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Richard M. Hynes

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American bankruptcy law has offered a "fresh start" in every state for over one hundred years. As a result, econometric studies of consumer bankruptcy often focus on one of the few aspects of the law that has varied significantly across time and across states: exemptions. Professors Gropp, Scholz and White published the first article to test the effect of exemptions on credit markets. Consistent with theory, they found that residents of states with larger exemptions pay higher interest rates than those in states with lower exemptions and face an increased probability that they will be denied credit. These effects were most pronounced for poor households. This result is surprising because exemptions only allow a household to keep what it has. The difference between a $100,000 exemption and an exemption with no dollar limit should not matter if the household has little or no assets to exempt. This essay examines alternative explanations for why exemptions appear to have a disproportionate impact on the poor. Unfortunately, however, none of these alternative explanations proves entirely satisfactory.

INTRODUCTION

After decades of debate,[1] Congress recently enacted reforms that significantly

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1 Calls for means-testing date at least to the 1960s. *See, e.g.*, James Angell MacLachlan, *Puritanical Therapy for Wage Earners*, 68 Com. L.J. 87, 90 (1963) (bankruptcy law "demands renewed consideration in the light of mushrooming wage-earner bankruptcies and the dawning recognition that it is a worthy objective

limit the ability of some consumers to obtain debt relief in bankruptcy.[2] A prominent argument in this debate is that generous bankruptcy relief leads to higher interest rates and reduced access to credit. This claim is intuitively appealing. If bankruptcy leads to more losses, creditors should be less willing to lend. Because bankruptcy is federal law and has offered roughly the same protection for over one hundred years,[3] economists cannot easily measure bankruptcy's effect on credit markets or even prove the existence of this effect to those who doubt the validity of economic reasoning.

Economists can, however, measure the impact of one component of bankruptcy law: property exemptions. Since 1898, American bankruptcy law has allowed each state to effectively determine the exemptions that are available to its residents in bankruptcy,[4] and exemption regimes vary greatly from state to state. For example, a married couple can exempt $75,000 of home equity in California,[5] $20,000 in Georgia,[6] and in Florida they can exempt all of their home equity regardless of the amount.[7]

Though this variation appears extreme, it should not matter to a great many households. Like most forms of debt relief, exemptions only allow households to keep what they have, and many Americans borrow because they don't have assets. The difference between an exemption that allows a household to keep an unlimited amount of home equity and one that allows the household to keep "just" $75,000, or even $20,000, should have little or no effect on households without home equity or other substantial assets

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of the law to sustain the character of citizens rather than complacently collaborate in their demoralization").

2 Bankruptcy Abuse Prevention and Consumer Protection Act of 2005, Pub. L. No. 109-8, 119 Stat. 23 (2005).

3 To be sure, bankruptcy has undergone important changes over the last century. *See, e.g.*, David Skeel, Debt's Dominion: A History of Bankruptcy Law in America (2002). However, since 1898 the most used bankruptcy chapter (first Chapter VII then Chapter 7): (1) offered consumers a discharge of nearly all debts without (until 2005) *explicitly* considering the consumer's income or expenses, and (2) allowed each state to effectively determine what assets the debtor must forfeit in bankruptcy by allowing the state to determine the exemptions available to the debtor.

4 In 1902 the Supreme Court ruled that this variation in exemptions did not violate the Constitution's requirement of "uniform" bankruptcy laws. Hanover Nat'l Bank v. Moyses, 186 U.S. 181 (1902).

5 Cal. Civ. Proc. Code §§ 703.110(a), 704.730 (Deering 2006). California provides a homestead exemption of $150,000 for certain groups such as the elderly and the disabled. *Id.*

6 *See* Ga. Code Ann. § 44-13-100(a)(1) (2006) (providing a homestead exemption of $5,000).

7 Fla. Const. art. X, § 4(a)(1).

to exempt. Thus, very generous exemptions should have an uneven effect on households. Even if they affect the repayment behavior of households with substantial assets, they should have little or no effect on the poor. As a result, the exemptions should not affect the credit available to the poor unless the value of household assets changes markedly between the time of borrowing and the time of repayment.

Unfortunately, however, this is not what the empirical literature has found. Most studies make no attempt to differentiate the effect that exemptions have on the poor from the effect that they have on the wealthy, and those that do find results that are sharply inconsistent with expectations. In the earliest article to examine the impact of exemptions on credit markets, Professors Gropp, Scholz and White found that consumers who live in states with more generous exemptions pay higher interest rates and are more likely to be denied credit or discouraged from borrowing.[8] As the authors emphasize,[9] however, exemptions (even unlimited exemptions) seem to have the most striking effects on households with so little in assets that they could protect all of their wealth in nearly every state of their sample.[10] The general puzzle is not unique to this one study. Another study finds that homestead exemptions have a very pronounced effect on entrepreneurs who do not own a home.[11]

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8 Reint Gropp, John Karl Scholz & Michelle White, *Personal Bankruptcy and Credit Supply and Demand*, 112 Q.J. Econ. 217 (1997).

9 *Id.* at 234 ("Thus, it appears that the bankruptcy exemption is strongly correlated with the probability of being turned down for credit or discouraged for borrowing, particularly for low asset households.").

10 *Id.* at 230 n.3 (defining the lowest quartile of households as those with total assets of less than $7,885). According to the variables employed by Gropp, Scholz and White, no more than three states in their sample had exemptions lower than this amount. *Id.* at 228-29. There are no observations from Delaware in the data-set used by Gropp, Scholz and White. In addition, one can reasonably question whether even these three states had exemptions of less than $8,000. For example, Gropp, Scholz and White list Iowa as offering a homestead exemption of just $500, but this limit applied only if the lot on which the house sits is larger than ½ acre in a city or 40 acres elsewhere. Iowa Code Ann. §§ 499A.18, 561.2, 561.16 (1983). The states that they list as having unlimited exemptions contain similar acreage restrictions. *See, e.g.*, Fla. Const. art. X, § 4(a)(1) (restricting a homestead to ½ acre in a municipality and 160 acres outside the municipality). Rather than revisit each exemption value they employ, this article tests the robustness of their results by employing an alternative measure of exemptions.

11 *See* Wei Fan & Michelle J. White, *Personal Bankruptcy and the Level of Entrepreneurial Activity*, 46 J.L. & Econ. 543, 560-62 (2003). Perhaps there are better explanations for this result than for the more general puzzle. For example, some states allow non-homeowners to use some or all of the homestead exemption on other property, and perhaps their results were picking up this effect. However, some

One should hesitate before dismissing empirical results that conflict with theory; perhaps large exemptions affect the poor for some reason. It is quite difficult to identify a plausible reason why large exemptions affect those without assets, however, suggesting that the regressions may not measure the effects of exemptions alone. The regressions may also measure the importance of some omitted variables that are correlated with exemptions. Significantly, Professor Villegas uses the same 1983 dataset used by Gropp, Scholz and White to test whether various non-bankruptcy collection limitations affect credit markets, and found that they do.[12] At a minimum, these variables should be included in the regressions.[13]

The complexity of debtor-creditor law makes it unlikely that any set of variables could fully capture the differences in state law. Debt collection is a low-margin industry, and thus, even laws that make it slightly more expensive to serve process or to litigate a claim may reduce collections.[14] More troubling is the fact that some variation in the law is not recorded in statutes and thus is not readily observable. Bankruptcy scholars argue that "local legal cultures" cause great disparities in bankruptcy practice despite a national bankruptcy law,[15] and similar cultures may affect the practice of debt collection in the various states. Unfortunately, the existing scholarship offers

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of the most generous homestead exemptions (in particular the notorious "unlimited" homestead exemptions) cannot be applied to other property. I co-authored a prior study that suggests that exemptions may have a disproportionate impact on lower-income Americans, a result that is particularly striking because the regressions included fixed state effects. *See* Jeremy Berkowitz & Richard Hynes, *Bankruptcy Exemptions and the Market for Mortgage Loans*, 42 J.L. & Econ. 809, 825 (1999). Note, however, that the regression did not explicitly test whether the effects of exemptions vary by the debtor's level of income, and thus the result may be an artifact of the model employed. In addition, all of the households in this sample would own a home if the mortgage loan were granted, and thus it is more plausible that they would accumulate home equity.

12 *See* Daniel J. Villegas, *Regulation of Creditor Practices: An Evaluation of the FTC's Credit Practice Rule*, 42 J. Econ. & Bus. 51 (1990).

13 Measured individually, these other variables are not strongly correlated with exemptions. However, it is possible that they interact in a way that is strongly correlated with the exemptions, and Gropp, Scholz and White employ probit regressions and other techniques in which uncorrelated omitted variables can still bias results.

14 As noted below, the creditor can sometimes add these costs to the amount that the debtor owes. *See infra* note 23 and accompanying text. This right will be rather hollow, however, if the debtor will not even repay the original amount in full.

15 *See, e.g.*, Theresa A. Sullivan, Elizabeth Warren & Jay Lawrence Westbrook, *The Persistence of Local Legal Culture: Evidence from the Federal Bankruptcy Courts*, 17 Harv. J.L. & Pub. Pol'y 801 (1994).

no unambiguous variable that summarizes this local legal culture in a way that could be included in a regression.[16] This essay suggests two proxies for these other differences that assume that the generosity of debt relief is correlated with ideology.

This essay finds that prior empirical results of the effect of exemptions on credit markets do not change significantly when one includes a host of variables designed to capture other aspects of debtor-creditor law. Unfortunately, this also means that the added variables fail to explain why exemptions appear to have a disproportionate effect on those whom they should affect the least. Clearly, more research must be done to resolve this puzzle, but until such time policymakers should use the results of empirical studies of exemptions with some caution. The recent bankruptcy reforms place a $125,000 ceiling on a homestead exemption if the debtor purchased the home within the last few years,[17] and there are calls to place an extremely large ($300,000) cap on homestead exemptions for all bankrupt debtors.[18] While there may be legitimate grounds for capping exemptions, scholars should be reluctant to conclude that these very high caps will significantly increase the credit available to the poor because the poor do not have home equity to exempt. Creditors themselves seem to believe that very large or "unlimited" exemptions are likely to have little effect on the behavior of most Americans. In the long debate over bankruptcy reform, creditors expressed almost no interest in reforming exemptions and actually opposed caps on homestead exemptions in an effort to limit opposition to the legislation.[19]

Part I provides a brief overview of debtor-creditor law. Part II reviews the

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16 The proof offered of this local legal culture is the inability to explain differences in filing rates and other bankruptcy choices with observable variables such as exemptions and the unemployment rate. *Id.* This residual is claimed by other scholars as evidence of differences in the stigma of filing for bankruptcy. *See, e.g.*, David B. Gross & Nicholas S. Souleles, *An Empirical Analysis of Bankruptcy and Delinquency*, 15 Rev. Fin. Stud. 319 (2002).

17 Bankruptcy Abuse Prevention and Consumer Protection Act of 2005, Pub. L. No. 109-8, 119 Stat. 23 (2005).

18 For example, on March 9, 2005, Senator Edward Kennedy proposed an amendment to the bankruptcy reform legislation that would limit homestead exemptions to $300,000. Senator Kennedy on Closing the Millionaires' Homestead Loophole, http://kennedy.senate.gov/~kennedy/statements/05/03/2005310716.html (Mar. 9, 2005). This amendment was narrowly defeated. Nicolas Brulliard, *Senate Passes Major Overhaul of Bankruptcy Code*, Cox News Service, March 10, 2005.

19 *See, e.g.*, Dan Morgan, *GAO: "Homestead Exemption" Aids Well-Off Few; Bush, Texas Officials on Record as Opposing Move to Limit Bankruptcy Shelter*, Wash. Post, July 18, 1999, at A6 ("Texans also found allies in credit card company lobbyists who worked against a tough limitation [for homestead exemptions] on grounds that

prior literature on the effect of debt collection limitations on credit markets. Part III discusses possible reasons why large exemptions appear to affect the credit available to those with little or no assets. Part IV presents the empirical tests. Part V concludes.

I. A BRIEF INTRODUCTION TO THE LAW OF DEBT COLLECTION

Most Americans who do not repay their debts do not file for bankruptcy,[20] and bankruptcy is but one component in a larger system of debt relief.[21] Of most salience to economists are those non-bankruptcy laws that affect the ability of a creditor to seize assets of the debtor in satisfaction of its claim. If the creditor did not bargain in advance for a security interest, the creditor must sue the debtor in state court before it can attach the debtor's property.[22] The creditor will often be able to add the cost of filing suit and serving process to the amount owed by the debtor,[23] though this right will mean little if the creditor cannot even collect on the original debt. As a result, many creditors may abandon collection efforts without seeking a judgment.

Even if the creditor does obtain a judgment, it must find assets to attach.

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such a provision would turn Texas and Florida legislators against the bankruptcy bill and doom chances for reform.").

20 *See, e.g.*, Am. Bankers Ass'n, 1997 Installment Credit Survey Report 109 (9th ed. 1997) (reporting that approximately seventy percent of all bank consumer credit losses occur outside of bankruptcy); Visa U.S.A., Inc., 1999 Annual Bankruptcy Survey (2000) (reporting that two-thirds of credit card loans charged off as uncollectible are not attributable to bankruptcy). Some of these loans may, however, be discharged in a bankruptcy proceeding after they are charged off as uncollectible. These percentages are based on outstanding loans and not on individuals. It is likely that the percentage of debtors who use bankruptcy is even lower because those who are most likely to be judgment-proof outside of bankruptcy, i.e. those with low incomes, are less likely to have large loans.

21 *See* Richard M. Hynes, *Why (Consumer) Bankruptcy?*, 56 Ala. L. Rev. 121 (2004).

22 Many states once routinely allowed the pre-judgment attachment of the debtor's property, but this practice was sharply curtailed by a series of cases that held such attachments to be a violation of due process unless the debtor is given notice and an opportunity to be heard. *See, e.g.*, Sniadach v. Family Finance Corp., 395 U.S. 337, 342 (1969).

23 In Illinois the judgment debtor is *required* to pay the costs of obtaining a garnishment order "unless . . . costs incurred by the judgment creditor were improperly incurred, in which case those costs shall be paid by the judgment creditor." *See* 735 Ill. Comp. Stat. 5/12-716(a) (2005).

Federal and state laws, such as the famous "unlimited" homestead exemption in Florida,[24] will exempt some of the debtor's assets from attachment, and other assets are likely to be pledged as collateral or hidden from the creditor. Transaction costs may make those assets that are available difficult to convert into cash. Any cash owned by the debtor is likely to be in the hands of a third party in the form of bank deposits or unpaid wages. The creditor may be able to reach these assets through garnishment, but here, too, the law affords the debtor some protection. Federal law limits wage garnishment to twenty-five percent of the debtor's take-home pay or the amount by which the debtor's take-home pay exceeds thirty times the federal minimum wage, which ever is lower,[25] with some states providing further protection or prohibiting wage garnishment entirely.[26]

Sometimes a creditor bargains in advance for the right to seize specific assets if the debtor defaults. For example, the home equity lender bargains for the right to seize the home, and the auto title lender bargains for the right to seize the car. State laws limit the ability of a creditor to foreclose on some types of collateral, however, either by requiring a lengthy process or by allowing the debtor to redeem the collateral many months after the foreclosure is completed.[27] Other states prohibit the creditor from seeking a judgment against the debtor if the collateral does not yield sufficient funds to repay the claim in full, at least if the debtor makes use of the most expeditious methods of foreclosure.[28]

The data used by Gropp, Scholz and White and by Villegas (and the data used in this essay) was collected in 1983, and so one must pay special attention to Federal Trade Commission regulations that went into effect in 1985. Prior to 1985 some states allowed debtors to agree in advance

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24 This law contains no dollar limit, but does limit the amount of land that can be included in the homestead. Fla. Const. art. X, § 4(a)(1).

25 15 U.S.C. § 1673(a) (2006). This law provides less protection against family law claims. *Id.* at § 1673(b)(2).

26 Hon. David F. Snow, *The Dischargeability of Credit Card Debt: New Developments and the Need for a New Direction*, 72 Am. Bankr. L.J. 63, 66 n.22 (1998) (listing four states that prohibit wage garnishment: Texas, Pennsylvania, South Carolina and North Carolina, and pointing out that these states have low rates of bankruptcy filings). Note that Florida also prohibits wage garnishment unless the debtor consents. Fla. Stat. Ann. § 222.11(2)(b) (West 2006).

27 Michael H. Schill, *An Economic Analysis of Mortgagor Protection Laws*, 77 Va. L. Rev. 489 (1991). For a summary of the laws in effect around 1983, see C.F. Sirmans, Real Estate Finance 83-85 (2d ed. 1989).

28 *E.g.*, Cal. Civ. Pro. § 580b (West 2006).

to confess their liability in a lawsuit,[29] to waive property exemptions,[30] and to irrevocably assign their wages to a creditor.[31] Today FTC rules prohibit each of these.[32] Similarly, debtors can no longer grant a security interest in household goods except to a creditor who has lent the money used to purchase these goods.[33] Finally, the FTC now limits the ability of a creditor to charge late fees and requires that creditors provide notice of a cosigner's liability.[34]

One recent paper suggests that the use of state collection proceedings may be falling, at least relative to the use of bankruptcy.[35] Other research suggests that few bankrupt debtors have been subject to garnishment or asset seizure,[36] though this last point is subject to some dispute.[37] Regardless, it seems that many creditors rely heavily on non-judicial collection techniques such as telephone calls and dunning letters that try to persuade the debtor to repay. Federal law places some limits on these techniques,[38] but much of this law does not apply if the original creditor retains its claim,[39] and debtors will sometimes look to the laws provided by their individual state for protection.[40]

The protections afforded by state and federal non-bankruptcy law are not strong enough for some debtors, and they file for bankruptcy. About seventy percent of bankrupt consumers choose Chapter 7, though this percentage varies substantially from district to district.[41] Chapter 7 offers

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29 Paul Ruschman et al., Federal Trade Commission, Analysis of the legal Environment Governing Consumer Credit Practices: Final Report, *available at* http://www.paulruschmann.com/clips/commerce/ftc_report.pdf (1985).

30 *Id.*

31 *Id.*

32 FTC Credit Practices Rule, 16 C.F.R. §§ 444.2(a)(1)-444.2(a)(3) (2005).

33 16 C.F.R. § 444.2(a)(4).

34 16 C.F.R. § 444.4.

35 *See* Richard M. Hynes, *Bankruptcy and State Collections Proceedings: The Case of the Missing Garnishments*, 91 Cornell L. Rev. 603 (2006).

36 *See* Teresa A. Sullivan, Elizabeth Warren & Jay Lawrence Westbrook, As We Forgive Our Debtors 305 (1989) ("Less than 10% [of the debtors] had suffered a property seizure or garnishment. Of more than 15,000 claims in our wage-earner sample, only 616 creditors (about 4%) had filed suit prior to bankruptcy.").

37 *See* Visa U.S.A., Inc., 1998 Bankruptcy Debtor Survey (1998) (reporting that over thirteen percent reported garnishment as the "last straw" before bankruptcy and another fifty-nine percent cited other remedies as triggering bankruptcy).

38 Fair Debt Collections Practices Act, 15 U.S.C.A § 1692 (West 2005).

39 15 U.S.C.A § 1692a(6) (excluding the original creditor from the definition of "debt collector").

40 *See, e.g.*, Cal. Civ. Code § 1788 (West 2006); 2 Howard J. Alperin & Roland F. Chase, Consumer Law, § 632 at 354 (collecting statutes).

41 In the first three quarters of 2004 over seventy percent of all non-business bankrupt debtors opted for Chapter 7. *See* Non-Business Bankruptcy Filings by Chapter,

an immediate discharge of most debts, and though high-income debtors are now subject to a means-test,[42] this was not true in 1983.[43] In exchange for the discharge, the consumer is asked to forfeit any assets not made exempt by state or federal law. The exemptions available in bankruptcy are generally the same as those available in a state-law collections proceeding,[44] though some states allow their debtors to choose certain bankruptcy-only exemptions when they file.[45] Because the exemptions are generous relative to the assets of debtors in financial distress,[46] less than five percent of bankrupt debtors forfeit assets to their general creditors.[47] Debtors may, however, lose assets to their secured creditors as Chapter 7 will, at most, delay foreclosure. The secured creditor is entitled to interest during this delay as long as the debtor has any equity in the collateral.[48] In theory, the debtor can redeem the collateral by paying the lesser of the creditor's claim or the fair market value of the collateral, but few debtors have the cash necessary to do so.[49]

Debtors who wish to retain non-exempt assets or assets pledged as collateral may fare better in Chapter 13. Debtors can retain assets pledged as

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1990-2004, per Quarter, *available at* http://www.abiworld.org/Content/ContentGroups/Online_Resources1/Bankruptcy_Statistics3/Statistics_General/Non-business_Bankruptcy_Filings_by_Chapter_(1990-2005).htm (last visited Mar. 1, 2006).

42 Bankruptcy Abuse Prevention and Consumer Protection Act of 2005, Pub. L. No. 109-8, 119 Stat. 23 (2005).

43 Even the "substantial abuse" test of Section 707(b) was not added until 1984. Bankruptcy Amendments and Federal Judgeship Act of 1984, Pub. L. No. 98-353, § 312, 98 stat. 333 (1984).

44 11 U.S.C. § 522 (2000) (permitting debtors to choose the exemptions available under state law).

45 About one-third of states allow their debtors to use the exemptions specified in Section 522. *See* Richard M. Hynes, Anup Malani & Eric A. Posner, *The Political Economy of State Property Exemptions*, 47 J.L. & Econ. 19, 24 (2004). In addition, some states have enacted exemptions that apply only in bankruptcy. *See, e.g.*, Cal. Civ. Proc. Code § 703.140 (West 2005).

46 One study of bankrupt debtors in 1991 revealed that the median homeowner in bankruptcy had just $5,500 in home equity. *See* Teresa A. Sullivan, Elizabeth Warren & Jay Lawrence Westbrook, The Fragile Middle Class: Americans in Debt 221 (2000).

47 *See, e.g.*, Executive Office for United States Trustees, United States Trustee Program: Preliminary Report on Chapter 7 Asset Cases 1994 to 2000, at 7 (2001) (on file with author) (explaining that "[h]istorically, the vast majority (about 95 to 97%) of Chapter 7 cases yield no assets").

48 11 U.S.C. § 506(b) (2005).

49 *See, e.g.*, Elizabeth Warren & Jay Lawrence Westbrook, The Law of Debtors and Creditors 293 (2001) ("For most debtors, section 722 might as well base redemption on the debtor running a three minute mile.").

collateral by promising to pay the lesser of the amount owed to the secured creditor or the value of the collateral over three to five years.[50] Debtors can retain non-exempt assets as well if they promise to repay an amount equal to the value of these non-exempt assets.[51] Today the debtor may also be forced to promise to repay an amount equal to her "projected disposable income" over three years,[52] but this provision was not yet in effect in 1983.

II. PRIOR LITERATURE

According to economic theory, laws that make it much more difficult for a creditor to collect should have a measurable impact on credit markets. If creditors find it more difficult or more expensive to collect unpaid debts, the rate at which they must charge-off loans as uncollectible should rise. These losses should make creditors less willing to lend at any given interest rate if they are willing to lend at all. Limitations on debt collection should reduce the supply of credit. A world in which households are not subject to harsh collection methods should make default less painful and thus make households willing to risk default by borrowing more at any given interest rate. Limitations on debt collection should increase the demand for credit. These supply and demand effects should, on balance, lead to a higher interest rate, though their effect on the quantity borrowed is uncertain because they work against each other.

At least since the 1970s and 1980s a number of papers have tested these hypotheses by looking at non-bankruptcy collection laws and credit markets in different states.[53] In one of the most recent papers in this field, Professor Villegas uses the 1983 Survey of Consumer Finance to examine the impact of several restrictions on creditor remedies made more uniform by Federal Trade Commission regulations that went into effect in 1985.[54] He focuses on the effect that these restrictions had on the amount of short-term credit borrowed, reasoning that restrictions that increase the amount borrowed are beneficial because they make borrowing more attractive to consumers even after the creditors passes on the additional costs that the restrictions impose. He found

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50 11 U.S.C. § 1325(a)(5) (2005).

51 11 U.S.C. § 1325(a)(4).

52 11 U.S.C. § 1325(b).

53 For a review of this literature, see Richard Hynes & Eric A. Posner, *The Law and Economics of Consumer Finance*, 4 Am. L. & Econ. Rev. 168 (2002).

54 *See* Villegas, *supra* note 12.

that some restrictions reduced the amount borrowed[55] while others increased the amount borrowed.[56]

Recently, consumer finance scholars have shifted their interest towards bankruptcy,[57] and the empirical literature has focused on exemptions. Some articles examine the market for mortgage loans,[58] or small business credit,[59] but of most relevance here is the first article to address the impact of property exemptions on credit markets. In 1997, Gropp, Scholz and White used the same data-set used by Professor Villegas, the 1983 Survey of Consumer Finance,[60] to examine whether property exemptions affect credit markets. They found that residents of states with larger exemptions are more likely to (1) have been turned down for credit or discouraged from applying for credit, and (2) pay higher interest rates. They also found that the exemptions affect the total amount borrowed, though the direction of this effect depends on the amount of the consumer's assets. Larger exemptions lead to more borrowing by households with significant assets and less borrowing by households without significant assets.

Unlike most other studies of exemptions, Gropp, Scholz and White explicitly test whether exemptions affect the rich and the poor differently.[61] They find that exemptions (even marginal differences in very large exemptions) have the most dramatic effect on households with less than $7,885 of total assets.[62] For example, exemptions greatly affect the interest rates paid by those with assets totaling less than $7,885, but have no statistically significant effect on the rates paid by households with assets

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55 *Id.* at 61 (finding that restrictions on security interests in household goods and restrictions on garnishment increased borrowing).

56 *Id.* at 61 (finding that restrictions on wage assignment reduced borrowing).

57 There are some notable exceptions to this rule. *See, e.g.*, Amanda E. Dawsey & Lawrence M. Ausubel, Informal Bankruptcy (2002) (working paper), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=3321.

58 *See* Berkowitz & Hynes, *supra* note 11; Emily Y. Lin & Michelle J. White, *Bankruptcy and the Market for Mortgage and Home Improvement Loans*, 50 J. Urban Econ. 138 (2001).

59 *See* Jeremy Berkowitz & Michelle J. White, *Bankruptcy and Small Firms' Access to Credit*, 35(1) Rand J. Econ. 69 (2004).

60 Though this data-set is now quite dated, publicly available versions of more recent surveys of consumer finance do not identify the state of residence of those surveyed.

61 One other study that tests for disparate effects is Fan & White, *supra* note 11. This study finds a similar puzzle to that found by Gropp, Scholz and White because it finds that homestead exemptions significantly affect the probability that a non-homeowner will start a business.

62 *See* Gropp, Scholz & White, *supra* note 8, at 230 n.23 (defining asset quartiles).

totaling more than $48,535.[63] If a household has less than eight thousand dollars in assets, it is puzzling why either the household or the creditor would care if the exemptions were unlimited or "merely" $70,400.[64] In either case the household could keep all that it has. Gropp, Scholz and White recognize that very large exemptions should not affect the demand for credit of low asset households,[65] but make no attempt to explain why large exemptions should affect the supply of credit available to these same low asset households.

III. WHY DO LARGE EXEMPTIONS APPEAR TO AFFECT THE POOR?

There are at least seven possible explanations for why very large exemptions appear to affect households without significant assets to exempt. First, creditors may believe that generous exemptions will affect the behavior of low-asset households even though this belief is mistaken. This belief will lead them to charge too much in states with large exemptions and too little in states with low exemptions. However, this explanation is inconsistent with competitive lending markets. Mistaken creditors should quickly be driven from the market as they will lose money when they charge too little and will lose business when they try to charge too much.

Second, creditors may simply fail to recognize that a household has so little in assets that it could exempt all of its wealth in nearly every state in the union. This explanation is implausible, however, because households with substantially greater assets have a much easier time obtaining credit, suggesting that creditors are able to distinguish between the poor and the affluent. Even if there is some uncertainty in the creditor's mind, it is not plausible that a creditor will mistake someone with no home or other significant assets for someone likely to exempt tens of thousands of dollars of home equity.

A third possibility is that even if a household lacks sufficient assets at the time of borrowing to use a generous exemption, the creditor may believe that the household will acquire sufficient assets prior to default. The literature has focused heavily on the ability of a debtor to plan for bankruptcy by acquiring non-exempt assets just prior to filing. Most discussions of pre-bankruptcy

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63 *Id.* at 244.

64 *Id.* (reporting that the largest observed value of an exemption with a dollar limit was $70,400).

65 *Id.* at 231 ("In the extreme case of households that will never have assets, the bankruptcy exemption will not affect demand for credit because there is (and will be) nothing for these households to shelter in bankruptcy.").

planning focus on debtors who sell non-exempt assets and use the proceeds to purchase exempt assets.[66] The low asset households lack significant assets of any type, however, and thus would have to borrow money to buy exempt assets. This task is risky because bankruptcy courts view such borrowing as a "badge of fraud" and may deny the debtor's discharge.[67] Courts also look askance at debtors who appear too greedy by gathering large sums of money on the eve of filing,[68] thereby reducing the likelihood that low asset households could accumulate the sums necessary to make the exemption limits relevant. Aside from the legal limitations, lenders will be reluctant to lend large sums on an unsecured basis to a debtor in financial distress. A review of the case law produces few, if any, instances of debtors who successfully borrow very large amounts in order to accumulate exempt property prior to discharge. In addition, if one truly believed that there were no effective legal or practical limits on pre-bankruptcy planning, then it would be hard to understand why any differences in exemptions would be relevant. The debtor's home state exemptions would not matter if the warm sands and unlimited exemptions of Florida and Texas await.[69]

The household may acquire sufficient assets after incurring the debt but prior to the eve of default. Unless the term of the loan is extremely long, however, it is implausible that many low asset debtors would accumulate the tens or hundreds of thousands of dollars of wealth necessary to make the "unlimited" exemptions relevant. Thus, it is quite surprising that Gropp, Scholz and White found that exemptions have a marked effect on the terms of moderate-length loans, such as automobile loans, that are offered to the poor.[70] In addition, prior research suggests that few bankrupt debtors are able

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66 *See, e.g.*, Lawrence Ponoroff & F. Stephen Knippenberg, *Debtors Who Convert Their Assets on the Eve of Bankruptcy: Villains or Victims of the Fresh Start*, 70 N.Y.U. L. Rev. 235 (1995).

67 14 Collier on Bankruptcy 49 (Lawrence P. King ed., 15th ed. rev. 1996 & Supp. 2001).

68 *In re* Zouhar, 10 B.R. 154, 157 (Bankr. D.N.M. 1981) ("There is a principle of too much; phrased colloquially, when a pig becomes a hog it is slaughtered.") (quoting Dolese v. United States, 605 F.2d 1146, 1154 (10th Cir. 1979)).

69 In 2005, Congress enacted legislation that set residency requirements for exemptions. Bankruptcy Abuse Prevention and Consumer Protection Act of 2005, § 307, Pub. L. No. 109-8, 119 Stat. 23 (2005).

70 Perhaps mortgages are of sufficient length to allow a small number of low asset households to accumulate sufficient assets. However, there are strong theoretical reasons to believe that mortgage lenders will not be harmed by large homestead exemptions. Because the mortgage is effectively senior to the homestead exemption, the exemption only affects the mortgage lender through transactions costs. *See* Berkowitz & Hynes, *supra* note 11. The effect of the transactions costs is theoretically

to exempt significant assets. One study suggests that the median home equity exempted by homeowners in bankruptcy in 1991 was just $5,500 despite the fact that every state in the study allowed households to exempt substantially more than this amount, and the median home equity for all United States households (including the solvent) was $43,078.[71]

A fourth possible explanation is that the results are caused by the timing of the measurement of assets. The Survey of Consumer Finance records the household's assets at the time of the survey, *after* the household has made its borrowing decisions. A household that has borrowed less or has been denied credit will have less cash with which to buy assets, meaning that the dependent variables may affect at least one independent variable, the household's assets.[72] For example, households that cannot obtain a mortgage are unlikely to buy a home and their total assets will be lower. This effect may cause exemptions to appear to affect the poor most strongly by concentrating those who have been denied credit at the bottom of the asset distribution.

To test the significance of this problem, this essay will use household income as a proxy for household wealth. Household income is strongly

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ambiguous, as large homestead exemptions may allow the household to avoid paying unsecured debt and thus be better able to repay the mortgage, but might also cause the household to file for bankruptcy and thus delay a foreclosure. Note, however, that a large homestead exemption would only cause the household to file for bankruptcy if the household has home equity to exempt. In this case, the mortgage lender is entitled to interest to compensate for the delay in foreclosure. 11 U.S.C. § 506(b) (2005). The empirical literature on this question is mixed with one study finding that larger homestead exemptions decrease the probability that a mortgage application will be denied and another finding that large exemptions increase this probability. *See* Berkowitz & Hynes, *supra* note 11; Lin & White, *supra* note 58.

71 *See* Sullivan, Warren & Westbrook, *supra* note 46, at 221. This study included bankrupt debtors in California (homestead exemption of $50,000 for a single individual and $75,000 for a married couple), Illinois (homestead exemption of $7,500 for a single individual and $15,000 for a married couple), Pennsylvania (allowed use of federal exemptions, $7,500 for a single individual and $15,000 for a married couple), Tennesee ($5,000 for a single individual and $7,500 for a married couple) and Texas (no dollar limit on the homestead exemption).

72 In their article, Gropp, Scholz and White define total assets as the sum of financial assets and net equity in real assets such as the home. *See* Gropp, Scholz & White, *supra* note 8, at 230 n.23. This presents a slightly different endogeneity problem because a household that obtains a home equity loan for a vacation will reduce its assets. However, correspondence with the authors suggests that this description was in error and that the actual variable used contains the total value of real assets regardless of the amount of debt secured by such assets. The summary statistics that they report suggest that this is likely the case. Both definitions were tried, and the difference did not materially affect the results.

correlated with household wealth but should be less affected by the amount of debt that the debtor incurs. Debt may, of course, have some effect on the household's income. Individuals with significant debt may choose to work harder so that they can earn more income to repay this debt.[73] Households that use the added debt to purchase business assets may be able to earn a higher income. The magnitude of these effects should be far less than the effect on household assets, and it is unlikely that this effect should be sufficiently large to shift households into another income quartile.

A fifth possible reason is that exemptions may affect the perceived generosity of debt relief even if they have no effect on the actual relief offered to low asset households. For example, low asset households who live in states with very large exemptions may be more likely to see news stories of celebrities retaining mansions in bankruptcy and may thus be more likely to realize that bankruptcy can help them escape their debts. Even if exemptions do not affect the amount collected from low asset debtors in bankruptcy (these debtors never have non-exempt assets), the exemptions may affect the willingness of low asset debtors to declare bankruptcy. Fearing these additional defaults, lenders may be less willing to lend to the poor when exemptions are generous. This explanation is theoretically possible, but the empirical support for a relationship between exemptions and filings is mixed at best. Some studies find a positive relationship between the bankruptcy filing rate and the generosity of exemptions,[74] but many others

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73 To the extent that a debt *must* be repaid, a worker keeps the last dollar that she earns and the debt does not change the price of leisure relative to work; there is no substitution effect. The debt does, however, make the worker less wealthy and thus may cause the worker to work more because she values each dollar of income more highly. Of course, if it becomes obvious that the debt will never be repaid and any additional money earned will simply be used to repay the creditor, the incentive to work will decline. *See, e.g.*, Richard M. Hynes, *Optimal Bankruptcy in a Non-Optimal World*, 44 B.C. L. Rev. 1, 23-26.

74 *See, e.g.*, Michell J. White, *Personal Bankruptcy Under the 1978 Bankruptcy Code: An Economic Analysis*, 63 Ind. L.J. 1 (1987); Andreas Lehnert & Dean M. Maki, *Consumption, Debt and Portfolio Choice: Testing the Effect of Bankruptcy Law* (2002) (Working Paper, Federal Reserve Board of Governors), *available at* http://www.federalreserve.gov/pubs/feds/2002/200214/200214.pap.pdf. A study conducted by this author found that under some specifications more generous exemptions did correlate with higher filing rates but under other specifications they did not. *See* Richard Hynes, Three Essays on Consumer Bankruptcy and Exemptions (1998) (unpublished Ph.D dissertation, University of Pennsylvania) (on file with author). Most studies focus on the effect of exemptions on the bankruptcy filing rate, but one study was able to examine the effect on the default rate and found that

find no relationship or even a negative relationship.[75] Moreover, these studies also fail to explore whether generous exemptions have a disparate effect on those who actually have assets to exempt.[76]

A sixth possible explanation for the disproportionate effect on low asset debtors is that other debtors are so unlikely to default that the effect of the exemptions cannot be measured. That is, the exemptions may affect the behavior of households with significant assets, but we cannot measure this effect with the data that we have. Note, however, that this can serve as at most a partial explanation, as it does not explain why exemptions affect those with nothing to exempt. In addition, this explanation runs counter

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more generous exemptions are correlated with higher default rates. *See* Dawsey & Ausubel, *supra* note 57.

75 *See, e.g.*, Vincent P. Apilado et al., *Personal Bankruptcies*, 7 J. Legal Stud. 371 (1978) (finding mixed results when testing for a link between exemptions and the filing rate prior to the enactment of the Bankruptcy Reform Act of 1978); Francis H. Buckley & Margaret F. Brinig, *The Bankruptcy Puzzle*, 27 J. Legal Stud. 187 (1998); Scott Fay et al., *The Household Bankruptcy Decision*, 92 Am. Econ. Rev. 706, 713-14 (2002) (finding no relationship between an individual's non-exempt assets and the likelihood that the individual will file for bankruptcy); Richard L. Peterson & Kiyomi Aoki, *Bankruptcy Filings Before and After Implementation of the Bankruptcy Reform Law*, 36 J. Econ. & Bus. 95 (1984); Alden F. Shiers & Daniel P. Williamson, *Nonbusiness Bankruptcies and the Law: Some Empirical Results*, 21 J. Consumer Aff. 277 (1987) (finding that generous exemptions lead to *lower* filing rates and arguing that this is due to greater care exerted by lenders); Phillip Shuchman & Thomas L. Rhorer, *Personal Bankruptcy Data for Opt-Out Hearings and Other Purposes*, 56 Am. Bankr. L.J. 1 (1982) (finding that states with very large exemptions sometimes had low bankruptcy filing rates and states that opted out of the federal bankruptcy exemptions sometimes had very high filing rates); Teresa A. Sullivan, Jay Lawrence Westbrook & Elizabeth Warren, *Consumer Debtors Ten Years Later: A Financial Comparison of Consumer Bankrupts 1981-1991*, 68 Am. Bankr. L.J. 121, 123 (1994) ("we could find no support for the economists' claims of debtors responding in a predictable fashion to the economic incentives created by property exemptions"); Lawrence A. Weiss et al., *An Analysis of State-Wide Variation in Bankruptcy Rates in the United States*, 17 Bankr. Dev. J. 407 (2001); William J. Woodward, Jr. & Richard S. Woodward, *Exemptions as an Incentive to Voluntary Bankruptcy: An Empirical Study*, 57 Am. Bankr. L.J. 53 (1983) (finding that the Bankruptcy Reform Act of 1978 did not lead to a significantly greater increase in filings in states that both allowed the use of these exemptions and had smaller exemptions available outside of bankruptcy).

76 Some more recent studies have tried to account for this effect by measuring the "benefit" of filing for bankruptcy. *See, e.g.*, Fay et al., *supra* note 75, at 708-09. This definition subtracts the debtor's non-exempt assets from total debt, and thus it is impossible to discern the effect of the exemptions from the effect of a high level of debt.

to empirical studies that suggest that bankruptcy is largely a middle class phenomenon.[77]

Finally, the coefficients on the exemptions variables may not measure the importance of exemptions. Rather, they may measure the importance of variables that are correlated with exemptions but more plausibly have a disproportionate effect on the poor. The laws studied by Professor Villegas (restrictions on security interests in household goods, wage assignments, etc.) provide obvious candidates for inclusion in the regressions. They do not, however, exhaust the list of differences in state collection laws or practice. Empirical studies of exemptions routinely exclude exemptions of low-value assets such as clothing or furniture because these exemptions often contain no explicit limits and are difficult to value.[78] It is difficult to believe that bankruptcy trustees seize these items, but it is at least possible that individual creditors threaten to seize these items in a state proceeding to convince the debtor that a failure to pay will have dire consequences.

A full account of all laws that affect credit markets would include more variables than are possible to test with the data available, and some elements of the law cannot be easily reduced to a variable. For example, scholars report persistent and significant differences in local bankruptcy practice that cannot be explained by economic or legal factors.[79] Judges and the local bar are said to use the discretion afforded to them to significantly shape bankruptcy practice according to their preferences. Non-bankruptcy collection law may afford judges and attorneys similar discretion. For example, several states allow judges to increase the amount exempt from wage garnishment if the debtor needs more income to support a family.[80]

Unfortunately, it is virtually impossible to measure these other variables directly, and the proxies offered by the literature (the bankruptcy filing rate or the choice of bankruptcy chapter) are sometimes interpreted to represent other factors such as the stigma of bankruptcy or the willingness of debtors to file.[81] This essay examines these proxies, but also searches for alternative proxies that assume that politics plays a role in these omitted variables.[82] In

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77 *See, e.g.*, Sullivan, Warren & Westbrook, *supra* note 46.

78 *See, e.g.*, Gropp, Scholz & White., *supra* note 8, at 227 n.20.

79 *See* Sullivan, Warren & Westbrook, *supra* note 15.

80 *See, e.g.*, Tenn. Code Ann. §§ 26-2-106, 26-2-107 (2005).

81 *See, e.g.*, Gross & Souleles, *supra* note 16.

82 Prior empirical evidence on the influence of political ideology on debtor-creditor law is mixed. Hynes, Malani and Posner found little evidence that ideology affects a state's choice of exemptions. *See* Hynes, Malani & Posner, *supra* note 45. This study did, however, find that a state's ideology influenced its reaction to opt-out of the federal exemptions created in 1978. *Id.* at 36. In addition, Nunez &

addition to picking up small differences in the law, politics may play a role in explaining judicial preferences. In many states judges are elected; in others they are appointed by elected officials. Because liberal members of Congress were more likely to oppose the recent bankruptcy reforms,[83] one might posit that liberal states would be friendlier to debtors. However, some states, like Florida and Texas, have a strong reputation for being "debtor friendly" but not for being liberal; perhaps their debt relief represents the populism of an earlier era. As a result, this essay will include two proxies for politics: a measure of how liberal a state is and a measure of the level of populism at the beginning of the twentieth century.

IV. EMPIRICAL TESTS

Most of the data used in this essay is drawn from the 1983 Survey of Consumer Finance, which provides detailed financial information on 3,665 households from 37 states and the District of Columbia.[84] The Survey of Consumer Finance also provides economic information about the area in which the household is located, such as the county unemployment rate and the degree of concentration in the local banking market.

Exemption laws are quite complicated, and any measure of their generosity requires several debatable assumptions.[85] As a result, few studies use the same method of evaluation.[86] This article generally uses the variables defined by

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Rosenthal report that ideology helps explain the votes of members of Congress on recent consumer bankruptcy legislation. *See* Stephen Nunez & Howard Rosenthal, *Bankruptcy "Reform" in Congress: Creditors, Committees, Ideology, and Floor Voting in the Legislative Process*, 20 J.L. Econ. & Org. 527 (2004).

83 *See* Nunez & Rosenthal, *supra* note 82.

84 In total the 1983 Survey of Consumer Finance includes 4,262 households. Of these, however, 438 are from a high-income sample that does not indicate the state of residence of the household and 159 households are excluded from the Federal Reserve's area probability sample due to missing data. A full description of this data-set can be found on-line. *See* Robert B. Avery & Gregory E. Elliehausen, Bd. of Governors of the Fed. Reserve Sys., 1983 Survey of Consumer Finances, http://www.federalreserve.gov/pubs/oss/oss2/83/codebk83.txt (last revision Feb. 15, 1990).

85 For example, Professors Gropp, Scholz and White seem to assume that married individuals could not each claim the state exemptions unless there is a state law that explicitly said that they could. Others would assume that married individuals could each claim exemptions unless there is a state law that says that they cannot.

86 *Compare* Gropp, Scholz & White, *supra* note 8 (considering both homestead and

Gropp, Scholz and White,[87] and tests for robustness by using the exemption measures used by Hynes, Malani and Posner,[88] and the homestead exemptions of 1920.[89] This last measure provides a useful test because the availability of credit could, in theory, have an effect on the exemptions chosen by a legislature, and thus the direction of causation could be uncertain. By contrast, current credit markets should have no effect on the exemptions available several generations ago, and yet inertia insures that today's exemptions are highly correlated with those of the past.[90]

Information on the usury limits in place around 1983 were obtained from the Financial Publishing Company.[91] To capture the time and expense of seizing collateral, estimates of the time it took to foreclose on a mortgage around 1983

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personal property exemptions), *with* Fan & White, *supra* note 11, at 553 (considering only homestead exemptions).

87 Gropp, Scholz and White added up the value of the homestead, personal property, tools of the trade, automobile and wildcard exemptions and doubled the sum if the household included a married couple and they believed the state allowed married couples of each claim an exemption. Gropp, Scholz & White, *supra* note 8, at 227. If any exemption was unlimited, the state was treated as offering unlimited exemptions. Finally, they used the value of the federal exemptions if this was greater. *Id.* at 226-29.

88 *See* Hynes, Malani & Posner, *supra* note 45; Hynes, Malani and Posner included the same exemptions as Gropp, Scholz and White, but added furniture and followed the legal literature in assuming that married debtors could double unless a state explicitly said that they could not. In addition, there are some discrepancies between the legal research conducted by Hynes, Malani and Posner and that conducted by Gropp, Scholz and White. Because the research of Hynes, Malani and Posner uncovered so many personal property exemptions (typically jewelry or furniture) that did not specify a dollar value, and because an unlimited homestead exemption is obviously of much greater value than an unlimited automobile exemption, exemptions were capped at the second highest observed. To test for robustness, Hynes, Malani and Posner also tried a narrower definition of personal property similar to that used by Gropp, Scholz and White. Finally, the exemptions of Hynes, Malani and Posner allow for the measurement of the exemptions available to a debtor who does not own a home; one cannot simply subject the homestead exemption because some (but not all) states allow the debtor to use some portion of the homestead exemption toward other property. Fortunately, the Hynes, Malani & Posner exemptions are highly correlated with the Gropp, Scholz & White exemptions.

89 *See* Paul Goodman, *The Emergence of Homestead Exemptions in the United States: Accommodation and Resistance to the Market Revolution, 1840-80*, 80 J. Am. Hist. 470 (1993). Following Gropp, Scholz & White, states with "unlimited" exemptions were set at zero and a separate dummy variable was created for these states.

90 *See* Hynes, Malani & Posner, *supra* note 45.

91 Fin. Publ'g Co., The Cost of Personal Borrowing in the United States (Charles H. Gushee ed., 1983).

were obtained from the Mortgage Guaranty Insurance Corporation.[92] Political variables were obtained from the political science literature.[93] Other collection limitations, including restrictions on wage assignments and security interests in household goods are drawn from the same Federal Trade Commission survey used by Professor Villegas.[94] Because a few errors were noted in this survey's summary of garnishment laws,[95] a new survey was conducted using the annotated code of each state. The number of bankruptcy filings per thousand people and the percentage of bankruptcies filed under Chapter 13 were taken from the American Bankruptcy Institute. Table 1 presents a summary of these collection laws and the variables used. Table 2 presents summary statistics for the variables used in the regressions.

A. Does Debt Relief Cause Households to Be Credit Constrained?

This essay first examines the probability that a household will be credit constrained. Following Gropp, Scholz and White, a household is deemed credit constrained if it is discouraged from borrowing because it believes that it would be denied credit or if it is actually denied credit and does not successfully reapply for the same or greater amount of credit from another source. Six hundred thirty-one households met this definition.[96]

Column 1 of Table 3 presents the results of a probit regression (with robust standard errors clustered by state) that replicates Gropp, Scholz and White's basic finding that households in states with larger exemptions are more likely to be credit constrained than those with smaller exemptions.[97]

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92 Mortgage Guaranty Insurance Corporation, Foreclosure-Redemption Summary (1983), *reprinted in* C.F. Sirmans, Real Estate Finance 83-85 (2d ed. 1989).

93 Estimates of the ideology of the population of each state was taken from Robert S. Erikson et al., Statehouse Democracy, Public Opinion and Policy in the American States 15-16 (1995). The percentage vote for Williams Jennings Bryan in 1900 can be found in CQ Press, Presidential Elections 1789-2000, at 131 (2002).

94 *See* Ruschman et al., *supra* note 29. Other variables from this study that were employed by Professor Villegas were excluded from the reported regressions of this essay because they were deemed unlikely to be important or had very little state variation. These variables included restrictions on confession of judgment, pyramiding of late charges, attorney's fees, wage assignments, deficiency judgments and waivers of exemptions.

95 For example, the report did not list Pennsylvania and South Carolina as prohibiting garnishment.

96 If one does not account for the possibility that the household can reapply for credit, 727 households are debt constrained. The results of this essay are not sensitive to this specification.

97 A number of variables included in the regression are excluded from Table 1 to

In short, their result is robust against the inclusion of other limitations on debt collection, usury ceilings, and proxies for the legal culture of each state.[98] As in their paper, the exemption variable is divided into quartiles with the largest quartile representing unlimited exemptions and the smallest quartile omitted from the regression. The coefficients on the exemption quartiles are positive, suggesting that households which have access to these exemptions face a larger probability of being credit constrained than those who face the lowest exemptions. As in Gropp, Scholz and White's study, only the coefficient on the unlimited exemptions is statistically significant at the ten percent level. Column 2 demonstrates that the general result is robust against the measure of exemptions employed by Hynes, Malani and Posner, and an omitted regression found the results robust against the use of the homestead exemption of 1920.[99]

Unfortunately, the results are too consistent with those of Gropp, Scholz and White, and the finding of a disproportionate impact on the poor remains. Though Gropp, Scholz and White did not formally test whether larger exemptions substantially increase the probability that a low asset household will be credit constrained, they provide a graph that shows that low asset households in states with unlimited exemptions face a higher probability of being credit constrained than low asset households in states with very small exemptions.[100] To test the disparate impact on rich and poor more formally, this essay employs the same technique as used by Gropp, Scholz and White in their examination of the effect of exemptions on total borrowing and interest

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save space. All regressions also contained the following variables: age of head of household, age of head of household squared, years of schooling completed, household income, household income squared, total household assets, a dummy for a married head of household, persons in household, dummy for non-white head of household, dummy for household located in Northeast, Midwest, South, Rural area, average income of household's profession, herfindahl index for financial institutions (a measure of market concentration), years working at current employer, statewide branch banking, no multi-state bank holding companies, county unemployment and a constant. Complete results are available from the author.

98 Excluding the bankruptcy filing rate and the percentage of bankruptcy filings in Chapter 13 does not materially affect the results. The coefficients on the other variables remain substantially the same and the same coefficients remain statistically significant. These variables are excluded from most models because large bankruptcy exemptions are alleged to raise the interest rate and cause more debtors to choose Chapter 7. Thus, including these variables in the regression could bias the results against finding a significant effect on exemptions.

99 The coefficient on the continuous measure of this exemption was positive and significant at the one percent level; the coefficient on the dummy for an unlimited exemption was positive but is not statistically significant.

100 *See* Gropp, Scholz & White, *supra* note 7, at 231.

rates. Households are divided into four quartiles based on their total assets. A dummy for each quartile is then crossed with the exemptions expressed as a continuous variable (with unlimited exemptions set equal to zero) and then also crossed with a dummy variable equal to one if the state offers an unlimited exemption. Column 4 of Table 3 presents the results.

Column 4 suggests that exemptions only increase the likelihood that households with very low assets will be credit constrained; the coefficient on exemptions is positive and significant only for households with the least amount of assets. In fact, larger exemptions seem to *reduce* the likelihood that wealthier households (those in the third and fourth quartile) will be denied credit. Unfortunately, these disparate effects are robust against different specifications of exemptions,[101] different cut-offs for asset quartiles,[102] and different measures of assets.[103] Column 5 demonstrates that this result is even robust against the use of income quartiles as a proxy for asset quartiles,[104] suggesting that the puzzle is not caused by the timing of the measurement of assets.

Not only do the new variables fail to resolve this puzzle, they also perform fairly poorly as an explanation for why some households are credit constrained. Consistent with theory, the coefficient on wage assignment is positive and statistically significant in every reported regression. The coefficient on ideology is also positive and significant in five of the six regressions, suggesting that politics may play a role in setting some aspects of debtor-creditor law that are not captured by the other variables. However, the bankruptcy statistics and most of the other legal variables are not significant, and the coefficient on the restriction of security interests in household goods has the "wrong" sign. One possible explanation is that lenders who do not use this remedy are more likely to deny credit because

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101 This result is robust against the use of exemptions measured by Hynes, Malani and Posner and the homestead exemptions of 1920.

102 The quartile breaks supplied by Gropp, Scholz and White do not precisely match the quartile breaks found when I recreated their measure of assets. This may be due to a slight difference in the way in which total assets are calculated or small changes in the data-set in the years since they completed their study. Though I tried to follow their definition, the mean of Total Assets calculated in this essay is significantly different from that reported by Gropp, Scholz and White. Using the corrected quartile breaks did not make a meaningful difference.

103 For example, the results did not change markedly when total home equity was used instead of home value.

104 Column 5 also includes the bankruptcy filing rate and the percentage of bankruptcies per thousand people. Column 5 would not materially change if these variables were excluded.

they are at a disadvantage compared to those who are willing to use this remedy. It is also possible, however, that this result represents an error in the data[105] or co-linearity with other variables.

B. Does Debt Relief Lead to Higher Interest Rates?

Economic theory predicts that generous debt relief should lead to higher interest rates by reducing the supply of credit and increasing demand for credit. Table 4 presents the results of Heckit regressions that test this result using a sample of households that purchased a car in 1982 or in the first quarter of 1983 and financed their purchase with a loan from a commercial bank, savings and loan or credit union. As in Gropp, Scholz and White's study, the first stage of the Heckit model seeks to explain which households purchase a car with credit obtained from one of the specified financial institutions, while the second stage seeks to explain the interest rate that they pay.

Though Model 1 of Table 4 includes a number of additional variables (other limitations on debt collection and political variables) not found in Gropp, Scholz and White's research, and excludes dummy variables representing the quarter in which the car was purchased from the selection stage of the Heckit model,[106] the results are generally the same. Larger exemptions seem to lead to higher interest rates and reduced probability of borrowing for those with few assets, but do not have a similar effect on those with sufficient assets to make use of the exemptions. Models 2 and 3 show that this result is robust against the use of income quartiles and the inclusion of bankruptcy statistics. An omitted regression found similar results when exemptions were measured in other ways.

Given the nature of the data, it is somewhat surprising that any of the variables had an effect on the interest rate. The unprocessed version of the Survey of Consumer Finance contains few observations in which the appropriate interest rate was reported; most interest rates were imputed. Though some interest rates may have been imputed by using the frequency and size of payments, the Federal Reserve reports that other rates were set

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105 Note that an examination of garnishment laws revealed several errors in the FTC survey. *See supra* note 95. The FTC Survey's results for restrictions on security interests in household goods was not rechecked.

106 As in Gropp, Scholz & White, dummy variables are employed in the interest rate stage to control for the quarter in which the automobile was purchased. Unlike Gropp, Scholz & White, these dummies are excluded from the selection stage because this stage is designed to determine if the household purchases a car at all.

by adding an error term to the average national interest rate on automobile loans reported in the Federal Reserve Bulletin.[107] No attempt was made to adjust the interest rate for state-specific conditions. For example, no account was taken of a state's usury ceiling, and many observations reflect rates well in excess of the legal limit at the time.[108] In short, future research should readdress the issue using better data.

C. Amount Borrowed

Finally, consider the effect of the debt relief laws on the amount borrowed. Professor Villegas focused primarily on this question, reasoning that beneficial laws would increase borrowing and harmful laws would decrease borrowing.[109] Yet this test is not dispositive. Some have argued that debtors fail to consider debt relief laws when deciding how much to borrow and that therefore almost any decline in debt relief will increase borrowing.[110] Even if this theory is incorrect and the only market failure is the cost of contracting, a beneficial law could lead to a decline in borrowing.[111] Still, the effect on total borrowing may prove somewhat instructive for policy analysis, and so this essay briefly presents the results of a basic estimation.

Table 5 presents the results of a Heckit model of the total amount borrowed by a family.[112] The results are consistent with those of Gropp, Scholz and White. Exemptions seem to lower the amount borrowed by lower income households and reduce the probability that they will borrow anything at all. By contrast, exemptions seem to increase borrowing by wealthier households.

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107 Avery & Elliehausen, *supra* note 84.

108 This could also be due to evasion of state usury restrictions. For example, national banks located outside a state need not follow the state's usury limit. *See* Marguette Nat'l Bank of Minneapolis v. First of Omaha Serv. Corp., 439 U.S. 299 (1978).

109 *See* Villegas, *supra* note 12.

110 *See, e.g.*, Lawrence M. Ausubel, *Credit Card Defaults, Credit Card Profits and Bankruptcy*, 71 Am. Bankr. L.J. 249, 268-69 (1997). For a critique of these arguments, see Richard M. Hynes, *Overoptimism and Overborrowing*, 2004 BYU L. Rev. 127.

111 *See* Hynes & Posner, *supra* note 53, at 198-99.

112 Gropp, Scholz and White use a more complicated model that separates the selection effect into two to determine if (1) the households desire to incur any debt, and (2) if the households are credit constrained. This essay uses the more simple model both because of convenience (the statistical package used did not contain the more complicated model) and because all of the factors in Gropp, Scholz and White's regressions that determine how much a household borrows also determine whether the household borrows.

This result is robust against different measures of the exemption and the use of income as a proxy for assets. Note that other limits on debt collection seem to have some effect on the amount borrowed as does the ideology variable, suggesting that there are important legal or political factors that are not captured by previous measures of the ability of a creditor to collect.

V. CONCLUSION

Economists commonly assert that debt relief comes at a cost. Laws that provide debt relief do so by limiting the ability of creditors to collect, and thus these laws should make creditors less willing to lend. Professors Gropp, Scholz and White supply important empirical support for this claim by demonstrating that households in states with larger bankruptcy exemptions pay higher interest rates and are more likely to be denied credit. This essay tests whether their results are robust against the inclusion of other laws that limit debt collection, and finds that they are.

Unfortunately, the results of this essay are too consistent with those found by Gropp, Scholz and White, and an important puzzle remains. Though general regressions yield coefficients consistent with theory, regressions that try to differentiate the effect that exemptions have on different classes imply that the exemptions have the greatest effect on those who should be affected the least, those without the assets necessary to make marginal differences in exemptions relevant. One possible explanation for this puzzle is that the coefficients on exemptions are picking up the effects of other variables that are correlated with exemptions. Unfortunately, however, this essay could not identify these other variables, and further research is needed. Until such time, however, policy-makers should be cautious in interpreting studies of exemptions as implying that marginal changes in exemptions will have a significant impact on credit markets.

Table 1: Summary of Collection Laws

Variable	Definition	States*	Source
Restricts wage assignment	Equals zero if a state does not prohibit irrevocable wage assignments for all or a large part of consumer credit.	Wageasg=0: AZ, AR, CT, FL, GA, IL, KY, LA, MA, MN, MS, NE, NJ, NY, SD, TN	FTC Report
Restricts security interests in household goods	Equals zero if a state does not prohibit nonpurchase money security interest in household goods for all or a large part of consumer credit.	Hldgds=0: AL, AR, FL, IL, KY, LA, ME, MI, MS, NE, NJ, PA, SD, TN, TX	FTC Report
Restricts wage garnishment	Equals one if a state provides limitations on garnishment that are substantially more restrictive than federal law. States that allowed debtors to exempt forty times the minimum wage rather than thirty were not included in this category.	Garnishr=1: AL, FL, IL, IA, MO, NE, NJ, NY, NC, PA, SC, SD, TX, WV	State statutes
Usury ceiling	Equals one if a state has usury limits on all or a substantial portion of consumer credit	Usury=0: AZ, IL, NJ, NY, OR, SD, VA.	The Cost of Personal Borrowing in the U.S.
Foreclosure takes longer than six months	Equals one if a mortgage creditor cannot foreclose on a property and extinguish any redemption rights within an average of six months	Sixmo=1: AZ, AK, CA, CO, DC, FL, GA, KY, LA, MD, MA, MS, MO, NE, NY, NC, OR, PA, SC, TN, TX, UT, VA, WV	C.F. Sirmans, Real Estate Finance

* The following states were either not included in the Survey of Consumer Finance or were missing significant data: AK, DE, DC, HI, ID, KS, MT, NV, NH, NM, ND, RI, VT, WY.

Table 2: Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min.	Max.
Dummy for credit constrained	3654	0.173	0.378	0	1
Interest rate x 10	407	170	43.5	60	299
Natural log of total debt (conditional on any debt)	2562	8.81	1.94	2.20	14.04
2d exemption quartile	3665	0.299	0.458	0	1
3d exemption quartile	3665	0.203	0.402	0	1
Unlimited exemption ("Unlimited")	3665	0.187	0.390	0	1
Combined exemptions (in $10,000) (exemption) x dummy variable for 1st quartile of asset distribution	3665	0.528	1.21	0	6.35
Exemption x 2d asset quartile	3665	0.379	1.01	0	6.35
Exemption x 3d asset quartile	3665	0.439	1.08	0	6.35
Exemption x 4th asset quartile	3665	0.509	1.20	0	6.35
Unlimited x 1st asset quartile	3665	0.065	0.246	0	1
Unlimited x 2d asset quartile	3665	0.041	0.199	0	1
Unlimited x 3d asset quartile	3665	0.039	0.194	0	1
Unlimited x 4th asset quartile	3665	0.044	0.204	0	1
Bankruptcies per thousand	3665	1.35	.6001	.47	2.91
Percent of bankruptcies in Chapter 13	3665	30.45	16.63	4	71
Ideology	3659	-12.8	7.01	-28	-0.8
Percent vote for Bryan in 1900	3565	0.497	0.131	0.352	0.921
Restricts wage garnishment	3583	0.432	0.495	0	1
Restricts wage assignment	3583	0.550	0.498	0	1
Restricts security interests in household goods	3583	0.564	0.496	0	1
Foreclosure takes longer than six months	3665	0.696	0.460	0	1
Usury ceiling	3665	0.787	0.410	0	1
Age of head of household (HOH) (in 100)	3665	0.466	0.173	0.16	0.98
Age squared	3665	0.247	0.175	0.256	0.96
Years of education of HOH	3665	12.1	3.28	0	17
Household income (in ten thousands)	3665	2.56	2.93	-2.41	53.0
Income squared	3665	15.1	84.7	1.6e-07	2813
Total assets (in millions)	3665	0.069	0.168	0	5.71
Married dummy	3665	0.612	0.487	0	1
Family size	3665	2.71	1.53	1	13
Nonwhite dummy	3665	0.172	0.377	0	1
HOH is male dummy	3665	0.738	0.4397	0	1
Northeast dummy	3665	0.201	0.401	0	1
Midwest dummy	3665	0.277	0.448	0	1
South dummy	3665	0.352	0.478	0	1
Rural dummy	3665	0.401	0.490	0	1
Avg. income of household's profession (in ten thousands)	3665	2.05	5.30	0	130
Herfindahl index for financial institutions in area (in thousands)	3665	1.38	1.01	0	4.92
Years working at current employer	3665	6.66	9.02	0	55
Statewide branch banking	3665	.446	0.497	0	1
No multibank holding companies in state	3665	.143	0.350	0	1
County unemployment x10	3665	96.3	36.1	25	224
HOH a high school graduate	3665	0.323	0.468	0	1
HOH has some college	3665	0.169	0.375	0	1
HOH a college graduate	3665	0.217	0.412	0	1
Thinks credit is a bad idea	3634	0.241	0.428	0	1

Table 3: Probit Model of the Probability of Being Credit Constrained (Robust p values in brackets; * significant at 10%; ** significant at 5%; * significant at 1%)**

	1	2	3	4	5
	Quartile	HMP	GSW x asset quart	GSW x inc. quart	HMP x inc. quart.
2d exemption quartile (GSW)	0.119				
	[0.359]				
3d exemption quartile (GSW)	0.095				
	[0.356]				
Unlimited Exemptions (GSW)	0.265				
	[0.014]**				
Homeowner (broad) exemptions ($10,000)		0.010			
		[0.018]**			
Exemption x dummy variable for 1st quartile of asset/income distribution			0.150	0.078	0.017
			[0.000]***	[0.015]**	[0.011]**
Exemption x 2d asset/income quartile			0.031	-0.023	-0.005
			[0.495]	[0.611]	[0.567]
Exemption x 3d asset/income quartile			-0.042	-0.014	0.016
			[0.096]*	[0.549]	[0.000]***
Exemption x 4th asset/income quartile			-0.067	-0.037	0.010
			[0.160]	[0.245]	[0.366]
Unlimited x 1st asset/income quartile			0.454	0.382	
			[0.000]***	[0.004]***	
Unlimited x 2d asset/income quartile			0.322	0.079	
			[0.033]**	[0.615]	
Unlimited x 3d asset/income quartile			0.099	0.304	
			[0.454]	[0.028]**	
Unlimited x 4th asset/income quartile			-0.165	0.170	
			[0.319]	[0.396]	
Non-business bankruptcies per 1,000	0.027			0.018	
	[0.685]			[0.777]	
Percentage Chapter 13 bankruptcies	0.001			0.002	
	[0.524]			[0.193]	
Ideology (liberal is larger)	0.012	0.011	0.007	0.011	0.010
	[0.023]**	[0.031]**	[0.229]	[0.041]**	[0.049]**
Percent vote for Bryan in 1900	-0.080	-0.017	-0.305	-0.149	-0.053
	[0.785]	[0.949]	[0.168]	[0.567]	[0.839]
Restricts garnishment	0.084	0.064	0.109	0.067	0.060
	[0.390]	[0.349]	[0.143]	[0.453]	[0.387]
Restricts wage assignment	0.111	0.099	0.125	0.127	0.098
	[0.075]*	[0.091]*	[0.048]**	[0.054]*	[0.091]*
Restricts security interests in household goods	-0.080	-0.114	-0.080	-0.069	-0.109
	[0.327]	[0.085]*	[0.299]	[0.406]	[0.101]
Foreclosure takes longer than six months	0.047	0.050	0.002	0.053	0.048
	[0.616]	[0.520]	[0.981]	[0.532]	[0.552]
Usury ceiling	0.071	0.045	0.012	0.032	0.039
	[0.383]	[0.580]	[0.865]	[0.698]	[0.635]
Observations	3479	3479	3479	3479	3479
Other GSW variables omitted from table.					

Table 4: Heckit Selection Model of Interest Rates

(Robust p values in brackets; * significant at 10%; ** significant at 5%; * significant at 1%)**

	Model 1 (Asset)		Model 2 (Income)		Model 3 (Income)	
	Rate	Selection	Rate	Selection	Rate	Selection
Exemption x dummy variable for 1st quartile of asset/income distribution	0.146	-0.118	-2.057	-0.126	-0.037	-0.106
	[0.968]	[0.006]***	[0.616]	[0.009]***	[0.993]	[0.021]**
Exemption x 2d asset/income quartile	-0.367	-0.001	-2.455	0.009	0.042	0.026
	[0.871]	[0.970]	[0.407]	[0.737]	[0.990]	[0.343]
Exemption x 3d asset/income quartile	-1.403	0.084	-0.185	0.035	2.341	0.055
	[0.512]	[0.003]***	[0.940]	[0.188]	[0.331]	[0.036]**
Exemption x 4th asset/income quartile	-0.624	-0.066	-2.224	-0.017	0.787	0.003
	[0.787]	[0.028]**	[0.305]	[0.541]	[0.717]	[0.924]
Unlimited x 1st asset/inc quartile	51.023	-0.615	41.664	-0.465	32.941	-0.522
	[0.002]***	[0.027]**	[0.009]***	[0.249]	[0.048]**	[0.172]
Unlimited x 2d asset/inc quartile	20.016	-0.003	22.315	-0.227	34.349	-0.269
	[0.124]	[0.974]	[0.046]**	[0.242]	[0.000]***	[0.182]
Unlimited x 3d asset/inc quartile	-5.485	-0.163	9.801	-0.066	22.130	-0.093
	[0.659]	[0.279]	[0.239]	[0.557]	[0.009]***	[0.400]
Unlimited x 4th asset/inc quartile	-9.272	-0.239	16.930	-0.256	23.815	-0.304
	[0.502]	[0.021]**	[0.289]	[0.159]	[0.092]*	[0.075]*
Non-business bankruptcies per 1,000					13.543	-0.001
					[0.002]***	[0.987]
Percent bankruptcies Chapter 13					-0.604	-0.005
					[0.000]***	[0.005]***
Ideology (liberal is larger)	0.744	-0.016	0.940	-0.018	0.600	-0.021
	[0.171]	[0.002]***	[0.082]*	[0.000]***	[0.189]	[0.000]***
Percent vote for Bryan in 1900	11.599	-0.257	21.004	-0.316	3.857	-0.413
	[0.758]	[0.341]	[0.589]	[0.219]	[0.864]	[0.119]
Restricts garnishment	6.554	-0.180	6.301	-0.190	18.238	-0.135
	[0.483]	[0.001]***	[0.505]	[0.002]***	[0.012]**	[0.055]*
Restricts wage assignment	6.997	0.040	11.211	0.035	14.102	0.028
	[0.284]	[0.470]	[0.096]*	[0.522]	[0.021]**	[0.622]
Restricts security interests in household goods	3.531	-0.095	3.359	-0.083	5.747	-0.091
	[0.652]	[0.076]*	[0.667]	[0.132]	[0.325]	[0.100]
Foreclosure takes longer than six months	4.959	0.080	7.549	0.080	-0.937	0.026
	[0.519]	[0.249]	[0.351]	[0.259]	[0.894]	[0.728]
Thinks credit is a bad idea		-0.238		-0.220		-0.222
		[0.005]***		[0.009]***		[0.008]***
Observations	3458	3458	3458	3458	3458	3458
Other GSW variables omitted from table.						

Table 5: Effect on Total Amount Borrowed
(Robust p values in brackets; * significant at 10%; ** significant at 5%; * significant at 1%)**

	Model 1 (GSW x Asset)	Model 1 (GSW x Asset)	Model 2 (GSW x income)	Model 2(GSW x income)	Model 3 (HMP x income)	Model 3 (HMP x income)
	Rate	Selection	Rate	Selection	Rate	Selection
Exemption x dummy variable for first quartile of asset/income distribution	-0.54792	-0.0914	-0.21143	-0.05117	-0.03913	-0.01188
	[0.000]***	[0.003]***	[0.003]***	[0.091]*	[0.003]***	[0.083]*
Exemption x 2d asset/inc quartile	-0.19772	0.04125	-0.08686	0.038	-0.0129	-0.00164
	[0.000]***	[0.313]	[0.014]**	[0.182]	[0.110]	[0.776]
Exemption x 3d asset/inc quartile	0.12161	0.09028	0.01212	0.09923	-0.00018	0.01117
	[0.000]***	[0.001]***	[0.788]	[0.004]***	[0.975]	[0.077]*
Exemption x 4th asset/inc quartile	0.15711	0.07459	0.05193	0.17424	0.01133	0.00611
	[0.000]***	[0.020]**	[0.167]	[0.002]***	[0.057]*	[0.586]
Unlimited x 1st asset/inc quartile	-1.4264	-0.16945	-0.64449	-0.05969	.	.
	[0.000]***	[0.095]*	[0.003]***	[0.615]	.	.
Unlimited x 2d asset/inc quartile	-0.51355	0.22111	-0.33743	0.00195	.	.
	[0.000]***	[0.025]**	[0.014]**	[0.987]	.	.
Unlimited x 3d asset/inc quartile	0.19451	0.41679	-0.11089	0.33092	.	.
	[0.194]	[0.000]***	[0.285]	[0.000]***	.	.
Unlimited x 4th asset/inc quartile	0.40267	0.11278	0.17822	0.5752	.	.
	[0.029]**	[0.512]	[0.176]	[0.004]***	.	.
Ideology (liberal is larger)	-0.00989	-0.00198	-0.0164	-0.0073	-0.01693	-0.00404
	[0.225]	[0.801]	[0.006]***	[0.313]	[0.000]***	[0.617]
Percent vote for Bryan in 1900	0.26626	0.15001	-0.06855	0.01753	-0.21283	0.21519
	[0.608]	[0.643]	[0.866]	[0.952]	[0.550]	[0.554]
Restricts garnishment	-0.14907	-0.15347	-0.16815	-0.15097	-0.15233	-0.21164
	[0.024]**	[0.085]*	[0.002]***	[0.074]*	[0.002]***	[0.013]**
Restricts wage assignment	-0.03146	-0.02787	-0.04915	-0.04122	-0.0269	-0.04708
	[0.680]	[0.657]	[0.413]	[0.512]	[0.652]	[0.448]
Restricts security interests in household goods	-0.36463	-0.08181	-0.365	-0.08339	-0.34787	-0.12081
	[0.000]***	[0.290]	[0.000]***	[0.265]	[0.000]***	[0.122]
Foreclosure takes longer than six months	-0.0596	-0.10747	-0.0783	-0.11989	-0.08355	-0.08161
	[0.382]	[0.126]	[0.180]	[0.089]*	[0.109]	[0.238]
Average income of household's profession in ten thousands	.	-0.00681	.	-0.00558	.	-0.00541
	.	[0.069]*	.	[0.148]	.	[0.135]
Observations	3458	3458	3458	3458	3458	3458
Other GSW variables omitted from table.						