Effects of the $20 California Fast-Food Minimum Wage: Highlights

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Abstract

This policy brief represents the second in a series of reports on the effects of California's $20 fast-food minimum wage. The first report, issued on September 30, 2024, used early data to generate preliminary estimates of the policy's impacts in its first three months. The current report draws from the same data sources, but now through mid-December 2024, and from new data sources that became available only after the first report. I focus here on the highlights of our new results, as we plan to issue a third, more detailed report, later this year.

Our updated findings include: an estimated wage increase of 8 to 9 percent for workers covered by the policy; no spillovers to non-covered workers; no negative effects on fast-food employment; and price increases of about 1.5 percent— or about 6 cents on a four-dollar hamburger. The number of fast-food establishments grew faster in California than in the rest of the U.S. I also identify questionable methods in a recent industry report that claims the policy led to substantial negative employment effects and large price increases. That report cherry picks its numbers and does not use modern causal identification methods, casting doubt on its claims.

*Professor, UC Berkeley and Chair, Center on Wage and Employment Dynamics (CWED). This brief reflects joint work with Denis Sosinskiy. CWED, housed at the UC Berkeley Institute for Research on Employment, produces rigorous, peer-reviewed academic research on employment policy issues, including influential studies of minimum wage policies. This research is supported entirely by a grant from the Silberstein Foundation.

1. Scope of the policy

1.1 Size of the increase

The $20 fast-food minimum wage comprises the highest statewide minimum wage in the U.S. The $4 increase from $16, or 25 percent, in 2024 also is large for a policy implemented in a single step. However, historical and regional comparisons suggest this policy change is not unprecedented. Indeed, $20 is nearly identical, after accounting for inflation in California, to the 1968 national minimum wage. Also, San Francisco and San Jose previously implemented 25 percent overnight increases in minimum wages, in 2004 and 2013, respectively. And about a third of the state's workers are employed in cities and counties with their own local minimum wages, reaching as high in July 2024 as $18.67 in San Francisco.

1.2 Industries and workers covered

The $20 policy applies to workers in fast-food restaurants and to the much smaller number of workers in snacks and nonalcoholic bars. The standard applies only to chains of restaurants and bars that have sixty or more locations nationwide. Since we lack data on the number of workers in covered snacks and nonalcoholic bars, I focus here on the results for fast food.

Using data provided to us by Datassential, Inc., a restaurant industry consulting company, we estimate that the wage standard applies to about 72 percent of fast-food workers. Using data provided to us by Glassdoor, a popular job posting site and Square, a payroll servicing company, we also estimate that wages in covered fast-food chains are considerably lower than in non-covered fast-food restaurants.

The partial coverage and lower wage levels in the covered sector suggest caution when using the BLS' Current Employment Survey or its Quarterly Census of Wages and Employment (QCEW) to analyze the effects of the policy. These datasets are available only for the entire California fast food industry. To address this issue, we rescale our QCEW-based estimates of wage effects to reflect the partial coverage of the policy among fast food workers.

2. Identifying the causal effects of the policy

2.1 Methods

A major issue for empirical economic analysis concerns how to distinguish correlation from causation. Simple correlations—such as changes to fast food employment rates immediately before and after a new wage standard—can occur without a causal relationship with the policy change. They may result from broader factors, such as variations in California's overall economic growth, that were unrelated to the minimum wage increase. A credible causal analysis requires comparing changes in the segment of California's fast-food industry affected by the policy to changes in valid control groups.

We use three control groups: fast-food restaurants in states that have not changed their minimum wages; small California fast-food restaurants not covered by the policy; and full-service California restaurants that were also not subject to the policy. To ensure that these control groups are valid, we check that they and the covered California fast-food restaurants exhibit similar pay and employment trends prior to the policy.

We use three standard statistical methods that isolate the causal effects of the policy from other simultaneous changes that affect fast food:

Difference-in-differences. This method compares before-after differences in our outcomes (wages, employment and prices) in covered fast-food restaurants in California with before-after differences in states that have not increased their minimum wages since 2009, and with before-after differences in non-covered fast food in California.

Triple difference-in-differences. This approach adds to the difference-in-differences method another set of comparisons: before-after differences in full-service restaurants in California and elsewhere. We prefer this approach to the difference-in-differences approach because it adds controls for changes in a closely related industry that is not covered by the policy.

Wage gap analysis. This method compares differences in wage outcomes between the covered fast-food restaurant chains that were more affected by the policy—because they were chains paying the lowest wages—to chains that had paid relatively higher wages before the policy. However, inter-chain wage differentials turn out to be very small. Consequently, this approach yielded basically the same results as our difference-in-differences methods. I therefore do not report them in this highlights brief, although they will be included in our forthcoming, expanded report.

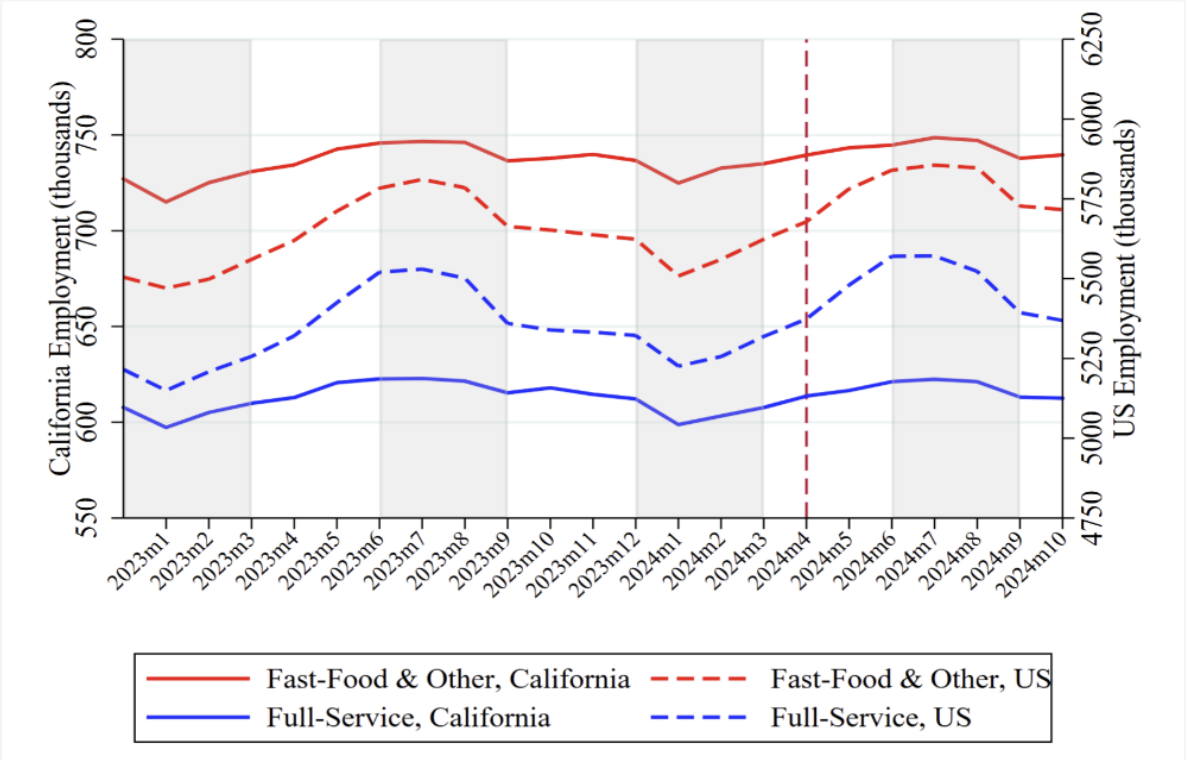
2.2 Corrections for seasonality

Consumption at fast-food restaurants tends to increase in the warmer months of the year and then to decrease when weather conditions become more adverse. The industry therefore exhibits substantial seasonal differences in employment. Accounting for seasonal differences thus can be important when examining data that do not cover an entire year.

Moreover, seasonal swings in fast food are more moderate in California than in the rest of the U.S., as one might expect for a state with a temperate climate. As a result, fast food upswings in the spring and summer months will be smaller in California than in the rest of the U.S., but not necessarily because of a minimum wage policy that began on April 1.

Figure 1 illustrates these differing amounts of seasonality in California and the U.S., for both fast food and full-service restaurants, in the year before the minimum wage policy took effect and for the first six months after the policy was implemented.

Figure 1. Employment trends 2023m1 to 2024m10



Notes: Constructed using BLS Current Employment Statistics data (CES). "Fast-food & Other" include NAICS codes 722513, 722514, 722515. CES does not provide state-level data for the fast-food industry individually. Full-service is NAICS 722511. The left y-axis shows employment in thousands of workers and ranges from 550 to 800. The right y-axis also shows employment in thousands of workers but has a different scale and a range of 4,750 to 6,250. The vertical dashed line is the month the new policy was introduced. Shading represents quarters.

We therefore adjust our data using a standard method that accounts for seasonality differences among states and that are specific to the fast-food and full-service restaurant industries. This method uses multiple years of data to eliminate spikes and dips of similar magnitude that happen at the same time of year. More specifically, we use pre-Covid and 2023-24 data to make these adjustments and we check their robustness to using monthly or quarterly data. We also tried excluding the last two years, to avoid the record-breaking California rainstorms of 2023-24. The results were similar regardless of the procedure.

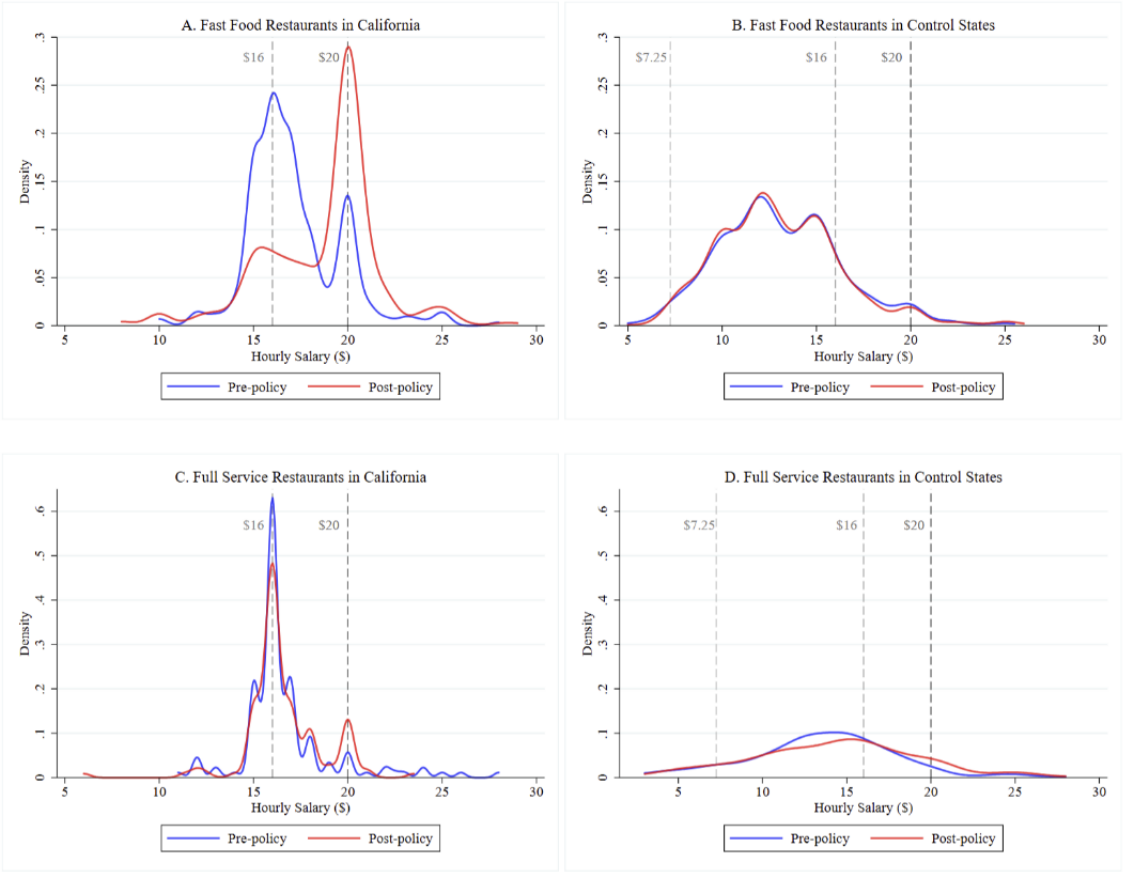
These seasonal adjustments safeguard against negatively biased estimates that would not accurately reflect the policy's employment effects—a pitfall in reports that omit such adjustments.

3. Wage effects

3.1 Glassdoor wage data

Figure 2, which uses data from Glassdoor data, a popular online job posting site, shows the distribution of wages before and after the policy. We focus on the burger-oriented segment of the largest fast-food chains, which are well-represented on Glassdoor. As Figure 2 shows, fast-food wages increased after the policy among the covered chains in California, but not in any of the comparison groups.

Figure 2. Wage effects using Glassdoor data



Notes: Constructed using data provided by Glassdoor. The pre-policy period includes wages for 2024Q1; the post-policy includes wages for 2024Q2. Panels A and B include reported wages in the "Restaurants & Cafes" industry for fast food restaurants in our price data and the top 20 fast-food chains– ranked by the number of salaries reported in the period of interest in California. Panels C and D include wages for full-service restaurants in our price data and the top 25 full service chains ranked by the number of salaries reported in the period of interest in California. Distributions are constructed using kernel density approximation. Excludes managerial and sales occupations. The vertical dashed lines represent the pre-policy California minimum wage, $16, and the new minimum wage for fast food in California, $20.

Using Glassdoor data, we estimate that average wages in these chains increased 9 percent.

3.2 Comparison with our preliminary Glassdoor wage estimates

Our estimate that average wages increased 9 percent among covered workers is much smaller than in our September 30, 2024 preliminary brief. Although both estimates use Glassdoor data, we now have a fuller understanding of the structure of their data. It turns out that many Glassdoor wage posts refer to previous jobs, not current jobs. Since wages on previous jobs typically were lower than on current jobs, we underestimated the pre-policy wage. Our new pre-policy wage estimates rely only on job data close to when the policy was implemented.

We now also use post-policy pay data from the QCEW. As we show below in Section 3.4, our QCEW wage effect estimate is 8.2 percent, close to our current 9 percent Glassdoor estimate. The similarity between the two reinforces our confidence in the current Glassdoor estimate. Moreover, a 9 percent wage effect of a 25 percent policy increase is more in line with wage effects in previous minimum wage studies. It also is more in line with our finding of minimal employment reductions and very modest price increases.

3.2 Square payroll data

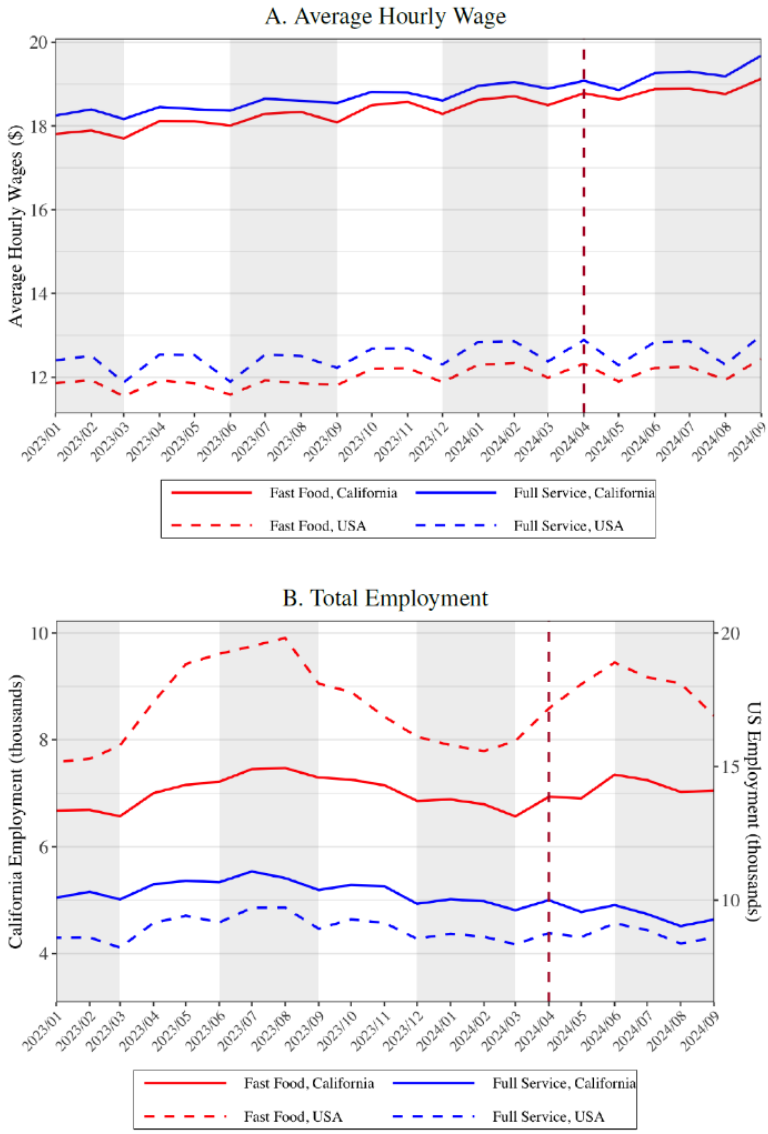
Figure 3A shows fast-food wages using data provided to us by Square, a payroll servicing company that services small, independent businesses. These uncovered restaurants provide one of our control groups. As Figure 3A shows, small restaurants that use Square pay higher wages in California than in control states; they also pay higher wages than do the large California chains.

In Figure 3A, we do not observe any changes in fast-food wages at these small restaurants at the time of the policy, in either California or in our group of control states. This result validates our methods: we find wage effects where we expect to and not where we do not expect to. This result also suggests the absence of any wage spillover effects of the policy to non-covered restaurants.

Figure 3B displays, again for small restaurants only, how total fast-food and full-service employment levels in California and control states changed between 2021m1 and 2024m9. These employment results come from restaurants that were in our Square dataset throughout this period. (They do not incorporate any seasonal adjustments, nor restaurants that might have closed during this period, and they do not include small restaurants that do not use payroll services.)

Figure 3B also shows that these fast-food restaurants also experience more seasonality than full-service restaurants—and less seasonality in California than in the control states. Figure 3B thus vividly displays the perils of not accounting correctly for seasonality by industry and state.

Figure 3. Wage and employment trends, Square data



Notes: Constructed using data from Square, a popular point of sale and payroll software provider. Panel A shows monthly average hourly wage in dollars. Panel B shows employment in thousands. The left y-axis ranges from 3 to 10. The right y-axis has a different scale and a range of 9 to 20. The vertical dashed line is the month the new policy was introduced. Shading represents quarters.

3.3 Government data

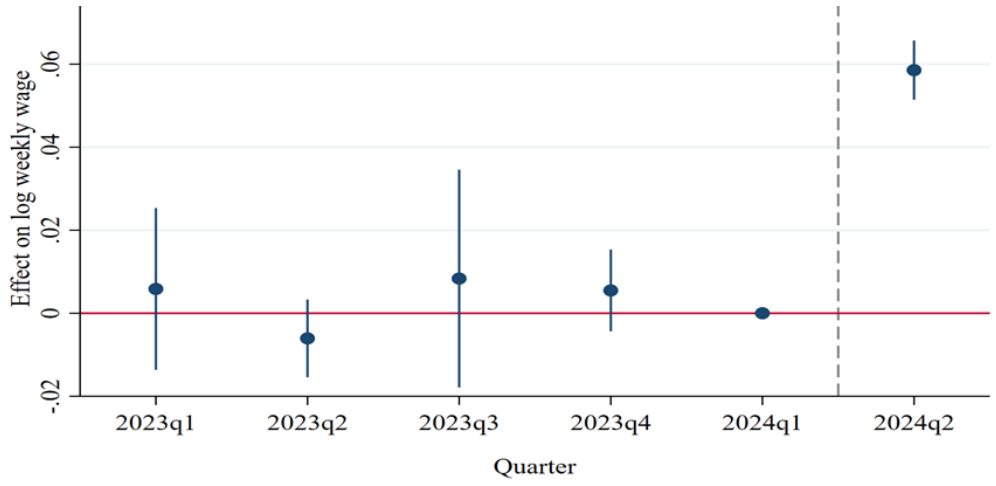
We present here our wage estimates that use BLS' most recent QCEW data release. QCEW data are based on mandatory employer payroll reports to state unemployment insurance system. BLS estimates that upward of 95 percent of all employers comply with this requirement. QCEW reports weekly wage data, but not weekly hours. However, the BLS' Current Employment Survey shows very little variation in weekly hours in fast food.

The QCEW data allows us to use both difference-in-differences and triple-difference methods to estimate wage effects. Since the two methods yield very similar results, we focus on our preferred triple-difference results.

In Figure 4, the dots indicate the percentage difference between wage changes in California fast food and wage changes in the control groups. The vertical bars indicate the statistical margins of error of the estimates. The vertical dashed line denotes when the policy became effective.

The estimates in Figure 4 show that wages trended similarly in California fast food and in the control groups prior to the policy, confirming the validity of the control groups. California fast-food wages then increased by 5.9 percent in the first quarter after the policy was implemented. After rescaling this estimate to account for the 72 percent coverage of the policy in fast food, we obtain a wage effect of 8.2 percent, remarkably close to our 9 percent estimate using the more granular private data.

Figure 4. Triple differences effect on weekly wages in fast food using seasonally adjusted QCEW



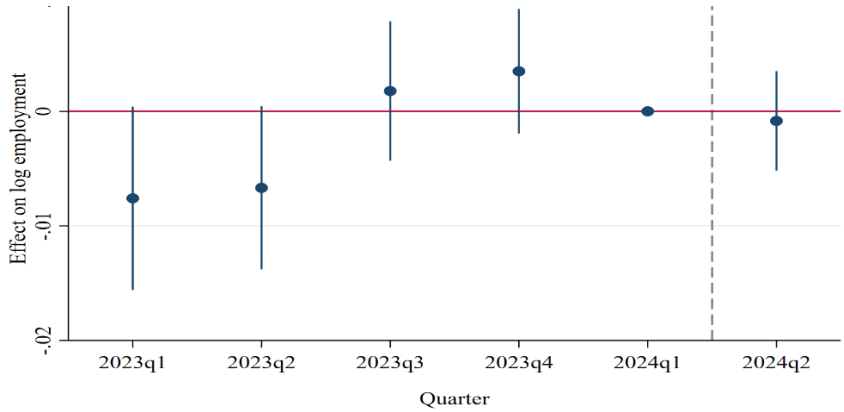
4. Employment effects

Using our seasonally adjusted QCEW data, we again used both difference-in-differences and triple-differences methods to estimate the employment effects of the policy. Our difference-in-differences results suggest a very small (0.7 percent) negative employment effect. However, our preferred triple differences method does not find a significant negative employment effect.

Figure 5 presents our preferred triple-difference results. Employment trended similarly in California fast food and the control groups, just before the policy, again validating our control groups. Employment changes after the policy were not statistically

significantly different from zero. In other words, the $20 minimum wage did not negatively affect fast-food employment.

Figure 5. Triple differences effect on employment in fast food using seasonally adjusted QCEW



The policy did not affect the number of fast-food jobs in California.

5. Establishment growth and exits

Using QCEW data, we examined changes in the number of fast-food establishments in California and in other states. In the quarter after the policy, the number of fast-food establishments grew faster in California than in the U.S., relative to establishment growth in the same quarter of the previous year. We also examined restaurant closures, using the representative sample of over 3,000 restaurants in our price data. We did not find any restaurants that closed in the first quarter after the policy—and only two that closed in the second quarter after the policy.

The number of fast-food restaurants in California has grown since the $20 minimum wage was implemented.

6. Effects on prices

Table 1 displays price changes in large California fast food chains, relative to price changes in control groups, in the first and second quarters of the policy. We obtained this data from a representative set of 3,801 restaurants in California and in the twenty states that have not experienced minimum wage changes since 2009.

Table 1. Difference-in-differences log price effect, by item and overall

	(1) Hamburger	(2) Specialty Burger	(3) Combo	(4) Price Index
2024Q2	0.049*** (0.002)	0.040*** (0.003)	0.038*** (0.001)	0.041*** (0.002)
2024Q3	0.004 (0.004)	0.011*** (0.002)	0.015*** (0.003)	0.015*** (0.002)
N	2,742	3,513	2,196	3,801

Note: The outcomes represent the log price change of the stated item, which is equivalent, when multiplied by 100, to the percentage price change. The price index is a weighted average of five items (hamburger, cheeseburger, specialty burger, combo, and fries), with weights representing relative the pre-policy price. The estimates are weighted by the number of each chain's locations in California. Each specification includes restaurant and time fixed effects. The last row represents the number of observations for each regression. The entries in parentheses are the standard errors, which are clustered at the state level. Statistical significance is marked as: $* p < 0.10$, $** p < 0.05$, $*** p < 0.01$.

The results indicate that the policy led to price increases of about 4.1 percent in the first quarter in California, relative to control states. Subsequently, between the first and second quarters, prices grew faster in the control states than in California. The overall increase two quarters after the policy is 1.5 percent, or about 6 cents for a $4 hamburger. This pattern suggests that chains may have initially overestimated the likely costs of the policy.

7. Comparisons to an industry study

BRG, a business consulting firm, has also recently examined the effects of the $20 policy. The BRG study claims to find substantial negative effects on employment, large effects on price increases, and evidence that the policy accelerated labor-saving automation. Each claim relies on questionable methods and does not use modern causal identification approaches. The report essentially cherry picks unrepresentative data to find adverse effects of the policy.

7.1 Employment

The introduction to the BRG study cites an employment decline of 1.9 percent in California fast-food employment between June 2023 and June 2024. But is this evidence of correlation or causation? BRG needs to control for employment changes in other states, in related industries and in prior years. The data they use does not control for differential seasonal employment patterns in California and the U.S. Their estimated employment decline thus cannot credibly represent the causal effects of the policy.

Indeed, the year-on-year results in the text of the report indicate that employment has trended downward since the first year after the pandemic, well before the $20 policy was introduced. BRG reports an even greater employment decline before the policy was enacted-- 3 percent from 2022 to 2023-- than after. This pattern of negative pre-trends undermines the credibility of BRG's claims of finding causal employment effects and illustrates the need for appropriate control groups to identify the policy's effects.

7.2 Prices

BRG downloaded menu price data for California, and for the entire U.S., from Datassential.com. Unfortunately, Datassential does not provide any information on how it constructs its price index, which is crucial given the wide variety of fast-food cuisines and likely variation in price increases among a restaurant's many menu items. Consider, for example, that the California fast-food industry includes an above-average proportion of Mexican restaurants. What if the cost of ingredients in Mexican restaurants has increased more than costs in burger-oriented restaurants? Price comparisons across states need to adjust for such differences.

We focus our price data collection on burger-oriented restaurants for exactly this reason. And the Dataessential prices raise another caution flag: The timing of California fast-food price increases using Datassential data does not align well with much more reliable price data published by BLS (which we provided in our previous report).

BRG reports that California prices increased 14.5 percent since August of 2023, compared to 8.2 percent in the entire U.S., which they therefore suggest amounts to a 6.3 percent price effect. However, BRG assumes here that California fast-food restaurants began to gradually increase price changes as far back as August 2023, presumably in order not to make larger price changes when the policy went into effect on April 1, 2024.

This assumption rests on an implausible scenario: that competing fast-food restaurants would increase their prices in advance in a coordinated manner. There is no mechanism for such advance coordination; indeed, restaurants that hold back increasing their prices would gain market share from their competitors. And previous studies have not found that businesses adjust their wages or employment levels to anticipate future policy changes.

An entire industry will increase its prices only if all or most of its constituent businesses experience a common cost shock, such as a minimum wage increase. It is therefore more appropriate to consider how prices changed just before the introduction of the policy. Earlier price increases are evidence of correlation, not causation. Indeed, the Datassential data in the BRG report indicate a 3 percent price effect between March and June of 2024, which is similar to our finding of a 3.7 percent price effect.

7.3 Automation

BRG claims that the higher minimum wage has increased labor-saving automation. They measure automation as changes in the number of employees per establishment and show that this measure declined in California relative to in the U.S.

However, automation is conventionally defined as the adoption of technologies that reduce the quantity of labor input per unit of output. BRG does not have a measure of technological adoption and it lacks a measure of output. It therefore cannot make any credible claims about the effects of minimum wages on automation.

More rapid changes in the number of employees per establishment in California could instead result from other changes that became widespread in California than in the rest of the U.S. Possible examples include faster growth among smaller-scale fast food start-ups, increases in the proportion of meals eaten in cars (which reduces restaurant cleaning costs), and the outsourcing of meal delivery to meal delivery companies. Restaurants will make such changes even when wage costs do not increase. Indeed, the cost of restaurant technologies, such as online ordering and payment systems, has fallen by orders of magnitude more than changes in labor costs. As other studies have found, the widespread of such technologies is not related to minimum wage increases.

The BRG study does not provide reliable estimates of the effects of the $20 minimum wage on employment, prices or automation.

8. Conclusions

In the first nine months of its existence, the California fast-food minimum wage policy has worked as intended. It has significantly increased the pay of fast-food workers. It has not had a negative effect on fast-food employment and the number of fast-food restaurants, and it has generated very modest price increases.

These results would be surprising in the theoretical world of perfectly competitive labor markets, where employed workers always have the option to move to a comparable job with another employer and employers can hire all the workers they want at the going wage. In such a world, increases in the price of labor reduce the demand for labor. However, as numerous studies have found, real world labor markets are far from competitive, low-wage labor markets especially so. In real world labor markets, frictions restrict the mobility of labor and employers must increase pay if they want to hire more workers.

In the real world, employers possess the power to set wages below the level that would obtain if the labor market was perfectly competitive. They use that power, even if the consequences include less attractive jobs, high employee turnover rates and difficulties filling their job vacancies. Minimum wage increases then make these jobs more attractive, reduce employee quits and reduce costly job vacancies.

As many previous studies have shown, these cost offsets, together with moderate price increases, explain why minimum wage policies such as the $20 fast-food standard, do not reduce employment.