



IRLE WORKING PAPER
#108-17
November 2017

The Effects of California's Public Policy on Jobs and the Economy Since 2011

Ian Perry

Cite as: Ian Perry. (2017). "The Effects of California's Public Policy on Jobs and the Economy Since 2011". IRLE Working Paper No. 108-17.
<http://irle.berkeley.edu/files/2017/The-Effects-of-Californias-Public-Policy-on-Jobs-and-the-Economy-Since-2011.pdf>

<http://irle.berkeley.edu/working-papers>

Berkeley
UNIVERSITY OF CALIFORNIA

The Effects of California's Public Policy on Jobs and the Economy Since 2011

Ian Perry

November 2017

Abstract

Between 2011 and 2016, California enacted a set of 51 policy measures addressing workers' rights, environmental issues, safety net programs, taxation, and infrastructure and housing. This paper labels these policies as the California Policy Model (CPM), and assesses some of the claims of critics and supporters regarding their impact on the state's economy. It analyzes arguments made by critics that contend the CPM would reduce employment and slow economic growth. The paper also evaluates supporters' arguments that the CPM would raise wages for low-wage workers, increase access to health insurance, and lower wage inequality. It finds results that suggest the CPM did in fact lead to increased wage growth and health insurance access and decreased wage inequality without reducing employment or economic growth.

Introduction

There is a long and ongoing debate over the proper role of government in setting economic policy. Proponents of government intervention argue that rules can protect the public, strengthen industries, and spur innovation. They contend government programs can alleviate market failures like monopoly power, externalities, differences in information, and under-provision of public goods. Advocates and observers recognize that government actions in these areas may carry costs, but they argue that the benefits of these activities outweigh those costs, and on net are a positive for the economy (Shapiro and Irons 2011 and Labonte 2010).

Opponents of regulation and government action disagree that the benefits of government intervention outweigh their costs. They argue government involvement in the economy distorts market outcomes leading to inefficiency. In their view, the costs of funding government action either through taxes or altered incentives slows economic progress, and leads to worse outcomes compared to a more laissez-faire system (Mitchell 2005).

In 2011, Democrat Jerry Brown succeeded Republican Arnold Schwarzenegger as California's governor, and California voters passed Proposition 25, which allowed the state budget to be approved with a 50 percent majority in the state legislature as compared to the prior two-thirds requirement. Already controlling both houses of the state legislature, adding the governor's office and simplifying the budget approval process allowed California Democrats to enact a more active economic policy agenda, which this report labels the

California Policy Model (CPM). This set of policies has expanded the role of government in California’s economy, and its components include raising its minimum wage, extending health insurance to millions of residents, setting ambitious climate policy, and raising taxes on high earners and corporations.

Governor Brown views California as “The Great Exception” (York 2015), believing that this set of policies will “work for everybody – corporations, workers and the environment.” He views California as “the wave of the future,” and its policy model as an example for other states to follow (Dickinson 2013). Opponents of these policies argue that the CPM will degrade the business climate in the state. These critics contend that with a potentially less friendly attitude towards business, people and companies will leave California, limiting the state’s economic potential and reducing employment and incomes (Investor’s Business Daily 2017).

This paper describes the components of the CPM, assesses whether the sum of its policies have shown success in achieving their goals, and whether there is evidence that the concerns of opponents of the CPM have come to fruition. Specifically, it evaluates the effect of the CPM on the growth rate of employment in California, the growth of state GDP, wage growth for low-wage workers, wage inequality, and access to health insurance. It begins with an explanation of the policies in the CPM, describes the data and methods used in the policy evaluation, and presents and discusses the results of that evaluation.

Components of the California Policy Model

The California Policy Model is a collection of 51 pieces of legislation, policy decisions, and policy implementations enacted in California since 2011. These policies fit into five major categories: workers’ rights, safety net, environment, taxation, and infrastructure and housing. They include minimum wage increases, the state’s implementation of the Affordable Care Act (ACA), several policies related to climate change, and a large set of new protections for the state’s workforce. The policies were selected through conversations with participants and observers of California politics, and an examination of legislation prioritized by the California Labor Federation or opposed at some point as “job-killers” by the California Chamber of Commerce. The policies in the five categories of the CPM are briefly described below. The full list of policies can be found in the Appendix.

Workers’ Rights

In July 2014, California raised its minimum wage from \$8 to \$9 per hour, and then to \$10 per hour in January 2016. This increase was projected to increase wages for 3.3 million working Californians, providing them with an average annual raise of \$800 (Allegretto, Reich, and West 2014). Following a wave of 22 California cities and counties passing their own minimum wage increases above the state minimum (UC Berkeley Labor Center 2017), the state passed Senate Bill (SB) 3 in 2016, which set the state minimum wage on a path to reach \$15 per hour by 2022, and then to rise annually with increases in the cost of living. The \$15 minimum wage was projected to affect 5.6 million workers when it fully phases in, on average raising their pay by \$3,700 per year (Jacobs and Perry 2016).

In addition to the minimum wage increases, the CPM contains a number of other policies intended to expand workers’ rights or raise labor standards. Some of these policies, like the state’s efforts to combat wage theft, also increase pay. California also extended paid sick leave to all of its workers, and created a

retirement savings plan to ensure that all workers can save for old age. The CPM also contains a number of targeted worker protections that extend additional rights to workers in specific classes and industries. A number of these measures protect workers from mistreatment on the basis of immigration status.

Environment

In 2006, California passed Assembly Bill (AB) 32, which committed the state to lowering its greenhouse gas emissions to 1990 levels by 2020. In 2012 and 2013, as part of the California Policy Model, the state enacted regulations to encourage emissions reduction, and started its cap and trade program. In 2015 and 2016, California passed SB 350 which committed the state to greater use of renewable energy and further improvements in energy efficiency, and SB 32 which raised the emissions reduction goal to 40 percent below 1990 levels by 2030.

While it is beyond the scope of this report to analyze the effects of California's climate policy, researchers from the Lawrence Berkeley National Laboratory, Environmental Defense Fund, and Next 10 have studied the state's emissions reductions efforts and have concluded that California is on pace to meet its 2020 carbon reduction goals (Greenblatt 2015, Hsia-Kiung and Morehouse 2015, and Next 10 2017).

Safety Net

In 2013, California decided to expand its Medicaid program, named Medi-Cal, in accordance with the ACA. As a result, by 2014 all California residents with legal immigration status earning less than 138 percent of the Federal Poverty Level had access to comprehensive health insurance; 3.7 million Californians gained health insurance coverage through the Medi-Cal expansion (Dietz, Lucia, Kominski, and Jacobs 2016). California also took an active role in reforming its individual insurance market. The state established its own exchange, Covered California, and pursued a strategy of "active purchasing" more vigorously than any other state. The components of active purchasing include: establishing a standard insurance plan design to simplify the process of selecting an insurance plan; only allowing insurers that meet rigorous standards to sell policies on the exchange; and requiring insurers to assist in efforts to improve the delivery of healthcare (Robinson, Lee, and Goldman 2015). In June 2016, 1.2 million Californians were receiving subsidies to purchase coverage in the reformed individual market (Dietz, Lucia, Kominski, and Jacobs 2016). According to data from the American Community Survey, California had the largest decline in the state uninsured rate from 2013 to 2015.¹

In 2015, California expanded its Medi-Cal program to include undocumented immigrant children. This action was projected to make an additional 250,000 children eligible for coverage (Lucia, Chen, Jacobs, and Pourat 2016). California fully funded this coverage expansion as federal funds cannot be spent on undocumented residents.

In 2015, California established a state earned income tax credit (EITC) to supplement the earnings of its low-wage workers. Childless workers earning up to \$6,580 could receive a maximum credit of \$214. Workers with children earning up to \$13,870 could receive a maximum credit of \$2,653 (California Franchise Tax Board 2017). The EITC was projected to raise incomes for 2 million Californians, on average providing their families with an additional \$460 per year (Montialoux and Rothstein 2015).

¹ Author's analysis of American Community Survey data.

In 2016, California eliminated the maximum family grant (MFG) from the Temporary Assistance for Needy Families (TANF) public assistance program. The MFG prevented a family's TANF grant from expanding with the birth of a new child if anyone in the family received aid in the ten months prior to the birth of the child. By removing the MFG, an estimated 130,000 California children from 95,000 families were projected to receive an additional \$136 per month (Megerian 2016).

Taxation

During the 2012 and 2016 elections, California voters passed three ballot propositions that raised taxes on high-income earners and corporations. In 2012, Proposition 30 raised the sales tax in the state by 0.25 percentage points, and raised income taxes on high-income Californians to increase funding for public education by \$6 billion per year (California Legislative Analyst's Office 2012a). Proposition 39 made it more difficult for multi-state businesses to avoid California corporate income taxes. The measure was expected to raise about \$1 billion per year with half of those additional tax receipts dedicated to supporting clean energy and energy efficiency projects (California Legislative Analyst's Office 2012b).

In 2016, California voters passed Proposition 55, which extended Proposition 30's tax increases on high-income Californians until 2030. It did not extend the sales tax increase from Proposition 30. Proposition 55 also established budgetary mechanisms to increase funding for the state's Medi-Cal health insurance program. The measure was expected to raise \$4 to \$9 billion per year (California Legislative Analyst's Office 2016). California voters also passed Proposition 56, which increased taxes on cigarettes by \$2 per pack. The measure was projected to raise \$1 billion annually with the money to be spent on healthcare programs (Dillon 2016).

Infrastructure and Housing

California has made major investments in public infrastructure. In 2014, the state allocated 25 percent of the revenue raised from its cap and trade program to the construction of its high-speed rail link between the San Francisco Bay Area and Los Angeles. During the 2014 election, California voters approved \$7.5 billion in bond financing to improve the state's water infrastructure.

In 2012, California passed the Homeowner's Bill of Rights which provided California homeowners with expanded protections during the foreclosure process. In 2016, it extended many of these rights to the survivors of deceased homeowners.

Data and Methods

The analyses in this paper use a synthetic control model to evaluate the effects of the CPM by comparing California's actual record on several economic indicators to the performance of a synthetic California that did not implement the policies in the CPM. The sections below describe the data used in the analysis and the implementation of the synthetic control model in the analysis.

Data

California state employment data come from the Quarterly Census of Employment and Wages (QCEW). The total employment indicator includes all workers covered by the QCEW, and the private sector indicator includes all private sector workers covered by the QCEW. State GDP data come from the Bureau of Economic Analysis (BEA).

The data used to assess the effect of the CPM on wage growth for low-wage workers and wage inequality come from the Center for Economic and Policy Research (CEPR) extract of the Current Population Survey (CPS) Outgoing Rotation Group (ORG) files. The sample was restricted to those who reported being currently employed, not self-employed, and age 18 to 64. Wages were inflated to 2016 dollars using the U.S. CPI-W. Observations with outlier wages, defined as below \$1 and above in \$200 in 1989 dollars (Mishel, Bivens, Gould, and Shierholz 2012), were dropped.

The insured rate data come from the American Community Survey (ACS). Data from 2008 to 2015 were used. The ACS data were used instead of data from the CPS, which is more commonly used for health insurance analysis, because of methodological changes in 2014 which interrupt the time series for insurance coverage.

Methods

The synthetic control model evaluates each policy by creating an estimate of California’s economic performance on a performance indicator had it not implemented the policy related to that indicator. It begins by finding a weighted average of a donor pool of states that have not enacted similar policies and that closely resemble California’s economic performance prior to the implementation of the CPM. The donor pool is made up of states whose governments were controlled by the Republican party from 2011 to 2016 (Republican control is defined as Republican possession of the state’s governor’s office and state legislature). The analysis assumes that because of their Republican control, those states did not implement policies similar to the CPM. Table 1 shows the Republican-controlled states in the donor pool. Table 2 shows the performance indicators used to evaluate each policy.

Table 1: Donor States

Alabama	Ohio
Arizona	Oklahoma
Florida	South Carolina
Georgia	South Dakota
Idaho	Tennessee
Indiana	Texas
Kansas	Utah
Michigan	Wisconsin
Nebraska	Wyoming
North Dakota	

The method assumes that the weighted average of those Republican-controlled states that match California prior to the policy implementation will also closely match the trends in California after the policy

Table 2: Policy Performance Indicators

Policy	Performance Indicator
Overall Effect on Employment	Total and Private Sector Employment Growth Since 2011
Overall Effect on Economic Growth	State GDP Growth Since 2011
Minimum Wage Increases	5, 10, 15, & 20th Percentile Wage Growth Since 2014
Wage Inequality	Change in 90th to 10th Percentile Wage Ratio Since 2011
ACA Implementation	Share of Non-Elderly Residents with Health Insurance

implementation, if California had not implemented the policy. Under that assumption, the synthetic control method’s estimate for California post-implementation can be used to represent California’s economic performance without the policy. Assuming the synthetic estimate is an accurate depiction of California without the policy, the difference between actual performance and the synthetic estimate can be attributed to the effect of the CPM.

When choosing the optimal weights for the donor states, the method must also consider the problem of over-fitting. Over-fitting can be an issue if the synthetic control model matches too heavily on noise in the pre-policy data. In this case, the post-policy estimates would not be accurate because they are based more on random noise than true trends in performance. Over-fitting can be measured by the post-policy prediction errors for the donor states. Since the donor states are not implementing the policy, there should be no policy effect, and the observed post-policy performance and the estimated post-policy performance should be expected to match. The extent to which the observed and estimated performance for the donor states do not match represents the amount of over-fitting due to noise in the model. By using multiple candidate models, the analysis can select a model that both closely approximates California and minimizes over-fitting.

The analysis uses eight candidate models for each indicator. The models vary by the frequency of outcome data in the pre-policy period, the presence of pre-policy period average covariates, and the length of the pre-policy period. The candidate models either use every pre-policy observation, or the first, middle, and last pre-policy observations.² The models either use only the pre-policy outcomes to match or use the pre-policy outcomes plus pre-policy period averages of the following covariates: population, unemployment rate, and industry distribution of private sector employment (the models for total and private sector employment also use the average weekly wage as a covariate). The pre-policy periods begin in either 2000 or 2006, which correspond to the year prior to the start of the last two recessions.³ The candidate models for health insurance only begin in 2008 due to data availability.

In each of the eight candidate models (four for the insured rate indicator), the root mean squared prediction error in the post-policy period (post-RMSPE) is calculated for the donor states. Because the donor states are meant to represent states where there is zero policy effect, the model with the smallest average post-RMSPE is selected.⁴ Tables in the Appendix show the models selected for each analysis and the weights assigned to the donor states.

The policy effect is defined as the percentage difference in California’s actual performance and Synthetic

²For the limited set of pre-policy observations, indicators with quarterly data use each quarter in the first, middle, and last year.

³Indicators with quarterly data begin in the first quarter of each year.

⁴This selection process is also used by Dube and Zipperer (2015).

California's performance in the last period of data. Statistical significance is determined using the placebo test commonly used by practitioners of the synthetic control method (Abadie, Diamond, and Hainmueller 2010, Dube and Zipperer 2015, and Reich, Allegretto, and Godoey 2017). The placebo test calculates "policy effects" for the donor states. If California's policy effect is sufficiently larger than the "effects" in the donor states, then it can be considered significant. The statistic for determining significance is the percentile rank of California's policy effect relative to the other states, which is calculated as California's rank divided by the number of states (including California) in the analysis plus one.

The relatively small number of states in the donor pool, 19, sharply limits the power of the placebo test and its ability to establish statistical significance. The test is unable to establish statistical significance at the standard 95 percent level using a two-tailed test. For a result to be significant at this level, its percentile rank must be less than or equal to 0.025 or greater than or equal to 0.975, but with only 19 donor states, the range of the percentile rank test in this analysis is 0.048 to 0.952.⁵ Since the test cannot establish significance at the 95 percent level, this analysis will use the 90 percent level for significance.

Due to the low power of this analysis, the number of tails in the significance test takes on greater importance. In this analysis, the number of tails will vary depending on the exact claim being tested. Critics of the CPM argue that it will have a negative effect on employment and economic output. For these claims, the analysis is trying to determine if the policy effect is not negative rather than not equal to zero and uses a one-tailed test. It finds the results on employment and GDP significant if the percentile rank is less than or equal to 0.10. The tests for CPM effects on low-wage worker wage growth, wage inequality, and health insurance access try to determine if the effect is statistically distinguishable from zero, and thus use a two-tailed test. These tests find the policy effect statistically significant at the 90 percent level if the percentile rank is less than or equal to 0.05 or greater than or equal to 0.95.

Other researchers (Abadie, Diamond, and Hainmueller 2010 and Dube and Zipperer 2015) have acknowledged that the placebo test is sensitive to how well the synthetic control model can mimic the donor states. There are occasions where the method is unable to fit synthetic outcomes that closely match the actual outcomes even in the pre-treatment period. In these situations, the difference between the actual and synthetic outcomes in the post-policy period does not reflect the random noise in the synthetic control method's estimate of the policy effect, but instead the failure of the synthetic control method to create an accurate representation of the state. In line with other researchers (Abadie, Diamond, and Hainmueller 2010 and Dube and Zipperer 2015), donor states whose accuracy in the pre-treatment period is more than two times worse than for California were dropped when assessing statistical significance.⁶

This approach gives a more accurate view of the random noise in the estimated policy effect, but further decreases the power of an already weak significance test. The tests for employment and economic growth cannot make conclusions at the 90 percent significance level if 11 or more states are eliminated, and the tests for low-wage worker wage growth, wage inequality, and health insurance access cannot provide answers at the 90 percent level if two or more donor states are eliminated. Due to this tradeoff, significance results are reported both with the full set of donor states, and with donor states with poor model fit removed.

⁵This corresponds to 1/21 and 20/21.

⁶Other researchers use accuracy ratio cutoffs ranging from two to twenty.

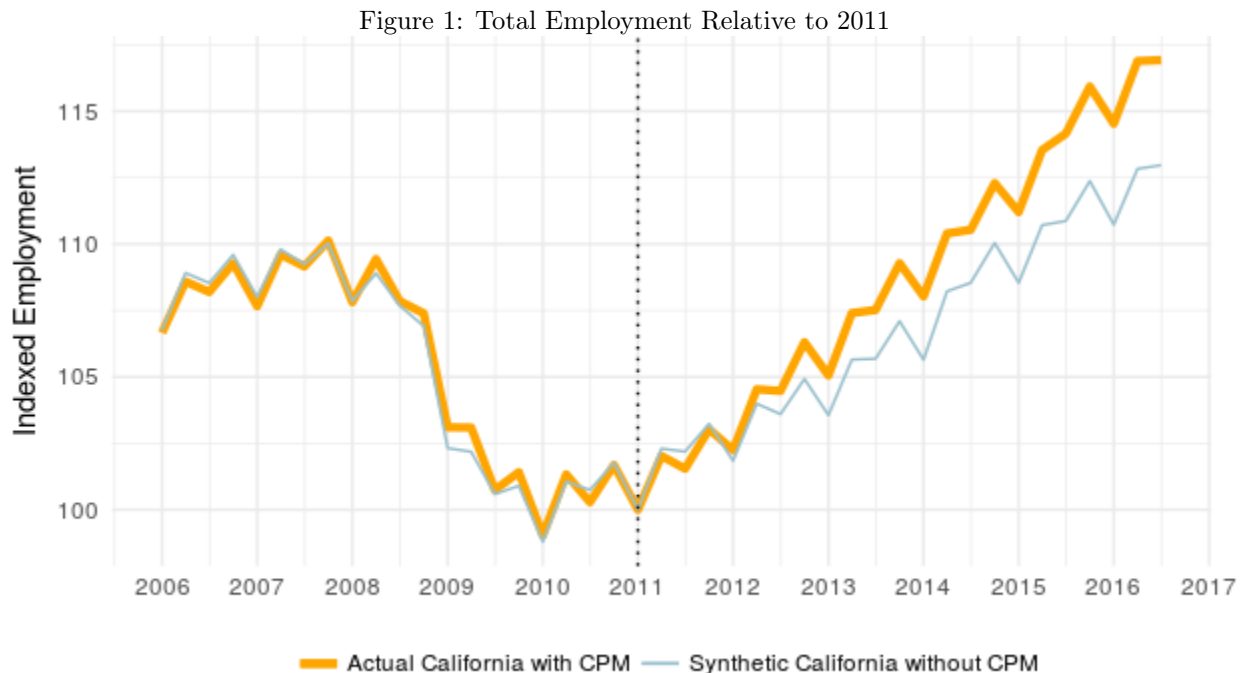
Results

The following sections analyze the effects of the CPM on California’s economic performance using the synthetic control model. The analysis begins by testing for negative effects on employment and economic growth. It then tests whether several selected policies were binding; specifically, whether the minimum wage increases affected wage growth for low-wage workers, whether the CPM as a whole had an impact on wage inequality, and whether California’s implementation of the ACA had an effect on the share of its residents with health insurance.

Employment Growth

Critics of the CPM argue that its policies would reduce employment growth in California. This claim was tested by examining the growth of total employment and private sector employment since 2011, the beginning of the implementation of the CPM. Total employment gives a picture of the overall rate of job growth in California including both the private and public sector. Examining private sector employment separately is also important because critics might argue that the CPM would have more of an effect on employment in the private sector, where businesses might be less able to absorb any potential cost increases created by the policies.

Figure 1 shows that total employment growth in California was greater than in synthetic California since 2011.



Source: Author’s analysis of QCEW data.

As seen in Table 3, the model estimated that total employment growth in California was 3.5 percent greater than synthetic California without the CPM. When testing with all donor states, this effect was not

statistically significant. However, after dropping the donor states that were not accurately represented by the synthetic control model the effect was significant at the 90 percent level using a one-tailed test.

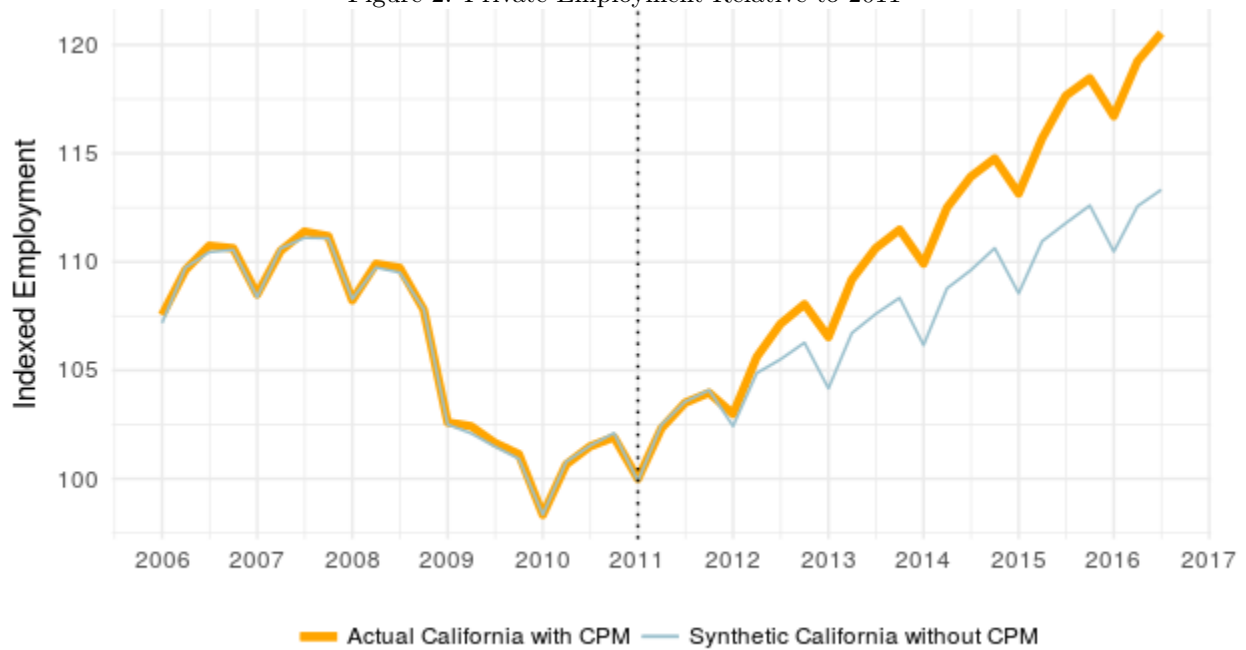
Table 3: Total Employment Relative to 2011 – Synthetic Control Results

Policy Effect	Percentile Rank	
	All	Donors with Poor Fit Removed
0.035	0.19	0.083

These results suggest that, contrary to predictions by its critics, the CPM did not slow overall employment growth in California. After removing donor states with poor model fit, the analysis can reject the claim that the CPM had a negative effect on total employment growth.

Figure 2 shows that private employment growth in California was also greater than in synthetic California since 2011.

Figure 2: Private Employment Relative to 2011



Source: Author's analysis of QCEW data.

As seen in Table 4, the model estimated that private employment growth in California was 6.4 percent greater than synthetic California without the CPM. However, this result was not significant in either one-tailed test.

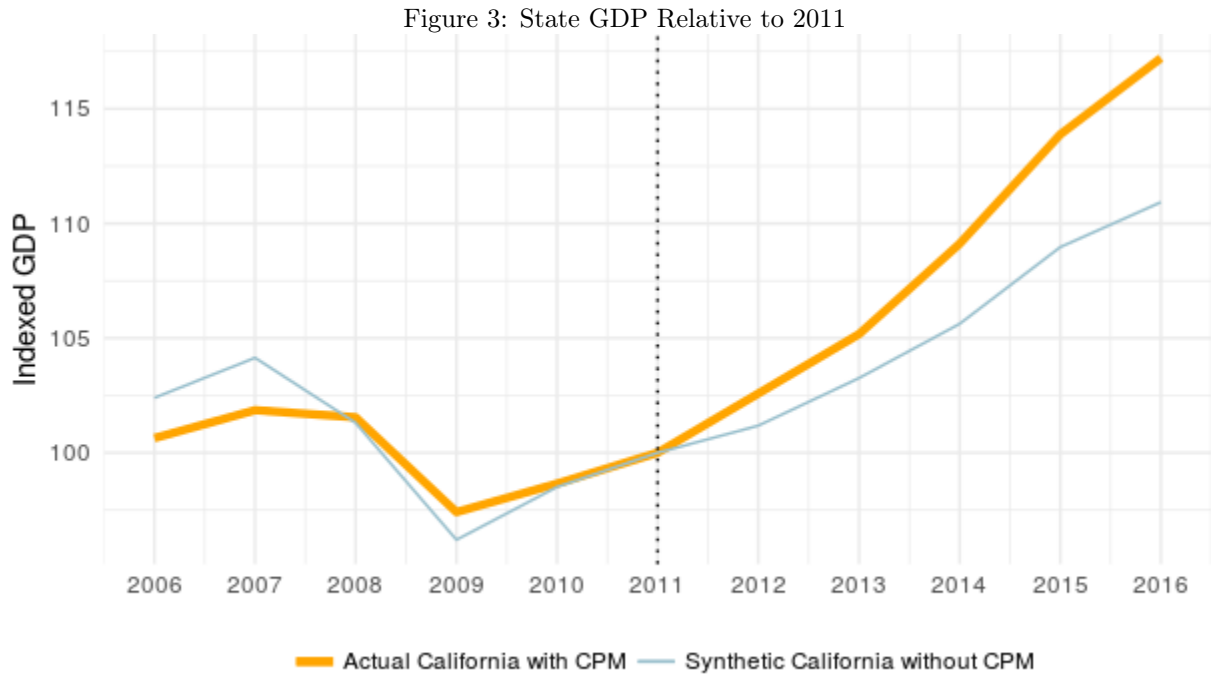
These results suggest that private employment growth was also not slowed by the CPM, although this conclusion merits less confidence than for the result for total employment, due to the lack of sufficient power in the statistical test.

Table 4: Private Sector Employment Relative to 2011 – Synthetic Control Results

Policy Effect	Percentile Rank	
	All	Donors with Poor Fit Removed
0.064	0.143	0.143

Economic Growth

Critics also argue that the CPM would have a negative effect on economic growth in California. The growth of state GDP since 2011, the beginning of CPM implementation, was used to test this claim. Figure 3 shows that actual GDP growth in California was greater than GDP growth in synthetic California without the CPM.



Source: Author's analysis of BEA data.

The model estimated that GDP growth in California was 5.7 percent greater than synthetic California without the CPM, as seen in Table 5. This effect was significant in both one-tailed tests.

These results show that the CPM did not lead to a decrease in economic growth in California. Both tests are able to statistically rule out negative effects on GDP growth.

Table 5: State GDP Relative to 2011 – Synthetic Control Results

Policy Effect	Percentile Rank	
	All	Donors with Poor Fit Removed
0.057	0.095	0.059

Wage Growth for Low-Wage Workers

California raised its minimum wage from \$8 to \$9 in July 2014, and then to \$10 in January 2016 (as shown in Table 6). Workers with wages below or near the new minimum wage were expected to receive pay increases as a result of the policy change. This section examines whether the minimum wage increases had an effect on wage growth for low-wage workers.

Table 6: California Minimum Wage Increases 2014-2016

Period	Old Minimum Wage	New Minimum Wage
July 2014	\$8	\$9
December 2016	\$9	\$10

Table 7: Selected California Wage Percentiles

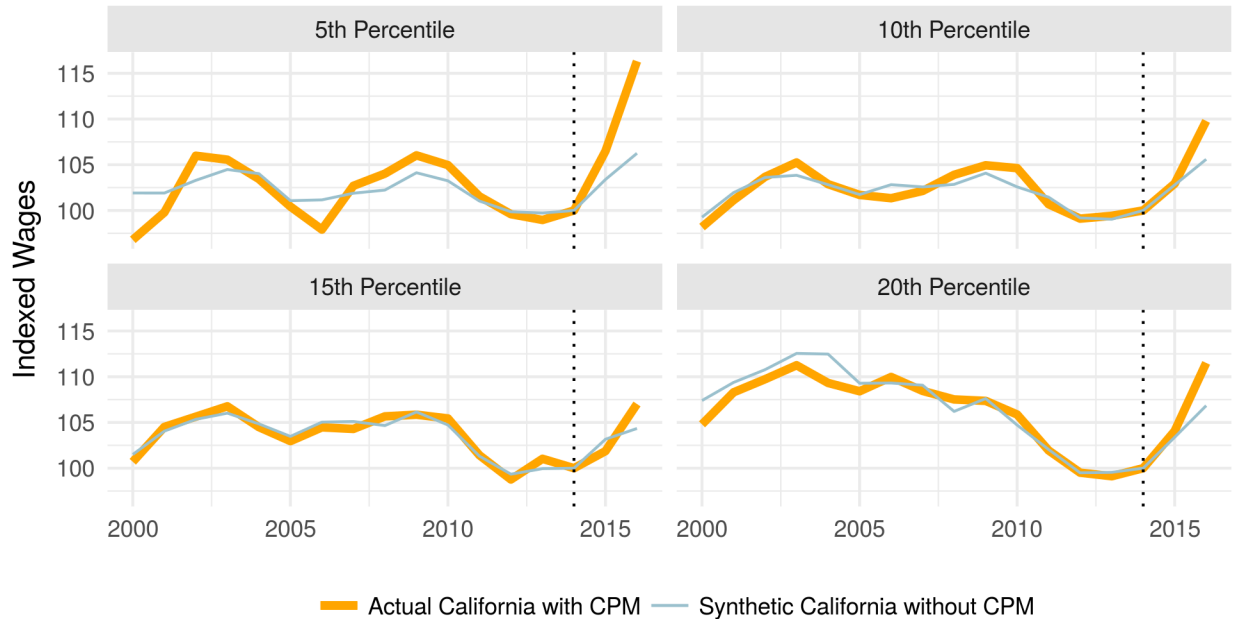
Year	5th Percentile	10th Percentile	15th Percentile	20th Percentile	25th Percentile
2013	8.30	9.10	10.01	10.43	11.69
2014	8.38	9.15	9.91	10.52	11.89
2015	8.93	9.42	10.09	10.95	12.04
2016	9.75	10.05	10.60	11.73	12.60

Previous research has shown that wage effects from minimum wage increases taper off near 115 percent of the new minimum wage (Wicks-Lim 2006). At the time of the minimum wage increases, that threshold was near the 20th percentile of the wage distribution in California. In 2013, the 20th percentile wage was \$10.43 and 115 percent of the new 2014 minimum wage was \$10.35. In 2015, the 20th percentile wage was \$10.95, and 115 percent of the new 2016 minimum wage was \$11.50. In both years, the 20th percentile wage was near that 115 percent threshold, and the 25th percentile was well above the threshold, so the wage effects of these two minimum wage increases should be expected at and below the 20th percentile in the wage distribution.

Figure 4 shows the analysis of the effect of the minimum wage increases in the CPM on wage growth at the 5th, 10th, 15th, and 20th percentiles since 2014 (the year of the first minimum wage increase and represented by the dashed line in the plots). In each wage percentile, actual wage growth in California was greater than the estimated wage growth for synthetic California without the minimum wage increases.

Table 8 shows that the model estimated that 5th percentile wage growth in California was 9.5 percent greater than synthetic California without the 2014 and 2016 minimum wage increases. It also estimated that 10th percentile wage growth was 4 percent higher, 15th percentile wage growth was 2.6 percent greater, and

Figure 4: Selected Wage Percentiles Relative to 2014



Source: Author's analysis of CPS Outgoing Rotation Group data.

20th percentile wage growth was 4.4 percent higher than synthetic California without the minimum wage increases.

The estimates of increased wage growth for the 5th and 20th percentiles were significant when using all donor states to perform the percentile rank test. After removing the donor states with poor model fit, only 5th percentile remained significant at the 90 percent level. Again, the lack of statistical significance is related to the low power of the test.

These results suggest that the 2014 and 2016 increases in the state's minimum wage raised wages for low-wage California workers. All four wage percentiles tested show higher wage growth in actual California compared to synthetic California without the minimum wage increases. The result for the 5th percentile was statistically significant using a two-tailed test. While the individual tests for the 10th, 15th, and 20th lack the statistical power to make firm conclusions about the effect, taken together these results are suggestive of a positive effect on wages for California's low-wage workforce.

Wage Inequality

To the extent that the minimum wage increases and other policies in the CPM drove an increase in wage growth for low-wage workers, they may have also helped mitigate the growth of wage inequality in California. Wage inequality is the difference in hourly earnings between those at the top of the wage distribution and those at the bottom. A common way to measure wage inequality is the ratio of the 90th percentile wage to the 10th percentile wage (OECD 2015).

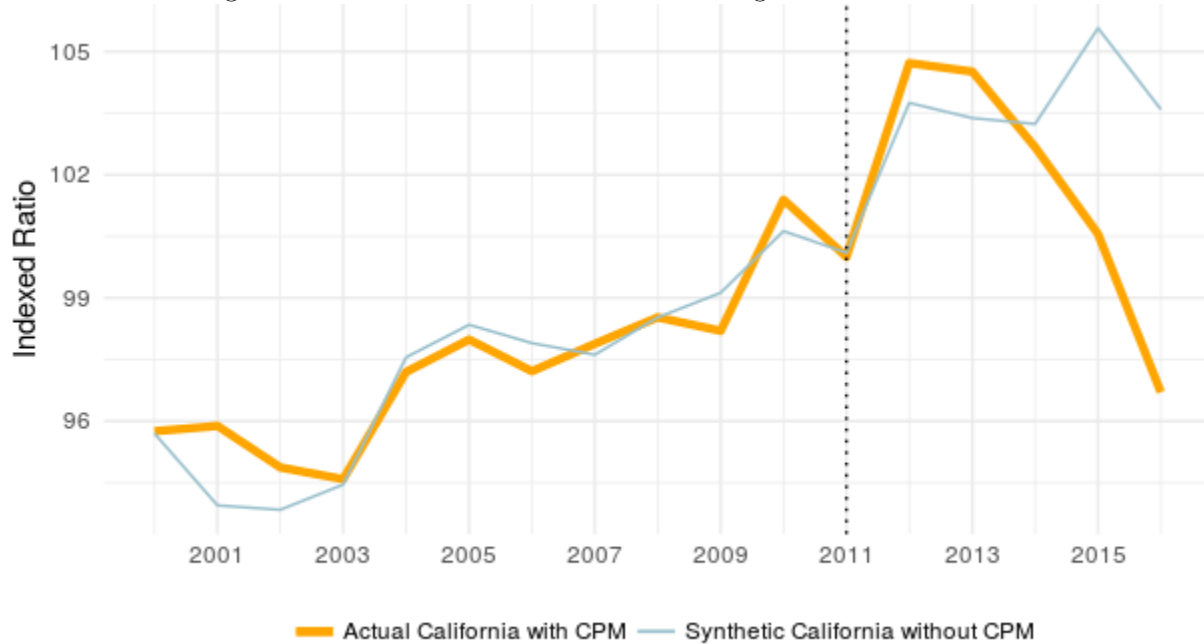
Figure 5 shows that by this measure, wage inequality in California has fallen since 2011, but increased

Table 8: Wage Growth Relative to 2014 – Synthetic Control Results

Wage Percentile	Policy Effect	Percentile Rank	
		All	Donors with Poor Fit Removed
5th	0.095	0.048	0.050
10th	0.040	0.095	0.059
15th	0.026	0.143	0.125
20th	0.044	0.048	0.083

in synthetic California. The change in inequality was measured relative to 2011 to capture the full effect of all the policies in the CPM, including the minimum wage increases and other policies like the tax increases on high-earning Californians.

Figure 5: 90th Percentile to 10th Percentile Wage Ratio Relative to 2011



Source: Author's analysis of CPS Outgoing Rotation Group data.

Table 9 shows the model estimate that the actual growth of the 90-10 wage ratio for California was 6.6 percent smaller than for synthetic California without the CPM. However, the percentile rank tests show that this result was not statistically significant.

The direction of the result is suggestive of a connection between the CPM and reduced wage inequality in California, but is less conclusive than the results for low-wage worker wage growth. The test is not powerful enough to make a firm statistical conclusion.

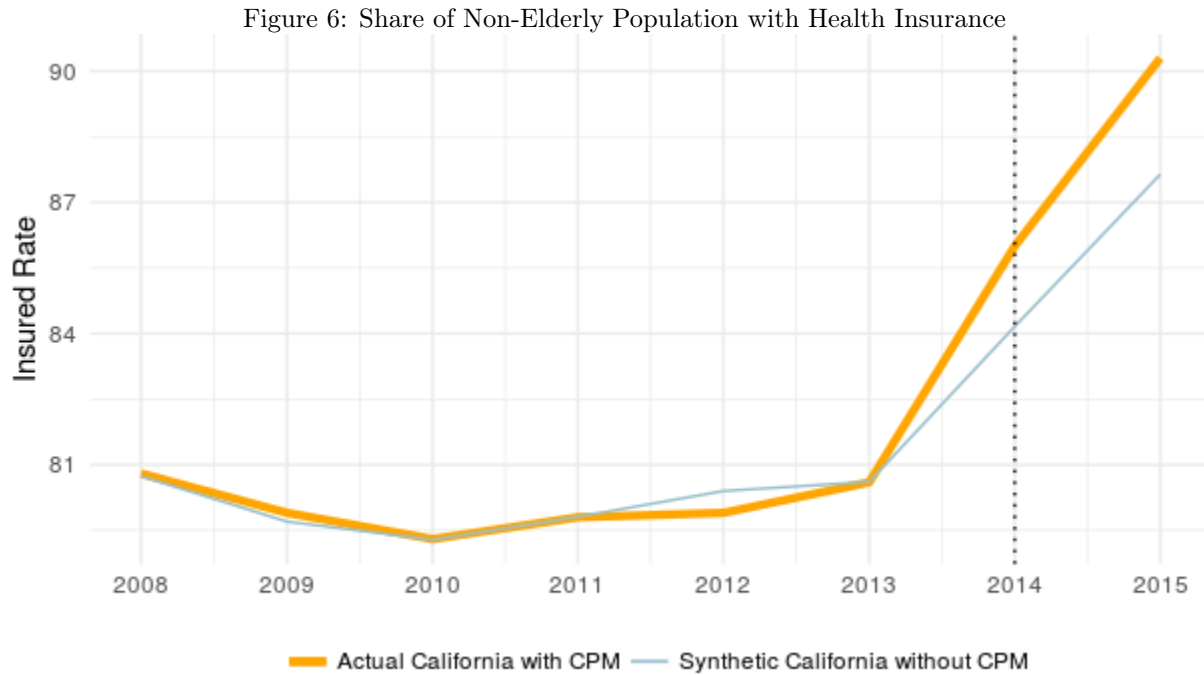
Table 9: 90th Percentile to 10th Percentile Wage Ratio Relative to 2011 – Synthetic Control Results

Policy Effect	Percentile Rank	
	All	Donors with Poor Fit Removed
-0.066	0.095	0.2

Health Insurance

The CPM includes California’s implementation of the Affordable Care Act (ACA). In 2014, California accepted the option to raise the eligibility limit for Medi-Cal (California’s version of the Medicaid public health insurance program) to 138 percent of the Federal Poverty Level. Unlike most states, California also opted in 2014 to run its own health insurance exchange, named Covered California. Covered California has pursued an active purchasing strategy with the goal of increasing coverage by making it easy for Californians to choose among high-quality health insurance plans.

Figure 6 shows the analysis of the effect of California’s implementation of the ACA on the share of non-elderly residents covered by health insurance.⁷ The insured rate in California is higher than in synthetic California without the ACA implementation of the CPM.



Source: Author’s analysis of ACS data.

As seen in Table 10, the model estimated that the insured rate in California was 3 percent greater than

⁷The analysis is limited to the non-elderly because Medicare already covers almost all Americans age 65 and older, so California’s ACA implementation would not be expected to affect insurance coverage among the over 65 population.

synthetic California without the state’s ACA implementation. The percentile rank test using all of the donor states shows that this policy effect was statistically significant.

Table 10: Share of Non-Elderly Population with Health Insurance – Synthetic Control Results

Policy Effect	Percentile Rank	
	All	Donors with Poor Fit Removed
0.03	0.048	0.083

These results provide evidence that California’s implementation of the ACA increased the share of its residents with health insurance. The statistical test with donor states with poor model fit removed was not powerful enough to make a firm conclusion, but overall the results are suggestive of a positive effect on the insured rate.

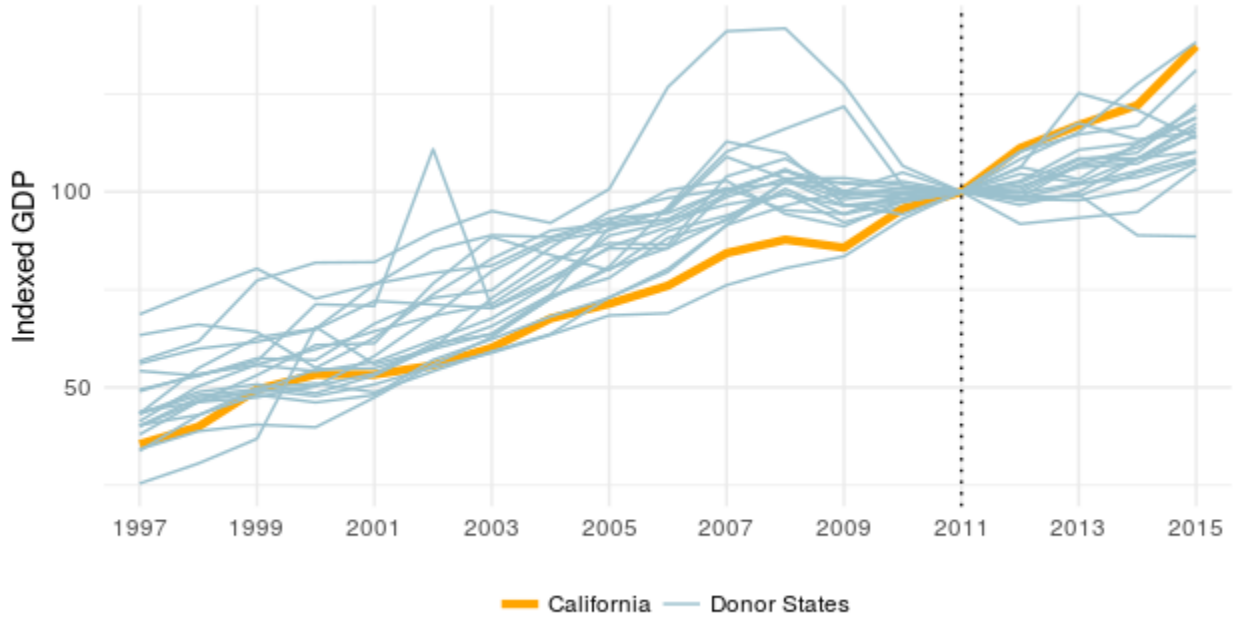
Discussion

The above analyses provide evidence that suggests the California Policy Model is working as intended. California’s minimum wage increases have raised pay for those at the very bottom of the state’s wage distribution (the 5th percentile), and the synthetic control model estimated that the CPM may have boosted pay for other low-wage workers slightly higher in the distribution (the 10th, 15th, and 20th percentiles). The results on wage inequality were not significant, but suggest that the CPM may have somewhat tightened the gap between California’s highest and lowest paid workers. California had the largest decline in the state uninsured rate from 2013 to 2015, and the analysis above suggests this was due to the state’s strong ACA implementation. And while not tested in this paper, multiple experts on climate change have agreed that California is on pace to meet its 2020 emissions reduction goals (Greenblatt 2015, Hsia-Kiung and Morehouse 2015, and Next 10 2017). At the same time, and in contrast to critics’ predictions, the analyses also suggest that the CPM did not have a negative effect on employment or economic growth in California. The analysis of employment effects suffers from some statistical uncertainty due to the low power of the significance test, but the analysis of effects on economic growth was able to rule out a negative impact.

There may be a concern that the synthetic control approach does not appropriately control for California’s technology boom. The state’s high-tech expansion occurred around the same time as the implementation of the CPM. Figure 7 shows that since 2011, California’s technology sector (measured by GDP and defined as in Benner and Neering 2016) has grown faster than that in all but one of the Republican-controlled states, and Figure 8 shows that the technology sector’s share of GDP is much higher in California than in any of the Republican-controlled states. The synthetic control approach might therefore struggle to distinguish between the effects of that California-specific technology boom and the effects of the CPM. This could mean that the finding of no effect on California’s economic growth is incorrect because the technology boom cancels out any drag created by the CPM. It could also mean that the synthetic control results finding a positive effect of the CPM’s minimum wage increases on low-wage worker wage growth are overstated.

Several analysis were conducted to test the effects of California’s technology boom on this paper’s results. First, if the growth in the technology sector is driving the economic growth in California, then after removing its contribution to state GDP, the synthetic control analysis should show no difference between

Figure 7: Technology Sector GDP Growth Relative to 2011



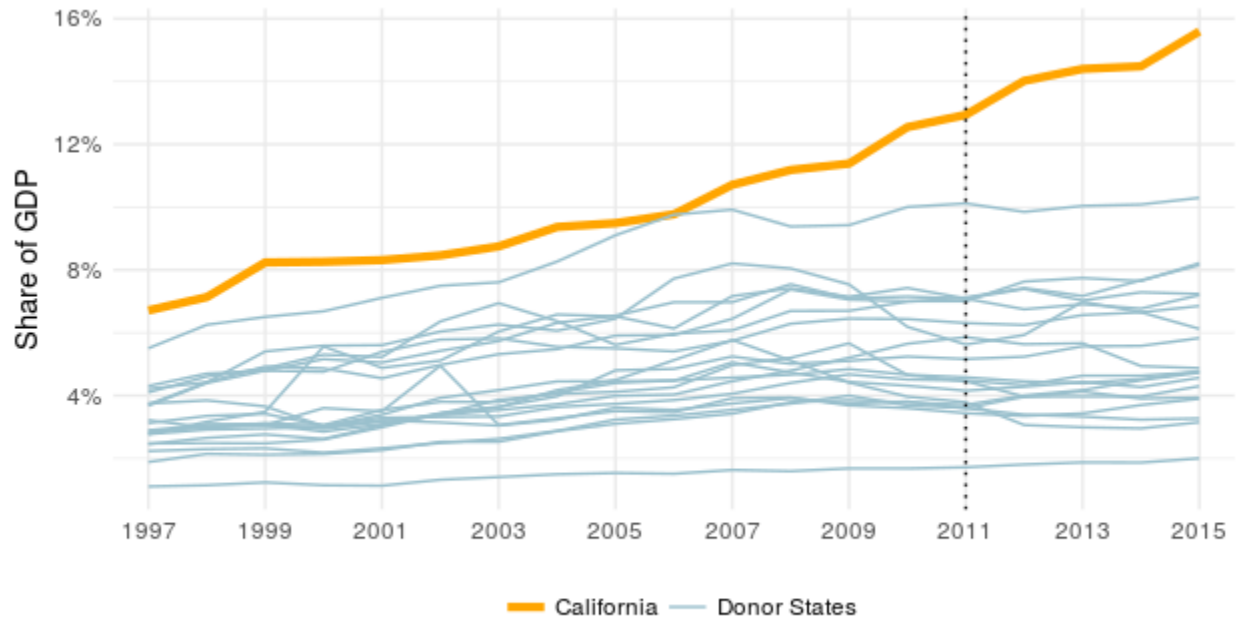
Source: Author's analysis of BEA data.

California's actual non-technology GDP growth and the synthetic estimate for California without the CPM. After performing this test, however, the gap between California's actual performance and the synthetic estimate persists. California still shows higher GDP growth even excluding the technology sector, although this result is less certain than the result for California's entire economy (see the Appendix for full results). It should also be noted that while this falsification test removes the direct contribution of the technology sector to state GDP, it does not address indirect effects like spillovers onto other sectors. Still, overall, this test suggests that the synthetic control model is able to control for California's technology sector growth.

Second, if the technology boom, not the minimum wage increases, is driving the increased wage growth for low-wage workers by generally stimulating California's economy, then an analysis of parts of the wage distribution outside the range of the minimum wage increases should also show California outperforming its synthetic estimate. For example, the 90th percentile wage is clearly beyond the reach of minimum wage increases, but could still be affected by a technology sector boom. However, an analysis of the growth of the 90th percentile wage shows that actual growth was somewhat smaller than the synthetic California estimate. Another way to test the validity of the wage growth results is to examine wage growth for relatively lower-paid workers in high-wage industries such as information; finance, insurance, and real estate; and professional and technical services. While these workers earn less than others in their highly-paid industries, their wages are still high enough to be outside the range expected to be affected by the minimum wage increases. The actual wage growth for these workers was similar to the synthetic estimate. These tests therefore suggest that the synthetic control analysis is properly accounting for the technology boom, and appropriately attributing the wage growth for low-wage workers to the minimum wage increases in the CPM (full results of these additional tests are shown in the Appendix).

Overall, it is important to emphasize that the cross-state analysis conducted in this study does not

Figure 8: Technology Industry Share of GDP



Source: Author's analysis of BEA data.

definitively resolve the debate over the CPM. While the estimates from each analysis point in the direction favored by proponents of the CPM, most of the tests are not statistically powerful enough to entirely discredit the fears of CPM skeptics, and may be somewhat contaminated by the growth of California's technology industry. Clearly further research is needed to bring more definitive answers to this debate.

The statistical ambiguity is to be expected given the low power of each individual analysis, which again is due to the limited number of comparison states. When the results are taken together, however, they all point in the same direction towards an interpretation that suggests the CPM working as intended. The evidence suggests the components of the CPM tested in this report are operating as designed, and evidence of large unintended consequences remains scarce. While these analyses do not settle the debate, they do shift the burden to opponents of the CPM to show stronger evidence for their criticisms of the policies.

Conclusion

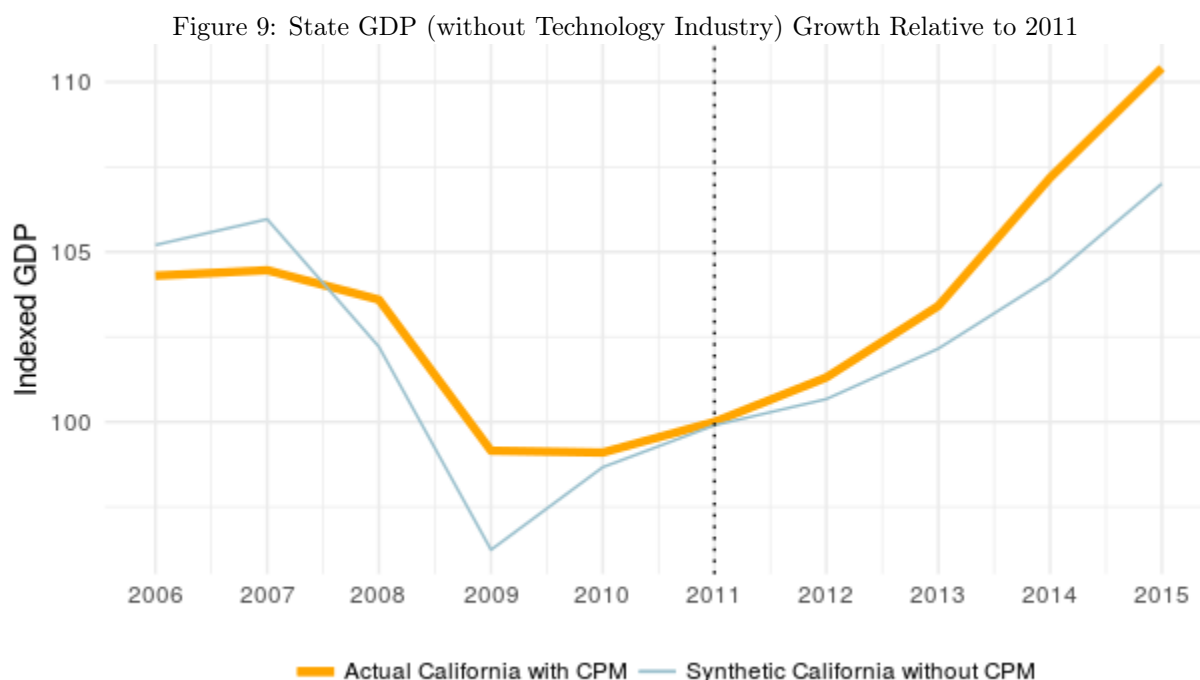
Since 2011, California has enacted a policy agenda seeking to bolster workers' rights, improve the environment, strengthen the safety net, increase equity in the tax system, and invest in its infrastructure. This report has presented evidence that suggests some of these efforts are succeeding, and that fears of unintended harms to employment and economic growth have not surfaced. More research will be needed to clarify and strengthen those findings. Still, this reports provides evidence that a state can take an active role in shaping its economy and improve conditions for its residents while avoiding harmful side effects.

Appendix

Falsification Test Results

GDP Growth with Technology Sector Removed

To determine if the technology boom is driving the result for GDP growth, this test removes the direct GDP contribution of the technology sector and conducts the synthetic control analysis.⁸ If the gap between California’s actual performance and the synthetic estimate remains, that indicates the model is able to control for the direct effect of the technology boom. It is important to note that this analysis does not remove the indirect effects of the technology boom such as spillovers onto other industries. Figure 9 shows the results of the analysis.



Source: Author’s analysis of BEA data.

Table 11 shows that the model estimated GDP growth without the technology sector was 3.2 percent greater in California than in synthetic California without the CPM. This result, though, was not statistically significant. This result shows that California continues to outperform its synthetic estimate, although this result was not statistically significant unlike the finding for the entire economy. Still, this test suggests that the model is controlling for California’s technology boom, because the effect on GDP growth is still positive.

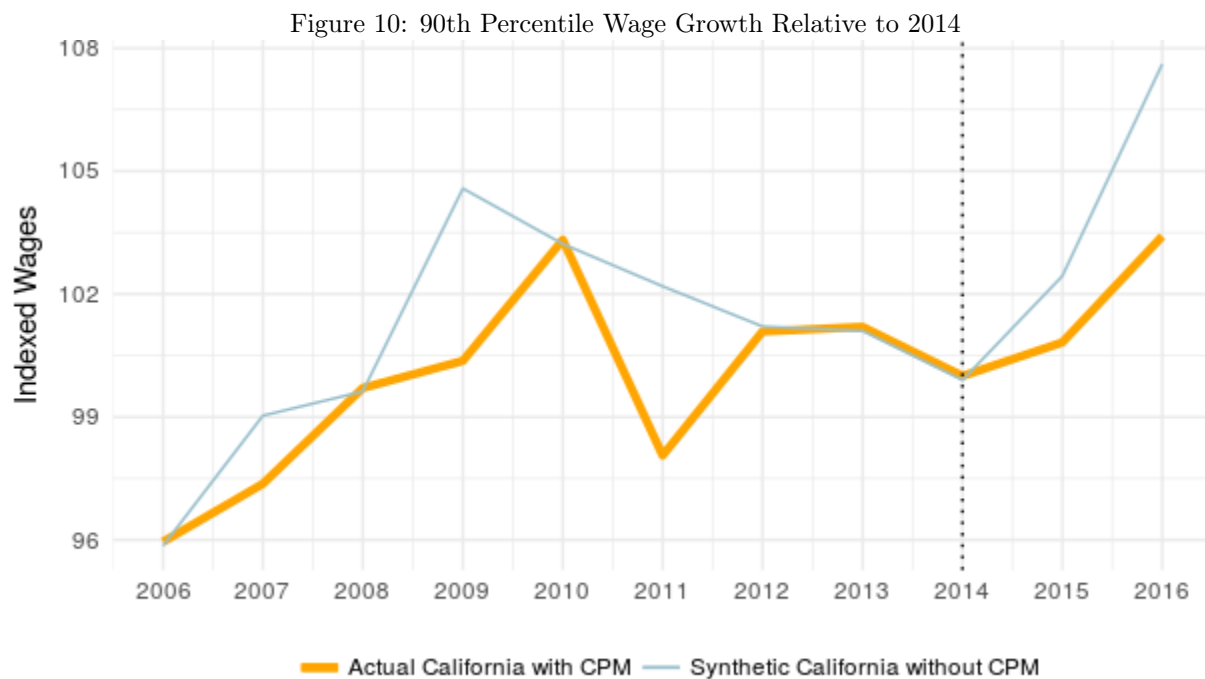
⁸The technology sector is approximately defined as in Benner and Neering (2016).

Table 11: State GDP (without Technology Industry) Growth Relative to 2011 – Synthetic Control Results

Policy Effect	Percentile Rank	
	All	Donors with Poor Fit Removed
0.032	0.238	0.222

Wage Growth at the 90th Percentile

This falsification test analyzes wage growth at the 90th percentile of the wage distribution. The minimum wage increases in the CPM are surely too small to affect wages at the top of the wage distribution. If California’s technology boom is driving wage growth as opposed to the minimum wage increases, the analysis may show evidence of a rise in 90th percentile "caused" by the minimum wage increases. Not finding evidence of an effect at the 90th percentile would strengthen the assumption that the model is able to control for the technology boom. Figure 10 shows the results of this test.



Source: Author’s analysis of CPS Outgoing Rotation Group data.

Table 12 shows that the model estimated that actual 90th percentile wage growth in California was 3.9 percent smaller than synthetic California without the CPM. The percentile rank tests show that this result was not statistically significant. These results suggest that the synthetic control model is not biased to show wage growth in California due to its technology boom. The estimate for the policy effect on these high earners is negative, and it is not statistically significant.

Table 12: 90th Percentile Wage Relative to 2014 – Synthetic Control Results

Policy Effect	Percentile Rank	
	All	Donors with Poor Fit Removed
-0.039	0.905	0.895

Wage Growth in High-Wage Industries

The other set of wage growth falsification tests examines wage growth in high-wage industries. When analyzing all workers, the 2014 and 2016 minimum wage increases were expected to increase wage growth at the 5th, 10th, 15th, and 20th percentiles because wages at these levels were close to the new minimum wages. Table 13 shows that in high-wage industries (information; finance, insurance, and real estate; and professional and technical services), only wages at the 5th percentile are close enough to the new minimum wages to expect an effect on wage growth. If the synthetic control model is working properly, this test should show evidence of the minimum wage increases affecting wages at the 5th percentile, but not at the 10th, 15th, and 20th percentiles. Figure 11 shows the results of this test.

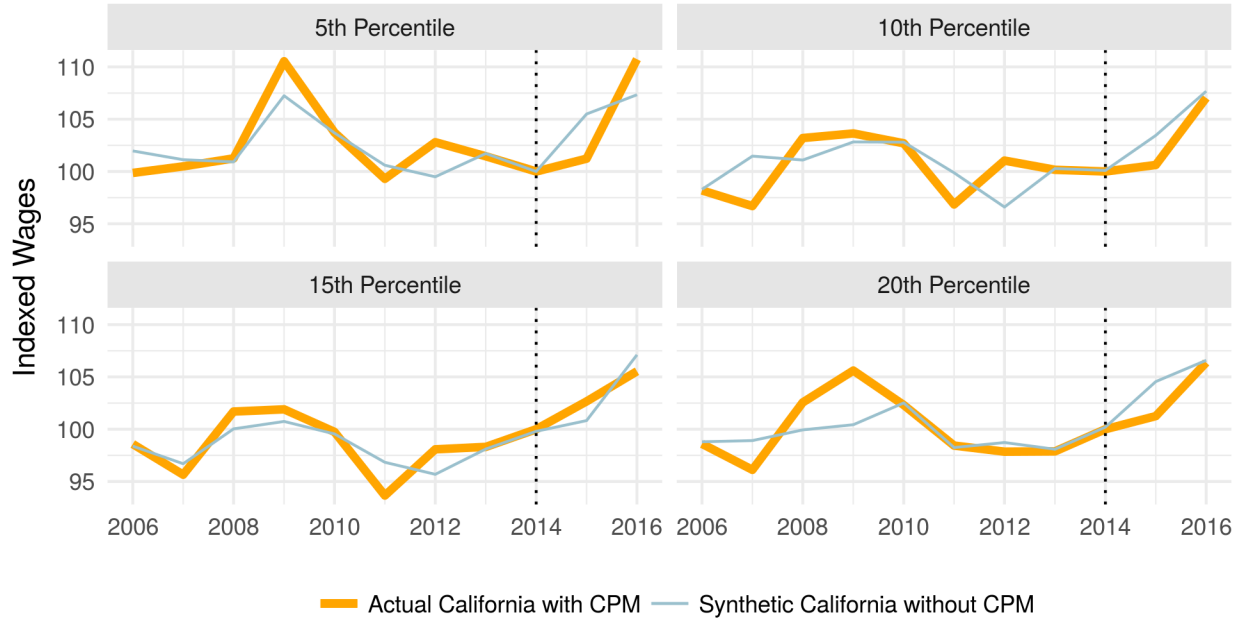
Table 13: Selected California Wage Percentiles - All Industries vs. High-Wage Industries

Year	5th Percentile		10th Percentile		15th Percentile		20th Percentile	
	All	High-Wage	All	High-Wage	All	High-Wage	All	High-Wage
2013	8.30	10.04	9.10	12.08	10.01	13.94	10.43	15.52
2014	8.38	9.89	9.15	12.06	9.91	14.18	10.52	15.86
2015	8.93	10.01	9.42	12.13	10.09	14.56	10.95	16.05
2016	9.75	10.95	10.05	12.91	10.60	14.96	11.73	16.87

High-wage industries are information, FIRE, and professional and technical services.

Table 14 shows that the model estimated 5th percentile wage growth for high-wage industries in California was 3.2 percent greater than synthetic California without the 2014 and 2016 minimum wage increases. The result was not statistically significant in either test. However, Table 13 shows that the 5th percentile for wages in these industries is similar to the 15th percentile for wages in all industries, and the estimated effect for the 5th percentile of high-wage industry workers is similar in magnitude to the effect on 15th percentile wage growth for all workers (see Table 8). This provides some confidence that the model is estimating consistent policy effects. The estimated policy effects for the other wage percentiles were both small and highly insignificant. These results provide additional evidence the synthetic control model is not biased to show wage growth.

Figure 11: Wage Growth in High-Wage Industries Relative to 2014



Source: Author's analysis of CPS Outgoing Rotation Group data.

Table 14: Wage Growth in High-Wage Industries Relative to 2014 – Synthetic Control Results

Wage Percentile	Policy Effect	Percentile Rank	
		All	Donors with Poor Fit Removed
5th	0.032	0.333	0.250
10th	-0.006	0.571	0.643
15th	-0.015	0.524	0.500
20th	-0.002	0.429	0.455

Table 15: Policies Included in the California Policy Model

Workers Rights		
<i>Increasing Pay</i>		
2016	AB 1066	Overtime Pay for Farmworkers
2016	SB 1015	Domestic Worker Overtime Made Permanent
2016	SB 3	Minimum Wage Increase to \$15
2015	AB 852	Prevailing Wage for Hospital Construction with Tax-Exempt Bonds
2015	SB 588	Expansion of Liability for Wage Theft
2015	SB 80	State EITC
2013	AB 10	Minimum Wage Increase to \$9 and \$10
2013	AB 241	Overtime Pay for Domestic Workers
2011	AB 240	Easing Collections for Wage Violations
2011	AB 469	Protections Against Wage Theft
<i>Paid Sick Leave</i>		
2014	AB 1522	Paid Sick Leave
<i>Retirement Savings for All Workers</i>		
2016	SB 1234	Secure Choice Retirement Savings Program
<i>Worker Protections</i>		
2016	AB 1669	Protections for Waste Management Workers
2016	AB 1690 / SB 1379	Protections for Part-Time Faculty
2016	AB 1926 / AB 2288	Protections for Workers in Apprenticeship Programs
2016	AB 1978	Protections for Janitorial Workers
2016	SB 1167	Protections for Workers in Hot Workplaces
2015	AB 359	Protections for Grocery Workers
2014	AB 2751	Protections for Workers Adjusting Immigration Status
2013	AB 218	Ban the Box for Public Sector Jobs
2013	AB 263 / AB 524 / SB 666	Protects Workers From Immigration-Status Based Retaliation
2012	AB 1794	Enforcement of Workers' Compensation Underreporting
2012	SB 863	Workers' Compensation Reform
2011	AB 22	Restrictions on Credit Report Usage in Employment Decisions
2011	SB 126	Protections for Farmworkers
<i>Employer Responsibility</i>		
2015	AB 1509	Liability for Retaliation by Subcontractors
2014	AB 1792	Report Companies with High Worker Usage of Medi-Cal
2014	AB 1897	Expansion of Liability for Labor Law Violations
2014	AB 2617	Prohibition Against Arbitration for Civil Rights Violations
2011	AB 243	Name Grower on Farmworker Paystub
2011	SB 459	Enforcement of Worker Misclassification

Environment

Climate Change

2016	SB 32	Cap and Trade Limits for 2030
2015	SB 350	Increase Use of Renewable Energy and Energy Savings
2013		Cap and Trade Program Begins
2012	AB 1532	Organize Usage of Cap and Trade Revenue
2012	SB 535	Spend Climate Change Funds in Disadvantaged Communities
2012		AB 32 Climate Change Regulations Go Into Effect

Environmental Protection

2016	SB 839	Toxic Waste Permitting Flexibility
2014	SB 270	Plastic Bag Ban

Safety Net

Healthcare

2015	SB 546	Health Insurance Rate Review
2015	SB 75	Medi-Cal for Undocumented Children
2014		ACA Implementation

Public Assistance

2016		Elimination of TANF Maximum Family Grant
------	--	--

Taxation

2016	Proposition 55	Extend Income Taxes Increases to Fund Education
2016	Proposition 56	Increase Cigarette Tax
2012	Proposition 30	Increase Sales Tax and Taxes on High Incomes to Fund Education
2012	Proposition 39	Income Tax Increase for Multi-State Businesses

Infrastructure and Housing

Infrastructure

2014	Proposition 1	Water bond
2014		Budget appropriation for high speed rail

Housing

2016	SB 1150	Extends Homeowner's Bill of Rights to Survivors
2012	AB 278 / SB 900	Homeowner's Bill of Rights

Table 16: Synthetic Control Model Donor Weights

State	Wage Growth				Wage Inequality
	5th Percentile	10th Percentile	15th Percentile	20th Percentile	
Alabama	0.000	0.000	0.000	0.000	0.027
Arizona	0.000	0.000	0.000	0.000	0.133
Florida	0.396	0.543	0.406	0.398	0.275
Georgia	0.000	0.000	0.143	0.000	0.000
Idaho	0.000	0.013	0.142	0.000	0.000
Indiana	0.000	0.000	0.000	0.000	0.000
Kansas	0.000	0.000	0.069	0.000	0.007
Michigan	0.333	0.000	0.000	0.498	0.000
Nebraska	0.000	0.060	0.121	0.000	0.000
North Dakota	0.000	0.020	0.000	0.000	0.000
Ohio	0.000	0.000	0.000	0.000	0.000
Oklahoma	0.000	0.000	0.000	0.000	0.000
South Carolina	0.000	0.000	0.062	0.000	0.000
South Dakota	0.000	0.099	0.000	0.000	0.000
Tennessee	0.053	0.125	0.003	0.000	0.180
Texas	0.169	0.000	0.000	0.000	0.078
Utah	0.000	0.000	0.000	0.000	0.148
Wisconsin	0.000	0.000	0.000	0.038	0.000
Wyoming	0.049	0.140	0.054	0.066	0.153

State	Insured Rate	Employment Growth		GDP Growth
		Total	Private	
Alabama	0.000	0.000	0.016	0.000
Arizona	0.000	0.000	0.247	0.000
Florida	0.578	0.163	0.022	0.257
Georgia	0.000	0.441	0.000	0.000
Idaho	0.000	0.000	0.000	0.000
Indiana	0.000	0.000	0.000	0.000
Kansas	0.000	0.000	0.032	0.000
Michigan	0.422	0.165	0.000	0.345
Nebraska	0.000	0.000	0.029	0.000
North Dakota	0.000	0.000	0.000	0.000
Ohio	0.000	0.109	0.360	0.000
Oklahoma	0.000	0.000	0.069	0.000
South Carolina	0.000	0.000	0.000	0.000
South Dakota	0.000	0.000	0.000	0.000
Tennessee	0.000	0.000	0.034	0.000
Texas	0.000	0.019	0.019	0.069
Utah	0.000	0.000	0.000	0.226
Wisconsin	0.000	0.000	0.139	0.000
Wyoming	0.000	0.103	0.032	0.103

Table 17: Synthetic Control Model Selection

Analysis	Model Selected	First Pre-Policy Period Year
5th Percentile Wage Growth	Pre-policy outcomes plus covariates	2000
10th Percentile Wage Growth	Pre-policy outcomes only	2000
15th Percentile Wage Growth	Pre-policy outcomes only	2000
20th Percentile Wage Growth	Pre-policy outcomes plus covariates	2000
Wage Inequality	Pre-policy outcomes only	2000
Insured Rate	First, middle, and last outcomes plus covariates	2008
Total Employment Growth	Pre-Policy outcomes plus covariates	2006
Private Employment Growth	Pre-policy period outcomes only	2006
State GDP Growth	First, middle, and last outcomes plus covariates	2006

References

- Abadie, Alberto, Alexis Diamond, and Jens Hainmueller. 2010. Synthetic Control Methods for Comparative Case Studies: Estimating the Effect of California's Tobacco Control Program." <https://economics.mit.edu/files/11859>
- Allegretto, Sylvia, Michael Reich, and Rachel West. 2014. "Ten Dollars or Thirteen Dollars? Comparing the Effects of State Minimum Wage Increases in California." UC Berkeley Center on Wage and Employment Dynamics. <http://irle.berkeley.edu/files/2014/Ten-Dollars-or-Thirteen-Dollars.pdf>
- Benner, Chris and Kyle Neering. 2016. "Silicon Valley Technology Industries Contract Workforce Assessment." UC Santa Cruz Everett Program. <http://www.everettprogram.org/main/wp-content/uploads/Contract-Workforce-Assessment.pdf>
- California Legislative Analyst's Office. 2012a. "Proposition 30. Temporary Taxes to Fund Education. Guaranteed Local Public Safety Funding. Initiative Constitutional Amendment." http://www.lao.ca.gov/ballot/2012/30_11_2012.aspx
- California Legislative Analyst's Office. 2012b. "Proposition 39. Tax Treatment for Multistate Businesses. Clean Energy and Energy Efficiency Funding. Initiative Statue." http://www.lao.ca.gov/ballot/2012/39_11_2012.aspx
- California Legislative Analyst's Office. 2016. "Proposition 55. Tax Extension to Fund Education and Health-care. Initiative Constitutional Amendment." <http://www.lao.ca.gov/BallotAnalysis/Proposition?number=55&year=2016>
- Dickinson, Tim. 2013. "Jerry Brown's Tough-Love California Miracle." Rolling Stone. <http://www.rollingstone.com/politics/news/jerry-browns-tough-love-miracle-20130829>
- Dietz, Miranda, Laurel Lucia, Gerald Kominski, and Ken Jacobs. 2016. "ACA Repeal in California: Who Stands to Lose?" UCLA Center for Health Policy Research and UC Berkeley Labor Center. <http://laborcenter.berkeley.edu/pdf/2016/ACA-Repeal-in-California.pdf>
- Dube, Arindrajit and Ben Zipperer. 2015. "Pooling Multiple Case Studies Using Synthetic Controls: An Application to Minimum Wage Policies." IZA. <http://ftp.iza.org/dp8944.pdf>
- Greenblatt, Jeffery. 2015. "Modeling California policy impacts on greenhouse gas emissions." Lawrence Berkeley National Laboratory. <http://www.sciencedirect.com/science/article/pii/S0301421514006892>
- Hsia-Kiung, Katherine and Erica Morehouse. 2015. "Carbon Market California: A Comprehensive Analysis of the Golden State's Cap-and-Trade Program." Environmental Defense Fund. <https://www.edf.org/sites/default/files/content/carbon-market-california-year-two.pdf>
- Investor's Business Daily. 2017. "Taxifornia Does It Again." <http://www.investors.com/politics/editorials/taxifornia-does-it-again/>
- Jacobs, Ken and Ian Perry. 2016. "\$15 Minimum Wage in California: Who Would be Affected by the Proposal to Raise California's Minimum Wage?" UC Berkeley Labor Center. <http://laborcenter.berkeley.edu/15-minimum-wage-in-california/>

- Koonse, Tia, Miranda Dietz, and Annette Bernhardt. 2015. "Enforcing City Minimum Wage Laws in California: Best Practices and City-State Partnerships." UC Berkeley Center for Labor Research and Education. <http://laborcenter.berkeley.edu/enforcing-city-minimum-wage-laws-in-california-best-practices-and-city-state-partnerships/>
- Labonte, Marc. 2010. "The Size and Role of Government: Economic Issues." Congressional Research Service. <https://pdfs.semanticscholar.org/b5ec/8cbf340d0fe98431f68de51d52ad6136c0d2.pdf>
- Laffer, Arthur and Stephen Moore. 2007. "Rich States/Poor States ALEC-Laffer State Economic Competitiveness Index." American Legislative Exchange Council. http://www.eoionline.org/wp/wp-content/uploads/RSPS_1st_Edition.pdf
- Lucia, Laurel, Xiao Chen, Ken Jacobs, and Nadereh Pourat. 2016. "Health Insurance and Demographics of California Immigrants Eligible for Deferred Action." UC Berkeley Labor Center. <http://laborcenter.berkeley.edu/health-daca-dapa>
- Megerian, Chris. 2016. "California Legislature approves \$171 billion state budget." Los Angeles Times. <http://www.latimes.com/politics/la-pol-sac-california-pass-budget-20160615-snap-story.html>
- Mishel, Lawrence, Josh Bivens, Elise Gould, and Heidi Shierholz. 2012. "The State of Working America, 12th Edition - Appendix A." Economic Policy Institute. <http://stateofworkingamerica.org/files/book/Appendices.pdf>
- Mitchell, Daniel. 2005. "The Impact of Government Spending on Economic Growth." The Heritage Foundation. <http://www.heritage.org/budget-and-spending/report/the-impact-government-spending-economic-growth>
- Next 10. 2017. "California Green Innovation Index: 9th Edition." <http://next10.org/sites/next10.org/files/2017-CA-Green-Innovation-Index-Final.pdf>
- OECD. 2015. "In It Together Why Less Inequality Benefits All." <http://www.oecd-ilibrary.org/docserver/download/8115091e.pdf>
- Reich, Michael, Sylvia Allegretto, and Anna Godoey. 2017. "Seattle's Minimum Wage Experience 2015-16" UC Berkeley Center on Wage and Employment Dynamics. <http://irle.berkeley.edu/files/2017/Seattles-Minimum-Wage-Experiences-2015-16.pdf>
- Robinson, James, Peter Lee, and Zachary Goldman. 2015. "Whither Health Insurance Exchanges Under The Affordable Care Act? Active Purchasing Versus Passive Marketplaces." Health Affairs Blog. <http://healthaffairs.org/blog/2015/10/02/whither-health-insurance-exchanges-under-the-affordable-care-act-active-purchasing-versus-passive-marketplaces/>
- Shapiro, Issac and John Irons. 2011. "Regulation, employment, and the economy: Fears of job loss are overblown." EPI. <http://www.epi.org/files/2011/BriefingPaper305.pdf>
- UC Berkeley Labor Center. 2017. "Inventory of US City and County Minimum Wage Ordinances." <http://laborcenter.berkeley.edu/minimum-wage-living-wage-resources/inventory-of-us-city-and-county-minimum-wage-ordinances/>
- Wicks-Lim, Jeannette. 2006. "Mandated Wage Floors and the Wage Structure: New Estimates of the

Ripple Effects of Minimum Wage Laws." University of Massachusetts, Amherst Political Economy Research Institute. <http://www.peri.umass.edu/fileadmin/pdf/WP116.pdf>

York, Anthony. 2015. "An idealist's heart: Brown on poverty, politics and the budget." Capitol Weekly. <http://capitolweekly.net/idealists-heart-brown-poverty-politics-budget/>