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The Effectiveness of Restrictions of Mortgage Equity Withdrawal in Curtailing Default: The Case of Texas

As an economist who has studied the causes of the recent mortgage default and foreclosure crisis, I am often asked how to design policies that will minimize the likelihood of another crisis. My typical response to such a question is that one of the most effective ways of lowering mortgage defaults would be to limit borrower leverage by either increasing down payment requirements at the time of purchase or limiting home equity withdrawal subsequent to purchase.

The reason behind my belief is twofold. First, economic theory tells us that being in a situation of negative equity (where the remaining balance of the mortgage is greater than the market value of the property) is a necessary condition for default and foreclosure. Homeowners with positive equity will almost always have a financial incentive to sell their homes instead of suffering through the foreclosure process, while borrowers who are "under water" have a difficult time refinancing or selling (since they would need to have enough cash at closing to cover the difference between the outstanding balance of the mortgage and the sale price/appraisal of the house) and have less of a financial incentive to continue paying the mortgage. Second, numerous empirical studies in the literature have confirmed the theory by documenting a strong positive correlation between the extent of negative equity and the propensity to default on one's mortgage.

New evidence on preventing defaults

An important new [paper](#) by Anil Kumar, an economist at the Federal Reserve Bank of Dallas, provides new evidence that shows just how effective restricting leverage can be in preventing mortgage defaults. His paper confirms many of the findings in previous studies that have shown a positive relationship between negative equity and default. However, it goes a step further by using plausibly random variation in home equity positions created by a government policy that placed explicit restrictions on home equity withdrawal.

Kumar's paper is a significant contribution to the literature because it seems to overcome a serious identification issue that has plagued most empirical studies on the topic. The major challenge is that a homeowner can partially control his or her equity position through decisions about initial down payments on purchase mortgages and decisions about cash-out refinancing and home equity loans or lines of credit subsequent to purchase. As a result, it's unclear whether homeowners with more negative equity are more likely to default because of their worse equity positions or because of other reasons (unobserved by the researcher) that happen to be correlated with the decision to put less money down at purchase or to extract more equity over time.

Both theory and empirical evidence tell us that more impatient individuals tend to borrow more and are more likely to default on their debts. Thus, it might simply be the case that more impatient borrowers who are less likely to repay any type of debt choose to put less money down and extract more equity over time, creating the observed correlation between negative equity and the propensity to default. To put it in the language of econometrics, there are both selection and treatment effects that could be driving the correlation that we see in the data, and the policy implications of restricting borrower leverage are likely very different depending on which cause is more important.

Do home equity restrictions cause lower default rate?

The paper focuses on a policy enacted in the state of Texas that placed severe restrictions on the extent of home equity withdrawal. The Texas constitution, enacted in 1876, actually prohibited home equity withdrawal. The prohibition was eventually lifted in 1997 and the restrictions were further relaxed in 2003, but even in the post-2003 period, Texas law placed serious limits on equity withdrawal, which remain in effect today.¹ Subsequent to purchase, a borrower cannot take out more than 50 percent of the appraised value of the home, nor exceed 80 percent of total loan-to-value (LTV). For example, if a borrower owned a home worth \$200,000 and had an outstanding mortgage balance of \$140,000, the borrower would be allowed to take out only \$20,000 in a cash-out refinance. It is important to note that this LTV restriction does not bind at the time of purchase, so a homebuyer in Texas could take out a zero-down-payment loan, and thus begin the homeownership tenure with an LTV ratio of 100 percent (we will come back to this issue later).

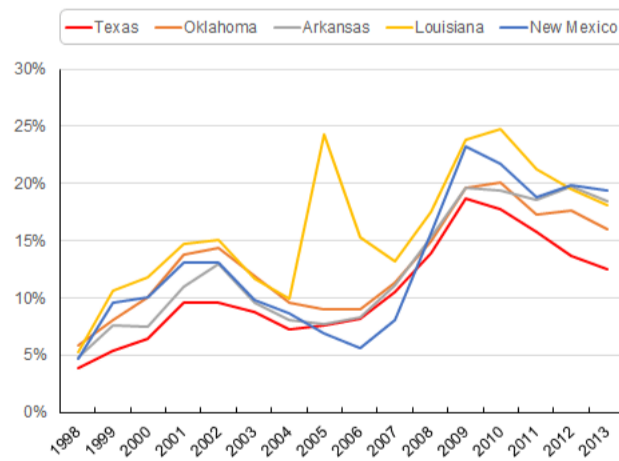
Here's a nice quote in the April 4, 2010, issue of the [Washington Post](#) crediting the cash-out restriction for Texas weathering the foreclosure crisis better than many areas of the country.

But there is a broader secret to Texas's success, and Washington reformers ought to be paying very close attention. If there's one thing that Congress can do to help protect borrowers from the worst lending excesses that fueled the mortgage and financial crises, it's to follow the Lone Star State's lead and put the brakes on "cash-out" refinancing and home-equity lending.

At first glance, the data suggest that such a sentiment may be correct. In the figure below, we display subprime mortgage serious delinquency rates (defined as loans that are at least 90 days delinquent) for Texas and its neighbors (Arkansas, Louisiana, New Mexico, and Oklahoma). We focus on the subprime segment of the market because these are the borrowers who are more likely to be credit-constrained and thus more likely to extract home equity at any given time. It is apparent from the figure that Texas had the lowest subprime mortgage delinquency rates over most of the sample period. While the paper uses a slightly different data set, a similar pattern holds (see Figure 1 in the paper). The figure is certainly compelling and suggests that the home equity withdrawal restrictions in Texas had an important effect on default behavior, but a simple comparison of aggregate default rates across states really doesn't tell us whether the policy had a causal impact on behavior. There could be other differences between Texas and its neighboring states that are driving the differences in default rates. For example, house price volatility over the course of the boom and bust was significantly lower in Texas compared to the rest of the country, which could also explain the differences in default rates that we see in the figure.

The paper uses a relatively sophisticated econometric technique called "regression discontinuity" to try to isolate the causal impact of the Texas policy on mortgage default rates. We won't get into the gory details of the methodology in this post, so for anyone who wants more details, this [paper](#) provides a nice general overview of the technique. Essentially, the regression discontinuity approach implemented in the paper compares default rates over the 1999–2011 period in Texas counties and non-Texas counties close to the Texas borders with Louisiana, New Mexico, Arkansas, and Oklahoma while controlling for potential (nonlinear) trends in default rates that occur as a function of distance on each side of the Texas border. The paper also controls for other differences across counties that are likely correlated with mortgage default rates (such as average house price appreciation, average credit score, and more). The idea is to precisely identify a discontinuity in default rates at the Texas border caused by the restrictions on home equity withdrawal in Texas. This strikes us as a pretty convincing identification strategy, especially in light of the fact that information on actual home equity withdrawal is not available in the data set used in the paper.

Subprime Mortgage Delinquency Rates



Source: Mortgage Bankers Association

The estimation results of the regression discontinuity specification show that the equity restriction policy in Texas lowered overall mortgage default rates over the 13-year period by 0.4 to 1.8 percentage points depending on assumptions about sample restrictions (including counties within 25, 50, 75, or 100 miles of the border) and functional form assumptions for the "control function" (that is, whether distance to the border is assumed to be a linear, quadratic, or cubic polynomial). At first glance, this may not seem like a large effect, but keep in mind that the average mortgage default rate over the entire sample period was only slightly above 3 percentage points in Texas and 4 percentage points in the neighboring states. The paper also restricts the sample to subprime mortgages only and finds significantly larger effects (2 to 4 percentage points), which makes sense. We expect subprime mortgage borrowers to be affected more by the equity restriction since they are more likely to withdraw home equity.² The paper implements a battery of robustness checks to make sure that the results aren't overly sensitive to functional form assumptions and adds controls for other types of state-level policy differences. Based on the results of those tests, the findings appear to be quite stable.

But is it a good policy?

So the paper appears to confirm what previous research on the relationship between equity and mortgage default has found, although it uses methods that aren't quite as clean as the regression discontinuity approach employed in this analysis. However, it doesn't mean that such a law change is necessarily good policy. While it seems to be effective in reducing defaults, it may also have some real costs. The most obvious one is the decrease in the volume of low-cost secured credit that many

borrowers used to improve their circumstances during the housing boom. An unintended consequence of the policy might have been to push financially distressed households into higher-cost credit markets like credit cards or payday loans. A second drawback of the policy may have been that it increased homeowner leverage at the time of purchase. As there were no restrictions on LTV ratios at the time of purchase, many homebuyers may have decided to make lower down payments, knowing that their access to equity would be restricted in the future. It's also possible that this may have resulted in a larger volume of subprime mortgage lending in Texas. Households with relatively high credit scores who could have obtained a prime mortgage with significant down payments (say, 20 percent), may have turned to the subprime segment of the market, where they could obtain loans with low down payments but with much more onerous contract terms.

While it's not clear whether the actual Texas policy of restricting home equity extraction is welfare-improving, it might seem from the research that restricting borrower leverage is an effective way to reduce mortgage default rates. But limiting borrower leverage is very unpopular. In fact, it probably isn't too much of an exaggeration to say that the vast majority of market participants are adamantly opposed to such policies. After all, it is perhaps the only policy upon which both the Center for Responsible Lending (CRL) and the Mortgage Bankers Association (MBA) share the same negative view.³ Thus, while such policies have been adopted in other countries, don't expect to see them adopted in the United States any time soon.⁴ To the contrary, policy is more likely to go in the opposite direction as evidenced by the Federal Housing Finance Agency's announcement to relax down payment requirements for Fannie Mae and Freddie Mac.

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¹ Before 1998, both home equity lending (loans and lines of credit) and cash-out refinancing were explicitly prohibited in Texas. A 1997 constitutional amendment relaxed this ban by allowing for closed-end home equity loans and cash-out refinancing as long as the combined LTV ratio did not exceed 80 percent of the appraised value (among a few other limitations that are discussed in the paper). In 2003, another constitutional amendment passed that further allowed home equity lines of credit for up to 50 percent of the property's appraised value, although still subject to a cap on the combined LTV ratio of 80 percent.

² The effects are actually smaller for the subprime sample when compared to the average default rate over the entire sample period, since the average rate is significantly higher in the subprime segment of the market (10 percent subprime default rate compared to the 3 percent overall default rate in Texas).

³ See [the CRL's view](#) of increased down payment requirements and [the MBA's perspective](#).

⁴ In the post-crisis period, Canada, Finland, Israel, New Zealand, and Norway have all placed restrictions on borrower leverage. For an overview, see [Rogers \(2014\)](#).

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