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Joint liability lending and credit risk: Evidence from the home equity market



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ABSTRACT

Using a unique dataset of home equity credit contracts, we examine the benefits of joint liability lending. Our results show that the risk of default for joint borrowers with similar risk scores is significantly lower than the risk associated with single borrowers. However, when joint borrowers have divergent risk scores, the risk of default is higher than single borrowers. Our results indicate that the lower risk associated with joint liability is largely dependent upon the similarity of risk characteristics (profiles) of the joint borrowers. Our results suggest that joint liability lending per se does not reduce credit risk.

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1. Introduction

The traditional rationale for joint liability lending is that it lowers credit risk. However, the economic mechanism through which joint liability lending overcomes information asymmetry problems is still an open question. For example, Stiglitz (1990) and Banerjee et al. (1994) argue that joint liability lending can overcome moral hazard problems while Ghatak (1999), Ghatak (2000), and de Aghion and Gollier (2000) argue that joint liability lending can overcome adverse selection problems.

The micro-finance literature is predicated on the premise of joint liability. For example, Ghatak and Guinnane (1999) show that lending to self-selected borrowers under joint liability reduces default. They find that joint liability causes an externality that leads to peer selection of similar risk characteristics. Joint liability also reduces risk through “peer pressure” and “social capital” effects since joint-applicants share locality and other bonds based on kinship and occupation that may help reduce default. As a result, lenders may utilize information that borrowers have about each other to overcome adverse selection and moral hazard problems.

The majority of empirical studies in the micro-finance literature credit joint liability lending with increasing access to credit, lowering transaction costs, and improving repayment rates for the poor in developed and

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developing countries.¹ However, several features of micro-credit make it hard to evaluate the virtue of joint liability lending. Specifically, micro-credit loans are typically originated to very poor households who do not have a choice of joint- or single-liability contracts.²

In this study, we utilize a unique dataset of home equity credit contracts that were originated to borrowers based on single and joint liability to explore in more detail questions surrounding the riskiness of joint liability lending.³ In the U.S., the distinction between single and joint liability in mortgage lending usually arises based on whether the borrower is married. State laws governing property rights associated with married couples prevent the ability of spouses to collateralize loans with real property without the consent of the other spouse. In addition, Fair Lending laws prevent banks from pricing single versus joint borrower risk differently into their loans.⁴ As a result, lenders require that married couples (and non-married couples that co-own the collateral) jointly commit to the credit contract. Because of this requirement, the use of joint liability for married couples should contain no information. In contrast, cases where an unmarried couple apply together may reveal information about their riskiness based on the self-selection of joint liability.

Home equity credit in the United States provides a particularly compelling case for studying joint liability due to the foreclosure practices prevalent in most states. Although home equity loans are collateralized by the borrower's home, the loans are junior or subordinated to the senior, first mortgage. Thus, in the event of borrower default the collateral property is sold during the foreclosure process with the sale proceeds used to repay the debts. As the subordinated mortgagee, the home equity lender only recovers when the cash proceeds from the foreclosure sale are sufficient to repay the senior, first mortgage in full. However, foreclosure sale does not release the borrower's liability with respect to the mortgage debts. If the lender suffers a loss after the collateral is sold at foreclosure, then the lender may convert the debt to a personal, unsecured liability and continue to pursue collection for the remaining unpaid balance.⁵ As a result, home equity loans often have features similar to unsecured personal liabilities in

the event that borrowers actually default on their mortgage loans.

Thus, using home equity credit data we can explore several interesting questions regarding borrower risk. First, we consider whether single borrowers are riskier than joint borrowers. As discussed above, empirical evidence from the development literature indicates that joint liability borrowers are less risky than single liability borrowers. At first, our analysis appears to confirm this finding by demonstrating that jointly liable borrowers have lower default risk than single liability borrowers.

However, upon further analysis we find that the lower risk associated with joint liability is dependent upon the similarity of credit scores for the borrowers. Thus, we examine the risk associated with joint borrowers using differences in credit scores to show that joint liability does not necessarily imply lower risk than single liability. Our results indicate that when joint borrowers have divergent credit scores, the risk of default is higher than the risk associated with single borrowers.

Overall, our results suggest that joint liability does reduce credit risk although we cannot be definitive about the mechanism – adverse selection versus moral hazard. However, we conjecture that since state laws prohibit married borrowers from collateralizing credit without spousal approval, it is less likely that the joint liability associated with married borrowers eliminates adverse selection. However, our second finding that joint borrowers with divergent risk tend to be riskier suggests that joint liability only eliminates moral hazard in cases when the risk characteristics of both the borrowers are similar. In fact, our results suggest that joint borrowers with differing risk might even create moral hazard risk.

Our paper is organized as follows. The next section discusses the data. [Section 3](#) discusses the impact of joint liability on the probability of credit applications being accepted. [Section 4](#) then outlines the empirical method and results testing the impact of joint liability on default. Finally, [Section 5](#) provides concluding remarks.

2. Data and initial analysis

We employ a data set of home equity credit contracts (home equity lines-of-credit and home equity loans) originated by a large financial institution from owner-occupants. This administrative dataset is described more fully in [Agarwal et al. \(2011\)](#), who studied the lender's use of soft information in the underwriting process.⁶ However, since our focus is on the nature of joint liability and not the lender's underwriting process, the data in this study differs slightly from those employed in [Agarwal et al. \(2011\)](#). For example, the dataset in this study explicitly includes joint liability accounts and different data screens for incomplete information. As a result, our dataset contains 181,100 applications for home equity loans and home

¹ See [Ghatak and Guinnane \(1999\)](#); [de Aghion and Morduch \(2000\)](#); [Van Tassel \(1999\)](#); [Rai and Sjostrom \(2004\)](#); [Madajewicz \(2011\)](#); [de Aghion and Morduch \(2005\)](#); and [Gine and Karlan \(2014\)](#). Also see [Morduch \(1999\)](#) for a review of the micro-finance literature.

² See [Gine and Karlan \(2014\)](#).

³ Thus, this study is part of a growing literature in economics and finance that is utilizing home equity contracts to study a variety of issues involving borrower and lender relationships (e.g. [Agarwal et al., 2006b](#), [Agarwal et al., 2011](#), and [Agarwal et al., 2006a](#)).

⁴ Although it is possible that changes of underwriting standards by lenders might increase or decrease default rates from time to time. But, the difference in individual versus joint borrower risk is always present because it is not eliminated by changes in underwriting standards.

⁵ See [Aalberts \(2015\)](#) for a discussion of the foreclosure process, lien priority, and the ability of lenders to convert mortgage loans into unsecured personal debt after foreclosure. Although several states limit the ability of lenders to pursue the borrower for losses after the foreclosure sale (these provisions are called anti-deficiency judgments), second mortgages or home equity credits are not subject to these provisions and thus the home equity loan can be converted to an unsecured, personal debt.

⁶ [Agarwal et al. \(2011\)](#) note that during the sample period, the financial institution that provided the data was ranked among the top-five commercial banks and savings institutions by the FDIC and had operations in the New England, Mid-Atlantic, and Florida regions.

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