

Online Appendix:  
Consumer Bankruptcy and Financial Health

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## Online Appendix A: Additional Results

Appendix Table 1  
Additional Tests of Randomization Balance

	Harsh Judge	Lenient Judge	p-value
	(1)	(2)	(3)
Initial Plan Length (Months)	48.893	48.643	0.911
Initial Repayment Rate (%)	0.313	0.414	0.614
Pre-Confirmation Amendment	0.509	0.467	0.638
Post-Confirmation Modification	0.273	0.143	0.289

Notes: This table reports summary statistics and randomization checks. The sample consists of 120 randomly selected bankruptcy filings from our estimation sample described in Table 1. Bankruptcy filers consist of individuals who filed for Chapter 13 in December 2003 in five randomly selected offices: Atlanta, Tulsa, Newport News, Miami, and San Diego. Column 3 reports p-values calculated from separate regression models of each filing characteristic on an indicator for being assigned to a judge with above median leniency. Column 3 also controls for office-by-filing-month fixed effects and clusters standard errors at the office level. See Section I.B for additional details.

Appendix Table 2  
Bankruptcy Offices in Chapter 13 IV Sample

Court	Office	Years	Judges	Discharge	$\sigma_Z$
Northern District of Alabama	Birmingham	2002-2005	3	0.342	0.036
Southern District of Alabama	Mobile	2002-2005	2	0.459	0.005
Southern District of California	San Diego	2002-2005	4	0.461	0.015
Southern District of Florida	Fort Lauderdale	2002-2005	2	0.443	0.011
Southern District of Florida	Miami	2002-2005	2	0.531	0.009
Northern District of Georgia	Atlanta	2004-2005	8	0.316	0.033
Northern District of Georgia	Rome	2004-2005	2	0.411	0.010
District of Idaho	Boise	2002-2005	2	0.543	0.004
Southern District of Indiana	Indianapolis	2002-2005	3	0.523	0.005
Eastern District of Kentucky	Lexington	2002-2005	2	0.550	0.036
District of Massachusetts	Boston	2002-2003	3	0.329	0.035
Eastern District of Michigan	Detroit	2003-2005	3	0.294	0.002
Western District of Michigan	Grand Rapids	2002-2005	3	0.495	0.010
District of Minnesota	Minneapolis	2002-2005	2	0.522	0.002
District of Minnesota	St. Paul	2002-2005	2	0.540	0.036
Eastern District of Missouri	St. Louis	2003-2005	2	0.415	0.012
Western District of Missouri	Kansas City	2002-2005	4	0.498	0.013
Middle District of North Carolina	Durham	2005	2	0.566	0.015
District of New Mexico	Albuquerque	2002-2005	2	0.416	0.022
District of Nevada	Las Vegas	2002-2005	3	0.380	0.018
Southern District of Ohio	Cincinnati	2002-2005	3	0.567	0.021
Southern District of Ohio	Columbus	2002	3	0.588	0.050
Southern District of Ohio	Dayton	2002-2005	3	0.605	0.017
Northern District of Oklahoma	Tulsa	2002-2005	2	0.477	0.015
District of Oregon	Eugene	2002-2005	2	0.595	0.015
District of Oregon	Portland	2002-2005	3	0.547	0.117
District of South Carolina	Columbia	2003-2005	2	0.756	0.019
Eastern District of Tennessee	Chattanooga	2002-2005	2	0.436	0.010
Middle District of Tennessee	Columbia	2002-2005	3	0.462	0.016
Middle District of Tennessee	Cookeville	2002-2005	3	0.473	0.007
Middle District of Tennessee	Nashville	2002-2005	3	0.485	0.012
Western District of Tennessee	Memphis	2002-2005	3	0.264	0.003
Western District of Texas	San Antonio	2002-2005	2	0.439	0.003
District of Utah	Salt Lake City	2003-2005	3	0.343	0.010
Eastern District of Virginia	Alexandria	2002-2005	2	0.562	0.001
Eastern District of Virginia	Newport News	2002-2005	2	0.560	0.040
Eastern District of Virginia	Norfolk	2002-2005	2	0.586	0.002
Western District of Washington	Tacoma	2002-2005	2	0.571	0.004
Eastern District of Wisconsin	Milwaukee	2003-2005	3	0.464	0.014

Notes: This table presents descriptive statistics for the 39 offices in the 29 bankruptcy courts that randomly assign filings to judges in our instrumental variables sample.  $\sigma_Z$  is the standard deviation of the leave-one-out measure of judge leniency described in the text.

Appendix Table 3  
 First Stage Results by Filer Characteristics

	Age at Filing		Baseline Credit Score		Baseline Homeowner		
	25 to 39 (1)	40 to 59 (2)	60 and up (3)	High (4)	Low (5)	Yes (6)	No (7)
Discharge	0.945*** (0.099)	0.872*** (0.062)	0.403*** (0.144)	0.811*** (0.045)	0.807*** (0.070)	0.810*** (0.071)	0.805*** (0.058)
Relative to Overall First Stage	1.154	1.065	0.492	0.990	0.985	0.989	0.983
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	54442	81206	19100	84154	82241	111432	58627

Notes: This table reports first stage and two-stage least squares results by baseline characteristics. The sample consists of Chapter 13 bankruptcy filers originating from offices that randomly assign filers to judges between 2002-2005 who are linked to credit report data in the year of filing. The post-filing mean for dismissed filers is reported in brackets for each subgroup. We instrument for Chapter 13 protection using the leave-one-out mean rate of granting Chapter 13 bankruptcy protection for the assigned judge minus the leave-one-out mean rate of granting bankruptcy protection for the office. Subgroup instruments are constructed using the matched estimation sample. All regressions control for age at filing and baseline homeownership, ZIP code income, financial strain index, installment balance, revolving balance, collection balance, mortgage balance, and non-mortgage credit access index, office-by-filing-month fixed effects, and cluster standard errors at the office level. See the data appendix for details on the data and variable construction. \*\*\* = significant at 1 percent level, \*\* = significant at 5 percent level, \* = significant at 10 percent level.

Appendix Table 4  
Main Results with Familywise-Error-Rate-Controlled P-values

	Dismissed Mean	2SLS Results	Uncorrected P-value	Holm Corrected p-value	StepM Corrected p-value
<i>Panel A: Adverse Financial Events</i>	(1)	(2)	(3)	(4)	(5)
Delinquency	0.596 (0.292)	0.009 (0.017)	[0.591]	[0.591]	[0.598]
Collection	0.584 (0.305)	-0.154** (0.063)	[0.014]	[0.056]	[0.086]
Charge-off <sup>†</sup>	0.216 (0.227)	-0.068*** (0.020)	[0.001]	[0.005]	[0.027]
New Bankruptcy <sup>†</sup>	0.109 (0.167)	-0.065*** (0.024)	[0.007]	[0.048]	[0.076]
Foreclosure	0.070 (0.139)	-0.016** (0.008)	[0.038]	[0.115]	[0.152]
Judgment	0.066 (0.128)	-0.031* (0.016)	[0.050]	[0.115]	[0.152]
Lien	0.034 (0.099)	-0.033*** (0.013)	[0.009]	[0.053]	[0.086]
Repossession	0.019 (0.064)	-0.016** (0.006)	[0.010]	[0.053]	[0.086]
Controls	-	Yes			
Observations	97006	175076			

Notes: This table reports two-stage least squares results of the impact of Chapter 13 bankruptcy protection on post-filing outcomes. The sample consists of Chapter 13 bankruptcy filers originating from offices that randomly assign filers to judges between 2002-2005 who are linked to credit report data in the year of filing. Column (1) reports the dismissed filer mean. Column (2) reports two-stage least squares estimates. Column (3) reports the unadjusted p-value. Columns (4) and (5) report p-values controlling for the Familywise Error Rate, the probability of at least one false rejection. Specifically, Column (4) uses the Holm step-down method described in Romano, Shaikh, and Wolf (2010). Column (5) uses the StepM method described in Romano, Shaikh, and Wolf (2008) with 1,000 bootstrapped samples and  $k = 1$ . Standard errors reported in parentheses are robust to arbitrary heteroskedasticity. See the data appendix for details on the data and variable construction. \*\*\* = significant at 1 percent level, \*\* = significant at 5 percent level, \* = significant at 10 percent level.

Appendix Table 5  
Results for Alternative Financial Strain Measures

	Dismissed		
	Mean	2SLS Results	
<i>Panel A: Ever Experienced</i>	(1)	(2)	(3)
Delinquency	0.942 (0.233)	0.002 (0.027)	-0.009 (0.030)
Collection	0.920 (0.271)	-0.147** (0.061)	-0.105 (0.069)
Charge-off <sup>†</sup>	0.581 (0.493)	-0.112* (0.060)	-0.122* (0.066)
New Bankruptcy <sup>†</sup>	0.351 (0.477)	-0.271*** (0.056)	-0.278*** (0.059)
Foreclosure	0.248 (0.432)	-0.111*** (0.031)	-0.064** (0.025)
Judgment	0.252 (0.434)	-0.154*** (0.056)	-0.130** (0.058)
Lien	0.128 (0.334)	-0.116*** (0.026)	-0.111*** (0.027)
Repossession	0.084 (0.278)	-0.071*** (0.027)	-0.074*** (0.029)
<i>Panel B: Number of Experiences</i>			
Delinquencies	6.774 (5.434)	1.247* (0.650)	0.644 (0.671)
Collections	6.847 (6.722)	-2.992*** (0.624)	-2.312*** (0.773)
Charge-offs <sup>†</sup>	1.220 (1.562)	-0.364*** (0.110)	-0.397*** (0.128)
New Bankruptcies <sup>†</sup>	0.479 (0.772)	-0.336*** (0.103)	-0.340*** (0.108)
Foreclosures	0.369 (0.767)	-0.158*** (0.047)	-0.082* (0.044)
Judgments	0.384 (0.836)	-0.304*** (0.090)	-0.266*** (0.092)
Liens	0.237 (1.069)	-0.283*** (0.102)	-0.273** (0.109)
Repossessions	0.094 (0.329)	-0.076** (0.034)	-0.079** (0.036)
Controls	-	No	Yes
Observations	97006	175076	175076

Notes: This table reports two-stage least squares results of the impact of Chapter 13 bankruptcy protection for alternative versions of the financial strain variables. All outcomes are annual averages for the year of filing to fifth year post-filing, with the exceptions of outcomes with a † where outcomes are averaged over the first full year after filing to the fifth year post-filing to remove the mechanical effect of the bankruptcy filing. Panel A reports results for indicator variables equal to one if the listed event occurred at least once in the first five post-filing years. Panel B reports results for the number of times the listed event occurred in the first five post-filing years. See Table 3 notes for additional details. \*\*\* = significant at 1 percent level, \*\* = significant at 5 percent level, \* = significant at 10 percent level.

Appendix Table 6  
Results for Additional Outcomes

	Dismissed		
	Mean	2SLS Results	
	(1)	(2)	(3)
<i>Panel A: Adverse Financial Events</i>			
Number of Paid Collections	0.744 (1.266)	-0.336*** (0.057)	-0.227*** (0.054)
Number of Unpaid Collections	4.251 (4.374)	-1.899*** (0.475)	-1.338** (0.541)
Number of Medical Collections	0.513 (0.942)	-0.077 (0.090)	-0.010 (0.102)
Number of Paid Judgments	0.087 (0.338)	-0.051** (0.023)	-0.033 (0.024)
Number of Unpaid Judgments	0.560 (0.977)	-0.339*** (0.107)	-0.241** (0.103)
<i>Panel B: Student Debt</i>			
Any Active Student Debt	0.167 (0.343)	0.003 (0.057)	0.027 (0.052)
Any Deferred Student Debt	0.038 (0.154)	-0.015 (0.027)	-0.009 (0.026)
<i>Panel C: Home Transitions</i>			
Living in Same Residence	0.496 (0.500)	0.270*** (0.049)	0.248*** (0.053)
Moved to Rental	0.429 (0.495)	-0.267*** (0.065)	-0.248*** (0.060)
Move to Home	0.075 (0.263)	-0.003 (0.040)	0.000 (0.040)
<i>Panel D: Revolving Trades</i>			
Number of Open Revolving Trades	0.766 (1.312)	0.576*** (0.144)	0.347** (0.144)
Credit Limit Revolving Trades	6.083 (12.691)	3.362*** (1.256)	-0.330 (0.744)
<i>Panel E: Credit Score</i>			
Credit Score	565.433 (44.543)	28.511*** (4.234)	17.029*** (3.738)
Controls	-	No	Yes
Observations	97006	175076	175076

Notes: This table reports two-stage least squares results of the impact of Chapter 13 bankruptcy protection on additional outcomes available in the credit bureau data. The sample consists of Chapter 13 bankruptcy filers originating from offices that randomly assign filers to judges between 2002-2005 who are linked to credit report data in the year of filing. All outcomes are measured over the first five post-filing years. Column 1 reports the post-filing mean and standard deviation for dismissed filers. Columns 2-3 instrument for Chapter 13 protection using the leave-one-out mean rate of granting Chapter 13 bankruptcy protection for the assigned judge minus the leave-one-out mean rate of granting bankruptcy protection for the office. All regressions control for office-by-filing-month fixed effects and cluster standard errors at the office level. Column 3 adds controls for baseline age bins, homeownership, ZIP code income, financial strain index, revolving balance, collection balance, mortgage balance, auto balance, indicators for mortgage and auto loans, revolving utilization, and non-mortgage inquiries as controls. \*\*\* = significant at 1 percent level, \*\* = significant at 5 percent level, \* = significant at 10 percent level.

Appendix Table 7  
Robustness of Main Results

	Judge Leniency			Judge Fixed Effects			
	Own-Out (1)	Month-Out (2)	90 Days (3)	Split Sample (4)	2SLS (5)	LIML (6)	Jackknife (7)
Financial Strain	-0.323*** (0.071)	-0.313*** (0.071)	-0.384*** (0.085)	-0.255*** (0.093)	-0.346*** (0.064)	-0.344*** (0.079)	-0.346*** (0.054)
Revolving Balance	-0.871 (0.727)	-0.866 (0.720)	-0.991 (0.667)	-0.930 (1.064)	-0.923 (0.597)	-0.970 (0.674)	-0.923 (0.877)
Collection Balance	-1.333*** (0.433)	-1.365*** (0.401)	-1.063 (1.144)	-1.834*** (0.554)	-1.419*** (0.376)	-1.374*** (0.459)	-1.419*** (0.072)
Mortgage Balance	14.535*** (5.075)	14.193*** (5.034)	25.654*** (8.914)	10.723 (6.891)	12.894** (5.467)	14.052** (6.261)	12.894 (9.439)
Auto Balance	-0.880 (0.560)	-0.768 (0.545)	-1.615 (1.151)	-1.160 (0.823)	-0.984* (0.515)	-1.102* (0.587)	-0.984*** (0.293)
Revolving Utilization	-16.289*** (3.403)	-15.702*** (3.183)	-18.717*** (4.630)	-16.146*** (4.568)	-15.335*** (2.837)	-16.752*** (3.759)	-15.335*** (3.009)
Non-Mortgage Inquiries	-0.300** (0.122)	-0.297** (0.117)	-0.402 (0.311)	-0.216 (0.203)	-0.356*** (0.115)	-0.359*** (0.139)	-0.356*** (0.028)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	175076	175076	175076	131416	175076	175076	175076

Notes: This table reports robustness checks for our main results. The sample consists of Chapter 13 bankruptcy filers originating from offices that randomly assign filers to judges between 2002-2005 who are linked to credit report data in the year of filing. Column 1 replicates our preferred estimates from Table 3 using leave-one-out judge leniency as an instrument for Chapter 13 protection. Column 2 uses a leave-month-out measure of judge leniency where we calculate judge leniency only using cases in all other months as an instrument for Chapter 13 protection. Column 3 uses a leave-one-out measure of judge leniency measured using the case decision after the first 90 post-filing days as an instrument. Column 4 uses a randomly selected subset of 25 percent of filers to calculate a leave-month-out measure of judge leniency that is used as an instrument in the mutually exclusive subset of filers. Columns 5-7 present results that use judge fixed effects as instruments for bankruptcy protection estimated using two-stage least squares, LIML, and jackknife IV. All regressions control for baseline age bins, homeownership, ZIP code income, financial strain index, revolving balance, collection balance, mortgage balance, auto balance, indicators for mortgage and auto loans, revolving utilization, non-mortgage inquiries, office-by-filing-month fixed effects, and cluster standard errors at the office level. See the data appendix for additional details on the data and variable construction. \*\*\* = significant at 1 percent level, \*\* = significant at 5 percent level, \* = significant at 10 percent level.



Appendix Table 8  
Main Results with Estimation Error Corrected P-values

	Years 1-5 Post-filing		Years 6-8 Post-filing	
	2SLS	Corrected	2SLS	Corrected
	Results	P-value	Results	P-value
	(1)	(2)	(3)	(4)
Financial Strain Index	-0.323*** (0.071)	[0.004]	-0.137** (0.058)	[0.005]
Revolving Balance	-0.871 (0.727)	[0.156]	0.167 (0.355)	[0.563]
Collection Balance	-1.333*** (0.433)	[0.001]	-1.986*** (0.629)	[0.007]
Have a Mortgage	0.132*** (0.021)	[0.001]	0.262*** (0.027)	[0.001]
Mortgage Balance	14.535*** (5.075)	[0.009]	37.300*** (13.747)	[0.031]
Have an Auto Loan	0.021 (0.031)	[0.407]	0.128*** (0.045)	[0.003]
Auto Balance	-0.880 (0.560)	[0.043]	0.524 (0.704)	[0.437]
Revolving Utilization	-16.289*** (3.403)	[0.001]	-8.690 (9.230)	[0.453]
Non-Mortgage Inquiries	-0.300** (0.122)	[0.010]	-0.043 (0.197)	[0.790]
Controls	Yes	Yes	Yes	Yes
Observations	175076	175076	151655	151655

Notes: This table reports two-stage least squares results of the impact of Chapter 13 bankruptcy protection on post-filing outcomes. The sample consists of Chapter 13 bankruptcy filers originating from offices that randomly assign filers to judges between 2002-2005 who are linked to credit report data in the year of filing. Columns 1 and 3 present results for the year of filing to fifth year post-filing and results for the sixth year post-filing to eighth year post-filing, instrumenting for Chapter 13 protection using the leave-one-out mean rate of granting Chapter 13 bankruptcy protection for the assigned judge minus the leave-one-out mean rate of granting bankruptcy protection for the office. All regressions control for office-by-filing-month fixed effects and cluster standard errors at the office level. Columns 2 and 4 report p-values that adjust for estimation error in our construction of both our financial strain index and our judge leniency measure. We implement a non-parametric cluster bootstrap (where a cluster is defined as one of the 39 bankruptcy offices), following the methodology in Cameron, Gelbach, and Miller (2008). This procedure involves sampling at the office level, with replacement, and then generating the judge leniency and financial strain measures within this sampled data. We then run our two-stage least squares regressions within the sample data, extracting the parameter values to generate a distribution of t-statistics values to calculate our standard errors. We report results from this bootstrap-t procedure with 1,000 simulations for our main results from Table 3, reporting for each result whether we reject the null. All columns include controls for baseline age bins, homeownership, ZIP code income, financial strain index, revolving balance, collection balance, mortgage balance, auto balance, indicators for mortgage and auto loans, revolving utilization, and non-mortgage inquiries as controls. See the data appendix for details on the data and variable construction. \*\*\* = significant at 1 percent level, \*\* = significant at 5 percent level, \* = significant at 10 percent level.

Appendix Table 9  
Results by State Judicial Foreclosure Laws

	Homeowners			Renters		
	Judicial (1)	Non-Judicial (2)	p-value (3)	Judicial (4)	Non-Judicial (5)	p-value (6)
Financial Strain	-0.010 (0.154) [0.029]	-0.455*** (0.042) [0.005]	0.003	-0.298 (0.206) [-0.219]	-0.195* (0.100) [-0.179]	0.638
Revolving Balance	5.476* (3.180) [3.528]	-1.426*** (0.398) [2.940]	0.026	2.381 (6.190) [2.534]	-0.665 (0.879) [1.564]	0.615
Collection Balance	0.438 (2.121) [4.030]	-1.694*** (0.639) [3.911]	0.320	0.449 (4.382) [4.214]	-1.187** (0.472) [4.720]	0.702
Mortgage Balance	7.997 (20.086) [41.672]	21.914** (9.627) [38.466]	0.515	23.022 (27.107) [8.848]	4.722 (5.264) [6.085]	0.491
Auto Balance	2.081 (1.870) [4.083]	-1.146* (0.653) [4.261]	0.090	7.151 (6.980) [3.983]	-1.130 (0.805) [3.787]	0.220
Revolving Utilization	10.331 (17.997) [47.421]	-19.408*** (2.714) [46.495]	0.091	-51.919** (26.060) [48.514]	-14.423*** (5.536) [47.218]	0.150
Non-Mortgage Inquiries	0.152 (0.704) [1.624]	-0.494** (0.207) [1.588]	0.361	0.032 (1.037) [1.580]	-0.111 (0.163) [1.544]	0.887
Controls	Yes	Yes	-	Yes	Yes	-
Observations	27706	83726	-	9860	48767	-

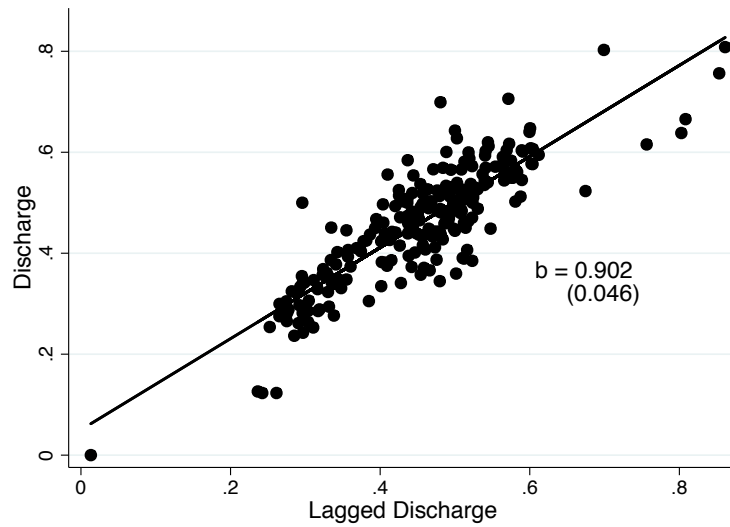
Notes: This table reports two-stage least squares results of the impact of Chapter 13 bankruptcy protection for states with judicial foreclosure and those without judicial foreclosure, separately by homeownership status. The sample consists of Chapter 13 bankruptcy filers originating from offices that randomly assign filers to judges between 2002-2005 who are linked to credit report data in the year of filing. The post-filing mean for dismissed filers is reported in brackets for each subgroup. We instrument for Chapter 13 protection using the leave-one-out mean rate of granting Chapter 13 bankruptcy protection for the assigned judge minus the leave-one-out mean rate of granting bankruptcy protection for the office. Subgroup instruments are constructed using the matched estimation sample. All regressions control for baseline age bins, homeownership, ZIP code income, financial strain index, revolving balance, collection balance, mortgage balance, auto balance, indicators for mortgage and auto loans, revolving utilization, non-mortgage inquiries, office-by-filing-month fixed effects, and cluster standard errors at the office level. See the data appendix for details on the data and variable construction. \*\*\* = significant at 1 percent level, \*\* = significant at 5 percent level, \* = significant at 10 percent level.

Appendix Table 10  
Predictors of Bankruptcy Filing

	(1)	(2)	(3)	(4)	(5)
Age at Filing	-0.00165*** (0.00005)	-0.00248*** (0.00006)	-0.00145*** (0.00006)	-0.00136*** (0.00006)	-0.00121*** (0.00006)
Homeowner	0.02620*** (0.00201)	0.02783*** (0.00326)	-0.04866*** (0.00199)	0.03884*** (0.00284)	-0.04348*** (0.00172)
ZIP code Income	-0.00001 (0.00003)	-0.00039*** (0.00005)	-0.00024*** (0.00006)	-0.00002 (0.00003)	-0.00037*** (0.00006)
Delinquency	0.07517*** (0.00320)				0.05163*** (0.00216)
Collection	-0.00380 (0.00264)				0.01556*** (0.00302)
Charge-off	0.02796*** (0.00172)				0.00921*** (0.00180)
Foreclosure	0.04793*** (0.01113)				0.04049*** (0.01147)
Judgment	0.05525*** (0.00370)				0.05543*** (0.00332)
Lien	0.01449 (0.00916)				0.02421*** (0.00722)
Repossession	0.05498*** (0.00644)				0.04838*** (0.00519)
Revolving Balance		0.00613*** (0.00019)			0.00475*** (0.00020)
Collection Balance		0.00017 (0.00026)			-0.00025* (0.00013)
Have a Mortgage			0.09613*** (0.00376)		0.07001*** (0.00295)
Mortgage Balance			0.00031*** (0.00005)		0.00017*** (0.00005)
Have an Auto Loan			0.08195*** (0.00251)		0.06746*** (0.00209)
Auto Balance			0.00140*** (0.00016)		0.00031** (0.00015)
Revolving Utilization				0.00073*** (0.00005)	0.00043*** (0.00003)
Non-Mortgage Inquiries				0.01825*** (0.00061)	0.01195*** (0.00052)
Observations	1306061	1306061	1306061	1306061	1306061

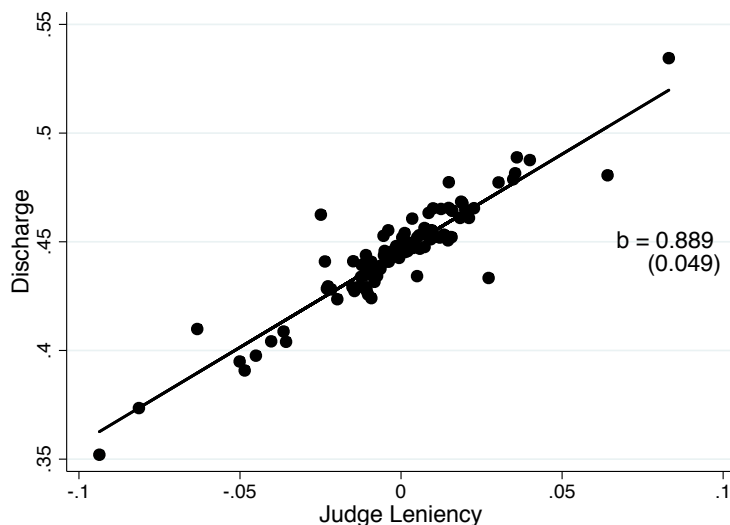
Notes: This table regresses lagged financial characteristics on bankruptcy filing in the following year. All regressions control for office-by-filing-month fixed effects and cluster standard errors at the office level. See the data appendix for details on the data and variable construction. \*\*\* = significant at 1 percent level, \*\* = significant at 5 percent level, \* = significant at 10 percent level.

Appendix Figure 1  
Persistence of Judge Leniency Measure



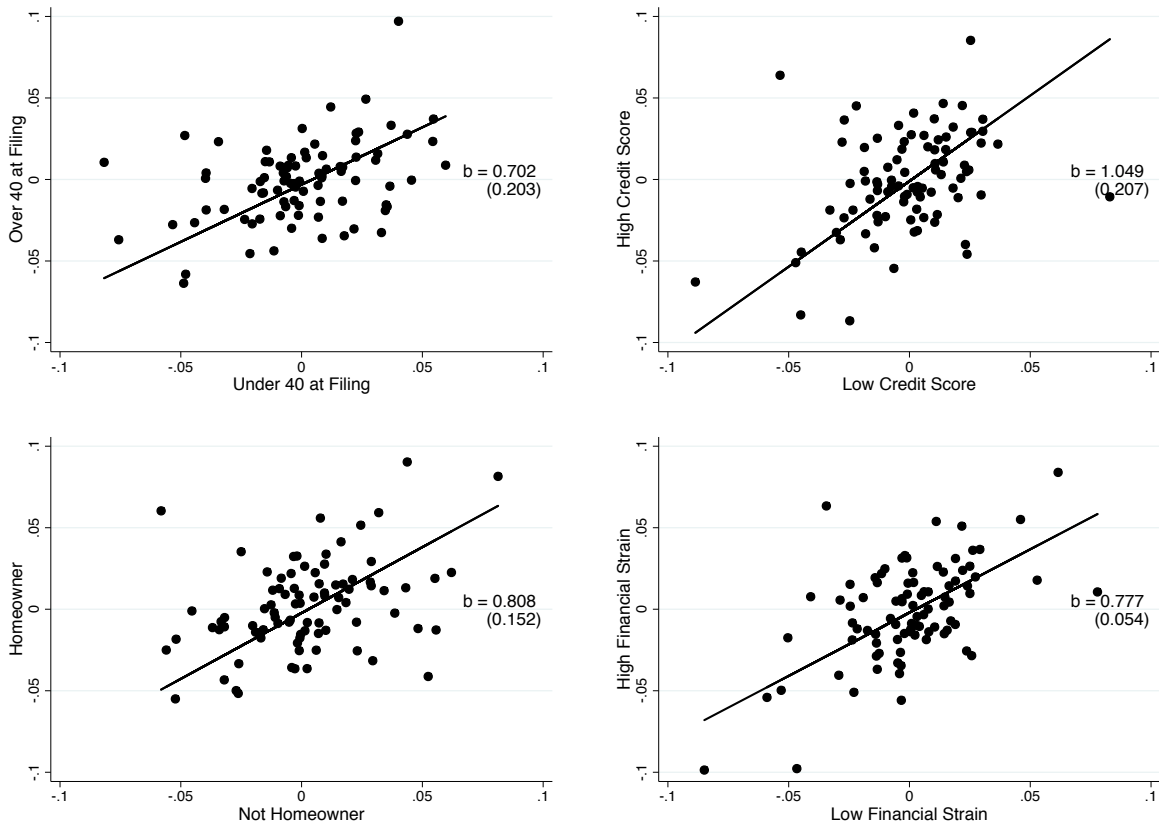
Notes: This figure plots current Chapter 13 discharge vs. lagged discharge for each judge-by-office-by-year. The sample consists of all first-time Chapter 13 filers from 2002-2005 linked to credit report data, for whom we observe credit data in the year of filing. Judge leniency is the leave-one-out mean rate of granting Chapter 13 bankruptcy protection for the assigned judge minus the leave-one-out mean rate of granting bankruptcy protection for the office. Each point in the scatter plot represents a separate judge-by-office-by-year observation. To construct the scatter plot, we regress current discharge rate on lagged discharge rate. The solid line shows the best linear fit estimated on the underlying micro data estimated using OLS. The coefficient shows the estimated slope of the best-fit line, with standard errors clustered at the office-by-judge level reported in parentheses.

Appendix Figure 2  
Judge Leniency and Bankruptcy Protection



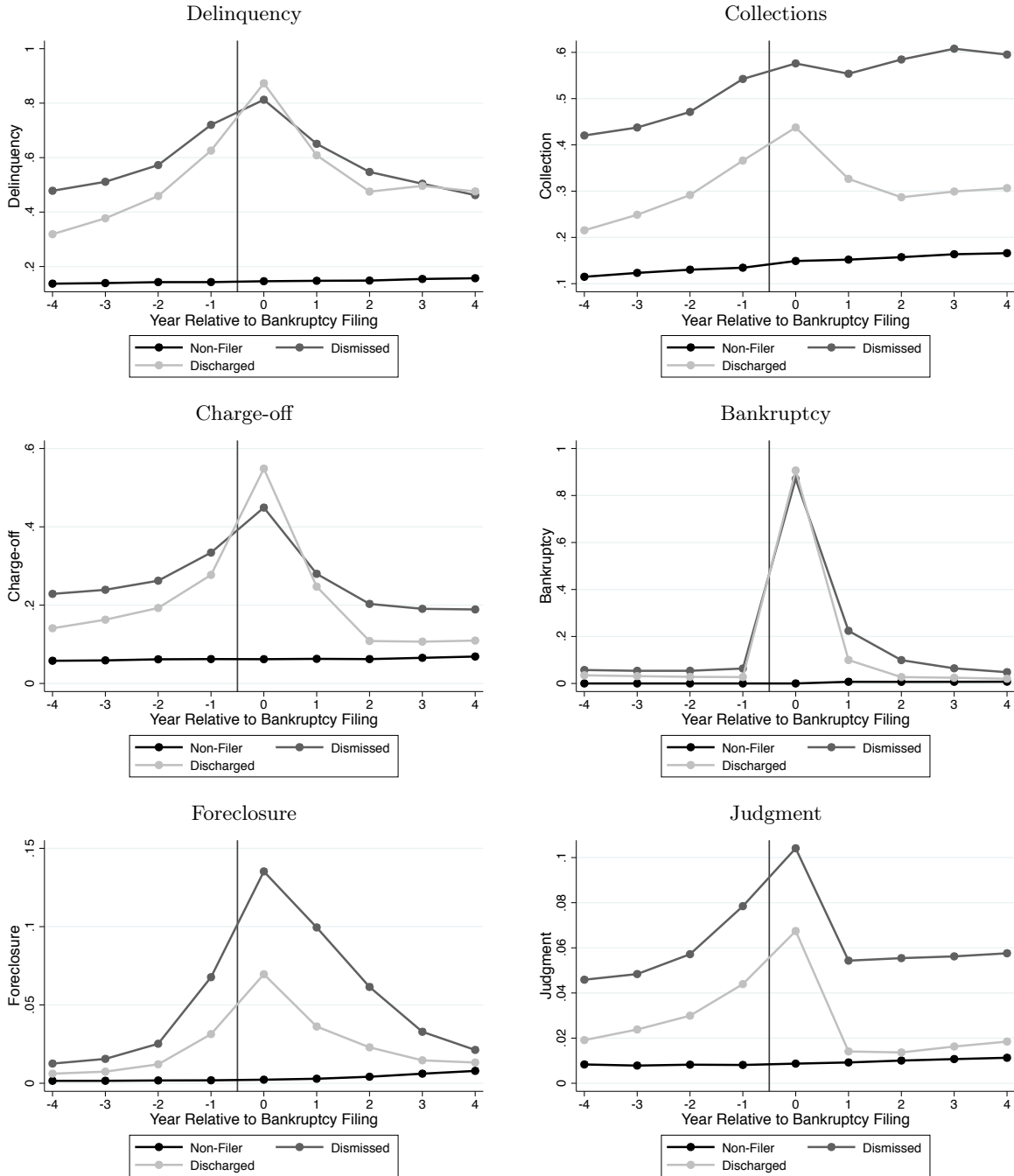
Notes: This figure plots Chapter 13 discharge vs. our leave-one-out measure of judge leniency. The sample consists of all first-time Chapter 13 filers from 2002-2005 linked to credit report data, for whom we observe credit data in the year of filing. Judge leniency is the leave-one-out mean rate of granting Chapter 13 bankruptcy protection for the assigned judge minus the leave-one-out mean rate of granting bankruptcy protection for the office. To construct the binned scatter plot, we first regress an indicator for discharge on office-by-filing-month fixed effects and calculate residuals. We then take the mean residual in each judge-by-year bin, adding the mean discharge rate to each residual to aid in the interpretation of the plot. The solid line shows the best linear fit estimated on the underlying micro data estimated using OLS. The coefficients show the estimated slope of the best-fit line including office-by-filing-month fixed effects, with standard errors clustered at the office level reported in parentheses.

Appendix Figure 3  
 Judge Leniency by Filer Characteristics



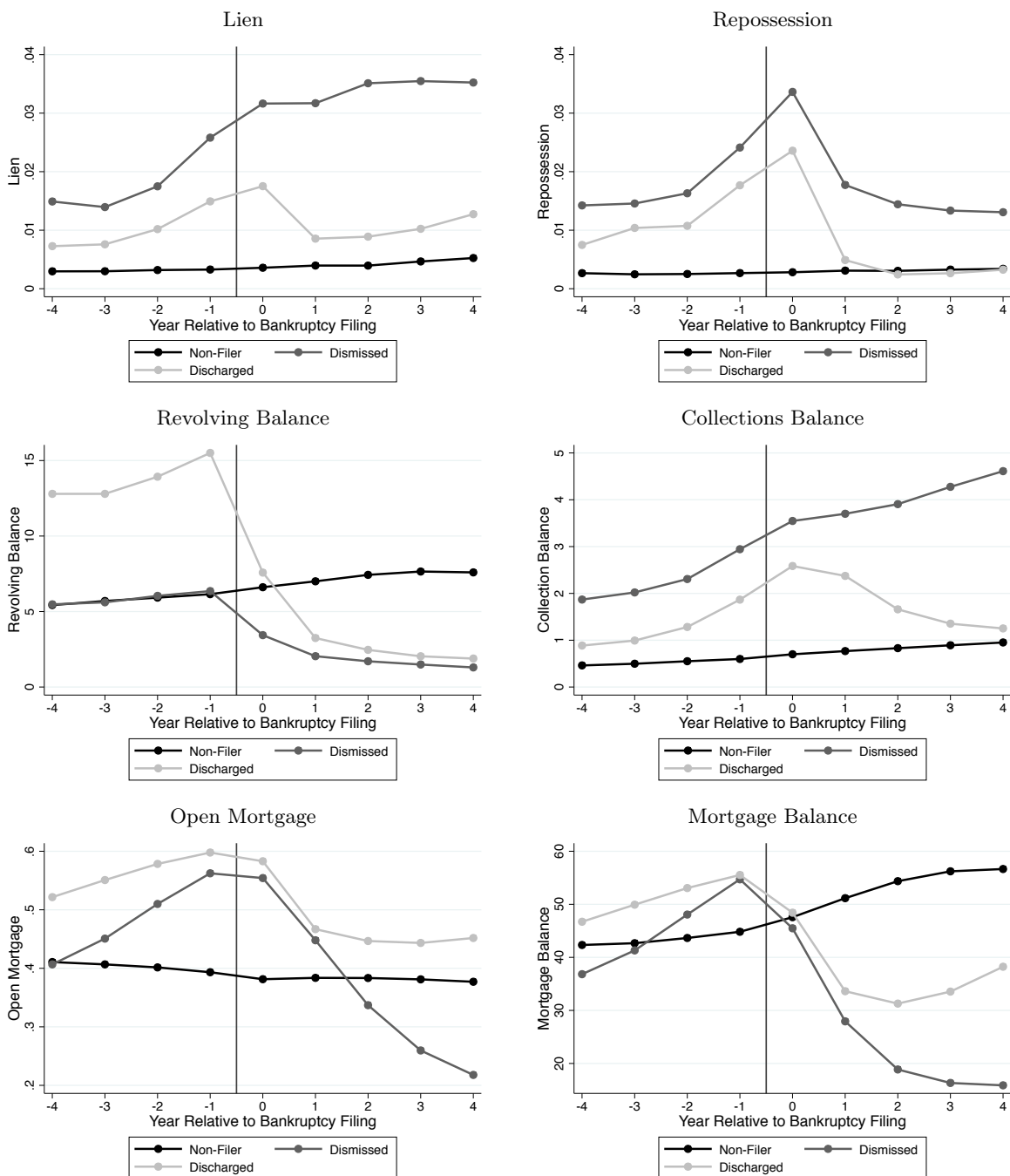
Notes: These figures show the correlation between judge leniency for different groups of filers. Age is determined at the time of filing and credit score and homeownership are determined in the full year prior to filing. The sample consists of all first-time filers between June 2002 and 2005 in the 39 offices that randomly assign filings to judges. Judge leniency is defined as the leave-one-out mean rate of granting bankruptcy protection for the assigned judge minus the leave-one-out mean rate of granting bankruptcy protection for the office. We take the average leniency for each group over all available years of data. Subgroup instruments are constructed using the matched estimation sample. The solid line shows the best linear fit estimated using OLS relating each judge leniency measure.

Appendix Figure 4  
Trends by Filing Status



Notes: These figures show the coefficients on year relative to filing dummies interacted with filer status: non-filer, dismissed filer, and discharged filer. Raw data figures include no controls.

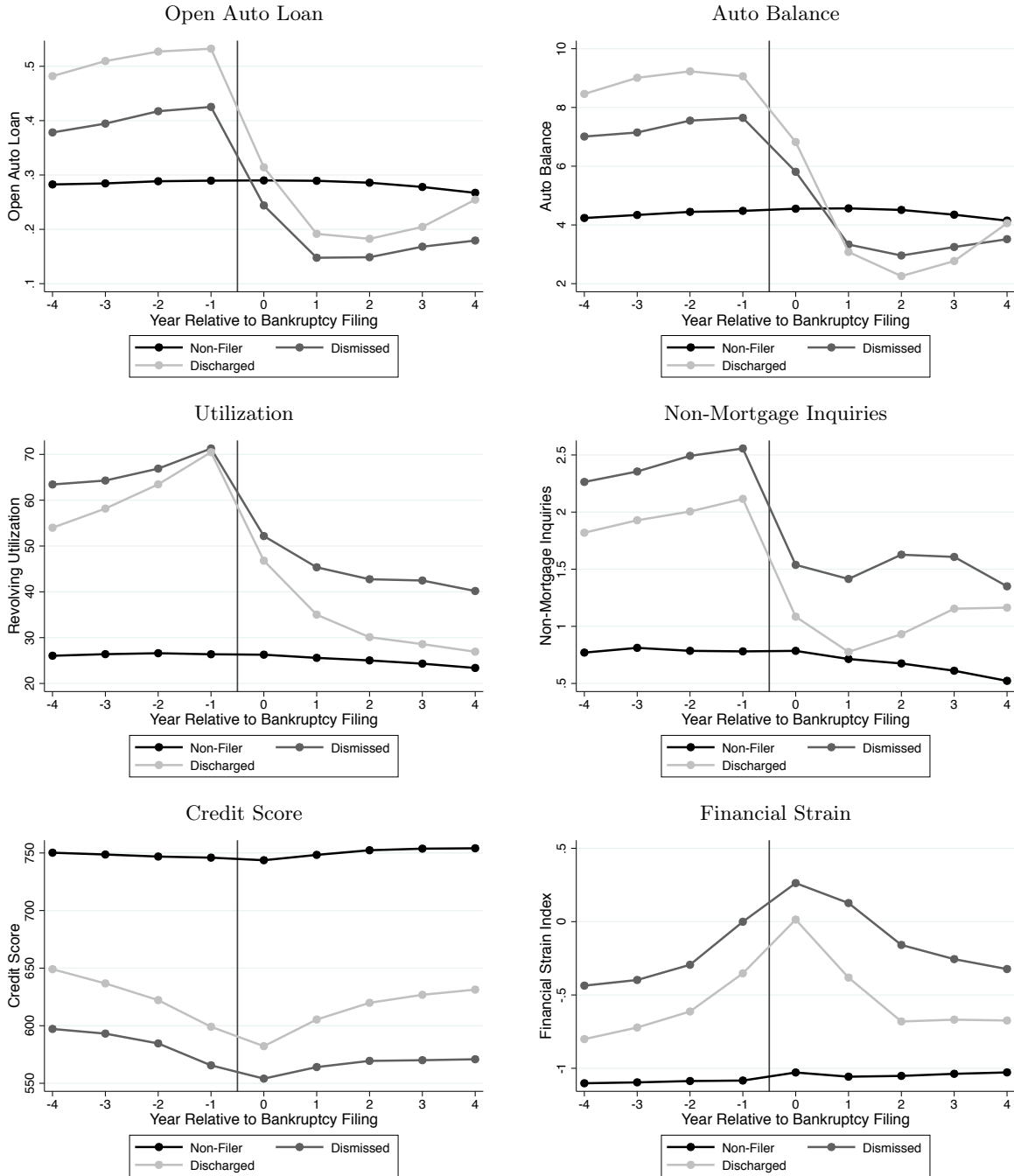
Appendix Figure 4  
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Notes: These figures show the coefficients on year relative to filing dummies interacted with filer status: non-filer, dismissed filer, and discharged filer. Raw data figures include no controls.



Appendix Figure 4  
Trends by Filing Status



Notes: These figures show the coefficients on year relative to filing dummies interacted with filer status: non-filer, dismissed filer, and discharged filer. Raw data figures include no controls.

## Online Appendix B: Data Dictionary

### A. Judge Leniency

*Judge Leniency* - We calculate judge leniency as the leave-one-out mean rate of granting Chapter 13 bankruptcy protection for the assigned judge minus the leave-one-out mean rate of granting bankruptcy protection for the office.

### B. Characteristics

*Homeowner* - Homeownership is based on a home flag calculated by TransUnion. The home flag is set to “Y” if there is any home equity or mortgage trade on file. This measure may overestimate actual homeownership because it does not require a non-zero balance on home equity or mortgage trades. Alternatively, this measure may underestimate actual homeownership if TransUnion does not observe the original mortgage or equity trade.

*ZIP code Income* - We obtain average annual ZIP code income from 1998-2002.

### C. Adverse Financial Events

*Delinquency* - We measure post-filing delinquencies based on the number of trades currently 30+ days past due within the past 12 months, provided by TransUnion. Delinquency probabilities are non-cumulative, measured as the probability of at least one delinquency in the prior 12 months, averaged over the first five post-filing years.

*Collection* - We measure post-filing collections based on the number of collection trades in the past 12 months, calculated by TransUnion. Collection account records consist of credit accounts and records of unpaid bills that have been transferred to a collection agency or in the process of collection. Generally, accounts sent to collection are listed on a debtor’s credit report for seven years. Collection trades are trades either with KOB (Kind of Business) = Collection, MOP (Manner of Payment) = 9B (Collection), or remark/dispute flags such as “Collection account cancelled by creditor,” “Placed for collection,” and “Collection account.” Collection probabilities are non-cumulative, measured as the probability of at least one collection in the prior 12 months, averaged over the first five post-filing years.

*Charge-off* - We measure post-filing charge-offs based on the number of charge-offs within the past 12 months, calculated by TransUnion. A charge-off occurs when a creditor declares a debt unlikely to be paid. An account is usually charged off after 180 days of non-payment, but the creditor can continue to attempt to collect on the debt. The charge-off record generally appears on a credit report for up to seven years. Charge-off information is obtained from trades with remark/dispute codes such as “Bad Debt: Collection Suit,” “Claim/PMT Against Guarantor,” “Early Termination w/Deficiency,” “Skip out of Account,” or MOP = 09 (Charged off to bad debt), or MOP = 9P (Paying or paid account with MOP 09). Charge-off probabilities are non-cumulative, and can be thought of as the probability of at least one charge-off in the prior 12 months, averaged over the second to fifth post-filing years.

*Bankruptcy* - We measure post-filing bankruptcies based on the number of bankruptcies within the past 12 months, calculated by TransUnion. Bankruptcies can occur under Chapter 7, Chapter 11, Chapter 12, or Chapter 13. Bankruptcy probabilities are non-cumulative, measured as the probability of at least one bankruptcy in the prior 12 months, averaged over the second to fifth post-filing years.

*Foreclosure* - We measure post-filing foreclosures based on the number of foreclosures within the past 12 months, calculated by TransUnion. A foreclosure is a process in which a bank or mortgage company takes possession of a mortgaged property because the mortgagor has failed to keep up with mortgage payments. Foreclosure information is obtained from public records, and trades with remark/dispute codes that signal foreclosure. In the TransUnion data, foreclosure is defined more expansively than an actual sale or deed transfer. Foreclosure ranges from an actual sale or transfer of the home, to merely a notice that foreclosure was commenced. For instance, the foreclosure flag is turned on for any of the following reasons: foreclosure initiated, foreclosure started, foreclosure discontinued, and foreclosure redeemed. Post-filing foreclosure probabilities are non-cumulative, and can be thought of as the probability of at least one foreclosure in the prior 12 months, averaged over the first five post-filing years.

*Judgment* - We measure post-filing judgments based on the number of civil judgment suits within the past 12 months, calculated by TransUnion. Judgment probabilities are non-cumulative, measured as the probability of at least one judgment in the prior 12 months, averaged over the first five post-filing years.

*Lien* - We measure post-filing liens based on the number of lien public records within the past 12 months, calculated by TransUnion. A lien is an official claim against property or funds for payment of a debt owed. Public record liens include federal and state tax liens, hospital liens, and judicial liens. Lien probabilities are non-cumulative, measured as the probability of at least one lien in the prior 12 months, averaged over the first five post-filing years.

*Repossession* - We measure post-filing repossessions based on the number of repossessions within the past 12 months, calculated by TransUnion. A repossession occurs when a lender takes back an asset, such as an automobile. Repossessions can be voluntary or involuntary. Late payments leading up to repossession are damaging to a debtor's credit score, and the mark of a repossession appears on credit reports. In the TransUnion data, repossession information is obtained from trades with remark/dispute codes such as "Paid Repossession," "Repossession," "Repossession, redeemed," "Paid by dealer," "Paid from collateral," or MOP (Manner of Payment) = 08 (Repossession). As with foreclosure, TransUnion defines repossessions expansively, including redeemed repossessions where the debtor makes full payment on the loan and takes back the asset. Post-filing repossession probabilities are non-cumulative, and can be thought of as the probability of at least one repossession in the prior 12 months, averaged over the first five post-filing years.

*Financial Strain Index* - The index contains the non-cumulative probabilities of the following eight components: delinquency, collection, charge-off, bankruptcy, foreclosure, judgment, lien and repossession, as defined above. Following Fryer and Katz (2013), for each post-filing year, each component is standardized using the mean and standard deviation for the dismissed filer group in the baseline year. We sum across the eight components to create a yearly index, restandardizing using the mean and standard deviation of the dismissed filer group in the baseline year. The index in the year of filing includes six components, excluding charge-offs and bankruptcies. We then average the yearly index across the first five post-filing years. Because each of the financial strains represent adverse events that negatively impact access to credit, a higher index represents worse outcomes.

#### D. Unsecured Debt and Collections Activity

*Revolving Balance* - Total balance of revolving trades with current balance greater than zero verified within 6 months calculated by TransUnion. Revolving trades include bank card accounts, retail accounts, and check credit accounts. Retail trade accounts include clothing, department stores, grocery, home furnishings, jewelry, computer, camera, and sporting goods stores. According to Avery et al. (2003), revolving trade balances (dollar-weighted) represent 11 percent of all open account balances.

*Collection Balance* - Aggregate current balance of all collections on file calculated by TransUnion. There are two important shortcomings of the collections data. First, there is incomplete coverage of unpaid bills, with larger entities, such as hospitals and utility companies, more likely to send debts to collection agencies. Second, collection records will not include debts that parties collect themselves and debts sent to collection agencies that do not report to credit bureaus.

#### E. Retaining Secured Assets

*Have a Mortgage* - We measure the probability of having an open mortgage based on the number of open mortgage trades verified in the past 12 months calculated by TransUnion. Mortgage trades are loans such as conventional real estate mortgages, FHA loans, real estate loans, second mortgages, and VA loans.

*Mortgage Balance* - Total balance of all mortgage trades verified in the past 12 months calculated by TransUnion. According to Avery et al. (2003), mortgage balances (dollar-weighted) represent 67 percent of all open account balances.

*Have an Auto Loan* - We measure the probability of having an open auto loan based on the number of open auto loans verified in the past six months calculated by TransUnion. Auto loans typically involve fixed monthly payments that fully amortize the total amount borrowed over the term of the loan, often secured (Avery et al. 2003).

*Auto Balance* - Total balance of open auto trades verified in the past 12 months calculated by TransUnion.

#### F. Credit Access

*Revolving Utilization* - Total outstanding revolving trade balance divided by revolving trade credit limit verified in the past 12 months calculated by TransUnion, expressed in percentages. Because total credit limit is likely understates actual credit limits (Avery et al. 2003), the credit utilization rate likely overstates actual credit utilization.

*Non-Mortgage Inquiries* - Number of non-mortgage inquiries within the past 6 months calculated by TransUnion. Inquiries are made to ensure that an applicant for credit, apartment rental, insurance, or employment meets minimum standards. When a creditor or lender checks a debtor's credit in connection with an application, a "hard inquiry" is tagged on a credit report. A hard inquiry remains on a credit report for up to two years and may lower a debtor's credit score. When a creditor reviews the credit report of an existing customer, or when a debtor checks his own credit, a "soft inquiry" typically shows up on your credit report. Soft inquiries generally do not lower credit scores or appear to businesses checking a debtor's credit.

## G. Credit Score

*Credit score* - This measure is an ordinal credit score calculated by TransUnion to measure credit risk. This measure is similar to the FICO score commonly referenced in the consumer finance literature.

## H. Data Characteristics

*Matched to Credit Report* - Indicator for whether the 253,863 bankruptcy filings sent to TransUnion were matched to credit report data from the baseline filing year.

*Missing Age* - Indicator for whether age at filing is missing.

*Missing Baseline Outcomes* - Indicator for whether baseline credit report outcomes are missing.

## I. Housing Transitions

*Living in Same Residence* - This measure is calculated based on the number of months at the current address calculated by TransUnion. We define a consumer as being in the same residence five years after filing if the difference between the number of months at the current address in year 5 and year 0 is at least 48 months.

*Moved to Rental* - We define this measure as individuals who have zero mortgage trades in year 5, coupled with a move between years 0 and 5 (such that they are no longer in the same residence by year 5).

*Moved to Home* - We define this measure as individuals who have non-zero mortgage trades in year 5, coupled with a move between years 0 and 5 (such that they are no longer in the same residence by year 5).