The Real Impact of the Panic of 1907: Evidence from Trust Company Stocks

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Prepared for AEA Annual Meetings

January 5, 2021
Introduction

- Financial panics cause significant disruption to the economy via liquidity freezes
  - Financial institutions operating outside of National Bank regulatory framework and absent liquidity backstop (LOLR) thought to precipitate runs more readily due to their (allegedly) higher risk portfolios and undercapitalization
  - Opacity exacerbates their susceptibility to runs, because investors and depositors cannot credibly reject harmful rumors.
- The Panic of 1907 bears resemblance to the 2008 financial crisis
  - The trust companies of early 20th century have been compared to the “shadow” banks of early 21st century
  - Some trust companies benefited from connections to the biggest NYC national banks and to JP Morgan and big industrialists such as Rockefeller
This paper contributes to the large literature on the causes and consequences of the Panic of 1907

- Global copper market disruption (Rodgers et al, 2018)
- Gold drain by London insurance companies from the San Francisco earthquake (Odell and Weidenmier, 2004)
- Teddy Roosevelt’s trust-busting campaign (Bittlingmayer, 1993)
- Trust companies propagating panic (Moen & Tallman (1992); Tallman & Moen, 2018)
- The volatility of the funding market (Fohlin, 2019) and related illiquidity of the stock market (Fohlin & Gehrig, 2019)
- The impact of trust company losses on “connected” businesses (Frydman et al, 2015)
- Some question whether trust companies really were poorly regulated, or just that a small few were poorly run (Hansen, 2014)
Global Conditions Set the Stage for the Panic of 1907

Most of these points raised by Lefevre (1908); argued that the real causes of the financial crisis related to excess demand for gold

- Wars + natural disaster
  - Boer War (1899-1902) and Russo-Japanese War (1904-05) each drained $1 billion in capital from the global economy
  - San Francisco Earthquake (1906) drained another $500 million
- Mexico move to gold standard (May 1, 1905)
- Argentina + Egypt both drawing large amounts of gold
- Lefevre: “the crash would have come earlier if the gold production had not been so great—the greatest it has ever been”
Proximal Causes: The Copper War + The Wall Street “Mob”

Circa 1903 Rockefeller & co. bid to monopolize US copper production (as with Standard Oil)

- Led to oversupply, then price hikes, then “The demand for copper ceased so abruptly and completely that it seemed the work of black magic.” (Lefevre)

- Aug. Heinze (United Copper) sold out to Rogers (Standard Oil/Amalgamated)

- Heinze Used funds from this sale to buy Mercantile National Bank

- When brother Otto failed in his United Copper corner, the establishment bankers “thought they perceived a heaven-sent opportunity to eliminate Heinze and his associates from the banking situation of New York City.” (Lefevre)

- Lefevre: “But the seed of fear had been implanted in the breast of the New York City mob.”
The Problem of the Trust Companies

Past researchers pointed to trust companies’ susceptibility to runs
- Some were undercapitalized, relative to deposits. E.g. Knickerbocker held $62 million in deposits with $1 million in capital stock
- Paid interest on demand deposits, incentivizing risky assets.
- Large proportion of assets consisted of call loans, which were collateralized by common stock
- Some were highly dependent on liquidity of risky counterparties, largely brokerages
- Lack of access to the New York Clearing House (no liquidity backstop)
- Some engaged in “overcertification” in their call loan business

NB: Hansen (2014) argues that trusts were regulated and supervised, contrary to the common view. Only a few held excessively risky portfolios. But their diversity hindered cooperation.
Trust Companies and the Money Trust

Trust Companies Relationships with National Banks and Investment Banks

- Commercial and investment banks often worked closely with trust companies, providing some backstop to those connected trust companies.
- “The Money Trust” investigation in Congress probed these interconnections, arguing that they controlled a large share of financial resources
- Most trust companies not connected, but they varied widely in size and range of activities and investments.
Data

Trust company stock prices: hand entered "Trust and Surety Company" table from the New York Tribune, 1905-1909

- Total of 59 trust companies.
- Bid and ask quotations printed three times per week
- Breaks in trade filled via interpolation; mostly affects "problem" trusts
- Created separate indexes for connected and independent trust companies; separated out three problem trusts (exposed to runs)

Connected and Troubled

- "Troubled" group contains 3 companies, i.e., Knickerbocker, Lincoln, and Trust Co. of America
- "Connected" group contains 7 companies (from Pujo report).
- "Independent" group contains the rest 49 companies, serving as the control group.
Trust Company Valuations and Connections
Stock Valuations in 1907

![Graph showing stock valuations in 1907 with different trends over time. The graph includes lines for market index, mining index, trust indexed, and United Copper.](image)
Table: DID Analysis on Trust Companies’ Stock Price (1906-1908)

<table>
<thead>
<tr>
<th></th>
<th>Log Price</th>
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<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
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<tr>
<td><strong>Panic × Troubled</strong></td>
<td>-0.790***</td>
<td>-0.789***</td>
<td></td>
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<tr>
<td></td>
<td>(0.058)</td>
<td>(0.057)</td>
<td></td>
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<tr>
<td><strong>Panic × Connected</strong></td>
<td>-0.004</td>
<td>0.041</td>
<td></td>
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<tr>
<td></td>
<td>(0.029)</td>
<td>(0.038)</td>
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<tr>
<td>Company FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Time FE</td>
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<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Observations</td>
<td>22,596</td>
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<td>$R^2$</td>
<td>0.650</td>
<td>0.650</td>
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<td>59</td>
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Robust standard errors are reported in the parenthesis.
Significance at *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$. 
Generalized Synthetic Control

- DID could overestimate or underestimate the impacts since it ignores the pre-treatment trends.
- Synthetic control method (à la Abadie 2010) controls for the pre-treatment trend by constructing a counterfactual.
- Generalized synthetic control method (Xu, 2017) allows for multiple treated units.
Specifically, we estimate the following model

$$\log(p_{it}) = \alpha_i + \tau_t + treatment_{it} + \lambda_i'f_t + e_{it}.$$ 

- The treatment is *Panic × Troubled* or *Panic × Connected*.
- We use the “independent” companies as the control group.
- The interactive fixed effect, $\lambda_i'f_t$, helps impute the counterfactual outcome.
Results: Synthetic Controls

The average treatment effect on the treated (ATT)

**Figure:** The ATT of *Panic* × *Troubled* (Jan 1906 – Dec 1908)
Results: Synthetic Controls – Counterfactuals

Figure: The counterfactual path of the troubled group (Jan 1906 – Dec 1908)
Comparison: with vs without Lincoln in the troubled group

**Figure:** The ATT of Panic \(\times\) Troubled (Jan 1906 – Dec 1908)
Results: Synthetic Controls – Counterfactuals

Comparison: with vs without Lincoln in the troubled group

Figure: The counterfactual path of the troubled group (Jan 1906 – Dec 1908)
Excluding vs including the troubled companies in the control group

Figure: The ATT of Panic \times Connected using different control groups
Results: Synthetic Controls – Counterfactuals

Figure: The counterfactual path of the connected group (Jan 1906 – Dec 1908)
Conclusion

Using a new, high-frequency dataset on market valuation of all NYC trust companies 1905-09, we find that

- the 3 “troubled” trusts experienced dramatic share price cuts;
- most trust companies’ share prices did not decline dramatically;
- connected trusts seem to have benefited from their ties to the top NYC national banks and to JP Morgan.
- Our empirical finding is consistent with Hansen (2014)’s story which argues that trusts were regulated and supervised.