Liquidity and CDS Spreads

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Objectives

1. Measure the liquidity and liquidity risk premium in Credit Default Swap spreads : this has important implications for measures of default risk.

Objectives

In particular : the credit spread puzzle.

- Corporate bond spreads are larger than predictions from model of default risk.
  (e.g. Collin-Dufresnes et al. (2001), Huang and Huang (2003))
- Use CDS spreads as model-free measures of default risk : the non-default component is a residual. (e.g. Longstaff et al. (2005))
- If CDS spreads carry a liquidity premium, then default risk is overestimated.

Objectives

1. Measure the liquidity and liquidity risk premium in Credit Default Swap spreads.
2. Characterize the sources of illiquidity in the Credit Default Swap market : there is a tension between search friction and adverse selection.

Objectives

- Illiquidity due to search frictions. It is more costly to carry a short CDS position. CDS spreads rise when liquidity decreases.
- Illiquidity due to adverse selection. Banks are large buyers of CDS and may strategically hide in higher liquidity to benefit from private information. CDS spreads rise when liquidity increases. (See e.g. Acharya and Johnson (2007))

Strategy

A reduced-form panel approach:

$$CDS_{i,t} = a + b \times Liquidity_{i,t} + c \times CreditRisk_{i,t} + Dummy_t + \epsilon_{i,t}$$

- CreditTrade data, aggregated to monthly frequency, 1997-2006.
- Firm-specific controls : Implied vol., Implied jumps, Ratings, Leverage, ...
- Time dummies.

Measures of Liquidity

1. BAS : Bid-Ask spread in percentage of the mid-quote.
2. T2Q : Ratio of trades to quotes : matching intensity.
3. V2V : Ratio of volatility to volume (trades + quotes).
4. NOC : Number of contracts outstanding.

Results

	BAS	T2Q	V2V	NOC
$\hat{b}$	14.71	-1.11	4.09	0.22
t	(1.88)	(-1.41)	(6.96)	(4.46)
Impact (bps)	2.4	0.4	32.5	17.8

Impact : Variation in CDS spread associated to a one standard deviation increase in liquidity/illiquidity measure.

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Benchmark :

- Longstaff, Mithal and Neis (2005) from corporate bonds.
- Longstaff (2004) from RefCorp and Treasury bonds.

Splitting the Sample

OI = Order Imbalance = Number of buy quotes minus number of sell quotes.

$\hat{b}$	All	OI <0	OI >0
BAS	14.71	39.27	-29.94
t	(1.88)	(2.23)	(-1.35)
T2Q	-1.11	-14.41	6.62
t	(-1.41)	(-2.34)	(2.13)

Splitting the Sample

PIN = Probability of Informed Trading

$\hat{b}$	All	PIN <0.25	PIN >0.25
BAS	14.71	19.09	-53.95
t	(1.88)	(1.69)	(-1.79)
T2Q	-1.11	-7.60	6.99
t	(-1.41)	(-1.73)	(2.00)

- Are large standard errors due to splitting the sample?
- Try an interactive term (i.e. $T2Q \times PIN$)?

Suggestions

Can we characterize the differences between subsamples?

- Are we selecting different types of firms, ...
- ... or different time periods, ...
- ... or both?
- Is there a link with the number of banking relationships or with deteriorating credit conditions? (Acharya and Johnson (2007))?

Suggestions

Is this the right split?

- The authors seek to identify the sources of illiquidity across the liquidity spectrum.
- The measure of informed trading is PIN and the measure of matching intensity is T2Q.
- Shouldn't we test whether the impact of PIN and T2Q varies across, say, the bid-ask spread spectrum?

Suggestions

- Coefficients for the Volatility-Volume ratio and of the Number of Contracts outstanding are suspiciously large.
- How about controls for aggregate factors driving the cross-section of CDS spreads?

$$CDS_{i,t} = a + b \times Liquidity_{i,t} + c \times CreditRisk_{i,t} + Dummy_t + \ldots$$
$$d_i \times AggregateFactor_t + \epsilon_{i,t}$$

Suggestions

Empirically important determinants of cross-section of corporate spreads:

- Implied volatility index (VIX).
  (e.g. Bao et al. (2008))
- Money market flows, bond issuance, on-the-run premia.
  (e.g. Longstaff et al. (2005), Fontaine and Garcia (2008)).