Online Appendix, Not For Publication

"The Impact of Consumer Credit Access on Employment, Earnings and Entrepreneurship"

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A   Details on the Integrated Longitudinal Business Database (ILBD)

The ILBD merges two different databases. The first database is the Longitudinal Business Database (LBD) which tracks the universe of all U.S. establishments that have paid employees.[26] The second database is the universe of IRS non-employer tax records (i.e. those who fill out 1040 Schedule C tax returns). As soon as an entity hires a non-contractor, full-time employee, the business owner must obtain an EIN and will enter the LBD.[27] Davis et al. [2007] construct the ILBD using the SSN-EIN link found on the application for an EIN, and they also use exact business name matches. This yields a crosswalk between non-employers and the subsequent businesses they become.[28] We subsequently merge the ILBD using anonymized unique identifiers to our credit bureau data and the LEHD.

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[26] "Overview: The Longitudinal Business Database (LBD) is a research dataset constructed at the Center for Economic Studies (CES) in the U.S. Census Bureau. The LBD contains the universe of all U.S. business establishments with paid employees listed in the Census Bureaus business register." http://maryannfeldman.web.unc.edu/data-sources/longitudinal-databases/longitudinal-business-database/

[27] According to the IRS, "As a business owner, when another person performs work for you, you must first correctly classify that person as an independent contractor or employee. If the person is an independent contractor, refer to Forms and Associated Taxes for Independent Contractors for your tax responsibilities. If the person is classified as an employee you must have an Employer Identification Number (EIN). Your tax responsibilities include withholding, depositing, reporting, and paying employment taxes. You must also give certain forms to your employees, they must give certain forms to you, and you must send certain forms to the IRS and SSA." https://www.irs.gov/businesses/small-businesses-self-employed/businesses-with-employees

[28] Quoting from Davis et al. [2007] "...we create a set of firm-level matches between employers and nonemployers for our selected industries. These matches rely on numeric identifiers and exact literal matches on business names. In matching on numeric identifiers, we exploit the fact that many business records contain both an EIN and an SSN. For example, when a business owner or officer applies for an EIN, he or she must fill out an SS-4 form for the IRS. This form includes the business name, the EIN and the SSN of the business owner or chief officer, all of which are included in Census Bureau business registers. These data allow us to build a crosswalk between EINs and SSNs, which we then use to match business records across universes... we rely only on the EIN-SSN crosswalk and exact literal matches on business name. As an example of how our matching algorithm works, consider all establishments with employees in our selected industries as of 2000. Using the longitudinal links in the LBD, we first create a set of identifiers (EINs, SSNs and business names) associated with each establishment with employees in 2000 for each year back to 1992... About 17 percent of our employer-nonemployer matches rely on exact literal matches on business name strings."

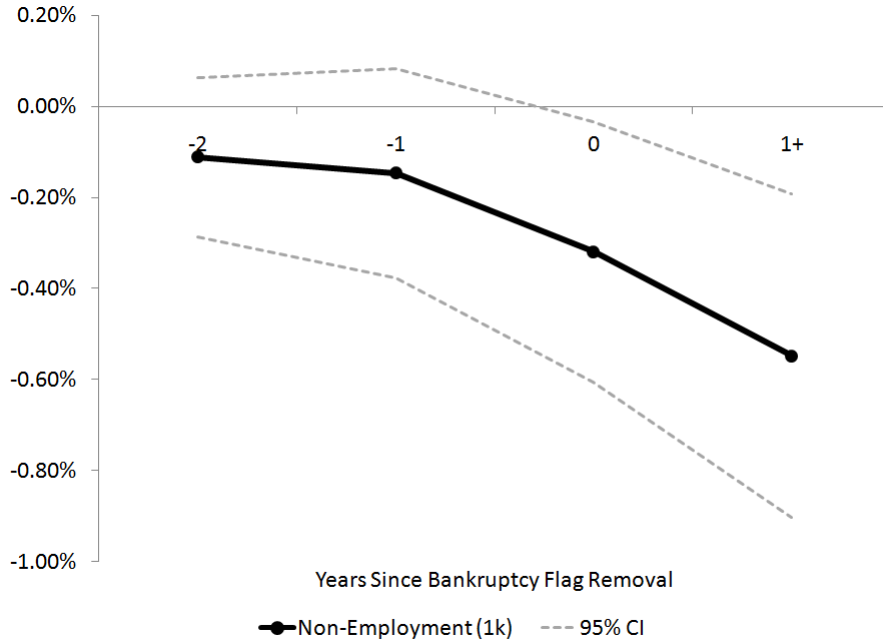# B   TransUnion/LEHD Additional Results: Levels of Non-Employment

Table 13 illustrates the impact of bankruptcy flag removal on non-employment, defined to be those who are not formal-employed and are also not self-employed. Column (1) of Table 13 shows that non-employment (using a \$1k earnings threshold) declines by .548% following bankruptcy flag removal, relative to the control group. In this case, we can reject equality of coefficients on the dummy one year prior to flag removal and one year following flag removal. Figure 6 plots the coefficients from Column (1). The figure shows a stable trend in non-employment prior to flag removal and then a rapid decline in non-employment following flag removal. Column (2) of Table 13 illustrates a similar pattern using the \$5k definitions of formal employment and self-employment.

Table 13: Baseline Non-Employment Results

	(1) Non-Employed, 1k (d)	(2) Non-Employed, 5k (d)
2 Years Before Removal (d)	-0.00112	-0.000723
	(0.000887)	(0.000914)
1 Year Before Removal (d)	-0.00147	-0.00101
	(0.00117)	(0.00120)
Year of Removal (d)	-0.00320**	-0.00278*
	(0.00146)	(0.00150)
1+ Years After Removal (d)	-0.00548***	-0.00354*
	(0.00181)	(0.00185)
Individual Fixed Effects	Y	Y
Year Fixed Effects	Y	Y
Age and Tenure Controls	Y	Y
R-squared	0.096	0.098
Indiv-Yr Obs.	1.500e+06	1.500e+06
No. of Indiv.	220000	220000
Sig Diff 1+Yr & -2Yr at 10%	Y	Y
Sig Diff 0Yr & -2Yr at 10%	Y	Y

Notes: SE in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Age and Tenure controls include quadratics in age and tenure. The symbol (d) indicates a dummy variable. Non-employment (d) is a dummy which equals one when individuals are simultaneously not formal-employed and not self-employed. For formal-employment and self-employment definitions, see Section 2.2.

Figure 6: Non-employment (Coefficients Plotted from Table 13, Column (1))

C TransUnion/LEHD Additional Results: Transitions from Self-Employment to Formal Employment and Vice Versa

Table 14 includes the transition rates between self-employment and formal-employment, as well as the incidence of dual jobs and single jobs. To reduce noise we require the individual to be in their previous sector for at least 2 years before the transitioning. Column (1) illustrates an insignificant increase in the transition rate from formal employment to self-employment. Column (2) illustrates an increase in the transition rate from self-employment to formal-employment of .171% following flag removal; however, the transition rate moves prior to the flag removal. Column (3) shows that odds of being both formally employed and self employed increases following flag removal, but insignificantly. Likewise Column (3) shows that the odds of being only self-employed are hardly affected by flag removal. But Column (4) shows that the odds of being solely employed in a formal sector job increases by .44% following flag removal. This suggests that individuals are finding formal-sector jobs that allow them to quit their self-employed jobs.

Table 14: Transitions from Self-Employment to Formal Employment

	(1) Transition from Formal-Employed (2yr) to Self-Employment, 1k (d)	(2) Transitions from Self-Employed (2yr) to Formal-Employed, 1k (d)	(3) Both SE and Formal-Employed (d)	(4) Only Self-employed (d)	(5) Only Formal-Employed (d)
2 Years Before Removal (d)	0.000173	0.000244	-0.000208	0.000808*	0.000516
	(0.000614)	(0.000322)	(0.000636)	(0.000426)	(0.00102)
1 Year Before Removal (d)	0.000555	0.00114***	-0.000309	-7.45e-05	0.00185
	(0.000756)	(0.000418)	(0.000807)	(0.000545)	(0.00134)
Year of Removal (d)	0.00126	0.00126**	0.000632	0.000318	0.00225
	(0.000909)	(0.000506)	(0.000990)	(0.000677)	(0.00166)
1+ Years After Removal (d)	0.00137	0.00171***	0.000247	0.000830	0.00441**
	(0.00110)	(0.000619)	(0.00121)	(0.000832)	(0.00205)
Individual Fixed Effects	Y	Y	Y	Y	Y
Year Fixed Effects	Y	Y	Y	Y	Y
Age and Tenure Controls	Y	Y	Y	Y	Y
R-squared	0.000	0.002	0.003	0.013	0.083
No. Person-Yr Obs.	1.500e+06	1.500e+06	1.500e+06	1.500e+06	1.500e+06
No. of Indiv.	220000	220000	220000	220000	220000

Notes: SE in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Age and Tenure controls include quadratics in age and tenure. Fixed Effects include individual fixed effects and year dummies.

D TransUnion/LEHD Additional Results: LBD Pay and Employment

Finally, Table 15 illustrates the impact of bankruptcy flag removal on payroll (in thousands of 2008 dollars) and employment for LBD firm owners. Column (1) of Table 15 shows that there is an increase in both LBD payrolls of $2.9k following flag removal among LBD firm owners, however this increase is insignificant at standard levels. Column (2) of Table 15 shows that there is an increase in employment of .66 employees (i.e. 2/3 of an employee on average) following flag removal among LBD firm owners, but again, this increase is insignificant. As we mentioned in the main text, the lack of power is presumably from the small fraction of bankrupt individuals who own employer-firms in the LBD, and in future research, we plan to explore the impact of credit access on hiring patterns in more detail with a broader sample of firm owners.

Table 15: LBD Employment and Pay

	(1) LBD Pay	(2) LBD Employment
2 Years Before Removal (d)	0.105	0.00251
	(0.118)	(0.00378)
1 Year Before Removal (d)	0.127	0.00240
	(0.197)	(0.00476)
Year of Removal (d)	0.242	0.00304
	(0.207)	(0.00617)
1+ Years After Removal (d)	0.163	0.00123
	(0.278)	(0.00642)
LBD Ownership, 2+ Yrs. (d)	-9.136***	-0.316
	(3.181)	(0.266)
2 Yrs. Before Removal (d) x LBD Ownership, 2+ Yrs. (d)	11.24	-0.635
	(12.12)	(0.564)
1 Yr. Before Removal (d) x LBD Ownership, 2+ Yrs. (d)	7.121	-0.673
	(6.496)	(0.704)
Yr. of Removal (d) x LBD Ownership, 2+ Yrs. (d)	17.20	-0.328
	(12.90)	(0.637)
1+ Yrs. After Removal (d) x LBD Ownership, 2+ Yrs. (d)	14.12	0.0269
	(12.54)	(0.302)
Individual Fixed Effects	Y	Y
Year Fixed Effects	Y	Y
Age and Tenure Controls	Y	Y
R-squared	0.000	0.000
No. Person-Yr Obs.	1.500e+06	1.500e+06
No. of Indiv.	220000	220000
Combined Coeff Diff 1+ Yrs & -2 Yrs	2.94	0.66
Combined Coeff Diff Sig at 10%	N	N

Notes: SE in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Age and Tenure controls include quadratics in age and tenure. Fixed Effects include individual fixed effects and year dummies. LBD Pay measures the total payroll of the firm and is expressed in thousands of 2008 dollars. LBD employment refers to the number of workers employed at the firm.

E   TransUnion/LEHD Additional Results: Formal Sector Exit Rates and Job Turnover

Are those who transition into formal employment marginal workers? To explore this question, we compute rates at which workers transit out of formal employment for those who find a new job after flag removal. In general, these newly employed workers are attached to the formal sector and are less likely to exit after flag removal. Table 16 illustrates job transitions among those who recently found a job. Column (1) of Table 16 shows that among those who transition into formal employment following flag removal, their odds of exiting formal employment in the following year actually declines slightly. Column (1) shows that individuals who transition into formal employment 1 or more years after bankruptcy flag removal are -.76% (= (-.0267+.0047)- (-.0153+.0009)) less likely to subsequently exit formal sector employment than individuals who transition into formal employment 2 years prior to bankruptcy flag removal. We find a similar result using the $5k cutoff in Column (2). Column (3) shows that individuals who transition into formal employment 1 or more years after bankruptcy flag removal are 2.96% (= (.0526-.0009)- (.0226-.0005)) more likely to start a new formal sector job than individuals who transition into formal employment 2 years prior to bankruptcy flag removal. The increased odds of switching to a new employer may reflect either (i) increased odds of being laid off, or (ii) climbing the job ladder. The persistent wage gains point to the latter explanation, but since the LEHD does not provide reason of separation, we leave this to future research.

Table 16: Transitions Out of Formal Sector Employment and Between Employers

	(1) Transition out of Formal Empl. Next Year, 1k (d)	(2) Transition out of Formal Empl. Next Year, 5k (d)	(3) New Formal Job Accession Next Year (d)
2 Years Before Removal (d)	0.000963	0.000921	-0.000513
	(0.000669)	(0.000699)	(0.00122)
1 Year Before Removal (d)	0.00150**	0.00178**	-0.000469
	(0.000759)	(0.000785)	(0.00141)
Year of Removal (d)	0.00266***	0.00275***	-0.00112
	(0.000893)	(0.000917)	(0.00165)
1+ Years After Removal (d)	0.00476***	0.00408***	-0.000948
	(0.00109)	(0.00111)	(0.00201)
Transition into Formal-Employed, 1k (d)	0.109***	0.0534***	0.00822***
	(0.00227)	(0.00192)	(0.00259)
2 Yrs. Before Removal (d) x Trans into Formal-Employed, 1k (d)	-0.0153***	-0.00924**	0.0226***
	(0.00501)	(0.00428)	(0.00574)
1 Yr. Before Removal (d) x Trans into Formal-Employed, 1k (d)	-0.0150***	-0.00822*	0.0213***
	(0.00503)	(0.00429)	(0.00571)
Yr. of Removal (d) x Trans into Formal-Employed, 1k (d)	-0.0203***	-0.00334	0.0186***
	(0.00547)	(0.00475)	(0.00626)
1+ Yrs. After Removal (d) x Trans into Formal-Employed, 1k (d)	-0.0267***	-0.0187***	0.0526***
	(0.00389)	(0.00330)	(0.00446)
Individual Fixed Effects	Y	Y	Y
Year Fixed Effects	Y	Y	Y
Age and Tenure Controls	Y	Y	Y
R-squared	0.043	0.037	0.011
No. Person-Yr Obs.	1.500e+06	1.500e+06	1.500e+06
No. of Indiv.	220000	220000	220000
Combined Coeff Diff 1+ Yrs & -2 Yrs	-0.76%	-0.63%	2.96%
Combined Coeff Diff Sig at 10%	N	N	Y

Notes: SE in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Age and Tenure controls include quadratics in age and tenure. Transition out of Formal Empl. Next Year, 1k (d) is a dummy that takes the value 1 if the individual earned at least $1k in the formal sector this year, and less than $1k next year. New Formal Job Accession Next Year (d) is a dummy that takes the value 1 if the individual becomes end-of-quarter employed at an SEIN they have never worked at previously.

F TransUnion/LEHD Additional Results: Tests for Selection Among Self-Employed Transitioners

In this appendix, we discuss the role of selection for the transition results. Since flag removal is forseeable, there is concern that better entrepreneurs who anticipate the need for credit deliberately wait until the flag is removed to start a business. However, such selection still suggests credit plays an important role for business startups. Nonetheless, we show that the entrepreneurs who transition into self-employment following flag removal are very close in terms of 1, 2, and 3 year lags of annual labor earnings relative to those who flow into self-employment 1 or 2 years prior to flag removal. This set of results suggests that the new self-employed individuals have similar labor productivity. We repeat the same exercise using 1, 2, and 3 year lags of annual self-employed income. The idea is that if these were repeat entrepreneurs as in Gompers et al. [2006], then we should see non-zero or greater lagged self-employed income. Again we find that those who transition into self-employment have very similar levels of previous self-employed earnings (i.e. they are not people who have previously failed disproportionately or succeeded disproportionately at entrepreneurship in the past). This suggests that they have similar prior levels of entrepreneurial talent. However, we cannot definitively rule out differences in unobserved talent.

Table 17 provides baseline regressions. Columns (1) through (3) regress lagged labor earnings on the self-employment transition indicator interacted with the window of dummies around flag removal. Columns (4) through (6) regress lagged self-employed income on an indicator interacted with the window of dummies around flag removal. To interpret the coefficients and test for selection, Table 18 tests whether those who transition into self-employment in the year of flag removal differ from those who transition into self-employment 1 and 2 years before flag removal. For example, the upper left hand cell of Table 17 computes prior labor earnings of those transitioning into self-employment in the year of removal $552 (= -120.5+1731 -1058) less the prior labor earnings of those transitioning into self-employment 1 year before flag removal $944 (=-36.63+1731 -749.7) to arrive at a difference in prior labor earnings between these two cohorts of self-employed individuals of $-391.9 (=-36.63+1,731 -749.7 -(-120.5+1,731 -1,058)). The standard error of this difference in prior labor earnings is $353, and the corresponding test statistic is -1.11, indicating that there is no difference in prior labor earnings between those who transition into self-employment one year before flag removal to one year after flag removal. The right-hand panel of Table 18 conduct the same

Table 17: Measures of selection for those who transition into self-employment. Regressions of past labor earnings and self-employed earnings on transition dummies.

	(1)	(2)	(3)	(4)	(5)	(6)
	1 Year Lagged Labor Earnings	2 Year Lagged Labor Earnings	3 Year Lagged Labor Earnings	1 Year Lagged Self Employed Income	2 Year Lagged Self Employed Income	3 Year Lagged Self Employed Income
2 Years Before Removal (d)	42.06	110.4**	283.2***	40.16*	-12.00	15.14
	(43.19)	(45.68)	(46.65)	(21.50)	(21.71)	(21.50)
1 Year Before Removal (d)	-36.63	86.06	279.4***	36.16	7.120	35.83
	(58.90)	(62.34)	(64.85)	(29.28)	(28.82)	(28.62)
Year of Removal (d)	-120.5	24.97	348.5***	19.74	31.14	70.09**
	(74.07)	(78.21)	(82.17)	(36.79)	(36.17)	(35.66)
1+ Years After Removal (d)	-469.6***	-291.8***	178.6*	15.44	-3.157	89.44**
	(91.25)	(96.37)	(101.6)	(45.19)	(44.66)	(44.55)
Transition Into Self-Employed (d)	1,731***	1,934***	1,507***	-8,960***	-3,902***	-2,516***
	(118.6)	(120.7)	(121.1)	(94.26)	(87.84)	(78.77)
2 Yrs. Before Removal (d) x Trans Into Self-Employed, 1k (d)	-462.9*	-422.4	-582.9**	655.1***	1,152***	1,113***
	(271.2)	(277.0)	(281.8)	(184.4)	(196.8)	(182.1)
1 Yr. Before Removal (d) x Trans Into Self-Employed, 1k (d)	-749.7***	-721.5**	-483.8*	516.7***	1,477***	760.6***
	(270.3)	(288.2)	(289.8)	(184.5)	(202.4)	(183.2)
Yr. of Removal (d) x Trans Into Self-Employed, 1k (d)	-1,058***	-418.2	-1.496	847.6***	1,102***	1,178***
	(286.8)	(298.9)	(292.7)	(191.7)	(201.4)	(192.1)
1+ Yrs. After Removal (d) x Trans Into Self-Employed, 1k (d)	-1,655***	-1,430***	-1,182***	1,802***	2,623***	2,382***
	(209.6)	(216.6)	(213.9)	(147.0)	(150.5)	(141.5)
Individual Fixed Effects	Y	Y	Y	Y	Y	Y
Year Fixed Effects	Y	Y	Y	Y	Y	Y
Age and Tenure Controls	Y	Y	Y	Y	Y	Y
R-squared	0.181	0.082	0.040	0.055	0.010	0.005
Round N	1.500e+06	1.500e+06	1.500e+06	1.500e+06	1.500e+06	1.500e+06
N Indiv	220000	220000	220000	220000	220000	220000

Notes: *** p<0.01, ** p<0.05, * p<0.1. Age and Tenure controls include quadratics in age and tenure.

exercise using self-employed earnings. Again, in all but one specification, we fail to reject that those who waited to start a business after flag removal had any difference in prior self-employment earnings to those who started their business one year before removal. Table 19 conducts the same exercise for longer lags of self-employed income, from 7 to 12 years, which includes the period before entering bankruptcy (earnings data is not available at these longer horizons). Again, the sample passes the selection tests in all but one specification, indicating that the people who wait to start a business are not necessarily repeat entrepreneurs who had higher income 7 to 12 years ago before entering bankruptcy.

Table 18: Measures of selection for those who transition into self-employment. Comparison of past labor earnings and past self-employed net income between those who transit into self-employment 1 and 2 years before flag removal versus those who transition into self-employment in the year of flag removal

	Difference in Labor Earnings X years ago between those who become SE <u>1</u> year before flag removal vs. those who wait until year of flag removal				Difference in Self-Employed net income X years ago between those who become SE <u>1</u> year before flag removal vs. those who wait until year of flag removal		
X=	1 Year	2 Years	3 Years		1 Year	2 Years	3 Years
Difference Labor Earnings	-391.9	242.1	551.4	Difference in Net Income	314.4	-350.5	451.9*
Std. Error	353.7	376.1	371.3	Std. Error	241.3	256.9	240.3
T-stat	**-1.11**	**0.64**	**1.49**	**T-stat**	**1.30**	**-1.36**	**1.88**
	Difference in Labor Earnings X years ago between those who become SE <u>2</u> years before flag removal vs. those who wait until year of flag removal				Difference in Self-Employed net income X years ago between those who become Self-Employed <u>2</u> years before flag removal vs. those who wait until year of flag removal		
X=	1 Year	2 Years	3 Years		1 Year	2 Years	3 Years
Difference in Labor Earnings	-757.5**	-81.29	646.7*	Difference in Net Income	172.1	-6.9	120.6
Std. Error	355.7	365.6	362.8	Std. Error	231.5	252.6	237.2
T-stat	**-2.13**	**-0.22**	**1.78**	**T-stat**	**0.74**	**-0.03**	**0.51**

Notes: *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Estimates based on Table 17 and calculations are explained in detail in the text.

Table 19: Measures of selection for those who transition into self-employment. Comparison of 7 to 12 year lagged self-employed net income between those who transit into self-employment 1 and 2 years before flag removal versus those who transition into self-employment in the year of flag removal

	Difference in Self-Employed net income X years ago between those who become Self-Employed <u>2</u> years before flag removal vs. those who wait until year of flag removal					
X=	7 Years	8 Years	9 Years	10 Years	11 Years	12 Years
Difference in Net Income	-282.6	581.2	35.5	273.3	497.4	319.9
Std. Error	458.8	482.3	480.4	569.2	590.0	363.8
T-stat	**-0.62**	**1.21**	**0.07**	**0.48**	**0.84**	**0.88**
	Difference in Self-Employed net income X years ago between those who become SE <u>1</u> year before flag removal vs. those who wait until year of flag removal					
X=	7 Years	8 Years	9 Years	10 Years	11 Years	12 Years
Difference in Net Income	-139.6	-1264	936.9	-831.5	727.1	-339.3
Std. Error	509.1	1178	470.8	754	551.6	416.6
T-stat	**-0.27**	**-1.07**	**1.99**	**-1.10**	**1.32**	**-0.81**

Notes: *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

G TransUnion/LEHD Additional Results: Alternate Selection Correction, Inverse Mills Ratios

In this section, we apply the heckit selection correction. We predict the odds that an individual transitions into self-employment using a probit regression with controls for cumulative lagged earnings, an equity proxy, quadratics in age and tenure, race dummies, sex, education dummies, mortgage and auto loan indicators. We then use the predicted probability of selecting into entrepreneurship to construct the inverse mills ratio. We then control for the inverse mills ratio in all of our subsequent transition results. Table 20 illustrates that our main results are nearly identical, even after controlling for the ex-ante odds of making the subsequent transition into self and formal employment, respectively. The inverse mills ratios do enter with significant coefficients, but the point estimates for our main results are extremely similar to the main tables in the text.

H TransUnion/LEHD Additional Results: Industry Results

Table 21 describes the sector in which individuals enter self-employment, and Table 22 describes the sector in which individuals enter formal employment. Industries are defined using 1 digit SIC classifications of the self-employment industry or the individual's primary employer. Among new entrants to self employment, they are more likely to enter manufacturing, telecom, and retail. There is no differential impact of flag removal on services and finance startups, which are relatively less capital intensive than manufacturing or communications/transport startups and also rely less on external finance (Rajan and Zingales [1996]).

   Table 22 shows that new formal-employment entrants are disproportionately more likely to work in the retail and service sector. Both sectors potentially require the individual to operate a cash-register or handle money relative to manufacturing and communications/transport jobs. However, we see relatively moderate effects of flag removal on the propensity to find a finance job, and employment in the finance industry continues to trend down, significantly, even after flag removal among non-transitioners.

Table 20: Inverse Mills Selection Correction for Main Results. Columns (1) through (3) apply the heckit correction for self-employment transitions, and Columns (4) through (6) apply the heckit correction for formal-employment transitions

	(1)	(2)	(3)	(4)	(5)	(6)
	Labor Earnings	Real Income	Total Earnings	Labor Earnings	Real Income	Total Earnings
Inverse Mills for Self-Employment Transition	30,957***	-4,797***	26,160***			
	(725.6)	(319.9)	(763.5)			
Inverse Mills for Formal Employment Transition				-18,625***	1,864***	-16,760***
				(211.4)	(95.75)	(223.0)
2 Years Before Removal (d)	37.26	-54.32***	-17.06	10.96	29.79	40.75
	(44.80)	(20.09)	(47.39)	(44.62)	(22.45)	(47.95)
1 Year Before Removal (d)	-31.61	-90.86***	-122.5*	-71.40	-5.213	-76.61
	(61.80)	(27.72)	(65.20)	(61.69)	(29.40)	(65.45)
Year of Removal (d)	-96.70	-118.2***	-214.9***	-132.7*	-14.30	-147.0*
	(77.90)	(34.63)	(81.99)	(77.84)	(36.78)	(82.37)
1+ Years After Removal (d)	-456.4***	-181.0***	-637.3***	-447.2***	-63.65	-510.9***
	(96.16)	(43.55)	(101.3)	(96.12)	(44.82)	(101.5)
Transition Into Self-Employed (d)	-1,527***	8,525***	6,998***			
	(116.2)	(123.3)	(154.0)			
2 Yrs. Before Removal (d) x Trans Into Self-Empl., 1k (d)	-611.5**	2,269***	1,657***			
	(272.5)	(268.1)	(345.2)			
1 Yr. Before Removal (d) x Trans Into Self-Empl., 1k (d)	-1,066***	2,174***	1,108***			
	(271.9)	(274.7)	(346.2)			
Yr. of Removal (d) x Trans Into Self-Empl., 1k (d)	-1,443***	2,690***	1,247***			
	(293.0)	(297.6)	(375.4)			
1+ Yrs. After Removal (d) x Trans Into Self-Empl., 1k (d)	-1,572***	3,355***	1,783***			
	(214.7)	(212.7)	(272.8)			
Transition Into Formal-Employed (d)				2,920***	-356.9***	2,563***
				(90.93)	(47.37)	(98.00)
2 Yrs. Before Removal (d) x Trans Into Formal-Employed, 1k (d)				787.4***	-182.7*	604.8***
				(205.0)	(110.8)	(223.9)
1 Yr. Before Removal (d) x Trans Into Formal-Employed, 1k (d)				1,284***	-382.0***	902.4***
				(212.6)	(117.5)	(233.6)
Yr. of Removal (d) x Trans Into Formal-Employed, 1k (d)				1,700***	-40.95	1,659***
				(234.1)	(131.0)	(257.0)
1+ Yrs. After Removal (d) x Trans Into Formal-Employed, 1k (d)				2,397***	-143.5	2,253***
				(168.1)	(91.44)	(184.2)
Individual Fixed Effects	Y	Y	Y	Y	Y	Y
Year Fixed Effects	Y	Y	Y	Y	Y	Y
Age and Tenure Controls	Y	Y	Y	Y	Y	Y
R-squared	0.125	0.077	0.108	0.142	0.004	0.112
Round N	1.500e+06	1.500e+06	1.500e+06	1.500e+06	1.500e+06	1.500e+06
N Indiv	220000	220000	220000	220000	220000	220000

Notes: *** p<0.01, ** p<0.05, * p<0.1. Inverse mills ratio constructed with first-stage probit that includes controls for cumulative lagged earnings, an equity proxy, quadratics in age and tenure, race dummies, sex, education dummies, mortgage and auto loan indicators

Table 21: Sectoral Composition of Startups Among Newly Self-Employed Individuals. Dependent variable is dummy which equals one if the individual is self-employed in the sector at the top of the column.

	(1)	(2)	(3)	(4)	(5)
	Manufacturing	Finance	Comm/Transp.	Retail	Services
2 Years Before Removal (d)	-0.000313	-7.89e-05	-1.95e-05	-0.000683*	-7.34e-06
	(0.000226)	(0.000228)	(0.000263)	(0.000361)	(0.000293)
1 Year Before Removal (d)	-0.000541*	3.76e-05	-0.000197	-0.000861*	-5.80e-05
	(0.000315)	(0.000317)	(0.000360)	(0.000500)	(0.000396)
Year of Removal (d)	-0.000911**	-3.81e-05	-2.50e-05	-0.00115*	0.000451
	(0.000388)	(0.000395)	(0.000449)	(0.000621)	(0.000494)
1+ Years After Removal (d)	-0.000699	-0.000377	-0.000126	-0.00127	0.000338
	(0.000510)	(0.000516)	(0.000589)	(0.000795)	(0.000647)
Transition Into Self-Employed (d)	0.0950***	0.110***	0.131***	0.247***	0.145***
	(0.00206)	(0.00216)	(0.00237)	(0.00298)	(0.00247)
2 Yrs. Before Removal (d) x Trans Into Self-Employed, 1k (d)	0.00597	-0.00462	0.00285	0.0377***	-0.00218
	(0.00445)	(0.00457)	(0.00515)	(0.00656)	(0.00521)
1 Yr. Before Removal (d) x Trans Into Self-Employed, 1k (d)	0.00660	-0.00924**	0.000122	0.0377***	0.00554
	(0.00452)	(0.00458)	(0.00513)	(0.00662)	(0.00542)
Yr. of Removal (d) x Trans Into Self-Employed, 1k (d)	0.00556	-0.00124	0.00897	0.0285***	0.00549
	(0.00478)	(0.00495)	(0.00557)	(0.00689)	(0.00573)
1+ Yrs. After Removal (d) x Trans Into Self-Employed, 1k (d)	0.0114***	-0.00296	0.00923**	0.0601***	0.00496
	(0.00358)	(0.00363)	(0.00412)	(0.00525)	(0.00423)
Individual Fixed Effects	Y	Y	Y	Y	Y
Year Fixed Effects	Y	Y	Y	Y	Y
Age and Tenure Controls	Y	Y	Y	Y	Y
R-squared	0.046	0.051	0.062	0.131	0.064
Round N	1.500e+06	1.500e+06	1.500e+06	1.500e+06	1.500e+06
N Indiv	220000	220000	220000	220000	220000

Notes: *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Industry classifications based on NAICS codes reported in the ILBD.

Table 22: Sectoral Composition of Employment Among Newly Formal-Employed Individuals. Dependent variable is dummy which equals one if the individual is formal-employed in the sector at the top of the column.

	(1)	(2)	(3)	(4)	(5)
	Manufacturing	Finance	Comm/Transp.	Retail	Services
2 Years Before Removal (d)	-0.000533	-0.000463	-0.000177	-0.000451	0.000536
	(0.000510)	(0.000445)	(0.000353)	(0.000720)	(0.000908)
1 Year Before Removal (d)	-0.00161**	-0.00127**	3.00e-05	-6.75e-05	0.00140
	(0.000697)	(0.000606)	(0.000483)	(0.000974)	(0.00123)
Year of Removal (d)	-0.00163*	-0.00196***	-0.000400	0.000829	0.00274*
	(0.000872)	(0.000760)	(0.000604)	(0.00121)	(0.00153)
1+ Years After Removal (d)	-0.000264	-0.00339***	-0.000348	0.000468	0.00402**
	(0.00109)	(0.000943)	(0.000758)	(0.00153)	(0.00192)
Transition into Formal-Employed, 1k (d)	0.0256***	0.0353***	0.0177***	0.144***	0.271***
	(0.00112)	(0.00118)	(0.000859)	(0.00208)	(0.00247)
2 Yrs. Before Removal (d) x Trans into Formal-Employed, 1k (d)	0.0108***	0.00202	0.00391*	0.0127***	0.0259***
	(0.00263)	(0.00273)	(0.00207)	(0.00474)	(0.00561)
1 Yr. Before Removal (d) x Trans into Formal-Employed, 1k (d)	0.00887***	0.00567**	0.00434**	0.0133***	0.0195***
	(0.00265)	(0.00278)	(0.00211)	(0.00475)	(0.00562)
Yr. of Removal (d) x Trans into Formal-Employed, 1k (d)	0.00508*	0.00775**	0.00567**	0.0166***	0.0376***
	(0.00284)	(0.00303)	(0.00228)	(0.00521)	(0.00616)
1+ Yrs. After Removal (d) x Trans into Formal-Employed, 1k (d)	0.0161***	0.00933***	0.00718***	0.0293***	0.0515***
	(0.00210)	(0.00221)	(0.00163)	(0.00380)	(0.00449)
Individual Fixed Effects	Y	Y	Y	Y	Y
Year Fixed Effects	Y	Y	Y	Y	Y
Age and Tenure Controls	Y	Y	Y	Y	Y
R-squared	0.016	0.007	0.005	0.032	0.066
Round N	1.500e+06	1.500e+06	1.500e+06	1.500e+06	1.500e+06
N Indiv	220000	220000	220000	220000	220000

Notes: *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Industry classifications based on NAICS codes reported in the ILBD.

I   Alternate Empirical Design: Non-Overlapping Treatment and Control Groups with Sample Window from 2001-2005

For robustness, we employ an alternate empirical strategy designed to address concerns about bankruptcy reform. We compare previously bankrupt individuals before and after the bankruptcy flag removal to a subset of individuals that **never** have their flags removed in our sample period, i.e. we implement a difference-in-difference analysis with non-overlapping treatment and control groups. In particular, our sample window is 2001-2005, and we always restrict our attention to 24-65 year olds. The two groups of individuals we compare are labeled the treatment group, for those whose bankruptcy flags are removed, and control group, for those whose bankruptcy flags are not removed.

- **Treatment Group:** Flag removals between 2001 and 2005 (the earliest date we can identify a flag removal is 2002 due to data limitations).

- **Control Group:** Flag removals between 2006 and 2010.

Let i index individuals and t index years (from 2001 to 2005). Let α_i denote a set of individual fixed effects, and γ_t denote year dummies. Let $Y_{i,t}$ denote the outcome of interest (a self employment dummy, earnings, wages, etc.). Let $D_{x,i,t}$ be a dummy variable taking the value 1 when a member of the treatment group is x periods before (if x is negative) or after (if x is positive) flag removal. E.g. $D_{-2,i,t}$ is a dummy indicating if a treated individual is 2 periods before flag removal, likewise $D_{0,i,t}$ takes a value of 1 if the treated individual is in the year of flag removal, and $D_{1+,i,t}$ takes a value of 1 if the treated individual is 1 or more years past flag removal. The specifications we run are of the following form:

$$Y_{i,t} = \alpha_i + \gamma_t + \beta_{-2}D_{-2,i,t} + \beta_{-1}D_{-1,i,t} + \beta_0 D_{0,i,t} + \beta_{1+}D_{1+,i,t} + \Gamma X_{i,t} + \epsilon_{i,t} \tag{4}$$

I.1 Alternate Empirical Design: Summary Stats

Table 23 describes the means and standard deviations of several key variables across the treatment ('Flag Drop') and control group ('No Flag Drop'), as of 2001.[29] As the table reveals, several of the mean values are significantly different across these two groups; however, what we show in the sections that follow, and what is essential for identification, is that the *trends* in these variables are parallel.[30] In the sections that follow, our analysis reveals parallel trends for the majority of outcome variables.

The variables in Table 23 are identical to those in Table 1, except the the alternate definitions of self-employment and formal employment. Since our credit reports are measured in September of each year, we may mistakenly classify a removal as occurring in the present year when in fact it had occured between October-December of the prior year.[31] To address any concerns that there may be people who transition right away into self-employment or formal-employment following an October flag removal, we also use an alternate definition of self-employment and formal employment (labeled in the tables as 'Self Employed, Alternate Def. (d)' and 'Formal-Employment, Alternate Def. (d)') which counts the individual as self-employed if they earned at least $1k in Schedule C income last year and $1k Schedule C income this year. Likewise, we count a individual as formally employed under this alternate definition if they earned at least $1k in labor earnings last year and $1k labor earnings this year.

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[29]Less than 5% of the panel enter at a later date, and in those situations we report the first observed value in the summary statistics.

[30]Due to the large size of the sample, even small differences in levels are statistically significant, even if they are economically insignificant.

[31]This is a problem, if for example, in September 2005 an individual has a bankruptcy flag on record and in September 2006 they do not; we would mark flag removal to occur in year 2006, however it may have been removed in October 2005, and they then immediately started a business.

Table 23: Alternate Empirical Design: Summary Statistics as of 2001, Treatment (Flag Drop) and Control (No Flag Drop) Groups

| | (A) Employment Levels and Flows | | | | |
| | Flag Drop | | No Flag Drop | | |
	Mean	SD	Mean	SD	Diff. Means p<.05
Self-Employed, 1k (d)	8.1%	0.27	7.4%	0.26	*
Self-Employed, Alternate Def. (d)	5.4%	0.23	4.6%	0.21	*
Formal-Employed, 1k (d)	78.7%	0.41	78.8%	0.41	
Formal-Employed, Alternate Def. (d)	74.3%	0.44	74.2%	0.44	
Both SE and Formal-Employed (d)	5.7%	0.23	5.2%	0.22	*
Non-Employed, 1k (d)	18.9%	0.39	19.0%	0.39	
Only Self-employed, 1k (d)	2.4%	0.15	2.2%	0.15	*
Only Formal-Employed, 1k (d)	73.0%	0.44	73.6%	0.44	*
Transition into Self-Employed, 1k (d)	2.8%	0.16	2.8%	0.16	
Transition out of Self-Employed, 1k (d)	2.5%	0.16	2.6%	0.16	
Transition into Formal-Employed, 1k (d)	4.4%	0.21	4.6%	0.21	*
Transition out of Formal-Employed, 1k (d)	4.4%	0.21	4.7%	0.21	*

| | (B) Earnings Characteristics | | | | |
| | Flag Drop | | No Flag Drop | | |
	Mean	SD	Mean	SD	Diff. Means p<.05
Formal Earnings Q4	$6,997.5	11209.3	$6,436.7	7719.7	*
Real Annual Labor Earnings (Adjusted for 0s: $41k)	$32,097.5	28704.7	$29,759.9	26482.2	*
Real Annual Self-Employed Net Income (Adjusted for 0s: $24k)	$2,009.2	9893.8	$1,631.8	8645.0	*
Real Total Annual Income (SE and Non-SE)	$34,106.7	29744.4	$31,391.8	27291.8	*
Self-Employed Income to Total Income	0.041	0.18	0.037	0.17	*
Arc Total Earnings Growth	-0.059	0.60	-0.056	0.64	

| | (C) Credit Characteristics | | | | |
| | Flag Drop | | No Flag Drop | | |
	Mean	SD	Mean	SD	Diff. Means p<.05
Bankruptcy Score	262.7	181.8	153.9	104.1	*
Number of Accounts Opened	1.6	1.8	1.3	1.5	*
Real Bankcard Balance	$3,311.2	5681.6	$1,891.4	3820.0	*
Real Revolving Balance	$4,809.5	9022.4	$2,627.1	5988.2	*
Real Installment Balance	$17,513.5	26472.7	$13,843.3	22543.1	*
Real Mortgage Balance	$55,166.1	98186.3	$37,271.4	76750.1	*
Real HELOC Balance	$684.9	6813.7	$368.8	4786.9	*

| | (D) Demographics and Employer Characteristics | | | | |
| | Flag Drop | | No Flag Drop | | |
	Mean	SD	Mean	SD	Diff. Means p<.05
Age	42.4	8.9	40.2	9.4	*
Imputed Years of Education	13.7	2.6	13.6	2.6	*
Tenure	2.4	2.3	2.3	2.3	*
Unemployment Rate	4.3	0.8	4.5	1.0	*
Employer Size ≥1000 (d)	0.243	0.429	0.244	0.43	
Employer Size ≥500 (d)	0.305	0.46	0.306	0.461	

Number of Observations	90000		140000		

Notes: Formal sector employment refers to those who earned at least $1k in a UI insured job covered by the LEHD. Self-Employment refers to those who earned at least $1k on their 1040 Schedule C. The Alternative Definition of Formal sector employment refers to those who earned at least $1k in a UI insured job covered by the LEHD for 2 consecutive years. The Alternative Definition of Self-Employment refers to those who earned at least $1k on their 1040 Schedule C for 2 consecutive years. Transitions defined as earnings more than $1k dollars in a sector in which you previously earned zero. Number of accounts opened refers to accounts opened in last 12 months.

I.2 Alternate Empirical Design: Stocks and Flows of Employment and Self-Employment

Table 24 illustrates the baseline 'stock' or levels of employment results using our alternate empirical design and using alternate definitions of formal and self employment. Table 24 generates very similar results to Table 2, and the alternate definitions of formal and self-employment results are similar to the baseline definitions. Following flag removal formal-employment under the alternate definition increases by .655%, and self-employment under the alternate definition remains flat. Table 25 and 26 illustrate the corresponding self-employment flows and formal employment flows for our alternate empirical design. Self-employment flows under the alternate definition increase by .2%. Flows out of self-employment under the alternate definition increase, but the increase is insignificant. In both tables, however, the broad pattern is the same: flows into self and formal employment increase, and flows out of self-employment increase (weakly). Generally, Table 25 and 26 support the results shown in Tables 3 and 10 shown in the main text.

Table 24: Alternate Empirical Design: Employment Levels and Bankruptcy Scores

	(1) Bankruptcy Score	(2) Bankruptcy Score	(3) Formal-Employed (d)	(4) Formal-Employed, Alternate Def. (d)	(5) Self-Employed (d)	(6) Self-Employed, Alternate Def. (d)
2 Years Before Removal (d)	77.04***	-13.18***	6.45e-05	0.000457	0.00175	0.000299
	(0.732)	(0.755)	(0.00150)	(0.00140)	(0.00117)	(0.000916)
1 Year Before Removal (d)	80.50***	-26.04***	0.00157	0.00116	0.000554	4.99e-05
	(0.655)	(0.887)	(0.00174)	(0.00166)	(0.00132)	(0.00109)
Year of Removal (d)	147.2***	29.45***	0.00397**	0.00353*	0.00170	-0.00107
	(0.798)	(1.047)	(0.00193)	(0.00185)	(0.00147)	(0.00122)
1+ Years After Removal (d)	110.1***	-34.51***	0.00623***	0.00655***	0.00320*	0.00126
	(0.684)	(1.162)	(0.00222)	(0.00213)	(0.00168)	(0.00140)
Fixed Effects (Individual and Year)	N	Y	Y	Y	Y	Y
Age and Tenure Controls	N	Y	Y	Y	Y	Y
R-Squared	0.120	0.122	0.113	0.221	0.002	0.003
Indiv.-Yr Obs	1,150,000	1,150,000	1,150,000	1,150,000	1,150,000	1,150,000
Number of Indiv.	240,000	240,000	240,000	240,000	240,000	240,000

Notes: SE in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Age and Tenure controls include quadratics in age and tenure. Fixed Effects include individual fixed effects and year dummies.

Table 25: Alternate Empirical Design: Self-Employment Flows

	(1) Transition into Self-Employed (d)	(2) Transition out of Self-Employed (d)	(3) Transition into Self-Employed, Alternate Def (d)	(4) Transition out of Self-Employed, Alternate Def (d)
2 Years Before Removal (d)	0.00145	0.000755	0.000228	0.000301
	(0.000993)	(0.000929)	(0.000722)	(0.000667)
1 Year Before Removal (d)	0.000504	0.00196**	0.00107	0.000647
	(0.000969)	(0.000924)	(0.000745)	(0.000675)
Year of Removal (d)	0.00278***	0.00272***	-8.44e-05	0.000901
	(0.00104)	(0.000988)	(0.000775)	(0.000721)
1+ Years After Removal (d)	0.00194*	0.00271**	0.00205**	0.000660
	(0.00117)	(0.00111)	(0.000895)	(0.000809)
Fixed Effects (Individual and Year)	Y	Y	Y	Y
Age and Tenure Controls	Y	Y	Y	Y
R-Squared	0.000	0.000	0.001	0.000
Indiv.-Yr Obs	1,150,000	1,150,000	1,150,000	1,150,000
Number of Indiv.	240,000	240,000	240,000	240,000

Notes: SE in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Age and Tenure controls include quadratics in age and tenure. Fixed Effects include individual fixed effects and year dummies. Transition into self-employed if SE annual earnings greater than $1k this year, zero last year. Transition out of self-employed if SE annual earnings greater than $1k last year, zero this year.

Table 26: Alternate Empirical Design: Formal-Employment Flows

	(1) Transition into Formal-Employed (d)	(2) Transition out of Formal-Employed (d)	(3) Transition into Formal-Employed, Alternate Def. (d)	(4) Transition out of Formal-Employed, Alternate Def. (d)
2 Years Before Removal (d)	-0.000392	0.00110	0.00138	0.000427
	(0.00118)	(0.00126)	(0.00114)	(0.00116)
1 Year Before Removal (d)	0.000413	0.000474	0.000970	1.20e-05
	(0.00118)	(0.00124)	(0.00114)	(0.00116)
Year of Removal (d)	0.000437	0.000679	0.00258**	0.000395
	(0.00125)	(0.00131)	(0.00121)	(0.00122)
1+ Years After Removal (d)	-0.000325	0.00238	0.00263*	0.00162
	(0.00143)	(0.00149)	(0.00138)	(0.00139)
Fixed Effects (Individual and Year)	Y	Y	Y	Y
Age and Tenure Controls	Y	Y	Y	Y
R-Squared	0.025	0.032	0.002	0.037
Indiv.-Yr Obs	1,150,000	1,150,000	1,150,000	1,150,000
Number of Indiv.	240,000	240,000	240,000	240,000

Notes: SE in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Age and Tenure controls include quadratics in age and tenure. Fixed Effects include individual fixed effects and year dummies. Transition into self-employed if SE annual earnings greater than $1k this year, zero last year. Transition out of self-employed if SE annual earnings greater than $1k last year, zero this year.

J Verification of Results in Cross-Sectional Public Data: Survey of Consumer Finances 1998-2010

To compare our results to public data, we turn to the Survey of Consumer Finances (SCF) from 1998 to 2010. We consider households who have filed for bankruptcy in the last 19 years (to protect the identity of survey respondents, the year of bankruptcy filing is restricted to be 0-1, 2-3, 4-5, etc. and therefore so is the removal year). To keep the studies comparable, we limit ourselves to prime age (24-65) heads of household. Our main independent variable is years since flag removal which takes values from -9 to +9 (-9 is 9 years before flag removal).

J.1 SCF Summary Statistics

Table 27 summarizes the sample of household heads used in the SCF analysis. Panel (A) describes the demographic characteristics of households. Approximately 27% have a college degree, the average age is 45, and the modal household head is white. Turning to Panel (B) which describes financial characteristics, on average, household heads with a prior bankruptcy record earn $65k per year (this is gross family income). Individuals have limited liquid asset positions but have relatively large (and skewed) illiquid asset positions. On average, households filed for bankruptcy 8 years ago, and roughly 48% of these households had credit denied when they applied. Bankcard limits total $8k and bankcard balances total $2k, despite the fact that many of these households have an active bankruptcy flag on their records. Panel (C) describes the employment and business ownership characteristics of households. Nearly 17% work for companies with less than 10 employees, and 12% own their own business.[32] Approximately 77% of the household heads are employed, and nearly 33% are working for employers with pensions or retirement plans.

J.2 SCF Results

Table 28 illustrates a distributed lag model around bankruptcy flag removal. Column (1) and (2) study employed households only. The general pattern in Columns (1) and (2) is that after

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[32]Our Census Self-employment Records cover 1040 Schedule C income, and so for comparability, we exclude SCF households who own multiple businesses are unlikely to be using 1040 Schedule C returns to report business income.

Table 27: Summary Statistics, Prime-Age Heads of Household with Prior Bankruptcy in Last 20 years (Source: 1998-2010 SCF)

(A) Demographic Characteristics			
Variable	Mean	p50	Std. Dev
College Degree (d)	0.26	0	0.44
No College Degree (d)	0.24	0	0.43
12 or Less Years of Education (d)	0.50	1	0.50
Age	45.60	45	9.71
White (d)	0.72	1	0.45
Black (d)	0.17	0	0.37
Hispanic (d)	0.09	0	0.28

(B) Financial Characteristics			
Variable	Mean	p50	Std. Dev
Income	65628	40000	242598
Liquid Assets to Income	0.16	0.025	0.66
Illiquid Assets to Income	3.29	2.08	3.88
Years Since Filing	7.93	7	5.03
Denied Credit (d)	0.48	0	0.50
Bankcard Limits, Combined	8012	800	18916
Bankcard Balance, Combined	2099	0	5522

(C) Employment and Business Ownership			
Variable	Mean	p50	Std. Dev
Work for Company with Less Than 10 Employees (d)	0.17	0	0.38
Single Firm Owner (d)	0.12	0	0.33
Employed (d)	0.77	1	0.42
Job Pension (d)	0.33	0	0.47
Observations	1775		

flag removal, households are finding jobs at larger firms where they are more likely to have benefits such as a pension; however, point estimates and patterns are unstable in Column (1). Column (3) shows that self-employment initially rises during bankruptcy and rises once again when the bankruptcy flag is removed. There are two competing forces at play: (i) the flag removal gives households access to more non-self-employment opportunities, and (ii) flag removal gives households access to more credit which may facilitate business formation and self-employment. In terms of employment, Column (4) shows that employment rises following flag removal. For credit related outcomes, Column (5) shows that credit denials fall after flag removal, Column (5) shows that bankcard limits expand, and Column (6) shows that bankcard balances rise.

The small sample sizes limit the types of inference and experiments that can be conducted; moreover many of the point estimates and patterns appear unstable. While this analysis is merely describing correlations, we take the patterns to be consistent with the patterns observed in our LEHD/TransUnion dataset.

Table 28: Verification of Results in Cross-Sectional Public Data: Distributed lags around bankruptcy flag removal. Dependent variables are (1) Job Benefits (2) Size of Firm Employee Works for (3) Self-Employment (4) Employment (5) Non-Employment (6) Loan Denial, (7) Credit Limits, and (8) Credit Balances. (Source: 1998-2010 SCF)

	(1) Job Pension (d)	(2) Work for Company with Less Than 10 Employees (d)	(3) Single Firm Owner (d)	(4) Employed (d)	(5) Denied Credit (d)	(6) Bankcard Limits, Combined	(7) Bankcard Balance, Combined
7 Years Before Flag Removal	-0.025	0.046	0.042	0.020	0.039	661.0	-19.3
	(-0.49)	(1.40)	(1.62)	(0.57)	(0.90)	(0.77)	(-0.05)
5 Years Before Flag Removal	-0.012	0.053	0.054*	-0.016	-0.006	3,025.5***	620.0
	(-0.22)	(1.45)	(1.93)	(-0.41)	(-0.14)	(3.07)	(1.52)
3 Years Before Flag Removal	-0.039	0.044	0.033	0.023	-0.033	2,276.3**	735.7*
	(-0.73)	(1.32)	(1.22)	(0.64)	(-0.73)	(2.50)	(1.90)
1 Year Before Flag Removal	-0.085	0.100**	0.018	0.029	0.001	3,256.9***	573.7
	(-1.50)	(2.54)	(0.65)	(0.75)	(0.03)	(3.04)	(1.38)
1 Year After Flag Removal	0.045	0.092**	0.061**	0.063*	-0.073	5,809.6***	1,856.5***
	(0.82)	(2.51)	(2.10)	(1.71)	(-1.57)	(4.93)	(3.51)
3 Years After Flag Removal	0.097	0.067	0.066*	0.023	-0.089*	9,612.6***	2,748.7***
	(1.57)	(1.61)	(1.91)	(0.51)	(-1.65)	(4.80)	(3.92)
5 Years After Flag Removal	-0.034	0.050	0.011	-0.047	-0.123**	8,804.7***	1,535.7***
	(-0.47)	(1.19)	(0.32)	(-0.95)	(-2.25)	(3.88)	(2.68)
7 Years After Flag Removal	0.154*	0.001	0.024	-0.094	-0.143**	14,721.4***	3,131.1**
	(1.65)	(0.03)	(0.53)	(-1.50)	(-2.20)	(3.36)	(2.32)
9 Years After Flag Removal	-0.082	0.054	0.096*	0.075	-0.055	7,190.5***	2,081.9**
	(-0.93)	(0.96)	(1.77)	(1.29)	(-0.76)	(2.65)	(2.06)
Demographic Controls	Y	Y	Y	Y	Y	Y	Y
Year Dummies	Y	Y	Y	Y	Y	Y	Y
Wealth Controls	Y	Y	Y	Y	Y	Y	Y
Employed Households Only	Y	Y	N	N	N	N	N
Observations	1,167	1,167	1,775	1,775	1,775	1,775	1,775
R-squared	0.051	0.036	0.077	0.110	0.053	0.287	0.069

Notes: Robust t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Demographic controls include a quadratic in age, race dummies, and education dummies. Wealth controls include liquid assets to income, illiquid assets to income, and income.