

ECONOMIC IMPACT OF STATE TAX INCENTIVES: AN ANALYSIS OF THE
CALIFORNIA COMPETES TAX CREDIT

By: Taryn Atkinson

Submitted in partial fulfillment of the requirements for Departmental
Honors in the Department of Accounting

Texas Christian University

Fort Worth, TX

5/6/2019

ECONOMIC IMPACT OF STATE TAX INCENTIVES: AN ANALYSIS OF THE
CALIFORNIA COMPETES TAX CREDIT

Project Approved:

Supervising Professor: Stephen Lusch, Ph.D.
Department of Accounting

Lance Bettencourt, Ph.D.
Department of Marketing

Abstract

The California Competes Tax Credit (CCTC) is a relatively new tax credit offered to businesses as an incentive to invest in and create jobs in California. Companies compete for the credit amount, and there is no standard credit amount per dollar invested or employment granted. A list of recipients is posted by the California Governor's Office of Economic Development each year. This paper explores the possible trends in the types of firms that receive the credit and how the program has influenced job development and growth for the economy of California. The purpose of this paper is to gain a better understanding of what the California Competes tax credit does and how effective it is in accomplishing its goals. Results from a descriptive analysis of credit recipients show: (1) high population areas seem to receive more credit dollars than low population areas, (2) the majority of recipients are in the services or manufacturing industries, (3) high poverty/unemployment areas receive, on average, significantly less credit per dollar invested than other counties within California, and (4) high poverty/unemployment areas receive, on average, significantly more credit per new job created than other counties within California. Evidence presented in this paper shows that the California Competes Tax Credit did not significantly increase employment nor economic growth in California. There is little evidence that the CCTC beneficially affected California's GDP or employment growth relative to its surrounding states. Also, high poverty/unemployment areas did not benefit from the CCTC program more so than other California counties in terms of reductions in unemployment.

Contents

Introduction..... 1

Institutional Background..... 3

Literature Review and Hypothesis Development 5

The Effect of State Employment Tax Credits 5

The Effect of State Investment Tax Credits 7

California’s Enterprise Zone Program..... 8

Key Takeaways and Hypothesis..... 9

Data and Methodology..... 10

Results..... 11

Descriptive Analysis of CCTC Recipients..... 11

Effect of CCTC on California’s Economy 22

Conclusion 27

References..... 29

Appendix..... 31

CCTC Decision Factors..... 31

Industry Divisions 32

Counties within California..... 33

List of High Poverty Counties within California 34

List of High Unemployment Counties within California 35

1. Introduction

Business tax incentives are a popular tool for state legislatures to use to help grow states' economies. According to Chirinko and Wilson (2018), the number of states offering investment tax incentives has dramatically increased over time. In addition, the magnitude of the tax benefits received by businesses taking advantage of these incentives has also increased. Governments use tax credits and incentives to attain certain goals. These goals can include increasing employment, attracting businesses to locate within the jurisdiction, and facilitating investment in certain industries or geographic areas. Because of the prevalence and magnitude of these state tax incentives, it is important to understand how well the programs meet their intended goals.

This paper analyzes one state tax incentive in particular: the California Competes Tax Credit (CCTC). The CCTC, established in 2013, is unique relative to most other state business tax incentive programs for a number of reasons. First, firms compete for the credit by submitting proposals. Second, there is no standard credit amount per dollar invested or jobs created. Third, the program also has recapture provisions for those businesses that fail to reach the investment and/or job creation targets submitted in their credit proposal.

This paper will explore the possible trends in the types of firms that receive the credit and how it has influenced job development and growth for the economy of California. First, I will examine descriptive statistics of credit recipients: (1) what industries are receiving the credit, (2) location of firms receiving the credit, (3) the credit amount received per dollar of investment, and (4) the credit amount received per number of employed. I will then descriptively evaluate the recipients of the credit, based on the location and industry of the recipient. Second, to determine if the tax credit has achieved its intended purpose, I will compare unemployment and GDP

growth in the state before and after the implementation, as well as compare California's unemployment rates and GDP growth to surrounding states.

The results of a descriptive analysis of the recipients of the California Competes Tax Credit show four main findings. First, high population areas seem to receive more credit dollars than low population areas. Second, the majority of recipients are in the services or manufacturing industries. Third, high poverty/unemployment areas receive, on average, significantly less credit per dollar invested than other counties within California. And lastly, high poverty/unemployment areas receive, on average, significantly more credit per new job created than other counties within California.

Evidence presented in this paper shows that the California Competes Tax Credit did not significantly increase employment nor economic growth in California. California's GDP and unemployment rate trends are similar to its surrounding states: Nevada, Oregon, and Arizona. Thus, there is little evidence that the CCTC beneficially affected California's GDP or employment growth relative to its surrounding states. High poverty/unemployment areas did not benefit from the CCTC program more so than other California counties in terms of reductions in unemployment.

As a relatively new tax credit there is currently little research about the California Competes program or the economic impacts the credit has generated. It is important to assess the effectiveness of the tax credit in achieving its main goals: sparking innovation and generating jobs in California. As the first of its kind, it is also important for legislatures to determine the impact of a competition-based credit versus other types of credits. If policymakers can determine what works well in California, then there would be less ambiguity in offering similarly designed credit and incentive programs.

The remainder of the paper is organized as follows. Section 2 explains the institutional background of California's previous business tax incentive program, the Enterprise Zone Program, and the introduction of the California Competes Tax Credit. Section 3 provides a literature review of the prior research on the effect of state employment and development tax credits, as well as a review of the economic effects of the California's Enterprise Zone program. Section 4 describes the data and methodology used to derive descriptive statistics on the credit recipients and analyze the effects of the credit on the California economy. Section 5 summarizes the results of the analysis and the paper concludes in Section 6.

2. Institutional Background

As of 2018, most states have at least one, if not several business tax incentive programs. Most states offer some form of tax incentives for job creation, investment, or both. In fact, a 2012 report by the state of Nebraska (2012) identifies 43 states with either job or investment tax credits. Beginning in 1984, the state of California used an "enterprise zone" program to incentivize investment and job creation in particular geographic regions of the state. At program inception, ten enterprise zones were established, increasing to 42 enterprise zones by 2010. The enterprise zone program offered businesses: (1) state tax credits for hiring disadvantaged workers, (2) income tax credits equal to the amount of sales and use taxes paid on machinery and parts used within the zone, (3) a 15-year period (versus the standard 10-year period) that businesses could carry forward net operating losses, (4) accelerated depreciation of property, and (5) a tax credit of five percent of qualified wages that low-income employees could claim.

Due to criticism of the effectiveness of the California Enterprise Zone Program, on July 11, 2013, California governor Jerry Brown signed Assembly Bill No. 93, which effectively

ended the California Enterprise Zone Tax Credit program and replaced it with a more targeted hiring and investment credit program, known as the California Competes Tax Credit (CCTC).

The CCTC is an income tax credit offered to businesses as an incentive to invest in and create jobs in California. Businesses can apply and receive a credit based on the number of jobs the firm intends to create and the magnitude of projected investment. The credit agreements are negotiated by GO-Biz, the California Governor's Office of Business and Economic Development, and approved by the California Competes Tax Credit Committee (California Competes Tax Credit 2018). The committee consists of the State Treasurer, the Director of the Department of Finance, the Director of GO-Biz, one appointee by the Speaker of the Assembly, and one appointee by the Senate Committee on Rules (California Competes Tax Credit 2018). When applicants apply for the credit, they request a credit amount and the timeframe for when the applicant would like the credit to be provided (California Code of Regulations 2018, § 8030). Other factors that influence GO-Biz's decision to award a credit include the following: (1) whether the applicant qualifies as a small business, (2) the date the applicant commenced or will commence business in California, (3) description of proposed project, (4) whether the project is for business growth, retention, or relocation, (5) and a description of the full-time employment associated with the project (California Code of Regulations 2018, § 8030). See Appendix A for a full list of factors used to determine credit recipients.

The Committee then reviews certain businesses' accounting records and reports to "ensure that businesses are in compliance with the agreed upon milestones" (California Franchise Tax Board 2017). To ensure that the total credit amount is fairly distributed, the governor's economic development initiative states that no single company will receive more than 20 percent of the total credit amount each year, companies in any location in California will be

considered, and the credit is available to large and small companies but 25 percent of the total credit amount each year is dedicated to those that qualify as a small business (Governor's Economic Development Initiative). The CCTC regulations define a small business as a "business that has worldwide aggregate gross receipts, less returns and allowances reportable to this state, of greater than zero (\$0.00) but less than two million dollars (\$2,000,000) during the previous taxable year" (California Code of Regulations 2018, § 8000). The awarded firms will receive the incentive for a period of five years if the firm meets its projections. If a firm breaches the terms of their approved project, then the credit will be recaptured under the discretion of the CCTC committee.

3. Literature Review and Hypothesis Development

The following literature review summarizes the prior research regarding state-level employment and investment credits and formulates a hypothesis of the effectiveness of the CCTC in increasing employment and investment.

The Effect of State Employment Tax Credits

Overall, there have been mixed results about the effectiveness of state employment tax credits. Current research supports three different conclusions: positive effects, negative effects, and neutral effects on the state's employment. Some research has found that state employment tax credits positively affect job creation within the states they operate in. Lawrence, Briskin, and Qu (2013) find that state tax incentive programs can be highly beneficial when they are run effectively. The programs must be properly designed with clear goals and measurable outcomes, offer high transparency, and be carefully monitored (Lawrence et al 2013). They explain that "since 2006, companies across various industries have created thousands of new positions in Missouri with the aid from tax incentive packages" (Lawrence et al. 2013, p. 31). Firm-level

employment has increased in Missouri because of state tax incentives. Similarly, Chirinko and Wilson (2016) examine 19 U.S. job creation tax credits to determine their effect on employment growth. They found a positive cumulative effect of job creation tax credits, but the effect takes two to three years to be fully observed in the data (Chirinko and Wilson 2016). The results suggest that job creation tax credits can be an effective long-run tool to increase job growth (Chirinko and Wilson 2016).

Similar research has found positive associations between state employment tax credits and job growth, but show that the effects would have occurred regardless of the incentive program. For example, Bartik and Erickcek (2014) estimate the job and fiscal impacts of the Michigan Economic Growth Authority (MEGA) tax credit program using simulation methods. MEGA had large effects on job creation relative to net fiscal costs. MEGA appears to have provided greater job creation and fiscal benefits than did cutting overall state business taxes. Yet, they found that many projects that were subsidized by MEGA would have occurred without the subsidy (Bartik and Erickcek 2014). In addition, Faulk (2002) compares employment change in eligible firms that participate in Georgia's Job Tax Credit program with employment change in eligible firms that do not participate in the program. Firms taking the credit created 23.5 to 27.6 percent more jobs than eligible firms not taking the credit from 1993 to 1995. Yet, Faulk estimates that 72.4 to 76.5 percent of the employment change in participating firms would have been created in the absence of the credit.

Other research has shown that state employment tax incentives have little positive effect, and sometimes even a negative effect on employment growth. Gabe and Kraybill (2002) examine the effect of Ohio development tax incentives on establishment-level employment change. They conclude that the incentives have a positive effect on announced projected growth, but very little

to a negative effect on actual employment growth. The results suggest that businesses tend to overstate the number of jobs they will create so that they receive larger incentives, but then fail to actually create many of these jobs. Jensen (2016) examined the Promoting Employment across Kansas (PEAK) program to assess the ability of economic development programs to encourage employment. He concludes that incentive programs have no apparent impact on firm expansion and have little impact on relocation or expansion decisions. He found that few firms increased their employment because of the PEAK program and very few firms would have left the state if they had not received the incentive.

The Effect of State Investment Tax Credits

Chirinko and Wilson (2018) constructed a comprehensive panel dataset covering the 48 contiguous states for over 20 years. They analyzed capital stock and establishment count data and found that capital formation increases when tax reductions of the price of capital increase. They also found that capital formation decreases when tax reductions of the price of capital in competitive states increase. Because of this relationship, they found that capital tax incentives tend to be a “zero-sum game” since “an equiproportionate increase in own-state and competitive-states user costs tend to have no effect on own-state capital formation” (Chirinko and Wilson 2018, p. 2362).

Freedman (2012) examines the effects of the federal government’s New Markets Tax Credit program. He concludes that subsidized investment modestly reduces poverty and unemployment in low-income communities. He also suggests that some of the observed impacts on neighborhoods are attributable to changes in the composition of residents as opposed to improvements in the welfare of existing residents.

California's Enterprise Zone Program

An analysis of California's enterprise zone program is important to determine why this incentive program was replaced and how its effects on California's economy compare to the effects of the California Competes Tax Credit program. Academic research was often critical of the effectiveness of California's enterprise zone program. In 1996, Dowall conducted a shift-share analysis and a survey of program recipients. "The existing enterprise zone programs have produced modest economic benefits, and there is little evidence to suggest they have strengthened the economic advantages of zones" (Dowall 1996, p. 364). Neumark and Kolko studied California's enterprise zone program using establishment-level data and geographic mapping. They found that the program was not effective in increasing employment and there was no shift in employment toward the lower-wage workers targeted by the program (Neumark and Kolko 2010). Similarly, a study conducted in 2009 used individual-level employment probability models and neighborhood-level propensity score matching to conclude that enterprise zones in both California and Florida had no effect on the employment of zone residents (Elvery 2009). "The results suggest that enterprise zones of California and Florida had, at best, no effect on employment and, at worst, a small negative effect in Florida, but the estimates are not significantly different from zero" (Elvery 2009, p. 57). In contrast, O'Keefe (2004) concluded that there were some positive effects from the Enterprise Zone program. She used a propensity score matching model to match enterprise zones with similar areas for comparison. O'Keefe estimated that the Enterprise Zone designation raised employment 2 to 3 percent each year during the early years of the program. In addition, she finds that employment increased more in businesses located in enterprise zones than in businesses without the same tax incentive (O'Keefe 2004).

The following research studies found that the California Enterprise Zone program did not effectively meet the goals of the program. According to Neumark and Kolko (2010), the enterprise zone application process was often uncompetitive. “In the 2006 application round, when 23 of 42 enterprise zone slots were open, the California Department of Housing and Development (HCD) received 25 applications and ended up combining several applications so that all 25 applicants became part of 23 newly designated zones — and many of these were in localities where a zone recently expired” (Neumark and Kolko 2010, p. 3). Dowall (1996) explained that the employment growth that took place in the enterprise zones was a result of county-wide and industrial mix components. After accounting for those two factors, “the total residual effect component for the 13 zones is negative,” suggesting that “program activities have done little to remove competitive disadvantages” within the enterprise zones (Dowall 1996, p. 361). Dowall surveyed 159 businesses located in enterprise zones. Of businesses taking advantage of the enterprise zone program, only 19 percent stated that the program actually influenced their hiring decisions and only 23 percent indicated that the incentive influenced their location or expansion decisions.

Key Takeaways and Hypothesis

The literature on state tax incentives and credits is mixed in terms of whether state tax credits and incentives stimulate investments or job growth. Some studies find strong positive effects of credits on employment and investment in states. Other studies find modest results or even negative effects of state tax incentives. The mixed reviews of state tax incentives lead to the following hypothesis stated in the null:

H1a: The enactment of the California Competes Tax Credit did not significantly increase employment in California.

H1b: The enactment of the California Competes Tax Credit did not significantly increase economic growth in California.

4. Data and Methodology

The Governor's Office of Business and Economic Development publicly releases a list of CCTC recipients that contains the following information: (1) company name, (2) primary location, (3) industry, (4) net increase of full-time employees, (5) investments, (6) amount of tax credit, (7) date agreement approved and, (8) amount of credit recaptured. It is important to note that the publicly available data only includes those companies that successfully bid for a CCTC; I am not able to observe the subset of businesses that applied for credits but were not granted credits. Using the list of awardees, I examine descriptive statistics of the 2013-2017 credit recipients. To determine the types of industries receiving the credit, I classify each recipient's industry into the industry categories provided by the Department of Labor (see Appendix B). To determine the location of firms receiving the credit, I classify the primary location into one of 58 counties in California (see Appendix C). I also look for trends in the credit amount received per dollar of investment and credit amount received per number employed.

In addition, I analyze the CCTC program's effect on economic growth. There are certain evaluation criteria that are helpful to ascertain the effectiveness of a credit: employment generated, economic output, state comparisons, and employment benefits (Lawrence et al. 2013). In this paper, I evaluate the effectiveness of the California Competes tax credit on three of those criteria: employment generated, economic output, and state comparisons. To assess employment generated, I compare the unemployment rates of California and individual counties within California both before and after the credit was established. The state-level unemployment data is from the Federal Reserve Economic Data website. The county-level unemployment data is from

the State of California Employment Development Department. To assess economic output, I will look for trends in GDP data on a state-wide and MSA-level basis. The GDP data is from the Bureau of Economic Analysis. I will also compare California's growth with the growth of neighboring states: Arizona, Nevada and Oregon. This comparison provides support to whether California's growth trend is specific to the state or general growth realized in surrounding states as well.

5. Results

Descriptive Analysis of CCTC Recipients

Table 1 reports descriptive information for each year the CCTC has been available. The table reports the number of credits granted each year, the total dollars of credits granted, and the portion of credit dollars in high unemployment or high poverty areas. "Rev. and Tax Code sections 17059.2 and 23689 require that Go-Biz 'give priority to a taxpayer whose project or business is located in an area of high unemployment or poverty.'" (Initial Statement of Reasons 2018). A high poverty or unemployment area is a county within California with a poverty or unemployment rate of at least 150 percent of the California statewide poverty rate (Initial Statement of Reasons 2018). Appendix D and E provide the lists of high poverty and high unemployment counties provided by Go-Biz.

Table 1: High Poverty/Unemployment Counties

Year	2013-14	2014-15	2015-16	2016-17	2017-18
N	29	212	259	275	201
Total Credit Dollars	\$28,515,500	\$142,796,018	\$152,384,648	\$204,939,960	\$145,265,216
Credit for High Poverty	\$3,600,000	\$3,235,000	\$24,370,000	\$10,659,000	\$9,315,000
% recipients High Poverty	6.90%	3.77%	7.72%	8.73%	9.95%
% credit \$ High Poverty	12.62%	2.27%	15.99%	5.20%	6.41%
Credit for High Unemployment	\$3,900,000	\$4,693,800	\$26,368,000	\$14,368,500	\$12,140,000
% recipients High Unemployment	10.34%	9.43%	12.74%	12.00%	12.44%
% credit \$ High Unemployment	13.68%	3.29%	17.30%	7.01%	8.36%

In the initial year of the CCTC program, only 29 businesses received the credit. However, in the next four years of the program, there have been more than 200 credit recipients each year with total credit dollars ranging from about \$140 million to \$200 million in most years. More counties qualify as high unemployment areas than qualify as high poverty areas. So, the percentage of credit recipients in high unemployment areas is consistently higher than the percentage of credit recipients in high poverty areas. Overall, 7.58 percent of credit recipients are located in high poverty areas and 11.68 percent in high unemployment areas. High poverty and high unemployment areas represent over 27 percent of all counties within California. Knowing that the California Competes Committee uses high poverty/unemployment as a decision factor for credit recipients, we would expect to see a high percentage of these counties receiving the credit. Over the five years of the program analyzed in this study, the total credit dollars awarded to recipients in high poverty areas is \$51,179,000 and the total credit dollars awarded to recipients in high unemployment areas is \$61,470,300. The highest total credit awarded to both high poverty and high unemployment areas was in 2015-16.

Table 2 outlines the top credit receiving counties. The top credit receiving counties are Los Angeles, San Diego, Sacramento, Orange, Fresno, Alameda, and San Bernardino. Overall, the seven top credit receiving counties received 62.14 percent of the total credit distributed from 2013 to 2017. The table also includes the rank of the counties in terms of population. One would expect that higher population counties will likely have more credit recipients. Of the seven top credit receiving counties, Fresno County is ranked fourth in terms of number of credit recipients but ranked tenth in population. Notably, Fresno County is the only high poverty and a high unemployment area as defined by Go-Biz to be among the top seven credit receiving counties. Over 5 percent of recipients are located in Fresno County and altogether received 4.53 percent of the total dollar amount of credits. Notably missing from the list of top credit recipients is Riverside County, who is the fourth largest county in terms of population but does not make the top seven counties in terms of credit recipients.

Table 2: Top Credit Receiving Counties

County	% of Credit Recipients	% of Credit Dollars	2018 Population Rank
Los Angeles	18.75%	24.08%	1
San Diego	15.57%	14.99%	2
Sacramento	9.53%	3.61%	8
Orange	6.66%	3.87%	3
Fresno	5.12%	4.53%	10
Alameda	4.61%	7.77%	7
San Bernardino	4.10%	3.29%	5

Figure 1 maps the sum of the total amount of credit received by all businesses in each county from 2013 to 2017. The counties with the larger populations seem to receive more credit dollars. Businesses that received the credit in Los Angeles received over \$162 million dollars in CCTC. The counties with smaller populations seem to receive less credit dollars. For example, all recipients within Yuba County received \$24,000 and made up only 0.10% of total credit

recipients. High poverty and high unemployment counties are marked with an asterisk in the tables. The high poverty/high unemployment areas make up half of the bottom credit receiving counties.

Figure 1: Total Credit by County

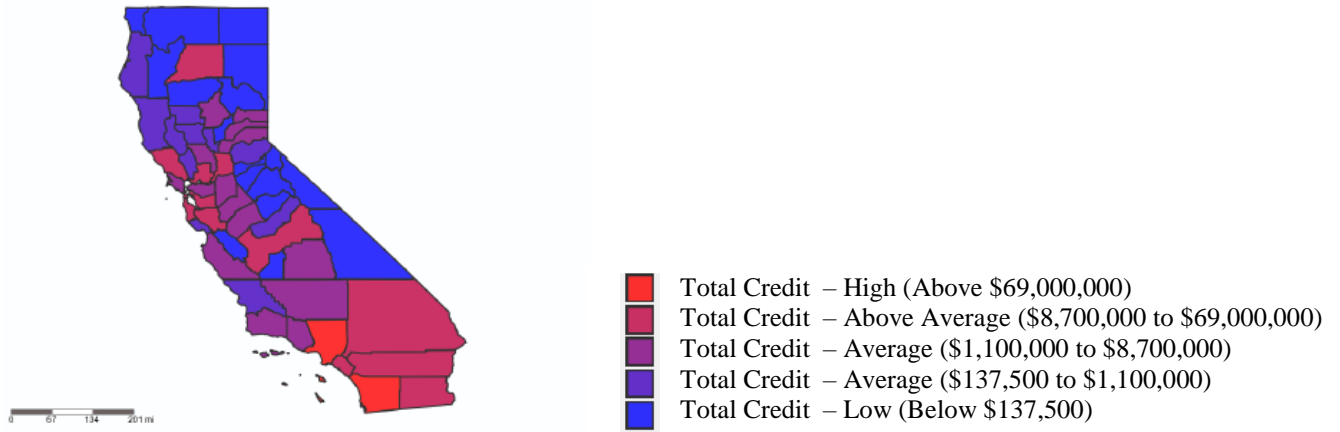


Table 3: Top Credit Receiving Counties

County	Amount of Tax Credit	Population Rank	% of Recipients
Los Angeles County	162,296,058	1	18.75%
San Diego County	101,030,338	2	15.57%
San Francisco County	55,875,200	12	3.38%
Alameda County	52,377,562	7	4.61%
Santa Clara County	48,421,688	6	2.56%
Fresno County*	30,539,000	10	5.12%
Orange County	26,054,500	3	6.66%
Sacramento County	24,368,000	8	9.63%
Riverside County	23,907,732	4	3.28%
San Bernardino County	22,141,000	5	4.10%

Table 4: Bottom Credit Receiving Counties

County	Amount of Tax Credit	Population Rank	% of Recipients
Yuba County*	24,000	39	0.10%
Tehama County	30,000	41	0.10%
Kings County*	70,000	33	0.10%
Siskiyou County*	100,000	45	0.10%
Colusa County*	147,500	50	0.10%
Mendocino County	341,200	38	0.31%
Napa County	523,000	34	0.41%
Glenn County*	600,000	48	0.20%
Santa Cruz County	600,000	24	0.20%
El Dorado County	640,000	29	0.41%

Figure 2 maps the sum of credit per new employee received by businesses in each county from 2013 to 2017. The same ten counties that have the higher amount of credit dollar per new employee are the same ten counties reported in Table 3 as having the highest total credit dollars received, albeit in a different rank order. Businesses in Los Angeles received a total of \$2,033,511.66 of credit per new employee over the years that CCTC has been in place. There is also overlap between the counties in Table 4 (i.e., lowest credit receiving counties) and Table 6 (i.e., lowest credit dollar per new employee counties). Notably, the same five high poverty/unemployment counties appear on both lists.

Figure 2: Credit per New Employee by County

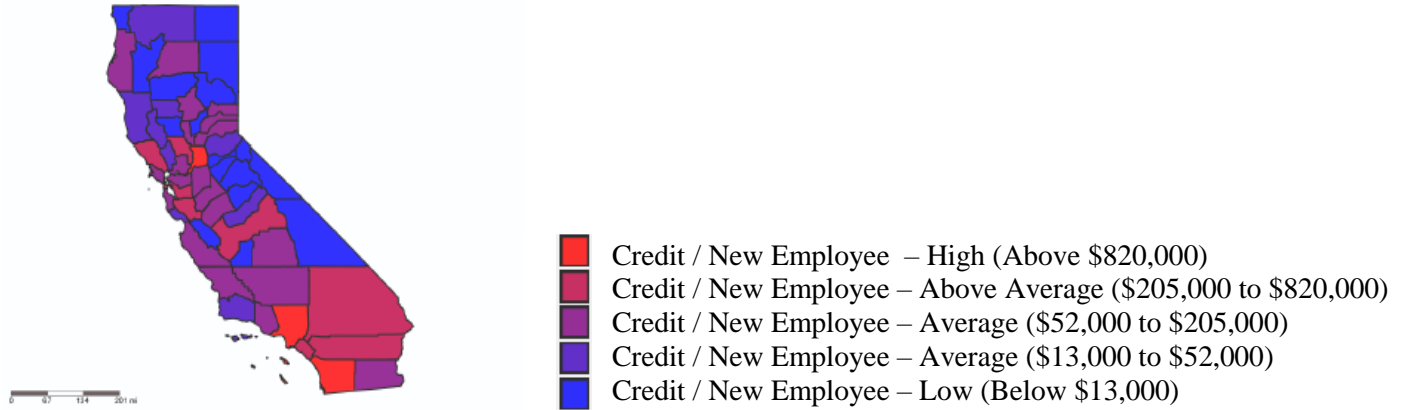


Table 5: Top Credit per New Employee Receiving Counties

County	Credit / new employee	Population Rank	% of Recipients
Los Angeles County	2,033,511.66	1	18.75%
San Diego County	1,797,694.39	2	15.57%
Sacramento County	1,122,269.39	8	9.63%
Fresno County*	801,192.79	10	5.12%
Orange County	708,818.86	3	6.66%
Alameda County	576,280.89	7	4.61%
San Bernardino County	403,712.28	5	4.10%
Riverside County	396,858.21	4	3.28%
Santa Clara County	285,309.37	6	2.56%
San Francisco County	283,961.02	12	3.38%

Table 6: Bottom Credit per New Employee Receiving Counties

County	Credit / new employee	Population Rank	% of Recipients
Kings County*	3,684.21	33	0.10%
Colusa County*	9,833.33	50	0.10%
Tehama County	10,000.00	41	0.10%
Yuba County*	12,000.00	39	0.10%
Santa Barbara County	17,581.46	19	0.41%
Siskiyou County*	20,000.00	45	0.10%
Santa Cruz County	22,222.22	24	0.20%
Glenn County*	31,666.67	48	0.20%
Mendocino County	33,765.40	38	0.31%
El Dorado County	42,963.66	29	0.41%

Figure 3 maps the sum of credit per dollar invested received by businesses in each county from 2013 to 2017. The highest credit per dollar invested has more diversity in its recipients than total credit dollars or credit dollars per new job created; however, the population rank of counties appearing in the top ten does not fall below 14. Consistent with Tables 3 and 5, Fresno County is the only high poverty/unemployment area in the top ten recipients. Six high unemployment/poverty areas are represented in the lowest credit received per dollar invested.

Figure 3: Credit per Dollar Invested by County

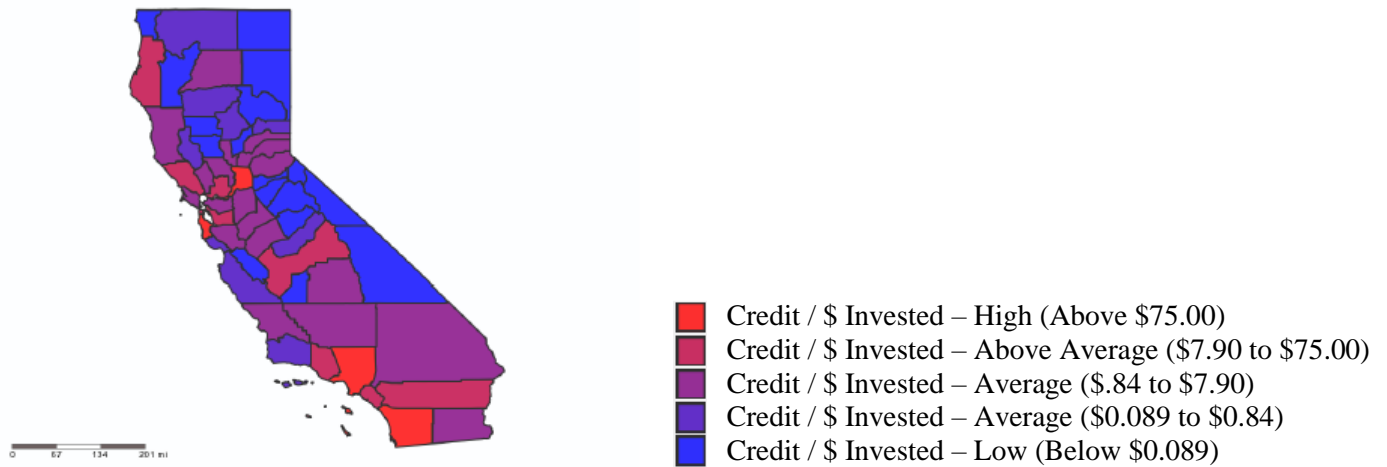


Table 7: Top Credit per Dollar Invested Receiving Counties

County	Credit / \$ of investment	Population Rank	% of Recipients
San Mateo County	214.1785	14	0.82%
San Diego County	138.7380	2	15.57%
Los Angeles County	117.3779	1	18.75%
Sacramento County	101.1502	8	9.63%
Orange County	45.3141	3	6.66%
Alameda County	41.5524	7	4.61%
San Francisco County	21.1060	12	3.38%
Fresno County*	16.0983	10	5.12%
Sonoma County	13.6122	17	2.05%
Ventura County	12.3641	13	1.95%

Table 8: Bottom Credit per Dollar Invested Receiving Counties

County	Credit / \$ of investment	Population Rank	% of Recipients
Colusa County*	0.0143	50	0.10%
Kings County*	0.0222	33	0.10%
Yuba County*	0.0600	39	0.10%
Glenn County*	0.0746	48	0.20%
Tehama County	0.0968	41	0.10%
Sierra County	0.1305	57	0.20%
Santa Cruz County	0.1985	24	0.20%
Madera County*	0.2786	32	0.31%
Monterey County	0.5313	21	0.51%
Siskiyou County*	0.5556	45	0.10%

Table 9 shows the thirteen counties that did not receive any credit and their corresponding population rank. The thirteen counties make up 22.4 percent of total counties in California. Two of these counties are high unemployment areas. Consistent with county population being a key determinant of the amount of credits received by businesses within the county, the counties that received no credits have some of the smallest populations within California.

Table 9: No Credit Received

County	Population Rank
Alpine County	58
Amador County	46
Calaveras County	44
Del Norte County	49
Inyo County	52
Lassen County	47
Mariposa County	53
Modoc County*	56
Mono County	54
Plumas County*	51
San Benito County	42
Trinity County	55
Tuolumne County	43

Table 10 summarizes the amount of credit granted per dollar of committed investment. There were a total of 976 credit recipients from 2013 to 2017. Of those 976 recipients, 74 were located in high poverty areas and 114 in high unemployment areas. These are not mutually exclusive, as an area can be designated as both high unemployment and high poverty.

Table 10: Dollar of Credit Granted per Dollar of Committed Investment

Full Sample						
N	Mean	Median	Min	P25	P75	Max
976	\$ 0.8709	\$ 0.1441	\$ 0.0000	\$ 0.0464	\$ 0.4888	\$ 104.3025

High Poverty County Sample						
N	Mean	Median	Min	P25	P75	Max
74	\$ 0.3909	\$ 0.1362	\$ 0.0059	\$ 0.0543	\$ 0.3303	\$ 4.0000

High Unemployment County Sample						
N	Mean	Median	Min	P25	P75	Max
114	\$ 0.3171	\$ 0.1099	\$ 0.0048	\$ 0.0323	\$ 0.2981	\$ 4.0000

For the full sample of credit recipients, the average tax credit received per dollar of committed investment is \$0.87 (median of \$0.14). The range varies greatly though, with a minimum credit amount granted per dollar of committed investment of \$0.00 and a maximum of \$104.30. Interestingly, the mean credit granted to high poverty and high unemployment areas is less than half of the average credit granted to the full sample of recipients.

Table 11 summarizes the dollar of credit granted per new employee. Overall, the mean credit granted was \$11,841.47 (median of \$9,375) for each new employee. While the average credit for investment in high poverty/unemployment areas was lower than the full sample, the average credit for new job creation is higher in these areas. For high poverty recipients, the mean credit per new job created is \$16,007.28 (median of \$15,043.10) and for high unemployment recipients the mean is \$14,167.75 (median of \$10,000).

Table 11: Dollar of Credit Granted per New Employee

Full Sample						
N	Mean	Median	Min	P25	P75	Max
976	\$ 11,841.47	\$ 9,375.00	\$ 291.55	\$ 4,759.81	\$ 17,021.28	\$ 45,454.55

High Poverty County Sample						
N	Mean	Median	Min	P25	P75	Max
74	\$16,007.28	\$15,043.10	\$1,466.28	\$7,852.56	\$23,684.21	\$37,500.00

High Unemployment County Sample						
N	Mean	Median	Min	P25	P75	Max
114	\$14,167.75	\$10,000.00	\$1,428.57	\$6,666.67	\$22,045.45	\$37,500.00

Table 12 summarizes the total number of credit recipients in each industry. There are ten industries defined by the U.S. Department of Labor. The majority of credit recipients are in the services and manufacturing industry. Together, those two industries make up 89.65 percent of credit recipients. Within the high poverty credit recipients, 77.03 percent of recipients are in the services or manufacturing industry. Of high unemployment credit recipients, 81.58 percent of recipients are in the services or manufacturing industry.

Table 12: Recipients by Industry

Industry	2013	2014	2015	2016	2017	Total	Total High Poverty	Total High Unemployment
Agriculture/Forestry/Fishing	0	3	0	1	1	5	0	4
Mining	0	0	0	0	0	0	0	0
Construction	2	8	10	5	5	30	10	9
Manufacturing	15	98	98	97	78	386	29	47
Trans./Comm/Electric/Gas/Sanitation	0	0	0	2	2	4	0	0
Wholesale	0	3	3	1	1	8	0	0
Retail	4	6	3	12	9	34	6	6
Finance/Insurance/Real Estate	1	5	10	1	1	18	1	2
Services	7	89	135	155	103	489	28	46
Public Administration	0	0	0	1	1	2	0	0

Table 13 summarizes descriptive statistics for the credit granted per dollar of investment in each industry. The mean credit granted per dollar of committed investment ranges from \$0.01 (agriculture/forestry/fishing) to \$1.28 (trans./comm./electric/gas/sanitation). Given the small sample sizes in the majority of industries, it is difficult to compare means and medians. However, for the two largest recipients (i.e., manufacturing and services) the mean and median credit per dollar of investment is lower for manufacturing recipients than services recipients (mean of \$1.02 vs. \$0.79 and median of \$0.25 vs. \$0.09). I performed a t-test to determine whether these means are statistically different. The test returned a p-value of 0.57. A p-value of 0.05 or lower is considered to be statistically significant.

Table 13: Dollar of Credit Granted per Dollar of Investment Committed by Industry

Industry	N	Mean	Median	Min	P25	P75	Max
Agriculture/Forestry/Fishing	5	\$0.0128	\$0.0124	\$0.0048	\$0.0124	\$0.0143	\$0.0203
Mining	0	-	-	-	-	-	-
Construction	30	\$0.6039	\$0.1292	\$0.0059	\$0.0551	\$0.7400	\$4.4444
Manufacturing	386	\$0.7907	\$0.0878	\$0.0027	\$0.0342	\$0.2430	\$104.3025
Trans./Comm/Electric/Gas/Sanitation	4	\$1.2826	\$1.2826	\$0.0653	\$0.0653	\$2.5000	\$2.5000
Wholesale	8	\$0.2464	\$0.1841	\$0.0343	\$0.0561	\$0.4220	\$0.5831
Retail	34	\$0.0882	\$0.0525	\$0.0048	\$0.0232	\$0.1424	\$0.2828
Finance/Insurance/Real Estate	18	\$1.1217	\$0.4525	\$0.0240	\$0.1319	\$2.1739	\$4.8000
Services	489	\$1.0211	\$0.2459	\$0.0000	\$0.0840	\$0.8197	\$60.9756
Public Administration	2	\$0.0799	\$0.0799	\$0.0799	\$0.0799	\$0.0799	\$0.0799

Table 14 summarizes the descriptive statistics for dollar of credit granted per new employee in each industry. The mean credit per new employee ranges from \$3,906.25 in the public administration industry to \$18,961.96 in agriculture/forestry/fishing. Again, given small sample sizes in the majority of industries, I will focus comparisons on services and manufacturing. The mean credit per new job created is slightly higher in manufacturing than in services (\$12,266.17 versus \$11,589.40). A t-test to determine whether these means are

statistically different results in a p-value of 0.29; thus, the means are not statistically different from each other.

Table 14: Dollar of Credit Granted Per New Employee by Industry

Industry	N	Mean	Median	Min	P25	P75	Max
Agriculture/Forestry/Fishing	5	\$18,961.96	\$11,111.11	\$4,054.05	\$9,833.33	\$34,905.66	\$34,905.66
Mining	0	-	-	-	-	-	-
Construction	30	\$12,266.17	\$10,000.00	\$2,000.00	\$3,502.04	\$19,062.50	\$38,461.54
Manufacturing	386	\$12,227.53	\$9,259.26	\$291.55	\$5,006.28	\$17,581.67	\$45,454.55
Trans./Comm/Electric/Gas/Sanitation	4	\$18,794.33	\$18,794.33	\$4,255.32	\$4,255.32	\$33,333.33	\$33,333.33
Wholesale	8	\$6,911.37	\$3,886.98	\$447.76	\$2,098.48	\$8,258.93	\$19,607.84
Retail	34	\$10,117.28	\$8,928.57	\$2,093.68	\$5,463.89	\$14,393.94	\$29,972.75
Finance/Insurance/Real Estate	18	\$12,509.22	\$9,949.24	\$608.27	\$4,657.87	\$16,416.67	\$33,333.33
Services	489	\$11,589.40	\$9,500.00	\$311.48	\$4,722.22	\$16,000.00	\$40,476.19
Public Administration	2	\$3,906.25	\$3,906.25	\$3,906.25	\$3,906.25	\$3,906.25	\$3,906.25

Effect of CCTC on California's Economy

Since the CCTC program was adopted in 2013, it is important to look at data both before and after the inception year to evaluate the effectiveness of the CCTC program in increasing investment and job growth within the state. A natural point of comparison is to compare California with its neighboring states to determine whether California achieved superior growth relative to other states within the region. While neighboring states differ from California, they do exhibit more homogeneity than a comparison to the broader set of states. Table 15 depicts annual GDP from 2009 to 2017 for California and surrounding states: Arizona, Oregon, and Nevada. GDP in California is much higher than that in neighboring states. GDP has increased in all four states since 2013. GDP steadily increased in all four states since 2009.

Table 15: GDP for California and Neighboring States

State	2009	2010	2011	2012	2013	2014	2015	2016	2017
California	1,912,115	1,965,886	2,036,297	2,131,199	2,223,892	2,358,920	2,510,167	2,619,639	2,746,873
Arizona	242,509	245,668	254,192	264,693	270,469	281,069	293,318	304,357	319,850
Oregon	181,022	191,120	199,929	196,973	196,594	202,116	215,940	227,032	236,219
Nevada	120,202	121,713	124,445	125,440	128,205	133,071	142,081	148,216	156,313

To compare GDP across states, I took the percent change from each year, this is reported in Table 16. From this, we can see that GDP increased for a majority of years in all states. The GDP in Oregon slightly decreased from the previous year in both 2012 and 2013. Since 2013, every state has steadily increased its GDP. California's GDP in both 2013 and 2014 were higher than surrounding states. However, since 2014, California's GDP trend is very similar to that of its neighboring states. Overall, Table 16 presents very little evidence that California has enjoyed more growth than neighboring states.

Table 16: Percent Change in GDP for California and Neighboring States

State	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
California	2.8%	3.6%	4.7%	4.3%	6.1%	6.4%	4.4%	4.9%
Arizona	1.3%	3.5%	4.1%	2.2%	3.9%	4.4%	3.8%	5.1%
Oregon	5.6%	4.6%	-1.5%	-0.2%	2.8%	6.8%	5.1%	4.0%
Nevada	1.3%	2.2%	0.8%	2.2%	3.8%	6.8%	4.3%	5.5%

To show GDP trends graphically, I log transform the GDP data to make the state data more comparable since California's GDP is much larger than surrounding states. I then plot annual log transformed GDP for California and its surrounding states in Figure 4. As seen in Figure 4, California and its neighboring states had very similar trends in GDP from 2009 to

2017, providing little evidence that the CCTC beneficially affected California’s GDP growth relative to neighbor states.

Figure 4: GDP Trend by State

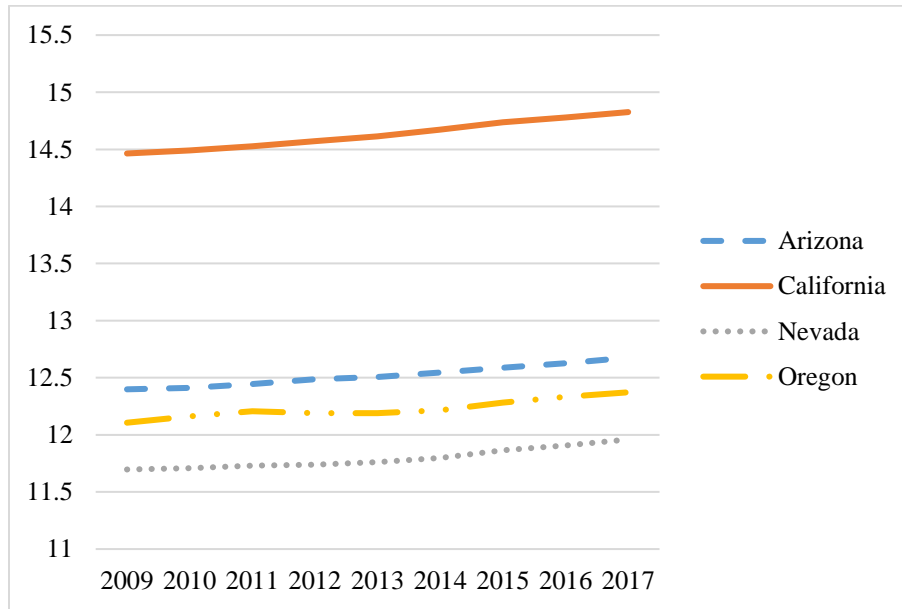


Table 17 reports the average unemployment rate for both high poverty/unemployment counties relative to other counties in California. The other receiving counties include Sacramento, San Bernardino, San Diego, Santa Barbara, Santa Clara, and Los Angeles. The unemployment rates in both high poverty/unemployment areas and other counties in California have significantly decreased since before the inception of CCTC in 2013.

Table 17: Average Unemployment for High Poverty/High Unemployment Counties vs. Other Counties

Counties	2009	2010	2011	2012	2013	2014	2015	2016	2017
High Poverty/ Unemployment	17.77%	19.05%	17.64%	16.20%	13.76%	12.53%	11.41%	10.77%	9.25%
Other	11.20%	11.37%	10.30%	8.92%	7.40%	6.03%	5.08%	4.60%	3.73%

Because high poverty and high unemployment areas have significantly higher unemployment rates than other counties in California, we can look at the percent change in the data to analyze trends. In Table 18, we can see that other counties have a greater change in their

average unemployment rate year over year than high poverty and high unemployment areas. This is inconsistent with the goal of the CCTC program in prioritizing recipients in high poverty/unemployment counties as we would probably expect in that case to see greater decreases in unemployment in high poverty/unemployment counties relative to other California counties.

Table 18: Percent Change in Unemployment Rate - High Poverty/Unemployment Counties v. Other Counties

Counties	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
High Poverty/Unemployment	7.20%	-7.42%	-8.16%	-15.06%	-8.96%	-8.89%	-5.67%	-14.12%
Other	1.49%	-9.38%	-13.43%	-17.01%	-18.47%	-15.75%	-9.51%	-18.84%

Figure 5 shows the average unemployment rates of high poverty/unemployment counties compared to other credit receiving counties. The trend in unemployment rates in high poverty/unemployment counties is consistent with other recipient counties. Thus, Table 18 and Figure 5 provide consistent evidence that high poverty/unemployment did not benefit from the CCTC program more so than other California counties in terms of reductions in unemployment.

Figure 5: Average Unemployment in High Poverty/Unemployment California Counties vs. Other California Counties

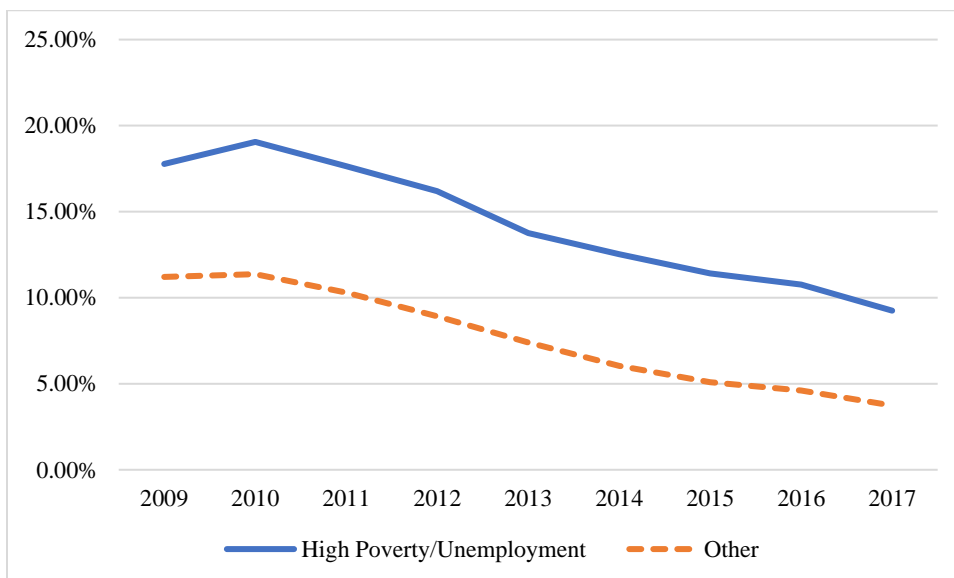


Table 19 reports the unemployment rate for California and its neighboring states from 2009 to 2017. All four states have realized reductions in their unemployment rate over the sample period.

Table 19: Unemployment Rate for California and Neighboring States

State	2009	2010	2011	2012	2013	2014	2015	2016	2017
California	11.14%	12.23%	11.71%	10.38%	8.94%	7.50%	6.20%	5.48%	4.78%
Arizona	9.93%	10.35%	9.50%	8.33%	7.74%	6.78%	6.04%	5.38%	4.86%
Oregon	11.26%	10.61%	9.50%	8.83%	7.88%	6.78%	5.58%	4.82%	4.14%
Nevada	11.30%	13.50%	13.00%	11.20%	9.60%	7.90%	6.80%	5.70%	5.00%

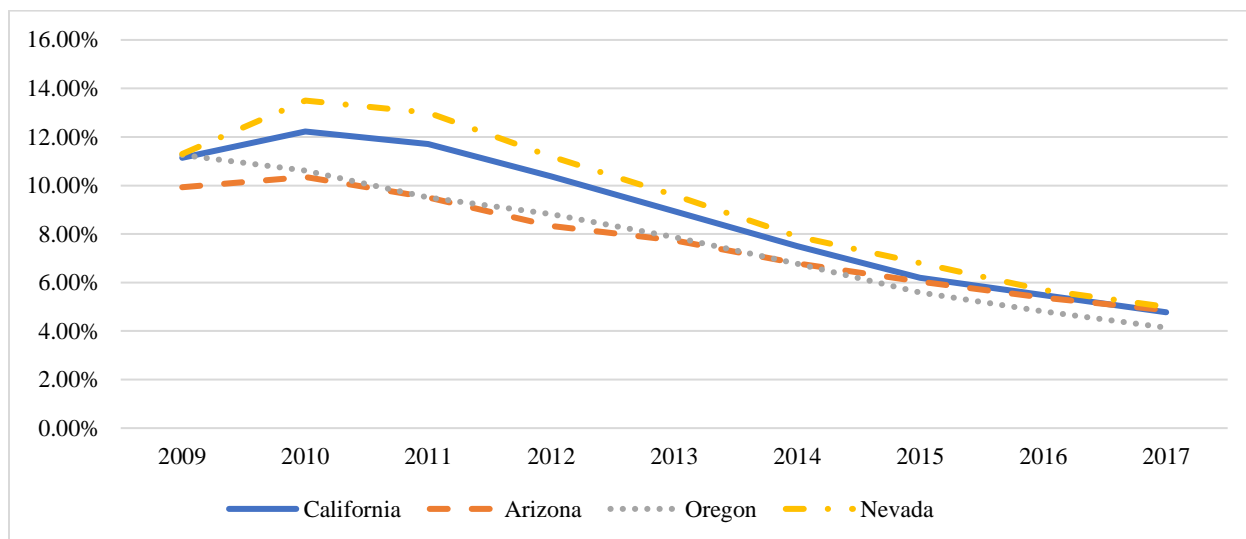
The following table shows the percent change in the unemployment rate for California, Arizona, Oregon, and Nevada from 2009 to 2017. California’s unemployment decreased the most from 2013 to 2015 and continues to decrease through 2017; however, neighboring states have enjoyed similar reductions in unemployment post 2013.

Table 20: Percent Change in Unemployment Rate for California and Neighboring States

State	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
California	9.7%	-4.2%	-11.4%	-13.8%	-16.1%	-17.3%	-11.6%	-12.9%
Arizona	4.3%	-8.2%	-12.3%	-7.1%	-12.4%	-10.9%	-11.0%	-9.6%
Oregon	-5.8%	-10.4%	-7.1%	-10.8%	-14.0%	-17.6%	-13.7%	-14.0%
Nevada	19.5%	-3.7%	-13.8%	-14.3%	-17.7%	-13.9%	-16.2%	-12.3%

Figure 6 shows California’s unemployment rate compared to surrounding states’ unemployment rates. From the figure, we can see that all four states have similar unemployment rate trends from 2009 to 2017. This again provides little evidence that California achieved superior reductions in unemployment relative to surrounding states following the implementation of the CCTC program.

Figure 6: Unemployment Rate by State



6. Conclusion

This paper presents an analysis of the California Competes Tax Credit. CCTC recipient data and California economic data were used to support the findings in this paper. Common trends in the descriptive analysis of CCTC recipients include (1) high population areas seem to receive more credit dollars than low population areas, (2) the majority of recipients are in the services or manufacturing industries, and (3) high poverty/unemployment areas receive significantly less, on average, credit per dollar invested than other counties within California and receive significantly more, on average, credit per new employee granted.

The evidence presented in this paper supports the hypothesis that the enactment of the California Competes Tax Credit did not significantly increase employment nor economic growth in California. California's GDP trend is constant with surrounding states' GDP; thus, there is little evidence that the CCTC beneficially affected California's GDP growth relative to its surrounding states. Likewise, even though unemployment rates have significantly decreased within California, the unemployment rates in its neighboring states have decreased at similar rates. This

again provides little evidence that California achieved superior reductions in unemployment relative to surrounding states. In addition, unemployment rates within high poverty/unemployment areas have a lower percent change than the other counties within California. Thus, high poverty/unemployment areas did not benefit from the CCTC program more so than other California counties in terms of reductions in unemployment, which is inconsistent with the goals of the CCTC program.

It is important to continue researching the effects of state tax incentives as well as the effects of the CCTC. Legislature should continue to analyze the effects of the CCTC on California's economy and continue to assess whether the benefits outweigh the costs of the program. With continued research, legislature can make informed decisions about the CCTC program in the future.

References

- Bartik, T. & Erickcek, G. (2014). Simulating the Effects of the Tax Credit Program of the Michigan Economic Growth Authority on Job Creation and Fiscal Benefits. *Economic Development Quarterly*, 4, 314–27.
- California Code of Regulations. (2018). California Competes Tax Credit. *Westlaw*, 10.13.1.
- California Competes Tax Credit. (2018). Retrieved April 24, 2019 from <http://business.ca.gov/Programs/CaliforniaCompetesTaxCredit>
- Initial Statement of Reasons. (2018). Retrieved April 25, 2019 from <http://business.ca.gov/Portals/0/CA%20Competes/initial-statement-of-reasons.pdf>
- Chirinko, R. & Wilson, D. (2016). Job Creation Tax Credits, Fiscal Foresight, and Job Growth: Evidence from U.S. States. *CESifo Working Paper Series*, 5771, 2-59.
- Chirinko, R. and Wilson, D. (2008). State investment tax incentives: a zero-sum game? *Journal of Public Economics*, 92, 2362-2384.
- Nebraska Department of Revenue. (2013). Comparison of Nebraska Tax Incentive Programs to Those Available in Other States. Retrieved April 24, 2019 from http://www.revenue.nebraska.gov/incentiv/annrep/10an_rep/neb_adv/neb_adv_compare.html
- Dowall, D. (1996). An Evaluation of California's Enterprise Zone Programs. *Economic Development Quarterly* 10, 4, 352–68.
- Lawrence, E., Briskin, E., & Qu, Q. (2013). A Review of State Tax Incentive Programs for Creating Jobs. *Journal of State Taxation* 31, 3, 25-32.
- Elvery, J. (2009). The Impact of Enterprise Zones on Resident Employment: An Evaluation of the Enterprise Zone Programs of California and Florida. *Economic Development Quarterly* 23, 1, 44–59.

- Faulk, D. (2002). Do State Economic Development Incentives Create Jobs? An Analysis of State Employment Tax Credits. *National Tax Journal* 55, 2, 263-80.
- Freedman, M. (2012). Teaching new markets old tricks: the effects of subsidized investment on low income neighborhoods. *Journal of Public Economics*, 96, 1000-1014.
- Gabe, T. & Kraybill, D. (2002). The Effect of State Economic Development Incentives on Employment Growth of Establishments. *Journal of Regional Science*, 42, 703-730.
- Jensen, N. (2017). Job Creation and Firm-Specific Location Incentives. *Journal of Public Policy* 37, 1, 85–112.
- Neumark, D. & Kolko, J. (2010). Do enterprise zones create jobs? Evidence from California's enterprise zone program. *Journal of Urban Economics*, 68, 1-19.
- O'Keefe, S. (2004). Job creation in California's enterprise zones: a comparison using a propensity score matching model. *Journal of Urban Economics*, 55, pp. 131-150.

Appendix

CCTC Decision Factors

According to the Governor's Office of Business and Economic Development, the following list are the factors used when reviewing applications to make credit decisions:

- The number of jobs the business will create or retain in this state.
- The compensation paid or proposed to be paid by the business to its employees, including wages, benefits, and fringe benefits.
- The amount of investment in this state by the business.
- The extent of unemployment or poverty where the business is located.
- The incentives available to the business in this state, including incentives from the state, local government, and other entities.
- The incentives available to the business in other states.
- The duration of the business' proposed project and the duration the business commits to remain in this state.
- The overall economic impact in this state of the applicant's project or business.
- The strategic importance of the business to the state, region, or locality.
- The opportunity for future growth and expansion in this state by the business.
- The training opportunities provided to employees
- The extent to which the anticipated benefit to the state exceeds the projected benefit to the business from the tax credit.
- The extent to which the credit will influence the applicant's ability, willingness, or both, to create new full-time jobs in this state that might not otherwise be created in the state by the applicant or any other business in California.

Industry Divisions

Department of Labor's 10 divisions:

- A. Agriculture, Forestry, Fishing
- B. Mining
- C. Construction
- D. Manufacturing
- E. Transportation/Communications/Electric/Gas/Sanitation
- F. Wholesale
- G. Retail
- H. Finance/Insurance/Real Estate
- I. Services
- J. Public Administration

Counties within California

The 58 counties in California:

1. Alameda
2. Alpine
3. Amador
4. Butte
5. Calaveras
6. Colusa
7. Contra Costa
8. Del Norte
9. El Dorado
10. Fresno
11. Glenn
12. Humboldt
13. Imperial
14. Inyo
15. Kern
16. Kings
17. Lake
18. Lassen
19. Los Angeles
20. Madera
21. Marin
22. Mariposa
23. Mendocino
24. Merced
25. Modoc
26. Mono
27. Monterey
28. Napa
29. Nevada
30. Orange
31. Placer
32. Plumas
33. Riverside
34. Sacramento
35. San Benito
36. San Bernardino
37. San Diego
38. San Francisco
39. San Joaquin
40. San Luis Obispo
41. San Mateo
42. Santa Barbara
43. Santa Clara
44. Santa Cruz
45. Shasta
46. Sierra
47. Siskiyou
48. Solano
49. Sonoma
50. Stanislaus
51. Sutter
52. Tehama
53. Trinity
54. Tulare
55. Tuolumne
56. Ventura
57. Yolo
58. Yuba

List of High Poverty Counties within California

Fresno County

Imperial County

Lake County

Merced County

Tulare County

List of High Unemployment Counties within California

Colusa County

Fresno County

Glenn County

Imperial County

Kern County

Kings County

Madera County

Merced County

Modoc County

Plumas County

Siskiyou County

Stanislaus County

Sutter County

Tulare County

Yuba County