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Journal of Financial Intermediation 15 (2006) 444–469
Journal of Financial Intermediation
www.elsevier.com/locate/jfi

An empirical analysis of home equity loan and line performance ☆

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Received 10 March 2004

Available online 9 February 2006

Abstract

Given the growth in home equity lending during the 1990s, it is imperative that lenders and regulators understand the risks associated with this segment of the residential mortgage market. Using a unique panel data set of over 135,000 homeowners with second mortgages, our analysis indicates that significant differences exist in the prepayment and default probabilities of home equity loans and lines, providing insights into bank minimum capital requirements. We find that households with equity loans are relatively more sensitive to changes in interest rates. By contrast, households with equity lines are more sensitive to appreciation in property value.

JEL classification: D100; E210; G210

Keywords: Home equity loans and lines; Prepayment; Capital regulations

☆ The views expressed in this research are those of the authors and do not represent the policies or positions of the Office of the Comptroller of the Currency, of any offices, agencies, or instrumentalities of the Unites States Government, or of the Bank of America.

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1042-9573/$ – see front matter
doi:10.1016/j.jfi.2005.03.002

1. Introduction

During the 1990s home equity lending in the form of home equity loans and home equity lines of credit increased significantly. According to Canner et al. (1998), commercial banks, savings institutions and credit unions held over $131 billion in home equity lines and another $129 billion in home equity loans at the end of 1997. Furthermore, they report that these figures are about 60 percent above their 1993 levels. More recently, evidence from the Survey of Consumer Finances suggests that the home equity lending market increased over 26 percent between 1998 and 2001 to $329 billion.[1] As a result, home equity credit now accounts for a sizeable segment of the consumer lending market. However, relatively little is known about the risk characteristics of these loans.

Standard mortgage option pricing models recognize that default risk increases as the mortgage amount increases relative to the collateral value (loan-to-value). Consistent with the positive relation between default risk and loan-to-value identified by option pricing models, home equity credit is usually classified as junior debt, having a lower priority claim on the underlying collateral relative to traditional first mortgage debt. As a result, default experiences may differ across portfolios of second and first mortgages.

In addition, traditional models of borrower choice of mortgage terms suggest that lenders offer various mortgage contracts as a mechanism for separating heterogeneous borrowers.[2] For example, Brueckner (1994) presents a model recognizing that lenders can utilize mortgage points to effectively induce borrowers to self-select mortgage contacts based on unobserved heterogeneity with respect to mobility. The implications of Brueckner's analysis suggest that unobserved differences could also exist among borrowers who choose to originate second mortgages versus those with only first mortgages. For example, borrowers wishing to tap current home equity, yet anticipate short mortgage tenure, may find the combination of low origination costs and higher contract interest rates associated with second mortgages more appealing than the higher origination costs and lower contract interest rates available on first mortgages. Furthermore, Campbell and Cocco's (2003) analysis of optimal first mortgage choice implies that borrower choice between second mortgage products (variable-rate credit lines versus fixed-rate loans) may also reveal unobserved heterogeneity in borrower risk profiles. As a result, prepayment and default performance across first and second mortgage products may differ.

While traditional loan performance models focus on primary mortgages, few studies have looked at the performance of home equity credit. With the exception of two recent empirical studies of home equity loans (Lai and Yang, 2003) and home equity (or credit) lines (Agarwal et al., 2005), little is known about why homeowners prepay or default on their second mortgages and no formal comparison of home equity line and home equity loan performance exists. Thus, the question this paper addresses is: Are there any system-

[1] Jim Follain at the Board of Governors of the Federal Reserve System provided the estimates of the 1998 and 2001 home equity lending market based on the 1998 and 2001 Survey of Consumer Finances.

[2] See Brueckner (1994), Posey and Yavas (2001), Saaadu and Sirmans (1995), Follain (1990), and Brueckner and Follain (1988), among many others, for theoretical and empirical models showing how borrower mortgage choice can be used as a screening mechanism for unobserved heterogeneity.