Review Essay

ECONOMIC VERSUS SOCIOLOGICAL APPROACHES TO LEGAL RESEARCH: THE CASE OF BANKRUPTCY

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> I used to tell my students that the difference between economics and sociology is very simple. Economics is all about how people make choices. Sociology is all about why they don't have any choices to make.
> —James S. Duesenberry (1990:223)

Teresa A. Sullivan, Elizabeth Warren, and Jay L. Westbrook, *As We Forgive Our Debtors: Bankruptcy and Consumer Credit in America*. New York: Oxford University Press, 1989. 384 pages. $29.95.

This essay examines economic versus sociological approaches to legal research—exemplified here by research on bankruptcy. The occasion is provided by the publication of *As We Forgive Our Debtors*, by Sullivan, Warren, and Westbrook (hereinafter SWW). As its title makes clear, this book exemplifies the sociological approach to research on bankruptcy. Further, its authors are quite hostile to economics, and they attempt to discredit economic models and their predictions.[1] Thus, some input from an economist seems warranted.

Section 1 develops the economic model of bankruptcy and empirical predictions from it. Section 2 describes the SWW study and reinterprets some of their results. Section 3 describes SWW's tests of their economic model and contrasts their methodology for testing models with that used by economists. The last section deals with policy issues concerning bankruptcy and possible reforms of bankruptcy law.

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[1] "[T]he simple economic model can be laid to rest as a powerful predictor of debtor behavior" (p. 254).

1. THE THEORY OF BANKRUPTCY

A critical issue in examining economic versus sociological approaches to bankruptcy is the role of theory. In bankruptcy, the relevant theory attempts to explain under what circumstances individuals or firms have an incentive to file for bankruptcy and, if so, whether filing under chapter 7 or chapter 11 of the Bankruptcy Code would make them better off. (Because sww focus on bankruptcies by individuals or couples rather than by corporations, I also focus on the individual bankruptcy decision, although the corporate bankruptcy decision can also be analyzed using the same approach; see White 1989.) The economic approach to bankruptcy utilizes the theory of consumer behavior. Consumers—who could be individuals or households—are assumed to maximize utility in planning consumption behavior generally. This assumption means that they might plan for bankruptcy strategically; that is, they might incur large debts knowing that they can later avoid repayment by filing for bankruptcy, or they might engage in excessively risky activities knowing that bankruptcy will aid them if the activities don't pay off. In economic models, consumers are said to have an incentive to file for bankruptcy if doing so makes them better off. However, not all consumers who have an incentive to file for bankruptcy are predicted to do so: economic models are used to make predictions concerning groups of consumers, not particular consumers. Rather, the stronger the incentive is for a group of consumers to file for bankruptcy, the more of them are hypothesized to do so. In contrast, sww's approach is entirely atheoretical—their view of bankruptcy is that people file for bankruptcy when their financial troubles become so overwhelming that they have no other choice. Therefore, bankruptcy filings are never the result of strategic calculations by individuals. Since sww pose no theory of why or when individuals file for bankruptcy, the debate over a theory of bankruptcy becomes a debate over whether the economic theory of consumer behavior is valid.

This section presents the basic outline of an economic theory of bankruptcy. In the first subsection, I examine models of bankruptcy when consumers know their future income with certainty. In the second, I assume that future income is uncertain and investigate the role of bankruptcy as insurance for income loss. I also examine the hypotheses that sww test from their version of an economic model.

The Bankruptcy Decision Under Certainty[2]

In economics, consumers are assumed to maximize the utility they get from consuming goods and services, subject to their budget constraints. In the bankruptcy context, we are concerned

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[2] For further discussion, see White 1987.

with multiperiod utility. Consumers borrow to finance consumption in the present and may or may not repay their creditors in the future when the loans come due. Suppose a consumer has income Y_1 in the present and has nonfinancial assets worth A (such as furniture or a car) but has no savings. She wants to consume goods and services worth C_1 in period 1, where C_1 exceeds her income Y_1. (This assumption is a realistic one because people normally borrow when, in addition to normal consumption, they wish to buy an expensive item (such as a new refrigerator) that will provide consumption value for several years. The loan enables them to spread out the cost of the refrigerator over several periods. Alternately, the consumer might save some amount each month and defer purchase of the refrigerator until she accumulates the entire purchase price.) In order to finance consumption of C_1, she must obtain a loan of $L = C_1 - Y_1$.[3] If the loan is for a year and the interest rate is r, then next year she must repay the lender $L(1 + r)$. Suppose her next year's income is Y_2. Then repaying the loan will leave her with $Y_2 - L(1 + r)$ for consumption next year.[4] Neglecting the possibility of bankruptcy, a consumer would borrow only if consuming $Y_1 + L$ this year and $Y_2 - L(1 + r)$ next year makes her better off than consuming Y_1 this year and Y_2 next year, which she can do without borrowing.

What about bankruptcy? Next year, when the loan must be paid off, the consumer has a choice between paying the debt in full or filing for bankruptcy. Actually, her choice is three-way, since if she files for bankruptcy, she can either file under chapter 7 or chapter 13 of the Bankruptcy Code. Consider chapter 7 first. Here, the consumer must give up all her assets above a state-mandated exemption level, E, and must pay bankruptcy-related costs of F, but she does not have to use any of her future income to repay debts. The bankruptcy trustee sells the nonexempt assets and uses the proceeds to pay creditors. The consumer receives a discharge from all of her debts.[5] Thus, a consumer considering whether to file for bankruptcy under chapter 7 compares the value of her assets A to the exemption level E. If her assets are worth less than the exemption level, or $A < E$, then she can avoid repaying her debt of $L(1 + r)$ completely by filing under chapter 7. She gains financially from filing for bankruptcy if her debt is greater than the cost of filing for bankruptcy, or if $L(1 + r) > F$. If her assets are worth more than the exemption level, or $A > E$, then she

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[3] L can be in the form of one single loan or several smaller loans from different lenders totaling the same amount.

[4] This example is obviously simplified, since consumer loans are normally repaid in equal installments over several years, rather than in one lump sum. The repayment amount $L(1 + r)$ might be thought of as being repaid in small amounts each month.

[5] Actually, a few types of debt cannot be discharged in bankruptcy, such as alimony or child support obligations, and some types of debt can be discharged in chapter 13 but not chapter 7. For discussion, see p. 278.

must give up assets worth $A - E$ to the bankruptcy court. She then gains financially from filing for bankruptcy if the amount of debt forgiven is greater than bankruptcy costs plus the value of nonexempt assets, or if $L(1 + r) > (A - E) + F$.

Thus, filing for bankruptcy under chapter 7 is attractive to consumers who have debts but own few assets. It is made even more attractive by the fact that exemption levels in some states are quite high. However, we should not conclude that all consumers having debts and low assets gain financially from filing for bankruptcy. According to figures given in SWW, filing for bankruptcy is costly: court filing fees are $60, and most consumers use bankruptcy lawyers, whose average charge is $500 (p. 23), so that F = $560. Thus, the consumer must have debts greater then $560 for bankruptcy to be worthwhile.[6] Additionally, filing for bankruptcy leads to loss of credit in the future and to some social stigma—although probably less in recent years than in the past. Also, anyone who has received a discharge under chapter 7 may not receive another for six years.[7]

Alternately, the consumer can file for bankruptcy under chapter 13. Then, instead of giving up assets, she must propose a plan under which she promises to repay all or part of her debts over three years. The repayment plan must be approved by the bankruptcy judge but does not have to be approved by creditors. Thus, the consumer can keep her assets but must devote some of her future income to debt repayment.

Since most debtors have greater ability to repay debt from future income than from nonexempt assets, they would seem to be better off filing for bankruptcy under chapter 7—where they would pay less—than under chapter 13. This implies that we would expect to observe few chapter 13 bankruptcies. However, chapter 13 bankruptcies are relatively common.[8] The explanation for this seeming paradox is that the choice of chapter 13 must be voluntary. Therefore, debtors who file under chapter 13 can propose repayment plans in which the total amount to be repaid, call it R,

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[6] If the consumer's creditors have only a fractional chance of collecting outside of bankruptcy, then the threshold level of debt that makes it worthwhile for the consumer to file for bankruptcy is higher. For example, if creditors would only succeed in collecting with .5 probability outside of bankruptcy, it is worthwhile for the consumer to file only if her debts exceed $1,120. However, outside of bankruptcy, the probability of collecting is increased by the fact that creditors can garnish the consumer's wages.

[7] This discussion assumes that the consumer's loan are unsecured, as in the case of credit card loans. If instead the loan is secured, as in the case of a loan for purchase of a car, then the creditor can repossess the car if the consumer files for bankruptcy under chapter 7, regardless of whether the consumer's assets are above or below the exemption level. The consumer can keep the car by reaffirming the car loan and paying off any arrears, but then the car loan is not discharged in bankruptcy. SWW, p. 31.

[8] Nationally, around 25 percent of bankruptcy filings are under chapter 13 (pp. 346–47).

equals the value of nonexempt assets that debtors would be obliged to give up under chapter 7, or $R = A - E$. Assuming that the cost of filing for bankruptcy is the same under either chapter, repaying an amount $R = A - E$ in chapter 13 makes debtors indifferent between filing for bankruptcy under chapter 7 or chapter 13. Repaying more than $A - E$ in chapter 13 makes debtors prefer chapter 7. But since $A - E$ is low or zero for most debtors in bankruptcy, many debtors have an incentive to offer only token repayment plans under chapter 13. Even when their incomes are relatively high, their incentive is to propose only token repayment of debt under chapter 13 as long as their excess assets are low or zero. Creditors may object to chapter 13 repayment plans that propose only token repayment, but their objections are unlikely to have much effect since the debtor has the right to shift to chapter 7. Debtors have an incentive to propose higher than token repayment plans under chapter 13 only when they have substantial nonexempt assets, such as equity in a house.[9]

Several conclusions can be drawn from this simple model. First, debtors are indifferent between filing under chapter 7 and chapter 13 if they repay $A - E$ in chapter 7 and an amount $R = A - E$ in chapter 13. (If $R > A - E$, then debtors prefer chapter 7 and if $R < A - E$, then debtors prefer chapter 13.) But since most debtors have few nonexempt assets, R is typically low and therefore the repayment rate R/L in chapter 13 is typically low. Higher repayment rates would make it more attractive for debtors to file under chapter 7 rather than chapter 13. Second, debtors' propensity to file under chapter 13 has little to do with their ability to repay their debts from future income. Rather, any debtor—regardless of income—will be indifferent between filing under chapter 7 and chapter 13 as long as the total amount to be repaid under chapter 13 equals $A - E$. Even debtors having no nonexempt assets would be willing to file under chapter 13 as long as they make only token repayment. Third, the amount that debtors repay under chapter 13 is unaffected by their incomes. Rather, repayment depends on the amount of nonexempt assets. The higher is $A - E$, the more debtors would have to give up in chapter 7, and the more they are thus willing to repay under chapter 13. But higher levels of future income Y_2 have no effect on the amount that must be repaid in chapter 13.

This analysis is obviously simplified and could be extended. For example, in an attempt to make chapter 13 more attractive to debtors and encourage more chapter 13 filings, Congress has al-

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[9] Amendments to the Bankruptcy Code adopted by Congress in 1984 were intended to make it more difficult for debtors having regular income to use chapter 7 or to adopt token repayment plans under chapter 13. However, I focus on the pre-1984 situation since both SWW's study and my own research (discussed below) used pre-1984 data. Whether the amendments were effective or not remains unclear.

lowed some types of debts to be dismissed in chapter 13 but not in chapter 7, such as student loans, debts incurred by fraud or liability for intentional injuries.[10] Debtors having these types of debts are therefore willing to repay more than $A - E$ in chapter 13 and would therefore be indifferent between filing under chapter 7 and chapter 13 even at a higher repayment level. These debtors are predicted to have higher repayment rates in chapter 13 than debtors not affected by the special provisions, holding other things equal. Debtors also have an incentive to file under chapter 13 if they have secured loans and the market value of the asset subject to the secured creditor's lien is less than the amount of the loan. Under chapter 13, the outstanding balance on the loan can then be reduced to the market value of the asset.[11] A significant minority of debtors in bankruptcy also own homes on which there are outstanding mortgages. Since most debtors wish to avoid foreclosure, they often reaffirm the mortgage in bankruptcy, that is, they make up any arrears and promise to continue payments on the mortgage according to the original agreement. Since this reaffirmation can be done under either bankruptcy procedure, owning a home has little effect on debtors' incentive to choose chapter 7 or 13.

Rational choices made by individuals are the central focus of the economic theory of bankruptcy. Thus, it should not suprise the reader than SWW both misunderstand the theory and reject it. For example, they argue that the economic model predicts that debtors having higher income will be more likely to file under chapter 13, because chapter 13 is "loaded with incentives that should have attracted can-pay debtors" (p. 235), including the broader discharge and the provision that permits debtors to keep property subject to liens if they repay only the value of the asset, not the amount of the loan. In an attempt to discredit the economic model, SWW examine the correlation coefficient in their sample of debtors between income and chapter of filing and find it to be +.12. This, they argue, is substantively unimportant. They also examine the correlation between level of asset holdings and choice of chapter and find that it is somewhat higher at +.25. The fact that the relationship between assets and choice of chapter is stronger than the relationship between income and choice of chapter supports the economic theory as developed here, because we argued that the first relationship should be nonexistent and the second should be positive. However, SWW conclude that "the correlations are too weak to provide substantive support to the economic model."[12]

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[10] However, tax claims must be paid in full in chapter 13 (p. 278).

[11] On many types of assets purchased with installment loans, the value of the asset depreciates faster than the loan is paid off, so that in chapter 13 bankruptcies the consumer can propose a reduction in the loan balance.

[12] SWW give no tests of statistical significance for any of their reported correlations. Instead they use plus or minus .2 as a "benchmark for minimum substantive importance" (pp. 237–38), which confuses tests of the statistical significance of a relationship with measures of its size.

Sww also argue that the economic model predicts that individuals with higher levels of unsecured debt are less likely to file under chapter 13.[13] They examine the correlation coefficient in their sample between unsecured debt and whether the debtor filed under chapter 13 and find it to be $-.12$, which they interpret as "so low that it has little substantive value" (p. 237). However, the model developed here suggests that the amount of unsecured debt should have little effect on choice of chapter, for choice of chapter depends only on the relationship between assets and the exemption level. Thus, the fact that they find little relationship between level of debts and choice of chapter is not surprising.

Another implication of the economic theory of bankruptcy is that debtors will only choose chapter 13 when the terms of the repayment plan make them no worse off than they would be if they filed under chapter 7. For many bankrupts, this implication suggests that they cannot make more than token repayment of debt from future income under chapter 13, for they have no nonexempt assets and would therefore pay nothing under chapter 7. Unfortunately, Sww indicate little about the repayment plans in their sample. In an offhand reference, they suggest that the chapter 13 repayment plans in their sample called for repaying half of the unsecured debt owed, which seems so high that it would be in most debtors' interest to file under chapter 7 instead.[14] But Sww's discussion of bankruptcy procedures suggests that even debtors who promise a fairly high repayment figure in chapter 13 actually end up paying much less. One factor is that if individual creditors do not file their claims in bankruptcy court, then the debtor does not have to repay the creditor. For example, if a debtor in chapter 13 proposed to pay 20 percent on unsecured debts but only half her creditors filed claims, then she would only have to pay 10 percent overall—a 50 percent reduction in her total liability (Sww, p. 54). Also, Sww found that debtors were still making payments on only about one-third of the chapter 13 repayment plans in their sample at the time they collected their data (Sww, pp. 214–16).[15] Thus, debtors often make a few payments and then stop. We do not know what kind of advice lawyers give debtors concerning chapter 13, but one possibility is that many debtors are told that if they choose chapter 13, they can agree to repay a relatively high proportion of their debt but actually get away with making only a few payments. This could explain the fact that Sww seem to observe more use of chapter 13 than would appear to be in debtors' inter-

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[13] SWW do not give a specific justification for this prediction (see p. 237), but their reasoning appears to be the same as discussed above: that chapter 13 is particularly favorable to debtors with secured debt.

[14] See SWW, p. 217. SWW focus instead on the question of whether debtors in bankruptcy could afford to pay their debts in full. See ch. 12.

[15] In another sample of chapter 13 repayment plans, discussed on p. 217, only about 30 percent were paid to completion.

est: debtors may actually repay much less than they promise and therefore end up no worse off than if they filed under chapter 7 in the first place.[16]

Sww's view of how debtors choose between chapters emphasizes local legal culture variables, such as whether local bankruptcy judges encourage lawyers to file many chapter 13 repayment plans. (Bankruptcy judges can encourage the filing of chapter 13 plans by delaying approval of chapter 7s while the lawyer "better explains" the chapter 13 alternative to the client or can encourage the filing of chapter 7s by approving them immediately but holding lengthy court hearing on chapter 13 repayment plans (see pp. 246–52). Sww note that the proportion of all bankruptcy filings that are chapter 13s varies widely by judicial district, from 3 percent to 49 percent in the districts studied (p. 247). This implies that otherwise identical debtors filing for bankruptcy have widely different probabilities of filing under chapter 13 depending on where they file their bankruptcy petition, contrary to the economic theory just discussed. In order to consider this issue, we need to extend the economic theory to consider the incentives of lawyers. In the discussion above, we assumed (implicitly) that debtors were well informed concerning the law and could analyze for themselves whether choosing chapter 7 versus chapter 13 would make them better off. However, in reality, debtors are likely to be uninformed concerning the law and to depend on lawyers for advice. But lawyers' own incentives are to make themselves as well off as possible, which is not necessarily the same as making their clients as well off as possible. Since bankruptcy lawyers represent clients for many years before the same judge, they have an incentive to follow the judge's wishes. For example, if lawyers charge clients the same amount for chapter 7 and chapter 13 bankruptcy filings, but bankruptcy judges approve chapter 7 petitions immediately while they hold hearings on chapter 13 repayment plans, then it is in lawyers' interest to encourage clients to file under chapter 7.[17] We would then expect to observe few chapter 13 filings in the judicial district. Alternatively, suppose the local bankruptcy judge favors chapter 13 and encourages lawyers to file many cases under chapter 13. Lawyers may, therefore, encourage some clients to file under chapter 13 even though doing so is not in the clients' interest. We would then expect to observe many chapter 13 filings in the judicial district. The economic

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[16] Debtors who default on chapter 13 repayment plans do not receive a discharge on their debts from the Bankruptcy Court, but creditors are probably unlikely to attempt to collect from them at that point.

[17] Actually, SWW report that the average lawyer's fee is $535 for a chapter 13 case versus $459 for a chapter 7 (p. 250). But this difference is probably too small to compensate lawyers for the extra court time required in a chapter 13 filing. Lawyers could further increase the charge for chapter 13 filings, but clients may be resistant to paying more for a choice whose benefits are unclear to them.

model thus does not deny that local legal culture variables may be important, although modeling them requires extending the economic model to consider both lawyers' and debtors' interests and the conflicts between them.

Uncertainty and Bankruptcy

Bankruptcy plays an additional role when debtors face uncertainty. Two basic types of uncertainty are at issue here. The first is uncertainty of future income, in particular the risk of losing income when workers are laid off or become ill. This type of uncertainty is assumed involuntarily.[18] The second type of uncertainty results from choosing a risky occupation, such as starting a new business. This type of uncertainty is assumed voluntarily. As SWW point out, self-employed and formerly self-employed individuals constitute an important group of those who file for bankruptcy. When the businesses of the self-employed fail, they are often personally liable for many of their business debts, leading them to file for bankruptcy.

In the first situation, suppose again that an individual has income this period of Y_1 and borrows L. Next year she will have to repay the loan and will therefore have net income of $Y_2 - L(1 + r)$ for consumption. But suppose next period she loses her job. In that case suppose her income next period will be only be half as large, or $.5Y_2$. Then if she must repay her debt, she will have net income of only $.5Y_2 - L(1 + r)$, which might be negative and certainly will be small. But instead, she can file for bankruptcy and the debt will be dismissed, in which case she will have $.5Y_2$ available for consumption. Having the option of filing for bankruptcy when illness strikes or when a job is lost has the effect of smoothing the debtor's income because without bankruptcy her income is either $Y_2 - L(1 + r)$ (with no illness) or $.5Y_2 - L(1 + r)$ (with illness); with bankruptcy it is either $Y_2 - L(1 + r)$ (with no illness) or $.5Y_2$ (with illness). When individuals are risk averse, they are willing to pay to buy insurance that smooths out their consumption stream. But insurance for income loss resulting from illness or unemployment is not sold by private insurers because of moral hazard—insured people would work less diligently and be more likely to be fired and/or would claim to be ill more often if they had such insurance.

Thus, bankruptcy in effect acts as a public insurance program, providing income smoothing when illness or job loss occurs by dismissing debt. If such insurance were offered privately, the moral hazard problem would cause it to be very expensive so that most individuals would prefer not to buy it. Providing it publicly reduces the cost per person because everyone who borrows shares the cost. Borrowers pay for this insurance via higher interest rates

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[18] For further discussion, see Rea 1984.

on loans, since when debt is discharged in bankruptcy, lenders lose money. To make up for these losses, lenders charge all borrowers a higher interest rate. However, providing insurance publicly does not solve the moral hazard problem. With bankruptcy smoothing income, people have an incentive to work less diligently because the cost of being fired is smaller and they are more likely to claim illness. Also, they may file for bankruptcy even when illness or job loss has not occurred because the program is not restricted to those groups. Further, once it becomes likely that an individual will file for bankruptcy, she has an incentive to borrow more, for both her new and old debts will be discharged in bankruptcy.

Turn now to the uncertainty faced by the self-employed. Their incomes are uncertain because many new businesses are unsuccessful and it is impossible to predict in advance which ones will be successful and which will fail. The availability of bankruptcy is a valuable cushion for the self-employed, for if the business fails, bankruptcy can be used to discharge the firm's debts. The availability of bankruptcy as a downside cushion thus increases the attractiveness of starting a new business. However, this cushion has an undesirable side effect—that of making economically inefficient business ventures attractive.

For example, suppose an individual is contemplating opening a new business. The future income from the business, net of expenses other than debt repayment, will be either $Y_2' + G$ or $Y_2' - G$, each with 50 percent probability. The factor G expresses how uncertain the income from the business is: the larger is G, the more risky is the income stream. Note that the average or expected value of future income from the business is Y_2', since $.5(Y_2' + G) + .5(Y_2' - G) = Y_2'$. Suppose the investment needed in the present to set up the business is B. To keep the example simple, suppose the individual will either borrow the entire amount B or not start the business at all. From an economic efficiency standpoint, the investment is efficient if $Y_2' > B(1 + r)$ or if the expected value of future income from the investment exceeds its cost, including interest accrued between the present and the future.

Assuming that the individual starts the business (financing is available), her net income after debt repayment in the future will be $Y_2' + G - B(1 + r)$ if the good outcome occurs, assuming that income in the good outcome is high enough to repay the debt in full $(Y_2' + G > B(1 + r))$. Her net income in the bad outcome will be zero, assuming that income in the bad outcome is less than the debt $(Y_2' - G < B(1 + r))$. Her expected net future income if she starts the business is therefore $.5(Y_2' + G - B(1 + r))$. She has an incentive to start the business if this amount is positive, or if $Y_2' + G > B(1 + r)$. But the condition for the business to be worthwhile is that $Y_2' > B(1 + r)$. Thus, individuals sometimes have an incentive to start businesses even when the businesses are inefficient

from an economic standpoint. The distortion becomes stronger as the income from the business becomes more risky, that is, as G rises, because the individual gets the benefit of high income if the good outcome occurs (once the loan is paid off), but the creditor incurs most of the loss if the bad outcome occurs.[19]

One implication of this discussion is that when individuals are observed in bankruptcy, their debts will be very high relative to their assets. In the example, when the individual files for bankruptcy, her assets are $Y_2' - G$ (which may be very low or negative) and her liabilities are $B(1 + r)$. But once individuals are observed in bankruptcy, it is impossible to identify whether this reflects a gamble that failed or a very needy individual who was forced into bankruptcy purely by need.

Thus the economic model sets out the conditions under which individuals or couples have an incentive to file for bankruptcy and how they benefit from the availability of bankruptcy even if they never end up using it. However, economists do not believe that individuals always do everything that they have an incentive to do. They believe that other influences besides economic ones affect individual behavior, such as religious ethics, honesty, reputational concerns, desire to avoid conflict with others. As a result, economists test their models on groups of individuals, not particular individuals. What economists do expect—and what guides testing of their models—is that the stronger any incentive becomes, holding other influences on behavior constant, the more people will act as the model predicts. Thus, if the financial gain from filing for bankruptcy gets larger (say, because debts rise relative to assets), more individuals are predicted to actually file for bankruptcy. Also, as more individuals start to have an incentive to file for bankruptcy— say, because the exemption level is raised—then more are predicted to file. To put it another way, economists would not expect to find that all bankruptcy is "economic" bankruptcy. But they do expect that changes which make bankruptcy more attractive from an economic standpoint will lead to more bankruptcies being filed.

2.   WHO FILES FOR BANKRUPTCY?

Most of *As We Forgive Our Debtors* consists of description of the data set that SWW collected on personal bankruptcies. (Bankruptcies filed by corporations or partnerships were eliminated from their sample.) The data were obtained entirely from the information that debtors file in the Bankruptcy Court. All cases in

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[19]   In this example, the lender's expected return is $.5(B(1 + r)) + .5(Y_2' - G)$. The lender will make the loan if this amount exceeds $B(1 + i)$, where i is the interest rate that the lender pays for funds. Note that the larger is G, the less likely that the lender will be willing to make the loan. The basic point that entrepreneurs have an incentive to make inefficiently risky investments since creditors bear most of the losses when the investments fail is due to Stiglitz 1972.

their sample were filed in 1981. Three states were covered in the study: Illinois, Pennsylvania, and Texas. There are approximately 1,500 cases in all (pp. 17–20). The data include the following information: whether the bankruptcy petition was filed by an individual or a married couple, where the debtor lived during the six years before filing for bankruptcy; whether the debtor(s) was employed, self-employed, or unemployed at the time of the bankruptcy; in what occupation and how much income s/he earned in the two years before the bankruptcy filing; a list of all creditors to whom the debtor owed money and how much was owed to each; a list and valuation of assets owned by the debtor; and information concerning whether the debtor was a homeowner.

In reading SWW's descriptions of their data, one question I had was how much "sociological" bankruptcy they would find, that is, cases involving extreme hardship that made bankruptcy unavoidable, versus how much "economic" bankruptcy, that is, cases involving some degree of strategic choice in advance which involved possible use of bankruptcy. In chapter 3, SWW tell six bankruptcy stories, representing six individual cases. How exactly these cases were chosen is not indicated, but the authors claim that each is a "typical" bankruptcy story that recurs throughout the sample. Two of these cases involve married couples who incurred substantial uninsured medical debt. Another involves a couple who, the authors believe, lost jobs and later found new ones but at much lower salaries. One case involves a recently divorced man who apparently filed for bankruptcy to discharge debts contacted while he was married, which he had promised to pay as part of his divorce settlement. Another case involves a couple who started a small business that seemed to have failed rather spectacularly. Another involves a couple who obtained multiple credit cards and consumer loans, spent every dollar they could (none of it on assets that would put them above the exemption level), and then filed for bankruptcy. Of these, the first three appear to fit the sociological sterotype of debtors who did not plan for bankruptcy and, in fact, probably did all they could to avoid it. The last three appear to fit the economic stereotype of debtors who took advantage of bankruptcy law either to enrich themselves directly or to engage in risky activities that might have—but didn't—pay off. Thus SWW's evidence suggests, not surprisingly, that both types of bankruptcies are common.

However, the amount of information available for each case seems just large enough to fuel speculation concerning "why" each individual filed for bankruptcy, but not enough to rule out alternate theories. Thus, SWW might classify their six cases differently. For example, their comments suggest that they consider the last case to be the fault of irresponsible creditors who extended the couple too much credit—a "sociological" bankruptcy—rather than the fault of the individuals themselves who strategically sought

out and took advantage of every dollar of credit they could obtain. A later chapter discussing the problem of bankruptcies resulting from too much credit card debt is titled "Credit Card Junkies," as though the debtors were victims of a disease and thus not responsible for their own behavior. On the other hand, some of the "economic" bankruptcies could have involved loss of income resulting from job loss or illness which did not show up explicitly in the bankruptcy court record.[20]

Descriptions of "typical cases" are interesting but potentially misleading, since the method of selection is not made clear. However, the authors also provide both a chapter describing the data set as a whole and a series of chapters describing particular subgroups within the data set. These give a detailed picture of the characteristics of persons in bankruptcy. Taking the sample as a whole, the average family income of debtors when they filed for bankruptcy was $15,800 in 1981, the average value of their assets was $29,400, and their average debt was $38,600 (p. 64). Thus, the average household in bankruptcy had a negative net worth of $9,200 and a ratio of debts to assets of 1.3. In comparison, the average U.S. household in 1981 had income of $25,800 (p. 65) and had a positive net worth of $51,300.[21] It should certainly not be surprising that debtors in bankruptcy have lower income and lower net worth than U.S. households generally. On the other hand, debtors in bankruptcy are not poor either: SWW point out that 75 percent of the debtors in their sample were above the 1981 federal poverty line, which was $9,300. This statistic should also not be surprising: poor households rarely have access to enough credit to make filing for bankruptcy worthwhile. In SWW's sample, 14 percent of debtors in bankruptcy have incomes above the U.S. average (p. 65). The fact that relatively high-income individuals file for bankruptcy is consistent with our theoretical discussion. High-income individuals have access to more credit and therefore can run up more debt before filing for bankruptcy. Bankruptcy thus benefits them more in terms of dollars of debt forgiven than it benefits lower-income debtors. Only when individuals accumulate substantial assets, rather than high income, does filing for bankruptcy become unattractive.

SWW argue that those who file for bankruptcy are similar to workers in general in terms of their occupational distribution but have much lower incomes than average given their occupations (ch. 5). SWW interpret this evidence to suggest that bankrupts are

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[20] SWW obviously recognize that the information in many of their cases is consistent with multiple explanations. On pp. 179–82, they discuss two further cases from the data set and suggest stories from both viewpoints, each consistent with the data.

[21] My calculationsw from data given by SWW, p. 71, for 1977 and 1983, assuming a constant rate of growth of net worth over the period. All of these figures are in current dollars.

similar to U.S. workers generally except that they have suffered misfortunes such as illness or layoff. Since those laid off usually take some time to find new jobs and may be forced to shift to lower-paying jobs, they show up in the data as having lower incomes than the average in their occupation. Such a scenario suggests a "sociological" bankruptcy. However, the evidence is also consistent with individuals planning their choice of occupation or the type of job they take with the possibility of bankruptcy in mind, that is, "economic" bankruptcy. For example, individuals in a particular occupation might have a choice between working for others at jobs paying relatively low wages but having a low risk of layoff or starting their own businesses where pay is high but the risk of the company failing is also high. If the individual's business fails, then the individual will have no income for several months and will file for bankruptcy. In this situation, individuals in bankruptcy will be observed to have lower incomes than others in the same occupation—exactly what SWW find. However, the entire set of individuals who choose the risky alternative of starting their own businesses (which we don't observe) will have higher average income than the set of individuals who choose the safe alternative of working for others. Thus, the general pattern that SWW observe is consistent with either the sociological or the economic view of bankruptcy.

Sww find that 10 percent of their entire sample are failed entrepreneurs (p. 111) and 8 percent of their sample are repeaters—they have filed for bankruptcy before (p. 192). Also 10 percent of their sample are credit card abusers, according to criteria that SWW develop (p. 185). Each of these categories suggests the existence of some degree of advance planning for bankruptcy. While there may be some overlap among them, they are each relatively common, and together they suggest that "economic" bankruptcies do exist and constitute at least a substantial minority of all consumer bankruptcies. In contrast, only about 1–2 percent of SWW's sample have large uninsured medical debts—which would indicate a forced bankruptcy (p. 168), suggesting that the group of pure "sociological" bankruptcies is fairly small.

Thus, not surprisingly, the data set constructed by SWW indicates that both "economic" and "sociological" bankruptcies are common in the real world. Many people appear to plan for bankruptcy in a somewhat strategic way—they go into risky occupations or they attempt to avoid paying divorce settlements or they run up high credit card debt. But many people also appear to end up in bankruptcy because they are unlucky or badly endowed in terms of ability or resourcefulness—they become ill, get laid off, have automobile accidents, or just do less well than others in the same situation.

3. TESTING MODELS OF BANKRUPTCY

In this section I consider the issue, raised by SWW, of how one tests whether economic versus social/demographic influences are more important in determining behavior in the bankruptcy area. I also examine how economists test models.

Economic Versus Social/Demographic Influences on Bankruptcy

In their chapter entitled "Laws, Models and Real People" (pp. 230–70), SWW address the first issue. A critical part of their argument consists of a multiple regression model predicting whether debtors filed for bankruptcy under chapter 7 or chpater 13. The dependent variable in the regression is a dummy variable for choice of chapter. SWW classify the independent variables into two groups—"economic variables," such as assets, family income, amount of debt, and the exemption value for assets in bankruptcy, and "social/demographic variables," including marital status, a prestige rating for the debtor's occupation, whether the debtor was a homeowner at the time of the bankruptcy filing, whether the debtor was self-employed, and whether the debtor moved in the period before filing for bankruptcy. There is also a third group of variables, called "local legal culture variables" (pp. 252–54).

SWW run two regressions, the first including only the economic variables and the second including only the social/demographic variables. The adjusted R^2 of the first regression is .12 and that of the second regression is .36.[22] Because the explanatory power of the economic variables, as measured by the adjusted R^2 value, is less than that of the social/demographic variables, SWW conclude that "the simple economic model can be laid to rest as a powerful predictor of debtor behavior" (p. 254).

SWW also report a multiple regression model that includes both the economic and social/demographic variables (p. 253, table 13.5, last column). In the combined regression, all of the economic variables pass the test of statistical significance.[23] In fact, the exemption-level variable shifts from being insignificant to being statistically significant when the social/demographic variables are added. However, it is difficult to conclude anything about the importance of particular variables, since SWW report only standardized regression coefficients.

No economist would ever pose the issue in this way or use such a procedure to test an economic model. Economists do not deny the importance of social/demographic variables as determinants of behavior. They would never test the importance of social/demographic variables *against* economic variables. Rather, their procedure is to test whether economic variables are important

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[22] The R^2 value measures the proportion of the variation in the dependent variable explained by the regression model.

[23] See below for further discussion of statistical significance.

predictors of behavior *allowing for* the effect of social/demographic variables. Thus when economic models are tested using regression analysis, standard procedure in economics calls for including both the relevant economic variable(s) and whatever social/demographic variables are thought to be relevant and can be measured. The test of statistical significance of an individual variable—economic or social/demographic—is whether it has a t-statistic greater than 2, which implies that with 95 percent confidence, we can reject the null hypothesis of no relationship between the individual explanatory variable and the dependent variable, allowing for the effects of all the other variables. The test of statistical significance for a group of economic variables is whether an F-test indicates that the group of variables adds significantly to the explanatory power of the model (the R^2) relative to the level obtained without including the group of variables. Thus, economists recognize that social/demographic variables are important determinants of behavior, and they always test economic models by asking whether economic variables are statistically significant *controlling for* the effects of social/demographic variables.

SWW's result that the R^2 value for their group of social/demographic variables is higher than the R^2 value for their group of economic variables would not surprise any economist with experience in testing models. But if social/demographic variables explain more variance, why are economic variables of interest at all? One obvious answer is simply that economists are primarily interested in economic variables, regardless of whether they explain more or less of the phenomenon being studied than other variables. A second answer is that economic variables are subject to policy control whereas social/demographic variables are not—at least not in the short run, so that economic variables can potentially be used to change behavior in ways desired by Congress or whatever body sets policy.

How do economists evaluate the results of testing a model using regression analysis? First, if the dependent variable is a qualitative variable—such as the choice between chapters 7 and 13 in SWW's regressions—they use nonlinear techniques such as probit or logit to estimate the model, rather than ordinary least squares (which SWW use). They use such techniques because ordinary least squares regression requires that the variance of the error term be distributed normally, but this assumption is not satisfied when the dependent variable is qualitative. Second, in evaluating the regression results, individual economic variables or group of variables must be significantly related to the dependent variable at the 95 percent level of confidence or higher. This is measured by a t-test for an individual variable or an F-test for a group of variables. Since both economic variables and social/demographic variables are included in the regression equation, the economic variable must be a statistically significant determinant of the dependent va-

riable *controlling for* the effects of the social/demographic variables. Third, each individual economic variable must be an important influence on the dependent variable, that is, a reasonable size change in the independent variable (one which could be accomplished by a realistic policy change) must lead to appreciable changes in the dependent variable. To measure these effects, economists avoid standardized regression coefficients (the form of results presented by SWW). Nonstandardized regression coefficients tell us the amount of change in the dependent variable which results from a unit change in the independent variable when all other variables are held constant. They allow the researcher to predict the effect of changes in economic policy instruments.

To illustrate how economists test economic models, I use an example from my own research on bankruptcy. Before doing so, however, I address the question of what can be learned concerning bankruptcy from different types of data.

Testing Models of Bankruptcy: What Type of Data Is Needed?

Two different types of data might be collected to test models of bankruptcy. One type would be a data set of the sort collected by SWW, consisting of a sample of individuals or couples who have filed for bankruptcy. The other would be a random sample of individuals or couples in the population generally, of whom some will have filed for bankruptcy.

Sww's data, collected at great effort from bankruptcy court records, gives us a fairly detailed picture of the demographic, financial, and employment situations of individuals and couples given that they have chosen to file for bankruptcy. As indicated in the previous section, these data allow SWW to describe typical situations of individuals and households in bankruptcy, including female-headed households, those who ran businesses before their bankruptcies, those who filed under chapter 7 versus chapter 13, etc.

However, the type of data collected by SWW cannot be used to study how people make the decision to file for bankruptcy, because their data set includes only people who actually filed for bankruptcy and excludes those who did not file. But the question of how people decide whether to file for bankruptcy is an extremely important one. For example, suppose the consumer credit industry were to introduce and lobby for the adoption of a mandatory federal bankruptcy exemption which would be lower than the exemption levels currently prevailing in most states. (Currently, a fairly generous federal bankruptcy exemption exists, but states can choose to opt out of it and set their own bankruptcy exemptions.) Such a measure would benefit banks and other institutions that lend to individuals because borrowers would find it less attractive to file for bankruptcy. In addition, individuals filing for bank-

ruptcy would be more likely to have excess assets, meaning that they would find it more attractive to file under chapter 13 and would promise a higher rate of repayment of debt from future income. SWW accuse the consumer credit industry of lobbying for such provisions as a substitute for rationalizing their own lending policies to reduce the number of individuals they lend to who later file for bankruptcy (pp. 304, 318). Such a policy proposal might be attractive to Congress because it would lower lenders' default costs and, assuming competition among lenders, would cause interest rates on consumer loans to fall for all borrowers. Congress, in considering such a proposal, would presumably be concerned about what its effects would be. Would it cause the number of people seeking bankruptcy protection from creditors to plummet or would there be little effect? Would those who stop filing for bankruptcy after the change be the most well-off (the least needy) of those who previously used the bankruptcy system or would the impact of the change fall heavily on the less well-off of the prior population of bankrupts? Would it hurt those who use bankruptcy strategically or those who use it as a last resort? Questions of this type cannot be answered using data sets such as SWW's. Their data tell us only the characteristics of people who filed for bankruptcy under the system prevailing at the time they collected their data. It cannot be used to analyze how the number or composition of bankruptcy filings would change if the bankruptcy system itself were to be changed.

To answer these questions, we would instead need a data set consisting both of individuals/couples who did and did not file for bankruptcy. The ideal data set for studying the bankruptcy decision would be a random sample of households in the United States that asked if the household had filed for bankruptcy over the last several years and also asked questions about the household's economic and social/demographic status regardless of whether it filed for bankruptcy.

Data of this type could be used to estimate a model in which the dependent variable would be whether the household filed for bankruptcy. The independent variables would include whether both husband and wife work; how much each earns; whether the husband or wife had lost his/her job in the last few years and how long either was unemployed; whether anyone in the household had major health problems; whether the household owned a house; how many credit cards or consumer loans the household had and for how much; assets and liabilities of the household; whether anyone in the household owned a business and if it failed; age, occupation, and educational level of both spouses. Such a data set could be used to study how the household decides between filing under chapter 7 or 13. Additionally, such a data set would allow us to determine how sensitive bankruptcy decisions are to such policy variables as the exemption level, such economic vari-

ables as job loss, and such social/demographic variables as occupational status.

But this type of data set would be expensive to collect for the same reason that collecting a data set on determinants of cancer is expensive: Many subjects have to be sampled for each one found to have cancer. Therefore, the sample must be very large in order to include a reasonably large number of cancer observations. Medical research projects often involve studies of this sort, but research in social science rarely can command large enough budgets to pursue careful studies of infrequently occurring events. Techniques exist for oversampling, say, the portion of the income distribution in which bankruptcy is known to be most likely, which reduces the size of the sample needed, but such research is still expensive.[24]

In my own study of the determinants of personal bankruptcy filings (White 1987), I attempted to get around the need for a large survey data set by combining data on personal bankruptcy filings by county for 1981 with aggregate data from the U.S. Census of Population on characteristics of the entire population by county for 1980. A large sample of personal bankruptcy filings was obtained from the Administrative Office of the U.S. Courts.[25] From these data, I determined the number of bankruptcy filings under each chapter by county in 1981. Thus, the dependent variable in my model was the number of bankruptcy filings under chapter 7 or 13 by county in 1981 divided by the total population of that county. The independent variables in the models included economic variables, such as the county unemployment rate, social/demographic variables, such as the divorce rate (although I made no attempt to classify variables by type); and an estimate of the dollar value of the personal bankruptcy exemption in the relevant state in 1981. The independent variables were for 1980 rather than 1981 because they are hypothesized to have a lagged effect on bankruptcy filings.

Sww (p. 16) argue that the data collected by the Administration Office are useless since the methods used by court clerks in the various bankruptcy court districts for classifying bankruptcy filings into personal versus corporate categories differ across districts and are sometimes faulty. However, as long as errors made in measuring the dependent variable (i.e., errors in classifying bankruptcy filings by chapter) are uncorrelated with the independent variables, the resulting data can be used without problems. The effect of errors in the dependent variable is to increase the va-

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[24] Even adding a question on bankruptcy to an existing survey such as the Panel Study of Income Dynamics would probably not yield a large enough sample of bankruptcy filings.

[25] The sample included 55,000 chapter 7 bankruptcy filings and 9,500 chapter 13 bankruptcy filings in 1981. In total, there were 214,000 chapter 7 bankruptcy filings and 94,000 chapter 13 bankruptcy filings in the United States in 1982, the closest year for which aggregate data on a comparable basis (petitions rather than estates) is available. See White 1987:32, 34.

Table 1. Results of Regressions Explaining Number of Personal Bankruptcy Filings, by Chapter of the Bankruptcy Code

	Chapter 7		Chapter 13	
	Coefficient	Elasticity	Coefficient	Elasticity
Unemployment rate	.77**	.44	−.097**	−.34
Exemption level ($000)	.0060**	.47	−.00044*	−.21
Divorce rate	7.8**	.32	1.5**	.37
Income ($000)	.0049**	.35	.00075	.33
Percent farmland	.066**	.27	−.0042	
Percent black	−.041		.079**	.40
Percent Spanish	−.15**	−.032	.033*	
Percent homeowners	.074		.035**	1.3
Percent elderly	−.056		−.021	
Intercept	−.14		.00058	
No. of observations	1,470		1,470	
R^2	.10		.093	

SOURCE: Michelle J. White, "Personal Bankruptcy Under the 1978 Bankruptcy Code: An Economic Analysis," 62 *Indiana Law Journal* 1, 45.
   *Coefficient is statistically significant at the 95 percent level.
   **Coefficient is statistically significant at the 90 percent level.

riance of error term in the overall equation so that the explanatory power of the model is reduced and the R^2 falls; but the coefficients of the independent variables and their *t*-statistics are unaffected.[26]

Table 1 shows two multiple regression equations explaining (1) personal bankruptcy filings under chapter 7 per thousand population and (2) personal bankruptcy filings under chapter 13 per thousand population.[27] Note that the question posed here differs from the question posed by SWW in their regression model discussed above. Here what is being explained is how many people file for bankruptcy under chapter 7 or chapter 13; however, SWW's regressions attempt to explain which bankruptcy chapter people choose when they have already decided to file for bankruptcy. From a policy perspective, the most important question is why people file for bankruptcy in the first place.

Examine the regression explaining chapter 7 bankruptcy fil-

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[26] This is the "errors in variables" model with the errors being in the dependent variable. See Pindyck and Rubinfeld 1981:176–77. Note that disagreement over whether "faulty" data can be used for empirical research is an old question dividing sociologists and economists. The former tend to emphasize collecting data specifically for the problem to be studied, while the latter tend to use existing data but to develop statistical models that predict how problems in the data will affect the results of the estimation.

[27] The regressions are estimated by ordinary least squares. Actually, it would have been better to have used a technique such as logit or probit. The reason is that since values of the dependent variable are restricted to the range between zero and one, the error term is heteroscedastic. This is the same problem, although less severe, as in SWW's regressions, where their dependent variable takes only the values of zero or one. However, the results using probit or logit or a heteroscedasticity correction would probably have been similar to those using ordinary least squares. See Pindyck and Rubinfeld 1981:275–78.

ings first. The economic variable I was most interested in was the bankruptcy exemption level because it is subject to congressional control. The exemption level variable was statistically significant at the 95 percent level (actually it is statistically significant at a much higher level, since the *t*-statistic is 8.1). The coefficient of the exemption level is .006.[28] Regression coefficients are interpreted as the change in the dependent variable that results from a unit change in the independent variable.[29] One way that economists often characterize the effect of a change in an independent variable such as the bankruptcy exemption level is to calculate its elasticity, or the percentage change in the number of chapter 7 bankruptcy filings that results from a 1 percent change in the exemption level. This elasticity is calculated by multiplying the coefficient of the exemption level (.006) by the average exemption level ($9,600 or 9.6 measured in thousands) and dividing by the average chapter 7 filing rate in the sample (.122), or (.006)(9.6/.122) = .47.[30] Thus, the model predicts that a 1 percent increase in the exemption level would lead to a 0.5 percent increase in the filing rate under chapter 7, holding all other variables constant. This elasticity is reasonably large suggesting that changing the bankruptcy exemption level would have an appreciable effect on the number of chapter 7 filings. Another way to characterize the effect of changes in the exemption level is to calculate the predicted increase in the number of chapter 7 bankruptcy filings that would result from an increase in the exemption level. Because the exemption level is measured in thousands of dollars and the dependent variable is measured as a proportion of population in thousands, the model predicts that an increase in the average bankruptcy exemption in the United States of $1,000 would lead to an increase in the number of chapter 7 bankruptcy filings per year in the United States of (.0060)(1.0)(220,000)(214,000/55,000) = 5,200, where 220,000 is the United States population in 1981, measured in thousands, and the factor (214,000/55,000) scales the bankruptcy sample upwards to the total number of bankruptcy filings.[31] To put the $1,000 increase in perspective, the average bankruptcy exemption in effect in 1981 was $9,600, so that an increase of $1,000 would have been around 10 percent. An increase or decrease of this magnitude is predicted to cause 5,2000 more or fewer bankruptcy filings under chapter 7.

Several other variables in the regression are also statistically

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28 See Table 1, nn. * and **.

29 The regression coefficients are not standardized.

30 Elasticity is defined generally as $(\Delta y/y)/\Delta x/x)$, where y is the dependent variable and x is an independent variable. Since the coeficient of x in a linear regression is $\Delta y/\Delta x$, the elasticity at the mean values of y and x is obtained by multiplying the coefficient by $\bar{x}/\bar{y}$, where the bars indicate mean values.

31 See note 25.

significant. Examine the unemployment rate. It has an elasticity of $(.77)(.07/.122) = .44$, where .07 is the average unemployment rate in 1981 and .122 is again the average filing rate under chapter 7 in the sample. Because the elasticities of the unemployment rate and the exemption level are similar in size, a 10 percent increase in the unemployment rate is predicted to increase chapter 7 bankruptcy filings by about the same amount as a 10 percent increase in the exemption level. Other coefficients in the model can be evaluated in the same way.

Turn now to the regression explaining the rate of bankruptcy filings under chapter 13. Here the coefficient of the exemption level, $-.00044$, is smaller and has the opposite sign from the coefficient of the chapter 7 filing rate. Also, the exemption level fails the test of statistical significance at the 95 percent level, although it is statistically significant at the 90 percent level, a weaker test. Thus, evidence that the exemption level is a significant determinant of the chapter 13 bankruptcy filing rate is relatively weak. The fact that the coefficients of the exemption level have opposite signs in the equations explaining number of chapter 7 and chapter 13 filings means that an increase in the exemption level is predicted to cause the number of chapter 7 filings to rise *and* the number of chapter 13 filings to fall. Because an increase in the exemption level makes filing under chapter 7 more attractive, filings that would otherwise occur under chapter 13 shift instead to chapter 7. The elasticity of chapter 13 filings with respect to the exemption level is $(-.00044)(9.61/.02) = -.21$, which is less than half as large as the elasticity for chapter 7 filings. The model predicts that an increase of \$1,000 in the average exemption level would cause the number of chapter 13 bankruptcy filings to drop by $(-.00044)(1.0)(220,000)(94,000/9,500) = -960$. Thus, an increase in the bankruptcy exemption level of \$1,000 is predicted to cause the number of chapter 7 bankruptcy filings to increase by 5,200 and the number of chapter 13 bankruptcy filings to fall by 960, for a net increase in total bankruptcy filings of around 4,200.

Do these results suggest that the economic model of bankruptcy works? By the criteria defined above, the answer is yes because the exemption level is a statistically significant and important determinant of the chapter 7 bankruptcy filing rate, allowing for the effects of social/demographic variables. Thus the model supports a theory that says that an increase or decrease in the exemption level would have an important effect on the chapter 7 bankruptcy filing rate, that is, those considering filing for bankruptcy are influenced by the amount of assets they will be allowed to keep. Strong support therefore exists for the economic approach to bankruptcy generally, since if (as SWW assert) consumers only file for bankruptcy when their financial troubles become overwhelming, their decisions would be unaffected by the amount of the bankruptcy exemption. The model provides only marginal sup-

port, however, for the theory that the exemption level is an important determinant of the chapter 13 bankruptcy filing rate. This result is not surprising because the exemption level only affects the chapter 13 bankruptcy filing rate indirectly through its influence on the attractiveness of filing under chapter 7.

However, I would characterize the model as providing suggestive rather than definitive results concerning whether economic factors are important determinants of the decision to file for bankruptcy. Further research is clearly needed, both to overcome the severe data limitations of this study and to allow the bankruptcy decision to be explored in more detail. Unfortunately, the properly specified multimillion-dollar random sample of household bankruptcy—described above—still awaits funding. The only way to obtain funding may be to convince the medical establishment that bankruptcy is a disease.

4. POLICY IMPLICATIONS

What sorts of policy implications emerge from SWW's study of personal bankruptcy? Somewhat surprisingly, SWW make no proposals for policy changes, apparently because they view the bankruptcy system as being under attack by economists for being too favorable to debtors, so that its current features need all the defense they can get. One policy change that they come close to advocating is that of abolishing chapter 13 altogether on the grounds that most debtors who file for bankruptcy under chapter 13 promise to repay more than they can afford in their repayment plans. However, they stop short of actually advocating this change.[32]

Does economics research suggest any policy changes in the bankruptcy system? The main policy issue in bankruptcy concerns how the existence of the bankruptcy system affects borrowing decisions and how persons decide whether to file for bankruptcy. As discussed above, this question cannot be studied using SWW's data set, since they collected data only on people who have already chosen to file for bankruptcy. My own research on this issue starts from the premise that the asset exemption level in bankruptcy is the key policy variable determining whether debtors have an incentive to file for bankruptcy. The regression results discussed in section 3 suggest that consumers respond fairly strongly to the level of the bankruptcy exemption, so that increasing or decreasing it would have an appreciable effect on the number of bankruptcy filings. If Congress felt that too many consumers were filing for bankruptcy, adopting a uniform and lower federal

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[32] Write SWW (p. 223): "It is not ridiculous to suggest that it might be better not to have chapter 13 at all. One could argue that its benefits are outweighed by the harm done to people who waste money and mental anguish on impossible payment plans. But we are not ready to go that far."

exemption level would substantially lower the number of bankruptcy filings. To this extent, SWW and I probably agree.

However, I would advocate a more substantive policy change: eliminating the current rule that allows consumers to avoid repaying debt from future income unless they voluntarily agree to do so by filing under chapter 13. As discussed in section 1, debtors in general have much greater ability to repay debts from future income than from assets. But current bankruptcy law only requires them to use their assets, not their income, to repay their debts. Since filing for bankruptcy under chapter 13 is voluntary, debtors have an incentive to choose chapter 13 only when (1) they have assets not covered by the bankruptcy exemption, or (2) they repay an amount in chapter 13 no higher than the value of their excess assets, or (3) they have debts which can only be dismissed under chapter 13, such as liabilities incurred by fraud. The bankruptcy exemption is high enough in most states that few bankrupts have excess assets. Therefore consumers generally choose chapter 13 only when their repayment plans are essentially a fiction or when they are in jurisdictions in which lawyers or judges in effect force them to do so, even though it is against their interest.

But since ability to repay debts depends mainly on future income, it makes sense to require that debtors in bankruptcy repay debts based on both their assets and their future income. This could be done by combining chapters 7 and 13 into one consumer bankruptcy procedure. Just as there is currently a bankruptcy exemption for assets, a new bankruptcy exemption for income could be adopted. This exemption would provide for bankrupts to keep both a minimum level of income—representing a basic standard of living—and a fraction of income above the basic standard of living, which would preserve incentives to work. Debtors in bankruptcy would be required to propose a repayment plan that would devote both their nonexempt assets and their nonexempt income to repayment of liabilities for a certain number of years.

Most states already have a type of income exemption in place in the form of limits on the maximum amounts of wages that may be subject to garnishment by creditors outside of bankruptcy. These would need to be reevaluated since they were not adopted with consumer bankruptcy in mind: currently consumers can avoid onerous wage garnishment by filing for bankruptcy. Under the new system, states that allow very high wage garnishment would need to set a lower maximum standard or a uniform federal income exemption would need to be adopted.

This change would improve the functioning of the personal bankruptcy system in several ways. First, it would prevent debtors with high incomes but low assets from getting out of repaying *any* of their debt, as they currently can under bankruptcy law. Second, since there would be only one bankruptcy chapter for individuals, the special provisions under chapter 13 that allow liabilities such

as those incurred by fraud to be dismissed would not be needed. To discourage fraud, it would be better not to dismiss such liabilities in bankruptcy at all. Third, to the extent that the change increased the total amount of debt repaid, it would reduce lenders' costs and therefore reduce the interest rates on loans paid by all borrowers.

Finally, while I'm sure that SWW would disagree with this proposal for reform, such a change would adversely affect only the "economic" bankrupts—those who plan strategically for bankruptcy since under some circumstances it makes them better off. For example, those with high income and few assets who borrow heavily to finance restaurant meals and vacations (which do not build assets that creditors can claim) would have to pay more. But "sociological" bankrupts, those who are forced into bankruptcy by misfortunes beyond their control despite all their efforts to avoid it, would not have to pay any more than they currently do. Both their low assets and their low incomes would be below the relevant exemption levels. Sww and I would probably agree that such a change would not affect most debtors in bankruptcy—who have little ability to repay debts from either assets or income. But the change would force the minority of bankrupts with the most ability to pay to begin to repay at least part of what they owe to creditors.

REFERENCES

DUESENBERRY, James S. (1960) "Comment on 'An Economic Analysis of Fertility' by Gary Becker," in *Demographic Change in Developed Countries*. Princeton, NJ: Princeton University Press.

PINDYCK, Robert S., and Daniel L. RUBINFELD (1981) *Econometric Models and Economic Forecasts*. 2d ed. New York: McGraw-Hill Book Co.

REA, S. (1984) "Arm-breaking, Consumer Credit and Personal Bankruptcy," 23 *Economic Inquiry* 188.

STIGLITZ, Joseph E. (1972) "Some Aspects of the Pure Theory of Corporate Finance: Bankruptcies and Take-Overs," 3 *Bell Journal of Economics and Management Sciences* 458.

WHITE, Michelle J. (1987) "Personal Bankruptcy Under the 1978 Bankruptcy Code: An Economic Analysis," 62 *Indiana Law Journal* 1.

——— (1989) "The Corporate Bankruptcy Decision," 3 *Journal of Economic Perspectives* 129.