Evaluating State and Local Business Incentives

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Motivation

- State and local governments spend billions of dollars each year on tax incentives and subsidies to attract and retain firms (Bartik, 2017, Slattery, 2019)
- Incentive policies are highly controversial
  - Attracting industrial activity is key for local economic growth and prosperity
  - Others question incentive spending effectiveness and mounting costs
- Evaluating these incentives requires overcoming three challenges
  1. Data limitations: difficult to measure prevalence, size, and composition of incentives
  2. Lack of transparency: hard to determine selection process
  3. Do not observe how economic activity would have evolved in the absence of deals
- New data on incentives from Slattery (2019) enable us to make progress

This paper

1. Characterize these incentive policies
2. Describe the selection process that determines which places and firms give and receive incentives
3. Evaluate the economic consequences and discuss policy implications

Summary of Findings

1. Policy:
   - Average discretionary subsidy is \$153M for $\sim$1000 promised jobs. Approx 30 deals/year
   - In 2014, states spent \$5-\$216 per capita on incentives for firms via range of forms
2. Selection:
   - Often big, profitable firms in auto, aerospace, chemical mfg; tech; finance and oil
   - Firms accept deals from places that are richer, larger, and more urban
   - Poor places provide larger incentives and spend more per job
3. Impacts:
   - Comparing "winning" and runner-up locations, we find that average employment within the 3-digit industry of the deal increases by $\approx$ 1000 jobs
   - Little/weak evidence of spillovers and no impact on county-level economic growth

Outline

1. Firm-specific subsidies

2. State and local subsidies in general

3. Policy Discussion and Directions for Future Research

1. Firm-Specific Subsidies

Outline

1. Policy: what are firm-specific subsidies?
   - Example 2008 Volkswagen Deal
   - Comprehensive data on firm-specific subsidies
   - Typical deal characteristics
2. Selection
   - Which firms receive them?
   - Which places provide firm-specific subsidies?
   - Why do they provide firm-specific subsidies?
3. Impacts: what are the effects on employment and economic activity?
   - Approach: compare outcomes in winner versus runner up locations
   - Event study of 2008 Volkswagen Deal
   - Event study of all firm-specific subsidies

2008 Volkswagen Deal in Tennessee

"There's nothing quite like the automobile industry to bring in money, raise family incomes and bring in jobs"

- VW build new assembly plant in Chattanooga with 2,000 emps and $1B spending
- TN grants VW a subsidy worth **$558 million**
  - Local property tax abatements over 30 years ($200M)
  - Enhanced state job and investment tax credits over 20 years ($200M)
  - Property given to VW ($81M)
  - Worker training ($30M)
  - Highway and road construction ($43M) + Rail line upgrades ($3.5M)
- TN promises specialized tax credits for any neighboring suppliers
- Location decision was "truly a very close competition": the runner-up was a site annexed by Huntsville, AL, where the subsidy offer was at least **$386 million**
- TN projected VW would have $100M in annual payroll, help create 14,000 total jobs, and have a total economic benefit of $600M per year

Data on Firm-Specific Subsidies

- Slattery (2019) data include discretionary subsidies for firms from 2002-2016
  - All $5M+ deals in the Good Jobs First Subsidy Tracker
  - Keep if deal involves a discretionary program or mentions expansion/relocation
  - Full Sample: 535 establishments receiving discretionary subsidies over 2002-2017
  - Analysis Sample: 195 [219] establishments receiving discretionary subsidies over 2002-2012, whose runner-up county [state] is known and in the US
- The dataset includes firm name, location, industry, and deal specifics, like number of jobs promised, the runner-up location, and the terms of the subsidy deal
- Over 30% of the subsidy deals in the sample mention contributions to the subsidy package from local governments

Average Deal and Top Industries Receiving Subsidies

Industry (NAICS)	Subsidy ($ M) Mean	Subsidy ($ M) Median	# Jobs Promised Mean	# Jobs Promised Median	Cost per Job ($) Mean	Cost per Job ($) Median	# of Deals
Full sample	153.0	57.2	1,888	850	388,602	59,268	535
Analysis sample	166.7	62.8	1,495	900	298,441	58,801	195
Manufacturing analysis sample	223.6	77.9	1,435	850	307,042	77,659	104
Automobile manuf. (3361)	302.9	140.9	4,850	2,000	121,824	63,367	56
Aerospace manuf. (3364)	338.5	94.9	4,989	1,100	87,321	58,800	29
Semiconductor/electronic manuf. (3344)	281.1	97.1	672	500	472,043	165,470	23
Financial activities (5239)	96.1	24.9	2,582	1,691	91,416	44,990	23
Pharmaceutical/medicine manuf. (3254)	61.3	46.7	601	500	100,246	72,202	21
Scientific R&D svc (5417)	122.7	61.1	568	548	354,408	114,540	20
Basic chemical manuf. (3251)	315.7	48.5	187	130	2,853,416	1,320,070	19
Rubber product manuf. (3262)	120.0	97.8	1,472	1,450	99,601	90,028	16
Information Technology (5415)	162.6	33.7	2,548	800	63,630	33,930	15
Data processing, hosting/related svc (5182)	159.9	106.9	463	100	1,571,001	1,064,117	15
Petroleum/coal manuf. (3241)	131.3	84.3	1,389	300	2,230,112	606,385	13

Notes: Tabulated using firm-level subsidy data from Slattery (2019). The full sample is 535 subsidy deals over the period of 2002-2017. The subsidy size is normalized to 2017 USD and a 10 year contract. The eleven top industries listed above make up 46% of the sample in terms of number of deals, and 65.5% of the sample in terms of dollars spent.

Firms Receiving Discretionary Subsidies Are Larger

	All Discretionary Subsidies (2002-2016)		
Jobs promised	# Subsidies	Estab Entry	% Coverage
1 - 99	36	8,971,339	0.00
100 - 249	44	26,126	0.17
250 - 499	77	4,251	1.81
500 - 999	140	1,419	9.87
1000+	238	639	37.25

- Most establishments that enter are small (1-99 employess)
- Firms are more likely to receive a discretionary subsidy when they build a new establishment with 1000+ employees

They also have Greater Employment, Profits, Revenue and Capital Stock

	All Compustat		Subsidized Firms		Subsidized Firms: Year of Deal	
	Mean	Median	Mean	Median	Mean	Median
Employees (1000s)	9.0	0.6	72.0	34.2	100.9	64.3
Capital Stock ($M)	1,514.4	28.2	12,098.3	3,004.6	18,865.2	7,720.1
Revenue ($M)	3,461.8	184.5	40,095.5	14,849.7	61,753.6	40,660.0
Gross Profit ($M)	1,139.8	67.5	13,239.3	4,007.9	20,743.3	8,969.8
Market Value ($M)	2,997.1	189.5	45,988.1	13,305.6	76,582.2	27,924.0
State Income Taxes ($M)	5.1	0.0	57.8	8.4	96.8	15.3
Total Income Taxes ($M)	99.7	1.0	1,239.1	275.5	1,790.3	627.2
Observations	107,219		2,470		313	

Notes: This table includes descriptive statistics on all firms included in Compustat, 2002-2014, and the Compustat firms that received discretionary subsidies. 61% of the firms receiving discretionary subsidies were found in Compustat. Dollars are measured in 2016 dollars.

Which Places Provide Firm-Specific Subsidies?

Unique counties in 2000

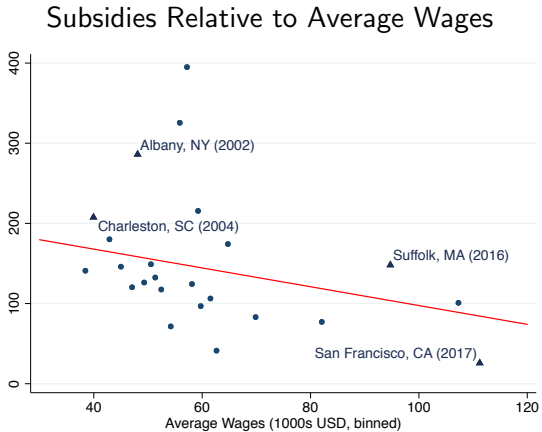
County:	Winner (Full)		Winner (Analysis)		Runner-up		Average		Pop > 100K	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Employment (K)	940.9	452.0	481.3	442.6	1,233.4	511.5	889.5	474.8	890.0	474.8
Population (K)	1,955.2	884.4	959.4	860.8	2,566.8	1,003.4	1,864.6	952.8	1,865.6	952.8
Average wages (K)	54.0	51.2	55.3	50.7	57.2	55.8	48.1	44.3	48.1	44.3
Population density	3,051.8	1,306.1	3,560.3	1,213.9	3,555.3	1,752.8	1,787.6	293.3	1,788.4	293.3
% emp in mfg.	15.0	14.5	14.0	13.8	14.1	13.6	16.3	15.8	16.3	15.8
% emp info & prof svcs.	27.6	28.6	29.3	29.2	30.1	30.0	22.9	22.9	22.9	22.9
% urban	92.4	97.1	93.5	96.6	95.0	98.0	79.0	87.1	79.0	87.1
% Bachelor's or more	27.6	25.9	29.6	27.0	29.6	27.4	24.4	23.8	24.3	23.8
% white	69.3	70.5	72.9	73.1	67.0	66.5	75.1	77.0	75.1	77.0
% Hispanic	16.7	10.5	13.8	8.2	18.2	15.6	12.6	5.5	12.6	5.5
% foreign-born	14.9	11.2	13.2	10.9	17.1	15.2	11.1	6.7	11.1	6.7
log housing units	12.8	12.8	12.6	12.8	13.2	13.0	12.9	12.9	12.9	12.9
log median house value	12.1	12.0	12.1	12.0	12.2	12.2	12.0	12.0	12.0	12.0
Wage bill (M)	54,293.2	24,556.1	28,296.1	22,566.0	72,235.9	31,827.1	48,123.2	25,198.2	48,147.4	25,198.2
Personal income (M)	92,498.7	41,676.7	50,526.2	41,523.0	123,204.7	62,813.7	83,593.5	49,370.4	83,634.9	49,370.4
Personal inc/capita (K)	48.3	43.8	50.9	46.0	51.0	48.2	43.6	41.1	43.6	41.1
Unemployment rate (%)	3.9	3.7	3.5	3.5	3.9	3.7	4.1	3.9	4.1	3.9
Observations	268		115		125		496		494	

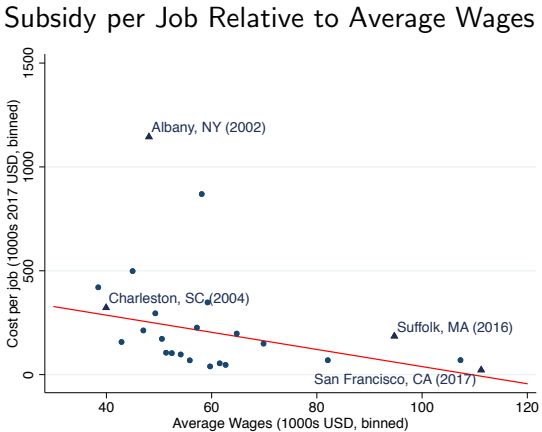
Notes: In the full sample, 268 unique counties win the 535 deals. In the analysis sample, 115 win 195 deals.

▸ Which states provide subsidies?

Firm-Specific Subsidies are Larger and More Generous in Lower Wage Locations

Full sample





Notes: Average wages are measured in the year of the firm-specific deal. Triangles in plot are individual data points; circles are binned data. Best fit line estimates are taken from population-weighted linear regression of y-axis variable onto x-axis variable.

Why Provide Firm-Specific Subsidies?

Glaeser (2001) provides 5 reasons:

1. Incentives might be bids that represent location-specific values of attracting a firm
2. Firms generate spillovers and agglomeration benefits for local producers, consumers, and suppliers
3. Places offer incentives to attract firms, which become future taxpayers
4. Firms may price discriminate to lower taxes for more mobile firms
5. Political economy considerations (signaling? salience? pork?), corruption/ capture

Why Provide Firm-Specific Subsidies?

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1. Incentives might be bids that represent location-specific values of attracting a firm
   - Large and profitable firms are more likely to receive subsidies
   - Hard to assess **location-specific** benefits. Slattery (2019) estimates state valuations
2. Firms generate spillovers and agglomeration benefits for local producers, consumers, and suppliers
   - Top industries are auto & aerospace mfg, chemical mfg, R&D, also finance
3. Places offer incentives to attract firms, which become future taxpayers
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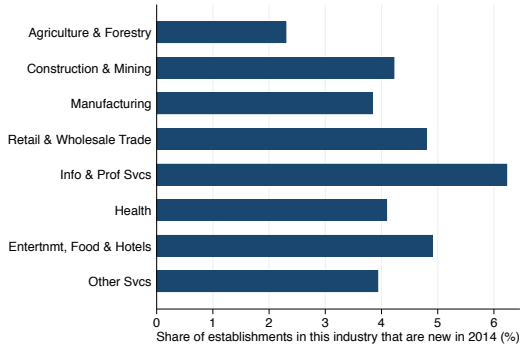
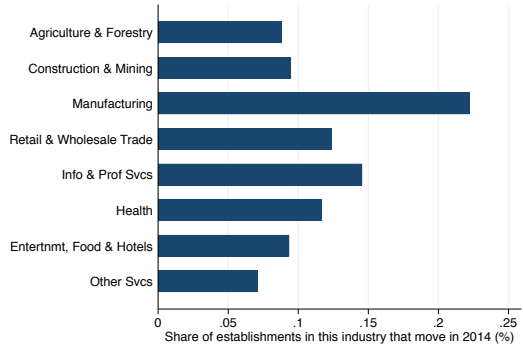
A. New Establishments



B. Movers



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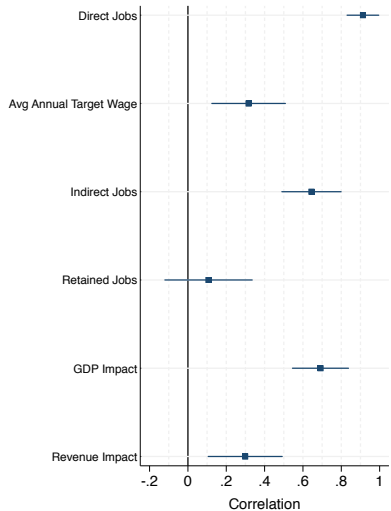
- See Chirinko and Wilson (2010) and Slattery (2019) for some evidence
- Very large spillovers required to rationalize multi-million dollar subsidy per job deals

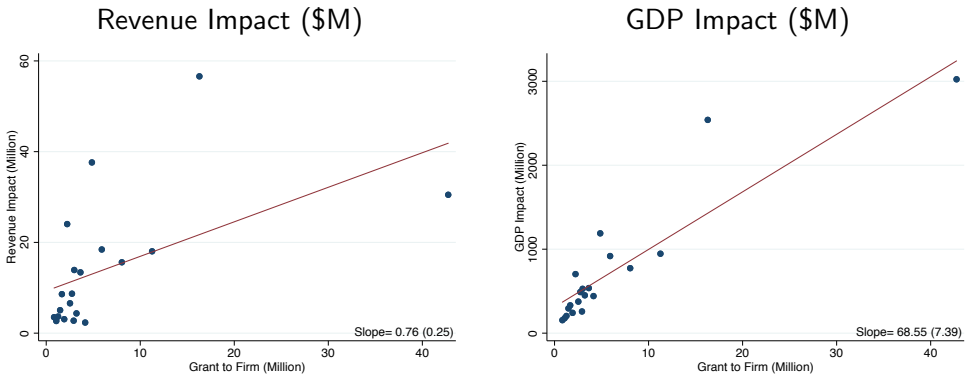
Determinants of Subsidy Size: Evidence from North Carolina

- Subsidy ↑ $29K per direct job
- Subsidy is higher for high-wage firms
- Subsidy ↑ $100 for $1 of average wages → going from wage $64K (mean) to $125K (P95) gives ≈ 2X subsidy
- NC predicts a multiplier of 1.4 for a median subsidy deal and 2.5 for every new skilled tradable job (close to local multiplier effects in Moretti (2010))

Correlates of Firm-Level Subsidies in NC



North Carolina's projected effects of firm subsidies on tax revenue and GDP



- NC projects recovering \$0.76 of tax revenue and \$68 of GDP per dollar of subsidy

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   - Approach: compare outcomes in winner versus runner up locations
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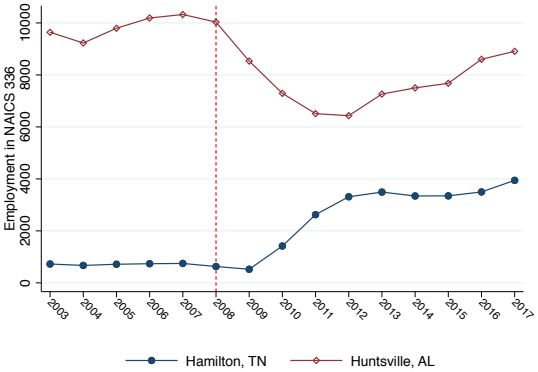
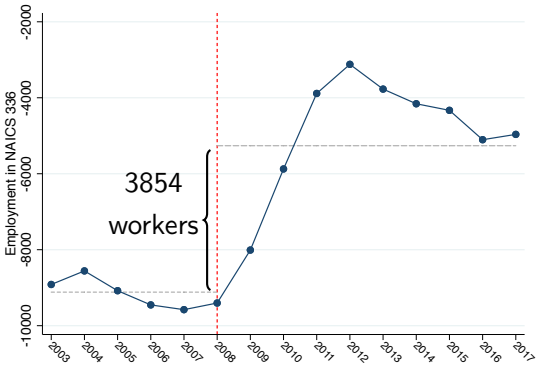
2008 Volkswagen Deal: winner vs runner up

Impact of the 2008 Volkswagen deal on local auto employment (NAICS 336)

Employment in Transportation Equipment Manufacturing



Differences in Employment Between Winner and Runner-up



▸ Deal-specific D-i-D Estimates of Firm-Specific Subsidies, by # Jobs Promised

Event Study Specification

Sample: Winner and runner-up counties listed in deals between 2002-2012, with non-missing and positive log employment, log population and log average wages 10 year before the deal.

For every period in event time $t \in [-5, 5]$, we run the following regression

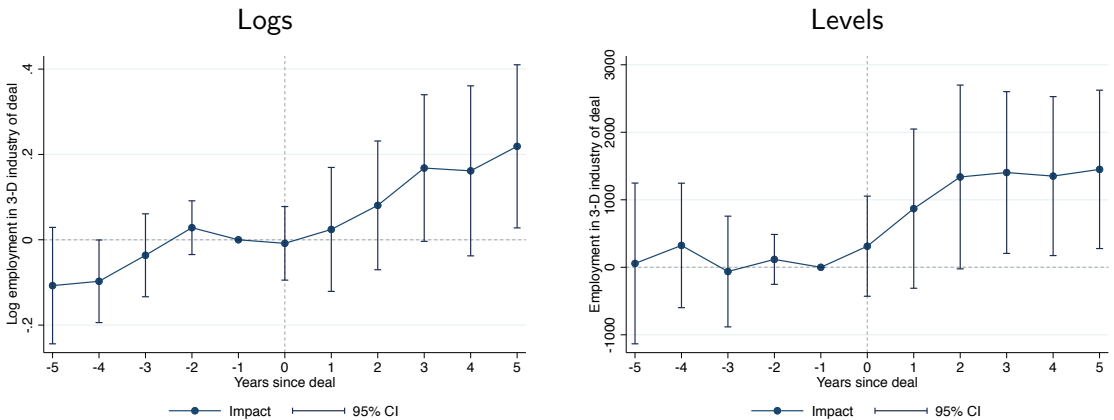
$$\ln Y_{it} = \alpha_t + \beta_t Winner_i + \mathbf{X_i}\gamma' + \delta_{dealyr} + \varepsilon_{it}$$

- $\ln Y_{it}$: log employment in the 3-D industry of the deal t periods relative to year of deal
- $Winner_i$ is an indicator for county i having won a discretionary deal, 0 for runner up
- α_t: controls for year fixed effects
- $\mathbf{X_i}$: controls for log employment, log population, and log average wages 10 years pre-deal
- δ_{dealyr}: calendar year-of-deal fixed effects

We then plot $\beta_t - \beta_{t=-1}$ for $t \in [-5, -4, -3, -2, 0, 1, 2, 3, 4, 5]$.

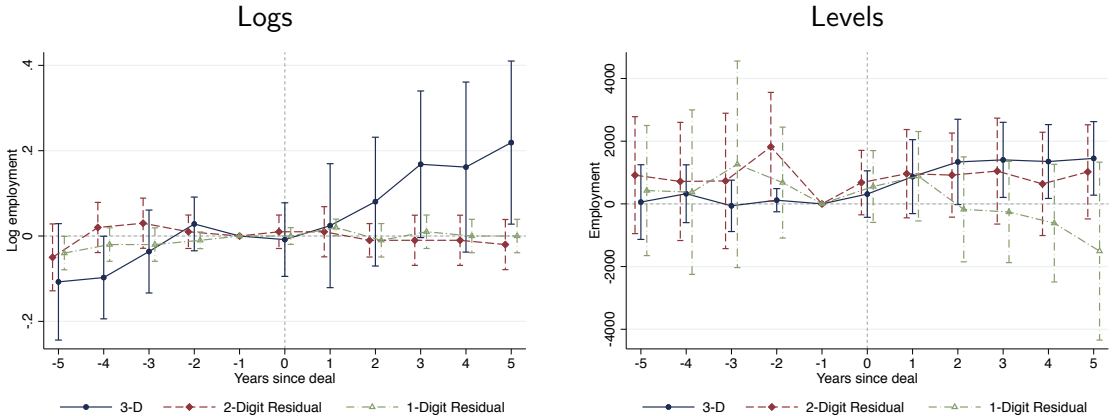
Event Study: Impact of Winning a Firm-Specific Deal on 3-D Employment

Local Employment in 3-Digit Industry of Deal



Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

Spillovers: Local Employment in 3-D, 2-D and 1-D Industry of Deal



Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Spillovers: CONSPUMA-level Employment in 3-D, 2-D, and 1-D Industry of Deal

Other outcomes and levels of aggregation

- County, 3-D Ind. of Deal: ▸ Employment per $50K in Subsidies ▸ Average wages ▸ Wagebill ▸ Establishments ▸ Residual Emp/pop ratio
- County (All Ind.): ▸ Employment per $50K in Subsidies ▸ Average wages ▸ Wagebill ▸ Establishments ▸ Log HPI ▸ Personal income ▸ Property tax revenue ▸ Population ▸ Emp/pop ratio
- CONSPUMA, 3-D Ind. of Deal: ▸ Employment ▸ CONSPUMA-wide emp. less emp. in 3-D Ind. of Deal ▸ Employment per $50K in Subsidies ▸ Average wages ▸ Wagebill ▸ Establishments ▸ Residual Emp/pop ratio
- CONSPUMA (All Ind.): ▸ Employment ▸ Employment per $50K in Subsidies ▸ Average Wages ▸ Wagebill ▸ Establishments ▸ Personal income ▸ Log HPI ▸ Property tax revenue ▸ Population ▸ Emp/pop ratio
- State, 3-D Ind. of Deal: ▸ Employment ▸ State-wide emp. less emp. in 3-D Ind. of Deal ▸ Employment per $50K in Subsidies ▸ Average Wages ▸ Wagebill ▸ Establishments ▸ Residual Emp/pop ratio
- State (All Ind.): ▸ Employment ▸ Employment per $50K in Subsidies ▸ Average Wages ▸ Wagebill ▸ Establishments ▸ Personal income ▸ Log HPI ▸ Population ▸ Emp/pop ratio ▸ Property tax revenue ▸ Tax revenue ▸ Direct expenditure ▸ Expenditure

Heterogeneity

- By Industry of Deal: ▸ Employment in 3-D Industry of Deal at County Level ▸ County-wide Employment
  - ▸ Employment in 3-D Industry of Deal at CONSPUMA Level ▸ CONSPUMA-wide Employment
  - ▸ Employment in 3-D Industry of Deal at State Level ▸ State-wide Employment
- By Size of Subsidy: ▸ Employment in 3-D Industry of Deal at County Level ▸ County-wide Employment
  - ▸ Employment in 3-D Industry of Deal at CONSPUMA Level ▸ CONSPUMA-wide Employment
  - ▸ Employment in 3-D Industry of Deal at State Level ▸ State-wide Employment
- By Employment-to-Population Ratio ▸ Employment in 3-D Industry of Deal at County Level
  - ▸ County-wide Employment ▸ Employment in 3-D Industry of Deal at CONSPUMA Level ▸ CONSPUMA-wide Employment
  - ▸ Employment in 3-D Industry of Deal at State Level ▸ State-wide Employment

Summary of Findings From Event Studies

- Strongest evidence of direct effects at county level within 3-D industry of deal
- Little effect on wages, income, but some increase in establishments
- Some weak evidence that average wages increase within industry in CONSPUMAs
- Little evidence of growth at CONSPUMA (1,042 jobs, 95% CI $\approx \{218, 1866\}$) or state level (762 jobs, 95% CI $\approx \{-2150, 3674\}$) beyond the direct effects
- Some weak evidence of larger effects for manufacturing deals and in low employment to population places

Difference-in-Differences Specification

Sample: Winner and runner-up counties listed in deals between 2002-2012, with non-missing and positive log employment, log population and log average wages 10 year before the deal.

$$\ln Y_{it} = \beta_0 + \beta_1 Winner_i + \beta_2 Post_t + \beta_3 Winner_i \times Post_t + \mathbf{X_i}\gamma' + \delta_{dealyr} + \varepsilon_{it}$$

- $\ln Y_{it}$: log employment in the 3-digit industry of the deal
- $Winner_i$: 1 for counties that won a discretionary deal between 2002-2012, 0 for runner-up
- $Post_t$: equals 1 in the year of the deal, and in the 5 years after
- $\mathbf{X_i}$: controls for log employment, log population and log average wages 10 years pre-deal
- δ_{dealyr}: calendar year-of-deal fixed effects

DID Estimates of Winning Compared to Runner-up: Employment (Levels)

	3-digit industry (1)	Residual 2-digit industry (2)	Residual 1-digit industry (3)	County-wide outcomes (4)
Panel A. Impacts on Firm Aggregates				
Winner × Post	1097.863**	333.770	-366.230	449.063
	(491.968)	(802.557)	(1815.195)	(5156.749)
Mean of outcome	9380.301	16392.218	51838.584	3.04e+05
Panel B. Heterogeneity by Size of Subsidy				
Subsidy > P75	1038.697	793.803	1481.331	-9767.702
	(1248.368)	(1654.609)	(1846.968)	(7637.112)
Mean of outcome (> P75)	10028.579	11852.325	24638.281	2.20e+05
Subsidy ≤ P75	1223.826**	178.450	-927.824	3794.056
	(528.981)	(941.633)	(2584.885)	(5771.770)
Mean of outcome (≤ P75)	9176.728	17928.444	60720.315	3.31e+05
Panel C. Heterogeneity by Employment-to-Population Ratio				
Emp/pop > P25	1409.534*	1385.252	2411.279	22415.554
	(705.895)	(1510.185)	(5298.403)	(28073.030)
Mean of outcome (> P25)	10264.311	15815.623	57268.429	3.16e+05
Emp/pop ≤ P25	246.044	-3057.932	-1.02e+04	-7.68e+04
	(2526.916)	(4296.568)	(15413.055)	(94307.276)
Mean of outcome (≤ P25)	6684.068	17998.446	36092.033	2.67e+05
Panel D. Heterogeneity by Deal Industry				
Manufacturing	7626.429**	-4960.167	47016.531***	9832.805
	(2915.486)	(3535.123)	(14112.979)	(21100.677)
Mean of outcome (mfg.)	5422.609	17852.250	17852.250	2.52e+05
Non-mfg.	-5982.319***	8058.367	-5.55e+04***	-1.06e+04
	(2036.728)	(5880.305)	(12108.602)	(23295.335)
Mean of outcome (non-mfg.)	13842.914	14302.631	90680.108	3.62e+05
Observations	4800	4625	5071	5071

▸ CONSPUMA-level DID Estimates: Levels ▸ State-level DID Estimates: Levels

DID Estimates of Winning Compared to Runner-up: Other Outcomes (Levels)

	Avg. Wages in 3-D Ind. of Deal	County-wide Avg. Wages	Personal Inc. Per Cap.	Est. in 3-D Ind. of Deal	County-wide Est.	Pop.
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Impacts on Firm Aggregates						
Winner × Post	94.047	-195.355	-945.852	19.302	-1402.420	0.000
	(1954.995)	(371.912)	(625.935)	(36.557)	(961.887)	(0.000)
Mean of outcome	87847.175	54522.976	50517.008	577.201	18038.458	6.18e+05
Panel B. Heterogeneity by Size of Subsidy						
Subsidy > P75	2408.177	-262.566	-582.365	2.159	-635.806	0.000
	(4541.955)	(713.593)	(560.858)	(79.416)	(620.167)	(0.000)
Mean of outcome (> P75)	77484.390	49133.453	45157.003	505.487	12278.927	4.69e+05
Subsidy ≤ P75	-473.976	-172.321	-1057.328	26.181	-1632.519	0.000
	(1934.082)	(358.073)	(734.351)	(30.562)	(1107.345)	(0.000)
Mean of outcome (≤ P75)	91101.306	56282.821	52267.214	599.694	19919.121	6.66e+05
Panel C. Heterogeneity by Employment-to-Population Ratio						
Emp/pop > P25	1489.884	-22.756	-1076.887	-3.283	1424.916	0.000
	(2252.734)	(335.559)	(921.329)	(77.651)	(2026.883)	(0.000)
Mean of outcome (> P25)	92934.477	56784.367	54357.674	699.319	19811.514	6.21e+05
Emp/pop ≤ P25	-4914.976	-705.152	-322.412	159.917	-1.15e+04	0.000
	(4626.760)	(1164.838)	(1660.951)	(188.640)	(11466.454)	(0.000)
Mean of outcome (≤ P25)	72330.906	47964.944	39379.075	204.304	12896.597	6.08e+05
Panel D. Heterogeneity by Deal Industry						
Manufacturing	7063.309*	968.434*	1824.231**	604.115***	1756.686	0.000
	(3507.427)	(527.793)	(803.309)	(164.525)	(1169.117)	(0.000)
Mean of outcome (mfg.)	78723.449	50981.874	46308.250	42.252	14135.231	5.23e+05
Non-mfg.	-7315.875	-1550.159*	-4166.471***	-595.850***	-5083.323*	0.000
	(4433.248)	(808.383)	(1478.287)	(214.209)	(2687.026)	(0.000)
Mean of outcome (non-mfg.)	98134.905	58569.950	55327.017	1181.402	22499.289	7.27e+05
Observations	4800	5071	5071	4819	5071	461

DID Estimates of Winning Compared to Runner-up: Employment (Logs)

	3-digit industry (1)	Residual 2-digit industry (2)	Residual 1-digit industry (3)	County-wide outcomes (4)
Panel A. Impacts on Firm Aggregates				
Winner × Post	0.145**	-0.003	0.017	0.004
	(0.072)	(0.020)	(0.019)	(0.011)
Mean of outcome	7.929	9.111	9.987	12.127
Panel B. Heterogeneity by Size of Subsidy				
Subsidy > P75	0.241*	0.008	-0.006	-0.017
	(0.129)	(0.051)	(0.038)	(0.015)
Mean of outcome (> P75)	7.625	8.724	9.311	11.731
Subsidy ≤ P75	0.121	-0.005	0.024	0.011
	(0.073)	(0.024)	(0.017)	(0.013)
Mean of outcome (≤ P75)	8.024	9.243	10.210	12.257
Panel C. Heterogeneity by Employment-to-Population Ratio				
Emp/pop > P25	0.126	0.009	0.002	0.002
	(0.084)	(0.053)	(0.027)	(0.014)
Mean of outcome (> P25)	8.038	9.130	10.105	12.241
Emp/pop ≤ P25	0.202	-0.037	0.081	0.021
	(0.274)	(0.187)	(0.090)	(0.024)
Mean of outcome (≤ P25)	7.596	9.061	9.647	11.798
Panel D. Heterogeneity by Deal Industry				
Manufacturing	0.350**	-0.409***	0.389***	0.007
	(0.153)	(0.073)	(0.076)	(0.014)
Mean of outcome (mfg.)	7.424	9.166	9.166	11.786
Non-mfg.	-0.067	0.653***	-0.424***	0.001
	(0.116)	(0.114)	(0.063)	(0.012)
Mean of outcome (non-mfg.)	8.498	9.023	10.909	12.518
Observations	4799	4386	5042	5067

▸ CONSPUMA-level DID Estimates: Logs ▸ State-level DID Estimates: Logs ▸ State economic outcomes: DID Estimates

DID Estimates of Winning Compared to Runner-up: Other Outcomes (Logs)

	Log Avg. Wages in 3-D Ind. of Deal	Log County-wide Avg. Wages	Log HPI	Log Personal Inc.	Log Est. in 3-D Ind. of Deal	Log County-wide Est.	Log Pop.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A. Impacts on Firm Aggregates							
Winner × Post	0.014	-0.003	-0.040*	-0.005	0.004	-0.005	0.006
	(0.028)	(0.006)	(0.021)	(0.010)	(0.036)	(0.011)	(0.011)
Mean of outcome	11.209	10.871	4.864	16.756	4.277	9.239	12.880
Panel B. Heterogeneity by Size of Subsidy							
Subsidy > P75	0.085	-0.003	-0.019	-0.024	0.058	-0.008	-0.008
	(0.067)	(0.012)	(0.046)	(0.020)	(0.057)	(0.017)	(0.012)
Mean of outcome (> P75)	11.107	10.776	4.866	16.293	3.613	8.802	12.515
Subsidy ≤ P75	-0.006	-0.003	-0.047*	0.001	-0.013	-0.004	0.011
	(0.030)	(0.006)	(0.026)	(0.010)	(0.046)	(0.012)	(0.012)
Mean of outcome (≤ P75)	11.240	10.902	4.863	16.907	4.484	9.382	12.999
Panel C. Heterogeneity by Employment-to-Population Ratio							
Emp/pop > P25	0.029	-0.000	-0.031	0.001	-0.008	0.001	0.016
	(0.032)	(0.005)	(0.021)	(0.014)	(0.054)	(0.015)	(0.014)
Mean of outcome (> P25)	11.295	10.914	4.884	16.907	4.479	9.396	12.956
Emp/pop ≤ P25	-0.036	-0.011	-0.059	-0.016	0.056	-0.017	-0.021
	(0.065)	(0.019)	(0.055)	(0.035)	(0.211)	(0.043)	(0.022)
Mean of outcome (≤ P25)	10.944	10.747	4.804	16.317	3.656	8.782	12.659
Panel D. Heterogeneity by Deal Industry							
Manufacturing	0.047	0.014	-0.014	0.033*	0.898***	0.044**	0.003
	(0.040)	(0.009)	(0.027)	(0.017)	(0.157)	(0.020)	(0.012)
Mean of outcome (mfg.)	11.148	10.814	4.836	16.358	3.032	8.865	12.552
Non-mfg.	-0.023	-0.022*	-0.070**	-0.049***	-0.932***	-0.063**	0.009
	(0.051)	(0.012)	(0.033)	(0.017)	(0.107)	(0.024)	(0.014)
Mean of outcome (non-mfg.)	11.276	10.937	4.895	17.210	5.679	9.667	13.255
Observations	4799	5071	5034	5071	4803	5071	5071

Bounds on Effects For Main Outcomes [5%, 95%]

	Emp. in 3-D Ind.	Res. 2-D Ind. Emp	Res. 1-D Ind. Emp.	Res. Emp.	Avg. Wages in 3-D Ind. of Deal	Wagebill in 3-D Ind. of Deal (M USD)	Emp per 50k Sub. in 3-D Ind. of Deal	Emp/Pop Ratio
Panel A. Impacts on County Outcomes								
Sub-panel: A.1 Levels								
Upper bound	2078.529	2536.706	3244.064	9760.905	4140.238	189.959	1.438	0.003
Lower bound	72.587	-1399.511	-4234.341	-1.36e+04	-4902.880	-102.894	-0.037	-0.004
Sub-panel: A.2 Logs								
Upper bound	0.286	0.042	0.063	0.029	0.070	0.330	0.325	0.007
Lower bound	0.007	-0.047	-0.032	-0.025	-0.037	-0.014	0.014	-0.009
Observations	5201	4985	5718	5756	5201	4800	4800	5276
Panel B. Impacts on State Outcomes								
Sub-panel: B.1 Levels								
Upper bound	4152.101	4694.569	285.166	96755.804	1621.833	438.305	4.158	0.001
Lower bound	-5444.681	-1.84e+04	-2.87e+04	-3.83e+05	-1771.258	-589.274	-1.947	-0.007
Sub-panel: B.2 Logs								
Upper bound	0.040	0.018	0.014	0.005	0.015	0.042	0.060	0.001
Lower bound	-0.031	-0.054	-0.037	-0.025	-0.023	-0.041	-0.058	-0.013
Observations	11473	10328	11496	7209	11473	11473	11473	7209

	Est. in 3-D Ind. of Deal	Rental Income	Personal Income	Log HPI	GDP	Tax Revenue	Expenditure	Direct Expenditure
Panel A. Impacts on County Outcomes								
Sub-panel: A.1 Levels								
Upper bound	98.944	236.132	374.436	0.001	N/A	N/A	N/A	N/A
Lower bound	-67.518	-1122.178	-2451.486	-0.084	N/A	N/A	N/A	N/A
Sub-panel: A.2 Logs								
Upper bound	0.070	0.017	0.021	N/A	N/A	N/A	N/A	N/A
Lower bound	-0.064	-0.057	-0.029	N/A	N/A	N/A	N/A	N/A
Observations	5210	5760	5760	5678				
Panel B. Impacts on State Outcomes								
Sub-panel: B.1 Levels								
Upper bound	868.523	58.638	-58.388	-0.002	-109.512	30.971	26.569	25.308
Lower bound	-476.470	-250.408	-917.962	-0.064	-1953.792	-285.574	-244.936	-171.944
Sub-panel: B.2 Logs								
Upper bound	0.044	0.003	-0.000	N/A	-0.002	0.001	0.002	0.002
Lower bound	-0.056	-0.042	-0.031	N/A	-0.050	-0.052	-0.049	-0.055
Observations	11495	12636	11496	12636	12636	12125	12125	12125

Notes: Levels estimates of rental income, personal income, GDP, tax revenue, expenditures, and direct expenditures are all reported per capita.

2. State and Local Subsidies

Data on General Subsidies

- Non-discretionary programs, such as job creation tax credits and job training grants, often make up a significant portion of discretionary subsidy deals
  - Any qualifying establishment can apply for tax credit by filling out paperwork, no negotiation required
- Dataset from Slattery (2019) includes hand-collected data on all state programs from tax expenditure reports and budget documents from 2007-2014
- Each observation outlines the annual state budget for economic development programs and amount spent (revenue forgone) on each tax credit

Recall the 2008 Volkswagen Deal in Tennessee

VW received an approximately $558M subsidy deal, consisting of

- City and county tax abatements ($200M)
- Property and infrastructure from the **state** ($128M)
- "Enhanced" **state** job and investment tax credits over 20 years ($200M)
  - VW qualified for both TN tax credits available to firms in 2008 (Jobs Credit and Industrial Machinery Credit)
- **State** funds for worker training ($30M)
  - Some of this money came from TN's "Fast Track" program, which funds community-led infrastructure projects and company-led job training
  - From state budget documents: TN spent over $53M on the Fast Track program in 2008, and allocated $71M for the program in 2009

Case Study: 2008 Volkswagen Deal in Tennessee

More generally,

- Any manufacturing firm entering TN in 2008 would receive tax relief from the Jobs Credit and Industrial Machinery Credit, as well as grants for job training from the Fast Track program
- Incentive generosity would be determined by the size of their investment and the number of jobs at the plant
- Tax credits are already part of the tax code, and Fast Track program is already funded in the state budget

$\Rightarrow$ Without any additional action by the state or local government, a manufacturing firm locating in TN would receive money from at least three incentive programs.

Generosity of State-Level Incentives Spending

On average states spend $54 per capita on incentives for firms

- $34 from economic development programs in the state budget
- $20 from tax expenditures

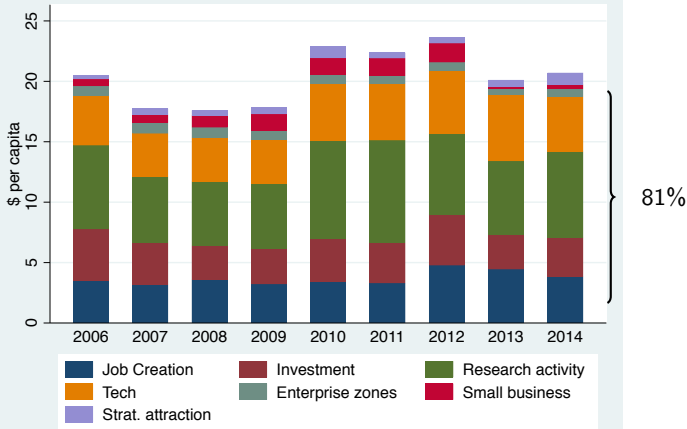
Relative to Other Types of Spending:

- Among top per capita spenders: per capita incentive spending is 56% of public safety expenditures, 40% of spending on health and hospitals, 30% of transportation, and 12% of education
- Full sample of states: 23% of public safety, 13% of health and hospitals, 11% of transportation, and less than 5% of education

Relative to Corporate Tax Revenue:

- Average 2014 incentive spending is $\approx$ 40% of corporate tax revenues
- In MI, SD and WV per capita incentive spending $>$100% of corporate tax revenue
- 5 states report 0 corporate income tax revenue, and spend about $44 per capita on incentives for firms

Per Capita Expenditures on State Tax Credits

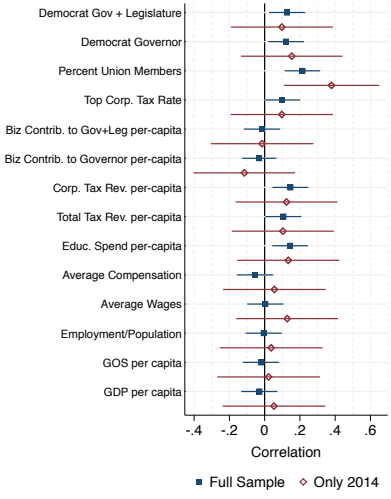


- Research- and tech-intensive firms, and those with high job creation and capital investment, are likely to be eligible for the most incentives from the state
- Some states write tax credits so specifically that only one firm qualifies $\rightarrow \approx$ discretionary subsidy

Who Provides Them?

Correlation between state characteristics and per capita incentive spending

- All 48 states in the continental U.S. offer some form of financial incentives
- Level of incentive varies widely:
  - Michigan is the highest spender, spending $216.10 in 2014 on incentives/subsidies
  - Nevada is the lowest ($5.41 in 2014)
- No clear pattern in state per capita incentive spending in terms of other state observables



▸ Percentage Union Members and Incentive Spending Per Capita

Why Do States Provide Incentives?

Revisiting Glaeser (2001)

- Price discrimination: attract and retain firms of a given type, or in a given industry, by reducing their costs of operating in the state
- Value creation: Legislation on tax credits and economic development programs often mention job creation and economic activity
- Agglomeration: reinforce existing industrial composition of the state and prevent relocation

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> *California is perceived as a high-tax business environment by firms contemplating setting up business or expanding... An R&D-related tax measure targets the particular types of firms that California desires to attract in spite of its relatively high position in the "tax" league tables – CA report to the Council on Science and Technology*

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  > *The purpose is to stimulate economic activity and to create new jobs for the citizens of the State by encouraging and promoting the expansion of existing business and industry within the State and by recruiting and attracting new business and industry to the State. – North Carolina's Job Development Investment Grant (JDIG) program*

- Agglomeration: reinforce existing industrial composition of the state and prevent relocation

Why Do States Provide Incentives?

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- Value creation: Legislation on tax credits and economic development programs often mention job creation and economic activity
- Agglomeration: reinforce existing industrial composition of the state and prevent relocation
  - CA has a "Film and Television Tax Credit" and a "Research and Development Tax Credit" to support Hollywood and Silicon Valley industry clusters

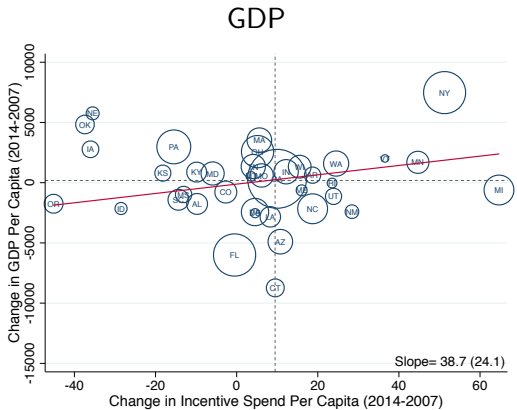
Is Incentive Spending Driven by Economics or Politics?

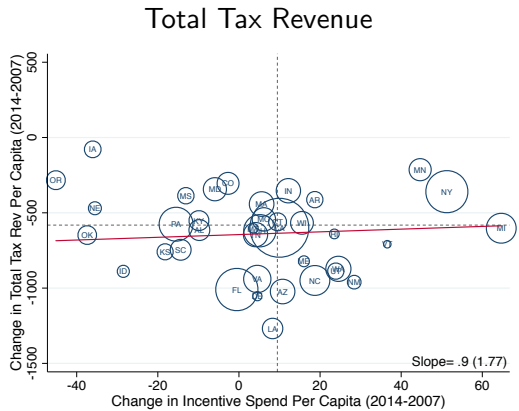
Dependent variable: indicator for whether states increased per capita spending by over 20%. Linear Probability Model.

	Per Capita Incentives Increase by 20%				
Governor can run as incumbent	0.05				0.04
	(0.06)				(0.06)
Election year		0.11*			0.11*
		(0.06)			(0.06)
GDP per capita ($1000) in $t-1$			0.00		0.02*
			(0.01)		(0.01)
% of population employed in $t-1$				-0.05	-0.09**
				(0.03)	(0.04)
Observations	336	336	336	336	336
R-squared	0.17	0.18	0.17	0.18	0.20

Notes: We measure the year-to-year change in per capita incentive spending, and create an indicator for whether spending increased by more than 20%. States increased per capita spending by over 20% 63 times, so 19% of the sample of state-years. State and Year Fixed Effects are included in each specification. Standard errors reported between parantheses. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

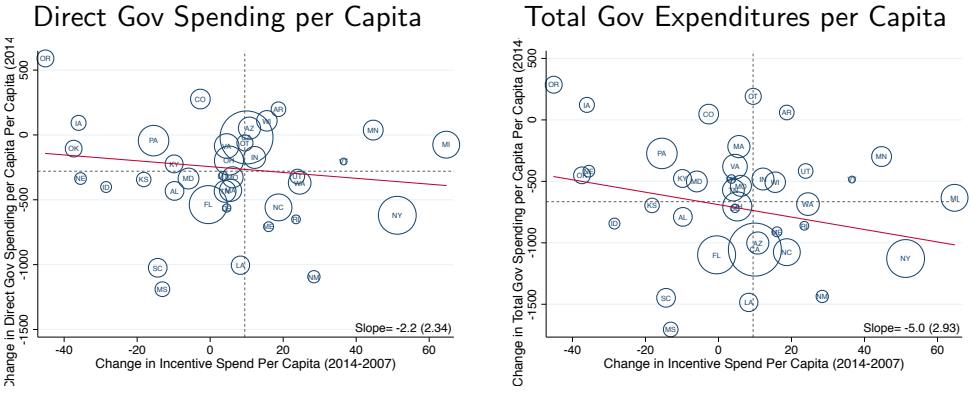
Effect of Changes in Incentive Spending on Per Capita GDP and Tax Revenue





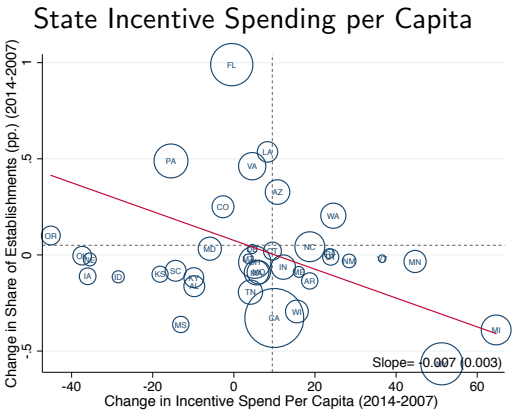
Notes: This figure plots the change in per capita outcomes of each state from 2007 to 2014 versus the change in per capita incentive spending over the period.

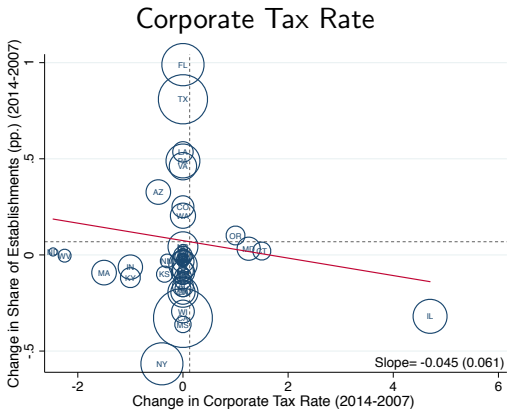
Effect of Changes in Incentive Spending on State Gov Spending



Notes: This figure plots the change in per capita outcomes of each state from 2007 to 2014 versus the change in per capita incentive spending over the period.

Impact of Changes in Tax Factors on Firm Location





Notes: This figure plots the change in share of establishments in each state from 2007 to 2014 relative to the change in per capita incentive spending over this period.

▸ Event study: effects of winning a deal on log state expenditures

3. Policy Discussion and Directions for Future Research

Welfare effects of subsidy deals are hard to measure

1. Some inputs to welfare analysis are (now) easier to measure
   - Mechanical Costs: average discretionary subsidy of \$153M is \$15.3M/year
2. Harder to measure:
   - Firm Location: inframarginal vs marginal firms (e.g., Amazon in NYC)?
   - Externalities: hard to detect indirect jobs, or IO linkages, price effects, congestion
   - Fiscal Externalities: hard to measure both state and local budget effects
     - 1000 jobs $\times$ 65K $\approx$ 65M wagebill. At 5-10% tax rates, rev of $\approx$\$3-7M
     - But unlikley there are 1000 **net new jobs**. Most do not go from unemployed to 65K.
3. How are these financed? Marginal value of those taxes and/or reduced spending?
   - Hard to find systematic data, but some case studies suggest the following sources:
   - Foregone future revenues (e.g., Foxconn)
   - Reduce other government spending and/or raise taxes (e.g., VA, TX, FL)

Example #1: VA in 2011 financing deals by reducing gov spending

"Gov. Bob McDonnell wants to tap into six funding sources to offset $50 million in new spending for his jobs and economic-development initiatives."

- Daily Progress, January 2010

- Increases Governor's "Opportunity Fund" by $12.1M, adds $5M to "industrial mega-site fund"
- **Where the money is coming from:**
  - Delay planned increase in state worker retirement
  - Decrease hiring for Department of Corrections
  - Tax Amnesty Program
  - Federal funding for food stamps

Examples #2 and #3: TX in 2017 and FL in 2009

Proposed and actualized cuts to incentive spending funds

In 2017 Texas House voted to decrease "Enterprise Fund" by $43M

- Planned to divide funds across (1) Child Protective Services and foster care funding, (2) disabled children's therapy sessions
- Gov Abbott threatened to veto budget if didn't increase fund by $100M
- Abbott won incentive funds

Florida faced with $2.3B budget deficit in 2009

- One of the cuts was $24M "Quick Action Closing Fund"

Policy Discussion

General considerations:

- Production efficiency/misallocation vs price discrimination/second best?
  - Distorting the allocation of resources across firms and locations?
  - Taxing more elastic firms less than the full corporate rate (Ramsey rule)?
  - Offsetting existing distortions / effectively subsidizing poor places?
- Beggar-thy-neighbor vs match effects?
  - Zero sum unless really big match effects?
- Importance of political vs economic considerations?

Directions for Future Research

1. Quantitative welfare analysis of subsidy deals and potential reforms
   - Under what conditions do these deals improve welfare?
   - How do subsidy deals compare to other place-based policies?
   - Which types of deals work best and for whom?
2. Who benefits from firm subsidies?
   - Capital: firm owner benefit per dollar of subsidy? House prices and property taxes?
   - Labor:
     - Which workers get these jobs (by skill, occupation, China shock/death of despair)?
     - Where do the workers come from? Residents vs migrants? Prior employment status?
     - Consequences for labor market outcomes? Direct and indirect jobs? Net new jobs?
   - State and local governments: fiscal effects? Are discretionary deals harder to undo?
3. Causes of firm subsidies and role of political economy considerations
   - Slattery (2019) finds subsidy larger when governor up for re-election; does subsidy improve re-election success, approval ratings? Is this signaling? Salience? Pork?
   - Prevalence of firm subsidies internationally? A uniquely American phenomenon?

Conclusion

1. Policy:
   - Average discretionary subsidy is $153M for 1000 promised jobs. Approx 30 deals/year
   - In 2014, states spent $5-$216 per capita on incentives for firms via range of forms
2. Selection:
   - Often big, profitable firms in auto, aerospace, chemical mfg; tech; finance and oil
   - Firms accept deals from places that are richer, larger, and more urban
   - Poor places provide larger incentives and spend more per job
3. Impacts:
   - Comparing "winning" and runner-up locations, we find that average employment within the 3-digit industry of the deal increases by $\approx$ 1000 jobs
   - Little/weak evidence of spillovers and no impact on county-level economic growth

Thanks!

Which States Provide Firm-Specific Subsidies?

Unique States in 2000

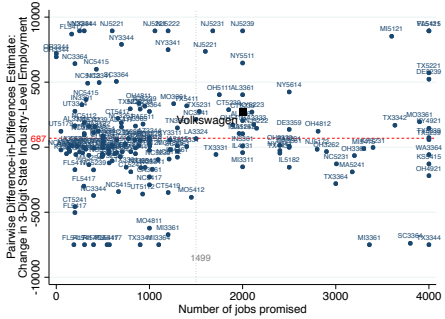
State:	Winner (Full)		Winner (Analysis)		Runner-up		Average	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Employment (1000s)	7,347.5	5,586.8	7,680.5	6,782.0	7,321.6	5,586.8	7,136.2	4,887.1
Population (1000s)	12,788.8	9,955.3	13,389.5	11,363.8	12,743.3	9,955.3	12,407.1	8,430.9
Average wages (1000s)	50.0	49.0	50.2	49.0	50.0	49.0	49.8	49.0
Population density	240.6	179.9	243.5	179.9	239.2	179.9	233.4	176.1
% emp in mfg.	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
% emp info & prof svcs.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
% urban	79.5	82.0	79.7	82.0	79.3	82.0	79.0	82.0
% Bachelor's or more	24.2	23.2	24.1	23.2	24.2	23.2	24.4	23.5
% white	74.9	73.5	74.8	73.5	75.1	73.5	75.5	73.5
% Hispanic	12.8	7.5	13.2	8.0	12.7	7.5	12.6	7.5
% foreign-born	11.3	10.4	11.5	10.9	11.2	9.8	11.0	9.8
log housing units	15.2	15.3	15.2	15.4	15.2	15.3	15.1	15.1
log median house value	12.1	12.0	12.1	12.0	12.1	12.0	12.1	12.0
Observations	40		35		41		48	

Notes: In the full sample, 40 unique states win the 535 deals. In the analysis sample, 35 win 219 deals.

Deal-specific Diff-in-Diff Estimates of Firm-Specific Subsidies

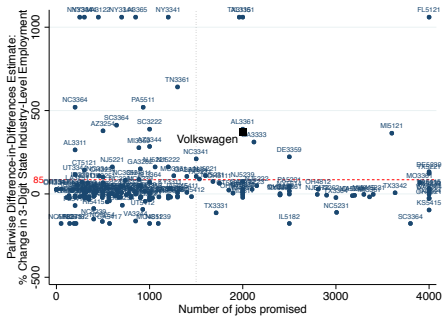
By Number of Jobs Promised in Deal, winzorized at 5% level

Level



- Slope=.071(.24)
- Intercept=372.2(384.4)

Percent



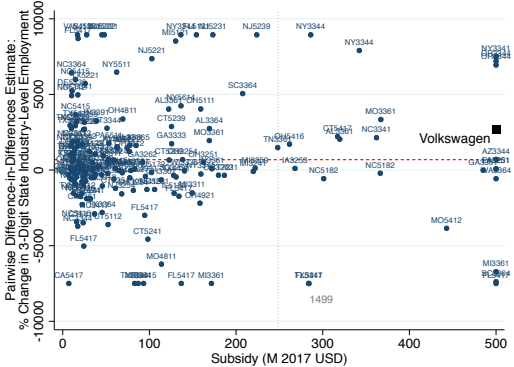
- Slope=.003(.015)
- Intercept=74.5(27.6)

▸ Go back

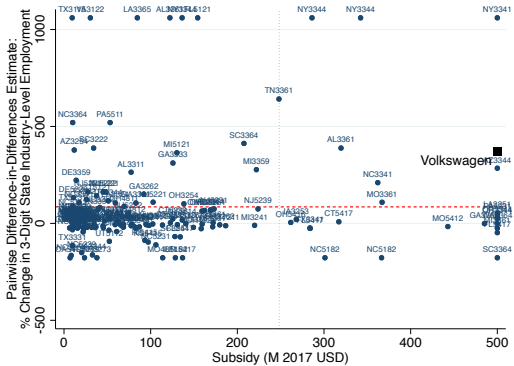
Deal-specific D-i-D Estimates of Firm-Specific Subsidies

By Size of Subsidy ($M 2017 USD), winzorized at 5% level

Level

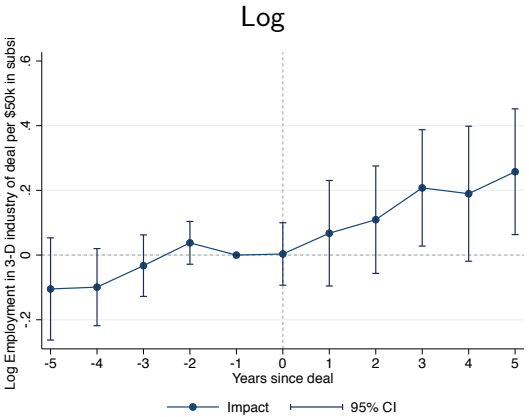


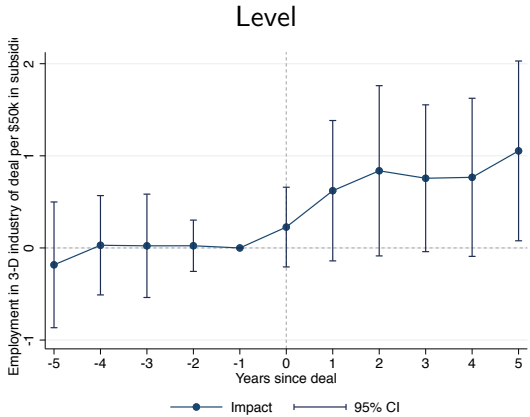
Percent



▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on County-Level Employment in 3-D Industry of Deal per 50k in Subsidies

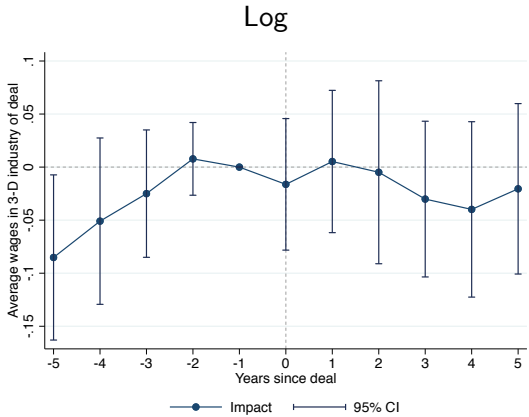


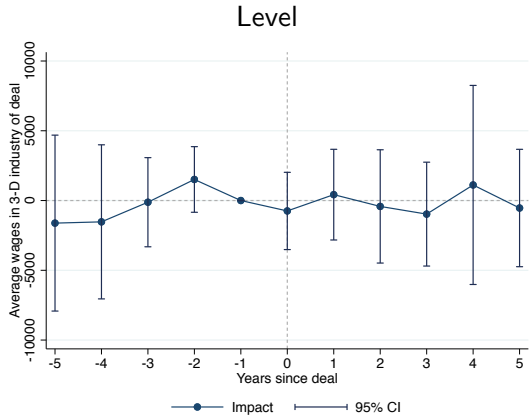


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on County-Level Average Wages in 3-D Industry of Deal

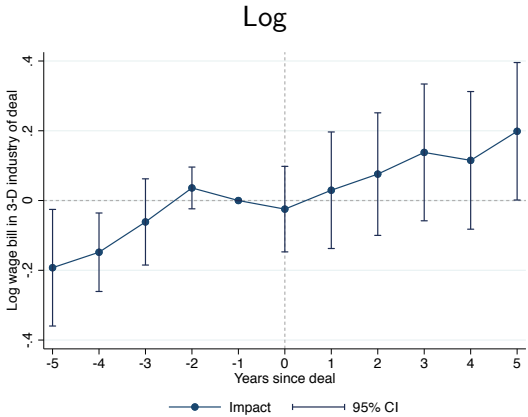


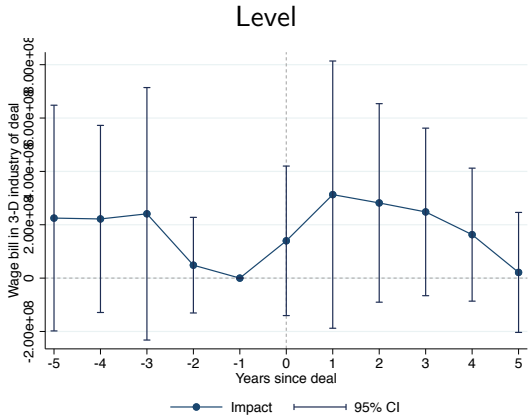


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on County-level Wage Bill in 3-D Industry of Deal

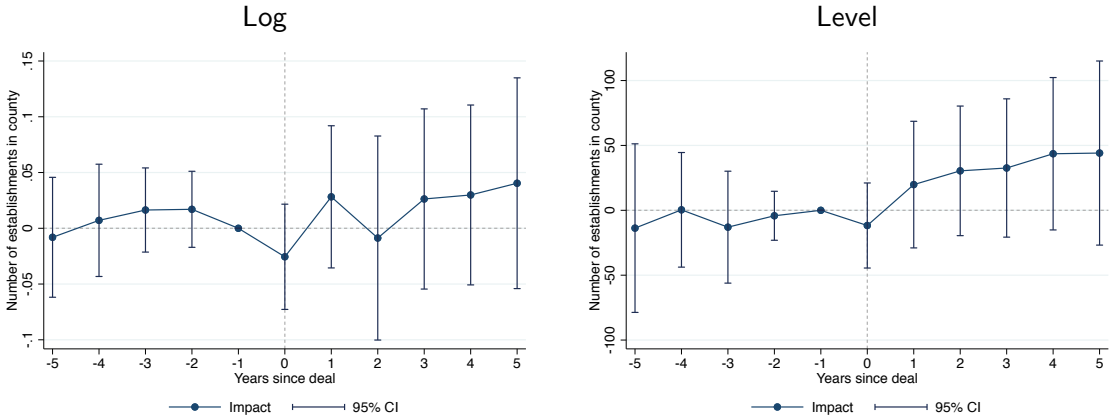




Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

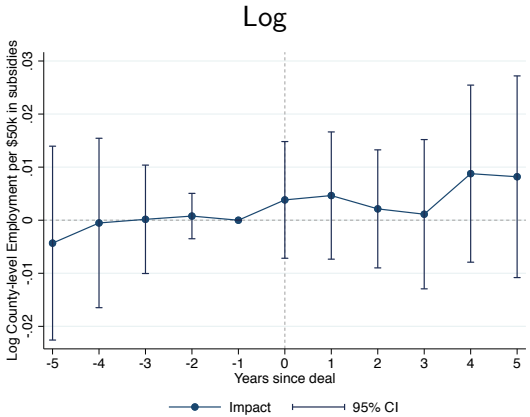
Event Study: Impact of Winning a Firm-Specific Deal on County-level Number of Establishments in 3-D Industry of Deal

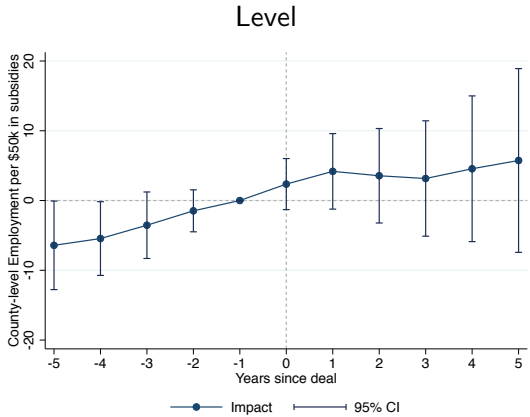


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on County-wide Employment per 50k in Subsidies (All Industries)

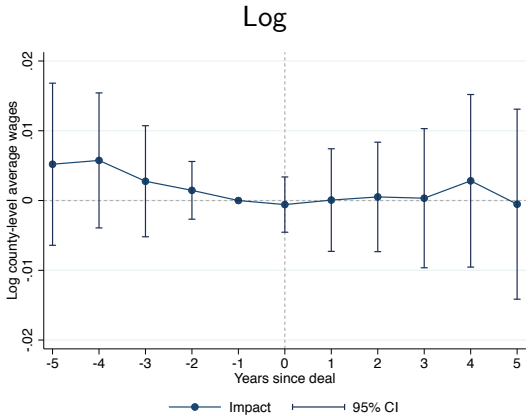


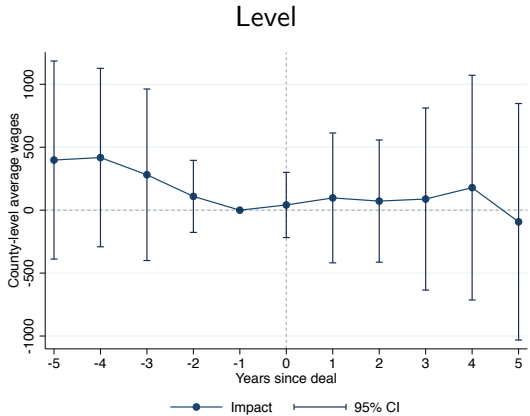


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on County-wide Average Wages (All Industries)

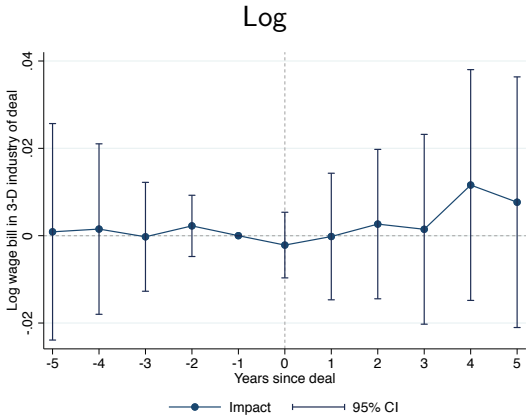


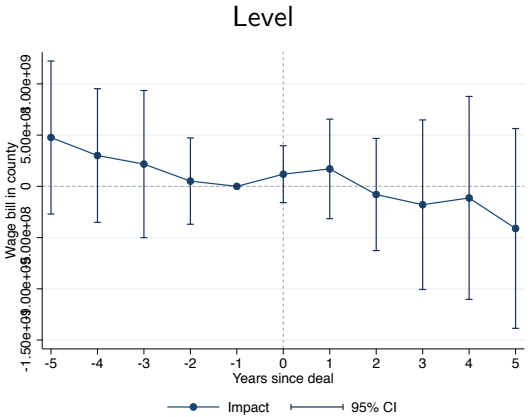


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on County-wide Wagebill (All Industries)

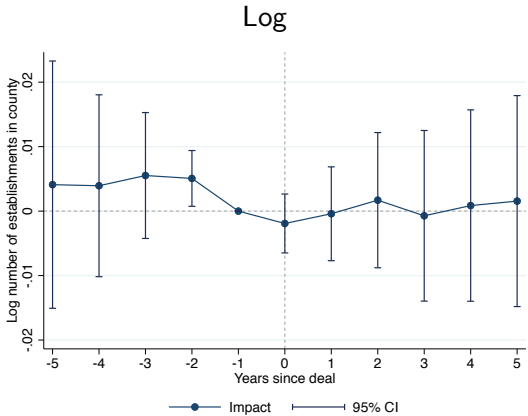


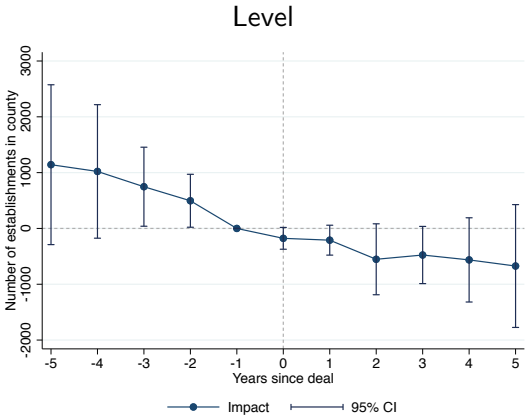


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on County-wide Establishments Count (All Industries)

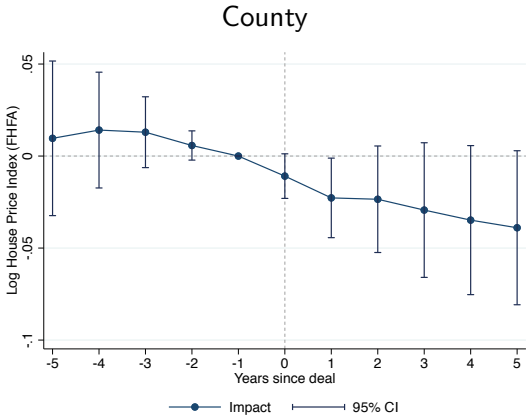


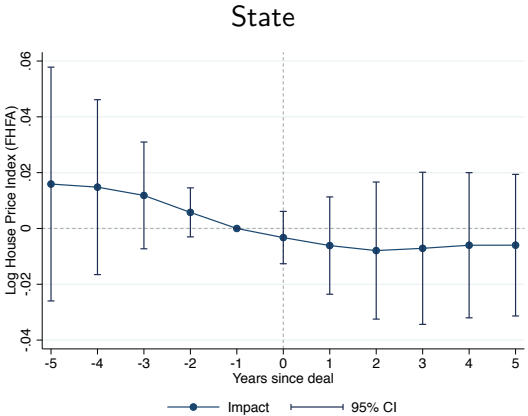


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on County-level log HPI

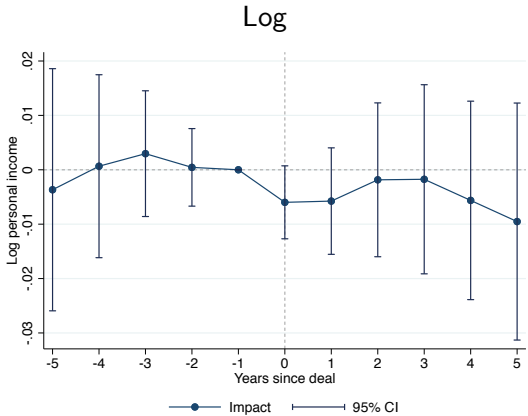


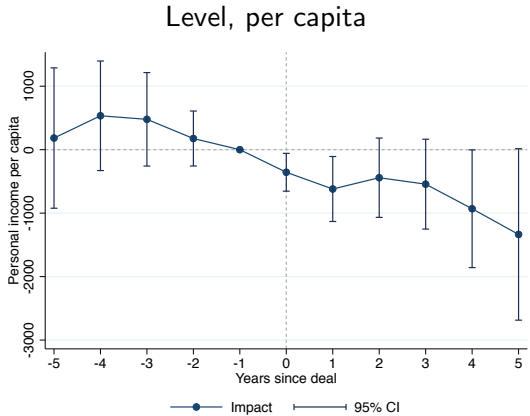


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on County-level Personal Income

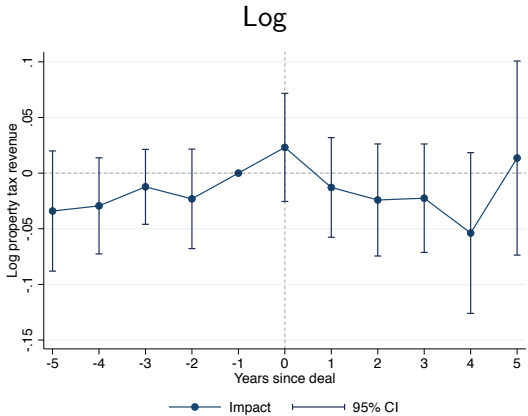


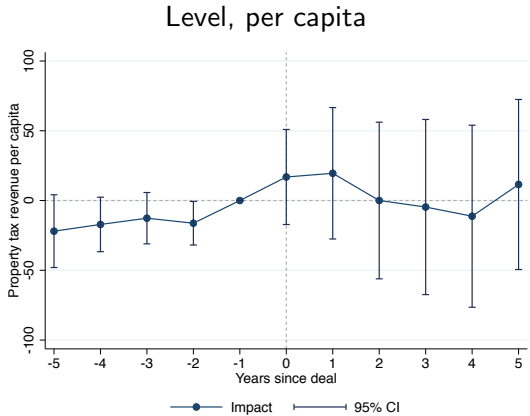


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on County-level Property Tax Revenue

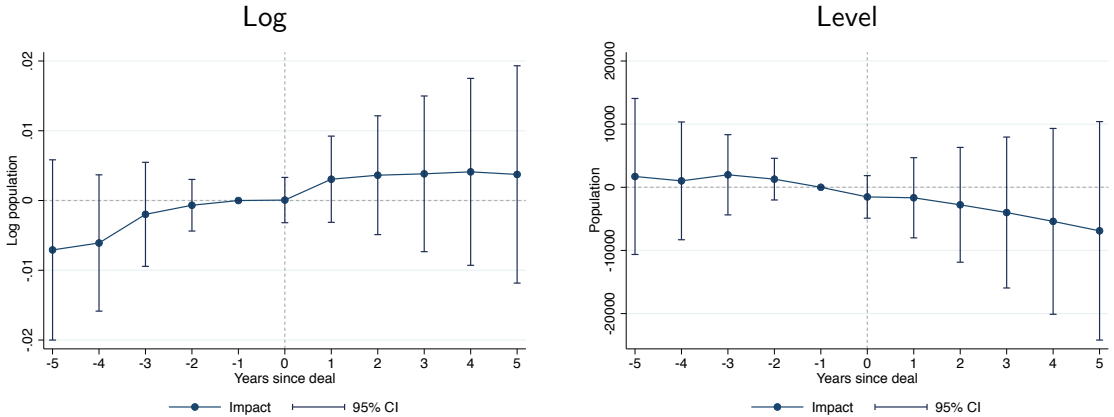




Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

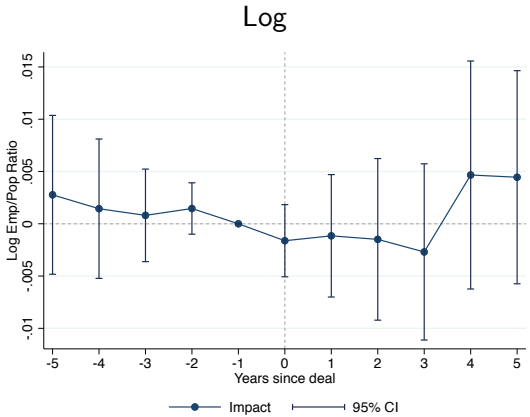
Event Study: Impact of Winning a Firm-Specific Deal on County-level Population

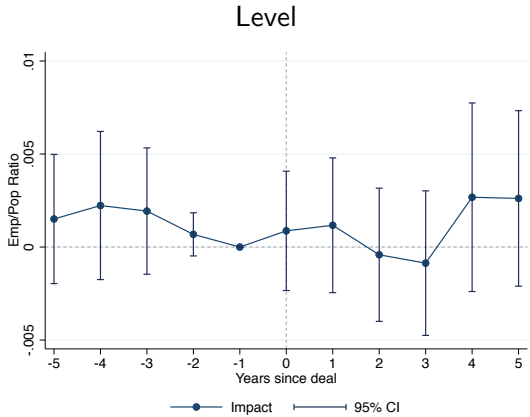


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on County-level Employment-to-Population Ratio

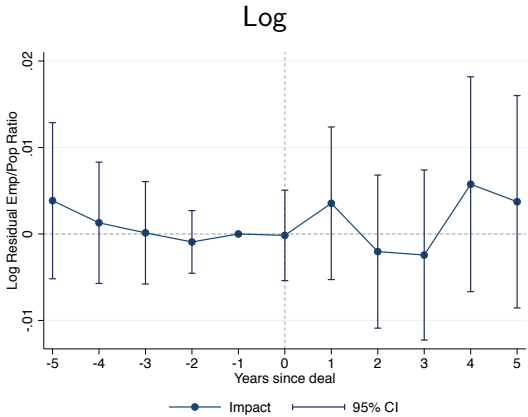


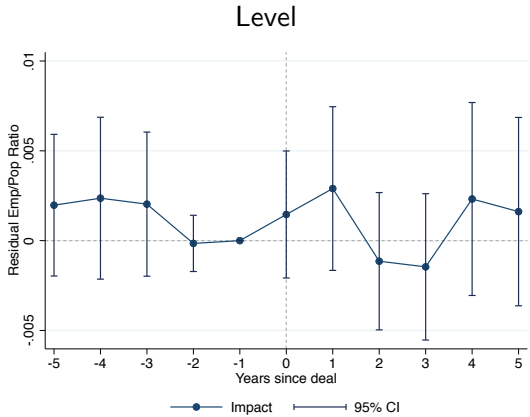


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on County-level Residual Employment-to-Population Ratio

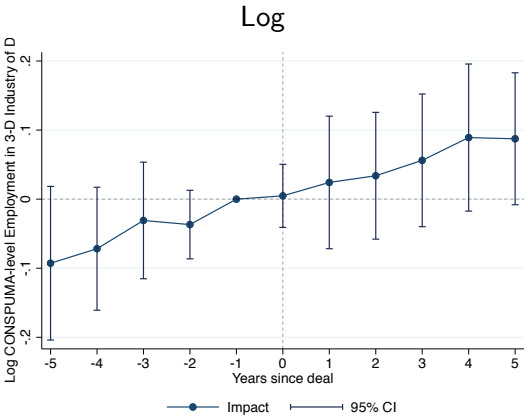


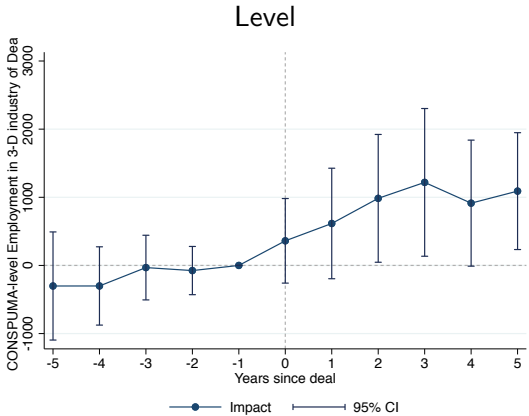


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on CONSPUMA-level Employment in 3-D Industry of Deal

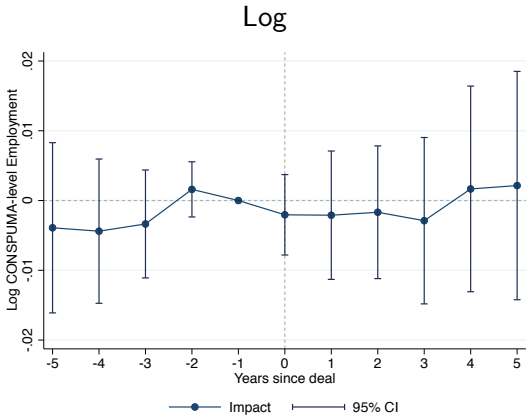


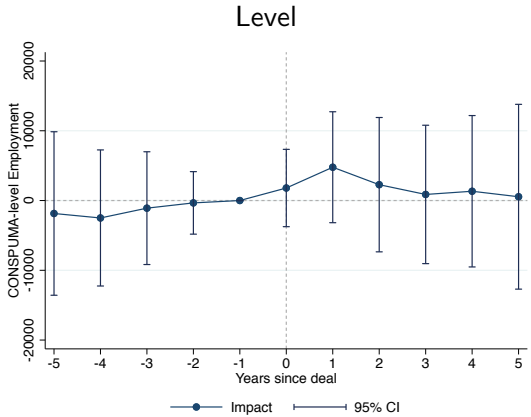


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on CONSPUMA-wide Employment (All Industries)

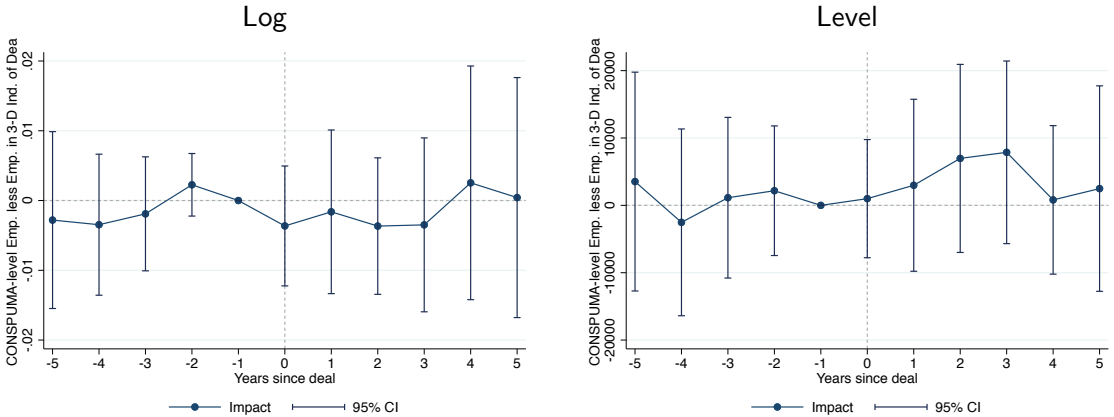




Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

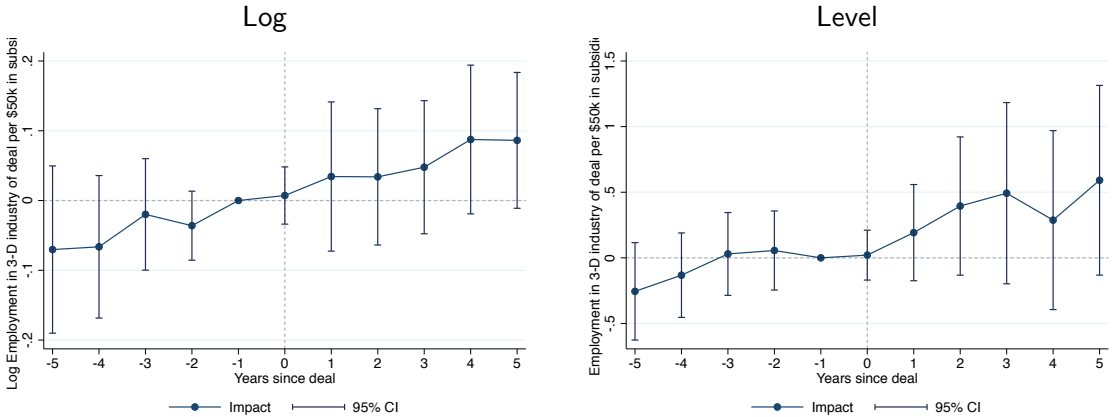
Event Study: Impact of Winning a Firm-Specific Deal on CONSPUMA-wide Employment less Employment in 3-D Industry of Deal



Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

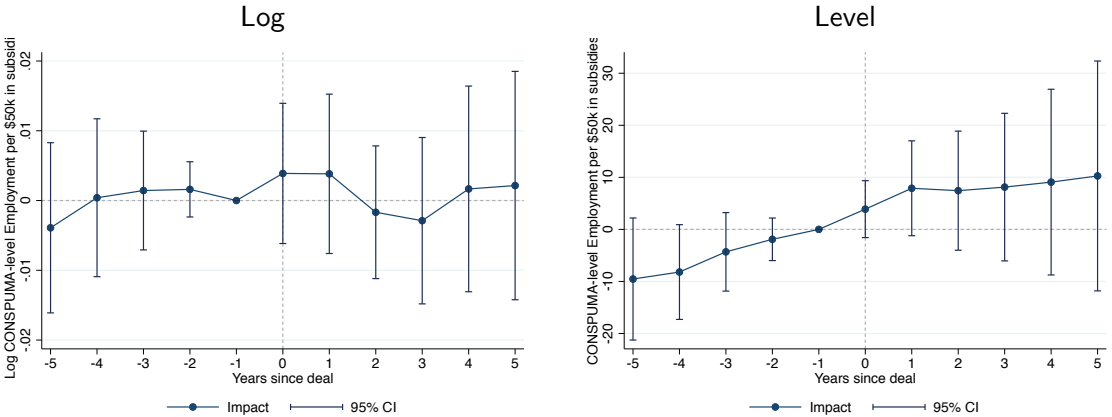
Event Study: Impact of Winning a Firm-Specific Deal on CONSPUMA-level Employment in 3-D Industry of Deal/50k in Subsidies



Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

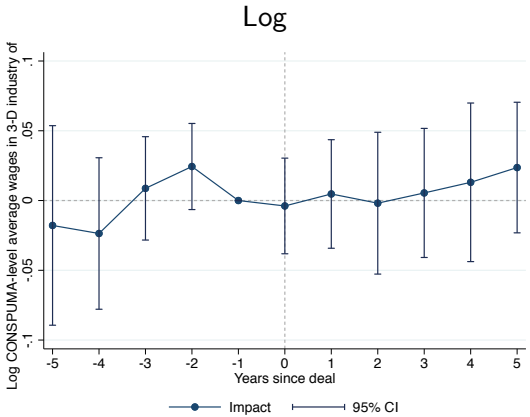
Event Study: Impact of Winning a Firm-Specific Deal on CONSPUMA-wide Employment/50k in Subsidies (All Industries)

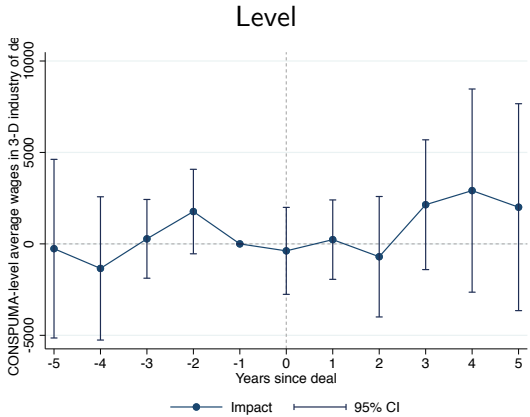


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on CONSPUMA-level Average Wages in 3-D Industry of Deal

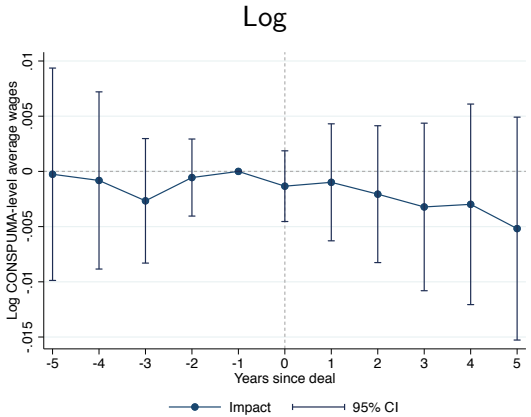


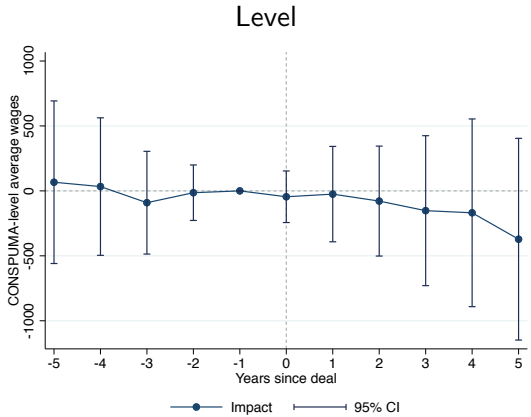


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on CONSPUMA-wide Average Wages (All Industries)

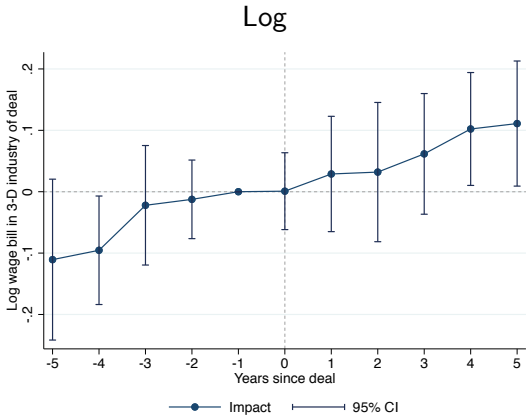


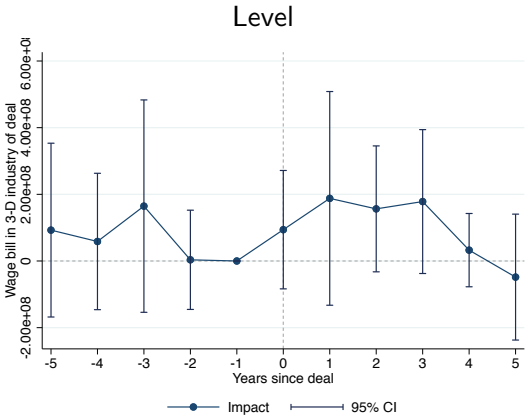


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on CONSPUMA-level Wagebill in 3-D Industry of Deal

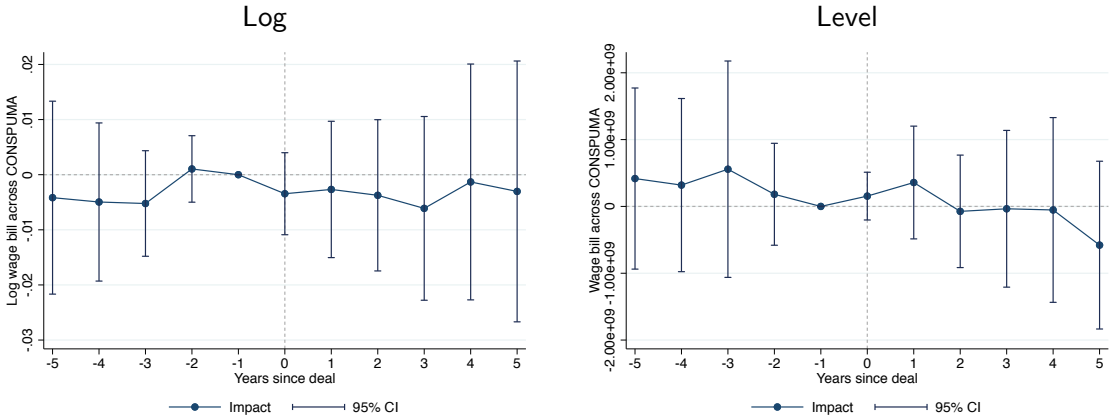




Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

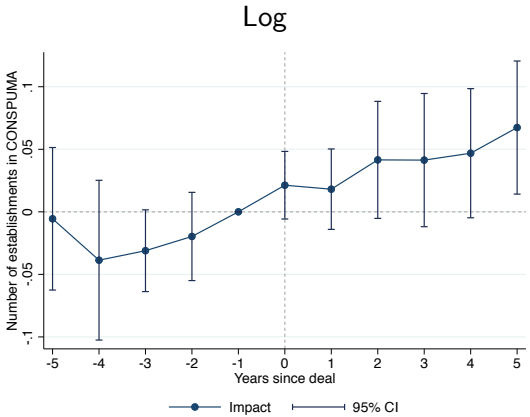
Event Study: Impact of Winning a Firm-Specific Deal on CONSPUMA-wide Wagebill (All Industries)

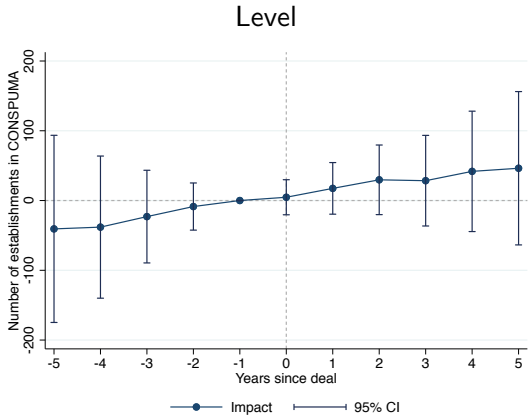


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on CONSPUMA-level Establishment Count in 3-D Industry of Deal

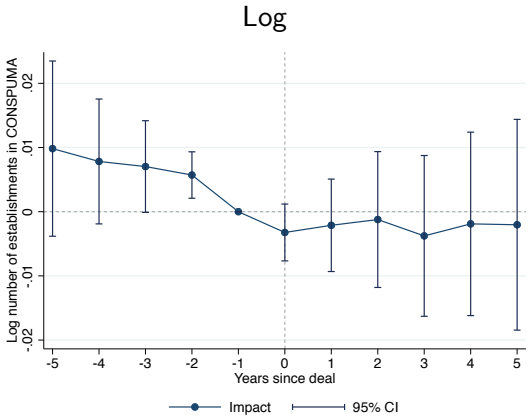


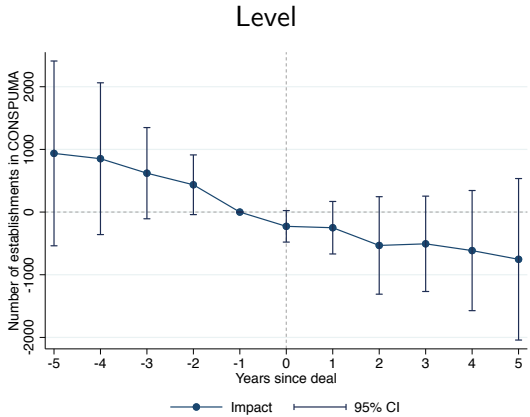


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on CONSPUMA-wide Establishment Count (All Industries)

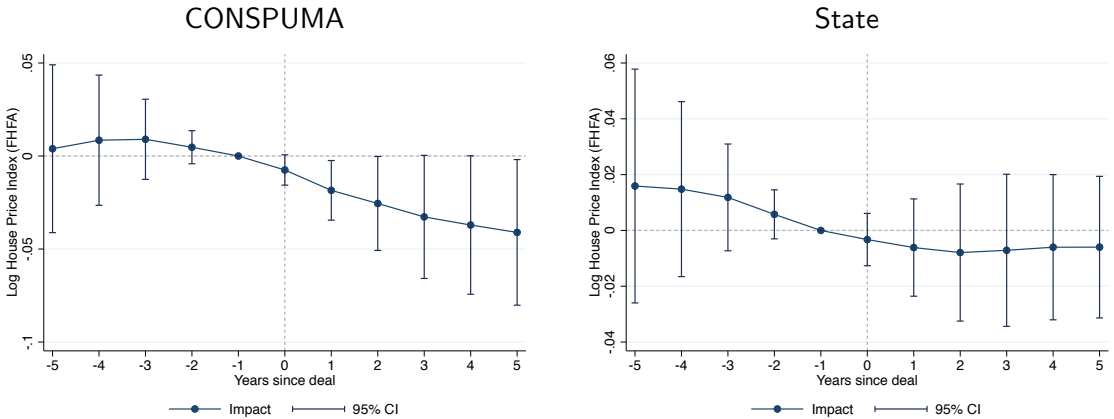




Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

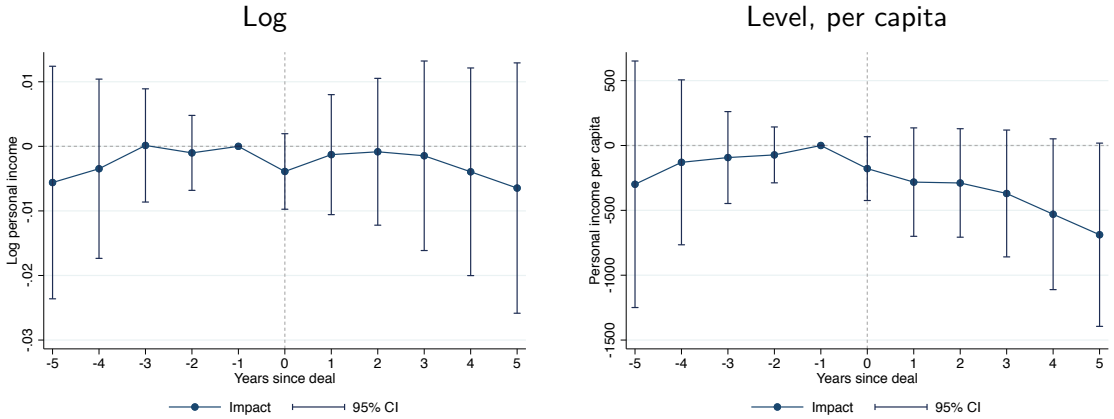
Event Study: Impact of Winning a Firm-Specific Deal on CONSPUMA-wide and State log HPI



Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

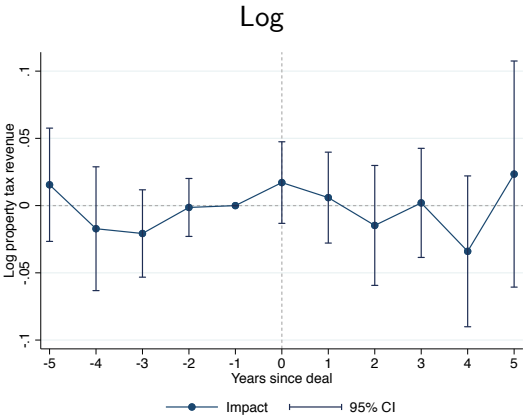
Event Study: Impact of Winning a Firm-Specific Deal on CONSPUMA-wide Personal Income

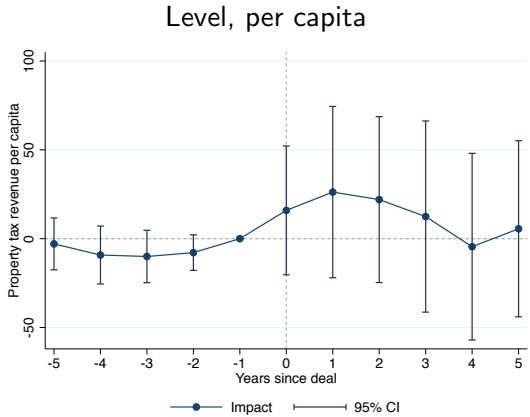


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on CONSPUMA-level Property Tax Revenue

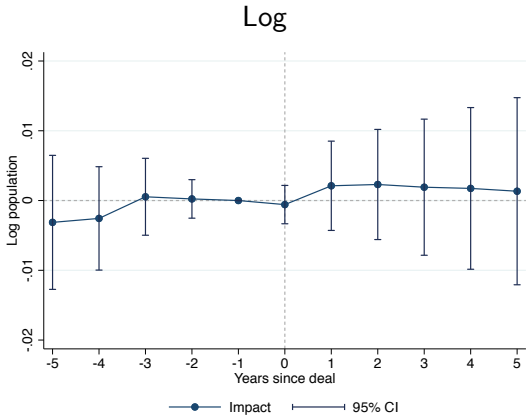


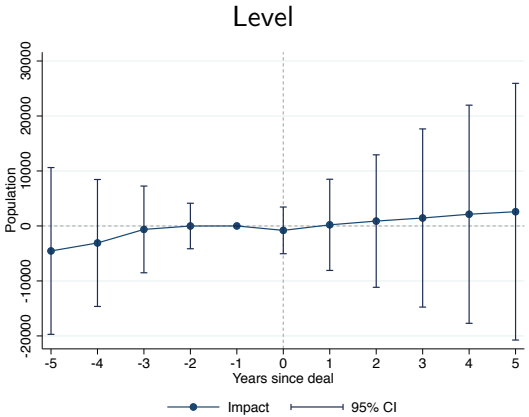


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on CONSPUMA-level Population

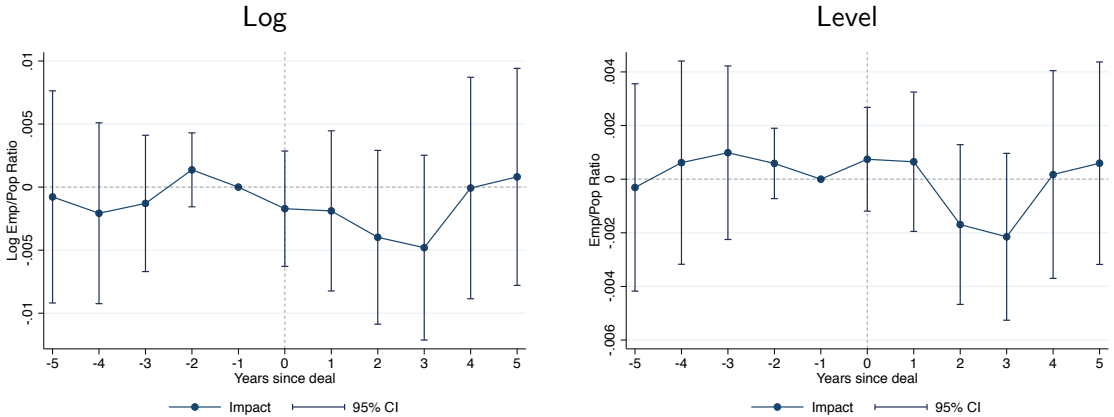




Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

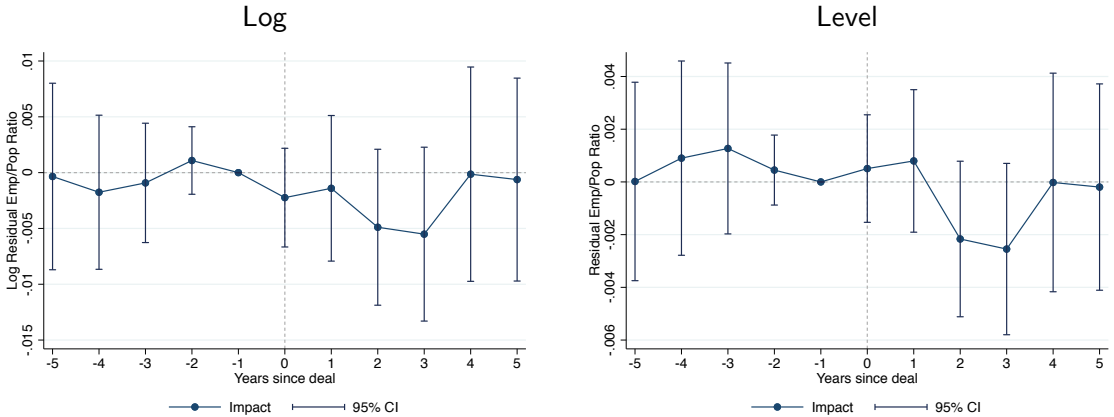
Event Study: Impact of Winning a Firm-Specific Deal on CONSPUMA-level Employment-to-Population Ratio



Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

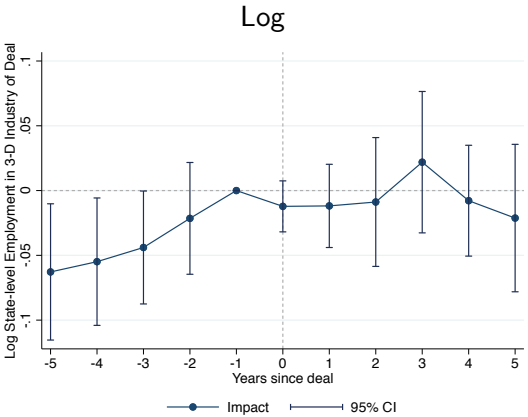
Event Study: Impact of Winning a Firm-Specific Deal on CONSPUMA-level Residual Employment-to-Population Ratio

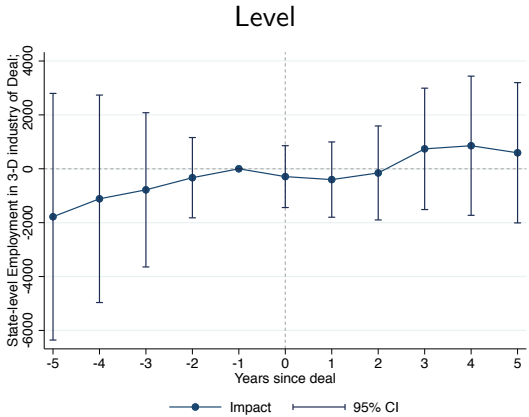


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on State-level Employment in 3-D Industry of Deal

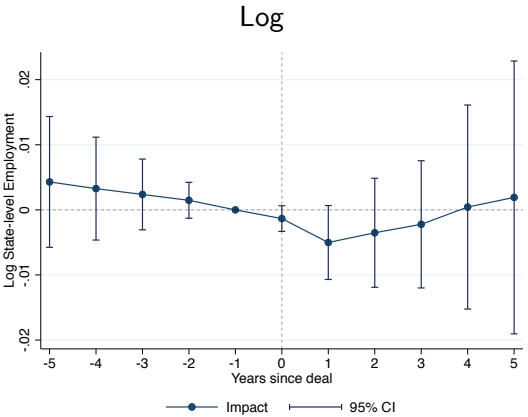


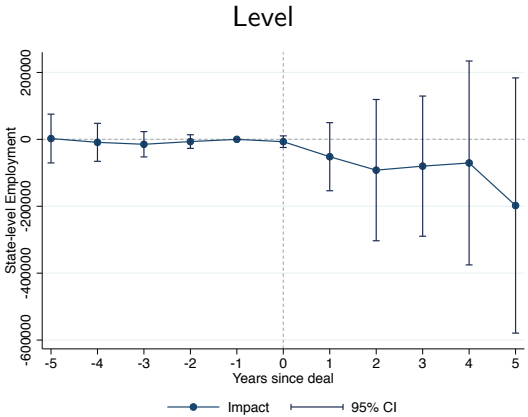


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on State-wide Employment (All Industries)

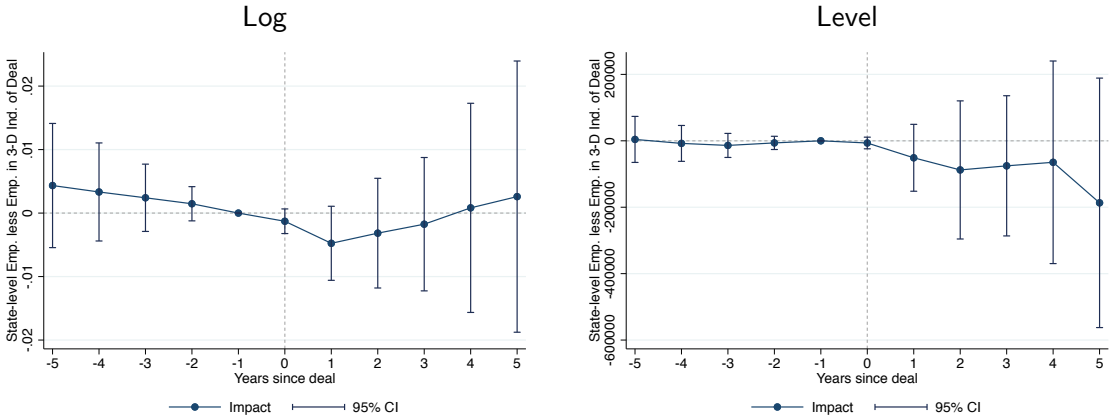




Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

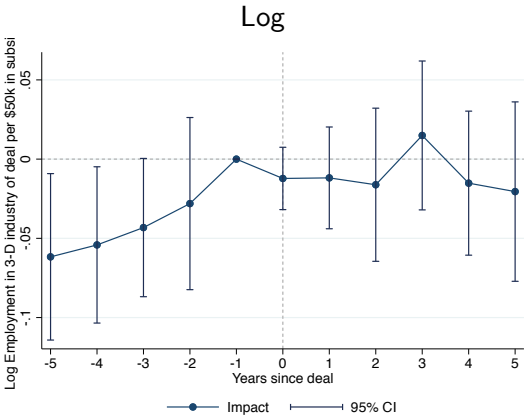
Event Study: Impact of Winning a Firm-Specific Deal on State-wide Employment less Employment in 3-D Industry of Deal

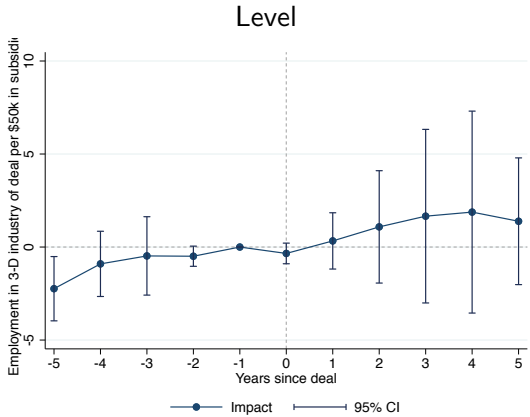


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on State-level Employment in 3-D Industry of Deal/50k in Subsidies

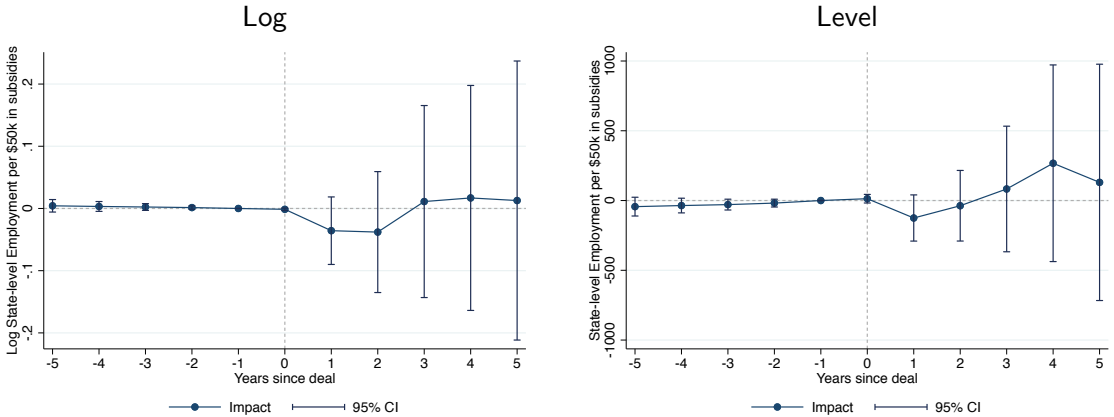




Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

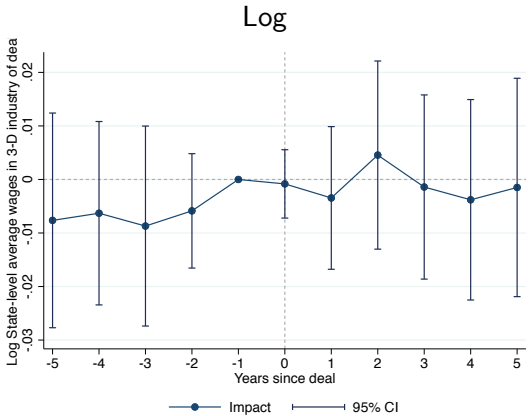
Event Study: Impact of Winning a Firm-Specific Deal on State-wide Employment/50k in Subsidies (All Industries)

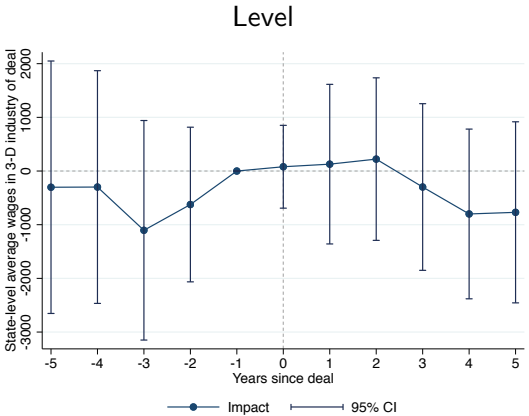


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on State-level Average Wages in 3-D Industry of Deal

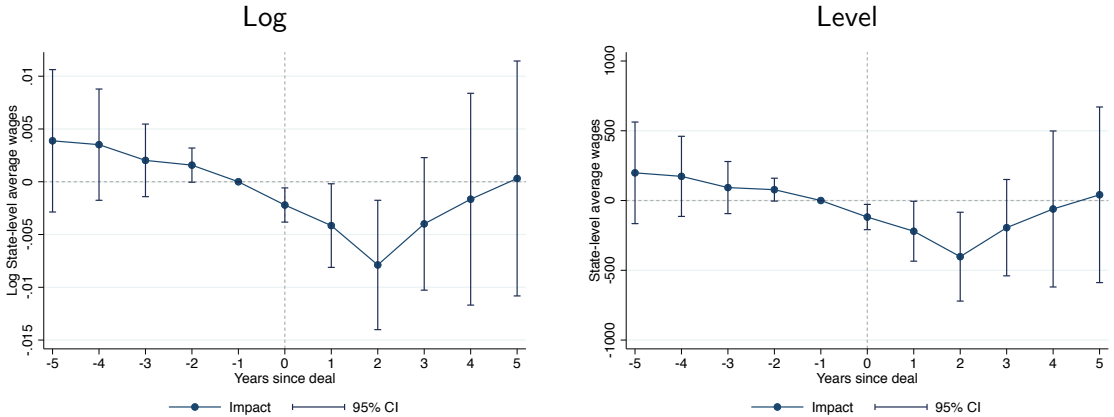




Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

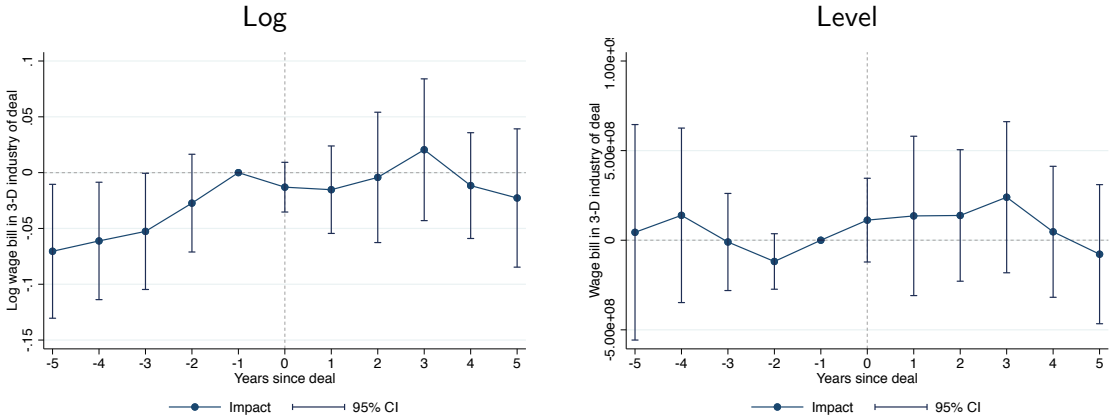
Event Study: Impact of Winning a Firm-Specific Deal on State-wide Average Wages (All Industries)



Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

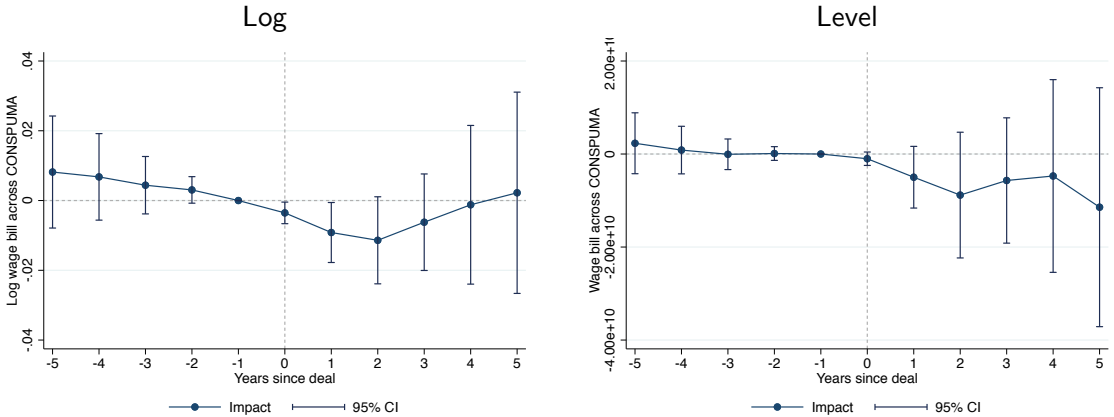
Event Study: Impact of Winning a Firm-Specific Deal on State-level Wagebill in 3-D Industry of Deal



Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

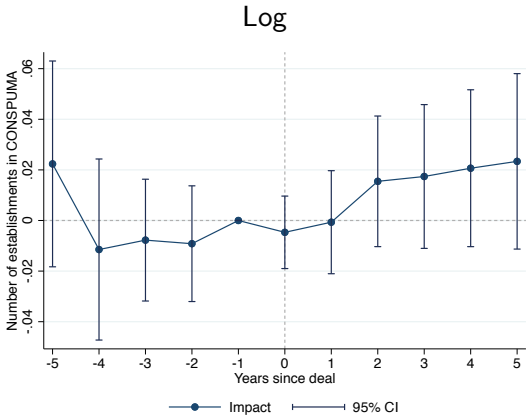
Event Study: Impact of Winning a Firm-Specific Deal on State-wide Wagebill (All Industries)

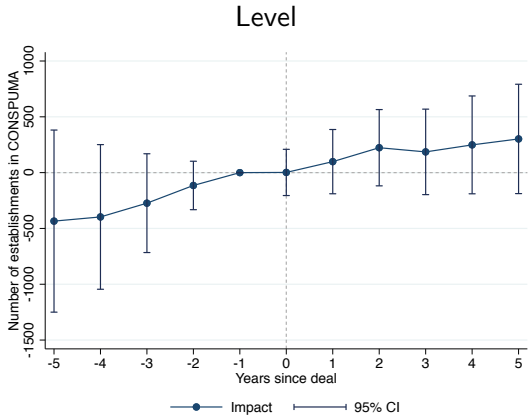


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on State-level Establishment Count in 3-D Industry of Deal

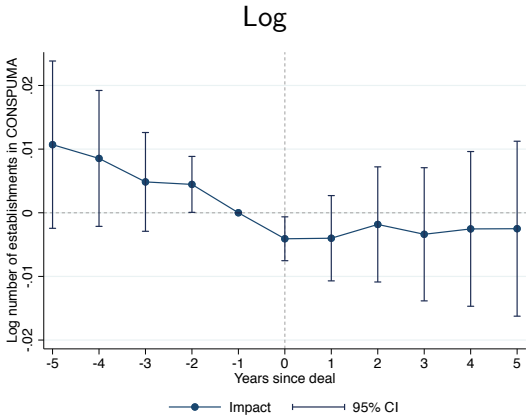


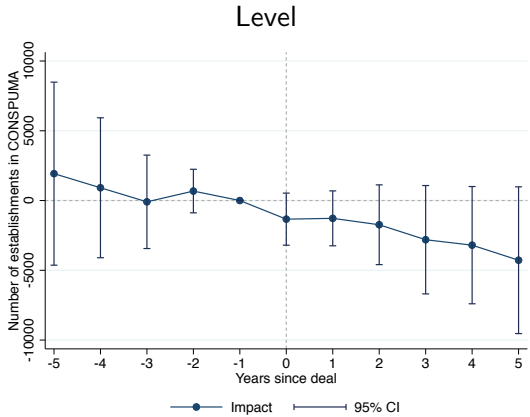


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on State-wide Establishment Count (All Industries)

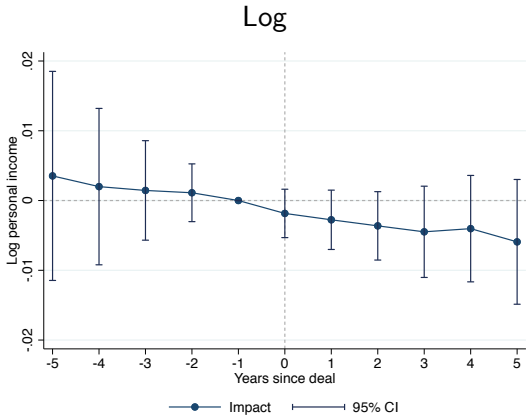


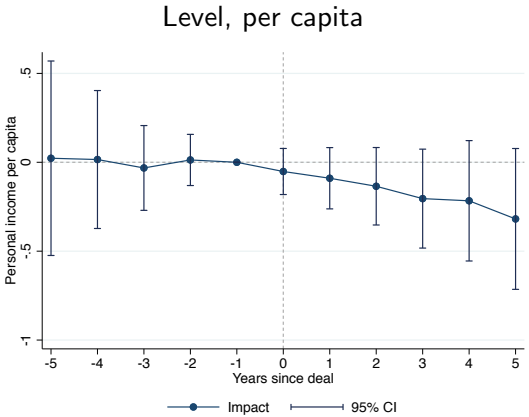


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on State-wide Personal Income

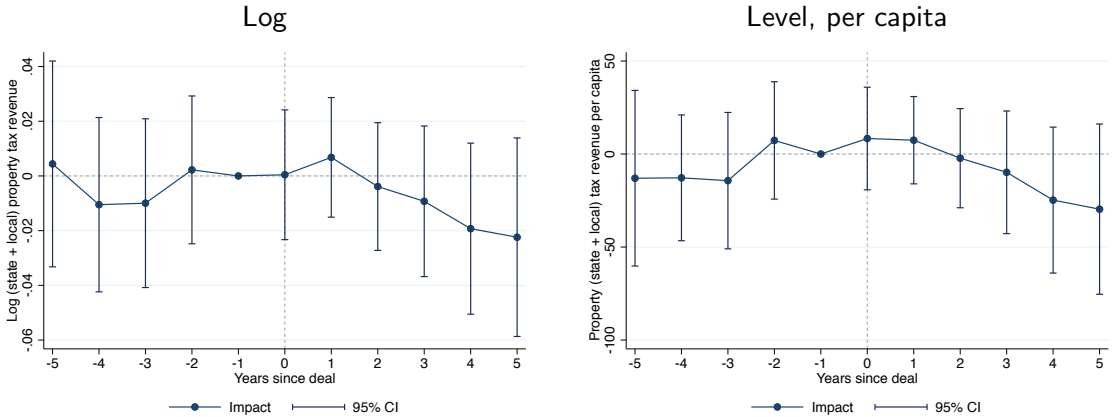




Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

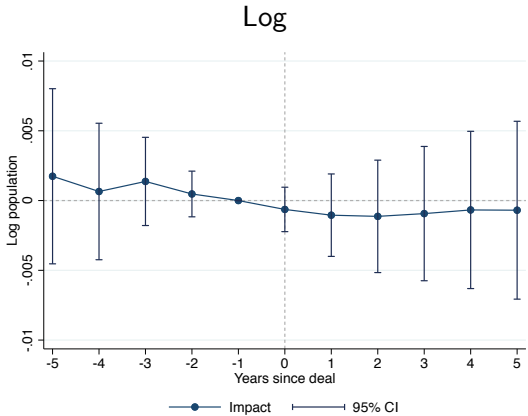
Event Study: Impact of Winning a Firm-Specific Deal on (State + Local) Property Tax Revenue at State Level

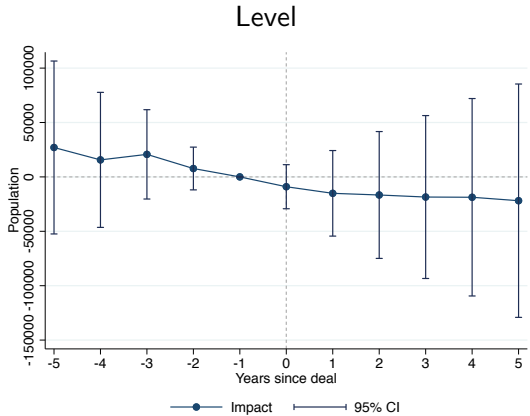


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on State-level Population

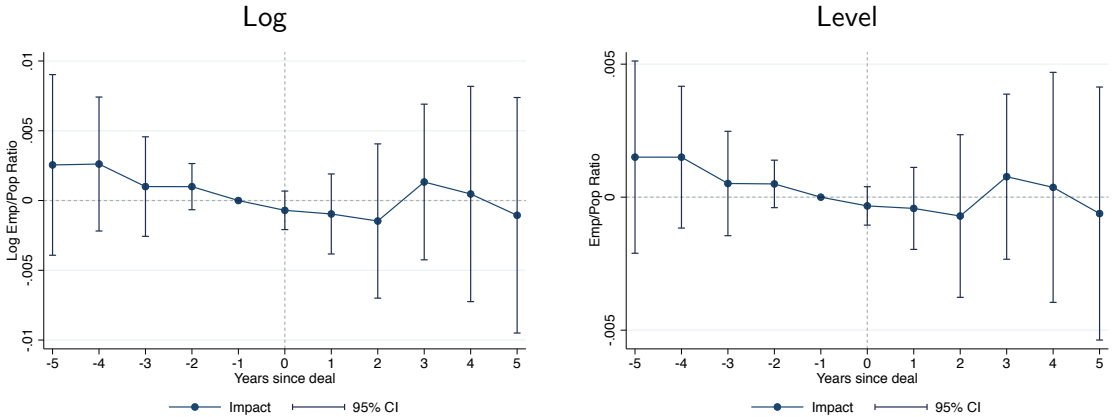




Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

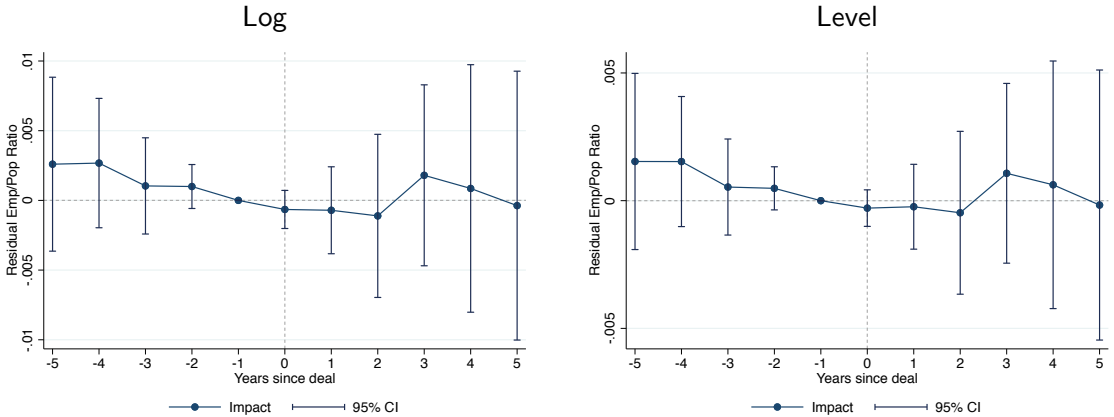
Event Study: Impact of Winning a Firm-Specific Deal on State-level Employment-to-Population Ratio



Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

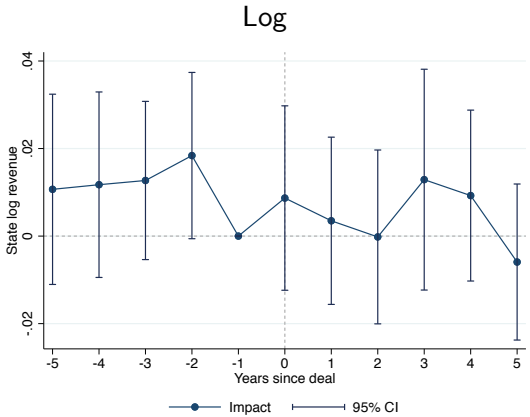
Event Study: Impact of Winning a Firm-Specific Deal on State-level Residual Employment-to-Population Ratio

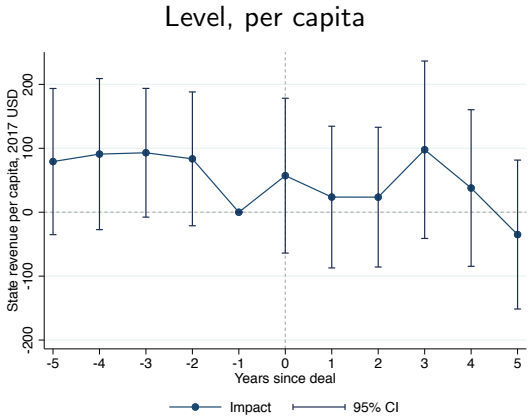


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on State-level Tax Revenue

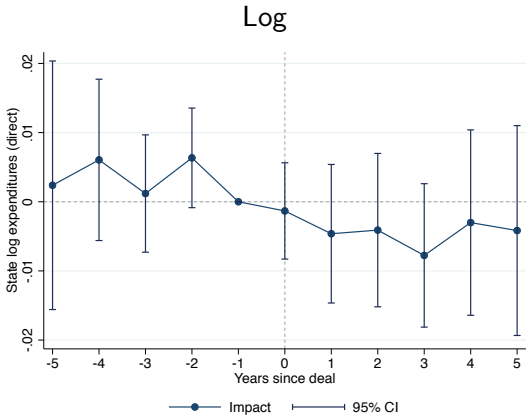


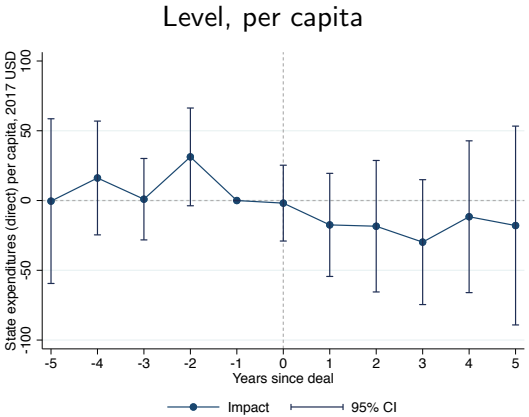


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on State-level Direct Expenditure

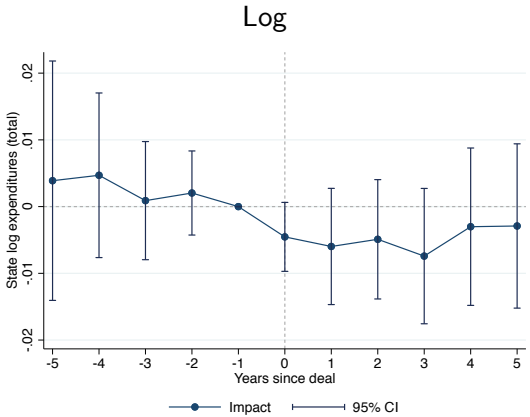


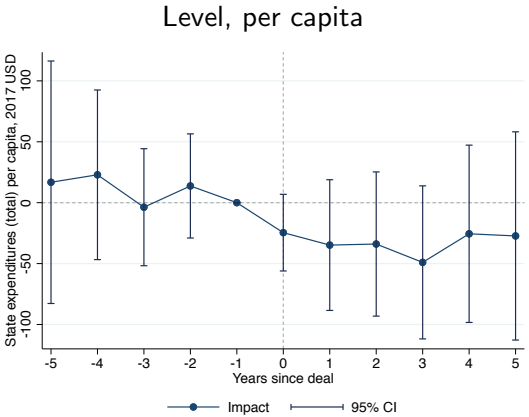


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on State-level Total Expenditure



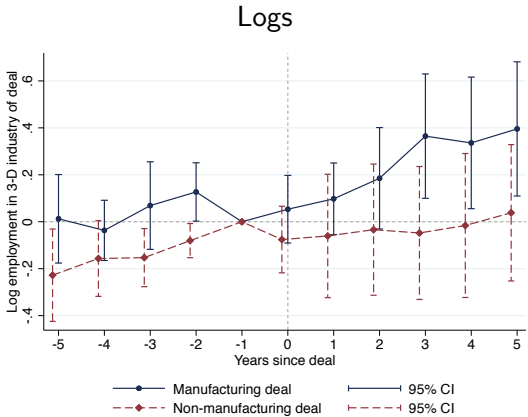


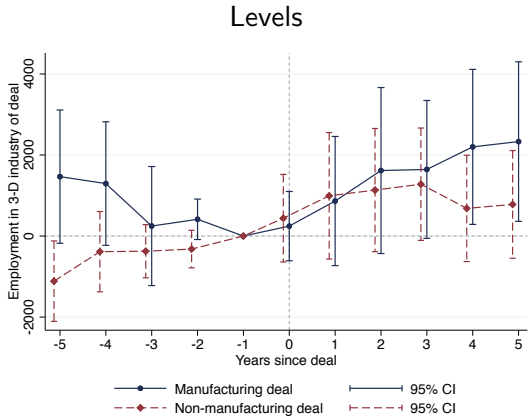
Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Heterogeneity by Industry of Deal

County-level Employment in 3-Digit Industry of Deal



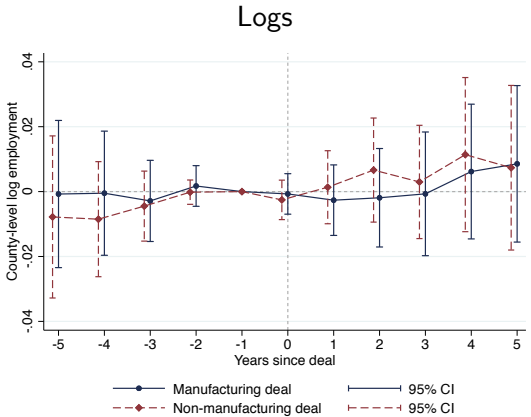


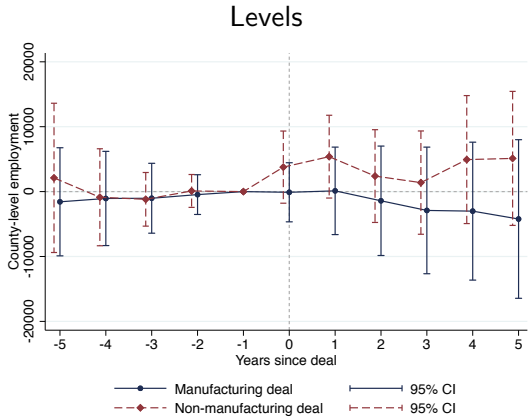
Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Heterogeneity by Industry of Deal

County-wide Employment (All Industries)



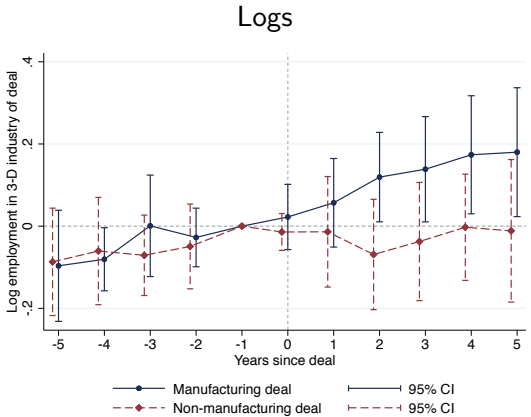


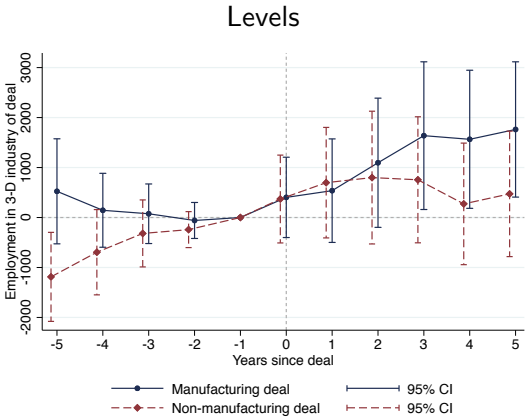
Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Heterogeneity by Industry of Deal

CONSPUMA-level Employment in 3-Digit Industry of Deal



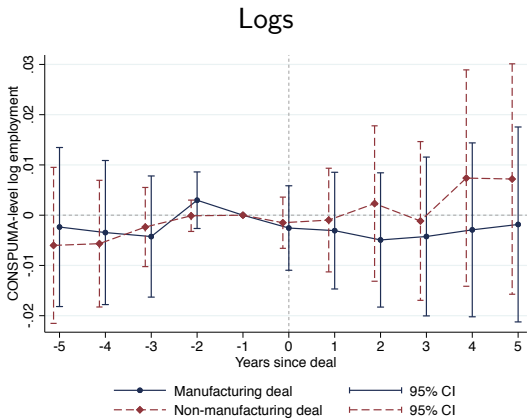


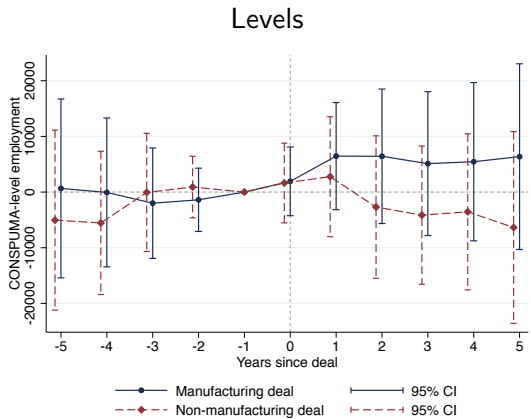
Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Heterogeneity by Industry of Deal

CONSPUMA-wide Employment (All Industries)



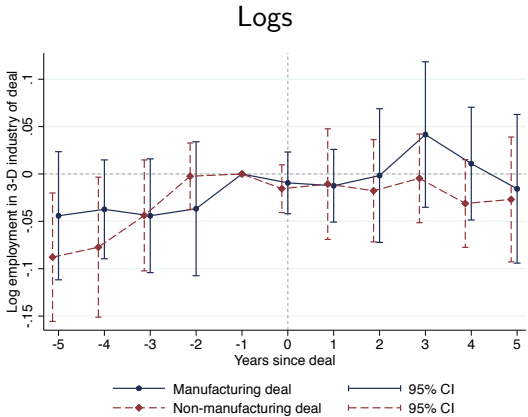


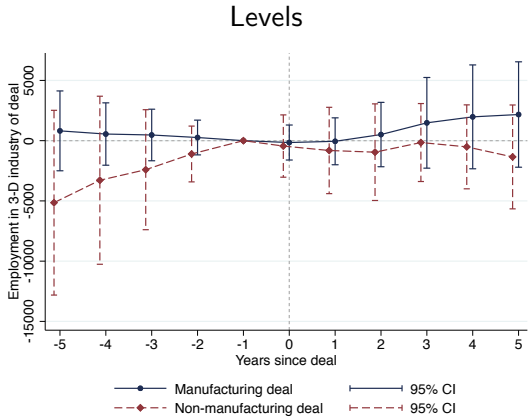
Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Heterogeneity by Industry of Deal

State-level Employment in 3-Digit Industry of Deal



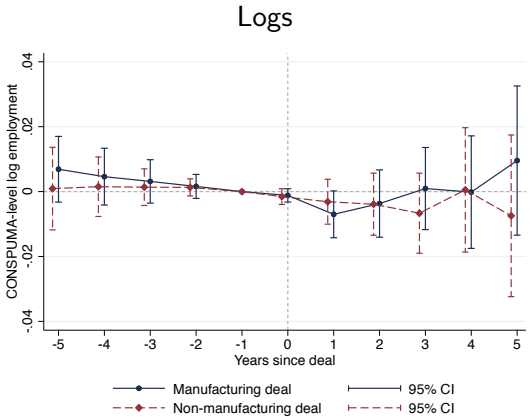


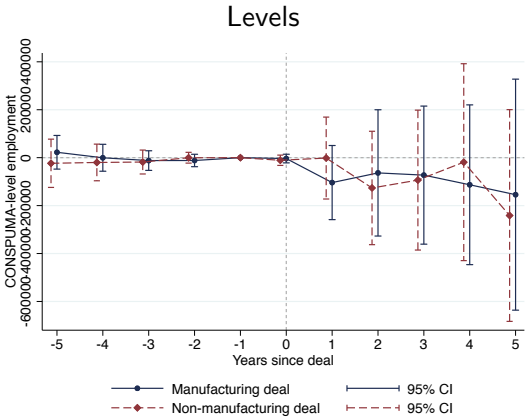
Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Heterogeneity by Industry of Deal

State-wide Employment (All Industries)



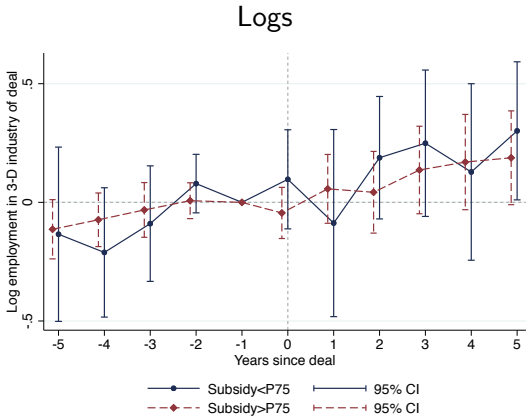


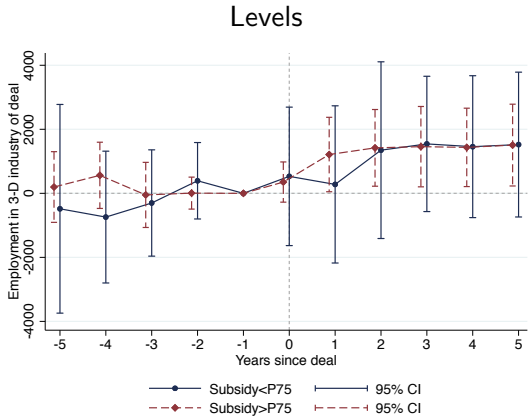
Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Heterogeneity by Subsidy Amount

County-level Employment in 3-Digit Industry of Deal



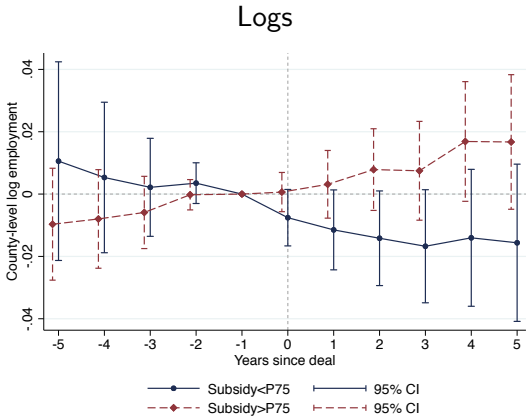


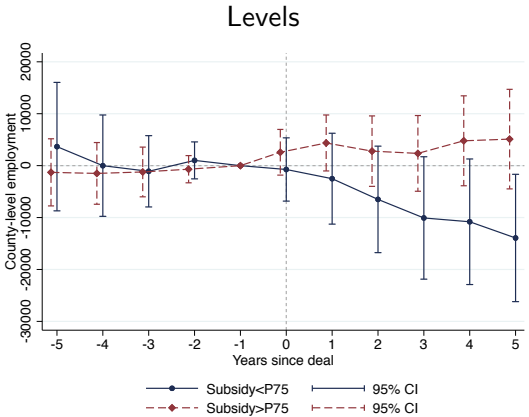
Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Heterogeneity by Subsidy Amount

County-wide Employment (All Industries)



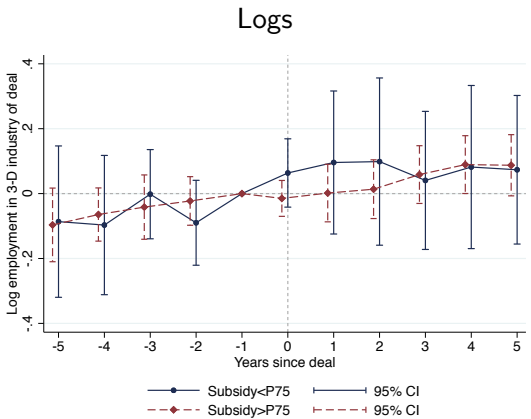


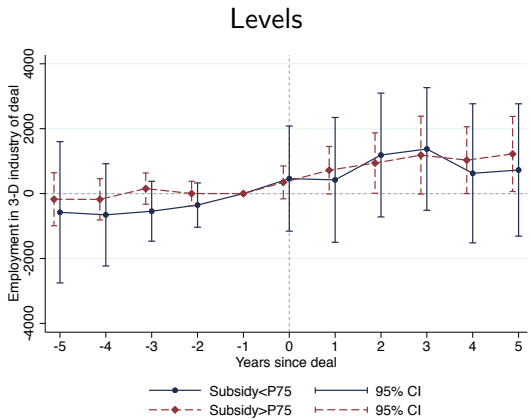
Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Heterogeneity by Subsidy Amount

CONSPUMA-level Employment in 3-Digit Industry of Deal



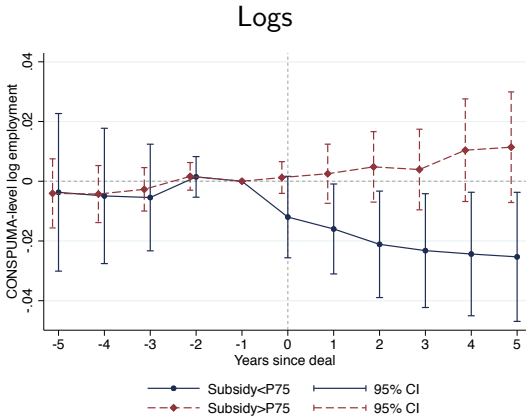


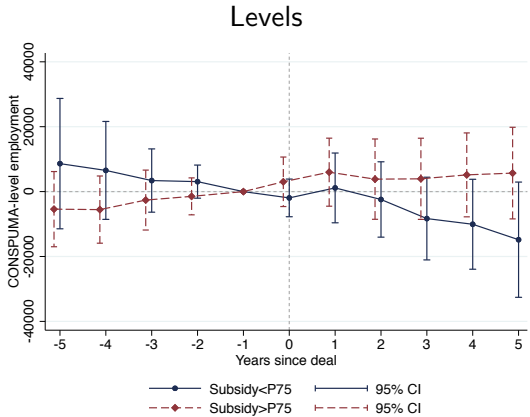
Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Heterogeneity by Subsidy Amount

CONSPUMA-wide Employment (All Industries)



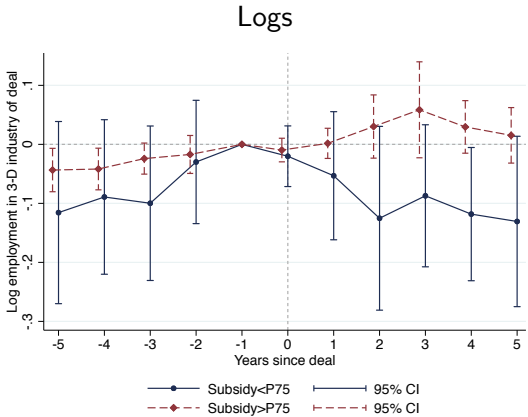


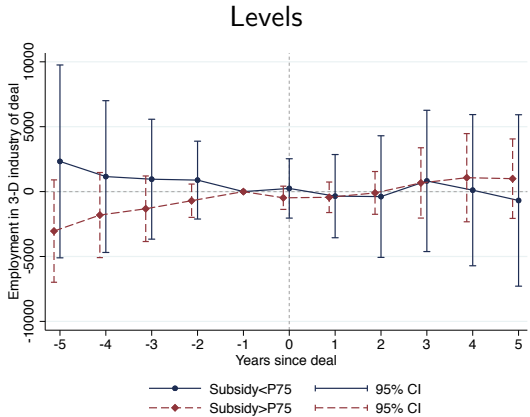
Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Heterogeneity by Subsidy Amount

State-level Employment in 3-Digit Industry of Deal



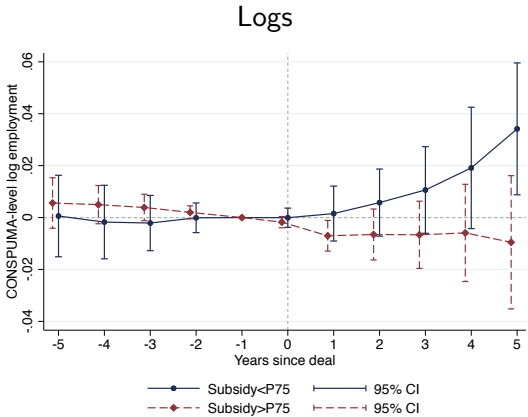


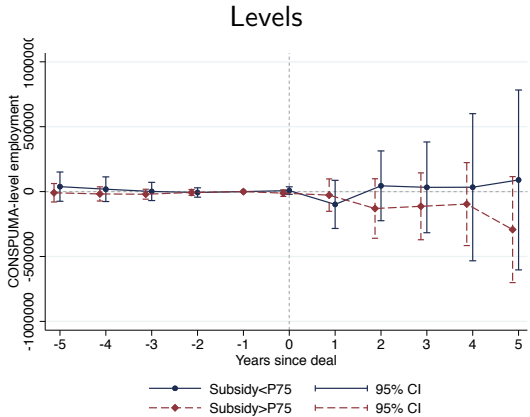
Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Heterogeneity by Subsidy Amount

State-wide Employment (All Industries)



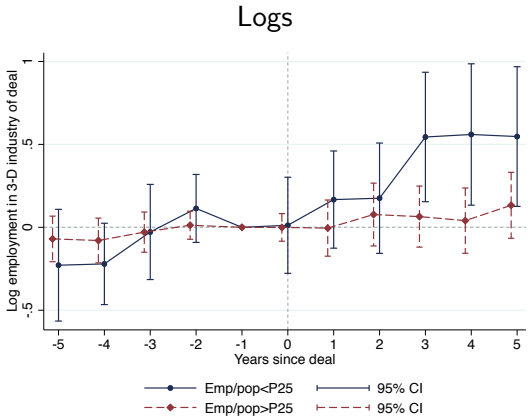


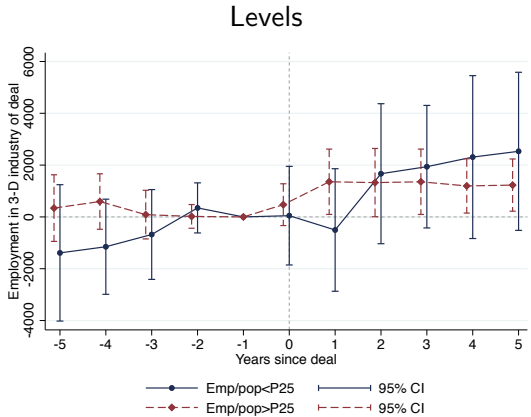
Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Heterogeneity by Employment/Population Ratio

County-level Employment in 3-Digit Industry of Deal

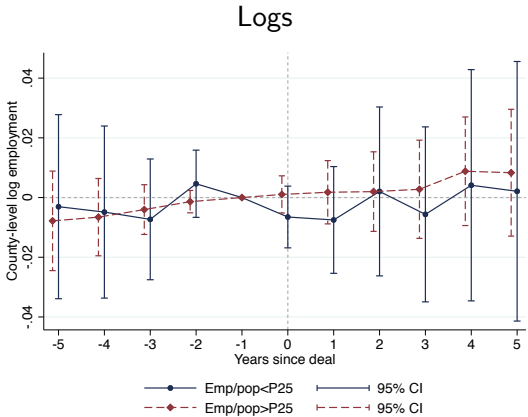


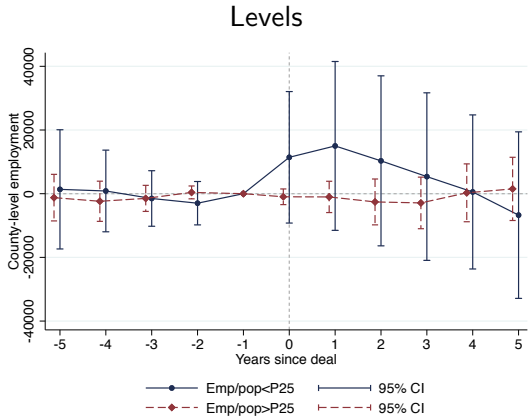


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level. P25 employment-to-population ratio among deal-counties is 0.44.

Heterogeneity by Employment/Population Ratio

County-wide Employment (All Industries)





Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level. P25 employment-to-population ratio among deal-counties is 0.44.

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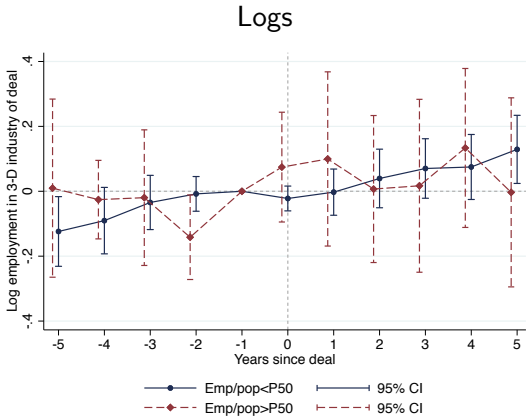
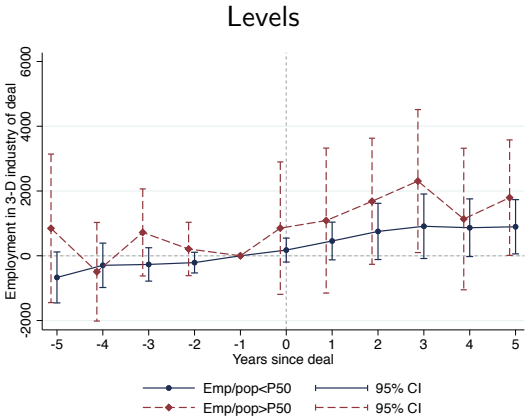
Heterogeneity by Employment/Population Ratio

CONSPUMA-level Employment in 3-Digit Industry of Deal

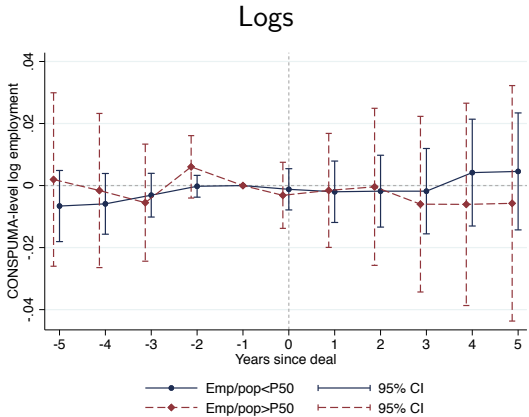


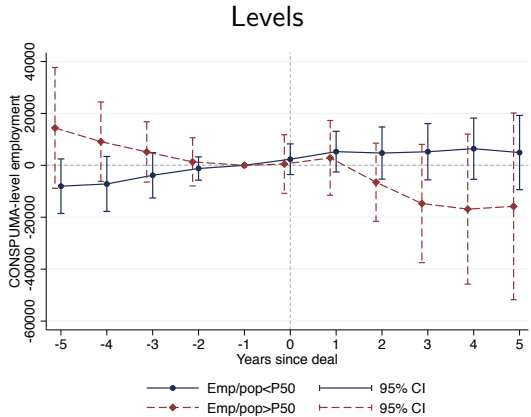


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level. P25 employment-to-population ratio among deal-CONSPUMAs is 0.44.

Heterogeneity by Employment/Population Ratio

CONSPUMA-wide Employment (All Industries)

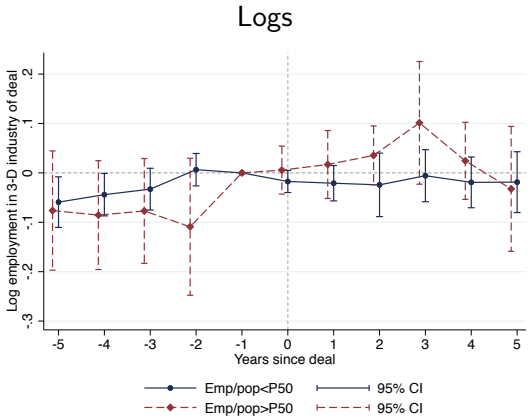


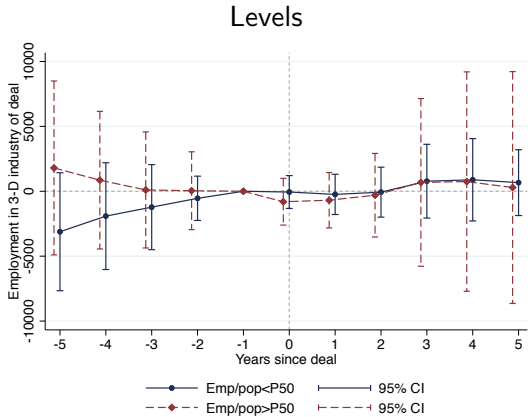


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level. P25 employment-to-population ratio among deal-CONSPUMAs is 0.44.

Heterogeneity by Employment/Population Ratio

State-level Employment in 3-Digit Industry of Deal





Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level. P25 employment-to-population ratio among deal-states is 0.55.

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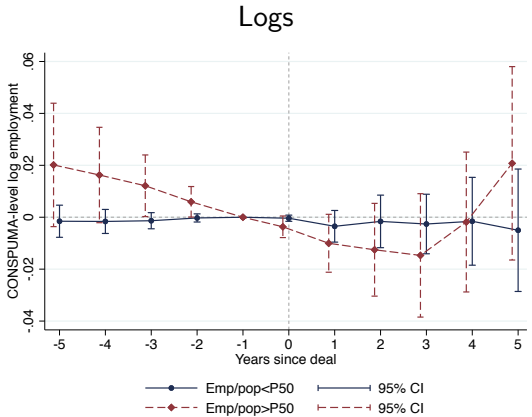
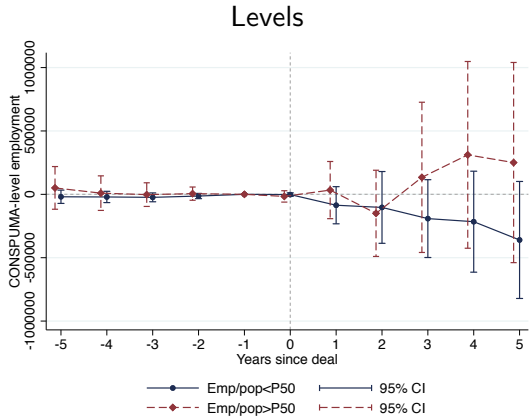
Heterogeneity by Employment/Population Ratio

State-wide Employment (All Industries)





Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level. P25 employment-to-population ratio among deal-states is 0.55.

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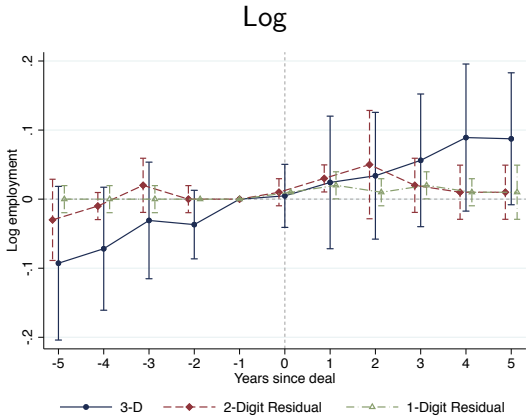
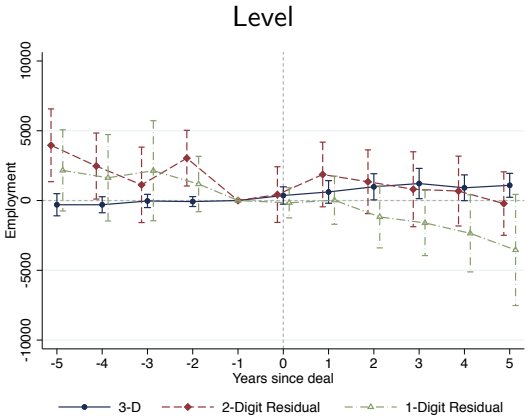
Spillovers: CONSPUMA-level Employment in Subsidies in in 3-D, 2-D and 1-D Industry of Deal

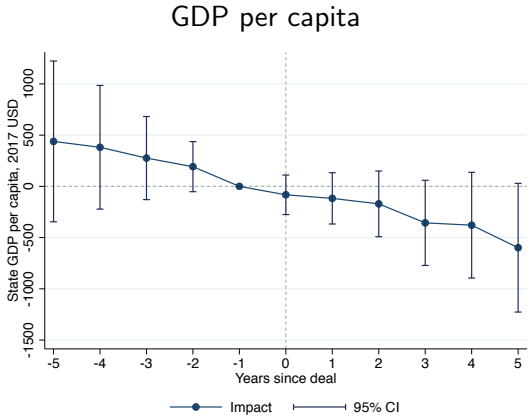


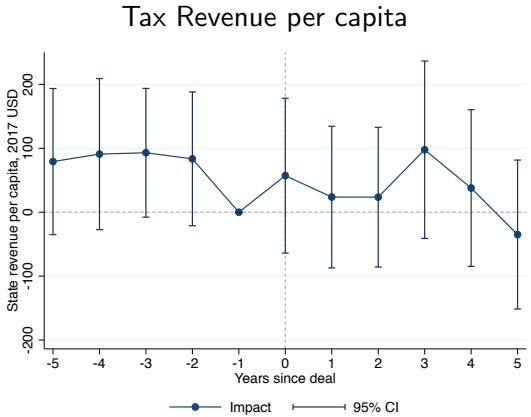


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on State Economic Outcomes

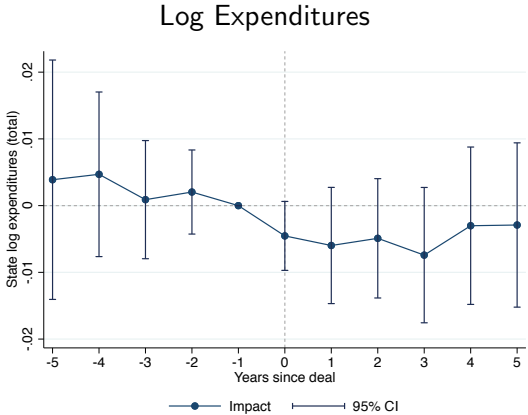


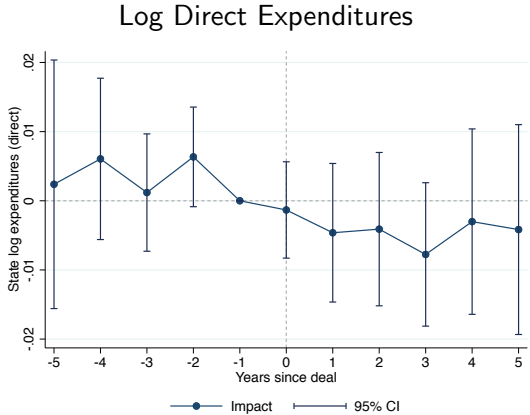


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on State Fiscal Outcomes

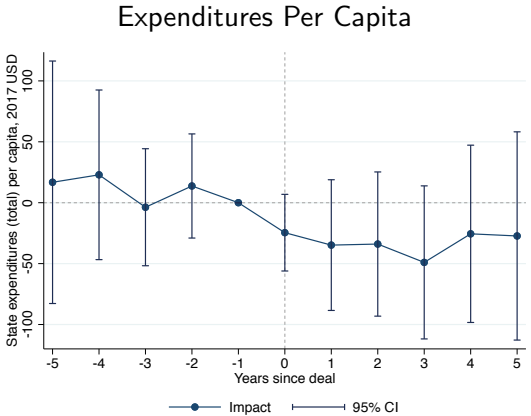


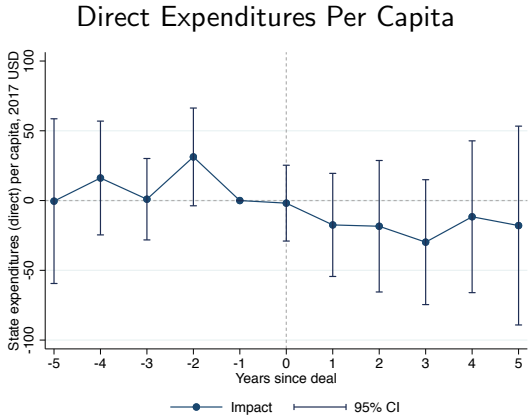


Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

Event Study: Impact of Winning a Firm-Specific Deal on State Fiscal Outcomes

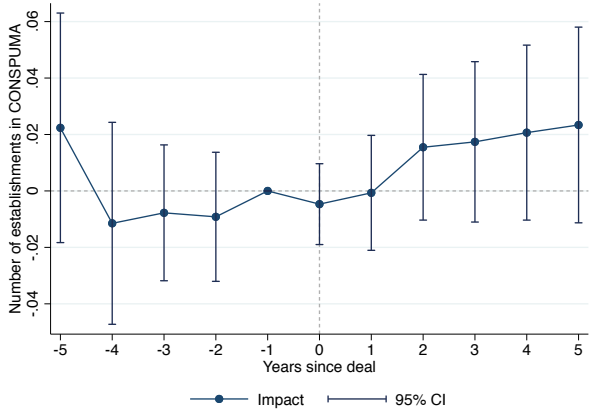




Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

▸ Go back

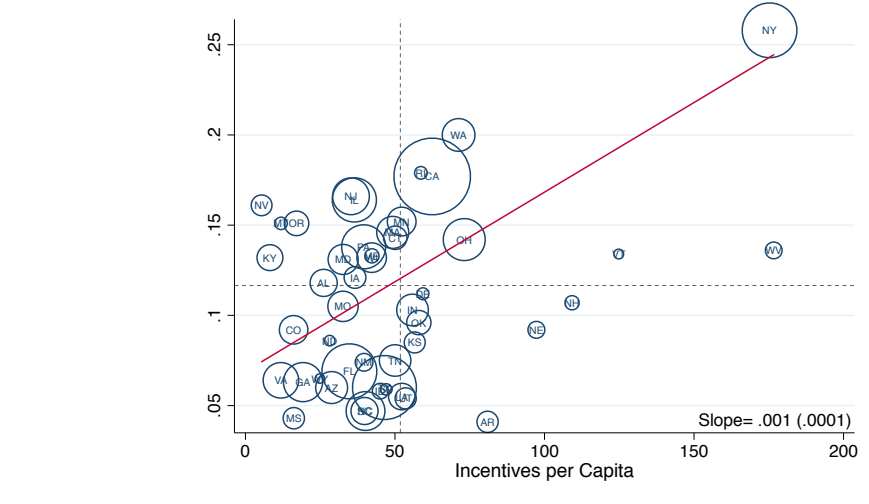
Event Study: Impact of Winning a Firm-Specific Deal on Number of Establishments in same 3-D industry, state level



Notes: The event studies control for log population, log employment and log average wages 10 years before the deal, and for deal year fixed effects. Standard errors clustered at the state level.

Go back

Share Union Members and Incentive Spending per capita



Notes: This figure plots percent union coverage of workers in each state in 2014 versus the per capita incentive spending in 2014.

▸ Go back

CONSPUMA-level Estimates of Winning Compared to Runner-up: Employment (Levels)

	3-digit industry (1)	Residual 2-digit industry (2)	Residual 1-digit industry (3)	County-wide outcomes (4)
Panel A. Impacts on Firm Aggregates				
Winner × Post	1,042.979**	-370.006	-2,138.077	-498.333
	(412.765)	(1,174.421)	(2,480.173)	(7,697.035)
Mean of outcome	12,190.231	40,415.459	86,763.550	630,393.698
Panel B. Heterogeneity by Size of Subsidy				
Subsidy > P75	1,062.388	638.721	955.194	-14,217.823
	(1,057.866)	(1,726.642)	(1,780.159)	(10,234.934)
Mean of outcome (> P75)	11,607.493	40,517.796	61,437.643	543,140.913
Subsidy ≤ P75	1,039.943**	-731.001	-3,176.619	4,069.800
	(409.355)	(1,487.827)	(3,425.608)	(8,376.855)
Mean of outcome (≤ P75)	12,383.823	40,380.779	95,205.519	659,477.959
Panel C. Heterogeneity by Employment-to-Population Ratio				
Emp/pop > P25	1,797.324	3,516.029*	4,745.784	-17,586.148
	(1,865.653)	(1,874.251)	(10,004.347)	(27,931.112)
Mean of outcome (> P25)	12,725.582	37,427.499	83,637.766	624,318.348
Emp/pop ≤ P25	-1,331.046	-11,923.508**	-23,015.798	51,834.183
	(5,218.330)	(4,677.027)	(37,277.833)	(102,408.636)
Mean of outcome (≤ P25)	10,519.118	49,191.287	96,140.903	648,619.747
Panel D. Heterogeneity by Deal Industry				
Manufacturing	7,007.383***	-18,869.229***	49,708.346***	66,066.207***
	(2,540.879)	(3,834.893)	(13,878.407)	(22,316.964)
Mean of outcome (mfg.)	7,583.885	56,871.226	56,871.226	631,841.726
Non-mfg.	-5,913.657***	25,958.768***	-63,532.287***	-79,358.443***
	(2,139.528)	(6,739.113)	(11,142.102)	(21,988.951)
Mean of outcome (non-mfg.)	17,671.952	17,614.460	122,568.641	628,659.245
Observations	5105	4826	5181	5181

▸ Go back

CONSPUMA-level DID Estimates of Winning Compared to Runner-up: Employment (Logs)

	3-digit industry (1)	Residual 2-digit industry (2)	Residual 1-digit industry (3)	County-wide outcomes (4)
Panel A. Impacts on Firm Aggregates				
Winner × Post	0.098**	0.026	0.016	0.002
	(0.046)	(0.018)	(0.016)	(0.009)
Mean of outcome	8.440	10.054	10.847	12.970
Panel B. Heterogeneity by Size of Subsidy				
Subsidy > P75	0.128	0.062	0.007	-0.016
	(0.094)	(0.053)	(0.028)	(0.015)
Mean of outcome (> P75)	8.163	9.844	10.383	12.776
Subsidy ≤ P75	0.088**	0.012	0.019	0.008
	(0.042)	(0.016)	(0.015)	(0.011)
Mean of outcome (≤ P75)	8.532	10.127	11.004	13.034
Panel C. Heterogeneity by Employment-to-Population Ratio				
Emp/pop > P25	0.137*	0.103***	0.077***	0.004
	(0.077)	(0.036)	(0.023)	(0.012)
Mean of outcome (> P25)	8.597	9.999	10.885	12.978
Emp/pop ≤ P25	-0.026	-0.196	-0.169**	-0.003
	(0.224)	(0.119)	(0.081)	(0.024)
Mean of outcome (≤ P25)	7.949	10.204	10.736	12.945
Panel D. Heterogeneity by Deal Industry				
Manufacturing	0.229	-0.449***	0.307***	0.003
	(0.147)	(0.074)	(0.060)	(0.011)
Mean of outcome (mfg.)	8.114	10.437	10.437	12.945
Non-mfg.	-0.054	0.798***	-0.330***	0.000
	(0.132)	(0.112)	(0.054)	(0.011)
Mean of outcome (non-mfg.)	8.827	9.412	11.330	13.000
Observations	5105	4497	5161	5177

▸ Go back

State-level Estimates of Winning Compared to Runner-up: Employment (Levels)

	3-digit industry (1)	Residual 2-digit industry (2)	Residual 1-digit industry (3)	County-wide outcomes (4)
Panel A. Impacts on Firm Aggregates				
Winner × Post	762.574	-1,495.856	-4,637.194	-59,809.263
	(1,456.459)	(4,640.124)	(6,457.149)	(77,474.446)
Mean of outcome	62,285.409	246,222.653	534,918.661	5664846.443
Panel B. Heterogeneity by Size of Subsidy				
Subsidy > P75	-2,397.390	-12,739.512	-9,884.731	-32,916.587
	(3,784.083)	(9,559.609)	(10,624.194)	(145,494.245)
Mean of outcome (> P75)	59,170.692	288,074.796	462,042.874	5561101.845
Subsidy ≤ P75	1,734.082*	2,055.716	-3,101.300	-60,620.737
	(966.248)	(5,660.388)	(7,367.483)	(84,819.207)
Mean of outcome (≤ P75)	63,279.866	232,860.222	558,186.231	5699932.080
Panel C. Heterogeneity by Employment-to-Population Ratio				
Emp/pop > P25	6,157.334	1,891.807	6,383.502	-59,749.860
	(3,923.198)	(11,090.758)	(25,467.121)	(119,990.842)
Mean of outcome (> P25)	63,035.544	252,249.374	566,261.865	5860971.061
Emp/pop ≤ P25	-15,498.243	-11,687.666	-37,802.793	-123,366.992
	(10,284.765)	(23,234.702)	(61,466.144)	(435,155.532)
Mean of outcome (≤ P25)	60,048.642	228,252.067	441,458.924	4932917.459
Panel D. Heterogeneity by Deal Industry				
Manufacturing	22,600.698**	-138,840.095***	169,559.438***	79,155.254
	(10,162.770)	(22,270.893)	(58,499.551)	(120,343.173)
Mean of outcome (mfg.)	33,400.455	358,736.816	358,736.816	5268912.893
Non-mfg.	-25,808.063**	168,953.522***	-217,346.353***	-224,092.848
	(11,449.785)	(25,168.458)	(49,161.343)	(186,882.562)
Mean of outcome (non-mfg.)	99,294.255	102,063.882	760,651.649	6146852.505
Observations	6039	6039	6039	5029

▸ Go back

State-level DID Estimates of Winning Compared to Runner-up: Employment (Logs)

	3-digit industry (1)	Residual 2-digit industry (2)	Residual 1-digit industry (3)	County-wide outcomes (4)
Panel A. Impacts on Firm Aggregates				
Winner × Post	0.030	-0.011	-0.005	-0.003
	(0.020)	(0.018)	(0.011)	(0.006)
Mean of outcome	10.115	12.158	12.879	15.336
Panel B. Heterogeneity by Size of Subsidy				
Subsidy > P75	-0.024	-0.012	-0.013	0.008
	(0.055)	(0.023)	(0.020)	(0.010)
Mean of outcome (> P75)	10.130	12.329	12.760	15.319
Subsidy ≤ P75	0.047**	-0.011	-0.002	-0.006
	(0.022)	(0.023)	(0.012)	(0.007)
Mean of outcome (≤ P75)	10.110	12.099	12.917	15.342
Panel C. Heterogeneity by Employment-to-Population Ratio				
Emp/pop > P25	0.009	0.011	0.005	0.001
	(0.048)	(0.043)	(0.016)	(0.006)
Mean of outcome (> P25)	10.183	12.154	12.947	15.382
Emp/pop ≤ P25	0.093	-0.077	-0.032	-0.018
	(0.153)	(0.099)	(0.043)	(0.015)
Mean of outcome (≤ P25)	9.907	12.167	12.677	15.165
Panel D. Heterogeneity by Deal Industry				
Manufacturing	0.152*	-0.455***	0.189***	-0.001
	(0.090)	(0.053)	(0.047)	(0.007)
Mean of outcome (mfg.)	9.843	12.606	12.606	15.274
Non-mfg.	-0.118	0.737***	-0.239***	-0.005
	(0.101)	(0.106)	(0.044)	(0.007)
Mean of outcome (non-mfg.)	10.460	11.322	13.230	15.412
Observations	6023	5294	6039	5029

▸ Go back

DID Estimates of Winning Compared to Runner-up: Bonus State Level Outcomes

	Log GDP (1)	Lop tax rev. (2)	Log exp. (3)	Log direct exp. (4)	Log pop. (5)	Log emp/pop (6)
Panel A. Impacts on State Aggregates						
Winner × Post	-0.010	-0.004	-0.005	-0.006	-0.001	-0.003
	(0.009)	(0.008)	(0.007)	(0.007)	(0.006)	(0.003)
Mean of outcome	26.683	24.616	24.610	24.114	15.846	-0.566
Panel B. Heterogeneity by Size of Subsidy						
Subsidy > P75	-0.017	-0.002	-0.011	-0.014	-0.003	-0.001
	(0.014)	(0.017)	(0.016)	(0.016)	(0.007)	(0.005)
Mean of outcome (> P75)	26.654	24.600	24.595	24.087	15.835	-0.576
Subsidy ≤ P75	-0.008	-0.005	-0.003	-0.003	-0.000	-0.003
	(0.009)	(0.010)	(0.008)	(0.008)	(0.007)	(0.004)
Mean of outcome (≤ P75)	26.692	24.622	24.614	24.123	15.850	-0.563
Panel C. Heterogeneity by Deal Industry						
Manufacturing	-0.001	0.000	-0.007	-0.006	-0.000	-0.000
	(0.009)	(0.011)	(0.012)	(0.010)	(0.007)	(0.004)
Mean of outcome (mfg.)	26.612	24.573	24.566	24.068	15.804	-0.568
Non-mfg.	-0.022*	-0.009	-0.002	-0.006	-0.002	-0.005
	(0.013)	(0.011)	(0.010)	(0.011)	(0.009)	(0.005)
Mean of outcome (non-mfg.)	26.774	24.672	24.666	24.172	15.901	-0.563
Observations	6039	6039	6039	6039	6039	5029

▸ Go back

DID Estimates of Winning Compared to Runner-up: Heterogeneity by Employment-to-Population Ratio

	3-digit industry (1)	Residual 2-digit industry (2)	Residual 1-digit industry (3)	County-wide outcomes (4)
Threshold: P50, impact on level of emp.				
Emp/pop > P50	1607.106**	244.287	-1546.629	4073.621
	(667.273)	(952.749)	(2515.508)	(4557.497)
Mean of outcome (> P50)	11224.984	17224.015	65374.196	3.41e+05
Enp/pop ≤ P50	472.562	505.763	1040.151	-2677.429
	(554.358)	(1536.148)	(2314.763)	(6366.552)
Mean of outcome (≤ P50)	7469.381	15550.951	38163.430	2.66e+05
Threshold: P75, impact on level of emp.				
Emp/pop > P75	1360.307	505.378	-2351.769	4320.353
	(1036.367)	(1728.850)	(1685.392)	(3638.099)
Mean of outcome (> P75)	11814.613	15739.367	62473.643	3.16e+05
Enp/pop ≤ P75	949.440*	280.363	381.971	-640.825
	(512.332)	(1005.711)	(2189.482)	(5934.222)
Mean of outcome (≤ P75)	8536.097	16600.091	48269.283	3.00e+05
Threshold: P50, impact on log of emp.				
Emp/pop > P50	0.109	0.022	0.029*	0.019*
	(0.100)	(0.018)	(0.015)	(0.011)
Mean of outcome (> P50)	8.253	9.350	10.326	12.442
Enp/pop ≤ P50	0.194*	-0.027	0.006	-0.010
	(0.102)	(0.039)	(0.033)	(0.014)
Mean of outcome (≤ P50)	7.593	8.873	9.638	11.810
Threshold: P75, impact on log of emp.				
Emp/pop > P75	-0.020	0.016	0.024	0.021*
	(0.101)	(0.023)	(0.023)	(0.012)
Mean of outcome (> P75)	8.215	9.330	10.204	12.404
Enp/pop ≤ P75	0.204**	-0.008	0.015	-0.001
	(0.083)	(0.025)	(0.024)	(0.012)
Mean of outcome (≤ P75)	7.829	9.042	9.913	12.034
Observations	4799	4386	5042	5067

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