Internet Appendix

For "Finance in the New U.S. Economy: Local Finance and Service Job Growth in the Post-Industrial Economy" by Elizabeth A. Berger

A.1 Measuring Local Finance in Autor and Dorn (2013)

There is not one perfect measure of local finance over the long time horizon used in Autor and Dorn (2013). In Section II, I use deposits per capita as a proxy for local finance because the measure approximates financial access, is available over the full sample period, and varies over time.

I repeat the Section II analysis using an alternative measure of local finance. The measure is linked to the local fraction of bank deposits used in Section V onwards. The limitation of this proxy is that the local fraction of bank deposits data are only available starting in 1994. I backfill the data to 1980 to construct a full time series from 1980 to 2005. However, the variation in the local fraction of bank deposits comes only from 2000 and 2005. I introduce time series variation in the measure by multiplying the local fraction of bank deposits by deposits per capita. Internet Appendix Table A.1 reports that the analysis using this alternative measure yields similar results to those in Table **??**.

A.2 Description of State and County Alcohol Policies

Kansas: The distribution of beer, wine, and liquor for off-premise consumption is legal and on-premise consumption of beer and wine is legal. The variable "liquor by the drink" denotes whether laws in a county permit this form of alcohol consumption.

Alabama: Liquor laws are set at the county and city levels. Cities can permit liquor sales even if the county is dry. I identify the year in which each county and city voted to permit liquor sales. If a city votes to permit liquor sales then the county is a wet county. For example, the city of Florence is in Lauderdale County and accounts for over 50% of

its population. Florence has permitted liquor sales since 1984. Hence the legalization date for the county is 1984.

Arkansas: Most counties determined alcohol laws in 1942 and did not alter laws until recently.[1] Many counties in Arkansas permit private clubs to sell alcohol for on-site consumption. The 2003 Pickett Law expanded the definition of "private club" to include national restaurant franchises, even in dry counties. Wet counties could offer liquor by the drink in 2003. The wet/dry year is the year in which wine, beer, or liquor could be purchased for off premise consumption.

Kentucky: Counties hold county and city-level elections that determine liquor laws. If a city in a county votes to permit the sale of liquor then the county is a wet county.

Mississippi: Following prohibition, each county was deemed dry until the county voted to be wet. The liquor event is the year that a county votes to permit liquor.

North Carolina: Data report the date on which each county and city voted to permit the following items: malt beverages, unfortified wine, fortified wine, liquor, and mixed beverages. I use the first date that a county or city within a county votes to permit each form of alcohol as the year in which that type of alcohol became legal in the county.

Tennessee: Liquor laws are set at the city and county levels. I use city municipal codes to determine the earliest date on which liquor was permitted in the county.

Texas: Cities, precincts, and counties vote to permit the following items: malt, wine, liquor, mixed drinks, and liquor at restaurants. I use the first date that a county or city votes to permit each form of alcohol as the year of legalization for that type of alcohol.

[1] This information is based on a conversation with Michael Langley, Arkansas Alcohol Beverage Control Chief Legal Counsel.

A.3 Alternative Proxies for Local Finance

I define several candidate proxies for local finance. The proxies are a combination of two essential characteristics: (1) a definition of a local bank and (2) a definition of available finance. I define a local bank in one of three ways. A concentrated deposits measure, CONCENTRATED_DEPOSITS, identifies local banks as institutions with 75% or more of total deposits concentrated in one county (Adelino et al. (2017)). A bank classification measure, BANK_CLASSIFICATION, is a measure of local institutions defined using the FDIC bank classification code that denotes national institutions. The third definition of local institution, SBA_LOANS, is the SBA share of total loans at each bank. Local banks are those with a high ratio of SBA loans. For all measures, local bank branches are branches of local banks, regardless of physical branch location.

I combine these definitions of local banks with measures of available finance. The first set of measures uses bank branch deposits. Within a county, I sum deposits that are held at branches of local institutions, LOCAL_DEPOSITS, and scale it by total deposits in a county, TOTAL_DEPOSITS. Local banks can be defined by CONCENTRATED_DEPOSITS or BANK_CLASSIFICATION. These proxies using LOCAL_DEPOSITS to define available finance are:

$\text{LOCAL\_FINANCE}_1 =$
$(\text{LOCAL\_DEPOSITS}_{CONCENTRATED\_DEPOSITS})/(\text{TOTAL\_DEPOSITS})$.

$\text{LOCAL\_FINANCE}_2 =$
$(\text{LOCAL\_DEPOSITS}_{BANK\_CLASSIFICATION})/(\text{TOTAL\_DEPOSITS})$.

A second set of measures uses the presence of bank branches, LOCAL_BRANCHES, as a measure of local finance. I calculate the number of branches that belong to local institutions scaled by the total number of branches, TOTAL_BRANCHES in a county.

This measure represents the proportion of branches that are owned by local institutions. Local banks can be defined as CONCENTRATED_DEPOSITS or BANK_CLASSIFICATION. These proxies using LOCAL_BRANCHES to define available finance are:

$$\text{LOCAL\_FINANCE}_3 = (\text{LOCAL\_BRANCHES}_{CONCENTRATED\_DEPOSITS})/(\text{TOTAL\_BRANCHES}).$$

$$\text{LOCAL\_FINANCE}_4 = (\text{LOCAL\_BRANCHES}_{BANK\_CLASSIFICATION})/(\text{TOTAL\_BRANCHES}).$$

An alternative set of measures uses LOCAL_DEPOSITS scaled by local economic activity, specifically the total number of employees in young firms in the county, YOUNG_FIRM_EMPLOYMENT. Intuitively this proxy measures the deposits available to fund employment at new, young firms. Local banks can be defined as CONCENTRATED_DEPOSITS or BANK_CLASSIFICATION. These proxies for local finance are:

$$\text{LOCAL\_FINANCE}_5 = (\text{LOCAL\_DEPOSITS}_{CONCENTRATED\_DEPOSITS})/(\text{YOUNG\_FIRM\_EMPLOYMENT}).$$

$$\text{LOCAL\_FINANCE}_6 = (\text{LOCAL\_DEPOSITS}_{BANK\_CLASSIFICATION})/(\text{YOUNG\_FIRM\_EMPLOYMENT}).$$

The final set of measures uses SBA loan data as proxies for financial access. To construct the first SBA-based measure, I define local deposits as the SBA weighted sum of all deposits weighted by the share of SBA loans at the branch's parent institution, LOCAL_SBA_DEPOSITS. I calculate the local finance proxy as the weighted deposits scaled by the total value of SBA loans in a county, $\text{TOTAL\_SBA\_LOANS}_{VALUE}$:

LOCAL_FINANCE_7 =

(LOCAL_SBA_DEPOSITS)/(TOTAL_SBA_LOANS$_{VALUE}$).

I construct a second SBA-based proxy that combines SBA lending with the deposits-based measure. The ratio is the total deposits at local banks in a county scaled by the total number of SBA loans in the county

LOCAL_FINANCE_8 =

(LOCAL_DEPOSITS$_{CONCENTRATED_DEPOSITS}$)/(TOTAL_SBA_LOANS$_{COUNT}$).

I construct a third measure as the sum of the number of SBA loans at local institutions, where local institutions are defined by SBA lending, scaled by total number of SBA loans in the county:

LOCAL_FINANCE_9 =

(LOCAL_SBA_LOANS$_{COUNT}$)/(TOTAL_SBA_LOANS$_{COUNT}$).

A.4 Financial Supply

In this subsection, I address the question of whether local finance is merely a proxy for total finance and whether finance alone creates service jobs. Specifically, I examine whether financial supply creates service jobs using a plausibly exogenous source of variation in the diffusion of local bank finance across counties. The test disentangles the effects of total finance available (i.e., a constrained financial system) on service employment growth from the effects of the distribution mechanism of finance (i.e., local or national banks) on service employment growth.

The boom in oil and natural gas production in the U.S. created positive financial shocks in non-boom counties (i.e., those outside of a 100-mile radius of the booms).[2]

[2]In a spatial analysis, Feyrer et al. (2017) show that the boom shocked income and employment for distances of up to 100 miles.

Gilje et al. (2016) demonstrate that oil discoveries led to deposit windfalls at bank branches exposed to shale oil production booms.

I use the data and definition of boom counties from Feyrer et al. (2017). Specifically, the data to build this definition come from two datasets, DrillingInfo and Energy Information Administration (EIA), which quantify and price oil production. I define boom counties as those with new production from fracking based on data from DrillingInfo. I define banks with oil exposure as banks that have at least one branch in an oil boom county. Exogenous shocks to financial supply (FRACKING_DEPOSITS) come from branches of banks with oil-boom exposure, located in non-boom counties. I study employment growth in one of five industries: financial, business, and professional services industry (PROFESSIONAL), non-alcohol retail industry (NON_ALCOHOL_RETAIL), other services industry (OTHER_SERVICES), the food services and alcohol industry (FOOD_SERVICES_AND_ALCOHOL), and total employment across all industries (TOTAL). I estimate a model that compares industry employment growth in non-boom counties with financial shocks to non-boom counties without financial shocks. The regression model is:

$$\text{Log}\,(E_{it}) \;=\; \beta_1 \text{FRACKING\_DEPOSITS}_{it} + \delta_t + \gamma_i + \varepsilon_{it}. \tag{1}$$

The key independent variable, $\text{FRACKING\_DEPOSITS}_{it}$, measures the deposits of bank branches with oil boom exposure divided by total deposits in a county. $\text{Log}\,(E_{it})$ is employment growth in one of five industries listed above. I control for county fixed effects, year fixed effects, and cluster standard errors by county.

Internet Appendix Table A.6 reports the results using the sample of non-boom counties (NO_OIL) to avoid measuring the direct effects of the oil boom on employment growth. Columns 1–4 suggest that a financial shock causes an increase in TOTAL

employment and financial, business, and professional services, PROFESSIONAL. Columns 5–8 show that the financial shock alone does not cause employment growth in FOOD_SERVICES_AND_ALCOHOL (column 5). Columns 6–8 report the results using a restricted sample of counties that did not have an oil boom (NO_OIL) and had an alcohol legalization shock (TRANSITION). When limited to TRANSITION counties (columns 6–8), the results show that the financial shock does not drive employment growth in FOOD_SERVICES_AND_ALCOHOL. Column 7 includes the interaction between the financial shock and the period following alcohol legalization ($\text{POST}_{it} \times$ FRACKING_DEPOSITS) and shows that the positive financial shocks did not create employment growth following alcohol legalization events. Column 8 includes the interaction of local finance with alcohol legalization events ($\text{POST}_{it} \times$ LOCAL_FINANCE_{i}). The positive and statistically significant coefficient on this interaction term suggests that employment growth in FOOD_SERVICES_AND_ALCOHOL relies on the supply of local finance. Overall, these results suggest that injecting financial supply into the banking system is not enough to promote service employment growth directly.

A.5 Labor Demand Shocks

The effect of local finance on employment growth may not be exclusive to service-based firms. Local finance is valuable to service firms because it can resolve information asymmetry and relieve financial constraints. However, local finance may operate through alternative channels and therefore may be important for firms in general. In this section, I examine whether local finance is essential to employment growth across different industries.

The boom in U.S. oil and natural gas production generated income and employment growth in counties with oil deposits (Feyrer et al. (2017)). New oil production shocked demand for local output across a range of industries. These shocks affect demand for

mining and transportation employment, which are directly related to the extraction process. They indirectly affect employment in sectors, such as service and construction, due to the local wealth shock and demand for local household consumption and investment (Feyrer et al. (2017)). I use these shocks to employment demand across a range of industries to identify the role that local finance plays in promoting employment growth.

The oil data come from DrillingInfo. Because coverage of these data begins in 2004, the dataset covers the years from 2004–2012 and includes monthly oil and natural gas production information for each oil well. Feyrer at al. (2017) include employment data for total employment, transportation, and construction. I add employment data for the alcohol, retail, and hospitality services industries (see Section IV.B) to the dataset.[3]

The identification strategy uses new production from the U.S. fracking boom as economic shocks to counties. I determine the economic impact of oil production on employment using this shock. These events should be exogenous shocks because new production of oil is a function of pre-existing geology and the development of new fracking technology. These changes should be independent of other shocks in the same county.

In the following analysis, the dependent variable is the one-year change in employment in a particular industry divided by the one-year lag in total employment in a county. Scaling by the one year lag addresses concerns that new money from oil production should affect areas with small populations differently that areas with large populations. For county i in year t, I estimate the following regression model:

[3]DrillingInfo and the Energy Information Administration (EIA) collect measures of total well production and the values of oil and natural gas extracted from wells. The definition of the value of new oil production is based on (1) the amount of oil produced and (2) the price of the oil. This defines the exogenous shock.

$$
\begin{aligned}
(2) \qquad \Delta E_{it} \;=\; & \beta_1 \text{NEW\_WELL\_VALUE}_{it} + \beta_2 \text{LOCAL\_FINANCE}_i + \\
& \beta_3 \text{NEW\_WELL\_VALUE}_{it} \times \text{LOCAL\_FINANCE}_i + \\
& \beta_4 \text{NEW\_WELL\_VALUE}_{it-1} + \delta_t + \gamma_i + \varepsilon_{it}.
\end{aligned}
$$

where the key independent variable, NEW_WELL_VALUE$_{it}$, is the total value of oil and natural gas extracted from wells that started producing in the current year measured in millions of dollars per capita. The model includes a control variable for the one year lag of new production to account for dynamic effects of oil production over time. I augment the model to compare employment growth in boom counties with high local finance (i.e., LOCAL_FINANCE$_i$) to employment growth in boom counties with low local finance following the oil demand shock, NEW_WELL_VALUE$_{it}$ $\times$ LOCAL_FINANCE$_i$. I remove alcohol transition counties from the analysis to ensure that the alcohol shock does not confound identification. The model includes county fixed effects, year fixed effects, and the one-year lag of new production as an additional control. Standard errors are clustered by county and year to control for within geography and within time correlation of new production.

In Internet Appendix Table A.8, columns 1, 3, and 5, the coefficient β_1 indicates that new production from the fracking boom increases TOTAL employment (column 1) and TRANSPORTATION employment (column 3). Column 5 shows that the shock does not expand SERVICE employment. The coefficient of interest, β_3, measures how LOCAL_FINANCE$_i$ influences employment growth (columns 2, 4, and 6). Local finance is not necessary for employment growth in collateral intensive industries, e.g., construction and transportation (column 4). In fact, column 6 reports that local finance may drive employment growth *only* in the SERVICE industry. These results suggest that

local finance plays a unique role for service-based firms.

Table A.1: Service Occupation Employment: Alternative Measure of LOCAL_FINANCE

Table A.1 reports regression results of a model measuring the effect of historical routine employment share on the growth of service employment between 1980 and 2005 within commuting zones. The specification is: Δ SERVICE _OCCUPATIONS$_{jst}$ = β_1 ROUTINE_OCCUPATIONS$_{jt_0}$+ β_2 LOCAL_DEPOSITS$_{jt}$ + β_3 LOCAL_DEPOSITS$_{jt}$ $\times$ ROUTINE_OCCUPATIONS$_{jt_0}$ + β_4 X_{jt_0} + δ_t + γ_s + ε_{jst} where Δ SERVICE _OCCUPATIONS$_{jst}$ is the growth in service occupations in commuting zone j in state s between years t and $t+1$. ROUTINE_OCCUPATIONS$_{jt_0}$ is the routine share of total labor hours as of 1980 in commuting zone j. δ_t is the time period indicator variables for the years 1980, 1990, and 2000. γ_s is the state indicator variables for each state. LOCAL_DEPOSITS$_{jt}$ is an indicator variable equal to one if commuting zone j is in the top tercile of the local fraction of bank deposits multiplied by per capita bank deposits in year t and equal to zero, otherwise. X_{jt} is a matrix of eight control variables for each commuting zone. The control variables are described in the text. Columns 1 and 2 report the replication of the Autor and Dorn (2013) regression results. Columns 3 and 4 report the analysis that includes the local access to finance variable. Heteroskedasticity robust standard errors, clustered by commuting zone, are reported in parentheses. ***, **, and * denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Replication		Local Finance Analysis	
	1	2	3	4
ROUTINE_OCCUPATIONS$_{jt_0}$	0.105***	0.111***	0.030	0.049
	(0.020)	(0.029)	(0.030)	(0.039)
LOCAL_DEPOSITS$_{jt}$			-0.028**	-0.020*
			(0.013)	(0.012)
LOCAL_DEPOSITS$_{jt}$ x ROUTINE_OCCUPATIONS$_{jt_0}$			0.103**	0.072*
			(0.041)	(0.037)
COLLEGE/NON_COLLEGE_POPULATION		0.011**		0.012**
		(0.005)		(0.005)
IMMIGRANT_POPULATION/NON_COLLEGE_POPULATION		0.025**		0.022*
		(0.010)		(0.011)
MANUFACTURING/TOTAL_EMPLOYMENT		-0.036***		-0.033***
		(0.012)		(0.012)
UNEMPLOYMENT_RATE		-0.313***		-0.289***
		(0.070)		(0.071)
FEMALE_EMPLOYMENT/POPULATION		-0.200***		-0.194***
		(0.031)		(0.031)
AGE_65+/POPULATION		-0.061**		-0.052*
		(0.029)		(0.029)
SHARE_WORKERS_WITH_WAGE(t) < MIN_WAGE(t+1)		-0.197***		-0.197***
		(0.036)		(0.036)
PER_CAPITA_INCOME (top tercile)				0.002
				(0.002)
R-squared	0.179	0.265	0.187	0.268
Number of Observations	2,166	2,166	2,166	2,166
State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Table A.2: Summary Statistics: Autor and Dorn (2013) Replication

Table A.2 reports summary statistics of the routine employment share, service employment growth, and the control variables used in regression analysis (Section II.B, equation (1)). Δ SERVICE _OCCUPATIONS$_{jst}$ denotes service occupation growth in commuter zone j in state s in year t. ROUTINE_OCCUPATIONS$_{jt_0}$ is the routine share of total labor hours as of 1980 in commuter zone j. LOCAL_DEPOSITS$_{jt}$ is an indicator variable equal to one if commuter zone j is in the top tercile of per capita bank deposits in year t and equal to zero, otherwise. The table includes eight control variables for each commuter zone. Control variables for the demand for service occupations include: relative supply of college educated individuals (COLLEGE/NON_COLLEGE_POPULATION), female labor force participation rate (FEMALE_EMPLOYMENT/POPULATION), and elderly population (AGE_65+/POPULATION). The stock of foreign born residents (IMMIGRANT_POPULATION/NON_COLLEGE_POPULATION) controls for service occupation supply shifts. Controls for local labor conditions include: unemployment rate (UNEMPLOYMENT_RATE) and share of employment in manufacturing (MANUFACTURING/TOTAL_EMPLOYMENT). The role of wages is measured as the proportion of workers at the start of the decade who are paid less than next decades minimum wage (SHARE_WORKERS_WITH_WAGE(t) $<$ MIN_WAGE(t+1)).

	Mean	Standard Deviation
LOCAL_DEPOSITS$_{jt}$	0.327	0.469
Δ SERVICE _OCCUPATIONS$_{jst}$	0.013	0.031
ROUTINE_OCCUPATIONS$_{jt_0}$	0.255	0.061
COLLEGE/NON_COLLEGE_POPULATION	0.565	0.362
IMMIGRANT_POPULATION/NON_COLLEGE_POPULATION	0.044	0.062
MANUFACTURING/TOTAL_EMPLOYMENT	0.184	0.103
UNEMPLOYMENT_RATE	0.052	0.023
FEMALE_EMPLOYMENT/POPULATION	0.497	0.148
AGE_65+/POPULATION	0.121	0.035
SHARE_WORKERS_WITH_WAGE(t) $<$ MIN_WAGE(t+1)	0.096	0.043

Table A.3: Effects of Local Finance on Employment Growth: Alternative Measures of Local Finance

Table A.3 reports estimates of the effect of local finance on food services and alcohol employment growth in the sample of transition counties based on the following difference-in-differences model: Log (E_{it}) = β_1 POST_{it} $\times$ LOCAL_FINANCE_i + β_2 POST_{it} + β_3 LOCAL_FINANCE_i + β_4 X_{it} + δ_t + γ_i + ε_{it} where E_{it} is the employment growth in the "Food Services and Alcohol" industry in county i at date t. LOCAL_FINANCE_i is a dummy variable equal to one if the proxy for access to local finance in a county falls in the top tercile across all counties in a given year, and zero otherwise. Proxies for local access to finance are based on bank classifications (columns 1–3), deposit concentration (columns 4–5), and Small Business Administration (SBA) lending (columns 6–8). Full variable definitions are provided in the text. POST_{it} is a dummy variable equal to one in the years following alcohol legalization in county i in year t, and zero otherwise. The coefficient on the interaction of POST_{it} $\times$ LOCAL_FINANCE_i measures the differential effect of local access to finance on the employment growth following the alcohol legalization event. Specifications include county-level controls: POPULATION, PER_CAPITA_INCOME, BANK_DEPOSITS_PER_CAPITA, UNEMPLOYMENT_RATE, HIGH_SCHOOL_ED_POPULATION_SHARE, URBAN_POPULATION_SHARE, and MALE_POPULATION_SHARE. Specifications include county and year fixed effects. Heteroskedasticity robust standard errors are clustered at the county level and reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	Bank Classification			Concentrated Deposits		Small Business Administration Lending		
	1	2	3	4	5	6	7	8
POST_{it} $\times$ LOCAL_FINANCE_i	0.181**	0.153***	0.509***	0.166***	0.505***	562.818*	0.069	0.385*
	(0.075)	(0.037)	(0.098)	(0.032)	(0.113)	(299.147)	(0.062)	(0.205)
POST_{it}	-0.054	-0.044	-0.013	-0.071	-0.055	-0.113	-0.138	-0.186
	(0.064)	(0.054)	(0.049)	(0.057)	(0.055)	(0.104)	(0.114)	(0.121)
Log(PER_CAPITA_INCOME)	1.228***	1.095***	1.039***	0.823**	0.949***	1.562	1.586	1.024
	(0.378)	(0.353)	(0.341)	(0.326)	(0.356)	(1.062)	(0.960)	(0.959)
Log(POPULATION)	0.522	0.810	1.121	2.006**	2.286**	1.396	0.989	3.015*
	(0.967)	(0.858)	(0.801)	(0.993)	(0.990)	(1.650)	(1.707)	(1.513)
DEPOSITS_PER_CAPITA	0.009	0.005	0.001	0.004	-0.008	0.002	0.027	0.036**
	(0.006)	(0.008)	(0.005)	(0.013)	(0.019)	(0.024)	(0.018)	(0.015)
HIGH_SCHOOL_ED_POPULATION_SHARE	-0.503	-0.534	-0.660	-2.064	-2.162*	1.309	0.977	-1.654
	(1.387)	(1.438)	(1.406)	(1.320)	(1.257)	(1.814)	(1.806)	(1.321)
URBAN_POPULATION_SHARE	-0.439	-0.380	-0.367	-0.083	0.053	0.038	0.235	-2.227
	(0.504)	(0.501)	(0.485)	(0.824)	(0.800)	(1.410)	(1.422)	(1.780)
MALE_POPULATION_SHARE	6.920***	7.132***	9.050***	7.671***	9.797***	16.038	-5.076	93.909
	(2.162)	(2.008)	(1.582)	(2.189)	(1.725)	(49.753)	(49.841)	(58.125)
UNEMPLOYMENT_RATE	-0.022**	-0.021**	-0.027**	-0.012	-0.014	-0.030	-0.022	0.002
	(0.010)	(0.010)	(0.010)	(0.012)	(0.012)	(0.019)	(0.017)	(0.021)
R-squared	0.189	0.199	0.227	0.238	0.254	0.243	0.226	0.320
Number of Observations	414	414	411	353	350	173	174	138
Number of Clusters	86	86	86	80	80	55	55	48
County FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Finance Proxy	FINANCE_2	FINANCE_4	FINANCE_6	FINANCE_3	FINANCE_5	FINANCE_7	FINANCE_8	FINANCE_9

Table A.4: Time Series Effects of Local Finance on Employment Growth

Table A.4 reports time-series effects of access to local finance on employment growth following alcohol legalization in transition counties. The dependent variable is the log of employment in the "Food Services and Alcohol" industry. LOCAL_FINANCE$_i$ is a dummy variable equal to one if the local fraction of bank deposits in a county falls in the top tercile of all county-level local fraction of bank deposits prior to alcohol legalization, and zero otherwise. The interactions (LOCAL_FINANCE$_i$ $\times$ (T-5), LOCAL_FINANCE$_i$ $\times$ (T-4), etc.) measure the change in employment growth in areas with higher local finance compared to lower local finance relative to the event year T. Specifications include county-level controls: POPULATION, PER_CAPITA_INCOME, BANK_DEPOSITS_PER_CAPITA, UNEMPLOYMENT_RATE, HIGH_SCHOOL_ED_POPULATION_SHARE, URBAN_POPULATION_SHARE, and MALE_POPULATION_SHARE. The specification includes county and year fixed effects. Heteroskedasticity robust standard errors are clustered at the county level and reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	Food Services and Alcohol Employment
	1
LOCAL_FINANCE$_i$ $\times$ (T-5)	0.039
	(0.090)
LOCAL_FINANCE$_i$ $\times$ (T-4)	-0.058
	(0.075)
LOCAL_FINANCE$_i$ $\times$ (T-3)	-0.020
	(0.072)
LOCAL_FINANCE$_i$ $\times$ (T-2)	0.043
	(0.069)
LOCAL_FINANCE$_i$ $\times$ (T-1)	0.032
	(0.042)
LOCAL_FINANCE$_i$ $\times$ (T+1)	0.122**
	(0.050)
LOCAL_FINANCE$_i$ $\times$ (T+2)	0.177**
	(0.079)
LOCAL_FINANCE$_i$ $\times$ (T+3)	0.170
	(0.121)
LOCAL_FINANCE$_i$ $\times$ (T+4)	0.185
	(0.128)
LOCAL_FINANCE$_i$ $\times$ (T+5)	0.025
	(0.123)
Log(PER_CAPITA_INCOME)	0.114
	(0.238)
Log(POPULATION)	1.042*
	(0.604)
DEPOSITS_PER_CAPITA	0.031*
	(0.018)
HIGH_SCHOOL_ED_POPULATION_SHARE	-1.398*
	(0.816)
URBAN_POPULATION_SHARE	0.133
	(0.267)
MALE_POPULATION_SHARE	2.222
	(1.842)
UNEMPLOYMENT_RATE	-0.017**
	(0.008)
R-squared	0.183
Number of Observations	842
Number of Clusters	89
County FE	Yes
Year FE	Yes

Table A.5: Employment Growth by Firm Age – Time Trends

Table A.5 reports the treatment effects of alcohol legalization on employment growth across firm ages in the following difference-in-differences model: Log (E_{it}) = β_1 POST$_{it}$ $\times$ LOCAL_FINANCE$_i$ + β_2 POST$_{it}$ + β_3 LOCAL_FINANCE$_i$+ β_4 X_{it} + δ_t + γ_i + ε_{it} where Log (E_{it}) denotes the natural log of employment in the "Food Services and Alcohol" industry and POST$_{it}$ is a dummy variable equal to one in the years following the legalization of alcohol in county i in year t, and zero otherwise. LOCAL_FINANCE$_i$ is a dummy variable equal to one if the local fraction of bank deposits in a county falls in the top tercile across all counties in a given year and zero, otherwise. The analysis studies firm age cohorts in event time. Columns 1–3, 4–6, and 7–9 cover the periods one, two, and three years following a legalization event, respectively. Each period covers firms of age groups (0-1), (2-3), and (4 -11+). The regression specifications include county-level controls: POPULATION, PER_CAPITA_INCOME, BANK_DEPOSITS_PER_CAPITA, UNEMPLOYMENT_RATE, HIGH_SCHOOL_ED_POPULATION_SHARE, URBAN_POPULATION_SHARE, and MALE_POPULATION_SHARE. Specifications include county and year-quarter fixed effects. Heteroskedasticity robust standard errors are clustered at the county level and reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	FIRM_AGE (1 Year Post)			FIRM_AGE (2 Years Post)			FIRM_AGE (3 Years Post)		
	1	2	3	4	5	6	7	8	9
	0-1	2-3	4+	0-1	2-3	4+	0-1	2-3	4+
POST$_{it}$	0.036	0.028	-0.022	0.019	-0.050	0.008	0.025	-0.130	0.003
	(0.177)	(0.218)	(0.040)	(0.154)	(0.214)	(0.036)	(0.142)	(0.219)	(0.038)
POST$_{it}$ $\times$ LOCAL_FINANCE$_i$	-0.010	0.252	0.006	-0.239	0.363**	0.029	-0.155	0.320**	0.021
	(0.259)	(0.204)	(0.058)	(0.218)	(0.162)	(0.056)	(0.199)	(0.157)	(0.058)
Log(PER_CAPITA_INCOME)	0.433	1.268	-0.373	1.160	1.982	-0.544*	-0.152	1.585*	-0.488
	(1.707)	(1.616)	(0.282)	(1.717)	(1.209)	(0.306)	(1.390)	(0.890)	(0.347)
Log(POPULATION)	2.872	5.995	1.053*	1.708	2.651	1.137**	2.541	3.893	0.859
	(2.637)	(3.706)	(0.622)	(2.417)	(2.890)	(0.565)	(2.117)	(2.454)	(0.782)
DEPOSITS_PER_CAPITA	-0.007	0.072	0.057	0.064	0.075	0.022	0.061	0.062	0.011
	(0.136)	(0.125)	(0.035)	(0.109)	(0.078)	(0.026)	(0.089)	(0.070)	(0.023)
HIGH_SCHOOL_ED_POPULATION_SHARE	7.103*	-0.968	0.964	3.603	-1.123	2.118**	1.684	3.459	1.905*
	(3.865)	(3.629)	(0.722)	(3.185)	(3.245)	(0.956)	(2.985)	(3.542)	(1.043)
URBAN_POPULATION_SHARE	2.588	10.944***	-1.634***	-0.361	10.898***	-1.223**	-9.559**	10.130***	-1.003
	(3.044)	(2.711)	(0.301)	(4.411)	(2.828)	(0.546)	(4.663)	(2.457)	(0.844)
MALE_POPULATION_SHARE	-173.590**	33.746	9.209	-206.490*	13.056	-2.452	35.902	1.391	-4.989***
	(83.008)	(61.866)	(8.222)	(121.163)	(8.909)	(1.817)	(23.540)	(6.748)	(1.470)
UNEMPLOYMENT_RATE	-0.055	-0.027	-0.012*	-0.048	-0.074	-0.010	-0.032	-0.083*	-0.012
	(0.039)	(0.042)	(0.007)	(0.033)	(0.047)	(0.008)	(0.031)	(0.046)	(0.010)
R-squared	0.123	0.154	0.211	0.137	0.133	0.218	0.118	0.122	0.159
Number of Observations	912	770	1,069	1,181	1,012	1,394	1,415	1,221	1,668
Number of Clusters	82	78	86	83	80	86	83	81	86
County FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table A.6: Food Services and Alcohol Employment Growth in Counties with Financial Shocks

Table A.6 presents the results of an analysis that measures the effect of financial shocks on employment growth in the following regression specification: $\text{Log}(E_{it}) = \beta_1$ FRACKING_DEPOSITS$_{it}$ + $\delta_t + \gamma_i$ + ε_{it} where E_{it} denotes the natural log of employment and FRACKING_DEPOSITS$_{it}$ measures the fraction of total deposits in the county that are held at banks with branches in boom counties. A high value for FRACKING_DEPOSITS$_{it}$ denotes counties that have a large portion of deposits held at banks with an oil boom shock at least 100 miles away from the county being analyzed. The analysis includes counties without direct oil boom shocks (NO_OIL). POST$_{it}$ is a dummy variable equal to one in the years following the legalization of alcohol in county i in year t, and zero otherwise. LOCAL_FINANCE$_{it}$ is a dummy variable equal to one if the local fraction of bank deposits in a county falls in the top tercile across all counties in a given year and zero, otherwise. Each column reports employment growth in a sector of the local economy. Columns 1–4 report results for employment in the following categories: TOTAL, PROFESSIONAL, which includes business, finance, professional, and hospitality, NON_ALCOHOL_RETAIL, and OTHER_SERVICE sectors. Columns 5–8 report the effects of the financial shock on employment in FOOD_SERVICES_AND_ALCOHOL industry. Columns 6–8 report these effects for the subset of counties that also experienced alcohol shocks (TRANSITION). The regression specifications include county-level controls defined in the text. The specification includes county and year fixed effects. Heteroskedasticity robust standard errors are clustered at the county level and reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	TOTAL	PROFESSIONAL	NON_ALCOHOL_RETAIL	OTHER_SERVICES	FOOD_SERVICES_AND_ALCOHOL			
	1	2	3	4	5	6	7	8
FRACKING_DEPOSITS	0.007*	0.023*	0.007	-0.068	-0.009	0.053	0.139	0.140
	(0.004)	(0.012)	(0.039)	(0.050)	(0.045)	(0.080)	(0.098)	(0.113)
POST$_{it}$							0.143	0.074
							(0.089)	(0.083)
POST$_{it}$ × FRACKING_DEPOSITS							-0.145	-0.079
							(0.129)	(0.108)
LOCAL_FINANCE$_i$								-0.053
								(0.185)
POST$_{it}$ × LOCAL_FINANCE$_i$								0.259*
								(0.141)
R-squared	0.106	0.006	0.075	0.015	0.050	0.063	0.082	0.132
Number of Observations	23,242	23,242	3,224	3,188	3,246	286	286	286
Number of Clusters	2,113	2,113	374	373	374	44	44	44
County FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County Sample	NO_OIL	NO_OIL	NO_OIL	NO_OIL	NO_OIL	NO_OIL	NO_OIL	NO_OIL
Subsample						TRANSITION	TRANSITION	TRANSITION

Table A.7: Employment Shifts in Counties with Financial Shocks from Branch Closures

Table A.7 presents the results of an analysis that measures the effect of financial shocks on employment growth in the following regression specification: Log (E_{it}) = β_1 POST$_{it}$ + β_2 EVENT_COUNTY$_i$ + $\delta_t + \gamma_i + \varepsilon_{it}$ where Log (E_{it}) denotes employment growth in industries following branch closures. POST$_{it}$ denotes the period following the events and EVENT_COUNTY$_i$ is an indicator equal to one if a county received a branch closure shock at some point during the sample period. Industries are grouped into MANUAL and ROUTINE-intensive groups, which are defined in the text. The county-level outcomes are TOTAL industry employment, MANUAL-intensive industry employment, ROUTINE-intensive industry employment, MANUAL_TOTAL employment, and ROUTINE_TOTAL employment. The specifications include county and year fixed effects. Heteroskedasticity robust standard errors are clustered at the county level and reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	TOTAL	MANUAL	ROUTINE	MANUAL_TOTAL	ROUTINE_TOTAL
	1	2	3	4	5
POST	-0.121**	-0.164**	-0.130**	-0.043**	-0.009
	(0.051)	(0.069)	(0.055)	(0.018)	(0.006)
EVENT_COUNTY	0.011	-0.009	0.037*	-0.020*	0.026
	(0.014)	(0.017)	(0.022)	(0.011)	(0.016)
R-squared	0.037	0.037	0.036	0.044	0.205
Number of Observations	1,304	1,304	1,304	1,304	1,304
Number of Clusters	309	309	309	309	309
County FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes

Table A.8: Employment Growth in Counties with Alternative Demand Shocks

Table A.8 presents the results of an analysis that measures the effect of demand shocks on employment growth in the oil and gas industry using the following difference-in-differences model: $\Delta(E_{it})$= β_1 NEW_WELL_VALUE$_{it}$ + β_2 LOCAL_FINANCE$_i$ + β_3 NEW_WELL_VALUE$_{it}$ $\times$ LOCAL_FINANCE$_i$ + β_4 NEW_WELL_VALUE$_{it-1}$ $\delta_t + \gamma_i + \varepsilon_{it}$ where $\Delta(E_{it})$ denotes the one-year change in employment and NEW_WELL_VALUE$_{it}$ measures the value of the new wells discovered in county i in year t. The coefficient on the interaction of NEW_WELL_VALUE$_{it}$ $\times$ LOCAL_FINANCE$_i$ measures the effect of demand shocks in the oil industry on the employment growth in counties with more local finance compared to counties with less local finance. Fracking boom counties experienced a large increase in the value of new oil wells between 2004 and 2012. The LOCAL_FINANCE$_i$ is a dummy variable equal to one if the local fraction of bank deposits in a county falls in the top tercile across all counties in a given year and zero, otherwise. Employment growth is employment in the following sectors: CONSTRUCTION, TRANSPORTATION, SERVICES, and TOTAL county-level employment across all sectors. The specification includes county and year fixed effects. Heteroskedasticity robust standard errors are clustered at the county level and reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	TOTAL		TRANSPORT		CONSTRUCTION		SERVICES	
	1	2	3	4	5	6	7	8
NEW_WELL_VALUE$_{it}$ (Mill)	0.445***	0.447***	0.133***	0.117**	0.057	0.061	0.101	-0.015
	(3.94)	(3.53)	(3.30)	(2.57)	(1.56)	(1.26)	(0.85)	(-0.17)
LOCAL_FINANCE$_i$		0.002		-0.000		-0.000		-0.000
		(1.45)		(-0.77)		(-0.19)		(-0.16)
NEW_WELL_VALUE$_{it}$ X LOCAL_FINANCE$_i$		-0.004		0.028		-0.007		0.196**
		(-0.04)		(0.60)		(-0.16)		(2.49)
R-squared	0.201	0.206	0.095	0.096	0.041	0.042	0.006	0.008
Number of Observations	15,379	15,275	15,379	15,275	15,379	15,275	15,379	15,275
Number of Clusters	2,197	2,183	2,197	2,183	2,197	2,183	2,197	2,183
County FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster Variable	County	County	County	County	County	County	County	County

Table A.9: Effects of Local Finance on Employment Growth: Cross-Industry Analysis

Table A.9 reports estimates of the effect of alcohol legalization on employment growth in the the food services and alcohol industry in excess of employment growth that occurs in an alternative industry using the following triple differences model: $\text{Log}(E_{it}) = \beta_1 \text{ POST}_{it} \times \text{LOCAL\_FINANCE}_i \times \text{ALCOHOL\_INDUSTRY}_{it} + \beta_2 \text{ ALCOHOL\_INDUSTRY}_{it} \times \text{POST}_{it} + \beta_3 \text{ ALCOHOL\_INDUSTRY}_{it} \times \text{LOCAL\_FINANCE}_i + \beta_4 \text{ POST}_{it} \times \text{LOCAL\_FINANCE}_i + \beta_5 \text{ POST}_{it} + \beta_6 \text{ LOCAL\_FINANCE}_i + \beta_7 X_{it} + \delta_t + \gamma_i + \varepsilon_{it}$ where Log (E_{it}) denotes industry employment. In column 1 industry employment is total employment in the food service and drinking places and other retail (OTHER_RETAIL) industries and in column 2 industry employment is total employment in the food service and drinking places and other service (OTHER_SERVICE) industries. ALCOHOL_INDUSTRY$_{it}$ is an indicator variable for employment in the food service and drinking places industry. The regression specifications include county-level controls: POPULATION, PER_CAPITA_INCOME, BANK_DEPOSITS_PER_CAPITA, UNEMPLOYMENT_RATE, HIGH_SCHOOL_ED_POPULATION_SHARE, URBAN_POPULATION_SHARE, and MALE_POPULATION_SHARE. The specification includes county and year fixed effects. Heteroskedasticity robust standard errors are clustered at the county level and reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	ALCOHOL_AND_OTHER_RETAIL	ALCOHOL_AND_OTHER_SERVICE
	1	2
ALCOHOL_INDUSTRY × POST$_{it}$ × LOCAL_FINANCE$_i$	0.111*	0.110*
	(0.063)	(0.058)
ALCOHOL_INDUSTRY × POST$_{it}$	0.035	-0.007
	(0.038)	(0.040)
Log(PER_CAPITA_INCOME)	0.444	0.373
	(0.273)	(0.317)
Log(POPULATION)	0.534	1.080
	(0.607)	(0.824)
DEPOSITS_PER_CAPITA	0.049***	0.017
	(0.010)	(0.026)
HIGH_SCHOOL_ED_POPULATION_SHARE	-0.730	-0.904
	(0.849)	(0.883)
URBAN_POPULATION_SHARE	-0.842*	-0.622
	(0.437)	(0.496)
MALE_POPULATION_SHARE	-0.581	4.311**
	(2.182)	(2.168)
UNEMPLOYMENT_RATE	-0.015*	-0.016
	(0.008)	(0.013)
R-squared	0.128	0.091
Number of Observations	861	868
Number of Clusters	89	89
County FE	Yes	Yes
Year FE	Yes	Yes