big chunk of expected returns on corporate bonds and credit spreads.
- ✚ The result seems to hold in both US and European bond markets.

# General Comments

- ✚ Addresses an important question asset pricing: liquidity effects in corporate bond prices/yields.
- ✚ Relatively clean and accessible data-set.
- ✚ Fairly robust methodology, although it can be improved.
- ✚ Intuitive and quantitatively meaningful explanation of liquidity factors and corporate bond exposures to them. These factors are also priced.
- ✚ Attempts to compare (in a limited way) results in the European market with those in the U.S. An interesting innovation.

# General Comments (Contd.)

- ✚ Paper mentions, but does not address, the issue of the expected (il)liquidity versus liquidity risk. Important, since failure to address this may attribute “too much” to liquidity risk. My sense, from my own research is that the *level* of illiquidity is much more important than the *fluctuations in illiquidity*.
- ✚ The first level problem is the liquidity effect in the corporate bond market itself. The treasury bond and equity markets may be related. It is unclear why liquidity in those markets should explain corporate bond liquidity, and hence, corporate bond pricing. 9

# General Comments (Contd.)

- Due to data limitations, the authors use bond index data with a number of simplifying assumptions necessary to calculate expected bond returns.
- The formula in equation (3) is reasonable for an individual bond. It does *not* make sense for an index, unless you assume that the defaults across bonds in the index are perfectly correlated. Hence, the probability of default for the whole *index* is upward biased and hence the expected returns are seriously downward biased. This affects all the empirical results. Intuitively, explains why the expected returns on the CCC bond index is only 2.56%. (Table 2)

# General Comments (Contd.)

- ✚ Using the equivalent duration, zero coupon bond ignores the slope of the term structure and perhaps a bias to the excess return calculations.
- ✚ Clubbing all bonds of a particular rating class into one category ignores a number of variations in credit risk within the class. This issue affects a number of other studies for the probability of default and the loss rate, but at least they attempt to look at the spreads on a bond-specific basis.
- ✚ It is very difficult to interpret the findings in terms for implications for individual bonds.

# Specific Comments

- ✚ Two different measures are used for the equity and treasury bond markets. Why not use the same measure or at least check whether the results are robust to the use of alternative measures?
- ✚ Expected return is an extremely crude measure at an *index* level:
  - ✓ Differences across bonds in terms of default and loss rates
  - ✓ Ignoring correlation in defaults across bonds
  - ✓ Use of equivalent duration zero-coupon bond
  - ✓ Assumption that default occurs only at maturity
  - ✓ Use of historical default rates without adjustment for age, maturity, state of business cycle etc.

# Specific Comments

- ✚ Tax effect has been accounted for in this paper, as in some other papers. Questionable, since large players – pension funds, hedge funds, CDO SPVs, foreign institutional investors - are tax-neutral. Marginal investor is likely to be tax-neutral.
- ✚ The tax effect is likely to be spurious because of the correlation between coupon (a proxy for the tax effect) and liquidity. (See Chacko, Mahanti, Mallik and Subrahmanyam (2005).)

# Suggestions for Improvement

- ✚ Distinguish between *expected liquidity* and *liquidity risk*.
- ✚ Disaggregate the indices to the extent possible. (For instance, include credit outlook, more granular maturities etc.)
- ✚ Check the results at the bond-specific level, using available data.
- ✚ Check bond market volatility factors e.g. swaption volatility (stock market volatility does not seem to work).
- ✚ Investigate the effects of specific crisis periods e.g. the GM/Ford downgrades.

# Extensions of the paper

- + Need to study the effects of illiquidity itself at a disaggregated level, preferably at an issue level. (See Nashikkar and Subrahmanyam (2006).)
- + Use information from the CDS market, to abstract from credit issues and focus purely on liquidity.
- + Why not study liquidity effects in the treasury bond market itself (across bonds) using this methodology?