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**The Impact of State Anti-Predatory Lending Laws:
Policy Implications and Insights**

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Introduction

The subprime mortgage market, which consists of high-cost loans designed for borrowers with weak credit,¹ has grown tremendously over the past ten years. Between 1993 and 2005, the subprime market experienced an average annual growth rate of 26 percent.² As this market emerged, so did allegations that subprime loans contained predatory features or were the result of predatory sales practices.³ In the worst cases, brokers deceived borrowers about the meaning of loan terms or falsely promised to assist them in obtaining future refinance loans with better terms. In other situations, borrowers entered into loans with low teaser rates, not aware how high their monthly payments could go when their interest rates reset.⁴

Many policy-makers across the country agree that subprime loans provide an important vehicle for making credit available to consumers; however, concerns about abuses in the subprime market have led the federal government and most states to enact laws that place limits on subprime lending. The federal government led the way with the Home Ownership Equity Protection Act (HOEPA), which was enacted in 1994. A growing number of states followed suit, passing laws modeled on HOEPA (known as “mini-HOEPA laws”). Today, well over half the states have anti-predatory lending statutes of one kind or another.⁵ These laws vary in terms of the loans they cover, the practices they prohibit, and the methods of enforcement they permit. In addition to the mini-HOEPA laws, numerous states have laws that pre-date HOEPA and prohibit specific loan terms such as prepayment penalties or balloon payments. These laws function alone or alongside more comprehensive mini-HOEPA laws.

¹ There are different definitions of the term “subprime loans.” Some limit the term’s meaning to non-conforming mortgages made to borrowers with impaired or non-existent credit. Over time, however, this definition has proven unsatisfactory, given the growing evidence that large proportions of high-cost mortgages went to borrowers with credit scores high enough to qualify for prime loans. See, e.g., Brooks & Simon (2007). More recent definitions have tended to focus on the high-cost structure of subprime loans, without regard to the borrowers’ characteristics.

² Gramlich (2007a, p. 2); see also Waggoner (2007).

³ While predatory lending is hard to define with precision, generally it is concentrated in the subprime market and involves excessive prices in view of the borrowers’ risk or lending without regard to borrowers’ ability to repay. Engel and McCoy define predatory lending as a syndrome of loan terms or practices involving one or more of the following features: (1) loans structured to result in seriously disproportionate net harm to borrowers; (2) rent-seeking; (3) illegal fraud or deception; (4) other information asymmetries favoring brokers or lenders; (5) mandatory arbitration clauses; (6) lending discrimination; and (7) servicing abuses. Engel & McCoy (2007, pp. 2043-45).

⁴ Truth in Lending Act rules at the time did not require lenders to inform borrowers about the exact dollar amounts of their maximum possible monthly payments following rate reset. McCoy (2007).

⁵ Azmy (2005).

As home mortgage default and foreclosures rates have escalated in recent years,⁶ anti-predatory lending measures have moved into the policy limelight. Lenders and others in the mortgage industry claim that the laws drive up the cost and reduce the availability of credit, especially to low-income borrowers. In contrast, those who endorse the laws argue that they are needed to protect vulnerable consumers and the communities in which they live.⁷ They further argue that any costs are *de minimis* relative to the protection the laws provide.

Any laws that place restrictions on loan terms and lending practices invariably have some effect on credit flows in the home mortgage market. Until recently, the nature and extent of those effects have only been speculative. The availability of loan pricing and other data now makes it possible to evaluate the impact of laws on the flow and cost of credit. In this chapter, we review past studies on the impact of anti-predatory lending laws and describe the results of our own research, which expands on prior studies by: (1) using a more nuanced legal index; (2) examining anti-predatory lending laws that pre-date HOEPA as well as the HOEPA analogues; (3) looking at the role of enforcement mechanisms, including assignee liability laws, on loan volumes; and (4) disaggregating anti-predatory lending laws along three dimensions—coverage, restrictions, and enforcement.

Description of Anti-Predatory Lending Laws

Anti-predatory lending laws take two forms. The older laws typically prohibit one or a few specific loan terms, such as prepayment penalties.⁸ The more modern laws are patterned on the federal HOEPA law. HOEPA governs “high-cost” loans, which are defined as loans that exceed one of two triggers: (1) where the annual percentage rate (APR) at consummation exceeds the yield on Treasury securities of comparable maturity plus eight percent for first-lien loans or ten percent for subordinate lien loans or (2) where the total points and fees exceed eight percent of the total loan amount or \$547, whichever is greater.⁹ HOEPA covers, at most, one percent of subprime residential mortgages.¹⁰ For that narrow set of loans, HOEPA restricts

⁶ By year-end 2007, approximately 21 percent of subprime adjustable-rate mortgages were past due 90 days or more. Bernanke 2008.

⁷ Apgar & Duda (2005); Engel (2006).

⁸ These laws are part of state usury laws or found in state versions of the Uniform Consumer Commercial Code. Alexander (1987); Eskridge (1984); Whitman (1992).

⁹ HOEPA, §§ 1601 *et seq.* The points and fees trigger is subject to annual indexing. \$547 was the trigger amount in 2007.

¹⁰ Gramlich (2007b, p. 28).

numerous lending terms and practices, including balloon terms and prepayment penalties. Lenders must also make specialized, advance disclosures to borrowers receiving HOEPA loans. HOEPA imposes liability for violations on lenders and assignees of HOEPA loans.¹¹

In 1999, North Carolina passed the first mini-HOEPA law. This statute adopted the HOEPA APR trigger, but used a lower points and fees trigger and provided more extensive substantive protections than HOEPA. In short order, other states followed North Carolina's lead and enacted mini-HOEPA laws of their own. Some of these laws augmented existing laws and others were states' first forays into limiting loan terms. As of 2007, over thirty states had mini-HOEPA laws while only six states had neither mini-HOEPA laws nor laws regulating prepayment penalties or balloon clauses in home mortgages.¹²

There is wide variation among the coverage, restriction and enforcement provisions in state mini-HOEPA laws. Although some states have adopted the same coverage triggers as HOEPA, most set their triggers below one or both of the HOEPA triggers. Still others have some laws that apply to all mortgage loans without any triggers and other laws that apply only to high-cost loans. With regard to restrictions, prohibited practices also vary widely in both quantity and quality among the states. For example, some states ban prepayment penalties altogether while others only ban prepayment penalties after five years from origination.¹³

Like the coverage and restriction provisions, state laws establish an array of different enforcement provisions, from exclusive governmental enforcement to private redress by aggrieved borrowers in court. Some laws allow borrowers to bring claims against loan originators alone, while other laws also authorize assignee liability, which permits borrowers to recover against securitized trusts and other holders of notes. Available relief ranges from actual damages to civil penalties or punitive damages.¹⁴

¹¹ Federal Reserve System (2001). In general, holders of HOEPA loans "are subject to all claims and defenses . . . that could be raised against the original lender." HOEPA §1641(d).

¹² A few states eschewed mini-HOEPA laws and instead required expanded disclosures to borrowers. Other states focused on mortgage brokers by expanding broker licensing requirements and subjecting brokers to greater regulation. Similarly, numerous cities and counties passed anti-predatory lending ordinances. The city and county ordinances are either limited in scope to lenders who contract with the cities or have been preempted. Bostic et al. (2008).

¹³ See, e.g., Annotated Laws of Mass. ch. 183C, § 5 (banning all prepayment penalties in high-cost loans); 63 Pennsylvania Statutes § 456.511(f) (prohibiting prepayment penalties in high-cost loans after five years).

¹⁴ Federal law has preempted portions of these state laws at various times for certain types of lenders and loan products. McCoy & Renuart (2007).

Studies of Anti-Predatory Lending Laws

Although some states have regulated practices associated with predatory lending for decades, until recently there were no studies evaluating the effects of anti-predatory lending laws (other than caps on interest rates) on credit flows and loan prices. That changed with the passage of North Carolina's anti-predatory lending law in 1999. Since then, several studies have assessed the impact of state mini-HOEPA laws on lending patterns.

An early study by Morgan Stanley surveyed subprime branch managers and mortgage brokers across the country to learn their views on the impact of anti-predatory lending laws on loan volumes. The investment bank reported that growth forecasts by respondents in states with tough laws were not significantly different from growth forecasts by respondents in less regulated states. The report observed, "One of the consistent messages we heard from our respondents was that the increased level of disclosures was boosting consumer comfort levels with subprime products and thus providing a positive impact on loan volume."¹⁵

Li and Ernst used a database of securitized subprime loans from January 1998 through December 2004 to study the effect of state laws on loan originations. The study ranked state laws according to the type of loans covered, points-and-fee triggers, substantive legal protections, and remedies available to borrowers. Based on their findings, the authors concluded that, for the most part, state mini-HOEPA laws did not lead to a reduction in subprime originations and reduced the number of subprime loans with predatory terms. In addition, in all but two states with anti-predatory lending laws, the nominal interest rates on home mortgages were static or dropped when compared with the control states.¹⁶

Ho and Pennington-Cross used HMDA data to conduct a cross-border study of the impact of anti-predatory lending laws on the probability of subprime applications, originations, and rejections.¹⁷ They developed a legal index that ranked the strength of anti-predatory lending laws and, using this index, compared loan volumes in adjacent states with and without anti-predatory lending laws. The results were that the typical state anti-predatory lending law: (1) did not have an impact on the probability of originations; (2) had a small negative effect on the likelihood of applications; and (3) reduced the chances that borrowers would be rejected. However, in states with stronger restrictions, the likelihood of originations and applications

¹⁵ Morgan Stanley (2002, p. 11).

¹⁶ Li & Ernst (2006).

¹⁷ This cross-border analysis helped hold labor and housing markets constant.

dropped. State anti-predatory lending laws with broad coverage increased the likelihood of subprime originations and applications.¹⁸

Ho and Pennington-Cross took the same approach in a study of the impact of state anti-predatory lending laws on the cost of credit. They found that anti-predatory lending laws that more strongly restrict lending practices modestly drive up the cost of borrowing on fixed-rate loans. The results also indicate that it is very easy for lenders to avoid coverage of most laws on adjustable-rate mortgages by designing loans in ways that reduce the reportable and the actual APR below the laws' triggers.¹⁹

A national study by Elliehausen et al. used a data set that included about twenty-two percent of the total volume of subprime mortgages (defined as high-cost loans) made by eight large lenders from 1999 through 2004, to study the impact of anti-predatory lending laws. The authors used several approaches to examine the effect of state laws on subprime originations and found that subprime originations dropped in states with anti-predatory lending laws. They argued that these results reflected a supply-side phenomenon; lenders substituted loans that fell below the triggers in the new anti-predatory lending laws for high-cost loans that would be subject to laws.²⁰

Expanding the Field

The various studies of the new anti-predatory lending laws all have limitations. In our study, we attempt to address some of these limitations. In particular, we examine state laws that were enacted prior to HOEPA as well as state laws that were modeled on HOEPA. As a result, we are able to look at the individual effects of both the old and new state laws and, in states that had older laws and newer mini-HOEPA laws, we can assess the effect of adding a new law to an existing regime.

Creating the Legal Index

We created a legal index by engaging in a careful textual review of every anti-predatory lending statute throughout the country that was in force in 2004 or 2005. The legal indexes used

¹⁸ Ho & Pennington-Cross (2006b).

¹⁹ Ho & Pennington-Cross (2006a). Cf. Gramlich (2007a, pp. 11-12) (expressing concern about the possibility of similar evasion under HOEPA and proposing lower HOEPA triggers for adjustable-rate loans than for fixed-rate loans).

²⁰ Elliehausen et al. (2006).

in other studies were created from charts summarizing laws that had been compiled by non-profits, trade associations, or lending industry lawyers. Our legal index is both more complete and more nuanced than prior efforts. As it is more fully described in Bostic, et al. (2008), the procedure is only sketched here. Following Ho and Pennington-Cross, we include four coverage and four restriction measures. We expand, however, on Ho and Pennington-Cross by adding a new dimension — enforcement mechanisms — that takes into account the potential liability of owners of loans, known as assignees, and other remedial provisions in the laws.

As Appendix A1 describes, we gave each law a score for coverage, restrictions and enforcement, with a higher score indicating a stronger law. The coverage measure takes into account the types of loans covered by the law; the broader the law's coverage, the higher the coverage score.²¹ The restrictions measure takes into account the strength of each law's credit counseling provisions and restrictions on prepayment penalties, balloon payments, and restrictions on loan terms that limit or bar borrowers' access to the courts. Again, the more restrictive the law, the higher the score. The enforcement score reflects the types and strength of enforcement mechanisms allowed – i.e., governmental only or also private remedies for injured borrowers. This enforcement measure makes a particularly unique contribution. One issue that is at the center of current policy debates is whether the ultimate purchasers of mortgage notes, including securitized trusts, should be liable for wrongdoing by originators.²² Our methodology allows us to study the scope of such assignee liability provisions and their effect on credit flows.

Each state then received a score along each measure (the lowest score was a 1), a component score for coverage, restrictions, and enforcement and an overall score. We constructed additive and multiplicative indices using the three component scores. Appendix A2 lists the constructed values for each state.

The Data

To assess the impact of these state laws, we used 2004 and 2005 HMDA data, which captures most residential mortgage lending.²³ This data permitted us to assess: (1) the probability of applying for a subprime loan relative to a prime loan; (2) the probability of

²¹ Among other things, the coverage score helps distinguish between older laws that cover the entire residential mortgage market from certain newer laws that only cover high-cost loans.

²² In recent years, up to 80 percent of subprime loans were securitized. Engel & McCoy (2007).

²³ We excluded states in which the anti-predatory lending laws changed or took effect in the middle of the calendar year in either 2004 or 2005.

originating a subprime loan relative to a prime loan; and (3) the probability of a subprime application being rejected. For 2004, we defined loans as subprime if they were made by lenders identified as subprime by HUD.²⁴ For 2005, we used the HUD subprime list and alternatively used HMDA pricing information to identify subprime loans.²⁵ We considered HMDA-reported loans that had APR yield spreads of 3 percentage points or more above the comparable Treasury yields to be subprime.

Cross Border Analysis

Most studies of anti-predatory lending laws examine the impact of laws on loan volumes and prices statewide. This approach fails to take into account intra-state variations in economic conditions that could influence credit markets. To avoid this pitfall, we used a cross-border sample. Our sample only included loans from counties located on state borders, where one of the two border states had an anti-predatory lending law.²⁶

The base model can thus be specified as:

$$Outcome_{it} = \beta^0 + \beta^1 Law_i + \sum_{j=ALFL}^{VAWV} \beta_j^2 Border_{ji} + \beta^3 Borrower_i + \beta^4 Location_i + \varepsilon_i$$

where i and j index, respectively, the individual loans and the state border pair, Law reflects the presence and strength of an anti-predatory lending law, $Border$ indicates that loans are in border counties for the indicated pair, $Borrower$ and $Location$ reflect borrower and location specific characteristics, and ε is the error term.²⁷

In the analysis below, we consider various specifications of the Law vector. Two specifications use the combined (composite) index that aggregates scores across the three dimensions. To establish whether index construction is important, we evaluate combined indexes that are additive and multiplicative in their construction. We also disaggregate these combined indexes to determine whether and how individual components of the legal framework

²⁴ HUD included a lender on its subprime list where subprime loans accounted for fifty percent or more of the lender's total mortgage originations. Under that approach, lenders were free to identify themselves as subprime based either on the credit profile of their borrowers or the high-cost nature of their loans. Scheessele (1999).

²⁵ We did not use the HMDA price information for our analysis of the 2004 data because of concerns about reporting and other errors in the data. Bostic et al. (2008).

²⁶ In a separate article (Bostic et al. (2008)), we used the same data and sampling technique; however we took a different sample. The results using the two different samples were virtually the same.

²⁷ For a complete discussion of these controls, see Bostic et al. (2008).

– i.e., coverage, restrictions, and enforcement mechanisms -- affect mortgage outcomes. Finally, we distinguish between state provisions in older laws and those in the newer mini-HOEPA laws.

Empirical results

Originations

Table 1 reports the results of estimates of how anti-predatory lending laws influence the relative probability of originating a subprime loan instead of a prime loan. We only report the law related variables but all other control variable results are available on request from the authors. Estimates using the combined indexes (both additive and multiplicative) consistently suggest that older laws usually make a subprime origination more likely than prime, while the newer laws have no significant effect on the likelihood of a subprime origination (except for one result in 2004). However, subsequent estimates indicate that these aggregated metrics mask important influences.

First, the individual components of the legal framework turn out to be important. We observe fewer subprime originations relative to prime originations where laws are more restrictive but comparatively more subprime originations where laws have broader coverage or enforcement mechanisms.

Moreover, when we further deconstruct the indexes to distinguish between older and newer laws, we find that both older and newer laws are important. Enforcement provisions appear to be the most important consideration for the older laws. The results show that the stronger the enforcement mechanisms in the older laws, the more likely an application is to be a subprime.

Among the newer laws, laws with greater restrictions reduce the probability of a subprime origination compared to that of a prime origination. Newer laws with broader coverage are associated with a higher probability of a subprime origination relative to prime.²⁸ It is perhaps these opposite forces that explain the lack of significant results using the aggregated indexes. The restrictions results might be a supply side story, with lenders being limited as to the subprime products they can offer. The coverage results – like the enforcement results for the old laws -- may reflect a judgment by stronger prospective applicants who had previously stayed on

²⁸ Under our analysis, the definition of a subprime loan for purposes of calculating origination, application, and rejection probabilities remains the same whether a law's coverage is narrow or broad.

the sidelines that the new laws gave them added protection against potentially abusive lenders, leading them to apply and to have their applications approved. On balance, these results are broadly consistent with those observed in prior research.

Rejections

As seen in Table 2, the combined indexes show a limited relationship with the likelihood of a subprime rejection. But, as we saw for originations, these belie more significant effects for the individual components. Indeed, when the indexes are disaggregated and the components are considered individually, restrictions, coverage, and enforcement provisions all have significant relationships with the probability of rejection.

The effects here are opposite from, but consistent with, those observed for originations. Greater restrictions are associated with increases in the likelihood of rejection. This could arise because the restrictions limit the types of products that lenders might consider offering, which in turn limits the types of borrower profiles (in terms of credit risk, etc.) that are likely to be approved. If so, then one would expect elevated rejection rates in high-restriction states after controlling for borrower profiles.

We also find that broader coverage and tougher enforcement reduce the probability of rejection. Moreover, the coverage effects appear to be stronger than the enforcement relationships across the board. Once again, extending coverage to a wider swath of subprime loans and adopting strong enforcement mechanisms may boost the confidence of better quality borrowers who, without legal protection, would fear exploitation. If more creditworthy borrowers are entering the mix, one would expect rejection probabilities to decline.

These rejection results are robust. They are broadly consistent across the two years and are qualitatively identical for both the older and newer laws. That said, the strength of the effects is greater for the newer laws. That is not surprising, because most of the newer laws contain multiple restrictions, unlike the older laws, which tended to have fewer restrictions. This suggests that the new law mechanisms may have had an important impact on underwriting policies and outcomes and on borrowers' comfort with subprime products.

Applications

The results for the probability of a subprime application versus a prime application (table 3) are largely statistically insignificant and inconsistent across different specifications. However, there are some consistent results.

When the components are disaggregated, the results for coverage are consistently negative – greater coverage is associated with a lower probability that an application will be subprime and a greater probability that an application will be prime. This holds when one uses both the combined indexes or breaks the index out according to older and newer laws. The enforcement relationships are inconsistent across law type and largely insignificant when aggregated.

Interactions Among the Components in the Legal Framework

So far, we have considered the legal framework components in isolation. However, these components could be interacting with one another in different ways. They might be mutually reinforcing such that strength along one dimension amplifies the effects associated with another dimension. Alternatively, they could be counter-balancing, so strength in one dimension reduces the strength of the relationship for another dimension. To explore these possibilities, we re-estimated the relationships including interaction terms between the various indexes. Table 4 shows the results of this exercise for regressions including each interactive term separately.

The results show few systematic interactive effects. The interaction between the coverage and restrictions index yields few significant coefficients, and in the cases where significant coefficients are observed there are reasons to have robustness concerns. For example, signs differ between the significant and insignificant coefficients for originations. We observe similarly weak results for the interaction of coverage with enforcement. The originations results show nothing systematic, while the rejections and applications estimates reveal significant relationships for 2004 but not 2005.

The lone exception to this is the restrictions-enforcement interaction, which shows significant positive coefficients for both applications and originations (except for one case). In the applications case, the positive interaction suggests that enforcement mechanisms inhibit the likelihood of a subprime application less where restrictions are strong and vice versa. This suggests that there might be a limit to the cumulative effects of these provisions, perhaps because

there is a finite pool of applicants whose decisions might be affected by the nature of the legal framework. We observe a similar offset in terms of originations, though the individual enforcement effect here is much weaker.

Putting it together: How legal framework provisions affect the market

Given the many moving parts in this framework, it is perhaps more straightforward to discern the relationships graphically based on a simulation using the coefficient estimates discussed above.²⁹ Figures 1 through 3 show how our model using the 2005 combined index data predicts that applications, rejections, and originations would change as a state's score changes along one dimension. Because the results for originations are qualitatively similar when one uses the HUD list or HMDA price information to define a subprime loan, the two are discussed singly.

Figure 1 shows that the probability of a subprime origination increases significantly as a state law covers more loans. By contrast, regulating more loans reduces the subprime application probability only slightly, even when one compares states at the extremes of the coverage index. Finally, increasing coverage reduces the probability that a subprime application will be denied. Taken together, these suggest that the increased probability of origination as coverage increases is mainly due to a decline in the likelihood that a given application will be rejected.

For restrictions (figure 2), the outcomes relate to each other similarly, but produce the opposite outcome. Here the probability of rejection rises considerably as a law becomes more restrictive, while applications again move only slightly, this time increasing as restrictions increase. Originations fall, though not nearly as much as rejections increase. From this, it appears that originations decline because of an increased likelihood of denial, and the slight increase in applications that occurs as restrictions increase serves to offset the rejection effect and mute the overall decline in originations.

The graph for enforcement mechanisms (figure 3) shows somewhat smaller effects than those observed for the other two components. The probability that a subprime loan is originated rises as one moves to states with broader enforcement measures. This occurs despite the fact that

²⁹ Given the limited robustness of the interaction results, this discussion focuses on the coefficients obtained using specifications that omitted interactions.

subprime application probabilities fall as enforcement increases.³⁰ Finally, rejection likelihoods decline as enforcement mechanisms increase. In considering these three trends, it appears that the application and rejection trends offset each other, with the rejection trends prevailing such that subprime origination probabilities ultimately increase.

Summary analysis

The results clearly indicate an important role for anti-predatory lending laws and highlight the importance of disaggregating the laws to focus on the effects of their different components. We have shown that the extent of coverage, restrictions, and enforcement embodied in a state's legal framework is associated with significant changes in the probability that a subprime application is rejected and a subprime loan is originated. As the individual components of the newer laws become stronger, they have different and often complimentary effects on applications, originations, and rejections.

These results can be used to paint different stories with different implications. For example, better-quality applicants or greater efforts by lenders to discourage people with weak credit risks from applying could explain why increased *coverage* is associated with lower subprime rejection probabilities. This would be a "modified lemons" story, whereby expanded coverage encourages people on the stronger end of the credit spectrum who previously avoided the subprime market to enter that market and obtain subprime loans.

Restrictions tend to increase the likelihood of rejection and hence retard originations in the subprime market. Restrictions typically limit the menu of subprime products a lender can offer and reduce the lender's ability to tailor products to the particular needs and profiles of borrowers. Borrowers who might have been served before may no longer find products for which they qualify. The higher rejection probabilities may also indicate that borrowers and lenders have not adjusted to the stricter lending standards through greater pre-screening of loan customers with weak credit profiles. The increased likelihood of rejections from stronger restrictions could also be a sign, albeit an indirect one, that lenders are complying with the laws.³¹

³⁰ While these probabilities are generally insignificant, their estimated magnitude is large.

³¹ Cf. Li and Ernst (2006, pp. 11-13) (finding that loans in states with mini-HOEPA laws had fewer abusive terms).

Finally, the key result in the analysis of *enforcement* is that stronger enforcement mechanisms reduce subprime rejection probabilities. The overall trend for enforcement is consistent with the view that the laws affect the market through changes in rejection probabilities.

In thinking about the results for enforcement mechanisms, one or more things could be going on. On the lower end of the credit spectrum, fear of legal exposure may cause brokers and loan officers to discourage people with weaker credit from applying for subprime loans. Removing these high risk applicants from the loan pool would reduce subprime rejection probabilities. In addition, objective standards and quantifiable damages caps may give lenders greater certainty about their legal obligations and legal exposure, making them more comfortable with originating subprime loans.

Ramifications of the Design of New Anti-Predatory Lending Laws

“Slider Effects”

These results have important implications for the design of anti-predatory lending laws. The three major components of anti-predatory lending laws – coverage, restrictions, and enforcement mechanisms – have “slider effects” in which the strength of one component offsets the negative effects of another.

To test and illustrate this, we selected seven states with newer laws featuring different combinations of weak and strong components and compared the outcomes in those states with those in Montana, which had (and still has) no anti-predatory lending law. Using the 2005 data for the newer laws, we simulated how each particular state’s law would affect the likelihood of originations, applications, and rejections relative to Montana.

As seen in Table 5, for four model laws — Nevada, New Mexico, New York, and Minnesota – both the probability of a subprime application and that of a subprime rejection went down compared to Montana. In each case, moreover, the likelihood of rejection dropped more than the likelihood of a subprime application. As a result, in these four states, the probability of a subprime origination rose. For the other three model states, rejection probabilities rose relative to Montana’s, but application rates either increased or fell relative to Montana only slightly. For these three states, we do not see a consistent signal regarding subprime origination probabilities.

One could infer an increased origination likelihood (Massachusetts), no change (North Carolina),³² and a reduced origination likelihood (Oklahoma).

What distinguishes the second group of three model laws from the four model laws that show a consistent increase in origination probability? Essentially, the second group of model laws (based on laws in Massachusetts, North Carolina, and Oklahoma) has narrower coverage than restrictions. For instance, the Oklahoma-type law has the lowest score for coverage but a medium score for restrictions, while the North Carolina-type law features low-to-medium coverage with high restrictions. The Massachusetts-type law follows a similar pattern, combining medium coverage with the highest score for restrictions. In Nevada, New Mexico, New York, and Minnesota, in comparison, the relative coverage is as strong or stronger than the restrictions.

The Effects of Strict Assignee Liability Laws

Our simulation also sheds light on the effect of assignee liability laws on flows of subprime credit, which is currently a topic of hot debate. In Table 6, we simulate the effect of adopting either of the two strictest types of assignee liability laws and compare those effects to outcomes in Montana, which has no law. Two of our model laws – patterned on laws in Nevada and Pennsylvania – impose full assignee liability with no safe harbors. The other seven model laws – patterned on the laws in New Mexico, Massachusetts, Illinois, Indiana, Maine, New Jersey, and West Virginia – create a limited safe harbor for assignees who perform due diligence and do not engage in willful violations of the law. Under those seven model laws, assignees who qualify for the safe harbor are only subject to limited claims and defenses that the borrower could raise against the lender. All other assignees are subject to full liability for all claims and defenses available against the lender.

Our simulation results show no definitive effect of assignee liability on the likelihood of subprime originations, even when the liability provisions are in their strongest form. In many instances, we observe higher probabilities of origination, relative to Montana, across the two definitions of subprime lending (HUD list and HMDA price); in a smaller number of cases, origination probabilities are lower than those in Montana.

³² Here and throughout this chapter, we evaluate North Carolina law only as of 2004 and 2005, not as of 2007, when North Carolina amended its mini-HOEPA law in order to strengthen it.

Our simulation results are based on credit flows for calendar year 2005. Given the events of 2007, when delinquencies of subprime mortgages skyrocketed and investors fled the market for subprime mortgage-backed securities, it is necessary to ask whether our results still hold or whether assignee liability laws played a role in investor flight.

While it is too early to arrive at a definitive answer to this question, several factors suggest that the dismal performance of subprime loans in late 2006 and in 2007 and the resulting inability to value subprime mortgage-backed securities, not assignee liability provisions, were what prompted the exit. First, in the summer of 2007, investors fled the entire subprime market (and even instruments remotely tied to that market), not just in states with assignee liability laws.³³ Second, as our origination results suggest, investors invested heavily in loans from states with assignee liability laws of various strengths for several years before the subprime market collapsed. This suggests that the poor performance of subprime loans, which experienced a sharp downturn in the months preceding the market's collapse, was the precipitating factor for the implosion, not assignee liability laws. Finally, most states with assignee liability laws, such as New Mexico and West Virginia, also regulated loan terms such as prepayment penalties and balloon clauses to curtail the higher risk of default and foreclosure associated with those terms.³⁴

Unanswered Questions

Our results raise as many questions as they answer. In this section, we discuss future research avenues suggested by our findings.³⁵

The Implications of Referring Loan Applicants to Loans Priced Below the Triggers

Future research is needed to clarify the meaning of our findings on the effects of restrictions in the newer laws. We find that stronger restrictions make a prime origination more likely relative to a subprime origination. This indicates that lenders and brokers may be doing a

³³ See, e.g., Standard & Poor's (2007) (noting that by September 12, 2007, "Wall Street firms, banks and investors ha[d] almost completely lost their appetite for nonagency mortgage-backed assets," including subprime MBS); cf. Federal Reserve (2007) (cutting the federal funds and discount rates by 50 basis points on September 18, 2007 because "the tightening of credit conditions ha[d] the potential to intensify the housing correction and to restrain economic growth more generally").

³⁴ Quercia et al. (2005, p. 25).

³⁵ In addition to the discussion that follows, future extensions will likely include consideration of differences in state foreclosure laws, exploration of the geographical distribution of legal frameworks, and estimation of the effects of laws according to lien status, owner-occupancy status, and refinance versus purchase loans.

better job of screening stronger loan candidates and referring them to loans that are not subject to the laws. What this means is not entirely clear. Our results could mean that lenders and brokers referred these applicants to less expensive³⁶ and safer loans. Alternatively, originators may have referred applicants to risky loan products that are consciously written to evade the triggers of a particular state law. In a third scenario, irrespective of state laws, originators may have referred applicants to loan products featuring low initial interest rates with low monthly payments, but with high rate resets. This practice would have enabled lenders to underwrite loans based on lower, initial interest rates and thus increase the likelihood that applicants would qualify for loans.

Concerns about evasion arise from the fact that most of the newer anti-predatory lending laws have triggers that hinge on a loan's APR or total points and fees. Any loans that fall below both triggers will escape regulation under these statutes. Most of these triggers can be gamed by writing an adjustable-rate mortgage (ARM) with a low introductory teaser rate that later adjusts to a fully indexed rate above the trigger. Currently, under the Truth in Lending Act, the APR formula for teaser-rate ARMs is a composite of the teaser rate for the introductory period and the fully-indexed rate at closing for the remaining term of the loan.³⁷ By lengthening the introductory period and offering a low teaser rate, it is possible to produce an APR for an ultimately expensive loan that nevertheless falls below the APR trigger.

During 2004 and 2005, there was a shift in the product mix of subprime loans, raising questions about the reason for that shift. Over that period, hybrid adjustable-rate mortgages (ARMs) and interest-only ARMs became much more prevalent, relative to fixed-rate loans, in the subprime market.³⁸ ARMs made up 74 percent of non-prime loans in 2004 and 79 percent in 2005.³⁹ A disproportionate number of the subprime ARMs for those years had low annual teaser rates of four percent or less for two years, three years or five years.⁴⁰ Similarly, interest-only loans (many of which were subprime loans) mushroomed in 2004 and 2005.⁴¹

³⁶ We cannot measure the extent of migration to cheaper loans because both of the definitions of subprime loans used in this chapter are subject to limitations. The HUD list does not identify subprime loans at the loan level and the HMDA price test categorizes first-lien loans below the 300 bps spread – which is a relatively large spread -- as prime.

³⁷ 12 C.F.R. § 226.22 & app. J to 12 C.F.R. pt. 226.

³⁸ Duncan (2006, p. 18); see also Avery et al. (2007, pp. 8-9); Cutts (2007, p. 13).

³⁹ Walsh (2006, p. 5).

⁴⁰ Cagan (2006, pp. 24-27); see also Cagan (2007); FitchRatings (2006a, pp. 2-3).

⁴¹ FitchRatings (2006a); FitchRatings (2006b); FitchRatings (2006c).

Evasion is not the only possible explanation for this shift in product mix. In 2004 and 2005, interest rates were rising and so were home prices. Lenders, believing that they could take on more risk because of home appreciation, may have marketed hybrid ARMs and interest-only ARMs products more vigorously to applicants who did not qualify for other loans.⁴² The fact that hybrid ARMs and interest-only ARMs were offered across the country, both in heavily regulated and lightly regulated states, gives this explanation currency.

Without more detailed information on loans, we cannot tell whether the product shift toward ARMs was motivated by rising home prices or evasion. Future research using loan-level data on loan type and the presence of teaser rates on loans would shed light on this issue. Research would also be helpful on the effects, both good and bad, of including more fees (such as prepayment penalties and yield spread premiums) in triggers for points and fees and of redefining the APR trigger at the fully indexed rate.

The Implications of Increased Subprime Originations

Our findings also raise questions for the policy implications of the higher probability of subprime originations that result from broader coverage. On the one hand, broader coverage expands access to credit, which is generally seen as desirable. On the other hand, from a policy perspective, lawmakers should be wary of writing laws that encourage consumers to enter markets rife with lax underwriting or abusive practices, as the recent subprime experience shows. If a law has broad coverage but restrictions or enforcement that are overly weak, the law may give consumers false confidence that they will be shielded from abuses when they apply for subprime loans.

How Well Did Loans Perform In States Governed by the Newer Laws?

The subprime crisis raises the related question, i.e., how well did loans perform in states with anti-predatory lending laws relative to loans in other states? It is well known by now that the 2005, 2006, and 2007 books of subprime loans had significantly elevated rates of delinquency and default.⁴³ Future research is needed on the effects of state anti-predatory laws on the performance of subprime loans and the associated welfare effects. Questions of interest

⁴² See, e.g., Pavlov & Wachter (2007, pp. 23, 27-30) (areas with higher concentrations of nontraditional ARMs have affordability constraints and experience faster home price appreciation during up markets).

⁴³ Sabry & Schopflocher (2007, pp. 8-10); Standard & Poor's (2007); Youngblood (2006).

include: How well did loans covered by state anti-predatory lending laws perform? How well did non-covered loans in those states perform? Non-covered loans include loans originated in states with newer laws that fell below a law's triggers and loans originated in the same states that were exempt from coverage due to federal preemption. In comparison, what was the default experience of loans in states without anti-predatory lending laws? Finally, in assessing performance, did it matter whether a state's mini-HOEPA law imposed underwriting standards on borrowers' ability to pay? In our canvass of state laws, some mini-HOEPA laws adopted such standards and others did not.

What Was the Effect of Federal Preemption?

National banks, federal savings associations, and their mortgage lending subsidiaries are exempt from state anti-predatory lending laws and state enforcement under federal preemption orders issued by federal banking regulators under the Home Owners' Loan Act⁴⁴ and the National Bank Act.⁴⁵ In contrast, mortgage brokers and independent non-depository lenders, along with many state-chartered depository institutions and their subsidiaries,⁴⁶ must comply with most provisions in state anti-predatory lending laws.⁴⁷ While estimates vary, in 2004 and 2005, possibly thirty to fifty percent of subprime mortgage loans originated in states with mini-HOEPA laws were exempt from compliance with those laws due to federal preemption.⁴⁸

Dual regulation creates a natural experiment for exploring the effects of different modes of regulation and their strength. During 2004 and 2005, national banks, federal savings associations, and their mortgage lending subsidiaries were subject to very few restrictions on the terms in their

⁴⁴ 12 C.F.R. § 560.2.

⁴⁵ 69 Fed. Reg. 1904 (Jan. 13, 2004) (codified at 12 C.F.R. §§ 34.3, 34.4). Federal preemption for national banks and their operating subsidiaries did not take effect until Feb. 12, 2004. See *id.*

⁴⁶ In isolated cases, state "wild card" laws may excuse state-chartered banks and thrifts from having to observe state mini-HOEPA laws. For instance, Georgia has a wild card law that exempts state-chartered banks and thrifts and their subsidiaries from state anti-predatory lending laws to the same extent as national banks and federal thrifts. See, e.g., Official Code of Georgia Ann. §7-6A-12.

⁴⁷ We say "most provisions" because the federal Alternative Mortgage Transactions Parity Act (AMTPA) exempts most lenders, including independent non-depository lenders, from having to comply with state limitations on balloon clauses except for traditional fixed-rate, fully amortizing mortgages. A few states exercised their right to timely opt out of federal preemption under AMTPA. Renuart & Keest (2005, §§ 3.10.1, 3.10.2 at n. 679).

⁴⁸ Robert Avery, Kenneth Brevoort and Glenn Canner report that depository institutions and their subsidiaries together made 37.4% of all higher-priced loans reported under HMDA in 2004 and 35.8% in 2005. That sum rose to 40.9% in 2006. Avery et al. (2007, p. 25 and tbl. 9). For purposes of determining the number of loans shielded by federal preemption, these sums are overinclusive because they include state depository institutions and subsidiaries that had to comply with state laws. At the same time, the sums are underinclusive because they omit loans by other non-depository lenders that were preempted from some state restrictions under AMTPA.

mortgage loans. Both types of federal depository institutions, however, did face capital regulation and periodic examinations for safety and soundness, community reinvestment, and lending discrimination. Independent non-depository lenders were exempt from those examinations, but had to comply with the state laws. State banks and thrifts were often subject to both.

This scheme presents several interesting questions for exploration. What effect did federal preemption have on subprime flows of credit and why? Did the relative lack of legal restrictions on federally preempted loans affect the default risk of those loans? Could consumers discern which loans were covered by state anti-predatory lending laws or did federally preempted loans receive a spillover effect from increased consumer confidence in regulated states? Is there a difference in origination rates and quality of loan performance between loans originated by national banks and federal savings associations (which have heavy federal banking regulation) and their mortgage lending subsidiaries (which were lightly regulated)? Do federally preempted loans display a higher incidence of injurious loan practices and terms, such as long prepayment clauses or yield spread premiums? Finally, did federally chartered depository institutions and their subsidiaries gain relative market share in regulated states?

Conclusion

In this study, we measure the effect of state anti-predatory lending laws on the flow of subprime credit. Our findings are robust and sometimes counterintuitive. For example, it has long been assumed that broadening the market coverage of an anti-predatory lending law would impede access to credit. We find, however, that broader coverage is associated with much lower probabilities of subprime loans being rejected. As a result, expanded coverage tends to increase access to subprime credit, as do increased enforcement mechanisms. Stronger restrictions have the opposite effect, likely by limiting the types of subprime loan products that a lender can offer.

The 2007 crisis in subprime is evidence that the subprime mortgage market is immature and in a state of flux. Already, the subprime market of 2007 is quite different from the market of 2004 and 2005. We do not know what direction the subprime market ultimately will take, but we expect that the market that emerges out of the current situation will be subject to greater controls. Some may be in the form of federal and state legislation. Others may be through new, more stringent, underwriting standards adopted by regulators, lenders, or securitizers. Whatever forms these controls take, our findings shed some light on the efficacy of different approaches.

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Table 1. Regression Results for Originations

<i>Dep. Var.</i>	Origination Probability					
<i>Year</i>	2005				2004	
<i>Subprime def.</i>	HUD List		HMDA Price		HUD List	
<i>Specification Variable</i>	Estimate	Odds Ratio	Estimate	Odds Ratio	Estimate	Odds Ratio
Specification 1						
Old Index ^A	0.009* (0.005)	1.02	0.032*** (0.004)	1.09	0.014** (0.005)	1.04
New Index ^A	-0.002 (0.004)	0.99	0.004 (0.004)	1.01	-0.001 (0.004)	1.00
Specification 2						
Old Index ^M	0.002* (0.001)	1.03	0.006 (0.001)	1.07	0.003* (0.001)	1.03
New Index ^M	-0.001 (0.001)	0.98	0.000 (0.001)	1.00	-0.002* (0.001)	0.97
Specification 3						
Combined Restrictions	-0.053*** (0.012)	0.92	-0.025* (0.010)	0.96	-0.031* (0.015)	0.95
Combined Coverage	0.047 (0.010)	1.09	0.045*** (0.008)	1.08	0.036*** (0.010)	1.07
Combined Enforcement	0.029 (0.014)	1.05	0.042*** (0.011)	1.07	0.015 (0.016)	1.02
Specification 4						
Old restrictions	-0.005 (0.016)	0.99	0.000 (0.013)	1.00	-0.004 (0.017)	1.00
Old coverage	-0.035 (0.027)	0.97	0.054* (0.022)	1.05	-0.003 (0.033)	1.00
Old enforcement	0.064*** (0.020)	1.07	0.049** (0.017)	1.05	0.052* (0.025)	1.06
New restrictions	-0.097*** (0.019)	0.89	-0.038* (0.016)	0.96	-0.048* (0.024)	0.95
New coverage	0.054*** (0.011)	1.09	0.037*** (0.009)	1.06	0.037*** (0.010)	1.06
New enforcement	0.041 (0.021)	1.05	0.020 (0.018)	1.02	-0.006 (0.024)	.099

*-significant at $p < .05$, ** - significant at $p < .01$, *** - significant at $p < .001$.

Odds ratios reflect a one standard deviation increase in the variable. List refers to samples in which subprime loans were identified using the HUD-generated subprime lender list. Price refers to samples in which subprime loans were identified using the high cost loan indicator in the HMDA data.

Table 2. Regression Results for Rejection Probability

<i>Specification Variable</i>	2004		2005	
	Estimate	Odds Ratio	Estimate	Odds Ratio
Specification 1				
Old Index ^A	-0.013*** (0.004)	0.97	-0.004 (0.003)	0.99
New Index ^A	-0.002 (0.003)	0.99	0.003 (0.003)	1.01
Specification 2				
Old Index ^M	-0.002*** (0.001)	0.97	-0.001 (0.001)	0.99
New Index ^M	-0.001* (0.001)	0.98	0.000 (0.001)	0.99
Specification 3				
Combined restrictions	0.074*** (0.011)	1.13	0.098*** (0.009)	1.18
Combined coverage	-0.078*** (0.007)	0.87	-0.091*** (0.007)	0.85
Combined enforcement	-0.028* (0.011)	0.96	-0.030* (0.010)	0.95
Specification 4				
Old restrictions	0.041*** (0.013)	1.05	0.051*** (0.012)	1.06
Old coverage	-0.085*** (0.024)	0.93	-0.055** (0.019)	0.95
Old enforcement	-0.023 (0.018)	0.98	-0.033* (0.014)	0.96
New restrictions	0.132*** (0.017)	1.17	0.155*** (0.013)	1.20
New coverage	-0.081*** (0.007)	0.88	-0.098*** (0.008)	0.85
New enforcement	-0.048** (0.018)	0.95	-0.069*** (0.015)	0.93

*-significant at $p < .05$, ** - significant at $p < .01$, *** - significant at $p < .001$.

Odds ratios reflect a one standard deviation increase in the variable. Subprime loans were identified using the HUD-generated list of subprime lenders in both years.

Table 3. Regression Results for Application Probability

<i>Specification Variable</i>	2004		2005	
	Estimate	Odds Ratio	Estimate	Odds Ratio
Specification 1				
Old Index ^A	-0.001 (0.004)	1.00	0.004 (0.004)	1.01
New Index ^A	-0.015*** (0.004)	0.95	-0.006 (0.003)	0.98
Specification 2				
Old Index ^M	0.000 (0.001)	1.00	0.002* (0.001)	1.02
New Index ^M	-0.004*** (0.001)	0.93	-0.002** (0.001)	0.97
Specification 3				
Combined restrictions	0.002 (0.012)	1.00	0.018 (0.010)	1.03
Combined coverage	-0.025** (0.008)	0.96	-0.005 (0.008)	0.99
Combined enforcement	-0.004 (0.013)	0.99	-0.024* (0.011)	0.96
Specification 4				
Old restrictions	0.032* (0.014)	1.04	0.057*** (0.013)	1.07
Old coverage	-0.126*** (0.026)	0.90	-0.064** (0.021)	0.95
Old enforcement	0.065** (0.020)	1.07	0.003 (0.016)	1.00
New restrictions	0.015 (0.019)	1.02	-0.014 (0.015)	0.98
New coverage	-0.026** (0.008)	0.96	-0.002 (0.008)	1.00
New enforcement	-0.050* (0.020)	0.95	-0.020 (0.017)	0.98

*-significant at $p < .05$, ** - significant at $p < .01$, *** - significant at $p < .001$.

Odds ratios reflect a one standard deviation increase in the variable. Subprime loans were identified using the HUD-generated list of subprime lenders in both years.

Table 4. The Coefficients on the Interactive Terms

	Coverage*Restrictions	Coverage*Enforcement	Restrictions*Enforcement
<i>Originations</i>			
2004 – List	0.006 (0.007)	0.011 (0.006)	0.042*** (0.007)
2005 – List	-0.018** (0.006)	-0.002 (0.006)	0.007 (0.006)
2005 – Price	0.002 (0.005)	0.005 (0.005)	0.021*** (0.005)
<i>Rejections (List)</i>			
2004	0.006 (0.005)	-0.029*** (0.005)	0.000 (0.005)
2005	0.019*** (0.004)	-0.006 (0.005)	0.014** (0.004)
<i>Applications (List)</i>			
2004	-0.006 (0.005)	-0.013** (0.005)	0.029*** (0.005)
2005	-0.006 (0.005)	-0.002 (0.005)	0.016*** (0.005)

*-significant at $p < .05$, ** - significant at $p < .01$, *** - significant at $p < .001$.

Odds ratios reflect a one standard deviation increase in the variable. Each coefficient in the table was obtained by running a separate regression. Specifications in which all coefficients are included together are not shown. List refers to samples in which subprime loans were identified using the HUD-generated subprime lender list. Price refers to samples in which subprime loans were identified using the high cost loan indicator in the HMDA data.

Table 5. Simulation of Model Laws: Percent Change Relative to Montana (With No Law)

		Nevada Model	Oklahoma Model	North Carolina Model	New York Model	Massachusetts Model	New Mexico Model	Minnesota Model
	<i>Component</i>							
	Coverage	Least (1.00)	Least (1.00)	Low-Medium (2.72)	Medium (3.15)	Medium (3.15)	Broad (5.17)	Broadest (7.46)
	Restrictions	Least (1.00)	Medium (3.18)	High (4.27)	Medium (2.91)	Highest (4.82)	High (4.27)	Low (1.55)
	Enforcement Mechanisms	Highest (3.81)	Medium (3.11)	Low (2.41)	Medium (2.76)	High (3.46)	High (3.46)	Lowest (1.00)
	<i>Outcome</i>							
	Origination							
	List	7.6%	-4.8%	-4.5%	4.7%	-2.6%	8.8%	27.8%
	Price	9.2%	2.6%	4.3%	9.6%	8.2%	16.7%	22.4%
	Application	-5.3%	-0.9%	1.3%	-1.5%	-0.1%	-1.8%	-2.00%
	Rejection	-5.7%	10.4%	8.4%	-4.2%	7.1%	-8.8%	-32.4%

Table 6. Simulation of Assignee Liability Laws: Percent Change Relative to Montana (With No Law)

		New Mexico Model	Massachusetts Model	Illinois Model	Indiana Model	Maine Model	New Jersey Model	West Virginia Model	Nevada Model	Pennsylvania Model
	<i>Component</i>									
	Coverage	Broad (5.17)	Medium (3.15)	Medium-Broad (4.74)	Low (2.29)	Least (1.00)	Medium (3.15)	Broad (6.6)	Least (1.00)	Least (1.00)
	Restrictions	High (4.27)	Highest (4.82)	Medium (2.91)	High (4.00)	Low (1.55)	Med-High (3.73)	Medium (2.64)	Least (1.00)	Medium (2.36)
	Enforcement Mechanisms	High (3.46)	High (3.46)	High (3.46)	High (3.46)	High (3.46)	High (3.46)	Medium (2.76)	Highest (3.81)	High (3.11)
	Raw Assignee Liability Score*	3.00	3.00	3.00	3.00	3.00	3.00	3.00	4.00	4.00
<i>Outcome</i>										
Origination										
List		8.8%	-2.6%	14.0%	-2.4%	3.9%	2.6%	22.6%	7.6%	-1.0%
Price		16.7%	8.2%	17.9%	6.7%	7.0%	10.4%	23.1%	9.2%	4.2%
Application		-1.8%	-0.1%	-3.5%	-0.9%	-3.9%	-1.7%	-3.4%	-5.3%	-2.0%
Rejection		-8.8%	7.1%	-14.7%	7.0%	-1.4%	-0.2%	-25.1%	-5.7%	4.8%

* This row reports the raw score for assignee liability before being scaled down for the overall enforcement mechanism index. A raw assignee liability score of 3.00 means that assignees who exercise due diligence are subject to limited claims and defenses, while other assignees (plus any assignees guilty of willful violations) are subject to full liability for claims and defenses. A raw assignee liability score of 4.00 means assignees have full liability for claims and defenses, regardless of due diligence. Model laws based on states with the strongest assignee liability laws – i.e., with raw scores of 4.00 -- are shaded in gray.

Figure 1. The Impact of Law Coverage on the Mortgage Outcome

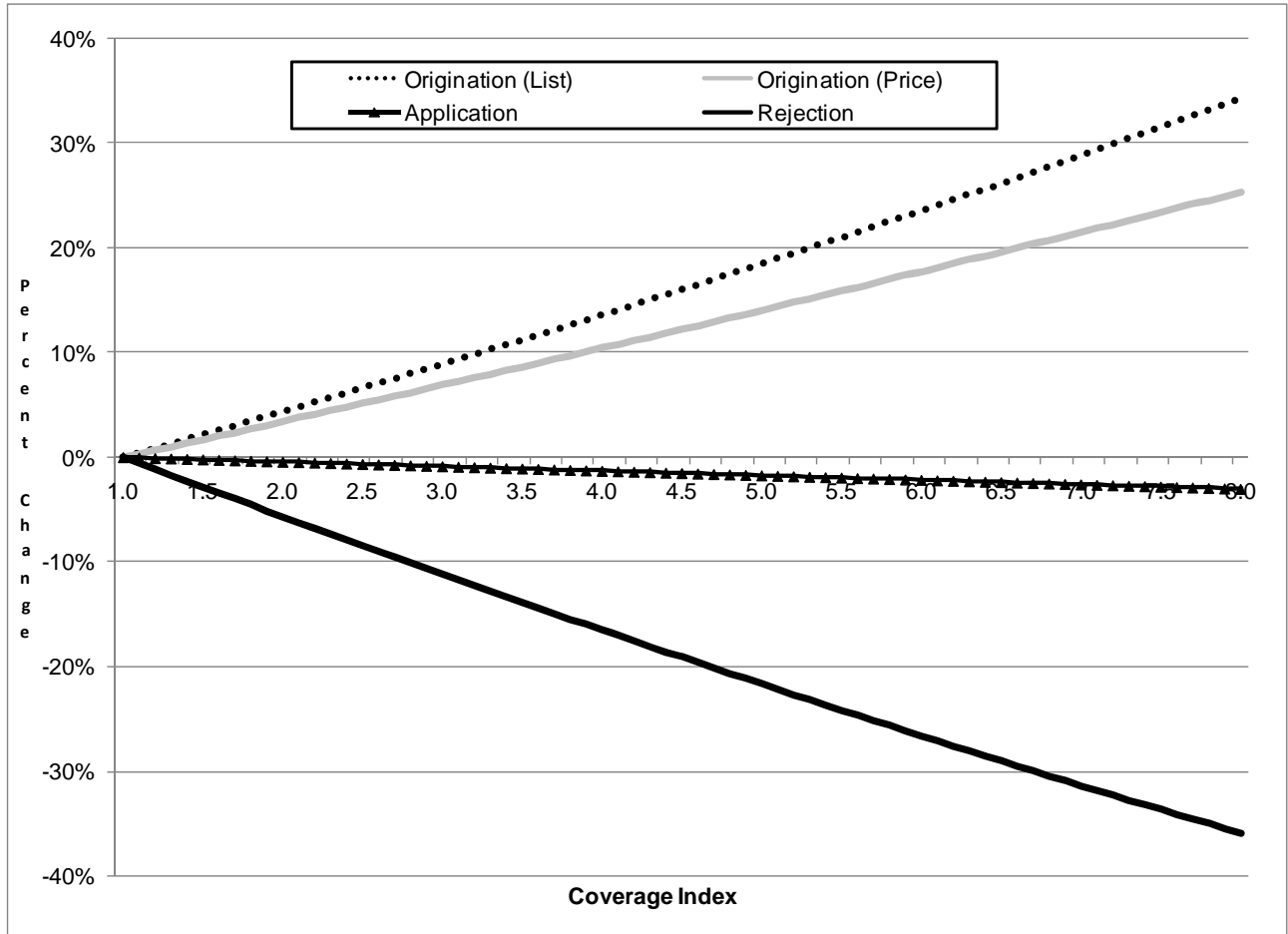


Figure 2. The Impact of Law Restrictions on the Mortgage Outcome

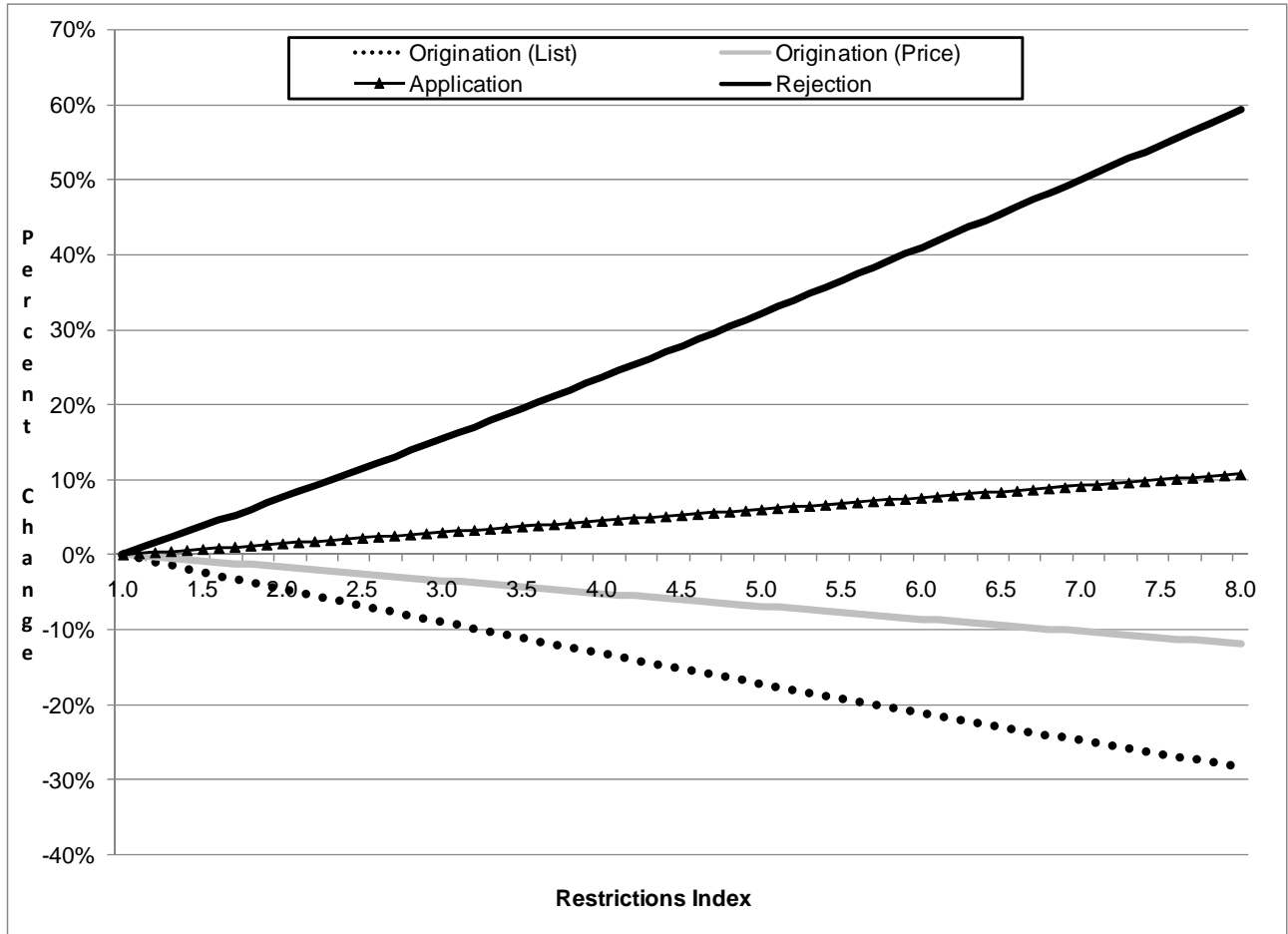
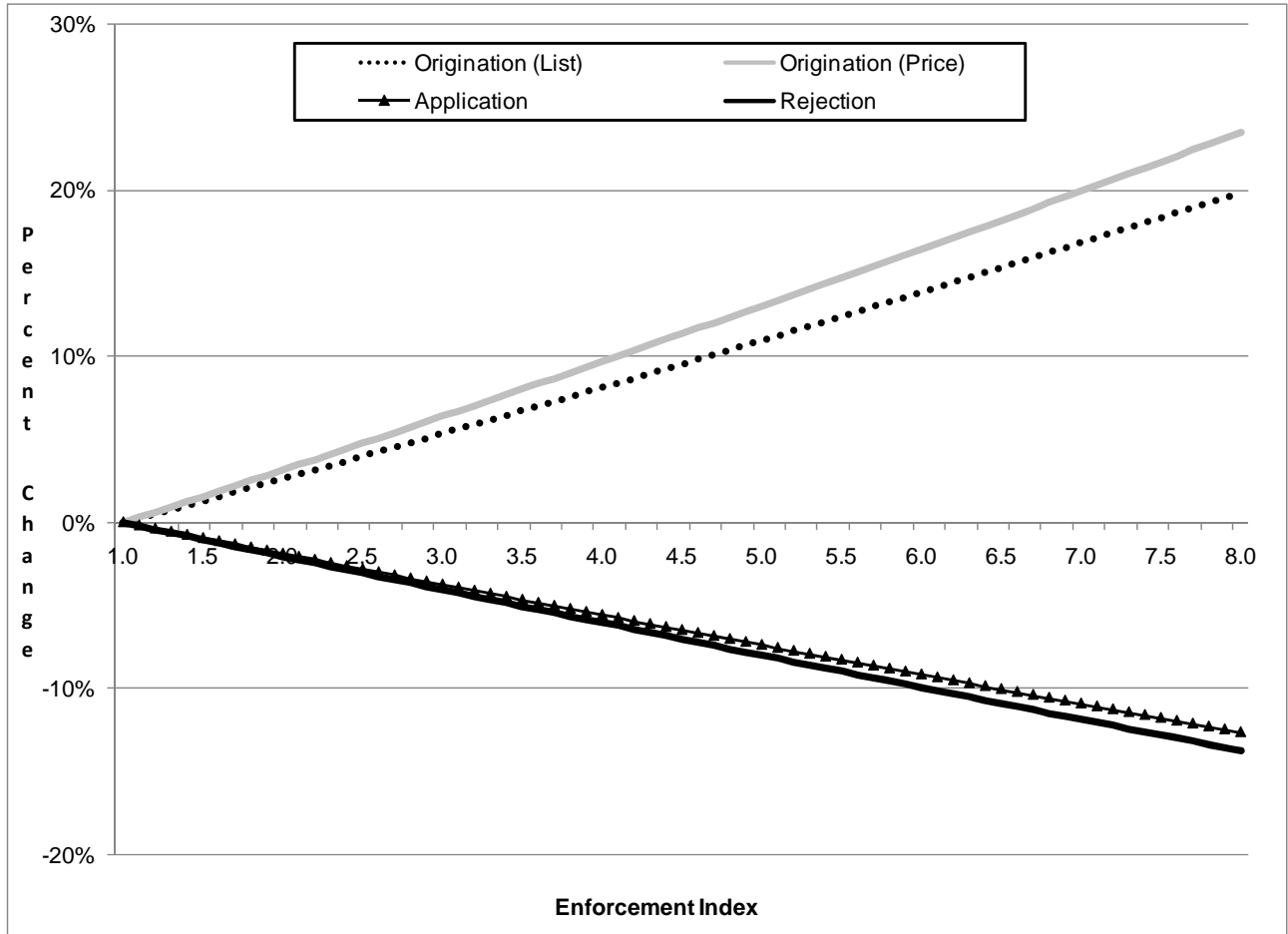


Figure 3: The Impact of Law Enforcement Mechanisms on the Mortgage Outcome



Appendix A1. Scoring Scheme – Index Creation

Each component is made up of various dimensions. We convert subcomponent scores to a 0-1 scale and then roll them up into a consolidated dimension score. This score is then rescaled by dividing by the component average score to insure that the indexes are not overly representative in terms of absolute value or variance of any single subcomponent. Consider the creation of the old law coverage index for Alaska. Because Alaska's score for loan purpose was a 2 and the maximum loan purpose score is 4, Alaska's converted loan purpose value is 0.5. The same procedure yields scores of 1 for the APR trigger 1st lien, the APR trigger higher liens, and the points and fees trigger subcomponents. These values sum up to 3.5 for Alaska. This sum is then divided by the average coverage value for all states (2.068627), then added to one, resulting in Alaska's coverage index value being 2.69 ($1 + 3.5 / 2.068627$). The additive version takes the value of each component and adds them together (index^A). We also create a multiplicative index (index^M).

<i>Coverage dimensions</i>	
Loan type	0 = HOEPA equivalent 1 = law does not cover government loans 2 = law does not cover reverse and/or open-ended loans 3 = law does not cover business and/or construction loans 4 = law covers all loans
APR trigger for first lien mortgages	0 = HOEPA equivalent 1 = 7-8 % plus the comparable Treasury security yield 2 = 6-7 % plus the comparable Treasury security yield 3 = no APR trigger
APR trigger for subordinate mortgages	0 = HOEPA equivalent 1 = 9-10% plus comparable Treasury security yield 2 = 8-9% plus comparable Treasury security yield 3 = 6-8% plus comparable Treasury security yield 4 = no APR trigger
Points and fees trigger	0 = HOEPA equivalent (8% of loan amount or \$400) 1 = 6-8 % of the total loan amount 2 = 5-6 % of the total loan amount 3 = less than 5 % of the total loan amount 4 = no points and fees trigger
<i>Restrictions dimensions</i>	
Prepayment penalties	0 = no prepayment penalty restrictions 1 = bans all penalties 60-84 months after origination 2 = bans all penalties 36-42 months after origination 3 = bans all penalties 24 months after origination 4 = bans all prepayment penalties
Balloon payments	0 = no restriction 1 = no balloons allowed in first 7 years of loan 2 = no balloons allowed in first 10 years of loan 3 = no balloons allowed after 10 or more years of loan 4 = no balloons allowed
Credit counseling requirements	0 = credit counseling not required 1 = credit counseling recommended 2 = credit counseling is required
Limits on judicial relief/ mandatory arbitration	0 = does not prohibit restrictions on judicial relief 1 = limits restrictions on judicial relief 2 = prohibits restrictions on judicial relief
<i>Enforcement dimensions</i>	
Assignee liability	0 = no assignee liability for holders in due course 1 = only relief against assignees is defensive 2 = assignee liability only if no due diligence 3 = assignees subject to limited claims and defenses 4 = assignees are liable even if they exercise due diligence
Enforcement against originators	0 = state government enforcement only 1 = borrower recovery limited to compensatory relief 2 = borrower relief compensatory and punitive

Appendix A2. Mini-HOEPA Index

State	New Laws (Mini-Hoepa)				
	Coverage	Restrictions	Enforcement	Index -- Additive	Index -- Multiplicative
Alaska	1.00	1.00	1.00	3.00	1.00
Alabama	1.00	1.00	1.00	3.00	1.00
Arizona	1.00	1.00	1.00	3.00	1.00
Arkansas	2.72	3.73	3.11	9.56	31.58
California	3.15	2.36	2.41	7.93	17.95
Colorado	1.43	2.64	3.11	7.18	11.73
Connecticut	1.86	2.91	3.11	7.88	16.85
Delaware	1.00	1.00	1.00	3.00	1.00
District of Columbia	4.74	2.91	3.11	10.75	42.85
Florida	1.00	2.64	3.11	6.75	8.20
Georgia	2.72	4.00	3.11	9.83	33.89
Hawaii	1.00	1.00	1.00	3.00	1.00
Idaho	1.00	1.00	1.00	3.00	1.00
Illinois	4.74	2.91	3.46	11.11	47.69
Indiana	2.29	4.00	3.46	9.76	31.75
Iowa	1.00	1.00	1.00	3.00	1.00
Kansas	1.00	1.00	1.00	3.00	1.00
Kentucky	1.86	3.18	3.81	8.86	22.59
Louisiana	1.00	1.00	1.00	3.00	1.00
Maine	1.00	1.55	3.46	6.01	5.35
Maryland	2.44	1.55	2.41	6.39	9.06
Massachusetts	3.15	4.82	3.46	11.44	52.63
Michigan	6.17	1.82	1.00	8.99	11.22
Minnesota	7.46	1.55	1.00	10.01	11.54
Mississippi	1.00	1.00	1.00	3.00	1.00
Missouri	1.00	1.00	1.00	3.00	1.00
Montana	1.00	1.00	1.00	3.00	1.00
Nebraska	1.00	1.00	1.00	3.00	1.00
Nevada	1.00	1.00	3.81	5.81	3.81
New Hampshire	1.00	1.00	1.00	3.00	1.00
New Jersey	3.15	3.73	3.46	10.34	40.71
New Mexico	5.17	4.27	3.46	12.90	76.42
New York	3.15	2.91	2.76	8.82	25.32
North Carolina	2.72	4.27	2.41	9.40	28.01
North Dakota	1.00	1.00	1.00	3.00	1.00
Ohio	1.00	2.36	3.11	6.47	7.35
Oklahoma	1.00	3.18	3.11	7.29	9.90
Oregon	1.00	1.00	1.00	3.00	1.00
Pennsylvania	1.00	2.36	3.11	6.47	7.35
Rhode Island	1.00	1.00	1.00	3.00	1.00
South Carolina	1.86	3.18	2.76	7.80	16.34
South Dakota	1.00	1.00	1.00	3.00	1.00
Tennessee	1.00	1.00	1.00	3.00	1.00
Texas	1.86	2.36	3.11	7.34	13.69
Utah	2.72	3.18	1.00	6.91	8.67
Vermont	1.00	1.00	1.00	3.00	1.00
Virginia	1.00	1.00	1.00	3.00	1.00
Washington	1.00	1.00	1.00	3.00	1.00
West Virginia	6.60	2.64	2.76	12.00	48.02
Wisconsin	1.00	1.00	1.00	3.00	1.00
Wyoming	1.00	1.00	1.00	3.00	1.00
Average	2.00	2.00	2.00	6.00	13.03
Min	1.00	1.00	1.00	3.00	1.00
Max	7.46	4.82	3.81	12.90	76.42
Standard Deviation	1.62	1.17	1.10	3.19	17.36

1 indicates that there is no law or that one of the parts of the law has little or no practical impact.

Appendix A3. Older Law Index

State	Coverage	Restrictions	Older laws (Before Mini-Hoepa)		
			Enforcement	Index -- Additive	Index -- Multiplicative
Alabama	2.69	3.68	1.64	8.02	16.28
Alaska	2.57	3.68	3.57	9.82	33.78
Arizona	1.00	1.00	1.00	3.00	1.00
Arkansas	2.93	2.34	1.00	6.28	6.87
California	2.93	1.67	2.92	7.53	14.34
Colorado	2.45	3.68	2.92	9.06	26.40
Connecticut	2.81	2.34	1.00	6.15	6.59
Delaware	1.00	1.00	1.00	3.00	1.00
Dist of Columbia	2.93	2.34	2.28	7.56	15.69
Florida	1.00	1.00	1.00	3.00	1.00
Georgia	1.00	1.00	1.00	3.00	1.00
Hawaii	1.85	1.67	2.92	6.44	9.02
Idaho	2.81	2.34	3.57	8.72	23.49
Illinois	1.00	1.00	1.00	3.00	1.00
Indiana	2.93	2.34	2.92	8.20	20.09
Iowa	2.93	3.68	1.64	8.26	17.74
Kansas	2.93	3.68	3.57	10.18	38.54
Kentucky	2.57	1.67	2.92	7.17	12.57
Louisiana	2.81	1.67	1.00	5.48	4.70
Maine	2.57	3.68	2.92	9.18	27.70
Maryland	2.57	3.68	3.57	9.82	33.78
Massachusetts	1.00	1.00	1.00	3.00	1.00
Michigan	2.57	2.34	1.96	6.88	11.82
Minnesota	1.00	1.00	1.00	3.00	1.00
Mississippi	2.93	1.67	2.92	7.53	14.34
Missouri	2.81	1.67	2.92	7.41	13.75
Montana	1.00	1.00	1.00	3.00	1.00
Nebraska	2.93	1.00	1.64	5.58	4.82
Nevada	1.00	1.00	1.00	3.00	1.00
New Hampshire	1.00	1.00	1.00	3.00	1.00
New Jersey	1.00	1.00	1.00	3.00	1.00
New Mexico	2.93	3.68	3.57	10.18	38.54
New York	1.00	1.00	1.00	3.00	1.00
North Carolina	2.69	2.34	2.92	7.96	18.44
North Dakota	1.00	1.00	1.00	3.00	1.00
Ohio	2.93	1.67	2.92	7.53	14.34
Oklahoma	1.97	3.68	3.57	9.22	25.84
Oregon	1.00	1.00	1.00	3.00	1.00
Pennsylvania	1.00	1.00	1.00	3.00	1.00
Rhode Island	2.93	3.01	1.00	6.95	8.84
South Carolina	2.93	3.68	3.57	10.18	38.54
South Dakota	1.00	1.00	1.00	3.00	1.00
Tennessee	1.00	1.00	1.00	3.00	1.00
Texas	1.00	1.00	1.00	3.00	1.00
Utah	2.81	3.68	3.57	10.06	36.95
Vermont	2.57	3.68	2.92	9.18	27.70
Virginia	2.81	1.00	3.57	7.38	10.03
Washington	1.00	1.00	1.00	3.00	1.00
West Virginia	1.00	1.00	1.00	3.00	1.00
Wisconsin	1.00	1.00	1.00	3.00	1.00
Wyoming	1.85	3.68	3.57	9.10	24.25
Average	2.00	2.00	2.00	6.00	12.09
Min	1.00	1.00	1.00	3.00	1.00
Max	2.93	3.68	3.57	10.18	38.54
Standard Deviation	0.88	1.12	1.09	2.75	12.47

1 indicates that there is no law or that one of the parts of the law has little or no practical impact.