The Best Value in the Subprime Market

State Predatory Lending Reforms

A report by
the Center for Responsible Lending

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Table of Contents

Executive Summary 2
Background 4
    This Study in Context 5
Methods 6
    Identifying State Laws 6
    Understanding Differences in Subprime Loan Volume 7
        1. Identifying loans with terms targeted for reform 8
        2. Measuring differences in volume 8
        3. Limitations 9
    Understanding Differences in Interest Rates of Subprime Home Loans 9
        1. Ensuring measurements are made on similar loans 9
        2. Measuring differences in interest rates 10
        3. Limitations 10
Findings 11
    #1: In states with strong laws, families in the subprime market receive fewer loans with abusive terms. 11
    #2: Strong state laws are not hampering consumers' access to subprime credit. 13
    #3: In states with strong laws, borrowers' interest rates are no higher for subprime mortgages – and they are often lower. 15
Policy Implications 18
Notes 20

Appendix 1: Categorizing State Reforms 22
Appendix 2: Volume Models 24
Appendix 3: Additional Rate Model Results 27
Notes on Appendices 30

Executive Summary

Since 1999, states have wrestled with the best regulatory approach to prevent predatory mortgage lending in the subprime market—a problem that increases the risk of foreclosure for credit-strapped families and costs Americans an estimated $9.1 billion each year.[1] Twenty-eight states have taken action either by passing comprehensive reforms or by relying on regulations aimed at specific predatory practices. Meanwhile, lawmakers in Washington also have proposed bills to update federal laws, including some that would override existing state laws.[2]

As lawmakers consider ways to address predatory mortgage lending, several questions are critical to the debate: How well are state laws working against predatory mortgage lending? Which laws would serve as the best models for effective policies? Are there negative unintended consequences of enacting state legislation? And what are the potential consequences of overriding state laws?

To answer these questions, we conducted the most comprehensive investigation ever undertaken on state anti-predatory lending laws. Our research examined 28 state reforms by analyzing six million subprime mortgage loans made over a seven-year period (1998 – 2004). Specifically, we compared borrowers' experiences under reforms in each of these states to those of borrowers in states with minimal protections or no laws. We were further able to isolate and measure the effects of the reforms by controlling for differences in key economic, geographic, temporal, and loan and borrower characteristics.

We find that state laws are working well to prevent predatory mortgage lending, but that's not all. Strong laws also allow subprime credit not targeted by the laws to flourish without increasing interest rates for borrowers. More specifically, in states with anti-predatory lending laws that go beyond current federal protections, we find:

- **Borrowers get fewer loans with abusive terms.**
  States that have implemented significant reforms generally reduced the incidence of loans with predatory terms, and states with the strongest laws realized the biggest gains in fighting predatory loans. For example, without New Mexico's law, an additional four out of ten borrowers (38.5%) in the subprime market would have received home loans with abusive features—including prepayment penalties, balloon payments or being unfairly steered into a higher-cost loan.

- **Borrowers have ready access to subprime credit.**
  State laws have produced no significant effect on subprime mortgage volume in the vast majority of states with anti-predatory lending laws. The results indicate that lenders have responded to state laws by fueling the expanding subprime market with mortgages that do not include loan terms targeted by state laws.[3]

- **Borrowers pay about the same or lower interest rates for subprime mortgages.** A central goal of predatory lending reform has been to shift lender compensation away from fees—both front-end charges and back-end prepayment penalties—into more transparent interest rates, since a borrower can refinance out of a high rate loan but cannot escape from high fees. With this in mind, we expected to find a combination of fee reductions accompanied by offsetting marginal interest rate increases. We did find that fees in the form of prepayment penalties were reduced, but, to our surprise, we also found that many families paid lower interest rates. Among states with reforms, interest rates on fixed-rate mortgages showed no statistically significant difference in eight states and actually were lower in 19.

  While the interest rate differences are small, they add up: A family with a $200,000 loan would typically save $1,000 or more over the first three years of the mortgage in a state with significant protections. One possible explanation for this finding is that in states with reforms, lenders are unwilling to pay mortgage brokers large bonuses (yield-spread premiums) for mortgages with higher-than-market rates—resulting in lower interest rates to borrowers.

In addition, there are strong indications that state reforms are having a positive effect on the national subprime market. For example, over the course of our study, the overall incidence of prepayment penalties peaked at 67.7% and then dropped to 51% by December 2004. For balloon payments, the corresponding figures went from 13.6% to zero.

Overall, these findings have two significant implications for state and federal policymakers, who are grappling with the best way to prevent predatory lending. First, the findings suggest that strong state laws like those in place in New Mexico, Massachusetts and North Carolina can serve as successful models. Second, the findings call into question the advisability of federal proposals that would nullify state efforts and substitute a weak national standard. In fact, this study shows that overriding state laws would be harmful—and costly—to consumers, since states are successfully cutting back on predatory loans without cutting off access to credit. From a homeowner's perspective, it appears that mortgages protected by strong state laws may be the best deal in the real estate market.

Background

Most abusive lending takes place in the subprime market, where unscrupulous lenders target vulnerable borrowers, including those with weak or blemished credit histories. Predatory lending can take different forms, but includes steering borrowers into a higher priced loan when they could qualify for a loan on better terms, stripping equity from a borrower by charging exorbitant fees or by levying abusive subprime prepayment penalties, and engaging in practices that increase the risk of foreclosure, such as making a loan without regard to the borrower's ability to repay the mortgage.

In 1994, Congress passed the Home Ownership and Equity Protection Act (HOEPA) in response to evidence of abusive practices in the mortgage lending market. The central feature of HOEPA's regulatory structure is to provide extra protections for home loans made at a high cost. By today's standards, HOEPA's two-pronged threshold is quite high. To be covered, the loan must typically have upfront charges that are more than 8% of the loan amount, or it must carry an annual percentage rate (APR) above a threshold that varies with time (set at about 12.5% in recent months). These measures stand in stark contrast to typical charges in today's market where conventional 30-year fixed rate mortgages average 6.5% interest rates and initial fees and charges on home loans average 0.4% of the loan amount.[4] HOEPA is further limited in scope since it does not cover loans used to purchase a home or open-end loans such as home equity lines of credit (HELOCs) at all. 2004 Home Mortgage Disclosure Act (HMDA) data show that only 0.003% of loans otherwise apparently eligible for coverage are made above HOEPA's thresholds.[5]

Since HOEPA's enactment, the subprime mortgage market has expanded an extraordinary fifteenfold (from $34 billion in 1994 to $516 billion in 2004),[6] and the problem of predatory lending has grown worse.[7] Unscrupulous lenders quickly found ways to circumvent HOEPA's intent and to take advantage of practices permitted under the legislation. For example, under HOEPA an unscrupulous lender has wide latitude to impose abusive prepayment penalties or to repeatedly refinance the same loan without providing any net tangible benefit to the borrower ("loan flipping").

In 1999, North Carolina passed the first comprehensive state law aimed at preventing predatory mortgage lending in the subprime mortgage market. Since then, many have passed specific anti-predatory lending laws to supplement federal protections aimed at ending abusive mortgage lending practices. The efforts of states have been modeled on HOEPA's basic structure, which is to provide extra protections for home loans defined as "high cost."

Many states have strengthened HOEPA and eliminated loopholes by expanding the definition of points and fees that are used to determine whether a loan is categorized as "high-cost." This has been a significant step in increasing protections for borrowers, especially when implemented in conjunction with adopting a lower "high-cost" threshold.

Additionally, several states have had separate regulations in place for years to address abusive prepayment penalties. During the study period, these prepayment penalty regulations were largely preempted for all except five states with applicable laws that chose to opt out of the Alternative Mortgage Transaction Parity Act. However, a federal regulatory change by the Office of Thrift Supervision that took effect in July 2003 restored these state provisions to full effect for non-depository finance companies, regardless of whether a state had originally elected to opt out.

This Study in Context

As additional states have taken action to address abusive practices in the subprime mortgage market, policy debates in Congress and within many state legislatures have grown more intense. A number of studies have been conducted that assess the effects of state laws on the market. Most of the research has focused on changes in loan volume in North Carolina's market, since it was the first state to pass a comprehensive anti-predatory lending law. This report digs deeper for the "why" behind reported changes in volume, and looks at the effects of these laws nationwide.

In 2002, the Center for Responsible Lending reported that the volume of subprime lending appeared to decrease in North Carolina after the state law was passed, but that the reduction was consistent with a decline in predatory loans that saved borrowers an estimated $100 million in its first year.[8] In 2004, researchers with the University of North Carolina at Chapel Hill (UNC) also noted a decline in subprime refinanced mortgages during the period 1998 - 2002, but found that 90% of the reduction could be attributed to fewer loans made with predatory terms.[9] The UNC researchers concluded that their findings were "…strongly suggestive that the North Carolina Anti-Predatory Law is doing what it is supposed to do." In addition, the UNC study found that subprime purchase lending, which directly contributes to home ownership, grew substantially in North Carolina during the study period.

There have been several more studies, including work from Harvey and Nigro, Burnett and Finkel, as well as Ho and Pennington-Cross, which use Home Mortgage Disclosure Act (HMDA) data and conclude that North Carolina saw a decrease in subprime market share apparently explained, at least in part, by a reduction in marketing.[10] This tentative explanation is frequently bolstered by findings that borrowers in North Carolina were less likely to be rejected for a subprime home loan and that applications for subprime loans were down, suggesting a drop in aggressive "push" marketing, particularly by non-depository finance companies. While we do not generally find that state reforms are connected with a drop in subprime lending in this paper, we believe that the observed changes reported by these other authors could reflect, as the UNC researchers found, a reduction in loans with abusive features—a possibility not readily explored through HMDA data.

Finally, Elliehausen and Staten analyzed data collected from nine lenders who were members of the American Financial Services Association (a trade organization of subprime lenders) and concluded that the North Carolina law was associated with a 14% drop in subprime lending.[11] Unfortunately, it is difficult to have confidence in that report's findings, since data collection for the study ended the day before the law took full effect.

Methods

The findings in this research are based on data from the Loan Performance Subprime Asset-Backed Securities Database.[12] The dataset included more than six million loans totaling $1.2 trillion originated from January 1998 through December 2004. For the full seven-year period, we estimate that the database covers over three-quarters of the subprime market.[13]

To analyze the data, our research involved three basic steps. First, we identified relevant state laws (including the District of Columbia) and their effective dates to sort loans into control and treatment categories (the former includes loans in states with minimal or no protections beyond HOEPA, while the latter includes loans in states with significant protections). Second, we developed and estimated multiple regression models to measure differences in loan volume, isolating the effect laws were having by controlling for other variables that influence loan originations. Third, we produced multiple regression models to estimate the effect state laws were having on interest rates charged to borrowers, controlling for factors that affect pricing.

Identifying State Laws

When examining state laws, we evaluated the strength of the laws by using protections available under the federal HOEPA law as a baseline. We then evaluated how the state laws differ in six key respects concerning a typical subprime loan: (1) types of loans covered, (2) treatment of points and fees, including covered charges and amount of charges that activate high-cost protections, (3) prepayment penalties, (4) anti-flipping rules, (5) substantive protections applicable to high-cost loans, and (6) remedies available to borrowers. We ascribed the following traits to our typical loan profile: first-lien, owner-occupied, conventional cash-out refinance from a non-depository lender, in an amount equal to that state's median subprime mortgage loan for the year the law being evaluated took effect. Appendix 1 lists the state law criteria and how each treatment state was coded.

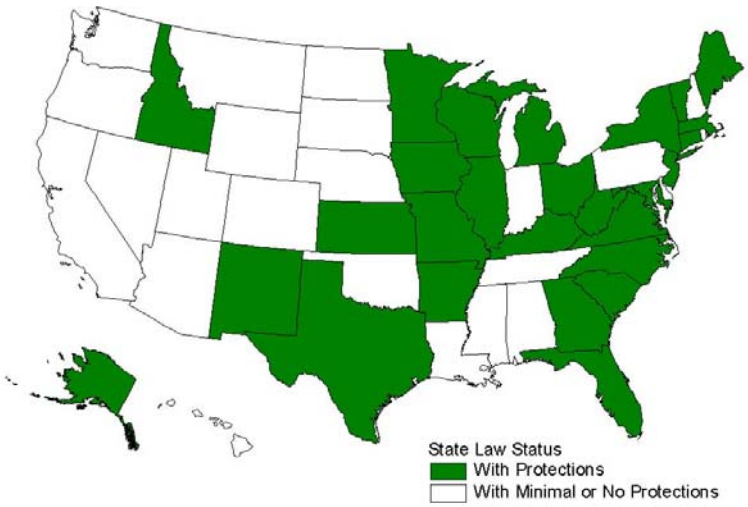
States that received the lowest score on all six of our criteria served as the control group. We then evaluated state laws that provided more than the federal level of protection on any individual criterion against this control group. In some instances, these laws were comprehensive predatory lending reforms; in others, they were stand-alone provisions, such as a specific restriction on prepayment penalties in the subprime mortgage market.[14] Further, all state laws with identical coding on our six criteria were grouped together and analyzed as one reform to help isolate the effects of the legal provisions from the idiosyncrasies of individual states.[15]

It is also worth noting that at different points in time, a state could be in the control group and later in the treatment group. For example, Florida's law took effect in 2002. Prior to that time, a loan made in Florida would have been considered to have been made in a state without significant protections and accordingly would have been in the control group. After that point

in time, a loan would have been considered to be made under Florida's reform. This method allows us to develop the broadest possible set of control measurements against which to assess lending patterns in states with significant reforms.

Finally, we only report on the state laws effective as of the end of our study period (December 2004). Although not reported here to avoid confusion, we also obtained results from previous reforms within states. [16] So, for example, North Carolina implemented part of its reform in 1999 and part in 2000, and then it substantively amended its reform again in 2003. The results in this report for North Carolina should be understood to apply to the law as it was amended effective 2003.[17]

Figure 1: States with Protections in Effect by December 2004



All total, we present findings for 28 states whose substantive anti-predatory lending laws were in effect as of the close of 2004. Those states are shown in Figure 1. Based on our six criteria, we identified Massachusetts, New Jersey, New Mexico, New York, North Carolina, and West Virginia as the states with the strongest laws. States that have effective protections only on prepayment penalties as measured by our criteria include Alaska, Idaho, Iowa, Kansas, Maine, Maryland, Michigan, Missouri, Ohio, Wisconsin, and Vermont.

Understanding Differences in Subprime Loan Volume

When policymakers enact reforms to address predatory lending, they intend to remedy perceived abuses within the subprime market. For example, equity stripping, steering, and flipping are three practices that are frequently mentioned in policy debates. In equity stripping, borrowers lose home equity when expensive fees are financed into the loan on the front end or taken through a subprime prepayment penalty on the back end. In steering, borrowers are influenced to accept a loan with a higher-cost than that for which they are qualified. Finally, loan flipping is the practice of refinancing loans (sometimes multiple times in quick succession) primarily to create fee income for the originator, with no tangible net benefit for the borrower. Other concerns surfaced in predatory lending debates include the use of mandatory arbitration clauses that effectively deny homeowners a chance to defend their home in court against foreclosure arising from a predatory loan, lending without regard to the ability to repay the loan, and packing unnecessary and frequently over-priced products such as single-premium credit insurance into a loan.

To account for policymakers' intentional efforts to reduce abuses in the subprime home loan market, our study distinguishes between changes in loans with terms targeted for reform and changes in all other subprime loans. However, due to the limitations of our database, we were only able to capture certain loan terms targeted for reform, as discussed more fully below.

1. Identifying loans with terms targeted for reform

A key step in our process involves separating the subprime mortgages in our data into two groups—loans with terms generally targeted in states for reform and all other loans. Based on our review of state laws, we identify three targeted practices that can be observed in our data: prepayment penalties, balloon payments and steering First, policymakers have clearly been concerned with the prevalence of prepayment penalties in subprime home loans. In North Carolina, for example, the state reform included three separate provisions addressing the charges. Policymakers also appear to object to balloon payments in subprime loans. Finally, steering seems a central concern—as evidenced by debate about two related charges, prepayment penalties and yield-spread premiums that support the practice. In some cases of steering, borrowers are induced to take a more expensive loan than that for which they qualify so that a broker or other originator can receive a bonus, sometimes known as a yield-spread premium. But lenders are unwilling to pay much of a bonus unless the borrower is locked in the higher rate through a prepayment penalty, as evidenced on rate sheets.[18]

In two instances, we are able to measure loan terms directly—prepayment penalties and balloon payments in subprime mortgages. Our analysis of the national data reveals that 59% of subprime loans over our study period had prepayment penalties while 3% of subprime loans had balloon payments. In addition, as a proxy for the practice of steering, we measure the number of subprime loans made to borrowers with credit scores at or above 660 who provided full documentation of income, since many of these borrowers could likely have qualified for lower cost credit in the prime market. Notably, our analysis of the data shows that 14% of subprime borrowers met the definition of this criteria. Recent public comments from an economist at Freddie Mac suggested that their analysis indicated that 20% of subprime loans over the last two years went to borrowers who could have qualified for a prime loan.[19]

2. Measuring differences in volume

We next analyze the differences between subprime home lending under state reforms and loans made in states without significant protections. Since our principal focus is understanding whether predatory lending reforms are decreasing the prevalence of loans with terms targeted for reform, we first examine differences in the proportion of loans with such terms under a given law compared to the proportion of loans with targeted terms in states with minimal or no protections.

Next, we measure whether overall subprime volume is different in those two contexts, to ascertain whether state laws have potentially led to a diminishment of overall credit. Finally, we decompose overall subprime volume into two segments and measure separately differences in volume of loans with and without targeted terms in states with reforms compared to loans made in states without reforms.

The volume measurements were made at the state level each month. Take, for example, the Florida law that became effective in October 2002. For this law we have 27 monthly measurements of volume (October 2002 through December 2004) that can then be compared to volume in states without significant reforms. As such, the results reported here in association with a law should be understood to be the average difference between lending under the law in the months the law was in effect and lending in states where there were no significant reforms.

In each of these measurements we controlled for key economic, geographic, and temporal factors that one might expect to influence originations. For example, we control for the effect of unemployment rates, interest rates, housing prices, the year and quarter in which a loan was made, as well as demographic measurements such as homeownership rates. In other words, we are able to measure the difference between lending under a state with a reform and states without reforms holding all of these controlled variables constant. Please see results for the volume model in Appendix 2 for a full list of non-law variables controlled for in this study.

3. Limitations

It is important to recognize that data limitations prevent us from measuring the full range of predatory practices generally targeted by lawmakers. For example, our data do not provide information on the nature and extent of up-front fees or the incidence of loan flipping. In all likelihood, these omissions will tend to understate potential positive consequences and overstate potential negative consequences associated with state laws. For example, this study assumes that any loans that were reduced by a state law and classified as "non-targeted" did not include predatory features, but that may not be the case: the loan may have had high up-front fees or may be a loan that resulted from loan flipping that did not benefit the borrower. Similarly, desirable changes associated with state laws are not exhaustive, since they apply only to the three specific practices screened in this report (subprime prepayment penalties, balloon clauses, and steering).

Understanding Differences in Interest Rates of Subprime Home Loans

We also examined differences in the interest rates of subprime home loans under the state reforms compared to loans made in states without significant protections through four loan-level multiple regression models—one each for fixed-rate mortgages with and without prepayment penalties and adjustable rate mortgages with and without prepayment penalties.

1. Ensuring measurements are made on similar loans

All adjustable rate mortgages (ARMs) modeled here were hybrid mortgages with a two-year fixed interest rate period adjusting semiannually thereafter for the final 28 years with a standard, fully-amortizing repayment schedule; they were the most common subprime ARMs by far. Further, while measuring rates, we included only loans that met certain criteria to ensure the measurements were fairly comparable. Both ARM and fixed-rate mortgages included in the model were restricted to those made to owner-occupant borrowers and secured by a first-lien on a single-family residence, with a 30-year term, no private mortgage insurance, and in an amount below jumbo loan thresholds.

2. Measuring differences in interest rates

Interest rates were defined by a risk premium measured as the difference between the rate charged on the home loan and a baseline rate. This is an important variation on simply measuring interest rates directly because it helps ensure the measurements reflect the cost lenders assign to mortgages beyond that of the general time-value of money. For fixed-rate mortgages, a moving average of the yield on five-year U.S. Treasury notes was used as the baseline rate. For the adjustable rate mortgages, the yield on a moving average of 6-month LIBOR rates was used as the baseline rate. While the measurement remains risk premiums, this construct also allows the reported results to be interpreted directly as differences in interest rate.

In contrast with our loan volume measurements discussed above, the measurements here are made on individual loans. So, for example, every loan in the data resulted in a measurement that was either designated as having taken place under a specific state reform or, alternatively, in the control group of loans made in states without significant protections. We then were able to measure the difference between the rates on loans in states with reforms and those in states without reforms.

As we made these measurements, we controlled for a similar set of variables as those utilized in the volume models and added the following additional key control variables, reflecting the major determinants of interest rate pricing in the subprime market: credit score, loan-to-value ratio,[20] loan amount,[21] refinance indicator variable, income documentation variable, and prevailing interest rates. These variables were chosen, in part, because many had been used successfully by other researchers examining the factors that influence mortgage pricing.[22]

3. Limitations

While our data did not allow us to control for the effect of discount points, we believe this omission, if it were to have any effect, would tend to overstate the risk premiums associated with loans in states with laws. This conclusion follows from the observation that state laws restrict up-front charges and, consequently, make it less likely that borrowers in those states will pay such fees than borrowers in states with no laws or minimal protections. This, in turn, would mean that risk premiums (and, consequently, interest rates) were understated in states without laws compared to those charged borrowers in states with laws.

Findings

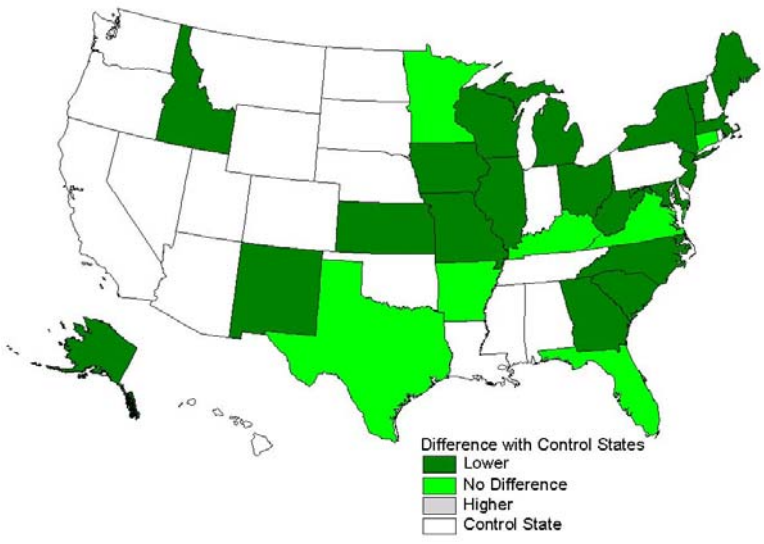
#1: In states with strong laws, families in the subprime market receive fewer loans with abusive terms.

When evaluating state anti-predatory lending laws, the most fundamental test is whether they actually deter loans with abusive terms. We first examined differences in the proportion of loans that included targeted terms under state laws as compared to states that had minimal or no protections, controlling for the effects of other variables that influence origination volumes, such unemployment rates. (See Appendix 1 for results for these variables not related to state laws).

For example, if 10 of 100 loans made under a state law had abusive terms compared with 30 of 100 loans in the control states, all else being equal, our results would indicate that the law was associated with a 20 percentage point lower proportion of loans with abusive terms than the control states. While it is worth noting that the hypothetical state in our example still has 10 loans with targeted terms, the fact remains that the theorized reform worked as intended. As a practical matter, it is difficult for policymakers to rid the market entirely of loans with terms targeted for reform. For example, federal law frequently operates to govern loans made by federally-chartered lenders without regard to state law.

Nevertheless, the results of our analysis were striking, revealing that state laws are clearly working to clean up the subprime mortgage market. Figure 2 illustrates the regression model results with a U.S. color-coded map. Control states, shown in white, are those that had either no or minimal protections beyond existing federal law. The dark green states all saw a lower proportion of loans with targeted features under their law than the control states. The light green states saw no difference between the proportion of such loans in their market after their reform took effect and the control states. No significant state laws were associated with an increase in the proportion of loans with targeted terms relative to the states without significant protections.

Figure 2: Difference in proportion of loans with terms targeted for reform in states with protections, compared to states with minimal or no protections.



As the map and accompanying Table 1 illustrate, 20 states showed lower proportions of predatory loans. Commonly, compared to control states, states with anti-predatory lending laws reduced the proportion of loans with targeted terms by 30 percentage points. For example, Table 1 shows that the proportion of loans in New Mexico with abusive terms was 38.5 percentage points lower than states without significant reforms.

Table 1: Difference in proportion of loans (in percentage points) with terms targeted for reform in states with significant protections, compared to states with minimal or no protections.

State(s)	Difference
Alaska, Iowa, Maine, Maryland, Michigan, Vermont*	**-28.5**$^{+++}$
Arkansas	-3.3
Connecticut	-2.9
District of Columbia	-8.0
Florida	-2.5
Georgia	**-43.7**$^{+++}$
Idaho, Kansas, Missouri, Ohio, Wisconsin*	**-11.3**$^{+++}$
Illinois	**-32.1**$^{+++}$
Kentucky	0.6
Massachusetts	**-29.8**$^{+++}$
Minnesota	-1.5
New Jersey	**-37.0**$^{+++}$
New Mexico	**-38.5**$^{+++}$
New York	**-32.3**$^{+++}$
North Carolina	**-32.0**$^{+++}$
South Carolina	**-48.1**$^{+++}$
Texas	-21.0
Virginia	-1.1
West Virginia	**-16.4**$^{++}$

* States with similar legal provisions were grouped together to facilitate analysis.
Statistically significant results are in boldface: + indicates 95.0% confidence level, ++ indicates 99.0% confidence level, +++ indicates 99.9% confidence level.

Not surprisingly, the states varied in how effectively they curtailed predatory lending. States with the strongest laws — Massachusetts, New Jersey, New Mexico, New York, North Carolina, and West Virginia — are generally associated with the largest declines in targeted terms relative to states without significant protections. Other states, such as Georgia and South Carolina, also experienced significantly fewer loans with abusive terms. Both of these states also have relatively strong provisions concerning points and fees in home loans, which may be a key factor in their effectiveness.[23] Conversely, states with relatively weaker provisions experienced smaller decreases in the proportion of loans with abusive features relative to the control states, including Arkansas, Connecticut, Florida, Minnesota, Texas, Kentucky, and Virginia. Notably, all of these states have relatively lax treatment of either points and fees or loan coverage, or both.

Of note, states with laws that only differed from control states in their effective regulation of prepayment penalties, such as Maine, may also have had a significant decline in loans with targeted terms compared to the control states. For those states it is likely that the indicated differences are overwhelmingly related to the incidence of prepayment penalties and do not extend to other abusive practices.

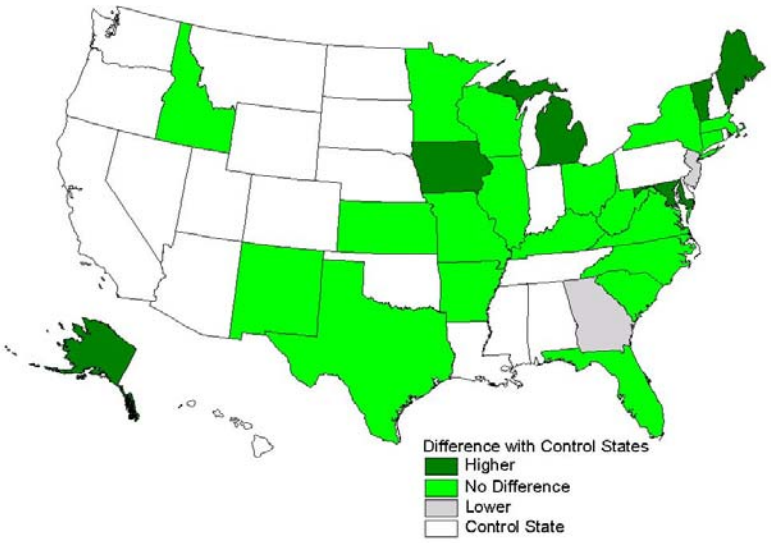
Beyond the model results, an analysis of the underlying data shows that these reforms are positively affecting the national market. For example, prepayment penalties, at their zenith, were found in 67.7% of subprime loans during one month in our study, but were only present in 51.0% by December 2004. For balloon payments, the corresponding figures stood at 13.6% and 0.0%. For our steering proxy, the measurements were 19.8% and 15.5%. In states that had passed reforms, the December 2004 measurements were 17.7%, 0.0%, and 11.9% for prepayment penalties, balloon terms, and the steering proxy respectively.

#2: Strong state laws are <u>not</u> hampering consumers' access to subprime credit.

When states pass stronger laws against predatory lending, the goal is to reduce the prevalence of loans with abusive terms without reducing the availability of responsible mortgage credit. The findings reported in Figure 3 and Table 2 show that states have struck an effective balance: Total subprime volume in states with reforms is similar to that found in states without significant protections.

Figure 3 shows results on state laws and overall subprime loan volume. As shown on the map, the laws produce no discernible pattern on subprime loan volume. Among the 28 states evaluated, relative to the control states, 20 had no statistically significant effect on overall subprime volume, six had more, and two had less. Examining Table 2 (next page), Massachusetts provides a useful example. Residents in that state enjoyed 1.23 fewer subprime home loans per month with targeted terms per 10,000 adults compared to states with minimal protections. For families in Massachusetts, this translates into 590 fewer loans each month with common abusive terms. As the table also shows, however, this drop in abusive lending was offset by an increase in loans without targeted terms.

Figure 3: Change in overall subprime volume in states with protections, compared to states with minimal or no protections.



The two states evaluated that showed less subprime loan volume compared to control states are Georgia and New Jersey. For Georgia, the reduction in overall volume is explained entirely by a drop in lending practices targeted for reform (see Table 2). In fact, while the state saw a decline in overall subprime volume relative to states without significant protections, the decline was confined to loans with targeted terms—loans without targeted terms actually increased.

New Jersey's experience suggests that further study may be valuable in this instance. As shown in Appendix 2, Table A2, New Jersey's per capita rate of subprime loans without certain abusive loan terms following the passage of its law was almost five times that of the control states. In fact, relative to the control states, New Jersey had the highest number of subprime loans without the targeted loan terms of any state in our study. This suggests that New Jersey has had more responsible subprime lending than any other state. At the same time, our study suggests that the state had fewer such loans than our models would have predicted. There are a number of factors that may contribute to the reason why New Jersey's performance may not be well-predicted by our models, including the possibility

that New Jersey's subprime market was already saturated prior to passage of its law. Lending credence to this possibility is the observation that New Mexico, which implemented an even stronger law at the same time, had no significant difference in overall subprime volume relative to states with no law or only minimal protections.

While overall volume did not differ from the control states in the vast majority of states with reforms, the findings presented in Table 2 provide further evidence that state laws were effectively combating abusive lending. Nineteen states showed some significant positive effect—either an increase in non-targeted loans or a decrease in targeted loans, or both—indicating that, following the implementation of state laws, market actors successfully made loans without targeted terms in place of loans targeted for reform.

These findings further affirm the effectiveness of state laws. While overall volume showed little difference in states with predatory lending laws, there is a clear pattern showing that loans with targeted terms declined in those states, while loans without targeted terms increased.

Table 2: Differences in subprime volume (number of loans per 10,000 adults per month) in states with significant protections, compared to states with minimal or no protections.

State	Overall	Loans with Targeted Terms	Loans without Targeted Terms
Alaska, Iowa, Maine, Maryland, Michigan, Vermont*	**0.64^{++}**	**-0.57^{+++}**	**1.22^{+++}**
Arkansas	0.80	0.54	0.23
Connecticut	-0.11	-0.40	0.31
District of Columbia	-0.12	-0.31	0.02
Florida	0.78	0.17	**0.57^{+}**
Georgia	**-1.56^{+}**	**-2.27^{+++}**	**0.95^{++}**
Idaho, Kansas, Missouri, Ohio, Wisconsin*	0.41	-0.04	**0.43^{+++}**
Illinois	0.52	-0.25	**0.82^{++}**
Kentucky	0.28	0.27	-0.02
Massachusetts	0.08	**-1.23^{+}**	**1.22^{+++}**
Minnesota	1.09	0.72	0.41
North Carolina	-0.04	-0.63	**0.76^{+}**
New Jersey	**-4.06^{+++}**	**-1.19^{+}**	**-2.49^{+++}**
New Mexico	-0.07	-0.46	0.42
New York	0.86	-0.38	**1.14^{++}**
South Carolina	0.43	**-0.85^{+}**	**1.29^{+++}**
Texas	-3.59	-3.16	0.47
Virginia	0.63	0.35	0.25
West Virginia	-0.61	-0.40	-0.20

Columns represent separate model results and the second two cannot be added directly to obtain the overall volume results.
* States with similar legal provisions were grouped together to facilitate analysis.
Statistically significant results are in boldface: + indicates 95.0% confidence level, ++ indicates 99.0% confidence level, +++ indicates 99.9% confidence level.

#3: In states with strong laws, borrowers' interest rates are no higher for subprime mortgages – and they are often lower.

In assessing how families are affected by state laws, it is important to consider the overall cost of subprime loans, which is a combination of fees plus the interest rate charged. Policymakers have expressed concerns that state laws could result in substantially higher interest rates on subprime mortgages resulting from increased legal risk or compliance costs. It is worth noting that this concern is quite different from the marginal increase in interest rates that we would expect if state reforms succeeded in their goal of shifting lender compensation from fees to more transparent interest rates. A shifting of lender compensation is a worthwhile aim since borrowers can escape loans that are over-priced on interest by refinancing with responsible lenders, but the cost of fees charged is lost to borrowers immediately and forever.

We know from the previous discussion that state laws have reduced lenders' fees charged in the form of prepayment penalties on subprime loans. Surprisingly, however, our results also indicate that state laws have not increased interest rates and, in some cases, borrowers actually paid lower rates for subprime mortgages after their state laws became effective compared to borrowers in states without significant protections.

Why would state laws lead to lower rates? By reducing excessive fees that bring no added value to consumers and by reducing the prevalence of abusive loan terms, it appears that state laws may have produced a more competitive lending environment that offers more responsible subprime loans. In the process, state laws may also have driven out bad actors and allowed responsible lenders to offer products on more affordable terms. Finally, predatory lending laws may discourage lenders from charging abusive yield-spread premiums, bonuses paid to mortgage brokers for mortgages with higher-than-market-rates. Two reasons to believe this might be the case are as follows: (1) some state laws have directly regulated these payments to mortgage brokers, and (2) by restricting prepayment penalties, other states may have made lenders less willing to rely on such payments generally since the borrower could refinance the day after their loan closed and the bonus was paid, denying the lender the benefit of a higher rate. We also note that these results are consistent with previous research conducted by CRL showing that advances in technology have drastically lowered the cost of complying with state laws.[24]

Figures 4 and 5 show differences in interest rates compared to control states following implementation of state reforms. Figure 4, representing 30-year fixed-rate mortgages, shows that interest rates had no significant difference in eight states and actually went down in 19 states compared to the control states. Figure 5, representing 30-year adjustable-rate mortgages, similarly shows that borrowers in states with reforms generally either paid roughly the same or actually paid lower interest rates on subprime mortgages.

While the absolute value of the majority of these differences is less than 0.25%, or 25 basis points (bp), a decrease of just 20 bp would result in savings of $10,000 on a subprime 30-year home loan held to maturity.[25] Even measured over a more common three-year average loan life, the savings are not trivial, amounting to $1,000.

To achieve an "apples-to-apples" comparison that truly captures the effects of state laws, both figures focus on mortgages without prepayment penalties. All lenders had the option to offer loans without prepayment penalties, but both federal and state rules play a large role in determining whether specific types of lenders can offer loans with penalties.[26] Accordingly, results for loans with prepayment penalties might more accurately reflect changes in lenders operating in a market than changes attributable to the effects of a state law. Interested readers, however, can refer to Appendix 3 for results associated with loans with prepayment penalties.

The results presented here also isolate the effects of state laws by controlling for important characteristics that influence the pricing of mortgages, including borrowers' credit scores and loan-to-value (LTV) ratios. The results for those and other variables confirm the accuracy of our approach, because they influenced rates in the expected direction and were well within expected ranges. For example, loans with higher credit scores were associated with lower interest rates, and loans with higher loan-to-value ratios had higher rates. For more results on variables not related to state laws, see Appendix 3.

Since state laws are effectively reducing abusive lending and the cost of complying with those laws is low, homeowners appear to receive the benefits of more responsible

Figure 4: Difference in Interest Rates on 30-Year Fixed Rate Mortgages without Prepayment Penalties in states with protections, compared to states with minimal or no protections.

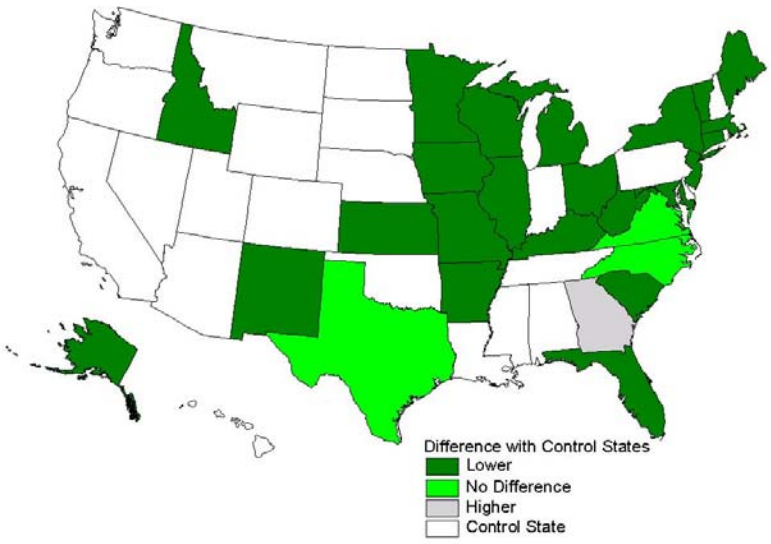
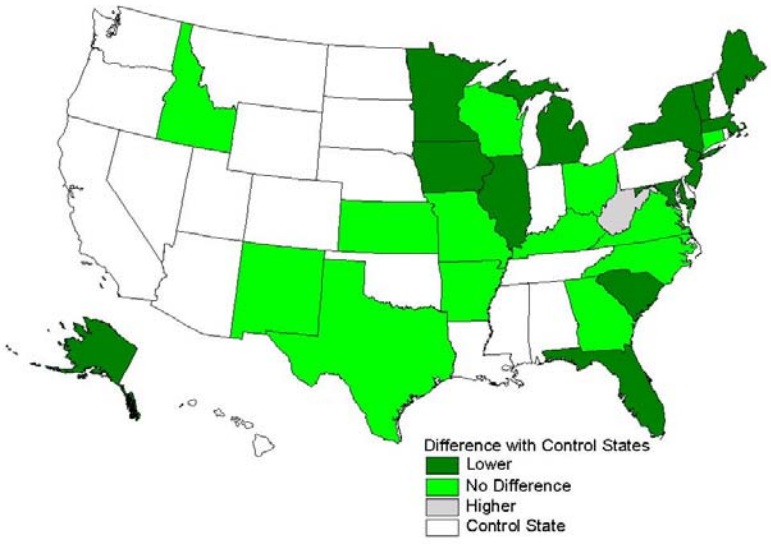


Figure 5: Difference in Interest Rates on 30-Year Adjustable Rate Mortgages without Prepayment Penalties in states with protections, compared to states with minimal or no protections.



subprime loans with lower fees in the form of prepayment penalties charged and, perhaps counter-intuitively, interest rates that are comparable or even lower.

Table 3: Difference in interest rates (in basis points) in states with significant protections, compared to control states.

State	Fixed Rate Mortgage without Prepayment Penalty	Adjustable Rate Mortgage without Prepayment Penalty
Alaska, Iowa, Maryland, Maine, Michigan, Vermont*	**-28.8^{+++}**	**-8.4^{+++}**
Arkansas	-9.3	8.9
Connecticut	-5.0	2.4
District of Columbia	-13.4	**70.5^{+}**
Florida	-2.6	**-20.1^{+++}**
Georgia	**15.4^{+++}**	3.9
Idaho, Kansas, Missouri, Ohio, Wisconsin*	**-28.0^{+++}**	**-6.6^{+}**
Illinois	**-24.6^{+++}**	**-15.0^{+++}**
Kentucky	**-14.3^{++}**	-7.8
Massachusetts	**-62.8^{+++}**	16.9
Minnesota	**-29.1^{+++}**	**-16.4^{+}**
New Jersey	**-32.3^{+++}**	**-5.6^{+}**
New Mexico	-6.2	5.6
New York	**-68.8^{+++}**	**-30.1^{+++}**
North Carolina	0.0	2.1
South Carolina	**-41.0^{+++}**	**-23.3^{+++}**
Texas	-3.4	-29.2
Virginia	-1.4	**17.3^{+}**
West Virginia	**-44.0^{+++}**	21.1

Notes: * States with similar legal provisions were grouped together to facilitate analysis.
Statistically significant results are in boldface: + indicates 95.0% confidence level, ++ indicates 99.0% confidence level, +++ indicates 99.9% confidence level.

Policy Implications

Predatory lending continues to be a major threat to American homeowners, as evidenced most recently by the Ameriquest settlement with 49 states and the District of Columbia for $325 million.[27] The research presented here shows that the states offer an excellent model for protecting credit-strapped families while preserving a healthy marketplace. For lawmakers considering reforms at the state or federal level, the findings points to a number of practical lessons highlighted by the states' experience:

- **Strong state laws are the most effective at preventing predatory lending**. States that enacted stronger legal protections showed larger declines in the proportion of loans with predatory terms compared to states with relatively weaker provisions. In general, state laws that achieved the best results tended to have one or more of these characteristics: a broad definition of loans covered by the law that includes purchase loans and home equity lines of credit; prepayment penalty restrictions; and/or a broad definition of points and fees that includes prepayment penalties and yield-spread premiums. Our analysis was not able to review the effects of state laws related to loan flipping, but it is likely that flipping restrictions also would have contributed to positive results in preventing predatory lending.

- **Laws that reduce predatory loans create a better market for borrowers and also for responsible subprime lenders**. In most states with anti-predatory lending laws, following implementation, the market successfully substituted loans without targeted terms for loans with abusive terms, with no net effect on the overall volume of subprime lending in these states.

- **State laws reduce the cost of subprime mortgages**. State laws reduce the fees that lenders charge in the form of prepayment penalties. While this study was unable to test whether up-front fees were also reduced, that also was an intended result. The expectation was that interest rates would rise to keep lender compensation constant, also an intended result, since interest rates are much more transparent. A borrower with rates that are too high can refinance with a responsible lender but cannot avoid paying exorbitant fees. Surprisingly, however, borrowers generally either paid lower interest rates for subprime mortgages than an identical borrower would have paid in a state without significant protections, or there was no significant difference. Even a small reduction in interest rates on a typical subprime loan can result in savings of as much as $1,000 per family. State anti-predatory lending laws already have begun producing these savings for homeowners.

- **States should continue to take action to curb mortgage lending abuses**. A number of states still have not enacted state laws against predatory lending, or have passed laws with protections that are no stronger than current federal law (HOEPA). Further, some states' laws have clearly had less effect in curbing abuses than others. These states should continue to explore ways to strengthen their approach, drawing on the models of those states that have most successfully reduced predatory lending and continued to provide a

robust subprime market that is both more affordable for borrowers and more competitive for responsible subprime lenders.

- **States must not lose their ability to fight abusive lending practices**. Several federal proposals introduced in the U.S. House of Representatives have ignored the success of state predatory lending laws and instead have sought to protect the subprime market from efforts in the states to reduce abusive loans. These proposals would deliberately override effective state laws and prevent the states from taking further positive actions against abusive lending practices. A bill introduced by Reps. Ney (R-Ohio) and Kanjorski (D-PA) in early 2005 calls for preemption of state laws, as does a proposal put forward recently by Rep. Clay (D-MO).

In addition to wiping out effective state laws, the Ney-Kanjorski and Clay bills propose standards that are similar to state laws that have had little or no impact on loans with predatory terms. For example, their bills include weak provisions against abusive prepayment penalties, and they leave gaps that would allow the abusive serial refinancing of loans (flipping). Both proposals would in some ways weaken existing federal law and open loopholes that would allow predatory lending practices to continue or increase.

From the perspective of homeowners, the best proposal offered in Congress thus far has come from Reps. Miller (D-NC), Watt (D-NC) and Frank (D-MA). Their bill is directly modeled on existing state laws that are working as intended. Judging from the results in the states, the Miller-Watt-Frank bill would likely reduce predatory lending nationally and provide a more competitive and affordable subprime market for borrowers who need access to credit. For example, the bill closes loopholes that would allow lenders to avoid designating loans as "high cost" by ensuring that all the borrower's costs are counted, including prepayment penalties. Their proposal also would require borrowers to receive counseling from a qualified professional before accepting a high-cost loan.

Further, rather than thwarting the states' ability to govern local real estate markets, the Miller-Watt-Frank bill offers strong federal protections as a floor – not a ceiling. States would continue to have the freedom to address any local issues that arise. For example, if a state experiences a rash of foreclosures as a result of "innovative" predatory lending practices, the state would be in a much better position than the federal government to act swiftly and appropriately to address that particular situation. If HOEPA had preempted states from passing laws back in 1994, then North Carolina never could have prohibited the financing of single-premium credit insurance, a predatory practice all but wiped out in the U.S. mortgage market through advocacy that began with that law.

The direct experience of states with strong and comprehensive laws offers a rare preview of how specific legislative approaches affect the marketplace. State predatory lending laws began as a new initiative in North Carolina, and today the "experiment" has expanded to more than two dozen states. The results are in, and they are positive: stronger protections against predatory loans, access to more responsible home loans and, it turns out, lower fees and often even lower interest rates. Strong state laws have been good for millions of consumers while supporting a thriving marketplace. To find a model for new national legislation, many lawmakers need look no further than their own backyards.

Notes

[1] See, e.g., Eric Stein, *Quantifying the Economic Costs of Predatory Lending*, Center for Responsible Lending (2001); Roberto G. Quercia, Michael A. Stegman and Walter R. Davis, *The Impact of Predatory Loan Terms on Subprime Foreclosures: The Special Case of Prepayment Penalties and Balloon Payments*, Center for Community Capitalism (2005) at www.kenan-flagler.unc.edu.

[2] See, e.g., H.R. 1182 sponsored by Reps. Miller, Watt and Frank, "The Prohibit Predatory Lending Act," which is modeled on existing state laws. A competing bill sponsored by Reps. Ney and Kanjorski, "The Responsible Lending Act" (H.R. 1295) includes some provisions that are weaker than current federal law and would preempt state laws.

[3] For purposes of this paper, loan characteristics targeted for reform by state laws (i.e., prepayment penalties and balloon payments -- generally on subprime loans -- and subprime loans made to borrowers with credit scores at or above 660 and full income documentation since these borrowers could likely have qualified for less expensive prime credit) served as a direct proxy for predatory loan terms. Consequently, we use "targeted loan terms" interchangeably with "predatory" or "abusive" loans.

[4] Federal Housing Finance Board, *Federal Housing Finance Board Reports Mortgage Interest Rates,* Washington, DC, MIRS 06-02 (January 25, 2006).

[5] R.B. Avery, G.B. Canner and R.E. Cook, *New Information Reported under HMDA and its Application in Fair Lending Enforcement*, Federal Reserve Bulletin 344-394 (Summer 2005).

[6] SMR Research Corporation, *Subprime Mortgage Loans, 2005*.

[7] National Predatory Lending Task Force, *Curbing Predatory Home Mortgage Lending: A Joint Report*, U.S. Department of Housing and Urban Development and U.S. Department of Treasury (June 2000) at http://www.hud.gov:80/pressrel/treasrpt.pdf.

[8] Keith Ernst, John Farris and Eric Stein, *North Carolina's Subprime Home Loan Market After Predatory Lending Reform*, Center for Responsible Lending (August 13, 2002) at www.responsiblelending.org.

[9] Roberto G. Quercia, Michael A. Stegman and Walter R. Davis, *Assessing the Impact of North Carolina's Predatory Lending Law*, Housing Policy Debate, (15)(3): (2004).

[10] K.D. Harvey and P.J. Nigro, *Do Predatory Lending Laws Influence Mortgage Lending? An Analysis of the North Carolina Predatory Lending Law*, Journal of Real Estate Finance and Economics 29(4): 435-456 (2004); K. Burnett, M. Finkel and B. Kaul, *Mortgage Lending in North Carolina After the Anti-Predatory Lending Law*, Abt Associates - Cambridge, MA (September 14, 2004); and G. Ho and A. Pennington-Cross, *The Impact of Local Predatory Lending Laws*, Federal Reserve Bank of St. Louis – St. Louis, MO, Research Division Working Paper 2005-49B (revised October 2005).

[11] G. Elliehausen and M.E. Staten, *Regulation of Subprime Mortgage Products: An Analysis of North Carolina's Predatory Lending Law,* Journal of Real Estate Finance and Economics 29(4):411-433 (2000).

[12] This database is a unique proprietary dataset from Loan Performance, Inc. (formerly the Mortgage Information Corporation). The database contains loan-specific information not available in other national mortgage databases, including credit scores, loan-to-value ratios and prepayment penalty variables. This database does not include mortgages originated and held by portfolio lenders. Subprime loans that are securitized are likely to be higher quality in general, and therefore this database is likely to understate the incidence of predatory lending in the subprime market.

[13] The dataset used here contains information on $1.21 trillion in loans from 1998-2004, while SMR Research Corporation estimates the total subprime volume over this period at $1.55 trillion.

[14] When evaluating the effectiveness of state regulation of subprime prepayment penalties, it is crucial to understand the interaction of state law with federal law. While prepayment penalty regulations were preempted for the non-depository lenders making the vast majority of subprime loans in most states for most loans during the study period, a federal regulatory change that took effect in July 2003 restored those provisions to full effect. *See* Office of Thrift Supervision, Alternative Mortgage Transacton Parity Act; Preemption, 67 Fed. Reg. 60542 (Sept. 26, 2002) (codified at 12 C.F.R. Sec. 560.220); Office of Thrift Supervision, Alternative Mortgage Transaction Parity Act; Preemption 67 Fed. Reg. 76304 (Dec. 12, 2002) (delaying effective date to July 1, 2003). Complicating matters further, six states chose to opt out of the Alternative Mortgage Transaction Parity Act.

Consequently any relevant provisions in the following states were fully operative during our 1998 -2004 study period: Arizona, Maine, Massachusetts, New York, South Carolina, and Wisconsin.

[15] To further help control for the uniqueness of individual states apart from their legal provisions and differences captured by our other control variables, we incorporated unobserved differences between the states into our models by treating them as random effects. In fact, we tested the difference this made in our models and found it a significant improvement in all of our interest rate models as well as in the volume model that examined differences in the proportion of loans with terms targeted for reform. Consequently, since this procedure gave rise to no improvement in the remaining three volume modes, the results reported here for those models do not incorporate this technique.

[16] Although the study covers laws in 28 states, it distinguishes 32 legal "regimes." This is because some states revised their laws during the study period. In addition, some states were affected by a change in federal regulations that occurred in 2002, when the Office of Thrift Supervision restored state restrictions on prepayment penalties. Results for regimes not in effect in December 2004 are not published in this paper, but are available on request.

[17] Results for previous state laws in effect during the 1998-2004 study period are available on request.

[18] See Howell E. Jackson and Jeremy Berry, *Kickbacks or Compensation: The Case of Yield Spread Premiums, (*January 2002).

[19] M. Hudson and E.S. Reckard, More Homeowners with Good Credit Getting Stuck with Higher-Rate Loans. Los Angeles Times: A-1 (October 24, 2005).

[20] Loan-to-value was modeled in buckets with corresponding values assigned as follows: below 65 (reference=0), 65-70=1, 71-75=2, 76-80=3, 81-85=4, 86-90=5, 90-95=6, 96-100=7, above 100=8. This conformed with industry practices observed on rate sheets.

[21] Since loan amount and loan-to-value ratios are thought to be determined simultaneously with interest rate, we estimated those amounts for borrowers in a separate system of equations and used predicted values in our models. These results and other detailed results are available on request.

[22] B.W. Ambrose, M. LaCour-Little, A.B. Sanders, *The Effect of Conforming Loan Status on Mortgage Yield Spreads: A Loan Level Analysis,* Real Estate Economics 32(4): 541-569 (2004).

[23] State laws vary in the charges they include within the points and fees measured to determine whether a loan carries a high enough cost to warrant additional protections. The strongest state laws build from HOEPA's base of typical up-front charges to include yield-spread premiums paid to brokers in connection with originating a loan at a higher rate than that for which a borrower is qualified and prepayment penalty charges. Other states have adopted less comprehensive definitions of points and fees, with some going so far as to exempt charges that are already included in HOEPA's definition.

[24] Delvin Davis and Ellen Schloemer, *Strong Compliance Systems Support Profitable Lending While Reducing Predatory Practices*, Center for Responsible Lending, issue paper no. 10 (2005).

[25] Assumes decrease applies to a 30-year fixed-rate mortgage with an interest rate of 8% and a $200,000 initial balance.

[26] To elaborate, we focus on loans without prepayment penalties because they better isolate the effects of state law effects. While some states prohibit prepayment penalties on certain mortgages, federal preemption means that some lenders are exempt from state laws, and some mortgages may not be covered by the prohibition. For example, North Carolina bans prepayment penalties on all first-lien home loans of less than $150,000. Under federal law, however, national banks may legally elect to offer loans with prepayment penalties of any size. However, these lenders likely are not representative of all lenders and some may elect to follow North Carolina law despite preemption. Thus, measuring rates on loans with prepayment penalties in states like North Carolina may more accurately reflect differences in specific lenders as opposed to differences attributable to the effects of the law. Because of these factors, we believe the results for loans without prepayment penalties do a better job of isolating the laws' effects.

[27] January 2006 Settlement Agreement with ACC Capital Holdings Corporation and its subsidiaries, including Ameriquest Mortgage Company.

Appendix 1: Categorizing State Reforms

Figure A1 and Table A1 respectively report the criteria used to evaluate state protections against predatory lending and the outcomes for specific state laws reported on in this paper that result from the application of those criteria to a typical subprime home loan. We ascribed the following traits to our typical loan profile: first-lien, owner-occupied, conventional cash-out refinance from a non-depository lender, in an amount equal to that state's median subprime mortgage loan for the year the law being evaluated took effect. Not shown or reported in other results are outcomes for state laws in effect in those states prior to the effective date of the most recent reform.

Figure A1: State Law Criteria

Coverage	1—Fails to satisfy 2 or 3 2—Existing HOEPA coverage plus open-end loans 3—Satisfies 2 and includes all loan types (conventional and government-insured, without regard to purchasing entity)
Points and Fees	1—Fails to satisfy 2 or 3 2—Threshold lower than existing HOEPA plus either prepayment penalty or yield-spread premiums included in fees measurement 3—Threshold lower than existing HOEPA plus both prepayment penalty and yield-spread premiums included in fee measurement or equivalent (e.g., yield-spread premiums included and substantial subprime prepayment penalty limitation)
Subprime Prepayment Penalties	1—Regulation preempted by federal law, limited to high-cost only, or allows 5 year terms or amounts of 6 months' interest on at least 80% of amount prepaid/3% or more of the amount prepaid. 2—Restricts term or amount of penalty further 3—Restricts term and amount of penalty further
Flipping Protections	1—Fails to satisfy 2 or 3 2—Requires lender to consider appropriateness of loan for a borrower on some refinancing transactions below the high-cost threshold. 3—Requires lender to consider appropriateness of loan for a borrower on all refinancing transactions below the high-cost threshold
High-Cost Loan Protections	1—Fails to satisfy 2 or 3 2—Requires pre-loan counseling, bans prepayment penalties, or limits financed fees to level below high-cost points and fees threshold 3—Requires at least two of the above
Remedies for Violations of High-Cost Protections	1—Fails to satisfy 2 or 3 2—Provides private cause of action with damages equivalent to those available under federal law for violations of HOEPA 3—Satisfies 2 and permits borrower to defend home against a loan purchaser initiating foreclosure of a loan with violations of high-cost protection standards, without exception.

Table A1. State Law Coding

State	Effective Law Year	Loan Coverage	Points & Fees	Subprime Prepayment Penalty	Flipping	High-Cost Protection	High-Cost Remedies
Alaska, Iowa, Maryland, Maine, Michigan, Vermont	Various	1	1	3	1	1	1
Arkansas	2004	1	2	2	1	2	2
Connecticut	2002	2	1	1	1	2	1
D.C.	2002	2	1	3	1	2	2
Florida	2002	1	1	1	1	1	3
Georgia	2003	3	3	1	1	2	2
Idaho, Kansas, Missouri, Ohio, Wisconsin	Various	1	1	2	1	1	1
Illinois	2004	1	1	3	3	1	3
Kentucky	2003	1	1	1	1	1	2
Massachusetts	2004	3	3	2	2	3	3
Minnesota	2003	2	1	3	1	2	1
New Jersey	2004	3	2	3	1	3	3
New Mexico	2004	3	3	3	3	3	3
New York	2003	3	3	3	1	2	3
North Carolina	2003	3	2	3	3	3	3
South Carolina	2004	1	2	3	2	3	2
Texas	2001	1	1	3	1	3	1
Virginia	2003	1	1	2	2	1	1
West Virginia	2000	3	3	3	2	3	3

Appendix 2: Volume Models

We examined several changes in subprime originations under the various reforms through four state-level multiple regression models. First, we examined whether state laws decreased the proportion of loans with terms targeted for reform in these laws compared with states that lacked significant protections. Second, we examined whether overall subprime loan volumes had been depressed following the implementation of a reform. We chose to confine our measurements to the number of adults in each state, because this measure most accurately reflects potential borrowers and because of the high-quality estimates available from the U.S. Census Bureau. Finally, our third and fourth models extended the analysis of our overall volume model by considering differences in loans with and without targeted terms, respectively. These measurements served as our dependent variables and were measured at the state level each month.

To ensure that we were accurately isolating the effect of state laws, we controlled for various factors that one might fairly expect to affect volume either by influencing demand for mortgages directly or by altering the cost of credit. In addition, our models controlled for unobserved differences among the states. The control variables in our models fell into six categories:

- Time: year, quarter, serial correlation of observations;[1]
- Region;
- Economic factors: slope of the yield curve, difference in yields across credit grades, interest rate volatility, and the volatility of state housing prices;
- Judicial foreclosure status;[2]
- Geographic factors: state personal income, state unemployment, state housing prices, urban status, and a series of zip code level factors thought to be related to demand, including income, poverty, unemployment, homeownership rates, as well as race and ethnicity; and
- Unobserved differences between states not related to the studied reforms.

The model results reported here explain a substantial amount of variation in the dependent variable. While the final models presented here do not allow for an r-squared calculation,[3] an ordinary least squares (OLS) version of the four volume models using the same independent variables resulted in r-squared calculations ranging from 67-69%. Moreover, the final form models presented here all were significant improvements on the OLS versions.

Table A2 reports univariate results for the state laws, as discussed in the text. Table A3 provides results for the non-law variables.

Table A2: Univariate Analysis of volume by state law, reporting mean (standard deviation).

Legal Regime	Overall Volume (# of loans/ 10,000 adults/ month)		Targeted/ Overall Volume (%)		Targeted Loan Volume (# of loans/ 10,000 adults/ month)		Non-Targeted Loan Volume (# of loans/ 10,000 adults/ month)	
	Law	**Diff.**	**Law**	**Diff.**	**Law**	**Diff.**	**Law**	**Diff.**
Alaska, Iowa, Maryland, Maine, Michigan, Vermont*	3.24 (2.42)	0.50^{++}	3.44 (1.63)	-3.73^{++}	1.25 (1.55)	-0.74^{++}	1.92 (1.42)	1.26^{++}
Arkansas	2.31 (0.50)	-4.70^{++}	8.26 (0.38)	0.08	1.91 (0.46)	-3.74^{++}	0.39 (0.07)	-0.90^{++}
Connecticut	6.17 (1.99)	1.47^{++}	7.84 (0.52)	0.06	4.87 (1.77)	1.19^{++}	1.27 (0.33)	0.28^{++}
District of Columbia	2.82 (0.62)	-0.51^{+}	5.40 (0.57)	-2.06^{++}	1.52 (0.43)	-0.94^{++}	1.28 (0.27)	0.44^{++}
Florida	9.04 (2.55)	3.86^{++}	8.37 (0.47)	0.53^{++}	7.61 (2.40)	3.53^{++}	1.38 (0.27)	0.32^{++}
Georgia	6.22 (2.12)	0.38	3.74 (0.48)	-4.29^{++}	2.37 (1.08)	-2.31^{++}	3.76 (1.06)	2.63^{++}
Idaho, Kansas, Missouri, Ohio, Wisconsin*	3.04 (1.81)	0.30^{+}	6.93 (1.63)	-0.24^{+}	2.08 (1.47)	0.09	0.90 (0.79)	0.24^{++}
Illinois	7.54 (1.26)	0.53	2.93 (0.24)	-5.25^{++}	2.21 (0.50)	-3.44^{++}	5.27 (0.79)	3.98^{++}
Kentucky	3.05 (0.44)	-3.47^{++}	8.88 (0.35)	0.67^{++}	2.69 (0.41)	-2.60^{++}	0.34 (0.09)	-0.84^{++}
Massachusetts	4.80 (1.33)	-0.83	4.75 (1.99)	-2.98	2.39 (1.57)	-1.95	2.37 (0.26)	1.12
Minnesota	7.38 (1.27)	0.86^{+}	7.91 (0.38)	-0.30^{+}	5.83 (1.14)	0.54	1.51 (0.24)	0.33^{++}
North Carolina	4.09 (0.82)	-2.65^{++}	2.64 (0.17)	-5.57^{++}	1.08 (0.26)	-4.38^{++}	2.96 (0.53)	1.74^{++}
New Jersey	7.15 (1.29)	0.33	1.43 (0.10)	-6.66^{++}	1.01 (0.15)	-4.48^{++}	6.12 (1.15)	4.81^{++}
New Mexico	3.85 (0.57)	-3.16^{++}	1.81 (0.16)	-6.37^{++}	0.70 (0.14)	-4.95^{++}	3.10 (0.41)	1.81^{++}
New York	4.58 (0.71)	-1.42^{++}	4.66 (0.54)	-3.42^{++}	2.14 (0.46)	-2.68^{++}	2.43 (0.38)	1.29^{++}
South Carolina	4.28 (0.80)	-2.73^{++}	2.24 (0.22)	-5.94^{++}	0.95 (0.22)	-4.70^{++}	3.28 (0.59)	1.99^{++}
Texas	5.28 (0.88)	-1.24^{++}	5.34 (0.42)	-2.87^{++}	2.82 (0.62)	-2.47^{++}	2.42 (0.30)	1.24^{++}
Virginia	6.62 (1.67)	0.10	7.94 (0.18)	-0.27^{++}	5.22 (1.32)	-0.07	1.35 (0.33)	0.17
West Virginia	1.34 (0.28)	-5.18^{++}	4.59 (0.60)	-3.62^{++}	0.61 (0.13)	-4.68^{++}	0.72 (0.17)	-0.46^{++}

Notes: The columns under "difference" reports observed volume under the state law minus the volume of the control states during the same time period. To test whether the difference is statistically significant, we used Cochran's T-Test assuming unequal variances between two groups (control and the "treatment" legal regime).
* States with similar legal provisions were grouped together to facilitate analysis.
$^{+}$ significant at 95% level, $^{++}$ significant at 99% level, and $^{+++}$ significant at 99.9% level. Notation carried forward in future tables.

Table A3: Volume model results for non-law variables (n=4,284 for all models)

Effect	Overall Volume (# of loans/ 10,000 adults/ month)	Targeted/Overall Volume (%)	Targeted Loan Volume (# of loans/ 10,000 adults/ month)	Non-Targeted Loan Volume (# of loans/ 10,000 adults/ month)
Intercept	6.6963^{+++}	1.0825^{+}	11.1789^{+++}	2.7070^{+}
Geographic Variables				
State Personal Income	0.0037^{+}	-0.0006	0.0029	0.0014
State Unemployment	-0.018	-0.0314^{++}	-0.0286	0.0215
State Housing Prices	-0.0137^{+++}	0.0028^{+}	-0.0197^{+++}	0.0007
State African-American Pop.	0.9935	-0.0912	1.0048	-0.2559
State Hispanic Pop.	-0.1130	2.5039^{+}	4.7699	-3.5101
Economic Controls				
Yield Curve Slope	0.0820^{+}	-0.0786^{+++}	0.0314	0.2811^{+++}
Credit Spread	0.1666^{+}	0.1976^{+++}	0.3642^{++}	0.2198
Rate	0.1642^{+++}	0.0101	0.2120^{+++}	-0.0390
Rate Volatility	-0.4073	-0.2828^{+}	-0.4165	1.1347^{+++}
State Housing Price Volatility	-0.0257	-0.0137^{+}	-0.0818^{++}	0.0255^{+}
Region				
GLAK	-2.2465	-0.2654	-2.8126	0.4153
MEST	-1.0523	0.0705	0.5625	-1.1092
NENG	0.8598	-0.2405	2.4358	-1.2409
PLNS	-2.6999^{+}	-0.4955	-4.2075^{+}	0.4012
RKMT	-1.3191	-0.2432	-2.5308	0.4205
SEST	-2.8599^{+}	-0.3479	-3.9961^{+}	-0.0002
SWST	-1.8931	-0.5905	-4.4088	0.9903
Judicial Foreclosure				
Jud2	-0.8811	0.0025	-0.8096	-0.6665
Jud3	-0.7380	0.0459	-1.2550	-0.2672
Jud4	-1.2275	-0.1859	-1.9654	0.4086
Time				
Q2	0.1212^{+++}	0.0153	0.1344^{+++}	0.1846^{+++}
Q3	0.1613^{++}	0.0029	0.1416^{+}	0.3717^{+++}
Q4	0.2596^{+++}	0.0425	0.2869^{+++}	0.3781^{+++}
Y99	0.0787	-0.0805^{+}	-0.0714	0.9360^{+++}
Y00	0.0044	-0.1219	-0.2621	1.2981^{+++}
Y01	0.2451	-0.0479	0.0451	1.5697^{+++}
Y02	0.5571^{+}	-0.0414	0.3309	2.1058^{+++}
Y03	0.6925^{+}	0.0311	0.4912	2.2632^{+++}
Y04	0.2349	-0.1797	-0.2046	2.5964^{+++}

Appendix 3: Additional Rate Model Results

As was the case with volume models, the final form models used here do not allow for a direct calculation of an r-squared measurement.[4] However, OLS versions of the four models that utilized the same independent variables yielded r-squared calculations that ranged from 56-60%. Again, as was the case with the volume models, the final form models presented in this report were all significant improvements on the OLS versions.

Table A4: Difference in Interest Rates (in basis points) in states with significant protections, compared to control states.

State	Fixed Rate Mortgage with Prepayment Penalty	Adjustable Rate Mortgage with Prepayment Penalty
Alaska, Iowa, Maryland, Maine, Michigan, Vermont*	-15.7^{+++}	-6.9^{+++}
Arkansas	-18.8^{+++}	-8.9^{+}
Connecticut	15.2^{+++}	14.1^{+++}
District of Columbia	20.2	-2.9
Florida	-13.1^{+++}	-11.7^{+++}
Georgia	-3.4	16.5^{+++}
Idaho, Kansas, Missouri, Ohio, Wisconsin*	-12.9^{+++}	-4.1^{+++}
Illinois	-0.6	-4.5^{+}
Kentucky	-0.8	1.9
Massachusetts	-104^{+++}	6.5
Minnesota	-17.4^{+++}	-7.9^{+++}
North Carolina	45.2^{+++}	9.8
New Jersey	-24.4	24.9
New Mexico	-41.9	-84.1^{+}
New York	-41.2^{+++}	-66.4^{+++}
South Carolina	-9.1	10.6
Texas	-19.3	5.2
Virginia	-18.4^{+++}	3.8
West Virginia	27.4^{+}	30.4^{+}

Table A5: Interest rate model results (in basis points) for non-law variables

Variables	Fixed Rate Mortgage, without Prepayment Penalty (N=430,851)	Fixed Rate Mortgage, with Prepayment Penalty (N=377,279)	Adjustable Rate Mortgage, without Prepayment Penalty (N=227,152)	Adjustable Rate Mortgage, with Prepayment Penalty (N=622,976)
Intercept	1251.127^{+++}	1433.069^{+++}	1166.849^{+++}	1313.036^{+++}
FICO	-1.106^{+++}	-1.082^{+++}	-1.167^{+++}	-1.194^{+++}
Loan Amount ($0,000s) (3SLS predicted)	-2.249^{+++}	-2.048^{+++}	-1.943^{+++}	-2.038^{+++}
LTV (3SLS predicted)	12.561^{+++}	18.405^{+++}	16.091^{+++}	13.369^{+++}
Refinance indicator	-5.438^{+++}	-29.380^{+++}	-11.586^{+++}	-13.948^{+++}
Low or No Income Documentation	14.062^{+++}	38.313^{+++}	45.343^{+++}	44.284^{+++}
Time				
Y99	-12.601^{+++}	-23.052^{+++}	4.211^{+}	4.208^{+++}
Y00	23.724^{+++}	-12.636^{+++}	9.980^{+++}	29.379^{+++}
Y01	60.424^{+++}	22.435^{+++}	44.658^{+++}	26.446^{+++}
Y02	-3.016	-81.424^{+++}	27.259^{+++}	-6.904^{+}
Y03	-15.766^{+++}	-115.837^{+++}	-15.203^{+}	-61.909^{+++}
Y04	-37.476^{+++}	-154.023^{+++}	-46.474^{+++}	-106.591^{+++}
Q2	-20.370^{+++}	-25.775^{+++}	-8.458^{+++}	-7.563^{+++}
Q3	-6.916^{+++}	-21.857^{+++}	-7.009^{+++}	-12.784^{+++}
Q4	-10.189^{+++}	-26.205^{+++}	-16.741^{+++}	-22.276^{+++}
Region				
GLAK	23.124	38.556^{+}	34.446	47.575^{+}
MEST	31.569	33.410^{+}	-13.411	9.428
NENG	24.153	36.502^{+}	-2.184	-10.164
PLNS	41.792^{+}	53.464^{+++}	88.028^{+}	76.904^{+++}
RKMT	-6.118	3.999	53.485	35.032^{+}
SEST	29.214	46.932^{+++}	60.746^{+}	57.447^{++}
SWST	26.165	24.511	85.318^{+}	72.079^{++}
Economic				
Yield Curve Slope	-29.997^{+++}	-49.966^{+++}	8.170^{+++}	0.185
60-Day Rate Moving Average (5-Year US Treasury for FRM, 6-Month LIBOR for ARM)	-39.354^{+++}	-38.408^{+++}	-76.047^{+++}	-76.142^{+++}
Rate volatility	-9.464^{+}	-95.481^{+++}	98.750^{+++}	44.914^{+++}
Credit Spread	109.191^{+++}	104.906^{+++}	56.984^{+++}	53.966^{+++}
Volatility in Housing Prices	0.134	-0.352^{+++}	1.432^{+++}	1.110^{+++}
Judicial Foreclosure				
JUD2	-2.132	-11.799	-9.265	-12.125
JUD3	-0.893	-24.007^{+}	15.922	4.021
JUD4	2.432	13.409	24.399	15.447

Table A5 (continued)

Variables	Fixed Rate Mortgage, without Prepayment Penalty (N=430,851)	Fixed Rate Mortgage, with Prepayment Penalty (N=377,279)	Adjustable Rate Mortgage, without Prepayment Penalty (N=227,152)	Adjustable Rate Mortgage, with Prepayment Penalty (N=622,976)
Geographic Variables				
State Personal Income ($000s)	0.045^{+++}	0.050^{+++}	0.127^{+++}	0.010
State Unemployment (%)	-4.175^{+++}	1.453^{++}	0.796	4.878^{+++}
State Housing Prices	0.030^{+}	0.009	0.117^{+++}	0.119^{+++}
Zip Code Income ($000s)	-1.660^{+++}	-1.658^{+++}	-1.881^{+++}	-1.245^{+++}
Zip Code Income Squared	0.009^{+++}	0.010^{+++}	0.011^{+++}	0.007^{+++}
Zip Code Poverty (%)	1.168^{+++}	0.771^{+++}	0.497^{+++}	0.140^{+}
Zip Code Unemployment (%)	0.102	0.245^{+}	-0.248	0.254^{++}
Zip Code Homeownership rate (%)	0.402^{+++}	0.234^{+++}	0.349^{+++}	0.153^{+++}
Zip Code ratio Hispanic: Non-Hispanic White	-0.546^{+++}	-0.679^{+++}	-0.392^{+++}	-0.000^{+++}
Zip Code ratio African-American: Non-Hispanic White	0.002^{+++}	0.240^{+++}	-0.021	-0.013
Central city status (Reference-Non-MSA)	-1.753^{+}	-5.129^{+++}	-1.936^{+}	-3.450^{+++}
Non-central city status (Reference-Non-MSA)	-7.894^{+++}	-9.417^{+++}	-5.357^{+++}	-5.750^{+++}

Notes on Appendices

[1] Technically speaking, the serial correlation of the observations was controlled through a one-step autoregressive process and was not an independent variable. Similarly, the unobserved differences between states were treated as random effects and were not modeled as independent variables with fixed effects.
[2] This variable was taken from B.W. Ambrose, M. LaCour-Little, A.B. Sanders, *The Effect of Conforming Loan Status on Mortgage Yield Spreads: A Loan Level Analysis*, Real Estate Economics 32(4): 541-569 (2004).
[3] The final form volume models were mixed models.
[4] The final form interest rate models were mixed models with state effects modeled as random effects to preserve degrees of freedom.