

Online Appendix

Do Credit Supply Shocks Affect Employment in Middle-Income Countries?

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Table A1: Description of data sources

Name	Source	Description	Frequency and period of original data	Main level of aggregation used in the analysis
Credit data	Bank of Mexico based on National Banking and Values Commission	Proprietary data that contains detailed information on all new and existent loans extended to firms. A wide variety of characteristics is reported for each loan: the number of employees and location (municipality) of the receiving firm, the issuing bank, and the loan size.	Monthly frequency. 2010 -2015	Annual-Local labor market
Formal employment	Mexican Social Security Institute (<i>Instituto Mexicano del Seguro Social, IMSS</i>)	Publicly available data that contains municipality-level information on the total number of registered workers by firm size and workers' characteristics.	Monthly frequency. 2010 -2015	Annual-Local labor market
Mexican Employment Survey (ENOE)	Instituto Nacional de Estadística y Geografía (INEGI)	Publicly available individual data on employment that contains municipality-level information on the total number of workers (formal and informal). It is only representative of a small number of urban municipalities.	Quarterly frequency. 2010 -2015	Annual-Local labor market
Population Census	Instituto Nacional de Estadística y Geografía (INEGI)	Publicly available individual data that can be aggregated at the regional level to construct socio-economic indicators.	Decennial. 2010	Local labor market
Banks' Balance Sheet	National Banking and Values Commission (CNBV)	Publicly available data that contains detailed information on banks' balance sheet indicators.	Monthly frequency. 2010 -2015	Annual-Bank level
Homicide data	Secretariado Ejecutivo del Sistema Nacional de Seguridad Pública	Publicly available data that contains detailed information on the number of homicides by municipality.	Monthly frequency. 2010 -2015	Annual-Local labor market

Notes: The table presents a description of all datasets used in the analysis.

Table A2: Characteristics of family firms and non-family firms

	Family firms	Non-family firms
Share of credit with collateral	0.40	0.48
Mean interest rate	13.63	10.31
Share of non-performing loans	0.06	0.04
Share of revolving credit	0.33	0.43
Mean employees	10	43

Notes: Main characteristics of family firms and non-family firms in December 2010, our baseline year. Statistics are computed at the loan level; data weighted by credit amount. Data on comes from proprietary credit data.

Table A3: Main results for same sample period

Dependent variable:	Log of new credit			Log of formal employees in small firms		
	1	2	3	4	5	6
Credit shock _t	0.541 (0.227)	0.631 (0.251)	0.639 (0.251)	0.087 (0.033)	0.094 (0.038)	0.095 (0.038)
Credit shock _{t-1}		0.224 (0.208)	0.194 (0.232)		0.019 (0.032)	0.017 (0.038)
Credit shock _{t-2}			-0.081 (0.207)			-0.004 (0.031)
N	1,404	1,404	1,404	1,404	1,404	1,404

Notes: Authors' estimation of equation (4) for log of new credit and formal employees in small firms in each labor markets as the dependent variable. Data on new credit and comes from proprietary credit data and data on formal employment comes from IMSS. Regressions include local labor markets and year fixed effects. The regression also includes linear trends interacted with the local labor market controls (fraction of illiterate population, fraction of households with dirt floor, and fraction of households with water). The table shows point estimates of the effect of credit supply shocks on changes in employment. Observations are weighted by the number of workers in small firms in each labor market-year cell. The table reproduces the main results from Table 5 and Table 6 restricting the sample to the same observations for which 2 lags can be computed (years 2013-2015). Standard errors are clustered at the local labor market level.

Table A4: Credit shocks in Mexico and the US

	Credit shocks Mexico	Credit shocks US
Mean	0.114	0.021
Standard deviation	0.156	0.237
Percentiles after subtracting the mean		
P10	-0.206	-0.236
P20	-0.152	-0.128
P30	-0.089	-0.068
P40	-0.048	-0.024
P50	0.004	0.016
P60	0.048	0.055
P70	0.104	0.095
P80	0.145	0.145
P90	0.194	0.225

Notes: The table shows the distribution of the credit supply shocks in local labor markets in Mexico estimated in this paper and those in US counties estimated by Greenstone et al. (2020). The credit shocks in the US correspond to the period 1998-2008 and were obtained from the data replication folder in <https://www.aeaweb.org/articles?id=10.1257/pol.20160005>. Data on credit shocks in Mexico are estimated using proprietary credit data.

Table A5: Results by gender

Dependent variable: log of formal employees in small firms						
	Females			Males		
	Log formal employees	Log low wage employees	Log high wage employees	Log formal employees	Log low wage employees	Log high wage employees
	1	2	3	4	5	6
Credit shock _t	0.077 (0.030)	0.127 (0.032)	-0.003 (0.044)	0.094 (0.034)	0.179 (0.045)	0.017 (0.039)
N	2,334	2,332	2,331	2,340	2,340	2,329

Notes: Authors' estimation of equation (4) for formal employees in small firms in each labor market as the dependent variable, distinguishing by gender. Data on formal employment comes from IMSS. Regressions include local labor markets and year fixed effects. The regression also includes linear trends interacted with the local labor market controls (fraction of illiterate population, fraction of households with dirt floor, and fraction of households with water). The table shows point estimates of the effect of credit supply shocks on changes in employment. Observations are weighted by the number of workers in small firms in each labor market-year cell. The table reproduces the main results from Table 5 and Table 6 restricting the sample to the same observations for which 2 lags can be computed (years 2013-2015). Standard errors are clustered at the local labor market level.

Table A6: Effects on wages

Dependent variable:	Log average wages all formal employees	Log average wages low wage employees	Log average wages high wage employees
	1	2	3
Credit shock _t	-0.046 (0.017)	-0.021 (0.010)	-0.004 (0.017)
N	2,340	2,340	2,333

Notes: Authors' estimation of equation (4) for log of formal employees in small firms in each labor market as the dependent variable. Data on formal employment wages comes from IMSS. Regressions include local labor markets and year fixed effects. The regression also includes linear trends interacted with the local labor market controls (fraction of illiterate population, fraction of households with dirt floor, and fraction of households with water). The table shows point estimates of the effect of credit supply shocks on changes in employment. Observations are weighted by number of workers in small firms in each labor market-year cell. Standard errors are clustered at the local labor market level.

Table A7: Heterogeneity by regional credit availability in baseline year

Dependent variable:	Log new credit	Log formal employees	Log low wage employees	Log high wage employees
	1	2	3	4
<i>Credit per worker (base category: high credit per worker)</i>				
Credit shock _t	0.450 (0.200)	0.066 (0.033)	0.082 (0.037)	0.036 (0.040)
Credit shock _t * MediumC _m	0.108 (0.080)	0.036 (0.017)	0.089 (0.023)	-0.006 (0.021)
Credit shock _t * LowC _m	0.314 (0.158)	-0.019 (0.022)	0.022 (0.025)	-0.055 (0.030)

Notes: Authors' estimation of equation (4) for main outcome variables. Regressions include local labor markets and year fixed effects. Data on new credit and comes from proprietary credit data and data on formal employment comes from IMSS. The regression also includes linear trends interacted with the local labor market controls (fraction of illiterate population, fraction of households with dirt floor, and fraction of households with water). Regressions include interactions with dummies indicating the level of credit per worker in a local labor market. MediumC_m (LowC_m) is an indicative variable that takes the value of 1 if labor market *m* has medium (low) level of credit per worker in the baseline year and zero otherwise. The dummy variables are constructed by taking the outstanding credit per worker in each labor market in 2010, and then computing percentiles 33 and 66, such that high credit indicates markets with more than \$17,694 (Mexican pesos) per formal worker, medium credit between \$6,426 and \$17,694, and low credit less than \$6,426. The table shows point estimates of the effect of credit supply shocks on changes in credit and employment. Observations are weighted by the number of workers in small firms in each labor market-year cell in 2010. Standard errors are clustered at the local labor market level.

Table A8: Biannual estimations

Dependent variable:	Log of new credit			Log of formal employees in small firms		
	1	2	3	4	5	6
Credit shock _t	0.318 (0.138)	0.630 (0.167)	0.417 (0.215)	0.031 (0.015)	0.038 (0.019)	0.038 (0.031)
Credit shock _{t-1}		0.383 (0.144)	0.466 (0.180)		0.022 (0.018)	0.018 (0.025)
Credit shock _{t-2}			0.0891 (0.120)			0.016 (0.018)
N	3,750	3,375	3,000	3,750	3,375	3,000

Notes: Authors' estimation of equation (4) for formal employees in small firms in each labor market as the dependent variable, distinguishing by gender. Data on new credit and comes from proprietary credit data and data on formal employment comes from IMSS. Regressions include local labor markets and year fixed effects. The regression also includes linear trends interacted with the local labor market controls (fraction of illiterate population, fraction of households with dirt floor, and fraction of households with water). The table shows point estimates of the effect of credit supply shocks on changes in employment. Observations are weighted by the number of workers in small firms in each labor market-year cell. The table reproduces the main results from Table 5 and Table 6 considering bi-annual data instead of yearly data. Standard errors are clustered at the local labor market level.

Table A9: Different normalization of results for large firms

Dependent variable	New credit	Formal employees	Low wage employees	High wage employees
	1	2	3	4
<i>Panel A: Outcomes defined as the share of large firms (outcome large firms / outcome total firms)</i>				
Credit shock _t	0.054 (0.058)	-0.004 (0.019)	-0.006 (0.025)	0.006 (0.020)
N	2,340	2,340	2,340	2,340
<i>Panel B: Outcomes for large firms defined in per capita terms (outcome / population 15-64)</i>				
Credit shock _t	-123 (292)	0.006 (0.005)	0.003 (0.002)	0.003 (0.004)
N	2,340	2,340	2,340	2,340
<i>Panel C: Outcomes for SMEs firms defined in per capita terms (outcome / population 15-64)</i>				
Credit shock _t	1,129 (636)	0.009 (0.003)	0.007 (0.002)	0.002 (0.002)
N	2,340	2,340	2,340	2,340

Notes: Authors' estimation of equation (4) redefining the outcome variables. Regressions include local labor markets and year fixed effects. Data on new credit comes from proprietary credit data and data on formal employment comes from IMSS. The regression also includes linear trends interacted with the local labor market controls (fraction of illiterate population, fraction of households with dirt floor, and fraction of households with water). Observations are weighted by the number of workers in small firms in each labor market-year cell in 2010. Panel A takes as a dependent variable the share of large firms (more than 250 employees) in credit and employment outcomes. Panel B (Panel C) considers outcomes of large firms (small firms) in per capita terms by dividing credit and employment outcomes by working age population (15-64). Standard errors are clustered at the local labor market level.