

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

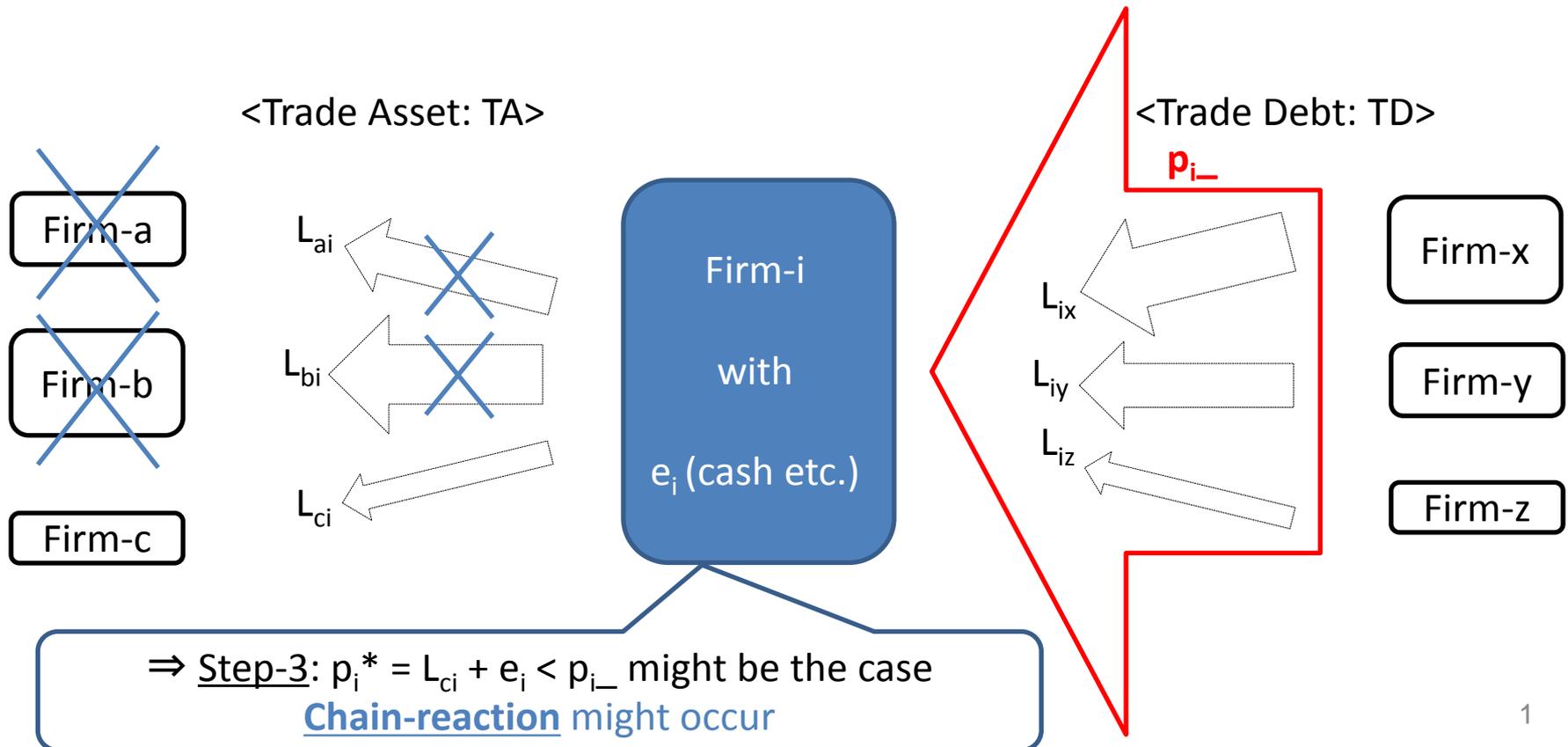
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# 1. Summary (1)

## □ 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**?

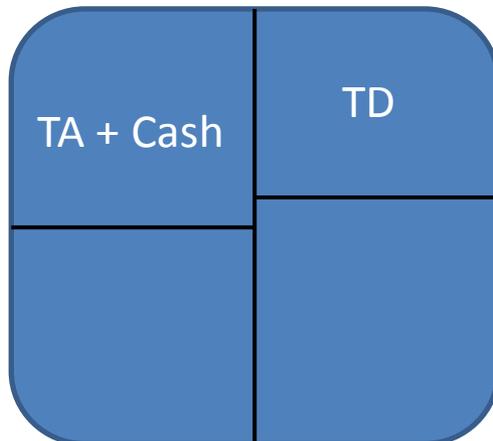
→ In the context of **default prediction**?

→ Any conditions under which this modified index matter?

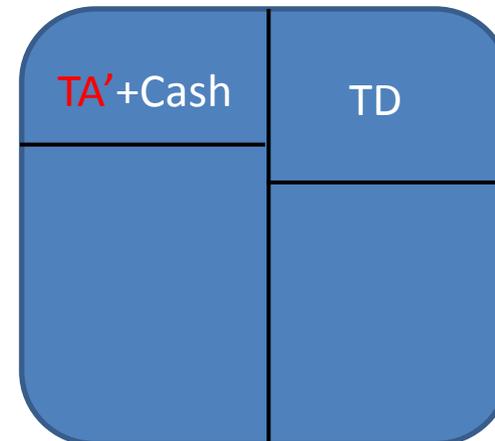
→ If so, bankers might be interested in such a new index

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...

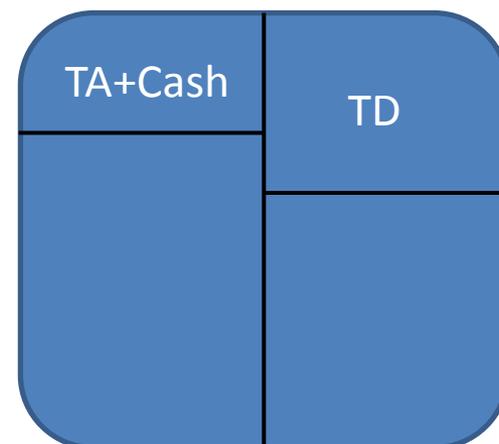
⇒ What **determines** the position?

→ 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  $t-\tau$  ⇒ default at  $t$ )?

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

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