

## MORTGAGE MARKET SENSITIVITY TO BANKRUPTCY MODIFICATION

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### ABSTRACT

*Bankruptcy has traditionally been one of the primary mechanisms used for sorting out consumer financial distress. The bankruptcy system, however, has been unable to help resolve the current home foreclosure crisis because of the special protection given to most mortgages in Chapter 13. Unlike virtually all other types of debt, a debtor cannot modify the terms of a mortgage in bankruptcy. This means that if a debtor wishes to keep her house, she must pay the mortgage according to its original terms down to the last penny, even if the debtor has negative equity in the house. Accordingly, many debtors who find themselves unable to handle their mortgage payments or are upside-down on the mortgage are losing their homes in foreclosure or simply surrendering their homes to mortgagees.*

*The loss of homes in foreclosure and voluntary arrangements has large economic and social deadweight costs. It also further depresses local housing prices by creating a glut of low-cost inventory, making it hard to stabilize the housing market, which has been the source of the credit problems that have since radiated through the global economy.*

*This paper examines the policy assumption underlying the special protection given to home mortgages in bankruptcy—namely that protecting lenders from losses in bankruptcy will encourage them to lend more and at lower rates, thus encouraging homeownership. This paper tests this policy assumption empirically using both current and historical mortgage market data. Current mortgage origination pricing, private mortgage insurance premiums, and secondary market pricing all indicate that mortgage markets are indifferent to bankruptcy modification risk. Historical mortgage pricing data from the 1980s and 1990s, when a particularly significant type of modification was permitted in almost half of federal judicial districts, also indicates that mortgage markets are largely indifferent to bankruptcy modification risk.*

*We explain the lack of market sensitivity to modification risk by reference to foreclosure sale and consumer bankruptcy data, which suggests that lenders' losses from bankruptcy modification would be extremely limited both in scope and magnitude and often total less than those they would incur in foreclosure. Taken as a whole our analysis of the current and historical data suggests that permitting even unlimited bankruptcy modification of mortgages would have no or little impact on mortgage markets. This creates a strong argument for modifying the Bankruptcy Code to provide an immediate solution to the mortgage crisis that would avoid the expenses of a government bailout of lenders or homeowners.*

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I.	BANKRUPTCY AND MORTGAGES .....	2
II.	THE STRUCTURE OF THE MORTGAGE MARKET .....	6
III.	BANKRUPTCY MODIFICATION RISK AS REFLECTED IN CURRENT MORTGAGE MARKET PRICING.....	7
	<i>A. Mortgage Interest Rate Variation by Property Type.....</i>	7
	<i>B. Private Mortgage Insurance Rate Premiums.....</i>	15
	<i>C. Secondary Market Pricing Variation by Property Type.....</i>	18
IV.	HISTORICAL EVIDENCE ON THE IMPACT OF PERMITTING STRIP-DOWN .....	19
	<i>A. Data and Methodology .....</i>	20
	<i>B. Results.....</i>	21
V.	EXPLAINING MORTGAGE MARKET INDIFFERENCE TO BANKRUPTCY STRIP-DOWN .....	30
	<i>A. The Baseline for Loss Comparison: Foreclosure Sales.....</i>	30
	<i>B. Projecting Lender Losses in Bankruptcy.....</i>	31
	1. <i>Mortgages in the 2001 Consumer Bankruptcy Project Database.....</i>	31
	2. <i>Mortgages in the 2007 Riverside-San Bernardino Database .....</i>	38
VI.	CONCLUSION.....	44
APPENDIX A.	EVALUATING THE MBA’S MODIFICATION IMPACT CLAIM.....	45

## **I. BANKRUPTCY AND MORTGAGES**

We are in the midst of an unprecedented home foreclosure crisis. Over a million home entered foreclosure in 2007 and another one to two million are expected to enter foreclosure in 2008. Nearly a quarter of a million homes were actually sold in foreclosure or otherwise surrendered to lenders in 2007.<sup>1</sup>

Traditionally bankruptcy is one of the major mechanisms for resolving financing distress. Although the process can be a painful one for all parties involved, bankruptcy allows an orderly forum for creditors to sort out their share of losses and return the deleveraged debtor to productivity. Thus for the past hundred and ten years, the bankruptcy has been the social safety net for the middle class. The bankruptcy system, however, is incapable of handling the current home foreclosure crisis because of the special protection it gives to most residential mortgage claims.

There are two main types of consumer bankruptcy, Chapter 7 liquidations and Chapter 13 repayment plans. In Chapter 7, the debtor surrenders all non-exempt assets for distribution to

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<sup>1</sup> E-mail from Daren Blomquist, RealtyTrac, Inc. to author, March 7, 2008 (on file with author).

creditors. In most circumstances this means that a Chapter 7 debtor will not be able to retain her home. In Chapter 13, in contrast, the debtor retains all of her property, but must devote all disposable personal income for the next three or five years to repaying creditors under a court supervised repayment plan and budget. Chapter 13, then is the type of bankruptcy generally suited for a debtor seeking to retain major property, such as a residence.

Debtors in Chapter 13 repayment plan bankruptcies are able to modify almost all types of debts. This means they can change interest rates, amortization, and term of loans.<sup>2</sup> They can also “strip-down” debts secured by collateral to the value of the collateral.<sup>3</sup> Strip-down bifurcates an undersecured<sup>4</sup> lender’s claim into a secured claim for the value of the collateral and a general unsecured claim for the deficiency. In Chapter 13, a creditor is guaranteed to receive the value of a secured claim.<sup>5</sup> In contrast, general unsecured claims are guaranteed only as much as would be paid out in a Chapter 7 liquidation, which is often mere cents on the dollar or nothing at all.<sup>6</sup> Because of compound interest, however, strip-down of  $X\%$  of the principal changes the total secured amount of the loan by a greater amount than a reduction in the interest rate by the same percent. Strip-down is thus the most significant type of modification because it affects the treatment of the principal amount of the creditor’s claim, not just the interest. Given the size and term of most mortgages, a strip-down of  $X\%$  of the principal will have a larger impact on the total return than a modification of  $X\%$  of the interest rate.

Under current law, debtors can modify mortgages on vacation homes, investor properties, and multifamily residences in which the owner occupies a unit.<sup>7</sup> Debtors can also currently

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<sup>2</sup> 11 U.S.C. § 1322(b)(2).

<sup>3</sup> 11 U.S.C. § 506. Strip-down is synonymous with “lien-stripping” and “cramdown”. Because cramdown has a distinct meaning in the context of Chapter 11 reorganizations, we use the term strip-down.

<sup>4</sup> Undersecured lenders and loans are also referred to as “upside-down” or “underwater.” The homeowner in such a situation has “negative equity.”

<sup>5</sup> 11 U.S.C. § 1325(a)(5)(B).

<sup>6</sup> 11 U.S.C. § 1325(a)(4).

<sup>7</sup> *E.g.*, *In re Scarborough*, 461 F.3d 406, 413 (3d Cir. 2006) (permitting strip-down on two unit property in which the debtor resided); *Chase Manhattan Mortg. Corp. v. Thompson (In re Thompson)*, 77 Fed. Appx. 57, 58 (2d Cir. 2003) (permitting strip-down on three unit property in which the debtor resided); *Lomas Mortg., Inc. v. Louis*, 82 F.3d 1 (1st Cir. 1996) (permitting strip-down on three unit property in which the debtor resided); *First Nationwide Mortg. Corp. v. Kinney (In re Kinney)*, 2000 U.S. Dist. LEXIS 22313, 11-13 (D. Conn. 2000) (permitting modification of a two-unit property in which the debtor resided); *Ford Consumer Fin Co. v. Maddaloni (In re Maddaloni)*, 225 B.R. 277, 278 (D. Conn. 1998); *In re Stivender*, 301 B.R. 498, 500 (Bankr. S.D. Ohio 2003) (noting same); *Enewally v. Wash. Mut. Bank. (In re Enewally)*, 276 B.R. 643, 652 (Bankr. C.D. Ca. 2002), *rev'd in part on other grounds*, 2002 U.S. Dist. LEXIS 28113 (C.D. Ca. 2002), *upheld on other grounds*, 368 F.3d 1165, 1172 (9th Cir. 2004) (mortgage on rental property that is not the debtor’s residence may be modified); *In re Kimball*, 247 B.R. 35 (Bankr. W.D. N.Y. 2000); *In re Del Valle*, 186 B.R. 347, 348-50 (Bankr. D. Conn. 1995) (permitting modification of two-unit property, where the debtor lived on one unit and rented the other); *Adebanjo v. Dime Sav. Bank, FSB (In re Adebanjo)*, 165 B.R. 98, 100 (Bankr. D. Conn. 1994) (permitting bifurcation on three-unit property containing the debtor’s residence); *In re McGregor*, 172 B.R. 718, 721 (Bankr. D. Mass. 1994) (permitting modification of a mortgage of a four-unit apartment building in which the debtor resided); *In re Spano*, 161 Bankr. 880, 887 (Bankr. D. Conn. 1993); *Zablonski v. Sears Mortgage Corp. (In re Zablonski)*, 153 Bankr. 604, 606 (Bankr. D. Mass. 1993) (mortgage encumbering a two family home was not protected from modification); *In re McVay*, 150 Bankr. 254, 256-57 (Bankr. D.Or. 1993) (a mortgage encumbering a bed and breakfast, which was the debtor's principal residence but which had "inherent income producing potential," was not protected from modification).

modify wholly unsecured second mortgages on their principal residences,<sup>8</sup> as well as loans secured by yachts, jewelry, household appliances, furniture, and vehicles.<sup>9</sup> The Bankruptcy Code, however, forbids the modification of mortgage loans secured solely by the debtor's principal residence.<sup>10</sup> Such mortgage loans must be paid off according to their original terms, including all fees that have been levied since default, or else the bankruptcy automatic stay will be lifted, permitting the mortgagee to foreclose on the property.<sup>11</sup> As a result, if a debtor's financial distress stems from a home mortgage, bankruptcy is unable to help the debtor retain her home, and foreclosure will occur.

The policy presumption behind bankruptcy's special protection for home mortgage lenders is that it enables them to offer lower interest rates and thus encourages home ownership. As Justice Stevens noted when the Supreme Court addressed the modification provision in 1993:

At first blush it seems somewhat strange that the Bankruptcy Code should provide less protection to an individual's interest in retaining possession of his or her home than to other assets. The anomaly is, however, explained by the legislative history indicating that favorable treatment of residential mortgagees was intended to encourage the flow of capital into the home lending market.<sup>12</sup>

Thus, the policy special treatment of principal home mortgages in bankruptcy is based on an economic assumption of market sensitivity to bankruptcy risk. This paper empirically tests the policy assumption behind the Bankruptcy Code's prohibition on the modification of single-

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<sup>8</sup> Every federal circuit court of appeals to address the issue has held that modification, including strip-down, of wholly unsecured second mortgages on principal residences is permitted. *See, e.g.* *Zimmer v. PSB Lending Corp.* (*In re Zimmer*), 313 F.3d 1220, 1227 (9th Cir. 2002); *Lane v. W. Interstate Bancorp* (*In re Lane*), 280 F.3d 663, 669 (6th Cir. 2002); *Pond v. Farm Specialist Realty* (*In re Pond*), 252 F.3d 122, 126 (2d Cir. 2001); *Tanner v. FirstPlus Fin., Inc.* (*In re Tanner*), 217 F.3d 1357, 1360 (11th Cir. 2000); *Bartee v. Tara Colony Homeowners Ass'n* (*In re Bartee*), 212 F.3d 277, 288 (5th Cir. 2000); *McDonald v. Master Fin., Inc.* (*In re McDonald*), 205 F.3d 606, 608 (3d Cir. 2000); *In re Lam*, 211 B.R. 36 (9th Cir. BAP), appeal dismissed, 192 F.3d 1309 (9th Cir. 1999). These are known as the "Son of Stripdown" cases.

<sup>9</sup> Until 2005, loans secured by all vehicles could be stripped-down. Since October 17, 2005, purchase money loans secured by motor vehicle may not be stripped-down in their first two-and-a-half years, and other purchase money secured loans may not be stripped-down in their first year. 11 U.S.C. § 1325(a)(9).

<sup>10</sup> 11 U.S.C. § 1322(b)(2). Section 1322(b)(2) provides that a plan of reorganization may not "modify the rights of holders of secured claims, other than a claim secured only by a security interest in real property that is the debtor's principal residence..." Since 2005, section 101(13A) of the Bankruptcy Code has defined "debtor's principal residence" as "a residential structure, including incidental property, without regard to whether that structure is attached to real property and...includes an individual condominium or cooperative unit, a mobile or manufactured home or trailer." 11 U.S.C. § 101(13A). State law, however, still determines what is "real property."

Modification of principal residence is even permitted per 11 U.S.C. § 1322(c)(2) in cases where the last payment on the contractual payment schedule is due before the final payment on the plan. *Am. Gen. Fin. Inc., v. Paschen* (*In re Paschen*), 296 F.3d 1203 (11th Cir. 2002); *In re Eubanks*, 219 B.R. 468 (B.A.P. 6th Cir. 1998). *But see In re Witt*, 113 F.3d 508 (4th Cir. 1997).

<sup>11</sup> Bankruptcy allows the homeowner to unwind any acceleration on the loan, however. 11 U.S.C. § 1322(c). Therefore, if the homeowner's problems stem not from a generally unaffordable mortgage payment level, but from a temporary loss of income or unexpected one-time expense, bankruptcy can still provide the homeowner with the breathing space to straighten out his or her finances, deaccelerate, and reinstate the mortgage.

<sup>12</sup> *Nobelman v. Am. Sav. Bank*, 508 U.S. 324 (1993) (Stevens, J., concurring). For discussion of the policy debate *see Grubbs v. Houston First Am. Sav. Assoc.*, 730 F.2d 236, 246 (5th Cir. 1984) (citing Hearings Before the Subcommittee on Improvements of the Judicial Machinery of the Senate Committee on the Judiciary, 95th Cong., 1st Sess. (1977) (pp. 652-53 (Wiese), 703, 707, 714-15 (discouragement of savings and loan associations making home loans), 719-21 (Kulik, National Association of Real Estate Investment Trusts)).

family primary residence mortgages. It finds that both current and historical data indicate that contrary to the policy assumption, mortgage markets are largely indifferent to bankruptcy modification risk.

This finding argues strongly in favor of permitting modification of all mortgage loans in bankruptcy. Permitting modification of all mortgages in bankruptcy would create a low-cost, effective, and immediately available method for resolving much of the current foreclosure crisis without imposing costs on the public fisc or creating a moral hazard for borrowers or lenders. Ideally mortgage servicers would modify the terms of unexpectedly unaffordable mortgages to help homeowners stay in the properties and to mitigate the loss to lenders. This has not been happening voluntarily on a large scale. If all mortgages could be modified in bankruptcy, it would provide homeowners with an option of forcing a workout of the mortgage, subject to the limitations provided by the Bankruptcy Code.

In particular, permitting bankruptcy strip-down on all mortgages could correct the problems created by negative equity. Homeowners with negative equity have reduced incentives to take care of their properties and many are choosing to abandon their homes rather than pay an often non-recourse mortgage that is for more than the house is worth. Over 10% of homeowners currently have negative equity in their homes, and if market declines continue the number could climb to 15%.<sup>13</sup> While Federal Reserve Chairman Ben Bernanke has called for lenders to voluntarily write-down principal on negative equity mortgages, there is little reason to think that this type of voluntary modification is more likely to happen than other, less drastic, voluntarily modifications.

There are other advantages to using the bankruptcy system to resolve the mortgage crisis. It would be immediately available, unlike plans for government agencies to take over defaulted mortgages. And, unlike a bailout in which the federal government would purchase defaulted mortgages, permitting bankruptcy modification of all mortgages would not involve the public fisc. Moreover, the possibility of a bankruptcy modification might encourage mortgage servicers to offer better private workout terms that homeowners are more likely to accept.

Bankruptcy modification would also avoid the moral hazard for lenders of a bailout; lenders would incur costs for having made poor lending decisions. Likewise, the costs bankruptcy imposes upon homeowners—requirement of living for three or five years on a court-supervised budget in which all disposable income goes to creditors; damaged credit rating; inability to file for bankruptcy for a number of years—should be sufficient to discourage irresponsible borrowing. In short, making bankruptcy a forum for distressed homeowners to restructure their mortgage debts is both the most moderate and the best method for resolving the foreclosure crisis and stabilizing mortgage markets.

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This paper proceeds in six sections. Section II briefly explains the structure and cast of characters in the mortgage market. Section III and IV test the economic assumption behind the Bankruptcy Code's prohibition on single-family primary residence mortgage modification in two ways. Section III examines whether current mortgage market pricing from the origination market, the secondary market, and the private mortgage insurance market reflects the risk of

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<sup>13</sup> J.W. Elphinstone, *Homeowner Equity Is Lowest Since 1945*, AP, March. 6, 2008, at <http://apnews.myway.com/article/20080306/D8V846R06.html>.

modification in bankruptcy that attaches to multifamily properties, vacation homes, and investor properties.

Section IV undertakes a natural experiment on the impact of strip-down, a particular type of modification that was permitted in approximately half of the federal judicial districts prior to the middle of 1993. The variation in the law among districts permits a fixed effects analysis of the impact of permitting strip-down on mortgage credit costs and availability, as well as on its impact on bankruptcy filings. Taken together, the current market pricing and the historical data indicate that mortgage markets are largely indifferent to bankruptcy modification outcomes. The current market data suggests almost complete indifference, whereas the historical data shows some sensitivity, particularly for higher price and higher loan to value (i.e. riskier) borrowers.

Section V addresses why mortgage markets are so indifferent to bankruptcy modification risk. Using data from Chapter 13 bankruptcy filings, it examines the impact of permitting strip-down on mortgage lenders and shows that it is often less than the lenders would lose in foreclosure. Because lenders would generally fare better in bankruptcy than in foreclosure, it is not surprising that they do not price adversely to legal regimes that permit a bankruptcy modification option.

Section VI concludes. An Appendix addresses the claims of the Mortgage Bankers Association regarding the impact of permitting bankruptcy modification legislation.

## **II. THE STRUCTURE OF THE MORTGAGE MARKET**

In order to understand the ways in which mortgage markets might react to bankruptcy modification risk, it is necessary to understand the structure of mortgage markets, which involve a cast of several key players: originators, private mortgage insurers, secondary market securitizers, including government-sponsored entities (GSEs), mortgage pool insurers, mortgage backed security (MBS) investors, and servicers. First, there are the financial institutions that advance (or in mortgage industry parlance “originate”) the mortgage loan to the homeowner, sometimes directly, and sometimes through mortgage brokers. These institutions include commercial banks, credit unions savings and loans, and mortgage banks. If the loan-to-value ratio on the mortgage exceeds 80%, mortgage insurance will generally be required. Usually the mortgage insurance is purchased by the homeowner, with the mortgagee as the payee, but it can also be lender-purchased.

Sometimes originators hold the mortgage loans on their own books, but often (indeed, almost always, in the case of mortgage banks) they sell them into the secondary market. Sometimes this is done through a direct securitization, but often the loans are sold either to a GSE (Fannie Mae or Freddie Mac) or to a private securitization conduit (such as an investment bank). These entities may retain the mortgages in their own portfolios, although they typically undertake what is called a multi-conduit securitization in which they pool loans from many originators and sell them to specially created securitization trusts that pay for the mortgage loans by selling to a government-sponsored entity (Fannie Mae or Freddie Mac) or to a private securitization conduit (such as an investment bank) trust interests, secured by the pooled mortgages, to capital market investors. These trust interests are the MBS.

The trust interests are typically divided into slices or tranches of various risk, based on senior/subordinated status. The price of the various MBS tranches is largely determined by the rating given to them by rating agencies like Moody's, Standard and Poor's, and Fitch's. The

credit ratings of various MBS tranches are often enhanced through various guarantees, such as pool-level stop-loss bond insurance. The originator often keeps a relationship with the mortgages it has sold, however, as it will frequently enter into a pooling and servicing agreement (PSA) with securitization trusts consisting of mortgages it originated. The originator will thus service the loans even though it does not hold them on its books.<sup>14</sup> A homeowners' mortgage may thus be transferred several times during its tenor, even as the servicer remains the same or the servicer may change even if the ultimate economic ownership of the mortgage does not.

### **III. BANKRUPTCY MODIFICATION RISK AS REFLECTED IN CURRENT MORTGAGE MARKET PRICING**

Section 1322(b)(2) of the Bankruptcy Code provides that all a Chapter 13 repayment plan may “modify the rights of holders of secured claims, other than a claim secured only by a security interest in real property that is the debtor’s principal residence...”<sup>15</sup> Section 1322(b)(2) thus prevents modification only of mortgages secured solely by real property that is the debtor’s principal residence. This means that mortgages on second or vacation homes, mortgages on multifamily properties in which the owner occupies a unit, and mortgages on rental or investor properties may currently be modified (including strip-down).<sup>16</sup>

The current variation in legal treatment by property type permits us to examine pricing in the mortgage industry to see if it reflects bankruptcy modification risk. We would expect that if the mortgage market were sensitive to bankruptcy modification, there would be a risk premium for vacation homes, multifamily homes, and investment property. To test this hypothesis, we examined three different pricing measures in mortgage markets: effective mortgage interest rates (APRs), private mortgage insurance rates, and secondary mortgage market pricing from Fannie Mae and Freddie Mac. In each market we examined rate variation by property type in an attempt to isolate the expected risk premium for bankruptcy modification risk on non-single-family owner-occupied properties. Astonishingly, all three measures indicate that mortgage markets are indifferent to bankruptcy modification risk, at least in terms of pricing.<sup>17</sup>

#### ***A. Mortgage Interest Rate Variation by Property Type***

Using on-line rate quote generators we tested current mortgage pricing on six types of properties: owner-occupied single-family principal residences; single-family second homes; owner-occupied two-family residences; owner-occupied three-family residences; owner-occupied four-family residences; and investor properties—to see if it reflected variations in bankruptcy modification risk.<sup>18</sup> We obtained the quotes from four major mortgage lenders: eLoan, IndyMac, JPMorgan Chase, and Wachovia. These lenders were selected because their on-line quote generators did not require disclosure our personal information. The quotes were generated between January 17, 2008 and January 27, 2008.

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<sup>14</sup> Typically securitization originators retain the last-out “equity” tranche of the trust, which allows them to retain any excess spread over the trust’s payout.

<sup>15</sup> 11 U.S.C. § 1322(b)(2).

<sup>16</sup> See *supra* note 7. Section 1322(a) and 1325(5) place limitations on the modification of all mortgages. It is important to note that the protections given mortgage holders depend on owner-occupancy status, so mortgage holders’ protections are dependent upon debtor cooperation, a factor upon which mortgage holders cannot justifiably rely.

<sup>17</sup> It is possible that there is simply less available credit for modifiable properties. We were unable to test this possibility, however.

<sup>18</sup> The reliability of on-line quotes was confirmed in interviews with veteran mortgage brokers.

Using the on-line quote generators, we tested 530 mortgage rate quotes from in eleven states. Our quotes divided into two subsamples. First we took a standardized sampling of 288 quotes in three states: California, Massachusetts, and Pennsylvania. We chose Massachusetts and Pennsylvania because of the clarity of the law in those states, which are located in the jurisdictions of the United States Courts of Appeals for the First and Third Circuits, respectively. There is unambiguous circuit level law in both the First and Third Circuits permitting the strip-down of mortgages on all multi-unit residences.<sup>19</sup> We included California both because it is the largest single state mortgage market and because it has been hit particularly hard by the mortgage crisis.

For this three-state sample we obtained 288 quotes for 30-year fixed-rate, first-lien purchase money mortgages, the most common traditional mortgage product. We tested assuming a loan-to-value (LTV) ratio of 80%, representing a 20% down payment. Half of the quotes obtained were for loan amounts within the GSE conforming limits, and half were for non-conforming “jumbos.” The conforming quotes were for loan amounts based on the average mortgage loan amount in the state. The quotes for the jumbos were for loan amounts slightly higher than the conforming limit for a 3-family residence.<sup>20</sup> For each of the six types of residences we recorded the quoted interest rate, points, and APR for the lowest APR quotation.

For IndyMac and eLoan, we obtained a full set of quotes for each of three different credit scores: 760, 660, and 560, representing prime, Alt-A, and subprime borrowers respectively. For JPMorgan Chase and Wachovia, we were not able to test for specific credit scores and have assumed that the single set of quotes generated are for prime borrowers, based on rate comparisons with IndyMac and eLoan.<sup>21</sup> Accordingly, in each state we tested thirty-six quotes for IndyMac and eLoan and twelve for JPMorgan Chase and Wachovia, for a total of 96 quotes per state and 288 quotes total. Tables 1a, 1b, 1c, 1d provide an illustrative example of the data. They shows the rate quotes generated by IndyMac on January 27, 2008 for mortgages in California within conforming limits at 20% and 10% down (Tables 1a and 1b, respectively), and for jumbos at 20% and 10% down (Tables 1c and 1d, respectively).

As a cross-check on our ability to extrapolate from 30-year fixed-rate, first-lien purchase money mortgage rate quotes in California, Massachusetts, and Pennsylvania, we also tested an additional non-scientific sample of 242 quotes from those three states as well as from eight additional states: Illinois, Florida, Maryland, Michigan, Missouri, Ohio, Nevada, and Texas. In this sample we tested at a variety of credit scores, ranging from 540 to 760, a range of LTV ratios from 90% to 70%, a variety of property values, as well as other mortgage products, such as 15-year fixed mortgages, 2/1 and 5/1 LIBOR ARMs, and interest-only mortgages.

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<sup>19</sup> *In re Scarborough*, 461 F.3d 406, 413 (3d Cir. 2006); *Lomas Mortg., Inc. v. Louis*, 82 F.3d 1 (1st Cir. 1996).

<sup>20</sup> By testing just above the conforming limit for 3-family residences, all of our 4-family residence quotes ended up being for conforming properties because of the higher conforming loan limit for 4-family residences. We tested just above the 3-family limit out of concern that the loan amount necessary for a 4-family jumbo might be so large as to distort our results for single- and two-family properties. Since there is no difference in legal treatment of three-family and four-family residences, we do not believe that the absence of four-family jumbos from our sampling is significant.

<sup>21</sup> JPMorgan Chase permits specification of credit by characterization (excellent, good, fair, etc.), but not by score. We used “excellent” as our assumption.

The samplings produced three general rate quote patterns that did not vary by either state or mortgage product type. First, for all conforming mortgage loans with 20% down payments from eLoan, IndyMac, and Wachovia, there was no difference within each credit score between the quotes offered for single-family primary residences, vacation homes, or any multi-family unit in which one unit is owner occupied. Interest rates, points, and APRs were identical for these property types, despite the variation in bankruptcy modification risk.

Uniformly, however, investor properties had higher interest rates and points. Because investor properties share the same bankruptcy modification risk as vacation homes and multifamily residences, the mortgage rate premium on investor properties cannot be attributed to bankruptcy modification risk.

It is unsurprising that vacation homes have the same rates as single-family principal residences. Vacation homes reputedly have lower default rates because typically only well-heeled buyers purchase them. They do not have tenant risks such as vacancy, non-payment, or damage, and they are typically well-maintained because of the pride of ownership factor.

Multifamily residences in which the owner resides carry the same tenant risks as investor properties. We do not have default rate data on multifamily residences, but owner residency likely reduces default risk and ensures reasonable property maintenance.

Chase rate quotes for conforming 20% down mortgages presented a variation on this pattern. Single-family principal residences, vacation homes, and four-family residences had identical quotes, but two- and three-family residences were priced around 25 basis points higher, and 30-year fixed quotes were unavailable for investor properties.

Significantly, with all four lenders, single-family primary residences, which are not modifiable in bankruptcy, were priced the same as vacation homes and at least one of the multi-family residences, which are modifiable in bankruptcy.

When we reduced the down payment to 10% on conforming mortgages, a slightly different pattern emerged. First, rate quotes were not always available with subprime credit scores (560 and 540). Second, for prime and Alt-A credit scores, there were four tiers of pricing by property type. Single-family principal residences and two-family owner-occupied properties were priced identically. Vacation homes also had the same interest rates and points, but APRs were about 10 basis points higher because of additional private mortgage insurance premiums. Investor properties and three- and four-family owner-occupied residences had significantly higher APRs (around 150 and 250 basis points respectively).

Again, Chase rate quotes were different. At 10% down, rate quotes were still unavailable for investor properties for 30-year fixed mortgages. Rates for vacation home mortgages were actually slightly lower (5 basis points) than for single-family principal residences. Notably, interest rates and points for two-family residences were the same as for single-family principal residences, but APRs were higher, by 38 basis points. We were unable to ascertain the source of the APR variation.

When we tested jumbos, Wachovia followed its price pattern for conforming loans at 80% LTV, and did not differentiate among property types except for investor properties. At 90% LTV, investor property quotes were unavailable, and the interest rate and points were the same for all other property types. The APR, however, was lower for single-family properties at 90%

LTV ratio, though, because of the higher closing costs for the other property types due to items such as higher appraisal fees.

For Chase, jumbo quotes were only available at 80% LTV. For single-family principal residences the quotes were identical to those for two-family residences. Vacation homes were quoted slightly higher, and three- and four-family and investor property quotes were unavailable from Chase for jumbos.

IndyMac and eLoan had a different pattern for jumbos. First, quotes were simply unavailable for subprime credit scores with 10% or 20% down payments, and for some Alt-A products. We were only able to generate quotes when we significantly increased down payments. Second, a three-tier rate spread emerged for prime borrowers depending on property type. Single-family principal residences were priced the lowest. Vacation homes and two-family properties were priced with slightly higher interest rates, but lower points, and APRs (the unit price) that were approximately 8-12 basis points higher.<sup>22</sup> Finally we were unable to obtain rate quotes for jumbo mortgages on three- or four-family properties or investor properties with 20% down or less. As with the subprime and Alt-A mortgages, we were able to get quotes when we decreased the LTV ratio.

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<sup>22</sup> On \$500,000 30-year 6% fixed mortgage, this translates into an additional \$3.00-\$3.59.



Table 1b. IndyMac Rate Quotes on Jan. 27, 2008 (10% Down, Conforming)

	Single Family Primary Residence	2 Family Primary Residence	3 Family Primary Residence	4 Family Primary Residence	Vacation Home or Second Home	Investor or Rental Property
State of Property	CA	CA	CA	CA	CA	CA
Lender	IndyMac	IndyMac	IndyMac	IndyMac	IndyMac	IndyMac
Credit Score	560	560	560	560	560	560
Conforming?	C	C	C	C	C	C
Property Value	\$356,000.00	\$356,000.00	\$356,000.00	\$356,000.00	\$356,000.00	\$356,000.00
Loan Amount	\$320,000.00	\$320,000.00	\$320,000.00	\$320,000.00	\$320,000.00	\$320,000.00
Loan Term	30-Fixed	30-Fixed	30-Fixed	30-Fixed	30-Fixed	30-Fixed
Interest Rate	NA	NA	NA	NA	NA	NA
Points	NA	NA	NA	NA	NA	NA
APR	NA	NA	NA	NA	NA	NA
	Single Family Primary Residence	2 Family Primary Residence	3 Family Primary Residence	4 Family Primary Residence	Vacation Home or Second Home	Investor or Rental Property
State of Property	CA	CA	CA	CA	CA	CA
Lender	IndyMac	IndyMac	IndyMac	IndyMac	IndyMac	IndyMac
Credit Score	660	660	660	660	660	660
Conforming?	C	C	C	C	C	C
Property Value	\$356,000.00	\$356,000.00	\$356,000.00	\$356,000.00	\$356,000.00	\$356,000.00
Loan Amount	\$320,000.00	\$320,000.00	\$320,000.00	\$320,000.00	\$320,000.00	\$320,000.00
Loan Term	30-Fixed	30-Fixed	30-Fixed	30-Fixed	30-Fixed	30-Fixed
Interest Rate	5.750%	5.750%	7.625%	7.625%	5.750%	6.875%
Points	0.868%	0.868%	1.250%	1.250%	0.868%	1.301%
APR	6.227%	6.227%	8.223%	8.223%	6.317%	8.241%
	Single Family Primary Residence	2 Family Primary Residence	3 Family Primary Residence	4 Family Primary Residence	Vacation Home or Second Home	Investor or Rental Property
State of Property	CA	CA	CA	CA	CA	CA
Lender	IndyMac	IndyMac	IndyMac	IndyMac	IndyMac	IndyMac
Credit Score	760	760	760	760	760	760
Conforming?	C	C	C	C	C	C
Property Value	\$356,000.00	\$356,000.00	\$356,000.00	\$356,000.00	\$356,000.00	\$356,000.00
Loan Amount	\$320,000.00	\$320,000.00	\$320,000.00	\$320,000.00	\$320,000.00	\$320,000.00
Loan Term	30-Fixed	30-Fixed	30-Fixed	30-Fixed	30-Fixed	30-Fixed
Interest Rate	5.375%	5.375%	7.500%	7.500%	5.375%	6.750%
Points	1.545%	1.545%	1.250%	1.250%	1.545%	0.745%
APR	5.898%	5.898%	8.386%	8.386%	5.985%	7.532%

Table 1c. IndyMac Rate Quotes on Jan. 27, 2008 (20% Down, Jumbo)

	Single Family Primary Residence	2 Family Primary Residence	3 Family Primary Residence	4 Family Primary Residence	Vacation Home or Second Home	Investor or Rental Property
State of Property	CA	CA	CA	CA	CA	CA
Lender	IndyMac	IndyMac	IndyMac	IndyMac	IndyMac	IndyMac
Credit Score	560	560	560	560	560	560
Conforming?	J	J	J	C	J	J
Property Value	\$812,500.00	\$812,500.00	\$812,500.00	\$812,500.00	\$812,500.00	\$812,500.00
Loan Amount	\$650,000.00	\$650,000.00	\$650,000.00	\$650,000.00	\$650,000.00	\$650,000.00
Loan Term	30-Fixed	30-Fixed	30-Fixed	30-Fixed	30-Fixed	30-Fixed
Interest Rate	NA	NA	NA	7.250%	NA	NA
Points	NA	NA	NA	0.808%	NA	NA
APR	NA	NA	NA	7.383%	NA	NA
	Single Family Primary Residence	2 Family Primary Residence	3 Family Primary Residence	4 Family Primary Residence	Vacation Home or Second Home	Investor or Rental Property
State of Property	CA	CA	CA	CA	CA	CA
Lender	IndyMac	IndyMac	IndyMac	IndyMac	IndyMac	IndyMac
Credit Score	660	660	660	660	660	660
Conforming?	J	J	J	C	J	J
Property Value	\$812,500.00	\$812,500.00	\$812,500.00	\$812,500.00	\$812,500.00	\$812,500.00
Loan Amount	\$650,000.00	\$650,000.00	\$650,000.00	\$650,000.00	\$650,000.00	\$650,000.00
Loan Term	30-Fixed	30-Fixed	30-Fixed	30-Fixed	30-Fixed	30-Fixed
Interest Rate	NA	NA	NA	5.750%	NA	NA
Points	NA	NA	NA	0.818%	NA	NA
APR	NA	NA	NA	5.872%	NA	NA
	Single Family Primary Residence	2 Family Primary Residence	3 Family Primary Residence	4 Family Primary Residence	Vacation Home or Second Home	Investor or Rental Property
State of Property	CA	CA	CA	CA	CA	CA
Lender	IndyMac	IndyMac	IndyMac	IndyMac	IndyMac	IndyMac
Credit Score	760	760	760	760	760	760
Conforming?	J	J	J	C	J	J
Property Value	\$812,500.00	\$812,500.00	\$812,500.00	\$812,500.00	\$812,500.00	\$812,500.00
Loan Amount	\$650,000.00	\$650,000.00	\$650,000.00	\$650,000.00	\$650,000.00	\$650,000.00
Loan Term	30-Fixed	30-Fixed	30-Fixed	30-Fixed	30-Fixed	30-Fixed
Interest Rate	7.000%	7.125%	NA	5.375%	7.125%	NA
Points	1.591%	1.522%	NA	1.495%	1.522%	NA
APR	7.210%	7.330%	NA	5.556%	7.330%	NA

Table 1d. IndyMac Rate Quotes on Jan. 27, 2008 (10% Down, Jumbo)

	Single Family Primary Residence	2 Family Primary Residence	3 Family Primary Residence	4 Family Primary Residence	Vacation Home or Second Home	Investor or Rental Property
State of Property	CA	CA	CA	CA	CA	CA
Lender	IndyMac	IndyMac	IndyMac	IndyMac	IndyMac	IndyMac
Credit Score	560	560	560	560	560	560
Conforming?	J	J	J	C	J	J
Property Value	\$722,223.00	\$722,223.00	\$722,223.00	\$722,223.00	\$722,223.00	\$722,223.00
Loan Amount	\$650,000.00	\$650,000.00	\$650,000.00	\$650,000.00	\$650,000.00	\$650,000.00
Loan Term	30-Fixed	30-Fixed	30-Fixed	30-Fixed	30-Fixed	30-Fixed
Interest Rate	NA	NA	NA	7.500%	NA	NA
Points	NA	NA	NA	0.875%	NA	NA
APR	NA	NA	NA	8.026%	NA	NA
	Single Family Primary Residence	2 Family Primary Residence	3 Family Primary Residence	4 Family Primary Residence	Vacation Home or Second Home	Investor or Rental Property
State of Property	CA	CA	CA	CA	CA	CA
Lender	IndyMac	IndyMac	IndyMac	IndyMac	IndyMac	IndyMac
Credit Score	660	660	660	660	660	660
Conforming?	J	J	J	C	J	J
Property Value	\$722,223.00	\$722,223.00	\$722,223.00	\$722,223.00	\$722,223.00	\$722,223.00
Loan Amount	\$650,000.00	\$650,000.00	\$650,000.00	\$650,000.00	\$650,000.00	\$650,000.00
Loan Term	30-Fixed	30-Fixed	30-Fixed	30-Fixed	30-Fixed	30-Fixed
Interest Rate	NA	NA	NA	7.500%	NA	NA
Points	NA	NA	NA	0.875%	NA	NA
APR	NA	NA	NA	8.026%	NA	NA
	Single Family Primary Residence	2 Family Primary Residence	3 Family Primary Residence	4 Family Primary Residence	Vacation Home or Second Home	Investor or Rental Property
State of Property	CA	CA	CA	CA	CA	CA
Lender	IndyMac	IndyMac	IndyMac	IndyMac	IndyMac	IndyMac
Credit Score	760	760	760	760	760	760
Conforming?	J	J	J	C	J	J
Property Value	\$722,223.00	\$722,223.00	\$722,223.00	\$722,223.00	\$722,223.00	\$722,223.00
Loan Amount	\$650,000.00	\$650,000.00	\$650,000.00	\$650,000.00	\$650,000.00	\$650,000.00
Loan Term	30-Fixed	30-Fixed	30-Fixed	30-Fixed	30-Fixed	30-Fixed
Interest Rate	7.250%	7.500%	NA	7.250%	NA	NA
Points	1.453%	1.346%	NA	1.250%	NA	NA
APR	7.829%	8.077%	NA	8.093%	NA	NA

The major insight from these rate quotes is that current mortgage rates evince a marked indifference to bankruptcy modification risk, at least among conforming loans. Regardless of the LTV ratio, there was no difference among conforming loans between the rates for single-family owner-occupied properties, which cannot currently be modified in bankruptcy, and those for two-family owner-occupied properties, which may currently be modified. This means that the rate differences that emerge at 90% LTV ratios between single and two-family owner occupied residences and other property types are not attributable to bankruptcy modification risk.

For both conforming and jumbo products, the higher interest rates for three- and four-family properties and investor properties are a function of risks other than bankruptcy modification. Mortgages on three- and four-family residences may carry higher prices at low LTV ratios because of higher default rates given the difficulties in managing income-producing properties for amateur landlords and the extremely limited foreclosure sale market for these properties outside of a few urban areas.<sup>23</sup> Likewise, the higher interest rates and points required on investor properties at all LTV ratios are explained by higher default rates on investor properties, the greater likelihood of investor properties being non-recourse, and the more limited secondary market for investor property mortgages. Investor properties have inherently greater default risk in part because an investor has the additional rent or mortgage expense that an owner-occupier does not. Investor properties also carry a variety of tenant risks—vacancy, non-payment, and damage. Because investor properties mortgages are often financed through rental payments, tenant risk adds to the default risk.

GSE conforming mortgages have the same bankruptcy modification risk as jumbos. Therefore, it seems unlikely that the small difference in the APR between single-family and two-family owner-occupied properties for some lenders' jumbo mortgages relate to bankruptcy modification risk. We suspect it is a function of the significantly smaller secondary market for jumbos, particularly for two-family owner-occupied properties.

While there is variation in rate quote patterns among the four lenders surveyed, all four lenders provided identical quotes for single-family owner-occupied properties, which cannot be modified in bankruptcy and certain types of multi-family properties, all of which can be modified in bankruptcy. This indicates that current mortgage pricing variations by property type do not reflect bankruptcy modification risk. It appears that current mortgage rate pricing strongly indicates that mortgage lending markets are indifferent to bankruptcy modification risk, a conclusion confirmed by private mortgage insurance pricing.

### ***B. Private Mortgage Insurance Rate Premiums***

Another way to examine mortgage market sensitivity to bankruptcy modification is through private mortgage insurance premiums. Private mortgage insurance is generally required for all mortgages on which there is less than 20% down payment.<sup>24</sup> The borrower pays the PMI

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<sup>23</sup> Chase's outlier pricing for four-family conforming loans is puzzling in this regard.

<sup>24</sup> Fannie Mae and Freddie Mac, the government sponsored entities that dominate the secondary mortgage market, will not purchase standard mortgages with LTVs of more than 80% without mortgage insurance coverage. Fannie Mae 2007 Selling Guide § V, 101; Freddie Mac, Single-Family Seller/Service Guide, § 27.1; Freddie Mac, Mortgage Insurance Coverage Options Matrix, at <http://www.freddiemac.com/learn/pdfs/uw/flexmi.pdf>. As a result most mortgage originators require some form of mortgage insurance coverage, typically from a private mortgage insurer, in order to access the full secondary market.

premiums, but the lender is the insurance payee. Private mortgage insurers stand in the mortgage lender's shoes and assume all the risks that the mortgage lender bears, with three exceptions; PMI policies typically exclude coverage for bankruptcy modification (including strip-down), fraud, and special hazards, such as earthquakes and floods.<sup>25</sup>

PMI insurers are in the business of pricing for risk, so the slight coverage difference between the risks covered by PMI policies and the risks incurred by mortgage lenders creates a natural experiment for testing the sensitivity of mortgage originators to bankruptcy modification. We can examine the differences in the spread between PMI rates for certain property types and the spread in mortgage interest rates between the same property types. In other words, by subtracting the additional PMI premium on two-, three, or four-family properties, vacation homes, or investor properties relative to single-family owner-occupied properties, from the additional interest rate charged on two-, three, or four-family properties, vacation homes, or relative to single-family owner-occupied properties, we can isolate the amount of the additional interest rate in mortgage origination pricing that covers the PMI exclusions of bankruptcy modification, special hazard, and fraud. To the extent that there is no difference, it indicates that the origination market, which bears the risk of bankruptcy modification, strip-down, and fraud, isn't pricing for these risks.

Table 2 shows major private mortgage insurers current premium adjustments for various property types above the premium for single-family principal residences. The premiums vary from insurer to insurer, but a couple of points are notable. First, the additional PMI premium for investor properties is typically 38 basis points. This is exactly the average additional premium

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Lender PMI coverage requirements are required to terminate when the loan-to-value ratio reaches 78%. 12 U.S.C. §§ 4901(18), 4902(b).

Private mortgage insurers do not appear to be taking the sort of losses they suffered in the savings and loan crisis of the 1980s. Notably, many of the subprime mortgages made in recent years did not include loan-level PMI. Rating agencies and investors did not require this because risk was managed through credit enhancement techniques such as tranching MBS to concentrate losses in the junior tranches, funding loss reserves with excess interest, and pool-level insurance provided by bond insurers. Because of this it is the bond insurers like MBIA and Ambac that insured subprime mortgage pools that have been taking the worst hits.

<sup>25</sup> Andrew Lipton & Shiv Rao, *Valuing Lender-Paid Mortgage Insurance in MBS and ABS Transactions*, Moody's Investor Service Special Report, Feb. 9, 2001, available at <http://www.natlaw.com/seminar/doc34.pdf>, at 5. Professor Mark Scarberry has observed that lenders are uniquely vulnerable because of the private mortgage insurance (PMI) exclusion. Statement of Mark S. Scarberry, Before the Senate Committee on the Judiciary Hearing on "The Looming Foreclosure Crisis: How To Help Families Save Their Homes," December 5, 2007. But some private mortgage insurers do not exclude bankruptcy strip-down from their master policies. See, e.g., Radian Insurance Corp., Master Policy, at [http://www.radian.biz/pdf/master\\_policy.pdf](http://www.radian.biz/pdf/master_policy.pdf), at 16; State of New York's Mortgage Agency's Mortgage Insurance Fund's Master Policy, at <http://nyhomes.org/docs/pmigenc3pol.pdf>, at 28. Thus lack of PMI coverage for strip-down from major private mortgage insurers seems to be attributable to lack of lender demand, as indicated in the lender's own pricing.

Even when there is an exclusion for bankruptcy strip-down, however, the exclusion applies not just to currently non-modifiable mortgages, but to all types of mortgages, and a lender can never be sure that what is an owner-occupied principal residence at the time a mortgage loan is made will be so in the future (and PMI coverage always excludes fraud); it is as easy as moving in a tenant the day before filing for bankruptcy. Thus, lenders have been assuming the risk of strip-down all along and not relying on PMI. Prospectively, though, if strip-down risk grows, it is reasonable to expect markets to adjust, as lenders will demand modification coverage from PM insurers or find equivalent coverage through swap and derivative products.

mortgage originators charge for investor property mortgages above single-family principal residence mortgages.<sup>26</sup>

Second, the additional PMI premium charged for vacation homes is 14 basis points. We do not have national average figures for the additional interest rate premiums for vacation home mortgages. Often there was no premium for vacation homes in our rate quote sampling, but when there was it is for high LTV properties and is around 12-14 basis points.<sup>27</sup> The near perfect fit between additional PMI premiums and additional mortgage interest rates premiums indicates that origination markets are indifferent to bankruptcy modification risk because PMI does *not* cover bankruptcy modification risk, yet is priced identically.

**Table 2. Current Additional Private Mortgage Insurance Premiums Above Single-Family Principal Residence by Property Types in Basis Points<sup>28</sup>**

	2-Family	3-4 Family	Vacation Home	Investor Property
<b>AIG United Guaranty</b>	0	0	14	38
<b>CMG</b>	0	32	14	32
<b>Genworth</b>	0	38	14	38
<b>MGIC</b>	0	0	14	38
<b>Republic Mortg. Ins.</b>	0	38	14	38
<b>Triad Guaranty*</b>	0	0	14-50	38-75

\* The range of rates for vacation homes and investor properties is dependent on credit scores.

Of course, debtors often surrender investor properties and vacation homes in bankruptcy; these properties are not essential to their reorganizations. Therefore, modification risk may not be particularly significant for these types of properties, so we would not expect to see price sensitivity. Debtors are more reluctant to surrender their residences, however. Therefore the data on two, three, and four family residences is of more relevance.

PMI insurers do not distinguish between three and four family residences. Of the six insurers whose rate schedules we were able to obtain, three charge a 38 basis point premium for 3-4 family residences, but three charge no premium. We do not have an explanation for the differences between insurers on 3-4 family rate quotes. Mortgage origination rates for 3-4 family properties, however, are often priced exactly like single family properties, but are

<sup>26</sup> Kittle, *supra* note 59, at 3. See also Table 3.

<sup>27</sup> The explanation for this additional premium is that most second home purchasers put down at least 20% of the purchase price so they are not required to have PMI coverage. Therefore, the additional PMI premium for second homes likely reflects the smaller (and riskier) coverage pool of second home buyers who do not put down at least 20% of the purchase price.

<sup>28</sup> AIG United Guaranty, Rates, at <https://www.ugcorp.com/rates/Monthly.pdf>; CMG Mortgage Insurance Company Nationwide Rates (Feb. 2008), at <http://www.cmgmi.com/ca-19.aspx>. Genworth Financial, Genworth Mortgage Insurance Company, National Rate Plans, Standard Annual Premium, at <http://mortgageinsurance.genworth.com/pdfs/Rates/NationalRates.pdf>; MGIC National Rate Card, January 2008, at [http://www.mgic.com/pdfs/71-6704\\_Natl\\_rates\\_jan08.pdf](http://www.mgic.com/pdfs/71-6704_Natl_rates_jan08.pdf); Republic Mortgage Insurance Company, Premium Rates, March, 2008, at <http://www.rmhc.com/ratesguides/premiumrates/ratecards/Documents/PremiumRates-3.08.pdf>; Triad Guaranty Insurance Company Monthly Rates (Dec. 2007), at [http://www.tgic.com/pdf/TGRC.0116.1207\\_Refundable\\_Monthly.pdf](http://www.tgic.com/pdf/TGRC.0116.1207_Refundable_Monthly.pdf)

sometimes priced significantly higher than 38 basis points. It is hard to infer a bankruptcy modification risk premium in mortgage origination pricing from 3-4 family residence PMI rates.

What is significant, however, is that none of the PMI insurers charged more for policies on two-family residences than for single-family residences. This matches with origination pricing that does not distinguish between single-family and two-family residences despite the different bankruptcy modification risks.

The additional PMI premiums for the types of properties that can currently be modified in bankruptcy are essentially the same as the additional interest rate premiums for these property types. Because PMI coverage excludes bankruptcy modification, it indicates that mortgage lenders, who bear the cost of bankruptcy modification, do not price for the modification risk.<sup>29</sup>

### ***C. Secondary Market Pricing Variation by Property Type***

The indifference of the market to bankruptcy modification risk in mortgage pricing is also apparent from the delivery fees charged by Freddie Mac and Fannie Mae, government-sponsored entities (GSEs) that are the two largest purchasers of home mortgages on the secondary market. Freddie Mac and Fannie Mae charge a delivery fee, essentially a discount rate, on the mortgages they purchase from originators. The discount rate varies by the characteristics of the mortgage product, such as property type, LTV ratio, and the borrower's credit score.

Notably, Freddie and Fannie have additional discount fees for investor properties and some multi-family residences, but not for vacation homes or for certain multi-family residences configurations.<sup>30</sup> The absence of a risk premium on all properties that can currently be modified in bankruptcy indicates that Freddie and Fannie are not pricing for bankruptcy modification risk. This evidence conforms to the pricing in the mortgage origination market. Given that a significant percentage of mortgage originations are sold into a secondary market<sup>31</sup> and that GSEs are the largest players in the secondary market, Freddie and Fannie pricing shapes mortgage origination pricing, so it is not surprising to see parallel pricing indifference. All current observational evidence indicates that the mortgage lending market is indifferent to bankruptcy modification risk.<sup>32</sup>

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<sup>29</sup> Securitized mortgage pools often have pool-level stop loss bond insurance to enhance their credit ratings. The existence of pool-level insurance may weaken the conclusions that can be drawn from PMI pricing. Nevertheless, not all mortgages are securitized and there can also be a pre-securitization exposure period for those that are.

<sup>30</sup> Freddie Mac, *Post-Delivery Fees, Exhibit 19* (Dec. 21, 2007), at <http://www.freddiemac.com/singlefamily/pdf/ex19.pdf>; Fannie Mae, *Loan Level Price Adjustment (LLPA) Matrix* (Dec. 7, 2007), at <https://www.efanniemae.com/sf/refmaterials/llpa/pdf/llpamatrix.pdf>.

<sup>31</sup> It is estimated that 75 percent of outstanding first-lien residential mortgages are held by securitization trusts, and that two-thirds are in GSE MBS. Credit Suisse, *Mortgage Liquidity du Jour: Underestimated No More*, Mar. 12, 2007, at 28. Freddie and Fannie MBS comprise over 44% of residential first-lien mortgage debt outstanding. *Id.*

<sup>32</sup> Likewise, there has been no problem securitizing mortgage debts that are modifiable, such as family farm mortgages, vacation home, multiunit, and investor properties. Indeed, the largest securitization market is in bankruptcy-modifiable, non-mortgage debts, such as credit cards and car loans. See Federal Reserve Statistical Release G.19.

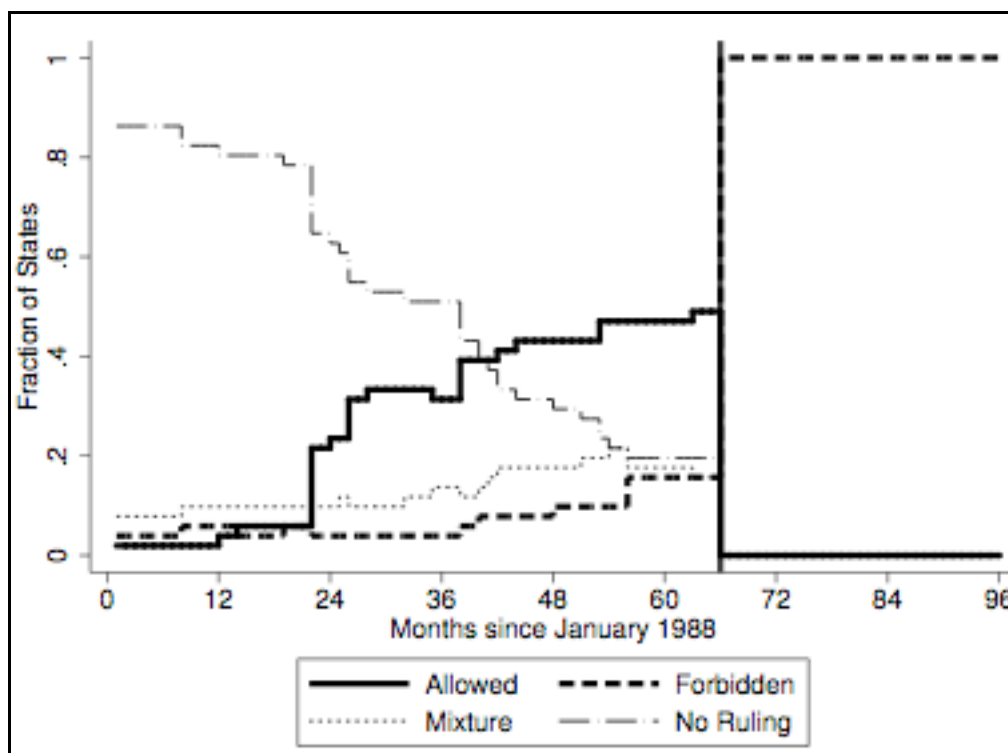
#### IV. HISTORICAL EVIDENCE ON THE IMPACT OF PERMITTING STRIP-DOWN

We are also able to gauge the impact of permitting strip-down using historical data. The historical data allows us to test not only the impact on effective mortgage interest rates (with points and fees amortized), but also its impact on loan origination volumes, loan-to-value ratios, and bankruptcy filings.

After the effective date of the Bankruptcy Code in October, 1979, but prior to the Supreme Court's *Nobelman* decision in 1993,<sup>33</sup> federal judicial districts varied as to whether they permitted "strip-down" of mortgages on debtors' principal residences. This variation between districts in the timing and results of their decisions allowed us to isolate the effects of allowing strip-down on home mortgage interest rates.

Figure 1 shows the fraction of states subject to various categories of strip-down rulings, starting in January 1988. At that point, very few courts had issued published rulings on the principal residence mortgage strip-down issue, so that nearly all states are categorized as "no ruling". Over the next few years, roughly half the states became subject to judicial rulings allowing strip-down, while less than one-fifth were subject to rulings forbidding strip-down. Some states had multiple, conflicting rulings among federal judicial districts.<sup>34</sup> These are labeled "mixture". The *Nobelman* decision, marked by a vertical line, then forbade strip-down nationwide.

**Figure 1. Published Strip-Down Rulings by Percentage of States**



<sup>33</sup> 508 U.S. 324.

<sup>34</sup>

### A. *Data and Methodology*

To quantify the effects of these rulings on the mortgage market, we used data from the Monthly Interest Rate Survey conducted by the Federal Housing Finance Board, which “asks a sample of mortgage lenders to report the terms and conditions on all single-family, fully amortized, purchase-money, nonfarm loans that they close during the last five business days of the month.”<sup>35</sup> We constructed five outcomes based on the set of loans reported within each state and month cell: the 20<sup>th</sup> percentile interest rate, the median interest rate, the 80<sup>th</sup> percentile interest rate, the number of loans reported, and the total dollar value of those loans. Each data point is thus constructed on the state-month level.<sup>36</sup> Because interest rates are a function of risk, loans made at the 20<sup>th</sup> percentile of interest rates are presumably less risky than those made at the 80<sup>th</sup> percentile. Therefore, the three interest rate percentile points are proxies for creditworthy, average, and less creditworthy borrowers.

We used the period 1988-1995, which thus exploits both the lower court rulings with differential timing and the *Nobelman* ruling that impacts all states simultaneously. We regressed the outcomes on state fixed effects, which control for any factors constant within a state over the period studied, and month fixed effects, which control for any factors constant across the country within a given month. This guarantees that our results are driven neither by correlation between strip-down rulings and country-wide factors (*i.e.*, if strip-down rulings tended to occur during recessions) nor by correlation between strip-down rulings and states’ fixed characteristics (*i.e.*, if states allowing strip-down always had unusually high interest rates). In particular, state fixed effects controls for legal variation among states, such as the availability of deficiency judgments and non-judicial foreclosure.

The driving variation is represented by a variable “strip-down,” which takes a value of 0 for each state in a given month subject to a court ruling forbidding strip-down and 1 for each state in a given month subject to a court ruling allowing strip-down. For states in months prior to any court rulings on strip-down, we tested three separate possibilities. First, we omitted such cases from the data as missing, which involves the least potential measurement error. Second, we ran regressions assuming that in states and months without rulings, strip-down was forbidden. Third, we assumed that in such cases, strip-down was allowed.

We believe the first assumption to be the most accurate. We interviewed several long-serving or retired bankruptcy judges around the country, all of whom told us that actual practice

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<sup>35</sup> Federal Housing Finance Board, Monthly Interest Rate Survey, *at* <http://www.fhfb.gov/Default.aspx?Page=8>.

<sup>36</sup> Our interest rate data is state-level, but judicial decisions occur on a district or circuit level, which each state having between one and four federal judicial districts, and multiple districts within each circuit. (We have treated the District of Columbia as equivalent to a state. Our data set does not cover Puerto Rico or other United States territories.) We therefore coded states by the existence of published decisions in each of their judicial districts or a circuit-level decision applicable to all the districts within the state. Accordingly we ended up with states being coded in one of two ways. First, all the districts in the state could have ruled to allow/forbid strip-down by a certain date. If so, we treated that state as permitting/forbidding strip-down as of that date. Alternatively, there could be splits within judicial districts within states, with some districts permitting strip-down, others forbidding it, and others simply not ruling on it. We eliminated states with mixed-rulings from our regressions for the time-periods that they had mixed-rulings. Fortunately many states had all of the districts ruling in the same way on strip-down.

We recognize that there is no such thing as “law of the district,” but the presence of a published opinion in a district, even though not binding on future cases, should affect lender behavior. It is possible that Circuit level decisions have a greater impact on lender behavior than district or bankruptcy court level decisions, but there is no metric by which we could weight results to account for this.

varied considerably among districts in the absence of published opinions. Accordingly, it is not sound to assume any particular practice in the absence of a published opinion. Nevertheless, our most reliable results turn out to be reassuringly robust to the choice of assumption made.

All regressions discussed below include the state and month fixed effects mentioned above, as well as state-month unemployment rates to control for contemporaneous economic conditions. Inclusion of this control has little effect on our point estimates, suggesting that the effect we measure is not due to a correlation with state-level economic conditions. We computed standard heteroskedasticity robust standard errors, and clustered by state to allow for arbitrary correlations in the error term, such as within-state serial correlation that is likely present.

Tables 3-5 show the results from such regressions with different outcome variables and interactions with bankruptcy filing rates. Each table has two panels; the top one relates outcomes to the contemporaneous state of the law, while the bottom panel relates outcomes to the law six months prior. Each of these panels is broken down into three subpanels for our different assumptions about the state of the law in the absence of published rulings.

In each column within each subpanel there are four numbers. The topmost number, the point estimate, is the coefficient of our regression. It represents our best estimate of the actual effect being measured. The second number, listed in parentheses, is the standard error. The standard error, multiplied by approximately two and added and subtracted from the point estimate provides a range—the confidence interval—of two standard deviations from the point estimate in which we can be 95% certain that the true regression coefficient lies.

Some of the standard errors feature one or two asterisks. The asterisks represent whether the confidence interval includes zero. One asterisk means we are 90% certain that the confidence interval does not include zero (marginal statistical significance), while two asterisks means we are 95% certain (statistical significance) that we can rule out the null hypothesis, that is we are 95% certain that zero is not within the range of possible coefficients. When the standard error does not have an asterisk, it means we are less than 90% certain that the confidence interval does not include zero. The third number,  $N$ , is the number of observations upon which we conducted our regression analysis, and the fourth number,  $R^2$ , is the proportion of variability in our data that is explained by our model, with 1.0 being 100%.

## **B. Results**

Table 3 shows the impact of permitting strip-down on loan-to-value ratios. Columns (1)-(3) show the impact on loan-to-value ratios at the 20<sup>th</sup>, 50<sup>th</sup> and 80<sup>th</sup> percentile of interest rates. Under our most conservative assumption, we find that permitting strip-down results in a reduction of loan to value ratios for all mortgages. For loans with the 20% lowest interest rates, there was little effect and without statistical significance. For median interest rate loans, there was a larger effect, but still not distinguishable from zero statistically, but for loans with the 80% highest interest rates, permitting strip-down resulted in a reduction in loan to value ratios by 1.373%, with 95% certainty that we can rule out a zero effect. When we introduced a six-month time lag from ruling dates, we found a reduction of 2.794% with 99% statistical significance.

These results are exactly what one would expect—lenders are less willing to take big risks on the (presumably) riskiest borrowers, who have to pay the highest interest rates. The high level of statistical significance in the Table 3's outcomes indicates that we have measured our driving variation (the strip-down rulings) correctly as they are picking up economic effects in the

data. Accordingly, the results from Table 3 increase our confidence in our other measurements, including regression outcomes that do not have statistical significance, and make it possible to make inferences from the lack of statistical significance.

Table 4a contains the same regression as Table 3, but substitutes interest rates as the outcome variable. The top panel of Table 4a suggests that the effect of allowing strip-down is to raise the median interest rate, regressed in column (2), by 11 basis points, though the effect is only marginally significant and only in one specification. The bottom panel's results are somewhat more precise, suggesting that 6 months after strip-down is allowed, the median interest rate is 15 basis points higher, again with marginal statistical significance. Curiously, all the outcomes in Table 4a, whether statistically significant or not, indicate a larger impact on interest rates for lower interest rate mortgages, that is for the *most* creditworthy borrowers.

Table 4b runs the same regressions, but substitutes mortgage origination numbers and volumes for the outcome variable. Columns (1) and (2) show no consistent or statistically significant pattern, suggesting that strip-down has no obvious effect on the quantities transacted in the mortgage market.

Table 4c collapses the monthly data into annual data and uses annual state-level bankruptcy filing volumes as outcomes. Neither the contemporaneous nor the lagged version of the strip-down variable seems to have any impact on the number of (non-business) bankruptcy filers, the number of (non-business) Chapter 13 filers, nor the proportion of filers who file under Chapter 13. Taken as a whole, Tables 4a, 4b, and 4c suggest that historically allowing strip-down in an unlimited regime has a small (10-15 basis point) impact on interest rates, but no impact on the volume of mortgage transactions nor on the propensity of people to file for bankruptcy.

Table 5a and 5b runs the same regressions as in Tables 3a and 3b, but with an extra term, the interaction between the strip-down variable and the state's proportion of bankruptcy filers filing under Chapter 13 in 1988. The idea here is to test whether strip-down rulings have a bigger impact in states where more people tend to file under Chapter 13. Table 5a suggests that this is in fact true. The coefficient on the interaction term in column (2) of the top panel is positive and significant, implying that if there is a linear regression, then every 10 percentage point rise in the proportion of filers using Chapter 13 leads to a 17 basis point higher impact of allowing strip-down. In future work, we hope to explore this heterogeneity in more detail, as it may provide further insight into the role that strip-down and bankruptcy risks have in determining interest rates.

Table 5c similarly replicates Table 4c, and again shows little evidence that strip-down affects bankruptcy filing rates (if anything, strip-down is associated with lower filing rates, a somewhat counterintuitive result).

Taken together, the historical data and current market pricing data indicate that mortgage markets are largely indifferent to bankruptcy modification outcomes. The current market data suggests almost complete indifference, whereas the historical data shows some sensitivity, particularly for higher price and higher loan to value (i.e. riskier) borrowers. Section III addresses why mortgage markets are so indifferent to bankruptcy modification risk. Section IV examines the political economy of attempts to change the Bankruptcy Code to permit modification of all types of mortgages, and in the process raises questions about why historically mortgage markets appear more sensitive to bankruptcy modification risk than they do today.

Table 3. Effects of Permitting Bankruptcy Strip-Down on Mortgage Loan to Value Ratios

		(1) Loan to Value Ratio (20th Percentile)	(2) Loan to Value Ratio (50th Percentile)	(3) Loan to Value Ratio (80th Percentile)	
<b>Contemporaneous Effect of Rulings</b>		<b>States with No Ruling Omitted</b>			
		Strip-down	-0.208	-0.512	-1.373**
		Standard Error	(0.900)	(0.687)	(0.535)
		N	2690	2690	2690
		R <sup>2</sup>	0.205	0.330	.0293
		<b>Assumption: Strip-Down Forbidden If No Ruling</b>			
		Strip-down	-0.597	0.025	-0.301
		Standard Error	(0.653)	(0.461)	(0.458)
		N	4782	4782	4782
		R <sup>2</sup>	0.166	0.259	0.224
		<b>Assumption: Strip-Down Allowed If No Ruling</b>			
		Strip-down	0.545	0.166	-0.856
		Standard Error	(1.012)	(0.773)	(0.954)
		N	4782	4782	4782
		R <sup>2</sup>	0.165	0.259	0.224
		<b>Six-Month Lagged Effect of Rulings</b>		<b>States with No Ruling Omitted</b>	
Strip-down	-0.828			-0.910	-2.794**
Standard Error	(0.803)			(0.708)	(0.640)
N	2692			2692	2692
R <sup>2</sup>	0.229			0.355	0.289
<b>Assumption: Strip-Down Forbidden If No Ruling</b>					
Strip-down	-0.958*			0.006	-0.014
Standard Error	(0.556)			(0.518)	(0.563)
N	4791			4791	4791
R <sup>2</sup>	0.171			0.261	0.228
<b>Assumption: Strip-Down Allowed If No Ruling</b>					
Strip-down	-0.443			-0.567	-2.130
Standard Error	(0.583)			(0.505)	(1.102)
N	4791			4791	4791
R <sup>2</sup>	0.170			0.261	0.230

Regressions include state and month fixed effects, and state unemployment rates. Robust standard errors are clustered by state (\*p<.10, \*\*<p<.05).

Table 4a. Effects of Permitting Bankruptcy Strip-Down on Mortgage Interest Rates

	(1) Interest Rate (20th Percentile)	(2) Interest Rate (50th Percentile)	(3) Interest Rate (80th Percentile)	
<b>Contemporaneous Effect of Rulings</b>	<b>States with No Ruling Omitted</b>			
	Strip-down	0.205	0.110	0.048
	Standard Error	(0.156)	(0.105)	(0.073)
	N	2690	2690	2690
	R <sup>2</sup>	0.802	0.849	0.924
	<b>Assumption: Strip-Down Forbidden If No Ruling</b>			
	Strip-down	0.119	0.111*	0.046
	Standard Error	(0.094)	(0.062)	(0.048)
	N	4782	4782	4782
	R <sup>2</sup>	0.833	.0875	0.932
	<b>Assumption: Strip-Down Allowed If No Ruling</b>			
	Strip-down	0.045	0.038	0.041
Standard Error	(0.118)	(0.088)	(0.032)	
N	4782	4782	4782	
R <sup>2</sup>	0.832	0.874	0.932	
<b>Six-Month Lagged Effect of Rulings</b>	<b>States with No Ruling Omitted</b>			
	Strip-down	0.270**	0.150*	0.071
	Standard Error	(0.133)	(0.081)	(0.090)
	N	2692	2692	2692
	R <sup>2</sup>	0.781	0.830	0.916
	<b>Assumption: Strip-Down Forbidden If No Ruling</b>			
	Strip-down	0.160*	0.116**	0.071*
	Standard Error	(0.089)	(0.056)	(0.038)
	N	4791	4791	4791
	R <sup>2</sup>	0.842	0.893	0.941
	<b>Assumption: Strip-Down Allowed If No Ruling</b>			
	Strip-down	0.086	0.059	0.040
Standard Error	(0.117)	(0.067)	(0.041)	
N	4791	4791	4791	
R <sup>2</sup>	0.841	0.892	0.941	

Regressions include state and month fixed effects, and state unemployment rates. Robust standard errors are clustered by state (\*p<.10, \*\*<p<.05).

Table 4b. Effects of Permitting Bankruptcy Strip-Down on Mortgage Originations

		(1)	(2)
		Number of Loans	Volume of Loans
<b>Contemporaneous Effect of Rulings</b>	<b>States with No Ruling Omitted</b>		
	Strip-down	0.172	0.158
	Standard Error	(0.153)	(0.165)
	N	2690	2690
	R <sup>2</sup>	0.931	0.932
	<b>Assumption: Strip-Down Forbidden If No Ruling</b>		
	Strip-down	-0.010	-0.015
	Standard Error	(0.071)	(0.072)
	N	4782	4782
	R <sup>2</sup>	0.916	0.918
	<b>Assumption: Strip-Down Allowed If No Ruling</b>		
	Strip-down	0.117	0.140
Standard Error	(0.096)	(0.100)	
N	4782	4782	
R <sup>2</sup>	0.916	0.919	
<b>Six-Month Lagged Effect of Rulings</b>	<b>States with No Ruling Omitted</b>		
	Strip-down	0.057	0.043
	Standard Error	(0.134)	(0.140)
	N	2692	2692
	R <sup>2</sup>	0.931	0.934
	<b>Assumption: Strip-Down Forbidden If No Ruling</b>		
	Strip-down	-0.038	-0.040
	Standard Error	(0.060)	(0.060)
	N	4791	4791
	R <sup>2</sup>	0.916	0.919
	<b>Assumption: Strip-Down Allowed If No Ruling</b>		
	Strip-down	0.062	0.069
Standard Error	(0.138)	(0.139)	
N	4791	4791	
R <sup>2</sup>	0.916	0.919	

Regressions include state and month fixed effects, and state unemployment rates. Robust standard errors are clustered by state (\*p<.10, \*\*<p<.05).

Table 4c. Effects of Permitting Bankruptcy Strip-Down on Bankruptcy Filings

	(1) All Non-Business Bankruptcy Filings	(2) All Non-Business Chapter 13 Bankruptcy Filings	(3) Proportion of Chapter 13 Filings	
<b>Contemporaneous Effect of Rulings</b>	<b>States with No Ruling Omitted</b>			
	Strip-down	0.053	-0.013	-0.013
	Standard Error	(0.057)	(0.129)	(0.022)
	N	252	252	252
	R <sup>2</sup>	0.995	0.991	0.979
	<b>Assumption: Strip-Down Forbidden If No Ruling</b>			
	Strip-down	0.028	0.037	0.002
	Standard Error	(0.034)	(0.065)	(0.008)
	N	408	408	408
	R <sup>2</sup>	0.990	0.983	0.968
	<b>Assumption: Strip-Down Allowed If No Ruling</b>			
	Strip-down	-0.050	-0.076	-0.020
Standard Error	(0.061)	(0.122)	(0.018)	
N	408	408	408	
R <sup>2</sup>	0.990	0.983	0.969	
<b>Six-Month Lagged Effect of Rulings</b>	<b>States with No Ruling Omitted</b>			
	Strip-down	0.044	0.041	-0.008
	Standard Error	(0.040)	(0.106)	(0.015)
	N	234	234	234
	R <sup>2</sup>	0.997	0.992	0.981
	<b>Assumption: Strip-Down Forbidden If No Ruling</b>			
	Strip-down	0.003	0.044	0.004
	Standard Error	(0.039)	(0.066)	(0.007)
	N	408	408	408
	R <sup>2</sup>	0.990	0.983	0.968
	<b>Assumption: Strip-Down Allowed If No Ruling</b>			
	Strip-down	-0.030	0.001	-0.014
Standard Error	(0.065)	(0.133)	(0.015)	
N	408	408	408	
R <sup>2</sup>	0.990	0.983	0.968	

Regressions include state and month fixed effects, and state unemployment rates. Robust standard errors are clustered by state (\*p<.10, \*\*<p<.05).

**Table 5a. Effect of Permitting Bankruptcy Strip-Down on Mortgage Interest Rates (interacted with Chapter 13 proportion)**

	(1)	(2)	(3)	
	Interest Rate	Interest Rate	Interest Rate	
	(20th Percentile)	(50th Percentile)	(80th Percentile)	
<b>States with No Ruling Omitted</b>				
<b>Contemporaneous Effect of Rulings</b>	Strip-down	-0.311	-0.183	-0.083
	Standard Error	(0.235)	(0.150)	(0.092)
	Strip-down * % Ch. 13	0.295**	0.168**	0.075**
	Standard Error	(0.096)	(0.062)	(0.035)
	N	2690	2690	2690
	R <sup>2</sup>	0.808	0.852	0.925
	<b>Assumption: Strip-Down Forbidden If No Ruling</b>			
	Strip-down	-0.215	-0.089	-0.069
	Standard Error	(0.163)	(0.106)	(0.064)
	Strip-down * % Ch. 13	0.192**	0.115**	0.066**
Standard Error	(0.067)	(0.044)	(0.028)	
N	4782	4782	4782	
R <sup>2</sup>	0.835	0.876	0.933	
<b>Assumption: Strip-Down Allowed If No Ruling</b>				
Strip-down	0.039	0.045	0.063	
Standard Error	(0.139)	(0.098)	(0.048)	
Strip-down * % Ch. 13	0.003	-0.004	-0.011	
Standard Error	(0.037)	(0.020)	(0.018)	
N	4782	4782	4782	
R <sup>2</sup>	0.832	0.874	0.932	
<b>States with No Ruling Omitted</b>				
<b>Six-Month Lagged Effect of Rulings</b>	Strip-down	-0.246	-0.110	-0.019
	Standard Error	(0.217)	(0.132)	(0.100)
	Strip-down * % Ch. 13	0.295**	0.149**	0.052*
	Standard Error	(0.087)	(0.059)	(0.030)
	N	2692	2692	2692
	R <sup>2</sup>	0.788	0.833	0.916
	<b>Assumption: Strip-Down Forbidden If No Ruling</b>			
	Strip-down	-0.207	-0.053	0.009
	Standard Error	(0.145)	(0.098)	(0.056)
	Strip-down * % Ch. 13	0.211**	0.097**	0.036*
Standard Error	(0.056)	(0.040)	(0.022)	
N	4791	4791	4791	
R <sup>2</sup>	0.844	0.893	0.941	
<b>Assumption: Strip-Down Allowed If No Ruling</b>				
Strip-down	0.024	0.068	0.080	
Standard Error	(0.145)	(0.081)	(0.065)	
Strip-down * % Ch. 13	0.031	-0.004	-0.020	
Standard Error	(0.038)	(0.019)	(0.021)	
N	4791	4791	4791	
R <sup>2</sup>	0.841	0.892	.0941	

Regressions include state and month fixed effects, and state unemployment rates.

Robust standard errors are clustered by state (\*p<.10, \*\*<p<.05).

**Table 5b. Effect of Permitting Bankruptcy Strip-Down on Mortgage Originations (interacted with Chapter 13 proportion)**

	(1) Number of Loans	(2) Volume of Loans	
<b>Contemporaneous Effect of Rulings</b>	<b>States with No Ruling Omitted</b>		
	Strip-down	0.126	0.118
	Standard Error	(0.246)	(0.252)
	Strip-down * % Ch. 13	0.026	0.022
	Standard Error	(0.116)	(0.112)
	N	2690	2690
	R <sup>2</sup>	0.931	0.932
	<b>Assumption: Strip-Down Forbidden If No Ruling</b>		
	Strip-down	-0.048	-0.050
	Standard Error	(0.121)	(0.117)
	Strip-down * % Ch. 13	0.022	0.020
	Standard Error	(0.055)	(0.051)
	N	4782	4782
	R <sup>2</sup>	0.916	0.918
	<b>Assumption: Strip-Down Allowed If No Ruling</b>		
Strip-down	0.097	0.106	
Standard Error	(0.125)	(0.135)	
Strip-down * % Ch. 13	0.010	0.017	
Standard Error	(0.047)	(0.052)	
N	4782	4782	
R <sup>2</sup>	0.916	0.919	
<b>Six-Month Lagged Effect of Rulings</b>	<b>States with No Ruling Omitted</b>		
	Strip-down	0.139	0.167
	Standard Error	(0.202)	(0.203)
	Strip-down * % Ch. 13	-0.047	-0.071
	Standard Error	(0.101)	(0.099)
	N	2692	2692
	R <sup>2</sup>	0.931	0.934
	<b>Assumption: Strip-Down Forbidden If No Ruling</b>		
	Strip-down	0.018	0.050
	Standard Error	(0.094)	(0.086)
	Strip-down * % Ch. 13	-0.033	-0.051
	Standard Error	(0.042)	(0.039)
	N	4791	4791
	R <sup>2</sup>	0.916	0.919
	<b>Assumption: Strip-Down Allowed If No Ruling</b>		
Strip-down	0.066	0.065	
Standard Error	(0.155)	(0.163)	
Strip-down * % Ch. 13	-0.002	0.002	
Standard Error	(0.041)	(0.046)	
N	4791	4791	
R <sup>2</sup>	0.916	0.919	

Regressions include state and month fixed effects and state unemployment rates.

Robust standard errors are clustered by state (\*p<.10, \*\*<p<.05).

**Table 5c. Effects of Permitting Bankruptcy Strip-Down on Bankruptcy Filings (interacted with Chapter 13 proportion)**

	(1) Number of nonbusiness filings)	(2) Number of nonbusiness Chapter 13 filings)	(3) Proportion of Chapter 13 filings	
<b>States with No Ruling Omitted</b>				
<b>Contemporaneous Effect of Rulings</b>	Strip-down	0.049	-0.069	-0.015
	Standard Error	(0.098)	(0.193)	(0.026)
	Strip-down * % Ch. 13	0.002	0.033	0.001
	Standard Error	(0.036)	(0.071)	(0.009)
	N	252	252	252
	R <sup>2</sup>	0.995	0.991	0.979
	<b>Assumption: Strip-Down Forbidden If No Ruling</b>			
	Strip-down	0.080*	0.150	0.012
	Standard Error	(0.044)	(0.100)	(0.012)
	Strip-down * % Ch. 13	-0.030**	-0.066*	-0.006
Standard Error	(0.013)	(0.036)	(0.006)	
N	408	408	408	
R <sup>2</sup>	0.990	0.983	0.968	
<b>Assumption: Strip-Down Allowed If No Ruling</b>				
Strip-down	-0.078	-0.143	-0.011	
Standard Error	(0.078)	(0.139)	(0.019)	
Strip-down * % Ch. 13	0.015	0.035	-0.005	
Standard Error	(0.018)	(0.031)	(0.005)	
N	408	408	408	
R <sup>2</sup>	0.990	0.983	0.969	
<b>States with No Ruling Omitted</b>				
<b>Six-Month Lagged Effect of Rulings</b>	Strip-down	0.022	-0.004	-0.004
	Standard Error	(0.063)	(0.167)	(0.019)
	Strip-down * % Ch. 13	0.013	0.026	-0.002
	Standard Error	(0.023)	(0.062)	(0.009)
	N	234	234	234
	R <sup>2</sup>	0.997	0.992	0.981
	<b>Assumption: Strip-Down Forbidden If No Ruling</b>			
	Strip-down	0.054	0.171	0.016
	Standard Error	(0.060)	(0.107)	(0.011)
	Strip-down * % Ch. 13	-0.030	-0.075**	-0.007
Standard Error	(0.019)	(0.037)	(0.006)	
N	408	408	408	
R <sup>2</sup>	0.990	0.983	0.968	
<b>Assumption: Strip-Down Allowed If No Ruling</b>				
Strip-down	-0.047	-0.047	-0.003	
Standard Error	(0.082)	(0.151)	(0.015)	
Strip-down * % Ch. 13	0.009	0.025	-0.005	
Standard Error	(0.017)	(0.028)	(0.004)	
N	408	408	408	
R <sup>c</sup>	0.990	0.983	0.969	

Regressions include state and month fixed effects, and state unemployment rates.

Robust standard errors are clustered by state (\*p<.10, \*\*<p<.05).

## V. EXPLAINING MORTGAGE MARKET INDIFFERENCE TO BANKRUPTCY STRIP-DOWN

Basic economic theory posits that when lenders will charge more when faced with larger potential losses. Yet studies on the impact of variation in debt collection laws, including bankruptcy, show that consumer credit markets are sensitive to some changes, but not to others. Karen Pence has shown that mortgage credit availability is sensitive to whether non-judicial foreclosure is available.<sup>37</sup> Reint Gropp, John Karl Scholz and Michelle White have found that creditors charge more on card loans in states that exempt significant property from creditor attachment.<sup>38</sup> Nadia Massoud and her coauthors found that credit card late fees and overlimit fees correlate with aggregate loss levels to banks.<sup>39</sup> In contrast, Frederick Link found that the cost and availability of general unsecured credit in states with high exemption levels was statistically indistinguishable from those in states with low exemption levels.<sup>40</sup> And Mark Kantrowitz has found that making private student loans non-dischargeable in bankruptcy has had only a *de minimis* impact on their availability.<sup>41</sup>

Our examination of current and historical pricing shows that permitting strip-down and other modifications has little or no impact on mortgage pricing, and only a small impact (historically) on the size of down payments required for the highest risk borrowers. Although we find scant evidence of mortgage market sensitivity to bankruptcy modification risk (other than for LTV ratios), we believe the key to explaining this lies in mortgage market sensitivity to foreclosure costs. We believe that the market's indifference to bankruptcy modification risk may be explained by the fact that losses due to modification (including strip-down) are generally smaller than those incurred in foreclosure. Moreover, bankruptcy modification risk is small in likelihood and magnitude of relative to all the other risk factors that determine mortgage interest rates above the cost of funds.

### A. *The Baseline for Loss Comparison: Foreclosure Sales*

But the baseline for examining bankruptcy modification losses is not zero losses, but the losses lenders incur in foreclosure. Foreclosure is a remarkably expensive process. The costs vary by lender and by state, with the availability of non-judicial foreclosure apparently being a major factor both because of the greater speed of non-judicial foreclosure and the lower costs of foreclosing outside of the court system. There is very little hard data on foreclosure losses, but most estimates put it between 30% and 60% of the outstanding loan value.<sup>42</sup> Lenders incur legal costs in foreclosures, do not receive interest on defaulted properties (time-value loss), and often are forced to sell the property at a significant loss.

Sheriff's foreclosure sale data from Monmouth County, New Jersey provides some sense of lender losses. We do not claim that Monmouth County is in any way representative or typical,

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<sup>37</sup> Karen M. Pence, *Foreclosing on Opportunity: State Laws and Mortgage Credit*, Federal Reserve Economics and Discussion Series (2003).

<sup>38</sup> Reint Gropp *et al.*, *Personal Bankruptcy and Credit Supply and Demand*, 112 QUARTERLY J. OF ECON. 217 (1997). A puzzling piece of this study is that secured loans are unlikely to be affected by exemption levels because exemptions do not trump security interests.

<sup>39</sup> Nadia Massoud *et al.*, *The Cost of Being Late: The Case of Credit Card Penalty Fees*, Working Paper, (October 2006), at <http://papers.ssrn.com/abstract=890826>.

<sup>40</sup> Frederick Link, *The Economics of Personal Bankruptcy*, doctoral dissertation, MIT, June 2004.

<sup>41</sup> Mark Kantrowitz, *Impact of the Bankruptcy Exception for Private Student Loans on Private Student Loan Availability* (Aug. 14, 2007), at <http://www.finaid.org/educators/20070814pslFICOdistribution.pdf>.

<sup>42</sup> See Pence, *supra* note 37, at 1 (listing estimates).

only that it is the sole detailed empirical data set on foreclosure sale outcomes we have been able to obtain to date.

New Jersey does not permit non-judicial foreclosure, so our data on 568 completed foreclosure sales between July 2005, and March 2008 captures all completed foreclosures sales in Monmouth County. The average foreclosure judgment was for approximately \$195,000. The average foreclosure sale netted only around \$84,000, meaning there is an average 57% loss at the sales. Part of the reason for this is that there are often few bidders at foreclosure sales. In 45% of the sales in Monmouth County, there were no bids beyond the foreclosing plaintiff's opening \$100 bid.

There are a few factors involved in the thin bidding at foreclosure sales. First, they are not well advertised compared with private sales. Second, the defaulted homeowner is still in possession of the property and inspection of the property is not possible. A foreclosure sale purchaser buys "as is" without an inspection. Third, defaulted properties are often not well-maintained, which further pushes down foreclosure sale prices. Fourth, any bidder at a foreclosure sale will likely have to bid over the outstanding mortgage amount in order to win because the foreclosing lender will place a credit bid for the outstanding amount of the mortgage. And fifth, the homeowner can, in some states, redeem the property *after* the foreclosure sale by simply paying the foreclosure sale price. This means that sale results are not always final. As a result, the foreclosing plaintiff (*i.e.*, the lender) was the purchaser at the foreclosure sale over half the time in Monmouth County.

This means that the property became Real Estate Owned (REO) on the lender's books, and the lender had to sell the property on its own in a private sale later, which has additional costs. In 2002, one analyst estimates the direct costs of foreclosure at \$58,759; this figure does not account for the loss the lender incurs on reselling the property.<sup>43</sup> Although a private resale by a lender might do better than a foreclosure sale, because the property can be fixed up, properly advertised and shown to prospective buyers, the lender loses time value (and may have higher reserve requirements, limiting its lending capacity) for carrying REO, and still has the problem of trying to sell an unoccupied house. In short, lenders incur significant losses in foreclosure, probably in the range of 50% of the loan.

## **B. Projecting Lender Losses in Bankruptcy**

### *1. Mortgages in the 2001 Consumer Bankruptcy Project Database*

An analysis of the mortgage debts in the 2001 Consumer Bankruptcy Project database provides a sense of both how mortgage lenders would fare if modification were permitted and the likelihood that a mortgage would be modified in bankruptcy. The 2001 CBP database is, an extensive multi-district database collected during the 2001 mini-recession.<sup>44</sup> Among the data included in the 2001 CBP database is information are the property values and mortgage claim amount for debtors' principal residences.

2001 CBP data provides us with an estimate of the impact on lenders of allowing bankruptcy strip-down on all mortgages. Strip-down is only one type of possible modification,

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<sup>43</sup> Craig Focardi, *Servicing Default Management: An Overview of the Process and Underlying Technology*, Tower Group, 2002.

<sup>44</sup> The 2001 CBP has data from the Central District of California, the Eastern District of Pennsylvania, the Middle District of Tennessee, the Northern District of Illinois, and the Northern District of Texas.

but it is most significant type because it affects the treatment of the principal of the mortgage claim, as well as the interest. The Bankruptcy Code provides very different protections for secured and unsecured claims in Chapter 13. Secured claims are entitled to receive at least the value of their claims under a plan, unless the debtor surrenders the property or the lender consents to alternative treatment.<sup>45</sup> Unsecured Chapter 13 claims are entitled only to receive only as much as they would have received in a Chapter 7 liquidation, which is frequently nothing.<sup>46</sup>

Strip-down bifurcates a mortgage lender's bankruptcy claim into a secured claim for the value of the collateral and an unsecured claim for the deficiency. Because the unsecured claim is frequently of negligible value, strip-down typically has a larger effect on a mortgage lender than other types of modification, such as extending the term of the loan, changing its amortization schedule, or changing its interest rates. Indeed, the requirement that plan pay at least the present value of a secured claim lender severely limits non-strip-down modifications, and the Supreme Court has set a floor for modified interest rates of secured creditors in Chapter 13 of the prime rate, subject to various adjustments.<sup>47</sup> This means that by examining historical data on potential strip-downs we are examining the worst-case scenario for lenders.

Only a small percentage of mortgages ever end up in bankruptcy. There is no data on the exact percentage, but if we use foreclosure rates as a guideline, it seems safe to estimate that less than 1% of all first-lien mortgages end up in bankruptcy. Since at least 1993, foreclosure rates have averaged 1.14% of all outstanding mortgages, with a low of .86% and a high of 1.69%.<sup>48</sup> Many mortgage delinquent homeowners never file for bankruptcy, however, although some do file before foreclosure proceedings commence. Nonetheless, we believe it a reasonable assumption that at least currently smaller percentage of mortgages end up in bankruptcy than end up in foreclosure. Using Monmouth County as our guide, homeowner in 24% of foreclosures scheduled for sale filed for bankruptcy, whereas 32% of the scheduled sales were completed. The remainder of the cases involved settlements between the servicer/lender and the homeowner, including reinstatement of the mortgage or sales cancelled without indication why.

Of the mortgages that end up in bankruptcy, many do not end up in Chapter 13. Extrapolating from the 2001 CBP database, 75% of the relatively small number of mortgages that end up in bankruptcy will end up in Chapter 13. We are cautious about this particular extrapolation, however, because the 2001 CBP database was drawn from five federal judicial

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<sup>45</sup> 11 U.S.C. § 1325(a)(5).

<sup>46</sup> 11 U.S.C. § 1325(a)(4).

<sup>47</sup> *Till v. SCS Credit Corp.*, 541 U.S. 465, 479 (2004). There is reason to believe that the prime rate would not be the relevant interest rate benchmark for mortgages. *Till* dealt with a subprime auto loan with a 21% contract rates of interest. As the prime rate has frequently been above the rate of 30-year fixed mortgages, using the prime rate as a floor could result in an inequitable windfall for creditors. See Federal Reserve Statistical Release H.15. Arguably for a mortgage loan, the appropriate base line would be either the average 30-year fixed rate mortgage rate or the 10-year Treasury bond rate. H.R. 3609, for example, would resolve this problem by amending section 1325(a)(5)(B)(ii) to permit "interest accruing after the date of the order for relief under this chapter at an annual percentage rate calculated at a fixed annual percentage rate, in an amount equal to the then most recently published annual yield on conventional mortgages published by the Board of Governors of the Federal Reserve System, as of the applicable time set forth in the rules of the Board, plus a reasonable premium for risk."

<sup>48</sup> Mortgage Bankers Association, *National Delinquency Survey*.

districts, and there is tremendous variation by district in the percentage of non-business bankruptcy filings that are Chapter 13.<sup>49</sup>

Within the limited universe of mortgages that end up in Chapter 13, the 2001 CBP is more instructive. The 2001 CBP database has information on 1096 mortgages scheduled by debtors on Schedule D in their bankruptcy petitions in Chapter 13 cases.<sup>50</sup> As Table 6 shows, of these claims, 29% were undersecured, around 4% were fully secured, and approximately 69% were oversecured. Table 7 shows that the undersecured claims were undersecured by an average of \$13,172.23, but the median undersecured Chapter 13 claim was undersecured by only \$8,000. On average, undersecured claims were undersecured by 21% of the total claim amount (the “Security Ratio”). In contrast, the average oversecured claim was oversecured by an equity cushion of \$27,603.39, or by an average of 37% of the claim amount.

**Table 6. Mortgage Claim Amount to Property Value by Bankruptcy Chapter**

	Chapter 7	Chapter 13	Total
<b>Undersecured</b>	22%	29%	27%
<b>Fully Secured</b>	4%	4 %	4%
<b>Oversecured</b>	74%	67%	69%

Source: 2001 Consumer Bankruptcy Project Database

<sup>49</sup> See, e.g., Teresa Sullivan *et al.*, *The Persistence of Local Legal Culture: Twenty Years of Evidence from the Federal Bankruptcy Courts*, 17 HARV. J. L. & PUB. POL’Y 801-865 (1994); Gordon Bermant *et al.*, *Thoughts on the “Local Legal Culture”*, 21 FEB. AM. BANKR. INST. J. 24 (2004); Chrystin Ondersma, “Testing the Power of Local Legal Culture: The Bankruptcy Experiment,” working paper, Dec. 22, 2007 (on file with authors).

<sup>50</sup> The amounts scheduled by debtors do not necessarily match up with those listed in creditors’ claims. See Katherine M. Porter, *Misbehavior and Mistake in Bankruptcy Mortgage Claims*, University of Iowa Legal Studies Research Paper Number 07-29, Nov. 2007, 33 at <http://ssrn.com/abstract=1027961> (noting that “median proof of claim exceeded its corresponding debt as listed on Schedule D by \$1366. The average proof of claim was \$3533 greater than the debtor reported on Schedule D.”)

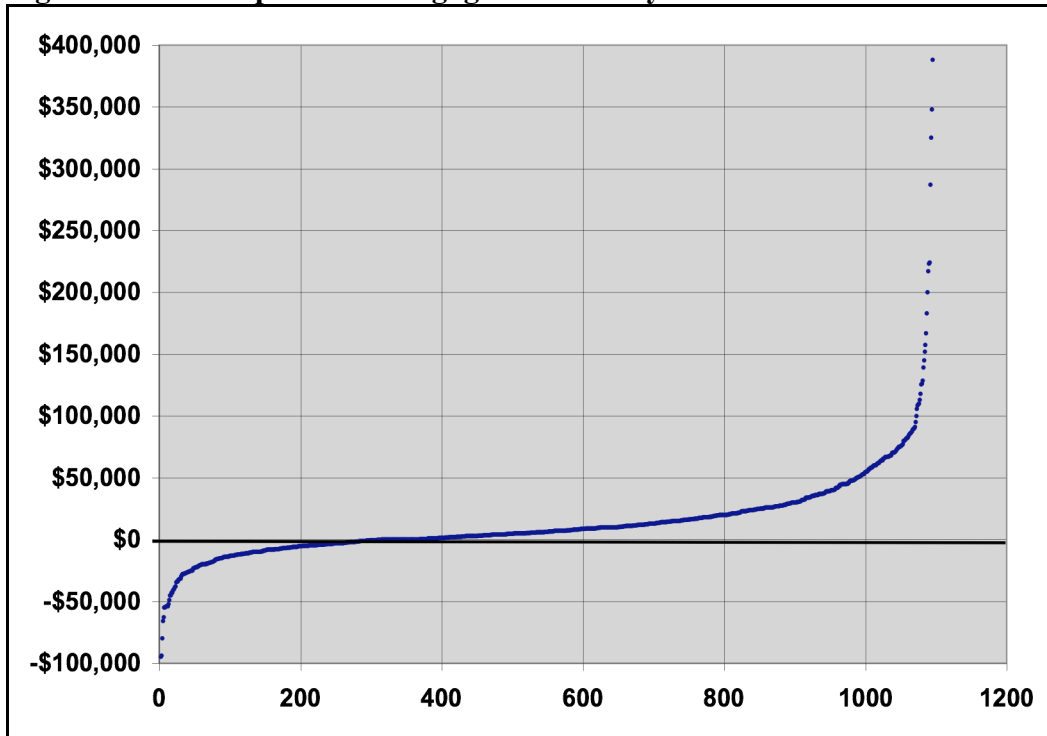
**Table 7. Mortgages in Chapter 13 (2001 CBP)**

	Chapter 13			
	Undersecured	Oversecured	Fully Secured	All
<b>Number</b>	316	730	50	1096
<b>Market Value</b>				
<i>Average</i>	\$79,990.13	\$112,681.40	\$64,780.78	\$102,818.86
<i>Std. Error</i>	\$3,459.30	\$3,131.94	\$4,267.22	\$2,466.04
<i>Median</i>	\$72,000.00	\$91,750.00	\$60,000.00	\$87,000.00
<b>Claim Amount</b>				
<i>Average</i>	\$62,103.71	\$74,262.98	\$59,722.70	\$70,093.87
<i>Std. Error</i>	\$2,974.66	\$2,112.03	\$4,418.32	\$1,668.42
<i>Median</i>	\$48,126.00	\$65,000.00	\$57,000.00	\$61,403.50
<b>Market Value Minus Claim Amount and Amount of Senior Liens</b>				
<i>Average</i>	-\$13,172.23	\$27,603.39	\$0.00	\$14,587.64
<i>Std. Error</i>	\$876.30	\$1,606.16	\$0.00	\$1,233.87
<i>Median</i>	-\$8,000.00	\$15,000.00	\$0.00	\$6,209.50
<b>Security Ratio (Average Difference between Market Value and Claim Amount as a Percentage of Claim Amount)</b>				
	-21.21%	37.17%	0.00%	20.81%

Source: 2001 Consumer Bankruptcy Project Database

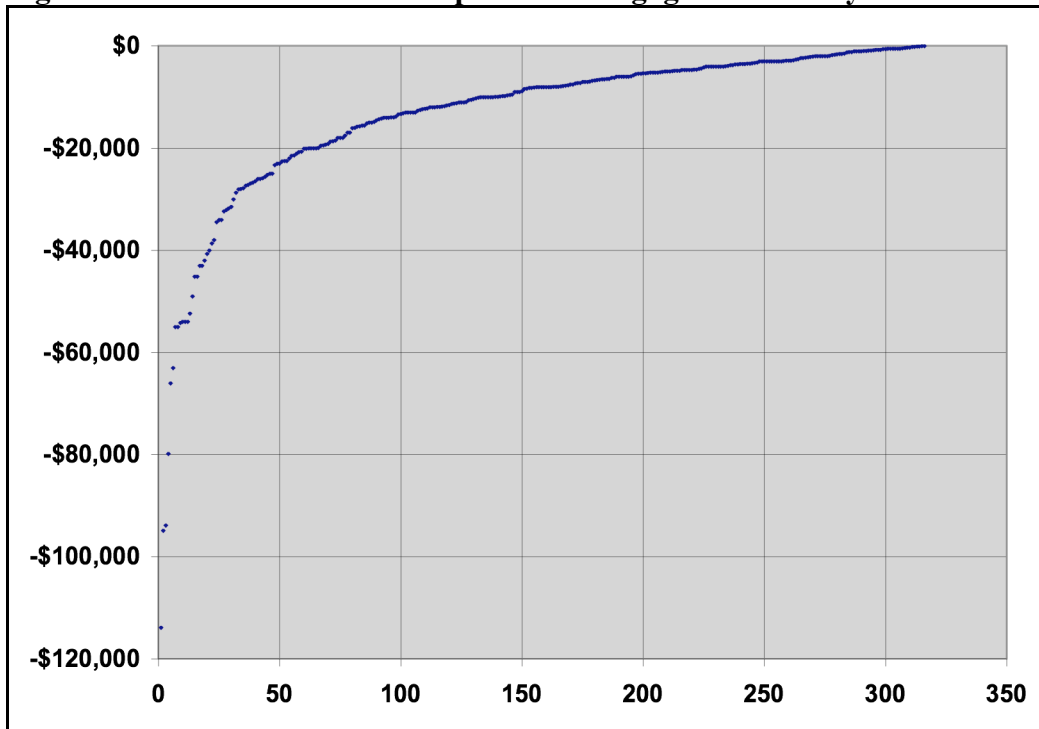
Looking at all Chapter 13 mortgage claims, the average claim was oversecured by \$14,587.64, which was around 21% of the average claim amount. Figure 2 shows the distribution of the amount by which mortgages in the 2001 CBP database were over or undersecured, while Figure 3 is a detail of the undersecured claims.

**Figure 2. Chapter 13 Mortgages Ranked by Amount Oversecured or Undersecured**



Source: 2001 Consumer Bankruptcy Project Database

**Figure 3. Undersecured Chapter 13 Mortgages Ranked by Amount Undersecured**



Source: 2001 Consumer Bankruptcy Project Database

When we break down the 2001 CBP Chapter 13 data into first and second-lien mortgages a more complex picture emerges. As Table 8 shows, only 22% of the first-lien mortgage debt is undersecured, as opposed to half of the second-lien mortgage debt. Moreover, as shown in Tables 9a and 9b, the average undersecured first-lien mortgage debt is only undersecured by \$9,187.36 or 10% of the outstanding claim amount, whereas the average undersecured second-lien mortgages are undersecured by \$18,374.02 or 84% of the claim amount. Figure 4 shows the distribution of the amount by which first and second-lien mortgages in the 2001 CBP database were over or undersecured.

**Table 8. Mortgage Claim Amount to Property Value by Lien Priority in Chapter 13**

	1 <sup>st</sup> Lien Mortgages	2d Lien Mortgages	All Mortgages
<b>Undersecured</b>	22%	50%	29%
<b>Fully Secured</b>	5%	2%	4%
<b>Oversecured</b>	72%	47%	67%

Source: 2001 Consumer Bankruptcy Project Database

**Table 9a. First-lien Mortgages in Chapter 13 (2001 CBP)**

	Chapter 13-2001 CBP—1 <sup>st</sup> Lien Mortgages			
	Undersecured	Oversecured	Fully Secured	All
<b>Number</b>	192	618	45	855
<b>Market Value</b>				
<i>Average</i>	\$79,990.13	\$112,681.40	\$64,780.78	\$102,818.86
<i>Std. Error</i>	\$3,459.30	\$3,131.94	\$4,267.22	\$2,466.04
<i>Median</i>	\$72,000.00	\$91,750.00	\$60,000.00	\$87,000.00
<b>Claim Amount</b>				
<i>Average</i>	\$89,177.49	\$84,204.06	\$64,780.78	\$84,298.63
<i>Std. Error</i>	\$3,617.44	\$2,261.10	\$4,267.22	\$1,845.59
<i>Median</i>	\$78,971.00	\$74,465.50	\$60,000.00	\$74,200.00
<b>Market Value Minus Claim Amount and Amount of Senior Liens</b>				
<i>Average</i>	-\$9,187.36	\$28,476.98	\$0.00	\$18,520.23
<i>Std. Error</i>	\$681.57	\$1,797.98	\$0.00	\$1,420.71
<i>Median</i>	-\$6,216.50	\$15,000.00	\$0.00	\$8,396.00
<b>Security Ratio</b>	-10.30%	33.82%	0.00%	21.97%

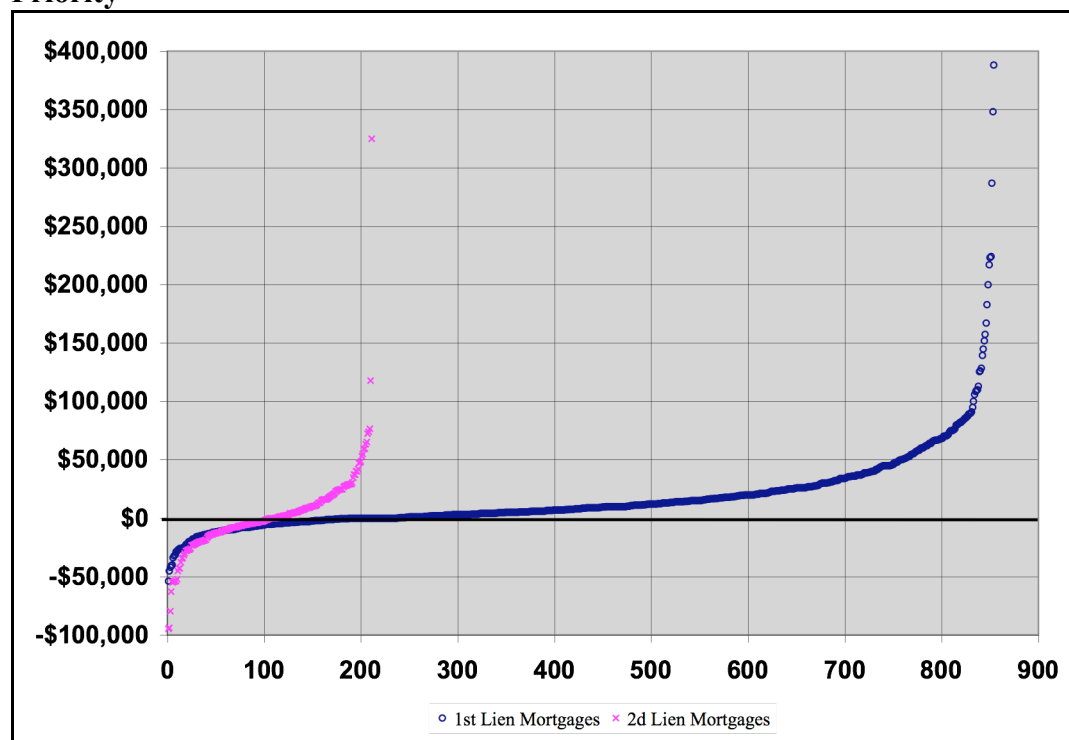
Source: 2001 Consumer Bankruptcy Project Database

**Table 9b. Second-lien Mortgages in Chapter 13 (2001 CBP)**

	Chapter 13-2001 CBP—2d Lien Mortgages			
	Undersecured	Oversecured	Fully Secured	All
<b>Number</b>	106	100	5	211
<b>Market Value</b>				
<i>Average</i>	\$93,925.57	\$134,893.58	\$92,600.00	\$113,310.27
<i>Std. Error</i>	\$4,789.25	\$7,655.52	\$9,206.52	\$4,570.75
<i>Median</i>	\$90,000.00	\$116,000.00	\$90,000.00	\$100,000.00
<b>Claim Amount</b>				
<i>Average</i>	\$21,835.41	\$20,924.65	\$14,200.00	\$21,222.83
<i>Std. Error</i>	\$1,883.40	\$1,551.13	\$3,611.09	\$1,200.47
<i>Median</i>	\$16,000.00	\$16,000.00	\$15,000.00	\$16,000.00
<b>Market Value Minus Claim Amount and Amount of Senior Liens</b>				
<i>Average</i>	-\$18,374.02	\$24,222.77	\$0.00	\$2,249.44
<i>Std. Error</i>	\$1,839.26	\$3,683.06	\$0.00	\$2,447.08
<i>Median</i>	-\$11,949.00	\$15,974.00	\$0.00	-\$125.00
<b>Security Ratio</b>	-84.15%	115.76%	0.00%	10.60%

Source: 2001 Consumer Bankruptcy Project Database

**Figure 4. Chapter 13 Mortgages Ranked by Amount Oversecured or Undersecured by Priority**



Source: 2001 Consumer Bankruptcy Project Database

The 2001 CBP data indicates, then, that under an unlimited strip-down regime, in normal market conditions only a limited subset of the already highly limited universe of mortgages that end up in Chapter 13 bankruptcy would be subject to strip-down, and in those cases the average lender losses would be limited to \$13,172.23, with a disproportionate share borne by second-lien mortgages. These are losses a lender would incur in a foreclosure in addition to the costs of the foreclosure process and the likely lower price the lender would get at a foreclosure sale. It is not surprising, then, that mortgage markets are indifferent to strip-down risk—the scope and magnitude of the potential loss is small and often less than that incurred in a foreclosure.

## 2. *Mortgages in the 2007 Riverside-San Bernardino Database*

The 2001 CBP provides a guide for traditional mortgage market conditions, but we were concerned about its predictive value for the current market, even though it was collected during a recession. Accordingly, we created a new data set of Chapter 13 filings that reflect current distressed real estate market conditions. We recorded the market values and the mortgage claim values for all real estate scheduled in Chapter 13 cases filed in the Riverside office of the Bankruptcy Court for the Southern District of California in the last for months of 2007.

We selected Riverside because it represents a worst-case scenario for lenders and because we are able to isolate it as a discrete community. Riverside-San Bernadino, located to the east-southeast of Los Angeles in the Inland Empire, has the third highest foreclosure rate of any metropolitan area in the country,<sup>51</sup> and has had so for at least a year prior to the bankruptcy filings in the dataset.<sup>52</sup> This means housing prices should have already been severely depressed in Riverside-San Bernadino, so the property values in our sample are likely to be lower than they might otherwise be. As of the third quarter of 2007, one out of every forty-three homes in Riverside-San Bernadino was in foreclosure.<sup>53</sup>

We were able to isolate Riverside-San Bernadino as a discrete community in bankruptcy filings because the bankruptcy court for the federal judicial district in which Riverside-San Bernadino is located has one of its five offices in Riverside. All of the cases filed in the Riverside office for this period were for debtors who listed their principal place of residence as in either Riverside or San Bernadino counties.

Between September 1, 2007 and December 31, 2007, 984 Chapter 13 petitions were filed in the Riverside office. Of these, 720 were unique cases for which mortgage debt was scheduled and for which there was information on both the property value and mortgage claim amount. We excluded timeshares, land-only mortgages, and liens for property taxes and homeowners' association dues from our definition of mortgage debt. The 2007 Riverside data includes principal homes, vacation homes, and rental properties. These cases yielded a sample of 1094 mortgages, almost the precise size as the 2001 CBP database. The 2007 Riverside database includes 720 first-lien mortgages, 347 second-lien mortgages, 25 third-lien mortgages, and 2 fourth lien mortgages. As Table 10 shows, 48% of the properties in the dataset had more than one mortgage, and 3.5% had more than two mortgages.

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<sup>51</sup> RealtyTrac, Press Release, Stockton, Detroit, Riverside-San Bernardino Post Top Metro Foreclosure Rates in Q3, Nov. 14, 2007, (1 in 43 houses in foreclosure).

<sup>52</sup> RealtyTrac, Press Release, Riverside-San Bernardino Foreclosures Increase 52 Percent in August, Sept. 24, 2006. (1 in 437 houses in foreclosure).

<sup>53</sup> See *supra*, note 51.

**Table 10. Mortgages in Chapter 13 (2007 Riverside)**

Cases Filed	Cases with Mortgage Debt Scheduled	Total # of Mortgages Scheduled	Number of 1 <sup>st</sup> Lien-Mortgages	Number of 2d Lien Mortgages	Number of 3d Lien Mortgages	% of 2d Line Mortgages that are Piggybacks
984	720	1094	720	347	25	54%

Source: PACER and Authors' Calculations

Overall, the 2007 Riverside Chapter 13 cases track the results of the 2001 CBP data closely. In Riverside, 21% of all mortgages in Chapter 13 were unsecured. In the 2001 CBP Chapter 13 sample, it was higher—around 29%. This tells us that even in the hardest hit areas of the country, most mortgages that end up in bankruptcy are still not undersecured. The likely explanation for the lower percentage of undersecured mortgages in Riverside is that even with the current problems in the Riverside real estate market, many of the loans are still benefiting from the appreciation of the mortgage bubble.

As Table 11 shows, the average undersecured mortgage in Riverside was undersecured by \$47,800.45, or 3.6 times the average undersecured mortgage in Chapter 13 in the 2001 CBP database. This discrepancy must be discounted for the overall higher home values and loan amounts in California. In Riverside, the average property value was over \$425,000, over four times higher than the average Chapter 13 home value in the 2001 CBP of \$105,266.05.<sup>54</sup>

**Table 11. Mortgages in Chapter 13 (2007 Riverside)**

	Chapter 13—Riverside—All Mortgages			
	Undersecured	Oversecured	Fully Secured	All
<b>Number</b>	231	842	21	1094
<b>Market Value</b>				
<i>Average</i>	\$388,289.00	\$438,629.90	\$344,806.70	\$426,199.40
<i>Std. Error</i>	\$8,668.56	\$6,079.97	\$29,096.23	\$5,102.01
<i>Median</i>	\$380,000.00	\$415,000.00	\$304,000.00	\$400,567.80
<b>Claim Amount</b>				
<i>Average</i>	\$206,365.00	\$257,111.60	\$264,735.20	\$246,542.70
<i>Std. Error</i>	\$11,504.93	\$5,730.17	\$34,202.04	\$5,112.08
<i>Median</i>	\$114,200.00	\$264,160.00	\$280,000.00	\$244,316.00
<b>Market Value Minus Claim Amount and Amount of Senior Liens</b>				
<i>Average</i>	-\$47,800.45	\$88,012.37	\$0.00	\$57,645.81
<i>Std. Error</i>	\$3,031.18	\$3,239.39	\$0.00	\$3,078.67
<i>Median</i>	-\$39,316.42	\$67,853.74	\$0.00	\$45,500.00
<b>Security Ratio</b>				
	-23.16%	34.23%	0.00%	23.38%

Source: PACER and Authors' Calculations

<sup>54</sup> Our initial sampling from other districts indicates that there is a strong correlation between average home prices and average amount undersecured.

Because of the influence on average property value on the amount over- or undersecured, the better metric for evaluating the impact on lenders is the ratio of the amount by which properties are over- or undersecured relative the amount of the claim (the “Security Ratio”). Table 12 presents a comparison of the 2001 CBP data and the 2007 Riverside data.

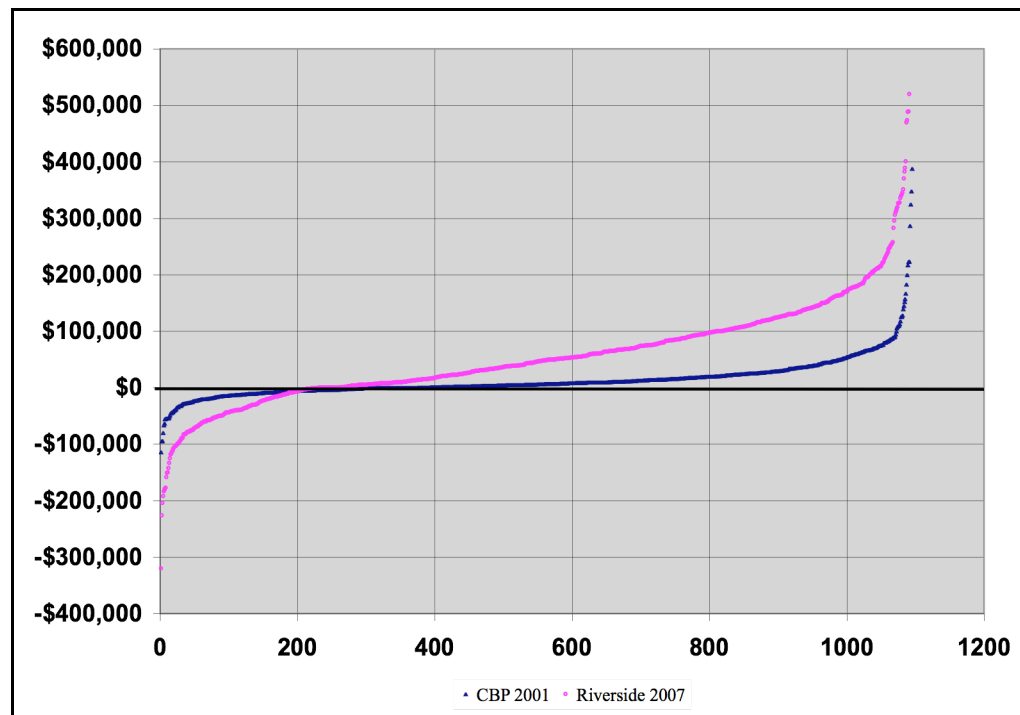
**Table 12. Comparison of Security Ratios, 2001 CBP and 2007 Riverside**

	2001 CBP Total	2001 CBP 1 <sup>st</sup> Lien	2001 CBP 2 <sup>d</sup> Lien	2007 Riverside Total	2007 Riverside 1 <sup>st</sup> Lien	2007 Riverside 2 <sup>d</sup> Lien
Undersecured Mortgages	-21%	-10%	-84%%	-23%	-11%	-57%
Oversecured Mortgages	37%	34%	116%	34%	30%	80%
All Mortgages	21%	22%	11%	23%	23%	22%

Source: 2001 Consumer Bankruptcy Project, PACER, and Authors’ Calculations

In the 2001 CBP the Security Ratio of the amount over 21% overall as compared to 23% for Riverside in 2007. For undersecured claims the Security Ratio was -21% for the 2001 CBP, as compared to -23% for Riverside in 2007, while for the oversecured claims it was 37% for the 2001 CBP, as compared to 34% for Riverside in 2007. Thus even in the worse case market scenario for lenders, the loss as a percentage of claim amount from permitting strip-down is about the same as in the 2001 CBP. Figure 5 presents a graphic comparison of the 2001 and 2007 data.

**Figure 5. Chapter 13 Mortgages Ranked by Amount Oversecured or Undersecured (2001 CBP and 2007 Riverside)**



Source: 2001 Consumer Bankruptcy Project; PACER

Table 13 shows that as with the 2001 CBP data, when we break down the mortgages into first and second-liens, we see that in Riverside, second-lien mortgages are three times more

likely to be undersecured than first-lien mortgages. Tables 14a and 14b provide the detailed breakdown. But as Table 12 shows, there is the over- or undersecured ratio for the first-lien mortgages in 2007 Riverside data is virtually identical to 2001 CBP data. The second-lien mortgages in 2007 Riverside data, however, have marked less extreme Security Ratios than the 2001 CBP data and an overall Security Ratio twice that of 2001, suggesting, counter intuitively, that second-lien debt in Riverside in 2007 was in better shape than second-lien debt on mortgages in 2001.

**Table 13. Percentage of Mortgages Over- and Undersecured in Chapter 13 (2007 Riverside)**

	1 <sup>st</sup> Lien Mortgages	2d Lien Mortgages	2d Lien “Piggyback” Mortgages	All Mortgages
<b>Undersecured</b>	13%	38%	39%	21%
<b>Fully Secured</b>	2%	1%	2%	2%
<b>Oversecured</b>	85%	60%	59%	77%

Source: PACER and Authors’ Calculations (numbers may not total 100% because of rounding)

**Table 14a. First-lien Mortgages in Chapter 13 (2007 Riverside)**

	Chapter 13—Riverside—1 <sup>st</sup> Lien Mortgages			
	Undersecured	Oversecured	Fully Secured	All
<b>Number</b>	90	614	16	720
<b>Market Value</b>				
<i>Average</i>	\$351,139.80	\$422,307.70	\$322,705.90	\$411,198.40
<i>Std. Error</i>	\$13,556.94	\$6,787.78	\$32,605.64	\$6,152.28
<i>Median</i>	\$339,500.00	\$400,000.00	\$300,000.00	\$395,063.00
<b>Claim Amount</b>				
<i>Average</i>	\$396,700.00	\$325,163.50	\$322,705.90	\$334,051.00
<i>Std. Error</i>	\$13,691.31	\$5,669.12	\$32,605.64	\$5,247.87
<i>Median</i>	\$383,769.00	\$319,859.70	\$300,000.00	\$329,144.60
<b>Market Value Minus Claim Amount and Amount of Senior Liens</b>				
<i>Average</i>	-\$45,560.22	\$97,144.20	\$0.00	\$77,147.39
<i>Std. Error</i>	\$5,282.29	\$3,913.24	\$0.00	\$3,852.46
<i>Median</i>	-\$39,375.00	\$76,768.00	\$0.00	\$64,953.18
<b>Security Ratio</b>				
	-11.48%	29.88%	0.00%	23.09%

Source: PACER and Authors’ Calculations

**Table 14b. Second-lien Mortgages in Chapter 13 (2007 Riverside)**

	Chapter 13—Riverside—2d Lien Mortgages			
	Undersecured	Oversecured	Fully Secured	All
<b>Number</b>	132	210	5	347
<b>Market Value</b>				
<i>Average</i>	\$412,516.90	\$479,969.70	\$415,529.20	\$453,381.90
<i>Std. Error</i>	\$11,293.78	\$13,370.76	\$58,135.10	\$9,349.84
<i>Median</i>	\$399,500.00	\$449,753.50	\$421,000.00	\$429,000.00
<b>Claim Amount</b>				
<i>Average</i>	\$86,133.48	\$77,215.85	\$79,229.20	\$80,637.16
<i>Std. Error</i>	\$3,105.29	\$3,743.25	\$22,720.85	\$2,578.91
<i>Median</i>	\$84,378.47	\$73,683.96	\$84,000.00	\$76,814.00
<b>Market Value Minus Claim Amount and Amount of Senior Liens</b>				
<i>Average</i>	-\$48,743.66	\$60,535.05	\$0.00	\$18,092.79
<i>Std. Error</i>	\$3,773.21	\$5,613.63	\$0.00	\$4,652.53
<i>Median</i>	-\$387,815.00	\$36,202.50	\$0.00	\$7,767.00
<b>Security Ratio</b>				
	-56.59%	78.40%	0.00%	22.44%

Source: PACER and Authors' Calculations

Many of the second-lien mortgages in Riverside-San Bernardino appear to be “piggyback” mortgages. Most mortgage lenders require homebuyers who pay less than 20% down to purchase private mortgage insurance because without the PMI coverage, the secondary market for the loan will be severely limited.<sup>55</sup> The amount of home that a buyer can afford in terms of monthly payments is reduced to the extent of the PMI premium. Therefore, lenders sometimes structure loans to help buyers avoid having to purchase PMI. This is done through “piggyback” mortgages, in which the lender (or another cooperating lender) takes a second mortgage on the property at the time of the purchase or refinance for some amount up to 20% of the property value. Often these transactions are structured as 80-10-10s or 80-15-5s, in which the first-lien mortgage loan is for 80% of the property value, the second-lien mortgage loan is for 10% or 15% of the property value, and the buyer makes a down payment of 10% or 5%. Lenders who enter into piggyback mortgage deals willingly forego the protection of PMI coverage in order to make larger loans. Thus, outside of bankruptcy, lenders doing piggybacks are not protected against losses in foreclosure.

We counted second mortgage loans other than home equity lines of credit, secured by the same property as certain piggybacks if they were made on the same day as the first-lien mortgage. Because bankruptcy filings do not always indicate the precise date on which a debt was incurred, nor do they indicate the original amount of the debt, only the amount outstanding, we also counted a second category of possible piggybacks. We counted second mortgages as possible piggybacks if the loan was either (1) made by the same lender in the same year, (2) made by the first mortgage lender, or (3) made within the same year (without further information available). Whereas our counting of certain piggybacks is likely underinclusive, our counting of possible piggybacks is likely overinclusive. In particular, our counting methodology likely includes some non-piggyback second mortgages, such as cash out refinancings, made shortly

<sup>55</sup> See *supra* note 24.

after the home sale transaction, but the nature of the data does not permit more precise delineation of piggybacks. Nonetheless, our methodology yields a range in which we can be fairly confident the actual number of piggybacks exists.

Of the second-lien mortgages, we identified 77 certain piggybacks and 116 possible piggybacks. This means that between 11% and 27% of the cases in our dataset had piggyback second mortgages, and that between 22% and 56% of second mortgages were piggybacks.

While piggybacks performed comparably to second-lien mortgage debt in general, the high incidence of piggybacks suggests that many lenders were willing to assume foreclosure loss risk themselves. It is a strange result, then, that these lenders receive greater protection in bankruptcy than they do outside of bankruptcy. If the loan is undersecured, a piggyback lender would bear the losses in a foreclosure sale. But if the piggyback lender is undersecured, but not wholly unsecured, and the debtor chooses to (and is capable of) paying the loan off in a Chapter 13 repayment plan, then the piggyback lender will come out better in bankruptcy than in foreclosure.

Riverside in 2007 represents a worst-case scenario for lenders. The large number of foreclosures in the community for at least a year prior to the bankruptcy filings in the data set pushed down already declining housing prices, and lenders had unusually large exposure on individual loans because the average loan size in California is larger than anywhere else in the country. Most real estate markets in the country are unlikely to ever be this bad. Accordingly, Riverside represents an outer limit of lender losses in an unlimited strip-down regime.

Strikingly, the 2007 Riverside data shows little qualitative difference from the 2001 CBP data. Even in far worse market conditions, lenders' Security Ratio is virtually unchanged, and a disproportionate amount of potential strip-down losses lies with the second-lien debt. To the extent that lenders' losses would be higher in the current market, it would relate to bankruptcy filing volume, a variable for which we have not controlled because the surge in bankruptcy filings before the effective date of the 2005 amendments to the Bankruptcy Code and the severe drop off thereafter would insert too many exogenous factors into the analysis for meaningful results.

Taken as a whole, the 2001 CBP data and the 2007 Riverside data indicate that only a very small subset of all mortgages—only undersecured mortgages in Chapter 13 cases—could potentially be stripped down if section 1322(b)(2) were amended to allow modification of all mortgages. Therefore, even if we make the overly conservative assumption that there would be no recoveries on the undersecured portion of the claim, lenders' losses on undersecured mortgages if unlimited strip-down were allowed would be limited to around 20% of their claim. These are losses a lender would almost assuredly incur in a foreclosure situation and are far less than the 40%-50% of loan value lenders are estimated to typically lose in foreclosure.

The 2007 Riverside data confirms what the 2001 CBP data indicated: that mortgage markets are indifferent to strip-down risk because it is small in magnitude and likelihood, and may represent lesser losses than lenders would incur in foreclosure. Even in an unlimited strip-down regime in the worst possible real estate markets, mortgage lenders would not be exposed to substantial losses. Strip-down is a risk of very small probability and magnitude. Strip-down losses, relative to the size of the mortgage market, are just too inconsequential for lenders and are not specifically figured into pricing models.

It is possible that if modification were permitted, many more people would file for bankruptcy and modify their mortgages. But for the losses to outweigh those from foreclosure would

## **VI. CONCLUSION**

The available empirical evidence indicates that permitting modification of all mortgages in bankruptcy would have little or no impact on mortgage interest rates, or mortgage origination volume. Permitting modification would, however, likely result in lenders requiring lower loan-to-value ratios, but this would be a salutary development; high LTV loans have fueled the current foreclosure crisis.

Mortgage markets appear largely indifferent to bankruptcy modification risk, in contrast to their sensitivity to features of the state law foreclosure process. Therefore, permitting bankruptcy modification of all mortgages would be unlikely to impact the average availability or price of mortgage credit. This indifference is because lender losses in foreclosure would be greater than in bankruptcy, and so permitting bankruptcy modification as an alternative to foreclosure would, if anything, benefit lenders. This finding neuters the policy assumption underlying the special protection for mortgages in Chapter 13; no other affirmative argument has been advanced for the Chapter 13 mortgage anti-modification provision. Accordingly, permitting mortgage modification in Chapter 13 would provide an immediate solution to much of the current home foreclosure crisis that would neither affect the public fisc nor create moral hazard nor impose costs on future borrowers.

Our findings speak to the fundamental policy debate in consumer bankruptcy law—the balance between providing debtors with a fresh start and limiting losses to creditors. Bankruptcy policy is concerned with limiting losses to creditors both because of the impact on the creditors themselves, and because of the impact on the credit market. The basic economic (as opposed to moral) assumption of creditors rights has been that creditor compensate for bankruptcy losses by raising rates and restricting lending. This argument makes a lot of sense in the b2b lending world or in the world of small-time creditors—sort of Main Street finance. Our paper suggests that at least in the mortgage industry, that is not the case. Taken together with research by Frederick Link on general unsecured credit,<sup>56</sup> by Ronald Mann on credit cards,<sup>57</sup> and by Mark Kantrowitz on private student loans,<sup>58</sup> there is a growing body of evidence that hints at a need for a new grant theory of consumer finance: because of diversification among millions of borrowers, risk-spreading through securitization and insurance, and fee-based profit models, the scope of the bankruptcy discharge has very little impact on the price or availability of credit. If that is the case, then we need to rethink consumer bankruptcy policy from the ground up with an eye to expanding the scope of the discharge.

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<sup>56</sup> Link, *supra* note 40.

<sup>57</sup> Ronald J. Mann, *Bankruptcy Reform and the “Sweatbox” of Credit Card Debt*, 2007 U. ILL. L. REV. 375, 389 (2007).

<sup>58</sup> Kantrowitz, *supra* note 41

## **APPENDIX A. EVALUATING THE MORTGAGE BANKERS ASSOCIATION'S MODIFICATION IMPACT CLAIM**

The Mortgage Bankers Association (MBA) has claimed that permitting modification of mortgages in bankruptcy will result in an effective 200 basis point increase in interest rates on single-family owner-occupied properties (“principal residences”).<sup>59</sup> The MBA figure is derived from a comparison of the current interest rate spread between mortgages on single-family principal residences and on investor properties.<sup>60</sup> It includes not only the current additional interest rate premium for investor properties of 37.5 basis points, but also amortizes the higher down payments and points generally required on investor properties in order to achieve the 200 basis point figure.<sup>61</sup> More recent MBA press releases have claimed only an increase of 150 basis points, without explaining the 50 basis point decline from the 200 basis point figure featured in Congressional testimony.<sup>62</sup> The MBA figure is based on an assumption that the entire spread between principal residence and investor property mortgage interest rates is due to lack of modification protection on investor properties.

Our research on current mortgage interest rate spreads among different property types disproves the MBA’s claim. The MBA’s calculation is based on looking selectively at the effective interest rate spread between investment properties and single-family principal residences.<sup>63</sup> But mortgages on investor properties are not the only type of property that can currently be modified in bankruptcy. Mortgages on vacation homes and on multifamily residences in which the owner occupies one unit can also be modified currently. As noted above, conforming mortgages on vacation homes and multifamily properties are currently priced the same as single-family principal residences. Only investor property mortgages are priced higher. This pattern is confirmed by PMI rates and Fannie/Freddie delivery fees. This means higher interest rates on investor properties must be attributed to non-bankruptcy risk factors entailed in lending against an investor property.<sup>64</sup>

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<sup>59</sup> Statement of David G. Kittle, CMB, Chairman-Elect, Mortgage Bankers Association, Before the Subcommittee on Commercial and Administrative Law, Committee on Judiciary, United States House of Representatives, Oct. 30, 2007, Hearing on “Straightening Out the Mortgage Mess: How Can We Protect Home Ownership and Provide Relief to Consumers in Financial Distress? – Part II,” at <http://judiciary.house.gov/media/pdfs/Kittle071030.pdf>, at 3.

<sup>60</sup> *Id.*

<sup>61</sup> *Id.*

<sup>62</sup> Mortgage Bankers Association, Press Release, MBA’s “Stop the Cram Down Resource Center” Puts a Price Tag on Bankruptcy Reform, Jan. 15, 2008, at <http://www.mortgagebankers.org/NewsandMedia/PressCenter/59343.htm>.

<sup>63</sup> At the January 29, 2007 Hearing on the Growing Mortgage Foreclosure Crisis: Identifying Solutions and Dispelling Myths, Before the Subcommittee on Commercial and Administrative Law, Committee on the Judiciary, United States House of Representative, David Kittle, the president-elect of the MBA claimed that prior to the enactment of the Bankruptcy Code there was no difference in interest rates for single-family owner-occupied principal residences and investor properties. The MBA has produced no data or other source to support this assertion, including in response to inquiries from major media outlets, and we know of no data source on interest rates that both goes back to 1978 and has rates broken down by property type. Indeed, the idea that investor properties and owner-occupied properties would ever be priced the same, even if there were no bankruptcy system whatsoever, ignores the significant default risk entailed in lending against investor properties caused by various tenancy risks.

<sup>64</sup> See *supra* at 16 for a discussion of factors impacting investor property mortgage rates.

The MBA figure is thus the result of a cherry-picked comparison.<sup>65</sup> Likewise, if our historical experiment provides a reasonable basis for extrapolating to the current market, and we believe it provides general parameters, then statistically there is a zero percent chance that the MBA's 150 basis point claim is correct. All empirical and market observational data indicates that that MBA's claim of an effective 150-200 basis point increase from allowing strip-down is groundless. The empirical evidence indicates that there is unlikely to be anything more than a *de minimis* effect on interest rates as a result of permitting bankruptcy modification.

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<sup>65</sup> Additionally, the MBA's amortization of the higher down payments typically required on investor properties is debatable. Lenders bear no risk on down payments, unlike on interest payments. Down payments receive different tax treatment than interest payments for borrowers. And down payments create equity in a house, unlike interest. By amortizing down payments—turning them into interest dollar for dollar adjusted for present value—the MBA is equating two very different types of payments that should not be treated as dollar for dollar equivalents.

Regardless, even if the MBA were correct is correct that higher down payments and/or points will be required and that it will be harder to make high LTV loans, this is not necessarily a bad thing, as it might compel more prudent lending practices and would inherently protect lenders from ending up with undersecured loans that could be stripped down by creating an instant equity cushion.