

Mortgage Securitization and Information Frictions in General Equilibrium

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Securitization is central in providing liquid funds for mortgage lending in the United States. However, this source of liquidity is volatile and can rapidly expand or collapse abruptly, as observed during the credit cycle of the 2000s. Such large fluctuations are a sign of markets in which information frictions play an important role. In García (2022), I develop a theory consistent with the U.S. mortgage market structure that replicates these dynamics. The model stresses the equilibrium connection between securitization and the credit market through the securitization liquidity channel (Loutskina, 2011; Calem et al., 2013; Vickery and Wright, 2013). I use the model to quantify the role of information frictions in accounting for aggregate credit dynamics. I also study the role of policy in stabilizing mortgage credit to households a key macroeconomic variable and a policymaker objective.

FRAMEWORK

The framework builds on a standard model of financial intermediation with housing. Impatient borrowing households, facing aggregate income and housing risk, take on long-term mortgages to finance their purchases of houses and non-durable goods. Mortgage credit is supplied by lenders operating with private equity. I extend this standard setup to capture relevant features of the U.S. mortgage market. First, borrower households can endogenously default on their mortgages, which defines the quality of loans that lenders hold. Second, lenders face heterogeneous loan origination costs, which capture the differences in origination technologies observed among mortgage originators. Third, as in practice, lenders face liquidity and information frictions. They are financially constrained by having limited access to debt markets, and they can privately identify the quality of the mortgages in their portfolios. Fourth, I introduce a securitization market where lenders can sell mortgages and buy securities. An endogenous securitization market has a dual role: reallocate illiquid assets and provide liquidity to

mortgage originators. Securitization increases the efficiency of credit funding and lowers interest rates for borrowers. However, its benefits are hindered by originators' private information about loan quality, thus leading to a classic adverse selection problem, as in Akerlof (1970).

THE ROLE OF INFORMATION FRICTIONS

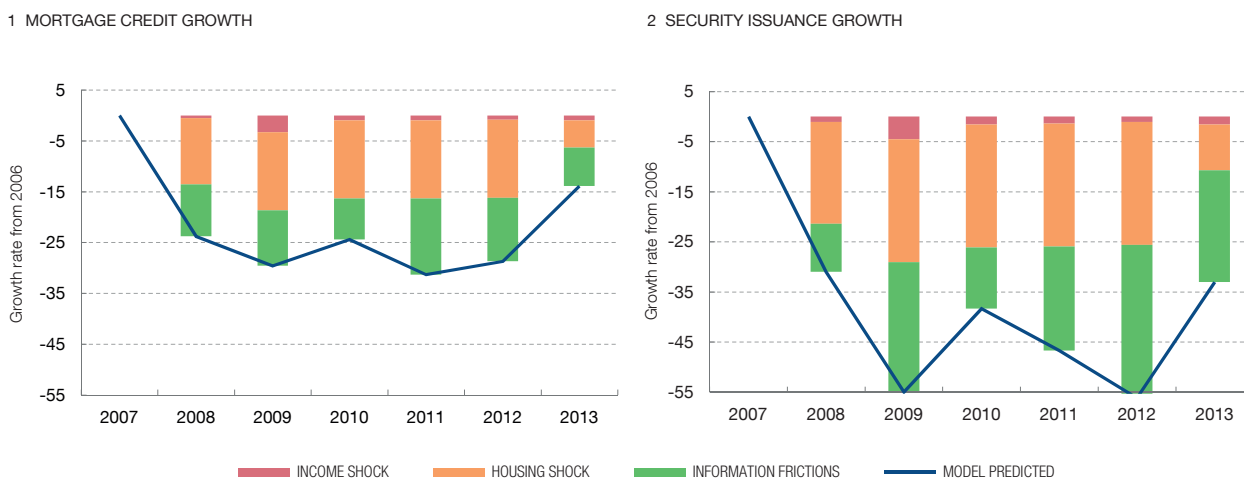
The model delivers boom-bust credit cycles driven by household credit risk with a novel feedback mechanism between the credit and the securitization markets. Episodes of high (housing valuation or income) risk can lead borrowers to default on their mortgages, affecting the composition of high- and low-quality loans in lenders' portfolios. For lenders, differences in origination costs and limited liquid funds generate motives for securitization trading. When trading, lenders split into groups: securitization sellers, buyers, and holders. Due to private information, sellers have incentives to sell low-quality loans and selectively retain high-quality ones when the market price is lower than their valuation. Security buyers understand these incentives; hence, securities trade at a discount. Holders are lenders that abstain from participating in securitization trading because the discount is too high for them. In times of low credit risk, the liquidity value and the cost-sharing benefits of securitization generally exceed the discount, and the market operates well.

In contrast, shocks that increase households' credit risk exacerbate information frictions. Buyers face a higher discount, demand for securities falls, and securities trade at a lower price. As a consequence, lenders stop trading and become holders. In the credit market, lenders face an endogenous liquidity shortage derived from the unwillingness to securitize their portfolios at current market prices. Given the limited access to debt markets, a contraction in the credit supplied to households ensues. This contraction further deteriorates households' balance sheets, leading to an amplification loop that amplifies credit cycles.

QUANTIFYING THE AMPLIFICATION EFFECTS DURING THE GFC

A quantitative test of the model shows that it can successfully replicate the dynamics observed in the data. When

Figure 1
SHOCK DECOMPOSITION DURING THE GREAT FINANCIAL CRISIS



NOTE: 1) Growth rate is in percentage points. 2) Shock decomposition: each bar shows the contribution of shocks to the model predicted growth rate. 3) Information frictions correspond to the difference between the benchmark economy and an economy with complete information.

households experience the same income and housing valuation shocks observed in the data during 2008-2013, the model successfully replicates two-thirds of the contraction in mortgage credit and the full contraction in MBS issuance.

Figure 1 shows the shock decomposition for new mortgage issuance in the credit and securitization markets. The yellow dashed bars quantifying the contribution of private information correspond to the difference between the benchmark economy and an economy with complete information. The decomposition of the underlying forces shows that information frictions could have amplified the credit contraction by up to 1.5 times (see figure). In other words, in the absence of information frictions, aggregate mortgage credit would have contracted by 27 percent instead of 40 percent. Pointing to a large adverse selection multiplier of household shocks (consistent with other models that study the amplification effects of information frictions in asset markets through liquidity channels Kurlat, 2013; Bigio, 2015, and Asriyan, 2020). The decomposition also shows that housing valuation shocks account for about half of the dynamics, and household income shocks played a less important role. This observation contributes to

understanding the factors at play during the GFC: showing how household mortgage risk dynamics together with agency problems can account for dynamics at the macro level. On policy grounds, the model provides insights into the rationale of credit guarantees as an instrument to stabilize liquidity in the MBS and mortgage credit markets affected by information frictions.

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