

Micro-evidence from a System-wide Financial Meltdown: The German Crisis of 1931

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Theoretical motivations for short-term debt

① Liquidity provision

- Diamond and Dybvig 83, Gorton and Pennachi 90
- short-term debt provides liquidity services to investors
- e.g. DD 83: banks insure agents against idiosyncratic liquidity risk

② Commitment device

- Calomiris and Kahn 91; Diamond and Rajan 01
- Informed depositors discipline the behavior of bank management

This paper: Which theory prevails empirically?

This is an Important Paper

This is a very important question...

- Implications for deposit insurance
 - Protects against coordination failures (benefit)
 - Reduces depositors' incentive to discipline the bank (cost)
- Value of different deposits
 - If interbank deposits provide discipline, then regulation that reduces interbank deposits, e.g. QE, may come at a cost

...that we do not know a lot about because...

- Challenge: deposit insurance is already in place

- **This paper addresses the important question using a unique empirical setting: the 1931 German Crisis**
 - No deposit insurance
 - Limited regulation and central bank intervention
- Findings
 - Interbank depositors are the most informed
 - Withdrawals occur early and predict eventual distress
 - Withdrawals not explained by observable characteristics
 - Wholesale depositors are relatively less informed
 - Withdrawals after interbank withdrawals and predict eventual distress
 - Withdrawals explained by observable characteristics
 - Retail depositors are the least informed
 - Last to withdraw when banks actually fail

- ① Mapping of theory to empirical findings
 - Are the empirics really testing Diamond and Dyvbig 83 versus Calomiris and Kahn 91?
- ② Interbank deposits
 - Are these not the interbank loans of other banks?
- ③ Investor sophistication versus contract type
 - Is it wholesale versus retail or is it time versus demand deposits?

1. Mapping of Theory to Empirical Findings

- Empirical test: to what extent outflows of a given deposit type predict future bank distress

- Assumption:

*“However, under the **assumption that no single depositor can mechanically induce default**, our methodology exploits both cross-sectional and time-series variation of depositor withdrawals.”*

- Thank you for explicitly stating the assumption!
- I think the assumption works well for most depositors (except perhaps some big interbank depositors)

1. Mapping of Theory to Empirical Findings

- Interpretation:

*...Specifically, we can test whether banks or regular depositors understand which other banks will become distressed—either because they have **information about a specific bank's solvency** or **information about what banks other depositors are likely to perceive as fragile.**"*

1. Mapping of Theory to Empirical Findings

- Interpretation:

...Specifically, we can test whether banks or regular depositors understand which other banks will become distressed—either because they have information about a specific bank's solvency or information about what banks other depositors are likely to perceive as fragile."

- ① **Liquidity provision:** Diamond and Dybvig 83, Gorton and Pennachi 90
 - short-term debt provides liquidity services to investors
 - e.g. DD 83: banks insure agents against idiosyncratic liquidity risk
 - **Bank runs are the consequence of coordination failures**
- ② **Discipline device:** Calomiris and Kahn 91; Diamond and Rajan 01
 - Informed depositors discipline behavior of bank management
 - **Bank runs are the result of mismanagement (and economic fundamentals)**

**This is not a test of liquidity provision VS commitment device.
This is a joint test of liquidity provision AND commitment device.**

1. Mapping of Theory to Empirical Findings

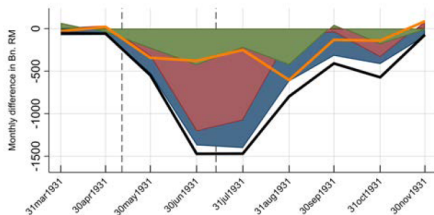
- This is crucial for the correct interpretation of the results!
 - “Informed” in the sense of **panic runs** is socially **costly**
 - “Informed” in the sense of **fundamentals** is socially **beneficial**
- E.g., page 2: banks are most informed → central bank reserves that ↓ interbank funding cost the disciplining function of interbank funding
 - If banks are informed that a bank will fail because other banks will withdraw
 - → ↓ interbank funding ↓ socially costly panic runs as in Diamond and Dyvbig 83
- Suggest to adjust theory motivation to match the empirics
 - Consider linking to e.g. Brunnemeier and Oehmke 13, He and Manela 16, Goldstein and Pauzner 05

2. Interbank Deposits

- If I understand correctly:
 - Demand deposits (less than 7 days) → retail deposits
 - Time deposits (7 days to 3 months) → wholesale deposits
 - Can be withdrawn early but at a penalty
- How about interbank deposits? What is the maturity? Can they be withdrawn?

2. Interbank Deposits

- Only considering domestic banks, interbank deposits (liabilities) at some banks must be the interbank loans (assets) at other banks



- But “*outstanding loans have long maturities, are not easily traded, and can typically not be called or terminated quickly.*”
- If applicable to interbank loans, why can interbank deposits be withdrawn?

2. Interbank Deposits

- Suggest to say a bit more about what interbank deposits are and how their contract terms may differ from retail and wholesale deposits
- From 2005 to 2009: the bulk of interbank loans in Germany were longer-term (Craig and Ma 18)
 - Of course, 1931 may not be the same as 2005

3. Investor Sophistication versus Contract Type

- I think this mapping makes sense!
 - Demand deposits (less than 7 days) → retail deposits
 - Time deposits (7 days to 3 months) → wholesale deposits
 - (Btw, are there no time deposits with maturity more than 3 months?)
- Finding:
 - Time deposits predict eventual distress → wholesale deposits are more informed
- Another very interesting finding:
 - Time deposits switch into demand deposits
- How to jointly interpret the two findings?

3. Investor Sophistication versus Contract Type

- How to reconcile the two findings?
- If time depositors/wholesale depositors were informed about the eventual distress of the bank, why would they switch into demand deposits and not get out of the bank altogether?
- Why are demand depositors who stay put considered uninformed whereas time depositors who switched into demand deposits considered informed?
- That is, is it really the amount of information between demand versus time depositors, or is it something about the contract forms per se that lead to the result?

Conclusion

- A great paper!
- Sheds light on information by different types of depositors leading up to a bank
 - Many theories, limited existing empirical evidence
- Suggestions
 - 1 Mapping of theory to empirical findings
 - 2 Interpretation of interbank deposits
 - 3 Contract type versus investor sophistication