# Residential Housing And Personal Bankruptcy*

BY WENLI LI

Bankruptcy filings are on the rise, and millions of households have either lost their homes to foreclosure or are on the verge of losing them. One subject of debate amid this rising number of bankruptcies is how personal bankruptcy laws deal with residential housing. This subject centers on two main issues: First, how do personal bankruptcy laws affect the availability of mortgages and the terms on which borrowers obtain mortgages? Second, how do personal bankruptcy filings affect the outcome of mortgage foreclosures? In this article, Wenli Li discusses these questions and examines the economic literature to shed some light on the legislative and policy debates that are likely to recur after the current crisis is over.

The subprime mortgage crisis that started in late 2006 has caused a sharp correction in the U.S. housing market. By the second quarter of 2008, real housing prices had dropped for four consecutive quarters, year over year, according to the Federal Housing Finance Agency house price index.[1] Meanwhile, lenders have tightened credit conditions by either charging higher rates or denying credit to those who would have gotten credit before the crisis. As a result, many households, especially those whose adjustable mortgage rates are scheduled to increase, are struggling to pay their bills. Bankruptcy filing rates have gone up – following the sharp rise and even sharper decline that accompanied the 2005 changes in the bankruptcy law – and millions of households have either lost their homes to foreclosure or are on the verge of losing them (Figure 1).

One subject that has received some attention, particularly from policymakers, as a result of the current crisis is how personal bankruptcy laws deal with residential housing. Although the Housing and Economic Recovery Act of 2008 does not contain direct changes to the current personal bankruptcy laws, proposals to reform bankruptcy laws were a central part of the debate. For instance, the Helping Families Save Their Homes in Bankruptcy Act, introduced in October 2007 but not included in the final law, amends the federal bankruptcy law to permit a bankruptcy plan to modify the mortgages of certain debtors and to provide for payment of such a loan at a fixed annual interest rate over a 30-year period.

There are two main issues concerning residential housing and personal bankruptcy law. One is how personal bankruptcy laws affect the availability of mortgages and the terms at which borrowers obtain their mortgages. The other is how personal bankruptcy filing affects the outcome of mortgage foreclosure. Economists have studied both issues, though the first issue has received somewhat more attention in the economic literature. Although the literature hasn't yet

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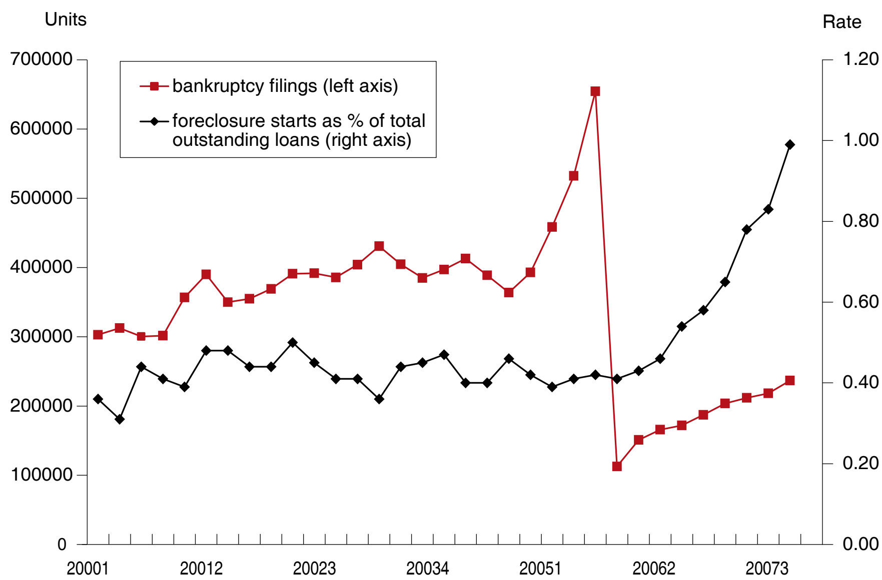
[1] The Economic Recovery Act of 2008, which was enacted on July 30, 2008, established the Federal Housing Finance Agency (FHFA) by combining the Office of Federal Housing Enterprise Oversight (OFHEO) and the Federal Housing Finance Board (FHFB). The legislation calls for OFHEO and the FHFB to be abolished one year from the date of enactment.

*The views expressed here are those of the author and do not necessarily represent the views of the Federal Reserve Bank of Philadelphia or the Federal Reserve System.

FIGURE 1

**Bankruptcy and Foreclosure Starts**




and so forth). States also set their own exemptions. While some states allow filers to opt out of the state exemptions for federal ones, other states disallow the use of federal exemptions. As mentioned above, Chapter 7 filers surrender all of their assets above the exemption levels in exchange for the discharge of their remaining unsecured debt not covered by the asset seized. Exemptions also have significance in Chapter 13 through the "best interests of the creditors" test, which states that creditors are entitled to receive at least as much in Chapter 13 as they would have received in Chapter 7. Thus, in a state with high exemptions, creditors should also expect lower repayments in Chapter 13.

Bankruptcy laws reduce ("strip down") debts secured by cars to the fair market value of the car at the time of the bankruptcy filing, and debts that exceed the fair market value become unsecured. But they do not allow for modification of mortgage loans secured solely by the borrower's principal residence. Nevertheless, Chapter 7 bankruptcy voids deficiency payments[2] in the same way that it voids unsecured debt whose value exceeds total nonexempt assets. Homeowners who file for bankruptcy under Chapter 13 are allowed to repay arrears on their mortgages over a three- or five-year period. Furthermore, bankruptcy filing puts an automatic stop to lenders' collection actions, including foreclosure on the debtor's house. The stay can be lifted only by the court or after the bankruptcy case is dismissed or terminated.

**The Determination of Mortgage Borrowing and Interest Rates.** Like other goods and services, mortgage

achieved complete agreement on either question, it does shed some light on the legislative and policy debates that are likely to come up again after the dust settles somewhat on the current crisis.

## EFFECT OF PERSONAL BANKRUPTCY LAWS ON AVAILABILITY AND PRICE OF MORTGAGES

There are two broad categories of household debt. Secured (collateralized) debt allows creditors to reclaim the collateral if the debtor defaults on the loan. The main examples of secured debt are mortgages and automobile loans. Unsecured debt – mainly credit card debt and installment credit – has no collateral that creditors can seize. Foreclosure laws govern the default on secured mortgage loans and are unique to each state. (See *The Foreclosure Process* for a short description of the main features of state foreclosure laws.) However, consumers can forestall foreclosure by electing bankruptcy, which is governed by the federal bankruptcy code.

**Personal Bankruptcy Laws.** There are two separate bankruptcy procedures: Chapters 7 and 13. The two chapters differ in that debtors who file under Chapter 7 are obliged to repay debt out of their assets, to the extent that their assets exceed predetermined exemption levels. Debtors who file under Chapter 13 are obliged to repay debt out of their income over a period of time after deducting reasonable living expenses.

Personal bankruptcy is governed by federal law, and there are separate federal exemption levels for the household's homestead (home equity in residential housing) and nonhomestead or other personal property (jewelry, furniture, savings,

[2] A deficiency judgment is a judgment lien against a borrower whose foreclosure sale did not produce sufficient funds to pay the mortgage in full.

## The Foreclosure Process

When a borrower defaults on a home mortgage, the lender may attempt to recover its losses by repossessing and selling the property. This process is governed by three types of state property laws: the judicial foreclosure process, statutory rights of redemption, and deficiency judgments. These laws vary widely across states (see the Table on pages 22-23 for a summary of the differences).

Under state property laws, two types of foreclosure are widely used. The more important type, *foreclosure by judicial sale*, is available in every state and required in many. It involves the sale of the mortgaged property under the supervision of a court, with the proceeds going first to satisfy the mortgage holder, then to satisfy other lien holders, and finally to the borrower. The second type is *foreclosure by power of sale*. Here, the mortgage holder is permitted to sell the property without court supervision. Again, proceeds from the sale go first to the mortgage holder, then to other lien holders, and finally to the borrower.[a] If the proceeds do not pay off the existing mortgage on the property plus costs, most states allow the lender to collect a *deficiency judgment* against the borrower's other assets equal to the lender's foreclosure losses. Deficiency judgments are thus unsecured debt that remains after repossession or sale and has the same priority as other unsecured debt.

After the foreclosure sale is complete, the homeowner can still regain the property if his or her state grants a statutory *right of redemption*. Up to a year after the sale, depending on the state, homeowners can redeem their property for the foreclosure sale price plus foreclosure expenses. The existence of redemption rights has resulted in investors' reluctance to purchase a foreclosed property during the redemption period and a large percentage of properties become lender-owned instead of being sold to a third party immediately after the foreclosure.[b]

Foreclosure is a costly process. A typical foreclosure process can last anywhere from a few months to a year, depending on the state. The total costs of the foreclosure process consist of accrued interest, advances, cost of the lawsuit, attorney's fees, publication fees, and the fee of the sheriff or selling officer from the filing of the complaint through the foreclosure sale.[c] Everybody loses in foreclosure. Lenders are estimated to lose almost 30 percent of their investment in a foreclosure,[d] and debtors, at the least, lose their homes, an outcome that disrupts families and communities.

[a] Where it is available, foreclosure by power of sale is generally faster than foreclosure by judicial sale. From the borrowers' perspective, the requirements of a judicial sale provide several months of free rent and protection against lenders' imposing excessive fees on borrowers.

[b] One practical solution is to buy the redemption rights from the owner, either shortly before or shortly after purchasing the property at auction at a negotiated price. Typically, redemption rights are sold for amounts ranging from a few hundred to a few thousand dollars. In most cases, an owner facing foreclosure who sees no realistic way to either avoid the foreclosure or recover the property afterwards is willing to sell rights he never expects to use.

[c] Researchers have found that the costs amounted to 19.1 percent of the final judgment amount – the amount mortgage borrowers owed to lenders — in the case of foreclosure sales in 1993 and 18.43 percent of the final judgment in the case of foreclosure sales in 1994. (See Debra Stark's article.)

[d] GMAC-RFC (Residential Funding Corporation), America's largest private issuer of mortgage-backed securities and a leading warehouse lender, estimates that it loses over $50,000 per foreclosed home. This number, together with the average loan size of $201,000 at origination in 2004, yields a loss rate of over 25 percent. A warehouse loan is a line of credit that a financial institution extends to a loan originator to fund a mortgage used to purchase property. (See page 2 of the article by Desiree Hatcher, which cites a GMAC-RFC estimate.)

loans and interest rates are determined by mortgage supply and demand (Figures 2 and 3 on page 24). Lines labeled L represent the supply of mortgages. A particular supply curve shows the amount of mortgage loans (in dollars) that lenders want to provide at each interest rate. Holding everything else the same, including estimated default risk, the higher the interest rate lenders can charge, the more willing they are to provide mortgage loans. So, the supply curve is upward sloping. Anything that affects lenders' ability to make a profit, such as the probability that borrowers will default on their mortgages and the lenders' losses when they do, will affect

TABLE

## State Foreclosure Laws — Comparison

| State | Judicial Requirement | | | Statutory Redemption | Deficiency Judgment |
|---|---|---|---|---|---|
| | Effective Judicial/Nonjudicial | Actual Law | Process Period (Days) | Redemption Period (Days) | |
| Alabama | NJ | B | 61.5 | 365 | Allowed |
| Alaska | NJ | B | 105 | 365 | Judicial foreclosure only |
| Arizona | NJ | B | 90 | 105 | Varies |
| Arkansas | E | B | 70 | 365 | Nonjudicial foreclosure only |
| California | NJ | B | 117 | 365 | Yes, judicial foreclosure only |
| Colorado | NJ | B | 91 | 75 | Yes |
| Connecticut | J | J | 62 | Court Decides | Yes |
| Delaware | J | J | 190 | 0 | No |
| Dist of Columbia | NJ | NJ | 47 | 0 | Yes |
| Florida | J | J | 135 | 0 | Yes |
| Georgia | NJ | B | 37 | 0 | Yes |
| Hawaii | E | B | 220 | 0 | Yes |
| Idaho | NJ | B | 150 | 365 | Yes |
| Illinois | J | J | 300 | 90 | Varies |
| Indiana | J | J | 261 | 0 | Yes |
| Iowa | J | B | 160 | 20 | No |
| Kansas | J | J | 130 | 365 | Yes |
| Kentucky | J | J | 147 | 365 | Yes, with restrictions |
| Louisiana | J | J | 180 | 0 | Yes |
| Maine | J | J | 240 | 90 | Yes |
| Maryland | J | J | 46 | Court Decides | Yes |
| Massachusetts | J | J | 75 | 0 | No |
| Michigan | NJ | NJ | 60 | 197.5 | Varies, case by case |
| Minnesota | NJ | B | 95 | 1825 | Yes |
| Mississippi | NJ | B | 90 | 0 | No |
| Missouri | NJ | B | 60 | 365 | No |
| Montana | NJ | B | 150 | 0 | Judicial foreclosure only |
| Nebraska | J | J | 142 | 0 | No |
| Nevada | NJ | B | 116 | 0 | Yes |
| New Hampshire | NJ | NJ | 59 | 0 | Yes |
| New Jersey | J | J | 270 | 10 | Yes, restricted |

## TABLE ... *continued*

### State Foreclosure Laws — Comparison

| State | Judicial Requirement | | | Statutory Redemption | Deficiency Judgment |
|---|---|---|---|---|---|
| | Effective Judicial/Nonjudicial | Actual Law | Process Period (Days) | Redemption Period (Days) | |
| New Mexico | J | J | 180 | 270 | Yes |
| New York | J | J | 445 | 0 | Yes |
| North Carolina | NJ | B | 110 | 0 | Varies case by case |
| North Dakota | J | J | 150 | 180-365 | Yes |
| Ohio | J | J | 217* | 0 | Yes |
| Oklahoma | J | B | 186 | 0 | Yes, with time limitation |
| Oregon | NJ | B | 150 | 180 | Yes, only with judicial foreclosure |
| Pennsylvania | J | J | 270 | 0 | Yes |
| Rhode Island | NJ | B | 62 | 0 | Yes |
| South Carolina | J | J | 150 | 0 | Yes |
| South Dakota | J | B | 150 | 197.5 | Varies case by case |
| Tennessee | NJ | NJ | 42.5 | 730 | Yes |
| Texas | NJ | B | 27 | 0 | Yes |
| Utah | NJ | NJ | 142 | Court Decides | Yes |
| Vermont | J | J | 95 | 272.5 | Yes |
| Virginia | NJ | B | 45 | 0 | Yes |
| Washington | NJ | B | 135 | 0 | Yes, only in judicial foreclosure |
| West Virginia | NJ | NJ | 75 | 0 | No |
| Wisconsin | J | B | 290 | 365 | Yes, unless waived |
| Wyoming | NJ | B | 60 | 227.5 | Yes |

* Before confirmation of foreclosure sale.

Note: J: judicial foreclosure; NJ: nonjudicial foreclosure; B: both judicial and nonjudicial foreclosure are allowed; Actual: what is required by law; Effective: what is carried out in practice. In general, a nonjudicial foreclosure will proceed in states where a power-of-sale clause can be written into the contract. There are a few states (MI, IA, SD, and OK), however, where a judicial foreclosure is pursued, i.e., effective, even though it is not required by law.

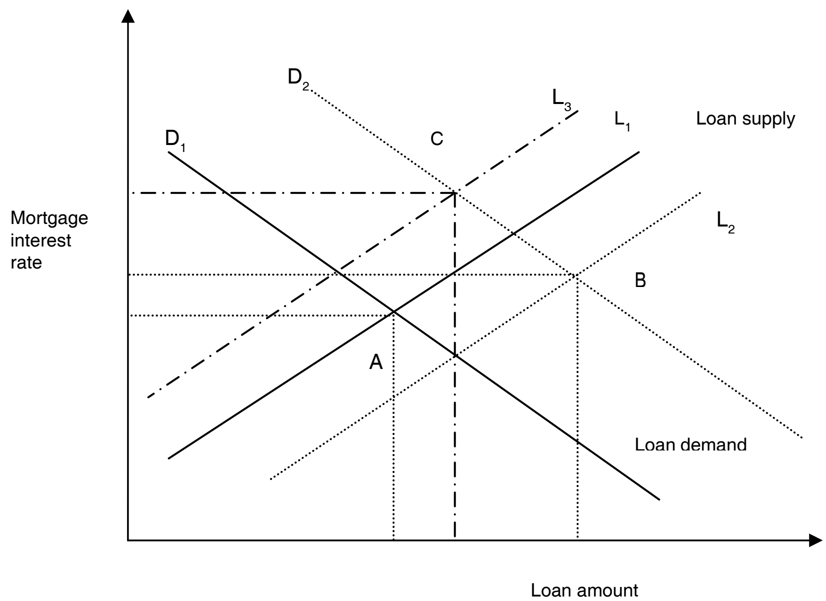
Source: http://www.foreclosures.com/www/pages/state_laws.asp and http://www.realtytrac.com/foreclosure-laws/foreclosure-laws.asp. Compiled by Kelly D. Edmiston and Dan Reichgott.

the supply of mortgages. Graphically, this is represented as a shift in the supply curve, say, from $L_1$ to $L_2$ (if the factor makes mortgage lending more profitable).

By contrast, mortgage demand, as depicted by lines labeled D, moves in the opposite direction to interest rates. A particular demand curve shows the amount of mortgage loans (in dollars) that households wish to borrow at each interest rate holding everything else constant, including the default rate. The higher the interest rate, the smaller will be households' demand for mortgages. Thus, the demand curve is downward sloping. Anything (other than the interest rate)

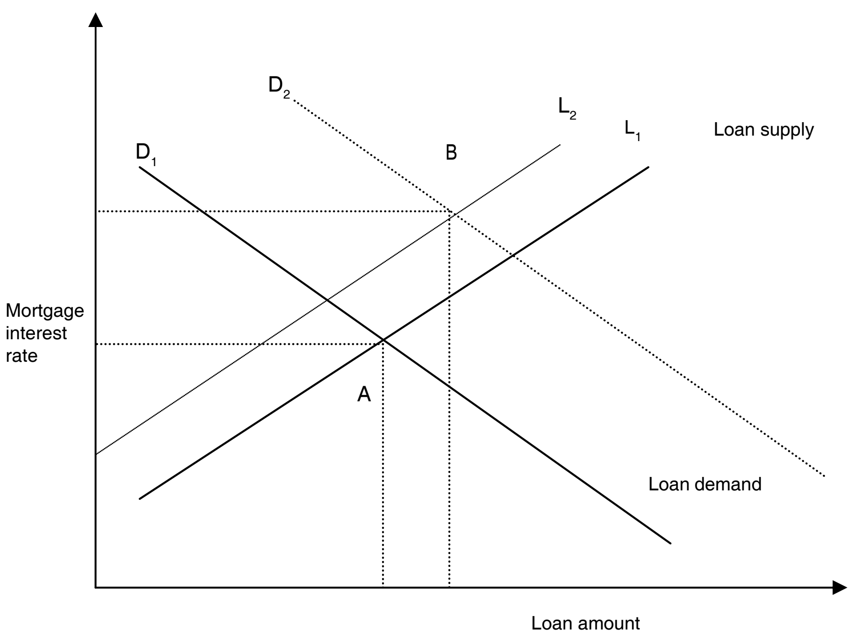
## FIGURE 2

### Mortgage Demand and Supply
(Mortgage Exemptions)




## FIGURE 3

### Mortgage Demand and Supply
(Automatic Stay)




that affects households' incentives to borrow will affect the position of the demand curve. Graphically, a factor that makes mortgage borrowing more or less attractive is represented as a shift in the demand curve, say, from $D_1$ to $D_2$ (if the factor makes taking out a mortgage more attractive).

The final market interest rate and mortgage loan amount, or the market equilibrium rate and loan amount, are determined by the intersection of the demand and supply curves. Economists have identified several channels through which the provisions of personal bankruptcy laws affect mortgage demand and supply.

**Debt Discharge and Bankruptcy Exemptions.** The first channel comes from partial or full discharge of unsecured debt and car loans under personal bankruptcy. When debtors are in financial distress, they can file for bankruptcy, obtain discharge of their nonmortgage debts, and use the funds that would otherwise go to nonmortgage lenders to repay their mortgages and thereby keep their homes, at least for a time. Figure 2 depicts how debt discharge and bankruptcy exemptions affect mortgage loan amounts and mortgage interest rates.

The more generous the homestead and nonhomestead exemptions, the more funds borrowers are likely to have after filing for bankruptcy. In addition, higher homestead exemptions directly protect debtors' home equity and, consequently, reduce borrowers' incentive to default on mortgage loans. These positive effects of bankruptcy debt discharge on mortgage payment are termed "wealth effects," since they leave borrowers with more wealth or funds that can be used to make their mortgage payments, which subsequently increase lenders' profits for a given mortgage demand. The supply curve will shift out because of this effect.

But exemptions also have a counteracting effect on supply. To the extent that higher exemptions increase households' incentives to file for bankruptcy (and perhaps default on their mortgage) or increase lenders' losses in the event of a mortgage default, the supply curve will shift inward. The total effect of exemptions on the supply of loans depends on the relative strength of these two effects: The supply curve will shift out from $L_1$ to $L_2$ if the first effect dominates, and it will shift in from $L_1$ to $L_3$ if the second force dominates.

Generous bankruptcy exemptions affect mortgage borrowers' loan demand as well. In particular, if borrowers are better sheltered by bankruptcy laws in the event of financial distress, they will be more likely to demand larger mortgages. As a result, mortgage demand will shift out (for example, from $D_1$ to $D_2$ in Figure 2).

To see the net effects of exemptions, consider a state that increases its exemption level. The new equilibrium loan amount and interest rate are determined by the new loan supply and demand curves. If supply shifts out, say, from $L_1$ to $L_2$, the equilibrium loan amount will definitely be higher (see point B). Whether the interest rate will be higher depends on whether demand increases more than supply. (As drawn, the interest rate is higher.) If the loan supply curve shifts inward, for example, from $L_1$ to $L_3$, the interest rate will certainly be higher, but it is unclear whether equilibrium loan supply will be higher or lower (see point C). (As drawn, the dollar amounts of loan supply are smaller than at point B.)

**Automatic Stay.** The second channel concerns the automatic stay provision in bankruptcy law. A bankruptcy filing imposes an automatic stay on all collection efforts, including foreclosure sales. The stay can be lifted only by the court. In other words, foreclosure cannot occur without the court's approval. This generates substantial costs for lenders in dealing with borrowers who are incapable of maintaining their mortgage payments despite their bankruptcy filing. The longer these households get to stay in the house, the more likely it is that the house may be damaged, since these households no longer have the incentive to do regular maintenance, since it's likely they will lose the house. In addition, if foreclosure turns out to be the final outcome, the lender loses the profits from having sold the house earlier. Both of these effects reduce lenders' profits and thus reduce loan supply. In Figure 3, this corresponds to an inward shift of the supply curve from $L_1$ to $L_2$.

A bankruptcy filing imposes an automatic stay on all collection efforts, including foreclosure sales. The stay can be lifted only by the court.

By contrast, the automatic stay on collection efforts will increase borrowers' demand for mortgages, because they will be able to stay in their homes for some period in the event of financial distress. As the new demand curve shifts out, say, from $D_1$ to $D_2$, the new equilibrium rate and loan amount will be at point B. The new interest rate will be higher; whether the loan amount will be higher depends on whether the increase in loan demand more than offsets the decline in supply.

**What Economists Have Found.** Taken together, whether bankruptcy requirements make the provision of equilibrium credit more extensive or more difficult depends on the net effect of the forces mentioned above.

In their 1999 paper, Jeremy Berkowitz and Richard Hynes examine Home Mortgage Disclosure Act ((HMDA) data[3] and find significant wealth effects associated with higher homestead exemptions. In particular, they find that higher homestead exemptions have tended to reduce mortgage rates and the probability of being denied a mortgage. In other words, higher exemptions shift the supply curve out. Personal exemptions, on the other hand, do not have a statistically significant impact.

By contrast, Emily Lin and Michelle White argue that Berkowitz and Hynes's empirical results are biased because they estimate a model that takes into account only the household's decision to default on its mortgage. Instead, Lin and White argue that an empirical model should include *both* the household's decision to file for bankruptcy, and its decision as to whether to default on its mortgage. Examining the same HMDA data as Berkowitz and Hynes, they find a *positive* relationship between the homestead exemption levels and the probability of borrowers being denied both mortgage and home improvement loans after taking into consideration borrowers' incentive to file for bankruptcy. The relationship between personal property exemptions and the probability of being denied either loan, however, is insignificant, as found by Berkowitz and Hynes. Explaining these results, Lin and White argue that borrowers' increased incentives to default on mortgages because of

[3] http://www.ffiec.gov/hmda/

more generous bankruptcy provisions and the provision of an automatic stay are much more important than the "wealth effects." Although lenders are entitled to collect additional interest to compensate for the delay, the available assets may not be sufficient to pay this interest, nor will these additional assets necessarily compensate lenders for all the associated costs.

Several other studies find supporting evidence for Emily Lin and Michelle White's argument. For example, using the Panel Study of Income Dynamics (PSID), a survey that provides detailed financial and income information about households,[4] Scott Fay, Erik Hurst, and Michelle White find that higher homestead and personal bankruptcy exemptions increase the likelihood that borrowers will file for bankruptcy. Numerous studies confirm that bankruptcy lengthens the foreclosure process and thus incurs substantially more cost to lenders.[5]

Furthermore, in a separate but related paper, Reint Gropp, John Scholz, and Michelle White show that more generous bankruptcy laws disproportionately affect low-asset households. In particular, using data from the Survey of Consumer Finances (SCF),[6] they find that generous state bankruptcy exemptions increase the amount of credit held by high-asset households and reduce the availability and amount of credit to low-asset households, taking account of other observable characteristics that might differ across households. They also find that interest rates on car loans are higher for low-asset households in high-exemption states. In other words, bankruptcy redistributes credit toward high-asset borrowers.[7]

In summary, although the jury is still out, the weight of the evidence is that more generous bankruptcy laws tend to restrict the availability of credit.

**EFFECT OF PERSONAL BANKRUPTCY LAWS ON HOMEOWNERSHIP OUTCOME**

Another aspect of the issue concerning personal bankruptcy laws and residential housing is whether personal bankruptcy laws help financially distressed borrowers save their homes. This question is of particular importance in light of the current financial crisis.

The same forces that affect mortgage demand and supply discussed earlier also affect homeowners' ability to keep their homes. Again, the first force is the wealth effect. Under either Chapter 7 or Chapter 13, bankruptcy exemptions allow borrowers to shift their resources toward mortgage payments and thereby help them keep their homes. The second force comes from the automatic stay on lenders' collection activity imposed by the bankruptcy court. A bankruptcy filing helps debtors save their homes (at least temporarily) by stopping lenders from closing and by giving debtors extra time to repay their overdue mortgage payments. This second force is particularly strong under Chapter 13, which allows debtors to have a repayment plan that spans three to five years. Bankruptcy trustees may also help debtors challenge excessive fees and penalties imposed by lenders. Katherine Porter, in her study, finds that mortgage lenders add questionable or excessive fees in half of all foreclosures. Lower fees in turn increase borrowers' ability to keep their homes.[8]

Finally, Melissa Jacoby argues that even in cases where debtors do end up losing their houses to foreclosure sale, bankruptcy filing gives them time to avoid a fire sale, in which the house is sold at a large discount.

Of course, other forces counterbalance the aforementioned positive effects. A bankruptcy filing delays the foreclosure process and imposes costs on both borrowers and lenders. Borrowers have to pay bankruptcy filing fees, lawyer fees,

A bankruptcy filing helps debtors save their homes (at least temporarily) by stopping lenders from closing and by giving debtors extra time to repay their overdue mortgage payments.

[4] http://psidonline.isr.umich.edu/

[5] These studies include articles by Thomas Springer and Neil Waller; Brent Ambrose, Richard Buttimer, and Charles Capone; and Dennis Capozza and Thomas Thomson.

[6] http://www.federalreserve.gov/pubs/oss/oss2/scfindex.html

[7] In their paper, Souphala Chomsisengphet and Ronel Elul argue that bankruptcy exemptions affect lenders' credit supply and mortgage loan terms only to the extent that they affect borrowers' payment behavior and, thus, their credit bureau score.

[8] These arguments are nicely laid out in Michelle White and Ning Zhu's article.

trustee fees, and so forth. In a Chapter 13 filing, trustee fees alone amount to between 6 to 10 percent of the total payments borrowers have to make through the repayment plan. The cost to lenders is even higher, and it includes lost mortgage interest, the time cost of money, and depreciated property value.

**Do Homeowners Keep Their Homes?** The empirical evidence on whether bankruptcy filing helps homeowners retain their homes is mixed.

First, the treatment of homeownership is an important matter for many bankrupt households. Economists have found that the majority of Chapter 13 filers are homeowners who (presumably) wish to save their homes. For example, Hülya Eraslan, Pierre-Daniel Sarte, and I studied Chapter 13 bankruptcy filings in Delaware between 2001 and 2002 and found that over 80 percent of the filers owned homes at the time of filing and that their mortgage loan-to-value ratio exceeded 90 percent. In another study, Michelle White and Ning Zhu also found that the vast majority (96 percent) of their bankrupt Delaware households were homeowners. This is despite the fact that a major bankruptcy reform adopted in 2005 was intended to force some bankruptcy filers to repay their unsecured debts in Chapter 13. Even in Chapter 7, the homeownership rate approached 50 percent, according to Ning Zhu's 2007 article.[9]

On the other hand, it is not clear whether the bankruptcy filing helped borrowers remain homeowners in the long run. First and foremost, the failure rate of Chapter 13 repayment plans is surprisingly high. In separate studies, Scott Norberg and Andrew Velkey and Hülya Eraslan, Pierre-Daniel Sarte, and I document that the final discharge rates of Chapter 13 cases are as low as 33 percent. That is, only about 33 percent of Chapter 13 filers successfully completed their repayment plans. Borrowers who fail to complete their repayment plan will not have their unsecured debt discharged, and lenders will immediately resume their collection efforts as soon as borrowers exit bankruptcy. These low discharge rates are also corroborated by anecdotal evidence in the legal literature.

Researchers find that filing for bankruptcy prolongs borrowers' stay in their home before they eventually lose it to foreclosure sales.

Second, despite their bankruptcy filing, a significant number of homeowners still end up losing their houses to foreclosure sales within five to six years of their bankruptcy filing. Sarah Carroll and I studied homeowners who filed for bankruptcy between 2001 and 2002 in New Castle County, Delaware, until 2007 and found that close to 30 percent of these filers still lost their houses to foreclosure sales. The rate increases substantially, to 40 percent, if we consider homeowners who were already one year late on their mortgage payments at the time of filing, compared to 43 percent of those homeowners who went to foreclosure without filing for bankruptcy. This finding is consistent with Raisa Bahchieva, Susan Wachter, and Elizabeth Warren's survey result that many homeowners in financial distress are simply hanging on to their houses without any realistic hope of repaying their mortgages.

**The Costs of Borrowers Staying in their Homes.** Researchers find that filing for bankruptcy prolongs borrowers' stay in their home before they eventually lose it to foreclosure sales. For example, Thomas Springer and Neil Waller find that bankruptcy filing lengthens the foreclosure process by half a year to one year. Sarah Carroll and I find that a Chapter 13 bankruptcy filing adds, on average, one year to the borrower's foreclosure process. A study by Brent Ambrose, Richard Buttimer, and Charles Capone, and another by Dennis Capozza and Thomas Thomson also find supporting evidence that bankruptcy filing delays foreclosure sales but has little effect in helping mortgage loans to become current.

But this result is a double-edged sword. While borrowers may have enjoyed additional benefits from staying in their own homes, the cost to lenders is high. In addition to the added cost mentioned earlier in the event that the bankruptcy plan fails and the foreclosure process begins again, lenders collect very little in cases under Chapter 13. For example, Norberg and Velkey find that the average repayment rate for secured lenders under Chapter 13 is 31 percent, and Hülya Eraslan, Pierre-Daniel Sarte, and I find the rate to be a mere 22 percent.[10]

Finally, there is also evidence that final sale price is negatively correlated with the length of a borrower's stay in bankruptcy and foreclosure together. For instance, Sarah Carroll and I find

[9] In their 2005 article, Raisa Bahchieva, Susan Wachter, and Elizabeth Warren document similar findings for an earlier period.

[10] See my 2007 *Business Review* article for more details.

that longer time-to-sale is associated with lower sale price; the correlation coefficient of the gap between bankruptcy filing and foreclosure sale and the final foreclosure sale price adjusted for inflation and house price growth is -0.16.

Although the existing literature finds that bankruptcy filing offers extra breathing room to homeowners who try to keep their homes, the eventual success rate is low and the added cost to lenders is high.

**A Caveat**. Before concluding, it is worth noting that many of the empirical studies cited in this section are based on a sample of bankruptcy filers, instead of a random sample of households in the U.S. consisting of both bankruptcy filers and nonbankruptcy filers. This can lead to what economists call a selection bias. The outcomes for the bankruptcy filers may not be the result of the features of the bankruptcy process but may be the result of some factor common to households that file for bankruptcy.

For example, the fact that a large number of homeowners lose their houses despite filing for bankruptcy may be simply because only households in desperate financial straits file for bankruptcy. In a properly designed test we would be comparing outcomes for essentially identical households: some who file for bankruptcy and some who don't. Therefore, while the stylized facts remain true, it is hard to conclude definitely whether bankruptcy helps homeowners preserve their homeownership. Since any changes in bankruptcy law would not only alter the bankruptcy outcome but also affect households' decision to file for bankruptcy, a fully convincing analysis should take account of both effects.

## WHAT'S NEXT?

The existing literature on bankruptcy and homeownership has focused on two questions. First, how do personal bankruptcy provisions affect credit supply? Second, how do the personal bankruptcy provisions affect households' homeownership outcome? While the literature generally supports the conclusion that more generous bankruptcy provisions lead to more restrictive credit supply, answers to the second question are much more mixed. Economists agree that homeowners take advantage of personal bankruptcy to try to retain their homes, particularly under Chapter 13. Nonetheless, only a small proportion of households succeed in keeping their homes in the long run. Furthermore, while bankruptcy filing adds to the length of the foreclosure process, the cost to lenders is high.

Proponents of recent legislation are likely to argue again that existing mechanisms to avoid foreclosure in bankruptcy need to be strengthened. To better evaluate such proposals, research needs to advance on two fronts.

First, we need to build a consistent framework that takes into consideration the effect of bankruptcy provisions and filings on credit supply and demand as well as mortgage payments and homeownership retention. Michelle White and Ning Zhu have taken the first step and provided a highly simplified framework in which households live only two periods. In the first period, households decide how much unsecured debt, mortgages, and automobile loans to borrow. In the second period, upon learning their income and asset value, they must decide whether to repay their loans, default on their mortgages, and/or enter bankruptcy. While instructive, this framework doesn't allow researchers to explore certain types of long-term decisions. For example, Chapter 7 bankruptcy filers cannot file for bankruptcy for the next six years, a factor that households will take into account when they decide whether to enter bankruptcy. The next step will be to extend this framework to a dynamic setting in which households will enjoy or suffer the effects of their decisions beyond the current period in which the decision is made and its immediate future.

Second, we need to collect additional national data, particularly in panel form, that will allow researchers to follow households over time. Such data will help us overcome the selection bias that the existing literature suffers from. Any analysis that examines only those that have entered bankruptcy may lead to relationships that appear much stronger than they actually are or, in some cases, relationships that are completely illusory artifacts. A national database will also help us overcome regional bias, since bankruptcy exemptions and foreclosure laws differ substantially from state to state.

Any analysis that examines only those that have entered bankruptcy may lead to relationships that appear much stronger than they actually are or, in some cases, relationships that are completely illusory artifacts.

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