

Online Appendix to *Chicago Fed Letter No. 454*

Credit card delinquency and Covid-19: Neighborhood trends in the Seventh District

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Difference-in-difference estimates

Model 1: LMI Census Tracts Treatment Group

Variable	Parameter estimate	Standard error ¹	t Value	Pr > t
Intercept	0.05504	0.000192	286.01	<.0001
pandemic	0.00651	0.000334	19.48	<.0001
lmi	0.07416	0.000406	182.73	<.0001
pandemic_x_lmi	0.01159	0.000707	16.39	<.0001
R-Square	0.3303			
Number of Observations	114660			

Model 2: Majority-Black Census Tracts Treatment Group

Variable	Parameter estimate	Standard error	t Value	Pr > t
Intercept	0.06391	0.000175	364.31	<.0001
pandemic	0.00771	0.000305	25.28	<.0001
majority_black	0.12785	0.000707	180.76	<.0001
pandemic_x_black	0.02088	0.00123	16.96	<.0001
R-Square	0.3257			
Number of Observations	114660			

Model 3: Majority-Hispanic Census Tracts Treatment Group

Variable	Parameter estimate	Standard error	t Value	Pr > t
Intercept	0.07073	0.000208	339.73	<.0001
pandemic	0.00888	0.000362	24.53	<.0001
majority_hisp	0.0359	0.00123	29.28	<.0001
pandemic_x_hisp	0.00245	0.00212	1.15	0.2816
R-Square	0.017			
Number of Observations	114660			

¹ The statistical significance of the parameter estimates in all three models was robust to clustering the standard errors at the census tract level.

Underlying aggregate data for Figure 2

Individuals with bankcard delinquency by census tract income

Quarter	Low- and Moderate-Income Tracts	Middle- and Upper- Income Tracts	All Seventh District Tracts
2018q1	12.62%	5.35%	6.99%
2018q2	11.92%	5.13%	6.66%
2018q3	12.35%	5.29%	6.88%
2018q4	12.84%	5.44%	7.11%
2019q1	13.27%	5.64%	7.36%
2019q2	13.09%	5.59%	7.27%
2019q3	13.36%	5.67%	7.39%
2019q4	13.93%	5.93%	7.73%
2020q1	15.13%	6.37%	8.33%
2020q2	14.98%	6.22%	8.18%
2020q3	14.47%	6.04%	7.91%
2020q4	14.34%	5.99%	7.84%

Notes: Individuals who were 90 days or more past due on any of their bankcard accounts (conditional on having a bankcard account) were flagged. The share of all individuals who were flagged as delinquent was then calculated for LMI census tracts, non-LMI tracts, and all tracts in aggregate in Illinois, Michigan, Indiana, Wisconsin, and Iowa.

Sources: Authors' calculations based on data from the Federal Reserve Bank of New York Consumer Credit Panel/Equifax (CCP) data and the *American Community Survey* 2014–18 five-year averages. Demographic characteristics of census tracts are derived from ACS data; CCP data does not include borrower income or race.

Individuals with bankcard delinquency by census tract demographic characteristics

Quarter	Majority White	Majority Black	Majority Hispanic	Majority Other Race or Ethnicity	All Seventh District Tracts
2018q1	5.78%	18.74%	10.63%	10.45%	6.99%
2018q2	5.54%	17.58%	10.12%	9.93%	6.67%
2018q3	5.71%	18.24%	10.43%	10.31%	6.88%
2018q4	5.88%	19.15%	10.53%	10.75%	7.11%
2019q1	6.10%	19.68%	10.93%	11.05%	7.36%
2019q2	6.04%	19.43%	10.69%	10.90%	7.28%
2019q3	6.14%	19.83%	10.74%	11.04%	7.40%
2019q4	6.41%	20.80%	11.24%	11.50%	7.73%
2020q1	6.88%	22.84%	12.11%	12.52%	8.34%
2020q2	6.74%	22.67%	11.79%	12.28%	8.19%
2020q3	6.55%	21.49%	11.73%	11.81%	7.92%
2020q4	6.51%	21.13%	11.55%	11.75%	7.85%

Notes: Individuals who were 90 days or more past due on any of their bankcard accounts (conditional on having a bankcard account) were flagged. The share of all individuals who were flagged as delinquent was then calculated for census tracts that are majority non-Hispanic White, non-Hispanic Black, Hispanic, all other tracts, and all tracts in aggregate in Illinois, Michigan, Indiana, Wisconsin, and Iowa.

Sources: Authors' calculations based on data from the Federal Reserve Bank of New York Consumer Credit Panel/Equifax (CCP) data and the *American Community Survey* (ACS) 2014–18 five-year averages. Demographic characteristics of census tracts are derived from ACS data; CCP data does not include borrower income or race.