REPORT OF THE CHIEF LEGISLATIVE ANALYST

DATE: October 23, 2024

TO: Honorable Members of the Economic, Community Development, and Jobs Committee

FROM: Sharon M. Tso
Chief Legislative Analyst

Council File No. 14-1371
Assignment No. 24-09-0680

Citywide Minimum Wage Study and Ordinance Amendment

SUMMARY

Council established a Citywide minimum wage with the passage of Ordinance No. 184320 (Attachment A), which was adopted June 1, 2016. The Ordinance incrementally raised the Citywide minimum wage to $15 an hour by 2020 for many workers. The current Citywide minimum wage is $17.28 (Attachment B). The Ordinance also includes a requirement that the Chief Legislative Analyst (CLA), in consultation with the City Administrative Officer (CAO), commission a study every three years to review the state of the City's economy in relation to the wage increases.

In response to this provision, the City commissioned the California Policy Lab (CPL) at the University of California, Los Angeles (UCLA) to execute the first required study in 2019. The study (Attachment C) found that the benefits of the higher Citywide minimum wage outweighed the costs, estimating that the wage increases had a net positive benefit as earnings rose while employment levels were unaffected.

Significant State legislative activity surrounding wage increases for historically low-wage workers has transpired since the adoption of the Ordinance, which overlaps with the policies of the City and Los Angeles County. As a result of the State's adoption of a higher minimum wage, as well as significantly higher wage increases for targeted industries, we recommend amending the Ordinance to remove the section requiring a new study every three years to evaluate the economic impacts of the Citywide minimum wage.

RECOMMENDATION

That the City Council:

1. Note and File Attachment C, "Evaluation of the Impact of the City of Los Angeles' Minimum Wage Ordinance," authored by the California Policy Lab of the University of California, Los Angeles.

2. Request the City Attorney draft an amendment to the Los Angeles Municipal Code (LAMC) to remove section 187.11.

BACKGROUND

On June 1, 2016, Council adopted Ordinance No. 184320, which incrementally raised the Citywide minimum wage to $15 an hour.[1] Associated with this increase, the Chief Legislative Analyst (CLA), with the assistance of the City Administrative Officer (CAO), was instructed to commission a study to review the state of the City's economy in relation to the wage increases every three years.

In compliance with this requirement, the CLA requested that the CPL prepare a study responding to the requirement of LAMC section 187.11. The analysis by the CPL was completed in June 2020 and utilized a multitude of data sources from the California Employment Development Department (EDD), Quarterly Census of Employment and Wages (QCEW), Office of Wage Standards (OWS), and Quarterly Workforce Indicators (QWI), among others to measure the impacts of the Citywide minimum wage increases on employment, earnings, and the greater Los Angeles economy. Using sophisticated methodical techniques, the report finds significant wage increases for food service workers in the City during the first three years of the Ordinance without identifying any decreases in employment levels following the annual minimum wage increases. The study therefore concludes that the Ordinance successfully raised the earnings of low-wage food service works without generating any detectable employment losses.

Efforts to raise the Statewide minimum wage alongside other State initiatives to increase wages in specific targeted sectors occurred after the adoption of the City's Ordinance. California's minimum wage is currently $16 per hour for all employers, while Los Angeles' minimum wage is $17.28 (Attachment B). Additional Statewide wage increases that exceed the City's minimum wage targeting fast-food workers and health care workers have also been enacted. Three Statewide increases isolated to professions with historically high minimum wage coverage rates adds significant difficulty to an analysis isolating the impacts of a single Citywide increase. These overlapping policies have thus rendered the City's minimum wage analysis inconsequential because it has been preempted in specific occupational categories.

AB 1228 was signed into law on September 28, 2023. The legislation creates the Fast Food Council within the Department of Industrial Relations, creating a process to develop minimum fast food restaurant employment standards related to wages, working conditions, and training. Moreover, the law established a minimum wage of $20 per hour for fast-food workers beginning April 1, 2024 and allows the Fast Food Council to increase this wage annually. The Fast Food Council and its authority sunset January 1, 2029.

SB 525 became law October 13, 2023. SB 525 incrementally increases the minimum wage for many health care workers to $25 per hour. Wage increases began in June 2024 and will reach the

[1] Los Angeles County's minimum wage law (Ordinance No. 2015-0039) was modeled after the City's Minimum Wage Ordinance (MWO) and also required the first wage increase to take effect by July 1, 2016.

$25 minimum standard in 2026, 2027, or 2028 for the vast majority of California health care workers affected by the law. The specific schedule for reaching the $25 minimum hourly wage depends on industry, employer size, and other employer characteristics. The UC Berkeley Labor Center estimates that approximately 426,000 California workers will see average annual earnings increases of $6,400 in the first year of the policy.

Further, Proposition 32 is an initiative statute that has qualified for the November 2024 ballot. If the initiative becomes law, employers across the State with 26 or more employees would have a minimum wage of $18 per hour and employers with 25 or fewer employees would have a minimum wage of $17 per hour as of January 1, 2025. Thus, if Proposition 32 is approved by California voters, the State minimum wage will be higher than the City's minimum wage for employers with 26 or more employees within the first year.

Section 187.11 Repeal

LAMC section 187.11 instructs the CLA, with the assistance of the CAO, to commission a study that reviews the state of the City's economy; minimum wage impacts; textile and apparel manufacturing impacts; residential care and nursing facilities impacts; child day care services impacts; restaurants and bars impacts; and wage theft enforcement, among other sectoral impacts. It further instructs the CLA and CAO to collect economic data, including earnings and sales tax on an annual basis.

As stated above, multiple Statewide wage increases have occurred that overlap with the Citywide minimum wage passed in 2016. Disaggregating the impacts of the City's Ordinance versus the other increases would be extremely difficult given the preponderance of minimum and other low-wage workers benefitting from the Statewide wage increases. Because the minimum wage increases are no longer isolated to Los Angeles and have extended to multiple sectors of the Statewide economy, we recommend repealing section 187.11 of the LAMC.

Henry Flatt
Analyst

Attachments:

A. Ordinance No. 184320
B. Current Citywide Minimum Wage Rate
C. Evaluation of the Impact of the City of Los Angeles' Minimum Wage Ordinance

ORDINANCE NO. 184320

An ordinance amending Article 7 of Chapter XVIII of the Los Angeles Municipal Code to include sick time benefits, an exemption for transitional job employees and other changes addressing the application of the ordinance.

THE PEOPLE OF THE CITY OF LOS ANGELES DO ORDAIN AS FOLLOWS:

Section 1. Article 7 of Chapter XVIII of the Los Angeles Municipal Code is amended in its entirety to read as follows:

ARTICLE 7

LOS ANGELES MINIMUM WAGE ORDINANCE

SEC. 187.00. PURPOSE.

According to consultants retained by the City and studies submitted to the City for its consideration, Los Angeles is a low-wage city with a high cost of living. Without action to raise the wage floor, the problems caused by incomes that are inadequate to sustain working families will become more acute. The cost of living is continuing to rise in Los Angeles, and labor market projections by the California Employment Development Department show that the number of low-wage jobs will grow faster than the number of mid- and high-wage jobs. Inaction will mean that the share of the labor force that does not receive sustaining pay will grow and the gap between stagnating low wages and the cost of a basic standard of living in Los Angeles will continue to widen.

Contrary to popular perception, the large majority of affected workers are adults, with a median age of 33 (only three percent are teens). The proposed minimum wage increase will greatly benefit workers of color, who represent over 80 percent of affected workers. Workers of all education levels will benefit from the proposed law, with less educated workers benefitting the most.

Los Angeles also ranks highest in California in child poverty rates. In short, although the City is experiencing strong economic growth which has spurred employment, poverty and inequality remain high and wages continue to stagnate. Affected workers disproportionately live in low-income families; on average, affected workers bring home more than half of their family's income. Affected workers live disproportionately in the lower-income areas of the City. These areas will experience greater earnings gains than the City as a whole due to a higher minimum wage. The research literature suggests that downstream benefits will result from the proposed wage increase, such as improved health outcomes for both workers and their children, and increases in children's academic achievements and cognitive and behavioral outcomes.

Studies show that minimum wage increases reduce worker turnover. Turnover creates financial costs for employers. Reduced worker turnover means that workers will have more tenure with the same employer, which creates incentives for both employers and workers to increase training and worker productivity.

The City has recognized that income inequality is one of the most pressing economic and social issues facing Los Angeles. Workers, who must live paycheck to paycheck, are frequently forced to work two or three jobs to provide food and shelter for their families. The City has also recognized that a worker's ability to have access to sick time is important. Employees should be paid for a certain number of days they are sick or for taking care of ill family members. These workers often rely on the public sector as a provider of social support services and, therefore, the City has an interest in promoting an employment environment that protects government resources. Therefore, by paying a higher than state-mandated minimum wage and providing sick time benefits, the City seeks to promote the health, safety and welfare of thousands of workers by ensuring they receive a decent wage for the work they perform and are able to attend to illnesses.

SEC. 187.01. DEFINITIONS.

The following definitions shall apply to this article:

A. "**City**" means the City of Los Angeles.

B. "**Designated Administrative Agency (DAA)**" means the Office of Wage Standards of the Bureau of Contract Administration, which shall bear administrative responsibilities under this article.

C. "**Employee**" means any individual who:

1. In a particular week performs at least two hours of work within the geographic boundaries of the City for an Employer; and

2. Qualifies as an Employee entitled to payment of a minimum wage from any Employer under the California minimum wage law, as provided under Section 1197 of the California Labor Code and wage orders published by the California Industrial Welfare Commission.

D. "**Employer**" means any person, as defined in Section 18 of the California Labor Code, including a corporate officer or executive, who directly or indirectly or through an agent or any other person, including through the services of a temporary service or staffing agency or similar entity, employs or exercises control over the wages, hours or working conditions of any Employee.

E. "**Non-Profit Corporation**" means a non-profit corporation, duly organized, validly existing and in good standing under the laws of the jurisdiction

of its incorporation and, if a foreign corporation, in good standing under the laws of the State of California, which corporation has established and maintains valid non-profit status under Section 501(c)(3) of the United States Internal Revenue Code of 1986, as amended, and all rules and regulations promulgated thereunder.

F. "**Person**" means any person, association, organization, partnership, business trust, limited liability company or corporation.

G. "**Wage**" means all amounts for labor performed by employees of every description, whether the amount is fixed or ascertained by the standard of time, task, piece, commission basis, or other method of calculation, as defined in California Labor Code Section 200(a).

SEC. 187.02. PAYMENT OF SICK TIME BENEFITS AND MINIMUM WAGE TO EMPLOYEES.

A. An Employer shall pay an Employee a wage of no less than the hourly rates set under the authority of this article.

B. Employers with 26 or more Employees shall provide Sick Time Benefits pursuant to Section 187.04 and pay a wage of no less than the hourly rates set forth:

1. On July 1, 2016, the hourly wage shall be $10.50.

2. On July 1, 2017, the hourly wage shall be $12.00.

3. On July 1, 2018, the hourly wage shall be $13.25.

4. On July 1, 2019, the hourly wage shall be $14.25.

5. On July 1, 2020, the hourly wage shall be $15.00.

C. Employers with 25 or fewer Employees shall provide Sick Time Benefits pursuant to Section 187.04 and pay a wage of no less than the hourly rates set forth:

1. On July 1, 2017, the hourly wage shall be $10.50.

2. On July 1, 2018, the hourly wage shall be $12.00.

3. On July 1, 2019, the hourly wage shall be $13.25.

4. On July 1, 2020, the hourly wage shall be $14.25.

5. On July 1, 2021, the hourly wage shall be $15.00.

D. On July 1, 2022, and annually thereafter, the minimum wage will increase based on the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) for the Los Angeles metropolitan area (Los Angeles-Riverside-Orange County, CA), which is published by the Bureau of Labor Statistics. The DAA shall announce the adjusted rates on February 1st and publish a bulletin announcing the adjusted rates, which shall take effect on July 1st of each year.

E. Employees who are 14-17 years of age shall be paid not less than 85 percent of the minimum wage required by Section 187.02 and rounded to the nearest nickel during their first 160 hours of employment. After more than 160 hours of employment, Employees who are 14-17 years of age shall be paid the applicable minimum wage pursuant to this article.

F. A Non-Profit Corporation Employer, which also qualifies as a Transitional Employer, as defined by Los Angeles Administrative Code (LAAC) Section 10.31.1(h) ("Non-Profit/Transitional Employer"), can apply to the DAA for a limited exemption to this article. This limited exemption shall allow a "Non-Profit/Transitional Employer" to pay an Employee holding a Transitional Job, as defined by LAAC Section 10.31.1(g), wages less than those required under Section 187.02 during the first 18 months of employment in the Transitional Job. The intent of this limited exemption is to create opportunities for the hardest to employ in the City, and shall be construed strictly in its application to an Employer seeking to qualify as a "Non-Profit/Transitional Employer."

G. For purposes of this article, on July 1, 2016, the size of an Employer's business or Non-Profit Corporation shall be determined by the average number of Employees employed during the previous calendar year. The Employer shall comply solely under either Section 187.02.B or C, until July 1, 2022, when the rate will be the same under both sections.

H. For purposes of this article, the size of an Employer's new business or Non-Profit Corporation in operation after July 1, 2016, shall initially be determined by the number of Employees employed during its first pay period. The Employer shall comply with wages due under the current year of operation under either Section 187.02.B or C, until July 1, 2022, when the rate will be the same under both sections.

SEC. 187.03. DEFERRAL APPLICATION FOR CERTAIN NON-PROFIT EMPLOYERS.

The DAA shall establish a procedure to allow an Employer that is a Non-Profit Corporation on July 1, 2016, with 26 or more Employees to qualify for the deferral rate schedule specified in Section 187.02.C. A Non-Profit Employer seeking the deferral must establish by compelling evidence that:

A. The chief executive officer or highest paid employee earns a salary which, when calculated on an hourly basis, is less than five times the lowest wage paid by the corporation; or

B. It is a Transitional Employer as defined in Section 10.31.1(h) of the Los Angeles Administrative Code; or

C. It serves as a child care provider; or

D. It is funded primarily by city, county, state or federal grants or reimbursements.

If a Non-Profit Corporation Employer loses its deferral status at any time after July 1, 2016, it shall pay wages due in the current year under Section 187.02.B.

SEC. 187.04. SICK TIME BENEFITS.

A. Every Employee who, on or after July 1, 2016, works in the City for the same Employer for 30 days or more within a year from the commencement of employment is entitled to paid sick leave.

B. Paid sick leave shall accrue on the first day of employment or July 1, 2016, whichever is later.

C. An Employee may use paid sick leave beginning on the 90th day of employment or July 1, 2016, whichever is later.

D. Employers must provide sick leave either: 1) by providing the entire 48 hours to an Employee at the beginning of each year of employment, calendar year, or 12-month period; or 2) by providing the Employee one hour of sick leave per every 30 hours worked.

E. Employees will be entitled to take up to 48 hours of sick leave in each year of employment, calendar year, or 12-month period. Accrued unused paid sick leave shall carry over to the following year of employment and may be capped at 72 hours. An Employer may set a higher cap or no cap at all.

F. If an Employer has a paid leave or paid time off policy or provides payment for compensated time off, that is equal to or no less than 48 hours, no additional time is required.

G. An Employer shall provide paid sick leave upon the oral or written request of an Employee for themselves or a family member, as defined by California Labor Code Sections 246.5(a) and 245.5(c), or for any individual related by blood or affinity whose close association with the employee is the equivalent of a family relationship. An Employer may require an Employee to provide reasonable documentation of an absence from work for which paid sick leave is or will be used.

H. An Employer is not required to provide compensation to an Employee for accrued or unused sick days upon termination, resignation, retirement, or other separation from employment.

I. If an Employee separates from an Employer and is rehired by the Employer within one year from the date of separation, previously accrued and unused paid sick time shall be reinstated.

SEC. 187.05. NOTIFYING EMPLOYEES OF THEIR POTENTIAL RIGHT TO THE FEDERAL EARNED INCOME CREDIT.

Employers shall inform Employees of their possible right to the federal Earned Income Credit (EIC) under Section 32 of the Internal Revenue Code of 1954, 26 U.S.C. Section 32.

SEC. 187.06. RETALIATORY ACTION PROHIBITED.

No Employer shall discharge, reduce in compensation or otherwise discriminate against any Employee for opposing any practice proscribed by this article, for requesting to use paid sick leave or actually using paid sick leave, for participating in proceedings related to this article, for seeking to enforce his or her rights under this article by any lawful means, or for otherwise asserting rights under this article.

SEC. 187.07. IMPLEMENTATION.

The DAA may promulgate guidelines and rules consistent with this article for the implementation of the provisions of this article. Any guidelines or rules shall have the force and effect of law, and may be relied upon by Employers, Employees and other parties to determine their rights and responsibilities under this article. The DAA may allow an Employer's established paid leave or paid time off policy or one which provides payment for compensated time off to remain in place and comply with this article even though it does not meet all the requirements in Section 187.04, if the DAA determines that the Employer's established policy is overall more generous.

SEC. 187.08. NO WAIVER OF RIGHTS.

Any waiver by an Employee of any or all of the provisions of this article shall be deemed contrary to public policy and shall be void and unenforceable.

SEC. 187.09. COEXISTENCE WITH OTHER AVAILABLE RELIEF FOR SPECIFIC DEPRIVATIONS OF PROTECTED RIGHTS.

The provisions of this article shall not be construed as limiting any Employee's right to obtain relief to which he or she may be entitled at law or in equity.

SEC. 187.10. CONFLICTS.

Nothing in this article shall be interpreted or applied so as to create any power or duty in conflict with any federal or state law.

SEC. 187.11. REPORTS.

Every three years after July 1, 2016, the Chief Legislative Analyst (CLA) with the assistance of the City Administrative Officer (CAO) shall commission a study to review the state of the City's economy; minimum wage impacts; textile and apparel manufacturing impacts; temporary workers, guards and janitors impacts; home health care services impacts; residential care and nursing facilities impacts; child day care services impacts; restaurants and bars impacts; personal and repair services impacts; transitional jobs programs impacts; service charges, commissions and guaranteed gratuities impacts; and wage theft enforcement. On an annual basis, the CLA and CAO shall collect economic data, including jobs, earnings and sales tax.

SEC. 187.12. SEVERABILITY.

If any subsection, sentence, clause or phrase of this article is for any reason held to be invalid or unconstitutional by a court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this ordinance. The City Council hereby declares that it would have adopted this section, and each and every subsection, sentence, clause and phrase thereof not declared invalid or unconstitutional, without regard to whether any portion of the ordinance would be subsequently declared invalid or unconstitutional.

Sec. 2. **URGENCY CLAUSE.** The City Council finds and declares that this ordinance is required for the immediate protection of public peace, health and safety for the following reason: Many employers do not provide sick time benefits to their employees. Moreover, many employees report to work sick for fear of losing their employment or because they cannot afford the lost wages. In order for the City of Los Angeles to protect the health of its residents and workers, sick time benefits must be provided to those who work in the City and the amendments to the Los Angeles Municipal Code as reflected in this ordinance must become effective as soon as possible. For all these reasons, the ordinance shall become effective upon publication pursuant to Los Angeles Charter Section 253.

Sec. 3. The City Clerk shall certify to the passage of this ordinance and have it published in accordance with Council policy, either in a daily newspaper circulated in the City of Los Angeles or by posting for ten days in three public places in the City of Los Angeles: one copy on the bulletin board located at the Main Street entrance to the Los Angeles City Hall; one copy on the bulletin board located at the Main Street entrance to the Los Angeles City Hall East; and one copy on the bulletin board located at the Temple Street entrance to the Los Angeles County Hall of Records.

I hereby certify that this ordinance was passed by the Council of the City of Los Angeles, **by a vote of not less than three-fourths** of all its members, at its meeting of JUN 1 2016.

HOLLY L. WOLCOTT, City Clerk

By _____
Deputy

Approved 6/2/16

_____
Mayor

Approved as to Form and Legality

MICHAEL N. FEUER, City Attorney

By Basia Jankowski
BASIA JANKOWSKI
Deputy City Attorney

Date May 20, 2016

File No. 14-1371

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ATTACHMENT E

CITY OF LOS ANGELES
CALIFORNIA

KAREN BASS
MAYOR

JOHN L. REAMER, JR.
Inspector of Public Works
and
Director

BUREAU OF
CONTRACT ADMINISTRATION

1149 S. BROADWAY, SUITE 300
LOS ANGELES, CA 90015
(213) 847-1922

http://bca.lacity.org

February 1, 2024

To: ALL EMPLOYERS AND EMPLOYEES SUBJECT TO THE CITY OF LOS ANGELES MINIMUM WAGE ORDINANCE

JULY 1, 2024 MINIMUM WAGE ORDINANCE WAGE RATE INCREASE

In accordance with Section 187.02(d) of the Los Angeles Municipal Code, the Office of Wage Standards hereby issues this notice. Section 187.02(d) of the Minimum Wage Ordinance provides that on July 1, 2022, and annually thereafter, the minimum wage will increase based on the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) for the Los Angeles metropolitan area, which is published by the Bureau of Labor Statistics.

The minimum wage rate, effective July 1, 2024, will increase by $0.50 for a new minimum wage rate of $17.28 per hour. This increase is applicable to Employees covered by the Minimum Wage Ordinance, specifically, those who perform at least two hours of work within the geographic boundaries of the City for an Employer and qualify as an Employee entitled to payment of a minimum wage from any Employer under the California minimum wage law, as provided under Section 1197 of the California Labor Code and wage orders published by the California Industrial Welfare Commission.

Covered Employers are required to post a notice, which includes the current minimum wage rate, in a conspicuous place at any workplace or job site where an Employee works pursuant to LAMC Section 188.03. The notice published by the Office of Wage Standards, which contains the required information, is available in 13 languages on the Wages LA website (wagesla.lacity.org) by clicking on the "Information & Documents" link on the home page. Please print and display the notice in a conspicuous location accessible to all affected employees.

Please be advised that the Los Angeles Municipal Code Section 188.03 states in part:

> Every Employer shall post notices in English, Spanish, Chinese (Cantonese and Mandarin), Hindi, Vietnamese, Tagalog, Korean, Japanese, Thai, Armenian, Russian and Farsi, and any other language spoken by at least five percent of the Employees at the workplace or job site.

If you have any questions regarding the Minimum Wage Ordinance, you may contact the Office of Wage Standards at (213) 847-2670.

Evaluation of the Impact of the City of Los Angeles' Minimum Wage Ordinance*

Till von Wachter†

Brenda Garcia Lemus‡

Maria Victoria Barone§

Emiliano Huet-Vaughn¶

February 7, 2020

Abstract

This study evaluates the impact of the minimum wage ordinance passed by the Los Angeles City Council on May 19th, 2015. We assess the effects of the first three annual minimum wage increases on July 1st, 2016, 2017, and 2018. To obtain the causal effect of these increases, we compare the evolution of earnings and employment in the City of Los Angeles with developments in comparable areas drawn from neighboring counties, the state, and the entire U.S. using event-study and synthetic control methods. Due to data limitations, we follow common practice and focus on the food services industry, which employs a large share of minimum wage workers in the City. We find that, relative to neighboring counties, the average weekly wages of food service workers in the City of Los Angeles increased by 4.1% during the second half of 2017, by another 1.8% during the first half of 2018, and lastly by a notable 6% during the second half of 2018 following changes in the California statewide minimum wage schedule. At the same time, we do not detect any decreases in employment levels following the annual minimum wage increases. We conclude that the minimum wage ordinance successfully raised the earnings of low-wage workers in the food service industry without generating any detectable employment losses.

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* We thank Geoffrey Schnorr and Thomas Hedin for their indispensable research assistance.

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I Executive Summary

We investigate how a mandated increase in the minimum wage, which was passed by the City of Los Angeles (referred to as the City thereafter) on May 19th, 2015, affected the earnings and employment levels of low-wage workers employed in the City. One key data challenge is the lack of hourly wage data in the State of California (referred to as the State thereafter), which makes it difficult to measure the policy's impact on all covered minimum wage workers in the City. As a result, we follow common practice and focus on examining the average weekly earnings and employment levels of food service, limited-service restaurant, and full-service restaurant workers before and after the annual minimum wage increases. These industry segments capture high shares of minimum wage workers and heavily rely on low-wage labor. We implement two separate statistical methods to measure the causal impact of the minimum wage ordinance relative to the prevailing state minimum wage and also relative to the federal minimum wage. Both statistical approaches yield consistent findings.

We find that the increase in the minimum wage successfully raised the average weekly earnings of workers in the food service industry in the City. However, we do not find any evidence of negative employment effects following the minimum wage increase. For example, from a comparison of earnings and employment in the City with neighboring areas, we find that the rise in the minimum wage led to an increase of average weekly wages of food service workers as a whole by 4.1% during the second half of 2017, then by another 1.8% during the first half of 2018, and lastly by a substantial 6% during the second half of 2018 in the City relative to surrounding areas following the State minimum wage. These effects are somewhat larger for limited-service restaurant workers. Since these do not typically receive additional compensation via tips or gratuities, the results directly translate into higher take home pay, suggesting that the minimum wage ordinance raised the earnings of these low-wage workers as intended. We also find increases in earnings for workers in full-service restaurants. In addition, we do not find any negative employment effects for either limited-service or full-service restaurant workers.

This study is one of only a few studies that investigate the impact of minimum wages above $10 per hour in cities in the U.S., and the only study focusing on Los Angeles. As we do, other studies have largely focused on the food services sector. Given the City has one of

the highest minimum wages in the country, the results from this study provide insight on the impact of a high minimum wage on the labor market of low-wage workers in a large urban setting with a substantial low-wage workforce.

The report begins by giving an overview of the policy context of the City's minimum wage ordinance, and by summarizing key findings from the three prospective studies of the impact of the minimum wage in the City. The report then provides background information on the state of the economy in which the minimum wage increases have taken place.

The main body of the report then summarizes the data and methodology used, and the main findings on the effect of the City minimum wage ordinance on earnings and employment in the food services sector. The report also provides some information on other sectors potentially affected by minimum wage increases, as well as a discussion of differential effects by higher and lower earning neighborhoods and by different firm size classes. This is followed by a summary of the City's ongoing efforts to enforce the minimum wage ordinance.

II Introduction

II.1 The Minimum Wage Ordinance in the City & Policy Context for the Study Design

On May 19th, 2015 the Los Angeles City Council voted 14-to-1 to increase the local minimum wage.[1] The City's minimum wage was increased from $9 per hour in 2015 to $15 per hour by 2020, with increases occurring on July 1st of each year. Employers with fewer than 25 employees or transitional employers were granted an additional year to comply with the higher minimum wage. Starting in 2022, the minimum wage will be indexed to the regional Consumer Price Index to adjust for inflation. In addition, the ordinance approved by the City Council requires employers to provide sick time benefits to minimum wage workers. The City led a domino effect of higher local minimum wages across the greater Los Angeles area, the State as a whole, and the nation.

[1]For additional details on Ordinance 184320 see https://clkrep.lacity.org/onlinedocs/2014/14-1371_ORD_184320_6-2-16.pdf and https://www.nytimes.com/2015/05/20/us/los-angeles-expected-to-raise-minimum-wage-to-15-an-hour.html

Shortly after several cities mandated minimum wage increases, the former governor of California, Jerry Brown, signed legislation to approve a statewide minimum wage increase to $15 per hour by 2022, with increases occurring on January 1st of each year.[2] The State's minimum wage law also gives small employers (those with 25 or fewer employees), an additional year to comply with the higher minimum wage schedule.[3] As a result, the State's higher minimum wage schedule closely follows the aforementioned local higher minimum wage schedules, except with a two-year lag. Most localities in the greater Los Angeles area that passed a higher minimum wage will reach $15 per hour by 2020, while areas that did not will see their minimum wage reach $15 per hour in 2022 when the State's mandate takes full effect.

The current study seeks to evaluate the impact of the higher minimum wage ordinance on the local economy in the City with a focus on the employment and earnings of low-wage workers. Currently, to administer its unemployment insurance program the State only collects data on total quarterly earnings and indicators of quarterly employment, but not on the number of hours worked by employees. Consequently, due to the lack of availability of data on the number of hours worked, we cannot calculate the hourly wages of employees in the City to estimate the policy's effect on all covered minimum wage workers. To overcome this challenge, we focus on the food services industry, limited service restaurants, and full service restaurants as proxies of low-wage industries, similar to many prior empirical studies of the effect of minimum wages on employment (e.g., Katz and Krueger, 1992; Card and Krueger, 1993; Neumark and Wascher, 2000; Nadler et al., 2019).[4] According to the Bureau of Labor Statistics, nationally three-fifths of all employees earning the minimum wage or less work in restaurants and other food services.[5] Because food services is the sector most likely to be affected by increases in minimum wages, the majority of empirical analyses of the minimum wage in the U.S. focused on the food services industry. We follow this approach, but also assess whether it is possible to use our data to study the effects on other industries.

This study also assesses the minimum wage enforcement efforts conducted by the City's

[2]See https://www.sacbee.com/news/politics-government/capitol-alert/article69842317.html

[3]Those employers with 25 or fewer employers follow the same schedule as those employers with 26 or more employees with a one year lag as outline here: https://www.dir.ca.gov/dlse/faq_minimumwage.htm

[4]Limited service restaurants are mostly fast-food places without waiters. For a detailed definition, see https://www.naics.com/naics-code-description/?code=722513

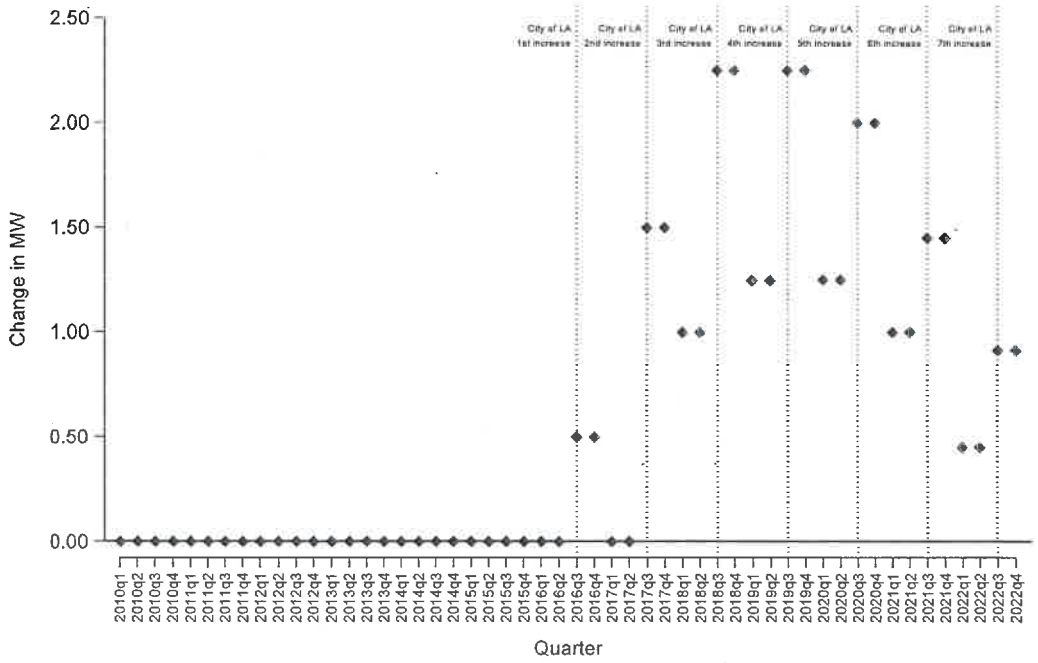
[5]See https://www.bls.gov/opub/reports/minimum-wage/2017/home.htm

Office of Wage Standards. In addition, we analyze online Grubhub menu data to search for evidence of increases in guaranteed gratuities or service charges after the minimum wage increases. However, we find no evidence of changes in guaranteed gratuities or service charges after the minimum wage increases (see section 6.5 for additional details).

The greatest challenge to evaluating the causal impact of the City's higher minimum wage on employment is isolating the true effect from the other local and state level minimum wage increases. This is made more difficult by the fact that the differences in minimum wages in the City and surrounding areas following the State minimum wage change every six months. This step-wise pattern is shown in Figure 1; each step relates to either a change in the City's minimum wage, occurring on July 1st (and corresponding to the vertical lines) or to a change in the state's minimum wage, occurring on January 1st. Given that at any given point the differences in minimum wages are small to moderate, and that the adjustment in wages is unlikely to always be instantaneous, studying the effect of the City's minimum wage alone requires a high degree of statistical precision.[6]

[6]Note that after 2022, the base minimum wages in the City and the State are equal, but in contrast to the City the State does not index its minimum wage to price increases (https://www.dir.ca.gov/dlse/faq_minimumwage.htm). As a result, there will be a small but increase gap in nominal minimum wages starting in 2022.

Figure 1: The Difference Between the City's & State's Minimum Wage



Source: The graph shows the City's minimum wage minus the State's minimum wage as measured in dollars over time.

In an ideal research setting, one would be able to estimate the effect of the City's minimum wage ordinance alone by comparing the employment in the City under the higher minimum wage to a counterfactual urban labor market that is the same in all respects but for the increased minimum wage. Since we cannot construct this ideal setting, we follow common research practice and have sought to identify 'control' areas that are sufficiently similar. This is made more difficult by the fact that many surrounding localities and the State have also passed a minimum wage ordinance and are thus exposed to a similar policy 'treatment'.

The current study follows two separate approaches to find suitable comparison areas to estimate the impact of the higher minimum wage on employment in the City. Under the first approach, we seek to estimate the impact of the City's higher minimum wage on employment in areas that continue to adhere to the minimum wage prevailing in the State. The analysis conducted under this approach will measure the impact of the minimum wage difference between the City and the State, which varies over time because the timing of the minimum wage increases

is different. Second, we use the synthetic control method to generate a counterfactual city from a pool of donor regions from comparable counties found outside of the State that were only exposed to the national minimum wage, to measure the causal impact of the policy. Since the national minimum wage did not increase during this period, these estimates measure the impact of a larger difference in the minimum wages on earnings and employment in the City .

Under both approaches, we find that the higher minimum wage in the City increased the earnings of food service workers as a whole, and did not have any detectable impact on their employment levels. In addition, we find that the higher minimum wage also raised the earnings of limited-service and full-service restaurant workers analyzed separately. Moreover, we find no evidence of decreases in employment levels for either limited-service or full-service restaurant workers. For instance, when comparing employment outcomes for limited-service workers in the City relative to the State, we find effects ranging from a decrease in employment of 0.03% (during the first half of 2017) to an increase in employment of 0.12% (during the second half of 2018). However, none of these employment effects are statistically significant.

Our findings are on par with the recent academic minimum wage literature focusing on food service and low-wage workers that examined the effect of both city and state minimum wage ordinances and found increases in earnings without an apparent adverse effect on employment (Allegretto et al., 2017; Allegretto et al., 2018; Cengiz et al., 2019).

II.2 Review of the Analysis of Previous Evaluations for the City

In March 2015, three separate ex-ante economic impact studies were conducted to assess the effects of the proposed higher minimum wage in the City. We briefly summarize the predictions made by these studies and relate key aspects to the analysis summarized in this report.

The Institute for Research on Labor and Employment at UC Berkeley conducted the first ex-ante study on the anticipated economic impacts of the proposed higher minimum wage in the City.[7] The study estimated that 609,000 covered workers would receive a wage increase

[7]See "The Proposed Minimum Wage Law for Los Angeles: Economic Impacts and Policy Options" by IRLE at UC Berkeley, pgs. 1-3.

and thus found that the proposed higher minimum wage would provide substantial benefits to working families. The researchers found that four industries – food services, health care and social assistance, retail trade, and administrative and waste management services – employ about half of the minimum wage workers covered by the proposed law. In this study, we focus on the food services industry, as we did not detect any positive earnings effects in the health care and social assistance, retail trade, and administrative and waste management industries. In addition, the study found that the higher labor costs would be passed to consumers via higher prices leading to a reduction in consumer demand of $592 million by 2017 and $1.128 billion in 2019.

The second ex-ante study was conducted by Beacon Economics and found that the proposed higher minimum wage by the City would fail to help minimum wage workers based on a cost-benefit analysis.[8] Most notably, half of the workers who would benefit from the higher minimum wage live outside of the City. While low-income families would benefit from the higher wages, many workers who already earn well above the minimum wage via tips and commissions would only receive partial financial gains from the increase. Consequently, per calculations by Beacon Economics, only $1 out of every $4 paid out by the policy plan would actually benefit the targeted workers, that is low-income working households living in the greater Los Angeles area. Additionally, per the study, the higher minimum wage would cost the city anywhere from 73,000 to 140,000 new jobs over a period of five years.

One key concern pointed out by the Beacon Economics study is that the wage differential the policy would have created between the City and surrounding localities as nearly 40% of all businesses in the City are located within two miles of the city's border. This could create an incentive for businesses to relocate across the city's border in search of lower labor costs. However, following the minimum wage increase in the City, various localities such as Pasadena, Malibu, Santa Monica, and the County of Los Angeles (referred to the County thereafter), along with the State, also followed suit by raising their minimum wages to nearly identical or very similar levels as the City, see section 7.1 for additional details. Therefore, concerns regarding business relocations to bordering localities became less urgent since the publication of the three

[8]See "Cost-Benefit Analysis: Los Angeles Minimum Wage Proposal" by Beacon Economics, pgs. 1-4, & 7.

ex-ante studies.

In contrast to the study by Beacon Economics, the UC Berkeley study found that the benefits of the higher minimum wage outweighed the costs. On par with the Berkeley study, we find that the annual minimum wage increases had a net positive benefit as earnings rose while employment level were not affected. Both studies found that the costs of the higher minimum wage were anticipated to be absorbed fully by consumers and employers located in the City, whereas the benefits would be spread across the County as half of the covered minimum wage workers live outside the city. The current study does not focus on the policy's effect on consumer prices. Due to data limitations, we were not able to evaluate the effect of the City's minimum wage ordinance on workers living outside the City.

A third ex-ante study on the proposed minimum wage was jointly conducted by the Economic Roundtable, the UCLA Labor Center, and the UCLA Institute for Research on Labor and Employment.[9] The key finding by the study was an expected $5.9 billion increase in wages along with a stimulus impact on the Los Angeles region. The researchers argued that the higher wages lead to a larger, more sustainable and inclusive economy regardless of the business adjustments. The study finds a multiplier effect of a $1.12 stimulus to the economy for a $1 increase in the minimum wage along with a creation of 24,875 new jobs in the City as a result of the proposed policy. Most notably, the researchers found that public assistance expenditures would decrease by $313 million per year as the higher minimum wage would reduce poverty. Based on our analysis, we find that the higher minimum wage in the City had no statistically significant impact on employment levels. While we cannot measure the actual aggregate impact on the earnings of all minimum wage workers, due to the lack of available hourly data, we find that the earnings of food service workers in the City relative to the State increased by 4.1% during the second half of 2017, by 1.8% during the first half of 2018, and by 6% during the second half of 2018. We did not conduct any causal analysis on the effect of the City's higher minimum wage on public assistance expenditures and utilization due to data limitations.

Taken together, the three separate ex-ante studies of the proposed higher minimum wage provided mixed findings on the anticipated impact of the higher minimum wage on the economy

[9]See "Los Angeles Rising: A City that Works for Everyone" by the Economic Roundtable, UCLA Labor Center, and the UCLA Institute for Research on Labor and Employment, pg. 7.

and employment in the City. The current study seeks to rigorously evaluate the actual impact of the higher minimum wage on the economy, wages, and employment.

II.3 Discussion of the Report Outline

The report continues as follows, section III addresses the state of the local economy in the City. We The report continues as follows, section III addresses the state of the local economy in the City. We provide a discussion of the data used and methods in Sections IV and V, respectively. Then we present our main findings in section VI. Section VII provides some further policy context, such as how the minimum wage has been enforced and how it compares to other nearby minimum wages, along with a look ahead. Lastly, a concluding section focuses on key findings, limitations, and policy implications.

III The State of the Economy

III.1 Overview of the National versus the Local Economy

The current section provides an overview of the local economy in the City prior to the passage of the minimum wage ordinance and during the step-wise increase in minimum wages to provide some context of employment growth, wage growth, costs of living, and poverty. Overall, passage of the ordinance and the ensuing rise in minimum wage took place against the backdrop of the longest economic expansion since World War II. Yet, despite ongoing economic growth, as of 2016 the poverty rate in the City was close to 19%, higher than the State average. The living wage has been calculated at about $20 per hour for a family of four with two full-time earners, and at about $15 for a single adult.

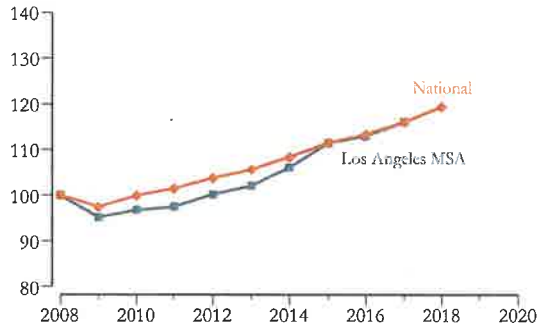
From 2010 to 2017, the size of the Los Angeles, Long Beach, and Anaheim metropolitan statistical area (MSA) economy grew at an average rate of 2.6% per year. In the upper-left panel of Figure 1, we see this growth has mirrored the expansion seen in the rest of the country, where GDP increased an average of 2.2% per year over the same period (2010-2017). The lower-left panel of Figure 1 shows the labor market in the Los Angeles MSA was hit especially hard

during the Great Recession in terms of unemployment, but re-converged to the national rate in 2016, and has since moved in tandem with the national labor market. The unemployment rate in the Los Angeles MSA steadily decreased over the past 9 years, where it reached 4.0% in August of 2019 only slightly higher than the national rate of 3.7%.

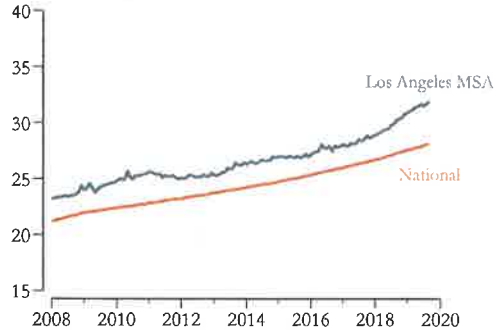
From Figure 2b see that average hourly earnings in the Los Angeles MSA follow the same trend as national earnings, but are $2.22 higher on average. From January 2010 to January 2019, average hourly earnings increased in the Los Angeles MSA at 2.5% per year. As of September, 2019, the average hourly earnings for all employees in the Los Angeles MSA was just under $32 per hour, compared to the national average of $28 per hour.

Figure 2: Economic Trends in the Local v. National Economy

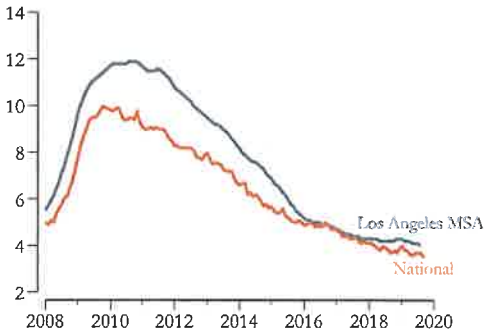
(a) Normalized Real GDP (100 = 2010 GDP)



(b) Average Hourly Earnings: All Employees



(c) Unemployment Rate (%)



Notes: U.S. Bureau of Economic Analysis, Retrieved from FRED. Panel (a) contains annual data, panels (b)-(d) contain monthly data.
(a) Real Gross Domestic Product [GDPCA]. Total Real Gross Domestic Product for Los Angeles-Long Beach-Anaheim, CA (MSA) [RGMP31080].
(b) Average Hourly Earnings of All Employees: Total Private [CES]. Average Hourly Earnings of All Employees: Total Private in Los Angeles-Long Beach-Anaheim, CA (MSA) [SMU06310800500000003SA].
(c) Unemployment Rate [UNRATE]. Unemployment Rate in Los Angeles-Long Beach-Anaheim, CA (MSA) [LOSA106UR].
(d) Labor Force Participation Rate [CIVPART]. Labor Force Participation Rate for California [LBSSA06].

III.2 Employment & Wage Trends in the City

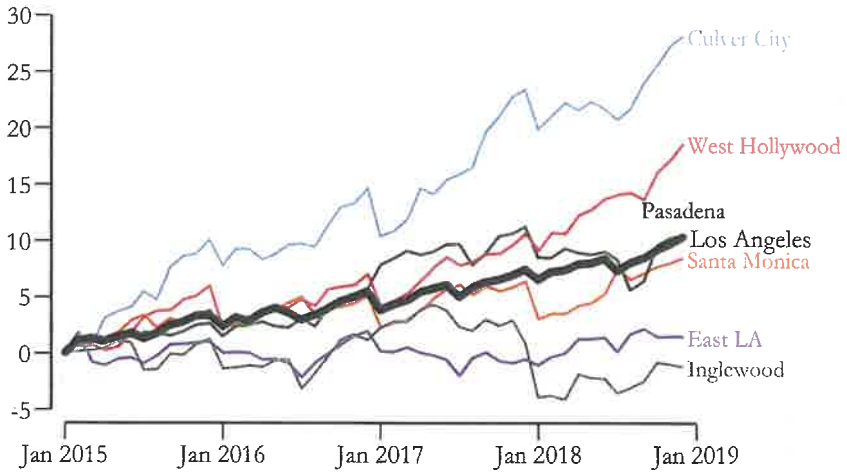
Since the largest geography reported in most published statistics or publicly available data is the County or the MSA, to obtain a snapshot of employment and earnings growth in the City and surrounding areas within the County, we relied on tabulated data from EDD. This data is described in more detail in Section IV.

Over the past 5 years, the pace of job growth in the metropolitan area has varied drasti-

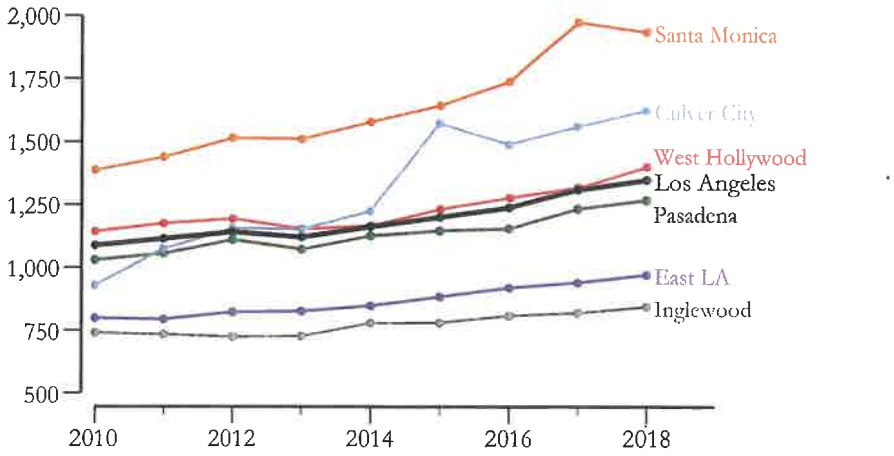
cally. Figure 3a shows employment in the City has been steady and lying in the middle relative to surrounding cities. In December 2019, there were about 1.85 million workers in the City, an increase of 10% relative to January 2015. Figure 3b shows that average weekly wages in the City have grown by about 2.4% per year since 2010, reaching $1,348 per week in 2018. Average wages in the city are significantly lower than Santa Monica or booming Culver City, but also much higher than East LA and Inglewood.

Figure 3: Employment & wage growth in different cities in the County of LA

(a) Monthly Employment Growth Relative to January 2015 (%)



(b) Average Weekly Wages ($)

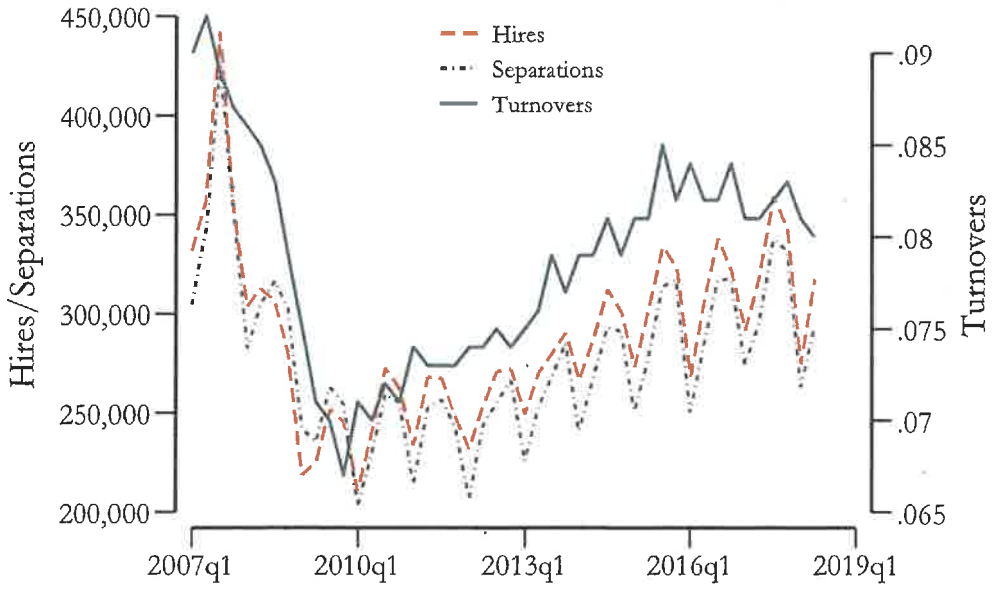


Source: Quarterly Census of Employment and Wages, tabulations obtained from California Employment Development Department (EDD).

III.3 Job Dynamics: Accessions & Separations

We use data from the Quarterly Workforce Indicators (QWI) for the City workforce investment area, which is a subset of the City, to provide an overview of job dynamics. The QWI are published by the U.S. Census Bureau, and are based on the same data source as the tabulations we obtained from EDD. As shown by Figure 4, the number of hires has been trending upwards since the Great Recession, indicating a strengthening labor market. In addition, the number of separations has also been on the rise providing evidence of a tight labor market as workers are able to find better positions. Lastly, the labor turnover rate, which measures the average rate of hires and separations at a given firm, has been relatively stable over the past three years.[10] In particular, we do not detect any abnormal patterns around the 2016 period during the first annual minimum wage increase to $10.50 per hour in the City.

Figure 4: Labor Market Dynamics in the City of LA



Source: U.S. Census - Quarterly Workforce Indicators (QWI).

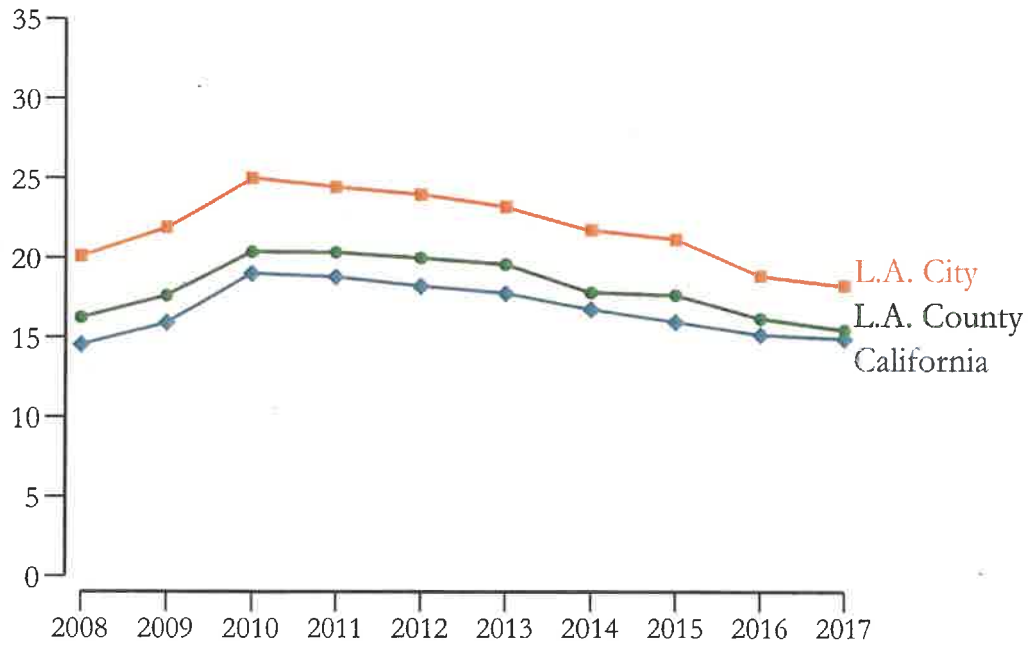
[10] See the definition of turnover at https://lehd.ces.census.gov/doc/Memo_changes_to_QWI.pdf

III.4 Poverty & Income Inequality in the City

The City has one of the highest poverty rates in the State. The median household income in the City as of 2017 was $60,197, well below the State median of $71,805.[11] Figure 5 shows how wage growth following the Great Recession has done little to ameliorate poverty rates in the city. The City has a significantly higher poverty rate compared to the rest of the County, as well as the rest of the State.

Poverty is not uniformly distributed across the Los Angeles area. Figure 6 illustrates how higher poverty rates are clustered around South/East Los Angeles (Hyde Park, Inglewood, etc.), while areas such as Malibu, Beverly Hills, and Pacific Palisades see (expectedly) much lower rates of poverty.

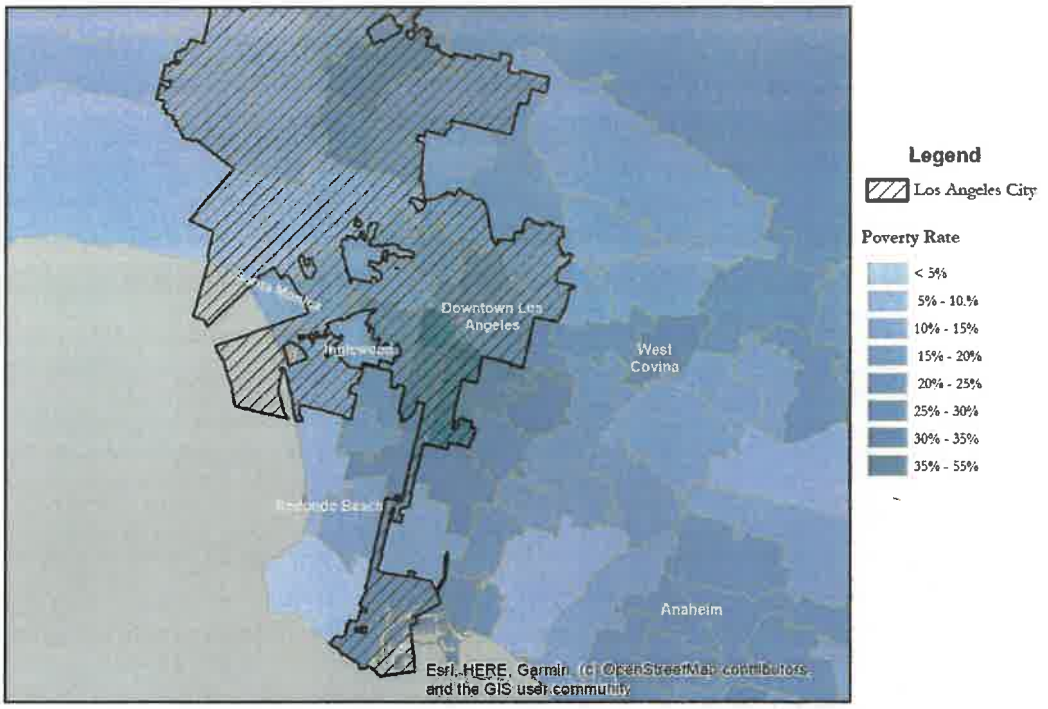
Figure 5: Poverty Rates in the City of LA, County of LA, & State



Source: Steven Ruggles, Sarah Flood, Ronald Goeken, Josiah Grover, Erin Meyer, Jose Pacas, and Matthew Sobek. IPUMS USA: Version 9.0 2008-2017 ACS. Minneapolis, MN: IPUMS, 2019. https://doi.org/10.18128/D010.V9.0.

[11] See 'Median Household Income' section at https://datausa.io/profile/geo/los-angeles-ca/

Figure 6: Poverty Rates in the City By PUMA



Sources: Steven Ruggles, Sarah Flood, Ronald Goeken, Josiah Grover, Erin Meyer, Jose Pacas, and Matthew Sobek. IPUMS USA: Version 9.0 2017 ACS. Minneapolis, MN: IPUMS, 2019. https://doi.org/10.18128/D010.V9.0.

III.5 Cost of Living & Sustaining Wages

In addition to high poverty rates, the City experienced increasing rents and home prices. As of September 2019, the median home value in the City was $696,900 compared to the national median home value of $231,000.[12] Additionally, the median rent in the City for a one-bedroom and two-bedroom apartment is $1,370 and $1,760 as of October 2019, respectively.[13]

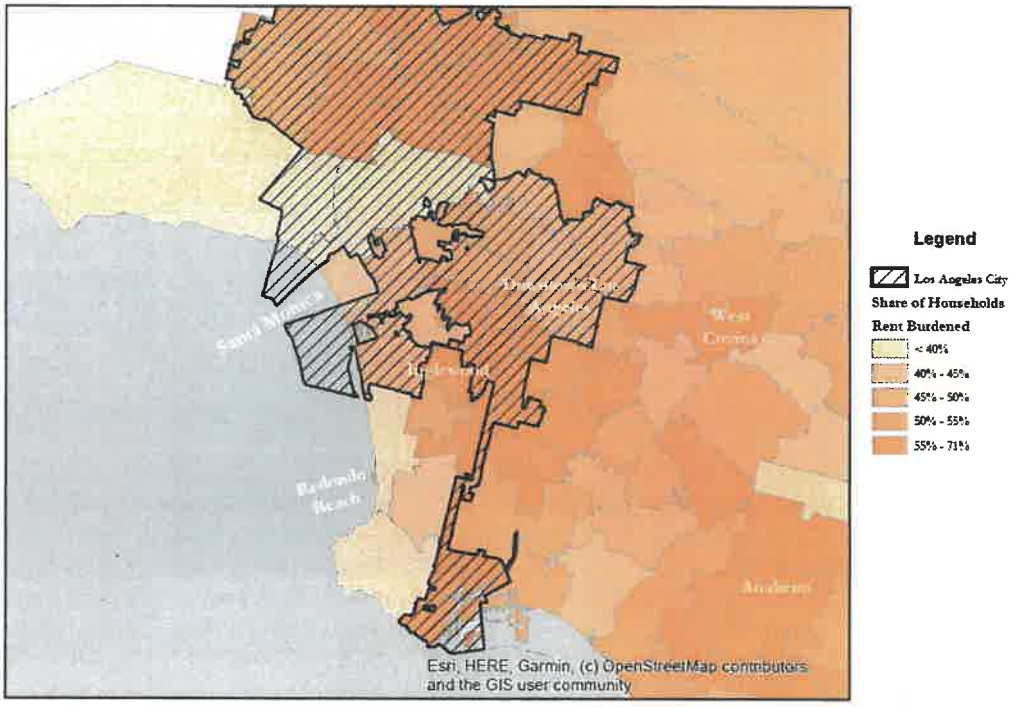
According to the Census, only 36.8% of housing units are owner-occupied, which implies that most households in the City rent. Similarly, Zillow found the percentage of renters among the City's residents to be 64.1%, one of the highest rates among the largest cities in the United States. Recently, Freddie Mac found the Los Angeles MSA to be the third highest

[12] The Zillow Home Value Index is a reliable measure of median home values as it takes into account the types of homes sold over time to generate a comparable metric across time. See https://www.zillow.com/los-angeles-ca/home-values/ & https://www.zillow.com/home-values/

[13] See https://www.apartmentlist.com/ca/los-angeles#rent-report

rent-burdened metro among major MSAs with a median rent of $1,340.[14] Figure 7 shows the share of households who are rent burdened by Public Use Microdata Area (PUMA).

Figure 7: Share of Households Rent Burdened By PUMA



Source: Steven Ruggles, Sarah Flood, Ronald Goeken, Josiah Grover, Erin Meyer, Jose Pacas, and Matthew Sobek. IPUMS USA: Version 9.0 2017 ACS. Minneapolis, MN: IPUMS, 2019. https://doi.org/10.18128/D010.V9.0.

The estimated cost of living for a family of four in the City is $3,605 per month excluding rent, which translates to $43,260 per year.[15] The estimated cost includes basic necessities such as transportation, food, and utility costs, along with leisure activities such as eating at a restaurant. Due to its high housing and living costs, the City is ranked as the 13th most expensive city in the United States and the 3rd most expensive city in the State by Numbeo.[16]

According to the MIT living wage calculator, the living hourly wage for a family of four with two working adults and two children is $19.51 in the County.[17] The living wage would allow households to cover their minimum housing, medical care, transportation, food, and other

[14] See https://mf.freddiemac.com/docs/rental_burden_by_metro.pdf
[15] See https://www.numbeo.com/cost-of-living/in/Los-Angeles
[16] Ibid.
[17] See http://livingwage.mit.edu/counties/06037

basic necessities. The California Budget & Policy Center, finds that a family of four with two working parents needs to earn a yearly income of $81,553, where both parents would each need to earn at least $19.61 per hour in order to reach a modest standard of living in the State. For a single adult without children, a livable hourly wage would equate to $15.69.[18] The California Budget & Policy Center assumes no public assistance or job-based benefits in their cost of living estimates.

III.6 Sales Tax Receipts

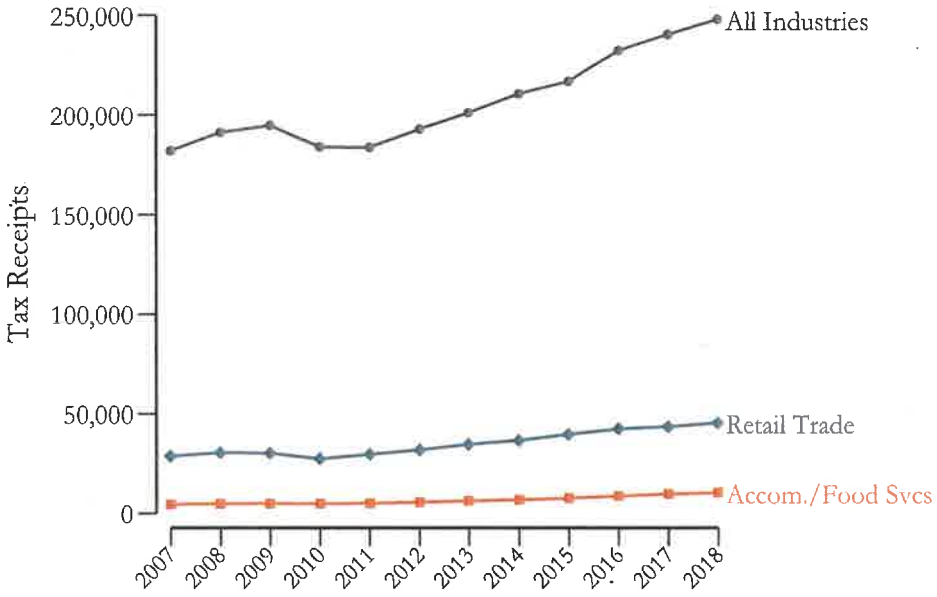
While Figure 2a shows economic activity at the level of the Los Angeles MSA, which includes the County as well as Long Beach and Anaheim, typical measures of economic activity are not published for smaller geographies. Hence, as an additional measure of economic activity that we can observe specifically for the City, we used publicly available data on annually reported gross tax receipts by industry from the City.[19] The dataset contains information on the business tax period, the NAICS code, the primary NAICS description, the number of business locations by industry, and the total gross tax receipts by industry. As noted by Figure 8a, we do not detect any decreases in business tax receipts at the time when and after the minimum wage increased in the City. The upward trend of the evolution of tax receipts continues even after the minimum wage first increased on July 1st, 2016.

In addition, we do not find any declines in tax receipts for the accommodation and food services industry (NAICS 72) and the retail trade industry (NAICS 44-45). Given the accommodation and food services industry heavily rely on low-wage labor, if at all we would expect to see any adverse effect on business activity there. As shown by Figures 8a and 8b, we do not detect any noticeable changes in tax receipts among these two industries after the minimum wage increased.

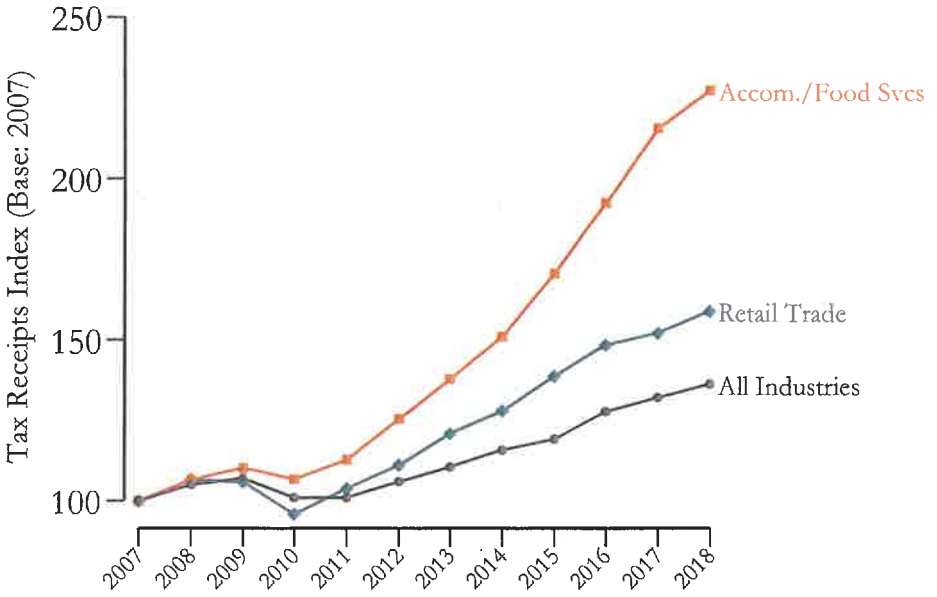
[18] See https://calbudgetcenter.org/blog/making-ends-meet-tougher-than-you-might-think/
[19] See https://data.lacity.org/A-Prosperous-City/Gross-Receipts-by-Industry/yqyr-2qgp

Figure 8: Evolution of Tax Receipts for Key Industries

(a) Total Annual Tax Receipts



(b) Index of Annual Tax Receipts



Source: Based on the City's annually reported gross tax receipts by NAICS code industry. See https://data.lacity.org/A-Prosperous-City/Gross-Receipts-by-Industry/yqyr-2qgp

IV Data Sources

IV.1 Quarterly Census of Employment and Wages (QCEW)

The data for the main empirical analysis of the report is based on the Bureau of Labor Statistics' Quarterly Census of Employment and Wages (QCEW) measured at the Public Use Microdata Area (PUMA) level for the entire State.[20] The QCEW is administrative data constructed from employers that are part of the unemployment insurance system, which covers the vast majority of employers. [21] In particular, we requested data tabulations for all of the Public Use Microdata Areas (PUMAs) in the State from the California Employment Development Department.

The U.S. Census defines PUMAs as statistical areas with at least 100,000 residents that lie within a given state.[22] The PUMAs are used as the geographic identifier in the Public Use Microdata Sample (PUMS) data. Currently the State is broken down to 265 PUMAs and 58 counties. We use PUMAs as the level of geographic aggregation as it provides a smaller geographic unit than counties and the City. For instance, the County covers 69 PUMAs since it is the most populous county in the State, whereas the City covers 25 PUMAs. Another advantage of using PUMAs is that it allows us to merge our data with publicly available demographic data from the American Community Survey (ACS).

Figure 9 shows the PUMA geography boundaries across the State. In addition, Figure 10 provides a detailed overview of the PUMAs found in the City and County. While we could have conducted the analysis at a smaller geographic level such as at the zip code or census tract level, two key concerns were taken into consideration. First, the Bureau of Labor Statistics' confidentiality policy sets strict rules about data releases, which leads to high data suppression rates for regions smaller than PUMAs.[23] In addition, it is well known that the QCEW data can exhibit substantial variation quarter-to-quarter, especially for smaller geographies (e.g., Nadler

[20] We gained access to aggregated tabulations of employment and wages at the PUMA level through our partnership with the Employment Development Department.

[21] For additional details on employment coverage, see the 'Coverage' section here: https://www.bls.gov/cew/overview.htm

[22] For additional details, see https://www.census.gov/programs-surveys/geography/guidance/geo-areas/pumas.html

[23] See https://www.bls.gov/bls/confidentiality.htm and https://www.bls.gov/cew/questions-and-answers.htm

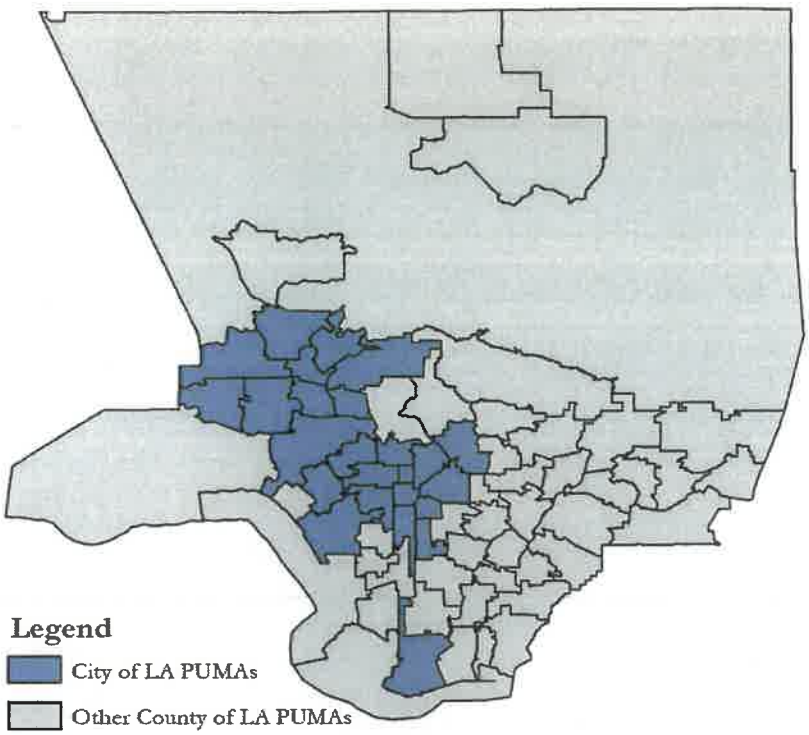
et al., 2019). The PUMA-level QCEW data provided to us covers the period from 4Q2009 through 4Q2018. In addition, the data was provided at the industry level for a set of requested industries. Lastly, we requested the data separately for large versus small firms. Following the City's minimum wage ordinance, we defined small firms as those with 1 to 25 employees and large firms as those with 26 or more employees. We measured firm size based on each firm's number of employees during the current year.[24]

Figure 9: Map of PUMAs in the State

Notes: Per the U.S. Census, PUMAs (Public Use Microdata Areas) are defined as statistical geographies for the release of the Public Use Microdata Sample (PUMS). These areas must contain at least 100,000 people and be constructed from census tracts or counties. For more information, see https://www.census.gov/programs-surveys/geography/guidance/geo-areas/pumas.html

[24]In contrast to the definition of firm size by the minimum wage ordinance, our data does not allow us to distinguish the place of work separately from the address of the firm. This can make a difference for certain industries and for firms with multiple locations.

Figure 10: Map of the PUMAs in the County



Notes: Since City and the PUMA boundaries do not perfectly overlap, we used the Missouri Census Data Center's geographic correspondence engine tool (Geocorr) to generate a crosswalk between City and PUMA boundaries. For more information on Geocorr see: http://mcdc.missouri.edu/applications/geocorr.html. While some PUMAs are strictly contained within the City, many other PUMAs overlapped two or more cities. We assigned overlapping PUMAs to the City if most of the 2010 population in a given boundary PUMA lived within the City's boundaries.

In addition, we use the publicly available national QCEW data measured at the county level along with customized City-level tabulations to conduct the synthetic control analysis[25] The county level data was used to generate the pool of synthetic control donors from states only exposed to the federal minimum wage. Since the County includes the City along with 87 other cities and unincorporated regions, we requested data tabulations of employment and wages only for the City. Due to the wide range of postal city names within the City, we used a crosswalk between zip codes and cities from the Missouri Census Data Center to aggregate the data only for the City.[26] This method allowed us to more accurately construct the City.

[25]We received the data tabulations of employment and wages for the City of LA through our partnership with the Employment Development Department. For additional information on the county level national QCEW data see: https://www.bls.gov/cEw/

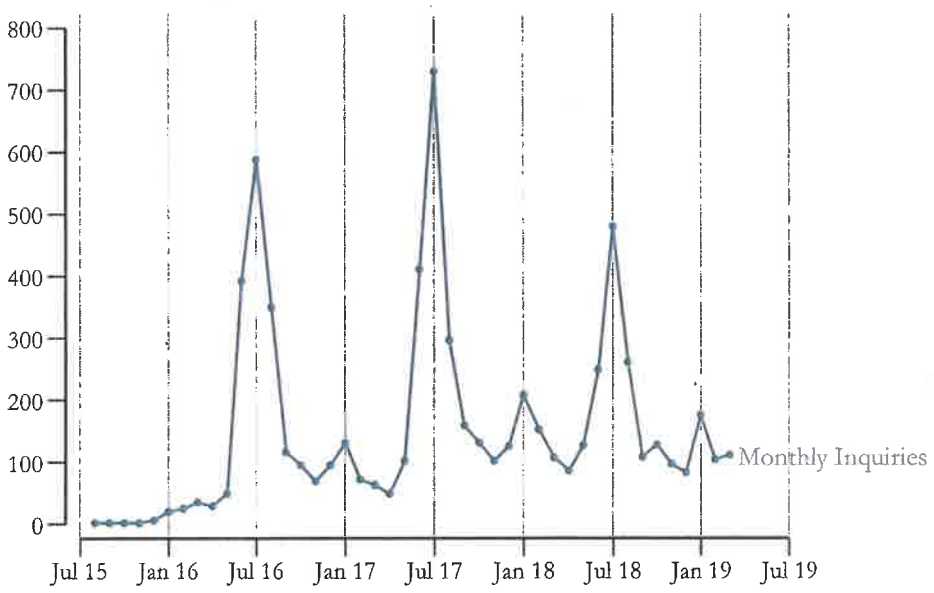
[26]Postal cities such as 'Playa Vista' correspond to the City, for this reason we cannot simply use the city name variable in the QCEW data to generate tabulations for the City, for additional information see

IV.2 Office of Wage Standards

IV.2.1 OWS Inquiry Data

We received two main data files from the City's Office of Wage Standards (OWS) pertaining to inquiries and complaints received by OWS. The inquiry file contained data from 6,891 inquiries made between July 2015 through April 2019. Of the 6,891 inquiries, 108 did not include the date the inquiry occurred and were dropped from the following analysis, leaving us with 6,783 observations. Figure 11 shows the evolution of the monthly inquiries received by OWS over time.

Figure 11: Inquiries Over Time



Source: Based on inquiry data from the City's Office of Wage Standards.

On average, the OWS received about 150 inquiries per month. We see that inquiries drastically increase each July, around the dates of the City's minimum wage increases, and increase less drastically each January, the month of the State's minimum wage increase. Each inquiry in the data set included variables such as who made the inquiry (Employer, Employee,

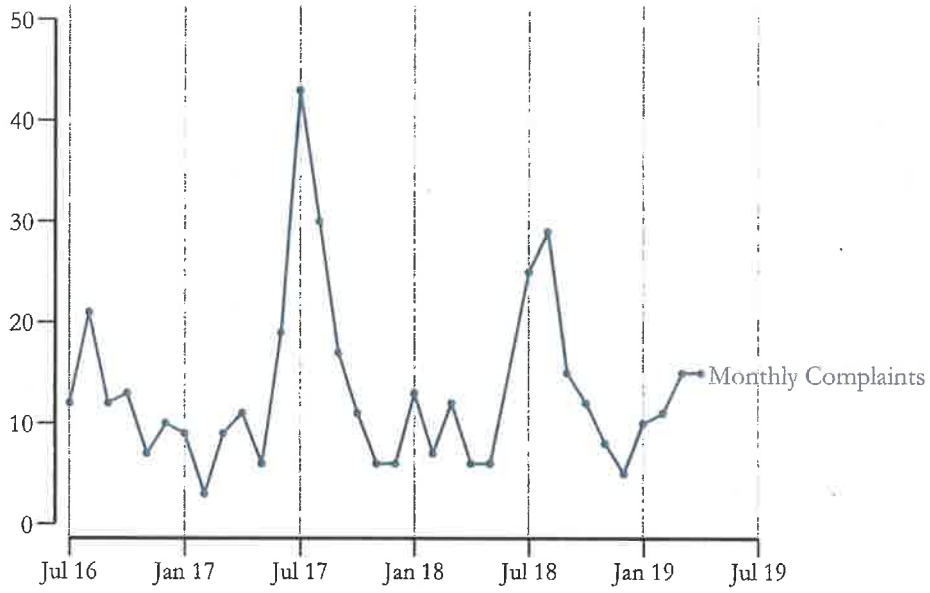
https://data.lacounty.gov/Geospatial/ZIP-Codes/65v5-jw9f . We use the zip codes to places crosswalk for the State from here: http://mcdc.missouri.edu/applications/geocorr2014.html

Other), the subject of the inquiry, and other administrative variables. OWS inquiries were diverse with 25 different inquiry types recorded, including an "Other" category.

IV.2.2 OWS Complaint Data

The OWS also provided a dataset concerning complaints and enforcement. The dataset contained a number of variables of economic interest, including the type of complaint, current status of the case, the case outcome (for closed cases), the address of the relevant business, and the open and close date for each case. The data included 500 unique complaints, with complaint origination dates spanning from July 2016 to May 2019. Of the 500 complaints received, 65 of them were "Duplicate Employers" meaning there were multiple complaints submitted against the same employer during the investigation process. There were 180 cases still open in the most recent dataset. After removing all duplicate observations and open cases, we are left with 256 unique complaints that have been resolved. On average, OWS received 15 complaints per month. Figure 12 plots the number of monthly complaints received by OWS over time. Much like inquiries, we see a significant increase in the number of complaints in each July, when the City's minimum wage increases. We analyze the data from OWS in more detail in Section 7.2.

Figure 12: Complaints Over Time



Source: Based on complaint data from the City's Office of Wage Standards.

V Methods

V.1 Event-Study Method

The key research question of the report is to assess the impact of the City's higher minimum wage on earnings and employment relative to comparable areas that follow the minimum wage prevailing in the State. Shortly after the City passed the higher minimum wage, the State also increased the statewide minimum wage. We follow a similar approach by Nadler et al. (2019) and Cengiz et al. (2019) by using an event-study method to evaluate the effect of the minimum wage in the City on wages and employment. The initial increase in the minimum wage and the subsequent multiyear increases provide the variation displayed in Figure 1 needed to estimate the wage and employment effects.

The event study approach compares the difference in outcomes in the City with a control group of similar, neighboring areas before and after the first increase in the City's minimum

wage in July of 2016. The event study approach allows us to not only measure the impact of the higher minimum wage after the policy went into effect, but also to assess whether the evolution in outcomes before the event was comparable (Schmidheiny and Siegloch, 2019). The key assumption inherent in the event study approach is that absent of the passage of the ordinance, the outcomes of the City and the control units would have been the same. Observing parallel trends in outcomes prior to the event lends substantial plausibility to this assumption. An additional advantage is that the event-study approach allows not only characterization of the initial effect, but also of the dynamic response of wages and employment to each of the multi-year increases in the minimum wage.

In an event-study framework, we are estimating the difference between observed wages or employment in the City and what the wages or employment would have been in the absence of the minimum wage increase. The counterfactual outcomes are generated from the regression model using a control group that is comparable to the City while also controlling for total employment and total population. Appendix I provides a technical overview of the event-study method.

The study period includes the first quarter of 2010 through the fourth quarter of 2018. The two key outcome variables of interest are average weekly wages and average quarterly employment levels. We use the QCEW data measured at the PUMA level for the entire State. The treated PUMAs consist of those covering the City, whereas the comparison group PUMAs consist of those in surrounding areas that followed the State minimum wage. For more details on the comparison groups used in the analysis see Section VI. The event-study method results are presented under Section 6.2 with supplemental findings on Appendix II.

V.2 Synthetic Control Method

Another key question is the impact of the City's higher minimum wage on earnings and employment relative to the federal minimum wage. To answer this question, we implement the synthetic control method to measure the impact of the City's higher minimum wage on earnings and employment. We follow the traditional synthetic control method, which consists of a data-driven approach to assess the impact of a policy change on a regional economy (Abadie

and Gardeazabal, 2003; Abadie et al., 2010). The synthetic control method works by creating a 'synthetic' City composed of a weighted average of the earnings and employment measures of a selected pool of control counties outside of the City before the minimum wage increase. The goal is to select the weights such that in key minimum wage sectors the wage and employment histories of the 'synthetic' city closely match those of the City in the period before the minimum wage increase. The two key measures of interest are again average weekly wages and average quarterly employment levels.[27] The study period consists of the pre-policy period from the fourth quarter of 2009 through the second quarter of 2016 before the minimum wage increased and the policy period from the third quarter of 2016 through the fourth quarter of 2018. For a more technical description of the synthetic control method please see Appendix III.

The control donor counties consist of those that have not been exposed to a higher state or local minimum wage, but can also approximate the City's low-wage labor market. Since the State increased the statewide minimum wage on January 1, 2017, we cannot use regions from the State as potential control donors. We follow a similar approach to Nadler et al. (2019) by only selecting donor counties that were exposed to the federal minimum wage during the study period (from 4Q2009 through 3Q2018) and were part of a metropolitan area with a population of at least 200,000 as of 2010. One drawback of this approach is that all of our donor counties come from Texas, the South, the Midwest, and the Northeast, which are areas that are different from the State in terms of their demographic and industry compositions. Given the size difference between the City and many potential donors, we use a normalization technique put forward by Nadler et al. (2019) to improve the match between the outcomes of the City and the synthetic city. For each outcome variable, we subtract from each quarter the region's average value during the pre-policy period. Under the normalization approach, we are no longer matching on actual levels, instead we are matching based on earnings and employment trends to generate the synthetic city. The synthetic control method results are presented under section 6.3 with supplemental detailed findings on Appendix IV.

[27] We follow the BLS average weekly wage definition which is equal to (total quarterly wages/quarterly average employment) divided by 13. See https://www.bls.gov/help/def/en.htm. The quarterly employment levels measure includes all full-time, part-time, temporary, and permanent jobs. Unfortunately, because of lack of information on hours worked in the data, we cannot distinguish between the various types of job arrangements.

VI Findings

VI.1 Key Findings

To begin, we find that the higher minimum wage in the City had a positive and statistically significant effect on the earnings of food service workers under both the event-study and the synthetic control methods.[28] The finding shows that the policy was effective at increasing the earnings of low-wage food service workers. In addition, we find no evidence that the higher minimum wage had any statistically significant negative or positive impact on employment levels. These findings are on par with the recent minimum wage literature studying the effects of local and state minimum wage increases (Dube et al., 2010; Nichols et al., 2014; Reich et al., 2017; Allegretto et al., 2018; Cengiz et al., 2019).

Moreover, we also find that the increase in the minimum wage raised the earnings of both limited-service and full-service restaurant workers in the City.[29] At the same time, we do not detect any statistically significant effects on the employment levels of either limited-service or full-service restaurant workers. The following sub-sections provide detailed findings from the event-study and synthetic control methods.

VI.2 Event-Study Results (Effects Relative to the State Minimum Wage)

One of the key conditions for conducting an event-study analysis is to identify a comparable control group that was not exposed to the same policy. In our case, we needed to find nearby regions that were not exposed to the City's minimum wage or any other local minimum wage. We use surrounding areas only exposed to the state-level minimum wage as a comparison group. The map in Figure 13 shows the PUMAs covering the City versus surrounding PUMAs only exposed to the State-level minimum wage.[30] We limit the comparison group to only those PUMAs from the County and nearby counties as these are more likely to be comparable to the City in economic and demographic terms. The event-study method relies on exploiting the

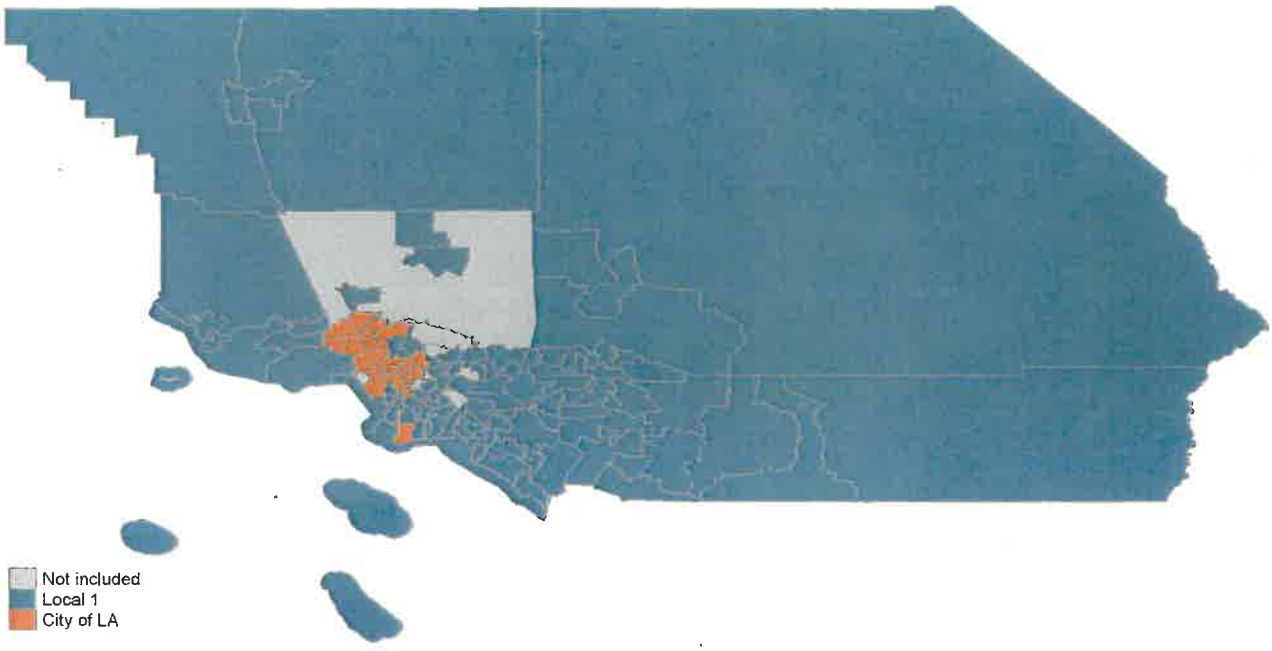
[28] We define the food service industry using NAICS 722.

[29] We define full-service restaurants using NAICS 722511 and limited-service restaurants using NAICS 722513.

[30] Public Use Microdata Areas (PUMAs) are statistical geographic areas defined for the dissemination of Public Use Microdata Sample (PUMS) data from the U.S. Census Bureau.

temporal variation in the increase of the minimum wage in the City relative to the prevailing minimum wage in the control areas (the State). By comparing the change in earnings or employment after the onset of the City minimum wage ordinance with the change in the control areas, we are able to isolate the causal effect of the increase in the minimum wage on average weekly wages and employment.

Figure 13: Map of Treated vs. Control Group PUMAs



The map in Figure 13 shows PUMAs in the City (in orange), areas of the County that follow the same minimum wage ordinance as the City (in grey), and areas in the County and surrounding counties that follow the State minimum wage (in blue). The main comparison area that we use for the purposes of this study consists of the area in blue, which we refer to as control group "Local 1". Local 1 consists of the incorporated cities in the County that did not pass their own minimum wage ordinance, as well as all PUMAs in neighboring counties (Riverside county, San Bernardino county, Ventura county, and Orange county).

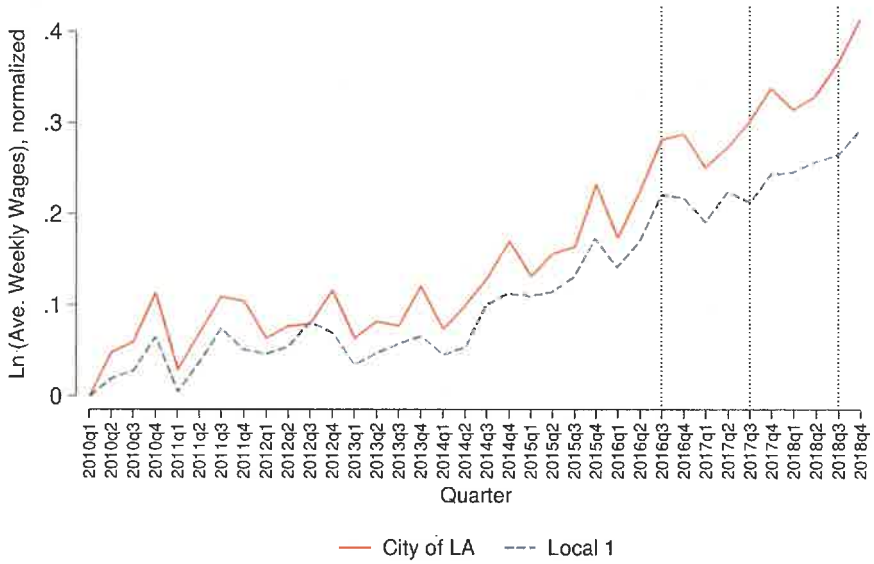
The key assumption of the event study approach is that employment and earnings in the City would have tracked those in the control areas had the minimum wage ordinance not taken place. To assess the plausibility of this assumption, successful event studies are able to

show that employment and earnings in the City and control areas evolved in parallel before the ordinance was enacted. If they did, it is likely that they would have continued to evolve in parallel absent the passage of the minimum wage ordinance.

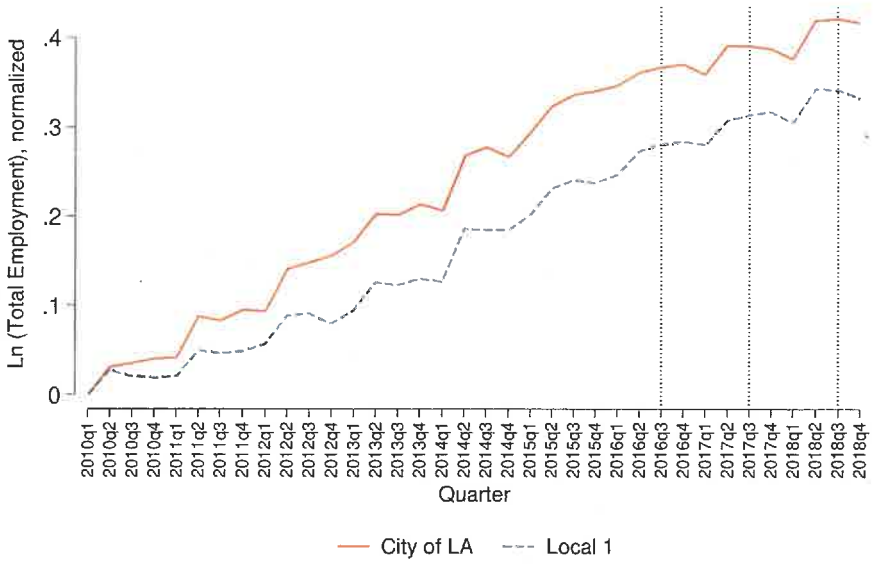
The evolution of the normalized log of average weekly wages for the food services industry, limited-service, and full-service restaurants in the City and the local control group (Local 1) from 2010 to 2018 is shown in Figures 14a, 15a, and 16a. An inspection of the figures reveals that average weekly wages effectively evolved in parallel from 2010 to 2016. The employment trends as shown in Figures 14b, 15b, and 16b evolve in parallel from 2013 to 2016. The figures demonstrate that the parallel trends assumption is met for both key outcomes, earnings and employment, allowing us to proceed with the event-study analysis.

Figure 14: Food Services Industry - Evolution of Key Outcomes

(a) Evolution of Log of Avg. Weekly Wages (Normalized)



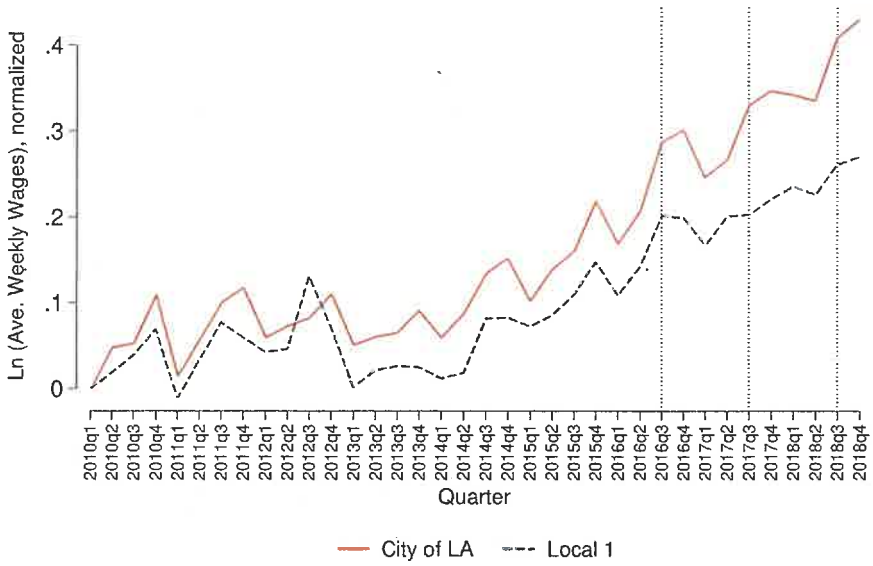
(b) Evolution of Log of Employment (Normalized)



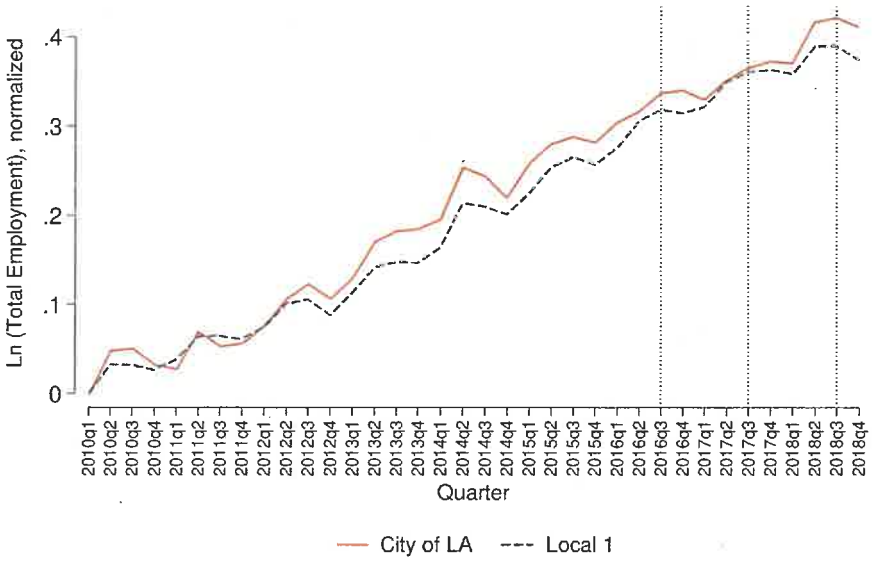
Notes: This figure shows the evolution of average weekly wages (panel a) and employment (panel b) in the City of Los Angeles and control group "Local 1". The vertical dashed lines represent the dates of the City's annual minimum wage increases that occur every July 1st. This control group is a collection of PUMAs from LA county and nearby counties only exposed to the state-level minimum wage. The variable of interest is expressed in log terms and normalized subtracting the value of the variable in the first quarter of 2010. Average weekly wages is computed following the BLS definition.

Figure 15: Limited-Service Restaurants - Evolution of Key Outcomes

(a) Evolution of Log of Avg. Weekly Wages (Normalized)



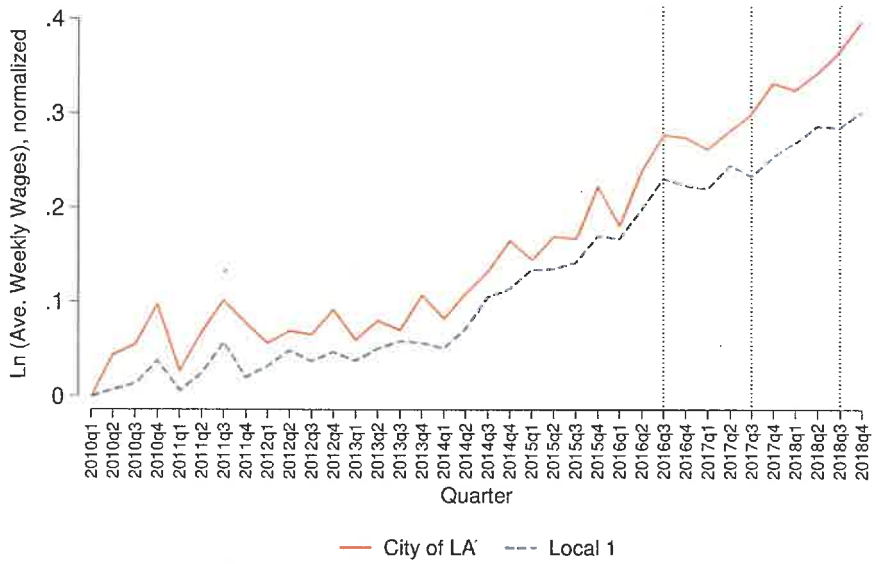
(b) Evolution of Log of Employment (Normalized)



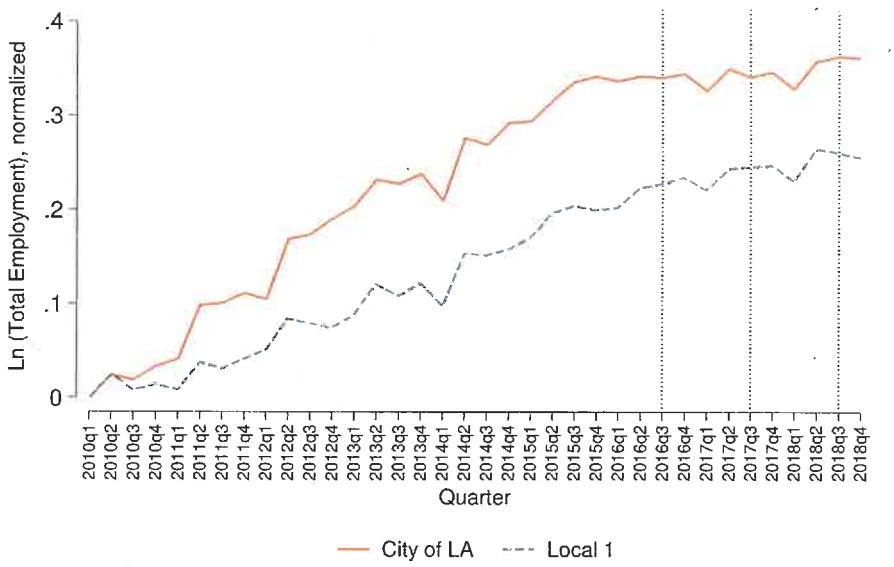
Notes: This figure shows the evolution of average weekly wages (panel a) and employment (panel b) in the City of Los Angeles and control group "Local 1". The vertical dashed lines represent the dates of the City's annual minimum wage increases that occur every July 1st. This control group is a collection of PUMAs from LA county and nearby counties only exposed to the state-level minimum wage. The variable of interest is expressed in log terms and normalized subtracting the value of the variable in the first quarter of 2010. Average weekly wages is computed following the BLS definition.

Figure 16: Full-Service Restaurants - Evolution of Key Outcomes

(a) Evolution of Log of Avg. Weekly Wages (Normalized)



(b) Evolution of Log of Employment (Normalized)



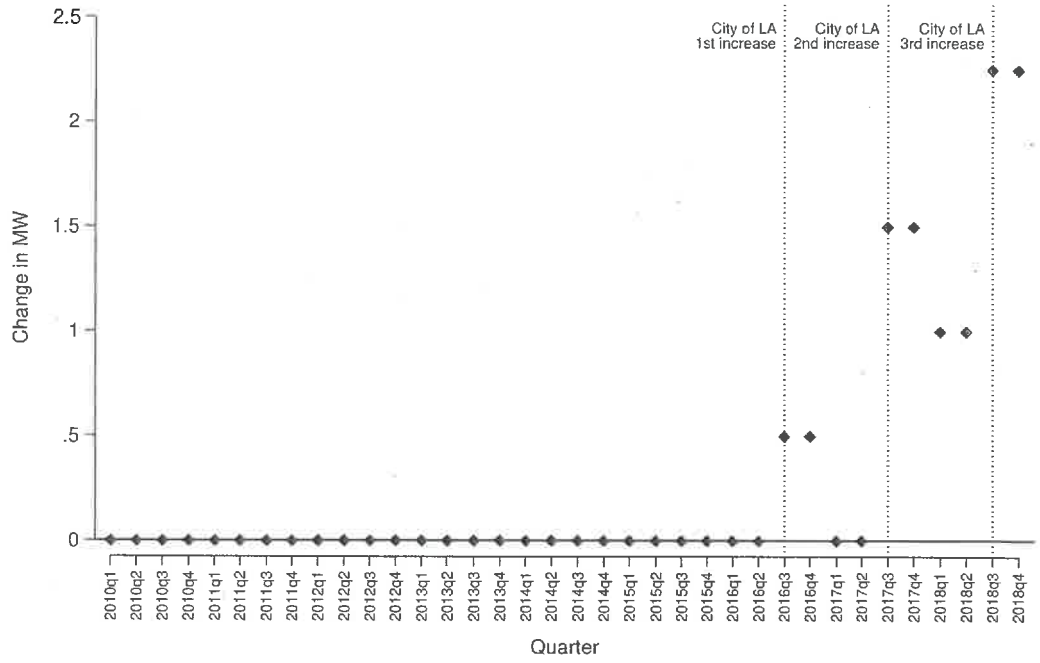
Notes: This figure shows the evolution of average weekly wages (panel a) and employment (panel b) in the City of Los Angeles and control group "Local 1". The vertical dashed lines represent the dates of the City's annual minimum wage increases that occur every July 1st. In contrast, the State increases the minimum wage every December 1st. This control group is a collection of PUMAs from LA county and nearby counties only exposed to the state-level minimum wage. The variable of interest is expressed in log terms and normalized subtracting the value of the variable in the first quarter of 2010. Average weekly wages is computed following the BLS definition.

Before turning to our main results, it is helpful to recall that we seek to measure the change in earnings and employment in the food services industry, limited-service restaurants, and full-service restaurants in the City relative to workers in Local 1 covered by the prevailing minimum wage in the State.[31] Figure 17 shows the difference between the minimum wage for the City versus the State. This is the same as Figure 1, but limited to the period under study in the empirical analysis.

The figure shows how the difference between the two minimum wages varies over time and follows a jigsaw pattern as the City's minimum wage is scheduled to increase every July 1st, whereas the State's minimum wage rises on January 1st. Consequently, the difference between the two minimum wages is higher during the second half of each year. For instance, during the first and second quarter of 2017, the difference between the two minimum wages was zero, but then jumped up to $1.50 for the third and fourth quarters. If our estimates capture the impact of the minimum wage, we would expect to see a similar jigsaw pattern in our estimates of the effect of the minimum wage on earnings.

[31] Local 1 consists of the incorporated cities in the County that did not pass their own minimum wage ordinance, as well as all PUMAs in neighboring counties (Riverside county, San Bernardino county, Ventura county, and Orange county).

Figure 17: The Difference Between the City's & State's Minimum Wage



Source: The graph shows the City's minimum wage minus the State's minimum wage as measured in dollars over time.

Turning to our main results, focusing on the findings for the entire food services industry, Figures 18a and 18b present the coefficient estimates with their respective 95 percent confidence intervals from the event study analysis on the log of average weekly wages (panel a) and the log of employment (panel b). The estimated coefficients represent the percentage change in the outcomes of interest for the quarter relative to a baseline period. The two panels of the figure present the estimates before and after July 2016, when the City's minimum wage ordinance came into effect.

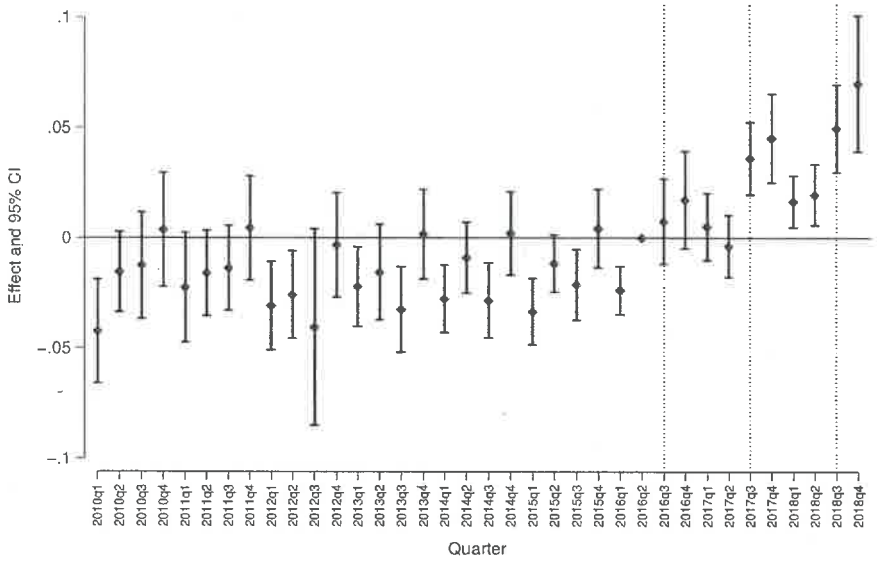
The estimated coefficients before July 2016 assess the validity of the research design by providing further evidence of the parallel trends assumption. Most of these estimated coefficients are statistically indistinguishable from zero and more importantly do not display a clear trend, e.g. they are neither increasing nor decreasing over time. The second group of estimated coefficients, those after July 2016, present evidence of the impact of the policy on the outcomes of interest.

When interpreting the coefficient estimates found on Figure 18a, we find during the third quarter of 2017 the average weekly wage increased by 3.6% relative to its level during the second quarter of 2016. The estimated coefficient is statistically different from zero and we can conclude that this change is due to the minimum wage increase. In contrast, when the outcome of interest is the log of employment, all coefficients during the post-policy period are indistinguishable from zero. We can conclude that there was no significant change in employment with respect to the baseline level prior to the minimum wage increase.

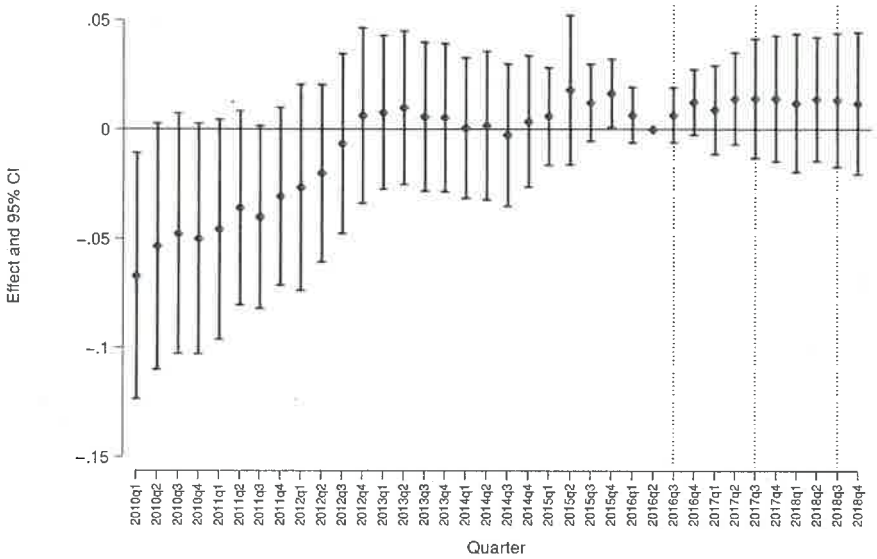
In addition, we find that the annual increases in the minimum wage raised the earnings of both limited-service and full-service restaurant workers in the City. This is particularly the case during the quarters following the annual increase occurring every July. The wage increases are larger and more precisely estimated for limited service restaurant workers, who on average have lower earnings. Similarly, as for the food services industry as a whole, we do not detect any declines or meaningful changes in the employment levels of limited-service and full-service restaurant workers following the annual minimum wage increases. The findings provide additional support that the minimum wage policy in the City successfully raised the earnings of low-wage workers without affecting employment levels.

Figure 18: Food Services Industry - Estimates of Main Outcomes

(a) Estimates for Log of Avg. Weekly Wages



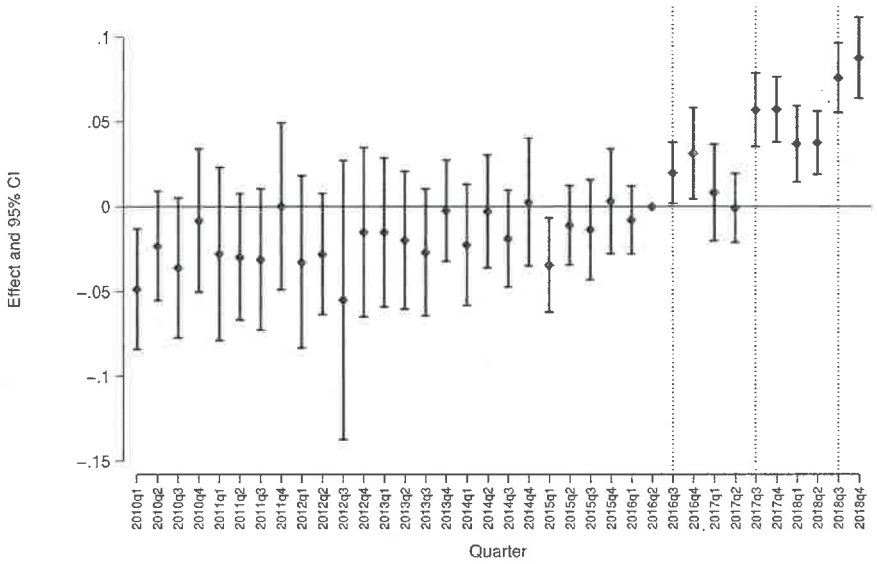
(b) Estimates for Log of Employment



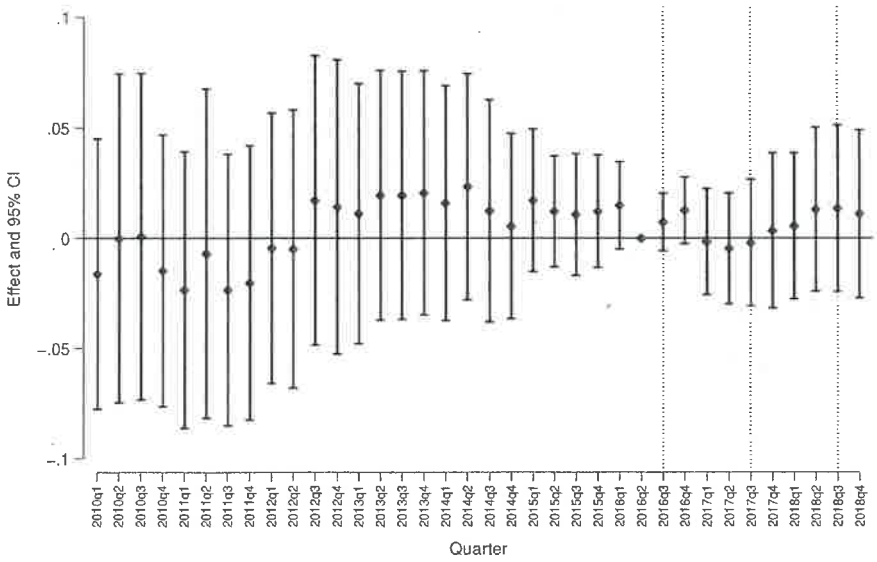
Notes: This figure shows coefficient estimates and 95 percent confidence intervals (CI) from the event study analysis on the normalized log of average weekly wages (panel a) and the normalized log of employment (panel b) as described in Section V.1. The estimated coefficients represent the percentage change in the outcomes of interest relative to the omitted quarter. The estimation equation is shown in Appendix II. The vertical dashed lines represent the dates of the City's annual minimum wage increases that occur every July 1st. In contrast, the State increases the minimum wage every December 1st. The treatment group is composed by PUMAs in the City of Los Angeles and the control group is a collection of PUMAs from LA county and nearby counties only exposed to the state-level minimum wage ("Local 1").

Figure 19: Limited-Service Restaurants - Estimates of Main Outcomes

(a) Estimates for Log of Avg. Weekly Wages



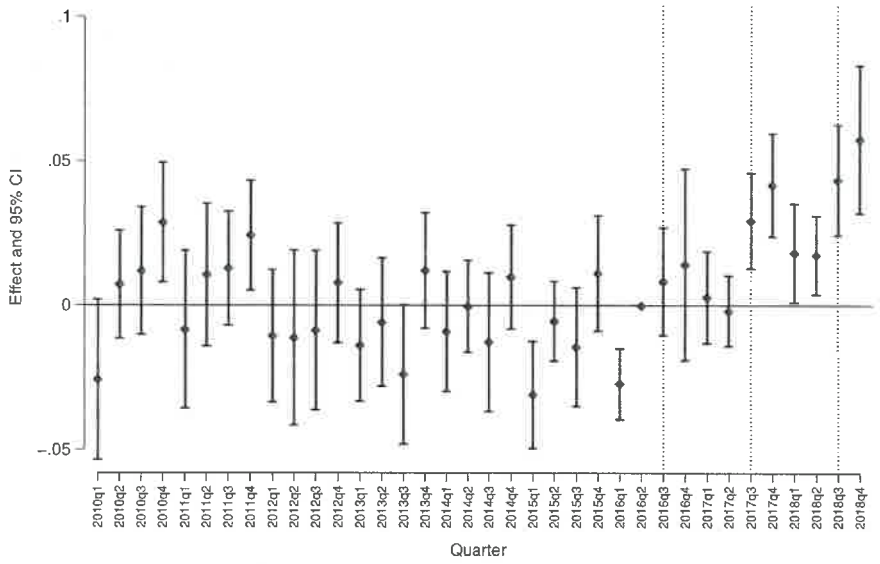
(b) Estimates for Log of Employment



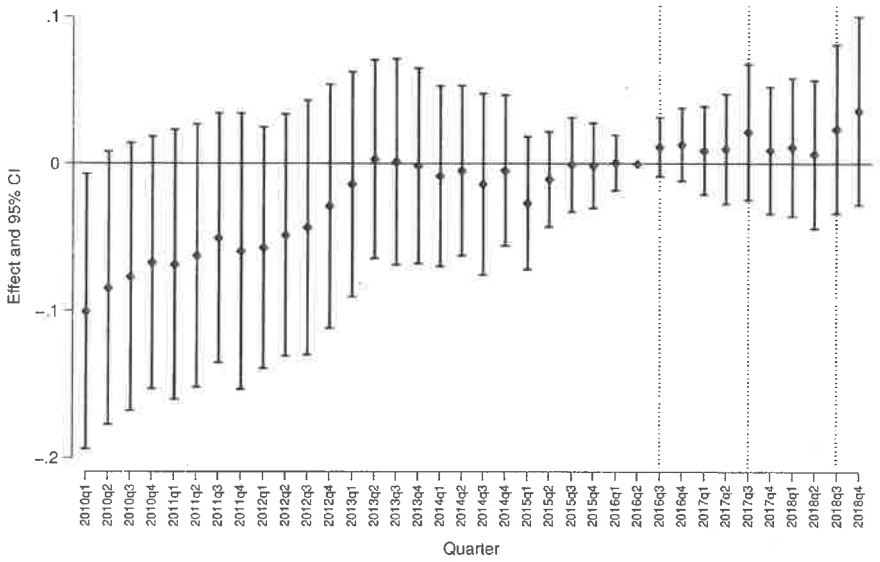
Notes: This figure shows coefficient estimates and 95 percent confidence intervals (CI) from the event study analysis on the normalized log of average weekly wages (panel a) and the normalized log of employment (panel b) as described in Section V.1. The estimated coefficients represent the percentage change in the outcomes of interest relative to the omitted quarter. The estimation equation is shown in Appendix II. The vertical dashed lines represent the dates of the City's annual minimum wage increases that occur every July 1st. In contrast, the State increases the minimum wage every December 1st. The treatment group is composed by PUMAs in the City of Los Angeles and the control group is a collection of PUMAs from LA county and nearby counties only exposed to the state-level minimum wage ("Local 1").

Figure 20: Full-Service Restaurants - Estimates of Main Outcomes

(a) Estimates for Log of Avg. Weekly Wages



(b) Estimates for Log of Employment



Notes: This figure shows coefficient estimates and 95 percent confidence intervals (CI) from the event study analysis on the normalized log of average weekly wages (panel a) and the normalized log of employment (panel b) as described in Section V.1. The estimated coefficients represent the percentage change in the outcomes of interest relative to the omitted quarter. The estimation equation is shown in Appendix II. The vertical dashed lines represent the dates of the City's annual minimum wage increases that occur every July 1st. In contrast, the State increases the minimum wage every December 1st. The treatment group is composed by PUMAs in the City of Los Angeles and the control group is a collection of PUMAs from LA county and nearby counties only exposed to the state-level minimum wage ("Local 1").

Table 1 shows by how much the total earnings, average weekly wages, and employment changed during each half-year period during which the difference between local and state minimum wages changed (as shown in Figure 17). For example, the third and fourth quarter of 2016 were grouped as bin 1 as the difference between the City's and State's minimum wage was the same during these two periods. Similarly, bin 2 captures the first and second quarters of 2017.

As shown by the second column of Table 1, we find that the average weekly wages of food service workers increased by 4.1% in the City relative to surrounding areas bound by the State minimum wage during the second half of 2017 (Bin 3). During the first half of 2018 (Bin 4), we find that the average weekly wages of food service workers rose by 1.8% in the City compared to the state. During the second half of 2018 (Bin 5), the average weekly wages of food service workers increased by a notable 6% in the City relative to the state. We do not find any statistically significant changes in average weekly wages during the second half of 2016 and the first half of 2017 when the differences in minimum wages were small and zero, respectively. This is further evidence that our event study comparison truly reflects the effect of differences in minimum wages, rather than independently existing differences between the City and the control areas. The findings provide evidence that as the difference between the City's and the state's minimum wage grew larger, the average weekly wages of food service workers in the City increased more.

In addition, as demonstrated by the fourth column of Table 1, we do not find any statistically significant changes in employment during any of the bin periods. Though we find positive employment effects during all bin periods, none are statistically significant. Therefore, we can conclude that we do not see evidence that the annual increases in the minimum wage reduced the employment levels of food service workers in the City.

Table 1: Food Services Industry - Point Estimation Post-Policy Period

	(1)	(2)	(3)	(4)
	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
Bin 1 (2016 Q3 - Q4)	0.0137	0.0125	8.9590**	0.0095
	(0.0115)	(0.0084)	(3.9445)	(0.0065)
Bin 2 (2017 Q1 - Q2)	-0.0020	0.0007	3.3778	0.0116
	(0.0118)	(0.0069)	(3.4590)	(0.0103)
Bin 3 (2017 Q3 - Q4)	0.0321**	0.0406***	23.0858***	0.0142
	(0.0149)	(0.0072)	(3.4545)	(0.0137)
Bin 4 (2018 Q1 - Q2)	0.0085	0.0181***	14.1706***	0.0130
	(0.0151)	(0.0060)	(2.5776)	(0.0150)
Bin 5 (2018 Q3 - Q4)	0.0550***	0.0599***	37.1232***	0.0128
	(0.0176)	(0.0121)	(5.2898)	(0.0158)
Number of PUMAs	4284	4284	4284	4284

Notes: This table shows coefficient estimates and standard errors (in parenthesis) from the event study analysis on outcomes of interest (see Appendix II, equation 2). The explanatory variables for the post-policy period are binned in two quarters, e.g. the first row presents the coefficient for a dummy variable that takes the value of one for the 3rd and 4th quarter of 2016. The comparison group is a collection of PUMAs from LA county and nearby counties only exposed to the state-level minimum wage ("Local 1"). Each observation weighted by total employment in the PUMA for the results in columns (1), (2), and (3). Estimates presented in column (4) are weighted by PUMA-level population. We use quarterly and PUMA level fixed-effects. The omitted category corresponds to the 2nd quarter of 2016. Standard errors are clustered at the PUMA-level. *** p<0.01, ** p<0.05, * p<0.10

Since the changes in the minimum wage differ across bins, the magnitudes of the coefficients in Table 1 are not directly comparable. To better assess whether the magnitude of the response for each percent increase in the minimum wage is similar across the different steps, we also calculate the earnings elasticity. The elasticity gives the percent change in average weekly wages relative to the percent change in the minimum wage for food service workers. Table 2 shows the elasticities for the five half-year periods. We do not calculate elasticities for the second bin as the difference between the City's and the State's minimum wage was zero.

The earnings elasticities during the first and second jump were positive, but are not statistically significantly different from zero. Looking at the second column, we find that a

one percent increase in the minimum wage raised average weekly wages by 0.30% during the second half of 2017 (Jump 3), by 0.21% during the first half of 2018 (Jump 4), and by 0.32% during the second half of 2018 (Jump 5) as shown by the second column of Table 2. Given the standard errors, these are about in the same order of magnitude. Other recent minimum wage studies focusing on the food services industry find wage elasticities of 0.186 to 0.224 (Nadler et. al, 2019) and 0.188 to 0.232 (Dube et. al, 2010), whereas earlier work found somewhat higher elasticities 0.63 to 0.73 (Card and Krueger, 1994).

We also calculate the employment elasticity, which captures the change in employment levels relative to the change in the minimum wage. As depicted by the fourth column of Table 2, we find positive employment elasticities for all minimum wage jumps, however none are statistically significant. Based on these findings, we conclude that the minimum wage did not have a meaningful impact on the employment levels of food service workers.

Table 2: Food Services Industry - Implied Effects of a One Percent Increase in the Minimum Wage (Elasticities)

	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
	(1)	(2)	(3)	(4)
Jump 1 (2016 Q3 - Q4)	0.280	0.257	17.92**	0.195
	(0.2357)	(0.1717)	(80.8462)	(0.133)
Jump 3 (2017 Q3 - Q4)	0.240**	0.304***	15.39***	0.107
	(0.1114)	(0.0541)	(25.87)	(0.1026)
Jump 4 (2018 Q1 - Q2)	0.0971	0.208***	14.17***	0.150
	(0.174)	(0.0695)	(29.6233)	(0.172)
Jump 5 (2018 Q3 - Q4)	0.296***	0.322***	16.50***	0.0686
	(0.0944)	(0.065)	(28.424)	(0.0846)

Notes: This table shows the estimated elasticities for total wages (column 1), average weekly wages (column 2) and employment (column 4) and effect sizes for average weekly wages (column 3). Estimates are based on the event study analysis on outcomes of interest as described in Appendix I, equations 3 and 4. The explanatory variables for the post-policy period are binned in two quarters, e.g. the first row presents the coefficient for a dummy variable that takes the value of one for the 3rd and 4th quarter of 2016. Note that Jump 2 coefficient is zero by construction and omitted from the table, see appendix for more details. The comparison group is a collection of PUMAs from LA county and nearby counties only exposed to the state-level minimum wage ("Local 1"). Standard errors are calculated using the delta method and clustered at the PUMA-level. *** $p<0.01$, ** $p<0.05$, * $p<0.10$.

When focusing on limited-service restaurant workers, we find that their average weekly wages grew even more following the annual minimum wage increases. For instance, as shown by the second column of Table 3, we find that the average weekly wages of limited-service restaurant workers increased by 2.6% during the second half of 2016 (Bin 1); by a noteworthy 5.7% during the second half of 2017 (Bin 3); then by another 3.7% during the first half of 2018 (Bin 4); and by a substantial 8.2% during the second half of 2018 (Bin 5) in the City relative to the State. In contrast, we do not find any statistically significant changes in the employment levels of limited-service restaurant workers in the City compared to the State following the annual increases.

Table 3: Limited-Service Restaurants - Point Estimation Post-Policy Period

	(1)	(2)	(3)	(4)
	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
Bin 1 (2016 Q3 - Q4)	0.0380**	0.0255**	13.7588**	0.0100
	(0.0170)	(0.0104)	(5.3190)	(0.0066)
Bin 2 (2017 Q1 - Q2)	-0.0032	0.0037	4.1746	-0.0031
	(0.0268)	(0.0116)	(5.6967)	(0.0121)
Bin 3 (2017 Q3 - Q4)	0.0560**	0.0570***	27.1721***	0.0008
	(0.0264)	(0.0099)	(5.6173)	(0.0157)
Bin 4 (2018 Q1 - Q2)	0.0508*	0.0372***	19.8829***	0.0093
	(0.0293)	(0.0095)	(4.9491)	(0.0172)
Bin 5 (2018 Q3 - Q4)	0.1066***	0.0815***	40.6829***	0.0123
	(0.0307)	(0.0106)	(5.0957)	(0.0187)
Number of PUMAs	4284	4284	4284	4284

Notes: This table shows coefficient estimates and standard errors (in parenthesis) from the event study analysis on outcomes of interest (see Appendix II, equation 2). The explanatory variables for the post-policy period are binned in two quarters, e.g. the first row presents the coefficient for a dummy variable that takes the value of one for the 3rd and 4th quarter of 2016. The comparison group is a collection of PUMAs from LA county and nearby counties only exposed to the state-level minimum wage ("Local 1"). Each observation weighted by total employment in the PUMA for the results in columns (1), (2), and (3). Estimates presented in column (4) are weighted by PUMA-level population. We use quarterly and PUMA level fixed-effects. The omitted category corresponds to the 2nd quarter of 2016. Standard errors are clustered at the PUMA-level. *** p<0.01, ** p<0.05, * p<0.10

To compare the effect across intervals, Table 4 again displays corresponding earnings elasticities for limited-service workers. Column 2 shows that a one percent increase in the minimum wage raised average weekly wages by 0.52% during the second half of 2016 (Jump 1); by 0.43% during the second half of 2017 (Jump 3); by 0.43% during the first half of 2018 (Jump 4); and by 0.44% during the second half of 2018 (Jump 5). Note that for limited service workers, the effect at the first bin is precisely estimated, and again all of the effects are of a similar order of magnitude. These earning elasticities are higher than those for all food service workers, showing that limited-service workers benefited the most from the minimum wage ordinance. The effect is very similar across intervals. We do not find evidence of negative employment elasticities following each annual minimum wage increase (Column 4).

Table 4: Limited-Service Restaurants - Implied Effects of a One Percent Increase in the Minimum Wage (Elasticities)

	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
	(1)	(2)	(3)	(4)
Jump 1 (2016 Q3 - Q4)	0.779**	0.523**	27.52**	0.205
	(0.3477)	(0.2141)	(109.0185)	(0.1346)
Jump 3 (2017 Q3 - Q4)	0.420**	0.427***	18.11***	0.00570
	(0.1978)	(0.0739)	(42.067)	(0.1176)
Jump 4 (2018 Q1 - Q2)	0.584*	0.427***	19.88***	0.107
	(0.3369)	(0.1092)	(56.8788)	(0.1976)
Jump 5 (2018 Q3 - Q4)	0.573***	0.438***	18.08***	0.0661
	(0.1651)	(0.0571)	(27.3811)	(0.1004)

Notes: This table shows the estimated elasticities for total wages (column 1), average weekly wages (column 2) and employment (column 4) and effect sizes for average weekly wages (column 3). Estimates are based on the event study analysis on outcomes of interest as described in Appendix I, equations 3 and 4. The explanatory variables for the post-policy period are binned in two quarters, e.g. the first row presents the coefficient for a dummy variable that takes the value of one for the 3rd and 4th quarter of 2016. Note that Jump 2 coefficient is zero by construction and omitted from the table, see appendix for more details. The comparison group is a collection of PUMAs from LA county and nearby counties only exposed to the state-level minimum wage ("Local 1"). Standard errors are calculated using the delta method and clustered at the PUMA-level. *** p<0.01, ** p<0.05, * p<0.10.

Last, we find that the wages of full-service restaurant workers rose to a lesser degree than

the earnings of limited-service restaurant workers after each annual minimum wage increase. Full-service restaurant workers often earn tips in addition to their hourly wage so would benefit less from a higher minimum wage since they are already earning well above it from tips and gratuities. As shown by the second column of Table 5, we discover that the average weekly wages of full-service restaurant workers increased by 3.6% during the second half of 2017 (Bin 3); then by another 1.8% during the first half of 2018 (Bin 4); and by 5.1% during the second half of 2018 (Bin 5) in the City relative to the State. We also found that the employment levels of full-service restaurant workers stayed the same after the annual minimum wage increases.

Table 5: Full-Service Restaurants - Point Estimation Post-Policy Period

	(1)	(2)	(3)	(4)
	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
Bin 1 (2016 Q3 - Q4)	0.0073	0.0113	6.8990	0.0124
	(0.0138)	(0.0103)	(5.2612)	(0.0104)
Bin 2 (2017 Q1 - Q2)	-0.0061	0.0005	2.8673	0.0097
	(0.0142)	(0.0061)	(2.9786)	(0.0166)
Bin 3 (2017 Q3 - Q4)	0.0223	0.0356***	21.3175***	0.0155
	(0.0196)	(0.0066)	(3.0481)	(0.0218)
Bin 4 (2018 Q1 - Q2)	-0.0002	0.0178**	15.3204***	0.0089
	(0.0203)	(0.0069)	(3.9042)	(0.0237)
Bin 5 (2018 Q3 - Q4)	0.0376	0.0505***	34.0647***	0.0299
	(0.0247)	(0.0102)	(5.0743)	(0.0294)
Number of PUMAs	4284	4284	4284	4284

Notes: This table shows coefficient estimates and standard errors (in parenthesis) from the event study analysis on outcomes of interest (see Appendix II, equation 2). The explanatory variables for the post-policy period are binned in two quarters, e.g. the first row presents the coefficient for a dummy variable that takes the value of one for the 3rd and 4th quarter of 2016. The comparison group is a collection of PUMAs from LA county and nearby counties only exposed to the state-level minimum wage ("Local 1"). Each observation weighted by total employment in the PUMA for the results in columns (1), (2), and (3). Estimates presented in column (4) are weighted by PUMA-level population. We use quarterly and PUMA level fixed-effects. The omitted category corresponds to the 2nd quarter of 2016. Standard errors are clustered at the PUMA-level. *** p<0.01, ** p<0.05, * p<0.10

Turning to more directly comparable earnings elasticities for full-service workers, as ex-

pected these are lower compared to those for full-service restaurant workers (Table 6), but comparable to the average effect for the entire food services sector (Table 2). For instance, we find that a one percent increase in the minimum wage raised average weekly wages by 0.27% during the second half of 2017 (Jump 3); by 0.21% during the first half of 2018 (Jump 4); and by 0.27% during the second half of 2018 (Jump 5) as shown by the second column of Table 6. We find positive employment elasticities, but none are statistically significant as demonstrated by the fourth column of Table 6.

Table 6: Full-Service Restaurants - Implied Effects of a One Percent Increase in the Minimum Wage (Elasticities)

	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
	(1)	(2)	(3)	(4)
Jump 1 (2016 Q3 - Q4)	0.150	0.231	13.80	0.255
	(0.2834)	(0.2121)	(107.833)	(0.2137)
Jump 3 (2017 Q3 - Q4)	0.167	0.266***	14.21***	0.116
	(0.1465)	(0.0496)	(22.8265)	(0.1631)
Jump 4 (2018 Q1 - Q2)	-0.00230	0.205**	15.32***	0.102
	(0.233)	(0.0796)	(44.8697)	(0.2728)
Jump 5 (2018 Q3 - Q4)	0.202	0.271***	15.14***	0.161
	(0.1327)	(0.055)	(27.2662)	(0.1581)

Notes: This table shows the estimated elasticities for total wages (column 1), average weekly wages (column 2) and employment (column 4) and effect sizes for average weekly wages (column 3). Estimates are based on the event study analysis on outcomes of interest as described in Appendix I, equations 3 and 4. The explanatory variables for the post-policy period are binned in two quarters, e.g. the first row presents the coefficient for a dummy variable that takes the value of one for the 3rd and 4th quarter of 2016. Note that Jump 2 coefficient is zero by construction and omitted from the table, see appendix for more details. The comparison group is a collection of PUMAs from LA county and nearby counties only exposed to the state-level minimum wage ("Local 1"). Standard errors are calculated using the delta method and clustered at the PUMA-level. *** p<0.01, ** p<0.05, * p<0.10.

VI.2.1 Event-Studies with Alternative Control Groups

We conduct the event-study analysis using three alternative control groups and find consistent results as those based on the preferred comparison group just discussed. Appendix II provides the maps of the alternative control groups along with detailed findings for each

one. Following the notion that places that are geographically closer to the City might yield better counterfactual outcomes, the first alternative comparison group consists of PUMAs only within the County that were exposed to the State minimum wage. To instead address the potential concern that spillover effects of the City minimum wage might affect these close PUMAs, the second alternative control group only includes PUMAs from the surrounding counties: Ventura, Kern, Orange, San Bernardino, and Riverside counties. Lastly, to assess to what extent economic developments in the wider Los Angeles area may affect our estimates, the third alternative comparison group consists of PUMAs from the entire State not exposed to a higher local minimum wage.

VI.2.2 Event-Study Large vs. Small Firms

Since the minimum wage ordinance gives small firms an additional year to comply with the annual increases, we also conduct the event-study separately for large and small firms.[32] When focusing on the food services industry, we find that workers experienced positive earnings effects in both large and small firms. In addition, we do not detect any statistically significant employment effects for either large and small firms. Appendix II includes the detailed findings for large versus small firms in the food services industry using the baseline control group.

VI.2.3 Event-Study Low income vs. High income PUMAs

Moreover, we conduct the event-study analysis separately for PUMAs with low and high labor income. First, we separate the treated PUMAs into two groups based on average earnings by PUMA for the food services industry from 1Q2014 through 2Q2016. Those PUMAs below the median were considered low income and those above were considered high income. We use this method to separate the PUMAs in the local 1 control group by low income and high income PUMAs. We find that food service workers in low income PUMAs experienced the higher earnings increases compared to those in high income PUMAs. We find statistically significant positive employment effects in low income PUMAs. In contrast, we find slight negative coefficient estimates on employment for high income PUMAs, however these are not

[32]Small firms are those with 1-25 employees, whereas large firms are those with 26 or more employees.

statistically significantly different from zero. The detailed results are found under Appendix II, section XI.3.

VI.3 Synthetic Control Results (Effects Relative to the Federal Minimum Wage)

As explained in Section V, we also estimated the effect increases in the City minimum wage based on a control group consisting of counties outside of the State that were only exposed to the federal minimum wage. In contrast to the results based on comparison groups within the State, this comparison estimates the effect of the higher minimum wage relative to the federal minimum wage. Since there is no obvious set of counties that are comparable to the City, we use the so-called synthetic control method to construct a weighted average of counties outside of the State that only followed the federal minimum wage as control group (see Section V).

Overall, we find consistent results between the two methods, re-affirming the policy's effectiveness at raising the earnings of low wage food service workers, without impacting employment levels. When considering the results, it is worth keeping in mind that unlike in the event study approach, in the case of the synthetic control approach the levels and trends in earnings and employment before the first minimum wage increase are equal by design (i.e., the control group is chosen to match these pre-trends). Hence, we only focus on the effects after the first minimum wage increase in what follows.

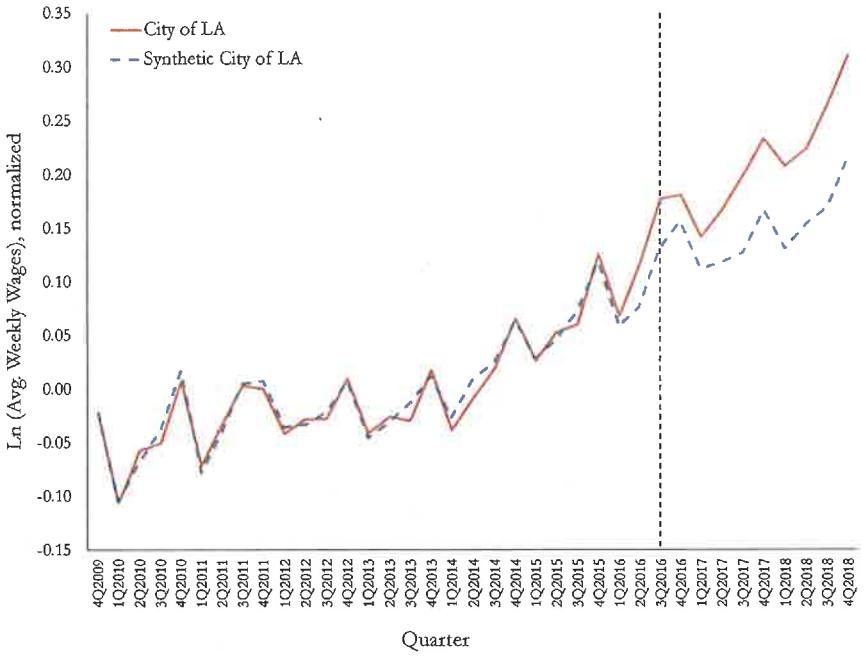
Under the synthetic control method, we find that the minimum wage ordinance had a strong positive effect on the earnings of food service workers in the City relative to those workers exposed to the federal minimum wage as shown by Figure 21a. The figure shows the actual evolution of average weekly wages. Additionally, the positive impact on earnings was statistically significantly different from zero during most periods following the annual minimum wage increases. As demonstrated by Figure 21b, we do not find any negative effects on the employment levels of food service workers and these are not statistically significant as the employment trends between the City and the synthetic city never diverged.

Further, we find that the higher minimum wage also raised the earnings of limited-and full-service restaurant workers in the City when analyzed separately relative to those exposed to

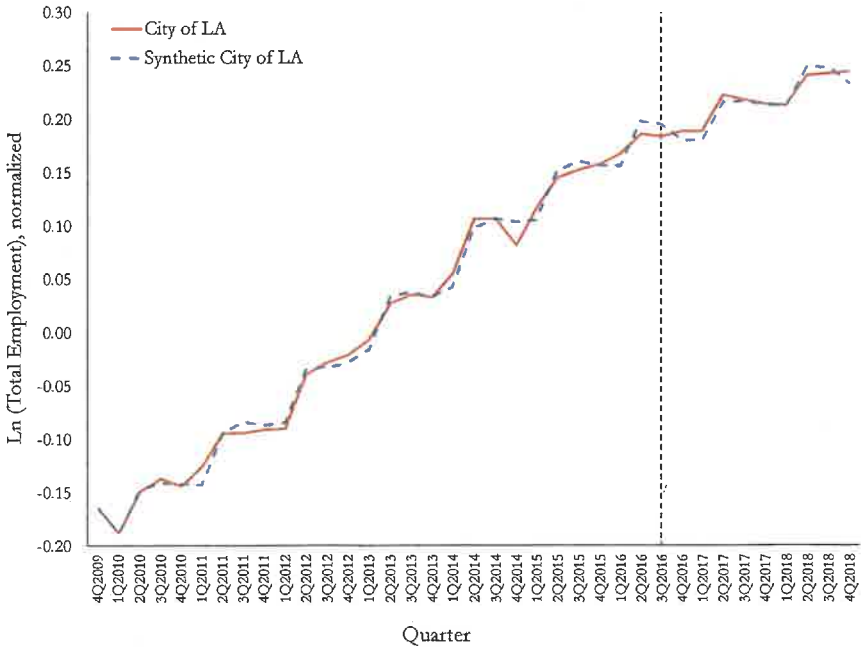
the federal minimum wage as demonstrated by Figures 22a and 23a. As illustrated by Figures 22b and 23b, we find that the higher minimum wage had no meaningful effect on employment levels of neither full-service nor limited-service restaurant workers. We take these findings to confirm the results from the event-study analysis presented in Section 6.2.

Figure 21: Food Services Industry

(a) Average Weekly Wages



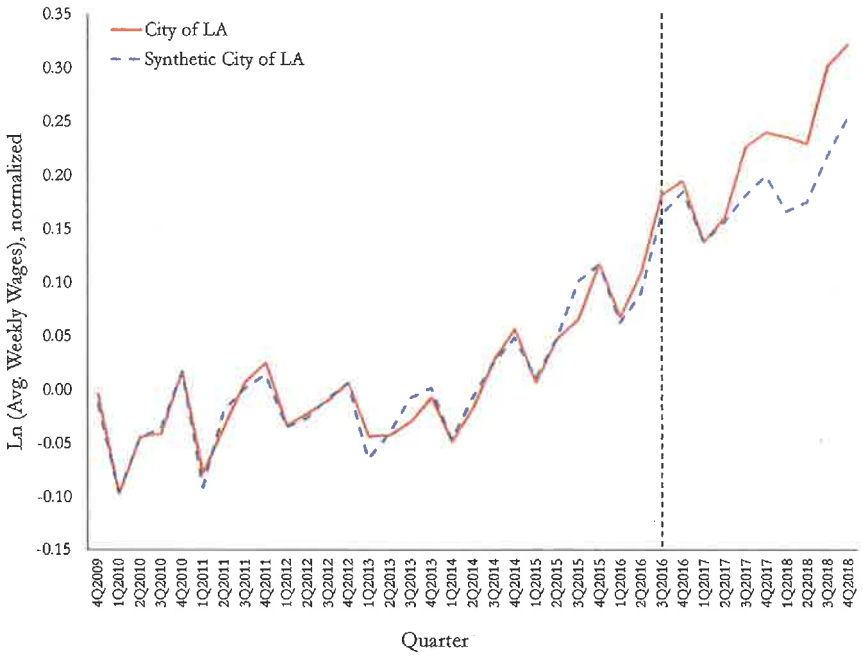
(b) Total Employment



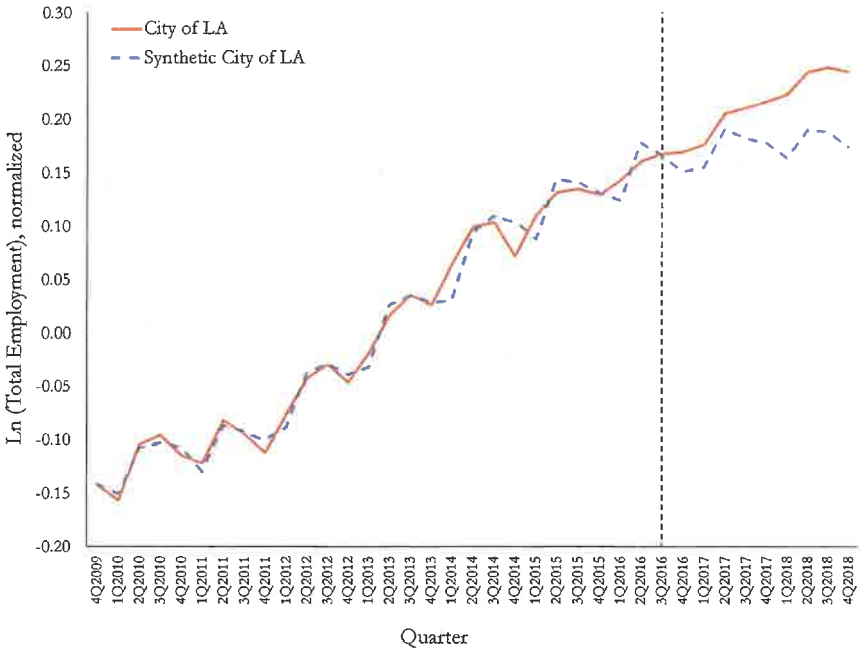
Notes: Panel (a) shows the trends of the normalized log of average weekly wages. Panel (b) shows the trends of the normalized log of employment. The Synthetic City of LA is constructed as the weighted average of the outcomes from counties outside of California (that were only exposed to the federal minimum wage) to match the trends before the first increase in the City minimum wage. See Section V.2 and Appendix IV for details.

Figure 22: Limited-Service Restaurants

(a) Average Weekly Wages



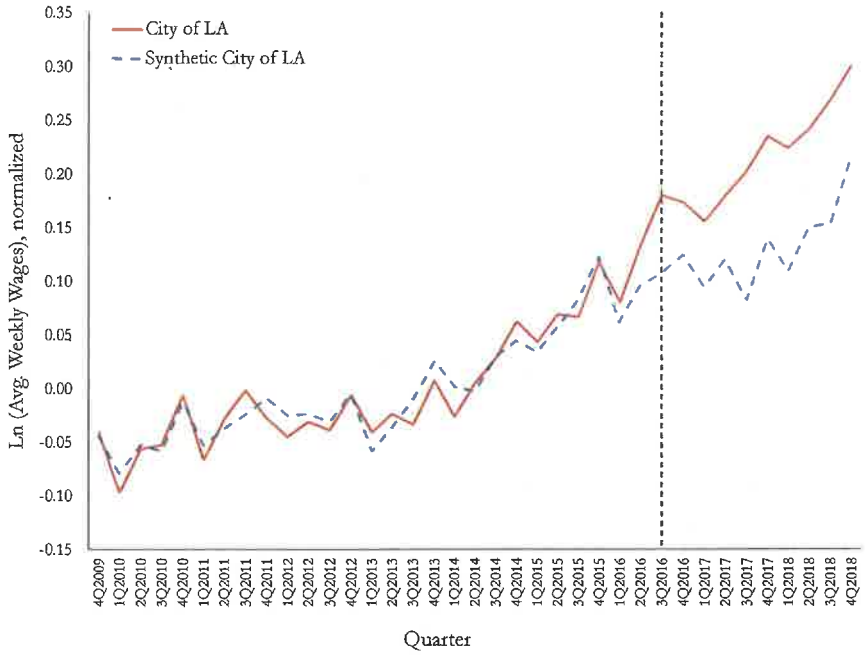
(b) Total Employment



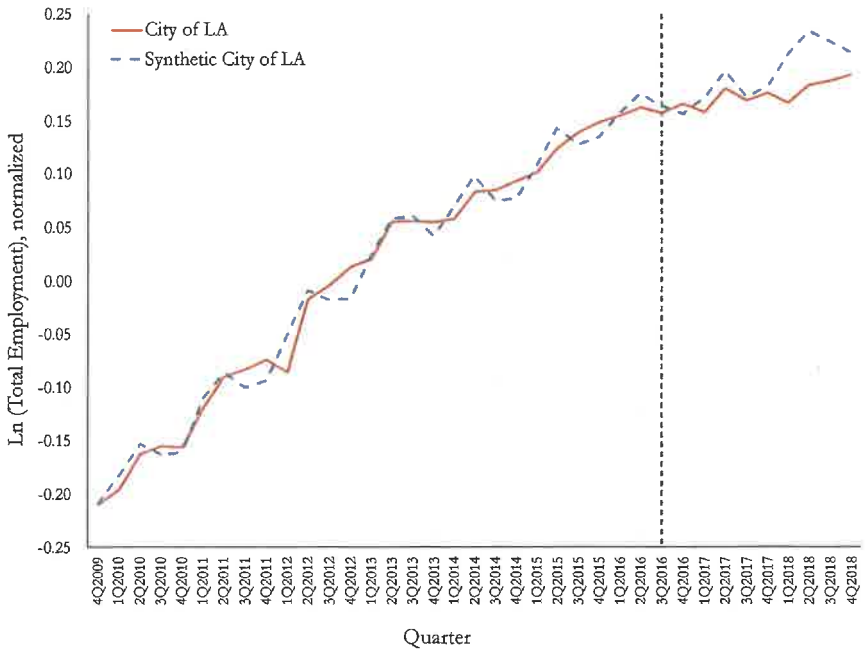
Notes: Panel (a) shows the trends of the normalized log of average weekly wages. Panel (b) shows the trends of the normalized log of employment. The Synthetic City of LA is constructed as the weighted average of the outcomes from counties outside of California (that were only exposed to the federal minimum wage) to match the trends before the first increase in the City minimum wage. See Section V.2 and Appendix IV for details.

Figure 23: Full-Service Restaurants

(a) Average Weekly Wages



(b) Total Employment



Notes: Panel (a) shows the trends of the normalized log of average weekly wages. Panel (b) shows the trends of the normalized log of employment. The Synthetic City of LA is constructed as the weighted average of the outcomes from counties outside of California (that were only exposed to the federal minimum wage) to match the trends before the first increase in the City minimum wage. See Section V.2 and Appendix IV for details.

In addition, for comparability with our event study results, we calculate the wage and employment elasticities for three periods, corresponding to changes in the City minimum wage: the first period covers the first annual minimum wage increase from the third quarter of 2016 through the second quarter of 2017, the second period covers the second annual minimum wage increase from the third quarter of 2017 through the second quarter of 2018, and the third period covers the third annual minimum wage increase from the third quarter of 2018 through the fourth quarter of 2018. Appendix III provides the technical details and equations used to calculate the wage and employment elasticities. These periods differ from those of the event-study (e.g., Table 2) as we are using the federal minimum wage as the comparison baseline, which does not change during our study-period. For example, we find that for food service industry workers a one percent increase in the minimum wage raised their average weekly wages by 0.74 of a percent during the first annual increase, by 0.35 percent during the second annual increase, and by 0.29 percent during the third annual increase. Setting aside the first period, the estimates are still relatively noisy and the minimum wage increase is small; these are similar in magnitude to those from the event study estimates shown in Table 2. In contrast, the employment elasticities for food service workers are close to zero and range from -0.01 to 0.066.

VI.4 Discussion of Effects on Other Industries Listed in the Ordinance

In addition to conducting the event-study and synthetic control analysis for the food service industry, limited-service restaurants, and full service restaurants, we also assessed the feasibility of studying the effect of the City minimum wage on workers in other industries of interest as listed on the minimum wage ordinance using our data. For instance, we conduct the analysis for home health care services, nursing and residential care facilities, child day care services, repair and maintenance, personal care services, other personal services, and retail trade. However, we do not detect any positive effects on the average weekly wages of the workers employed in these industries. Since the policy did not have any bite in these industries, we do not further conduct the analysis on employment. As in other studies, it is likely that we do not detect an effect of the minimum wage on earnings for these industries because minimum wage

workers have lower employment shares in these sectors than in the food industry. Hence, the minimum wage there affects fewer workers, such that it is more difficult to detect a statistically reliable impact in data that does not have reliable information on hourly wages.

VI.5 Impacts on Service Charges, Commissions, and Guaranteed Gratuities

In order to assess the impact of the minimum wage ordinance on guaranteed gratuities or service charges, we searched for key words using Grubhub online menus.[33] We searched for the following words in the data: service charges, commissions, tips, guaranteed gratuities, additional fee, service fee, convenience charge, and convenience fee. Despite casting a relatively wide net, we did not find any key words in the data that reflect guaranteed gratuities or service charges, indicating that these restaurants did not mention these fees or charges on their online Grubhub menus. While suggestive, we cannot conclusively determine whether service charges increased after the minimum wage increased based on this evidence, since online service prices may not be affected by change in conventions regarding service charges and tips as much as prices charged for table service.

In terms of qualitative research, various industry associations have noticed that restaurants have added service charges in states where the minimum wage has increased such as Arizona, California, and Colorado.[34] Traditionally, most research has focused on minimum wages' effects on employment because relatively few restaurants use service charges.[35] Studies put the number at less than 5 percent for some metropolitan areas, but this number may be different in urban Los Angeles. The practice of imposing service charges varies across establishments as restaurants react to the new minimum wages with different strategies.[36] While restaurant owners or management may want to use service charges to pass the cost onto consumers, in so far as this reduces tips it might dissuade potential employees. Service charges

[33] Grubhub is a mobile food ordering and delivery marketplace. See https://www.grubhub.com/

[34] Taylor, Kate. "Some diners are furious about a pricing strategy that is becoming the 'new norm' at restaurants in states that raised the minimum wage." Business Insider. 9 Mar 2017.

[35] Wessels, Walter J. "Minimum wages and tipped servers." *Economic Inquiry* 35.2 (1997): 334-349 & Katz, Lawrence F., Krueger, Alan. "The Effect of the Minimum Wage on the Fast Food Industry." NBER Working Paper n. 3997 (1992).

[36] Brown, Donna, and Alf Crossman. "Employer Strategies in the face of a national minimum wage: an analysis of the hotel sector." *Industrial Relations Journal* 31.2 (2000) 204-219.

appear also largely unpopular among American consumers.[37]

It is possible that some restaurants in the City may be introducing service charges in response to the minimum wage increases. However, it is also possible that new service charges may for example be a response to a tightening labor market for back-of-house staff.[38] As the labor market has tightened since the end of the last recession, it has been more difficult to fill back-of-house, low-wage positions and adding service charges allows restaurateurs to distribute more wages to staff that do not interact with customers.

Several responses to minimum wage increases other than laying off workers, reducing hours, or imposing service charges have been studied in the prior literature. This includes, among others, reorganization of business costs, in particular a compression of the wage schedule (e.g., Katz and Krueger, 1992); price increases to pass on costs to consumers (e.g., Lemos, 2004; Allegretto and Reich, 2018); replace low-wage workers with higher-wage workers (e.g., Giuliano, 2013); reduce turnover costs or increase productivity (e.g., Wolfers and Zilinsky, 2015); and increase the use of labor saving technologies (e.g., Lordan and Neumark, 2018). It is also important to keep in mind that the literature has not settled whether employers should want to decrease employment. It is well understood that especially larger employment may be induced to increase employment if they hire a disproportionate share of workers in the local labor market. Moreover, it is possible that increases in the purchasing power of low income workers has direct spillover effects on economic activity, reducing or reversing any potential adverse effects on the bottom line. Even in the absence of such effects, businesses in general and restaurants in particular that do feel the need to adjust to increasing labor costs have various ways to respond to minimum wage increases other than employment reduction or service charges.

VI.6 Discussion of Findings and Potential Limitations

Overall, we find that the minimum wage ordinance raised the earnings of all food service, limited-service restaurant, and full-service restaurant workers. In line with a growing empirical

[37]Even, William, and David MacPherson. "The Effect of the Tipped Minimum Wage on Employees in the U.S. Restaurant Industry." Southern Economic Journal 80.3 (2014): 633-655.

[38]Rodell, Besha. "Are Service Charges the Savior of the Restaurant Industry, or Legal Wage Theft?" LA Weely. 24 Jan 2017.

academic literature, we find clear increases in the earnings of affected workers, but do not detect any negative employment effects as measured by levels. One caveat to this finding is that our data does not allow us to measure the effect on hours worked or on all covered minimum wage workers due to the lack of hourly data in the State. It could be the case that employers mitigate the higher labor costs by reducing the number of hours worked instead of laying off employees, leaving the total number employed unchanged. However, the recent literature does not find that a higher minimum wage leads to reductions in the number of hours worked (Cengiz et al., 2019). This challenge could be addressed if the State started to collect data on the number of hours worked by employees, for example as part of their data collection efforts to administer the unemployment insurance program.[39] Similarly, due to data limitations, we cannot estimate the effect for different demographic or education groups or study the effect on household income. Another potential shortcoming of this study is that we cannot measure substitution effects, where low-wage workers may get replaced by higher-wage workers within the same industry. Notwithstanding these limitations, we conclude that the minimum wage ordinance was successful at increasing the earnings of low-wage workers in the food industry, while not impacting their employment prospects.

VII Policy Analysis

VII.1 The City's Minimum Wage Increase Schedule & Comparison to Other Local Ordinances

Shortly after the city approved the higher minimum wage, the Los Angeles County Board of Supervisors voted on July 21st, 2015 to also increase the County minimum wage to $15 per hour by 2020. The County's higher minimum wage only covers unincorporated areas of the County, and follows the same schedule as the City minimum wage.[40] Following the City and County actions, on January 12, 2016, the Santa Monica City Council approved a higher

[39] For example, the State of Washington collects data on the number of hours worked as part of the UI program. See https://esd.wa.gov/labormarketinfo/median-hourly-wages

[40] For more information on the unincorporated areas in LA county, see https://www.lacounty.gov/government/about-la-county/unincorporated-areas/

minimum wage to $15 by 2020.[41]

Then, on March 14, 2016, Pasadena also approved a higher minimum wage.[42] Unlike the other local minimum wage laws, Pasadena passed an initial increase to $13.25 by 2018 with pending approval to $15 by 2020 contingent on the findings from an evaluation report. After receiving two evaluation reports in February 2019, Pasadena decided to move forward with the full increase to $15 by 2020.[43] Soon after, on March 28, 2016, the Malibu city council also passed a higher minimum wage to $15 by 2020. The local higher minimum wages approved throughout the greater Los Angeles area follow nearly identical schedules as the City as shown on the table below.

[41] See https://www.latimes.com/local/lanow/la-me-ln-santa-monica-minimum-wage-20160112-story.html

[42] See https://ww5.cityofpasadena.net/planning/wp-content/uploads/sites/56/2017/07/Minimum-Wage-Fact-Sheet.pdf

[43] See https://ww5.cityofpasadena.net/planning/code-compliance/minimum-wage-ordinance/

City of Los Angeles[1]

Date	1-25 Employees	26+ Employees	All hotels
7/1/2016	State Min.	$10.50	n/a
7/1/2017	$10.50	$12.00	n/a
7/1/2018	$12.00	$13.25	n/a
7/1/2019	$13.25	$14.25	n/a
7/1/2020	$14.25	$15.00	n/a
7/1/2021	$15.00	CPI Indexed	n/a

County of Los Angeles[2]

Date	1-25 Employees	26+ Employees	All hotels
7/1/2016	State Min.	$10.50	n/a
7/1/2017	$10.50	$12.00	n/a
7/1/2018	$12.00	$13.25	n/a
7/1/2019	$13.25	$14.25	n/a
7/1/2020	$14.25	$15.00	n/a
7/1/2021	$15.00	CPI Indexed	n/a

City of Pasadena[3]

Date	1-25 Employees	26+ Employees	All hotels
7/1/2016	State Min.	$10.50	n/a
7/1/2017	$10.50	$12.00	n/a
7/1/2018	$12.00	$13.25	n/a
7/1/2019	$13.25	$14.25	n/a
7/1/2020	$14.25	$15.00	n/a
7/1/2021	$15.00	CPI Indexed	n/a

City of Santa Monica[4]

Date	1-25 Employees	26+ Employees	All hotels
7/1/2016	$10.00	$10.50	$13.25
7/1/2017	$10.50	$12.00	$15.66
7/1/2018	$12.00	$13.25	Hotel Wage CPI
7/1/2019	$13.25	$14.25	CPI
7/1/2020	$14.25	$15.00	CPI

City of Malibu[5]

Date	1-25 Employees	26+ Employees	All hotels
7/1/2016	State Min.	$10.50	n/a
7/1/2017	$10.50	$12.00	n/a
7/1/2018	$12.00	$13.25	n/a
7/1/2019	$13.25	$14.25	n/a
7/1/2020	$14.25	$15.00	n/a
7/1/2021	$15.00	CPI Indexed	n/a

State of Califonia[6]

Date	1-25 Employees	26+ Employees	All hotels
1/1/2017	$10.00	$10.50	n/a
1/1/2018	$10.50	$11.00	n/a
1/1/2019	$11.00	$12.00	n/a
1/1/2020	$12.00	$13.00	n/a
1/1/2021	$13.00	$14.00	n/a
1/1/2022	$14.00	$15.00	n/a
1/1/2023	$15.00		n/a

Notes & sources:
[1] https://bca.lacity.org/eeo_hotel
[2] https://www.lacounty.gov/minimum-wage/
[3] https://ww5.cityofpasadena.net/planning/code-compliance/minimum-wage-ordinance/
[4] https://beta.smgov.net/strategic-goals/inclusive-diverse-community/minimum-wage-ordinance
[5] https://www.malibucity.org/793/Minimum-Wage
[6] https://www.dir.ca.gov/dlse/faq_minimumwage.htm

The City led a domino effect of implementing higher minimum wages across the greater Los Angeles area. In addition, as discussed in Section II.1, the entire State also raised the state-level minimum wage. Due to the various local minimum wage increases and the higher state minimum wage, the difference in minimum wage between the City and neighboring areas is substantially smaller to the status quo prevailing during the time when the City's minimum

wage ordinance was passed. Hence, there is less concern of that the minimum wage raises the incidence of business relocations from the City as businesses would need to move well outside City boundaries to reduce their labor costs. This is may be particularly true of businesses such as restaurants that typically have a local clientele that may not be easily moved.

We calculated that a business could have saved about $13,500 (measured in 2016 dollars) in labor costs for each full-time minimum wage worker from 2016, when the minimum wage ordinance came into effect to 2022, when the difference between the City and State minimum wages decreases.[44] Taking into account the cost of relocation, the uncertainty of reestablishing a clientele in a new location, and the overall chance of remaining in business it is unlikely that many businesses found it profitable to move. The incentive to migrate is likely to have been further mitigated by some ability of businesses to pass through some of the higher costs to their customers in terms of higher prices. In addition, theory predicts that reductions in profits of local businesses should be partly absorbed by falling commercial rents. In any event, our results suggest that in case of any outward mobility, there must have been as many businesses eager to open inside the City during the same period.

VII.2 Minimum Wage Enforcement

The Office of Wage Standards (OWS) is the designated agency tasked with implementing and enforcing the minimum wage, paid sick leave, and wage theft program of the minimum wage ordinance established by the City Council ordinance in June 2015. The OWS ensures that employers in the City comply with the appropriate minimum wage rates specified by the ordinance through community outreach and investigation of potential wage theft violations.

The OWS consists of three units tasked with effectively implementing and enforcing the MWO. The information and outreach section focuses efforts on informing businesses and employees about minimum wage and paid sick leave requirements and administering on-call personal services contracts for community outreach and other specialized services. The Investigation and Compliance Section investigates complaints of wage underpayment and sick time

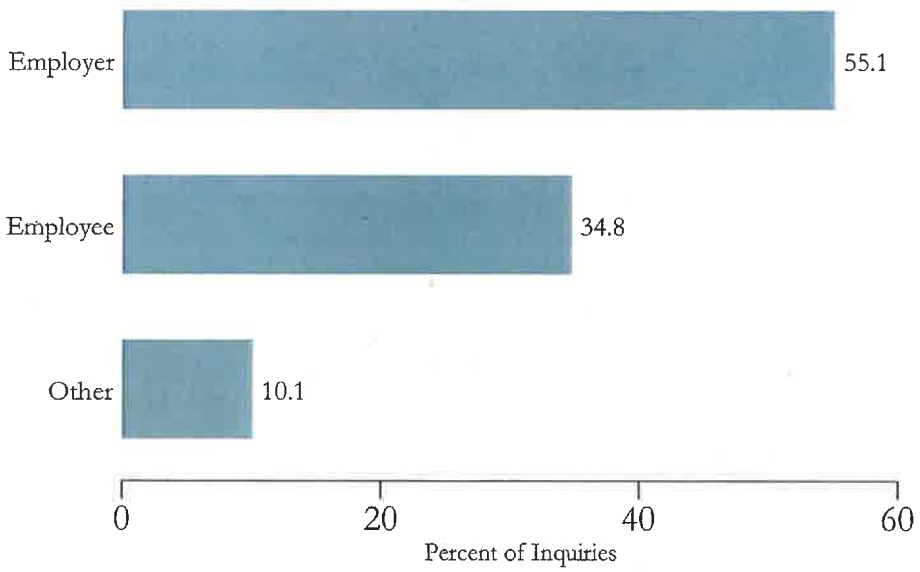
[44] We assume a 40-hour work week for 50 weeks per year. The number is obtained by multiplying full-time hours every half year (25 weeks) times the differences in minimum wages shown in Figure 1, and then calculating the present dollar value as of 2016 of the amounts using a discount rate of 5%.

violations and issues findings and assessments of wage and sick time restitution and penalties where applicable. The Implementation and Enforcement Section handles collections, hearings, and other legal matters. As of January 22, 2017, the OWS was also tasked with enforcing the Los Angeles Fair Chance Initiative for Hiring (Ban the Box) law.[45] Individuals wishing to submit complaints to the OWS concerning potential violations are able to use the anonymous online complaint form, visit in person to submit a confidential complaint, or may call in to the OWS office.

VII.2.1 Inquiries

First, we examine who submits inquiries to the OWS. Figure 24 shows the breakdown of inquirer types. We find that 55% come from employers, 35% come from employees, and the remaining 10% come from other sources.

Figure 24: Inquirer Types



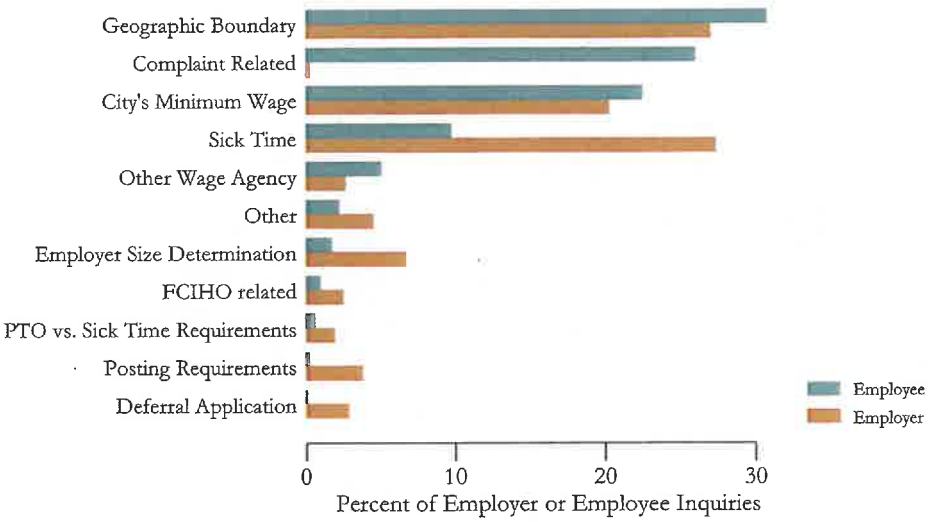
Notes & Sources: Based on the full sample of 6,783 from data on inquiries collected by the City's Office of Wage Standards.

Figure 25 shows the distribution of inquiry types of employers versus employees. Note

[45] See: https://www.bca.lacity.org/wage-standards

that five of the original case types were related to the Fair Chance Initiative for Hiring Ordinance (FCIHO), and have been re-grouped into a single category. In addition, all other types with less than 50 inquiries have been included in the "Other" category and were mostly unrelated to the minimum wage.[46] We see that most inquiries (67%) are related to geographic boundaries and the City's minimum wage law. We can conclude that employers are much more likely than employees to inquire about sick time, while employees are much more likely to inquire about complaints and the complaint process.

Figure 25: Inquiry Types of Employers vs. Inquiry Types of Employees



Notes & Sources: Based on inquiry data collected by the City's Office of Wage Standards. PTO refers to Personal Time Off and FCIHO refers to the Fair Chance Initiative for Hiring Ordinance.

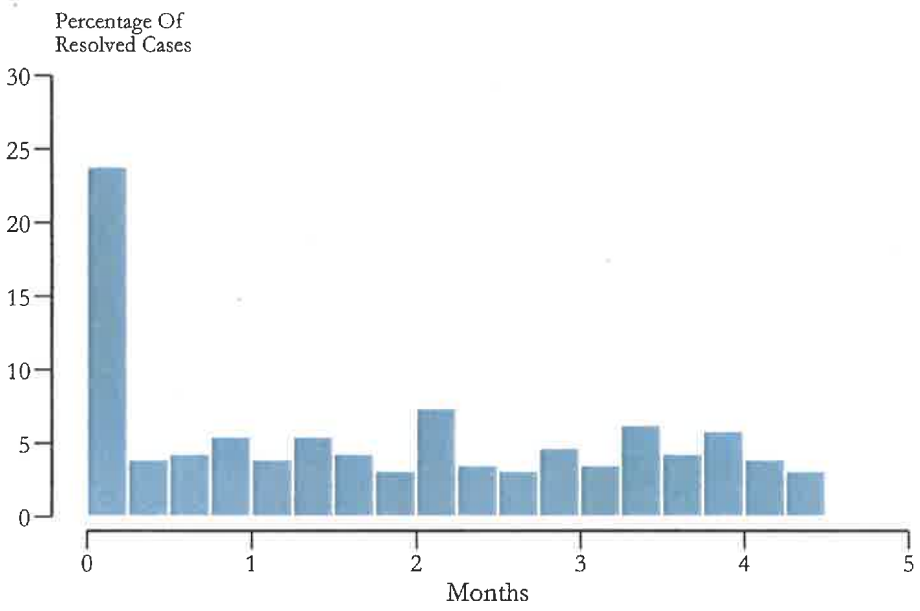
VII.2.2 Complaints

We also conduct analysis of the complaints submitted to the OWS. When analyzing the 265 unique cases that have closed, we find that almost one quarter of cases are closed within about a week, but some cases are open for over 4 months. The distribution of case resolution

[46] 28 of the 417 Inquiries in the "Other" category were related to the Small Business Worksheet, and 49 were related to the "Determination of more generous 187.07" (To request a determination from the OWS of a compensated time off policy that may be more generous than is required under the MWO, businesses must complete a MWO PSL Determination Request Form)

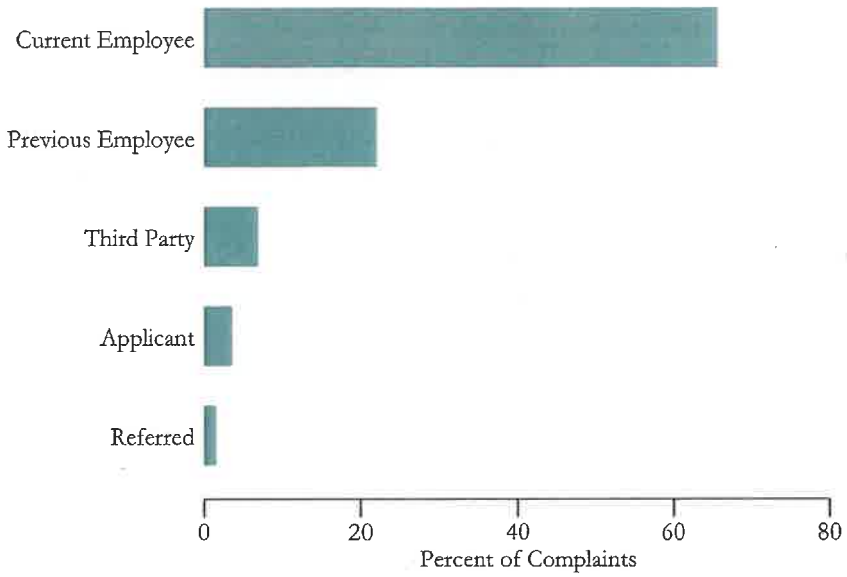
durations is shown in Figure 26. The data allows us to examine who is submitting complaints. Figure 27 shows that 66% of the sample of closed complaints are filed by current employees, and 22% are filed by previous employees. Of the full sample of 500 complaints filed, which includes complaints open as of April 2019, we see that 69% were related to Minimum Wage underpayment, and 21% were related to Sick Leave violations as shown by Figure 28.

Figure 26: Duration of Resolved Cases



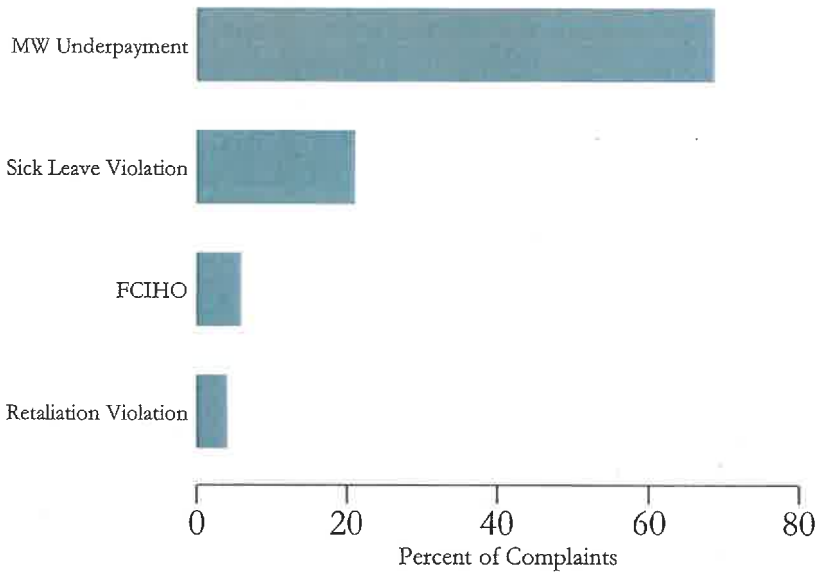
Notes & Sources: Based on the sample of 256 closed cases from data on complaints collected by the City's Office of Wage Standards. The sample excludes repeat complaints against the same employer.

Figure 27: Complainant Types



Notes & Sources: Based on the sample of 385 complaints with documented complainant type from the data collected by the City's Office of Wage Standards. The sample excludes repeat complaints against the same employer.

Figure 28: Complaint Types

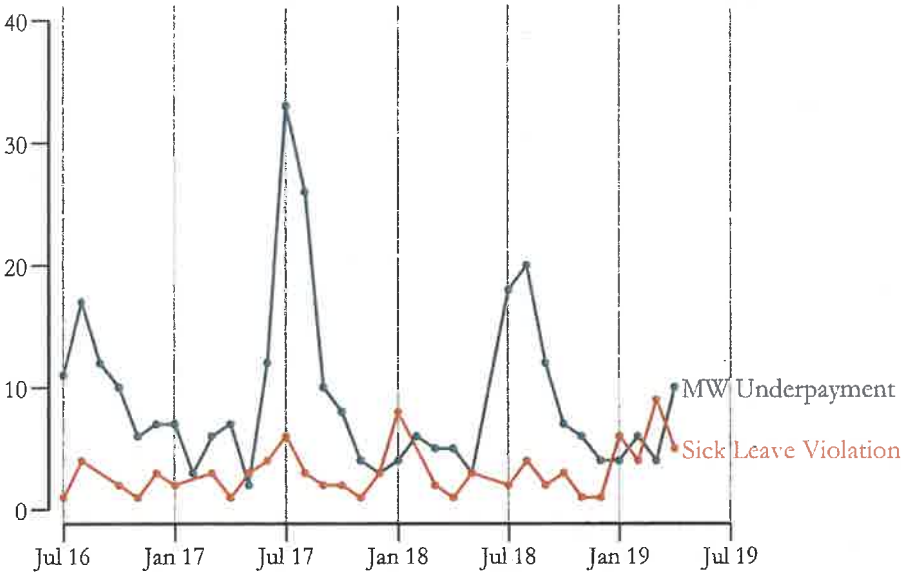


Notes & Sources: Based on the full sample of 435 (non-duplicate) cases from the complaint data collected by the City's Office of Wage Standards. The sample excludes repeat complaints against the same employer.

In addition, Figure 29 shows the number of monthly minimum wage and sick leave violation complaints received by OWS.[47] Figure 30 shows the percent of complaints by industry. We find that Professions and Occupations leads the way with nearly 30% of complaints, followed by Restaurants and Retail Trade. The Garment Industry is lower on the list, but this is likely due to the relative size of the industry. We can further refine this by separating the two largest complaint types, minimum wage and sick leave violations, and then compare the fraction of complaints by industry again, as shown in Figure 31. Once again, professions and occupations along with restaurants exhibit the highest share of both minimum wage and sick leave complaints compared to other industries.

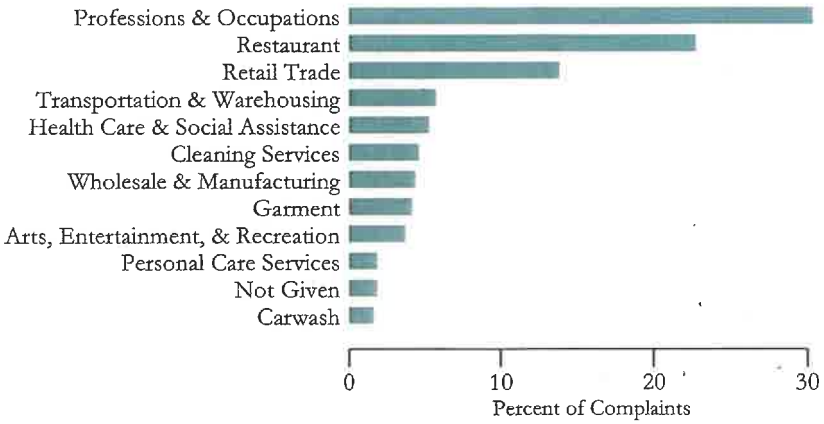
[47]Not shown are complaints regarding FCIHO or Retaliation Violations

Figure 29: Monthly Complaints by Type



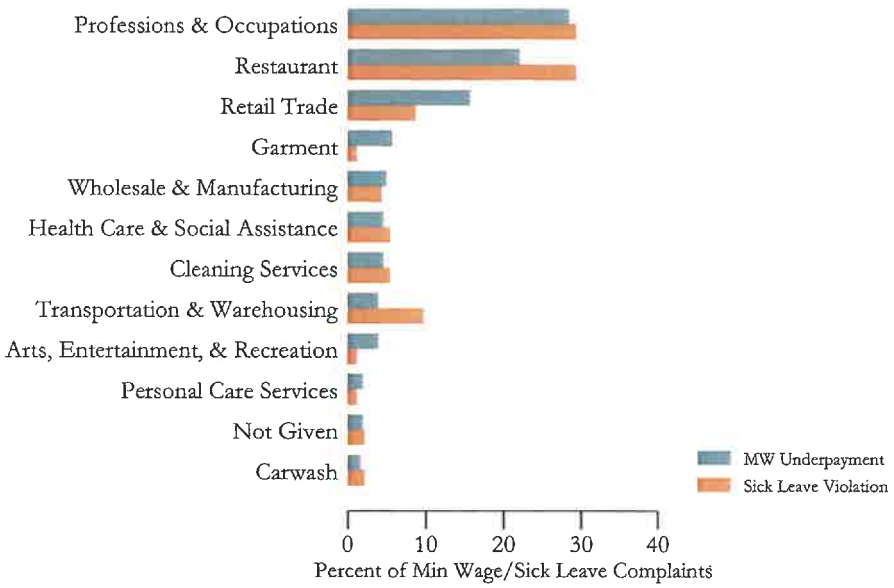
Notes & Sources: Based on the full sample of 435 (non-duplicate) cases from the complaint data collected by the City's Office of Wage Standards. The sample excludes repeat complaints against the same employer.

Figure 30: Share of Complaints, by Industry



Notes & Sources: Based on the complaint data collected by the City's Office of Wage Standards.

Figure 31: Industry Types: Minimum Wage vs. Sick Leave Complaints



Notes & Sources: Based on the full sample of 435 (non-duplicate) cases from the complaint data collected by the City's Office of Wage Standards.

VII.3 Looking Ahead

The current study focuses on assessing the impact of the minimum wage ordinance up to the fourth quarter of 2018. Consequently, we are only measuring the impact of the first three annual increases on July 1st of 2016, 2017, and 2018 based on the schedule for large firms. Due to the lag in data availability, we are not able to examine the impact of the annual increase on July 1st, 2019. Under this study, we evaluated the effect of the three largest annual increases in the City minimum wage, where it increased by $0.50 in 2016, $1.50 in 2017, $1.25 in 2018. The City minimum wage increased by $1.00 in 2019 and will rise by $0.75 in 2020. In addition, difference between the State and City minimum wages is decreasing over time. Since we did not detect any negative employment effects during the biggest relative annual minimum wage increases, we do not anticipate any during the last two annual increases. A future study could assess the effect from the increases on July 1st, 2019 and July 1st, 2020. Since small firms are eligible for a one-year deferral, the last annual increase will take place on July 1st, 2021.

VIII Conclusion

In conclusion, the study finds that the minimum wage ordinance in the City passed on May 19th, 2015 raised the earnings of low-wage workers in the food industry. The first three annual increases in the minimum wage successfully increased the weekly wages of food service workers, especially for limited-service restaurant workers. The policy effectively raised the earnings of the lowest paid workers in the City. In line with much of the academic minimum wage literature, we find that the higher minimum wage had no negative employment effects for low-wage food service workers.

While the current study measures the policy's impact on earnings and employment levels, due to data limitations, we do not measure the impact on the number of hours worked or any labor substitution effects. Notwithstanding these limitations, we estimate that the City's higher minimum wage had a statistically significant and positive earnings effect relative to the state and federal minimum wage. In addition, we do not detect any negative impacts on employment levels using two rigorous causal methods. The findings from this study imply that minimum wages above $10 per hour in an urban setting positively impact the earnings of low-wage food service workers, without negatively impacting their employment levels.

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X Appendix I: Overview of Event-Study Methodology

The event-study identification strategy of this report relies on the variation in the minimum wage of the City of LA relative to the State of California minimum wage rate. We estimate the causal effect of the policy via the following regression:

$$Y_{it} = \sum_{s=-25}^{10} 1(t - t^0 = s)\gamma_s + X'_{it}\beta + \mu_i + \delta_t + u_{it} \tag{1}$$

The unit of analysis i corresponds to a PUMA. The index t measures the calendar time expressed in quarters and the index s counts the relative time with respect to the second quarter of 2016 (t^0) or moment 0. That is, the quarter before the implementation of the policy under analysis, as it is common practice in the implementation of event studies (see Goodman-Bacon (2019) and Schmidheiny and Siegloch (2019)).

The outcome variable Y_{it} corresponds to either the log of average weekly wages or the log of employment for PUMA i in quarter t. The regressions include a set of control variables that have been widely used in the minimum wage literature: log total employment (at the PUMA level) and log of population. [48] PUMA fixed effects (μ_i) control for variation in outcomes across PUMAs that is constant over time. Time fixed effects (δ_t) control for variation in outcomes over time that is common across all PUMAs. Standard errors are clustered at the PUMA level, this permits both error heteroskedasticity and flexible error correlation within clusters, a reasonable assumption in this application.

We estimate equation (1) using a weighted-OLS, this specification allows us to put more weight on larger PUMAs, rather than putting equal weight on PUMAs that are different sizes. The rationale for this correction is relatively standard: if there were no differences in minimum wage effects across PUMAs, i.e. no heterogenous effects, the weighting does not matter. However, under the assumption of heterogeneity, weighting yields results closer to the 'true' average effect for the population.

[48] For example, Totty (2015) controls for the county-quarter total private sector employment and the county population in his analysis of the impact of higher minimum wage at the national level on the food service industry.

X.1 Computation of Effect Sizes and Elasticities

The estimation of effect sizes and elasticities relies on a modified version of our main event-study design. We estimate the following event-study design specification:

$$Y_{it} = \sum_{s=-25}^{0} 1(t - t^0 = s)\gamma_s + \sum_{s=1}^{5} \lambda_s 1\{\text{JUMP}_s = 1\} + X_{it}'\beta + \mu_i + \delta_t + u_{it} \tag{2}$$

The definition goes as in the previous section, but now we grouped together the post dummies based on the observed change in the minimum wage. We define these binned post dummies as "jumps". The variable $JUMP_1$ takes the value of one for the 3rd and 4th quarter of 2016. The variable $JUMP_2$ takes the value of one for the 1st and 2nd quarter of 2017. Finally, $JUMP_5$ takes the value of one for the 3rd and 4th quarter of 2018.

Each λ_s measures the change in the outcome of interest in semester s, relative to time 0. Consider first the case when the outcome of interest is defined in log terms, e.g. log of employment, the λ_s coefficient measures the log change in the outcome of interest. The ratio between the log change in the outcome of interest and the log change in the minimum wage rate, expressed also relative to time 0, provides an estimate of the elasticity:

$$\epsilon_s = \frac{\lambda_s}{\text{Percentage change in MW}_s} \tag{3}$$

If the outcome of interest is expressed in dollar amounts, the λ_s coefficient measures the amount change in the outcome of interest. The ratio between these change and the dollar change in the minimum wage rate, expressed also relative to time 0, provided an estimate of the effect size ε:

$$\varepsilon_s = \frac{\lambda_s}{\text{Dollar change in MW}_s} \tag{4}$$

X.2 Comparison with Nadler et al. (2019)

The estimates in Nadler et al. (2019) table 3 are obtained using an IV strategy as follows, these are equations 7 and 8 (pages 23 and 24). The first stage is estimated using the following regression:

$$\text{Log MW}_{it} = (t - t^0 + 1)\theta^{pre\ trend} + 1(t \geq t^0)\theta^{jump} + 1(t \geq t^0)(t - t^0)\theta^{phasein} + X'_{it}\beta + \mu_i + \delta_t + u_{it}$$

The second stage is estimated using the following regression:

$$\text{Y}_{it} = \epsilon ln(\hat{MW})_{it} + (t - t^0 + 1)\varphi^{pre\ trend} + X'_{it}\beta + \mu_i + \delta_t + u_{it}$$

Where $ln(\hat{MW})_{it}$ is the log minimum wage predicted from the first stage model, and ϵ is the elasticity of the outcome with respect to the minimum wage. Equivalently, ϵ can be estimated as the ratio between the coefficient of interest of the fist stage θ^{jump} and the coefficient γ from the reduced from regression:

$$\text{Y}_{it} = (t - t^0 + 1)\theta^{pre\ trend} + 1(t \geq t^0)\gamma + 1(t \geq t^0)(t - t^0)\theta^{phasein} + X'_{it}\beta + \mu_i + \delta_t + u_{it}$$

Since the argument followed by Nadler et al. (2019) is that the IV strategy leverages the variation in the minimum wage over time recovered by the event study, the estimated elasticities are:

$$\epsilon = \frac{\gamma}{\theta^{jump}}$$

This is equivalent to the procedure we implement in this report, with the caveat that we are doing all the estimations non-parametrically. Put in another way, we estimate the γ coefficient in Nadler et al. (2019) by adding one dummy variable for each post period (λ_s coeffients in equation 2) and then dividing by the corresponding jump in the minimum wage.

XI Appendix II: Event-Study Supplemental Findings

The following maps illustrate the PUMAs used for each of the three alternative control groups. Local 0 consists on control group PUMAs within LA county that were only exposed to the state-level minimum wage as shown by Figure 32. In addition, local 2 encompasses control group PUMAs outside of LA county but in surrounding counties only exposed to the state-level minimum wage as illustrated by Figure 33. At last, the statewide control group consists of PUMAs from across the state of California only exposed to the state-level minimum wage as shown by Figure 34.

Figure 32: Map of Treated & Local 0 Control Group PUMAs

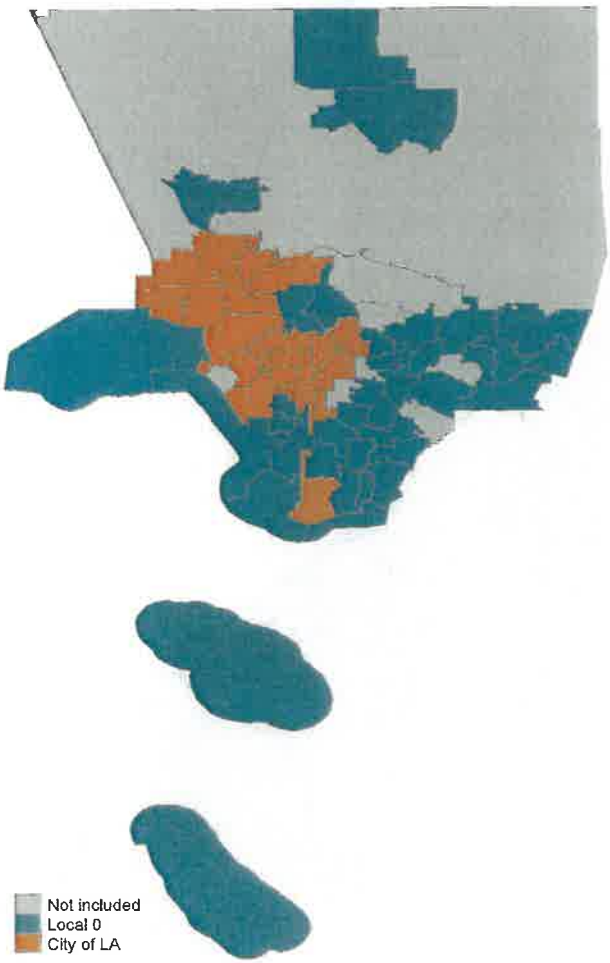


Figure 33: Map of Treated & Local 2 Control Group PUMAs

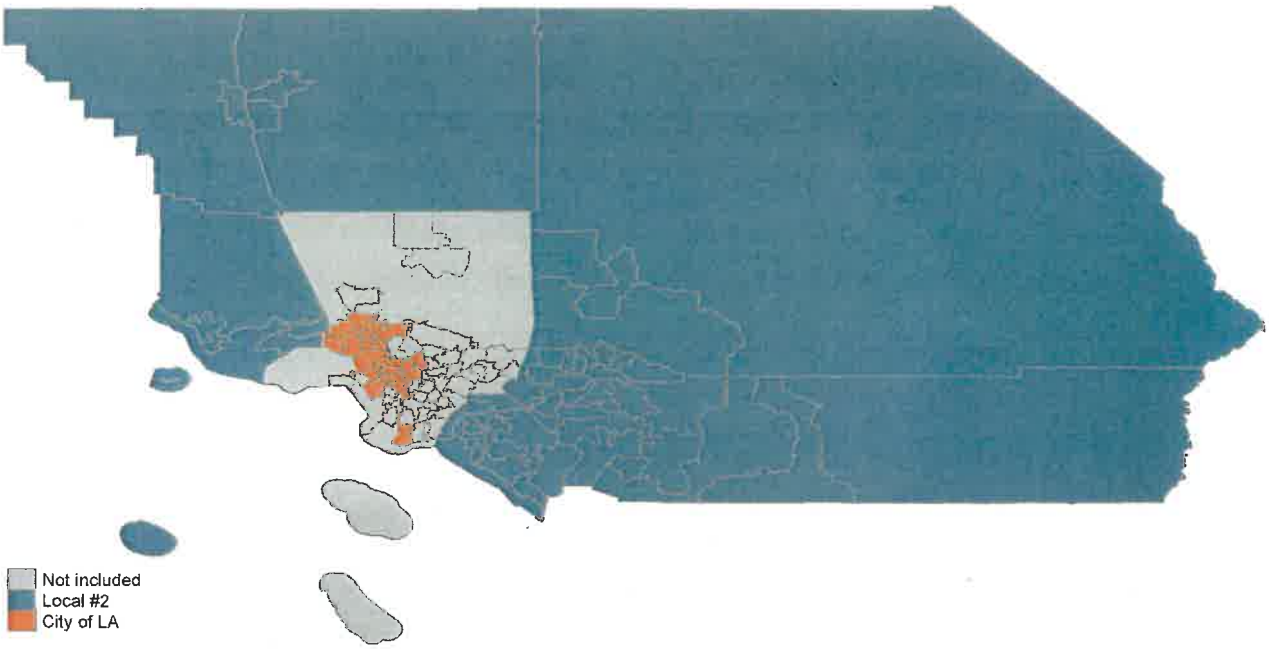
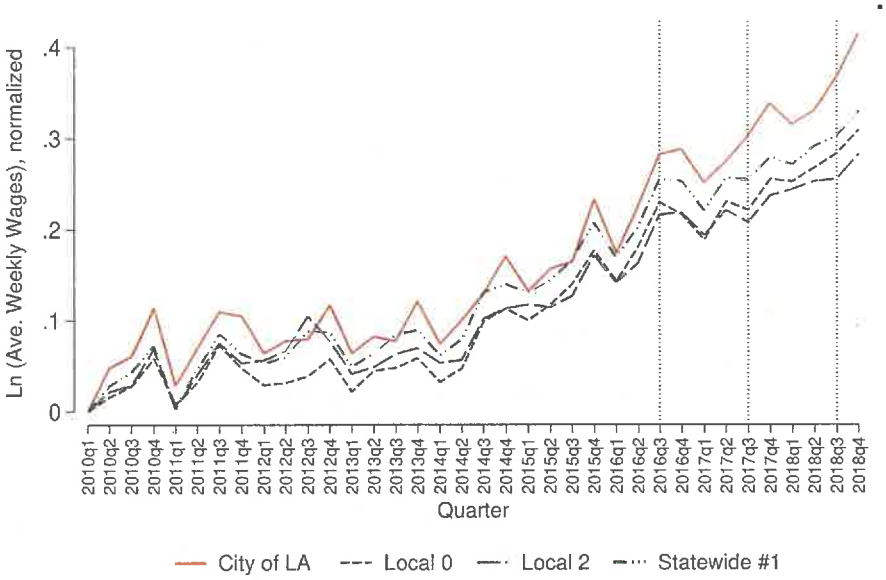


Figure 34: Map of Treated & Statewide Control Group PUMAs

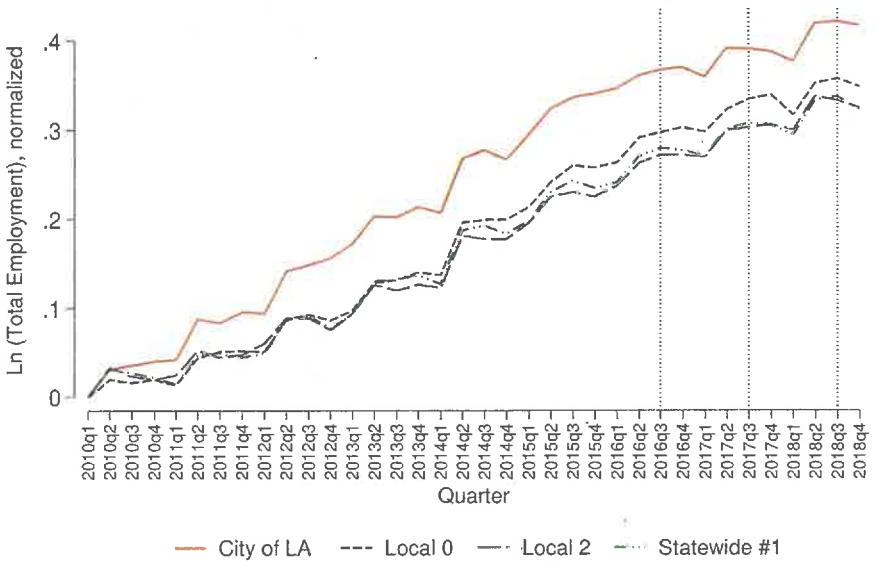
XI.1 Outcome Variable Trends Using Alternative Control Groups

Figure 35: Food Services Industry - Evolution of Key Outcomes

(a) Evolution of Log of Avg. Weekly Wages (Normalized)



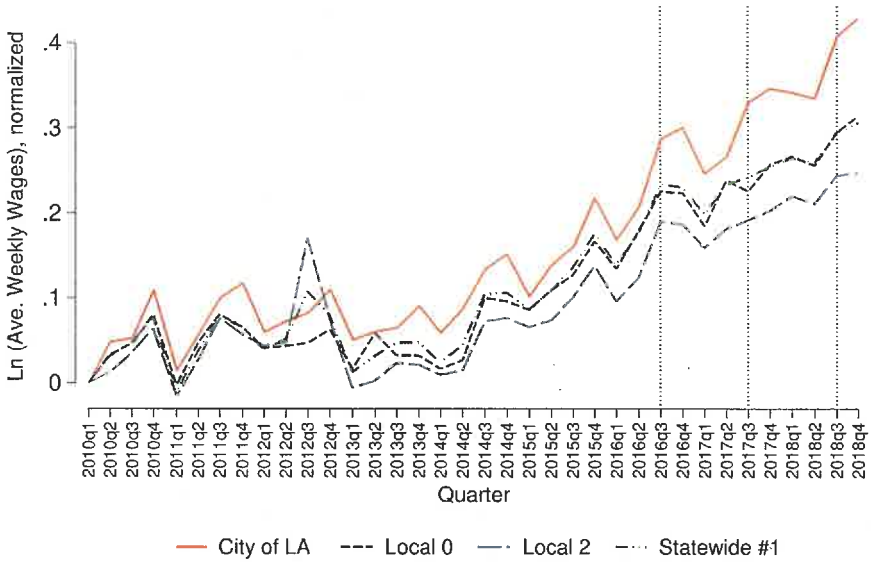
(b) Evolution of Log of Employment (Normalized)



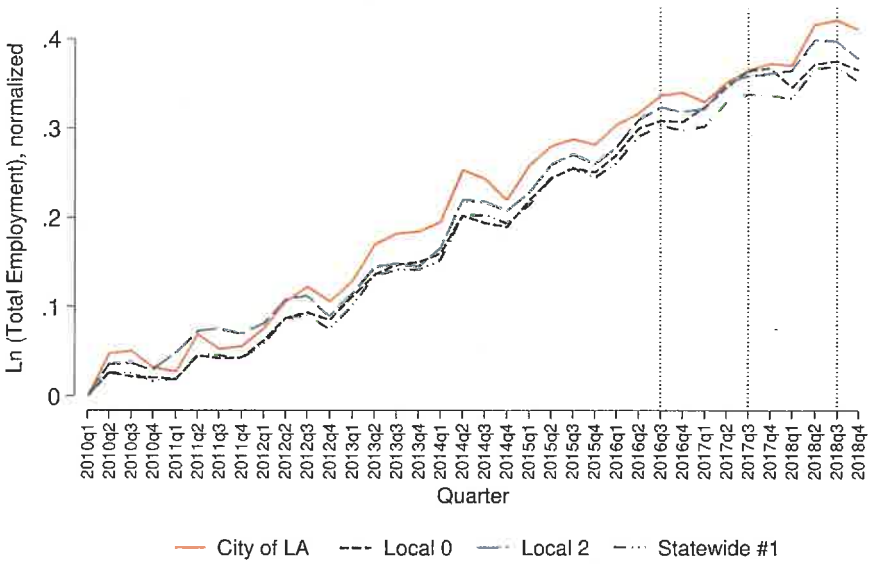
Notes: This figure shows the evolution of average weekly wages (panel a) and employment (panel b) in the City of Los Angeles and control groups "Local 0, 2, and Statewide 1". The variable of interest is expressed in log terms and normalized subtracting the value of the variable in the first quarter of 2010. Average weekly wages is computed following the BLS definition.

Figure 36: Limited-Service Restaurants - Evolution of Key Outcomes

(a) Evolution of Log of Avg. Weekly Wages (Normalized)



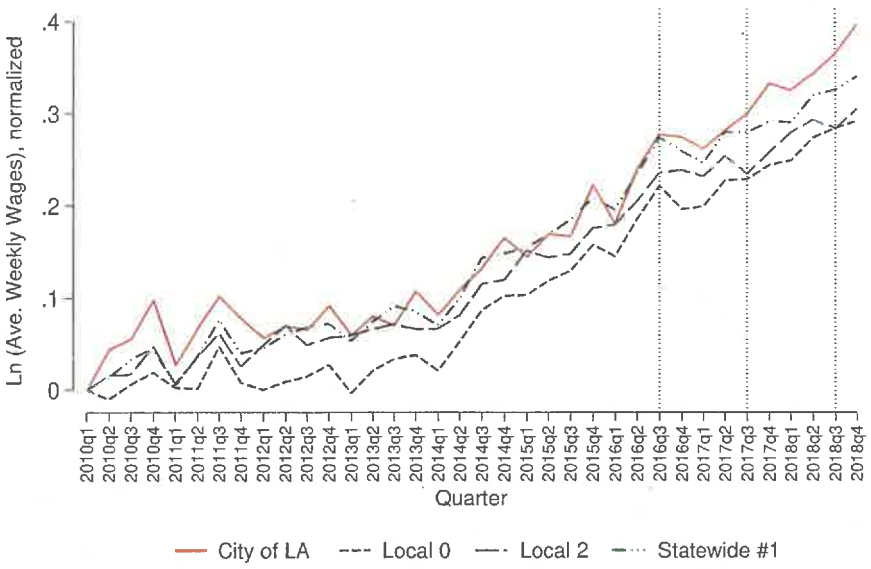
(b) Evolution of Log of Employment (Normalized)



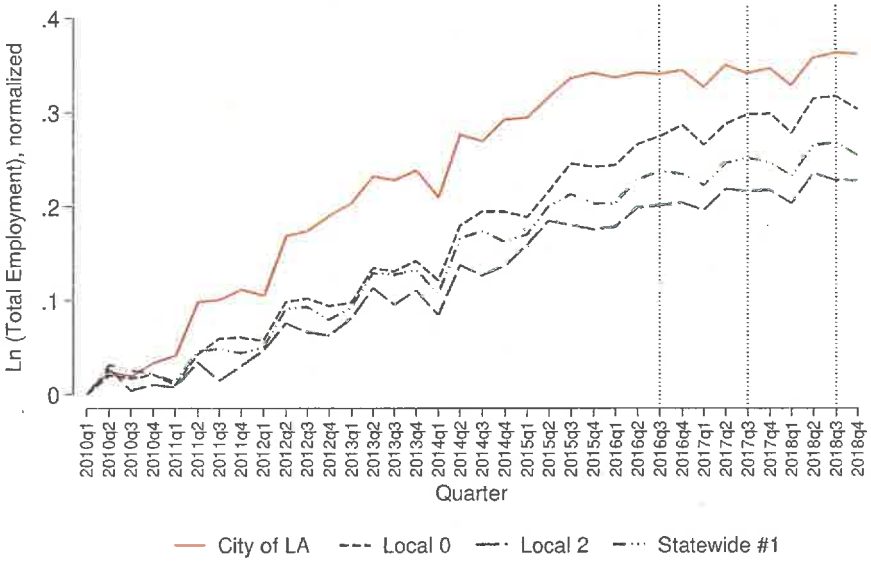
Notes: This figure shows the evolution of average weekly wages (panel a) and employment (panel b) in the City of Los Angeles and control groups "Local 0, 2, and Statewide 1". The variable of interest is expressed in log terms and normalized subtracting the value of the variable in the first quarter of 2010. Average weekly wages is computed following the BLS definition.

Figure 37: Full-Service Restaurants - Evolution of Key Outcomes

(a) Evolution of Log of Avg. Weekly Wages (Normalized)



(b) Evolution of Log of Employment (Normalized)

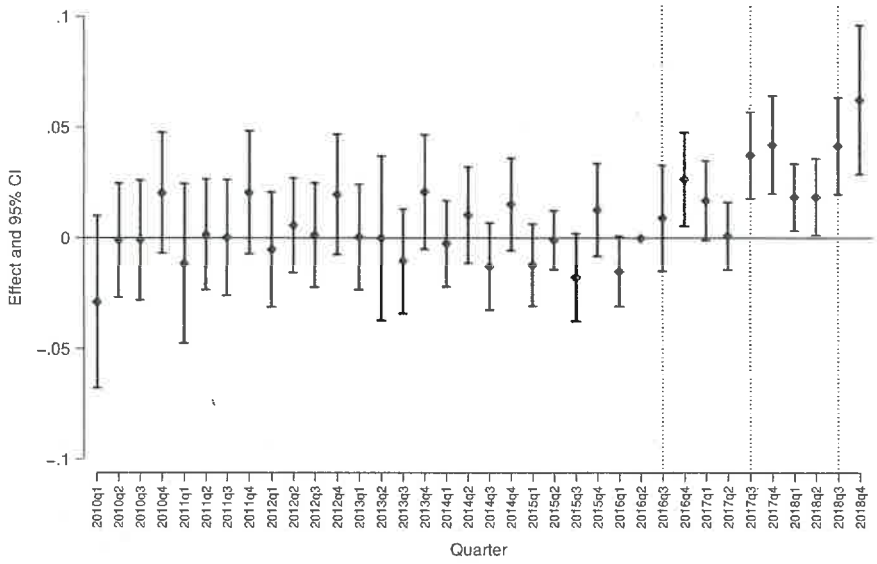


Notes: This figure shows the evolution of average weekly wages (panel a) and employment (panel b) in the City of Los Angeles and control groups "Local 0, 2, and Statewide 1". The variable of interest is expressed in log terms and normalized subtracting the value of the variable in the first quarter of 2010. Average weekly wages is computed following the BLS definition.

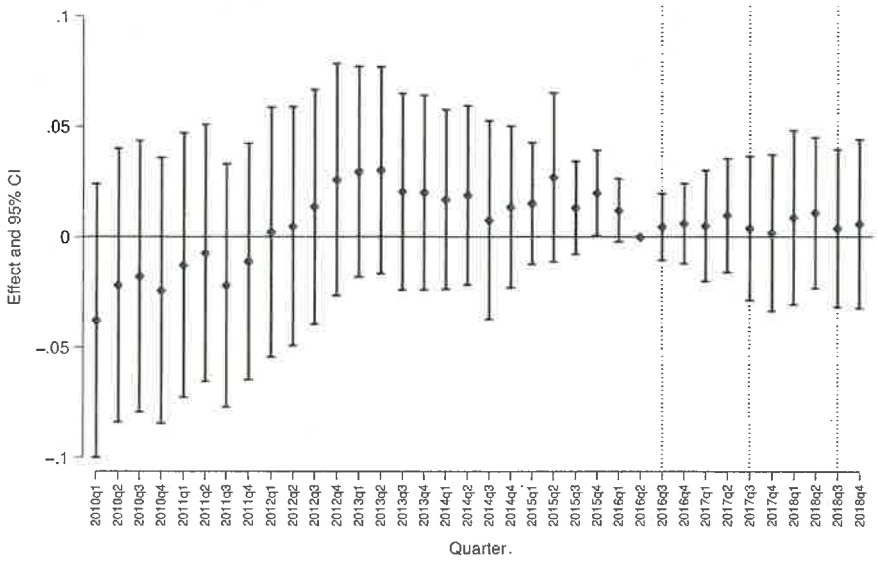
XI.1.1 Results for the Local 0 Control Group

Figure 38: Food Services Industry - Estimates of Main Outcomes (Weighted)

(a) Estimates for Log of Avg. Weekly Wages (Normalized)



(b) Estimates for Log of Employment (Normalized)



Notes: This figure shows coefficient estimates and 95 percent confidence intervals from the event study analysis on the log of average weekly wages (panel a) and the log of employment (panel b). The treatment group is composed by PUMAs in the City of Los Angeles and the control group is a collection of PUMAs from LA county only exposed to the state-level minimum wage ("Local 0"). The estimated coefficients represent the percentage change in the outcomes of interest relative to the omitted quarter.

Table 7: Food Services Industry - Point Estimation Post-Policy Period

	(1)	(2)	(3)	(4)
	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
Bin 1 (2016 Q3 - Q4)	0.0177	0.0180**	11.1342**	0.0053
	(0.0129)	(0.0089)	(4.3224)	(0.0076)
Bin 2 (2017 Q1 - Q2)	0.0038	0.0089	6.4160*	0.0073
	(0.0132)	(0.0070)	(3.4994)	(0.0126)
Bin 3 (2017 Q3 - Q4)	0.0233	0.0399***	22.6538***	0.0028
	(0.0175)	(0.0082)	(3.9611)	(0.0165)
Bin 4 (2018 Q1 - Q2)	0.0145	0.0186**	14.2094***	0.0098
	(0.0202)	(0.0077)	(3.4056)	(0.0181)
Bin 5 (20168 Q3 - Q4)	0.0483**	0.0521***	32.9235***	0.0049
	(0.0208)	(0.0129)	(5.9585)	(0.0182)
Adj. R^2	0.9918	0.9628	0.9605	0.9921
Observations	2160	2160	2160	2160

Notes: This table shows coefficient estimates and standard errors (in parenthesis) from the event study analysis. The explanatory variables for the post-policy period are binned in two quarters. The comparison group is a collection of PUMAs from LA county only exposed to the state-level minimum wage ("Local 0"). Estimates presented in columns (1), (2), and (3) are weighted by PUMA-level employment. Estimates presented in column (4) are weighted by PUMA-level population. We use quarterly and PUMA level fixed-effects. The omitted category corresponds to the 2nd quarter of 2016. Standard errors are clustered at the PUMA-level. *** p<0.01, ** p<0.05, * p<0.10

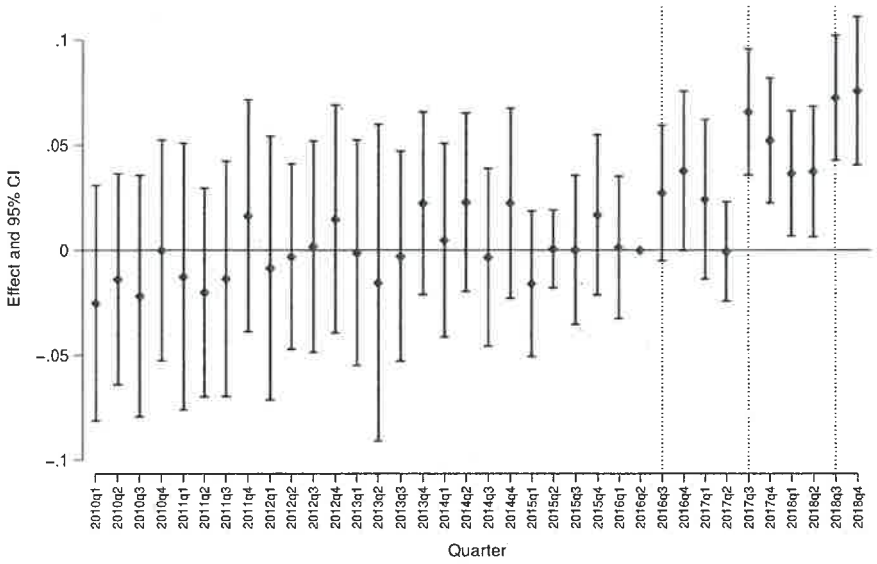
Table 8: Food Services Industry - Estimated Elasticities & Effect Sizes

	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
	(1)	(2)	(3)	(4)
Jump 1 (2016 Q3 - Q4)	0.364	0.369**	22.27**	0.109
	(0.2647)	(0.1834)	(88.5924)	(0.1551)
Jump 3 (2017 Q3 - Q4)	0.175	0.299***	15.10***	0.0211
	(0.1314)	(0.0617)	(29.664)	(0.1236)
Jump 4 (2018 Q1 - Q2)	0.166	0.214**	14.21***	0.113
	(0.2321)	(0.088)	(39.1398)	(0.2075)
Jump 5 (2018 Q3 - Q4)	0.260**	0.280***	14.63***	0.0262
	(0.1118)	(0.0693)	(32.0171)	(0.098)

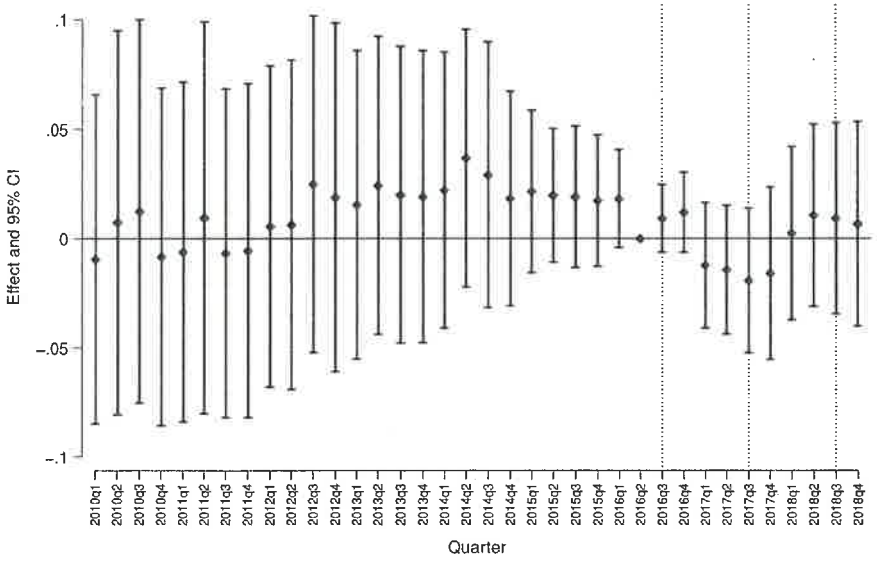
Notes: This table shows the estimated elasticities for total wages (column 1), average weekly wages (column 2) and employment (column 4) and effect sizes for average weekly wages (column 3). The explanatory variables for the post-policy period are binned in two quarters. Note that Jump 2 coefficient is zero by construction and omitted from the table. The comparison group is a collection of PUMAs from LA county only exposed to the state-level minimum wage ("Local 0"). Standard errors are clustered at the PUMA-level.

Figure 39: Limited-Service Restaurants - Estimates of Main Outcomes (Weighted)

(a) Estimates for Log of Avg. Weekly Wages (Normalized)



(b) Estimates for Log of Employment (Normalized)



Notes: This figure shows coefficient estimates and 95 percent confidence intervals from the event study analysis on the log of average weekly wages (panel a) and the log of employment (panel b). The treatment group is composed by PUMAs in the City of Los Angeles and the control group is a collection of PUMAs from LA county only exposed to the state-level minimum wage ("Local 0"). The estimated coefficients represent the percentage change in the outcomes of interest relative to the omitted quarter.

Table 9: Limited-Service Restaurants - Point Estimation Post-Policy Period

	(1)	(2)	(3)	(4)
	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
Bin 1 (2016 Q3 - Q4)	0.0457**	0.0325*	17.2042**	0.0107
	(0.0216)	(0.0167)	(8.0515)	(0.0079)
Bin 2 (2017 Q1 - Q2)	-0.0030	0.0117	6.6600	-0.0132
	(0.0279)	(0.0129)	(6.0340)	(0.0143)
Bin 3 (2017 Q3 - Q4)	0.0428	0.0590***	28.6278***	-0.0175
	(0.0295)	(0.0145)	(7.6130)	(0.0176)
Bin 4 (2018 Q1 - Q2)	0.0561*	0.0370**	20.5164***	0.0066
	(0.0335)	(0.0144)	(7.0882)	(0.0197)
Bin 5 (2018 Q3 - Q4)	0.1019***	0.0741***	38.3264***	0.0080
	(0.0351)	(0.0158)	(7.3324)	(0.0221)
Adj. R^2	0.9688	0.8871	0.8611	0.9634
Observations	2160	2160	2160	2160

Notes: This table shows coefficient estimates and standard errors (in parenthesis) from the event study analysis. The explanatory variables for the post-policy period are binned in two quarters. The comparison group is a collection of PUMAs from LA county only exposed to the state-level minimum wage ("Local 0"). Estimates presented in columns (1), (2), and (3) are weighted by PUMA-level employment. Estimates presented in column (4) are weighted by PUMA-level population. We use quarterly and PUMA level fixed-effects. The omitted category corresponds to the 2nd quarter of 2016. Standard errors are clustered at the PUMA-level. *** p<0.01, ** p<0.05, * p<0.10

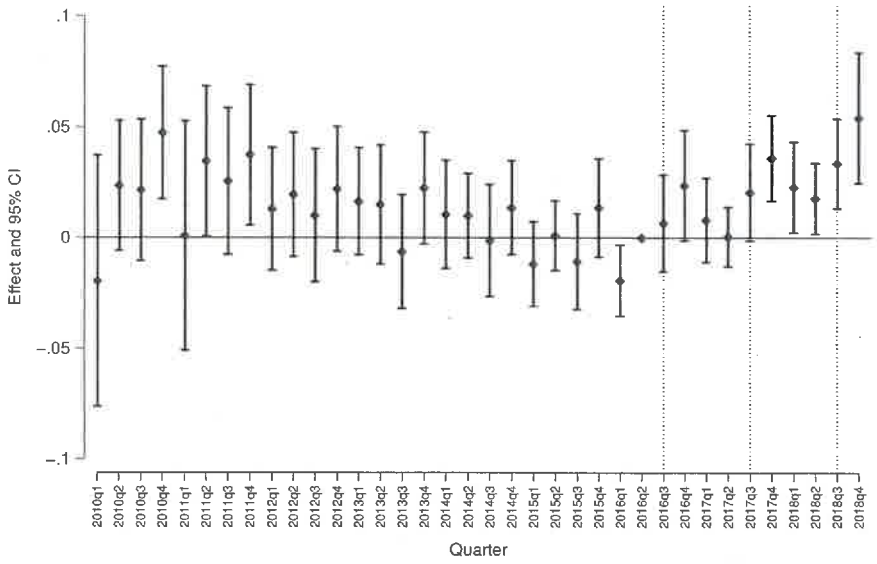
Table 10: Limited-Service Restaurants - Estimated Elasticities & Effect Sizes

	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
	(1)	(2)	(3)	(4)
Jump 1 (2016 Q3 - Q4)	0.937**	0.667*	34.41**	0.219
	(0.4423)	(0.3426)	(165.0238)	(0.1621)
Jump 3 (2017 Q3 - Q4)	0.321	0.442***	19.09***	-0.131
	(0.2209)	(0.1086)	(57.013)	(0.132)
Jump 4 (2018 Q1 - Q2)	0.645*	0.425**	20.52***	0.0756
	(0.3852)	(0.1658)	(81.4635)	(0.2269)
Jump 5 (2018 Q3 - Q4)	0.548***	0.398***	17.03***	0.0430
	(0.1888)	(0.0847)	(39.3997)	(0.119)

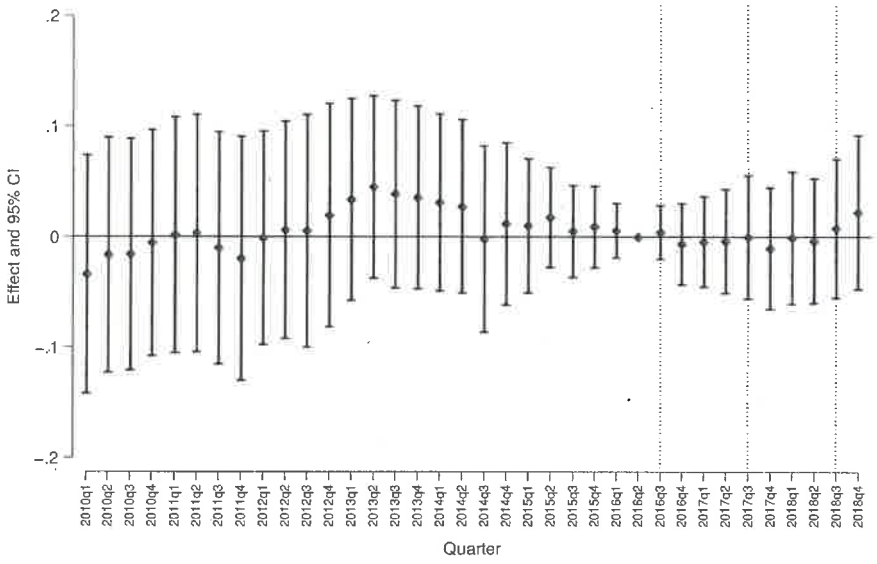
Notes: This table shows the estimated elasticities for total wages (column 1), average weekly wages (column 2) and employment (column 4) and effect sizes for average weekly wages (column 3). The explanatory variables for the post-policy period are binned in two quarters. Note that Jump 2 coefficient is zero by construction and omitted from the table. The comparison group is a collection of PUMAs from LA county only exposed to the state-level minimum wage ("Local 0"). Standard errors are clustered at the PUMA-level.

Figure 40: Full-Service Restaurants - Estimates of Main Outcomes (Weighted)

(a) Estimates for Log of Avg. Weekly Wages (Normalized)



(b) Estimates for Log of Employment (Normalized)



Notes: This figure shows coefficient estimates and 95 percent confidence intervals from the event study analysis on the log of average weekly wages (panel a) and the log of employment (panel b). The treatment group is composed by PUMAs in the City of Los Angeles and the control group is a collection of PUMAs from LA county only exposed to the state-level minimum wage ("Local 0"). The estimated coefficients represent the percentage change in the outcomes of interest relative to the omitted quarter.

Table 11: Full-Service Restaurants - Point Estimation Post-Policy Period

	(1)	(2)	(3)	(4)
	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
Bin 1 (2016 Q3 - Q4)	0.0030	0.0152*	8.8823**	-0.0011
	(0.0135)	(0.0082)	(4.0854)	(0.0138)
Bin 2 (2017 Q1 - Q2)	-0.0071	0.0043	4.5556	-0.0040
	(0.0191)	(0.0068)	(3.2335)	(0.0216)
Bin 3 (2017 Q3 - Q4)	0.0022	0.0283***	17.7403***	-0.0053
	(0.0240)	(0.0079)	(3.5917)	(0.0269)
Bin 4 (2018 Q1 - Q2)	-0.0052	0.0202**	16.1088***	-0.0023
	(0.0267)	(0.0080)	(4.2323)	(0.0276)
Bin 5 (2018 Q3 - Q4)	0.0218	0.0438***	30.0126***	0.0151
	(0.0271)	(0.0108)	(5.3554)	(0.0319)
Adj. R^2	0.9886	0.9529	0.9519	0.9900
Observations	2160	2160	2160	2160

Notes: This table shows coefficient estimates and standard errors (in parenthesis) from the event study analysis. The explanatory variables for the post-policy period are binned in two quarters. The comparison group is a collection of PUMAs from LA county only exposed to the state-level minimum wage ("Local 0"). Estimates presented in columns (1), (2), and (3) are weighted by PUMA-level employment. Estimates presented in column (4) are weighted by PUMA-level population. We use quarterly and PUMA level fixed-effects. The omitted category corresponds to the 2nd quarter of 2016. Standard errors are clustered at the PUMA-level. *** $p<0.01$, ** $p<0.05$, * $p<0.10$

Table 12: Full-Service Restaurants - Estimated Elasticities & Effect Sizes

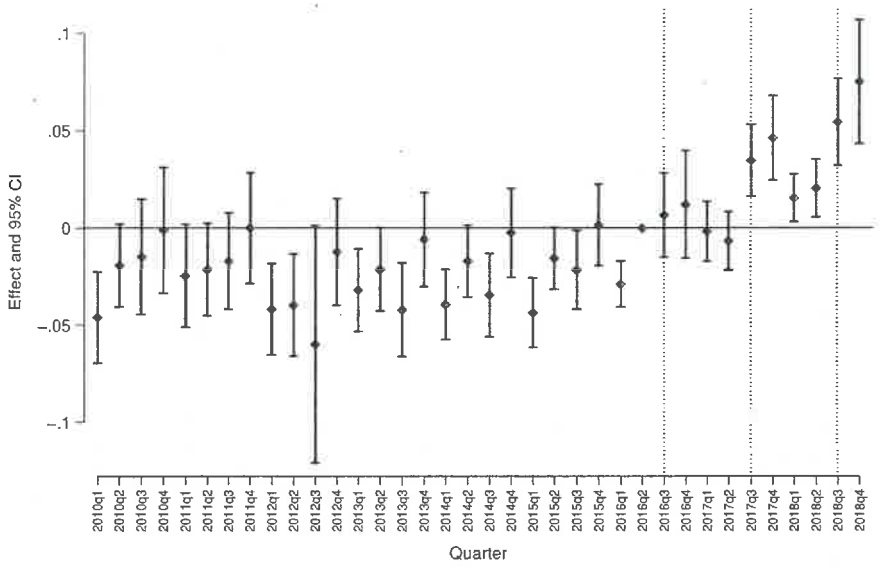
	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
	(1)	(2)	(3)	(4)
Jump 1 (2016 Q3 - Q4)	0.0609	0.312*	17.76**	-0.0219
	(0.2771)	(0.1688)	(83.7332)	(0.2838)
Jump 3 (2017 Q3 - Q4)	0.0166	0.212***	11.83***	-0.0397
	(0.1794)	(0.0588)	(26.8977)	(0.2015)
Jump 4 (2018 Q1 - Q2)	-0.0592	0.233**	16.11***	-0.0260
	(0.3072)	(0.0922)	(48.6406)	(0.3172)
Jump 5 (2018 Q3 - Q4)	0.117	0.235***	13.34***	0.0813
	(0.1459)	(0.0579)	(28.7765)	(0.1716)

Notes: This table shows the estimated elasticities for total wages (column 1), average weekly wages (column 2) and employment (column 4) and effect sizes for average weekly wages (column 3). The explanatory variables for the post-policy period are binned in two quarters. Note that Jump 2 coefficient is zero by construction and omitted from the table. The comparison group is a collection of PUMAs from LA county only exposed to the state-level minimum wage ("Local 0"). Standard errors are clustered at the PUMA-level.

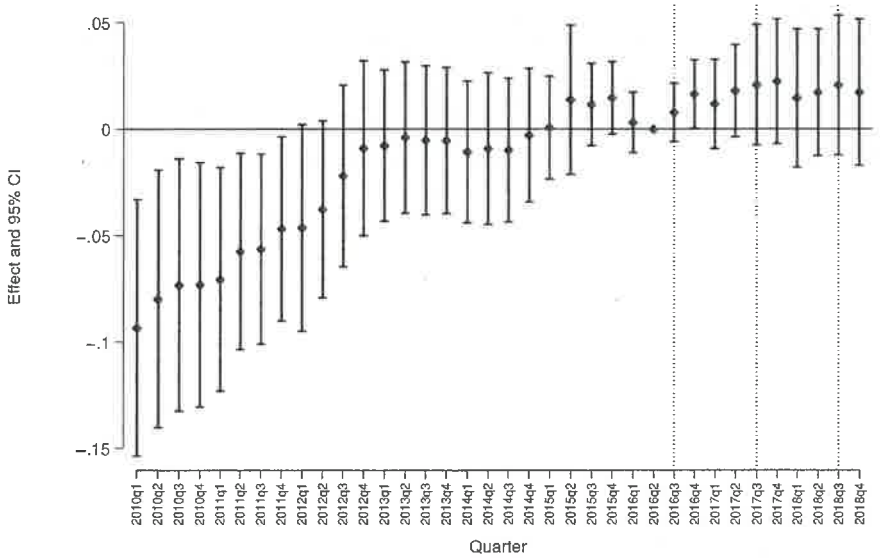
XI.1.2 Results for the Local 2 Control Group

Figure 41: Food Services Industry - Estimates of Main Outcomes (Weighted)

(a) Estimates for Log of Avg. Weekly Wages (Normalized)



(b) Estimates for Log of Employment (Normalized)



Notes: This figure shows coefficient estimates and 95 percent confidence intervals from the event study analysis on the log of average weekly wages (panel a) and the log of employment (panel b). The treatment group is composed by PUMAs in the City of Los Angeles and the control group is a collection of PUMAs from surrounding counties only exposed to the state-level minimum wage ("Local 2"). The estimated coefficients represent the percentage change in the outcomes of interest relative to the omitted quarter.

Table 13: Food Services Industry - Point Estimation Post-Policy Period

	(1)	(2)	(3)	(4)
	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
Bin 1 (2016 Q3 - Q4)	0.0114	0.0094	7.7857*	0.0122*
	(0.0131)	(0.0099)	(4.5220)	(0.0070)
Bin 2 (2017 Q1 - Q2)	-0.0049	-0.0041	1.6766	0.0149
	(0.0118)	(0.0071)	(3.5690)	(0.0104)
Bin 3 (2017 Q3 - Q4)	0.0373**	0.0407***	23.3645***	0.0217
	(0.0159)	(0.0082)	(3.8478)	(0.0139)
Bin 4 (2018 Q1 - Q2)	0.0068	0.0182***	14.3955***	0.0159
	(0.0152)	(0.0064)	(2.7581)	(0.0154)
Bin 5 (2018 Q3 - Q4)	0.0613***	0.0648***	39.6866***	0.0189
	(0.0187)	(0.0128)	(5.5946)	(0.0166)
Adj. R^2	0.9912	0.9443	0.9387	0.9932
Observations	2988	2988	2988	2988

Notes: This table shows coefficient estimates and standard errors (in parenthesis) from the event study analysis. The explanatory variables for the post-policy period are binned in two quarters. The comparison group is a collection of PUMAs from surrounding counties only exposed to the state-level minimum wage ("Local 2"). Estimates presented in columns (1), (2), and (3) are weighted by PUMA-level employment. Estimates presented in column (4) are weighted by PUMA-level population. We use quarterly and PUMA level fixed-effects. The omitted category corresponds to the 2nd quarter of 2016. Standard errors are clustered at the PUMA-level. *** p<0.01, ** p<0.05, * p<0.10

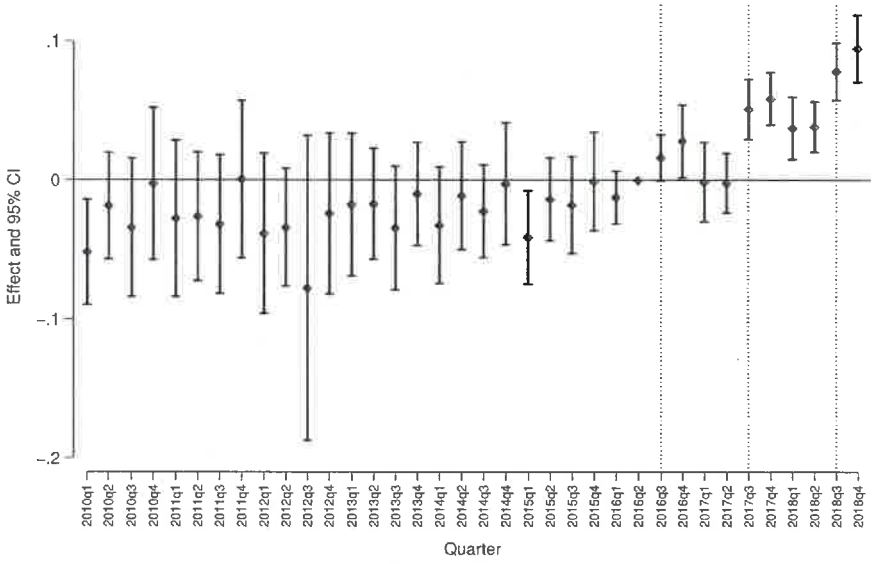
Table 14: Food Services Industry - Estimated Elasticities & Effect Sizes

	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
	(1)	(2)	(3)	(4)
Jump 1 (2016 Q3 - Q4)	0.234	0.193	15.57*	0.250*
	(0.2682)	(0.2035)	(92.6829)	(0.143)
Jump 3 (2017 Q3 - Q4)	0.279**	0.305***	15.58***	0.162
	(0.1194)	(0.0614)	(28.8154)	(0.1044)
Jump 4 (2018 Q1 - Q2)	0.0779	0.209***	14.40***	0.183
	(0.1751)	(0.0733)	(31.6986)	(0.1772)
Jump 5 (2018 Q3 - Q4)	0.330***	0.348***	17.64***	0.102
	(0.1007)	(0.0688)	(30.0618)	(0.0893)

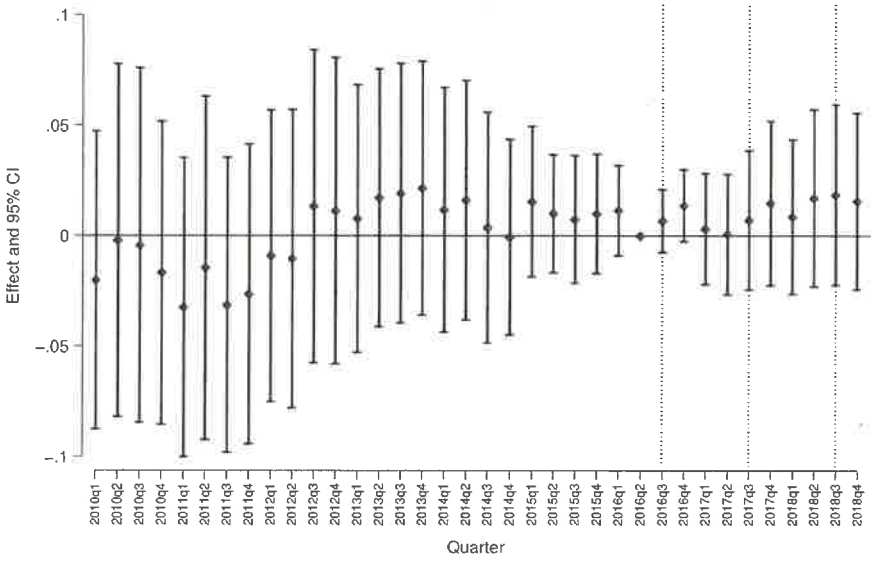
Notes: This table shows the estimated elasticities for total wages (column 1), average weekly wages (column 2) and employment (column 4) and effect sizes for average weekly wages (column 3). The explanatory variables for the post-policy period are binned in two quarters. Note that Jump 2 coefficient is zero by construction and omitted from the table. The comparison group is a collection of PUMAs from surrounding counties only exposed to the state-level minimum wage ("Local 2"). Standard errors are clustered at the PUMA-level.

Figure 42: Limited-Service Restaurants - Estimates of Main Outcomes (Weighted)

(a) Estimates for Log of Avg. Weekly Wages (Normalized)



(b) Estimates for Log of Employment (Normalized)



Notes: This figure shows coefficient estimates and 95 percent confidence intervals from the event study analysis on the log of average weekly wages (panel a) and the log of employment (panel b). The treatment group is composed by PUMAs in the City of Los Angeles and the control group is a collection of PUMAs from surrounding counties only exposed to the state-level minimum wage ("Local 2"). The estimated coefficients represent the percentage change in the outcomes of interest relative to the omitted quarter.

Table 15: Limited-Service Restaurants - Point Estimation Post-Policy Period

	(1)	(2)	(3)	(4)
	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
Bin 1 (2016 Q3 - Q4)	0.0348**	0.0221**	12.0538**	0.0102
	(0.0168)	(0.0098)	(5.0034)	(0.0071)
Bin 2 (2017 Q1 - Q2)	-0.0050	-0.0016	2.3293	0.0019
	(0.0276)	(0.0121)	(5.8886)	(0.0127)
Bin 3 (2017 Q3 - Q4)	0.0620**	0.0548***	25.9173***	0.0110
	(0.0273)	(0.0096)	(5.5021)	(0.0168)
Bin 4 (2018 Q1 - Q2)	0.0508*	0.0379***	19.8671***	0.0128
	(0.0300)	(0.0093)	(4.7879)	(0.0183)
Bin 5 (2018 Q3 - Q4)	0.1124***	0.0863***	42.2325***	0.0171
	(0.0315)	(0.0105)	(4.9825)	(0.0197)
Adj. R^2	0.9611	0.8513	0.7439	0.9681
Observations	2988	2988	2988	2988

Notes: This table shows coefficient estimates and standard errors (in parenthesis) from the event study analysis. The explanatory variables for the post-policy period are binned in two quarters. The comparison group is a collection of PUMAs from surrounding counties only exposed to the state-level minimum wage ("Local 2"). Estimates presented in columns (1), (2), and (3) are weighted by PUMA-level employment. Estimates presented in column (4) are weighted by PUMA-level population. We use quarterly and PUMA level fixed-effects. The omitted category corresponds to the 2nd quarter of 2016. Standard errors are clustered at the PUMA-level. *** p<0.01, ** p<0.05, * p<0.10

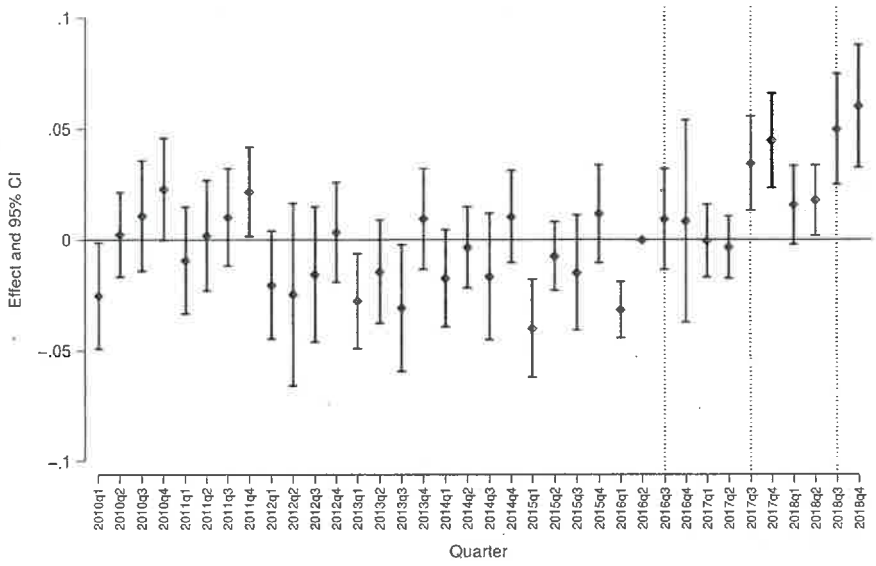
Table 16: Limited-Service Restaurants - Estimated Elasticities & Effect Sizes

	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
	(1)	(2)	(3)	(4)
Jump 1 (2016 Q3 - Q4)	0.714**	0.452**	24.11**	0.209
	(0.3443)	(0.2001)	(102.5483)	(0.1451)
Jump 3 (2017 Q3 - Q4)	0.464**	0.411***	17.28***	0.0820
	(0.2041)	(0.0722)	(41.2046)	(0.1259)
Jump 4 (2018 Q1 - Q2)	0.584*	0.436***	19.87***	0.147
	(0.3443)	(0.1065)	(55.026)	(0.2101)
Jump 5 (2018 Q3 - Q4)	0.604***	0.464***	18.77***	0.0920
	(0.1691)	(0.0565)	(26.7729)	(0.1061)

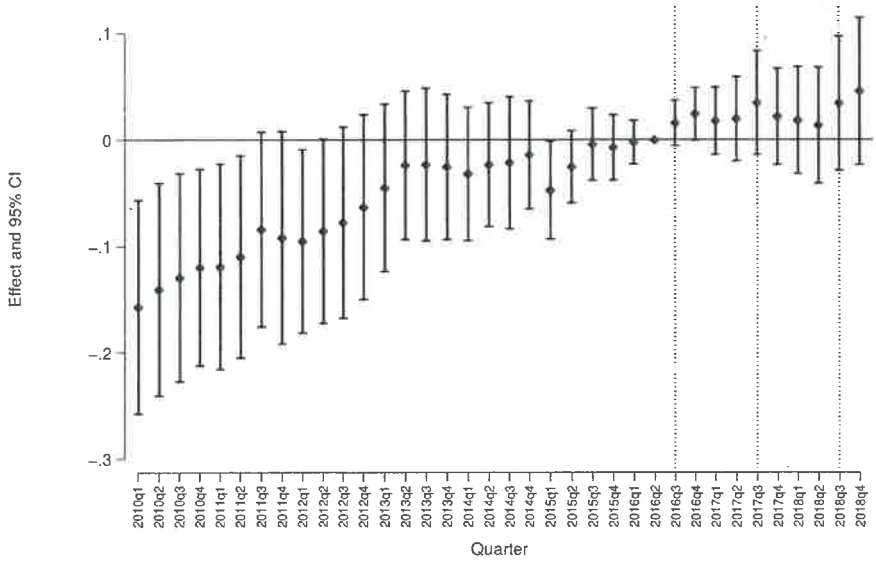
Notes: This table shows the estimated elasticities for total wages (column 1), average weekly wages (column 2) and employment (column 4) and effect sizes for average weekly wages (column 3). The explanatory variables for the post-policy period are binned in two quarters. Note that Jump 2 coefficient is zero by construction and omitted from the table. The comparison group is a collection of PUMAs from surrounding counties only exposed to the state-level minimum wage ("Local 2"). Standard errors are clustered at the PUMA-level.

Figure 43: Full-Service Restaurants - Estimates of Main Outcomes (Weighted)

(a) Estimates for Log of Avg. Weekly Wages (Normalized)



(b) Estimates for Log of Employment (Normalized)



Notes: This figure shows coefficient estimates and 95 percent confidence intervals from the event study analysis on the log of average weekly wages (panel a) and the log of employment (panel b). The treatment group is composed by PUMAs in the City of Los Angeles and the control group is a collection of PUMAs from surrounding counties only exposed to the state-level minimum wage ("Local 2"). The estimated coefficients represent the percentage change in the outcomes of interest relative to the omitted quarter.

Table 17: Full-Service Restaurants - Point Estimation Post-Policy Period

	(1)	(2)	(3)	(4)
	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
Bin 1 (2016 Q3 - Q4)	0.0097	0.0089	5.7423	0.0201*
	(0.0179)	(0.0140)	(7.0603)	(0.0107)
Bin 2 (2017 Q1 - Q2)	-0.0033	-0.0020	1.9306	0.0188
	(0.0138)	(0.0065)	(3.1430)	(0.0174)
Bin 3 (2017 Q3 - Q4)	0.0364*	0.0396***	23.4893***	0.0284
	(0.0217)	(0.0086)	(3.9391)	(0.0228)
Bin 4 (2018 Q1 - Q2)	0.0046	0.0168**	15.0543***	0.0160
	(0.0213)	(0.0075)	(4.1342)	(0.0255)
Bin 5 (2018 Q3 - Q4)	0.0495*	0.0551***	36.6723***	0.0399
	(0.0284)	(0.0120)	(5.9247)	(0.0319)
Adj. R^2	0.9882	0.9445	0.9408	0.9900
Observations	2988	2988	2988	2988

Notes: This table shows coefficient estimates and standard errors (in parenthesis) from the event study analysis. The explanatory variables for the post-policy period are binned in two quarters. The comparison group is a collection of PUMAs from surrounding counties only exposed to the state-level minimum wage ("Local 2"). Estimates presented in columns (1), (2), and (3) are weighted by PUMA-level employment. Estimates presented in column (4) are weighted by PUMA-level population. We use quarterly and PUMA level fixed-effects. The omitted category corresponds to the 2nd quarter of 2016. Standard errors are clustered at the PUMA-level. *** p<0.01, ** p<0.05, * p<0.10

Table 18: Full-Service Restaurants - Estimated Elasticities & Effect Sizes

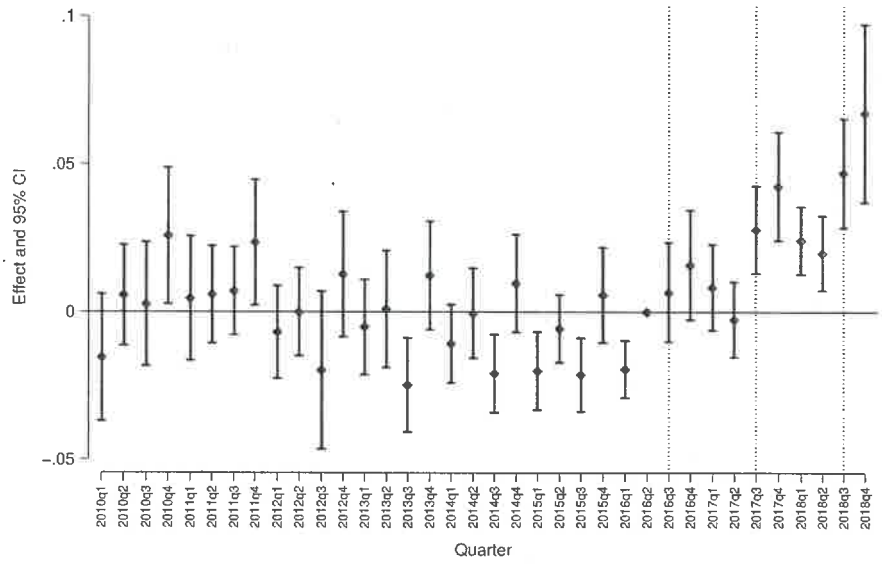
	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
	(1)	(2)	(3)	(4)
Jump 1 (2016 Q3 - Q4)	0.198	0.181	11.48	0.412
	(0.3665)	(0.286)	(144.7073)	(0.2184)
Jump 3 (2017 Q3 - Q4)	0.273*	0.297***	15.66***	0.213
	(0.1626)	(0.0647)	(29.4998)	(0.1704)
Jump 4 (2018 Q1 - Q2)	0.0526	0.193**	15.05***	0.184
	(0.2445)	(0.0857)	(47.513)	(0.2933)
Jump 5 (2018 Q3 - Q4)	0.266*	0.296***	16.30***	0.215
	(0.1524)	(0.0645)	(31.8359)	(0.1715)

Notes: This table shows the estimated elasticities for total wages (column 1), average weekly wages (column 2) and employment (column 4) and effect sizes for average weekly wages (column 3). The explanatory variables for the post-policy period are binned in two quarters. Note that Jump 2 coefficient is zero by construction and omitted from the table. The comparison group is a collection of PUMAs from surrounding counties only exposed to the state-level minimum wage ("Local 2"). Standard errors are clustered at the PUMA-level.

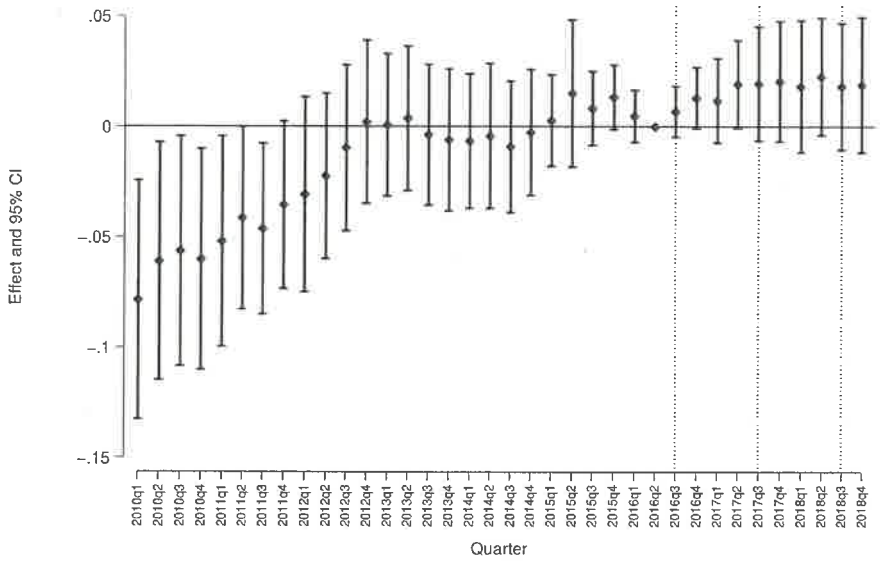
XI.1.3 Results for the Statewide Control Group

Figure 44: Food Services Industry - Estimates of Main Outcomes (Weighted)

(a) Estimates for Log of Avg. Weekly Wages (Normalized)



(b) Estimates for Log of Employment (Normalized)



Notes: This figure shows coefficient estimates and 95 percent confidence intervals from the event study analysis on the log of average weekly wages (panel a) and the log of employment (panel b). The treatment group is composed by PUMAs in the City of Los Angeles and the control group is a collection of PUMAs from across the state of California only exposed to the state-level minimum wage ("Statewide 1"). The estimated coefficients represent the percentage change in the outcomes of interest relative to the omitted quarter.

Table 19: Food Services Industry - Point Estimation Post-Policy Period

	(1)	(2)	(3)	(4)
	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
Bin 1 (2016 Q3 - Q4)	0.0131	0.0113	8.1856**	0.0099
	(0.0102)	(0.0073)	(3.5042)	(0.0060)
Bin 2 (2017 Q1 - Q2)	0.0037	0.0028	4.0993	0.0155
	(0.0112)	(0.0065)	(3.2792)	(0.0097)
Bin 3 (2017 Q3 - Q4)	0.0316**	0.0353***	20.6370***	0.0200
	(0.0136)	(0.0064)	(3.1203)	(0.0130)
Bin 4 (2018 Q1 - Q2)	0.0184	0.0222***	15.6018***	0.0205
	(0.0142)	(0.0058)	(2.4207)	(0.0142)
Bin 5 (2018 Q3 - Q4)	0.0559***	0.0571***	35.5413***	0.0186
	(0.0166)	(0.0117)	(5.1057)	(0.0148)
Adj. R^2	0.9904	0.9477	0.9397	0.9916
Observations	7812	7812	7812	7812

Notes: This table shows coefficient estimates and standard errors (in parenthesis) from the event study analysis. The explanatory variables for the post-policy period are binned in two quarters. The comparison group is a collection of PUMAs from across the state of California only exposed to the state-level minimum wage ("Statewide 1"). Estimates presented in columns (1), (2), and (3) are weighted by PUMA-level employment. Estimates presented in column (4) are weighted by PUMA-level population. We use quarterly and PUMA level fixed-effects. The omitted category corresponds to the 2nd quarter of 2016. Standard errors are clustered at the PUMA-level. *** p<0.01, ** p<0.05, * p<0.10

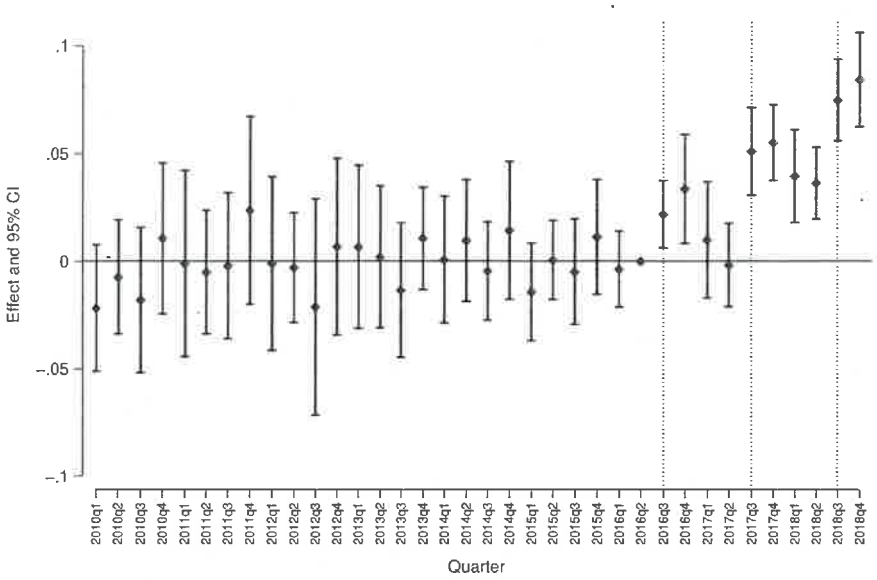
Table 20: Food Services Industry - Estimated Elasticities & Effect Sizes

	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
	(1)	(2)	(3)	(4)
Jump 1 (2016 Q3 - Q4)	0.269	0.232	16.37**	0.203
	(0.2085)	(0.1486)	(71.8216)	(0.1231)
Jump 3 (2017 Q3 - Q4)	0.236**	0.264***	13.76***	0.150
	(0.1016)	(0.0476)	(23.3673)	(0.0973)
Jump 4 (2018 Q1 - Q2)	0.211	0.255***	15.60***	0.236
	(0.1634)	(0.0662)	(27.8205)	(0.1628)
Jump 5 (2018 Q3 - Q4)	0.300***	0.307***	15.80***	0.100
	(0.089)	(0.0629)	(27.4352)	(0.0797)

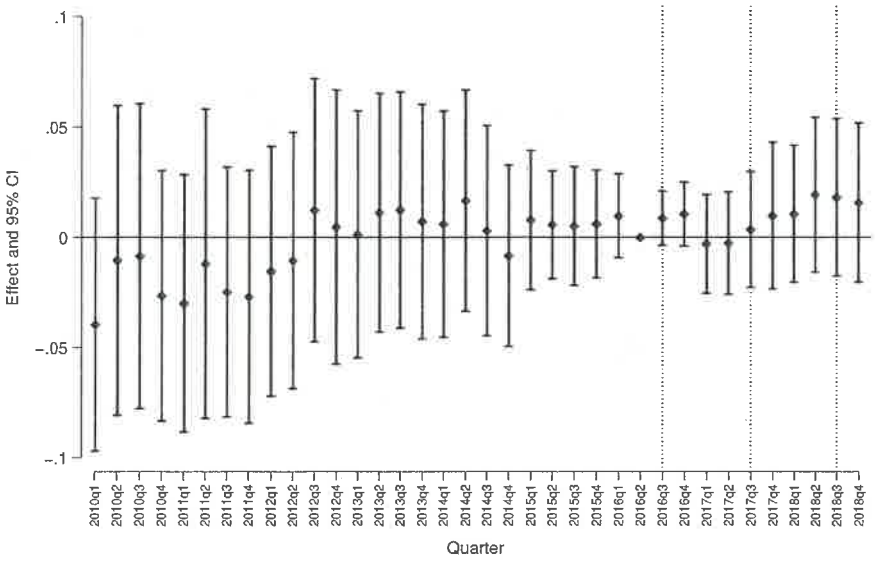
Notes: This table shows the estimated elasticities for total wages (column 1), average weekly wages (column 2) and employment (column 4) and effect sizes for average weekly wages (column 3). The explanatory variables for the post-policy period are binned in two quarters. Note that Jump 2 coefficient is zero by construction and omitted from the table. The comparison group is a collection of PUMAs from across the state of California only exposed to the state-level minimum wage ("Statewide 1"). Standard errors are clustered at the PUMA-level.

Figure 45: Limited-Service Restaurants - Estimates of Main Outcomes (Weighted)

(a) Estimates for Log of Avg. Weekly Wages (Normalized)



(b) Estimates for Log of Employment (Normalized)



Notes: This figure shows coefficient estimates and 95 percent confidence intervals from the event study analysis on the log of average weekly wages (panel a) and the log of employment (panel b). The treatment group is composed by PUMAs in the City of Los Angeles and the control group is a collection of PUMAs from across the state of California only exposed to the state-level minimum wage ("Statewide 1"). The estimated coefficients represent the percentage change in the outcomes of interest relative to the omitted quarter.

Table 21: Limited-Service Restaurants - Point Estimation Post-Policy Period

	(1)	(2)	(3)	(4)
	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
Bin 1 (2016 Q3 - Q4)	0.0405**	0.0277***	14.1834***	0.0097
	(0.0162)	(0.0096)	(4.9484)	(0.0063)
Bin 2 (2017 Q1 - Q2)	-0.0013	0.0040	4.2420	-0.0027
	(0.0260)	(0.0113)	(5.5780)	(0.0113)
Bin 3 (2017 Q3 - Q4)	0.0589**	0.0530***	25.4351***	0.0067
	(0.0251)	(0.0092)	(5.4191)	(0.0147)
Bin 4 (2018 Q1 - Q2)	0.0577**	0.0379***	20.0790***	0.0150
	(0.0283)	(0.0089)	(4.7346)	(0.0163)
Bin 5 (2018 Q3 - Q4)	0.1084***	0.0794***	39.8986***	0.0170
	(0.0297)	(0.0097)	(4.7736)	(0.0178)
Adj. R^2	0.9620	0.8691	0.7914	0.9680
Observations	7812	7812	7812	7812

Notes: This table shows coefficient estimates and standard errors (in parenthesis) from the event study analysis. The explanatory variables for the post-policy period are binned in two quarters. The comparison group is a collection of PUMAs from across the state of California only exposed to the state-level minimum wage ("Statewide 1"). Estimates presented in columns (1), (2), and (3) are weighted by PUMA-level employment. Estimates presented in column (4) are weighted by PUMA-level population. We use quarterly and PUMA level fixed-effects. The omitted category corresponds to the 2nd quarter of 2016. Standard errors are clustered at the PUMA-level. *** p<0.01, ** p<0.05, * p<0.10

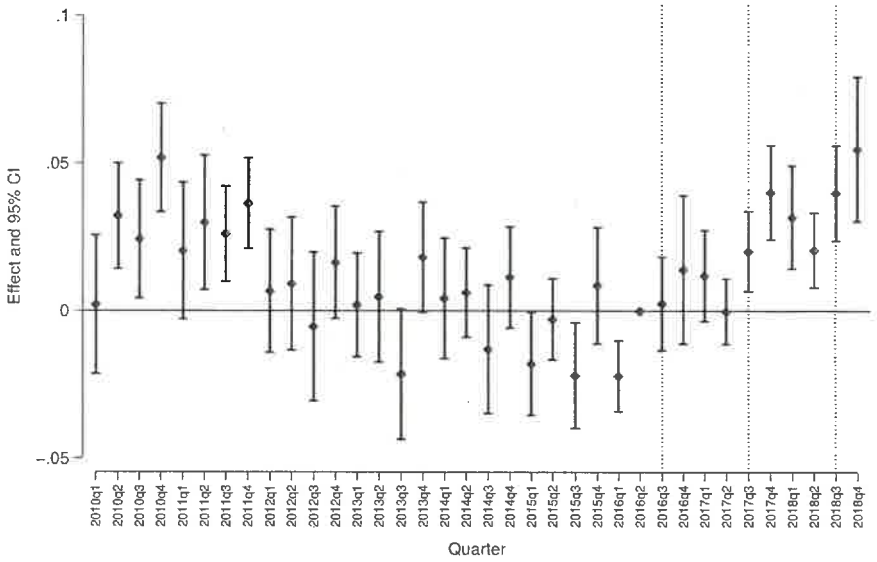
Table 22: Limited-Service Restaurants - Estimated Elasticities & Effect Sizes

	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
	(1)	(2)	(3)	(4)
Jump 1 (2016 Q3 - Q4)	0.830**	0.568***	28.37***	0.198
	(0.333)	(0.1962)	(101.4222)	(0.1285)
Jump 3 (2017 Q3 - Q4)	0.441**	0.397***	16.96***	0.0505
	(0.1878)	(0.0692)	(40.5833)	(0.1099)
Jump 4 (2018 Q1 - Q2)	0.663**	0.436***	20.08***	0.173
	(0.3253)	(0.1021)	(54.4142)	(0.1868)
Jump 5 (2018 Q3 - Q4)	0.583***	0.427***	17.73***	0.0914
	(0.1596)	(0.0521)	(25.6504)	(0.0956)

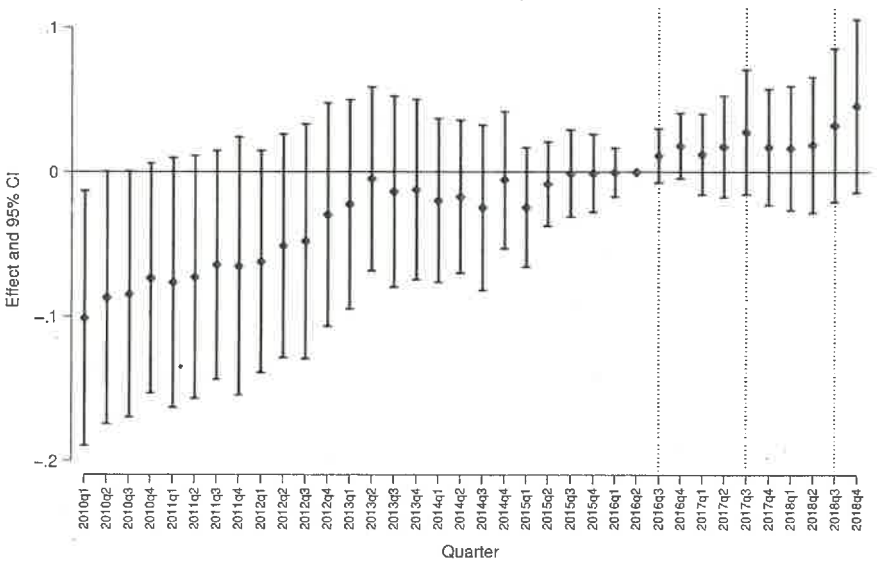
Notes: This table shows the estimated elasticities for total wages (column 1), average weekly wages (column 2) and employment (column 4) and effect sizes for average weekly wages (column 3). The explanatory variables for the post-policy period are binned in two quarters. Note that Jump 2 coefficient is zero by construction and omitted from the table. The comparison group is a collection of PUMAs from across the state of California only exposed to the state-level minimum wage ("Statewide 1"). Standard errors are clustered at the PUMA-level.

Figure 46: Full-Service Restaurants - Estimates of Main Outcomes (Weighted)

(a) Estimates for Log of Avg. Weekly Wages (Normalized)



(b) Estimates for Log of Employment (Normalized)



Notes: This figure shows coefficient estimates and 95 percent confidence intervals from the event study analysis on the log of average weekly wages (panel a) and the log of employment (panel b). The treatment group is composed by PUMAs in the City of Los Angeles and the control group is a collection of PUMAs from across the state of California only exposed to the state-level minimum wage ("Statewide 1"). The estimated coefficients represent the percentage change in the outcomes of interest relative to the omitted quarter.

Table 23: Full-Service Restaurants - Point Estimation Post-Policy Period

	(1)	(2)	(3)	(4)
	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
Bin 1 (2016 Q3 - Q4)	0.0049	0.0082	5.5100	0.0147
	(0.0111)	(0.0081)	(4.1845)	(0.0097)
Bin 2 (2017 Q1 - Q2)	0.0010	0.0058	5.1297*	0.0150
	(0.0136)	(0.0058)	(2.8750)	(0.0157)
Bin 3 (2017 Q3 - Q4)	0.0179	0.0303***	18.7853***	0.0225
	(0.0178)	(0.0054)	(2.5837)	(0.0204)
Bin 4 (2018 Q1 - Q2)	0.0105	0.0261***	18.8554***	0.0176
	(0.0190)	(0.0070)	(3.9523)	(0.0221)
Bin 5 (2018 Q3 - Q4)	0.0373	0.0474***	32.0376***	0.0391
	(0.0228)	(0.0095)	(4.7784)	(0.0275)
Adj. R^2	0.9877	0.9415	0.9363	0.9878
Observations	7812	7812	7812	7812

Notes: This table shows coefficient estimates and standard errors (in parenthesis) from the event study analysis. The explanatory variables for the post-policy period are binned in two quarters. The comparison group is a collection of PUMAs from across the state of California only exposed to the state-level minimum wage ("Statewide 1"). Estimates presented in columns (1), (2), and (3) are weighted by PUMA-level employment. Estimates presented in column (4) are weighted by PUMA-level population. We use quarterly and PUMA level fixed-effects. The omitted category corresponds to the 2nd quarter of 2016. Standard errors are clustered at the PUMA-level. *** p<0.01, ** p<0.05, * p<0.10

Table 24: Full-Service Restaurants - Estimated Elasticities & Effect Sizes

	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
	(1)	(2)	(3)	(4)
Jump 1 (2016 Q3 - Q4)	0.101	0.168	11.02	0.302
	(0.2282)	(0.1669)	(85.7644)	(0.1987)
Jump 3 (2017 Q3 - Q4)	0.134	0.227***	12.52***	0.168
	(0.1334)	(0.0405)	(19.3486)	(0.1528)
Jump 4 (2018 Q1 - Q2)	0.121	0.300***	18.86***	0.203
	(0.2181)	(0.0803)	(45.4234)	(0.2545)
Jump 5 (2018 Q3 - Q4)	0.200	0.255***	14.24***	0.210
	(0.1224)	(0.051)	(25.6763)	(0.1476)

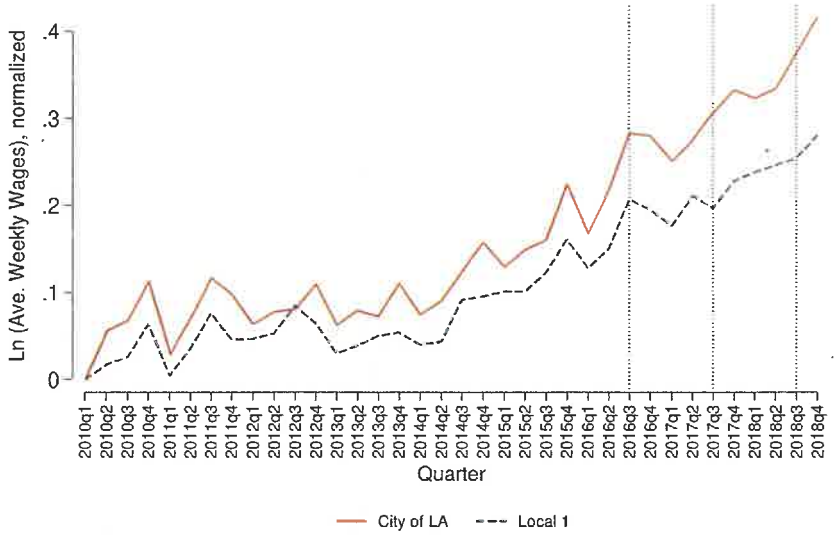
Notes: This table shows the estimated elasticities for total wages (column 1), average weekly wages (column 2) and employment (column 4) and effect sizes for average weekly wages (column 3). The explanatory variables for the post-policy period are binned in two quarters. Note that Jump 2 coefficient is zero by construction and omitted from the table. The comparison group is a collection of PUMAs from across the state of California only exposed to the state-level minimum wage ("Statewide 1"). Standard errors are clustered at the PUMA-level.

XI.2 Results By Firm Size

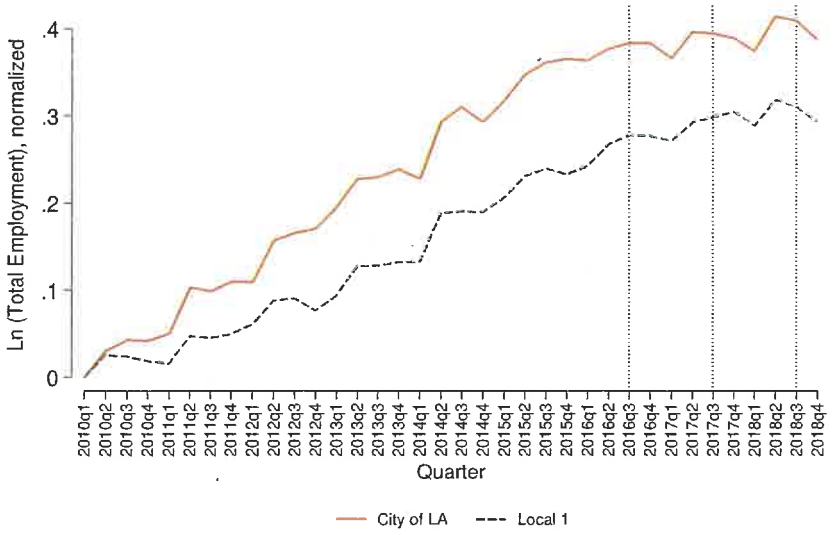
XI.2.1 Results for the Large Firms Using Local 1 Control Group

Figure 47: Food Services Industry - Evolution of Key Outcomes

(a) Evolution of Log of Avg. Weekly Wages (Normalized)



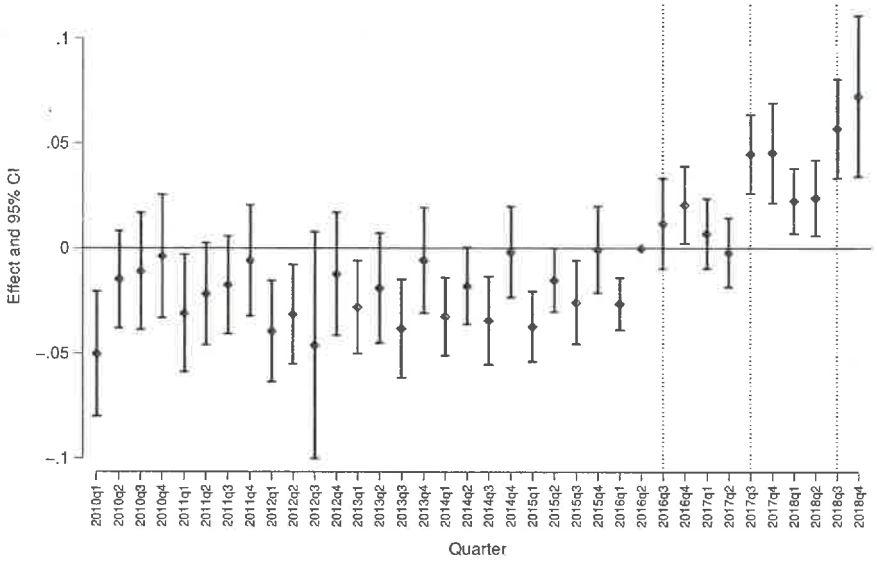
(b) Evolution of Log of Employment (Normalized)



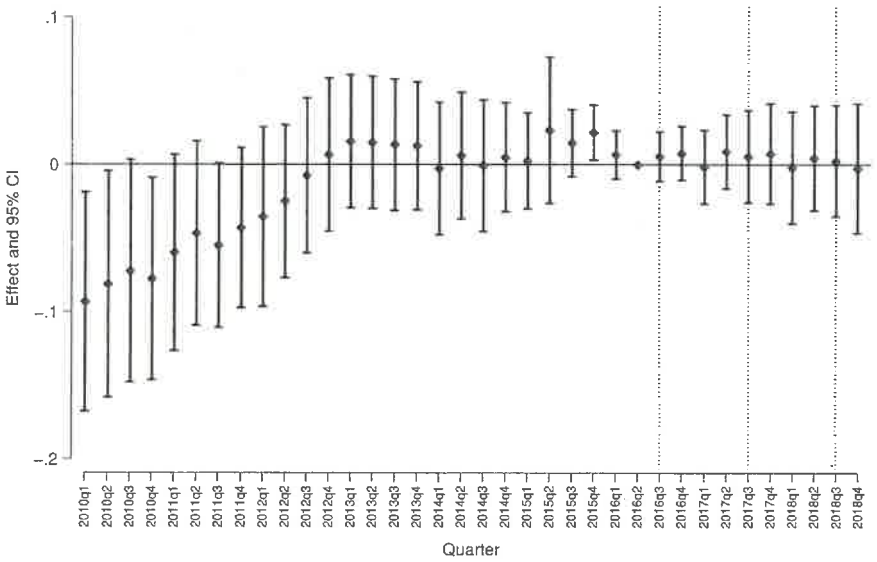
Notes: This figure shows the evolution of average weekly wages (panel a) and employment (panel b) in the City of Los Angeles and control group "Local 1" for large firms, that is those with 26 or more employees. This control group is a collection of PUMAs from LA county and nearby counties only exposed to the state-level minimum wage. The variable of interest is expressed in log terms and normalized subtracting the value of the variable in the first quarter of 2010. Average weekly wages is computed following the BLS definition.

Figure 48: Food Services Industry - Estimates of Main Outcomes (Weighted)

(a) Estimates for Log of Avg. Weekly Wages (Normalized)



(b) Estimates for Log of Employment (Normalized)



Notes: This figure shows coefficient estimates and 95 percent confidence intervals from the event study analysis on the log of average weekly wages (panel a) and the log of employment (panel b) for large firms, that is those with 26 or more employees. The treatment group is composed by PUMAs in the City of Los Angeles and the control group is a collection of PUMAs from LA county and nearby counties only exposed to the state-level minimum wage ("Local 1"). The estimated coefficients represent the percentage change in the outcomes of interest relative to the omitted quarter.

Table 25: Food Services Industry - Point Estimation Post-Policy Period

	(1)	(2)	(3)	(4)
	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
Bin 1 (2016 Q3 - Q4)	0.0164	0.0162*	10.7741**	0.0067
	(0.0129)	(0.0086)	(4.2006)	(0.0083)
Bin 2 (2017 Q1 - Q2)	-0.0025	0.0025	4.7628	0.0038
	(0.0149)	(0.0076)	(3.9947)	(0.0124)
Bin 3 (2017 Q3 - Q4)	0.0331**	0.0451***	25.7512***	0.0066
	(0.0163)	(0.0087)	(3.9850)	(0.0157)
Bin 4 (2018 Q1 - Q2)	0.0086	0.0233***	17.5898***	0.0013
	(0.0177)	(0.0082)	(3.3558)	(0.0182)
Bin 5 (2018 Q3 - Q4)	0.0547***	0.0646***	41.0402***	0.0001
	(0.0204)	(0.0149)	(6.5342)	(0.0203)
Adj. R^2	0.9871	0.9234	0.9136	0.9875
Observations	4284	4284	4284	4284

Notes: This table shows coefficient estimates and standard errors (in parenthesis) from the event study analysis on outcomes of interest (see Appendix II, equation 2) for large firms, that is those with 26 or more employees. The explanatory variables for the post-policy period are binned in two quarters, e.g. the first row presents the coefficient for a dummy variable that takes the value of one for the 3rd and 4th quarter of 2016. The comparison group is a collection of PUMAs from LA county and nearby counties only exposed to the state-level minimum wage ("Local 1"). Estimates presented in columns (1), (2), and (3) are weighted by PUMA-level employment. Estimates presented in column (4) are weighted by PUMA-level population. We use quarterly and PUMA level fixed-effects. The omitted category corresponds to the 2nd quarter of 2016. Standard errors are clustered at the PUMA-level. *** p<0.01, ** p<0.05, * p<0.10

Table 26: Food Services Industry - Estimated Elasticities & Effect Sizes

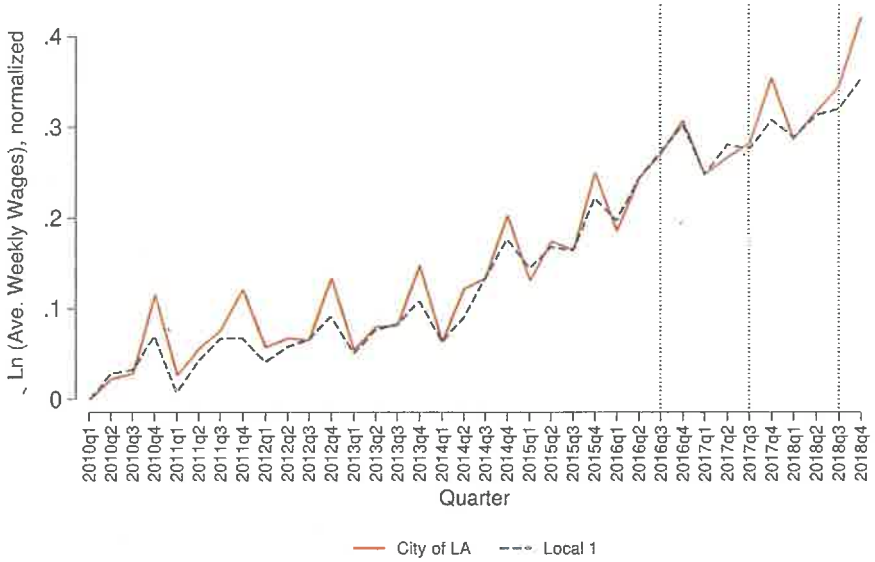
	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
	(1)	(2)	(3)	(4)
Jump 1 (2016 Q3 - Q4)	0.3361	0.3328*	21.55**	0.1377
	(0.2646)	(0.1760)	(86.10)	(0.17)
Jump 3 (2017 Q3 - Q4)	0.2478**	0.3379***	17.17***	0.0495
	(0.1224)	(0.0654)	(29.84)	(0.1177)
Jump 4 (2018 Q1 - Q2)	0.0992	0.2674***	17.59***	0.0151
	(0.2035)	(0.0940)	(38.57)	(0.2095)
Jump 5 (2018 Q3 - Q4)	0.2941***	0.3471***	18.24***	0.0007
	(0.1098)	(0.0800)	(35.11)	(0.1088)

Notes: This table shows the estimated elasticities for total wages (column 1), average weekly wages (column 2) and employment (column 4) and effect sizes for average weekly wages (column 3) for large firms, that is those with 26 or more employees. Estimates are based on the event study analysis on outcomes of interest as described in Appendix I, equations 3 and 4. The explanatory variables for the post-policy period are binned in two quarters, e.g. the first row presents the coefficient for a dummy variable that takes the value of one for the 3rd and 4th quarter of 2016. Note that Jump 2 coefficient is zero by construction and omitted from the table, see appendix for more details. The comparison group is a collection of PUMAs from LA county and nearby counties only exposed to the state-level minimum wage ("Local 1"). Standard errors are clustered at the PUMA-level. *** p<0.01, ** p<0.05, * p<0.10

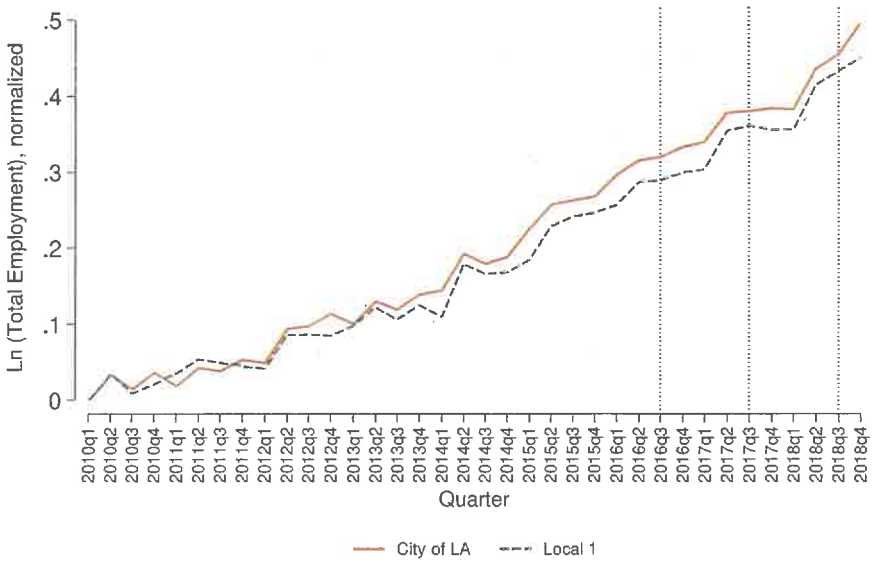
XI.2.2 Results for the Small Firms Using Local 1 Control Group

Figure 49: Food Services Industry - Evolution of Key Outcomes

(a) Evolution of Log of Avg. Weekly Wages (Normalized)



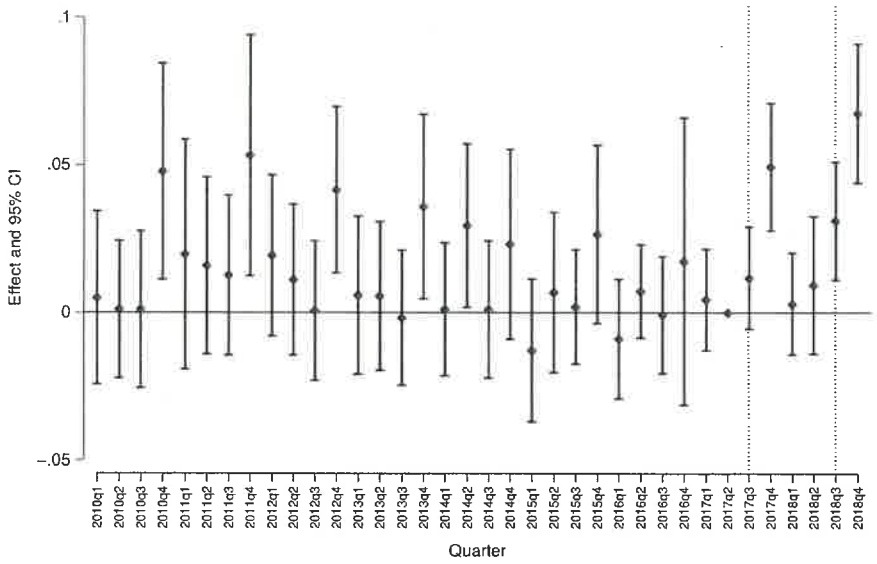
(b) Evolution of Log of Employment (Normalized)



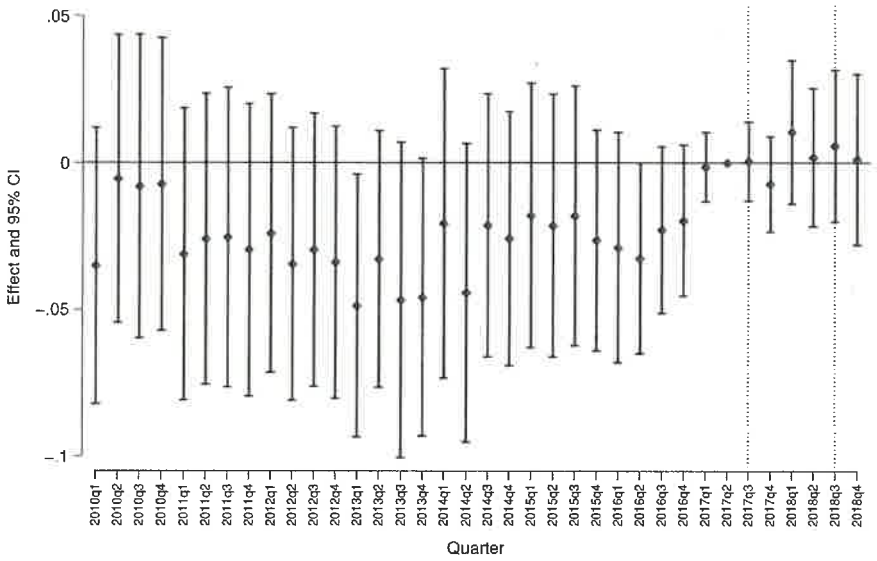
Notes: This figure shows the evolution of average weekly wages (panel a) and employment (panel b) in the City of Los Angeles and control group "Local 1" for small firms, that is those with 1-25 employees. This control group is a collection of PUMAs from LA county and nearby counties only exposed to the state-level minimum wage. The variable of interest is expressed in log terms and normalized subtracting the value of the variable in the first quarter of 2010. Average weekly wages is computed following the BLS definition.

Figure 50: Food Services Industry - Estimates of Main Outcomes (Weighted)

(a) Estimates for Log of Avg. Weekly Wages (Normalized)



(b) Estimates for Log of Employment (Normalized)



Notes: This figure shows coefficient estimates and 95 percent confidence intervals from the event study analysis on the log of average weekly wages (panel a) and the log of employment (panel b) for small firms, that is those with 1-25 employees. The treatment group is composed by PUMAs in the City of Los Angeles and the control group is a collection of PUMAs from LA county and nearby counties only exposed to the state-level minimum wage ("Local 1"). The estimated coefficients represent the percentage change in the outcomes of interest relative to the omitted quarter.

Table 27: Food Services Industry - Point Estimation Post-Policy Period

	(1)	(2)	(3)	(4)
	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
Bin 1 (2017 Q3 - Q4)	0.0255***	0.0305***	17.7700***	-0.0034
	(0.0097)	(0.0076)	(5.6442)	(0.0069)
Bin 2 (2018 Q1 - Q2)	0.0057	0.0063	7.1336	0.0062
	(0.0109)	(0.0093)	(5.8454)	(0.0114)
Bin 3 (2018 Q3 - Q4)	0.0488***	0.0496***	29.8694***	0.0035
	(0.0158)	(0.0091)	(6.0016)	(0.0125)
Adj. R^2	0.9878	0.9160	0.8396	0.9894
Observations	4284	4284	4284	4284

Notes: This table shows coefficient estimates and standard errors (in parenthesis) from the event study analysis on outcomes of interest (see Appendix II, equation 2) for small firms, that is those with 1-25 employees. The explanatory variables for the post-policy period are binned in two quarters, e.g. the first row presents the coefficient for a dummy variable that takes the value of one for the 3rd and 4th quarter of 2017. The comparison group is a collection of PUMAs from LA county and nearby counties only exposed to the state-level minimum wage ("Local 1"). Estimates presented in columns (1), (2), and (3) are weighted by PUMA-level employment. Estimates presented in column (4) are weighted by PUMA-level population. We use quarterly and PUMA level fixed-effects. The omitted category corresponds to the 2nd quarter of 2016. Standard errors are clustered at the PUMA-level. *** p<0.01, ** p<0.05, * p<0.10

Table 28: Food Services Industry - Estimated Elasticities & Effect Sizes

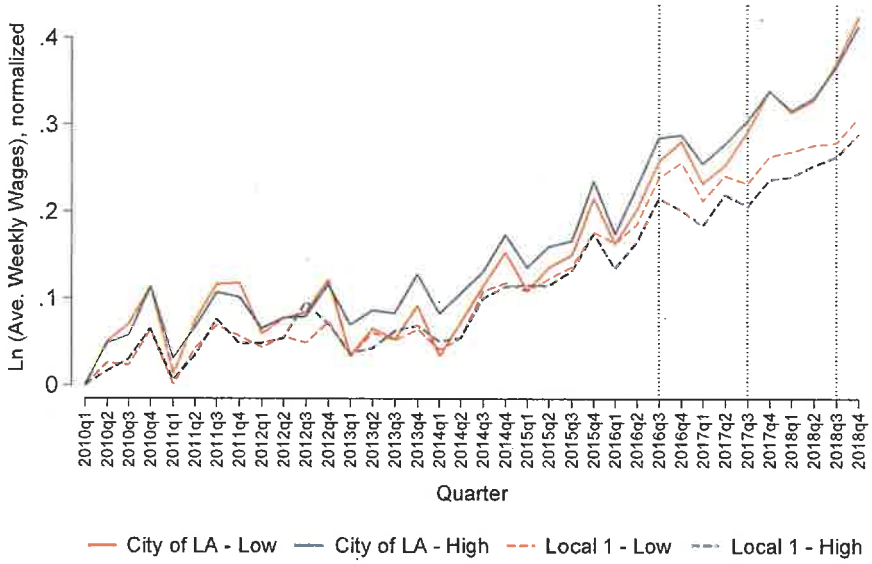
	Ln Total Wages	Ln Ave. Weekly Wages	Ave. Weekly Wages	Ln Employment
	(1)	(2)	(3)	(4)
Jump 1 (2017 Q3 - Q4)	0.5229***	0.6258***	35.54***	-0.0694
	(0.1983)	(0.1557)	(115.68)	(0.1420)
Jump 3 (2018 Q3 - Q4)	0.3656***	0.3713***	19.91***	0.0262
	(0.1182)	(0.0681)	(44.94)	(0.0937)

Notes: This table shows the estimated elasticities for total wages (column 1), average weekly wages (column 2) and employment (column 4) and effect sizes for average weekly wages (column 3) for small firms, that is those with 1-25 employees. Estimates are based on the event study analysis on outcomes of interest as described in Appendix I, equations 3 and 4. The explanatory variables for the post-policy period are binned in two quarters, e.g. the first row presents the coefficient for a dummy variable that takes the value of one for the 3rd and 4th quarter of 2017. Note that Jump 2 coefficient is zero by construction and omitted from the table, see appendix for more details. The comparison group is a collection of PUMAs from LA county and nearby counties only exposed to the state-level minimum wage ("Local 1"). Standard errors are clustered at the PUMA-level. *** p<0.01, ** p<0.05, * p<0.10

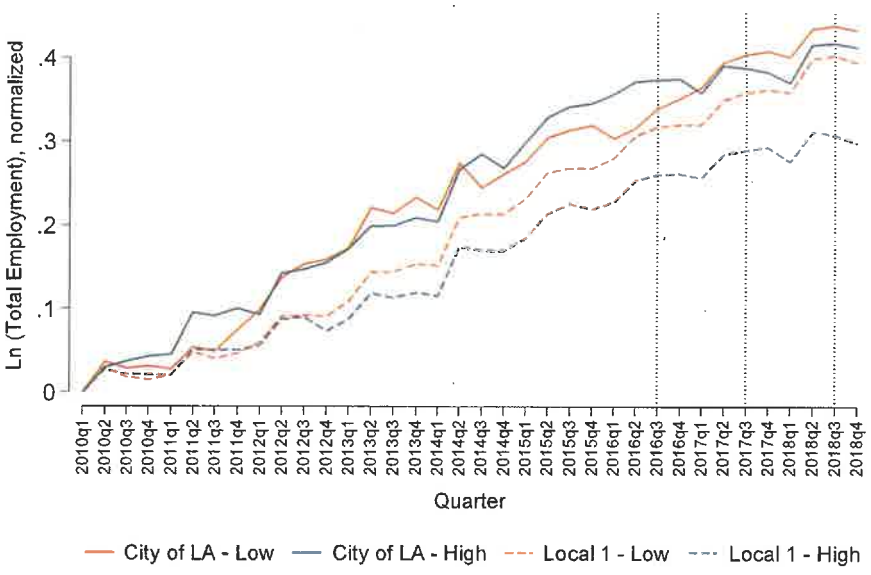
XI.3 Results By Low v. High Income PUMAs

Figure 51: Food Services Industry - Evolution of Key Outcomes

(a) Evolution of Log of Avg. Weekly Wages (Normalized)



(b) Evolution of Log of Employment (Normalized)

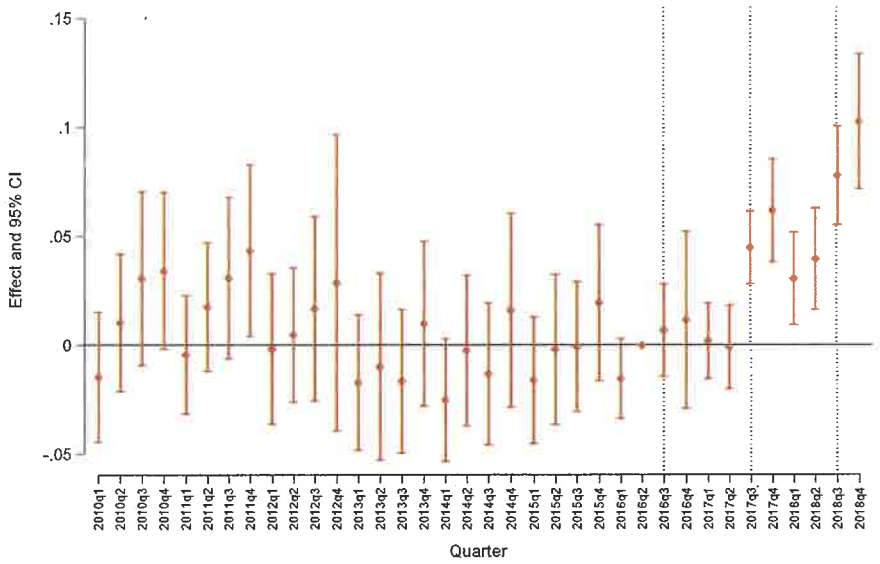


Notes: This figure shows the evolution of average weekly wages (panel a) and employment (panel b) in low income versus high income PUMAs in the City of Los Angeles and low income versus high income PUMAs in the control group "Local 1". The variable of interest is expressed in log terms and normalized subtracting the value of the variable in the first quarter of 2010. Average weekly wages is computed following the BLS definition.

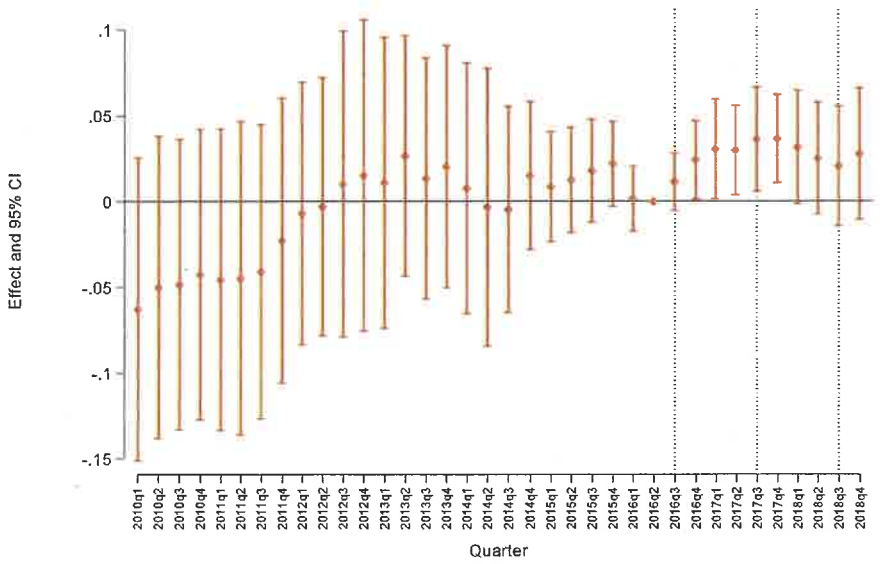
XI.3.1 Results for Low Income PUMAs

Figure 52: Food Services Industry - Estimates of Main Outcomes (Weighted)

(a) Estimates for Log of Avg. Weekly Wages (Normalized)



(b) Estimates for Log of Employment (Normalized)



Notes: This figure shows coefficient estimates and 95 percent confidence intervals from the event study analysis on the log of average weekly wages (panel a) and the log of employment (panel b) for low income PUMAs. The estimated coefficients represent the percentage change in the outcomes of interest relative to the omitted quarter.

Table 29: Food Services Industry - Point Estimation Post-Policy Period

	(1)	(2)
	Ln Ave. Weekly Wages	Ln Employment
Bin 1 (2016 Q3 - Q4)	0.0186**	0.0189**
	(0.0089)	(0.0082)
Bin 2 (2017 Q1 - Q2)	0.0023	0.0333***
	(0.0078)	(0.0123)
Bin 3 (2017 Q3 - Q4)	0.0572***	0.0434***
	(0.0088)	(0.0118)
Bin 4 (2018 Q1 - Q2)	0.0397***	0.0429***
	(0.0099)	(0.0142)
Bin 5 (2018 Q3 - Q4)	0.0872***	0.0415**
	(0.0125)	(0.0165)
Adj. R^2	0.9010	0.9904
Observations	3888	3888

Notes: This table shows coefficient estimates and standard errors (in parenthesis) from the event study analysis on outcomes of interest (see Appendix II, equation 2) for low income PUMAs. The explanatory variables for the post-policy period are binned in two quarters, e.g. the first row presents the coefficient for a dummy variable that takes the value of one for the 3rd and 4th quarter of 2017. Estimates presented in columns (1), (2), and (3) are weighted by PUMA-level employment. Estimates presented in column (4) are weighted by PUMA-level population. We use quarterly and PUMA level fixed-effects. The omitted category corresponds to the 2nd quarter of 2016. Standard errors are clustered at the PUMA-level. *** p<0.01, ** p<0.05, * p<0.10

Table 30: Food Services Industry - Estimated Elasticities & Effect Sizes

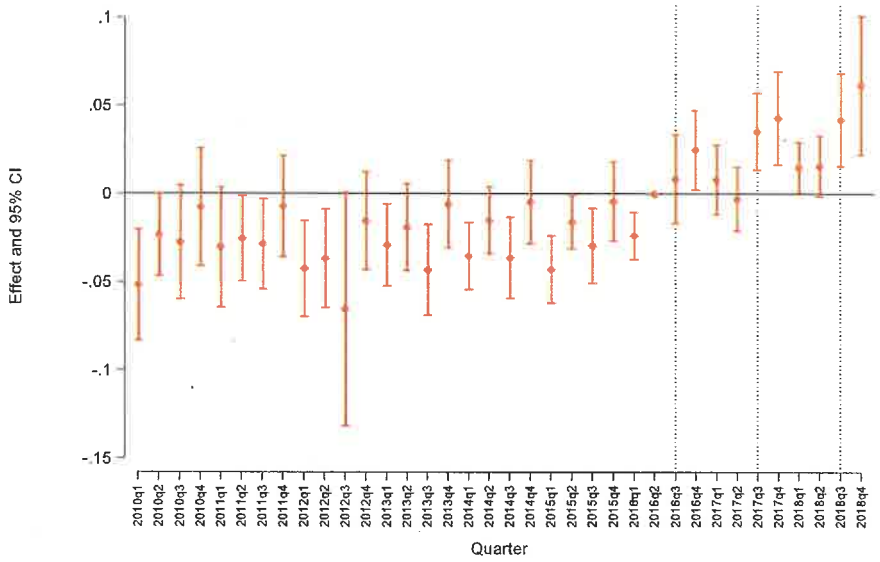
	Ln Ave. Weekly Wages	Ln Employment
	(1)	(2)
Jump 1 (2016 Q3 - Q4)	0.3814**	0.3883**
	(0.1829)	(0.1671)
Jump 3 (2017 Q3 - Q4)	0.4284***	0.3248***
	(0.0662)	(0.0880)
Jump 4 (2018 Q1 - Q2)	0.4563***	0.4934***
	(0.1135)	(0.1628)
Jump 5 (2018 Q3 - Q4)	0.4687***	0.2231**
	(0.0673)	(0.0886)

Notes: This table shows the estimated elasticities for average weekly wages (column 1) and employment (column 2) for low income PUMAs. Estimates are based on the event study analysis on outcomes of interest as described in Appendix I, equations 3 and 4. The explanatory variables for the post-policy period are binned in two quarters, e.g. the first row presents the coefficient for a dummy variable that takes the value of one for the 3rd and 4th quarter of 2017. Note that Jump 2 coefficient is zero by construction and omitted from the table, see appendix for more details. Standard errors are clustered at the PUMA-level. *** p<0.01, ** p<0.05, * p<0.10

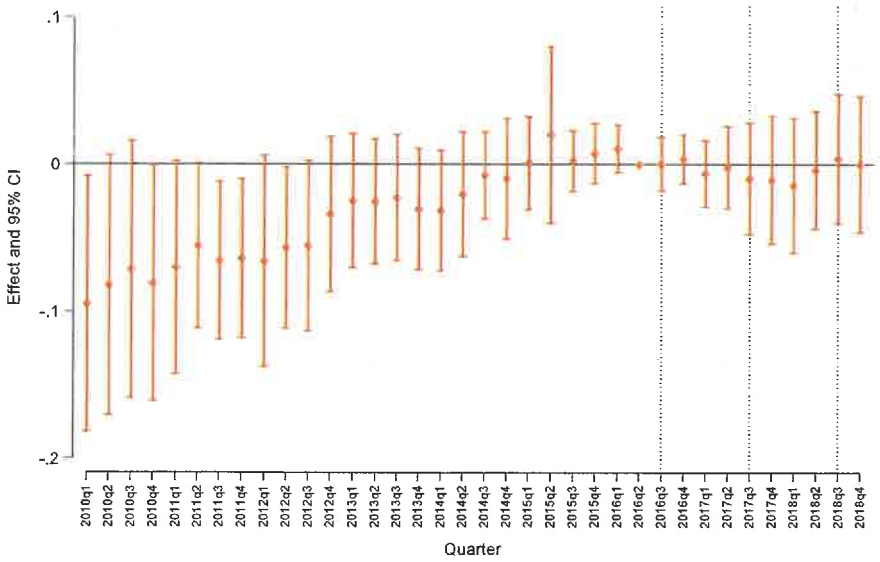
XI.3.2 Results for High Income PUMAs

Figure 53: Food Services Industry - Estimates of Main Outcomes (Weighted)

(a) Estimates for Log of Avg. Weekly Wages (Normalized)



(b) Estimates for Log of Employment (Normalized)



Notes: This figure shows coefficient estimates and 95 percent confidence intervals from the event study analysis on the log of average weekly wages (panel a) and the log of employment (panel b) for high income PUMAs. The estimated coefficients represent the percentage change in the outcomes of interest relative to the omitted quarter.

Table 31: Food Services Industry - Point Estimation Post-Policy Period

	(1)	(2)
	Ln Ave. Weekly Wages	Ln Employment
Bin 1 (2016 Q3 - Q4)	0.0115	0.0008
	(0.0095)	(0.0077)
Bin 2 (2017 Q1 - Q2)	0.0009	-0.0079
	(0.0081)	(0.0119)
Bin 3 (2017 Q3 - Q4)	0.0374***	-0.0160
	(0.0082)	(0.0190)
Bin 4 (2018 Q1 - Q2)	0.0139**	-0.0213
	(0.0067)	(0.0204)
Bin 5 (2018 Q3 - Q4)	0.0539***	-0.0140
	(0.0143)	(0.0209)
Adj. R^2	0.9404	0.9912
Observations	3852	3852

Notes: This table shows coefficient estimates and standard errors (in parenthesis) from the event study analysis on outcomes of interest (see Appendix II, equation 2) for high income PUMAs. The explanatory variables for the post-policy period are binned in two quarters, e.g. the first row presents the coefficient for a dummy variable that takes the value of one for the 3rd and 4th quarter of 2017. Estimates presented in columns (1), (2), and (3) are weighted by PUMA-level employment. Estimates presented in column (4) are weighted by PUMA-level population. We use quarterly and PUMA level fixed-effects. The omitted category corresponds to the 2nd quarter of 2016. Standard errors are clustered at the PUMA-level. *** p<0.01, ** p<0.05, * p<0.10

Table 32: Food Services Industry - Estimated Elasticities & Effect Sizes

	Ln Ave. Weekly Wages	Ln Employment
	(1)	(2)
Jump 1 (2016 Q3 - Q4)	0.2348	0.0163
	(0.1940)	(0.1585)
Jump 3 (2017 Q3 - Q4)	0.2799***	-0.1197
	(0.0615)	(0.1420)
Jump 4 (2018 Q1 - Q2)	0.1597**	-0.2444
	(0.0767)	(0.2346)
Jump 5 (2018 Q3 - Q4)	0.2895***	-0.0750
	(0.0767)	(0.1122)

Notes: This table shows the estimated elasticities for average weekly wages (column 1) and employment (column 2) for high income PUMAs. Estimates are based on the event study analysis on outcomes of interest as described in Appendix I, equations 3 and 4. The explanatory variables for the post-policy period are binned in two quarters, e.g. the first row presents the coefficient for a dummy variable that takes the value of one for the 3rd and 4th quarter of 2017. Note that Jump 2 coefficient is zero by construction and omitted from the table, see appendix for more details. Standard errors are clustered at the PUMA-level. *** p<0.01, ** p<0.05, * p<0.10

XII Appendix III: Overview of Synthetic Control Methodology

The synthetic control method uses observations from the outcome variable of interest during the pre-policy period to generate the optimal set of weighted control regions to match the treated region's outcome trend during the pre-policy period. We calculate the synthetic control separately for each outcome of interest, Y_{jt}, in our case the normalized log of average weekly wages and the normalized log of average quarterly employment levels. Let w_{cj} represent the optimal weight on control county c and outcome variable j, where $c = 1$ represents the City of LA and $c = 2, ..., C$ represents the donor pool of control counties. The synthetic control estimator finds the optimal weights that minimize the pre-policy period mean squared prediction error (MSPE) of the outcome between the actual City of Los Angeles and the synthetic City of Los Angeles such that:

$$min_{Wcj} \sum_{t=0}^{T} (Y_{1jt} - \sum_{c=2}^{C} w_{cj} Y_{cjt})^2$$

where $\sum w_{cj} = 1$ and $\forall c w_c \geq 0$

Consequently, the weighted average of the donor control counties selected (e.g., those with non-zero weights) will be equal to the synthetic control for outcome j as represented by the following equation:

$$\hat{Y}_{1jt}^{Synth} = \sum_{c=2}^{C} w_{cj}^{*} Y_{cjt}$$

We can then estimate the effect of the higher minimum wage ordinance on the outcomes of interest j in quarter q as follows:

$$\alpha_q^{Synth} = Y_{1jt} - \hat{Y}_{1jt}^{Synth}$$

where q represents quarters after the minimum wage ordinance in the city of LA went into effect

Lastly, we calculate the elasticities, η, for each annual increase, i, and outcome, j, as follows:

$$\eta_{ij} = \sum_{t=i}^{T} (Y_{1jt} - \hat{Y}_{1jt}) / \triangle (MW)$$

where $\triangle (MW)$ represents the percent minimum wage increase from the prior year.

XIII Appendix IV: Synthetic Control Method Supplemental Findings

XIII.1 Food Services (NAICS 722)

The following map shows the donor counties that we used to implement the synthetic control method for the food services industry. The donor sample consists of counties mostly from Texas, the South, the Midwest, and the Northeast.

Figure 54: Map of the Donor Counties

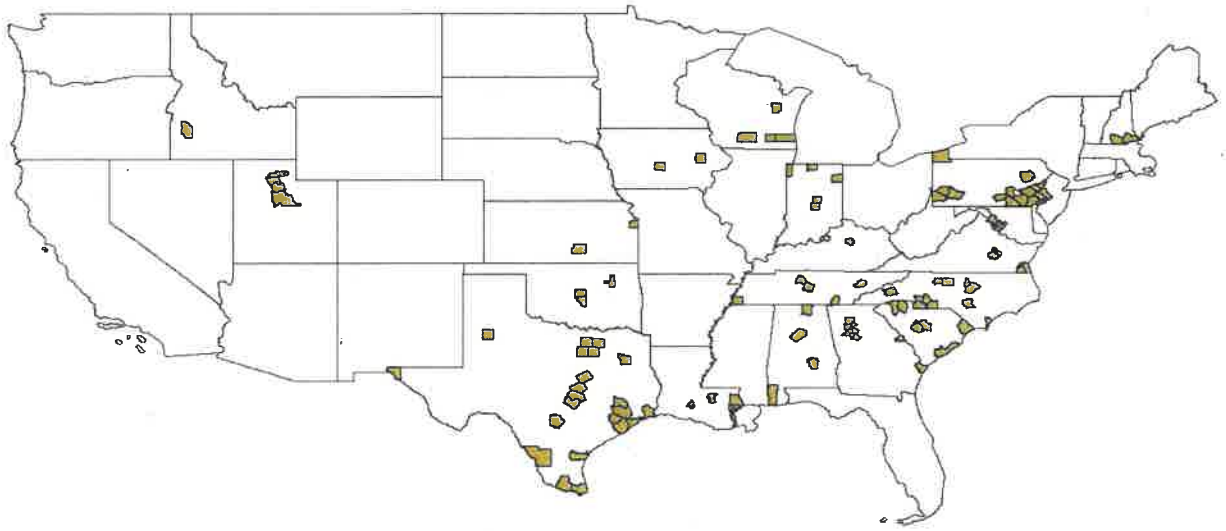
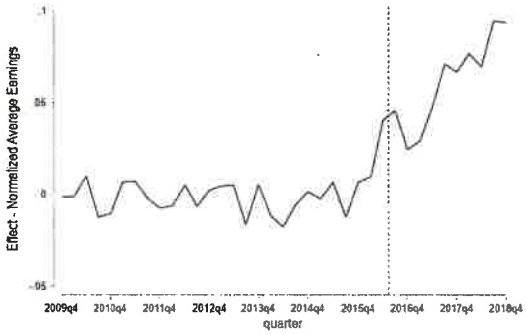
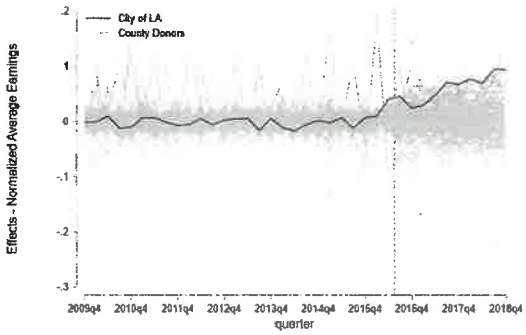


Figure 55: Food Services Industry - Log of Avg. Weekly Wages (Normalized)

(a) Effect = City of LA - Synthetic Control



(b) Placebo Tests with Effect



(c) Standardized P-Values

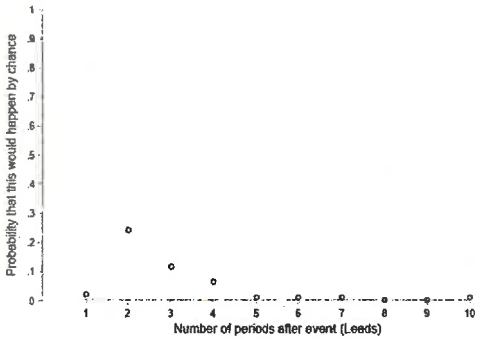
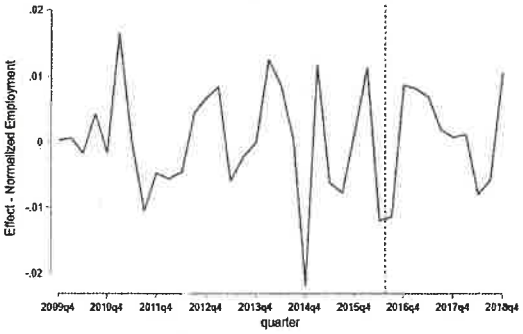
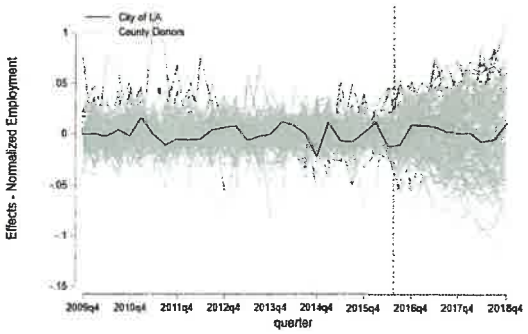


Figure 56: Food Services Industry - Log of Employment (Normalized)

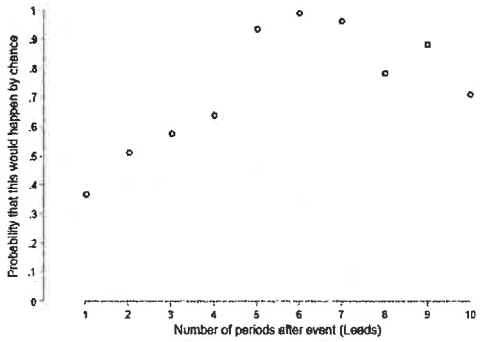
(a) Effect = City of LA - Synthetic Control



(b) Placebo Tests with Effect



(c) Standardized P-Values



XIII.2 NAICS 722511: Full-Service Restaurants

The following map shows the donor counties that we used to implement the synthetic control method for the full-service restaurant industry. The donor sample consists of counties mostly from Texas, the South, the Midwest, and the Northeast.

Figure 57: Map of the Donor Counties

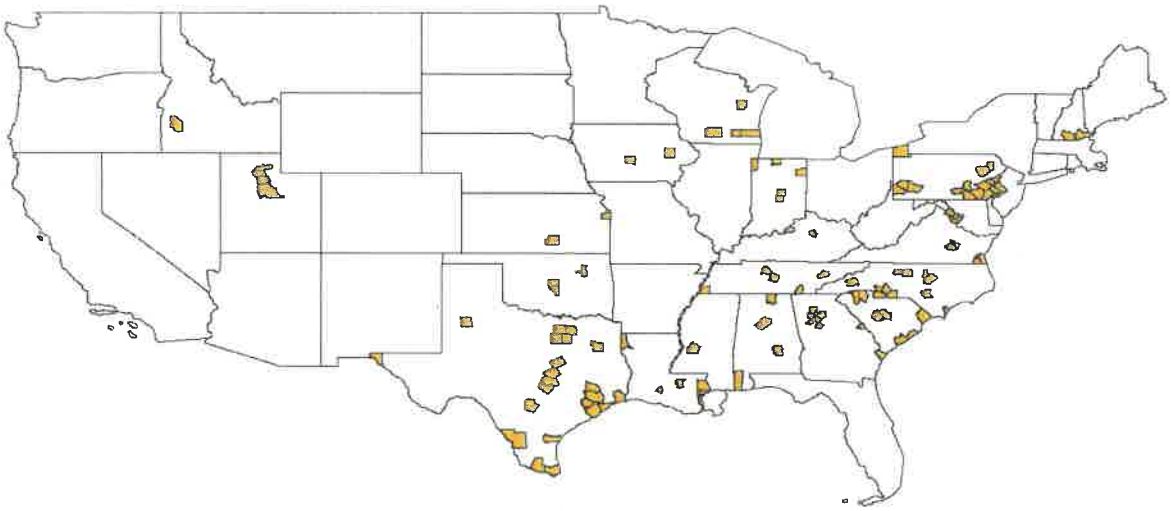
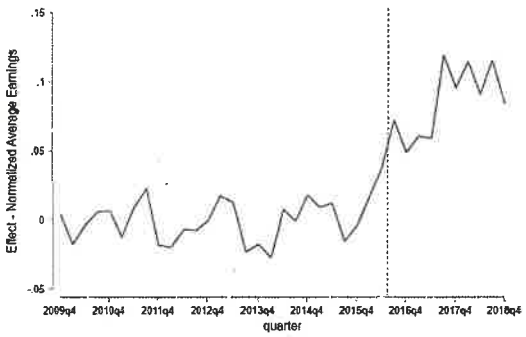
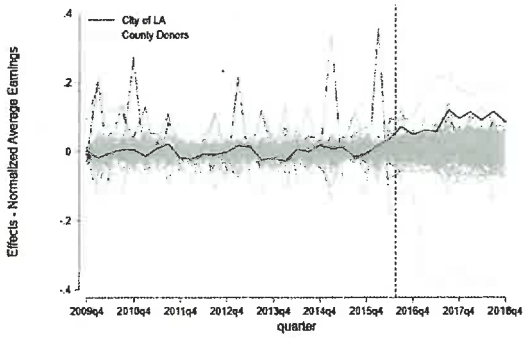


Figure 58: Full-Service Restaurants - Log of Avg. Weekly Wages (Normalized)

(a) Effect = City of LA - Synthetic Control



(b) Placebo Tests with Effect



(c) Standardized P-Values

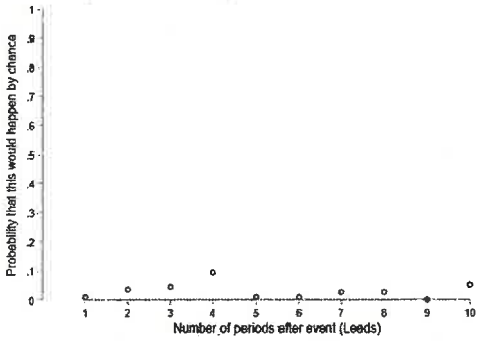
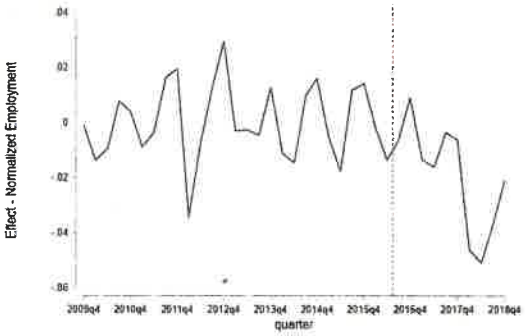
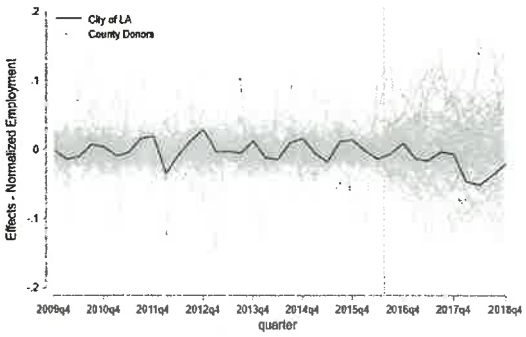


Figure 59: Full-Service Restaurants - Log of Employment (Normalized)

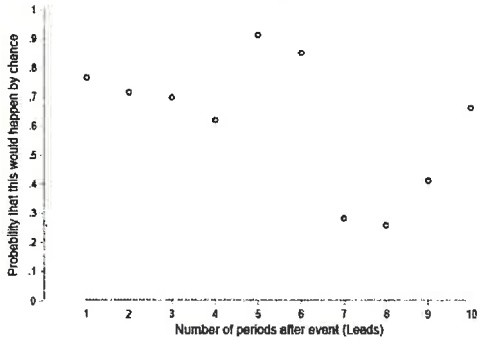
(a) Effect = City of LA - Synthetic Control



(b) Placebo Tests with Effect



(c) Standardized P-Values



XIII.3 NAICS 722513: Limited-Service Restaurants

The following map shows the donor counties that we used to implement the synthetic control method for the limited-service restaurant industry. The donor sample consists of counties mostly from Texas, the South, the Midwest, and the Northeast. ,

Figure 60: Map of the Donor Counties

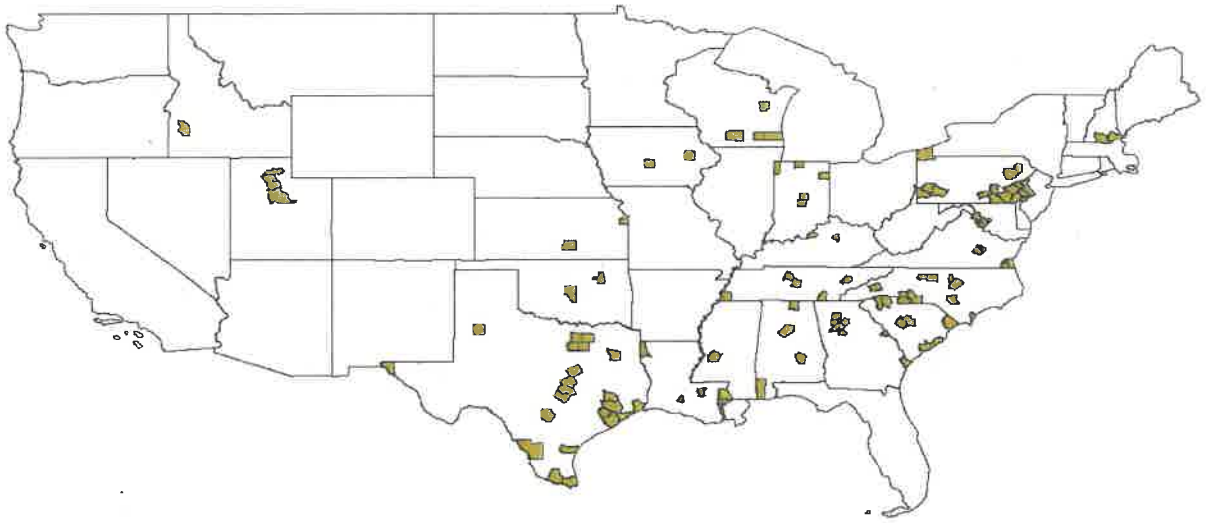
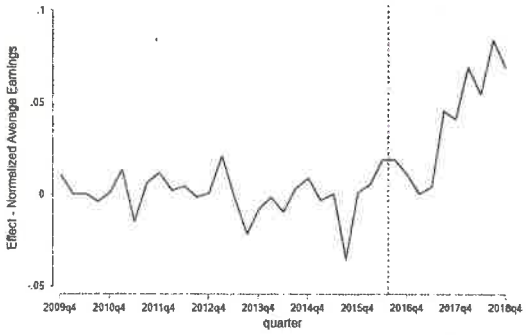
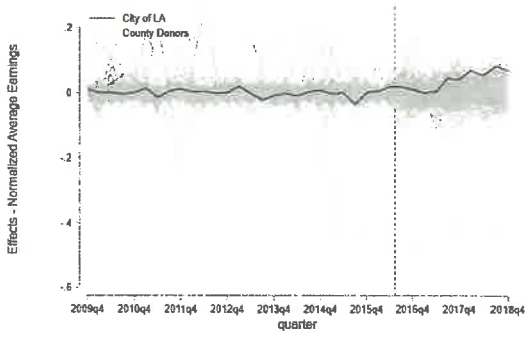


Figure 61: Limited-Service Restaurants - Log of Avg. Weekly Wages (Normalized)

(a) Effect = City of LA - Synthetic Control



(b) Placebo Tests with Effect



(c) Standardized P-Values

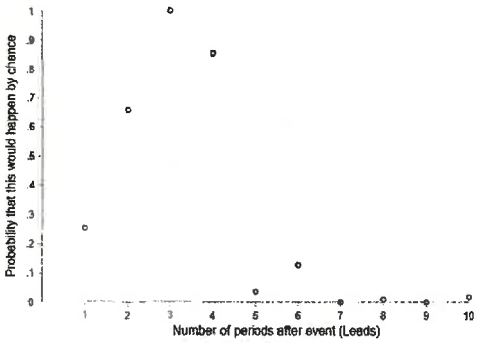
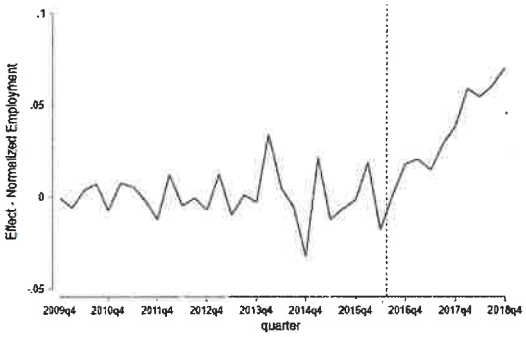
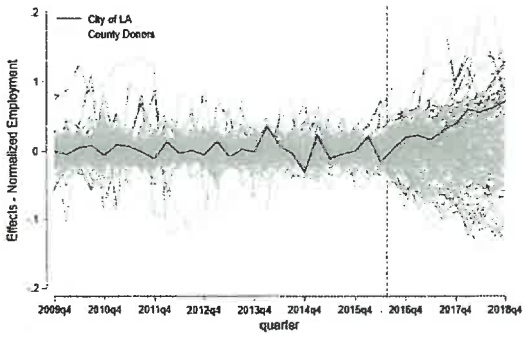


Figure 62: Limited-Service Restaurants - Log of Employment (Normalized)

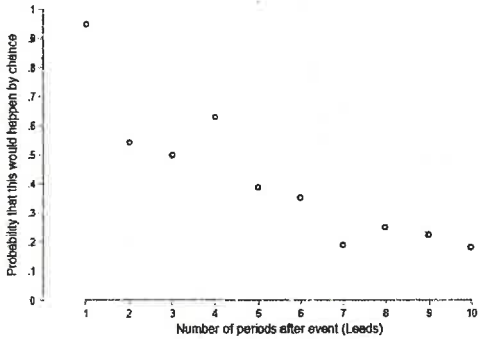
(a) Effect = City of LA - Synthetic Control



(b) Placebo Tests with Effect

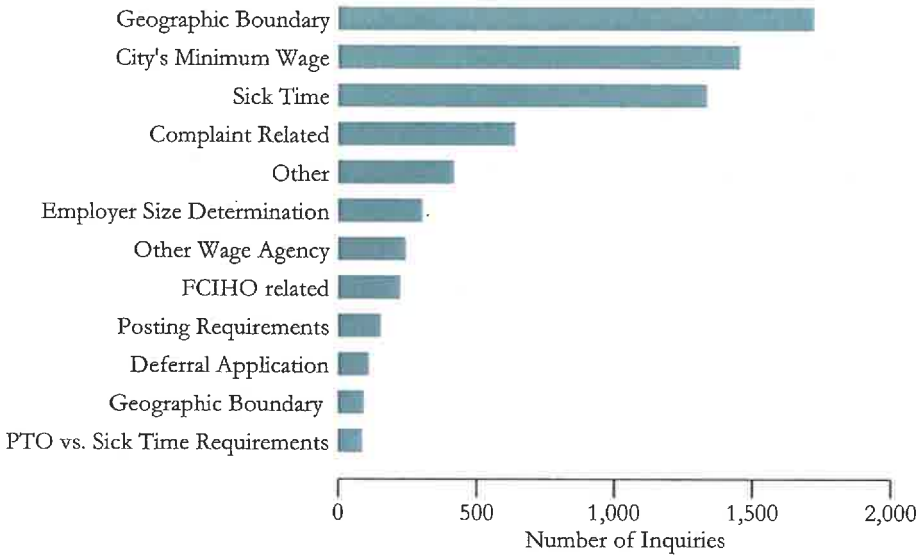


(c) Standardized P-Values



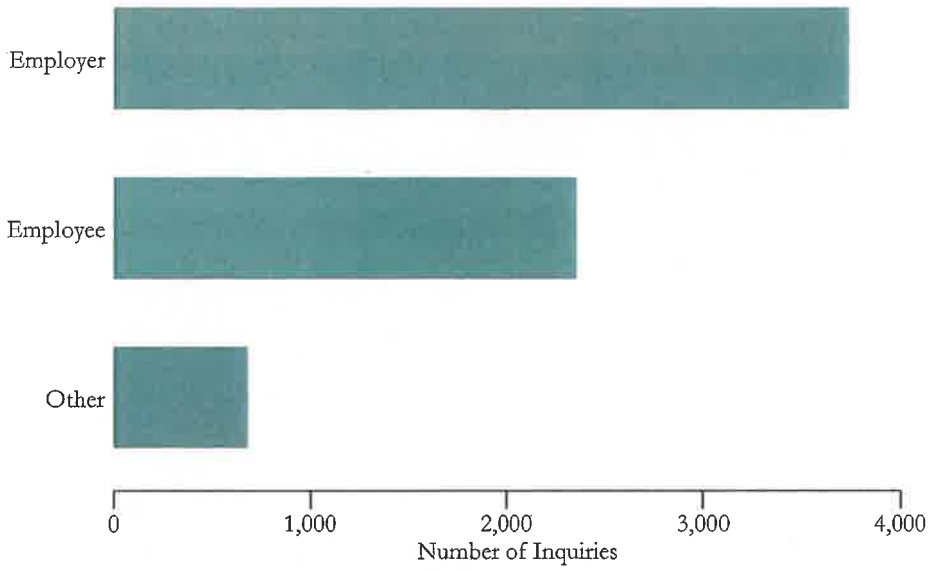
XIV Appendix V: Office of Wage Standards Supplemental Figures & Tables

Figure 63: Inquiry Types: Based on a Full Sample of 6,783 Inquiries



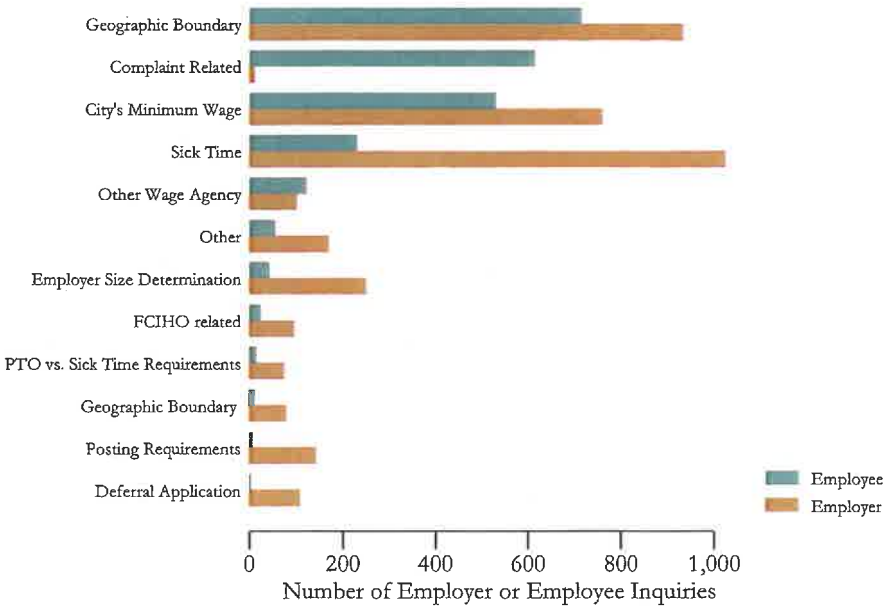
Notes & Sources: Based on the full sample of 6,783 inquiries from data collected by the City's Office of Wage Standards.

Figure 64: Inquirer Types



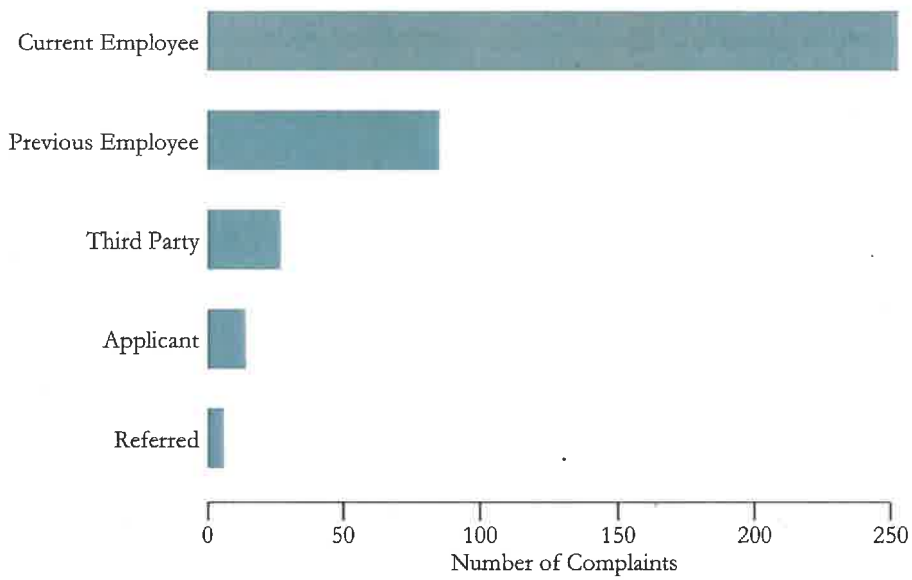
Notes & Sources: Based on the full sample of 6,783 inquiries from data collected by the City's Office of Wage Standards.

Figure 65: Inquiry Types of Employers v. Inquiry Types of Employees



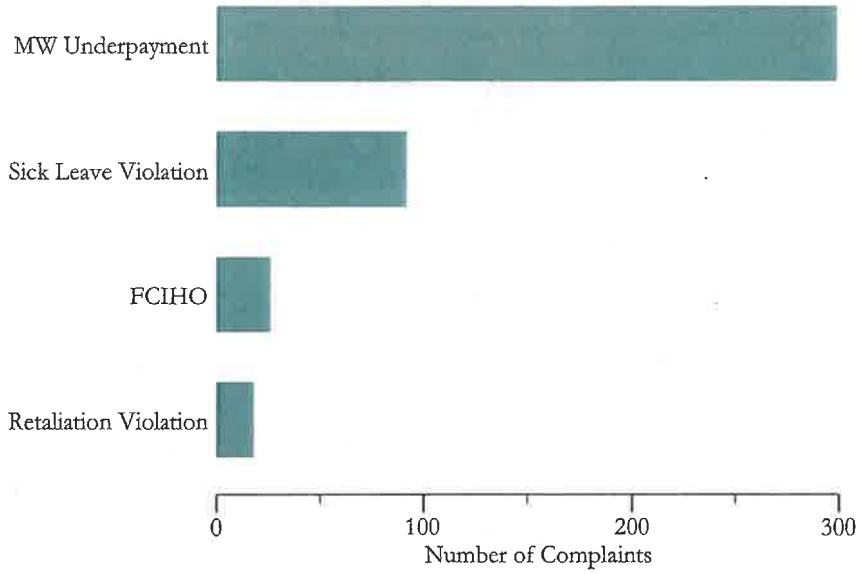
Notes & Sources: Based on the inquiry data collected by the City's Office of Wage Standards.

Figure 66: Complainant Types



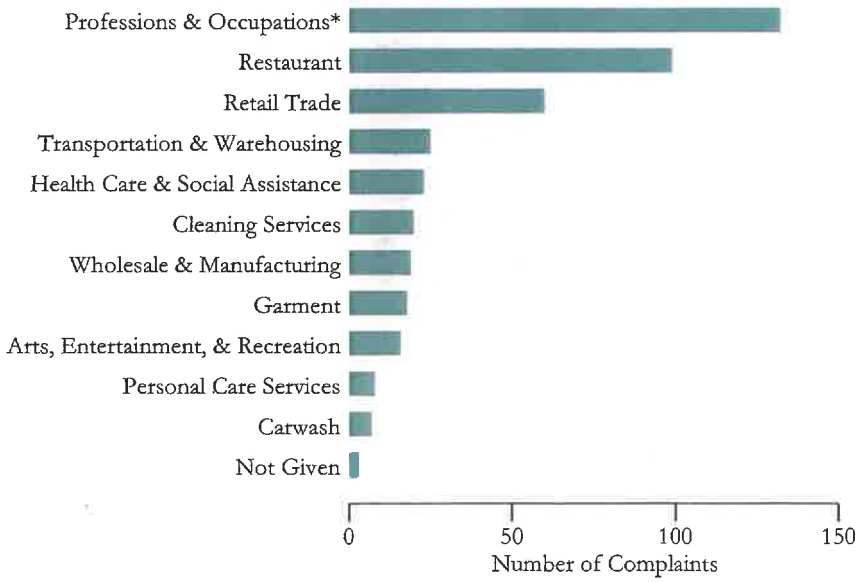
Notes & Sources: Based on the sample of 385 complaints with documented complainant type from the data collected by the City's Office of Wage Standards. The sample excludes repeat complaints against the same employer.

Figure 67: Complaint Types



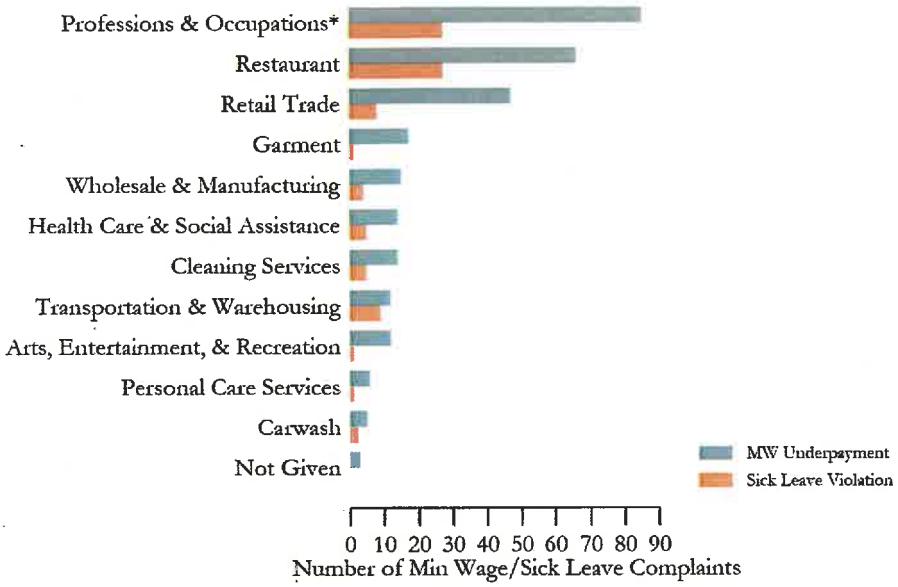
Notes & Sources: Based on the full sample of 500 cases from the complaint data collected by the City's Office of Wage Standards.

Figure 68: Share of Complaints, by Industry



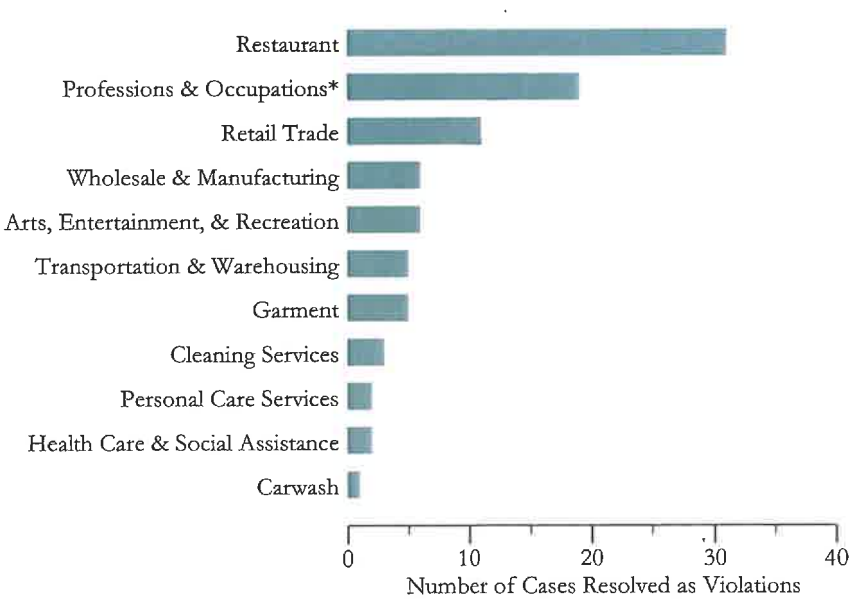
Notes & Sources: Based on the full sample of cases from the complaint data collected by the City's Office of Wage Standards.

Figure 69: Industry Types: Minimum Wage vs. Sick Leave Complaints



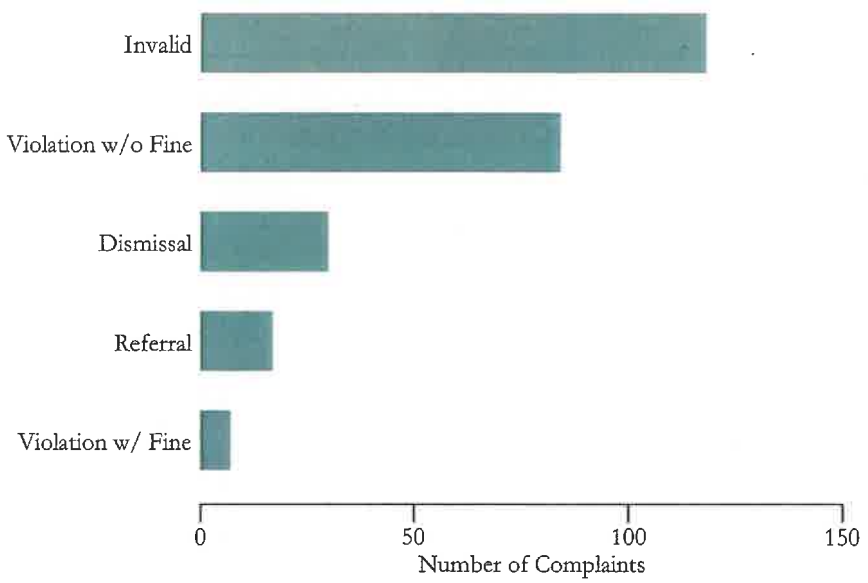
Notes & Sources: Based on the complaint data collected by the City's Office of Wage Standards.

Figure 70: Share of Violations, by Industry



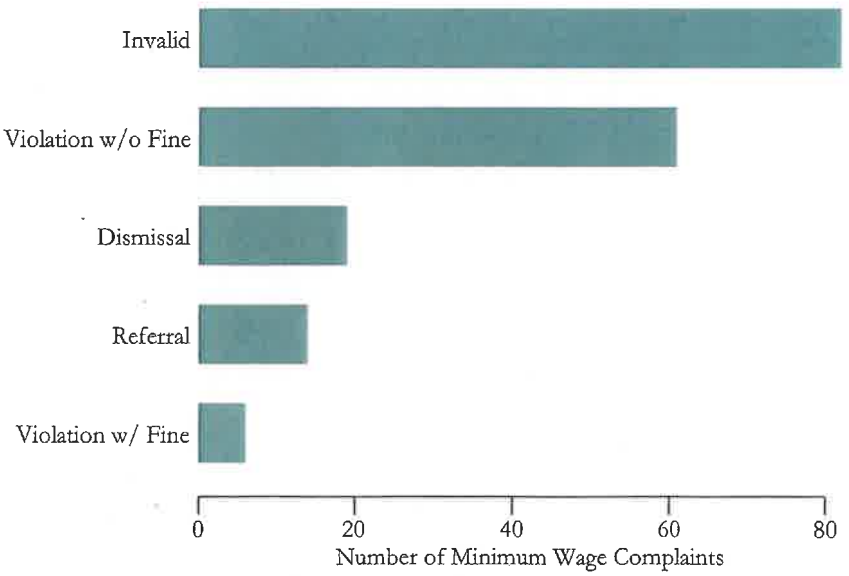
Notes & Sources: Based on the number of cases resolved as violations collected by the City's Office of Wage Standards. The sample excludes repeat complaints against the same employer.

Figure 71: Outcome of Complaints



Notes & Sources: Based on the sample of 256 closed cases collected by the City's Office of Wage Standards. The sample excludes repeat complaints against the same employer.

Figure 72: Outcome of Complaints: Minimum Wage Cases



Notes & Sources: Based on the sample of 182 closed cases related to the minimum wage collected by the City's Office of Wage Standards. The sample excludes repeat complaints against the same employer.