

Evaluating State and Local Business Incentives

Cailin Slattery, Columbia GSB
Owen Zidar, Princeton & NBER

Brookings Municipal Finance Conference

July 14, 2020

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 enable us to make progress

What we do in this paper

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

1. The State and Local Business Incentives Landscape

Three Business Tax Instruments

1. **Lowering the corporate tax rate:** Lowers tax bill for all C-corps, encouraging entry of new firms and expansion of existing firms
2. **Narrowing the corporate tax base:** Lower tax bill for set of firms, based on activity/industry. Encourages entry of new firms in that industry/increase in targeted activity
3. **Offering firm-specific tax incentives:** Offer one firm a subsidy for their commitment to locate in the jurisdiction and create a certain level of employment and investment

States take different approaches

	Average	AL	CA	NV	NY	PA	SC	TN	WV
<i>Instrument 1:</i>									
Corporate Tax Rate (%)	6.5	6.5	8.8	0	7.1	10	5	6.5	6.5
Corporate Tax Revenue Per Capita (\$)	162	90	246	0	264	193	81	193	118
<i>Instrument 2:</i>									
Tax Credits per capita (\$)	19	11	60	0	33	15	32	16	0
Econ Development per capita (\$)	34	15	2	5	142	25	8	35	177
<i>Instrument 3:</i>									
Number of subsidies	14	15	13	4	20	3	16	12	4
Cost per job (\$)	45,785	12,466	4,997	42,339	11,712	93,406	6,433	11,805	34,345
Incentives as a percent of Corp Tax Revenues (%)	38	29	25	N/A	66	20	49	26	150

States take different approaches

	Average	AL	CA	NV	NY	PA	SC	TN	WV
<i>Instrument 1:</i>									
Corporate Tax Rate (%)	6.5	6.5	8.8	0	7.1	10	5	6.5	6.5
Corporate Tax Revenue Per Capita (\$)	162	90	246	0	264	193	81	193	118
<i>Instrument 2:</i>									
Tax Credits per capita (\$)	19	11	60	0	33	15	32	16	0
Econ Development per capita (\$)	34	15	2	5	142	25	8	35	177
<i>Instrument 3:</i>									
Number of subsidies	14	15	13	4	20	3	16	12	4
Cost per job (\$)	45,785	12,466	4,997	42,339	11,712	93,406	6,433	11,805	34,345
Incentives as a percent of Corp Tax Revenues (%)	38	29	25	N/A	66	20	49	26	150

Today, I will focus on firm-specific tax incentives.

Why offer a firm-specific tax incentive?

1. Attract a “high-benefit” firm
2. Can contract with firms on investment and hiring
3. Don't have to lower revenue collected from all firms in the state
4. Target mobile firms, raising revenues more efficiently (*Ramsey 1927*)
5. Retain a valuable firm

Why offer a firm-specific tax incentive?

1. Attract a “high-benefit” firm
2. Can contract with firms on investment and hiring
3. Don't have to lower revenue collected from all firms in the state
4. Target mobile firms, raising revenues more efficiently (*Ramsey 1927*)
5. Retain a valuable firm

Costs to using firm-specific tax incentives:

1. It is hard to pick winners
2. It is hard to know if firm is inframarginal
3. Lack of transparency leaves incentives exposed to political capture
4. Most distressed places may not be able to afford to compete
5. Providing generous incentives requires raising revenue from other taxes

What do we mean by firm-specific incentive?

2008 Volkswagen Deal in Tennessee

- VW chooses Chattanooga for new assembly plant
 - Promises 2,000 emp and \$1B investment
- 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
- 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

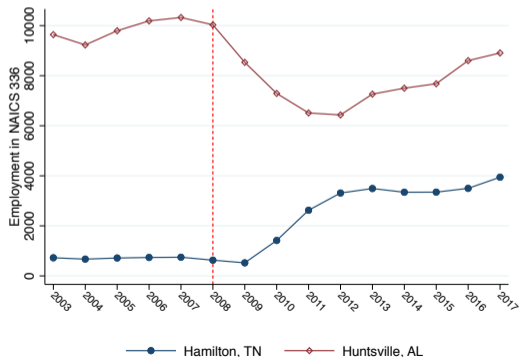
Volkswagen location decision was “truly a very close competition”

- Initially considered “more than 100 candidate sites”
- Runner-up in Huntsville, AL, subsidy offer at least **\$386 million**

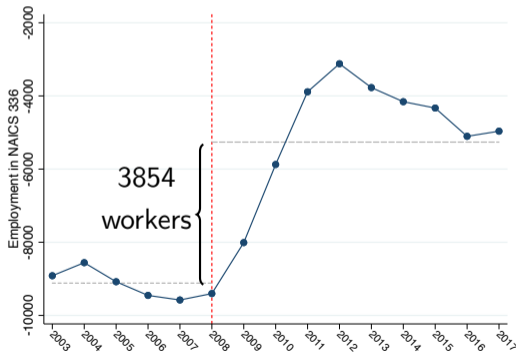
Volkswagen location decision was “truly a very close competition”

- Initially considered “more than 100 candidate sites”
- Runner-up in Huntsville, AL, subsidy offer at least **\$386 million**

Employment in Auto Manufacturing



Diff Between Winner and Runner-up



2. Data on State and Local Business Incentives

Firm-Specific Incentives: Data Collection and Sources

Company	Year	Winner	Runner-up	Subsidy (\$M)	Jobs at Stake	Invest (\$M)
Hyundai	2002	Montgomery, AL	Hardin, KY	234.6	2,000	1,000
Fidelity Investments	2006	Wake, NC	Duval, FL	88.2	2,000	100
American Greetings	2011	Cuyahoga, OH	Cook, IL	117.2	1,700	25
Procter & Gamble	2015	Berkeley, WV	Franklin, PA	21.0	700	500

Sources:

Subsidy Tracker
+ Site Selection

Example

Articles on
Subsidy Deals

Example

Tax Expenditure
Reports

Example

State Budget
Documents

Example

Firm-Specific Incentives: Data Collection and Sources

Company	Year	Winner	Runner-up	Subsidy (\$M)	Jobs at Stake	Invest (\$M)
Hyundai	2002	Montgomery, AL	Hardin, KY	234.6	2,000	1,000
Fidelity Investments	2006	Wake, NC	Duval, FL	88.2	2,000	100
American Greetings	2011	Cuyahoga, OH	Cook, IL	117.2	1,700	25
Procter & Gamble	2015	Berkeley, WV	Franklin, PA	21.0	700	500

Sources:

Subsidy Tracker
+ Site Selection

Example

Articles on
Subsidy Deals

Example

Tax Expenditure
Reports

Example

State Budget
Documents

Example

543 subsidies, average \$178M, 1,500 jobs (2002-2017)

Most subsidies go to manufacturing, technology, and high-skilled services

	# of Deals	Subsidy (\$ M)	Jobs Promised	Cost Per Job (\$)	Investment (\$ M)
Full sample	543	178.4	1,487	119,972	757.5
Automobile manuf. (3361)	56	293.6	2,768	106,057	854.8
Aerospace manuf. (3364)	31	585.8	2,734	214,237	534.5
Financial activities (5239)	25	92.3	2,652	34,809	286.8
Scientific R&D svc (5417)	22	113.7	518	219,259	185.0
Basic chemical manuf. (3251)	18	187.4	196	956,701	779.0

Notes: This table includes the mean deal characteristics (subsidy size, jobs, investment) for select industries. Dollars in 2017 USD.

- Automobile manufacturing most popular, has largest expected multiplier
 - Policymakers target firms with large agglomeration effects (*high-benefit*)
- 10 industries make up 47% of sample

Subsidies go to large establishments, from large profitable firms

Small establishments are less likely to receive discretionary subsidies:

Jobs promised	<i>All Discretionary Subsidies (2002-2017)</i>		
	# Subsidies	Estab Entry	% Coverage
1 - 99	39	8,971,339	0.00
100 - 249	47	26,126	0.18
250 - 499	80	4,251	1.88
500 - 999	141	1,419	9.94
1000+	236	639	36.93

Subsidies go to large establishments, from large profitable firms

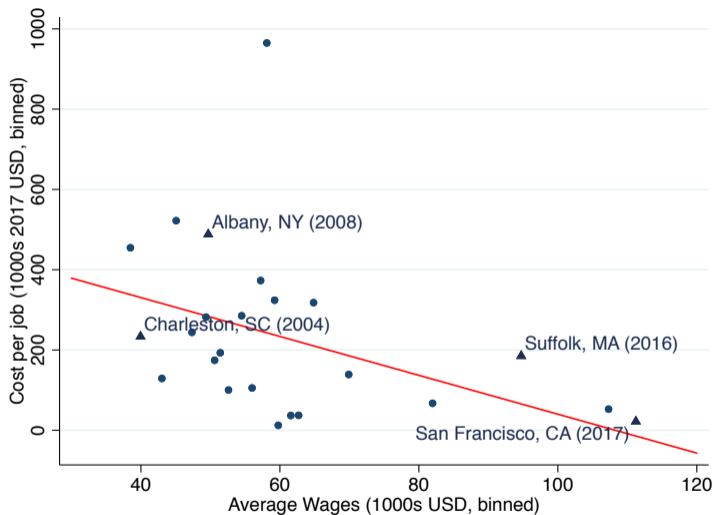
Small establishments are less likely to receive discretionary subsidies:

Jobs promised	<i>All Discretionary Subsidies (2002-2017)</i>		
	# Subsidies	Estab Entry	% Coverage
1 - 99	39	8,971,339	0.00
100 - 249	47	26,126	0.18
250 - 499	80	4,251	1.88
500 - 999	141	1,419	9.94
1000+	236	639	36.93

Compared to publicly traded companies, subsidized firms are larger, more profitable:

	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
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
Observations	107,219		2,470		313	

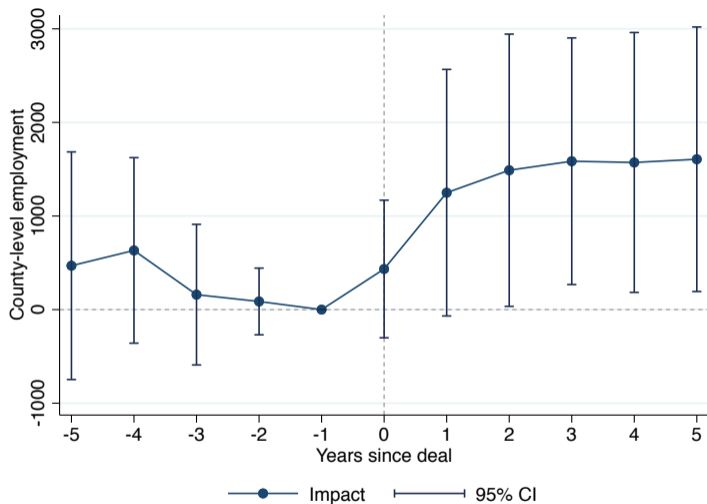
Low-wage locations provide more generous subsidies



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 cost per job on average wages.

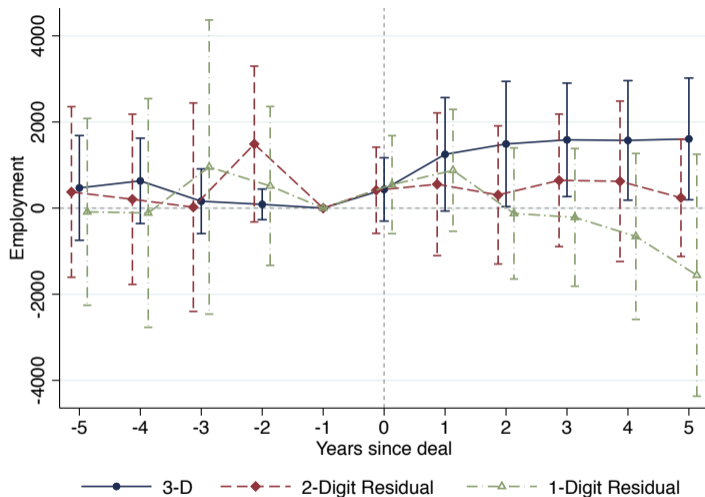
3. Effects of State and Local Business Incentives

Event Study: Within-Industry Employment Effects of Subsidy



Notes: This figure shows the event study estimates of the effect of winning a firm-specific deal on county level employment within the NAICS 3-digit industry of deal

Event Study: Spillover Effects of Winning a Subsidy Deal



Notes: This figure shows event study estimates of the effect of winning a firm-specific deal on three outcomes: employment in 3-digit industry of deal, 2-digit residual employment, and 1-digit residual employment.

Comparison with Prior Results

We detect direct effect of winning a firm on local employment within industry of deal

- Don't find effects on employment outside the directly affected industry

Previous studies have found more support for spillover effects using estab.-level data

- “Million Dollar Plants” data: 82 subsidy deals from *Site Selection Magazine*, mostly manufacturing, in 1980s and 90s (*Greenstone & Moretti 2003*)
- Greenstone, Hornbeck & Moretti (2010) find substantial TFP spillovers for estabs in winning areas (*Patrick (2016) finds more modest spillover effects*)
- Our data selected on subsidy size, MDP data selected on size of investment
 - MDP Results

4. Policy Discussion

Improvements to current policy

Policymakers can design incentives with equity considerations in mind

- Target tax incentives to hard-hit regions (*Bartik 2019*)
- Subsidize employers who promise to hire local residents (*Bartik 2019*)
- Target marginal investments and job creation for high-multiplier *industries*
 - More transparent and less political than incentives for *individual firms*
- Should also evaluate whether incentives “trickle down”

Need more rigorous evaluation and transparency requirements

- Federal accounting rules require incentives reporting, but reports are low quality
- Few states require systematic evaluation of incentive programs

Considering harmonization

Various U.S. governors have proposed “truce” on subsidy competition

- NY lawmakers propose “End Corporate Welfare Act”, urge others to sign on
- This is more attractive to NY than in more distressed regions

THE WALL STREET JOURNAL

The Kansas-Missouri Subsidy Armistice

Two states agree to quit shuffling jobs back and forth across the border.

Aug. 14, 2019 7:17 pm ET

Harmonization may be more effective at the regional level (e.g. Kansas City)

- However, both states rushed to finalized deals right before truce enacted

A larger (super-)federal role

Centralized approach may be key to avoid competition and address equity concerns

- Federal programs with lenient requirements unlikely to be effective
 - E.g. Opportunity Zone program in the U.S.
- Empowerment Zones increased employment in places with poverty rates above 40%, unemployment over 15% (*Busso, Gregory and Kline 2013*)
- Recent Proposal: Tennessee Valley Authority for the 21st century (*Austin, Glaeser and Summers 2018*)

The EU restricts state aid to reduce concerns about tax competition

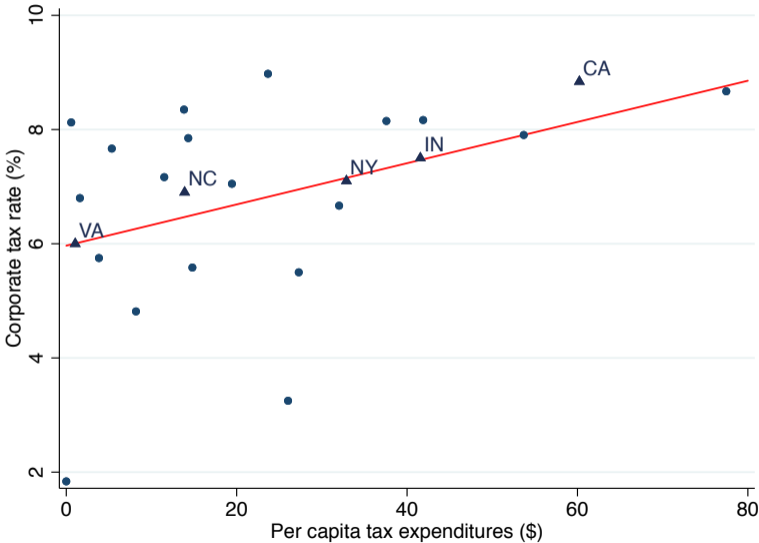
- Structural funds implemented at super-federal level
- Encourage investment, capital deepening, and econ development in distressed areas, to reduce regional disparities

Open questions and directions for future research

1. How much do state and local business tax incentive policies improve the well-being of underemployed and low-income workers?
 - As argued in Amazon HQ2 NYC case, will all good jobs go to migrants and high-skilled, leaving locals with more congestion and higher prices?
2. How effective are these approaches relative to other policies?
 - Places could instead invest in education, amenities
3. How big of a role does politics play in subsidy-giving?
 - Distribution of resources within a state?
 - Actual effects on re-election success?
4. Does targeting subsidies at the largest firms have anti-competitive effects in the product market?
 - Implications for conversation on increasing industrial concentration?

Thank you!

States with high corporate tax rates have narrower bases



Subsidy Tracker Individual Entry

Company: Microchip

Parent Company:

Subsidy Source: state

Location: Oregon

City: Gresham

Project Description:

Semiconductor fabrication

Year: 2002

Subsidy Value: \$13,100,000

Program Name: Strategic Investment Program

Awarding Agency: Business Oregon

Type of Subsidy: property tax abatement

Source of Data:

Direct from Business Oregon; not on web

Notes:

Year is year of approval; subsidy value is cumulative amount of abatement through 2010

ARCHIVE

Incentives Deal of the Month

from *Site Selection's* exclusive New Plant database

- December 2002** Oregon Incentives, Idle Plant Are 'Fab' for Microchip's Expansion Plans
- November 2002** South Carolina's \$17M in Incentives Lure 14-Employee Biotech Firm from North Carolina
- October 2002** New South Carolina Incentives Spur BMW's \$400M, 400-Job Expansion
- September 2002** Kansas Incentives Keep Goodyear's 1,700-Worker Plant Online in Topeka
- August 2002** \$140M Project at Risk? Ford, Ohio at Odds over \$83M Incentive Package
- July 2002** Mississippi's \$68M Incentive Package Fuels \$500M, 1,300-Job Nissan Expansion
- June 2002** Rhode Island Settles Land Spat, Clears Way for \$100M Dow, Fidelity Expansions
- May 2002** Hornets, Saints Get Multimillions, but Louisiana's New Incentives Have Far Broader Focus
- April 2002** New York's \$500M Incentive Package Aims to Retain Lower Manhattan Firms
- February 2002** \$17 Million in Incentives Help Maine Land 400-Worker Wal-Mart Distribution Center
- January 2002** \$150,000 Award Will Keep 40-Year-Old Neighborhood Grocery Open in Akron, Ohio

[Back](#)

Week of April 1, 2002

Blockbuster Deal of the Week

from *Site Selection's* exclusive New Plant database



Gov. Don Siegelman praised the "very supportive" work "in putting the land together quickly" for what the governor called "the biggest economic development project in the history of Alabama."

in nine years.

"This is the biggest economic development project in the history of Alabama," said Gov. Don Siegelman. "We have once again shown the world that Alabama is simply a great place to do business."

The Montgomery location won out over a site near Glendale, Ky. Hyundai in late February dropped sites in Mississippi and Ohio from its location shortlist.

Hyundai's \$1B Plant Alabama Bound After 11th-Hour Bargaining

By JACK LYNE, *Site Selection* Executive Editor of Interactive Publishing

SEOUL – The final brake shoe has dropped, and "Project Beach" has landed: Hyundai Motor Co., South Korea's largest carmaker, has picked Hope Hull, Ala., as the site of its new US\$1 billion auto assembly plant. Located just south of Montgomery, the plant will employ at least 2,000 workers with annual average salaries of some \$40,000.

The Alabama facility will be Hyundai's first U.S. plant. The site-selection announcement ends the often very public odyssey of Project Beach, the Seoul-based automaker's code name for its U.S. location search.

Hyundai's operation marks the fourth major automotive production plant that Alabama has landed

Electrolux Home Products, Inc. (“EHPI”)

In addition to North Carolina, EHPI management considered two other potential locations: South Carolina and Tennessee. South Carolina offered several desirable locations in York and Lancaster Counties. South Carolina submitted a formal proposal that included significant up-front cash incentives and cash grants valued at approximately \$54 million. EHPI recently established a large manufacturing facility in Memphis, Tennessee. That facility was located there after extensive analysis of the incentives offered in Tennessee, Alabama, and North Carolina. Tennessee was chosen in large part due to its superb incentive package.

- Nexteer Automotive (Steering Solutions Services Corporation) - The former steering division of Delphi Corporation, which operates in **Saginaw** under the Nexteer brand name, is the only global Tier One automotive supplier focused on advanced steering and driveline systems technology. The company plans to invest \$413 million to actively pursue diverse new business opportunities. The project will retain 8,711 total jobs, including 2,400 directly by the company. The MEDC estimates the increased economic activity created by the project will retain an additional 6,311 indirect jobs. Based on the MEDC's recommendation, the MEGA board today approved a state tax credit valued at \$70.7 million over 10 years to encourage the company to expand in Michigan over competing sites in Europe and China. Buena Vista Charter Township is considering an abatement in support of the project. <http://www.nexteer.com/>

Table 3.1
Fiscal Year Tax Credits
Returns Processed During Fiscal Year 2015

Code Section(s)	Credit	Year Enacted	Credit Claimed Against	Number of Returns	Amount
§§ 58.1-439.18 et seq.	Neighborhood Assistance Act Credit	1981 (effective July 1, 1981)	Individual, Corporate, Insurance and Bank	4,393	\$14,512,830
§ 58.1-280	Enterprise Zone Business Tax Credit	1982 (effective July 1, 1982)	Individual, Corporate, Insurance and Bank	12	1,218,516
§§ 58.1-334 & 58.1-432	Conservation Tillage Equipment Credit	1985 (effective 1985)	Individual and Corporate	255	486,727
§ 58.1-435	Low-Income Housing Credit	1989 (effective 1990)	Individual, Corporate, Insurance and Bank	-	15,542
§§ 58.1-337 & 58.1-436	Advanced Technology Pesticide and Fertilizer Application Equipment Credit	1990 (effective 1990)	Individual and Corporate	99	158,193
§ 58.1-438.1	Tax Credit for Vehicle Emissions Testing Equipment and Clean-Fuel Vehicles and Certain Refueling Property	1993 (effective 1993)	Individual and Corporate	41	9,482
§ 58.1-439	Major Business Facility Job Tax Credit	1994 (effective 1995)	Individual, Corporate, Insurance and Bank	74	4,109,769
§ 58.1-439.2	Coastfield Employment Enhancement Tax Credit (Refundable)	1995 (effective 1996)	Individual and Corporate	49	28,363,515
§ 58.1-439.1	Clean Fuel Vehicle and Advanced Cellulosic Biofuels Job Creation Tax Credit	1995 (effective 1996)	Individual and Corporate	191	307,062
§ 58.1-280.1	Enterprise Zone Real Property Investment Tax Credit (Refundable)	1995 (effective July 1, 1995)	Individual and Corporate	0	0
§ 58.1-339.2	Historic Rehabilitation Tax Credit	1996 (effective 1997)	Individual, Corporate, Insurance and Bank	1,038	97,998,279
§ 58.1-439.4	Day-Care Facility Investment Credit	1996 (effective 1997)	Individual and Corporate	0	0
§§ 58.1-339.3 & 58.1-439.5	Agricultural Best Management Practices Tax Credit	1996 (effective 1998)	Individual and Corporate	471	1,144,933
§ 58.1-439.6	Worker Retraining Tax Credit	1997 (effective 1999)	Individual, Corporate, Insurance and Bank	6	160,926
§ 58.1-439.7	Recyclable Materials Processing Equipment Credit	1998 (effective 1999)	Individual and Corporate	91	623,285
§ 58.1-332.1	Foreign Tax Credit	1998 (effective 1998)	Individual Only	1,689	507,562
§ 58.1-339.4	Qualified Equity and Subordinated Debt Investments Tax Credit	1998 (effective 1999)	Individual Only	241	2,096,539
§ 58.1-439.10	Waste Motor Oil Burning Equipment Credit	1998 (effective 1999)	Individual and Corporate	62	124,387
§ 58.1-439.9	Tax Credit for Certain Employers Hiring Recipients of Temporary Assistance to Needy Families (TANF)	1998 (effective 1999)	Individual and Corporate	0	0
§ 58.1-512	Land Preservation Tax Credit	1999 (effective 2000)	Individual and Corporate	3842	67,668,579
§ 58.1-339.6	Political Candidates Contribution Tax Credit	1999 (effective 2000)	Individual Only	17,357	604,377
§ 58.1-339.7	Livable Home Tax Credit	1999 (effective 2000)	Individual and Corporate	284	823,494
§ 58.1-433.1	Virginia Coal Employment and Production Incentive Tax Credit	1999 (effective 2001)	Corporate Only	7	8,909,576
§ 58.1-339.8	Low-Income Taxpayer Credit	2000 (effective 2000)	Individual Only	364,370	133,791,162
§§ 58.1-339.10 & 58.1-439.12	Riparian Forest Buffer Protection for Waterways Tax Credit	2000 (effective 2000)	Individual and Corporate	98	229,754
§ 58.1-339.9	Rent Reductions Tax Credit	2000 (effective 2000)	Individual and Corporate	0	0
§ 58.1-339.11	Long-term Care Insurance Tax Credit	2006 (effective 2006)	Individual Only	4,081	1,174,845
§ 58.1-439.12.02	Biodiesel and Green Diesel Fuels Producers Tax Credit	2008 (effective 2008)	Individual and Corporate	0	0
§ 58.1-439.12.05	Green Job Creation Tax Credit	2010 (effective 2010)	Individual and Corporate	-	752
§ 58.1-439.12.04	Tax Credit for Participating Landlords (Community of Opportunity)	2010 (effective 2010)	Individual and Corporate	20	42,041
§ 58.1-339.12	Farm Wheries and Vineyards Tax Credit	2011 (effective 2011)	Individual and Corporate	63	180,535
§ 58.1-439.12.03	Motion Picture Production Tax Credit (refundable)	2011 (effective 2011)	Individual and Corporate	4	7,176,474
§ 58.1-439.12.06	International Trade Facility Tax Credit	2011 (effective 2011)	Individual and Corporate	13	146,096
§ 58.1-439.12.08	Research and Development Expenses Tax Credit (Refundable)	2011 (effective 2011)	Individual and Corporate	317	4,210,012
§ 58.1-439.12.09	Barge and Rail Usage Tax Credit	2011 (effective 2011)	Individual, Corporate, Insurance and Bank	-	41,700
§ 58.1-439.12.10	Virginia Port Volume Increase Tax Credit	2011 (effective 2011)	Individual and Corporate	34	736,816
§ 58.1-439.12.07	Telework Expenses Tax Credit	2011 (effective 2012)	Individual and Corporate	10	112,843
§ 58.1-439.26	Education Improvement Scholarships Tax Credits	2012 (effective 2013)	Individual, Corporate, Insurance and Bank	347	1,613,525

2015 Session ▾

2015 Session

Budget Bill - HB1400 (Chapter 665)

Bill Order ▸ Office of Commerce and Trade ▸ Item 101

• Budget Bill

2014 - 2016 Biennium

HB1400

▸ Introduced

▸ Enrolled

 ▸ **Chapter 665**

SB800

▸ Introduced

Budget Amendments

Committee Reports

 ← Item → [Print](#) [PDF](#) [Email](#) **Item Lookup** ex. 43, C-1, 3-3.01 Q

Economic Development Incentive Payments

Item 101

Economic Development Services (53400)

Financial Assistance for Economic Development (53410)

Fund Sources:

	First Year - FY2015	Second Year - FY2016
Economic Development Services (53400)	\$52,160,436	\$67,863,444
	\$62,076,436	\$79,363,444
Financial Assistance for Economic Development (53410)	\$52,160,436	\$67,863,444
	\$62,076,436	\$79,363,444
General	\$51,910,436	\$67,613,444
	\$61,826,436	\$79,113,444
Dedicated Special Revenue	\$250,000	\$250,000

Authority: Discretionary Inclusion.

A.1. Out of the amounts in this Item, \$10,000,000 \$19,916,000 the first year and \$10,000,000 \$20,750,000 the second year from the general fund shall be deposited to the Governor's Commonwealth's Development Opportunity Fund, as established in § 2.2-115, Code of Virginia. Such funds shall be used at the discretion of the Governor, subject to prior consultation with the Chairmen of the House Appropriations and Senate Finance Committees, to attract economic development prospects to locate or expand in Virginia. If the Governor, pursuant to the provisions of § 2.2-115, E.1., Code of Virginia, determines that a project is of regional or statewide interest and elects to waive the requirement for a local matching contribution, such action shall be included in the report on expenditures from the Governor's Commonwealth's Development Opportunity Fund required by § 2.2-115, F., Code

[Back](#)

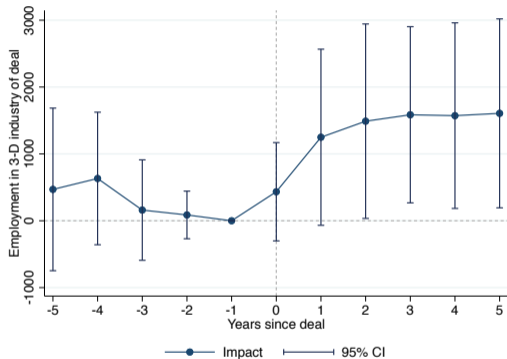
Which Places Provide Firm-Specific Subsidies?

Unique counties in 2000

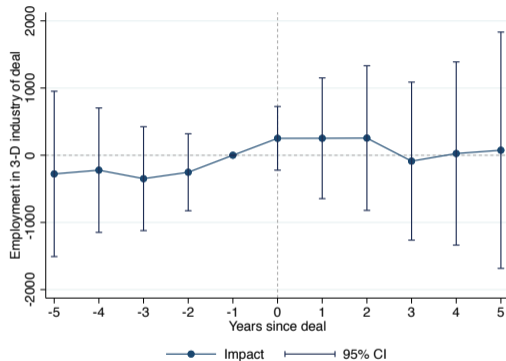
County:	Winner (Full)		Winner (Analysis)		Runner-up		Average		Pop > 100K	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Employment (K)	201.3	82.0	229.1	142.9	303.5	157.5	44.1	11.3	197.1	102.9
Population (K)	407.0	171.2	453.9	285.1	610.0	308.1	90.9	25.2	400.8	208.6
Average wages (K)	45.5	42.8	48.6	45.0	48.6	45.0	34.8	33.1	44.4	42.1
Population density	1,096.7	285.3	1,524.9	485.2	1,702.1	506.3	229.4	42.4	1,088.5	341.0
% emp in mfg.	21.5	18.0	20.1	16.0	17.6	15.3	19.3	17.3	16.4	14.8
% emp info & prof svcs.	19.3	17.2	22.4	22.1	24.1	24.0	9.6	8.3	21.2	19.6
% urban	73.2	78.5	81.0	90.6	82.8	91.8	39.1	38.4	80.4	85.0
% Bachelor's or more	22.1	20.3	25.4	24.6	26.9	25.4	16.5	14.5	24.9	23.3
% white	78.1	81.1	77.4	79.2	75.7	77.8	84.5	91.3	79.5	83.0
% Hispanic	7.0	3.1	8.1	3.9	8.1	3.9	6.2	1.8	9.1	4.3
% foreign-born	6.2	3.5	7.7	4.7	8.5	5.5	3.5	1.7	7.7	5.2
log housing units	11.2	11.2	11.5	11.6	11.7	11.7	9.4	9.3	11.5	11.4
Wage bill (M)	10,969.5	3,403.9	12,789.2	6,751.4	17,477.6	7,689.0	2,086.8	376.7	10,059.3	4,207.9
Personal income (M)	19,640.2	6,592.2	23,161.7	11,790.5	31,131.8	14,512.0	3,968.0	792.9	18,809.3	8,473.0
Personal inc/capita (K)	40.9	39.3	44.5	41.8	45.6	41.7	34.1	32.8	42.9	40.6
Unemployment rate (%)	4.0	3.7	3.7	3.4	3.8	3.5	4.4	4.1	3.9	3.6
Observations	268		115		126		3,107		537	

Comparison: Within-Industry Employment Effects of Subsidy Deal

Our Subsidy Deals Dataset



Million-Dollar Plants Dataset

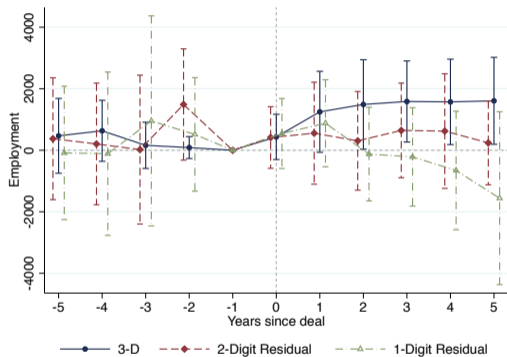


Notes: This figure plots event study estimates of the effect of winning a firm-specific deal on employment in NAICS 3-digit industry of deal.

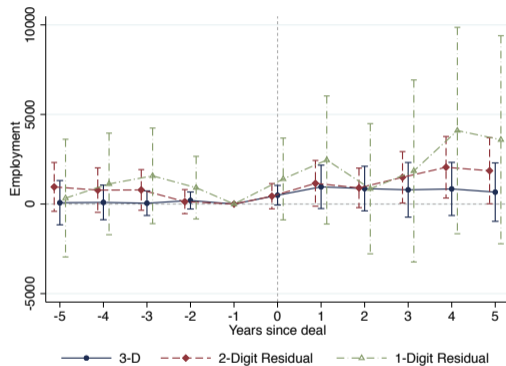
[▶ Back](#)

Comparison: Spillover Effects of Winning a Subsidy Deal

Our Subsidy Deals Dataset



Million-Dollar Plants Dataset



Notes: This figure plots event study estimates of the effect of winning a firm-specific deal on on three outcomes: employment in 3-digit industry of deal, 2-digit residual employment, and 1-digit residual employment.

[▶ Back](#)