Downpayment, mobility and default: A welfare analysis

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ABSTRACT

In this paper, I study the impact of the relaxation of downpayment requirements on home-ownership and default risk in the context of a static spatial life cycle model. Given its quantitative success in matching the U.S. home-ownership curve, my model represents a reasonable benchmark for assessing the efficiency of mortgage default prevention policies. I find that both income and geographical mobility are the main trigger factors for default decisions. In fact, households with a higher mobility (i.e. young households) rate are more likely to default. According to the welfare analysis, I suggest that policymakers include a minimum downpayment requirement of 9.5% in the new definition of the Qualified Residential Mortgage (QRM). This number should, however, be viewed with some caution, since I focus on a steady-state economy, in which house prices are constant. In fact, house prices represent an important factor influencing the default rate. Potentially, the optimal minimum downpayment requirement should be set at a higher value than 9.5%.

1. Introduction

The bursting of the housing bubble is believed to be one of the primary causes of the 2007–2009 recession in the United States (U.S.). Indeed, the steep increase in foreclosure rates in the mortgage market played an important role in the U.S. financial crisis. There is a consensus that the relaxation of mortgage loan standards and the deregulation of the banking system were the main causes of the financial crisis. The relaxation of downpayment requirements has been promoted for decades, as it is believed by many to be an efficient policy to promote home-ownership, particularly for young households. However, there has never been any agreement on the efficiency of such policies, and the debate is still open as to whether the relaxation of downpayment requirements has a significant impact on home-ownership. In fact, there is no clear conclusion about the quantitative and empirical importance of this impact. Fisher and Gervais (2011), Kiyotaki et al. (2011), and Mnasri (2015) argued that the impact of relaxing downpayment requirements is quantitatively small and has only modest implications for the housing market. On the other hand, several other researchers have found that borrowing constraints play an important role in explaining the low ownership rates among young households (Chambers et al., 2009; Iacoviello and Pavan, 2013).

There is an ongoing debate in the U.S. as to whether or not to include a minimum downpayment requirement in the definition of the Qualified Residential Mortgage (QRM). The QRM is a set of loan standards designed to reduce the risk of default. If a mortgage loan meets the QRM criteria, it will be exempt from the Dodd–Frank Wall Street Reform, which requires financial firms to retain 5% of the credit risk when they sell loans to investors. This gives lenders a powerful incentive for making loans that meet the QRM criteria, given the higher percentage of mortgages that they can sell into the secondary market, thereby reducing their long-term risks. At the same time, a borrower is better off meeting the QRM guidelines, otherwise he will have a harder time finding a loan, and is very likely end up paying a higher interest rate. Consequently, the definition of the QRM should set the bar for mortgage-lending...
standards in the U.S. In the original proposal made in 2011, the QRM criteria included a downpayment requirement of at least 20%, for the loan to be considered a QMR. However, this proposal was highly criticized by mortgage industry advocates who argued that a such requirement could seriously restrict credit for certain borrowers and would do more harm than good. In the proposal issued in August 2013, the 20% downpayment requirement was dropped. Indeed, the six federal agencies responsible for finalizing the definition of the QRM have proposed to align it with the Qualified Mortgage (QM) definition, which requires the borrowers to have a total debt-to-income (DTI) ratio less than 43%. Regulators have also considered an alternative proposal, the QM-plus, which includes a minimum downpayment requirement of 30%.

In this paper, I use an extended version of Mnasri’s (2015) framework as a benchmark to shed light on the efficiency of mortgage default prevention policies by assessing the potential impacts of introducing minimum downpayment requirement on home-ownership, default rates, and welfare. Mnasri (2015) used a standard life cycle model with uninsurable individual income risk, plausibly calibrated to match key features of the U.S. housing market, where households can decide on their housing tenure status as well as on whether to move or not. The author argued that the relatively low ownership rate of young households is mainly explained by their high geographic mobility, and that the downpayment constraints have minor quantitative implications on ownership rates, except for old households. He also found that home-ownership has a negative impact on geographic mobility because of the transaction costs of housing. He also argues that this impact depends on the income level of the homeowner. Moreover, the model was outstandingly successful in matching the home-ownership curve of the U.S. for 2009, as well as in capturing the shift in the ownership curve between 1993 and 2009. This empirical success makes Mnasri’s (2015) framework a very good benchmark for accurately assessing the relationships among downpayment requirements, home-ownership, and defaulting.

My paper is most closely related to work by Hatchondo et al. (2011), who studied the impact of downpayment requirements on home-ownership and default rates in the context of a standard incomplete life-cycle models market with housing. They show that a calibrated version of the model matched non targeted moments such as the distribution of downpayments and hence plausible borrowing behavior. They also argue that the introduction of minimum downpayments or income garnishment benefits a majority of the population. Another related study to this paper is a recent work by Arslan et al. (2015). Unlike Hatchondo et al. (2011), where the house prices were assumed to follow a stochastic process, Arslan et al. (2015) assumed that house prices are constant in the steady state and change only when an aggregate interest rate shock hits the economy. They also argued that a macroprudential policy (a 20% minimum downpayment requirement) would make the economy, especially foreclosures, more stable.

My paper differs from these related articles in four key respects. Firstly, in these papers, house size is assumed to be fixed regardless of whether it is rented or owned. In my model, both owners and renters can adjust their housing services. I believe this is a crucial difference, since assuming a fixed housing size implies that the home-ownership premium is constant and does not depend on the income level, which could represent a potential source of bias. In fact, to accurately assess the efficiency of any policy regarding minimum downpayment requirements and their potential welfare implications, we should refer to a model with a realistic set up, particularly with respect to the housing premium and the default cost. Clearly, the decision to whether rent or own a house depends on the housing premium (the utility difference between being a homeowner or a renter) and the financial cost of buying a house. Assuming a constant housing size would underestimate the housing premium for households with a relatively high income, as they are supposed to be willing to afford larger houses and hence, derive more utility from them. This could represent an important source of bias that might induce to misleading policy recommendations.

A second crucial difference is related to the way the cost of defaulting is modeled. In Hatchondo et al. (2011), when a homeowner defaults, the lender is allowed to garnish the defaulters’ income, whereas in Arslan et al. (2015), a defaulter is only allowed to purchase a house with an exogenous probability. In my model, when a homeowner defaults, he/she will be prevented from borrowing for 7 years after the default. This is consistent with U.S. banking standards, where a bad credit flag stays for 7 years, on average, in the credit history of the agent. Similar to in Livshits et al. (2007), I assume that debtors can discharge all their debt via default (bankruptcy) and do not assume any life long liability for loans. The fact that I need to keep track of the defaulter for 7 years represents a significant computational burden. Having said this, the potential benefit of this implementation is very important, especially if we want to have a relevant and realistic assessment of the impact of downpayments on the default rate. In fact, the exclusion of a household who is expecting a significant income increase from the mortgage market for many years should be associated with a relatively important utility loss. However, if I simply assume a fixed income garnishment as a default penalty for all defaulters regardless of their actual and future income (as in Hatchondo et al., 2011), the model could imply exactly the opposite. This also represents a potential source of bias in capturing the difference in utility costs incurred by defaulters belonging to different age groups. Indeed, young households should expect a relatively high increase in their future income compared with older households. This means that when a young household defaults, he/she should expect a higher default cost (being barred from the mortgage market for 7 years although his/her income might substantially increase) than an older household. This cannot be captured with a fixed income garnishment (Hatchondo et al., 2011) or an exogenous probability of returning to the mortgage market (Arslan et al., 2015).

Thirdly, in my model, mobility and defaulting are both endogenous so I can investigate the potential impact of geographic mobility on the decision to default. As I will show later, mobility is one of the trigger factors for defaulting. In fact, young households

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1 The QM definition requires loans to meet other characteristics (maximum loan horizon of 30 years; regular periodic payments that are substantially equal, no negative-amortization, interest-only, or balloon features; total points and fees should not exceed 3% of the total loan amount).

2 This is consistent with key features of Chapter 11 of the U.S. bankruptcy code.

3 Livshits et al. (2007) refer to this as the “Fresh Start” system, as opposed to the “No Fresh Start” system, where consumer bankruptcy restructures the consumer’s debt payments.
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