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ABSTRACT

- Bankruptcy costs are measurement-sensitive and heterogeneous
- Chapter 7 liquidations are not faster or cheaper than Chapter 11 reorganization
- Chapter 11 allows creditors to recover more by preserving assets better

I. Related Literature

Skip

II. Bankrupt Firm Characteristics

A. The Sample

- All corporate bankruptcies filed under Chapter 7 & Chapter 11
- 1995–2001
- Federal Bankruptcy Courts of AZ and NY

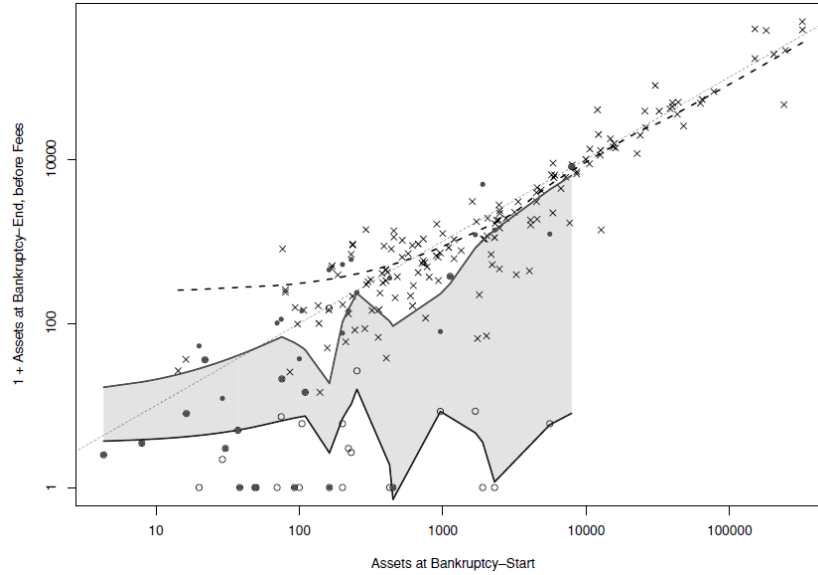
B. Pre-bankruptcy Firm Characteristics

Table I

		N	Mean	SD	Min	Median	Max
Pre-bankruptcy assets	Chapter 7	61	\$501,886	\$1,271,522	\$0	\$110,813	\$7,921,000
	Chapter 11	225	\$19,800,000	\$71,900,000	\$0	\$1,200,000	\$712,000,000
Debt/assets ratio	Chapter 7	56	5.37	12.81	0.09	1.68	88.96
	Chapter 11	221	5.71	30.20	0.01	1.25	370.15
Secured debt to total debt ratio	Chapter 7	36	37.03%	42.22%	0%	12.30%	100%
	Chapter 11	222	47.64%	36.52%	0%	45.94%	100%
Total number of creditors	Chapter 7	58	27	33	0	12	158
	Chapter 11	216	159	538	1	23	5004
% of secured creditors	Chapter 7	58	4.56%	4.88%	0%	8.70%	5.06%
	Chapter 11	216	4.49%	10.53%	0%	8.70%	16.29%
Secured debt includes banks (Y/N)	Chapter 7	45	31.11%	46.82%	0	0	1
	Chapter 11	176	36.93%	48.40%	0	0	1
Unsecured debt includes banks (Y/N)	Chapter 7	46	36.96%	48.80%	0	0	1
	Chapter 11	176	18.18%	38.68%	0	0	1
Equity owned by managers	Chapter 7	61	32.19%	44.31%	0%	0%	100%
	Chapter 11	225	42.59%	45.27%	0%	20%	100%

- “Big deals” are more usual in Chapter 11 (than Chapter 7)
- Chapter 11 > Chapter 7 for: size before bankruptcy, fractions of secured debt, total # of creditors, managers’ ownership

Figure 1



- O for Chapter 7 (concentrated at bottom), X for Chapter 11 (at 45° line)
- Bottom: poor resulting assets, 45° line: assets are well-preserved

C. Determinants of Choice of Procedure

Table II

Probits	Presence of Creditors' Committee (Y/N)	Forced Petition (Y/N)	Chapter 11 (Y/N)
(SD of Dependent Variable)	(0.35)	(0.24)	(0.46)
Number of secured creditors/100	7.008* [1.85]	-36.701** [2.05]	32.688*** [2.65]
Number of unsecured creditors/100	0.091 [1.28]	0.142 [1.36]	0.199 [0.90]
Secured debt includes ≥ 1 bank (Y/N)	0.030 [0.11]	-0.330 [0.53]	-0.784** [2.53]
Unsecured debt includes ≥ 1 banks (Y/N)	-0.993** [2.41]	-0.230 [0.40]	-1.239*** [3.79]
Equity owned by managers (%)	-0.003 [1.25]	-0.000 [0.06]	0.006* [1.78]
Secured debt to total debt	-0.284 [0.72]	-0.468 [0.55]	-0.278 [0.74]
Debt/assets > 100% (Y/N)	1.181*** [3.99]	0.200 [0.55]	0.711** [2.32]
Total assets	-15.258* [1.83]	-618.515 [.]	-11.514* [1.93]
Total assets \times (assets > \$100K)	15.082* [1.83]	617.337*** [536.30]	12.657** [2.31]
Total assets \times (assets > \$1M)	0.264 [0.54]	1.186 [1.09]	-0.937 [1.06]
Total assets \times (assets > \$10M)	-0.071 [1.07]		
χ^2 -test (asset variables = 0) (p-value)	0.01**	0.00***	0.00***
Arizona dummy	-0.683** [2.42]	-0.012 [0.03]	0.432 [1.37]
Constant	-1.595*** [3.63]	-0.860 [1.38]	-0.108 [0.29]
Observations	198	166	167
R ²	0.37	0.21	0.35

- Firms prefer Chapter 11 under certain conditions; causes an endogenous selection (or self-selection) problem as a result
- Firms will go Chapter 11 when: they are not too tiny, # of secured creditors \uparrow , a bank is not their creditor, more underwater (i.e. leverage \uparrow)

III. Indirect Bankruptcy Cost: Reported Asset Value Changes during Bankruptcy

A. Descriptive Statistics

Table III

	Pre-bankruptcy		Post-bankruptcy, Pre-fees			Ratio Post-Pre-bankruptcy		
			Chapter 7 Secured Recovery Is:			Chapter 7 Secured Recovery Is:		
	Chapter 7	Chapter 11	Reported	Optimistic	Chapter 11	Reported	Optimistic	Chapter 11
<i>N</i>	61	225	50	50	157	34	34	152
Mean	\$501,886	\$19,800,000	\$158,989	\$388,339	\$20,400,000	17.2%	80.0%	106.5%
<i>SD</i>	\$1,271,522	\$71,900,000	\$1,035,574	\$1,249,510	\$68,800,000	35.2%	89.9%	83.2%
Minimum	\$0	\$0	\$0	\$0	\$13,427	0.0%	0.0%	3.4%
Quartile 1	\$49,000	\$315,146	\$0	\$0	\$335,341	0.0%	10.7%	55.3%
Median	\$110,813	\$1,100,000	\$0	\$6,593	\$1,040,385	0.8%	38.0%	86.9%
Quartile 3	\$278,900	\$5,863,500	\$0	\$139,650	\$6,529,087	12.3%	136.0%	120.4%
Maximum	\$7,921,000	\$712,000,000	\$7,328,549	\$7,328,549	\$474,000,000	158.9%	278.2%	474.8%

- Chapter 11 better preserves assets under bankruptcy than Chapter 7
- Post-pre-ratio: 80%<107% (mean), 38%<87% (median)

B. Determinants

Table IV

(SD of Dependent = 1.09)		OLS	Treatment Effects	Heckman	Heckman
Inverse Mills Ratio			sig*	insig	sig*
Chapter 11 (Y/N)	+	0.785*** [4.06]			
Chapter 11 (Y/N)—instrumented	+		1.373*** [3.57]		
Conversion from Chapter 11 (Y/N)		-0.114 [0.56]	-0.107 [0.53]		
Length of proceedings in days (log)		0.010 [0.10]	-0.000 [0.00]	0.034 [0.36]	0.126 [1.07]
Forced petition (Y/N)	-	-0.667** [2.51]	-0.608** [2.07]	-0.730 [1.61]	-0.345 [0.80]
Unsecured committee (Y/N)	-			-0.401* [1.92]	-0.321 [1.36]
Number of unsecured creditors/100		-0.012 [0.71]	-0.018 [1.06]	-0.011 [0.61]	-0.006 [0.30]
Number of secured creditors/100—		-0.049* [1.95]	-0.077*** [3.09]	-0.039 [1.28]	-0.008 [0.23]
Secured debt includes banks (Y/N)		0.030 [0.25]	0.110 [0.85]	-0.037 [0.28]	-0.005 [0.03]
Unsecured debt includes banks (Y/N)		-0.160 [1.15]	0.071 [0.39]	-0.135 [0.82]	-0.163 [0.77]
Equity owned by managers (%)		-0.002 [1.15]	-0.002 [1.52]	-0.001 [0.91]	-0.002 [1.09]
Total expenses to pre-assets	++	3.893** [2.39]	3.952** [2.41]		
Debtor expenses to pre-assets	++			1.072*** [14.83]	1.069*** [11.32]

(SD of Dependent = 1.09)		OLS	Treatment Effects	Heckman	Heckman
Unsecured expenses to Pre-assets	+			11.879** [2.37]	3.379 [0.74]
Secured debt to total debt	+++	0.544** [2.14]	0.454* [1.73]	0.470** [2.08]	0.268 [1.05]
Debt/assets > 100% (Y/N)	++++	0.575*** [4.90]	0.485*** [3.66]	0.669*** [4.90]	0.670*** [4.27]
Total assets		6.510 [0.93]	9.835 [1.29]	-2.294 [0.35]	-0.924 [0.12]
Total assets × (assets > \$100K)		-6.300 [0.91]	-9.677 [1.28]	2.140 [0.33]	0.802 [0.10]
Total assets × (assets > \$1M)		-0.199 [1.02]	-0.161 [0.80]	0.107 [0.50]	0.086 [0.41]
Total assets × (assets > \$10M)	+	-0.008 [0.28]	0.005 [0.17]	0.050* [1.70]	0.038 [1.22]
χ ² -test (asset variables = 0) (p-value)		0.42	0.25	0.30	0.60
Arizona dummy	---	-0.184* [1.74]	-0.210** [2.03]	-0.328** [2.54]	
χ ² -test (Specific Judge Effects) (p-value)					0.00***
Constant		-1.655** [2.48]	-1.983*** [3.10]	-0.521 [0.79]	1.858 [1.55]
Observations		150	150	121	120
R ²		0.52	0.52	0.74	0.79

- Ch. 11 retains value 79% (OLS), 137% (consider self-selection) better than Ch. 7
- Assets are better preserved when: total (or debtor) expenses ↑, secured debt ↑, leverage ↑, located in NY

IV. Indirect Bankruptcy Cost: Time in Bankruptcy

- Indirect bankruptcy costs such as bankruptcy's adverse impact on product and capital markets increase with the time that firms spend in bankruptcy

A. Overall Duration

Table V

	Chapter 11	Chapter 7	(Ch11 → Ch7) Conversions
<i>N</i>	257	116	42 (out of 116)
Mean	828	709	672
<i>SD</i>	391	367	334
Minimum	56	74	120
Quartile 1	550	440	428
Median	866	672	655
Quartile 3	933	936	859
Maximum	2,215	1,553	1,509

- About 2 years to resolve: on average, 828 days (Ch. 11), 709 (7), 672 (11→7)
- Chapter 11 takes longer time than Chapter 7 at a glance

Table VI

(SD of Dependent = 0.61)		OLS	Treatment Effects	Heckman	Heckman
Inverse Mills Ratio			insig	insig	insig
Chapter 11 (Y/N)	+	0.412** [2.31]			
Chapter 11 (Y/N)—Instrumented			−0.062 [0.17]		
Conversion from Chapter 11 (Y/N)	+	0.467** [2.28]			
Forced petition (Y/N)		0.052 [0.23]	0.010 [0.04]	0.051 [0.21]	0.008 [0.03]
Unsecured committee (Y/N)		−0.045 [0.30]		−0.016 [0.10]	−0.117 [0.73]
Number of unsecured creditors/100	+	0.012 [0.77]	0.014 [0.90]	0.013 [0.88]	0.029* [1.85]
Number of secured creditors/100	++++	0.057** [2.50]	0.058** [2.37]	0.051* [2.43]	
Secured debt includes banks (Y/N)		0.005 [0.04]	−0.016 [0.11]	0.036 [0.23]	−0.035 [0.23]
Unsecured debt includes banks (Y/N)		−0.088 [0.65]	−0.146 [0.85]	−0.193 [1.02]	−0.168 [0.96]
Equity owned by managers (%)		0.002 [1.54]	0.002 [1.30]	0.002 [1.40]	0.002 [1.60]
Secured debt to total debt		0.038 [0.23]	0.078 [0.41]	0.125 [0.61]	0.113 [0.51]
Debt/assets > 100% (Y/N)		0.158 [1.43]	0.187 [1.53]	0.141 [1.08]	0.147 [1.10]
Total assets		−2.124 [0.83]	−1.756 [0.67]	−0.185 [0.06]	−0.732 [0.20]
Total assets × (assets > \$100K)		2.281 [0.91]	1.960 [0.76]	0.379 [0.13]	0.951 [0.27]

(SD of Dependent = 0.61)		OLS	Treatment Effects	Heckman	Heckman
Total assets × (assets > \$1M)		−0.121 [0.71]	−0.155 [0.88]	−0.150 [0.80]	−0.164 [0.95]
Total assets × (assets > \$10M)	--	−0.035 [1.41]	−0.048* [1.73]	−0.043 [1.37]	−0.054* [1.75]
χ^2 -test (asset variables = 0) (<i>p</i> -value)		0.45	0.25	0.56	0.28
Arizona dummy		−0.062 [0.65]	−0.035 [0.36]	−0.061 [0.51]	
χ^2 -test (Specific Judge Effects) (<i>p</i> -value)					0.01**
Constant		5.874*** [31.46]	6.262*** [23.38]	6.188*** [23.72]	5.925*** [19.57]
Observations		195	195	165	164
<i>R</i> ²		0.10	0.09	0.07	0.26

- Chapter 11: + significant in OLS, insignificant after addressing self-selection issues
- Chapter 11 takes longer only because the types of firms that choose it intrinsically need more time; the procedure itself does not increase indirect costs, i.e. duration
- Secured creditors ↑ → days in bankruptcy ↑, vary judge by judge
- Increase with size monotonically (but mild)

	Scale			
	\$0–\$100k	\$100k–\$1m	\$1m–\$10m	\$10m and above
Mean time, Ch. 7	666	674	738	
Mean time, Ch. 11	694	750	835	958

- **Table VII, Table VIII:** introduce three phases (filing–submission, submission–confirmation, confirmation–closure), report determinants respectively

V. Direct Bankruptcy Costs: Court-Declared Expenses

A. Descriptive Statistics

Table IX

	Expenses Divided by Pre-Bankruptcy Assets		Expenses Divided by Post-Bankruptcy Assets			Expenses Divided by Total Liabilities	
			Chapter 7 Secured Recovery Is:				
	Chapter 7	Chapter 11	Reported	Optimistic	Chapter 11	Chapter 7	Chapter 11
<i>N</i>	57	222	21	38	157	76	227
Mean	8.1%	16.9%	80.4%	37.9%	9.4%	2.9%	11.5%
<i>SD</i>	11.9%	74.3%	32.7%	44.4%	16.8%	5.3%	55.2%
Minimum	0.0%	0.0%	9.7%	0.0%	0.0%	0.0%	0.0%
Quartile 1	0.0%	0.2%	55.2%	0.4%	0.8%	0.0%	0.2%
Median	2.5%	1.9%	100.0%	9.6%	3.5%	0.4%	1.4%
Quartile 3	10.7%	6.7%	100.0%	100.0%	9.5%	3.7%	5.5%
Maximum	47.8%	885.3%	100.0%	100.0%	98.5%	34.8%	555.4%
% ≥ 100%	0%	3%	68%	29%	0%	0%	2%
% <1 %	46%	41%	0%	29%	30%	54%	44%
% = 0%	35%	20%	0%	21%	9%	45%	19%
Arizona							
<i>N</i>	11	106	6	7	66	11	108
Mean	9.4%	5.7%	75.9%	32.6%	4.3%	3.6%	7.8%
<i>SD</i>	10.7%	26.2%	37.9%	46.4%	5.7%	3.7%	53.4%
Median	6.5%	0.8%	100.0%	5.7%	1.9%	2.6%	0.7%
New York							
<i>N</i>	46	116	15	31	91	65	119
Mean	7.8%	27.1%	82.2%	39.0%	13.1%	2.8%	14.8%
<i>SD</i>	12.2%	98.8%	31.7%	44.6%	20.8%	5.5%	56.7%
Median	2.1%	3.7%	100.0%	9.7%	4.6%	0.2%	2.8%

- Bankruptcy costs are sensitive to: the choice of statistic (mean/median), the choice of denominator (pre-/post-bankruptcy assets/total liabilities)
- **Table X:** analyze category by category, 45% of Chapter 7 expenses are for the debtor' attorney, 80% of Chapter 11 expenses are for the debtor expenses, debtors (\$6.2M) & unsecured committees (\$6.6M) spend about equal amounts

B. Determinants

Table XI

(SD of Dependent = 0.35)		OLS	Treatment Effects	Heckman	Heckman
Inverse Mills ratio			sig*	sig**	sig**
Chapter 11 (Y/N)	+	0.100* [1.80]			
Chapter 11 (Y/N)–Instrumented			−0.322 [1.34]		
Conversion from Chapter 11 (Y/N)		−0.014 [0.22]	0.021 [0.33]		
Forced petition (Y/N)		0.224 [1.42]	0.218 [1.46]	0.176 [1.34]	0.158 [1.21]
Length of proceedings in days (log)		0.031 [1.29]	0.033 [1.44]	0.014 [0.58]	0.013 [0.43]
Unsecured committee (Y/N)		0.003 [0.05]		0.036 [0.70]	0.017 [0.32]
Number of unsecured creditors/100		0.001 [0.43]	0.001 [0.66]	0.005 [1.58]	0.005 [1.24]
Number of secured creditors/100		−0.005 [0.66]	0.000 [0.08]	0.000 [0.03]	−0.004 [0.29]
Secured debt includes banks (Y/N)		0.001 [0.03]	0.006 [0.20]	−0.032 [1.08]	−0.029 [0.87]
Unsecured debt includes banks (Y/N)		0.031 [0.63]	0.021 [0.46]	−0.009 [0.14]	−0.002 [0.04]
Equity owned by managers (%)		−0.000 [0.64]	−0.000 [0.94]	−0.000 [0.65]	−0.000 [0.17]
Secured debt to total debt		−0.067 [1.16]	−0.027 [0.43]	−0.019 [0.30]	−0.020 [0.27]
Debt/assets > 100% (Y/N)		−0.005 [0.15]	0.004 [0.14]	0.036 [0.91]	0.041 [0.97]
Total assets	+++	2.658** [1.98]	2.237* [1.70]	3.274* [1.78]	3.428 [1.37]
Total assets × (assets > \$100K)	---	−2.781** [2.08]	−2.395* [1.84]	−3.366* [1.84]	−3.521 [1.42]

(SD of Dependent = 0.35)		OLS	Treatment Effects	Heckman	Heckman
Total assets × (assets > \$1M)	+++	0.098** [2.18]	0.146** [2.57]	0.076* [1.69]	0.076 [1.59]
Total assets × (assets > \$10M)	++++	0.023** [3.02]	0.011* [1.84]	0.015** [2.46]	0.017** [2.73]
χ^2 -Test (asset variables = 0) (p-value)		0.00**	0.00**	0.00**	0.00**
Arizona dummy	---	−0.079** [2.49]	−0.091** [2.95]	−0.049* [1.66]	
χ^2 -Test (Specific Judge Effects) (p-value)					0.14
Constant		−0.086 [0.52]	0.217 [0.93]	−0.014 [0.08]	0.342* [1.73]
Observations		194	194	165	164
R ²		0.26	0.28	0.41	0.46

	Scale			
	\$0–\$100k	\$100k–\$1m	\$1m–\$10m	\$10m and above
Mean fees/pre-assets	31.5%	10.2%	3.9%	1.3%
Median fees/pre-assets	23.2%	4.9%	1.4%	0.8%
Mean fees/liabilities	21.0%	7.4%	7.0%	1.2%
Median fees/liabilities	4.0%	3.9%	2.0%	0.7%

- Expenses for Chapter 7 & 11 are not different after considering self-selection issues
- Assets $\uparrow \rightarrow$ Total bankruptcy costs \downarrow (with decreasing rates)
- **Table XII:** determinants of debtor costs, no difference between Chapter 7 & 11, increase with unsecured expenses (strategic complement, negative externalities or an optimal division of labor among multiple parties), higher costs in NY

C. Interpreting Direct Bankruptcy Cost Estimates

- Large heterogeneity in bankruptcy costs. Should adopt a balanced approach

VI. Creditor Recovery Rates and APR Violations

- Absolute Priority Rule

A. Descriptive Statistics

Table XIII

	Secured Recovery			Unsecured Recovery			Total Recovery			APR	
	Chapter 7		Chapter 11	Chapter 7		Chapter 7		Chapter 11	Chapter 11 Only		
	Secured Recovery Is:			Secured Recovery Is:		Secured Recovery Is:					
	Reported	Optimistic		Reported	Optimistic	Reported	Optimistic		APR Violation	Adherence	
<i>N</i>	29	30	143	115	173	47	47	157	263	261	
Mean	32.4	51.4	90.2	1.1	51.6	5.4	27.4	69.4	12.2%	91.0%	
<i>SD</i>	46.4	49.6	21.8	8.4	41.3	19.9	38.2	32.4	32.8%	27.2%	
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	−40.5%	
Quartile 1	0.0	0.0	95.0	0.0	10.0	0.0	0.0	45.8	0.0%	100.0%	
Median	0.0	70.6	100.0	0.0	40.0	0.0	5.8	79.2	0.0%	100.0%	
Quartile 3	100.0	100.0	100.0	0.0	100.0	0.0	64.7	100.0	0.0%	100.0%	
Max	100.0	100.0	100.0	87.9	100.0	98.3	100.0	100.0	100.0%	100.0%	
% = 0	59	47	1	95	5	79	43	0	88	0	
% ≥ 100%	30	47	74	0	35	0	6	34	12	89	

- Recovery rates: secured creditors in Chapter 7 do not fare well
- Recovery rates increase monotonically in size (but mild)

	Scale					Relationship	
	Recovery	\$0-\$100k	\$100k-\$1m	\$1m-\$10m	\$10m and above		
Total	Ch. 11	46%	57%	75%	84%		Monotonic, but modest compared to 38% <i>SD</i> Step function Not monotonic
Secured	Ch. 11	77%	91%	91%	94%		
Unsecured	Ch. 11	47%	40%	61%	59%		
Total							
Pessimistic	Ch. 7	3%	1%	25%		Intrinsically unreliable	
Optimistic	Ch. 7	11%	58%	61%		Intrinsically unreliable	
Unsecured	Ch. 7	1%	0%	1.5%		Tiny	

- APR Violation (digital): 1 if violates, 0 if obeys
- Adherence (continuous): from 0 if fully ignores to 1 if perfectly follows

Table XIV

(SD of Dependent = 38.36)					(SD of Dependent = 38.36)					
		OLS	Treatment Effects	Heckman	Heckman		OLS	Treatment Effects	Heckman	Heckman
Inverse mills ratio			insig	insig	insig	Debtor expenses to pre-assets	++		6.909*	6.468*
Chapter 11 (Y/N)	+	53.197*** [5.75]				Unsecured expenses to pre-assets			-49.877 [0.69]	-162.719 [1.36]
Chapter 11 (Y/N)—instrumented	+		58.938*** [4.76]			Secured debt to total debt	++++	28.894*** [3.21]	27.446*** [3.06]	34.072*** [3.50]
Conversion from Chapter 11 (Y/N)		-7.662 [0.73]	-8.763 [0.82]			Debt/assets > 100% (Y/N)	----	-24.568*** [5.33]	-25.241*** [5.38]	-29.490*** [5.33]
Forced petition (Y/N)	----	-27.631*** [2.72]	-27.005*** [2.75]	-21.137*** [2.69]	-23.818** [2.13]	Total assets		60.131 [0.33]	67.861 [0.38]	-248.876 [0.95]
Length of proceedings in days (log)		-2.723 [0.65]	-2.743 [0.66]	-6.658 [1.54]	-7.285 [1.22]	Total assets × (assets > \$100K)		-68.583 [0.39]	-77.025 [0.43]	247.376 [0.95]
Unsecured committee (Y/N)				6.151 [0.94]	5.049 [0.69]	Total assets × (assets > \$1M)		8.798 [1.18]	9.410 [1.27]	1.432 [0.18]
Number of unsecured creditors/100		-0.410 [0.90]	-0.483 [1.09]	-0.460 [1.04]	-0.187 [0.32]	Total assets × (assets > \$10M)		-0.243 [0.20]	-0.154 [0.13]	0.135 [0.14]
Number of secured creditors/100	----	-2.423** [2.38]	-2.725** [2.34]	-3.707*** [2.72]	-3.341** [2.19]	χ ² -test (asset variables = 0) (p-value)		0.21	0.21	0.49
Secured debt includes banks (Y/N)		3.304 [0.71]	4.277 [0.90]	7.024 [1.36]	9.194 [1.48]	Arizona dummy		-7.324 [1.59]	-7.312 [1.58]	-5.471 [1.04]
Unsecured debt includes banks (Y/N)		-0.606 [0.08]	2.049 [0.22]	5.313 [0.44]	2.239 [0.18]	χ ² -test (Specific Judge Effects) (p-value)				0.63
Equity owned by managers (%)		-0.049 [0.96]	-0.055 [1.07]	-0.061 [1.06]	-0.070 [1.00]	Constant		39.191 [1.33]	35.222 [1.13]	114.094*** [3.87]
Total expenses to pre-assets		-13.389 [0.65]	-10.322 [0.48]			Observations		143	143	121
						R ²		0.63	0.63	0.55

- Ch. 11 outperforms in terms of total recovery rate (w/ self-selection controls)
- Recovery rates ↓ when: forced petition, # of secured creditors ↑, leverage ↑
- Recovery rates ↑ when: debtor expenses ↑, portion of secured debt ↑

Table XV

Panel A: Secured Creditors				Panel B: Unsecured Creditors				
(SD of Dependent = 41.74)				(SD of Dependent = 41.06)				
	OLS	Heckman	Heckman		OLS	Treatment Effects	Heckman	Heckman
Inverse Mills ratio		insig	insig	Inverse mills ratio		insig	insig	insig
Chapter 11 (Y/N)				Chapter 11 (Y/N)	+	56.448*** [7.36]		
Chapter 11 (Y/N)—Instrumented				Chapter 11 (Y/N)—Instrumented	+		58.314*** [4.27]	
Conversion from chapter 11 (Y/N)				Conversion from chapter 11 (Y/N)		0.605 [0.07]	0.710 [0.09]	
Length of proceedings in days (log)				Length of proceedings in days (log)		-4.733 [0.97]	-4.798 [0.98]	-7.741 [1.37]
Forced petition (Y/N)				Forced petition (Y/N)	—	-22.101* [1.66]	-22.130* [1.81]	-14.640 [1.22]
Unsecured committee (Y/N)				Unsecured committee (Y/N)		-0.236 [0.03]	2.633 [0.28]	5.546 [0.49]
Number of unsecured creditors/100				Number of unsecured creditors/100		0.254 [0.35]	0.231 [0.31]	0.122 [0.16]
Number of secured creditors/100	—	-2.538*** [2.67]	-2.418*** [2.49]	Number of secured creditors/100	----	-6.894*** [4.94]	-6.983*** [5.14]	-7.250*** [4.41]
Secured debt includes banks (Y/N)				Secured debt includes banks (Y/N)		-1.325 [0.21]	-1.008 [0.15]	4.460 [0.56]
Unsecured debt includes banks (Y/N)				Unsecured debt includes banks (Y/N)	+++	16.266** [2.36]	16.919** [2.00]	19.832* [1.81]
Equity owned by managers (%)				Equity owned by managers (%)		-0.003 [0.05]	-0.004 [0.07]	-0.029 [0.37]
Debtor expenses to pre-assets				Debtor expenses to pre-assets	++			8.509*** [3.98]
Unsecured expenses to pre-assets				Unsecured expenses to pre-assets				-24.174 [0.27]
Total expenses to pre-assets				Total expenses to pre-assets		-3.699 [0.22]	-3.283 [0.20]	
Secured debt to total debt				Secured debt to total debt		13.275 [1.41]	12.840 [1.30]	15.443 [1.30]
Debt/assets > 100% (Y/N)	---	-13.482*** [3.01]	-12.565*** [2.95]	Debt/assets > 100% (Y/N)	----	-31.499*** [4.49]	-31.887*** [4.53]	-40.407*** [4.70]
Total assets		-287.747 [1.26]	-302.268 [1.32]	Total assets		83.452 [0.70]	88.604 [0.70]	-133.727 [0.83]
Total assets × (assets > \$100K)		288.121 [1.28]	303.469 [1.35]	Total assets × (assets > \$100K)		-84.497 [0.72]	-89.724 [0.73]	142.128 [0.90]
Total assets × (assets > \$1M)		-1.713 [0.27]	-2.368 [0.36]	Total assets × (assets > \$1M)		1.449 [0.13]	1.473 [0.14]	-7.786 [0.63]
Total assets × (assets > \$10M)		1.354 [1.13]	1.191 [0.98]	Total assets × (assets > \$10M)		-0.343 [0.22]	-0.296 [0.18]	-0.570 [0.31]
χ^2 -test (asset variables = 0) (p-value)		0.44	0.05	χ^2 -test (asset variables = 0) (p-value)		0.88	0.00***	0.87
Arizona dummy	--	-7.718* [1.93]	-7.344* [1.85]	Arizona dummy		-8.278 [1.37]	-8.275 [1.41]	-9.266 [1.20]
χ^2 -test (Specific Judge Effects) (p-value)			0.37	χ^2 -test (Specific Judge Effects) (p-value)				0.03**
Constant		129.749*** [5.39]	125.993*** [5.16]	Constant		38.423 [1.34]	37.581 [1.27]	115.029*** [3.18]
Observations		124	124	Observations		162	162	132
R ²		0.21	0.22	R ²		0.42	0.42	0.36

- Secured creditors: # of secured creditors \uparrow , leverage \uparrow , AZ \rightarrow recovery rates \downarrow
- Unsecured creditors: Ch. 11, \exists unsecured bank, debtor expense $\uparrow \rightarrow$ recovery \uparrow , but # of secured creditors \uparrow , leverage $\uparrow \rightarrow$ recovery \downarrow

C. Determinants of APR Violations

- **Table XVI:** # of secured creditors \downarrow , secured debt \uparrow , leverage \uparrow , tiny firms, managers' ownership \uparrow , unsecured expenses \uparrow , AZ \rightarrow APR violation \uparrow

VII. The Role of Courts

A. Court Oversight of Fees

- **Table XVII:** whether the courts appear to act as a binding constraint on legal expenses in equilibrium. The answer is negative. In equilibrium, courts mostly rubberstamp legal expense request

B. Behavioral Differences among Judges

- **Table XVIII:** analyze judge by judge, AZ judges more violate APR than NY judges (18% vs. 6%), new judges (after 1975) recover more than old judges (91.3% vs. 89.6%) & follow APR more than old judges (82.4% vs. 78.7%), female judges recover more than male judges (95% vs. 89%) & reign fees more (12.4% vs. 4.6%)

VIII. Conclusion

- After addressing endogenous selection problems, Chapter 7 seems to offer few advantages; it takes similar days to resolve, requires similar fees, provides creditors with lower recovery rates than a comparable Chapter 11 procedure
- Bankruptcy costs: sensitive to procedures, denominators (i.e. pre-/post-bankruptcy assets/liabilities), central statistics (i.e. mean/median)
- Theorists would be well advised not to claim either uniformly low or uniformly high bankruptcy costs, but rather to recognize that bankruptcy costs are modest in some firms, and large in other firms