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Qualified residential mortgages and default risk☆

Ioannis Floros[a], Joshua T. White[b,*]

[a] College of Business, Iowa State University, 2200 Gerdin Busines Building, Ames, IA 50011, USA
[b] Terry College of Business, University of Georgia, 320 Sanford Hall, 310 Herty Drive, Athens, GA 30603, USA

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ABSTRACT

The Dodd–Frank Act tasks regulators with defining a Qualified Residential Mortgage (QRM) as an exemption from risk retention for residential mortgage-backed securities. Congress instructs regulators to consider factors that result in lower levels of historic default in defining a QRM. We analyze non-agency loans and find credit scores and loan-to-value ratios are among the most significant predictors of default, even when controlling for risky loan products and loose underwriting standards. Importantly, credit scores and loan-to-value ratios better tradeoff the benefit of reduced default risk with the cost of limiting access to capital than most factors, yet are absent from the final QRM definition. Our results have important implications for current and future policy on residential mortgage securitization, risk retention, and disclosure.

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1. Introduction

> *"When every mortgage is labeled as 'qualified,' investors should assume none really will be."* —SEC Commissioner Daniel M. Gallagher[1]

During the 2000s, non-agency securitizations changed the mortgage landscape through non-traditional loan products and underwriting practices (Keys et al., 2013). Securitization diverges from the traditional lending model where the same agent originates and services the loan (Demiroglu and James, 2012). The resulting moral hazard from conflicts of interest among these agents decreased the quality of securitized mortgages and played a paramount role in the financial crisis (Keys et al., 2013). For example, non-agency residential mortgage-backed security issuances totaled more than $3 trillion between 2002–2007 alone.[2] Yet, we find more than 40% of a representative sample of these loans default within five years.[3]

In the wake of the financial crisis, Congress passed the Dodd–Frank Wall Street Reform and Consumer Protection Act of 2010 (hereafter, Dodd–Frank), requiring regulators to promulgate rules

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* Corresponding author. Tel.: +1 706 542 4450.
E-mail addresses: ivfloros@iastate.edu (I. Floros), jtwhite@uga.edu (J.T. White).

[1] See "Dissenting Statement of Commissioner Daniel M. Gallagher Concerning Adoption of Rules Implementing the Credit Risk Retention Provisions of the Dodd–Frank Act" available at http://www.sec.gov/News/PublicStmt/Detail/PublicStmt/1370543240793#.VInqD2TF-1I.

[2] See Securities Industry and Financial Markets Association (SIFMA), "US Mortgage-Related Issuance and Outstanding," available at http://www.sifma.org/research/statistics.aspx.

[3] We use serious delinquency as a proxy for default. We define a mortgage loan as seriously delinquent if it has ever been 90 days past due, foreclosed, or real estate owned. Properties owned by a lender are considered to be real estate owned. Properties are termed real estate owned after an unsuccessful foreclosure auction, but lenders can become owners of a property at any time after a loan is delinquent or the property is foreclosed (Pennington-Cross, 2006). We define variables in Appendix A.

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requiring the originator or sponsor of residential mortgage-backed securities to retain 5% of the credit risk.[4] The risk retention requirements are intended to attenuate moral hazard by aligning the incentives between the securitization agents and investors who bear the default risk. By requiring "skin in the game," securitizers may have greater incentives to improve borrower screening and monitoring (Demiroglu and James, 2012).

Importantly, Dodd–Frank exempts a new class of securitized loans, known as a Qualified Residential Mortgage or QRM, from all risk retention. This loophole is based on the notion that soundly underwritten mortgages with high quality borrower characteristics and prudent loan types results in sufficiently low default risk that risk retention is unnecessary. Congress instructs regulators to define a QRM by considering the underwriting and product features that have historically predicted loan default. The purpose of this paper is to examine characteristics associated with default for loans impacted by the QRM definition.

Dodd–Frank provides a list of borrower (e.g., credit score) and loan characteristics (e.g., interest-only payments) for regulators to consider in defining a QRM, but does not prescribe a target default rate. Although regulators have freedom in defining its characteristics, Dodd–Frank requires that the QRM definition is no broader than the definition of a Qualified Mortgage (QM), which focuses on a borrower's ability to repay by placing restrictions on debt-to-income ratios and riskier loan products.[5]

In 2011, regulators proposed a QRM definition based on analysis of historical loan performance using data on *agency* securitized loans (i.e., loans securitized by Government-Sponsored Enterprises such as Fannie Mae or Freddie Mac).[6] We note that Dodd–Frank exempts agency securitized loans from risk retention because the agencies retain 100% risk retention through payment guarantees. We argue that any analysis of the characteristics associated with default for the purposes of defining a QRM should examine historical data from *non-agency* securitizations since agency loans are exempt from risk retention. Moreover, academic literature identifies non-agency securitized loans as being subject to higher levels of moral hazard and performing differently than agency securitizations (e.g., Keys et al., 2012). Thus, our analysis focuses on non-agency securitizations.[7]

After considerable lobbying by housing industry participants, regulators re-proposed the QRM definition in August 2013 with two alternatives: QRM could (a) be identically defined as a QM; or (b) have additional restrictions beyond that of a QM, such as stipulations on credit history, down payments, and loan-to-value ratios.

In October 2014, regulators chose to equate the definition of a QRM with QM, but included a provision that requires a periodic review. In the final rule, regulators admit that aligning QRM with QM ignores useful factors that mitigate default risk (e.g., credit history and loan-to-value ratios) due to concerns of a potentially disparate impact on access to capital for low income, minority, or first-time homebuyers.[8] This justification is based on the premise that weaker QRM standards facilitates greater access to mortgage capital by making it easier to arrange and securitize residential mortgages. However, some regulatory principals expressed concerns that the final QRM definition ignores important factors, such as loan-to-value ratios.[9]

Since regulators must periodically review the QRM definition, we contribute to the policy debate and academic literature by examining the loan and borrower characteristics for each of the proposed QRM definitions. Our primary research questions are as follows:

1. What loan and borrower characteristics are the principal drivers of default in non-agency residential mortgage-backed securities loans?
2. Do the characteristics of a QM efficiently tradeoff default risk and access to capital?
3. For securitized loans requiring risk retention, how long should the risk be retained?

To answer these questions, we analyze a dataset of ex-ante observable loan-level characteristics of non-agency securitized mortgages originated over 1997–2009. Our selection of loan characteristics associated with default is motivated both by factors identified in Dodd–Frank and extant academic literature. We find a number of characteristics are significantly associated with default in non-agency securitized loans. In agreement with the definition of a QM, we find certain product types (e.g., negative amortization, balloon or interest-only payments) and relaxed underwriting standards (e.g., less than full documentation) are associated with greater serious delinquency. However, our results indicate that borrower credit scores and combined loan-to-value ratios are better determinants of default than most factors included in the definition of a QM. These findings are in line with extant literature identifying credit scores (Demyanyk and Van Hemert, 2011) and loan-to-value ratios (Mian and Sufi, 2009) as important determinants of non-agency mortgage default.[10]

Consistent with recent studies (e.g., Demiroglu and James, 2012), we also find evidence that loans with a higher probability of moral hazard significantly underperform those where moral hazard is attenuated. Loans with an affiliation between the originator and servicer are much less likely to default than those where no affiliation is present, and this relationship has among the greatest marginal effect on default in a logistic regression. Similarly, loans with less than full documentation of income and assets, where the role of loan screening of soft information is enhanced (Keys et al., 2012), are associated with greater instances of default. Yet, the explanatory power of credit scores and combined loan-to-value ratios remain statistically and economically large even when controlling for the heightened role of moral hazard and screening of soft information. We show that this relationship is robust to a number of treatments and controls, including a propensity score matching analysis.

To answer our second research question regarding the effectiveness of QM in trading off default risk and access to capital, we first present historical default rates under each of the proposed definitions of QM and QRM. We find more than 44% of our sample of non-agency securitized loans became seriously delinquent. Filtering on loans meeting the definition of QM reduces the historical

[4] Risk retention refers to originators or sponsors maintaining a financial interest in the securitization.

[5] A summary of the proposed and final definitions of QM and QRM is provided in Appendix B.

[6] See Credit Risk Retention, 76 Fed. Reg. 24089 (proposed Apr. 29, 2011), available at https://www.gpo.gov/fdsys/pkg/FR-2011-04-29/pdf/2011-8364.pdf.

[7] Appendix C summarizes differences in the performance of agency and non-agency securitized loans.

[8] See Credit Risk Retention, 79 Fed. Reg. 77688 (adopted Dec. 24, 2014) available at https://www.gpo.gov/fdsys/pkg/FR-2014-12-24/pdf/2014-29256.pdf.

[9] SEC Commissioner Daniel Gallagher notes that, *"residential mortgages with zero percent down and weak loan-to-value ratios that in the past would have been called subprime will now carry the same 'quality' endorsement from the government as solid mortgages with significant down payments and strong loan-to-value ratios."* See "Dissenting Statement of Commissioner Daniel M. Gallagher Concerning Adoption of Rules Implementing the Credit Risk Retention Provisions of the Dodd–Frank Act" available at http://www.sec.gov/News/PublicStmt/Detail/PublicStmt/1370543240793#.VInqD2TF-1I.

[10] The mortgage default predictive power of credit scores and loan-to-value ratios has long been identified in academic literature. von Furstenberg (1969) found loan-to-value ratios are the most important determinant of default over the life of a mortgage. Avery et al. (1996) find credit scores are a strong predictor of loan performance even among non-traditional loan products.

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