Instituciones Financieras

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Clase 5
UTDT Maestría en Finanzas

Today

- Review

- Shocks to credit supply and small businesses
  - Bankruptcy law (debtor protection laws)
  - Bank liquidity shock (global crisis, Portugal)

- Peer-to-peer lending: Pros and cons
  - Chinese platform: Renrendai

Credit supply shocks and small businesses

Bank liquidity shock

Negative exogenous (unexpected) credit supply shock and access to credit

Evidence from the 2007-2009 Crisis

Slides based on:

- "Interbank Liquidity Crunch and the Firm Credit Crunch: Evidence from the 2007-2009 Crisis", by Iyer, R., Peydr, J., da-Rocha-Lopes, Schoar, A. in *Review of Financial Studies*, v 27 n 1 2014, 347-372

Motivation

- The banking crisis in 2007 generated a sudden dry-up in interbank liquidity market in Europe
  - Crisis began in August 2007 when the European interbank market started experiencing significant tensions (interbank loan spreads went up significantly).
  - The ECB had to inject large amounts of liquidity (euros 245 billion)
- This unexpected interbank crunch may have affected firms' access to credit, especially smaller firms
- The key channel through which a banking crisis may affect the economy is the ability of firms to access credit

Portugal: Imported credit supply shock

- Unexpected shock across all European countries
  - Generated a liquidity crisis
  - Unrelated to Portuguese banks

- Why was it an imported crisis for Portugal?
  - Portuguese banks were not investing in US suprime market
  - There was no real estate bubble in Portugal
    - Between 1996 and 2006 house prices grew only 10% (compared with more than 80% in US, Holland, Greece, Spain, UK)

Empirical Identification

- Ideal setting to test **causality** (rather than correlation)
  - whether an exogenous credit supply shock affects firms´ credit availability

Data

- Loan data from Central Credit Register (Bank of Portugal)
  - Total of 293,896 firm-bank pairs
  - Firms with at least 2 banking relationships: 220,406 firm-bank pairs
- Central Balance-Sheet Database (Bank of Portugal)
  - Allows to match credit register data with
    - A) Bank balance-sheet variables (bank size, profits, liquidity, nonperforming loans, capital and interbank borrowing)
    - B) Firm balance-sheet variables (Firm identity, industry, location, juridical nature, total assets, number of employes, age of incoporation, profits, interest expenses and total debt)

Interbank Borrowing and Credit Growth

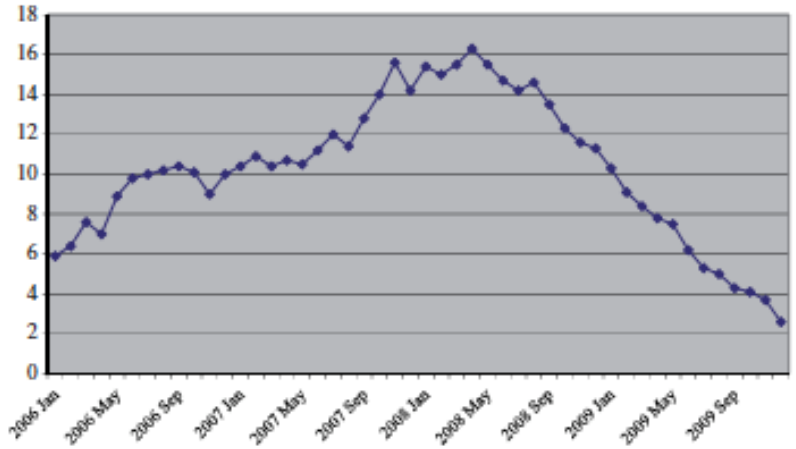


Figure 1
Growth in total credit volume for nonfinancial firms

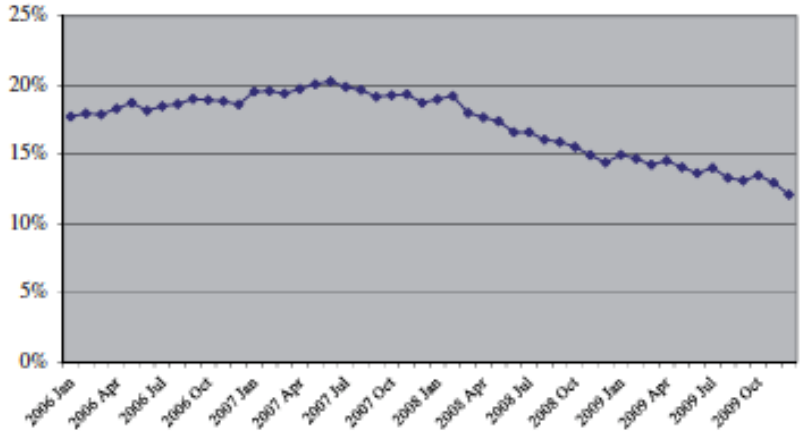


Figure 2
Interbank borrowing (as a fraction of total assets)

- Credit growth affected by the crisis
- Interbank borrowing also decreases
- However, interbank borrowing decreases sooner than firm credit growth
- This suggests that, potentially, the dry-up in access to liquidity in the interbank markets could be an important factor affecting the credit growth of firms

Interbank borrowing

- The banks that were more dependent on interbank borrowing **before the crisis** should be the more affected by the liquidity crunch

- The paper uses interbank liquidity dependence (borrowing) as a measure of the magnitude of the credit supply shock experienced by each bank.

Variables

- Main dependent variable: logcredit_{bi}
  - Change in granted credit from bank b to firm i between 2007:Q2 and 2009:Q2

- Independent variables
  - Interbank borrowing ratio_b as of 2007:Q2
  - Firm fixed effects (to keep loan demand constant, and isolate the supply side effect)
  - Bank characteristics
  - Firm variables

Results I

- A 10% increase in interbank dependence before the crisis, leads to a further 4% reduction in credit availability during the crisis

Results II

Heterogeneous effects across firms

- The effect of the credit supply reduction due to interbank liquidity exposure is higher for:
  - Firms that are smaller
  - Firms that are younger
  - Firms with lower banking relationship (volume of credit before the crisis)
  - No effect for large firms

Results III

The extensive margin (new credit) and bank-firm relationships

- Banks with higher interbank dependence
  - are less likely to initiate a new lending relationship with a small firm
  - more likely to terminate a relationship
  - A stronger pre-existing bank-firm relationship lowers the effect on termination both for large and small firms

Results IV

- Can small firms find substitutes for the reduction in credit from the affected bank (from less affected banks or trade credit) ?
  - Firms are not able to perfectly substitute the fall in credit with other forms of debt.
  - Should have negative impact on their performance

Results V

- Did public liquidity from central banks (ECB) alleviate credit supply tensions?
  - Higher borrowings from the ECB increase credit availability to firms
  - **However**, this effect **is reduced** for banks that had higher ex-ante interbank borrowing, suggesting that these banks were hoarding the extra liquidity provided as liquid assets

Conclusions

- Following the credit crisis, the authors find:
  - Interbank liquidity shocks induced a credit supply contraction primarily for entrepreneurial firms
  - These firms cannot compensate the reduction in loan supply from other sources

Policy implication: Central bank liquidity does not seem to encourage more lending, but rather more hoarding of liquidity

Peer-to-Peer (P2P) lending

The case of a FinTech in China

Pros and Cons

- Pros:
  - P2P borrowers and lenders can capture some of the rents typically appropiated by banks
  - Relax credit constraints
  - Finance borrowers who are cut off from traditional bank lending

- Cons:
  - P2P lending is not subjet to the same scrutinity and it may pose new risks to the financial system

Slides based on:

- “Household Credit and Regulatory Arbitrage: Evidence from Online Marketplace Lending, working paper, 2021”, by Braggion, F., Manconi, A. and Zhu, H.

  - An earlier version of this paper was circulated under the title “Is FinTech a Threat to Financial Stability?”

Motivation

- Expansions of credit supply can generate disruptions in the real economy
- Policy efforts to contain household leverage and prevent the buildup of asset price bubbles typically target traditional financial intermediaries
- Households now have access to alternative, **unregulated** credit channels: Peer-to peer (P2P lending)
- P2P lending is not subject to the same scrutiny that traditional banks receive from regulators. This may pose new risks to the financial system and has raised concerns that P2P lending can lead to an excessive build-up of household leverage.

P2P Lending

- Double digit growth in developed economies (US,UK)
- The fastest growing and (estimated) largest market is China
- P2P companies bypass the role traditionally played by banks, disentermediating credit

Objectives of the paper

- Determine the capacity of P2P lending to fuel household debt creation

- Assess to what extent P2P lending can interfere with regulatory action in credit markets

Institutional background

- The analysis revolves around a regulatory change in the Chinese housing market, which took place in November 2013.

- Since about 2011, China experienced strong growth in residential mortgages and property prices.
  - In response, the General Office of the State Council issued on 26 March 2013 a "Notice on Further Improving Regulation of the Real Estate Market" instructing local regulators to slow down property transactions.
  - It raised the possibility of an increase in minimum down-payment requirements on residential mortgages, thus tightening LTV (loan to value) caps. The increase was not mandated

- Conditional on a decision to raise down-payment requirements, the implementation and enforcement of the regulation was delegated to local branches of the People's Bank of China.

Research question

- Paper studies P2P lending around this *regulatory change* in the Chinese real state market which takes place in Nov. 2013:
  - The city governments of a number of large Chinese cities impose a 16.7% increase in the minimun downpayment to obtain a mortgage for the purchase of a second home (from 60% to 70% of the property value)
  - The objective of these regulations is to slow down the growth in real state prices by limiting credit
  - Anecdotal evidence suggests that real state investors circumvent the new requirements borrowing via P2P lending platforms to reach the increased down-payment.
  - With the contribution from the P2P platorms, househols can still increase their leverage
  - **Does the regulatory change create a positive shock to P2P lending demand?**

Data

- The dataset corresponds to a Chinese online P2P lending Company Renrendai.

- It spans from October 2010 (launched) until February 2017 and contains information on:
  - 955,174 loan applications
  - 746,647 individual borrowers (and their characteristics)
  - 351,333 lenders

- The average Renrendai loan has size RMB 58,632 (USD 8,795) with annualized interest rate 12.69% and duration 27 months.
- The average Renrendai borrower has pre-tax monthly income of about RMB 140,500 (USD 21,075) yearly.
- Relative to the Chinese income distribution, Renrendai borrowers are among the top 10% but below the top 1%. The loan face value is typically about 40% of the borrower's annual income.

Empirical strategy

- **1) Compare treated cities versus non-treated cities**
  - Paper studies changes in P2P lending around the change in downpayment for treated and non-treated cities
  - Treated cities: Four of the ten largest cities (Beijing, Guangzhou, Shanghai, Shenzen) and seven smaller cities (Changsha, Hangzhou, Nanjing, Nanchang, Ningbo, Suzhou, and Wuhan)
  - Non-treated: all the remaining ones

Empirical strategy

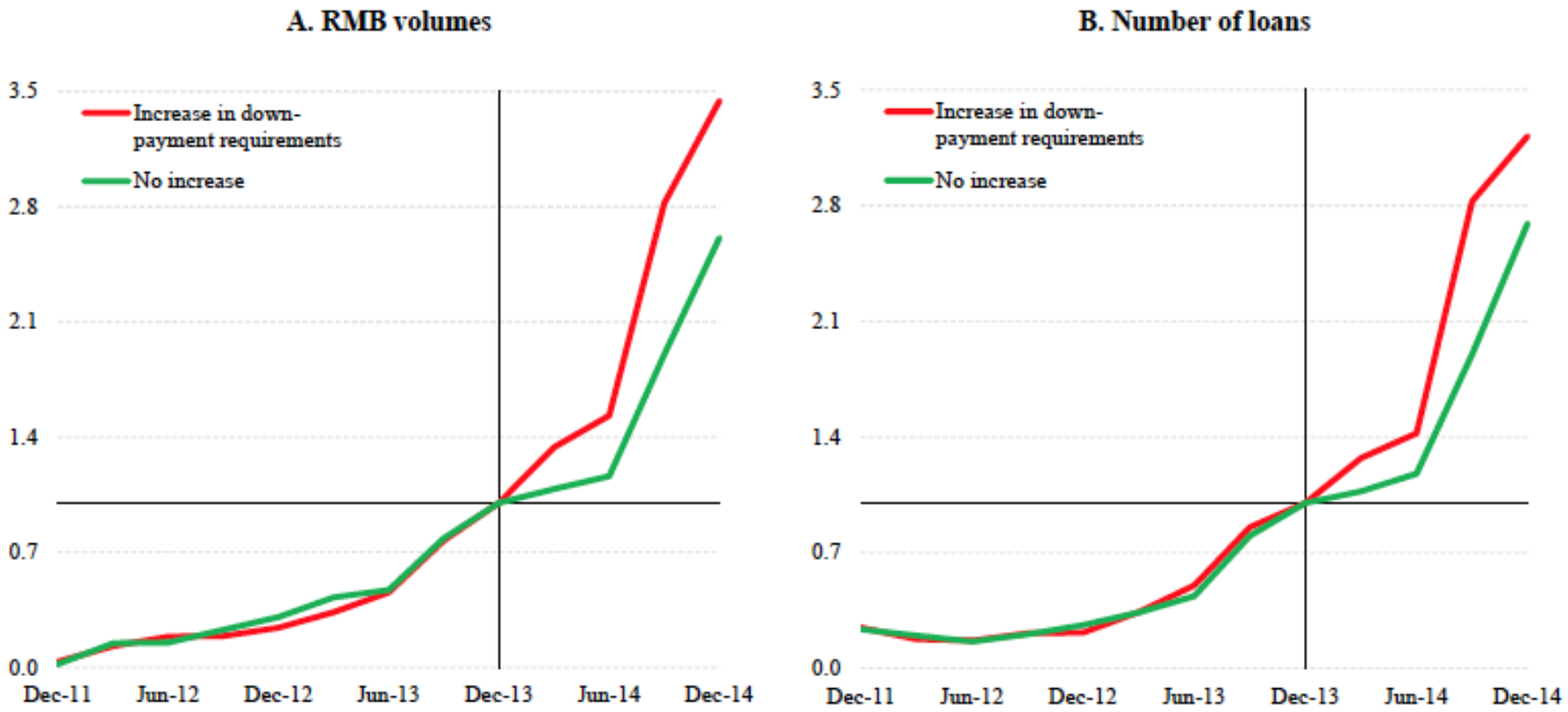
- **2) Separate credit demand and supply**
  - Typical lender in Renrendai invests in multiple loans at the same time.
  - Lender*date fixed effects strategy: intuitively, the test compares 2 loans from the same P2P lender to two different borrowers (one living in a treated city and the other living in a non-treated city). So the supply is fixed and differences in lending from these two borrowers must come from the demand side.

Treated city downpayment  , what happens to lending demand by?

Treated borrower Non-treated borrower

LENDER

Figure1. Affected vs Unaffected cities



- Each series is normalized to equal 1 on the date of the change in downpayment (end 2013), such that the vertical axis represents the relative change in P2P compared to that date.
- First piece of evidence consistent with P2P lending being used to circumvent regulatory credit supply constraints.

Results on lending

- Borrower-lender level regressions confirm the evidence from Figure 1
- Estimates imply that the increase in P2P borrowing we observe accounts for 60% to 80% of the increase in the downpayment for the average second home mortgage
- Given that Renrendai is just one P2P lender, the estimate provides a lower bound
- The effect is driven by the extensive margin: the influx of new borrowers after the 2013 downpayment increase

Results on loan performance

- Deteriorating loan performance in treated cities
  - Among loans to homeowners
    - Delinquencies increase by 1.6 percentage points relative to control cities
    - Defaults increase by 2.4 percentage points relative to the control cities. Similar to the U.S. default rates are on average 2% among Renrendai loans. The estimates thus imply that default frequency more than doubles in relative terms.
    - The effect is driven by the extensive margin: default rates occur among new borrowers that register on Renrendai after 2013

Validation of the analysis

- **Symmetric change in regulation:** In September 2015, as part of a stimulus package, nearly all the city governments of China (with the exception of Beijing, Guangzhou, Sanya, Shanghai and Shenzhen) impose a 16.7% reduction in minimum down-payment requirement (from 30% to 25% of the property's value) in this case for first home purchases.

- In this case, the **demand** for P2P lending at the treated cities ***decreases***, reversing the effects of the 2013 episode

Conclusions

- Following an increase in 2013 of down payment requirements on second-home mortgages at several major Chinese cities, we find:
  - The intervention increases the demand for P2P credit by borrowers who try to circumvent the down-payment requirements, leaving overall credit demand unchanged.
  - Default rates increase
- Policy implication: P2P platforms can reduce the effectiveness of policies to contain household leverage