11th Financial Risks International Forum

Comments on:
Suppliers as Liquidity Providers: Concentration Risk in Trade Credit

Anne-France Delannay **Michel Dietsch**
Joël Petey

Discussant: Sylvain Benoit

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The Paper

1. **Research question:** Are suppliers (non-financial firms) able to bear trade credit risk (*i.e.* credit granted through delays of payment) stemming from credit concentration on a given number of customers (buyers)?
2. **Purpose:** Measuring the systematic and the specific components of this trade credit risk
   - By complementing a multifactor structural credit risk model (Merton, 1974) **[systematic component]**
   - With a granularity adjustment (Gagliardini and Gouriéroux, 2013) **[idiosyncratic component]**
3. In order to evaluate both the "**sectoral**" and the "**name**" concentration of the trade credit risk in receivable portfolios held by suppliers

Data, Method & Result

1. **Data:** matching suppliers-buyers data for a panel of French firms, from 2007 to 2012, provided by a large credit insurer
2. **Estimation:** implementation of a generalized linear mixed models (GLMM) to compute the **default thresholds** and the **random effects variances** (and their correlation matrix) using suppliers' and buyers' history of ratings (including default)
3. **Main result:** Suppliers bear significant idiosyncratic credit risk when their portfolios are of small size, but extract significant diversification benefits when their portfolios are of large size

Remarks

What are the main drivers of the delays of payment granted by suppliers?

Descriptive analysis of these delays of payment:

- Is trade credit a systematic activity?
- How many days is the delay on average?
- Higher with the amount paid?
- Higher when the rating of the buyers is good?
- Higher when the rating of the suppliers is good?
- Link to the portfolios' size?

Remarks

To what extent your results are driven by a given sector?

When using the 2012 data, you identify **four prominent sectors** (industries?) with **large discrepancies** between the number of supplier and buyers:

- The manufacturing sector (35.5% of suppliers and 22.7% of buyers)
- The wholesale sector (40.3% of suppliers and 16.5% of buyers)
- The retailing sector (7.9% of suppliers and 19.9% of buyers)
- The construction sector (0.8% of suppliers but 15.1% of buyers)

Which sector bears the higher trade credit risk?

Question #1

Are the limits (the insured amounts) set by the credit insurance company corresponding to the total amount of trade credits providing by the suppliers?

Definition

"The systematic credit risk component for a given supplier is computed as the weighted sum of the marginal risk contributions of this supplier's customers, the weights being the buyers' receivables claims proxied by **the insured amount** set by the credit insurance company."

Question #2

How do you choose the dependence structure of risk factors?

The latent risk factors (random effects) are assumed to be multivariate Gaussian. The covariance matrix G of the random effect associated to industry b is given by:

$$G = \begin{bmatrix} \sigma_1 & 0 & \dots & 0 \\ 0 & \sigma_b & \dots & 0 \\ \vdots & \vdots & & \vdots \\ 0 & 0 & \dots & \sigma_B \end{bmatrix} \quad R_{(B,B)} \quad \begin{bmatrix} \sigma_1 & 0 & \dots & 0 \\ 0 & \sigma_b & \dots & 0 \\ \vdots & \vdots & & \vdots \\ 0 & 0 & \dots & \sigma_B \end{bmatrix}$$

From a multifactor model, you end up with a single risk factor model (with heterogenous variances but with all correlations constrained to 1) **even if the hypothesis of perfect correlation ($H_0 : R_{(B,B)} = J_B$) is rejected?**

Question #3

Sequantial/dependent sorting vs. independent sorting:

		Losses on receivables portfolio / Equity capital - in %						
	median value of turnover in K€	[10-20[	[20-30[	[30-50[	[50-100[	[100-200[	[200-500[	≥ 500
turnover decile 1	1 109	3,6	4,0	2,8	1,9	4,3	8,9	7,8
turnover decile 2	1 946	3,3	4,4	7,5	3,3	4,9	7,3	7,6
turnover decile 3	2 785	5,2	3,0	3,4	2,6	4,4	6,2	3,6
turnover decile 4	3 790	2,6	5,5	4,0	3,7	4,2	6,7	13,0
turnover decile 5	5 343	5,2	3,2	3,5	3,5	3,0	5,5	16,8*
turnover decile 6	7 370	1,7	4,0	2,1	1,7	2,8	4,6	8,5
turnover decile 7	10 635	1,6	2,3	1,6	3,2	1,0	2,7	4,1
turnover decile 8	18 349	2,3	1,1	2,1	2,0	1,7	1,9	2,4
turnover decile 9	35 341	0,8	0,5	1,4	1,9	0,8	1,4	2,2
turnover decile 10	119 560	0,6	0,9	0,2	0,4	0,6	0,5	1,5

How small is trade credit compared to the other risks?

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Comments on: Who Supplies Liquidity, and When?

Xin Wang **Mao Ye**

Discussant: Sylvain Benoit

March 28, 2017

The Paper

1. **Motivation:** Building the first theoretical model to **study non-high frequency traders** (non-HFTs) "buy-side algorithmic traders"**(BATs) trading behavior**, where
   - BATs are slower than HFTs (O'Hara, JFE, 2015)
   - BATs supply liquidity to minimize the transaction costs of portfolio rebalancing (Hasbrouck and Saar, 2013), not to profit from the bid-ask spread
2. **Model:** Extending Budish, Cramton, and Shim (QJE, 2015) by
   - Incorporating discrete tick size, and
   - Allowing non-HFTs to supply liquidity

The Paper

An impressive list of results:

- HFTs dominate liquidity supply only when adverse selection risk is low or tick size is large
- **BATs are more likely to supply liquidity when tick size is small** since supplying liquidity is less costly than demanding liquidity from HFTs
- A small tick size improves liquidity, but also leads to more mini-flash crashes
- Theoretical evidence suggesting that academics should not apply the cancellation ratio as a cross-sectional proxy for HFT activity

Question #1

How does a stub quote work?

Definition

"When the fraction of BATs is large enough, HFTs have to quote **stub quotes**, a bid-ask spread wider than the maximum value of the jump, to protect against sniping."

Is the stub price always exactly one tick above jump size?

Question #2

How discrete tick size generates a depth of the “best bid and ask (offer)” (BBO) of multiple shares since all non-HFT market orders are one unit?

Question #3

The private value role:

- HFTs have no private value to trade, but
- Non-HFTs (including BATs) have a private value

What happens if the BATs' private value goes to zero?