

Availability of Mortgage Loans in Volatile Real Estate Markets

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This paper presents a default model for mortgages on single-family houses implying a higher probability of negative equity and thus default in real estate markets with high price volatility. Mortgage lenders compensate for the increased default probability in volatile markets by demanding higher downpayments or increased creditworthiness of loan applicants, thus making mortgage loans more difficult to obtain. An empirical analysis finds greatly varying price volatility in single-family real estate markets in a sample of 42 cities. Consistent with the implications of the model, the empirical analysis finds that the fraction of low-downpayment loans declines in volatile markets. © 2000 Academic Press

1. INTRODUCTION

The comparison of price developments in regional real estate markets reveals their marked differences from each other. Some markets, such as New England and California, experienced dramatic price fluctuations over the past few years. Other markets, mainly those located in the Midwest, exhibited a comparatively smooth price development. Assuming that past price volatility in a market is an indicator of future price volatility, this paper analyzes how these differences in price development affect business practices of financial institutions accepting credit risk of home mortgage loans. It is found that financial institutions operate more cautiously in markets with a history of volatile prices, and access to loans is curtailed.

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A result of the model presented in this paper is that under conditions of high price volatility profit maximizing mortgage lenders are more likely to reject applications for low-downpayment loans. In anticipation of this increased rejection probability, loan applicants make efforts to increase the size of their downpayments. For both reasons, average downpayment sizes increase in volatile markets. As lack of sufficient funds for the downpayment is often the biggest obstacle in gaining access to mortgage loans, a number of loan applicants who can obtain loans in stable real estate markets are credit constrained in volatile markets. Even though the model is written with primary mortgage market lenders in mind, its results apply to other profit maximizing financial institutions bearing mortgage default risk as well. In particular, the model results are relevant for the private mortgage insurance industry, which assumes credit risk of low-downpayment loans, and the government sponsored enterprises (GSEs) Fannie Mae and Freddie Mac, which purchase and accept the credit risk of a large fraction of the loans originating in the primary market.

The paper presents empirical evidence supporting the model predictions. It is found that the volatility of real estate price varies greatly in a sample of 42 cities, making it plausible that mortgage lenders adjust their lending standards in response. Among loans sold on the secondary mortgage market, the fraction of loans with low downpayments declines in cities with highly volatile markets, as implied by the model.

The model rests on the assumption that perceived default probabilities of mortgage loans are the primary factor determining availability of loans. Negative equity, which occurs when the house price falls below the present value of the mortgage, is assumed to be a necessary precondition for default. In markets with high house price volatility, the probability of negative equity increases, and causes mortgage lenders to adopt more restrictive lending practices. The assumptions made here are that mortgage lenders observe local real estate markets, forecast house prices based on past behavior of local house prices, interpret past price volatility in local markets as a predictor of future price volatility, and that lenders adjust their lending practices in response.

I argue that the burden of reduced mortgage lending in volatile markets is not distributed evenly; applicants for low-downpayment mortgage loans are much more restricted than applicants for high-downpayment loans. The reason for this asymmetry is that price volatility increases the probability of negative equity in low-downpayment loans significantly. For high-downpayment loans the probability of negative equity is low, even if price volatility is comparatively high. Mortgage lenders often compensate for higher price volatility by increasing downpayment requirements, to reduce the probability of negative equity. The necessity to make downpayments is a major impediment restricting access to mortgage loans. Many households

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