Research Proposal: Loan Officer Incentives, Uncertainty and Credit Supply

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Question

- Loan officers are intermediaries in the home mortgage market, sourcing and processing mortgages for mortgage brokers.
- In the past 20-30 years, loan officers have transitioned from primarily being salaried employees of banks to non-bank independent contractors (Woodward and Hall, 2010).
- How do the incentives induced by their compensation contracts affect how they respond to uncertainty shocks?

Motivation

- Compensation incentives have been shown to play an important role in how firms respond to uncertainty shocks.
  - Managers with greater equity incentives relatively reduce risk (Ion and Yin, 2021) and investment (Glover and Levine, 2015).
- Similar agency frictions have been highlighted in the mortgage market:
  - Moral Hazard on the part of originators (Keys et al., 2010) and even private mortgage insurers (Bhutta & Keys, 2020) has been highlighted as a cause of the global financial crisis.
  - Experiments on commerical bank loan officers, with much of the same incentives as those in the mortgage market, show that compensation that takes into account loan performance leads to better screening and profitability.
  - An experiment which varied loan officer's compensation schedule from fixed to volume-based showed 31% higher origination rates, 15% higher loan amounts and 28% higher default rates.
- Little evidence to-date on how uncertainty shocks affect the mortgage market.

Who are loan officers and how are they paid?

- "Loan Officer" (LO) refers to the agent within (or associated to) the originator bank-branch that process the mortgage application.
  - Loan officers often screen mortgage applications and search for "leads". As effort is unobservable, banks provide performance incentives in the order of "typically 1-2% of the loan amount" (Bhutta et al.).
- As of 2011, loan officers legally cannot be paid differently for processing loans with different terms (interest rates, prime/subprime).
- LO compensation contracts can consist of:
  1. per-loan commissions
  2. per-dollar commissions
  3. a fixed salary
- The terms of the contract can vary even between loan officers in the same branch. Bhutta et al. state that some loan officers can even choose their distributions.

What am I proposing?

- Descriptive questions first:
  1. Do loan officers that receive higher compensation per loan originate more loans (quantity / dollars)?
  2. How volatile is the origination activity for each branch / officer?
  3. How does loan officer compensation vary across time and loan?
  4. How "tight" is the origination market? (Measured by the number of "offers" outstanding to the number of originations / mortgage inquiries).

Causal Questions

- How do uncertainty/volatility shocks affect loan officer (LO) mortgage origination?
  - Dependent is Processing time/ volume, idea is a DiD with coefficient of interest being shock x an incentive group dummy.
  - Differences between performance-based vs. fixed-salary LOs (e.g., traditional vs. non-bank lenders).
- Possible Approaches:
  - Use branch-time fixed effects (at least for traditional lenders I can do this), control for prime/subprime loans.
  - Develop a structural model of LO origination (e.g., Glover and Levine) to explain responses.
- Hypothesis:
  - Uncertainty shocks increase effort for "skin-in-the-game" LOs, raising origination volume but possibly reducing screening.
  - For "conforming" loans, loan officers may be more sensitive to demand volatility than originators (as default risk is insured but demand risk is not).
  - Volatility shocks may enhance LO informational advantage, potentially harming borrowers.

Data

- Loan Officer Compensation data is from Optimal Blue "Pricing Insight" data on mortgage offers to potential buyers (contract design must be inferred from repeated mortgage offers).
- Ideally, Mortgage Call Report (MCR) data from the Federal Reserve can help to cross-check contracts with aggregate compensation data at the originator-level and form a measure of salary.
- Uncertainty shocks can be measured as idiosyncratic uncertainty in mortgage demand, perhaps measured at the local level by a model of the volatility of mortgage applications. Another idea is to use lender-level uncertainty, 30 year fixed rate - 10 year spreads or policy uncertainty.
- In the GSE market, interest rate uncertainty would perhaps lead to little variation in mortgage interest rates today.
- Mortgage inquiries can be taken from equifax.