Journal of Monetary Economics 56 (2009) 700–720

Contents lists available at ScienceDirect

Journal of Monetary Economics

journal homepage: www.elsevier.com/locate/jme

Financial regulation and securitization: Evidence from subprime loans ☆

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A R T I C L E I N F O

Article history:
Received 19 February 2009
Received in revised form
16 April 2009
Accepted 24 April 2009
Available online 12 May 2009

JEL classification:
G21

Keywords:
Securitization
Screening
Incentives
Subprime
Defaults
Mortgages
Disintermediation
Subprime crisis
Regulation

A B S T R A C T

We examine the consequences of existing regulations on the quality of mortgage loans originations in the originate-to-distribute (OTD) market. The information asymmetries in the OTD market can lead to moral hazard problems on the part of lenders. We find, using a plausibly exogenous source of variation in the ease of securitization, that the quality of loan origination varies inversely with the amount of regulation: more regulated lenders originate loans of worse quality. We interpret this result as a possible evidence that the fragility of lightly regulated originators' capital structure can mitigate moral hazard. In addition, we find that incentives which require mortgage brokers to have 'skin in the game' and stronger risk management departments inside the bank partially alleviate the moral hazard problem in this setting. Finally, having more lenders inside a mortgage pool is associated with higher quality loans, suggesting that sharper relative performance evaluation made possible by more competition among contributing lenders can also mitigate the moral hazard problem to some extent. Overall, our evidence suggests that market forces rather than regulation may have been more effective in mitigating moral hazard in the OTD market. The findings caution against policies that impose stricter lender regulations which fail to align lenders' incentives with the investors of mortgage-backed securities.

1. Introduction

The recent collapse of the financial system has fueled increased calls for tighter and stricter regulations in credit markets. While there exists a general consensus among scholars and policy makers that the current regulatory framework needs to be overhauled, it is not a priori clear what the optimal policy response should be. If anything, historical evidence suggests that the seeds of bad regulation are often sown in times of crises and thus cautions against knee-jerk reactions

☆ Prepared for the Carnegie-Rochester Conference on Public Policy, November 14–15, 2008. We thank John Cochrane, Douglas Diamond, Uday Rajan, Skander Van den Heuvel and the editors (Marvin Goodfriend and Bennett T. McCallum) for helpful comments and discussions. Seru thanks Initiative on Global Markets at the University of Chicago for financial assistance. The opinions expressed in this paper are those of the authors and not of Sorin Capital Management. We thank Florian Schulz and especially Eleni Simintzi and Shu Zhang for extensive research assistance. All remaining errors are our responsibility.

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0304-3932/$ - see front matter
doi:10.1016/j.jmoneco.2009.04.005

that accord the blame of the current subprime crisis on a lack of regulation of the banking sector.[1] The objective of this paper is to investigate the role of regulation in the context of securitization.

There is now substantial evidence which suggests that securitization, the act of converting illiquid loans into liquid securities, contributed to bad lending by reducing the incentives of lenders to carefully screen borrowers (Dell'Ariccia et al., 2008; Mian and Sufi, 2008; Purnanandam, 2008; Keys et al., 2009). By creating distance between the originators of loans and the investors who bear the final risk of default, securitization weakened lenders' incentives to screen borrowers, exacerbating the potential information asymmetries which lead to problems of moral hazard. The goal of this paper is to examine the effect of different regulations on the moral hazard problem that is associated with the 'originate-to-distribute' (OTD) model. Specifically, we exploit cross-sectional variation in different regulations affecting market participants in the OTD chain to examine how regulations interacted with the securitization process.

Studying the subprime mortgage market provides a rare opportunity to evaluate the impact of financial regulation, as market participants who perform essentially the same tasks (origination and distribution) are differentially regulated. This unique feature of the market allows us to identify the impact of regulatory oversight. We begin our analysis by exploiting the cross-sectional differences in supervision faced by originators of subprime loans in the United States. Deposit-taking institutions (banks/thrifts and their subsidiaries, henceforth called *banks*) undergo rigorous examinations from their regulators: the Office of the Comptroller of the Currency (OCC), Office of Thrift Supervision (OTS), Federal Deposit Insurance Corporation (FDIC) and the Federal Reserve Board. Non-deposit taking institutions (henceforth called *independents*), on the other hand, are supervised relatively lightly. We examine the performance of the same vintages of loans that are securitized by banks relative to those securitized by independents to assess the costs and benefits of allowing some market participants to operate beyond the scope of regulation.

Theoretically, the differential impact of regulation on the two types of lenders is ambiguous as there are several economic forces at play. First, it can be argued that relative to independents, banks may suffer less from securitization-induced moral hazard since they face more supervision and are thus monitored better.[2] On the contrary, one can argue that FDIC insurance for bank deposits could further aggravate the moral hazard problem as banks are less exposed to market discipline as compared to the independents who raise their money through the market as a line of credit or from a warehouse credit facility (Calomoris and Kahn, 1991; Diamond and Dybvig, 1983). In addition, economic forces such as reputation and incentives complicate economic inferences. Our empirical tests examine these alternatives with a view to isolating the effects of regulation on the performance of banks (highly regulated) and independents (less regulated) in the OTD market.

The challenge in making a claim about how regulation interacts with the performance of lenders in the OTD market lies with the endogeneity of the securitization decision by lenders. In any cross-section, securitized loans may differ on both observable and unobservable risk characteristics from loans which are kept on the balance sheet (not securitized). Moreover, documenting a positive correlation between securitization rates and defaults in time-series might be insufficient since macroeconomic trends and policy initiatives, independent of changes in lenders' screening standards, may induce compositional differences in mortgage borrowers and their performance over time.

We overcome these challenges by exploiting a rule of thumb in the lending market which induces exogenous variation in the ease of securitization of a loan compared to a loan with similar characteristics (Keys et al., 2009). In other words, the rule of thumb exogenously makes a loan more liquid as compared to another loan with similar risk characteristics. The empirical strategy then evaluates the performance of a lender's portfolio around the ad-hoc credit threshold as a measure of moral hazard in the OTD market and examines whether performance varies systematically across banks and independents. In addition, we examine how other attributes of regulation and incentives could influence the gap in performance induced by moral hazard around the securitization threshold.

Using a large dataset of securitized subprime loans in the U.S., we empirically confirm that the number of loans securitized varies systematically around the ad-hoc credit cutoff using a sample of more than three million home purchase and refinance securitized loans in the subprime market during the period 2001–2006. In particular, when we examine the number of loans around the ad-hoc threshold, we find that both banks and independents securitize about twice as many loans above the ad-hoc credit cutoff as compared to below it. Interestingly, we find that loans originated by banks tend to default more relative to independents (for results with similar flavor, see Purnanandam, 2008; Loutskina and Strahan, 2008). This is in contrast to the populist view that has brought forth widespread calls for more regulation of independent mortgage institutions (Treasury Blueprint, 2008).

In order to further our understanding of the behavior of banks, we examine banks' financial ratios and find that larger banks, those with more deposits, and those with more liquid assets tend to originate higher quality loans around the threshold. We view this evidence as suggesting that banks with more reputation or bank quality (and hence with higher deposits) and conservative banks (and hence with more liquid assets) originated loans which were more carefully screened in the OTD market.

[1] See Calomiris (2000) for more details.

[2] There may be significantly large welfare costs of capital requirements as well as has been noted in Van den Heuvel (2008). Our analysis is agnostic about the welfare implications of various regulations that we consider.