A. Appendix Tables Referenced in the Paper

Appendix Table 1. Comparison of experimental sample to a plausibly nationally representative sample

	(1)	(2)	(3)
Data Source:	Our experimental sample		NFCS
Sample:	Full	CBL Takers	"Very bad" or "Bad" credit
	N=1531	N=320	N=4463
Age	43.129	42.834	42.807
	(15.207)	(14.415)	(14.627)
Female (0/1)	0.649	0.619	0.658
	(0.478)	(0.486)	(0.474)
Married (0/1)	0.235	0.248	0.389
	(0.424)	(0.432)	(0.488)
Number of adults in household	1.620	1.633	Not asked
	(0.789)	(0.804)	
Number of children in household	0.825	0.908	1.008
	(1.233)	(1.366)	(1.232)
Race - Non-white (0/1)	0.893	0.924	0.327
	(0.309)	(0.265)	(0.469)
College or more (0/1)	0.258	0.301	0.191
	(0.438)	(0.459)	(0.393)
Low-income (0/1)	0.385	0.413	0.435
	(0.487)	(0.493)	(0.496)

NFCS=2018 National Financial Capability Survey. NFCS results are for the 17% of the sample who respond "Very bad" or "Bad" to the question: "How would you rate your current credit record?", where the other response options are: "About average", "Good", "Very good", "Don't know", and "Prefer not to say". Cells show sample mean or proportion, with standard deviaiton in parentheses. Unit of observation is an individual. For NFCS, we imputed age as the midpoint of the response option intervals. The income threshold used for last variable is 30K for our baseline survey and 35K for NFCS.

Appendix Table 2. Do baseline observable characteristics help predict takeup of the CBL?

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	CBL Arm (N=789)			Extra Step Arm (N=742)			
	Takers Mean(se)	Taker - Non-takers Diff (se)	p-value diff = 0	Takers Mean(se)	Taker - Non-takers Diff (se)	p-value diff = 0	p-value (1) = (4)
Age	43.00	0.74	0.53	42.39	-1.62	0.35	0.74
	(1.00)	(1.19)		(1.63)	(1.73)		
Female	0.63	-0.04	0.27	0.60	-0.05	0.37	0.64
	(0.03)	(0.04)		(0.05)	(0.05)		
Married	0.23	0.01	0.81	0.28	0.05	0.34	0.39
	(0.03)	(0.03)		(0.05)	(0.05)		
Number of adults in household	1.60	-0.04	0.57	1.71	0.11	0.22	0.30
	(0.05)	(0.06)		(0.09)	(0.09)		
Number of children in household	0.92	0.16	0.11	0.88	0.04	0.75	0.85
	(0.08)	(0.10)		(0.13)	(0.14)		
Race - Black	0.90	0.03	0.23	0.86	-0.02	0.67	0.26
	(0.02)	(0.03)		(0.04)	(0.04)		
College or more	0.27	0.02	0.49	0.38	0.14	0.01	0.05
	(0.03)	(0.03)		(0.05)	(0.05)		
Financial risk-taking scale (standardized)	0.14	0.14	0.09	0.02	0.02	0.84	0.38
	(0.07)	(0.08)		(0.11)	(0.12)		
Self-control and credit knowledge index (standardized)	0.01	-0.06	0.42	0.07	0.08	0.49	0.63
	(0.06)	(0.08)		(0.10)	(0.11)		
Liquidity index (standardized)	0.00	0.01	0.86	-0.14	-0.16	0.16	0.22
	(0.06)	(0.08)		(0.10)	(0.11)		
Baseline FICO® Score	554.38	-14.23	0.01	561.02	-0.53	0.95	0.43
	(4.74)	(5.68)		(8.06)	(8.53)		
Installment credit activity at baseline index (standardized)	-0.03	0.02	0.83	0.14	0.16	0.16	0.17
	(0.07)	(0.08)		(0.11)	(0.11)		
Revolving credit activity at baseline index (standardized)	-0.06	-0.09	0.25	-0.05	-0.06	0.62	0.95
	(0.07)	(0.08)		(0.11)	(0.12)		
Number of prior loans, lifetime	7.22	0.00	1.00	8.79	1.15	0.28	0.17
	(0.57)	(0.68)		(0.93)	(0.99)		

Unit of observation is an individual. As in Table 3 Column 1, we define CBL take-up as opening a CBL within 18 months of random assignment. All row variables measured at baseline, with most having sample sizes slightly lower than the full-sample N reported in the column headings, due to survey non-response or credit report missing information. Please see Online Appendix B-2 for details on index components and construction.

Appendix Table 3a. Baseline characteristics
(Same as Table 1 but sample here is restricted to those in the top tercile of installment credit activity index at baseline)

	(1)	(2)	(3)
	Mean (SD)		Univariate t-test diff: (2) - (1)
Sample:	Extra Step Arm	CBL Arm	
	N= 244	N= 246	(SE)
Age	41.881	41.516	-0.365
	(14.670)	(14.578)	(1.321)
Female	0.664	0.736	0.072
	(0.473)	(0.442)	(0.041)
Married	0.331	0.260	-0.070
	(0.471)	(0.440)	(0.042)
Number of adults in household	1.616	1.612	-0.004
	(0.719)	(0.793)	(0.069)
Number of children in household	1.004	0.851	-0.153
	(1.230)	(1.199)	(0.111)
Race - Black	0.895	0.942	0.048
	(0.308)	(0.234)	(0.025)
College or more	0.388	0.365	-0.023
	(0.488)	(0.482)	(0.044)
Financial risk-taking scale (standardized)	0.017	0.104	0.087
	(0.991)	(1.043)	(0.093)
Self-control and credit knowledge index (standardized)	0.239	0.271	0.032
	(0.999)	(0.959)	(0.089)
Liquidity index (standardized)	0.079	0.045	-0.033
	(1.010)	(0.918)	(0.087)
Delinquency index (standardized)	0.331	0.283	-0.048
	(1.050)	(0.954)	(0.091)
1 = Higher than median of index of default outcomes	0.734	0.760	0.027
	(0.443)	(0.428)	(0.039)
1 = Scored on FICO	0.988	0.996	0.008
	(0.110)	(0.064)	(0.008)
Baseline FICO® Score	565.714	561.910	-3.803
	(56.460)	(53.620)	(4.994)
Installment credit activity at baseline index (standardized)	1.085	1.067	-0.017
	(0.353)	(0.378)	(0.033)
Revolving credit activity at baseline index (standardized)	0.354	0.301	-0.053
	(1.031)	(1.064)	(0.095)
Number of prior loans, lifetime	10.639	9.756	-0.883
	(10.608)	(8.443)	(0.866)

Unit of observation is an individual. Index variables are standardized to be mean zero and standard deviation one in the Extra Step Arm; see Online Appendix B-2 for details on index components and construction. Sample size varies across variables due to missing observations.

Appendix Table 3b. Baseline characteristics
(Same as Table 1 but sample here is restricted to those in the bottom tercile of installment credit activity index at baseline)

	(1)	(2)	(3)
	Mean (SD)		Univariate t-test diff: (2) - (1) (SE)
Sample:	Extra Step Arm N= 243	CBL Arm N= 283	
Age	42.745	41.943	-0.801
	(14.301)	(15.842)	(1.325)
Female	0.568	0.594	0.026
	(0.496)	(0.492)	(0.043)
Married	0.148	0.184	0.036
	(0.356)	(0.388)	(0.033)
Number of adults in household	1.662	1.631	-0.031
	(0.900)	(0.843)	(0.077)
Number of children in household	0.692	0.811	0.119
	(1.090)	(1.229)	(0.103)
Race - Black	0.865	0.855	-0.010
	(0.342)	(0.353)	(0.031)
College or more	0.152	0.135	-0.017
	(0.360)	(0.343)	(0.031)
Financial risk-taking scale (standardized)	0.025	-0.060	-0.084
	(1.023)	(0.998)	(0.090)
Self-control and credit knowledge index (standardized)	-0.101	-0.134	-0.033
	(0.978)	(0.943)	(0.085)
Liquidity index (standardized)	-0.099	-0.148	-0.049
	(0.909)	(0.873)	(0.078)
Delinquency index (standardized)	-0.282	-0.407	-0.125
	(0.852)	(0.778)	(0.071)
1 = Higher than median of index of default outcomes	0.465	0.424	-0.041
	(0.500)	(0.495)	(0.043)
1 = Scored on FICO	0.605	0.534	-0.071
	(0.490)	(0.500)	(0.043)
Baseline FICO® Score	529.027	542.854	13.827
	(61.548)	(73.668)	(7.874)
Installment credit activity at baseline Index (standardized)	-1.205	-1.178	0.027
	(0.343)	(0.333)	(0.029)
Revolving credit activity at baseline index (standardized)	-0.429	-0.409	0.021
	(0.799)	(0.826)	(0.071)
Number of prior loans, lifetime	4.077	3.980	-0.098
	(5.589)	(4.969)	(0.490)

Unit of observation is an individual. Index variables are standardized to be mean zero and standard deviation one in the Extra Step Arm; see Online Appendix B-2 for details on index components and construction. Sample size varies across variables due to missing observations.

Appendix Table 4. OLS treatment effects by baseline installment borrowing

	(1)	(2)	(3)	(4)
	Baseline Installment Index Tercile			p-value
Sample:	Lowest	Middle	Highest	(1) = (2) = (3)
Panel A. First stage: 18-month take- up rates by baseline installment index tercile				
CBL Arm	0.290	0.321	0.289	0.671
	(0.454)	(0.468)	(0.454)	
Extra Step Arm	0.115	0.103	0.135	0.536
	(0.320)	(0.304)	(0.343)	
Observations	526	486	490	

Panel A cells report sample proportion and standard deviation, unless noted otherwise. Compare to Table 3 Column 1.

Panel B. Second stage, allowing for HTEs by a simple measure of baseline installment activity

Dependent variable:	1= (Has FICO® Score 8	FICO® Score 8	1= (Has FICO® Score 8 >= 590	1= (Has FICO® Score 8 >= 620
Post * (1=had open installment loan at baseline)	0.017	3.609	0.035	0.059
	(0.008)	(2.005)	(0.019)	(0.016)
Post * (1=did not have open installment loan at baseline)	0.082	10.658	0.029	0.010
	(0.026)	(3.784)	(0.026)	(0.021)
CBL Arm * Post * (1=had open installment loan at baseline) (i)	-0.016	-5.268	-0.038	-0.035
	(0.010)	(3.106)	(0.027)	(0.023)
CBL Arm * Post * (1=did not have open installment loan at baseline) (ii)	0.068	7.822	0.072	0.035
	(0.035)	(5.603)	(0.042)	(0.029)
p-value (i) = (ii)	0.021	0.041	0.028	0.062
Observations	5966	5167	4952	4952
Individuals	1502	1382	1238	1238
Mean dependent variable in Extra Step Group at baseline	0.840	561.489	0.245	0.129

Panel B uses the same specification as Table 3 Columns 2 and 3 but replaces Post and CBL*Post with the variables shown above. Cells report coefficients and standard errors (clustered on person), unless noted otherwise.

Appendix Table 5a. Potential sources of CBL treatment efffect heterogeneity on FICO® score by index components for 6-month endline

	Index components	(1) Mean (se) of row variable for observations in lowest tercile CATE	(2) Mean (se) of row variable for observations in highest tercile CATE	(3) p-value (1) = (2)	(4) ATE (se) for observations in lowest tercile of row variable	(5) ATE (se) for observations in highest tercile of row variable	(6) p-value (5) = (6)
Self-control and credit knowledge index (standardized)	Carefully consider affordability before buying (1-5)	4.23	4.18	0.43	-0.13	-5.89	0.47
		(0.04)	(0.04)		(5.17)	(5.88)	
	Live for today (1-5)	3.23	3.15	0.36	-12.00	-1.15	0.39
		(0.06)	(0.06)		(6.43)	(11.02)	
	Set long-term goals (1-5)	3.41	3.25	0.05	-2.90	-11.09	0.52
		(0.06)	(0.06)		(6.4)	(10.78)	
	Wish better disciplined with money (1-5)	2.55	2.42	0.13	-5.63	-1.21	0.62
		(0.06)	(0.06)		(4.87)	(7.93)	
	Trouble finishing tasks (1-5)	4.00	3.87	0.05	1.95	-14.57	0.07
		(0.05)	(0.05)		(4.6)	(7.15)	
	Checked credit score in last 12 months (0/1)	0.61	0.35	0.00	3.71	-8.51	0.12
		(0.02)	(0.02)		(5.27)	(5.75)	
	Obtained credit report in last 12 months (0/1)	0.39	0.19	0.00	1.00	-9.53	0.21
		(0.02)	(0.02)		(4.62)	(7.21)	
	Correctly answered "Could your credit rating affect the amount of interest you would pay on a bank loan?" (0/1)	0.96	0.95	0.60	-12.80	-1.79	0.54
		(0.01)	(0.01)		(17.85)	(4.03)	
	Correctly answered: "Could your health affect the amount of interest you would pay on a bank loan"? (0/1)	0.79	0.60	0.00	2.91	-2.46	0.52
		(0.02)	(0.02)		(7.22)	(4.69)	
	Correctly answered: "Could your age affect the amount of interest you would pay on a bank loan?" (0/1)	0.60	0.48	0.00	-4.30	1.13	0.49
		(0.03)	(0.03)		(5.62)	(5.46)	
	Correctly answered: "Could how much you borrow overall affect the amount of interest you would pay on a bank loan?" (0/1)	0.93	0.82	0.00	-6.95	-2.13	0.67
		(0.02)	(0.02)		(8.9)	(4.32)	
	Correctly answered: "Could how long you take to repay the loan affect the amount of interest you would pay on a bank loan?" (0/1)	0.94	0.85	0.00	-1.37	-2.85	0.90
		(0.02)	(0.02)		(9.68)	(4.23)	
Liquidity index (standardized)	Has income greater than 30k (0/1)	0.46	0.30	0.00	-2.92	-2.12	0.92
		(0.02)	(0.02)		(4.86)	(6.28)	
	Financial situation, source of stress (1-5)	2.56	2.54	0.88	-7.35	4.18	0.21
		(0.06)	(0.06)		(4.89)	(8.25)	
	Difficult to cover bills (1-5)	3.09	2.95	0.11	-6.82	2.31	0.54
		(0.06)	(0.06)		(5.58)	(14.26)	
	Can come up with $2k (1-5)	2.66	2.43	0.01	-0.60	-13.71	0.40
		(0.07)	(0.07)		(4.52)	(15.52)	
	Overall financial situation (1-5)	2.53	2.44	0.11	-3.11	-26.04	0.14
		(0.04)	(0.04)		(4.88)	(20.27)	
	Savings balance ($ hundreds, top-coded at 95%)	1.74	2.25	0.13	-8.01	-1.76	0.50
		(0.24)	(0.24)		(6.28)	(7.35)	
	More than $60 in savings (0/1)	0.36	0.40	0.21	-4.97	1.18	0.43
		(0.02)	(0.02)		(4.65)	(6.5)	
Installment credit activity at baseline index (standardized)	Number of open installment tradelines (IHS)	1.74	0.57	0.00	3.49	-3.06	0.45
		(0.04)	(0.04)		(5.37)	(6.58)	
	Has open installment loan (0/1)	0.90	0.49	0.00	20.06	-9.82	0.00
		(0.02)	(0.02)		(7.41)	(4.47)	
	Number of inquiries in last 12 months (IHS)	2.01	1.09	0.00	11.98	-12.74	0.01
		(0.04)	(0.04)		(7.28)	(6.45)	
Revolving credit activity at baseline index (standardized)	Number of open revolving loans (IHS)	0.91	0.58	0.00	-4.12	3.13	0.40
		(0.04)	(0.04)		(4.72)	(8.14)	
	Has open revolving tradeline (0/1)	0.62	0.46	0.00	-4.12	-1.50	0.73
		(0.02)	(0.02)		(4.72)	(5.49)	
	Utilization of revolving loans (IHS)	4.55	4.20	0.03	-12.32	-8.88	0.78

Same setup here as in Table 5, except here we use index component variables in place of indices. IHS= inverse hyperbolic sine transformation. See OnlineAppendix B-2 for details on index components and construction.

Appendix Table 5b. Potential sources of CBL treatment efffect heterogeneity on FICO® score by index components for 12-month endline

	Index components	(1) Mean (se) of row variable for observations in lowest tercile CATE	(2) Mean (se) of row variable for observations in highest tercile CATE	(3) p-value (1) = (2)	(4) ATE (se) for observations in lowest tercile of row variable	(5) ATE (se) for observations in highest tercile of row variable	(6) p-value (5) = (6)
Self-control and credit knowledge index (standardized)	Carefully consider affordability before buying (1-5)	4.11 (0.05)	4.15 (0.05)	0.52	2.70 (5.38)	-3.29 (6.22)	0.47
	Live for today (1-5)	3.28 (0.06)	3.22 (0.06)	0.49	-12.20 (6.48)	3.03 (10.87)	0.25
	Set long-term goals (1-5)	3.21 (0.06)	3.32 (0.06)	0.23	-0.94 (6.78)	3.77 (10.98)	0.72
	Wish better disciplined with money (1-5)	2.62 (0.06)	2.41 (0.06)	0.02	-2.81 (5.)	-0.41 (8.65)	0.80
	Trouble finishing tasks (1-5)	3.89 (0.05)	3.91 (0.05)	0.69	2.45 (4.87)	-4.61 (7.19)	0.45
	Checked credit score in last 12 months (0/1)	0.48 (0.03)	0.44 (0.03)	0.32	0.60 (5.58)	-0.72 (5.98)	0.87
	Obtained credit report in last 12 months (0/1)	0.33 (0.02)	0.27 (0.02)	0.07	3.21 (4.83)	-5.38 (7.6)	0.33
	Correctly answered "Could your credit rating affect the amount of interest you would pay on a bank loan?" (0/1)	0.96 (0.01)	0.96 (0.01)	0.82	-3.50 (17.26)	0.50 (4.24)	0.83
	Correctly answered: "Could your health affect the amount of interest you would pay on a bank loan"? (0/1)	0.62 (0.02)	0.72 (0.02)	0.01	4.36 (7.65)	1.05 (4.91)	0.71
	Correctly answered: "Could your age affect the amount of interest you would pay on a bank loan?" (0/1)	0.44 (0.03)	0.53 (0.03)	0.03	0.08 (5.89)	2.62 (5.73)	0.76
	Correctly answered: "Could how much you borrow overall affect the amount of interest you would pay on a bank loan?" (0/1)	0.89 (0.02)	0.86 (0.02)	0.17	-17.20 (10.31)	2.56 (4.47)	0.10
	Correctly answered: "Could how long you take to repay the loan affect the amount of interest you would pay on a bank loan?" (0/1)	0.90 (0.02)	0.88 (0.02)	0.46	-15.36 (10.71)	1.86 (4.41)	0.18
Liquidity index (standardized)	Has income greater than 30k (0/1)	0.46 (0.03)	0.38 (0.03)	0.03	-1.85 (5.13)	2.15 (6.5)	0.62
	Financial situation source of stress (1-5)	2.72 (0.06)	2.50 (0.06)	0.01	-2.75 (5.06)	4.06 (8.93)	0.48
	Difficult to cover bills (1-5)	3.25 (0.06)	2.97 (0.06)	0.00	-4.06 (5.75)	10.44 (15.43)	0.35
	Can come up with $2k (1-5)	2.89 (0.07)	2.44 (0.07)	0.00	3.29 (4.67)	-0.50 (16.39)	0.81
	Overall financial situation (1-5)	2.65 (0.04)	2.39 (0.04)	0.00	1.31 (4.97)	-26.68 (21.32)	0.09
	Savings balance ($ hundreds, top-coded at 95%)	3.82 (0.28)	1.47 (0.28)	0.00	-0.26 (6.46)	-4.08 (7.57)	0.70
	More than $60 in savings (0/1)	0.53 (0.03)	0.33 (0.03)	0.00	1.07 (4.94)	-1.30 (6.69)	0.77
Installment credit activity at baseline index (standardized)	Number of open installment tradelines (IHS)	1.37 (0.05)	1.00 (0.05)	0.00	5.83 (5.67)	-2.48 (6.97)	0.36
	Has open installment loan (0/1)	0.84 (0.02)	0.65 (0.02)	0.00	16.42 (7.79)	-5.08 (4.71)	0.02
	Number of inquiries in last 12 months (IHS)	1.45 (0.05)	1.46 (0.05)	0.93	7.58 (7.25)	-11.03 (6.85)	0.07
Revolving credit activity at baseline index (standardized)	Number of open revolving loans (IHS)	1.31 (0.04)	0.49 (0.04)	0.00	-1.76 (5.2)	5.72 (8.54)	0.42
	Has open revolving tradeline (0/1)	0.77 (0.02)	0.40 (0.02)	0.00	-1.76 (5.2)	0.98 (5.7)	0.73
	Utilization of revolving loans (IHS)	3.95	4.55	0.00	-8.87	-5.49	0.80

Same setup here as in Table 5, except here we use index component variables in place of indices. IHS= inverse hyperbolic sine transformation. See Online Appendix B-2 for details on index components and construction.

Appendix Table 6. CBL treatment effect heterogeneity on credit behaviors
(Same as Table 6 but here sample is restricted to those that have a score at baseline)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
FICO® Score 8 Factor:	New Credit	Delinquency	Amounts Owed		Credit Mix	Delinquency from SLCCU administrative data	
Dependent variable index includes:	Inquiries, Number of Accounts	10 measures of delinquency, collections, & derogatories (higher values = less timely repayment)	Balances: Revolving, auto loans, other installment	Utilization: 4 discrete measures of credit limit usage and outstanding balances; # open installment loans	1 = (Open installment and open revolving loan)	Currently Delinquent on CBL	Ever Delinquent on CBL
Sample:	Have score at baseline						
Panel A. Main effects							
CBL Arm						0.011	0.091
						(0.004)	(0.015)
CBL Arm * Post	0.000	0.096	-0.064	-0.021	-0.021		
	(0.041)	(0.043)	(0.043)	(0.047)	(0.024)		
Observations	4945	4945	4929	4945	4945	3691	1235
Individuals	1238	1238	1238	1238	1238	1235	1235
Panel B. Heterogeneity by baseline credit access							
CBL Arm * Bottom tercile of installment credit activity at baseline index (i)						0.014	0.120
						(0.008)	(0.030)
CBL Arm * Middle tercile of installment credit activity at baseline index (ii)						0.005	0.073
						(0.005)	(0.022)
CBL Arm * Top tercile of installment credit activity at baseline index (iii)						0.016	0.090
						(0.007)	(0.022)
CBL Arm * Post * Bottom tercile of installment credit activity at baseline index (iv)	-0.026	0.009	0.006	0.115	0.089		
	(0.048)	(0.070)	(0.073)	(0.104)	(0.041)		
CBL Arm * Post * Middle tercile of installment credit activity at baseline index (v)	-0.016	0.023	-0.106	-0.041	-0.075		
	(0.043)	(0.063)	(0.082)	(0.074)	(0.040)		
CBL Arm * Post * Top tercile of installment credit activity at baseline index (vi)	0.030	0.218	-0.069	-0.085	-0.038		
	(0.085)	(0.081)	(0.063)	(0.074)	(0.040)		
p-value of (i) = (ii) or (iv) = (v)	0.875	0.879	0.308	0.221	0.005	0.334	0.192
p-value of (ii) = (iii) or (v) = (vi)	0.628	0.058	0.717	0.671	0.508	0.227	0.557
p-value of (i) = (iii) or (iv) = (vi)	0.564	0.051	0.440	0.117	0.027	0.845	0.416
Observations	4945	4945	4929	4945	4945	3691	1235
Individuals	1238	1238	1238	1238	1238	1235	1235
Mean dependent variable in Extra Step Arm at baseline	0.139	0.156	0.057	0.151	0.437	NA	NA
Mean dependent variable in Extra Step Arm, Post	0.017	0.081	0.174	0.215	0.506	0.007	0.033

OLS intention-to-treat estimates with standard errors (clustered on person in Columns 1-6) in parentheses. Each panel-column presents estimates from a regression of the variable described in the column heading on the variable(s) described in the row headings, with regressions in Panel A Columns 1 - 5 also including person fixed effects and Post, and the regressions in Panel B columns 1 - 5 also including person fixed effects and Post interacted with each of the baseline installment credit activity terciles. In Columns 1-5, unit of observation is a person-credit report, with at most four observations for most persons: baseline, and three endlines at 6, 12, and 18 months post-treatment assignment, which are included in the Post indicator for the experiment period. Number of observations is lower than the number of individuals x 3 or 4 credit reports because some credit reports lack information on one or more dependent variables. Unit of observation in Column 6 is a person-SLCCU data snapshot, with those snapshots timed to coincide roughly with the credit report endlines. Columns 6 and 7 use endline data only, because no one in our sample had a CBL at baseline. Those who did not open a CBL are coded as zero in columns 6 and 7. Index variables are standardized to be mean zero and standard deviation one in the Extra Step Arm at baseline; see Online Appendix B-2 for details on index components and construction.

Appendix Table 7. CBL treatment effects on SLCCU account balances
(Same as Table 7 Columns 5-8 but here outcome variables are transformed)

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)
	Account balances ($ hundreds)					
	Savings			Savings + checking		
	Winsorized (95%)	Winsorized (99%)	Inverse Hyperbolic Sine	Winsorized (95%)	Winsorized (99%)	Inverse Hyperbolic Sine
Sample:	Full					
Panel A. Main effects						
CBL Arm * Post	0.329	0.970	0.069	0.128	1.034	0.036
	(0.279)	(0.615)	(0.058)	(0.495)	(0.909)	(0.084)
Observations	6124	6124	6124	6124	6124	6124
Individuals	1531	1531	1531	1531	1531	1531
Panel B. Heterogeneity by installment credit activity at baseline						
CBL Arm * Post * Bottom tercile of installment credit activity at baseline index (i)	0.112	-0.143	0.013	0.185	0.152	-0.023
	(0.405)	(0.991)	(0.090)	(0.713)	(1.508)	(0.134)
CBL Arm * Post * Middle tercile of installment credit activity at baseline index (ii)	0.082	1.376	0.102	-0.509	0.721	0.033
	(0.552)	(1.116)	(0.106)	(0.983)	(1.683)	(0.156)
CBL Arm * Post * Top tercile of installment credit activity at baseline index (iii)	0.801	1.847	0.095	0.764	2.416	0.133
	(0.509)	(1.153)	(0.106)	(0.903)	(1.643)	(0.150)
p-value of (i) = (ii)	0.965	0.309	0.522	0.568	0.801	0.786
p-value of (ii) = (iii)	0.339	0.769	0.964	0.340	0.471	0.645
p-value of (i) = (iii)	0.290	0.191	0.555	0.615	0.310	0.439
Observations	6008	6008	6008	6008	6008	6008
Individuals	1502	1502	1502	1502	1502	1502
Mean dependent variable in Extra Step Arm at baseline	2.160	3.724	0.739	4.053	6.088	1.016

Unit of observation is a person-SLCCU data snapshot, with four observations for most persons at roughly the same timing as our credit report pulls: baseline, and three endlines at 6, 12, and 18 months post-treatment assignment, all three of which are included in the Post indicator for the experiment period. Standard errors, in parentheses, are clustered at the person-level. Each column presents results from a single OLS regression of the dependent variable described in the column heading on the variable(s) shown in the rows, Post and person fixed effects (odd columns), with even columns including Post * Bottom Tercile of Credit Access at Baseline Index, Post * Middle Tercile of Credit Access at Baseline Index, and Post * Top Tercile of Credit Access at Baseline Index instead of the Post indicator. All outcome variables here are calculated from SLCCU administrative data. Balances are recorded as zero for those who leave the credit union. Outcomes in columns (1) and (4) replace observations greater than the 95th percentile with the observation at the 95th percentile. Outcomes in columns (2) and (5) replace observations greater than the 99th percentile with the observation at the 99th percentile.

Appendix Table 8. Mean CATEs by treatment arm for full sample

	(1)	(2)	(3)
	Extra Step Arm	CBL Arm	p-value
Sample:	Full		(1) = (2)
	Dependent variable: 1= Has FICO® Score 8		
ITE Mean (se)	0.0021	0.0025	
	(0.0007)	(0.0007)	0.709
N	683	730	
	Dependent variable: FICO® Score 8		
ITE Mean (se)	-1.526	-1.882	
	(0.163)	(0.162)	0.122
N	572	595	

Same as Table 10, but here for full sample.

B. Implementation and Data Details

1. Additional details on research and CBL operations

Survey administration: Surveys and treatments were delivered in private spaces within the credit union branches to preserve privacy and minimize the possibility of one applicant hearing about what another applicant receives. Study participants were compensated for their time (about 15-20 minutes) with a $5 gift card to a local grocery store. SLCCU preferred paper surveys and surveyors overnighted them periodically to research team headquarters; unfortunately, one package containing about 50 surveys was lost (including some who did not receive a random assignment). Thus, we have random assignment but no survey data for these 50 individuals. Missingness is balanced across the two experiment arms.

Randomization: Each surveyor used a random number generator on a computer provided, maintained, and monitored by the research team. We also randomly assigned two other treatments. First, an independent cross-randomization provided half the survey sample (unconditional on CBL interest) with information on phone-based credit counseling and financial education. Second, six months after opening the CBL product, half of CBL takers were invited to set up an automatic transfer from checking to savings that would start six months later, after the last CBL payment. Take up of these two treatments was 2% and 0% and thus we exclude them from the analysis.

Marketing and onboarding: If a CBL Arm member was ready to open a CBL on the spot, our surveyors would escort them to a credit union representative who would further describe the product, establish payment dates, and originate the CBL. CBL Arm members who were not immediately ready to open a CBL received three forms of follow-up: nudges from a teller any time they transacted in a branch; phone calls attempting to set up an appointment to open a CBL; and two emails.

Financial education requirement: The financial education content did not include anything specifically about credit builder loans, and participants were not informed about the content of the financial education modules at the time of randomization: they were simply told they needed to "complete five online lessons" that would take about an hour or less. Participants could satisfy the requirement by completing five (or more) modules out of eight available: Savings and Investments, Mortgages, Overdraft Protection, Payment Types and Credit Cards, Credit Scores and Reports, Identity Protection, Insurance and Taxes, and Financing Higher Education.

2. Variable definitions

Index construction rules

1. Transform variables with substantial skewness using inverse hyperbolic sine
2. Standardize each component with respect to the Extra Step Arm.
3. Calculate the person-level mean across non-missing components (if someone is missing all components their index value is missing).
4. Standardize each index with respect to the Extra Step Arm.

Variable definition details not fully specified in the tables or main text

Baseline financial risk-taking scale (Measured from baseline survey, higher values indicate greater risk tolerance)

In Tables 1 & 5; Appendix Tables 2, 3a, & 3b.

1. Q: "I am willing to take a risk financially if there is a chance of substantial gain."
   A: 1 = strongly disagree, 2= disagree, 3 = feel neutrally, 4= agree, 5 = strongly agree

Baseline self-control and credit knowledge index (12 components, each measured from baseline survey, higher values indicate more self-control)

In Tables 1 & 5; Appendix Tables 2, 3a, 3b, 5a, & 5b.

1. Q: "Before I buy something I carefully consider whether I can afford it."
   A: 1 = strongly disagree, 2= disagree, 3 = feel neutrally, 4= agree, 5 = strongly agree
2. Q: "I tend to live for today and let tomorrow take care of itself."
   A: 1 = strongly agree, 2= agree, 3 = feel neutrally, 4= disagree, 5 = strongly disagree
3. Q: "I set long term financial goals of five years or more and strive to achieve them."
   A: 1 = strongly disagree, 2= disagree, 3 = feel neutrally, 4= agree, 5 = strongly agree
4. Q: "I often find that I regret spending money. I wish that when I had cash, I was better disciplined and saved my money rather than spent it."
   A: 1 = strongly agree, 2= agree, 3 = feel neutrally, 4= disagree, 5 = strongly disagree
5. Q: "I have trouble finishing or completing my tasks."
   A: 1 = strongly agree, 2= agree, 3 = feel neutrally, 4= disagree, 5 = strongly disagree
6. Q: "In the past 12 months, have you checked your credit score?"
   A: 0 = No, 1 = Yes
7. Q: "In the past 12 months, have you obtained a copy of your credit report?"
   A: 0 = No, 1 = Yes

8. Correctly answered "Could your credit rating affect the amount of interest you would pay ona bank loan?" **(Yes)**
   A: 0 = No, 1 = Yes
9. Correctly answered: "Could your health affect the amount of interest you would pay on a bank loan?" **(No)**
   A: 0 = No, 1 = Yes
10. Correctly answered: "Could your age affect the amount of interest you would pay on a bank loan?" **(No)**
    A: 0 = No, 1 = Yes
11. Correctly answered: "Could how much you borrow overall affect the amount of interest you would pay on a bank loan?" **(Yes)**
    A: 0 = No, 1 = Yes
12. Correctly answered: "Could how long you take to repay the loan affect the amount of interest you would pay on a bank loan?" **(Yes)**
    A: 0 = No, 1 = Yes

Baseline liquidity index (7 components, measured from baseline survey and baseline SLCCU data, higher values indicate more liquidity)
In Tables 1 & 5; Appendix Tables 2, 3a, 3b, 5a, & 5b.

1. Q: "My financial situation is a source of stress in my life."
   A: 1 = strongly agree, 2= agree, 3 = feel neutrally, 4= disagree, 5 = strongly disagree
2. Q: "In a typical month, it is difficult for me to cover my expenses and pay all my bills."A:
   1 = strongly agree, 2= agree, 3 = feel neutrally, 4= disagree, 5 = strongly disagree
3. Q: "I am confident that I could come up with $2000 if an unexpected need arose within the next month"
   A: 1 = strongly disagree, 2= disagree, 3 = feel neutrally, 4= agree, 5 = strongly agree
4. Q: "How would you describe your overall financial situation? Would you say…"A:
   1 = bad, 2 = not very good, 3 = okay, 4 = very good, 5 = excellent
5. HH income is greater than $30k (0 = income less than or equal to $30K, 1 = greater than $30K)
6. Savings Balance ($ hundreds, top-coded at 95%)
7. More than $60 in savings (0 = less than or equal to $60 in savings, 1 = more than $60 in savings)

Delinquency index (10 components, each measured from credit bureau data; higher values indicate more default, delinquency, collection activity on accounts)

In Tables 1 (baseline), & 6 (outcome); Appendix Tables 3a. 3b (baseline), 6 (outcome), & 9 (outcome) ; Appendix Figure 1 (outcome)

1. Account 30 days past due in the last 12 months (0 = does not have account past due, 1 = has account past due)
2. Account 90 days past due in the last 12 months (0 = does not have account past due, 1 = has account past due)
3. Account in collection (0 = does not have account in collection, 1 = has account in collection)
4. Has amount past due (0 = does not have amount past due, 1 = has amount past due)
5. Account with a major derogatory event (0 = does not have major derogatory event, 1 = has major derogatory event)
6. Number of accounts 30 days past due in the last 12 months
7. Number of accounts 90 days past due in the last 12 months
8. Number of accounts in collection
9. Amount past due ($)
10. Number of accounts with a major derogatory event

Baseline installment credit activity index (3 components, each measured from credit bureau, higher values indicate more installment credit)

Tables 1, 5, 6, & 7; Appendix Tables 2, 3a, 3b, 4, 5a, 5b, 6, 7, & 9; Appendix Figure 1.

1. Number of open installment loans (transformed by taking inverse hyperbolic sine)
2. Any open installment loan (0 = no open installment loan, 1 = any open installment loan)
3. Number of inquiries made within last 12 months (transformed by taking inverse hyperbolic sine

Baseline revolving credit activity index (3 components, each measured from credit bureau, higher values indicate more revolving credit access)

In Tables 1 & 5; Appendix Tables 2, 3a, 3b, 5a, & 5b.

1. Number of open revolving loans (transformed by taking inverse hyperbolic sine)
2. Any open revolving loan (0 = no open revolving loan, 1 = any open revolving loan)
3. Utilization of revolving loans (transformed by taking inverse hyperbolic sine)

Baseline number of prior loans, lifetime (Measured from credit bureau, higher values indicate moreloans)

In Tables 1 & 5; Appendix Tables 2, 3a & 3b.

1. Total number of open and closed loans.

New credit (2 components; each measured from credit bureau; higher values indicate more new credit) In Table 6; Appendix Table 6.

1. Number of inquiries made in the last 12 months (bureau data)
2. The number of accounts (bureau data)

Amounts owed: Balances (3 components, each measured from credit bureau; higher values indicatelarger amounts owed)

In Table 6; Appendix Table 6.

1. Outstanding revolving loan balance
2. Outstanding installment loan balance
3. Outstanding auto loan balance

Amounts owed: Utilization (5 components, each measured from credit bureau data; higher valuesindicate more utilization)

In Table 6; Appendix Table 6.

1. Revolving utilization is over 30% (0 = below 30%, 1 = above 30%; missing if no credit line)
2. Number of open installment loans
3. Outstanding revolving loan balance (0 = no outstanding balance, 1 = outstanding balance)
4. Outstanding auto loan balance (0 = no outstanding balance, 1 = outstanding balance)
5. Outstanding installment loan balance (0 = no outstanding balance, 1 = outstanding balance)

C. Do CBLs change the predictive power of credit scores? Results and discussion.

Here we explore whether a CBL-influenced credit score is better, or worse, at predicting default, as measured by the score's gradient and its fit. CBLs might capture valuable information and thereby improve the predictive power of the credit score or distort information and thereby reduce the score's predictive power. As noted at the outset, distortion seems like a real possibility given that the CBL is not a loan in an economic sense—it functions like a commitment contract for saving—yet is reported to credit bureaus as a standard installment loan.

Our tests compare the 6-month endline credit score's default gradient or fit for the delinquency index from the 18 month-endline, across the CBL versus Extra Step arms. (The predicted outcome here is the same delinquency index we use in prior tables.) Since the CBL is more likely to exert influence if it changes scores, we focus here on our key margin of HTEs, although we also present results on the full sample for completeness. If the CBL changes the scores' predictive power, then e.g., the *6-month score*CBL Arm*Bottom tercile baseline installment activity* coefficient or fit will differ from the *6-month score*Extra-Step Arm*Bottom tercile baseline installment activity* coefficient or fit.

Our ability to draw sharp inferences here is limited by several constraints particular to our data and setup. First, we focus on the predictive power of 6-month endline scores because many components of our delinquency index are measured over the prior 12 months, but doing so may miss CBL effects on scores and/or delinquencies that occur after the 6-month endline. Second, our measures of delinquency and default include CBL delinquency, due to data limitations described in Section 2-B. Because there is mechanically more CBL delinquency in the CBL Arm by virtue of the strong first-stage, our predictive tests are biased towards finding an improvement in predictive accuracy of the credit scores (although, as discussed vis a vis Table 6, that bias might be small due to reporting and measurement nuances). Third, we are not privy to exactly how Fair Isaac or lenders use the credit score to predict delinquency or default, and as such may well be mis-specifying functional form.

Keeping those caveats in mind, Appendix Table 9 presents results from our gradient tests. As expected, given the null average TE on credit scores, Column 1 shows no statistically

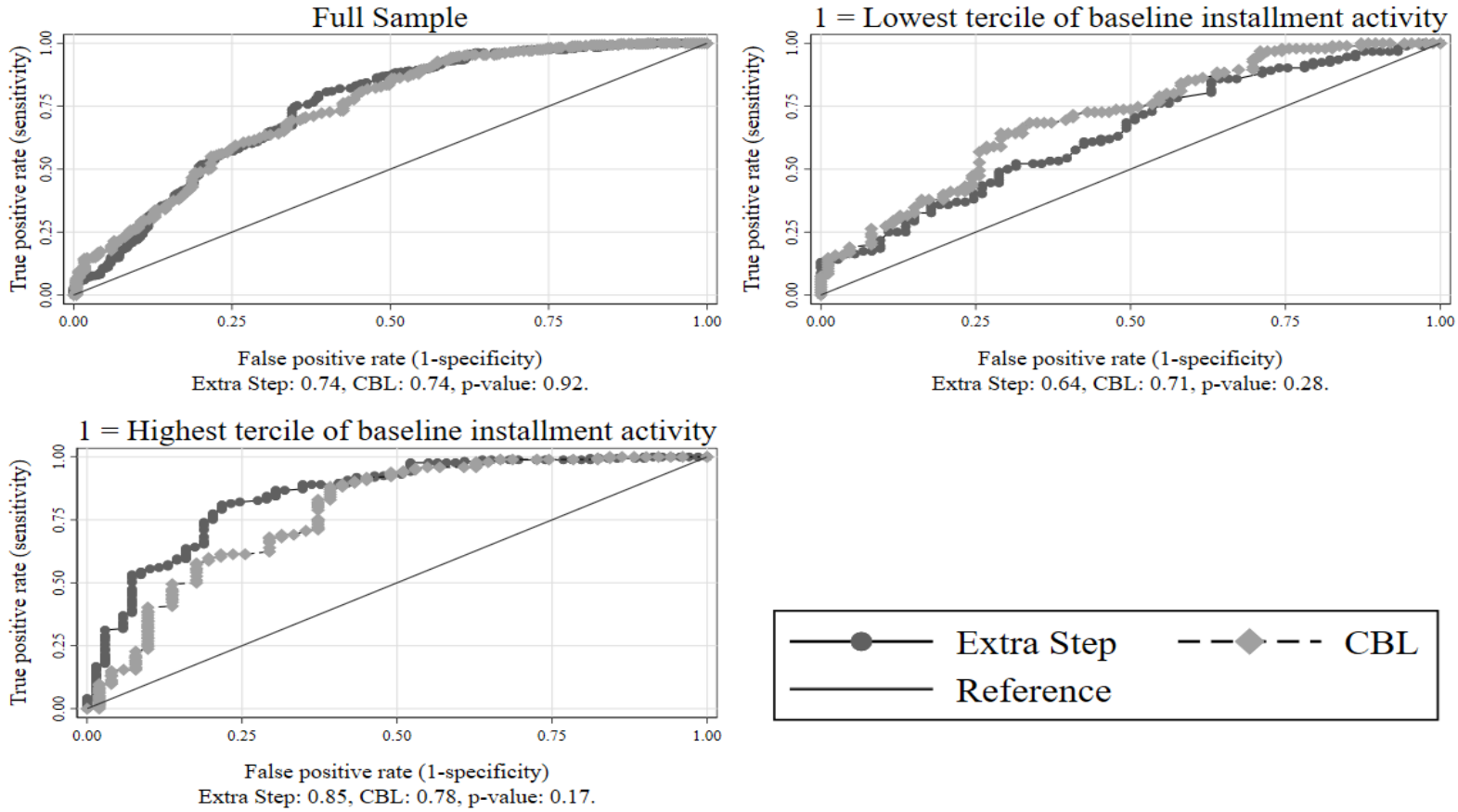
significant difference in the default-score gradient across the CBL and Extra-Step arms (p-value 0.34), and the point estimate on the difference is small in economic terms: a 0.01 sd difference in delinquency per 100-point change in credit score. Column 2 decomposes this average gradient for our key margin of heterogeneity and again finds economically small differences, here in predictive power within each of the baseline installment loan activity terciles (comparing rows (iii) vs.(iv), (v) vs. (vi), and (vii) vs. (viii)). But there is some evidence that CBL weakens predictive power for those in the top tercile (a 0.03 sd flatter gradient, with a 0.049 p-value on the difference). Although the magnitude of this flattening is economically small in our specification, it nevertheless generates some cause for concern given the aforementioned caveats that our specification could understate any distortion.

Appendix Figure 1 presents the results from the fit tests. Specifically, we test whether the CBL changes the 6-month endline credit score's ability to explain the variance of our delinquency index, using receiver operator characteristic (ROC) curves. A greater area under the curve (AUC) indicates a better fit. The 45-degree line shows what the ROC curve would be if the 6-month endline credit score had no power to predict delinquency 6 months later. Because a ROC curve requires a discrete predicted (outcome) variable, we cut the delinquency index at its median, with those above the median defaulting more. We then compare the AUCs for the CBL vs. Extra Step arms, calculating standard errors and p-values using the DeLong et al. (1988) method.

As expected in the full sample, there is little difference in the AUCs across the CBL vs. Extra-Step arms (p-value on the difference of 0.92). We also find no evidence for distortion in the lowest-tercile installment activity group, where the fit for those in the CBL arm suggests weakly greater predictive power: 0.71 vs. 0.64 for those in the Extra-Step arm (p-value 0.28). But, as with the gradient test, the fit results for the top tercile of baseline installment activity generate some cause for concern, as here the 6-month credit score explains less variance in delinquency in the CBL arm (0.78 vs. 0.85). This difference has a p-value of 0.17, but its true difference could be somewhat greater and statistically stronger, per the measurement caveats discussed above.

Appendix Figure 1. Do CBLs change credit scores' predictive power?

Testing for differences in fit using Area Under the Curve (AUC) comparisons



Note: Each graph shows receiver operating characteristic (ROC) curves used to assess credit score accuracy. We discretize at each 6-month endline credit score as a cutoff and predict more-risky behavior (i.e. defaulting) for those with scores below the cutoff and less-risky behavior (i.e. not defaulting) for those with scores above the cutoff. This aligns with what credit scores are constructed to do, which is to predict default ordinally. We then compare each person's prediction based on their 6-month score with their true value of the 18-month endline discretized delinquency index to calculate the true and false positive rates. ROCs require a discrete classification of the outcome to be predicted, so we discretize our 18-month endline delinquency index (see Data Appendix for details) at the median index value. As before, a higher value--the above median indicator--indicates more default. The true positive rate, on the y-axis, is (number of people correctly classified as more-risky at 6 months)/(number of observed more-risky people at 18 months). The false positive rate, on the x-axis, is (number of people incorrectly classified as more-risky at 6 months)/(number of observed less-risky people at 18 months). The areas under the curve (AUCs) for the Extra Step and CBL arms are shown below each graph along with the p-value of a chi-squared test of their equality (Delong, Delong, Clarke-Pearson 1988). The Reference (45-degree) line shows a ROC with no predictive power.

Appendix Table 9. Do CBLs change the predictive power of credit scores? Testing for differences in the default-score gradient

	(1)	(2)
Dependent variable:	18-month endline Delinquency index: includes 10 measures of delinquency, collections, & derogatories (higher values = less timely repmt). Includes CBL delinquency.	
FICO® Score 8 (hundreds) at baseline	-0.175	-0.270
	(0.063)	(0.062)
FICO® Score 8 (hundreds) at 6 month endline * CBL Arm (i)	-0.492	
	(0.063)	
FICO® Score 8 (hundreds) at 6 month endline * Extra Step Arm (ii)	-0.500	
	(0.063)	
FICO® Score 8 (hundreds) at 6 month endline * CBL Arm * Bottom tercile of installment credit activity at baseline index (iii)		-0.504
		(0.062)
FICO® Score 8 (hundreds) at 6 month endline * Extra Step Arm * Bottom tercile of installment credit activity at baseline index (iv)		-0.510
		(0.065)
FICO® Score 8 (hundreds) at 6 month endline * CBL Arm * Middle tercile of installment credit activity at baseline index (v)		-0.446
		(0.062)
FICO® Score 8 (hundreds) at 6 month endline * Extra Step Arm * Middle tercile of installment credit activity at baseline index (vi)		-0.442
		(0.062)
FICO® Score 8 (hundreds) at 6 month endline * CBL Arm * Top tercile of installment credit activity at baseline index (vii)		-0.368
		(0.064)
FICO® Score 8 (hundreds) at 6 month endline * Extra Step Arm * Top tercile of installment credit activity at baseline index (viii)		-0.397
		(0.062)
p-value of (i) = (ii)	0.344	
p-value of (iii) = (iv)		0.705
p-value of (v) = (vi)		0.716
p-value of (vii) = (viii)		0.049
Observations	1228	1228
Mean dependent variable in Extra Step Arm	0.064	0.064

Unit of observation is a person. Standard errors, in parentheses, are Huber-White. Each column presents results from a single OLS regression of the dependent variable described in the column heading on the variables shown in the rows. Index variables are standardized to be mean zero and standard deviation one in the Extra Step Arm at baseline; see Data Appendix for details on index components and construction. Sample here is limited to persons for whom we could obtain a credit report at our 18-month endline and who have a credit score at baseline and the 6-month endline.