

Combining Rules and Discretion in Economic Development Policy: Evidence on the Impacts of the California Competes Tax Credit

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September 2021

We are grateful for funding from the Laura and John Arnold Foundation and the Smith-Richardson Foundation. Any views expressed are our only, and do not reflect the view of the Foundations. We also thank current and former GO-Biz staff, including Cheryl Akin, Scott Dosick, Kristen Kane, Van Nguyen, Jonathan Sievers, and Austin Sihoe. The views expressed are our own; GO-Biz provided program data, had no control over our analysis, interpretation, or conclusions. The research in this paper was conducted while the authors were Special Sworn Status researchers of the U.S. Census Bureau at the Federal Statistical Research Data Center at the University of California, Irvine. Any views expressed are those of the authors and not those of the U.S. Census Bureau. The Census Bureau's Disclosure Review Board and Disclosure Avoidance Officers have reviewed this information product for unauthorized disclosure of confidential information and have approved the disclosure avoidance practices applied to this release. This research was performed at a Federal Statistical Research Data Center under FSRDC Project Number 2146. (CBDRB-FY21-P2146-R8879)



Introduction

- Renewed interest in leveraging policy to incentivize job creation and to encourage economic development.
 - Growing evidence that “place” matters for economic success.
 - Place-based policies can potentially address root causes of poverty.
- Existing research provides rather limited evidence that job creation incentive programs are effective.
 - Job creation efforts can entail large windfalls.
 - Jobs may fail to be created for the less-advantaged.
 - Place-based programs have a particularly poor track record.



This project

- We evaluate the effects of the California Competes Tax Credit (CCTC) on recipient neighborhoods.
 - The CCTC attempts to incorporate best practices from previous economic development initiatives.
 - Combines explicit eligibility thresholds with some discretion on the part of program officials in awarding credits to businesses.
 - Structure and implementation of the program facilitate quasi-experimental evaluation.

Approach

- Exploit microdata on accepted and rejected CCTC applicants together with restricted-access ACS data on local economic outcomes.
 - Our empirical strategy compares changes in outcomes in neighborhoods with awards to neighborhoods without awards (but that received applications).
 - Condition on total proposed jobs, helping to control for unobserved neighborhood characteristics.
 - Additionally, leverage applicant scores in a set of supplementary regressions that place more weight on areas with applicants whose scores were closer to cutoffs for eligibility for program incentives.

Summary of findings

- We find evidence of positive local employment effects of tax credit awards under the CCTC.
 - Each CCTC-incentivized job in a census tract increases the number of people working in that tract by ~ 2.5 .
 - Context: estimate of 0 implies all windfall, estimate of 1 implies no windfall, estimate > 1 implies positive local multiplier
 - Due to spillovers, magnitude of multiplier at state level may differ.
 - CCTC awards increase employment among workers residing in both high income and low income communities.
 - Positive local multiplier driven more by awards to non-manufacturing than manufacturing firms.
 - Results robust to alternative approaches.

California Competes Tax Credit

- The CCTC replaced California's EZ Program in 2014.
 - Strong evidence that the EZ Program had little effect on new job growth or business creation within targeted zones.
 - Most of EZ hiring credits were “windfalls” for firms.
- The CCTC attempted to address deficiencies in the EZ Program by, among other things, combining rules and discretion.
 - Contrasts to most EZ programs, where incentives are entitlements for businesses locating in designated areas.

California Competes Tax Credit

- Any business that might locate or grow in California can apply for tax credits under the CCTC.
- Tax credits awarded in a two-stage process:
 1. Quantitative evaluation of the projected costs and benefits of the tax credit allocation to an applicant; only those with scores below a threshold make it to phase 2 (with exceptions).
 2. A more comprehensive evaluation where program officials select among applications, and also further negotiate contract terms with winners.
- If approved, businesses have 5 years to meet their milestones (FTE, salary levels, and project investment) and claim their credits.

Quantitative evaluation (Stage 1)

Stage 1 involves a quantitative evaluation of the projected costs and benefits of the tax credit allocation to an applicant.

- A cost-benefit ratio is calculated for each applicant by dividing total credits requested by the sum of total new emp. compensation and total capital investment.
- Applicants are then ranked from lowest to highest based on the cost-ratio.
- A cutoff for proceeding to stage 2 is determined by the amount of credits available for that wave x2 (there are 3 waves per year)
 - Impossible to predict this cutoff with any certainty

Comprehensive evaluation (Stage 2)

- Those applicants with scores below the cutoff proceed to stage 2.
 - Program administrators only consider those with qualifying scores.
 - They select among those applications that are the most consistent with program goals
 - This is accompanied by the negotiation of agreements with applicants about specific annual milestones
 - These agreements are then either approved or rejected by a CCTC Committee in the Governor's office.

Program details

- About \$150-\$200 million per year was available for allocation for fiscal years 2013-14 through 2017-18 (period covered by our data).
 - 3 application rounds each fiscal year.
 - No application fee; applicants hear about awards within 3 months of submitting.
- Credits tend to be fairly large.
 - Average winning applicant received \$865,000 in credits.
 - About 20% receive > \$1 million.
- In earlier years, a set aside for “small” businesses (<\$2m in revenues)
 - No relevant stage 1 cutoff most years because too few applicants.



Program details

- Businesses locating or expanding anywhere in California can apply
 - But retains some place-based flavor: those indicating that 75%+ of their proposed net increase of new FTEs work 75%+ of the time in a high unemployment/high poverty county receive priority in review.
- GO-Biz may also automatically advance an application to stage 2 if the applicant certifies that absent the credit, the applicant's project could occur in another state or that the applicant could terminate or relocate its employees to another state.
- Several changes to improve targeting of incentives in 2018.

Why do we say “best practices”?

- Our own research has studied other economic development programs, especially place-based ones, and our conclusions on effectiveness are quite negative (most recently our new work on Opportunity Zones)
- In contrast, CCTC ...
 - Directly incentivizes *new* job creation (reducing/eliminating problem of “windfalls”)
 - Has discretionary component that allows program administrators to award credits where they will have the largest impact (but of course depends on good discretionary decision making)
 - Builds in claw back of tax credits if goals not met
 - And from a research perspective, CCTC uniquely allows discretion *and* permits rigorous evaluation



Data

- Governor's Office of Business and Economic Development (GO-Biz)
 - All CCTC applicants since program's inception
 - Complete details from businesses' applications, including proposed job creation, scores (and components thereof), and progression through review process
 - Signed confidentiality agreements to protect data
 - GO-Biz has no control over our conclusions
- Restricted-access American Community Survey (ACS)
 - 2013-2018, accessed through RDC
 - Provides annual data at the tract level as well as detailed information on workplace

Sample

- Sample covers 2013-2018
 - Covers 2 years prior to nearly all pledged CCTC-incentivized job creation and up to 5 years after the first pledged job creation.
- Use full sample of tracts where any jobs were ever proposed by a CCTC applicant
 - Excludes many tracts with little commercial activity

Basic empirical approach

- Intuition: Compare changes in outcomes in tracts where more jobs awarded (“incentivized”) to tracts where fewer jobs awarded
- Problem of “counterfactual”:
 - Maybe program administrators awarded jobs to places that we poised to do particular well – leads to overstatement of benefits.
 - Maybe program administrators awarded jobs to places doing badly – leads to understatement of benefits
- Key approach: compare to places where businesses applied for similar number of jobs to be awarded (captures underlying economic conditions – “demand” for tax credits)
- Supplemental approach: restrict comparison to tracts with applicants close to the 2x cutoff (idea – since cutoff unknown, this is closer to “random” assignment of CCTC subsidies – “RD” flavor)

Statistical model

Focus on location of jobs, and thus measure employment in each tract based on place of work.

$$y_{it} = \alpha + \beta AWARD_{it} + \gamma PROPOSED_{it} + S_i \mu + R_t \eta + \sum_{d=2}^{10} (D_{i0}^y R_t \theta_{dt}) + \varepsilon_{it}$$

where

- y_{it} is employment in tract i in year t (ACS),
- $AWARD_{it}$ is the # of jobs promised by CCTC-supported businesses in i and t
- $PROPOSED_{it}$ is the # of jobs proposed by CCTC applicants
- S_i and R_t are tract and year FEs
- In some specifications, include dummy variables for deciles of y at baseline (D_{i0}^y) interacted with year

Statistical model

Focus on location of jobs, and thus measure employment in each tract based on place of work.

$$y_{it} = \alpha + \beta AWARD_{it} + \gamma PROPOSED_{it} + S_i \mu + R_t \eta + \sum_{d=2}^{10} (D_{i0}^y R_t \theta_{dt}) + \varepsilon_{it}$$

Interested in β

- Estimate of $\beta = 0$ would imply no net local employment growth associated with CCTC awards (pure windfall)
- Estimate of $\beta \in (0, 1)$ would imply some local job creation, but still some windfall
- Estimate of $\beta > 1$ would imply a positive local multiplier associated with CCTC-incentivized jobs

Descriptive statistics

Tracts with Any CCTC Applicants

	2013	2014	2015	2016	2017	2018	All Years
CCTC Jobs Awarded	0	0.36	7.71	17.48	30.17	42.13	16.31
	(0)	(4.05)	(63.03)	(107.10)	(154.60)	(194.47)	(114.44)
CCTC Jobs Proposed	0	4.618	23.82	52.65	91.90	138.32	51.88
	(0)	(39.86)	(124.02)	(209.25)	(315.26)	(456.40)	(252.65)
CCTC Jobs Awarded (Conditional on Award)	0	10.60	45.78	64.03	74.68	99.11	75.03
	(0)	(19.74)	(148.06)	(197.77)	(236.34)	(288.80)	(236.4)
Employment	4164	4306	4411	4575	4713	4849	4503
	(6535)	(6951)	(7202)	(7439)	(7642)	(7934)	(7299)
N	1300	1300	1300	1300	1300	1300	7800

Notes: This table presents means and standard deviations (in parentheses) for the variables listed in the first column. The sample sizes in the last row are approximate (rounded to the closest 100). The statistics for the third row are for the subsample of tracts that had non-zero awards for each year.



Baseline results

Employment on CCTC Levels

	Tract Employment		
CCTC Jobs Awarded	4.035*** (0.960)	2.986*** (0.958)	2.695*** (0.811)
CCTC Jobs Proposed		0.683*** (0.265)	0.476** (0.214)
Tract Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	No
Base Employment Deciles × Year Fixed Effects	No	No	Yes
Tracts	1300	1300	1300
Observations	7800	7800	7800

Notes: Standard errors are clustered at the tract level. Base Employment Deciles are measured based on 2013 values of the outcome variable. The sample sizes (tracts and observations) are approximate (rounded to the closest 100). *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Results by income & education

Employment Effects on Those in Living Poorer vs. Richer and Lower-Education vs. Higher-Education Tracts

	Lower-Income	Higher-Income	Lower-Education	Higher-Education
CCTC Jobs Awarded	1.127*** (0.324)	1.575*** (0.541)	0.847*** (0.211)	1.877** (0.790)
CCTC Jobs Proposed (Not Shown)	Yes	Yes	Yes	Yes
Tract Fixed Effects	Yes	Yes	Yes	Yes
Base Employment Deciles × Year Dummy Variables	Yes	Yes	Yes	Yes
Ratio	0.747		0.684	
Tracts	1300	1300	1300	1300
Observations	7800	7800	7800	7800

Notes: All regressions include tract and year fixed effects. Standard errors are clustered at the tract level. Base Employment Deciles are measured based on 2013 values of the outcome variable. The sample sizes (tracts and observations) are approximate (rounded to the closest 100). Column 1 outcome is the employment for individuals with the tract of residence with a 2013 poverty ratio above the median, and Column 2 is below median. Column 3 outcome refers to employment for individuals with the tract of residence with a below median share of workers with a Bachelors and Above in 2013, and Column 4 is above median. The Ratio statistic in column 1 refers to the average ratio of the outcomes in column 1 to column 2 measured in 2013 in the sample tracts. The Ratio statistic in column 3 refers to the average ratio of the outcomes in column 3 to column 4 measured in 2013 in the sample tracts. *** p<0.01, ** p<0.05, * p<0.1

Results by industry

Employment Effects in Manufacturing and Non-Manufacturing on CCTC Employment in Manufacturing and Non-Manufacturing

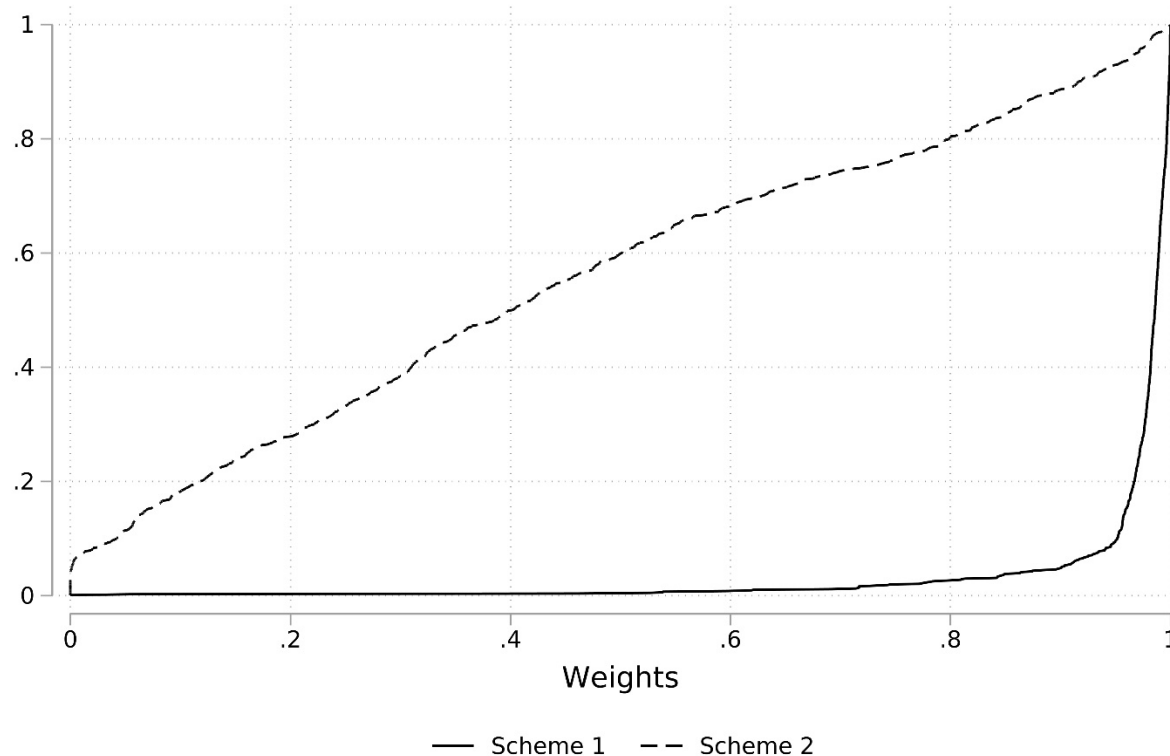
	Total Employment	Manufacturing Employment	Non-Manufacturing Employment
CCTC Manufacturing Jobs Awarded	1.126 (0.814)	0.116 (0.436)	0.821 (0.735)
CCTC Non-Manufacturing Jobs Awarded	4.785*** (1.669)	0.529 (0.343)	4.273** (1.667)
CCTC Manufacturing Jobs Proposed	0.919 (0.591)	0.825*** (0.242)	0.323 (0.530)
CCTC Non-Manufacturing Jobs Proposed	0.397** (0.201)	-0.0785 (0.0507)	0.501** (0.208)
Tract Fixed Effects	Yes	Yes	Yes
Base Employment Deciles × Year Dummy Variables	Yes	Yes	Yes
Ratio (Column 2/3 Dep. Var.)		0.184	
Tracts	1300	1300	1300
Observations	7800	7800	7800

Notes: All regressions include tract and year fixed effects. Standard errors are clustered at the tract level. Base Employment Deciles are measured based on 2013 values of the outcome variable. The sample sizes (tracts and observations) are approximate (rounded to the closest 100). Column 1 outcome is Total Employment, Column 2 outcome is Manufacturing Employment, and Column 3 outcome is Non-Manufacturing Employment. The Ratio statistic in column 2 refers to the average ratio of the outcomes in column 2 to column 3 measured in 2013 in the sample tracts. *** p<0.01, ** p<0.05, * p<0.1

“Locally” weighted approach

- Incorporate information on scores of CCTC applicants into weighting scheme
 - Places more weight on the effects of CCTC investment in tracts where applicants have scores closer to threshold for their funding round
 - Motivation: tracts with applicants whose scores are far from cutoff likely different, possibly on unobservables
- Restrict sample to large applicants (with relevant cutoffs)
 - Calculate weights using average (absolute) distance of applicants in each tract to cutoff.
 - Re-center this measure by subtracting it from largest value and dividing by largest value => tracts with smaller re-centered scores get weights close to 1
 - Use these raw weights, and also different exponentials in these weights.

CDFs for 2 weighting schemes



Note: This figure shows the empirical CDFs for the weights created among the sample of tracts with at least 1 large applicant. The horizontal axis represents the weights that lie between 0 and 1, and the vertical axis is the proportion between 0 and 1. The empirical CDFs of two weighting schemes (corresponding to Table 8 and Table 9, respectively) are shown on the same figure, one solid and another dashed. The legend simply labels them as “Scheme 1” and “Scheme 2.”

Unweighted results (1+ large applicant)

Restricted to Tracts with At Least 1 Large Applicant, No Weighting

	Empl.	Empl., Lower- Income Tracts	Empl., Higher- Income Tracts	Empl., Lower-Ed Tracts	Empl., Higher-Ed Tracts	Manu. Empl.	Non- Manu. Empl.
CCTC Jobs Awarded	2.575***	1.049***	1.540***	0.782***	1.778**		
	(0.804)	(0.331)	(0.540)	(0.224)	(0.774)		
CCTC Manuf. Jobs Awarded						0.133	0.853
						(0.440)	(0.731)
CCTC Non-Manuf. Jobs Awarded						0.547	4.107**
						(0.356)	(1.663)
CCTC Total Jobs Proposed	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tract Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Base Employment Deciles × Year Dummy Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ratio (Column 2/3, 4/5, 6/7 Dep. Var.)		0.736		0.675		0.210	
Tracts	900	900	900	900	900	900	900
Observations	5400	5400	5400	5400	5400	5400	5400

Notes: See notes to Tables 2-4. CCTC Total Jobs Proposed control consists of two separate controls for manufacturing and non-manufacturing in the last two columns (Columns 6 and 7). Sample is restricted to tracts with at least 1 large applicant.

*** p<0.01, ** p<0.05, * p<0.1

Results, weighting scheme 1

Restricted to Tracts with At Least 1 Large Applicant, Weighting by Average Absolute Values of Score Minus Cutoff Relative to Largest Difference

	Empl.	Empl., Lower- Income Tracts	Empl., Higher- Income Tracts	Empl., Lower-Ed Tracts	Empl., Higher-Ed Tracts	Manu. Empl.	Non- Manu. Empl.
CCTC Jobs Awarded	2.584*** (0.809)	1.055*** (0.332)	1.546*** (0.544)	0.784*** (0.225)	1.786** (0.780)		
CCTC Manuf. Jobs Awarded						0.129 (0.442)	0.838 (0.726)
CCTC Non-Manuf. Jobs Awarded						0.551 (0.359)	4.148** (1.673)
CCTC Total Jobs Proposed	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tract Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Base Employment Deciles × Year Dummy Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ratio (Column 2/3, 4/5, 6/7 Dep. Var.)		0.736		0.675		0.210	
Tracts	900	900	900	900	900	900	900
Observations	5400	5400	5400	5400	5400	5400	5400

Notes: See notes to Tables 2-4. CCTC Total control consists of two separate controls for manufacturing and non-manufacturing in the last two columns (Columns 6 and 7). Sample is restricted to tracts with at least 1 large applicant. The Ratio statistics are unweighted. See text and Figure 1 for more information on the weighting.

*** p<0.01, ** p<0.05, * p<0.1

Results, weighting scheme 2 (~linearized)

Restricted to Tracts with At Least 1 Large Applicant, Weighting by Average Absolute Values of Score Minus Cutoff Raised to 64th Power to Linearize

	Empl.	Empl., Lower- Income Tracts	Empl., Higher- Income Tracts	Empl., Lower-Ed Tracts	Empl., Higher- Ed Tracts	Manu. Empl.	Non- Manu. Empl.
CCTC Jobs Awarded	2.948*** (0.984)	1.186*** (0.409)	1.785*** (0.652)	0.772** (0.308)	2.131** (0.946)		
CCTC Manuf. Jobs Awarded						-0.0695 (0.527)	0.652 (0.772)
CCTC Non-Manuf. Jobs Awarded						0.568* (0.332)	4.416*** (1.642)
CCTC Total Jobs Proposed	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tract Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Base Employment Deciles × Year Dummy Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ratio (Column 2/3, 4/5, 6/7 Dep. Var.)		0.736		0.675		0.210	
Tracts	900	900	900	900	900	900	900
Observations	5400	5400	5400	5400	5400	5400	5400

Notes: See notes to Tables 2- 4. CCTC Total control consists of two separate controls for manufacturing and non-manufacturing in the last two columns (Columns 6 and 7). Sample is restricted to tracts with at least 1 large applicant. The Ratio statistics are unweighted. See text and Figure 1 for more information on the weighting.

*** p<0.01, ** p<0.05, * p<0.1

Discussion

- Results point to significant local multipliers associated with CCTC-incentivized jobs
 - In diff-in-diff, about 2.5 workers per CCTC-incentivized job in tracts with awards.
 - Roughly proportionate effects across residents of low vs. high income tracts.
 - Seemingly larger local multipliers associated with incentivizing firms in non-manufacturing (although not necessarily non-tradeable) industries.
- Does not necessarily imply a statewide multiplier of 2.5, but less reason to think this program is merely shifting activity within state (at least relative to EZ-type programs).

Discussion

- At time of writing, CCTC program had allocated \$1.23 billion in tax credits to businesses. Pledged jobs by awarded businesses during this period totaled 124,000, implying direct cost per incentivized job of \$9,900.
- Applying our estimate of the multiplier, the total incentive per job created in recipient tracts is approximately \$3,960.18.
 - May overstate or understate the total cost per job statewide, as there may be negative or positive spillovers of CCTC-incentivized job creation across tracts.
 - Still, meaningful impact on areas where jobs awarded/incentivized.
 - Given that the CCTC program is relatively new, the permanence of jobs created as a result of the CCTC is also unclear.
- Cost per job estimate compares very favorably to other place-based programs such as EZs and the New Markets Tax Credit, to other hiring credit programs (especially once one accounts for windfalls), and to the EITC.

Conclusion

- We provide evidence on the efficacy of new generation of economic development programs incorporating perceived best practices.
 - These programs combine rules and discretion in allocating business incentives.
- We find evidence of significant local multipliers associated with CCTC-incentivized jobs.
- Evidence so far points to CCTC as a success story.
 - One might want better targeting to less-advantaged areas. Remains to be seen whether that would reduce effectiveness/increase cost (which might be acceptable).
 - We will have additional evidence to report using company-level data from other confidential Census sources.