

Online Appendix for “Do the Right Firms Survive Bankruptcy?”

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Introduction

This Online Appendix for [Antill \(2020\)](#) contains additional results and information complementing the paper.

Online appendix OA.1 Form-of-exit examples

This section provides examples of each form of exit. I also provide examples of the role that 363 sales play in determining the form of exit.

Budget Group sold in a 363 sale (see, for example, docket entry 274) to Cendant,¹ allowing Budget to continue operating as a Cendant subsidiary. The URD classifies this as an acquisition and the BD classifies this as a case involving 363 sales.

National Bedding L.L.C. acquired Sleepmaster as part of Sleepmaster’s plan of “reorganization” (see docket entry 924).² The URD classifies this as an acquisition and the BD classifies this as a case not involving 363 sales.

Linen’s n Things sold substantially all of its assets in a 363 sale (see docket entry 1742) to a group of professional liquidators.³ The liquidators proceeded to dissolve the company and liquidate the assets piecemeal.⁴ The URD classifies this as a piecemeal liquidation and the BD classifies this as a case involving 363 sales.

Crown Pacific Partners liquidated through a confirmed plan of liquidation. The plan transferred some assets to the lien-holding creditors and established a liquidating trust to sell other assets.⁵ The URD classifies this as a piecemeal liquidation and the BD classifies this as a case not involving 363 sales.

¹See <https://www.deseret.com/2002/8/23/19673368/cendant-agrees-to-purchase-most-budget-group-assets>.

²See <https://www.furnituretoday.com/business-news/sertas-largest-licensees-will-merge-with-court-ok/>.

³See <https://www.reuters.com/article/governmentFilingsNews/idUSN1535213520081015>.

⁴See <https://chainstoreage.com/news/liquidation-sales-begin-linens-n-things>.

⁵See <https://sec.report/Document/0001104659-04-040627/>.

American Airlines successfully emerged from bankruptcy through a plan of reorganization.⁶ As part of the plan, claimants received newly issued common shares. Prior to confirming the plan, the debtor sold some (but not all) of its assets using 363 sales.⁷ The URD classifies this as a reorganization and the BD classifies this as a case involving 363 sales.

Finally, AMTROL successfully emerged from bankruptcy through a plan of reorganization. According to the plan, AMTROL’s creditors “converted their Notes into equity in the reorganized Company,” and AMTROL did not engage in meaningful asset sales during the bankruptcy.⁸ The URD classifies this as a reorganization and the BD classifies this as a case not involving 363 sales.

Online appendix OA.2 Data and variable descriptions

Online appendix OA.2.1 Data details

The URD contains Moody’s proprietary estimates of the final recovery rate received by creditors, typically based on the confirmed plan of reorganization or liquidation. Each debt instrument’s recovery rate is calculated as the ratio of the total dollar amount paid out to the instrument holders at the end of the bankruptcy, discounted to the start of the bankruptcy at the pre-petition interest rate for the instrument, to the total dollar amount of pre-petition debt associated with the instrument. Unless otherwise stated, I use the “family recovery,” which is the “simple dollar-weighted average of the recovery rates of the debt instruments in the pre-petition capital structure of the company.”⁹ Importantly, the URD focuses on debt

⁶See <https://www.sec.gov/Archives/edgar/data/6201/000000620114000004/R11.htm>.

⁷For example, the debtor sold an office building in Tucson, Arizona using a 363 sale (see docket entry 4951).

⁸See <https://www.businesswire.com/news/home/20070606005993/en/AMTROL-Emerges-from-Chapter-11>.

⁹See <https://www.moodys.com/Pages/Default-and-Recovery-Analytics.aspx> for further details.

instruments such as bonds and bank loans, and typically ignores other bankruptcy claims.

Online appendix OA.2.2 Matching details

My initial URD sample contains 981 bankruptcies. Removing prepackaged cases reduces my URD sample from 981 bankruptcies to 669. I am able to match 524 of my 669 bankruptcies to an observation in BD with nonmissing firm controls. I identify a set of potential matches using the company name, industry, and filing date. I verify by hand that this list of potential matches is correct and exhaustive. I can observe judge experience and the judge-liquidation-taste measure for 503 observations, which comprise my final sample. Many firms have a leverage ratio (defined as total debt divided by assets) less than one at the time of filing. This is consistent with [Iverson \(2017\)](#), who finds that 40% of firms have asset value exceeding their liabilities at the time of filing.

Online appendix OA.2.3 Variables

I include the following variables in the vector X_i in my Roy model.

1. I include the firm's leverage at the time of filing. This is a key variable for two reasons. I measure the creditor recovery rate as the ratio of the total dollar amount paid out to all creditors to the total dollar amount of their debt claims. It follows that, holding all else equal, higher firm leverage mechanically implies a lower recovery rate. A more interesting motive for including leverage is that it is a measure of financial distress. Creditors of a financially distressed firm are particularly likely to benefit from a reorganization, since the firm could potentially be profitable if not for the problems caused by its high leverage. I expect that, all else equal, firms with lower leverage are less likely to be financially distressed and thus to have creditors who are less likely to

benefit from a reorganization. I define leverage as the ratio of the firm's total debt to the book value of the firm's assets. I obtain the firm's total debt, which includes both bonds and bank loans, from the URD. I obtain the book value of the firm's assets at the time of filing from the BD.

2. I include the firm's annual revenue, normalized by its assets, as reported on its bankruptcy petition. In practice, bankruptcy professionals use a firm's measured revenues to estimate its going-concern value. At the same time, high-revenue firms might hold assets in economically strong regions, which could lead to high liquidation values. I obtain both the book value of the firm's assets and the firm's reported revenues, both measured at the time of filing, from the BD.
3. I include the logarithm of the book value of the firm's assets at the time of filing. Like leverage, the firm's asset value likely has a mechanical effect on recovery rates, since holding all else equal, recovery should be higher when there are more assets to be sold or utilized. Additionally, firm size (as measured by book assets) may proxy for complexity, which could affect the efficiency of a liquidation. I obtain the book value of the firm's assets at the time of filing from the BD. I normalize assets to 2018 dollars.¹⁰
4. I include the logarithm of the number of employees. Holding all else equal, creditors of firms with more human capital are more likely to benefit from reorganization, since human capital is unlikely to contribute to liquidation values. I obtain the number of employees at the time of filing from the BD.
5. I include the fraction of the firm's debt that is junior to other debt. The distinct

¹⁰I use the annual consumer price index for all items to normalize assets, which I obtain from the Federal Reserve Bank of St. Louis's FRED database. See <https://fred.stlouisfed.org/series/CPALTT01USA657N>.

treatments of junior and senior debt in bankruptcy could lead to conflicts of interest that affect key bankruptcy decisions (and thus recovery). Using the URD, I identify all debt that is identified as junior to other debt. I classify the remaining debt as senior. The junior debt share is equal to the ratio of the total amount of junior debt to the total amount of junior and senior debt.

6. For the same reason that I include the junior debt share, I also include the fraction of the firm's debt that is secured. Using the URD, I identify all debt that is identified as secured. I classify the remaining debt as unsecured. The secured debt share is equal to the ratio of the total amount of secured debt to the total amount of unsecured and secured debt.
7. I include a time trend and the aggregate spread between Baa-rated-corporate-bond yields and 10-year treasury yields. Liquidation values and asset sale proceeds might be lower when a negative shock increases the supply of distressed assets, especially since potential buyers may themselves be financially constrained due to the same negative shocks (Shleifer and Vishny, 1992). These time controls might capture firesale externalities that affect creditor recovery in liquidations. I measure time trends using the year of the filing date, which I obtain from the BD. I obtain the spread between Moody's seasoned-Baa-corporate-bond yield and the yield on a 10-year-constant-maturity treasury, measured in the month of the bankruptcy filing, from the Federal Reserve Bank of St. Louis's FRED database.¹¹
8. I include industry fixed effects. Certain industries rely on intangible assets, which tend to have low liquidation values, and thus creditors of firms in those industries

¹¹See <https://fred.stlouisfed.org/series/BAA10YM>.

might benefit more from reorganization. Likewise, as suggested by [Shleifer and Vishny \(1992\)](#), industries that experience large negative shocks might have a constrained set of buyers and generate a higher supply of distressed assets, leading to lower liquidation values.¹² I obtain firm SIC codes from the URD, and I define industries by the first two digits of the SIC code.

9. I include judge experience as a proxy for judge skill. [Iverson et al. \(2020\)](#) show that firms are less likely to be liquidated under experienced judges. If inexperienced judges liquidate more firms because they are less efficient at reorganizing firms, then one would expect that reorganizations are particularly beneficial under experienced judges. I obtain judge-appointment dates from the UCLA-LoPucki database. I define judge experience as the logarithm of the number of months between the bankruptcy filing and the judge's appointment date.

Online appendix OA.2.4 Instrument discussion

As described in the text, there are 2,336 large nonfinancial, non-prepackaged bankruptcies in the BD that do not appear in the URD. I use these cases as a training sample to evaluate judge liquidation tastes. In this training sample, firms exit either by acquisition, liquidation, dismissal, conversion to Chapter 7, or emerging. Roughly 20% of my test sample cases end in conversion.

I exclude prepackaged and financial cases from my training sample to focus on judge decisions in cases that are as similar as possible to my main sample. I exclude dismissals when I calculate the instrument because it is unclear whether the filing was in bad faith or

¹²Ideally, I would include industry-by-year fixed effects, but my small sample size precludes the inclusion of such granular controls.

the judge intended for creditors to seek nonbankruptcy remedies.

As shown in the text, firms are more likely to liquidate when they are assigned to judges that convert more cases to Chapter 7 in my training sample. Because the cases in my training sample are reasonably similar to the cases in my main sample, judge decisions in my training sample are reflective of judge decisions in my main sample. This similarity appears to be important. In unreported results, I calculate liquidation tastes using the universe of Chapter 11 filings as a training sample. I do not find a statistically significant first stage. This suggests that a judge's decisions in large public cases are a better predictor for how they will act in other large public cases.¹³ I nonetheless find that my results appear robust to smaller changes in the training sample. Consider the following changes. After dropping dismissals, for each judge in my training sample, I calculate the 10th and 90th percentiles of the reported assets in his or her training-sample cases. I drop all cases in which the reported asset value is smaller than the 10th percentile, then construct my instrument and sample as described in the text. In unreported results, I re-estimate the regressions corresponding to Tables 2 and 3. I find results that are extremely similar to those reported in Tables 2 and 3. In a separate exercise, I drop all cases in which the reported asset value is larger than the 90th percentile. I then construct my instrument and data set as described in the text. In unreported results, I once again find that when I re-estimate Tables 2 and 3 using this alternative instrument definition, my results appear similar to when I use my primary instrument definition. Together, these exercises informally suggest that judge decisions in small cases are not reflective of their decisions in large public cases, but within a collection of large cases, judge decisions are similar across cases of different sizes.

¹³I thank Ben Iverson for providing the data for this exercise.

Online appendix OA.3 Additional results

Online appendix OA.3.1 Alternative classification of acquisitions

Table OA.1: Counterfactuals, excluding acquisitions

This table shows my counterfactuals from the generalized Roy model, estimated on the subsample of cases that did not conclude in acquisition. Details of the generalized-Roy-model estimation are provided in Appendix C.1. Column (1) shows estimates of my counterfactuals. I bootstrap the entire model estimation and the calculation of each counterfactual 500 times, clustering at the district level. Column (2) shows the fraction of bootstrapped estimates that are strictly negative. See Section 5.3 for detailed definitions of the counterfactuals.

	<u>Estimate</u>	<u>F(0)</u>
<i>Recovery-rate changes</i>		
No inefficient reorganizations	0.03	0.00
No inefficient liquidations	0.13	0.00
Achievable gain	0.11	0.06
Achievable gain, OOS	0.04	0.11
Achievable gain in cases involving 363 sales	0.08	0.04
No liquidations involving 363 sales	0.02	0.28
No inefficient acquisitions or liquidations involving 363 sales	0.10	0.00
<i>Unconditional frequencies</i>		
Inefficient liquidations	0.16	0.00
Inefficient reorganizations	0.02	0.00
<i>Regression of inefficiency on an indicator for 363 sales</i>		
Regression coefficient on 363 sale indicator	0.23	0.01

Table OA.2: Counterfactuals, acquisitions as reorganizations

This table shows my counterfactuals from the generalized Roy model. In this estimation, I classify a case as concluding in a reorganization if it concludes in either reorganization or acquisition. Details of the generalized-Roy-model estimation are provided in Appendix C.1. Column (1) shows estimates of my counterfactuals. I bootstrap the entire model estimation and the calculation of each counterfactual 500 times, clustering at the district level. Column (2) shows the fraction of bootstrapped estimates that are strictly negative. See Section 5.3 for detailed definitions of the counterfactuals.

	<u>Estimate</u>	<u>F(0)</u>
<i>Recovery-rate changes</i>		
No inefficient reorganizations	0.00	0.00
No inefficient liquidations	0.14	0.00
Achievable gain	0.10	0.03
Achievable gain, OOS	0.09	0.08
Achievable gain in cases involving 363 sales	0.09	0.02
No liquidations involving 363 sales	0.07	0.20
No inefficient acquisitions or liquidations involving 363 sales	0.10	0.00
<i>Unconditional frequencies</i>		
Inefficient liquidations	0.16	0.00
Inefficient reorganizations	0.02	0.00
<i>Regression of inefficiency on an indicator for 363 sales</i>		
Regression coefficient on 363 sale indicator	0.21	0.01

Online appendix OA.3.2 Recovery normalized by assets

Table OA.3: Instrumental-variables regressions, recovery normalized by assets

This table shows 2SLS regressions of family recovery on indicators for either emerging or 363 sales. See Tables 1 and 2 for variable definitions. The text provides further details. Columns (1)-(3) show 2SLS regressions of family recovery on an indicator for emerging, instrumented by judge liquidation taste. Column (1) defines acquisitions as liquidations. Column (2) defines acquisitions as reorganizations. Column (3) excludes acquisitions, which accounts for the sample size of 455. Column (4) uses an indicator for 363 sales, which is missing for six observations, as the endogenous variable. In addition to the listed controls, all regressions include industry fixed effects, filing-district fixed effects, and district-specific time trends for the filing year. Standard errors, clustered at the district level, are presented in parentheses.

	Family Recovery			
	(1)	(2)	(3)	(4)
Reorganization	0.443** (0.186)	0.451* (0.262)	0.342** (0.164)	
363 Sale				-0.421** (0.185)
Leverage	0.277*** (0.033)	0.277*** (0.027)	0.273*** (0.030)	0.306*** (0.023)
Log(Assets)	-0.016 (0.021)	-0.011 (0.017)	-0.010 (0.016)	0.066*** (0.021)
Revenue/Assets	0.040*** (0.012)	0.042*** (0.016)	0.030** (0.012)	0.007 (0.010)
Log(Employees)	-0.010 (0.015)	-0.009 (0.011)	-0.012 (0.014)	-0.008 (0.015)
Baa-Treasury Spread	-0.010 (0.015)	-0.019** (0.009)	-0.011 (0.010)	-0.047*** (0.014)
Junior Debt Share	-0.086** (0.035)	-0.091** (0.043)	-0.078** (0.033)	-0.024 (0.030)
Secured Debt Share	0.088*** (0.023)	0.066* (0.035)	0.074** (0.031)	0.098*** (0.031)
Log(Judge Experience)	-0.021** (0.010)	-0.019 (0.020)	-0.012 (0.009)	-0.010 (0.016)
Industry FE	Y	Y	Y	Y
Court FE and Trends	Y	Y	Y	Y
Acquisitions	Liquidation	Reorganization	Excluded	N/A
Observations	503	503	455	497

Note:

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table OA.4: Generalized-Roy-model estimates, recovery normalized by assets

This table shows estimates from the generalized Roy model. See Appendix C.1 for details.

	γ	β^0	$\beta^1 - \beta^0$	$K(\mathbf{p})$
	(1)	(2)	(3)	(4)
Leverage	0.325 (0.221)	0.164 (0.225)	0.141 (0.277)	
Log(Assets)	0.375 (0.086)	-0.057 (0.139)	0.046 (0.172)	
Revenue/Assets	-0.176 (0.076)	0.053 (0.109)	-0.056 (0.157)	
Log(Employees)	-0.095 (0.060)	0.000 (0.069)	0.008 (0.110)	
Log(Judge Experience)	0.199 (0.030)	0.036 (0.104)	-0.070 (0.127)	
Baa-Treasury Spread	-0.183 (0.107)	0.003 (0.101)	-0.006 (0.124)	
Junior Debt Share	0.366 (0.223)	0.030 (0.187)	-0.143 (0.211)	
Secured Debt Share	0.131 (0.317)	0.165 (0.188)	-0.075 (0.232)	
Liquidation Taste	-1.309 (0.346)			
Propensity				0.292 (3.042)
Propensity2				-1.661 (2.962)
Propensity3				0.715 (1.770)
Observations	477			
Essential Heterogeneity	0.760			
Observable Heterogeneity	0.980			

Table OA.5: Counterfactuals, recovery normalized by assets

This table shows my counterfactuals from the generalized Roy model, estimated on the subsample of cases that did not involve 363 sales. Details of the generalized-Roy-model estimation are provided in Appendix C.1. Column (1) shows estimates of my counterfactuals. I bootstrap the entire model estimation and the calculation of each counterfactual 500 times, clustering at the district level. Column (2) shows the fraction of bootstrapped estimates that are strictly negative. See Section 5.3 for detailed definitions of the counterfactuals.

	<u>Estimate</u>	<u>F(0)</u>
<i>Recovery-rate changes</i>		
No inefficient reorganizations	0.04	0.00
No inefficient liquidations	0.08	0.00
No inefficient acquisitions	0.03	0.00
Achievable gain	0.15	0.03
Achievable gain, OOS	0.12	0.05
Achievable gain in cases involving 363 sales	0.08	0.04
No liquidations involving 363 sales	0.04	0.15
No acquisitions involving 363 sales	0.01	0.21
No inefficient acquisitions or liquidations involving 363 sales	0.08	0.00
<i>Unconditional frequencies</i>		
Inefficient liquidations	0.19	0.00
Inefficient acquisitions	0.07	0.00
Inefficient reorganizations	0.03	0.00
<i>Regression of inefficiency on an indicator for 363 sales</i>		
Regression coefficient on 363 sale indicator	0.29	0.01

Online appendix OA.3.3 Results with liberal clustering by district year

Table OA.6: Generalized-Roy-model estimates, liberal clustering

This table shows estimates from the generalized Roy model. I cluster at the district-year level when calculating bootstrapped standard errors. See Appendix C.1 for details.

	γ	β^0	$\beta^1 - \beta^0$	K(p)
	(1)	(2)	(3)	(4)
Leverage	0.325 (0.157)	-0.352 (0.181)	0.322 (0.220)	
Log(Assets)	0.375 (0.084)	-0.128 (0.144)	0.143 (0.166)	
Revenue/Assets	-0.176 (0.087)	0.085 (0.074)	-0.116 (0.107)	
Log(Employees)	-0.095 (0.066)	0.028 (0.065)	-0.042 (0.096)	
Log(Judge Experience)	0.199 (0.077)	-0.007 (0.099)	-0.028 (0.118)	
Baa-Treasury Spread	-0.183 (0.110)	0.018 (0.099)	-0.004 (0.129)	
Junior Debt Share	0.366 (0.245)	-0.200 (0.240)	0.058 (0.300)	
Secured Debt Share	0.131 (0.218)	0.388 (0.197)	-0.315 (0.258)	
Liquidation Taste	-1.309 (0.482)			
Propensity				-0.158 (2.149)
Propensity2				-2.860 (3.527)
Propensity3				1.120 (1.920)
Observations	477			
Essential Heterogeneity	0.620			
Observable Heterogeneity	0.580			

Table OA.7: Counterfactuals, liberal clustering

This table shows my counterfactuals from the generalized Roy model. Details of the generalized-Roy-model estimation are provided in Appendix C.1. Column (1) shows estimates of my counterfactuals. I bootstrap the entire model estimation and the calculation of each counterfactual 500 times, clustering at the district-year level. Column (2) shows the fraction of bootstrapped estimates that are strictly negative. See Section 5.3 for detailed definitions of the counterfactuals.

	<u>Estimate</u>	<u>F(0)</u>
<i>Recovery-rate changes</i>		
No inefficient reorganizations	0.02	0.00
No inefficient liquidations	0.10	0.00
No inefficient acquisitions	0.04	0.00
Achievable gain	0.12	0.05
Achievable gain, OOS	0.11	0.08
Achievable gain in cases involving 363 sales	0.09	0.06
No liquidations involving 363 sales	0.03	0.29
No acquisitions involving 363 sales	0.01	0.31
No inefficient acquisitions or liquidations involving 363 sales	0.10	0.00
<i>Unconditional frequencies</i>		
Inefficient liquidations	0.15	0.00
Inefficient acquisitions	0.06	0.00
Inefficient reorganizations	0.04	0.00
<i>Regression of inefficiency on an indicator for 363 sales</i>		
Regression coefficient on 363 sale indicator	0.25	0.00

Online appendix OA.3.4 Results using filing-division fixed effects

Table OA.8: First-stage estimates, filing-division fixed effects

This table shows ordinary least squares regressions in which the dependent variable is (i) an indicator for emerging or (ii) an indicator for 363 sales. I calculate the judge-liquidation-taste instrument, using New Generation Research's Bankruptcydata.com (BD), as the fraction of cases that the bankruptcy judge converts to Chapter 7 in a test sample of bankruptcies that is disjoint from my main sample. See the text for details. All regressions include industry fixed effects, defined using 2-digit SIC codes from the Moody's Ultimate Recovery database. The other listed controls are described in Table 1. All regressions include filing-division fixed effects and filing-division-specific time trends for the filing year, both from BD. Standard errors, clustered at the filing-division level, are presented in parentheses. Column (1) defines acquisitions as liquidations. Column (2) defines acquisitions as reorganizations. Column (3) excludes acquisitions, which accounts for the sample size of 455. Column (4) uses an indicator for 363 sales, which is missing for six observations, as the dependent variable.

	Reorganization			363 Sale
	(1)	(2)	(3)	(4)
Liquidation Taste	-0.403*** (0.123)	-0.371** (0.142)	-0.447*** (0.128)	0.350** (0.142)
Leverage	0.083 (0.072)	0.094 (0.071)	0.105 (0.086)	-0.056 (0.067)
Log(Assets)	0.090*** (0.031)	0.075** (0.036)	0.073** (0.036)	0.089*** (0.023)
Revenue/Assets	-0.064 (0.042)	-0.071*** (0.021)	-0.085** (0.042)	-0.025 (0.025)
Log(Employees)	-0.016 (0.025)	-0.019 (0.033)	-0.009 (0.030)	0.032 (0.025)
Baa-Treasury Spread	-0.022 (0.033)	-0.000 (0.017)	-0.004 (0.024)	-0.033 (0.036)
Junior Debt Share	0.034 (0.073)	0.064 (0.088)	0.062 (0.085)	0.110 (0.083)
Secured Debt Share	-0.029 (0.117)	0.038 (0.106)	0.023 (0.113)	0.061 (0.078)
Log(Judge Experience)	0.068*** (0.014)	0.060** (0.025)	0.064*** (0.021)	-0.030 (0.046)
Industry FE	Y	Y	Y	Y
Court FE and Trends	Y	Y	Y	Y
Acquisitions	Liquidation	Reorganization	Excluded	N/A
Instrument F-Statistic	10.65	6.830	12.19	6.110
Observations	503	503	455	497
Adj. R ²	0.0733	0.0569	0.0729	0.136

Note:

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table OA.9: Instrumental-variables regressions, filing-division fixed effects

This table shows 2SLS regressions of family recovery on indicators for either emerging or 363 sales. See Tables 1 and 2 for variable definitions. The text provides further details. Columns (1)-(3) show 2SLS regressions of family recovery on an indicator for emerging, instrumented by judge liquidation taste. Column (1) defines acquisitions as liquidations. Column (2) defines acquisitions as reorganizations. Column (3) excludes acquisitions, which accounts for the sample size of 455. Column (4) uses an indicator for 363 sales, which is missing for six observations, as the endogenous variable. In addition to the listed controls, all regressions include industry fixed effects, filing-division fixed effects, and division-specific time trends for the filing year. Standard errors, clustered at the division level, are presented in parentheses.

	Family Recovery			
	(1)	(2)	(3)	(4)
Reorganization	0.500** (0.243)	0.544 (0.383)	0.426* (0.226)	
363 Sale				-0.599* (0.315)
Leverage	-0.131*** (0.025)	-0.140*** (0.030)	-0.147*** (0.026)	-0.120*** (0.027)
Log(Assets)	-0.017 (0.034)	-0.013 (0.033)	-0.019 (0.026)	0.082** (0.033)
Revenue/Assets	0.051*** (0.013)	0.058** (0.026)	0.044** (0.017)	0.003 (0.012)
Log(Employees)	-0.018 (0.014)	-0.016 (0.013)	-0.017 (0.015)	-0.008 (0.022)
Baa-Treasury Spread	-0.013 (0.014)	-0.023** (0.012)	-0.009 (0.013)	-0.044*** (0.013)
Junior Debt Share	-0.195*** (0.045)	-0.213*** (0.049)	-0.232*** (0.048)	-0.118** (0.048)
Secured Debt Share	0.158*** (0.035)	0.122*** (0.045)	0.123** (0.048)	0.172*** (0.051)
Log(Judge Experience)	-0.037*** (0.013)	-0.036 (0.027)	-0.029** (0.015)	-0.024 (0.022)
Industry FE	Y	Y	Y	Y
Court FE and Trends	Y	Y	Y	Y
Acquisitions	Liquidation	Reorganization	Excluded	N/A
Observations	503	503	455	497

Note:

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table OA.10: Ordinary-least-squares versions of instrumental-variables regressions

This table shows ordinary least squares (OLS) regressions of family recovery on indicators for either emerging or 363 sales. See Tables 1 and 2 for variable definitions. The text provides further details. Columns (1)-(3) show OLS regressions of family recovery on an indicator for emerging. Column (1) defines acquisitions as liquidations. Column (2) defines acquisitions as reorganizations. Column (3) excludes acquisitions, which accounts for the sample size of 455. Column (4) uses an indicator for 363 sales, which is missing for six observations, as the independent variable. In addition to the listed controls, all regressions include industry fixed effects, filing-division fixed effects, and division-specific time trends for the filing year. Standard errors, clustered at the division level, are presented in parentheses.

	Family Recovery			
	(1)	(2)	(3)	(4)
Reorganization	0.115*** (0.034)	0.116*** (0.033)	0.134*** (0.039)	
363 Sale				-0.075** (0.032)
Leverage	-0.109*** (0.033)	-0.109*** (0.034)	-0.123*** (0.040)	-0.098*** (0.034)
Log(Assets)	0.022 (0.023)	0.024 (0.021)	0.015 (0.023)	0.040 (0.027)
Revenue/Assets	0.031** (0.013)	0.031** (0.013)	0.027 (0.016)	0.022 (0.014)
Log(Employees)	-0.022 (0.014)	-0.022* (0.013)	-0.024 (0.015)	-0.022 (0.015)
Baa-Treasury Spread	-0.017 (0.013)	-0.019 (0.013)	-0.012 (0.016)	-0.027* (0.015)
Junior Debt Share	-0.168*** (0.046)	-0.170*** (0.045)	-0.180*** (0.046)	-0.157*** (0.046)
Secured Debt Share	0.171*** (0.050)	0.165*** (0.052)	0.166*** (0.060)	0.169*** (0.055)
Log(Judge Experience)	-0.009 (0.011)	-0.009 (0.010)	-0.007 (0.009)	-0.007 (0.010)
Industry FE	Y	Y	Y	Y
Court FE and Trends	Y	Y	Y	Y
Acquisitions	Liquidation	Reorganization	Excluded	N/A
Observations	503	503	455	497

Note:

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Online appendix OA.3.5 Judicial-bias counterfactual

My identification relies on the fact that, within a given district, bankruptcy judges have different inherent tastes for liquidation that affect the likelihood of a liquidation. I consider a counterfactual bankruptcy system in which each judge applies the average level of liquidation taste in his or her district. Specifically, I construct counterfactual propensity scores $\tilde{P}(Z_i)$ by changing the coefficient on judge liquidation taste in column (1) of Table C.1 to zero. I evaluate the corresponding PRTE using equation (13). I find that this counterfactual bankruptcy system exceeds the average recovery in my sample by less than 0.005. Most inefficient liquidations are thus caused by an overall bias against reorganization, not the within-district variation in liquidation tastes. In summary, I find that (i) eliminating within-district judicial bias would have a small effect on overall efficiency, but (ii) inefficient form-of-exit choices revealed by my model are very costly.

While I rely on within-district variation in judge liquidation tastes for identification, that does not imply that judicial discretion is primarily responsible for inefficient form-of-exit choices. As long as there is some judicial discretion, my Roy model allows me to extrapolate from compliers, those cases in which two judges would reach different forms of exit, to non-complier cases. Indeed, the above estimate from my judicial-bias counterfactual exercise suggests that judicial discretion may play a relatively small role in the inefficiency that I document. This finding is consistent with recent work documenting that many 363 sales are arranged prior to the petition-filing date (Waldock, 2020). Managers negotiate with creditors prior to filing to arrange these 363 sales. Judicial discretion is less likely to affect the outcomes of these prearranged sales. In light of my results, managers may succeed in arranging inefficient 363 sales because in many instances creditors know that they are powerless under the current Chapter 11 system to prevent these sales.

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