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Personal Bankruptcy Under the 1978 Bankruptcy Code: An Economic Analysis†

MICHALLE J. WHITE*

INTRODUCTION**

Between the late 1970's and the early 1980's, the number of personal bankruptcy cases filed in the United States each year more than doubled, from around 200,000 to around 450,000 filings per year.¹ In a recent sample of personal bankruptcy cases that closed in 1982, the average debtor had liabilities of all types totaling about $34,000 at the time of the bankruptcy filing, but repaid only about $200.² This combination of a high and rising number of personal bankruptcy cases being filed and the fact that few liabilities are ever repaid by debtors makes personal bankruptcy an important policy issue. A rough estimate of annual losses by creditors in personal bankruptcy cases suggests that lenders are losing up to fifteen billion dollars—($34,000)(450,000)—per year.

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¹ See Table 1 infra p. 29.
² The figures reflect personal bankruptcy filings under all applicable procedures (discussed below) and include payments made to all types of creditors. For a discussion of the data set, which was constructed by the Administrative Office of the U.S. Courts (A.O.C.), see section III infra pp. 29-40. The A.O.C. does not publish data concerning the level of liabilities in bankruptcy cases as a whole in the U.S.; however, it does provide these data for a large sample of bankruptcy cases.
on loans that are discharged as part of personal bankruptcy filings. These losses are borne by other borrowers in the form of higher interest charges on loans to consumers and by lenders themselves, or their shareholders, in the form of losses of equity. These losses raise the cost of risk taking and cause lenders to reduce their willingness to make loans to consumers generally. They also make borrowing less attractive from the viewpoint of debtors, because the cost is higher.

Further, although business bankruptcies receive more publicity, personal bankruptcy filings appear to be far more important than business bankruptcies in terms of the aggregate level of losses they cause for lenders. In 1981, 16,800 business firms failed and the average failed firm had liabilities of $414,000, according to Dun and Bradstreet data. This meant that creditors' losses in business failures could have been no higher than seven billion dollars in 1981, even if none of these liabilities were even partially repaid.4

The key feature of a personal bankruptcy procedure is its exemption/discharge policy. This refers to the fact that debtors are discharged from the obligation to pay their debts when they give up all their assets above a fixed exemption value. Policy considerations in personal bankruptcy suggest that two factors must be balanced: the gain to debtors from having a "fresh start" with no obligations to pay pre-bankruptcy creditors from post-bankruptcy income, and the loss to the economy when debtors are permitted to avoid repaying large amounts of debt. Creditors make up their losses on loans by raising the interest rates they charge to all borrowers and reducing the amount they are willing to lend, thus reducing the attractiveness of borrowing and the amount borrowed by debtors generally. The "fresh start" consideration appears to have been paramount when Congress revised personal bankruptcy procedures under the Bankruptcy Reform Act of 1978, commonly referred to as the new Bankruptcy Code.5 The Code raised the exemption level applicable in personal bankruptcy cases and widened the types of debt which could be discharged.6 As a result,

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3. Strictly speaking, losses to creditors in personal bankruptcy cases constitute transfers of income from creditors to debtors, rather than pure losses to the economy. However, both the prospects of pure losses and of transfers from creditors to debtors give creditors incentives to change their behavior in ways which cause resource losses to the economy due to creditors making economically inefficient decisions. The pure or "deadweight" losses to the economy from personal bankruptcy can be shown to be bounded from above by the level of transfers from creditors to debtors. For a discussion and an application in the context of corporate bankruptcy, see White, Bankruptcy Costs and the New Bankruptcy Code, 38 J. FIN. 477 (1983).

4. These data include business terminations that caused losses to creditors but did not involve a bankruptcy filing, but they exclude bankruptcies of firms in a few sectors, such as banking and real estate. The data are taken from DUN AND BRADSTREET CORPORATION, THE BUSINESS FAILURE RECORD (1983).


6. Some states have "opted-out" of the higher exemption adopted under the Code. See sections II & III infra pp. 25-40.
it made bankruptcy potentially much more attractive from the viewpoint of debtors. From an economic standpoint, it therefore raised the cost of bankruptcy to creditors and future borrowers, who pay for higher default rates in the form of higher interest charges.

This Article analyzes personal bankruptcy procedures under the new Code using an economic approach. Although both lawyers and economists have previously argued that economic factors are important in understanding bankruptcy, in general lawyers writing on bankruptcy have used a variety of approaches, while economists have focused on empirical issues and neglected to analyze carefully the specific provisions of the law. While this Article pursues an economic approach to analyzing personal bankruptcy, this should not be taken to imply an argument that only economic issues and economic motivations are important in explaining individuals' decisions to file for bankruptcy. Rather, the author's intent here is to pursue the economic approach consistently and then to examine critically whether, and to what extent, the conclusions suggested by the economic approach appear to explain recent behavioral trends and whether its predictions suggest possible reforms. The empirical tests of the model performed below also allow at least some crude conclusions to be drawn concerning how important economic variables are in explaining rates of personal bankruptcy filing.

The plan of the Article is as follows. Section I analyzes an economic model of the demand for loans by individual borrowers, first assuming that no default is possible and then successively introducing the possibilities of default via the debtor filing for bankruptcy under Chapter 7 of the Code and then via Chapter 13 of the Code. (Under Chapter 7, the debtors give up all assets above an exemption level, but do not have to give up any of their future income. Under Chapter 13, debtors do not give up any assets in bankruptcy, but they must pay a part of their debts from future income.) The model's results are startlingly clear in demonstrating how attractive filing for bankruptcy is for debtors who are motivated purely by economic considerations.

In section II, the behavior of lenders and unusual characteristics of equilibrium in the loan market are considered. Section III discusses recent and current data concerning personal bankruptcy filings, including the characteristics of individuals and married couples at the time of their bankruptcy filings. The size of the uniform federal bankruptcy exemption, is compared to the level of assets

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7. Thomas Jackson has used both economic and psychological theories to argue in favor of a non-variable right of discharge and a fresh start policy. See Jackson, The Fresh-Start Policy in Bankruptcy Law, 98 Harv. L. Rev. 1393 (1985).

Theodore Eisenberg has used economic analysis to argue in favor of limiting the availability of discharge. See Eisenberg, Bankruptcy Law in Perspective, 28 UCLA L. Rev. 953, 981 (1981).

For references to analyses by economists of the effects of bankruptcy law on the number of bankruptcy filings by individuals, see infra note 80.

owned by average United States households. Payoff rates by type of creditor and by Chapter of filing are also explored.

Section IV formulates and tests an empirical model of the determinants of personal bankruptcy filing rates. The main objective of the model is to shed light on the question of whether the increase in the number of personal bankruptcy filings that occurred just after the Code went into effect was due to the increase in the exemption level or was due to the severe recession in the economy that occurred at the same time. A secondary objective of the model is to determine how important economic variables in general are, relative to measurable non-economic factors such as the divorce rate or demographic characteristics, in explaining the number of personal bankruptcy filings. The final section contains the conclusion and a discussion of possible policy changes.

One methodological point should be noted. The analysis in section I of individual behavior concerning the bankruptcy decision focuses on bankruptcy law as it was from when the Code took effect in late 1979 until it was amended in 1984. This period is examined because the data that are discussed in section III and used to test some aspects of the behavioral model in section IV are from the period 1979 to 1982. However, important provisions of the 1984 amendments are also discussed.

I. INDIVIDUAL BEHAVIOR

In this section, an economic model of the behavior of individuals or households when deciding whether and how much to borrow, and whether to default and file for bankruptcy, is explored. First, the demand for loans is examined assuming no default. Then the possibility of default is introduced and individuals’ decisions concerning whether to default are examined. Throughout this section, the author assumes that any default on a loan requires a bankruptcy filing and is treated according to the prespecified bankruptcy rules discussed below. The alternate possibilities that debtors might merely skip town ahead of their creditors without filing for bankruptcy, or that debtors default and creditors successfully pursue state-mandated non-bankruptcy remedies against them, are ignored. The author examines in separate subsections the alternatives of filing under Chapter 7 and under Chapter 13 of the Bankruptcy Code.

A. The Demand for Loans Assuming No Default

The decision to borrow money, and the determination of how much to borrow, are the central features in any model of bankruptcy. If individuals did not borrow, then they could never spend more than their incomes and would never be in a position to default. In such a situation there would be no need
for a bankruptcy procedure. In the discussion below, lenders are sometimes referred to as banks; however, the model applies equally to any lender.

The behavior of individuals or households is first examined assuming that there is no default. In doing so, it is assumed that there are only two time periods, denoted periods 1 and 2, which can be broadly interpreted as present and future. In period 1, individuals decide whether and how much to borrow; in period 2, they must repay the amount borrowed plus interest. Individuals are assumed to maximize utility functions in making consumption decisions. Their utility levels depend on the amount consumed in time periods 1 and 2, denoted $C_1$ and $C_2$, respectively. $C_1$ and $C_2$ each encompass any and all consumption items, including services such as housing, travel, or college tuition, perishable goods such as food, and durable goods such as appliances and cars. Consumption in either period is measured in units which cost one dollar each. These assumptions allow one to ignore prices in what follows.

Decisions are made subject to a budget constraint. Individuals are assumed to work and earn income of $Y_1$ dollars in the first period and of $Y_2$ dollars in the second period. They have no wealth or other sources of income. If they decide to consume exactly their income in period 1 or less, that is, if $C_1 \leq Y_1$, then they have no need to borrow. However, if they wish to consume more than their income in period 1, then they must borrow. If borrowing occurs, then the amount consumed in period 1 becomes $C_1 = Y_1 + B_1$, where $B_1$ is the dollar amount borrowed. By assumption, any amount borrowed in period 1, plus interest, must be repaid in full in period 2. The interest rate per period is assumed to be a constant amount, $r$, per dollar borrowed, regardless of the amount borrowed. Thus, an individual borrowing $B_1$ in period 1 must repay $B_1(1 + r)$ in period 2. The decision to borrow $B_1$ in period 1 means that the individual will consume $Y_1 + B_1$ dollars worth of goods and services in period 1, but only $Y_2 - B_1(1 + r)$ in period 2. The two period budget constraint is therefore:

$$(C_1 - Y_1)(1 + r) = Y_2 - C_2.$$ 

$C_1 - Y_1$ is the amount borrowed in period 1 which, together with interest, must be repaid from income in period 2.

Borrowing has the effect of transferring purchasing power and consumption from period 2 to period 1. The economic theory of borrowing is based on two factors: first, individuals’ demands for smoothing of consumption over more

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9. Of course, borrowing is construed broadly here; for example, paying for April's electric bill in May constitutes borrowing from the electric company.

10. Although a more general model would have many time periods, each of the two periods considered here can be interpreted as many subperiods taken together.

11. It should be noted that the same model can be used to analyze savings behavior, since savings is just negative borrowing. If the individual saves, then $C_i < Y_i$. 
than one period, and second, individuals' general preferences for present over future consumption.\textsuperscript{12}

Focusing on the first reason for borrowing, suppose an individual has low income in period 1, perhaps because he is in school at that time, but will have high income in period 2. The usual assumption in economics of diminishing marginal utility of consumption implies that he would prefer to consume relatively equal amounts in periods 1 and 2, rather than consuming almost everything in period 2 and almost nothing in period 1. The same reasoning implies that individuals would prefer to borrow to finance the purchase of durable goods whose consumption will be spread out over both time periods. For example, suppose the individual wishes to purchase an automobile in period 1 and has relatively equal income levels in periods 1 and 2. The car will provide consumption in both periods, but must be paid for in full when purchased. If it is paid for entirely out of period 1 income, then the individual will have a very low level of consumption of all goods except cars in period 1 relative to period 2. But if part of the car's cost can be financed with a loan which will be repaid out of period 2 income, then consumption of all goods can be smoothed over the two periods.

Thus, individuals borrow if the gain from shifting a small amount of consumption from period 2 to period 1 exceeds the cost of doing so, which is the interest charge on the loan. Individuals can be viewed as making this calculation separately for each dollar (or ten or one hundred dollars) that they borrow. An extra dollar of borrowing is worthwhile if the gain from additional smoothing of consumption exceeds the additional interest cost. As the amount borrowed increases, the gain from further borrowing falls, since individuals' income has already been smoothed to some extent by the amounts already borrowed. The cost of further borrowing, however, remains constant. Individuals stop borrowing when their consumption streams across the two periods have been smoothed out to the point that further borrowing is not worth the additional interest charge. At this point, their utility functions are maximized subject to the budget constraint.

Figure 1 shows this graphically. The horizontal and vertical axes measure consumption in the two periods, $C_1$ and $C_2$. The curved lines are indifference curves, that is, different combinations of consumption in periods 1 and 2 which give rise to the same utility level. The individual's utility level is the same at all points along any single indifference curve. But her utility level is higher along indifference curves involving higher consumption of both $C_1$ and $C_2$. Thus, in the figure, her utility level is higher at any point along indifference curve $U_3$ than anywhere along $U_2$, and higher along $U_2$ than anywhere along $U_1$.

\textsuperscript{12} The theory of savings behavior is similar to that explaining borrowing, except that the motivation is to smooth consumption by transferring purchasing power in the opposite direction, from the present to the future.
The individual is assumed to have predetermined levels of income in both periods. These income levels are $Y_1'$ and $Y_2'$ in periods 1 and 2, respectively. The straight line in Figure 1 is the individual's budget line, which shows all feasible consumption possibilities given the person's fixed income levels in the two periods. The budget line intersects the horizontal axis at the maximum possible period 1 consumption level, $C_1' = Y_1'/1 + r$. This is obtainable only if the individual borrows so much to finance period 1 consumption that her period 2 consumption is zero. The vertical intercept of the budget constraint is the maximum possible period 2 consumption level, $Y_2'(1 + r) + Y_2'$. It is obtainable only when the individual saves so much to finance consumption in period 2 that her consumption in period 1 equals zero. Points in-between denote possibilities obtainable when intermediate amounts are borrowed or saved. The slope of the budget line is $-(1 + r)$.

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13. In general, primes or double primes are used to denote particular values of variables such as income or the level of borrowing, while the same notation without the prime indicates the variable itself. For example, $Y_1$ denotes income in period 1 generally while $Y_1'$ is the individual's actual dollar level of income in that period.
At one particular point on the budget line in Figure 1, the individual's consumption in each period must exactly equal income in that period, so borrowing and saving are both zero. This is point $a$, where $C_1 = Y_1$ and $C_2 = Y_2$. At point $a$, the individual achieves utility level $U_1$ on indifference curve $U_1$. Note that at point $a$, income in period 2 is assumed to be higher than income in period 1. This assumption is convenient since it tends to make borrowing attractive. In the figure, the individual can increase utility by borrowing, which moves her along the budget line in a southeast direction. The best she can do is to move from point $a$ to point $b$ by borrowing the amount $B'_1$. At point $b$, she consumes $C_1 = Y_1 + B'_1$ in period 1 and $C_2 = Y_2 - B'_1(1 + r)$ in period 2. By so doing, she moves to a point on indifference curve $U_2$.

It is an important implication of the model that the individual cannot do better by borrowing either a larger or a smaller amount than $B'_1$. For example, suppose she borrowed some higher amount, $B''_1 > B'_1$, and moved to point $c$ on the budget line. Then she would be worse off than if she borrowed $B'_1$, because the utility level she would achieve by borrowing $B''_1$ is lower than utility level $U_2$. The same type of argument implies that she would be made worse off by borrowing less than $B'_1$.

The second reason for borrowing has not yet been discussed: that is, the general preference of most individuals for present over future consumption. This factor tends to increase the demand for borrowing above the level that would be implied by the consumption-smoothing motivation alone, but by varying amounts depending on the individuals' tastes. The stronger are individuals' tastes for present over future consumption, the more they borrow given fixed levels of present and future income. The strength of individuals' tastes for present over future consumption is represented in Figure 1 by the slope of the indifference curves. For example, an individual having a stronger taste for present over future consumption than the individual whose tastes are graphed in Figure 1 would have indifference curves that were more steeply sloped than those shown; that is, the indifference curve $U_1$ would rotate in a counterclockwise direction around point $a$ and the other indifference curves would rotate in the same direction. This individual would borrow more than $B'_1$, but not an unlimited amount.\(^{14}\)

The above discussion has shown that individuals' demands for loans are always self-limiting in a model where there is no default and loans must be repaid in full. Loan demands are always limited because borrowing has its price. No one ever wants to borrow an unlimited amount, for the same reasons that no one ever wants to purchase an unlimited number of units of any particular good.

\(^{14}\) An individual having a weaker taste for present over future consumption than the individual whose tastes are graphed in Figure 1 would have indifference curves that were flatter than those shown in the figure. This individual would borrow less.
The analysis of the demands for loans also has the implication that individuals’ borrowing demands respond to changes in the interest rate. Suppose the interest rate, \( r \), falls. Figure 2 above reproduces the original indifference curves and budget line. It also contains a new, flatter budget line, shown as the dashed line, which prevails after \( r \) falls. The new dashed budget line also goes through point \( a \), since consumption possibilities are unaffected by the change in the interest rate if no borrowing or lending takes place. With a lower interest rate, borrowing becomes more attractive and saving less attractive. As a result, individuals wish to borrow to point \( d \), where consumption in period 1 is \( C''_1 \) and where a higher amount is borrowed than \( B'_1 \) in Figure 1.\(^{15}\) If the opposite

\(^{15}\) Technically, this result assumes either that borrowing is a normal good in the relevant income range (an increase in income effect leads individuals to borrow more), or, if borrowing is an inferior good, that the substitution effect of the interest rate change outweighs the income effect.
change occurred and the interest rate increased, then the budget constraint would rotate in the opposite direction, still through point $a$, and borrowing would become less attractive relative to saving. Thus, the demand for loans is similar to demand curves for goods and services generally in that it is price responsive. In this case, the "price" of borrowing or lending is the interest rate per period. If the interest rate rises, individuals borrow less and consumption in period 1 falls relative to period 2. If the interest rate falls, individuals borrow more and make changes in the opposite direction. But their demands for loans are always limited, because borrowing has its price.

Finally, what if an individual's income rises? This can be analyzed in the context of the model by assuming that the predetermined levels of income, $Y_1'$ and $Y_2'$, both increase by the same percentage, so that income in period 2 remains higher than income in period 1. Then the individual's budget line shifts outward, but retains the same slope as the original budget line, since the interest rate $r$ remains the same. The dotted line in Figure 2 is the new higher budget line. Given the new, higher income levels, the individual would be at point $a'$ on the higher budget line if he did not borrow or save. Then by borrowing he can move from indifference curve $U_j$ to point $e$ on the higher indifference curve $U_e$. In general, individuals' demands for borrowing are expected to rise when income levels rise but the interest rate remains the same, as shown in the figure by the difference between borrowing to move from point $a$ to point $b$ at the lower income level versus borrowing to move from point $a'$ to point $e$ when income levels in both periods are higher.\[16\]

### B. Bankruptcy and Individuals' Demands for Loans: Chapter 7

The theory of saving and borrowing as normally presented by economists assumes no bankruptcy, with all loans being repaid in full at the time they come due. Nevertheless, it is necessary to consider the possibility that borrowers might default and file for bankruptcy instead of repaying their loans. In this section, the only bankruptcy procedure considered is Chapter 7. Chapter 13 is analyzed in the next section.

In analyzing individuals' choices given the possibility of default, the author will avoid for the present making any assumptions concerning ethics or opportunistic behavior with regard to debt repayment. As in the previous section, it is assumed that individuals act to maximize utility. Whether they choose to default, therefore, depends on which alternative allows them to achieve a higher utility level given their tastes, their income levels, the terms under which they can borrow, and the features of the bankruptcy system. Obviously, the utility

\[16\] This proposition relies on the assumption that borrowing is a normal good, at least for increases in income when the level of income is not too high. Then, the amount of income devoted to borrowing would rise as income rises, assuming that other factors are held constant. However, this result is not expected to hold indefinitely as income continues to rise. Households eventually begin to save more and borrow less as their incomes rise. The actual outcome may vary for different households depending on such factors as their stage in the life cycle.
maximization model explored here ignores many factors which have a bearing on the decision to file for bankruptcy or not, such as the moral stigma applied to bankruptcy, the desire to be an upstanding citizen and reluctance to lie about one's income in applying for loans. In actuality, some individuals may not default even under circumstances in which default could increase utility. This possibility is ignored in exploring the model presented in this section and the following section.

Suppose again that individuals choose whether to borrow during period 1. If they borrow, then at the beginning of period 2, they can choose between defaulting on the loan and filing for bankruptcy under Chapter 7 of the Code, or paying off the loan in full and remaining out of bankruptcy.

The Chapter 7 bankruptcy procedure is represented here by a set of assumptions. First, if individuals file for bankruptcy under Chapter 7, then they must pay a filing fee to the bankruptcy court. They also incur various other costs, including paying their lawyer if one is used and bearing the cost of reduced access to credit in the future. The total amount of these costs is referred to as the bankruptcy cost and is assumed to have a fixed dollar value. Bankruptcy costs are denoted $F$ and may be either positive or zero in amount.

Second, individuals filing for bankruptcy must also give up all assets owned over and above a fixed exemption. The actual exemption which is applicable depends on the debtor's state of residence and on whether and when the state opted-out of the uniform federal exemption set by the Bankruptcy Code. For debtors in non-opt-out states, the applicable exemption depends on the year in which the bankruptcy petition was filed, since the uniform federal exemption was reduced in 1984. In analyzing the decision process of individuals, the

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17. The last part of this section examines the effect of varying the level of opportunism across the population on the prior analysis.

18. This fee is assumed to include compensation of the trustee as established by 11 U.S.C. §§ 326(a), 330.

19. Actually, it is unclear what overall effect a previous bankruptcy filing has on an individual's future access to credit. Some lenders may view a previous bankruptcy filing as an advantage, since it eliminates many past liabilities and forestalls the debtor from filing another bankruptcy petition in the future for 6 years. 11 U.S.C. § 727(a)(8) (Supp. II 1984). Other lenders may view it as an indication that the debtor is likely to default again, perhaps by skipping town with unpaid debts.

20. The uniform federal exemption, 11 U.S.C. § 522(d) (1982 & Supp. II 1984), provided, as of the early 1980's, that up to $7500 in equity in an owner-occupied residence is exempt, plus up to $1200 of interest in a motor vehicle, plus the debtor's interest in household furnishings and goods, with no limit other than that the value of the debtor's interest in any particular item must not exceed $200. There are additional exemptions, some with dollar limits, for jewelry, tools of the trade, life insurance contracts, pensions, and assorted other categories, plus a $400 exemption that can be applied to any type of property. The $7500 "homestead" exemption can be applied to other assets if equity in the home is smaller than this amount. Also, renters are allowed to apply the homestead exemption to other assets, and couples filing for bankruptcy jointly receive a double exemption.

However, many states opted-out of the federal exemption during the early 1980's, as allowed by Congress. 11 U.S.C. § 522(b). They set their own exemption levels, usually involving lower dollar amounts. For a further discussion of state exemption levels and of the trend concerning states' opting-out, see section III infra pp. 29-40.

21. The 1984 amendments to the Bankruptcy Code provided in particular that renters can
personal bankruptcy exemption is assumed to have a fixed dollar value, which is denoted $E$. While the value of $E$ can vary by state or by year depending on the applicable exemption provisions, what is required for purposes of this section is only that it have a fixed dollar value.\(^{22}\)

Third, once debtors have given up assets whose value exceeds the exemption, then their debts are discharged.\(^{23}\) Under Chapter 7, debtors do not have to give up any of their future income to creditors.\(^{24}\)

Individuals’ assets are assumed to have a dollar value which is denoted $A$. The value of their excess assets over and above the exemption level is therefore $A - E$, which may be positive or negative. If $A - E$ is positive, then it is referred to as the debtor’s non-exempt assets, and is denoted $X$. $X$ must be either positive or zero.

The author will sometimes assume that $X = 0$ or that individuals filing for bankruptcy under Chapter 7 have no non-exempt assets. This assumption, which might appear to be extreme, actually turns out to be quite reasonable. The data discussed in section III suggest that in actuality, few individuals filing for personal bankruptcy ever repay any of their debts.\(^{25}\) Also, debtors who anticipate that they will file for bankruptcy in period 2 have an incentive to spend their period 1 income on services or perishable goods, rather than durable goods, since the former cannot be recovered by creditors. Alternately, debtors can buy durable goods in period 1 but transfer them to friends or relatives before filing.
for bankruptcy. Even if debtors buy durable goods, only a fairly low fraction
of the goods they buy will be worth creditors’ efforts and expense to repossess
at the time of the bankruptcy filing, since goods decline in value over time and
many used goods do not have resale markets.

Finally, an additional reason for assuming that debtors often do not give up
any assets when they file for Chapter 7 bankruptcies is that the uniform federal
exemption level during the period 1979 to 1984 was quite high relative to the
value of most households’ assets, particularly if the bankruptcy filing was by
a married couple. According to recent United States Government data, the
average value of consumer durables owned by all households in the United
States, excluding the value of financial assets and equity in owner-occupied
housing, was approximately $12,600 in 1980. This is less than the value of
the pre-1984 uniform federal bankruptcy exemption, which William Woodward
and Richard Woodward estimated to have a value of $14,500 for a single
person. Thus, a single person filing for bankruptcy, and having durable assets
equal in value to the average for all United States households, was likely to be
able to shelter all of his or her durable assets from creditors, plus at least $2,000
of financial assets. A married couple filing for bankruptcy could own well over
the average value of assets for United States households before any assets would
have to be turned over to creditors. Further, financial assets held in the form
of retirement accounts or whole life insurance are exempt in bankruptcy in
most states.

In examining the behavior of individuals who potentially may file for bank-
ruptcy in period 2, it is necessary to first consider the incentives they face in
period 1. Individuals planning to default in period 2 have an incentive to borrow
as much as possible in period 1, once they decide to borrow at all, since by
assumption they will have to give up little or nothing to repay the loans. Anything
they can borrow increases their consumption level in period 1, but does not
reduce consumption in period 2, once the bankruptcy cost has been paid. Thus,
an individual planning to default who had unlimited access to credit in period
1 would borrow and consume an unlimited amount. Unlike the situation dis-
cussed in the previous section, the self-limiting characteristic of loan demand
breaks down if the possibility of default is introduced into the model.

27. The data discussed below indicate that about 43% of all bankruptcy filings are joint
filings. See Table 2 infra p. 32.
Table 764 of the abstract shows the total value of consumer durables owned by households.
Id. at 455. Table 60 shows the number of households. Id. at 42. Note that the median value
of consumer durables owned by U.S. households is probably less than the average value,
implying that more than half of U.S. households have assets of lower value than the exemption
level.
29. See Woodward & Woodward, Exemptions as an Incentive to Voluntary Bankruptcy:
30. Exemption values for durable assets are smaller in many states that have opted-out.
For a discussion of this topic, see section IV infra pp. 40-51.
31. In theory, borrowing with intent to deceive gives rise to liabilities which are not dis-
Therefore, individuals planning to default have an incentive to borrow as much as possible in period 1 and, in particular, to borrow more than non-defaulters. However, lenders have an incentive to try to identify potential defaulters and refuse to lend to them. Lenders are assumed to learn over time how much non-defaulting individuals having various present and future income levels wish to borrow. They therefore can identify future defaulters by the large size of their loan requests relative to their current and future incomes. As a result, the best that defaulters can do is to act like non-defaulters in similar circumstances and request approximately the same size loans. For example, if a potential defaulter has period 1 and period 2 income levels of $Y_1'$ and $Y_2'$, respectively, then the best he can do is to apply for the same loan that a non-defaulter having these income levels would seek, which one knows from Figure 1 is $B_1'$. Thus, defaulters can never obtain unlimited loans. By applying for loans from multiple sources, or by exaggerating their future incomes, they may be able to obtain a somewhat higher level of loans than non-defaulters, but not an unlimited amount.

Defaulters' situations are shown in Figure 3. They are assumed to have incomes in period 1 and period 2 of $Y_1'$ and $Y_2'$, respectively. Point $a$ is again the no borrowing/no lending point on the budget constraint, and point $b$ is the point chosen by non-defaulters having the same period 1 and period 2 income levels. Since defaulters are assumed to be able to borrow only the same amount as otherwise similar non-defaulters, $B_1'$, their period 1 consumption must be $C_1' = Y_1' + B_1'$. Assume first that the bankruptcy cost, $F$, is zero and that defaulters do not give up any assets in bankruptcy, or $X = 0$. Then in period 2, borrowers that default will be at point $e$ on indifference curve $U_2$. Having filed for bankruptcy, they keep and consume all their period 2 income, so $C_2' = Y_2'$, and their period 1 consumption remains the same, or $C_1' = Y_1' + B_1'$. Thus, defaulters are better off than non-defaulters having the same income levels. Their gain from defaulting is the money equivalent of the difference between utility levels $U_1$ and $U_2$.

One interesting question is how individuals' incentives to default vary as the interest rate changes. The dashed line in Figure 3 is borrowers' new budget line if the cost of borrowing rises from $r$ to some new higher interest rate. As discussed above, the higher interest rate causes non-defaulters to borrow less, so that they move to point $g$ rather than point $b$ in Figure 3. Given the higher interest rate, they have a lower level of consumption in period 1 and they achieve a lower utility level on indifference curve $U_1'$.


32. The model can easily be extended to include the choice by individuals concerning how many hours to work. In this case, it can also be shown that individuals intending to default in period 2 will prefer to work less or not at all in period 1, since working lowers utility by reducing valuable leisure time, while borrowing more instead has no cost.

33. For a further discussion of lender behavior, see section II infra pp. 25-28.
Now suppose that the borrower defaults. With the higher interest rate $r'$ prevailing, the borrower moves from point $g$ to point $f$ on indifference curve $U_3$. Thus, at the higher interest rate, the utility gain from defaulting is the difference between utility levels $U_f$ and $U_g$, whereas at the lower interest rate it was the larger gain represented by the difference between utility levels $U_2$ and $U_3$. In general, the utility gain from defaulting and filing for bankruptcy is smaller when the interest rate is higher, because the amount borrowed in that case is smaller. Thus, the amount borrowed and the utility gain from defaulting both fall as the interest rate rises, reducing the attractiveness of filing for bankruptcy. The opposite result occurs if the interest rate falls rather than rises.

This result is particularly interesting because it seems counter-intuitive: it predicts that as interest rates rise, fewer individuals will file for bankruptcy because the utility gain from defaulting is smaller. Conversely, if interest rates fall, more individuals will file for bankruptcy. Because they can borrow more, the utility gain from borrowing and later defaulting is higher.

This result has implications concerning how the pattern of personal bankruptcy
filings is expected to vary over the business cycle. Economists studying business cycles have found generally that interest rates tend to rise during the expansionary part of the cycle and fall during the contractionary part of the cycle. This suggests that the number of personal bankruptcy filings should fall during the expansion and rise during the contraction. This relationship is tested empirically in section IV below, using the unemployment rate as a proxy for the stage of the business cycle.

Suppose now that the bankruptcy cost, $F$, is the positive amount $F' > 0$ and that the interest rate is the original rate, $r$, represented by the solid budget line in Figure 3. Individuals who default still have the same period 1 consumption, but now they must give up $F'$ dollars of their period 2 income in order to file for bankruptcy. The vertical distance between points $e$ and $h$ in the figure is the amount $F'$. Given $F'$, defaulters achieve the lower utility level $U_e$ at point $h$. However, they are still better off defaulting than not defaulting. But now suppose the bankruptcy cost is set at a higher level, $F'' > F'$. $F''$ is defined as that bankruptcy cost level which makes individuals indifferent between defaulting and not defaulting because both alternatives must leave individuals at the same utility level on indifference curve $U_e$ at point $b$. The bankruptcy cost which makes individuals just indifferent between defaulting and not defaulting is $F'' = B'(1 + r)$, or a bankruptcy cost equal to the amount owed in period 2. $F'$ is shown on the diagram as the vertical distance between points $e$ and $b$. Thus, as long as the bankruptcy cost is smaller than the amount owed, individuals are better off defaulting. If the bankruptcy cost is greater than the amount owed, then individuals are better off repaying their loans and avoiding bankruptcy.

The author has assumed throughout this analysis that the amount borrowed is fixed at $B'$. How do the results change if the amount that a potential defaulter can borrow is larger or smaller? Regardless of the size of $B'$, individuals still have an incentive to default if the amount owed in period 2, $B'(1 + r)$, exceeds the bankruptcy fee. Thus, if the amount that can be borrowed is greater than $B'$, then it is worthwhile for individuals to default even if the bankruptcy cost is higher than $F''$ in Figure 3. Conversely, if the amount that can be borrowed is smaller than $B'$, then individuals will only default if the bankruptcy cost is smaller than $F''$. This implies that a low bankruptcy cost encourages individuals to file for bankruptcy even if the amount owed is small. It also implies that if individuals can borrow large amounts, then it becomes worthwhile for even high income individuals to default and file for bankruptcy. Presumably, high income people face higher bankruptcy costs, since the stigma and loss of future access to credit are greatest for them. But if they can borrow and consume large enough amounts in period 1, then defaulting could be attractive for them as well.

Thus, the analysis suggests that increasing the bankruptcy cost, $F$, would have the effect of discouraging individuals from filing for bankruptcy. Since the bankruptcy court filing fee is the component of $F$ which is most easily altered by policy, one can conclude that raising the filing fee would discourage personal bankruptcy filings. However, increasing the filing fee, but keeping it at a fixed dollar amount for all debtors, would mainly discourage default by those who have relatively low liabilities. For individuals having high liabilities, raising the filing fee would have little effect, since the fee is only a small component of $F$ for them, while other components, such as the cost of representation by a lawyer or the cost of social stigma, are much more important.

It would also be sensible to consider a variable filing fee which is larger for individuals having higher liabilities. Since default is only attractive if the amount owed exceeds the bankruptcy cost, a filing fee which is greater for individuals who owe more would have the effect of discouraging bankruptcy for everyone. In contrast, a higher but still fixed filing fee would make bankruptcy less attractive only for poorer individuals. A higher filing fee would make using the bankruptcy process less attractive for debtors owing relatively little, and might cause them to avoid filing for bankruptcy altogether.

Now suppose that an individual filing for bankruptcy must give up some assets, since the total value of assets owned exceeds the exemption level, or $X > 0$. How the excess assets are valued will be important for the analysis. One approach to asset valuation is based on market value, that is, what the asset would sell for in an organized used market. For example, the market value of a used car is closely proxied by its “Blue Book” value. The market value of an individual’s excess assets is denoted $X_m$. However, the value of excess assets to debtors themselves may differ from the assets’ market value. Their value can be quantified, at least in theory, by asking individuals how much they would be willing to pay at the time of the bankruptcy filing from their period 2 income to keep all their assets, rather than the assets covered by the exemption. This amount is referred to as the assets’ “sentimental value” and denoted $X_S$. Sentimental value will often exceed the market value of an asset when it is a family heirloom or an antique, but this condition may hold for other assets as well. For example, the debtor may own a three year old television set which cost $500 when new, but now has a market value on the used television market of only $100. Its value to the debtor may be greater, say $200, since the debtor would prefer to have the old set rather than having to choose between buying a new one for $500 or a used one without a warranty for $100.

35. Even when markets for used assets exist, the prices at which they sell are often very low. This is thought to be because defective goods (“lemons”) are likely to be resold on the used market, while non-defective goods are likely to be retained by their owners and not resold. As a result, the assets sold in used markets are likely to be defective and worth only low prices. The classic treatment of this problem is by George Akerlof. See Akerlof, The Market for Lemons, 84 Q. J. Econ. 488-500 (1970).
Suppose an individual filing for bankruptcy has excess assets whose sentimental value is $X^*_i$. Then, the total cost to the individual of filing for bankruptcy in terms of loss of period 2 income is equivalent to $F' + X^*_s$, since both the bankruptcy cost and the sentimental value of the excess assets represent lost period 2 income. Referring again to Figure 3, default is still preferred if the amount that must be given up in bankruptcy is less than the amount that would be owed to creditors in the absence of a bankruptcy filing, or $F' + X^*_s < B'(1 + r)$. As more, or higher value, assets must be given up in bankruptcy, default becomes less attractive.

To summarize the results of this section, individuals considering default in period 2 have an incentive to try to borrow as much as possible in period 1, perhaps by claiming to lenders that their incomes are higher than they actually are. Banks are assumed to limit the loans they offer to individuals to an amount equal to what a non-defaulter in otherwise similar circumstances would demand. If the loan amount offered plus interest exceeds the bankruptcy cost plus the individual's sentimental valuation of excess assets, then the individual has an incentive to default in period 2. If the loan offered is smaller than the bankruptcy cost plus the sentimental value of excess assets, then the individual has an incentive not to default. In the latter case, she may prefer to borrow less than the entire amount offered by lenders or even not to borrow at all. When the interest rate on loans rises, individuals can borrow less. This makes default and bankruptcy less attractive since the utility gain from defaulting falls as the size of the loan falls. From a policy standpoint, the most important implication of the model is that default and filing for bankruptcy appear to be options which are attractive for individuals in a wide variety of circumstances.

C. Bankruptcy and Individuals' Demands for Loans: Chapter 13

In this section, the incentives for default are considered when individuals have a choice between using either the Chapter 7 or Chapter 13 procedures under the Bankruptcy Code. Chapter 13 is intended for individuals having regular income. Under the procedure, a debtor proposes a plan providing for full or partial repayment of his debts over a period of usually three years. The plan must provide for priority liabilities to be paid in full over the period of the plan and for unsecured creditors to be paid no less than they would have received under Chapter 7. Secured creditors must retain the liens securing their claims or must consent to any change. If the plan is accepted by the bankruptcy court, then the debtor does not have to give up any of his assets as long as he performs according to the plan. Only the court has to approve the plan; creditors’ approval is not required. Individuals filing for bankruptcy have a choice between the Chapter 7 and Chapter 13 procedures. Even after filing

under Chapter 13, they are allowed to shift to a Chapter 7 filing at any time until the plan is accepted.\footnote{Id. \S 1307(a).}

Several provisions of Chapter 13 are intended to make it more attractive to debtors. These include making some types of debts dischargeable under Chapter 13 that are not dischargeable under Chapter 7, such as student loans or debts acquired by fraud.\footnote{Id. \S 1328(a).} These special provisions are ignored for the moment, but will be considered below.

One important issue on which the law was ambiguous until the passage of the 1984 amendments concerns whether Chapter 13 plans providing for zero or only token repayment of unsecured debts would be approved by the bankruptcy courts in situations where the debtor had regular income, but no assets exceeding the exemption level. In these cases, the debtor did not have to give up any assets to pay creditors if the filing were under Chapter 7. As a result, bankruptcy courts often approved Chapter 13 repayment plans that provided for only token repayment, but there were cases that both approved and disapproved such plans.\footnote{See Barnes v. Whelan, 689 F.2d 193 (D.C. Cir. 1982) (allowing token repayment plan); \textit{In re Goeb}, 675 F.2d 1386 (9th Cir. 1982) (allowing token repayment plan). But see \textit{In re Iacovoni}, 2 Bankr. 256, 268 (Bankr. D. Utah 1980) (disallowing token repayment plan); \textit{In re Terry}, 630 F.2d 634 (8th Cir. 1980) (disallowing zero or token repayment plans).} However, the 1984 amendments to the Bankruptcy Code changed the Chapter 13 procedure so as to make zero repayment plans under Chapter 13 less easily available. The following discussion first examines debtors' situations before the pre-1984 amendments and then introduces the amended procedure prevailing after 1984.

Prior to 1984, Chapter 13 appeared on its face to provide creditors access to debtors' future income streams in cases where there were likely to be steady streams of future income, rather than limiting their access to debtors' assets only. It therefore appeared to meet the criticism that debtors could use the bankruptcy laws to avoid paying their debts even when they could feasibly pay all or a substantial part of them from future income. However, because the option permitted debtors to choose between Chapters 7 and 13, this meant that creditors could never force debtors to use their future income to pay debts. Debtors were always allowed the choice between sheltering their future income from creditors or sheltering their excess assets from creditors, and they could choose whichever alternative they preferred.

Turn now to the model of debtor behavior developed above. In analyzing Chapter 13, an assumption is made that any amount promised to creditors under a plan must come out of debtors' period 2 income. The author again uses $F$ to denote the total cost of an individual's personal bankruptcy filing. The total cost of a bankruptcy filing may be the same or different for a Chapter 13 filing as for a Chapter 7 filing.\footnote{For example, the cost of reduced access to credit may be lower under Chapter 13 if...} $X_m$ and $X_S$ are also used to denote,
respectively, the market value of excess assets owned by debtors, and debtors' sentimental valuations in terms of the amount of period 2 income they would be willing to give up in order to keep the excess assets.

Individuals can now choose among the three alternatives: repaying their debts in full, filing for bankruptcy under Chapter 7, or filing for bankruptcy under Chapter 13. Assume that individuals will choose that alternative which gives them the highest utility level. Suppose at the outset that the bankruptcy cost $F$ is zero and that the value of excess assets is also zero. Figure 3 above analyzed the choice that individuals faced when considering whether to file for bankruptcy under Chapter 7. In that figure, not defaulting put the individual at point $b$ on indifference curve $U_2$. Defaulting and filing under Chapter 7 put the individual at point $e$ on the higher indifference curve $U_5$. Therefore, individuals will only choose Chapter 13 if it results in the same or a higher utility level than $U_5$. But note that consumption in period 1 is the same amount, $C' = Y' + B'$ under all three alternatives. Thus, if individuals filing under Chapter 13 give up any of their period 2 income, they must have a lower utility level than $U_5$. In the situation analyzed, individuals will prefer filing under Chapter 7 if the amount that must be repaid from future income under Chapter 13 exceeds zero. If the amount that must be repaid under Chapter 13 equals zero, then they will be indifferent between filing under Chapter 7 and Chapter 13.

Now suppose that the bankruptcy cost is a positive amount, $F' > 0$, for both Chapter 7 and 13 filings, but that the debtors' non-exempt assets, $X$, are still zero. Then, individuals filing under Chapter 7 will achieve the lower utility level $U_4$ at point $h$ in Figure 3. If they choose Chapter 13 instead, they must still pay the same bankruptcy fee. But if they must pay a fee of $F'$, then they cannot give up any of their remaining period 2 income, $Y' - F'$, and still achieve utility level $U_5$. Therefore, given a choice between Chapters 7 and 13, individuals will still choose Chapter 7 unless zero repayment plans are allowed under Chapter 13. Again, if zero repayment plans are allowed, then individuals will be indifferent between the two procedures. Thus, adding a bankruptcy cost to the model does not change the result that individuals either prefer Chapter 7 over Chapter 13, or are indifferent between the two procedures, as long as the bankruptcy cost is the same under both and debtors have no excess assets which must be given up in a Chapter 7 bankruptcy.

Consider next the possibility that debtors own assets exceeding the exemption level. Assume again that the bankruptcy cost is $F'$ and is the same for filings under Chapter 7 and 13. The excess assets that must be given up if individuals file under Chapter 7 have sentimental value equivalent to $X'_g$ dollars of period 2 income. Suppose further that none of the excess assets are subject to secured creditors' liens. Then if individuals file under Chapter 13 instead of Chapter 7, their plans must provide for a payment to creditors equal to what creditors

lenders are willing to lend to potential borrowers who have previously filed under Chapter 13, but not to potential borrowers who have previously filed under Chapter 7.
would receive in a Chapter 7 proceeding. If the excess assets were turned over to a trustee as part of a Chapter 7 proceeding, then the trustee would sell them for market value, which in this case is \( X_m' \), and turn the proceeds over to creditors.\(^4\) Thus, the bankruptcy cost to an individual of filing under Chapter 13 is the amount \( X_m' \), which must be paid to creditors from period 2 income. But if the individual instead filed under Chapter 7, then he must give up his excess assets, which he values at \( X_s' \). Therefore, debtors will choose Chapter 13 if the sentimental value of excess assets exceeds their market value, or \( X_s' > X_m' \). Conversely, debtors will choose Chapter 7 if the market value of excess assets exceeds their sentimental value, or \( X_m' > X_s' \).

Assume now that all the debtors’ excess assets are subject to secured creditors’ liens. Consequently, creditors must retain the liens securing their claims. However, the amount debtors in Chapter 13 cases must agree to pay to secured creditors depends on whether the amount owed on the loan is greater than, or less than, the market value of the asset whose purchase was financed by the loan. The amount still owed to creditors will depend on the amount initially borrowed and on how much of the loan principal has been repaid. In many cases, the amount owed on the loan will be higher than the assets’ current market value, since the market value of assets such as automobiles and consumer durables depreciates faster than normal installment loans are paid off. If so, then secured creditors usually agree to reduce the amount owed to \( X_m' \), since this is the amount they would receive if the debtor surrendered the asset to the secured creditor.\(^4\) In this case, filing for bankruptcy under Chapter 13 is attractive to debtors since it allows them to retain excess assets that are subject to secured creditors’ liens, but still to reduce the amount that must be repaid. Thus, the model suggests that Chapter 13 is likely to be chosen by debtors filing for bankruptcy in those cases where debtors have excess assets which are subject to secured creditors’ liens.

The results are similar if debtors have excess assets and either the assets have sentimental value exceeding their market value, or the secured creditors’ liens are on real estate and the debtors’ equity in the property exceeds the Chapter 7 exemption. In this case, debtors have an incentive to choose Chapter 13, since it is the only means of retaining the assets.

Finally, suppose some assets are subject to secured creditors’ liens, but the total value of assets owned by the debtor is less than the exemption value. Then, the results are the same as in the situation analyzed above in which there are no excess assets. The existence of secured creditors’ liens does not change the result that debtors either prefer filing under Chapter 7 or, if approval of a zero repayment plan is likely, will be indifferent between the two Chapters.

Thus, the model predicts that individuals filing for bankruptcy who have no

\(^4\) This analysis ignores the trustee’s fee in Chapter 7 cases, which would be subtracted from the sale proceeds before creditors were paid.

\(^4\) Such claims are secured for an amount equal to the value of the asset subject to the lien and are unsecured for the rest. 11 U.S.C. §§ 506, 1325(a)(5) (1982 & Supp. II 1984).
excess assets would either prefer Chapter 7 over Chapter 13 or would be indifferent between the two. Those individuals living in districts where zero repayment plans are unlikely to be approved would prefer to file under Chapter 7. Those individuals living in districts where zero repayment plans are likely to be approved might prefer the broader discharge, lesser stigma, or other special features of Chapter 13. For those individuals owning excess assets, Chapter 13 would be preferred if the sentimental value of the excess assets exceeds their market value, since filing under Chapter 13 is the only way for debtors to retain the assets. If the excess assets are subject to secured creditors' liens, then debtors have an incentive to choose Chapter 13, since under this procedure they can keep the assets while repaying only an amount equal to the assets' current market value.

The features which make Chapter 13 attractive to debtors in special situations include allowing discharge of student loans or debts acquired by fraud. In addition, individuals filing under Chapter 13 can file again for bankruptcy sooner than those filing under Chapter 7. Finally, debtors who own houses are likely to prefer Chapter 13 if their houses are worth more than the amount owed on the mortgage and worth more than the applicable homestead exemption, if one exists. In the latter situation, only filing under Chapter 13 allows debtors to avoid forced sales of their homes. For debtors falling under these provisions, paying more than a token amount to creditors from future income under a Chapter 13 plan would be as attractive as filing under Chapter 7, when Chapter 7 would otherwise be preferred. However, only in these situations does a bankruptcy filing under Chapter 13 lead to more than a token amount of repayment from the debtors' future income.

The analysis has shown that debtors in the most common situations have an incentive to choose Chapter 7 over Chapter 13, except when approval of a zero repayment plan would be likely. To the extent that Chapter 13 was intended as a procedure by which debtors having regular income would pay at least part of their debts from future income, the model suggests that it was ineffective in its original form. This gave rise to debate concerning whether and how debtors might be encouraged or forced to use Chapter 13 more frequently. In 1984, Congress amended the Bankruptcy Code to require that debtors apply all of their "disposable income" for three years to debt repayment, where


46. Lynn LoPucki argued in favor of a "good faith effort" test which would prevent debtors from receiving a discharge in bankruptcy unless they proposed plans to repay creditors which were consistent with their ability to pay. See LoPucki, "Encouraging" Repayment Under Chapter 13 of the Bankruptcy Code, 18 Harv. J. Legis. 347 (1981). Theodore Eisenberg also argued in favor of requiring debtors having regular incomes to use Chapter 13 rather than Chapter 7. See Eisenberg, supra note 7. However, Teresa Sullivan, Elizabeth Warren and Jay Westbrook argued against forcing the use of Chapter 13 by employed debtors. See Sullivan, Warren & Westbrook, Limiting Access to Bankruptcy Discharge: An Analysis of the Creditors' Data, 1983 Wis. L. Rev. 1091 (1983).
“disposable income” was defined as income not necessary for the maintenance of the debtor and dependents.47 Also, a provision was added allowing the courts to dismiss any Chapter 7 petition that constituted a “substantial abuse” of the Chapter 7 procedure.48

The amendments appear to force debtors filing under Chapter 13 to pay creditors according to their future income, although the ambiguous definition of “disposable income” might still allow debtors having both high income and high living expenses, such as a large mortgage, to pay little. This suggests that many debtors could find Chapter 7 more attractive, particularly if they live in opt-out states having fairly generous exemptions. However, debtors living in non-opt-out states, particularly those who are renters, also face a lower Chapter 7 exemption as a result of the 1984 amendments.

How do the 1984 amendments affect debtors’ incentives in choosing among filing for bankruptcy under Chapter 7, filing for bankruptcy under Chapter 13, or remaining out of bankruptcy completely? The last question appears to be the most straightforward. The 1984 amendments made filing for bankruptcy under both Chapter 7 and Chapter 13 less attractive for individuals living in non-opt-out states. The amendments are therefore likely to cause the bankruptcy filing rate to fall generally in non-opt-out states. The same effect would be expected to occur over a slightly different time period in those states which opted-out before 1984, but set exemption levels lower than the uniform federal exemption.

The effect of the 1984 amendments on the choice by debtors between Chapters 7 and 13 is more difficult to predict. The amendments appear to be attempting both to force more debtors to use Chapter 13 and to change the rules in ways which make Chapter 13 less attractive. Under the pre-amendment rules analyzed above, most debtors would only prefer to file under Chapter 13 if they expected a zero repayment plan to be approved or if they had substantial excess assets. Under the 1984 amendments, a zero repayment plan could still be approved, but only if the debtor has zero “disposable income.” The latter could either result from the debtor having low income, or from the debtor having high income but also high expenses. For debtors not in either situation, Chapter 7 is likely to be chosen. Chapter 7 is also now relatively more attractive to debtors in those opt-out states having generous exemptions. Thus, the amendments intended to make Chapter 13 more commonly used in fact appear likely to have the opposite effect. Instead, more debtors are now likely to choose Chapter 7 or to choose to remain out of bankruptcy completely. It should also be noted that a cost of the changes is the possibility that otherwise employed debtors might decide to take lower-paying jobs, or work fewer hours, in order to be able to obtain approval of a zero repayment plan under Chapter 13.49

48. Id. § 707(b) (Supp. III 1985).
49. For a discussion of possible reforms, see CONCLUSION AND POLICY RECOMMENDATIONS infra pp. 49-51.
D. Opportunistic Behavior: Who Chooses Default?

The consideration which many observers might rank as most important in determining whether an individual will default and file for bankruptcy has not yet been discussed: that is, the person's propensity to engage in opportunistic behavior. Opportunistic behavior is used here to denote an individual's willingness to take advantage of any opportunity for financial gain, regardless of whether such behavior is considered by society to "bend the rules," or to be unethical, dishonest or illegal. The line between opportunism and the normal utility maximizing behavior assumed in economics is not a sharp one. In the bankruptcy context, opportunism loosely denotes planning one's behavior ahead of time so as to take maximum advantage of the prevailing bankruptcy rules.

How does opportunism enter the analysis developed in the previous section? Suppose a person's taste for opportunistic behavior is defined as the maximum utility gain, or its monetary equivalent, that a person is willing to give up to avoid filing for bankruptcy. The smaller is this amount, the stronger is the individual's taste for opportunistic behavior. Opportunism is therefore a continuous variable. Given this definition, extremely non-opportunistic individuals, or individuals having extremely strong tastes for honest, ethical behavior, never default, regardless of how large their utility gain would be from filing for bankruptcy. The behavior of extremely non-opportunistic individuals is therefore described by section IA above. At the opposite extreme, very opportunistic individuals default even if by doing so they increase their utility level by only a very small amount. Their behavior is therefore fully described by the analyses in sections IB and IC, which indicate under what conditions defaulting makes them better off. Under these assumptions, very non-opportunistic individuals never file for bankruptcy and very opportunistic individuals file for bankruptcy when doing so will make them even slightly better off. Individuals that exhibit an intermediate level of opportunism sometimes file for bankruptcy, but only when their utility gain from doing so is substantial.

For example, in Figure 3 above, the individual depicted was on indifference curve $U_j$ if she did not default, but would have been on indifference curve $U_j$ if she had defaulted, assuming her bankruptcy cost, $F$, was zero. Her gain from defaulting is therefore $U_j - U_i$ when measured in units of utility, or $B'(1 + r)$ when measured in dollars of period 2 income. If she is extremely opportunistic, she clearly will choose default and bankruptcy. But if she is fairly non-oppor-

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50. For a discussion of opportunism in a different context, see O. WILLIAMSON, MARKETS AND HIERARCHIES: ANALYSIS AND ANTITRUST IMPLICATIONS (1975).

51. Recent bankruptcy cases provide some examples of opportunistic behavior. For example, a couple filed for bankruptcy under Chapter 13 after the wife induced an incompetent widow under her professional care to turn her money over to the couple, who used the proceeds to buy a house for themselves. The couple filed for bankruptcy after a tort judgment was entered against them for defrauding the widow. In re Rimgale, 669 F.2d 426 (7th Cir. 1982). In another case, the debtor filed a repayment plan under Chapter 13 which called for repayment of 100% of unsecured claims which were co-signed by others, but for repayment of only 1% of unsecured claims which were not co-signed. Barnes, 689 F.2d 193.
tunistic, her gain from defaulting on the loan, or $U_5 - U_2$, may not be large enough to induce her to file for bankruptcy.

One thus can characterize each individual by a "taste for opportunism," or equivalently, an aversion to default, which vary among individuals and may depend on religious upbringing, ethics, social pressure, or genes. It is assumed to be predetermined. Then, an individual's decision whether to default depends on both the size of the gain from defaulting and on the strength of that individual's opportunism. Under these assumptions, even a very non-opportunistic individual will choose to default if the utility gain from filing for bankruptcy is great enough, while even very opportunistic individuals will repay their debts if the utility gain from defaulting is small enough. It is interesting to note that under these assumptions, default becomes more likely as the amount borrowed increases, because the gain from defaulting increases with the size of the loan, while the taste for non-opportunistic behavior is assumed to be predetermined and therefore does not depend on the size of the loan.

Therefore, when opportunism is introduced into the model, individuals' decisions to default are determined by the interaction of their individual tastes and the economic circumstances determining the potential gain from default. Economic and non-economic factors thus interact in determining the prevalence of opportunistic behavior and the frequency of bankruptcy filings.

II. Bank Lending Behavior

The previous section, describing individual behavior and the incentive for borrowers to file for bankruptcy versus their incentive to avoid bankruptcy, demonstrates that some mechanism by which lenders can limit the amount they lend to individuals is necessary for any model of the loan market. Otherwise, individuals having a relatively low taste for honest behavior, or very risky future income streams, could borrow unlimited amounts and then default. Lenders then would incur unlimited losses and, presumably, would be forced to cease making loans at all. This is the case even if individuals incur costs when they file for bankruptcy, such as lawyers' fees and filing fees. In this section, the incentives faced by lenders and the nature of equilibrium in the market for loans are briefly examined. In particular, the conditions by which banks and other lenders limit the amount or the terms under which they are willing to lend are of interest. Such behavior is generally referred to as "credit rationing."

Dwight Jaffee and Thomas Russell have analyzed the behavior of lenders in a model which makes assumptions similar to the ones made here concerning the behavior of borrowers.52 In their model, the borrower

52. See Jaffee & Russell, Imperfect Information, Uncertainty and Credit Rationing, 90 Q.J. Econ. 651 (1976).
population is divided between honest borrowers and dishonest borrowers. Honest borrowers never default, while dishonest borrowers sometimes default.

Lenders by assumption cannot distinguish between honest and dishonest borrowers at the time borrowers apply for loans. Honest borrowers' demand curves for loans have the characteristics discussed in section IIA. Their demand curves are downward sloping; that is, honest borrowers demand larger loans when the interest rate is lower and if their incomes are higher, and they demand smaller loans when the interest rate is higher and if their incomes are lower.\textsuperscript{53} Lenders learn the characteristics of this demand curve, perhaps by their experience with many borrowers. Therefore, dishonest borrowers can never do better than appearing to have the same demand curves for loans as those of honest borrowers whose income and other relevant characteristics are the same. If, instead, dishonest borrowers revealed to the lender their extremely high demand for loans, then lenders could identify them as dishonest and would refuse to lend to them at all.

Jaffee and Russell did not examine closely the factors affecting debtors' default decisions, but they assumed that default becomes more likely as the principal amount of the loan increases. Therefore, in the population in general, the mix of honest and dishonest borrowers is such that the percent who default on loans rises as the loan size increases. For small loans, this result emerges from the analysis in section IIB above, where it is never in borrowers' interests to default when the bankruptcy cost, $F$, exceeds the size of the loan. Thus, the default rate on loans whose size are smaller than $F$ must be zero. This result also emerges as individuals whose income is fixed are able to borrow more, perhaps by misrepresenting their income or by borrowing from multiple sources. With larger loans, the utility gain from defaulting and filing for bankruptcy is larger.\textsuperscript{54}

Several different market equilibria are possible in the context of the model. One possibility is that there is no rationing of loans, other than that the size and interest rate on all loans offered to borrowers is such that they are on the demand curve of honest borrowers having that income level. All lenders offer the same loan terms. Given these loan terms, the total supply of loans offered by all lenders in the market equals the total demand for loans by all borrowers in the market. The interest rate on loans must exceed lenders' own costs of funds by a percentage which is equal to the percent of dishonest borrowers in the population. For example, if 5\% of borrowers receiving a certain size loan default and do

\textsuperscript{53} The demand curve for an individual borrower is derived from the set of indifference curves such as are depicted in Figures 2 and 3 above.

\textsuperscript{54} This result also emerges from a model in which future income is uncertain. Then, the larger the loan, the more likely it is that period 2 income will be less than the amount owed on the loan.
not repay anything, then the interest rate offered to all borrowers having those characteristics must be 5% higher than it would be if no one defaulted. Given this interest rate, lenders avoid incurring losses even if the probability of borrowers defaulting is positive.

An alternative outcome of the model involves lenders rationing loans by offering multiple loan contract terms to borrowers in each income group. Suppose one contract specifies a low interest rate on a loan which is limited to a small maximum size. Another contract, perhaps offered by a different lender, specifies a higher interest rate on a loan which allows a larger maximum size. Under some circumstances, the existence of multiple contract offers induces borrowers to reveal whether they are honest or dishonest. Honest borrowers, in some situations, prefer the smaller loan at the lower interest rate. Dishonest borrowers, however, always prefer whichever loan is larger, since the interest rate is irrelevant when the borrower plans to default. Thus, only honest borrowers take the small loans and only dishonest borrowers take the large loans. But in this circumstance, lenders offering the larger, higher interest rate loans must incur losses, since their only customers are dishonest. As a result, this set of contract terms must invariably disappear. The consequence is a return to the situation in which honest and dishonest borrowers receive the same contract terms.

In this type of rationing model, there may be no set of loan contracts which persists in the market over time, that is, no stable equilibrium. Instead, there may be cycles of loan terms being offered, with honest and dishonest borrowers sometimes revealing their identities via their choice among loan contracts, then the loan contracts favored by dishonest borrowers disappear, leaving only those contracts which previously attracted honest borrowers exclusively. But for lenders offering these latter loan contracts to avoid incurring losses when the contracts attract both honest and dishonest borrowers, they must raise the interest rate. This in turn may cause other lenders to begin offering new contracts with yet smaller maximum loan sizes and lower interest rates, hoping to attract only honest borrowers. Thus, the cycle may repeat itself.

Finally, it is interesting to note that the first equilibrium described, in which there is no rationing and only one set of loan terms offered to both honest and dishonest borrowers, is unlikely to persist. This is because when-

55. Honest borrowers may prefer to borrow more than the rationed amount at the interest rate being charged. But what is necessary for the argument is only that they prefer the smaller loan with the lower interest rate over the larger loan at the higher interest rate when only these two loan contracts are offered by lenders. As an example, referring back to Figure 2 above, suppose the only loan contract terms being offered are either a small, low interest rate loan which puts the borrower at point $f$ on the dashed budget line (which has the lower interest rate), or a larger loan, but with a higher interest rate, which puts the borrower at point $g$ on the solid budget line (which has the lower interest rate). Honest borrowers would prefer to take the smaller loan, since it results in the higher utility level, $U_f$, whereas the larger loan results in the lower utility level, $U_g$. 
ever different banks happen to attract slightly different mixes of honest and dishonest borrowers, they will then be forced to offer different interest rates on loans of the same size in order to avoid incurring losses. But if they do offer different interest rates, then honest borrowers will have an incentive to switch to those banks that offer lower interest rates. This will force the high interest rate banks to raise their interest rates still further, since they now have an even larger proportion of dishonest borrowers. But that will give their remaining honest customers an even greater incentive to switch to other lenders. Competitive pressures will eventually cause the banks having the highest proportion of dishonest borrowers to change their lending strategies. Thus, the loan market will evolve toward the rationing outcome described above.

Other models of loan markets in the economics literature have emphasized that credit rationing is a likely outcome. One such model, which was recently proposed by Joseph Stiglitz and Andrew Weiss, has as an important feature the assumption that different borrowers have different levels of risk associated with their future income streams. The riskier is an individual’s future income stream, the higher is the probability that he will choose to borrow. But from the lenders’ viewpoints, individuals with riskier income streams are less desirable as borrowers since their probability of default is higher. Thus, the focus of the lenders’ problem is to find a lending strategy whereby a borrower population is attracted that does not contain so many dishonest borrowers that the lenders end up incurring losses. The best strategy is for the lenders to offer low interest rates on loans in order to attract desirable, low risk borrowers. In Stiglitz and Weiss’ model, banks ration credit by choosing to loan unlimited amounts at low interest rates to some borrowers and not to lend at all to other borrowers. But the same general type of model could lead to credit rationing in the form of low interest loans being offered with a fixed maximum size.

Thus, credit rationing in some form is a feature of most economic models of the market for loans. These models support the assumption made above in analyzing individual borrowers’ behavior—that individuals can never borrow unlimited amounts. However, the loan market models also highlight the role of limited information. Because acquiring information concerning the characteristics of individual borrowers is costly and difficult (dishonest borrowers have an incentive to provide bad information), lenders’ screenings of potential borrowers will never be so accurate as to eliminate default entirely.


57. Stiglitz and Weiss’ model is intended to model the behavior of firms, rather than individuals, as borrowers and they do not consider the problem analyzed in the previous section that borrowers intending to default in the future have an unlimited demand for loans at any interest rate.
III. CHARACTERISTICS OF RECENT PERSONAL BANKRUPTCY CASES

In this section, the characteristics of recent personal bankruptcy cases and trends in the number and type of bankruptcy filings are discussed. The Administrative Office of the United States Courts (A.O.C.) provides data concerning the number of bankruptcies, both in total and for personal bankruptcies alone. Table 1 below gives the total number of bankruptcy estates, both personal and business, which were filed, terminated and pending for several years before and after the Bankruptcy Code went into effect in October, 1979.

Table 1

NUMBER OF BANKRUPTCY ESTATES FILED, TERMINATED AND PENDING, 1975-1983
(Numbers in thousands)

<table>
<thead>
<tr>
<th>Year</th>
<th>All Bankruptcy Filings</th>
<th>All Bankruptcy Terminations</th>
<th>Bankruptcy Estates Pending</th>
<th>Personal Bankruptcy Filings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975</td>
<td>254</td>
<td>224</td>
<td></td>
<td>224</td>
</tr>
<tr>
<td>1976</td>
<td>247</td>
<td>211</td>
<td></td>
<td>211</td>
</tr>
<tr>
<td>1977</td>
<td>214</td>
<td>182</td>
<td></td>
<td>182</td>
</tr>
<tr>
<td>1978</td>
<td>203</td>
<td>172</td>
<td></td>
<td>172</td>
</tr>
<tr>
<td>1979</td>
<td>226</td>
<td>197</td>
<td></td>
<td>197</td>
</tr>
<tr>
<td>1980</td>
<td>361</td>
<td>315</td>
<td></td>
<td>315</td>
</tr>
<tr>
<td>1981</td>
<td>519</td>
<td>452</td>
<td></td>
<td>452</td>
</tr>
<tr>
<td>1982</td>
<td>528</td>
<td>413</td>
<td>733</td>
<td>450</td>
</tr>
<tr>
<td>1983</td>
<td>495</td>
<td>843</td>
<td></td>
<td>415</td>
</tr>
</tbody>
</table>

In the table, joint bankruptcy filings by married couples are counted as two bankruptcies. Figures are rounded to the nearest thousand.

Table 1 highlights the rapid increase in the number of personal bankruptcy filings that occurred just after the adoption of the new Code. Between 1979 and 1980, the number of personal bankruptcy estate filings increased by 60%.

58. The figures in Table 1 for number of bankruptcy filings and terminations count filings by husbands and wives as two separate filings.

The data for 1975 to 1982 are taken from: Foley, A.O.C. ANN. REP. OF THE DIRECTOR at 12, Table 11 (1982) (U.S. Bankruptcy Courts Bankruptcy Estates Filed, Terminated, and Pending During the Twelve Month Periods Ended June 30, 1981 and 1982); id. at 14, Table 12 (U.S. Bankruptcy Courts Business and Non-Business Bankruptcies During the Twelve Month Periods Ended June 30, 1975 and 1982); id. at 15, Table 13 (U.S. Bankruptcy Courts Filings, by Chapter of the Bankruptcy Act During the Twelve Month Periods Ended June 30, 1975 through 1982).

The data for 1983 are taken from: STATISTICAL ANALYSIS & REPORTS DIVISION, A.O.C., FED. JUD. WORKLOAD STATISTICS at 29, Table 20 (1983) (U.S. Bankruptcy Courts Bankruptcy
from 197,000 to 315,000. From 1980 to 1981, the number increased by a further 43%. In contrast, the number of personal bankruptcy cases filed in 1978, the last full year before the new Code took effect, was 172,000. After 1981, the number of cases filed began to fall slightly, but remained at a much higher level than anytime before the adoption of the new Code. 59

Two factors have been blamed for the rapid increase in the number of bankruptcy filings in 1980 and 1981. First, the adoption of the new Code coincided quite closely with the beginning of a long and severe economic recession. Second, the Code itself, and particularly the higher exemption level in Chapter 7 personal bankruptcy cases, has been held responsible for the increase. But whether the increased personal exemption level was the feature of the Code responsible for the rise, or whether some other provision or combination of provisions of the new Code was responsible, remains unclear. At the time the Code was adopted, there was widespread publicity in the popular press given to the possibility of using bankruptcy to get out of paying debts. Also, advertising by lawyers was first permitted in several states at around the same time and many lawyers advertised the availability and attractiveness of personal bankruptcy procedures. These factors would tend to suggest a rise in the number of bankruptcy filings around the time the Code went into effect, but would not suggest that any particular provision of the Code was responsible. Increased social acceptability of bankruptcy or more general knowledge of the availability of bankruptcy, or both, might alternatively be responsible.

One particular aspect of the higher personal bankruptcy exemption level adopted as part of the Code suggests that at least a temporary increase in the number of personal bankruptcy filings should have been expected around 1980 and 1981. The Code specified for the first time that a uniform exemption level for personal bankruptcies would apply in all states unless a state opted-out by adopting its own exemption. As discussed above, Woodward and Woodward valued the uniform federal exemption at $14,500. 60 For all but a few states, the uniform exemption was much higher than any of the state exemption levels in effect prior to the Code's adoption. This made filing for bankruptcy a much more attractive option for personal debtors than it had been under the old

59. Estates Filed, Terminated, and Pending During the Twelve Month Periods Ended December 31, 1982 and 1983; id. at 31, Table 22 (U.S. Bankruptcy Courts Business and Non-Business Estate Filings, By Chapter of the Bankruptcy Code, During the Twelve Month Periods Ended December 31, 1980 through 1983).

60. See supra note 29 and accompanying text.
Act. Further, many states opted-out within a year or two of the Code's adoption, and once such states opted-out, they generally set exemption levels that were lower than the uniform federal exemption. Thus, debtors may have anticipated, or may have been advised by their lawyers, that their states were likely to opt-out and that they should file for bankruptcy quickly while the federal exemption was still in effect. This implies that a large, but temporary, increase in the number of personal bankruptcy filings should have been expected during the period shortly after the Code was adopted.61 Another reason that debtors would have had an incentive to file for bankruptcy quickly was that the Code fixed the Chapter 7 exemption in dollar terms, but inflation was proceeding at a quite rapid rate in the early 1980's. Thus, the real value of the exemption was falling over time.62

Table 1 also gives data concerning the total number of personal bankruptcy estates terminated and pending during the years 1981 to 1983. During the first few years the Code was in effect, there was a consistent pattern of fewer cases terminating than were being filed each year. This meant a steady buildup in the number of bankruptcy cases pending. As a result, there were over 800,000 cases pending in the system as of 1983.

Table 2 below gives data concerning the breakdown of personal bankruptcy filings by Chapter for the years since the new Code's adoption. Since the A.O.C. sometimes reports the number of bankruptcy estates and sometimes reports the number of bankruptcy petitions filed, both are given when available. The letter E indicates estates and the letter P indicates petitions. In any year, the number of petitions is always lower since joint bankruptcy filings by married couples are counted as two estates, but only one petition.63 It is interesting

61. For a discussion of the states' reactions to the new Bankruptcy Code's opt-out provisions, see generally Woodward & Woodward, supra note 29.

Woodward and Woodward valued each state's pre-Code personal bankruptcy exemption level. Their calculations indicate that twenty-three states had exemption levels prevailing before the adoption of the Code of $8,500 or less and an additional thirteen states had exemption levels of between $8,500 and $14,500. Of the remaining states, ten were excluded from the Woodward and Woodward study because their exemption levels contained provisions which depended on whether the debtor was a head of household or not and were therefore difficult to value. Also, four states opted-out of the uniform exemption before it ever went into effect.

It should be noted that Woodward and Woodward's valuations ignore any exemption provisions in state laws that apply to homeowners only. Woodward and Woodward also indicate that of the forty states included in their study, eight opted-out in 1980 and twelve more opted-out in 1981, in addition to the four that opted-out before the Code went into effect in October 1979. The author is grateful to Woodward and Woodward for making their unpublished valuation data available.

62. Later on, there was an incentive for debtors to accelerate bankruptcy filings if they lived in non-opt-out states, in order to file before the 1984 bankruptcy amendments which reduced the uniform federal exemption. See Table 2 infra p. 32.

63. There was also a small number of personal bankruptcy filings under Chapter 11 each year. Since Chapter 11 is primarily intended for business bankrupts, these cases are included in the total number of filings, but are not otherwise discussed.
and surprising that the number of bankruptcy filings rose from 1984 to 1985, despite the 1984 amendments to the Bankruptcy Code which made filing under both Chapter 7 and 13 less attractive to debtors. Also, note that during the past few years, the proportion of personal bankruptcy cases filed under Chapter 13 has always been around 30%.

Table 264
NUMBER OF PERSONAL (NON-BUSINESS) BANKRUPTCY ESTATE AND PETITION FILINGS, 1980-1985
(By Chapter of the Bankruptcy Code)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Filings</th>
<th>Chap. 7 Filings</th>
<th>Chap. 13 Filings</th>
<th>Percent Chap. 13</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980(E)</td>
<td>411,043</td>
<td>303,736</td>
<td>106,693</td>
<td>.26</td>
</tr>
<tr>
<td>1981(E)</td>
<td>456,894</td>
<td>326,276</td>
<td>129,053</td>
<td>.28</td>
</tr>
<tr>
<td>1982(E)</td>
<td>449,829</td>
<td>306,574</td>
<td>140,082</td>
<td>.31</td>
</tr>
<tr>
<td>1983(E)</td>
<td>415,030</td>
<td>284,571</td>
<td>125,544</td>
<td>.30</td>
</tr>
<tr>
<td>1984(E)</td>
<td>296,122</td>
<td>201,819</td>
<td>91,283</td>
<td>.31</td>
</tr>
<tr>
<td>1985(E)</td>
<td>341,189</td>
<td>237,610</td>
<td>100,603</td>
<td>.29</td>
</tr>
</tbody>
</table>

In order to investigate the characteristics of personal bankruptcy cases further, a computerized data set constructed by the A.O.C. was used. It includes information from both the filing and the closing of a large number of bank-

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bankruptcy cases. The data file contains 75,000 cases, of which around 67,000 were personal bankruptcies. All cases in the file closed during the period July through September of 1982. Cases were filed over a longer period which ranged from the time the Bankruptcy Code first went into effect in October, 1979 through June, 1982. In order to concentrate on personal bankruptcies, all business cases were deleted from the file. This left a sample equal in number to around 22% of personal bankruptcy cases filed in each of the recent years in the United States. In the data set, joint filings by husband and wife are counted as single cases.

Information given in the file for each case includes date and Chapter of filing and closing, name of the person(s) filing, whether the filing was joint, district and county of residence, number of creditors, dollar value of priority, secured and unsecured claims, total value of assets of the person filing before the bankruptcy exemption, whether a discharge or dismissal was issued, how much (if anything) was paid to priority secured and unsecured creditors, and the amount of various types of administrative costs incurred. Priority claims in personal bankruptcy cases consist mainly of taxes owed to local, state, or federal governments. Administrative costs, which are also priority claims, include payments to the trustee, lawyers hired by the trustee, appraisers, auctioneers, and others. The bankruptcy court filing fee, which must be paid by all debtors filing for bankruptcy, is not included in these figures. It should be noted that the level of liabilities in each category, and the value of assets, are as listed by the debtor and are not in most cases checked by anyone else.65

Table 3 below summarizes the characteristics of personal bankruptcy cases in the data set at the time of their bankruptcy filing. Separate breakdowns are also given for cases which were filed and closed in Chapter 7, filed and closed in Chapter 13, and filed in Chapter 13 but closed in Chapter 7. In the latter, no wage earner plan was approved by the Bankruptcy Court, so the filing was shifted from Chapter 13 to Chapter 7. About 85% of all cases were filed under Chapter 7, with the rest filed under Chapter 13.66 Comparing Tables 2 and 3, the percentage of personal bankruptcy cases originally filed under Chapter 7 which closed in 1982, 83%, is higher than the proportion of all bankruptcy cases filed in 1980 to 1982 under Chapter 7. The latter ranges from 76% in 1980 to around 70% in 1982. This difference suggests that Chapter 13 cases are likely to go on for longer than Chapter 7 cases before eventually closing, or that Chapter 13 cases are more likely than Chapter 7 cases never to be closed at all, or a combination of both effects.

65. See generally Statistical Analysis and Reports Division, A.O.C., Statistical Codes for Bankruptcy Reports (undated).
66. There were also a few cases filed under Chapter 11.
### Table 3
**CHARACTERISTICS OF PERSONAL BANKRUPTCY CASES AT FILING**  
(By Chapter of the Bankruptcy Code)

<table>
<thead>
<tr>
<th></th>
<th>All Cases</th>
<th>Chap. 7 Cases</th>
<th>Chap. 13 Cases</th>
<th>Filed Chap. 13, Closed Chap. 7</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Secured Liabilities:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avg. Value</td>
<td>$15,000</td>
<td>$15,400</td>
<td>$12,100</td>
<td>$12,800</td>
</tr>
<tr>
<td>Percent nonzero</td>
<td>71%</td>
<td>71%</td>
<td>69%</td>
<td>70%</td>
</tr>
<tr>
<td><strong>Priority Liabilities:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avg. Value</td>
<td>$632</td>
<td>$667</td>
<td>$359</td>
<td>$294</td>
</tr>
<tr>
<td>Percent nonzero</td>
<td>18%</td>
<td>20%</td>
<td>12%</td>
<td>11%</td>
</tr>
<tr>
<td><strong>Unsecured Liabilities:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avg. value</td>
<td>$18,300</td>
<td>$20,900</td>
<td>$5,200</td>
<td>$7,500</td>
</tr>
<tr>
<td>Percent nonzero</td>
<td>92%</td>
<td>95%</td>
<td>74%</td>
<td>80%</td>
</tr>
<tr>
<td><strong>Total Liabilities:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avg. value</td>
<td>$33,900</td>
<td>$36,900</td>
<td>$17,600</td>
<td>$20,600</td>
</tr>
<tr>
<td><strong>Total Liabilities Per Creditor:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avg. value</td>
<td>$2,600</td>
<td>$2,600</td>
<td>$1,800</td>
<td>$1,900</td>
</tr>
<tr>
<td><strong>Assets:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avg. value</td>
<td>$15,000</td>
<td>$14,500</td>
<td>$15,700</td>
<td>$15,500</td>
</tr>
<tr>
<td>Percent nonzero</td>
<td>89%</td>
<td>94%</td>
<td>65%</td>
<td>75%</td>
</tr>
<tr>
<td><strong>Joint filing:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>43%</td>
<td>43%</td>
<td>37%</td>
<td>50%</td>
</tr>
<tr>
<td><strong>Number of creditors:</strong></td>
<td>13</td>
<td>14</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td><strong>Number of cases:</strong></td>
<td>66,800</td>
<td>55,000</td>
<td>9,500</td>
<td>1,930</td>
</tr>
</tbody>
</table>

In fact, the group of cases in the data set which both filed and closed in Chapter 13 took sixteen months on average from filing to termination, compared to the group of cases filed and closed in Chapter 7 which took nine months on average. But the actual difference in duration of cases across Chapters is likely to be more extreme than the seven months reflected in the sample. Both types of cases had to have closed during the period July
through September, 1982 in order to be included in the data set. Any Chapter 13 cases filed under the Code which were still pending after September, 1982 would not be included. But the cases excluded by this criteria are likely to be the ones which, when and if they finally terminate probably would have the longest duration. Therefore, the group of Chapter 13 cases included in the data set is likely to have a shorter average duration than that of all Chapter 13 cases.

This possibility is interesting since debtors filing under Chapter 13 have no particular incentive to speed their cases toward closing or even to want the closing to occur at all. The bankruptcy filing itself stays creditors' attempts to force repayment by debtors. Debtors are not obliged to give up any assets as long as the case remains pending in Chapter 13. However, once a Chapter 13 repayment plan is approved by the court, debtors must begin repayment of whatever amounts have been promised. Therefore, they themselves have no reason to want to speed up the bankruptcy process. Further, in a typical personal bankruptcy case, no individual creditor has a large enough interest in the case, in terms of the expected amount of repayment, to justify incurring expenses so as to speed it along. In contrast, in Chapter 7 cases, debtors themselves often have an interest in the case closing quickly. Little or nothing in terms of assets must be given up, while closing the case results in a discharge from debts being issued to the debtor. Thus, it should not be surprising to find that a larger fraction of cases are filed under Chapter 13 than are both filed and quickly closed under Chapter 13. Many cases under this Chapter probably are filed but never closed, and thus remain pending indefinitely, with no party having a sufficient interest to insure that they are finally concluded.

At the time of the bankruptcy filing, debtors must list their assets and liabilities. Since many debtors indicate that they have zero assets or zero liabilities in some category, Table 3 gives both the average value of assets or liabilities in each category, and below each figure, it lists the percent of cases in which a positive value was reported. For example, the average value of assets as listed by debtors in all personal bankruptcy cases was $15,000. But in only 89% of all cases was a positive figure given for the value of assets. This means that the average value of assets for the subset of cases in which a positive value was given was $15,000/.89 = $16,900.

Table 3 indicates that the average value of assets listed by debtors at the time of the bankruptcy filing was similar for filings under both Chapters 7 and 13.67 However, a higher proportion of debtors filing under Chapter 13 than under Chapter 7 indicated that they had no assets at all. The figures

67. See columns 2 and 3 of Table 3.
are 35% versus 6%, respectively. This suggests that debtors having no assets prefer to take advantage of the broader discharge and lower stigma of Chapter 13, rather than to file under Chapter 7. This finding is not surprising in light of the discussion in section 1C, where debtors were shown to be indifferent between filing under Chapters 7 and 13 when zero or token repayment plans were likely to be approved. On the liabilities side, debtors filing under Chapter 13 had a much lower level of total liabilities than debtors filing under Chapter 7, $17,600 versus $36,900, respectively. Not surprisingly, debtors having a lower level of total liabilities are more likely to be willing to give up some of their future income to pay off part of their debts.

Debtors filing under Chapter 13 were conspicuously different from those filing under Chapter 7 in that those filing under Chapter 13 had a much larger proportion of their liabilities in secured form. The proportion of liabilities which are secured is 42% for debtors filing under Chapter 7, 68% for debtors filing under Chapter 13, and 62% for debtors filing under Chapter 13 and closing in Chapter 7. Thus, debtors appear more likely to file for bankruptcy under Chapter 13 if they have assets subject to secured liens, such as purchase money mortgages, which would not be discharged under Chapter 7. This is not surprising, since the discussion in section IC showed that debtors had an incentive to file under Chapter 13 if they had assets subject to secured creditors' liens. Filing under Chapter 13 allows debtors to retain the assets but to bargain with creditors to reduce the amount owed to the assets' current market value.

Table 3 also shows that the average debtor had thirteen creditors. This implies that the average individual claim, regardless of type, was $2,600. In 43% of the cases, the bankruptcy filing was joint, that is, by a husband and wife together. These figures are fairly similar regardless of which Chapter was used.

Since we know the proportion of Chapter 7 bankruptcy cases filed jointly (.43), the Woodward and Woodward estimate of the value of the pre-1984 uniform federal bankruptcy exemption ($14,500) can be used to compute an average exemption value for cases in the sample weighted by the probability of filing jointly.68 Under the uniform federal exemption, cases filing jointly received a double exemption valued at $29,000.69 For cases filed under Chapter 7, the weighted federal exemption value is $14,500 (1 - .43) + $29,000 (.43) = $20,700. Using the data given in Table 3, the average value

68. Woodward & Woodward, supra note 29.
69. Actually, the value of the exemption may be less than double depending on the composition of assets owned by the couple. For example, if the couple owns only one car, then they can only exempt $1200 in interest in a motor vehicle, not $2400. See 11 U.S.C. § 522(d)(2) (1982 & Supp. II 1984). However, for simplicity, the author assumes here that it doubles.
of assets owned by debtors filing under Chapter 7 who indicated that they had non-zero assets is $14,500/.94 = $15,400. Thus, the average exemption figure exceeds the average value of assets of persons filing under Chapter 7 by about 34%. The average married debtor in the data set who files a joint petition under Chapter 7 therefore has zero excess assets and would not be liable for any payment to creditors, assuming he resides in a non-opt-out state. In actuality, many debtors live in states which have opted-out and adopted their own exemption levels. But while state exemption levels are generally lower than the uniform federal exemption for non-homeowners, a number of state exemptions treat homeowners more generously than the federal exemption does. Thus, the calculation could either over-estimate or under-estimate the number of debtors having no non-exempt assets.\footnote{Over half of the states had opted-out by the end of 1981. See Table A1 \textit{infra} p. 52-53. Of those which opted-out by the end of 1981, seven provide a "homestead" exemption of $10,000 or more in addition to their other exemptions in bankruptcy, according to the data collected by Woodward and Woodward.}

Carrying the analysis a step further, the standard deviation of the distribution of asset values for debtors filing under Chapter 7 was also examined, in order to determine what proportion of debtors had assets exceeding the weighted exemption figure of $20,700. If one assumes that the distribution of asset values is normal, then in approximately 17\% of the cases, the debtor will have assets greater in value than the mean asset value of $14,500 plus the standard deviation of the distribution of asset values. The standard deviation figure for assets is $61,000. This means that a sizeable minority of debtors, well over 17\%, filing for bankruptcy under Chapter 7 have excess assets.\footnote{The assumption of normality for the distribution of assets cannot be accurate overall since the distribution of asset values is truncated at zero, but is likely to be reasonable for the upper end of the distribution, which is what we are examining.} This makes it somewhat surprising how few creditors actually received any payment on their claims.\footnote{For data on the number of creditors receiving payment from debtors who filed bankruptcy, see Table 4 below, and \textit{infra} notes 74-79 and accompanying text.} However, the asset value data are provided by debtors themselves and obviously may be exaggerated.\footnote{The data on the value of debtors' assets includes the value of those assets subject to secured creditors' liens. Thus, a debtor might appear to have assets greater in value than the federal exemption, but still might not pay anything to unsecured creditors.}

Table 4 below gives data concerning the characteristics of bankruptcy cases and payments to creditors at the time the case was terminated for the same sample of cases. It should be noted that the payments to secured creditors are understated, since secured creditors often receive their return by repossessing an asset which is subject to a lien. The figures in Table 4 include only actual payments to secured creditors.\footnote{Payments to secured creditors occur because the property subject to the lien has market value greater than the secured creditor's claim. Then the bankruptcy trustee sells the property}
Table 4
CHARACTERISTICS OF PERSONAL BANKRUPTCY CASES AT CLOSING
(By Chapter of the Bankruptcy Code)

<table>
<thead>
<tr>
<th></th>
<th>All Cases</th>
<th>Chap. 7 Cases</th>
<th>Chap. 13 Cases</th>
<th>Filed Chap. 13, Cases Closed Chap. 7</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Secured Creditors:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avg. amt. paid</td>
<td>$122</td>
<td>$42</td>
<td>$529</td>
<td>$273</td>
</tr>
<tr>
<td>Percent nonzero</td>
<td>6.0%</td>
<td>0.3%</td>
<td>38.0%</td>
<td>19.0%</td>
</tr>
<tr>
<td>Avg. payoff rate</td>
<td>0.8%</td>
<td>0.3%</td>
<td>4.4%</td>
<td>2.1%</td>
</tr>
<tr>
<td><strong>Priority Creditors:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avg. amt. paid</td>
<td>$6</td>
<td>$3</td>
<td>$22</td>
<td>$11</td>
</tr>
<tr>
<td>Percent nonzero</td>
<td>1.0%</td>
<td>0.3%</td>
<td>4.0%</td>
<td>2.4%</td>
</tr>
<tr>
<td>Avg. payoff rate</td>
<td>1.0%</td>
<td>0.5%</td>
<td>6.1%</td>
<td>3.7%</td>
</tr>
<tr>
<td><strong>Unsecured Creditors:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avg. amt. paid</td>
<td>$68</td>
<td>$23</td>
<td>$317</td>
<td>$138</td>
</tr>
<tr>
<td>Percent nonzero</td>
<td>6.0%</td>
<td>3.0%</td>
<td>29.0%</td>
<td>16.0%</td>
</tr>
<tr>
<td>Avg. payoff rate</td>
<td>0.4%</td>
<td>0.1%</td>
<td>6.1%</td>
<td>1.8%</td>
</tr>
<tr>
<td><strong>Administrative Costs:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avg. amt. paid</td>
<td>$56</td>
<td>$22</td>
<td>$233</td>
<td>$129</td>
</tr>
<tr>
<td>Percent nonzero</td>
<td>13.0%</td>
<td>5.0%</td>
<td>56.0%</td>
<td>28.0%</td>
</tr>
<tr>
<td><strong>Months in Bankruptcy:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>9</td>
<td>16</td>
<td>18</td>
</tr>
<tr>
<td><strong>Number of Cases:</strong></td>
<td>66,800</td>
<td>55,000</td>
<td>9,500</td>
<td>1,930</td>
</tr>
</tbody>
</table>

Table 4 shows that the proportion of cases in which creditors received some payment, regardless of the amount, differs widely by the type of claim and by the Chapter of filing. For example, creditors in Chapter 7 cases received some payment in only .3% of the cases in which they held priority claims, and in 3% of the cases in which they held unsecured claims. The fact that a higher proportion of unsecured than priority creditors received payments seems surprising, since the priority rule in Chapter 7 cases specifies and pays the secured creditor with part of the proceeds. If, instead, the secured creditor’s claim is greater than the asset’s market value, then the property is transferred to the secured creditor directly and no payment is reflected in the bankruptcy court records.
that priority claims must be paid in full before creditors holding unsecured claims are paid anything at all. However, those cases in which unsecured creditors received payments might have been cases in which there were no priority claims. The average payment to all creditors in Chapter 7 cases, including those that received nothing, amounted to .5% of priority claims and .11% of unsecured claims.75

Turning to Chapter 13 cases, creditors received some payment in a much larger fraction of cases, but still well below 100%. Secured creditors received some payment in 38% of the cases, priority creditors in 4% of the cases and unsecured creditors in 29% of the cases. The average payment to all secured creditors in Chapter 13 cases amounted to 4.4% of claims.76 The figures for repayment of priority and unsecured claims are both 6%. Thus, while creditors did better in Chapter 13 cases, they still received very little on average. This result is not surprising since debtors would be likely to choose a Chapter 7 proceeding if they were obligated to pay creditors much more under Chapter 13 than under Chapter 7.

Another way to look at payoff rates in personal bankruptcy cases is to examine what creditors received contingent on their receiving some positive return. For those secured creditors in Chapter 7 cases that did receive some payment, the average amount paid was $14,00077 and the average claim was $21,700.78 Thus, the average payoff rate for secured creditors receiving payment was 65%.79 The average payoff rates for priority and unsecured creditors, calculated by the same method, were 30% and 3.5%, respectively. For those creditors in Chapter 13 cases that did receive a positive return, the average payoff rate was 7.9% for secured creditors, 17% for priority creditors, and 16% for unsecured creditors. Thus, for those creditors that receive a positive return on their claims, Chapter 7 is relatively more favorable for secured and priority creditors, and Chapter 13 is relatively more favorable for unsecured creditors.

Thus, in a large sample of personal bankruptcy cases, there is a high probability of creditors not receiving any payments at all, as well as a high probability of extremely low average payoff rates even when a positive payment is made, except for secured creditors in Chapter 7 cases. Also, the

75. It is interesting to compare the payoff rate figures discussed here for unsecured creditors to those for a sample of corporations that filed for bankruptcy under Chapter 7 of the new Code. Corporations that liquidate under Chapter 7 have no exemption. In a sample of seventy-three corporations that filed for bankruptcy under Chapter 7 in the bankruptcy court of the Southern District of New York, the author did not find any instance of a payment being made to unsecured creditors. See White, Bankruptcy Liquidation and Reorganization, in HANDBOOK Mod. Fin. 35-1 (D. Logue ed. 1984).
76. $529/$12,100 = 4.4%.
77. $42/.003 = $14,000.
78. $15,400/.71 = $21,700.
79. $14,000/$21,700 = 65%.
average size of claims is small. Taking all these factors together, individual creditors appear to have relatively little incentive to devote time and resources to individual bankruptcy cases. Every creditor possessing a small claim has an incentive to "free ride," but in most cases no creditor has a large enough claim to pursue the case actively. Thus, it is not surprising that personal bankruptcy cases take a long time from filing to termination, that they sometimes do not close at all, and that they yield very little to creditors.

IV. AN EMPIRICAL MODEL OF THE BANKRUPTCY FILING RATE

In this section, an econometric model of the bankruptcy filing rate across counties in the United States is estimated, using data for 1981. The model has several purposes. First, it is intended to examine how well bankruptcy filing rates can be explained using measurable economic and socio-demographic variables. Such a model is useful because it enables predictions to be made concerning how the pattern of bankruptcy filings might change in the future and how specific changes that might be made in the future will affect bankruptcy filings. These changes could be the result of either intentional policy reforms, such as a change in the federal bankruptcy exemption level, or changes which are not the result of policy reforms, or changes which are unintentional effects of policy shifts, such as future changes in the unemployment rate or the divorce rate.

The model also is intended to address the debate concerning how responsive personal bankruptcy filing rates are to general economic conditions versus how responsive they are to the adoption of the new Bankruptcy Code, with its more favorable exemption provisions for debtors in personal bankruptcy cases. The large increase in the personal bankruptcy filing rate which followed the adoption of the new Code led to speculation that the high federal exemption in bankruptcy, adopted as part of the Code, was responsible for the rise. However, the Code went into effect at the start of a long and deep recession in the economy, which also would be expected to raise personal bankruptcy filing rates. Previous attempts to sort out the relative importance of the Code versus the recession in explaining the increase in bankruptcy filings have been hampered by inadequate understanding of what specific aspects of the Code might have affected bankruptcy filing rates.80

80. Lawrence Shepard, for example, did a time series regression analysis using aggregate yearly bankruptcy filing rates to predict whether economic conditions could explain the increase in the bankruptcy filing rate which occurred at the time the new Code was adopted. He found that the recession could not explain an increase in the number of personal bankruptcy filings as large as occurred after 1979. But he did not attempt to explore what provision of the Code explained the pattern of increased bankruptcy filings, nor did he examine the effect of non-economic factors, except for race, on the bankruptcy filing rate. Also with only one data point per year, he had only thirty observations in total. This sample is too small to allow conclusions
To address these issues, the A.O.C. computerized data set discussed in the previous section is used again to construct aggregate figures concerning the number of bankruptcy filings by county for all counties in the United States. This was done simply by adding up the number of personal bankruptcy filings in each county, in total and separately by Chapter, for the period January through December, 1981. Then, the bankruptcy data were matched to a separate data set giving information on the population and other characteristics of each county in 1980.81

Data on bankruptcy filing rates for the year 1981 were used because the other county data were available only for 1980. It is assumed that economic factors have their effect with a time lag. An increase in the local rate of unemployment, the variable used to proxy the strength or weakness of the local economy, would probably increase the number of bankruptcy filings in the area, but only some months later when workers would have used up some of their savings and their eligibility for unemployment compensation. This made it logical to combine 1981 filing data with economic data from one year earlier.

The variable to be explained by the model is the number of bankruptcy filings per thousand population, in total and by Chapter. The model hypothesizes that personal bankruptcy filings are responsive to a set of economic and socio-demographic variables. The estimated coefficient of each variable indicates how responsive the personal bankruptcy filing rate is to changes in the level of that variable. The t-statistic of each variable indicates whether bankruptcy filings are related to that variable at the 95% level of statistical significance. Thus, the coefficient of the unemployment variable indicates how many additional personal bankruptcies are predicted by the model to occur when the local unemployment rate rises or falls by one percentage point, but the values of other variables remain the same.

In addition to the unemployment rate, the other economic variable which is hypothesized to play a major role in personal bankruptcy decisions is the exemption level. The Bankruptcy Code provided for a new uniform exemption which was intended to replace the separate state exemption provisions prevailing before 1978. Since the uniform federal exemption was more gen-

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81. The additional data are taken from the computer tape version of U.S. BUREAU OF THE CENSUS, CITY AND COUNTY DATA BOOK (United States) (1983) (available through the Inter-University Consortium for Political and Social Research).
erous than the previous state exemptions in almost all states, it would be expected to make bankruptcy more attractive, since debtors could shelter more assets through the bankruptcy process. However, the Code allowed states to opt-out of the federal bankruptcy exemption by adopting their own bankruptcy exemption levels, and many states did so within a few years after the Code went into effect. The exemption levels adopted by the various states range from exempting very little to being much more generous than the federal exemption. This means that the incentive for an individual debtor to file for bankruptcy in 1981 depended on whether the relevant state had opted-out of the federal bankruptcy exemption and, if so, on how generous was the state's exemption. As noted above, debtors in states that were expected to opt-out had an incentive to file for bankruptcy quickly in the period just after the new Code went into effect, if the state was likely to opt-out in the near future and adopt a smaller exemption than the federal exemption. In addition, higher exemption levels in general are hypothesized to make filing for bankruptcy more appealing to debtors.

In order to capture the effect of the bankruptcy exemption level, valuation data constructed by Woodward and Woodward were used. They calculated a dollar value for the bankruptcy exemption in each state, as well as for the uniform federal exemption. Many states have a separate “homestead” exemption in addition to their other exemptions, which is available only to homeowners. However, the homestead exemption was not included in the exemption value variable used in the analysis, since few persons filing for bankruptcy are homeowners. Several states in the sample opted-out during 1981. The exemption level used for these states is a weighted average of the federal exemption and the state exemption adopted after opt-out, with the weights being the number of months during the period that each exemption level was in effect. Finally, counties in ten states are omitted from the analysis because their bankruptcy exemption provisions differed depending on whether the person filing for bankruptcy was a head of household and

82. Supra note 29.
83. Most states provide separate exemptions for a variety of categories of personal property, such as for clothing, books and bibles, household furnishings, “tools of the trade,” farm animals, and sometimes for an automobile. Usually each separate exemption is subject to a maximum dollar limit. Woodward and Woodward adjusted the valuation of the least frequently used exemption items to take account of the low probability of a typical debtor using them. The author is grateful to Woodward and Woodward for making their unpublished data available for use in this Article.
84. As of 1981, the federal exemption of $7,500 for homeowners' equity provided that the same amount could be used by renters to exempt other assets. State exemptions, however, do not allow renters to use the homeowners' exemption.
85. In a few cases, Woodward and Woodward did not value the state exemption levels prevailing after opt-out. The author constructed the valuations used in these cases following their method as closely as possible.
were therefore difficult to value. Valuation figures are given in Table A1 at the end of this Article.

It should be noted that the exemption variable captures only debtors' incentives vis-a-vis the exemption levels within a particular state. It does not capture the incentive of a debtor to move to a state having a more generous exemption level before filing for bankruptcy. The latter is ignored here, on the presumption that few debtors have the resources to move prior to filing for bankruptcy.

Other factors which are thought to affect the bankruptcy filing rates by county are the divorce rate in the county, the proportion of households in the county which own their own homes, and the average income level. Divorces are thought to make bankruptcy more likely, both because of the financial disruption involved and the greater expense of maintaining two households rather than one. Homeowning is usually thought to reduce the likelihood of bankruptcy, since bankruptcy can lead to loss of the house and the owners' equity, depending on the level of the state exemption. In addition, homeowning is correlated generally to wealth.

Also included as explanatory variables are the proportion of the county's population which is old, the proportion which is Black and the proportion which is Spanish. Each of these variables tests whether members of these groups are more likely to file for bankruptcy, holding other factors constant, than are members of the population at large. Also included is a variable measuring the proportion of the county's land used for farming, to test whether the presence of more farmers in the county increases the bankruptcy filing rate.

Finally, it might be asked why no interest rate variable was included in the model. There are two answers. The first is that since all of the debtors in the sample filed for bankruptcy over a short period of time, and since interest rates are virtually uniform all over the country at any one point in time, all debtors faced the same interest rates. Therefore, it is impossible empirically to separate out the effects of higher interest rates from the effects of other factors. The second answer is that the theoretical model discussed above suggests that the level of interest rates does not affect the bankruptcy

86. For example, Texas has a homestead exemption for owner-occupied housing that is not subject to any limitation on maximum value (although there is an acreage limitation). Tex. [Prop.] Code Ann. §§ 41.001 to .002 (Vernon 1984).
87. Strictly speaking, economic theory provides no clear prediction concerning whether households borrow more or less when their income levels rise. This is because the substitution effect and the income effect pull in opposite directions. However, the standard theory does not allow for default or bankruptcy.
88. The importance of several of these variables was suggested by the work of Philip Shuchman, who interviewed and gathered data concerning a sample of persons who filed for bankruptcy. See Shuchman, The Average Bankrupt: A Description and Analysis of 753 Personal Bankruptcy Filings in Nine States, 88 Com. L.J. 288 (1983).
decision at all. Only the maximum amount that can be borrowed matters.

Table 5 shows means and standard deviations for all variables discussed above.

Table 5
VARIABLE MEANS AND STANDARD DEVIATIONS

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 7 Filings/ Thousand Pop.</td>
<td>.122</td>
<td>.129</td>
</tr>
<tr>
<td>Chapter 13 Filings/ Thousand Pop.</td>
<td>.0202</td>
<td>.0414</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>.0702</td>
<td>.0286</td>
</tr>
<tr>
<td>Exemption level (000$)</td>
<td>9.61</td>
<td>4.58</td>
</tr>
<tr>
<td>Divorces/Thousand Pop.</td>
<td>.00500</td>
<td>.00215</td>
</tr>
<tr>
<td>Income (000$)</td>
<td>8.73</td>
<td>1.89</td>
</tr>
<tr>
<td>% Farmland</td>
<td>.498</td>
<td>.290</td>
</tr>
<tr>
<td>% Black</td>
<td>.103</td>
<td>.146</td>
</tr>
<tr>
<td>% Spanish</td>
<td>.0263</td>
<td>.0630</td>
</tr>
<tr>
<td>% Homeowners</td>
<td>.724</td>
<td>.0835</td>
</tr>
<tr>
<td>% Elderly</td>
<td>.123</td>
<td>.0364</td>
</tr>
</tbody>
</table>

The results of estimating linear models of Chapter 7 and Chapter 13 bankruptcy filing rates, using ordinary least squares, are shown in Table 6 below.89

In the first two columns of Table 6, the variable being explained is the number of personal bankruptcy filings per thousand people under Chapter 7; in the second two columns, the variable being explained is the number of filings per thousand under Chapter 13. A single asterisk (*) indicates that the explanatory variable is related to the level of bankruptcy filings per thousand population at the 95% level of statistical significance. Double asterisks (**) indicate that the explanatory variable is related to the level of bankruptcy filings at the 90% level of statistical significance, a weaker test.90

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89. Because the explanatory variables are the same in both equations, using ordinary least squares leads to the same results as would be obtained if an estimation method which took account of the correlated error terms across the two equations were used. See R. Pindyck & D. Rubinfeld, ECONOMETRIC MODELS & ECONOMIC FORECASTS 331-34 (1981).

The first column of results for each Chapter, labeled coefficients, gives the change in the number of bankruptcy filings under the relevant Chapter per thousand population resulting from a unit change in the relevant explanatory variable. The second column of results for each Chapter, labeled elasticities, gives the percent change in the number of bankruptcy filings under the relevant Chapter resulting from a 1% change in the relevant explanatory variable. Generally, elasticities are listed only for variables that are statistically significant.

Table 6
RESULTS OF REGRESSIONS EXPLAINING NUMBER OF PERSONAL BANKRUPTCY FILINGS
(By Chapter of the Bankruptcy Code)

<table>
<thead>
<tr>
<th>Chapter 7</th>
<th>Chapter 13</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coeff.</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>.77*</td>
</tr>
<tr>
<td>Exemption level (000$)</td>
<td>.0060*</td>
</tr>
<tr>
<td>Divorce rate</td>
<td>7.8*</td>
</tr>
<tr>
<td>Income (000$)</td>
<td>.0049*</td>
</tr>
<tr>
<td>% Farmland</td>
<td>.066*</td>
</tr>
<tr>
<td>% Black</td>
<td>-.041</td>
</tr>
<tr>
<td>% Spanish</td>
<td>-.15*</td>
</tr>
<tr>
<td>% Homeowners</td>
<td>.074</td>
</tr>
<tr>
<td>% Elderly</td>
<td>-.056</td>
</tr>
<tr>
<td>Intercept</td>
<td>-.14</td>
</tr>
<tr>
<td>Number of obs.</td>
<td>1470</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.10</td>
</tr>
</tbody>
</table>

Note first that both the unemployment rate and the exemption level variables are statistically significant in explaining the level of Chapter 7 personal bankruptcy filings. Also, both variables have the expected positive signs: an increase in either the county unemployment rate or the bankruptcy exemption level is associated with an increase in the rate of personal bankruptcy filings.

91. Elasticities are convenient for making comparisons across variables because they are unitless.
under Chapter 7. Examining the column of results in the form of elasticities, a 1% increase in the county unemployment rate implies an increase in the bankruptcy filing rate of .44%, or around one-half of one percent, while a 1% increase in the state bankruptcy exemption level implies an increase in the bankruptcy filing rate of .47%. Thus, the two effects appear to be of about the same importance quantitatively.

An alternate way to put the two effects into perspective is to consider how many extra Chapter 7 bankruptcy filings the model predicts would occur if the unemployment rate were to rise by one percentage point all over the country, from an average rate of 7% to 8%, versus if the exemption level were to rise by $1,450 all over the country, from an average rate of $4,100 to $5,550, in each case assuming that nothing else changes. These two changes represent about equal percentage increases, approximately 15%, in both the unemployment rate and the exemption level. The model predicts that the increase in the unemployment rate would result in 1,700 extra Chapter 7 personal bankruptcy filings nationally.\(^9\) By the same procedure, the increase in the exemption level would result in 1,900 extra Chapter 7 filings nationally.\(^9\) Thus, the model suggests that both economic conditions and the exemption level are of similar importance in determining the number of Chapter 7 bankruptcy filings. While both are statistically significant, neither effect is strikingly important quantitatively.

Another way of illustrating the unemployment effect is to examine the effect on bankruptcy filing rates of the difference between the unemployment rate in a very severe recession versus the unemployment rate in very prosperous economic conditions. The range over which the unemployment rate varies over the course of a business cycle is usually in the range of four or five percentage points. Thus, the model predicts that variations in the unemployment rate over the cycle could account for around 6,800 to 8,500 Chapter 7 bankruptcy filings per year. Since the actual number of Chapter 7 personal bankruptcy filings in 1981 was 326,000, economic conditions appear to explain only a small part of the variation in the number of Chapter 7 bankruptcy filings.

Taking a similar approach, one can analyze the effect of an increase nationally in the average state exemption level. Suppose all of the opt-out states decided to opt back in and increase their exemption levels to that of the uniform federal exemption in 1981, or $14,500. The value of the average state exemption level as of 1981 for all states in the sample was $9,600. Therefore, if all opt-out states switched to the uniform federal exemption

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92. The calculation is \((.00077)(.01)(220,000,000)\), where the last figure is the total U.S. population.
93. The calculation is \((.00601)(1.45)(220,000,000)\), where the exemption level is measured in thousands of dollars.
level, the increase in the average exemption level nationally would be $4,900.\textsuperscript{94} Assuming that all other factors remained constant, the model predicts that this change would result in the number of Chapter 7 personal bankruptcy filings nationally increasing by 6,500 per year nationwide, or by about 2%.

Some of the other variables also have interesting effects. The divorce rate is statistically significant and is positively related to the number of Chapter 7 bankruptcy filings. While the divorce rate is not a policy variable, it is interesting to note that its elasticity (.32) is similar in magnitude to that of the unemployment and exemption level variables. The model predicts that for every 100 extra divorces, there will be one extra Chapter 7 bankruptcy filing, holding all other factors constant. Of the other variables, higher income has a positive and statistically significant effect on the rate of bankruptcy filings under Chapter 7. Its elasticity is .35. As indicated above, the positive sign on the income variable should not be surprising, since higher income households have greater access to credit, which the theory predicted would make default and filing for bankruptcy more attractive. Also, the more farms in an area, the higher the rate of bankruptcy filings under Chapter 7. A 10% increase in the proportion of the county's land devoted to farms is associated with a 2.7% increase in the number of bankruptcy filings under Chapter 7.

Of the remaining variables, only the variable measuring the proportion of the population which is Spanish is statistically significant. Holding other factors constant, the higher the proportion of a county's population which is Spanish-speaking, the lower is the Chapter 7 bankruptcy filing rate. But having more Blacks in the population, more elderly, or more homeowners relative to renters, has no statistically significant effect on the Chapter 7 bankruptcy filing rate.\textsuperscript{95}

The last two columns in Table 6 give the results of using the same variables to explain Chapter 13 bankruptcy filing rates. It is interesting to note that many of the variables either have the opposite signs when explaining Chapter 13 bankruptcy filing rates as they had when explaining Chapter 7 filing rates, or are statistically significant in explaining bankruptcy filing rates under one Chapter but not under the other. This implies that conditions which have the effect of increasing the Chapter 7 filing rate may at the same time have the effect of lowering the Chapter 13 filing rate or may have no effect on Chapter 13 filings at all. For example, a rise in the county unemployment rate is predicted to increase the Chapter 7 filing rate, but to lower the Chapter 13 rate. More land devoted to farming in the county raises the Chapter 7 filing rate, but does not have a statistically significant

\textsuperscript{94} $14,500 - $9,600 = $4,900.$

\textsuperscript{95} However, since the Chapter 7 homeowners' exemption was not included in the exemption variable, the effect of having more homeowners in the population may not be accurately measured.
effect on the Chapter 13 filing rate. Counties with a greater proportion of homeowners are predicted to have higher Chapter 13 filing rates, but the Chapter 7 filing rates are unaffected. Higher average income in a county is associated with a higher Chapter 7 filing rate, but has no significant effect on the Chapter 13 filing rate. These differences in results suggest that different motivations are present when debtors file for bankruptcy under Chapter 13 versus when they file for bankruptcy under Chapter 7.

Turning to the individual variables, the unemployment rate is negatively related to the Chapter 13 bankruptcy filing rate; that is, counties with lower unemployment rates have more filings relative to population under Chapter 13. The unemployment elasticity (−.34) is similar in absolute size to its effect in the Chapter 7 equation. This result, combined with the unemployment effect in the Chapter 7 equation, suggests that the pattern of bankruptcy filings by Chapter varies over the business cycle. In recessions, the Chapter 7 bankruptcy filing rate rises and the Chapter 13 rate falls, while in prosperous periods, the opposite occurs. This result seems reasonable, since it implies that employed debtors, who are the only ones able to use Chapter 13, are more likely to file under Chapter 13 and unemployed debtors are more likely to file under Chapter 7.

The state exemption level variable is just short of statistical significance at the 95\% level. It is negatively related to the rate of Chapter 13 bankruptcy filings. Since a higher exemption level makes Chapter 7 relatively more attractive to debtors, the negative relationship with the Chapter 13 filing rate is as expected. The elasticity of the exemption level variable is −.21. The divorce rate is positively related to the level of Chapter 13 bankruptcy filings; the relationship is statistically significant and its elasticity (.37) is similar in magnitude to that found for Chapter 7. Thus, more divorces cause approximately equal proportionate increases in the number of bankruptcy filings under both Chapters.

The proportion of homeowners in the population is positively and significantly related to the Chapter 13 bankruptcy filing rate. The elasticity of the homeowning rate (1.3) is the largest of any variable in either equation. The positive effect of homeowning on the number of Chapter 13 filings is not surprising, since filing under Chapter 13 may allow homeowners in financial difficulty to keep their homes, when a Chapter 7 filing would cause a loss of the home if the level of the debtors' equity exceeded the state exemption. The results imply that homeowners are more likely than non-homeowners, in otherwise similar circumstances, to file for bankruptcy under Chapter 13.

Of the remaining variables, only the proportion of the population which is Black is statistically significant in explaining the number of Chapter 13 bankruptcy filings. A 10\% increase in the proportion of the population which is Black is predicted to increase the Chapter 13 filing rate by 4\%. 
It should be noted that the $R^2$ level given for each of the estimated models is .10 for the model of Chapter 7 bankruptcy filings and .093 for the model of Chapter 13 bankruptcy filings. This means that only around 10% of the variation in the number of bankruptcy filings per 1000 population has been explained by the variables tested, while the remaining 90% is due to factors not included in the model. While this amount of unexplained variation is normal for models of this type, the high level of unexplained variation suggests both the possibility that important variables may have been left out and the possibility that individual idiosyncratic factors are extremely important in determining the level of bankruptcy filings. The model suggests that economic factors are important in determining the level of personal bankruptcy filings, but that other, unmeasured variables may be even more important.

**Conclusion and Policy Recommendations**

Several conclusions emerge rather strongly from the analysis. First, the theoretical model of the decision whether to file for bankruptcy suggests that for many individuals, filing for bankruptcy made them better off than the alternative of repaying their loans. By filing for bankruptcy under Chapter 7, they are discharged from repaying their debts while avoiding giving up any assets. As of the early 1980's, individuals or couples had to own assets having a higher value than the average for all United States households before they became obliged to give up any assets in a bankruptcy filing under Chapter 7, assuming that the uniform federal exemption applied in their case. It also has been shown that filing for bankruptcy under Chapter 7 becomes more, rather than less, attractive when interest rates are lower. This is because individuals intending to default in the future always wish to borrow as much as possible, but lenders are willing to lend them more when rates are lower. The more that can be borrowed, the larger is the gain from borrowing as much as possible and then defaulting and filing for bankruptcy.

When Chapter 13 is introduced as a second bankruptcy alternative, debtors were shown, as of the early 1980's, to be indifferent between Chapter 7 and Chapter 13 if they anticipated that a zero or token repayment plan would be approved by the bankruptcy court. If debtors did not expect a token repayment plan to be approved, then they generally preferred to file under Chapter 7. However, debtors preferred to file under Chapter 13 if they had assets whose values exceeded the exemption level, or if one of the special features of Chapter 13 applied to them. Thus, Chapter 13, as of the early

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96. Generally, models using cross section data have lower $R^2$ levels than models using time series data. Also the $R^2$ falls as the number of observations in the data set rises and here we have a relatively large data set (1,470 observations).
1980's, was not effective in encouraging typical debtors to repay a more than token portion of their debts from future income, even for those debtors having regular incomes. Rather, most debtors would choose Chapter 13 only if they expected a token repayment plan to be approved. As a result, while many debtors actually chose to file for personal bankruptcy under Chapter 13, few debtors repaid more than a token proportion of their debts.

Debtors' choices between Chapters 7 and 13 were changed somewhat by the 1984 amendments to the Bankruptcy Code. These amendments made filing for bankruptcy under both Chapters less attractive for those debtors living in non-opt-out states or in states that opted-out and adopted lower exemptions than the uniform federal exemption. The 1984 amendments are ambiguous in their effect on debtors' incentives to choose Chapter 13 or Chapter 7, however, because the definition of "disposable income" adopted in 1984 is vague in defining how much income must go to repay debts for debtors having different income levels.

The third conclusion of the Article appears to be at odds with the other two. Despite the quite clear and unambiguous conclusions of the theoretical model for the period before the 1984 amendments, the importance of economic variables in an empirical model explaining the number of personal bankruptcy cases filed was found to be rather small. Using a multiple regression model applied to bankruptcy filing data from 1981, the results suggested that both an exemption level variable and an unemployment variable were related to the number of personal bankruptcy filings at normal levels of statistical significance. However, large changes in the levels of either of the two economic variables had only small effects on the number of personal bankruptcy filings. Hence, economic variables were not found to be of very great importance in explaining the number of personal bankruptcy filings.

What do these rather weak empirical results imply concerning the United States policy toward personal bankruptcy? At a basic level, the results suggest that many individuals do not act opportunistically in their own economic self-interest; that is, they avoid filing for bankruptcy even in situations where doing so would make them better off. This is fortunate from a policy standpoint, since if all individuals acted exclusively according to the utility maximization model, the number of personal bankruptcy cases being filed each year might be many times as high as it actually is. On the other hand, just because honesty, religious background, social pressure, or some other ethical value holds people back from filing for bankruptcy when they could gain from doing so does not negate the need for a bankruptcy policy which is sensible from an economic standpoint. If filing for personal bankruptcy is financially very attractive but ethically unappealing, then ethical values are likely to change over time to reduce the social approbrium connected to bankruptcy, causing a gradual upward trend in the number of personal bankruptcy filings to be likely. The 1984 amendments to the Bankruptcy
Code, which made filing for bankruptcy less rewarding to the opportunists among us, are likely to lessen this possibility.

Given the changes already made by the 1984 amendments to the Bankruptcy Code, two further policy prescriptions are suggested by the analysis. One would eliminate debtors' rights to choose between filing under Chapters 7 and 13. Instead, debtors having regular incomes would be obliged to file for bankruptcy under Chapter 13, regardless of which procedure made them better off, and only debtors without regular incomes would be allowed to file under Chapter 7. Such a change would not interfere with the "fresh start" objective for low income debtors, since they would have little or no "disposable income" in excess of their living expenses and thus would be obliged to pay little to creditors even under Chapter 13. Eliminating debtors' rights to choose between the Chapters would support the general policy goal of encouraging bankrupt debtors to repay their debts from future income according to their individual abilities to pay.

One attractive feature of eliminating debtors' choices between the bankruptcy Chapters is that if it were adopted, there would be less need to keep the bankruptcy exemption in Chapter 7 low. This is because high-earning debtors could not avoid repaying their debts by threatening to shift their bankruptcy filings to Chapter 7, since Chapter 7 would be reserved for those debtors without regular incomes. Thus, elimination of the choice provision could logically be paired with a second policy change, that of raising the Chapter 7 exemption level for debtors not having regular incomes. This second policy change would be sensible in that debtors not having regular incomes generally can get only limited credit. Therefore, raising the exemption for them would not result in strong incentives to engage in opportunistic behavior. Further, the change would be beneficial for those debtors who have higher than average levels of assets, but who file for bankruptcy because some adverse event occurred that caused their incomes to be cut off, such as a severe illness. Under the change, these debtors would file for bankruptcy under Chapter 7 and would benefit from a higher exemption with which to shelter their assets. Such a policy change would also move bankruptcy law further toward recognition of the economic reality that debtors' primary abilities to repay debts, if any, comes from future income, not from current asset ownership.

97. 11 U.S.C. § 1307(a). Such a change has been advocated by Theodore Eisenberg. See Eisenberg, supra note 7.
### Table A1
**PERSONAL BANKRUPTCY EXEMPTION VALUES FOR INDIVIDUAL STATES**

<table>
<thead>
<tr>
<th>State</th>
<th>Exemption</th>
<th>Opt-Out Date</th>
<th>Opt-Out Amount*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>$ 3,000</td>
<td>1980</td>
<td></td>
</tr>
<tr>
<td>Alaska</td>
<td>14,500</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Arizona</td>
<td>8,500</td>
<td>1980</td>
<td></td>
</tr>
<tr>
<td>Arkansas</td>
<td>8,800</td>
<td>July 1981</td>
<td>$ 3,000</td>
</tr>
<tr>
<td>California</td>
<td>14,500</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Colorado</td>
<td>10,000</td>
<td>July 1981</td>
<td>5,500</td>
</tr>
<tr>
<td>Connecticut</td>
<td>14,500</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Delaware</td>
<td>9,750</td>
<td>July 1981</td>
<td>5,000</td>
</tr>
<tr>
<td>Florida</td>
<td>1,000</td>
<td>1979</td>
<td></td>
</tr>
<tr>
<td>Georgia</td>
<td>6,000</td>
<td>1980</td>
<td></td>
</tr>
<tr>
<td>Hawaii</td>
<td>14,500</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Indiana</td>
<td>11,500</td>
<td>1980</td>
<td></td>
</tr>
<tr>
<td>Iowa</td>
<td>8,700</td>
<td>May</td>
<td>5,800</td>
</tr>
<tr>
<td>Kansas</td>
<td>9,500</td>
<td>1980</td>
<td></td>
</tr>
<tr>
<td>Kentucky</td>
<td>5,000</td>
<td>1980</td>
<td></td>
</tr>
<tr>
<td>Louisiana</td>
<td>3,000</td>
<td>1979</td>
<td></td>
</tr>
<tr>
<td>Maine</td>
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</tr>
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<td>July 1981</td>
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</tr>
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</tr>
<tr>
<td>Nebraska</td>
<td>1,500</td>
<td>1980</td>
<td></td>
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<tr>
<td>Nevada</td>
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<td>June 1981</td>
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<tr>
<td>North Carolina</td>
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</tr>
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<td>Ohio</td>
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</tr>
<tr>
<td>Pennsylvania</td>
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<td>Rhode Island</td>
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<tr>
<td>South Carolina</td>
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<td>May 1981</td>
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<tr>
<td>Tennessee</td>
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<td></td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>Vermont</td>
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</tr>
<tr>
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<td>1979</td>
<td></td>
</tr>
<tr>
<td>Washington</td>
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<td></td>
</tr>
<tr>
<td>West Virginia</td>
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<td>July 1981</td>
<td>11,500</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>14,500</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>
*If the state opted-out during 1981, then the exemption value used in the regression model is a weighted average of the uniform federal exemption, $14,500, and the value adopted by the state after opt-out, which is given after the opt-out date. The weights used are the number of months each exemption was in effect. If the state opted-out before 1981, then the exemption value used for the entire year is the value adopted by the state at the time of its opt-out. If the state did not opt-out or opted-out after 1981, then its opt-out date is listed as "none" and the uniform federal exemption is used in the regression model."