How the 2005 Bankruptcy Reform Increased Foreclosures & Lowered the Cost of Auto Credit

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Abstract

We hypothesize that the 2005 bankruptcy abuse reform (BAR) contributed to the surge in subprime foreclosures that destabilized financial markets. Before BAR, over-indebted mortgagors could free up income to pay the mortgage by filing bankruptcy and having their unsecured debts, including credit card debt and "under-water" auto loans, discharged. BAR blocks that maneuver for better-off filers by way of a means test, limitations on cram-down of auto loans, and other obstacles. We identify the effects of BAR using state home equity bankruptcy exemptions; filers in low-exemption states were not very protected before BAR, so they would be less affected by the reform. Difference-in-difference regressions confirm four predictions implied by that identification strategy. Our findings add to research trying to explain the surge in subprime foreclosures and to a broader literature on household bankruptcy demand and credit supply.

Key words: bankruptcy, subprime foreclosures, subprime mortgages, unsecured debt, credit card debt, home equity exemptions, cram-down

Is it just coincidence that subprime foreclosures surged and home prices peaked right after the bankruptcy abuse reform (BAR) took effect in October of 2005 (Chart 1)?[1] This article present arguments and evidence that is not. Before BAR, any household could file Ch. 7 bankruptcy and have credit cards and other unsecured debts discharged. Sidestepping unsecured debts left more income to pay the mortgage. BAR blocked that maneuver by a variety of obstacles, including a means test that forces better-off households who demand bankruptcy to file Ch. 13, where they must continue paying unsecured lenders. When the means test binds, cash constrained mortgagors who might have saved their home by filing Ch. 7 are more likely to face foreclosure or to have to sell their home.

Legal scholars and practitioners have clearly recognized how filing Ch. 7 and discharging unsecured debt can help avert foreclosure:

> "…many debtors file bankruptcy precisely so that they can *pay* their mortgage… by discharging other debts." Berkowitz and Hynes (1998), p. 3, original emphasis. [2]

> "some mortgage lenders are eager to see a troubled borrower file for Chapter 7 bankruptcy, since the other debts can be discharged." Sullivan, Warren, and Westbrook.[3]

> "If … the value of your home is covered by your state's homestead exemption, Chapter 7 may be the way to go…by getting rid of most your other debts, keeping up the the mortgage will be just that much easier" *Bankruptcy for Dummies*, Caher and Caher (2006), p. 190.

Our hypothesis follows directly from the first and second observations; if some households demanded Ch. 7 to avoid foreclosure, limiting access to Ch. 7 should increase foreclosures. Our identification strategy follows from the third observation; limiting access to

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[1] We prefer BAR over BAPCPA because it is pronounceable, and because abuse prevention clearly came first (White 2006). Congress hardened the law in sympathy with consumer lenders, particularly credit card lenders, alleging that some filers were abusing bankruptcy to avoid debts they actually within their (filers') means (Skeel 2001, Nunez and Rosenthal 2006)

[2] Consistent with the argument, Berkowitz and Hynes (1998) estimate that mortgage rates and the probability applicants are turned down for mortgages is declining in the level of homestead exemptions.

Ch. 7 should matter more in states with high home equity exemptions.[4] Bankruptcy exemptions are the opposite of collateral; they determine how much home equity Ch. 7 filers get to *keep* from unsecured creditors. We reason that home owners in states with low home equity exemption are less likely to demand Ch. 7, so the means test is less likely to affect outcomes in those states. In textbook terms, we identify BAR as a contraction in the "supply" of bankruptcy protection, and we predict a larger impact on foreclosures in states with high exemptions and hence, high "demand" for Ch. 7.

We buttress the identification by looking for differential effects of BAR across different classes of household credit. We expect BAR will reduce delinquency rates on unsecured loans in states with high exemptions because lenders in those states were most exposed to loss under bankruptcy before BAR.[5] We figure BAR will be unrelated to prime mortgage foreclosures because prime mortgagors are, by definition, unlikely to demand bankruptcy, regardless of exemptions.

We test those predictions using difference-in-difference regressions of mortgage foreclosure and loan delinquency rates estimated with state level, quarterly data over 1998:Q1 to 2007:Q3. The results are largely consistent with our predictions. Given home price appreciation and economic conditions, we find that the increase in subprime foreclosures after BAR was significantly higher in states with higher exemption. Prime foreclosure rates, by contrast, were unrelated to BAR. In still starker contrast, delinquency rates on unsecured personal loans, which

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[3] The Fragile Middle Class: Americans in Debt," Yale University Press, New Haven, 2000, quoted by Bernstein (2008).

[4] White and Zhu (2008) find that a substantial fraction of filers in Delaware in 2006 were bound by the means test. Of 586 households that filed Ch.13, 22% did not pass the means test, and 89% owed unsecured debt. Among the 90 percent of Ch. 13 filers that actually filed payment plans, 38% committed to repay unsecured debts. The latter represent payments that were potentially avoidable under Ch. 7 before BAR.

[5] We know from other evidence that those exemptions do affect bankruptcy demand. Ashcraft et al. (2007) find that the rush to file Ch. 7 just before the bankruptcy reform (Chart 2) was highest among states with riskier borrowers

were made more secure under BAR, decreased more post-BAR in states with higher home equity exemptions.

The estimated impact of BAR on subprime foreclosures is substantial. For a state with average home equity exemption, the average subprime foreclosure rate over the seven quarters after BAR was 12.6 percent higher than the average subprime foreclosure rate over all states over the period before BAR. This translates to just over 32,000 more subprime foreclosures nationwide per quarter due to BAR.[6]

Though Congress may not have anticipated that BAR would cause foreclosures to surge, observers close to the facts clearly saw the wave coming. Ms Alexis McGee, President of Foreclosure.com, made this prediction six months *before* BAR took effect:

> "[P]eople get in over their heads by further encumbering their homes with equity lines of credit that are exhausted with purchases of consumer products and services such as cars and expensive vacations. Then, when interest rates rise, and home values stop increasing, they can no longer refinance and file a Chapter 7 bankruptcy petition to wipe out their [unsecured] debts and hold off foreclosure by their lender…[Now] they must file under Chapter 13, and pay off their debt in 60 months or less. Middle income families in this position could face the loss of their homes" *Business Wire*, April 25, 2005.

Ms. McGee was prescient.

Auxiliary findings we present suggest BAR contributed to subprime foreclosures through an entirely different channel. Before BAR, the difference between the par value of an automobile loan and the current value of the automobile securing the loan (the "under-water"

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and high exemptions. Risky households demanded Ch. 7 while supply was high, and they demanded it most where Ch. 7 is most protective of equity owners.

[6] BAR may have indirectly contributed to foreclosures *via* lower home prices. To the extent that constrained borrowers were forced to sell homes in lieu of filing Ch. 7, the downward pressure on home prices would contribute to foreclosures by "underwater" mortgages.

part of the loan) could be discharged under bankruptcy.[7] BAR prohibits cram-down for cars owned less than 910 days.

Using difference-in-difference regressions, we find that auto loan delinquency rates and interest rates spreads fell substantially after BAR, particularly in high exemption states. In relation to our main point, that auxiliary finding suggests that BAR contributed to foreclosures on subprime mortgagors by making auto lenders more secure. More tangentially, that finding indicates that BAR made auto credit cheaper.

Our paper adds another suspect to the list of candidates that may have triggered the destabilizing surge in subprime foreclosures, including declining home prices (Gerardi et al. 2007), expanded mortgage supply (Mian and Sufi 2008), looser lending standards (Dell'Ariccia et al. 2008, Demyanyk and Van Hemert 2007) and agency problems associated with securitization (Keys et al. 2008).

Beyond adding another suspect behind the rise in foreclosures, our findings add to a broader literature investigating how high bankruptcy exemptions affect household bankruptcy demand and consumer credit supply.[8] Fay, Hurst, and White (2002) find higher bankruptcy demand in states with higher net benefits from filing, where that benefit increases with exemption levels. Gropp, Sholz, and White (1997) found higher auto loan rates in high exemption states. Our findings suggest that BAR curbed bankruptcy demand and increased auto credit supply.

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[7] One could buy a new car credit then file bankruptcy immediately afterward and have his obligation cram-down to the current "used" car price. New cars depreciate rapidly (because of the "lemons" problem) so strategic filers could buy a good new car for the price of a bad "used" car.

[8] The bankruptcy "bar" (Skeel 2001) tends to argue that bankruptcy is driven by bad luck (illness, job loss, etc.) not incentives. See Himmelstein et al. (2005) for evidence on the bad luck hypothesis. Ashcraft et al. (2007) review literature on bankruptcy demand.

The next section elaborates on how BAR reduced the supply of bankruptcy protection and presents some simple, circumstantial evidence consistent with our hypothesis. Section III shows with an example and algebraically how the means test is more likely to bind in states with high home equity exemptions. Section IV presents regression evidence suggesting BAR contributed the surge in subprime foreclosures. Section V presents auxiliary evidence that BAR made auto lenders more secure (and mortgage less secure, by extension) and auto credit cheaper by limiting cram-down. Section VI concludes.

II. How BAR Might Have Increased Foreclosures

Bankruptcy is court protection of debtors from creditors and debt collectors. While under bankruptcy, a judge stays all collection efforts—foreclosure, repossession of other assets, civil suits, garnishment of wages, and dunning—while the court determines which debts get discharged (forgiven), and which the borrower must repay from asset sales or future income. That division depends on which chapter of the bankruptcy law the borrower files under and the bankruptcy exemptions in the filer's state. Under Chapter 13 (rescheduling), filers get to keep all their assets but commit to continue paying creditors for three to five years out of future income. Under Chapter 7 (liquidation), filers keep all their future income but lose any home equity that is not exempt under their state's bankruptcy law (Table 2). Any unsecured debts, including credit card and personal loans, that are not paid from the proceeds of liquidation gets discharged. Importantly, the discharge of unsecured debt leaves more income for the mortgage.

Table 1 summarizes how BAR changed filers' bankruptcy options. While virtually all of the changes raise the cost of filing or reduce the benefit (protection), the means test may be the more important change. Before BAR, filers could choose which Chapter to file, and about 70

percent chose Ch. 7.[9]   Now, only filers whose income over the previous six months is below the median for their state automatically qualify for Ch. 7 and the discharge. Better-off filers whose means (defined as income minus IRS-recognized expenses, payments to secured creditors, and priority payments) exceed $166.67 per month must continue making payments to unsecured creditors for five years under Ch. 13.[10]   If Ch. 13 filers fail to make payments, the bankruptcy stay is removed and creditors can resume collection efforts, including foreclosure.

Before testing our hypothesis formally, we note some circumstantial evidence that supports it, or at least fails to contradict it.

Chart 2 shows that filing rates under either Chapter remain lower than one would predict given economic and housing market conditions, and that the ratio of filings (Ch. 7/Ch. 13) has fallen. In other words, BAR appears to have reduced overall bankruptcy demand and the relative demand for Ch. 7.

Chart 3 shows how BAR appears to have reversed the historical relationship between bankruptcy filings, on the one hand, and the relative performance of mortgages and credit loans, on the other. Relative performance is measured by the past due mortgages per total mortgages held divided by past due credit card loans per total loans held. Relative mortgage performance used to improve when filings increased, consistent with the argument that filers were better positioned to make the mortgage once their credit card and other unsecured debt was discharged,

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[9] See "Protecting the Integrity of the Bankruptcy System in Chapter 7 No-Asset Cases."
http://www.usdoj.gov/ust/eo/public_affairs/articles/docs/nabtalkfall2001.htm.
[10] Filers with monthly means between $166.67 and $100 cannot file Ch. 7 if their means exceed 25 percent of their unsecured debts. Filers with means less than $100 per month may file Ch. 7.
http://www.usdoj.gov/ust/eo/bapcpa/meanstesting.htm

but not so since BAR.[11] Before BAR, the correlation between filings and relative performance

was - 0.80 ($p < .01$). After BAR, the correlation was 0.66 ($p = 0.16$).[12]

What remains to be shown is that this circumstantial evidence is not just coincidence.

The bankruptcy law changed all at once in every state, and other things, namely home price

appreciation, changed at the same time. We need an identification strategy that tells us where the

impact of BAR should be greatest.

III.2 BAR Binds More in High Exemption States

We show numerically and algebraically that BAR is more likely to bind, and thus

increase foreclosures, in states with high home equity exemptions. Intuitively, home owners in

low exemption states were less likely to demand Ch. 7, so limiting access is less likely to matter

there. This section can be skipped if that point is understood.

III.2.1 Numerical Example

Imagine an indebted homeowner whose budget deteriorates from one month to the next:

Homeowner's Monthly Budget at Time	t	t+1
Income after taxes	5000	4000
Consumption	1000	1000
Priority payments (alimony etc.)	1000	1000
Secured debt payments (mortgage)	2000	2000
Unsecured debt payments (credit card, personal loan, etc.)	500	500
Leftover (saving)	500	-500

With income of $4000 per month, the homeowner cannot afford to pay both secured and

unsecured creditors without cutting consumption. Filing Ch. 7 bankruptcy might solve his

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[11] Number of filings seems like the correct unit, but the chart looks very similar using filing rates.
[12] Indeed, big credit card banks have enjoyed record profits since BAR (Simkovic 2008), while mortgage lenders
have suffered record losses. The former, namely Bank of America, JP Morgan Chase, and Citigroup, have been
buying banks, thrifts, and investment banks that lost money on mortgages and mortgage-backed securities. The
stock market predicted credit card banks' ascendancy; Ashcraft et al. (2007) find that as BAR made its way through
Congress in 2005, stock prices of (most) credit card banks rose relative to other banks and the market as a whole.

problem. The attractiveness of Ch. 7 depends on how much equity he has in his home, where he lives, and whether he winds up in this predicament before or after October 17, 2005 (BAR). Say he has $40,000 in home equity and lives in Colorado, where the home equity exemption is $45,000.   If his troubles started before BAR, he could file Ch. 7, have his unsecured debts discharged. The saving of $500 per month in debt payments to unsecured lenders would let him pay the mortgage without reducing consumption.   If his problems begin after BAR, he may be constrained by the means test.   If his average income over the last 6 months exceeds the median for his state, and if his leftover income less IRS recognized living expenses exceeds $166.67 per month, Ch. 7 is not an option. If he files, he must file Ch. 13 and continue payments to unsecured lenders. Given his pinched circumstances at t+1, even one dollar paid to unsecured lenders leaves him one dollar shy of making the mortgage. If he fails to make all payments required under his Ch. 13 plan, including to unsecured lenders, the judge lifts the bankruptcy stay and foreclosure can ensue.[13]

Now imagine the same sequence of events befalling a homeowner in Maryland, home equity exemption of zero. For this homeowner in that state, Ch. 7 would not be a panacea even before Oct. 17, 2005. He could file Ch. 7, but unsecured lenders could claim up to the amount he owes in home equity. He would have to sell or refinance the house to pay unsecured lenders, or cut consumption. Ch. 7 provides less protection from unsecured creditors to home equity owners in low exemption states, so losing the Ch. 7 option under BAR is less constraining in those states.

III.2.2. Algebra

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[13] All is not lost, however. The borrower could sell his house and use some of his $40,000 in home equity to pay his credit card debt. Or, he could borrow against his home equity and use the proceeds to pay credit card debt.

The decision tree of a cash-constrained homeowner has many branches. Given positive equity, refinancing or selling the home might solve his problems. If not, he might default. Given default, does he await foreclosure, or does he file bankruptcy? Given bankruptcy, does he file Ch. 7 or Ch. 13?

Fortunately, our point can be made by modeling just a single branch of the decision tree. Starting with a mortgagor in default and contemplating bankruptcy, we show that BAR is more likely to bind, and thus trigger foreclosure, in states with higher home equity exemptions.

Imagine a home owner that owes secured and unsecured creditors S and U. S is a mortgage on a home with expected value V, so home equity $= V - S \equiv E > 0$. Home equity is the borrower's only asset. The debtor earns Y per month. The debtor consumes c per month, or at least prefers to, and spends p per month on priority payments (child support, etc.).

The home owner is *cashflow constrained*: he has enough income after preferred consumption and priority payments to pay secured creditors, but not enough to pay secured *and* unsecured creditors:

$$0 < Y - c - p - S < U.$$

To relax the constraint he considers bankruptcy. Under Ch. 7 he keeps his future income but loses any non-exempt home equity to unsecured creditors. Given home equity exemption EX, Ch. 7 leaves him with total wealth of $Y + min[E, EX]$. Under Ch. 13 he keeps all of his equity but he promises to pay some amount to unsecured lenders each month for three to five years. That leaves him with $E + Y - U'$, where $U' \le U$ denotes the present value of payments to unsecured lenders required under his Ch. 13 payment plan.[14] He prefers Ch. 7 if the loss of non-

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[14] Before BAR, filers volunteered a repayment plan subject to approval by the bankruptcy court. The means test determines the repayment plan after BAR.

exempt assets under Ch. 7 is less than the present value of payments to unsecured lenders under Ch. 13:

$$max[E - EX,0] < U'.$$

Given E, the loss of non-exempt assets is decreasing in EX, so for given U', demand for Ch. 7 is increasing (non-decreasing) in EX. [15]

Now consider how the means test can constrain Ch. 7 demand. As defined under BAR, $Means = Y - c^* - p - S$, where c^* denotes IRS-recognized living expenses. Filers with average income over the previous six months above the median for their state and $Means > \$167$ cannot file Ch. 7. If they file Ch. 13, they are required to pay $Means$ per month to unsecured lenders for 60 months. That leaves the Ch. 13 filer with $Y + E - M$, where M denotes the present value of $Means$ over 60 months. Under Ch. 7 they are left with $Y + min[E, EX]$, the same as before. The means test only binds in a meaningful way if it diverts someone from Ch. 7 to Ch. 13. Given $Means > \$167$, a borrower is bound if and only if

$$max[E - EX,0] < M.$$

Given $M > \$167$ and $E > 0$, the means test is more likely to bind the higher is EX. Said differently, for two home owners with the same means and home equity, the one in the high EX state is more likely to be constrained by the means test.

Constrained Ch. 7 filers are left with less cash flow to pay the mortgage and so are more likely to face foreclosure. [16] Because high exemption states will have a larger fraction of constrained filers, we predict:

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[15] We ignore filing and legal fees. Ch. 7 was and still is cheaper to file than Ch. 13 (White 2008), further inclining filers toward Ch. 7.

[16] Unless constrained filers cut consumption to c^* they will default on one or the other debt, in which case the bankruptcy stay is lifted and foreclosure can ensue. Constrained filers owe $Means$ to secured creditors, so their free cash flow is negative unless they cut c to c^*: $Y - c - p - S - Means = Y - c - p - S - (Y - c^* - p - S) = c^* - c < 0.$

1) the surge in subprime mortgage foreclosure rates since BAR will be higher in high exemption states,

2) any increase in *un*secured consumer credit delinquency rates since BAR will be lower in higher exemption states.

3) any change in *prime* mortgage foreclosures since BAR will be invariant to state exemptions. Prime mortgagors are (by definition) unlikely to demand bankruptcy protection so the BAR is unlikely to bind.

IV.1 Regression Evidence

This section presents regression evidence to test four hypothesis

4) the surge in subprime mortgage foreclosure rates since BAR will be higher in high exemption states,

5) any increase in *un*secured consumer credit delinquency rates since BAR will be lower in higher exemption states.

6) any change in *prime* mortgage foreclosures since BAR will be invariant to state exemptions. Prime mortgagors are (by definition) unlikely to demand bankruptcy protection so the means test is unlikely to bind.

We test those predictions by estimating difference-in-difference regressions:

$$Y_{st} = \alpha + \alpha_s + \alpha_t + \beta X_{st} + \gamma BAR_t{\cdot}EX_s + \delta BAR_t{\cdot}UNLIMITED\ EX_s + \varepsilon_{st}.$$

The dependent variable Y_{st} is the foreclosure rate on subprime or prime mortgages or the delinquency rate on personal loans in state s at time t. X_{st} represents four variables that other research has shown to be correlated with foreclosure or delinquency rates:

- median home price appreciation (year-over-year growth rate)
- unemployment rate (seasonally adjusted),
- log(real per capita income),
- real per capita income growth (year-over-year)

We include only contemporaneous values of those control variables but we have confirmed our main results using lagged values as well (see robustness tests below). BAR_t is a dummy variable equal to 0 for t or before 2005:Q4 and equal to one for t after that date. EX_s = single filer home equity exemption in s at 2005:4 divided by the median home price in s at 2005:4. *UNLIMITED EX$_s$* = 1 if the exemption in s at 2005:4 was unlimited, 0 otherwise. [17] We "freeze" exemptions at their 2005:4 levels to avoid endogeneity (between exemptions and foreclosure rates). We scale exemptions in case a given exemption in California, say, provides less protection than the same exemption in Idaho. Using unscaled exemption does not change our main results in any important way (see robustness section). Scaled and unscaled exemptions are reported in Table 2. We collected the exemptions data from state legislative websites to ensure their accuracy as of 2005:Q4. The state effect, α_s, controls for any constant differences in Y across states due, for example, to differences in states' foreclosure rules, credit "culture," etc. The year-quarter time effect, α_t, controls for differences over time in Y due to interest rates or other aggregate, macro factors. Note that because we include those fixed effects, the "own" effects of *BAR, EX,* and *UNLIMITED EX* on foreclosures are unidentified. The coefficients on the interactions, *BAR·EX* and *BAR·UNLIMITED EX,* measure the difference-in-difference in the mean of *Y.* Said differently, those coefficients measure how the difference in the mean of *Y* after *BAR* differs with *EX* or *UNLIMITED EX.* We predict positive coefficients on both variables in the subprime regression, smaller or zero coefficients in the prime regression, and negative coefficients in the personal loan regression.[18]

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[17] $EX_s = 0$ when *UNLIMITED EX$_s$* = 1.

[18] The coefficients on *BAR, EX,* and *Unlimited EX* are unidentified because the regression includes time (year-quarter) fixed-effects. The time effect controls for any constant differences over time due to changes in market interest rates or other macroeconomic events. The state effect controls for any constant differences in X across states due, for example, to differences in states' foreclosure rules, credit "culture," etc.

We estimate the regressions by ordinary least squares using a panel of state-quarter data from 1998:Q1 – 2007:Q3.   The foreclosure data are from the National Delinquency Survey published by the Mortgage Bankers' Association. MBA collects their data from 120 lenders with 44 million loans on one-to-four unit residential properties.[19] The delinquency rate on personal loans is from the Consumer Credit Delinquency Bulletin published by the American Bankers' Association. ABA collects their data from a panel of 450 banks across the country. Summary statistics and sources for all the regression variables are in the appendix.

Regression coefficients and standard errors (clustered by state) are reported in Table 3. The signs of the key coefficients are as predicted. *BAR·UNLIMITED EX* is statistically insignificant, but *BAR·EX* is significant and positive in the subprime foreclosure regression and significant and negative in the personal loans delinquency regression at below one percent.[20] Both prime and subprime foreclosures rates are negatively related to home price appreciation and unemployment, as one would expect, but only subprime foreclosures depend on BAR. The cross-sectional relationship between the changes in subprime foreclosures after BAR and state exemption levels are evident in Chart 4.

The regression estimates imply that the impact of BAR on subprime foreclosures is smaller, but of the same order, as the impact of slower house price appreciation. The coefficient on *BAR·EX* in column 2 indicates that for a state with average home equity exemption/median home price, the average subprime foreclosure rate over the seven quarters after BAR was 12.6 percent higher than the average subprime foreclosure rate over all states over the period before

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[19] http://www.mortgagebankers.org/NewsandMedia/PressCenter/56555.htm

[20] We lack a good, or at least a unified, explanation for why the unlimited exemption states (and D.C.) do not fit the regression line. It seems notable, however, that five of those seven observations have large farm and/or energy sectors (Iowa, Kansas, Oklahoma, South Dakota and Texas). Perhaps the commodity price inflation in recent years offset the impact of BAR. D.C. residents may have dodged the bullet; Ashcraft et al. (2007) find the filing rate in D.C. more than doubled between the 3rd and 4th quarter of 2005, far more than in any state. D.C. residents may have

BAR (4.6 percent). That translates to just over 32,000 more subprime foreclosures nationwide per quarter due to BAR. By comparison, a standard deviation decrease in home price appreciation increases the foreclosure rate 13.7 percent relative to the average. Average annual house price appreciation over the seven quarters before BAR was 8% higher than over the seven quarters following BAR, implying 47,689 more subprime foreclosures outstanding per quarter since BAR.[21]

IV.3 Robustness Checks

The main results in Table 3 are robust to several alternative specifications. We briefly discuss these alternatives here (actual results are available upon request). Including four lags of home price appreciation and all other economic variables does not appreciably alter the significance of *BAR·EX*. We also obtain similar results when we control for the share of subprime mortgages that are secured and the share with adjustable rates (though those data are only available post 2004:1). For those regressions, we found that the share of subprime mortgages that were securitized was positively and significantly related to the subprime foreclosure rate, which is consistent with the evidence in Keys et al (2008) that securitization agency problem contributed to foreclosures. The size and significance of the *BAR·EX* coefficient did not change appreciably when we added those extra controls, however. Using exemption levels that are not scaled by the median home price does not materially change the results.

Are we confounding the seismic effects of the bankruptcy reform with the tidal effects of Katrina, the hurricane that flooded and blew homes away in several southern states on August

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been forewarned as D.C. has ten times more lawyers per capita than the state with the 2nd highest number of lawyers per capita (NY). http://www.averyindex.com/lawyers_per_capita.php
[21] A standard deviation increase in the unemployment rate increases the foreclosure rate about 13.4 percent. Unemployment rates *decreased* almost 70 bps on average since BAR, implying 20,059 fewer foreclosures per quarter.

23, 2005? [22] To be safe, we estimated regressions excluding states where Katrina killed people (

LA, MS, FL, AL, GA, KY) and found essentially the same results.

V. How BAR Lowered Auto Loan Delinquency and Interest Spreads.

As secured lenders, auto lenders (like mortgage lenders) prefer that over-indebted

borrowers file Ch. 7, have their unsecured debts discharged, then re-affirm their auto loan

(Whitford 2006). Accordingly, the gain to unsecured lenders created by BAR might adversely

affect auto lenders as it did mortgage lenders. However, a specific provision in BAR inserted at

the behest of auto lenders might offset that.[23] Before BAR, borrowers could buy a new car on

credit then immediately file Ch. 13 and have their obligation lowered ("crammed") to the car's

current "blue book" value. Book values for new cars, once they leave the lot, can be 20 percent

below sticker price so buying and filing might save several $thousand on a mid-line sedan and

several times that for a luxury make.[24] BAR curbs that maneuver by requiring filers to own a car

for 910 days before their loan can be crammed in bankruptcy.

The impact of limiting cram-down on the auto credit market depends on several factors.

If the buy-and-file maneuver was rarely practiced, limiting cram-down should hardly affect the

market. We have nothing to say about how frequently new car loans got crammed in bankruptcy

except to note that it must have happened, else auto lenders would not have lobbied Congress for

protection. While the benefit to car buyers from having a loan crammed hardly seems big

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[22] To the extent Katrina completely destroys a home, foreclosure seems redundant, though it might happen for legal or insurance purpose. Indirect effects, through labor and credit markets, are also possible: if ones' job washes away, or if the bank pulls up stakes, foreclosure might rise. We control for indirect effect via unemployment and income.

[23] Whitford (2006) thoroughly discusses auto loan cram-down and how BAR altered treatment of automobile lenders under bankruptcy. He notes that the provision to limit cram-down of auto loans under Ch. 13 came at the behest of a Senator from Michigan and the American Financial Services Association, a trade association "including many lenders specializing in auto finance." (p. 35).

[24] Using detailed personal bankruptcy filings in Delaware, Zhu (2008) finds that that about 8 percent of Ch. 13 filers owned at least one "luxury brand" automobile, about the same fraction as for non-filers.

enough to motivate solvent borrowers to file, it might tempt marginal borrowers already verging on bankruptcy to upgrade to the latest model before filing.

Gropp et al. (1997) found that auto loan interest rates were higher for households in states with high home equity exemptions. To see whether BAR undoes that link, we regress auto loan delinquency rates and interest rate spreads at the state level on the same variables used above, except we omit home price appreciation as we would not expect (nor did) that variable to matter for the auto credit market. The spread equals the difference between the interest rate on a five-year auto loan and the five-year Treasury bill. The auto interest rates are from Bankrate.com (see appendix). Auto loan delinquency rates are from the Consumer Delinquency Bulletin published by the ABA. The ABA reports separate delinquency rates on loans made directly by a bank or other financial institution and on indirect loans made by the auto dealer.

The auto credit market results (Table 4) are more mixed than the housing market results. They depend partly on whether we use scaled or unscaled exemptions (so we report both) and the type of loan (direct or indirect). Overall, auto loan delinquency rates tended downward after BAR in higher or unlimited exemption states, significantly so for direct loans.[25] Consistent with that result, auto loan interest spreads also declined after BAR in states with high or unlimited exemptions. The link between spreads and exemptions was more significant using unscaled exemptions, but the magnitudes were comparable regardless. The decline in the average auto loan spread was 15 basis points lower after BAR for unlimited exemption states, a 5.7 percent decline relative to the mean over all states (265 basis points). The regression results show clearly in Chart 5.

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[25] We have no ready explanation for why only direct loan delinquency rates declined significantly. We had fewer observations on indirect so the estimates are less precise, but the estimates are also much smaller than for direct auto loans. The mean delinquency rate on indirect loans was 12 basis points higher (see appendix), suggesting greater

VI. Conclusion

We conclude that the bankruptcy abuse reform of 2005 (BAR) contributed to the destabilizing surge in subprime foreclosures by shifting risk from credit card and auto lenders to mortgage lenders. The means test under BAR gives credit card and other unsecured creditors a stronger claim on borrowers' cash flow, and that weakens secured lenders' (implicit) claim on that cash flow. Limiting cram-down on auto loans eliminates another maneuver over-indebted borrowers could use to free up income for their mortgage. By making it harder for borrowers to avoid paying credit card debt and auto loans, BAR made it harder to pay the mortgage, hence higher foreclosure rates.[26]

The impact of BAR can be expected to vary over the business cycle and over time. The means test uses income over the previous six months, so more filers will qualify for Ch. 7 if unemployment rates rise. Over time, the relative supply and demand for mortgage and consumer credit will adjust to take account of the new bankruptcy rules.

The welfare impact of BAR is beyond our ken. That calculus depends firstly on the tradeoff between the insurance that soft bankruptcy laws provide and the moral hazard (abuse) such insurance invites, and secondly on how successfully BAR curbs bankruptcy abuse.[27] On a more modest point, we know that high bankruptcy exemptions once made auto credit more expensive (Gropp et al. 1997). Our results suggest that BAR made it cheaper.

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risk. If so, one might have expected BAR to have improved delinquency risk more for indirect loans, contrary to our findings. We thank Bill Whitford for discussion on this point.

[26] To give credit, analysts at Credit Suisse (2007) noticed that among bankrupt mortgagors they tracked, those filing before BAR were more likely to avoid foreclosure than those filing after. They concluded BAR affected subprime mortgagors "profoundly."

[27] Ashcraft et al. (2007) consider the welfare implications but conclude agnostically.

References

Ailoae, Dragos, Wanching Lo, Dimitri V Shishkinnu, andYu Shuoning (2008), "The Effect of 2005 Bankruptcy Abuse Reform on the Auto Loan Market," Special Project for Master in Economics, New York University, May, unpublished (available from Morgan).

Ashcraft, Adam, Astrid Dick, and Donald Morgan (2007), "Bankruptcy Abuse Prevention and Consumer Protection Act: Means Testing or Mean Spirited?" Federal Reserve Bank of New York Staff Study no. 279.

Ashcraft, Adam and Til Schuermann (2008), "Understanding the Securitization of Subprime Mortgage Credit," Federal Reserve Bank of New York Staff Report no. 318.

Bernstein, David (2008), "Bankruptcy Reform and Foreclosure," http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1154635

Caher, James and John Caher (2006), *Personal Bankruptcy Law for Dummies*. 2nd ed. Wiley .

Credit Suisse (2007), "Subprime Heat Update," Fixed Income Research, March 8.

Chomsisengphet, and Elul (2006), "Bankruptcy Exemptions, Credit History, and the Mortgage Market," *Journal of Urban Economics,* 171-188.

CCH (2005), "Bankruptcy Reform Act Briefing," http://www.cch.com/bankruptcy/bankruptcy_04-21.pdf

Dell'Ariccia, G. Igan Deniz, and Luc Laeven (2008), "Credit Booms and Lending Standards: Evidence from the Subprime Mortgage Market," http://www.imf.org/external/pubs/ft/wp/2008/wp08106.pdf

Demyanyk, Y. and Otto Van Hemert (2007), "Understanding the Subprime Mortgage Crises," Working paper, Federal Reserve Bank of St. Louis.

Foote C., Geradi, K, Gotte L., and Willen, P. (2008), "Just the Facts: An Initial Analysis of Subprime's Role in the Housing Crises," *Journal of Housing Economics,* 17, 291-305.

Gerardi, Kristopher, Harvey Rosen, and Paul Willen (2007), "Subprime Outcomes: Risky Mortgages, Homeownership Patterns, and Foreclosures," Federal Reserve Bank of Boston Working Paper, July.

Green, James, Christer Huffington, Carrie Irwin, Munish Jain (2007), "Subprime Mortgage Crises: What's BAPCPA Got to Do with It?" Special Project for Master in Economics, New York University, December, unpublished (available from Morgan)

Gropp, R., J.K. Scholz, and M.J. White (1997), "Personal Bankruptcy and Credit Supply and Demand," *Quarterly Journal of Economics*, 112: 217-251.

Hynes, Richard and Jeremy Berkowitz (1998), "Bankruptcy Exemption and the Market for Mortgage Loans," Wharton Financial Institutions working paper, published in *J. of Law & Economics*, 42, 809-830, 1999.

Keys, Benjamin, Tanmoy Mukherjee, Amit Seru, and Vikrant Vig (2008), "Did Securitization Lead to Lax Screening? Evidence from Subprime Loans 2001-2006," Working Paper, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1093137

Mian, Atif and Amir Sufi (2008), "The Consequences of Mortgage Credit Expansion: Evidence from the 2007 Mortgage Default Crisis," http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1072304

Nunez, Stephen, and Howard Rosenthal (2006), "Bankruptcy 'Reform' in Congress: Creditors, Committees, Ideology, and Floor Voting in the Legislative Process," *The Journal of Law, Economics, and Organization*, Vol. 20, No. 2, p 527-557.

Simkovic, Michael (2008), "The Effect of 2005 Bankruptcy Reforms on Credit Card Industry Profits and Prices," available at SSRN: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1157158

Skeel, David A. (2001), *Debt's Dominion*, Princeton: Princeton University Press.

White, M. (2006), "Personal Bankruptcy: Abuse Prevention versus Debtor Protection," *Economie publique/Public Economics*, no. 18-19, pp. 3-27, 2006.

_____ (2007), "Bankruptcy Reform and Credit Cards," *Journal of Economic Perspectives,* Fall, 2007.

_____ and Ning Zhu (2008), "Saving Your Home in Chapter 13 Bankruptcy," NBER Working Paper # 14179. http://www.nber.org/papers/w14179

Whitford, William (2006), "A History of Automobile Lender Provisions of BAPCPA," University of Wisconsin Law School Legal Studies Research Paper No. 1020. Available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=907086

Zhu, Ning (2008), "Personal Consumption and Bankruptcy," U.C. Davis Working Paper, http://www.gsm.ucdavis.edu/uploadedFiles/Faculty/Directory_and_Profiles/personal_bank.pdf

Zywicki, Todd J (2005), "Institutions, Incentives, and Consumer Bankruptcy Reform." George Mason Law & Economics Research Paper No. 05-07, Washington and Lee Law Review, Vol. 62, No. 3, pp. 1071-1138, Summer 2005
Available at SSRN: http://ssrn.com/abstract=681483 or DOI: 10.2139/ssrn.10.2139/ssrn.681483

Chart 1
Subprime Foreclosures Rose after the Bankruptcy Abuse Reform
Shaded area indicates recession.
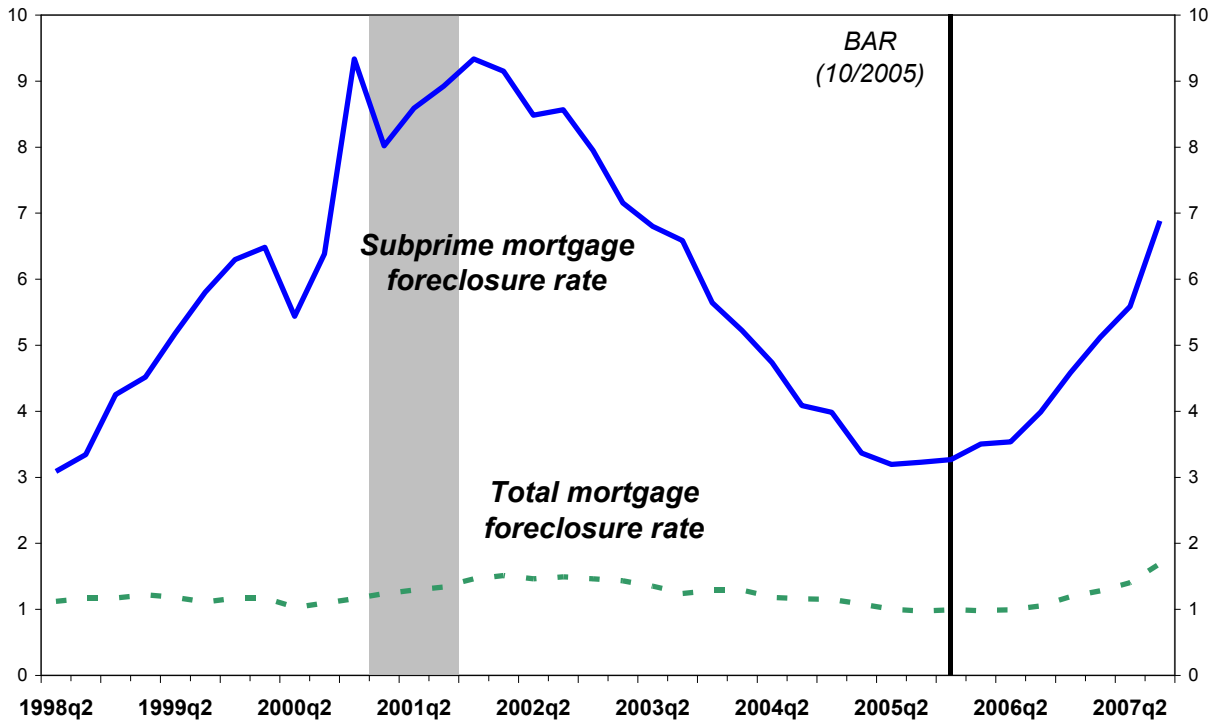
Source: MBA National Deliquency Survey.
Solid line shows percent of outstanding subprime mortgages that are in foreclosure in U.S. Dashed line shows percent of outstanding total mortgages that are in foreclosure in U.S.

Chart 2
Households Rushed to File Ch. 7 Before the Bankruptcy Reform Took Effect
Plotted are Ch. 7 and Ch. 13 bankruptcy filings per 10,000 persons relative to forecasted trend (see note). While Ch. 7 filings surged, Ch. 13 filings dropped. Since BAR, total filings are lower than predicted (see below) and the ratio (Ch. 7/Ch.13) fell from about $10/3.25 \approx 3$ in 2004:4 to $5/2.5 = 2$ in 2007:3. The means test and other reforms appear to have lowered aggregate bankruptcy "supply" and the relative demand for Ch.7.
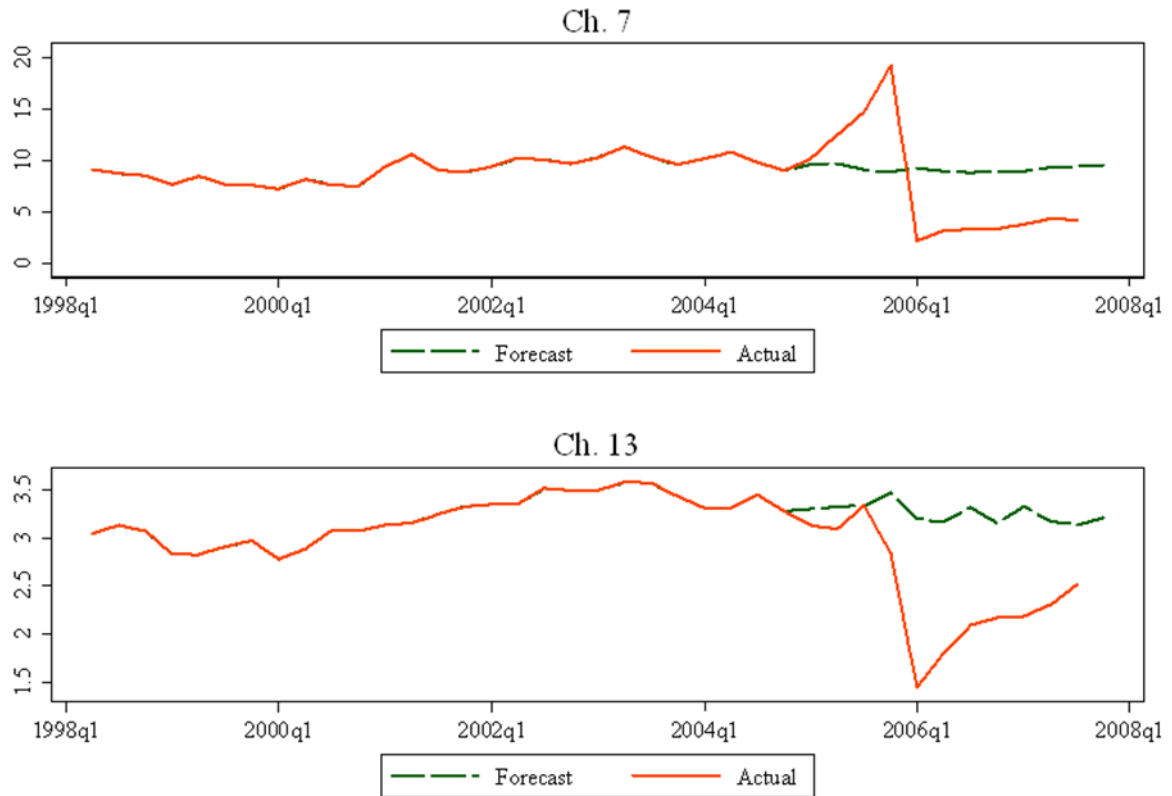
Forecast generated from vector autoregression model comprising 2 lags each of bankruptcy filings, unemployment rate, house price appreciation, and per capita income annual growth rate. We create the forecast by iteratively running the model and forecasting bankruptcy filings one quarter ahead for each state separately. For each step we replace the actual value of bankruptcy filings with the estimated value. Charts show bankruptcy filings per 10,000, averaged across 50 states and District of Columbia.

Chart 3
Before BAR, Mortgage Performance Improved Relative to Credit Cards when Bankruptcy Filings Increased
Total filings (left scale) = number of personal filings under Ch. 7 and Ch. 13 each quarter.
Relative loan performance (right scale) = fraction of residential real estate loans that are past due/fraction credit card loans that are past due, where past due means late 90 or more days or nonaccruing.
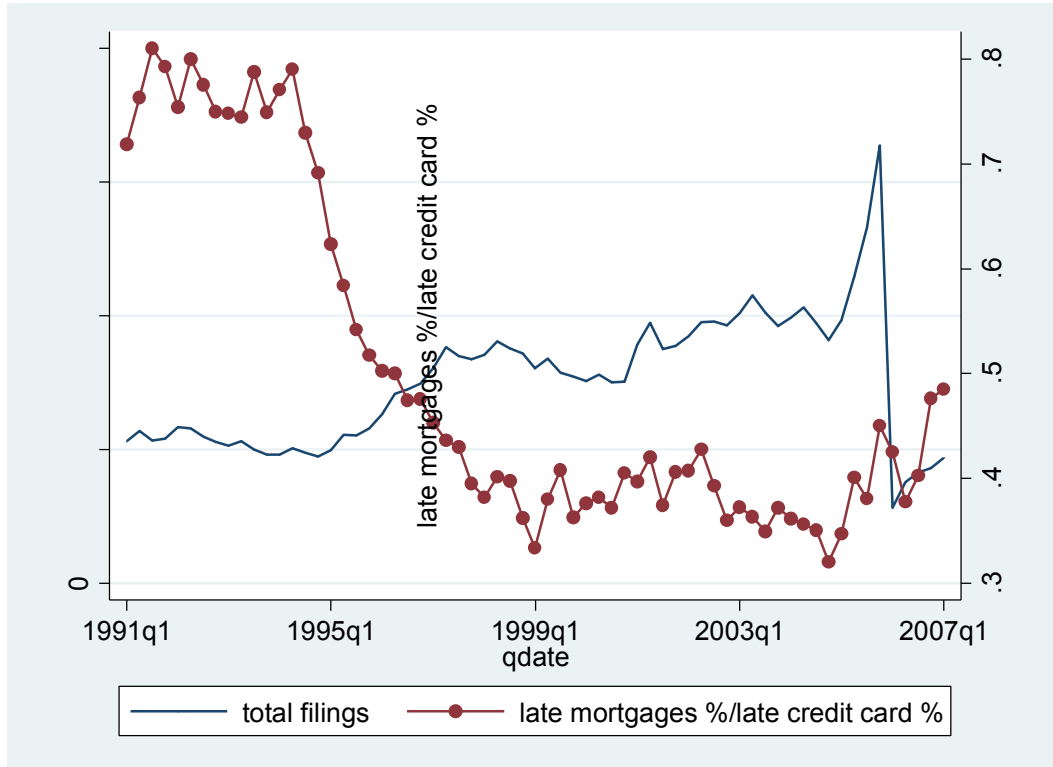
Notes and sources: Residential real estate loans include open- and close-ended loans secured by 1-4 family residential properties. Bankruptcy filings are from U.S. Courts. Loan performance data are from banks' Call Reports.

Chart 4
Subprime Foreclosures Rose More Since BAR in States with Higher Bankruptcy Exemptions.
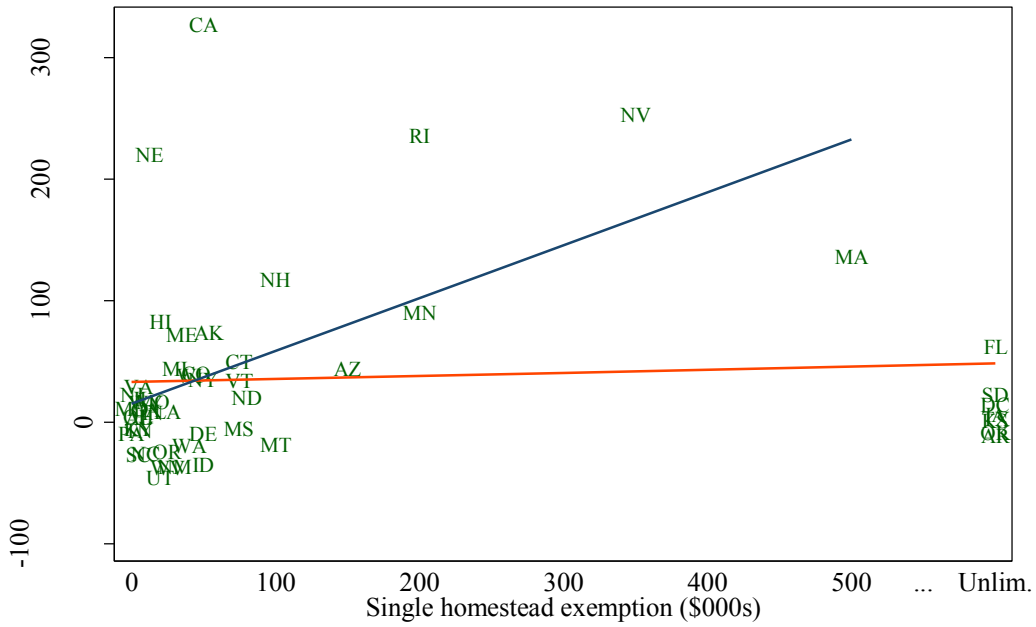
Sources: State Laws & Statutes, Mortgage Bankers Association

Difference in subprime foreclosure rate equals percent change in average rate from seven quarters before BAR (2004:2-2005:4) to seven quarters after (2006:1-2007:3)

Chart 5
Auto Loan Interest Spreads Fell After BAR, Especially in Unlimited Exemption States.
Left axis measures interest rate on new automobile loan (5 year) minus rate on government bond (5 year).
Solid line equals average for states with unlimited home equity bankruptcy exemptions. Dashed line is
average for other states. Right scale measures gap between spreads in unlimited exemption states and
limited exemptions states.
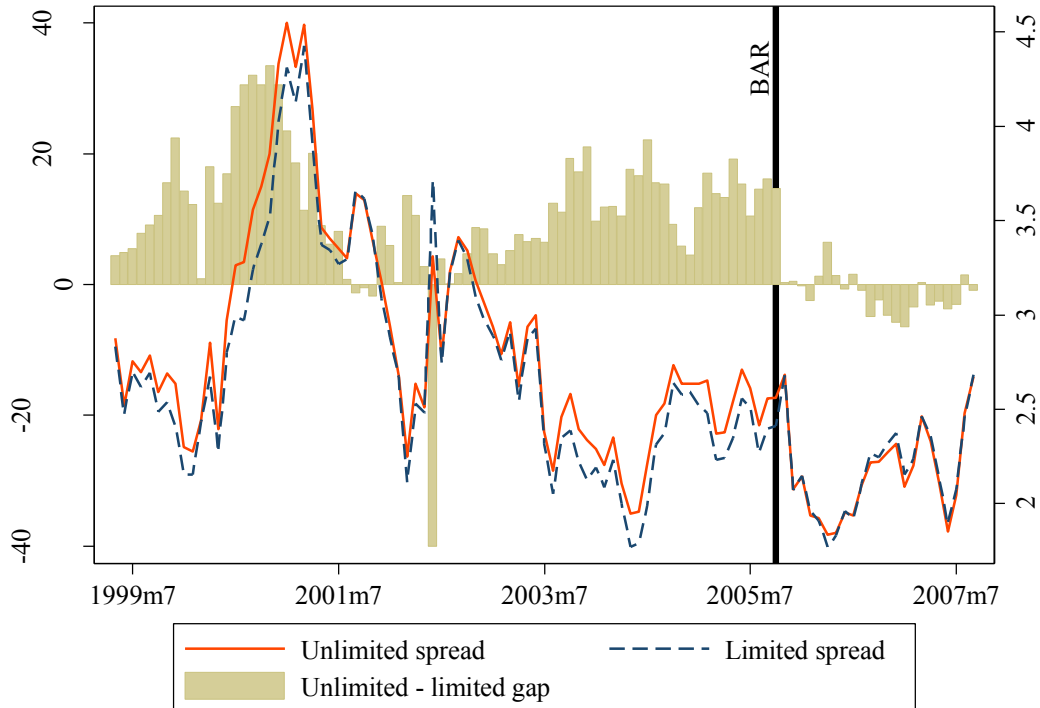
Table 1
How the 2005 Bankruptcy Abuse Reform (BAR) Affects Filers and Creditors, by Chapter

Debtors file bankruptcy to stay (protect themselves from) creditors and debt collectors. Secured creditors are entitled to security even in bankruptcy, but credit card and other unsecured debt may be discharged. The disposition of filer's debts and wealth differ by chapter of the bankruptcy law. Ch. 7 (liquidation) protects all income but not all assets. Ch. 13 (rescheduling) protects all assets but not all income. Congress rewrote the bankruptcy law in 2005 to curb alleged abuse. See key reforms below.

	Pre-BAR	*BAR*
Chapter 7 or 13 determined by	filer	means test
Ch. 13 repayment plan determined by	filer	means test
Income lenders can claim: 7, 13	0, per plan	0, per test
Home equity lenders can claim: 7, 13	Table 2, 0	Table 2 or $125,000^{Ñ}$, 0
Filing fees + estimated[1] legal costs ($000s): 7, 13	0.6,1.6	2.3 ± 0.5, 3.2 ± 0.5
Months between filing and discharge: 7, 13	0, 36-60	6^{2}, 60
Unsecured debts that get discharged: 7, 13	all - priority*, all - priority* plus	less, less
Days financed car buyer must wait to cram loan†	0	910
Years before re-filing permitted: 7, 13	6, 0.5	8, 2
"Ch. 20" = Ch. 7 + Ch. 13 permitted?	yes	no
Months of credit counseling required before filing	none	6

Sources: White (2007), CCH (2005)

* priority debt: student loans, child support, taxes, recent or fraudulent credit card charges.

† pay only current book value of car.

Ñ if resident < 1215 days or domiciled < 710 days.

2 after credit counseling

1 practioner estimates reported in White (2007)

2 See CCH p. 3

Table 2
State's Home Equity Bankrutpcy Exemption, Median Home Price, and their Ratio, Sorted by Exemption

Exemption is $ of home equity unsecured lenders cannot claim under bankruptcy. Home price is median for state. Both measured in $1000 at 2005:4. Correlation between exemption and exemption/home price = 0.87.

State	Exemption	Home price	Ratio	State	Exemption	Home price	Ratio
Maryland	0	326	0	Colorado	45	231	0.17
New Jersey	0	362	0	California	50	485	0.10
Pennsylvania	0	162	0	Delaware	50	213	0.15
Alabama	5	136	0.03	Idaho	50	164	0.28
Kentucky	5	124	0.03	New York	50	284	0.18
Ohio	5	128	0.02	Alaska	54	204	0.25
South Carolina	5	158	0.03	Connecticut	75	313	0.24
Tennessee	5	144	0.03	Mississipi	75	124	0.52
Virginia	5	279	0.01	Vermont	75	182	0.38
Illinois	7.5	224	0.03	North Dakota	80	120	0.49
Georgia	10	152	0.05	Montana	100	156	0.50
North Carolina	10	160	0.05	New Hampshir	100	220	0.33
Wyoming	10	154	0.06	Arizona	150	256	0.57
Nebraska	12.5	128	0.09	Minnesota	200	188	0.87
Indiana	15	113	0.11	Rhode Island	200	280	0.63
Missouri	15	129	0.10	Nevada	350	327	1.07
Hawaii	20	496	0.06	Massachusetts	500	366	1.50
Utah	20	173	0.10	Arkansas	unlimited	113	unlimited
Louisiana	25	137	0.14	D.C.	" "	391	" "
Oregon	25	235	0.10	Florida	" "	266	" "
West Virginia	25	148	0.09	Iowa	" "	123	" "
Michigan	30	145	0.18	Kansas	" "	137	" "
New Mexico	30	165	0.16	Oklahoma	" "	110	" "
Maine	35	195	0.18	South Dakota	" "	115	" "
Washington	40	260	0.13	Texas	" "	136	" "
Wisconsin	40	161	0.25	mean*	60.56	206	0.24

*Excluding states with unlimited exemptions

Source: Exemptions from state websites. Median home price from Moodys.com

Table 3
Subprime Mortgage Foreclosures Rose after BAR in High Exemption States;
Personal Loan Delinquency Fell

Reported are regression coefficients (standard errors) estimated via OLS using state data from 1998:1 to 2007:3. BAR = 0 on or before 2005:4 and 1 after. *Exemption* = home equity exemption in state at 2005:4/median home price in s at 2005:4. *Unlimited Ex.* = 1 for states with unlimited homestead exemption at 2005:4, zero for other states. All regressions include state and year-quarter fixed effects. Standard errors are robust and clustered at state level.

	Dependent Variable:					
	Mortgage Foreclosure Rate:				*Pesonal Loan*	
	Subprime		Prime		*Delinquency Rate*	
	(1)	(2)	(3)	(4)	(5)	(6)
BAR x Exemption	2.85***	2.04***	0.07	-0.06	-0.78***	-0.84***
	(0.71)	(0.65)	(0.08)	(0.06)	(0.18)	(0.16)
BAR x Unlimited Ex.	0.81	0.68	0.04	0.02	-0.12	-0.16
	(0.87)	(0.78)	(0.09)	(0.07)	(0.19)	(0.19)
House price appreciation		-0.11***		-0.01***		0.01
		(0.02)		(0.00)		(0.01)
Unemployment rate		0.53*		0.12***		0.14**
		(0.27)		(0.04)		(0.06)
Log(per capita income)		-5.25		-0.84		2.31
		(5.60)		(0.62)		(1.80)
Per capita income growth		0.04		0.00**		0.00
		(0.02)		(0.00)		(0.00)
Constant	2.50***	54.78	0.53***	8.72	2.60***	-21.84
	(0.29)	(58.01)	(0.05)	(6.45)	(0.10)	(18.62)
Observations	1989	1989	1989	1989	1577	1577
Adjusted R-squared	0.56	0.62	0.09	0.40	0.27	0.28

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 4

Auto Loan Spreads and Delinquency Rates Tended Downward After BAR in High Exemption States

Panel regression coefficient estimates (robust, state-clustered s.e.). *Spread* = interest rate on 5-year auto loan minus yield on 5-year Treasury bill rate. Direct loans are from car dealer. *BAR* = 0 on or before 2005:4 and 1 after. *Exemption* = home equity exemption in state at 2005:4/median home price in *s* at 2005:4. *Unlimited Ex.* = 1 for states with unlimited homestead exemption at 2005:4, zero for other states. Exemption *not* scaled in lower panel.

| | *Auto Loan Spread* | | Delinquency Rate | | | |
			Direct Auto Loans		*Indirect Auto loans*	
BAR x Exemption	-0.09	-0.14	-0.25	-0.34	-0.17	-0.09
	(0.10)	(0.10)	(0.39)	(0.40)	(0.37)	(0.39)
BAR x Unlimited Ex.	-0.11	-0.15*	-0.62**	-0.67**	-0.20	-0.13
	(0.09)	(0.08)	(0.30)	(0.30)	(0.22)	(0.21)
Unemployment rate		0.07		0.11		-0.07
		(0.09)		(0.11)		(0.11)
Log(per capita income)		0.96		3.25		-4.60*
		(0.70)		(2.97)		(2.73)
Per capita income growth		-0.00		0.00		0.01
		(0.00)		(0.00)		(0.01)
Constant	2.74***	-7.86	2.30***	-31.65	1.81***	49.54*
	(0.07)	(7.40)	(0.09)	(30.76)	(0.09)	(28.37)
Observations	1734	1734	1546	1546	1373	1373
Adjusted R-squared	0.72	0.72	0.18	0.18	0.03	0.04

UnScaled exemptions

Dependent Variable

| | *Auto Loan Spread* | | Delinquency Rate | | | |
			Direct Auto Loans		*Indirect Auto loans*	
	(1)	(2)	(3)	(4)	(9)	(10)
BAR x Exemption	-0.05*	-0.06**	-0.02	-0.04	-0.02	0.01
	(0.03)	(0.03)	(0.09)	(0.10)	(0.10)	(0.10)
BAR x Unlimited Ex.	-0.12	-0.15*	-0.57*	-0.62**	-0.18	-0.11
	(0.09)	(0.08)	(0.30)	(0.30)	(0.22)	(0.21)
Unemployment rate		0.08		0.10		-0.07
		(0.09)		(0.11)		(0.10)
Log(per capita income)		0.98		3.09		-4.67*
		(0.70)		(2.97)		(2.71)
Per capita income growth		-0.00		0.00		0.01
		(0.00)		(0.00)		(0.01)
Constant	2.74***	-8.09	2.30***	-30.03	1.81***	50.24*
	(0.07)	(7.46)	(0.09)	(30.79)	(0.09)	(28.13)
Observations	1734	1734	1546	1546	1373	1373
Adjusted R-squared	0.72	0.72	0.17	0.18	0.03	0.04

*** p<0.01, ** p<0.05, * p<0.1

Appendix: Data Sources and Summary Statistics

	Source	N	Mean	Standard Deviation	Min	Max
Dependent Variables						
Subprime foreclosure rate (%)	MBA National Deliquency Survey	1989	5.74%	3.33%	0.00%	17.03%
Prime foreclosure rate (%)	"" "" ""	1989	0.51%	0.28%	0.07%	2.11%
60-month New Auto Loan Rate	Bankrate.com	1734	7.06%	1.29%	3.87%	11.75%
5-yr US Treasury	FRB Table H.15	1734	4.41%	1.03%	2.57%	6.59%
Auto-Treas. Spread		1734	2.65%	0.65%	0.37%	6.95%
Personal Delinquency Rate[1]	American Bankers Association	1577	2.03%	0.95%	0.13%	7.04%
Auto Loan Delinquency Rate_Direct	" "	1546	1.75%	0.94%	0.34%	8.38%
Auto Loan Delinquency Rate_Indirect	" "	1373	1.87%	1.01%	0.11%	8.39%
Independent Variables						
Single Household Exemption	Code Law for each state	1989	$39,803	$67,161	$0	$550,000
Median House Price	FHFB Monthly Interest Rate Survey[3]	1989	$184,178	$72,663	$71,000	$620,000
Exemption / Med. House Price		1989	0.21	0.30	0.00	1.75
Unemployment Rate	Bureau of Labor Statistics	1989	4.67%	1.17%	2.10%	9.70%
House Price Appreciation[2]	Moody's Economy.com median home price index	1989	6.13%	5.97%	-7.88%	51.57%
Real Per Capita Income (2005:1 $)	Census, BEA, BLS	1989	$32,389	$5,354	$11,667	$56,951
Log(Real Per Capita Income)		1989	10.37	0.16	9.36	10.95
% chg. Real Per Capita Income[2]		1989	1.85%	4.33%	-57.90%	158.56%

Data are from 1998:1 - 2007:3 for 50 states + District of Columbia, except where noted differently.

1 Data incomplete for some states

2 year-over-year % change

3 Federal Home Finance Board