# Stress Testing Securities Clearing and Settlement Systems

# Discussion

**Payment and Settlement Simulator Seminar**

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The views in this presentation do not necessarily reflects those of the Federal Reserve Bank of New York or the Federal Reserve System

# The Research by Matti and Friends

- Very interesting application of the Simulator to Securities Settlement
  - Clearing?
- One of the first (if not the first) published empirical stress test of a Securities Settlement System (SSS)
- Settlement Algorithm of Real System not Available???

# Questions

- All Accounts? Dormant accounts!
- Clearings Parties or owners?
- Bonds 1500 trades? Simulations necessary
- Important asset not available = Nokia?
- Commonly settlement algorithm fails?

# Dear child has many names

- Simulations of failure in payment systems
- Analyzing the impact of operational incidents in large-value payments systems: a simulation approach
- Systemic risk in a netting system revisited
- Analysis, by simulation, of the impact of a technical failure of payment system participant
- Stress testing securities clearing and settlement systems using simulations

# Framework

Strike

Liquidity shock

Earthquake

Terror Attack

Power Outage

Default

Wide Scale Disruption

Financial Crisis

Operational incident

## Scenarios

- System
  - Suspend (duration?)
- Participant
  - Default/operational
- Assets
  - Nokia?
- Algorithm
  - BoE: Revert to EoD
- Transactions
- Credit limits

# References

- Scientific Inquiry?
- Need to get your references right
- The Grand Daddy – Humphrey (1986)

## Examples: Distribution

- Angelini et al (1996)
  - First to simulation the failure of all participant
- Bedford, Millard and Yang
  - First to discuss (but not implement) distributions based on time series of simulations