

Do Federal Bankruptcy Exemptions Fundamentally Alter Chapter 7 Bankruptcy Outcomes?

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The relationship between federal bankruptcy exemptions and Chapter 7 bankruptcy outcomes are examined using spreadsheet modelling techniques. These techniques benchmark the nature (and distribution) of debts discharged in Chapter 7 assets case filings. Data from Chapter 7 asset cases in the western United States in 2010 indicate an optimal Chapter 7 asset case distribution: 9.0 percent of assets back to the debtor, 28.1 percent to unsecured creditors, 21.0 percent to secured creditors, 28.9 percent to court administrators (including trustees), 4.4 percent to creditors arising from prior bankruptcy filings, and 8.6 percent to all other creditors. The nature (and distribution) of liquidated assets allocated to creditors across debtor choice and non-debtor choice states is empirically assessed and no evidence is found to suggest debtor choice leads to a better outcome for debtors.

INTRODUCTION AND LITERATURE REVIEW

Bankruptcy is a unique consumer decision which is highly strategic, with immediate outcomes which are almost exclusively financial (Sullivan, Warren, & Westbrook, 1988, 197; Fay & White, 2002; Zhu, 2011; Hackney, Friesner, Brajcich, & Hickman, 2014). Households file for bankruptcy protection when they have become (or are close to becoming) financially insolvent. Filing for protection under the U.S. Bankruptcy Code allows debtors to restructure or relieve themselves of their most onerous debts and re-establish themselves financially. The speed with which a household resolves its financial issues, and the means by which debts are restructured or forgiven, become crucial indicators of an efficient bankruptcy process.

The vast majority of consumer bankruptcy cases are filed under either Chapter 7 or Chapter 13 of the U.S. Bankruptcy Code (Hackney & Friesner, 2015). Under a Chapter 13 filing, a household retains most or all assets and debt obligations are disclosed and prioritized. The trustee's obligations are given first priority, followed by secured creditors, priority unsecured creditors (domestic support obligations, taxes owed, etc.), and unsecured creditors. The debtor files a budget listing available income and typical

monthly expenditures. This budget is reviewed by the Chapter 13 Trustee. Disputes about budget line items are typically resolved by negotiation between the debtor and the Chapter 13 trustee, with final approval in the hands of the court. The budget is affected by family size and geographic location. Income remaining after allowable expenses is distributed to creditors (over 36 to 60 months) in order of priority. Any remaining debts are discharged subject to 11 USC § 523 categories of non-dischargeable debt. (Loibl, Hira, & Rupured, 2006; Norberg & Compo, 2007). Most households qualify for Chapter 13 bankruptcy.¹

Under a Chapter 7 filing, the household discloses income, assets and obligations, which are prioritized in a similar manner to Chapter 13 filings. All assets (net of exemptions) are liquidated, and the proceeds are used to repay creditors in order of priority. The remaining obligations are discharged subject to statutory limitations. Only a small percentage of Chapter 7 debtors retain non-dischargeable debts (for example, domestic support obligations, most taxes, intentional tort damages).

In order to file Chapter 7 bankruptcy, a household is subject to a “means test” where household income is compared to the state’s median income for the same family size. Households whose adjusted incomes is lower than the median are allowed to choose either Chapter 7 or Chapter 13 bankruptcy (Power, 2007; Hackney & Friesner, 2015). The vast majority of filers who pass the means test (representing about two-thirds to three-quarters of all consumer bankruptcy filings) file under Chapter 7 (Power, 2007; Hackney, Friesner, Brajcich, & Hickman, 2014).

Bankruptcy, and Chapter 7 in particular, represents a redistribution of wealth from creditors to debtors. A central public policy question is whether the amount of redistribution is socially optimal (Hackney, Friesner, & Johnson, 2016). A number of factors which are exogenous to the bankruptcy process (incomes, obligations and family sizes of debtors) impact the redistribution of wealth (Braucher, 1993; Norberg & Compo, 2007; Lefgren & McIntyre, 2010; Zhu, 2011; Hackney, Friesner, & Johnson, 2016). The bankruptcy outcome is also impacted by exemptions debtors can use to shield assets from liquidation. These exemptions are determined at the state level (Jiminez, 2009). In 31 states, filers must adhere to exemption guidelines specific to that state. However, in 19 states and the District of Columbia (collectively known as “debtor choice states”), Chapter 7 filers may use state-specific exemptions or Federal exemptions (Jiminez, 2009).² If state-specific exemptions are less generous than Federal exemptions, filers in debtor choice states may be able to shield a higher dollar value of assets from liquidation compared to otherwise comparable debtors in other states. In these cases, there may be a greater redistribution of wealth from creditors to debtors. Whether such extraordinary redistribution occurs is a fundamentally empirical issue, since debtors in debtor choice states must have greater assets to shield, a willingness to use Federal exemptions, and state-specific exemptions that are more stringent than Federal exemptions.

Bankruptcy was designed as a social safety net: a process which leads to greater household health. However, the process can be over-used or abused (Hackney, Friesner, & Johnson, 2016). If debtors in a given state present at the time of bankruptcy with very different incomes, assets and debts (both in total and in distribution), a benchmark, or “optimal”, level of debt repaid or discharged is difficult to establish. This becomes much more difficult when comparing bankruptcy filers across states, who may have different asset exemptions and means test criteria. Hence, a prerequisite to addressing the redistributive effects of Chapter 7 asset case filings is to determine a benchmark amount (and distribution) of debt to be exempt, discharged, or repaid in the filing process (Jiminez, 2009). Once established, the redistributive effects of asset exemptions, in a relative sense, can be evaluated. If debtors in debtor choice states consistently shield assets in excess of these benchmarks (while non-debtor choice states do not exceed these benchmarks), then evidence exists suggesting that these additional exemptions are being utilized. This, in turn, suggests a lower total amount of debt repaid through the Chapter 7 bankruptcy process, although the proportion of liquidated assets distributed to higher priority creditors may likely increase, holding other relevant variables constant.

The relationship between federal bankruptcy exemptions and Chapter 7 bankruptcy outcomes are examined using spreadsheet modelling techniques. These techniques benchmark the nature (and distribution) of debts discharged in Chapter 7 assets case filings. As a corollary, the nature (and

distribution) of liquidated assets allocated to creditors across debtor choice and non-debtor choice states is empirically assessed to determine whether more generous exemptions in debtor choice states affect the types of debts discharged. The value of using spreadsheet modelling techniques lies in the accessibility and ease of use by practitioners (especially trustees and other Court personnel), and the ability to analyze data that may or may not have well defined statistical properties. Thus, the approach is simple, flexible and accessible to individuals who implement and manage the bankruptcy process.

The remainder of this paper proceeds in several steps. The next section contains the data used in the analysis, which consists of state-level totals for Chapter 7 asset case filings in 9 states comprising Federal Bankruptcy Court District 9 during the year 2010. This section also describes the empirical methodology used to analyze the data, which consists of spreadsheet modelling and nonlinear programming methods. Empirical results and a discussion of the policy implications arising from those results are contained in the third section. The final section concludes the paper, identifies study limitations, and suggests directions for future research.

DATA

The data are drawn from the U.S. Trustee Program's database of closed Chapter 7 asset cases during the year 2010, the most recent year of data available at the time the research project was initiated (<https://www.justice.gov/ust/bankruptcy-data-statistics/chapter-7-trustee-final-reports>). The database contains both de-identified individual filings and state totals. Information is provided on the distribution of debts presented by the debtor, the claims of creditors (secured claims, priority unsecured claims, unsecured claims, etc.) as well as the total and distribution of claims paid through the sale of debtor assets. Unfortunately, the data contain very few debtor demographics variables to contextualize the debtor's financial position at the time of filing, making interpretation of the individual level data problematic. As a result, this analysis focuses on the state totals. To ensure a parsimonious and interpretable benchmarking model, and to ensure that states themselves are reasonably comparable in socio-economic characteristics, the nine states comprising the Ninth Federal Court District (California, Arizona, Nevada, Oregon, Washington, Idaho, Montana, Alaska and Hawaii) are analyzed. Of these states, Hawaii, Alaska, and Washington allow debtors to choose either Federal or state guidelines (i.e., they are debtor choice states), while the remaining states require filers to use state guidelines. As noted earlier, Oregon was not a debtor choice in 2010, but legislatively adopted that status in 2013. Oregon, based upon the 2010 data, is treated as a non-debtor choice state in this study. Because the analysis uses data freely available in the public domain, and focuses on the state as the unit of observation (rather than the individual), the research is not classified as human subjects research and does not require Institutional Review Board approval.

While the data contain a wide array of debtor and case-specific information, they cannot be construed as meeting the characteristics of a randomly collected sample, and thus are not directly amenable to traditional statistical analysis. Both the individual and state information, as they are totals, are more reflective of populations that are subject to incidental truncation bias. The nature of the bias stems from the fact that asset cases take much longer (as many as two to four years) to close than non-asset cases. Moreover, the data reflect only Chapter 7 filings, not the entirety of consumer bankruptcy filings, and the means test criteria determining eligibility to file under Chapter 7 (which some filers voluntarily choose not to pursue, instead filing under Chapter 13) vary from state to state. Hence, the data are not reflective of the same socio-economic demographic, nor is that demographic measured consistently over time. Instead, what filings exist in the data represent a subset of the census, with inclusion in the reported subset of data being systematically determined in a manner that is latent to the researcher.

At the conclusion of a Chapter 7 filing, assets are either retained by the debtor, or are liquidated and used to repay creditors in order of priority. For simplicity, all resource allocations were collated into six categories: payments to the debtor (including excess funds and exempt assets), payments to secured creditors, payments to priority unsecured creditors, payments to general unsecured creditors, payments for

administrative costs (including, but not limited to trustee payments), payments based on prior bankruptcy expenses, and all other payments.

EMPIRICAL METHODOLOGY

An empirical methodology which emphasizes parsimony is adopted to descriptively benchmark the optimal distribution of resources allocated to creditors and retained by the debtor at the conclusion of a Chapter 7. This descriptive benchmarking approach is appropriate for our data which represent totals (or averages) across groups of decision makers. Consistent with the operations research literature, non-linear programming methods are used to establish benchmarks (Eff, Gschwend, & Johnston, 2008; Ruther, Maclaurin, Leyk, Buttenfield, & Nagle, 2013; Brajcich & Friesner, 2015). These methods are sufficiently flexible to characterize a wide array of decision problems and are uniquely suited to establish relative benchmarks that may be based on extrema or measures of central tendency in a data set. Moreover, non-linear programming methods can be applied to any type of data, whether or not the data are amenable to traditional statistical analysis. While such empirical models may be complex, they may also be formulated in a manner that is accessible to practitioners and policy makers, and can be implemented using software available to both researchers and practitioners (i.e., Microsoft Excel and Solver add-in).

A related concern is the perspective of the analysis. Debtors present at the time of filing with a pre-determined set of assets (both exempt and non-exempt), liabilities, income and socio-demographic characteristics. The state in which debtors file (whether debtor choice or non-debtor choice), and the number of debtors filing in a given state and year, is likewise fixed and known. Debtors file with the intention of relieving themselves of as much debt as possible while attempting to retain as many assets as possible. This is especially true when considering Chapter 7 asset filings, where the debtor possesses (sometimes substantial) assets. Since non-exempt assets are liquidated to pay creditors and most other (dischargeable) debts are discharged, debtors are likely to be indifferent about the amount and distribution of payments (based on the liquidation of non-exempt assets) to specific creditors. Concomitantly, policy makers and Court personnel must adhere to the provisions of the U.S. Bankruptcy Code, which attempts to balance debtor relief with ensuring repayment to creditors in priority order. These perspectives suggest a spreadsheet modelling exercise that is both flexible and general. It should address these varying perspectives and focus on the payments of debts, not the generation of those debts. Since states have different populations, legal structures (which may promote or inhibit specific types of bankruptcy filings), economic conditions, and other socio-economic characteristics, state level totals (filings or debts paid) are likely to be non-comparable across states. Totals must therefore be normalized to ensure comparability.

Based on these considerations, a nonlinear programming problem to benchmark the distribution of debt repayments in Chapter 7 asset case filings is presented:

$$\begin{aligned}
 & \text{minimize}_{w_1, \dots, w_S} \sum_{i=1}^S \sum_{j=1}^T (w_i p_{ij} - \rho_j)^2 \\
 & \text{subject to: } \rho_j = \sum_{i=1}^S w_i p_{ij} \\
 & 0 \leq w_i \leq 1 \quad \forall w_i \\
 & \sum_{i=1}^S w_i = 1
 \end{aligned} \tag{1}$$

where $i = 1, \dots, S$ denotes each state; $j = 1, \dots, T$ denotes each category of debt repayment, and p represents the proportion of total payments (for state i) in category j . As long as, for each state (i), $0 \leq p_{ij} \leq 1$ and $\sum_{i=1}^S p_i = 1$, then:

$$\begin{aligned}
0 &\leq \rho_j \leq 1 \quad \forall \rho_j \\
\sum_{j=1}^T \rho_j &= 1 \\
\sum_{i=1}^S \sum_{j=1}^T w_i p_{ij} &= 1
\end{aligned}
\tag{2}$$

The restrictions noted above for the p_{ij} s are enforced through the construction of these proportional variables. Hence, the restrictions noted above for the ρ_j s also implicitly hold.

The intuition behind the model is straightforward. Identifying an optimal weighting of state characteristics (the distribution of disbursements at the conclusion of Chapter 7 asset filing cases during 2010) that minimizes the sum of squared errors fit around a “benchmark” proportion (ρ) of payments for that state and debt category is the goal of this model. This is intuitive because the benchmark is a measure of central tendency, or average, based solely on the arithmetic properties of proportions in mutually exclusive and collectively exhaustive categories, as well as the data themselves. Deviations from the benchmark allow for excess or a paucity of distributions per category. The sum of squares objectives facilitates the incentives of both debtors (who seek higher asset retention/payments) and policy makers (who seek to balance those interest with the interests of creditors). The use of proportions also allows states to be compared in meaningful terms, especially given that data are state totals which represent the collective financial positions of all Chapter 7 asset case filers, and thus “averages out” the unique socio-cultural and economic aspects of individual filers.

Additionally, the use of benchmarks allows for the empirical investigation of whether debtor choice states allow filers to retain greater assets compared to non-debtor choice states. In such circumstances, the proportion of payments to debtors (asset retention) in Alaska, Hawaii and Washington (debtor choice states) would exceed the benchmark and be higher than non-debtor choice states, and the difference between the actual and optimal proportions would be positive. If the difference between an actual and optimal proportion is negative, then the proportion of assets being distributed to creditors is less than optimal in a manner that is too low. Similar comparisons can be made for asset allocations to other types of creditors.

The model is estimated using standard spreadsheet and data analysis software. In this case, the model was solved using the Solver add in (and more specifically, its GRG Nonlinear programming routine) to Microsoft Excel. The spreadsheet model (available upon request) successfully converged to an optimal value. Because the data are not amenable to standard statistical analysis, no calculations of confidence intervals or formal hypothesis testing were conducted. Instead a simple comparison of the difference between an optimal value and its actual value are used to test the study’s premises.

RESULTS

Table 1 provides an empirical description of Chapter 7 asset cases across the states in the District. Of particular note are the stark differences across states in terms of the number of filings, and the value of debts presented at the time of filing. Arizona, for example, has 3,646 cases, nearly 50 percent higher than the next highest states, namely California (2,213 cases) and Nevada (2,074 cases). Concomitantly, Alaska (66 cases), Hawaii (104 cases), Washington (509 cases) and Montana (563 cases) have the lowest number of Chapter 7 asset case filings. Although Alaska has the lowest number of cases, Alaska exhibits the highest value of receipts per case, at \$920,188.73. California (\$229,114.15) and Hawaii (\$153,326.59) have the second and third highest receipts per case, respectively. The states with the lowest receipts per case are Idaho (\$10,588.08), Oregon (\$11,463.05), and Arizona (\$13,441.94), none of which are debtor choice states.

**TABLE 1
PROPORTION OF DISBURSEMENTS**

State	Exemption	Gross Receipts	Cases	Receipts per Case
AZ	State	49009312	3646	13441.94
HI	Federal or State	15945965	104	153326.59
CA	State	507029623	2213	229114.15
NV	State	33070900.43	2074	15945.47
AK	Federal or State	60732456.2	66	920188.73
ID	State	13436268.64	1269	10588.08
MT	State	9502199.74	563	16877.8
OR	State	21756870.79	1898	11463.05
WA	Federal or State	47655720.84	509	93626.17

Proportion of Total Payments to:

State	Debtor/ Exempt	Unsecured Creditors	Secured Creditors	Court Administ.	Prior Bank.	Others
AZ	0.0362	0.2981	0.2357	0.3135	0.0435	0.073
HI	0.0136	0.3274	0.1989	0.291	0.0379	0.1312
CA	0.0189	0.1492	0.3669	0.4105	0.0257	0.0288
NV	0.0302	0.2842	0.2501	0.3149	0.0477	0.0729
AK	0.0046	0.0336	0.2566	0.507	0.025	0.1731
ID	0.1514	0.4227	0.0545	0.2209	0.0414	0.1092
MT	0.0505	0.2019	0.3626	0.3166	0.0289	0.0396
OR	0.094	0.3035	0.2966	0.2293	0.0516	0.0249
WA	0.0452	0.1333	0.426	0.3204	0.0634	0.0117

Each state is compared to an optimal benchmark, which is based on a weighted average of the individual state values. Table 2 provides the optimal weights that are used to construct the benchmark(s). Note that the weights assigned to Arizona, California, and Nevada are zero, indicating that these states do not contribute to the formation of the optimal benchmark. From a policy perspective, this implies that such states have payments in Chapter 7 asset filing cases that deviate substantially from the optimal benchmarks. In contrast, Oregon (39.8 percent) and Idaho (21.3 percent), which have a reasonably high number of asset cases and modest disbursements per case, contribute most to the optimal benchmarks.

**TABLE 2
SIMULATION RESULTS**

<u>State</u>	<u>Exemption</u>	<u>Optimal Weight</u>	<u>Objective Function Value</u>
Arizona	State	0.000	1.639
	Federal or		
Hawaii	State	0.058	
California	State	0.000	
Nevada	State	0.000	
	Federal or		
Alaska	State	0.157	
Idaho	State	0.398	
Montana	State	0.017	
Oregon	State	0.213	
	Federal or		
Washington	State	0.157	

Table 3 describes the optimal proportions per category and deviations between each state's proportion and the optimal proportion per category. A negative value indicates the proportion of a state's receipts paid to specific creditors is below the optimal value (i.e., too small of a proportion of a state's receipts are paid to creditors), while a positive value reflects an above-optimal proportional payout (i.e., too much is paid to creditors). Column totals provide these proportions overall, while interior proportions are specific to a state. Examining these proportions, an optimal Chapter 7 asset case distributes 9.0 percent of assets back to the debtor, 28.1 percent to unsecured creditors, 21.0 percent to secured creditors, 28.9 percent to court administrators (including trustees), 4.4 percent to creditors arising from prior bankruptcy filings, and 8.6 percent to all other creditors.

**TABLE 3
BENCHMARKING ANALYSIS: DEVIATIONS BETWEEN
OPTIMAL AND ACTUAL PROPORTIONS**

State	Exemption	Cases	Receipts Per Case	Debtor Exempt.	Unsecured Creditor	Secured Creditor	Court Administ.	Prior Bankruptcy	Other
AZ	State	3646	13442	-0.054	0.017	0.026	0.024	-0.001	-0.013
HI	Federal/State	104	153327	-0.076	0.046	-0.011	0.002	-0.006	0.045
CA	State	2213	229114	-0.071	-0.132	0.157	0.121	-0.018	-0.057
NV	State	2074	15945	-0.059	0.003	0.04	0.026	0.004	-0.013
AK	Federal/State	66	920189	-0.085	-0.248	0.047	0.218	-0.019	0.087
ID	State	1269	10588	0.062	0.141	-0.155	-0.068	-0.003	0.023
MT	State	563	16878	-0.039	-0.08	0.153	0.028	-0.015	-0.047
OR	State	1898	11463	0.004	0.022	0.087	-0.06	0.008	-0.061
WA	Federal/State	509	93626	-0.045	-0.148	0.216	0.031	0.019	-0.074
Optimal Benchmark				0.09	0.281	0.21	0.289	0.044	0.086

With regard to distributions to unsecured creditors, the results in Table 3 suggest that in California, Alaska, Montana, and Washington, the proportion of assets distributed is less than optimal. In all other states, the proportion is more than optimal. In the states of Hawaii and Idaho, the proportion of assets being allocated to secured creditors is less than optimal, while in all other states a greater than optimal proportion of assets is distributed to secured creditors. The proportion of assets being allocated to court administrators (including trustees) is below the optimal level in Idaho and Oregon, but above the optimal level in all other states in the District. In Arizona, California, Nevada, Montana, Oregon, and Washington, the proportion allocated to creditors from prior bankruptcy filings is less than the optimal benchmark, while the proportions in Hawaii, Alaska, and Idaho exceed the optimal benchmark. And for all other expenses, the proportions allocated in Arizona, California, Nevada, Montana, Oregon, and Washington are less than the optimal benchmark.

Relative to the optimal benchmark, in Alaska, Hawaii and Washington (debtor choice states) debtors retain a proportion of receipts that is below the optimal benchmark. That is, debtors in these states retain too few of their assets in the Chapter 7 filing. The same is true of debtors in Arizona, California, Nevada, and Montana. Concomitantly, debtors in Oregon and Idaho retain an above optimal proportion of assets. Thus, the model fails to support the contention that debtor choice states allow individuals filing under Chapter 7 to retain too many of their assets, and allow too few assets to be distributed to creditors.

CONCLUSIONS

Spreadsheet modelling techniques are used to evaluate the distribution of debts discharged through the bankruptcy process. Bankruptcy is a process that is highly strategic and financial in nature. Households, especially those filing under Chapter 7 seek to discharge as many debts as possible onto society, while retaining as many assets as possible in that process. Consumer bankruptcy is an important social safety net, and the importance of a mechanism to provide relief to households who, through unforeseen circumstances, have accumulated untenable debt loads, cannot be understated. However, it is equally important for policy makers and court personnel to monitor the amounts and distributions of debt discharged through the bankruptcy process to prevent overuse or abuse. This requires establishing benchmarks to quantify the appropriate level of debt to be discharged through the bankruptcy process. The first contribution of this manuscript is demonstrating that benchmarks *can* be identified in a simple and straightforward fashion, using tools accessible to those involved in administering the bankruptcy process, and by imposing very few ad hoc assumptions.

A second contribution is demonstrating how established benchmarks can be used to evaluate policy issues in an intuitive and parsimonious manner. A common perception about Chapter 7 asset cases is that states which give debtors greater flexibility in exempting assets are more likely to exploit those advantages and retain a disproportionately greater share of assets, thereby leaving disproportionately fewer assets available to be recovered by creditors. The results of our simple spreadsheet modelling exercise suggest that this perception may be unfounded. Chapter 7 filers in Alaska, Washington and Hawaii, which allow debtors greater flexibility in shielding assets, actually retain a lower than optimal proportion of assets. Moreover, in other states that do not allow Chapter 7 filers this flexibility, a greater than optimal proportion of assets are retained by debtors. While this analysis does not provide conclusive finding to suggest that Chapter 7 filers are exploiting various provisions in the U.S. Bankruptcy Code, this analysis does suggest that such exploitations, if they occur, are based on more nuanced considerations than filing in a debtor choice versus a non-debtor choice state.

While this study provides some interesting findings, results are preliminary and should be viewed with caution. Future research is necessary to add depth, breadth and additional analytical rigor to this model. Several extensions are noteworthy. First, this model provides optimal benchmarks that are relative to the Federal Bankruptcy Court Districts from nine states in the western U.S. Future research that included a larger number of geographic regions may obtain different, and more generalizable benchmarks. Similarly, extensions of our work that utilize more, and more recent time periods, or data that is disaggregated to the level of the individual filer, may obtain more accurate and precise benchmarks

than were obtained in the current study. This recommendation is especially salient for bankruptcy filings in Oregon, which converted from a non-debtor choice state to a debtor choice state in 2013. An analysis of how the optimal distribution of debts changed as the legal environment surrounding bankruptcy filings changed would provide invaluable information concerning the possible exploitation of such exemptions. Next, extensions of this model that allow for more than six categories of creditors or claims on assets would provide a more comprehensive understanding of the optimal distribution of debts. Further, extensions of this model to allow for the inclusion of debtor-specific characteristics would allow optimal benchmarks to vary based on the unique characteristics of debtors at the time of filing. Lastly, this model be extended, using randomly selected data from a population, to allow for the construction of confidence intervals and the testing of hypotheses. This would allow for more accurate and precise conclusions to be drawn concerning the appropriateness of debts discharged and assets redistributed through the bankruptcy process.

ENDNOTES

1. The qualifying household must have a regular source of income. Additionally, because Chapter 13 has aggregate debt and property limitations, some high-debt debtors are disqualified and utilize the specialized protection of a Chapter 11 filing.
2. The number of debtor choice states continues to change. As increasing numbers of states legislatively change their exemption statutes to allow their debtors to have access to the generally more liberal Federal exemption statutes. The current list of debtor choice states is as follows: Alaska, Arkansas, Connecticut, Hawaii, Kentucky, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New Mexico, New York, Oregon, Pennsylvania, Rhode Island, Texas, Vermont, Washington, Wisconsin, and the District of Columbia. At the time the data sample was collected, 2010, Oregon was not a debtor choice state, adopting this status in 2013.

REFERENCES

- Brajcich, A., & Friesner, D. (2015). Using Maximum Entropy Outlier Analysis to Identify Multinational Corporation Tax Havens. *Journal of Accounting and Finance*, 15(3), 11-26.
- Braucher, J. (1993). Lawyers and Consumer Bankruptcy: One Code, Many Cultures. *American Bankruptcy Law Journal*, 67, 501-583.
- Eff, M., Gschwend, T., & Johnston, R. (2008). Ignoramus, Ignorabimus? The Principle of Maximum Entropy and Ecological Inference for RxC Tables. *Political Analysis*, 16, 70-92.
- Fay, S., Hurst, E., & White, M. (2002). The Household Bankruptcy Decision. *American Economic Review*, 92(3), 706-718.
- Hackney, D., & Friesner, D. (2015). Using Misclassification Analysis to Evaluate the Effectiveness of the BAPCPA Means Test. *Journal of Accounting and Finance*, 15(4), 40-52.
- Hackney, D., Friesner, D., Brajcich, A., & Hickman, L. (2014). Effects of IRS Collection Activities on the Determination to File Bankruptcy. *Journal of Accounting and Finance*, 14(5), 24-41.
- Hackney, D., Friesner, D., & Johnson, E. (2016). What is the Actual Prevalence of Medical Bankruptcies? *International Journal of Social Economics*, 43(12), 1284-1299.
- Jiminez, D. (2009). The Distribution of Assets in Consumer Chapter 7 Bankruptcy Cases. *American Bankruptcy Law Journal*, 83(4), 795-822.
- Lefgren, L., & McIntyre, F. (2010). Explaining the Puzzle of Cross-State Differences in Bankruptcy Rates. *Journal of Law and Economics*, 52(2), 367-393.
- Loibl, C., Hira, T., & Rupured, M. (2006). First Time versus Repeat Filers: The Likelihood of Completing a Chapter 13 Bankruptcy Repayment Plan. *Journal of Financial Counseling & Planning*, 17(1), 23-33.
- Norberg, S., & Compo, N. (2007). Report on an Empirical Study of District Variations, and the Role of Judges, Trustees and Debtors' Attorneys in Chapter 13 Bankruptcy Cases. *American Bankruptcy Law Journal*, 81(4), 431-470.
- Power, B. (2007). The Courts, Congress and Tax Debts: An Analysis of the Discharge of Tax Debts Before and After the Enactment of the Bankruptcy Abuse Prevention and Consumer Protection Act of 2005. *Fordham Journal of Corporate & Financial Law*, 12, 881-911. Available at: <http://law2.fordham.edu/publications/articles/600flspub8959.pdf> Accessed May 22, 2014.
- Ruther, M., Maclaurin, G., Leyk, S., Battenfield, B., & Nagle, N. (2013). Validation of Spatially Allocated Small Area Estimates for 1880 Census Demography. *Demographic Research*, 29(22), 579-616.
- Sullivan, T.A., Warren, E., & Westbrook, J.L. (1988). Laws, Models, and Real People: Choice of Chapter in Personal Bankruptcy." *Law & Social Inquiry*, 13(4), 661-706.
- Sullivan, T.A., Warren, E., & Westbrook, J.L. (1997). Consumer Bankruptcy in the United States: A Study of Alleged Abuse and of Local Legal Culture. *Journal of Consumer Policy*, 20(2), 223-268.
- Zhu, N. (2011). Household Consumption and Personal Bankruptcy. *Journal of Legal Studies*, 40(1), 1-37.