



Learning from Payments Research: Operations and Political Economy

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and Workshop

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The question

- What can payments and settlement research (and simulation in particular) contribute to economics?



- Earlier thoughts on this
- Comment on Afonso and Shin JMCB, 2011
- “Why Pay? An Introduction to Payments Economics” (with Will Roberds) JFI, 2009



The question

- What can payments and settlement research (and simulation in particular) contribute to economics?
 - Pre crisis answer: A Rethinking of Monetary Theory and Monetary Policy
 - Post crisis: Understanding of liquidity



- Change in attitude in Economics
- Understanding liquidity is acknowledged as key (contrast reaction to Humphrey 1986)
- Now need to show that some lessons of payments systems *do not* carry over to rest of economy



- Resistance to Simulation
- Mainstream Economics Centered on
 - Constrained Maximization
 - Equilibrium
- Simulation Avoids
 - Justified by Observed Behavior
 - Not absolute



- Example 1
- “The Impact of Payment Splitting on Liquidity Requirements in RTGS”
by Edward Denbee and Ben Norman,
Bank of England 2010



- What it does
- Uses simulator to examine effect of modifying UK's CHAPS to split large payments into smaller ones.
- Quantifies reduction of queues or (equivalently) reduction of liquidity requirements



- Results
- Shows distribution of benefits and costs among heterogeneous participants
- Shows significance of degree of activity on the day to liquidity saving
- In other words, variability gives insight into liquidity process



- Example 2
- Liquidity Requirements and Payment Delays:
Participant Type Dependent Preferences
by Christian Schulz, ECB, 2011.



- What it does
- Synthetically generated data to examine tradeoff between liquidity and delay for various participants in an RTGS system



- Results
- Tradeoffs between liquidity requirements and payment delay vary by type of participant
- Magnitudes sufficiently large to create conflict in preferences for management rules



- Meta Message from These Examples
- Techniques are Complementary and Reinforcing
- But need extend to environments with greater variation



- Example 3
- “Liquidity Effects of the Events of September 11, 2001”
by James McAndrews and Simon Potter NYFRB, 2002
- “Precautionary Demand and Liquidity in Payment Systems,”
by Gara Afonso and Hyun Song Shin, JMCB, 2011



- Results
- Shows importance of liquidity as motivator of bank behavior
- Significance of feedback from this behavior in a payment system
- But successful and pre-crisis, so little outside effect



- Example 4
- “Settlement Liquidity and Monetary Policy Implementation,”
by Bech, Martin and McAndrews, NYFed, 2011



- Results
- Drastic change in timing of FedWire payments post Lehman
- Attributable to Liquidity Supply
- Differential Effects on Payments on Behalf of customers



- Meta Message
- Insights generated into behavior
- Valuable variations in data determined
- Ripe now for complementary simulations
- (Same goes for corresponding European examples!)



Indirect effects of payments research on economic thinking

- Direct Effect on Payments Regulation
- Success of Performance of Payments Systems
- Perversely, a danger of misinterpretation of this success



- Political Economy Underpinning
- Payments systems too important to fail
- Central banks hostage to system participants
- Expertise necessary for strict oversight



Centralized Clearing and Settlement systems in analogous position

- "Payments Settlement: Tiering in Private and Public Systems" (with Will Roberds) JMCB 2009
- Tension between collateral and counterparty monitoring in maintenance of system safety



- Consequence
- Mutualization reduces counterparty monitoring
- Mandated centralization distorts optimal segmentation of financial markets
- Induces risk shifting onto unprepared regulators



- A challenging job for payments researchers
- Study systemic risk in centralized settlement systems
- Extend simulation techniques to prepare regulators of new centralized financial markets.
- A tough job—but somebody’s gotta do it!





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