Beyond the Aggregate: Heterogeneous Effects of Monetary Policy on Credit Allocation

Sui-Jade Ho, Özer Karagedikli, and Samantha Ong

Discussed by Edison Yu
Federal Reserve Bank of Philadelphia

ABFER, Singapore
May, 2025

Monetary Policy and Distributive Effects

- Household debt is a key transmission channel of monetary policy
  - Among different kinds of debts, mortgages probably affect households most
    - In the U.S., mortgage debts account for about 70% of total U.S. household debts in 2024
    - In Malaysia, it's about 61% in 2023
  - This is particularly true for countries that have mostly floating rate mortgages
    - When the mortgage rate changes, monthly payment changes affect borrower budget constraint right away
- What about heterogeneous effects?
  - One example: higher vs lower income households
  - French data: higher income home buyers are more sensitive to rate changes (Ligonniere and Ouerk, 2024)
  - Ringo (2024) shows the opposite results in the U.S.

Monetary Policy and Distributive Effects

- Household debt is a key transmission channel of monetary policy
  - Among different kinds of debts, mortgages probably affect households most
    - In the U.S., mortgage debts account for about 70% of total U.S. household debts in 2024
    - In Malaysia, it's about 61% in 2023
  - This is particularly true for countries that have mostly floating rate mortgages
    - When the mortgage rate changes, monthly payment changes affect borrower budget constraint right away
- What about heterogeneous effects?
  - One example: higher vs lower income households
  - French data: higher income home buyers are more sensitive to rate changes (Ligonniere and Ouerk, 2024)
  - Ringo (2024) shows the opposite results in the U.S.

This Paper

- Unique data from Malaysia
  - Unlike in France and the U.S., most mortgages in Malaysia are variable rates
  - High frequency data with loan and borrower characteristics
  - Observe all stages of mortgage applications
- Event studies
  - Examine changes in loan and borrower characteristics 14 days before and after surprise rate changes
    - Monetary Policy Committee meets six times a year
    - Measured by the 1-month Kuala Lumpur Interbank Offered Rate (KLIBOR)
  - Other control variables: age, gender, employment sector, first home loan status
  - Bank-time fixed effects to control for supply-side factors

This Paper

- Unique data from Malaysia
  - Unlike in France and the U.S., most mortgages in Malaysia are variable rates
  - High frequency data with loan and borrower characteristics
  - Observe all stages of mortgage applications
- Event studies
  - Examine changes in loan and borrower characteristics 14 days before and after surprise rate changes
    - Monetary Policy Committee meets six times a year
    - Measured by the 1-month Kuala Lumpur Interbank Offered Rate (KLIBOR)
  - Other control variables: age, gender, employment sector, first home loan status
  - Bank-time fixed effects to control for supply-side factors

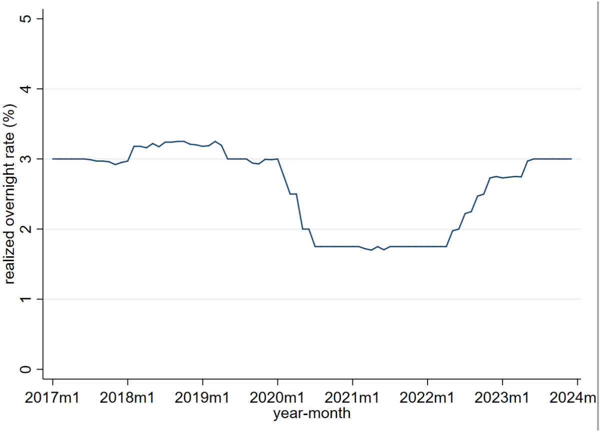
Summary of Results

When interest rate increases

	Effects on higher income borrowers relatively to lower income borrowers
Loan amount applied	-
Loan amount originated	-
Approval rate	no differential effect
Loan maturity	no differential effect
Probability of multiple applications	+

Comment: Monetary Policy Shocks

- Sample period with one rate cycle related to Covid
  - Otherwise not much movement over a narrow range
  - Covid affected higher and lower income households differently?
  - Control for Covid impact?



Comment: Monetary Policy Shocks

- Do the mortgage rates move with the policy shocks?
  - U.S. data: Gürkaynak, Sack, and Swanson (2005)
    - Probably less of a problem for floating rate mortgages
  - E.g. Australian commercial banks do not always follow the Reserve Bank of Australia's rate decision
    - Reasons banks not following the rate change might be endogenous
  - Malaysian evidence: Asymmetric transmission (Tang, Puah, and Liew, 2015)
- Policy surprise shocks vs signals of economic fundamental (e.g. Nakamura and Steinsson, 2018)
  - Periods with policy rate changes but not the mortgage rate changes, and vice versa
  - Disentangle the different components: economic fundamentals, inflation expectation etc.

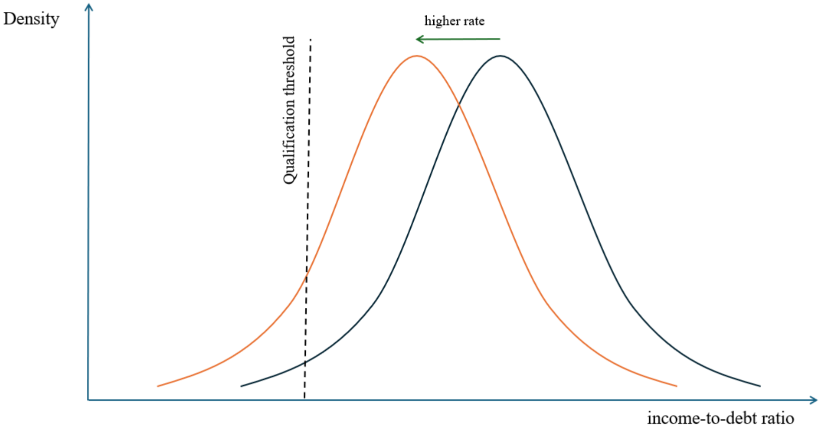
Comment: Monetary Policy Shocks

- Do the mortgage rates move with the policy shocks?
    - U.S. data: Gürkaynak, Sack, and Swanson (2005)
        - Probably less of a problem for floating rate mortgages
    - E.g. Australian commercial banks do not always follow the Reserve Bank of Australia's rate decision
        - Reasons banks not following the rate change might be endogenous
    - Malaysian evidence: Asymmetric transmission (Tang, Puah, and Liew, 2015)
- Policy surprise shocks vs signals of economic fundamental (e.g. Nakamura and Steinsson, 2018)
    - Periods with policy rate changes but not the mortgage rate changes, and vice versa
    - Disentangle the different components: economic fundamentals, inflation expectation etc.

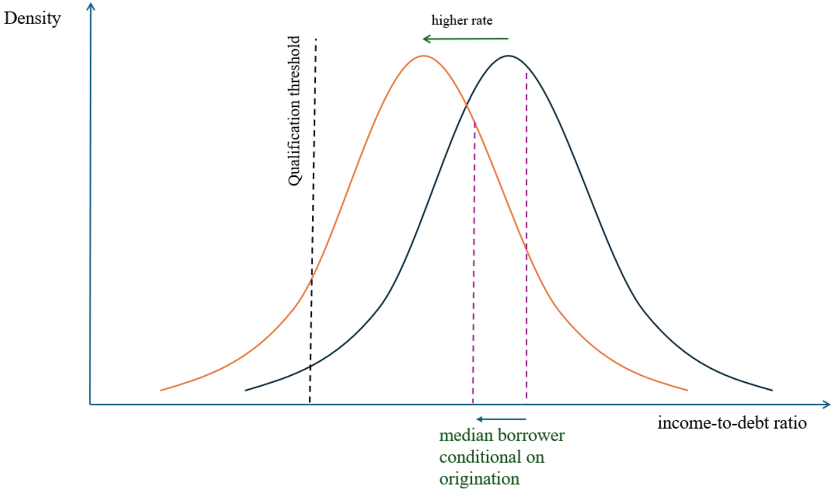
Comment: Selection

- Extensive v.s. intensive margin?
  - The results report intensive margin effects, i.e. effects conditional on loan applications
  - Do the number of loan applications respond? (and differently across income groups)
  - If there are changes at the extensive margin, is there any selection?
    - Lower income households drop out of applications?

Illustrative Example



Illustrative Example



Potential Solutions

- Changes in observed characteristics among applicants?
    - LTV ratio, income, type of loans, locations etc.
- The data has information about every step of the application process
    - Can we look at outcomes (e.g. loan amounts) at different stages of the application process
    - Supposedly, some stages are more difficult to reverse
    - Do people already started the application process respond differently
        - Higher application withdrawal?
- How about default rates?
    - This is one way to control for potentially omitted variables related to loan quality

Comment: Mechanism

- If the results are not come from compositional changes, would be very interesting to figure out the mechanism
- Why and how did richer applicants lower the borrowed amount?
    - Did sellers reduce prices? (appraised vs final sale amounts)
    - Wealth of rich applicants are more sensitive to monetary policy shocks?
        - Higher leverage, other assets have higher sensitivity (e.g. more equity investment)
    - Lower loan-to-value ratio to reduce leverage?

Comment: Other Heterogeneity

- Might consider heterogeneity in other dimensions
  - Education level
  - Financial literacy
  - Measures of financial constraints

Comment: External Validity and Policy Implication

- Monetary policy operates through borrowers with higher income
  - Tighter policy reduces inequality (opposite to Ringo (2024)?)
- How much of this is due to the difference between fixed vs variable rate mortgages?
  - Fixed rate: each rate change is bigger
    - But asymmetric effects with prepayment options
    - Rate hike: more expensive but higher prepayment risk
  - Variable rate: one change alone is not as important
    - Asymmetric results?

Conclusion

- Interesting paper and I learned a lot from it.
- Excellent data and addressing important questions
- Thanks very much!