

Discussion for Uesugi and Hazama (2012)
“Measuring the Systemic Risk in Interfirm Transaction Networks”

Prepared for
HIT-TDB-RIETI International Workshop
on the Economics of Interfirm Networks

November 29-30, 2012

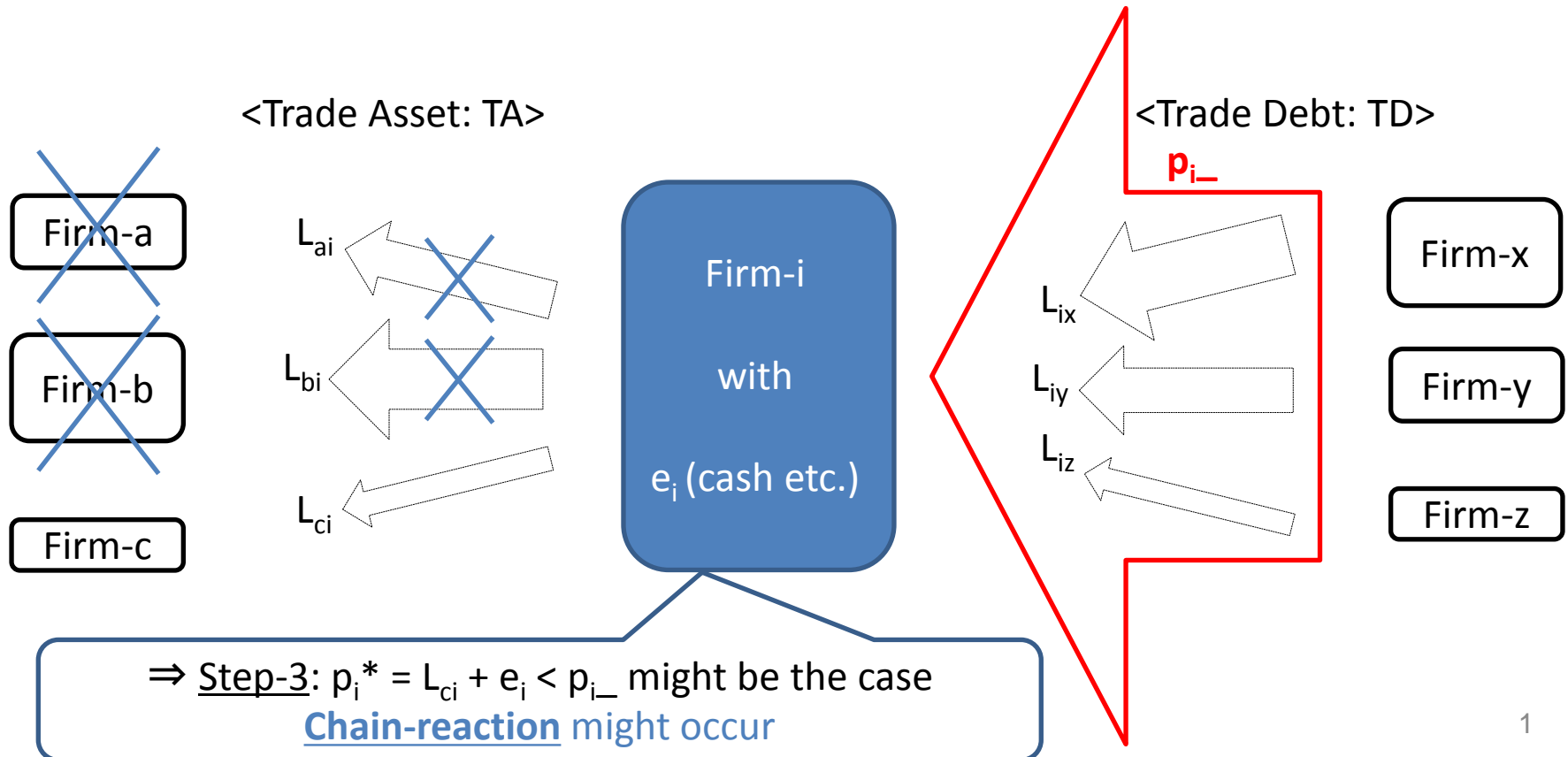
Daisuke Miyakawa (Development Bank of Japan)

1. Summary (1)

□ Entropy Maximizing Approach & Propagation Mechanism

⇒ Step-1: Given p_{i-} , assign L_{ij} as random as possible with considering the size of p_{j-}

⇒ Step-2: Compute the clearing vector p_i^* (i.e., actual payments in sudden clearance)



1. Summary (2)

□ Key results

- ✓ Chain reaction could matter (e.g., initial default 9,392 vs. secondary 849 in the baseline example and 9,392 vs. **2,739** in the **100% LGD example**)
- ✓ LGD for initial defaults tend to be larger than that for secondary default
(although no size difference b/w initial defaulted and secondary)
- ✓ Positive (mild) correlation b/w (i) the predicted default in the case of sudden clearance and (ii) the actually observed default (esp. due to defaulted TA)

⇒ An interesting exercise for quantifying the trade credit network
⇒ Providing valuable information for researchers and practitioners

2. Major Comments (1)

□ How to use the result?

⇒ It looks like computing a “modified” liquidity ratio

→ I.e., (**actually receivable** trade asset + cash) / trade debt

⇒ This measure has **additional** information to the **traditional liquidity ratio**?

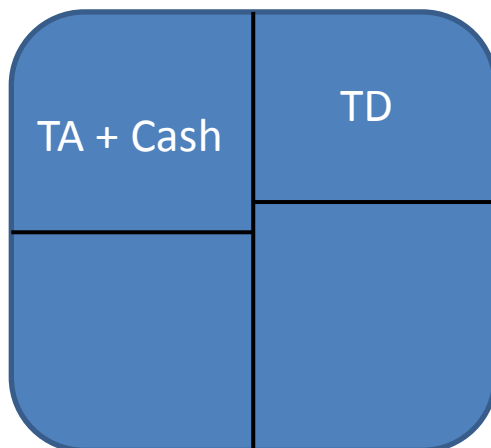
→ In the context of **default prediction**?

→ Any conditions under which this modified index matter?

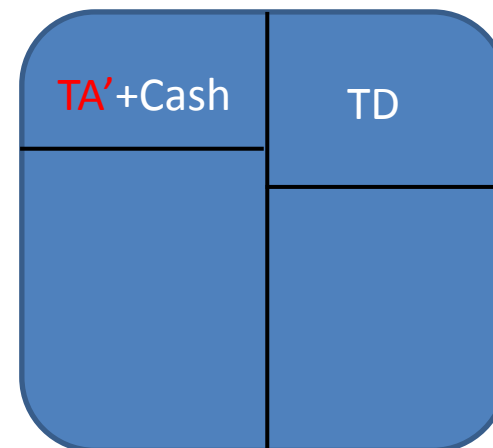
→ If so, bankers might be interested in such a new index

Partly done

<Traditional>



<Uesugi=Hazama>



2. Major Comments (2)

□ Why are the “defaulted” firms taking such a position?

⇒ Defaulted firms hold **large trade debt** compared to **trade asset + cash**

→ Large TD, Small TA, and/or Small cash

Related to when this model should be applied

⇒ How to **interpret** this? Does this **reflect** something?

→ Small outputs (i.e., sales) compared to inputs (i.e., intermediate goods)?

→ Too much reliance on trade debts compared to trade assets?

→ Large bargaining power?

Size is reported not to matter...

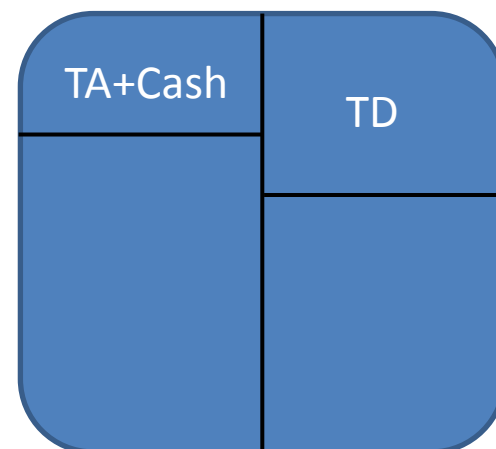
⇒ What **determines** the position?

→ Esp., **dynamics** of the modified liquidity ratio?

→ Panel estimation of $(TA+Cash)/TD$ if possible

→ Could make sense as far as we believe the estimated L_{ij}

<“Defaulted”>



3. Minor Comments

□ Use L_{ij} ?

⇒ One smart way to estimate the interfirm connection

⇒ Use it to analyze, for example, **the transmission of industry- and/or firm-specific shock** (e.g., some episodes of large bankruptcy, financial crisis etc.)?

⇒ What about technological spillover?

□ Correlation between predicted and actual defaults?

⇒ Any chance to predict defaults (e.g., low modified liquidity ratio at $t-\tau \Rightarrow$ default at t)?

⇒ (Related to the point in the previous slide,) instrumenting modified liquidity ratio in the default estimation?

<Contact Information>

Daisuke Miyakawa:

Associate Senior Economist

Research Institute of Capital Formation, Development Bank of Japan

Otemachi Financial City South Tower 5F

1-9-7 Otemachi Chiyoda-ku, Tokyo, 100-8178 JAPAN.

E-mail: damiyak@dbj.jp, damiyak@gmail.com

http://www.dbj.jp/ricf/en/staff/miyakawa_daisuke.html