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The Impact of a \$15 Minimum Wage in Unincorporated Los Angeles County

Empirical Analysis

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Survey Research

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About the Employment Policies Institute

The Employment Policies Institute (EPI) is a nonprofit research organization found in 1991 and based in Washington, DC. EPI's mission is to study public policies that impact the entry-level job market. In this capacity, EPI has worked with economists from the country's top research universities. EPI receives support from foundations, businesses, and individuals.

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Executive Summary

Introduction

Earlier this summer, Los Angeles Mayor Eric Garcetti signed into law a bill that raises the city's minimum wage to \$15 an hour over a five-year period. A few weeks later, the Mayor testified before the Los Angeles County Board of Supervisors and encouraged them to follow the city's lead and establish a \$15 wage requirement for the unincorporated areas of Los Angeles County.

A report on this proposal by the Los Angeles Economic Development Corporation included the results of a survey of 1,000 Los Angeles businesses. However, the survey focused on all businesses in Los Angeles County, and not those specifically located in unincorporated areas. The report that follows focuses specifically on the impact of a \$15 minimum wage—phased in over a five-year period between 2016 and 2020—on businesses and employees located in unincorporated areas of Los Angeles County.

The report is divided into two sections. The first section, authored by Dr. Aaron Yelowitz, uses American Community Survey data from the Census Bureau to identify affected employees in unincorporated areas, and to analyze the impact on the wage bill and employment levels from a wage mandate of \$15 an hour. The second section, authored by Dr. Lloyd Cordor, is a survey of 422 for-profit and non-profit businesses in the county's unincorporated areas. (The business data for this survey was provided by Los Angeles County.)

Findings from Section 1

Dr. Yelowitz finds that there are approximately 341,000 working-age employees who reside in the county's unincorporated areas. Restricting the sample to employees who likely live and work in the unincorporated areas narrows it to roughly 200,000 employees. Of those employees, just under one-third—about 106,000 people—earn less than \$15 an hour.

Dr. Yelowitz provides demographic details for working-age employees in unincorporated areas. He finds that those residing in unincorporated areas are 10 percentage points less likely to be a college graduate, relative to the county as a whole, and six percentage points more likely to have no diploma. Unincorporated areas are also more racially and linguistically diverse: The population of workers is 14 percentage points more likely to be Hispanic or Latino, and three percentage points more likely to have difficulty speaking English.

Of those employees who earn less than \$15 an hour, nearly 40 percent have difficulty speaking English, and roughly one-third lack a high-school diploma.

Dr. Yelowitz estimates that a fully phased-in \$15 minimum wage would cost, on average, an additional \$9,700 per affected employee in the unincorporated areas. Payroll taxes and paid leave requirements would add about \$900 to the per-employee cost. (In the accompanying table to figure 1 in the study, Dr. Yelowitz provides the per-employee wage bill for each step of the minimum wage increase.) Across all

employees in unincorporated Los Angeles County, the total additional wage cost of a \$15 minimum wage (assuming no job loss) is roughly \$1.04 billion.

The employment impact of these added wage costs has been the subject of intense academic and political debate. At the \$15 level, very few experts expect that there will be *zero* impact: In the city of Los Angeles, for instance, even proponents of a higher minimum wage at the University of California-Berkeley acknowledged that some lost jobs would likely result from a \$15 minimum wage.

In this report, Dr. Yelowitz relies on widely-accepted estimates from the academic literature to project a range of plausible employment efforts. His best estimate of the negative employment effect in unincorporated Los Angeles County is approximately 10,000 fewer jobs once the \$15 proposal is fully phased in. In this case, the total wage bill would fall to \$742 million. (A full range of employment estimates, at each level of the proposed wage increase, is available in Table 2.)

In the last portion of his analysis, Dr. Yelowitz uses ACS data to construct estimates on the scope and reach of a \$15 wage requirement. His analysis suggests that just over 80 percent of employers in the unincorporated portions of Los Angeles County would be affected by the fully phased-in \$15 minimum wage. (This figure is roughly in line with findings from the survey results in Section 2.) Among very small employers with four or fewer employees, who make up the largest grouping of businesses in the county's unincorporated areas, close to 70 percent would be affected by the \$15 wage requirement.

The wage increase would impact a much larger number of firms in industries such as hotel & food service, education, healthcare, and social assistance. It would have less of an impact on firms in the real estate industry, and on professional, scientific, & technical service businesses.

Findings from Section 2

Using data provided by Los Angeles County, Dr. Corder and his team surveyed 422 for-profit and non-profit businesses in the county's unincorporated areas. A majority of respondents were for-profit companies (91%) and most also had less than 10 employees (58%). Over one-third of respondents (41%) owned locations near an incorporated city boundary where a \$15 minimum wage would not apply.

Four-in-five (78%) of the respondents indicated that they would have to increase pay if the minimum wage is raised to \$15 per hour (for-profit, 81%; non-profit, 58%). As noted above, this result is similar to the estimate from Dr. Yelowitz that 81 percent of firms in unincorporated Los Angeles County would be affected by an increase in the minimum wage to \$15 an hour.

Surveyed for-profit businesses were very likely to take a series of steps to offset the cost of a \$15 minimum wage (see Figure 2 in the report). For instance, nearly three-quarters of respondents reported that they were likely to raise prices, with 61 percent very likely to take this step. Over one-third of surveyed business owners were very likely to reduce staff levels; in total, over half of respondents were very or somewhat likely to reduce staffing levels. Similarly, over 40 percent were very likely to scale back on employees' hours or their hours of operations.

One-third of businesses reported that they'd consider relocating, with one in five very likely to relocate. This risk was somewhat greater for businesses with locations near an incorporated city boundary where a \$15 minimum wage would not apply. The risk was considerably higher for businesses in the

manufacturing industry, which may be less-tied to a specific geographic location than a restaurant or hotel.

For some businesses, neither relocation nor cost-cutting measures would be sufficient: 29 percent reported that they might close as a consequence of a \$15 minimum wage, with one in ten very likely to close.

It's difficult to draw meaningful conclusions from the results of the non-profit business survey. Of the 422 business surveyed, just four percent identified as non-profit organizations (n=19). Of those businesses, 11 would be affected by an increase in the minimum wage to \$15 an hour. Three of the eleven surveyed nonprofits were very likely to need additional financial support to absorb an increase to \$15 an hour. While two of the nonprofits reported that it was possible they would have to reduce services for their targeted population, none of the nonprofits reported that they were likely to shut down or relocate.

Conclusions

For many legislators, the decision to raise the minimum wage is a moral one rather than an economic one, which this report cannot speak to. Whatever the underlying motivations in Los Angeles County, legislators should keep in mind these conclusions:

- The population in the unincorporated areas of Los Angeles County tends to be less-educated than the County as a whole, particularly for employees earning less than \$15 an hour;
- A \$15 minimum wage will have broad reach in unincorporated Los Angeles County, eventually affecting roughly 80 percent of all businesses by the time it's fully phased-in;
- A \$15 minimum wage will cost employers in unincorporated areas an estimated \$1 billion when it's fully phased-in; the proposal will cost roughly 10,000 jobs, reducing the wage bill to \$742 million;
- The survey results suggest business relocation outside of the unincorporated areas is a risk, particularly for businesses in industries such as manufacturing that aren't tied to a specific geographic area;
- The survey results suggest price hikes, reduced hours & reduced employment are all likely responses by for-profit employers to a \$15 minimum wage;
- For 10 percent of the for-profit businesses in the country's unincorporated areas, the survey results suggest that closure in response to a \$15 minimum wage is very likely.

Section 1: The Labor Market Impact of Expanding a \$15/Hour Minimum Wage to Unincorporated Parts of Los Angeles County

By: Dr. Aaron Yelowitz

This analysis uses Census Bureau data from the American Community Survey (ACS) to model the impact of increasing the minimum wage in unincorporated areas of Los Angeles County on the following schedule:

- July 1, 2016 \$10.50
- July 1, 2017 \$12.00
- July 1, 2018 \$13.25
- July 1, 2019 \$14.25
- July 1, 2020 \$15.00

Currently, the minimum wage in these unincorporated areas matches the state wage of \$9 an hour.

The primary challenge associated with this analysis is identifying employees in unincorporated areas that would be affected by a wage increase as described above. Appendix A describes in detail the methodology used to identify working-age adults in the county's unincorporated areas.

Comparison of Working-Age Adults in Incorporated and Unincorporated Parts of Los Angeles

Before simulating the employment effects and additional wage bill from a \$15 per hour minimum wage, it is instructive to examine characteristics of workers in different parts of Los Angeles. This is shown in Table 1. Approximately 46% of ACS respondents met the criteria for inclusion in the sample based on age and work status. Of the 4,592,905 workers, 341,867 of them, or 7.4% of all workers, were assigned to unincorporated areas (Table 1, column 1). Restricting workers to those who both live in and (likely) work in unincorporated areas (through short commuting distance) narrows the sample to approximately 200,000 workers. Of those workers, approximately half (106,612) have imputed wage rates under \$15 per hour.

There are clear differences between workers in unincorporated and incorporated parts of Los Angeles. Those in unincorporated areas tend to be more disadvantaged; for example, they are 10 percentage points less likely to be a college graduate. Unincorporated areas are also more racially diverse, with a population of workers that is 14 percentage points more likely to be Hispanic or Latino. Annual hours of work and annual wages rates are also lower.

The second column restricts the sample to those working in unincorporated areas (and understates the labor market impact because individuals may live in incorporated areas and commute to unincorporated areas, although this is impossible to ascertain from the ACS). The third column then restricts the sample to the 106,612 workers who work in unincorporated areas and earn less than \$15 per hour. They form the core group of affected workers. This sample is clearly different than the full sample of workers: they

are considerably younger, far more likely to be non-citizens, much less educated (with only 10 percent having a college degree), far more likely to be Hispanic or Latino, and have difficulty speaking English. On average, wage rates are \$9.13 per hour. Poverty rates are approximately 7 percentage points higher – 16% versus 9% – for these workers.

Table 1 Summary of Workers in American Community Survey, 2013				
	Unincorporated Areas			Incorporated Areas
	(1) All workers	(2) All workers, Near home	(3) All workers, Near home, Under \$15	(4) All workers
Weighted Population	341,867	198,303	106,612	4,251,038
Age	40.1	40.2	36.7	40.3
Non-Citizen	0.23	0.24	0.32	0.21
Male	0.54	0.51	0.50	0.54
No Diploma	0.22	0.23	0.32	0.16
HS Grade or GED	0.23	0.23	0.28	0.20
Some College	0.32	0.32	0.30	0.30
College Graduate	0.23	0.23	0.10	0.33
White	0.19	0.18	0.11	0.31
Black	0.10	0.10	0.07	0.07
Hispanic	0.58	0.59	0.72	0.44
Married	0.47	0.47	0.38	0.45
Difficulty with English	0.28	0.30	0.39	0.25
Work Near Home	0.58	1.00	1.00	0.60
Annual Hours Worked	1747	1815	1721	1785
Wage Rate	\$22.62	\$21.86	\$9.13	\$25.51
Wage Under \$9/hour	0.25	0.25	0.47	0.22
Wage \$9-\$15/hour	0.26	0.29	0.53	0.24
Wage Over \$15/hour	0.48	0.46	0.00	0.54
Under 100% FPL	0.10	0.09	0.16	0.09
100%-200% FPL	0.22	0.23	0.34	0.19
200%-300% FPL	0.19	0.20	0.24	0.17
300%-400% FPL	0.13	0.13	0.11	0.13
400%-500% FPL	0.10	0.10	0.07	0.10
Over 500% FPL	0.27	0.25	0.09	0.32
Employer Health Ins.	0.59	0.60	0.45	0.59
Medicaid	0.09	0.08	0.12	0.07
Uninsured	0.27	0.27	0.38	0.25
Wage Bill at \$10.50/hour	\$1,040	\$1,794	\$3,336	\$0
Wage Bill at \$12.00/hour	\$1,603	\$2,763	\$5,140	\$0
Wage Bill at \$13.25/hour	\$2,158	\$3,720	\$6,919	\$0

Wage Bill at \$14.25/hour	\$2,642	\$4,555	\$8,473	\$0
Wage Bill at \$15.00/hour	\$3,033	\$5,229	\$9,725	\$0
Notes: Author's tabulation of 2013 American Community Survey, for workers in Los Angeles County. Wage rates constructed by dividing annual wage and salary income by annual hours. "Near home" defined as working in Los Angeles County and either having a commute of 30 minutes or less, or walking/biking/working at home. Wage bill applies only to workers who work near home, live in an unincorporated area, and earn less than \$15/hour. In computing annual hours, weeks worked assigned based on the methodology in Yelowitz (2012). ¹				

The bottom of Table 1 also computes a per-worker "wage bill" – this is assigned only for workers who live and work in unincorporated areas and earn under \$15 per hour. Assuming zero job loss, zero work hour reductions, and no other compensation responses (such as shifting premiums on health insurance plans or cutting other benefits), the increase in the wage floor leads to increased costs of \$9,725 per year for the 106,612 workers, or an aggregate increase in the wage bill of \$1.036 billion from a minimum wage of \$15 per hour, the level proposed for 2020. Figure 1 plots out the wage bill for the years 2016 to 2020, as the minimum wage is phased in, using the results in column (3). The aggregate bill is simply the product of the average wage bill and the 106,612 workers. The calculations assume no wage growth outside of the mandated minimum wage; to the extent that wages of the workers in column (3) grew absent the minimum wage, the wage bill would be modestly lower.

Figure 1 also plots the wage bill incorporating state and federal payroll taxes, as well as paid sick leave; see http://www.taxes.ca.gov/Payroll_Tax/doingbus1.shtml for a description of California-specific taxes. Only employer-side taxes are included.² The California payroll taxes include Unemployment Insurance (UI) and Employment Training Tax (ETT). Federal payroll taxes include Social Security taxes (6.2%) and Medicare taxes (1.45%).³ California's unemployment insurance tax is assumed to be 3.4%, but paid on just the first \$7,000 of wages; for firms with long enough histories, the tax is experience-rated. The ETT tax is 0.1%, with the same limit on wages. Although federal Social Security payroll taxes are capped, the limit is \$118,500 for 2015; thus, it is assumed that employers would pay the full amount on the wage bill. Medicare taxes are uncapped (and there is an additional tax for high earners that is unlikely to matter for the workers under \$15 per hour). Incorporating federal Social Security taxes and Medicare taxes is therefore straightforward; each wage bill is simply adjusted upward by 7.65%. For each of the 106,612 affected workers, to the extent that the minimum wage increases led to increases in annual wage income up to \$7,000, the additional California tax rates were also incorporated and assumed to be 3.5% (3.4% for unemployment and 0.1% for ETT). For the \$15 per hour minimum wage (in 2020), the payroll taxes from Social Security and Medicare amounted to \$743.98 per worker per year and the additional California payroll taxes amounted to \$11.64 per worker per year.

In addition to payroll taxes at the state and federal level, California's Healthy Workplace Healthy Family Act of 2014 (AB 1522) allows employees to accrue up to three days (24 hours) of paid sick leave per year, at a rate of 1 hour of paid leave for every 30 hours worked. Thus, all employees working more than

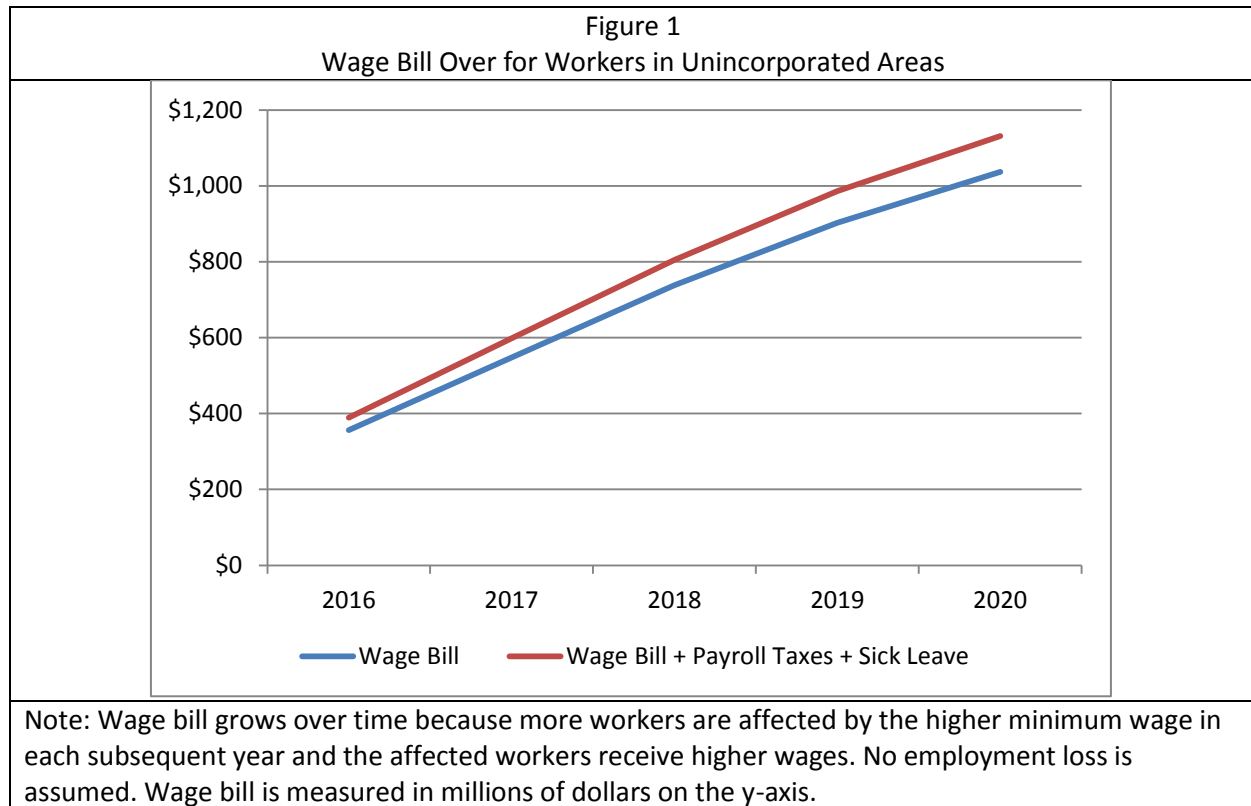
¹ Aaron Yelowitz. "The Labor Market Effects of Citywide Compensation Floors: Evidence from San Francisco and Other Cities." Employment Policies Institute, 2012.

² State disability insurance (SDI) is not included because it is deducted from the employee's paycheck.

³ See <http://www.irs.gov/Businesses/Small-Businesses-&Self-Employed/Understanding-Employment-Taxes>. The federal unemployment tax (FUTA) is not included. The FUTA rate is 6.0% and employers can take a credit of up to 5.4% of taxable income if they pay state unemployment taxes. FUTA would potentially lead to a modestly higher wage bill.

720 hours per year also accrue 3 days of paid sick leave.⁴ U.S. workers take, on average, 4.1 sick days per year, so it is likely that all sick days mandated by California’s legislation will be used.⁵ For workers above 720 annual hours, the increase in costs attributable to the minimum wage would then be 24 hours (mandated sick leave hours) multiplied by the increase in wage rate due to the minimum wage. For example, a company would see an increase in costs of \$144 per year (24 hours x \$6 per hour change) from increasing the minimum wage to \$15 per hour if the worker initially earned \$9 per hour. For workers below the 720 hour threshold, the increase in costs would approximate $(1/30) \times \text{Annual Hours} \times \text{Wage rate change}$. For example, the increase in costs would be \$120 per year for a worker with 600 annual hours, using the same wage change as before.

By far, the biggest increase in the wage bill comes from the direct costs of the minimum wage; incorporating other institutional features raises the cost in each year by approximately 9%. The overall wage bill, including all the institutional features considered, is \$1.13 billion in 2020, with a \$15 per hour minimum wage.



⁴ <http://www.dir.ca.gov/dlse/ab1522.html>

⁵ Ziebarth and Karlsson, “A natural experiment on sick pay cuts, sickness absence, and labor costs” *Journal of Public Economics* 94 (2010), 1108-1122.

Companion Table accompanying Figure 1: Impact on Wage Bill (Affected Workers=106,612)					
	2016	2017	2018	2019	2020
Panel A: Per Worker Impact					
Wage Bill	\$3,336.31	\$5,139.92	\$6,918.96	\$8,473.03	\$9,725.28
Social Security & Medicare California (Capped)	\$255.23	\$393.20	\$529.30	\$648.19	\$743.98
Payroll Taxes	\$8.73	\$9.76	\$10.62	\$11.23	\$11.64
Sick Leave	\$45.83	\$70.03	\$93.78	\$114.40	\$130.98
Panel B: Aggregate Impact (shown in Figure 5)					
Wage Bill	\$355,691,108	\$547,977,151	\$737,643,630	\$903,326,781	\$1,036,831,125
Social Security & Medicare California (Capped)	\$27,210,368	\$41,920,254	\$56,429,732	\$69,104,502	\$79,317,580
Payroll Taxes	\$931,221	\$1,040,657	\$1,132,600	\$1,197,263	\$1,240,973
Sick Leave	\$4,885,808	\$7,465,934	\$9,997,801	\$12,196,807	\$13,964,008

Employment Effects and Labor Market Outcomes

It is likely that employers will attempt to adjust their labor force, given such a dramatic increase in the wage floor and such a large rise in the wage bill. This is not a controversial observation: Notably, even proponents of a minimum wage increase in Los Angeles acknowledged that job displacement would likely occur at the \$15 level. A review of the economic literature on this subject, as well as a discussion of the most recent empirical methods, can be found in Neumark & Wascher (2008) and Neumark, Salas & Wascher (2014).⁶

The “employment elasticity” measures the responsiveness of employment to wage rates. The table below presents a range of elasticities, where for example, an elasticity of -0.2 means that a 10% increase in the wage rate leads to a 2% reduction in employment.

As noted, the wage imputation procedure produces hourly wage rates that are at times lower than \$9 per hour. To the extent that wage rates are measured too low, the employment effects and wage bill are overstated. The second panel adjusts all imputed wage rates that are under \$9 per hour to exactly \$9 per hour, and again simulates the employment effects.

⁶ David Neumark and William Wascher. *Minimum Wages*. 2008, MIT Press.

David Neumark, J. M. Ian Salas, and William Wascher. “Revisiting the Minimum Wage-Employment Debate: Throwing Out the Baby with the Bathwater?” *Industrial and Labor Relations Review*, 2014, Vol. 67, pp. 608-648.

The results of both sets of simulations are presented in Table 2:

Table 2			
Estimates of Job Loss and Additional Wage Bill from Fully Phased in Legislation			
	$\epsilon = -0.1$	$\epsilon = -0.2$	$\epsilon = -0.3$
Job Loss at \$15/hour (with imputed wage from ACS)	10,064	19,532	28,239
Lose Employer Health Insurance	3,897	7,656	11,055
Wage bill, with job loss	\$897.9m	\$769.7m	\$655.2m
Additional sick leave cost (=1.1% of wage bill)	\$9.6m	\$8.2m	\$7.0m
Job Loss \$15/hour (assuming wage of at least \$9 if lower in ACS)	4,688	9,845	15,050
Lose Employer Health Insurance	1,905	4,037	6,165
Wage bill, with job loss	\$789.4m	\$742.3m	\$694.9m
Additional sick leave cost (=1.1% of wage bill)	\$8.4m	\$7.9m	\$7.4m
Note: Analysis uses 106,612 workers earning less than \$15/hour (Table 1, column 3). Each column presents a different employment elasticity.			

Given the large sample of affected workers (approximately 106,000) and large increase in average wages (from \$9.13 per hour to \$15 per hour by 2020), the employment losses are quite sizable, even with the most conservative assumptions based on credible existing studies. Job losses range from approximately 4,700 to more than 28,000, with a best estimate of roughly 10,000 lost jobs when the legislation is fully phased in. The more employers adjust by laying off workers, the lower the additional wage cost. Nonetheless, the wage bill ranges from \$655 million to nearly \$900 million, assuming companies adjust their workforce to higher labor costs.

Through job loss, employers may also reduce costs for other fringe benefits. Table 2 indicates that among the roughly 106,000 affected workers, 45% had employer-sponsored coverage.⁷ Although the typical job loser is less likely to have employer coverage (relative to the workers who remain on the job), approximately 40% also lose insurance coverage in Table 2. The number of individuals who lose employer coverage ranges from approximately 1,900 to 11,000. The extent to which this saves the employer money depends on the degree of initial cost sharing for health insurance premiums between employees and the employer, which is not reported in the ACS. The findings are consistent for all elasticity estimates and wage rate assumptions. Given the drastic changes in the health care market with the passage of the Affordable Care Act, several adjustments are likely for all job losers. First, some of the job losers are under 26, and may qualify for coverage on their parent's plan. Second, some will qualify for Medicaid, which was expanded to 138% of the federal poverty level (FPL) in California in 2014. Third, many of the remaining individuals will be mandated to purchase health insurance coverage, and will likely use California's health insurance exchange, Covered California.

⁷ The ACS does not indicate whether health insurance is received through the individual's own employer, or as a dependent (i.e. spouse or child) on another person's policy. The analysis here assumes coverage is through the worker's own employer.

In addition, for affected workers remaining on the job, California's Healthy Workplace Health Family Act of 2014, effective from July 1, 2015 onward, mandates paid sick leave (PSL). Employees, including part-time and temporary employees, earn at least one hour of paid leave for every 30 hours worked. An employer may limit the amount of PSL an employee can use in one year to 24 hours or three days. Accrued PSL may be carried over to the next year, but it may be capped at 48 hours or six days.⁸ The PSL mandate increases labor costs, but the degree depends on whether PSL was offered to employees prior to the law. To the extent firms were offering more than three days of PSL, they could scale back PSL to exactly three days as prescribed by the law, thereby undoing the additional costs incurred from a higher minimum wage. According to the March 2014 National Compensation Survey, 30% of workers in the bottom quartile of wages were offered PSL.⁹ Most employees (79%) receiving PSL as a fixed number of days received at least five days, suggesting such shifting is possible. These two figures, taken together, suggest 23.7% (=30% \times 79%) of low wage workers who would be affected by a \$15/hour minimum wage would not have increases in expenditure for sick leave. If PSL is fully used in a year (i.e. 24 hours) and the typical worker had worked 1,721 hours annually (from Table 2), the mandate increase compensation costs by 1.4%. The actual increase in compensation costs could be lower, to the extent that employers scale back PSL. If all employers did scale back, then the actual increase in PSL expenditure due to the higher minimum wage is 1.1% (=1.4% \times 76.3%).

⁸ <http://www.dir.ca.gov/dlse/ab1522.html>

⁹ <http://www.bls.gov/ncs/ebs/benefits/2014/ownership/private/table32a.htm>

Table 3 Effects During Phase-In, 2016-2019			
	$\epsilon = -0.1$	$\epsilon = -0.2$	$\epsilon = -0.3$
Job Loss at \$14.25/hour by 2019 (with imputed wage from ACS)	9,038	17,687	25,532
Loss of Employer Health Insurance	3,468	6,863	9,907
Wage bill, with job loss	\$787m	\$679m	\$583m
Additional sick leave cost (=1.1% of wage bill)	\$8.4m	\$7.3m	\$6.2m
Job Loss at \$14.25/hour by 2019 (assuming wage of at least \$9 if lower in ACS)	3,959	8,264	12,855
Loss of Employer Health Insurance	1,599	3,353	5,212
Wage bill, with job loss	\$667m	\$633m	\$596m
Additional sick leave cost (=1.1% of wage bill)	\$7.1m	\$6.8m	\$6.4m
Note: Analysis uses 99,371 workers earning less than \$14.25/hour.			
Job Loss at \$13.25/hour by 2018 (with imputed wage from ACS)	7,768	15,158	21,955
Loss of Employer Health Insurance	2,947	5,837	8,461
Wage bill, with job loss	\$647m	\$564m	\$489m
Additional sick leave cost (=1.1% of wage bill)	\$6.9m	\$6.0m	\$5.2m
Job Loss at \$13.25/hour by 2018 (assuming wage of at least \$9 if lower in ACS)	3,027	6,349	9,781
Loss of Employer Health Insurance	1,200	2,544	3,926
Wage bill, with job loss	\$514m	\$492m	\$470m
Additional sick leave cost (=1.1% of wage bill)	\$5.5m	\$5.3m	\$5.0m
Note: Analysis uses 93,804 workers earning less than \$13.25/hour.			
Job Loss at \$12.00/hour by 2017 (with imputed wage from ACS)	6,267	12,187	17,676
Loss of Employer Health Insurance	2,336	4,634	6,725
Wage bill, with job loss	\$484m	\$427m	\$374m
Additional sick leave cost (=1.1% of wage bill)	\$5.2m	\$4.6m	\$4.0m
Job Loss at \$12.00/hour by 2017 (assuming wage of at least \$9 if lower in ACS)	1,987	4,085	6,444
Loss of Employer Health Insurance	779	1,595	2,537
Wage bill, with job loss	\$335m	\$325m	\$314m
Additional sick leave cost (=1.1% of wage bill)	\$3.6m	\$3.5m	\$3.4m
Note: Analysis uses 82,863 workers earning less than \$12/hour.			
Job Loss at \$10.50/hour by 2016 (with imputed wage from ACS)	4,611	8,923	12,940
Loss of Employer Health Insurance	1,664	3,337	4,848
Wage bill, with job loss	\$316m	\$282m	\$250m
Additional sick leave cost (=1.1% of wage bill)	\$3.4m	\$3.0m	\$2.7m
Job Loss at \$10.50/hour by 2016 (assuming wage of at least \$9 if lower in ACS)	757	1,810	2,779
Loss of Employer Health Insurance	284	678	1,048
Wage bill, with job loss	\$150m	\$147m	\$145m
Additional sick leave cost (=1.1% of wage bill)	\$1.6m	\$1.6m	\$1.5m
Note: Analysis uses 69,261 workers earning less than \$10.50/hour.			

Simulating Firm Costs for a Minimum Wage Increase in Unincorporated Los Angeles County

A natural question to ask is whether the minimum wage increases, going from \$10.50 to \$15 per hour, have equal impacts on firms. In this part of the analysis, the 2013 ACS is used to sample relevant employees in order to create pseudo-firms. (The full methodology is described in Appendix A.)

Overall, 12,095 “pseudo-firms” were created for the unincorporated areas. Roughly half of all firms were located in 10 ZIP Codes: 90001, 90022, 90063, 90221 (Compton), 90248 (Gardena), 90502 (Torrance), 91001 (Altadena), 91745 (Hacienda Heights), 91746 (La Puente), and 91748 (Rowland Heights).

Based on the simulation, Table 4 shows the fraction of firms affected by each minimum wage increase (where “affected” means their wage bill goes up at all). Across all firms, raising the minimum wage, in steps from \$10.50 to \$15.00 per hour increases the wage bill for 67% to 81% of all firms. The impact varies considerably by industry. Accommodation and Food Services, Manufacturing and Retail Trade have large portions of their workforce affected (even from the \$10.50 minimum wage), while the effects are much smaller for Professional, Scientific and Technical Services, Information and Real Estate and Rental and Leasing. The fully phased-in minimum wage of \$15 per hour would affect nearly 9,800 firms located in unincorporated areas.

	Firms	Proportion of firms affected if raise minimum wage to:				
		\$10.50	\$12.00	\$13.25	\$14.25	\$15.00
All Industries	12,095	0.67	0.72	0.76	0.78	0.81
Agriculture, Forestry, Fishing and Hunting	7	0.71	0.71	0.86	0.86	0.86
Mining, Quarrying, and Oil and Gas Extraction	2	0.00	0.00	0.00	0.00	0.00
Utilities	15	0.20	0.20	0.20	0.20	0.20
Construction	776	0.58	0.61	0.64	0.65	0.72
Manufacturing	893	0.86	0.88	0.88	0.89	0.90
Wholesale Trade	1,597	0.61	0.63	0.69	0.70	0.75
Retail Trade	1,578	0.83	0.86	0.90	0.91	0.93
Transportation and Warehousing	636	0.48	0.60	0.66	0.71	0.73
Information	209	0.35	0.39	0.43	0.45	0.48
Finance and Insurance	505	0.55	0.60	0.67	0.70	0.79
Real Estate and Rental and Leasing	547	0.35	0.46	0.59	0.59	0.67
Professional, Scientific and Technical Services	1,073	0.38	0.47	0.50	0.52	0.57
Management of Companies and Enterprises	2	0.00	0.00	0.00	0.00	0.00
Administrative and Support and Waste Management and Remediation Services	547	0.80	0.85	0.87	0.91	0.91
Educational Services	181	0.72	0.74	0.82	0.82	0.85
Health Care and Social Assistance	1,231	0.73	0.77	0.79	0.81	0.82
Arts, Entertainment, and Recreation	238	0.64	0.71	0.71	0.74	0.76
Accommodation and Food Services	1,063	0.93	0.95	0.97	0.97	0.97
Other Services, except Public Administration	995	0.81	0.86	0.90	0.91	0.92

Notes: Author's simulations using the 2013 American Community Survey.

Table 5 examines the effect by firm size. Even the smallest increases in the minimum wage affect virtually all businesses with 20 or more employees; the increase to \$15 affects almost all firms that employ 5 or more people.

	Firms	Proportion of firms affected if raise minimum wage to:				
		\$10.50	\$12.00	\$13.25	\$14.25	\$15.00
All Industries	12,095	0.67	0.72	0.76	0.78	0.81
1 to 4 employees	6,956	0.51	0.57	0.63	0.65	0.69
5 to 9 employees	2,113	0.82	0.87	0.90	0.91	0.93
10 to 19 employees	1,450	0.91	0.94	0.95	0.96	0.97
20 to 49 employees	1,034	0.97	0.98	0.98	0.99	0.99
50 to 99 employees	334	0.98	0.99	0.99	0.99	0.99
100 to 249 employees	163	0.98	0.99	0.99	0.99	0.99
250 or more employees	45	0.96	0.96	0.96	0.96	0.96

Notes: Author's simulations using the 2013 American Community Survey.

It is perhaps unsurprising that the larger the firm, the greater the likelihood of employing workers earning under \$15 per hour. Table 6 illustrates the per-employee wage bill for each minimum wage level by industry. Three industries – Manufacturing, Other Services, except Public Administration and Accommodation and Food Services – see per-employee costs rise by more than \$7,000 per year from a \$15 per hour minimum wage, while Real Estate and Rental and Leasing, Educational Services, Professional, Scientific and Technical Services and Information see per-employee costs rise by less than \$3,000 per year. Table 7 provides similar figures by firm size. The results from this table clearly suggest that the minimum wage policies will have the largest per-employee cost on the largest firms. The per-employee cost of \$6,426 in firms with 250 or more employees is 38% larger than the per-employee cost for the smallest firms.

These tables also show that the per-employee cost, across all firms, rises from approximately \$1,700 per year for a \$10.50 minimum wage to more than \$5,000 per employee from a \$15 minimum wage.

	Per-employee wage bill if raise minimum wage to:					
	Firms	\$10.50	\$12.00	\$13.25	\$14.25	\$15.00
All Industries	12,095	\$1,723	\$2,651	\$3,564	\$4,357	\$5,002
Agriculture, Forestry, Fishing and Hunting	7	\$4,093	\$5,504	\$7,284	\$8,891	\$10,097
Mining, Quarrying, and Oil and Gas Extraction	2	\$0	\$0	\$0	\$0	\$0
Utilities	15	\$399	\$574	\$720	\$837	\$944
Construction	776	\$1,201	\$1,926	\$2,627	\$3,209	\$3,708
Manufacturing	893	\$3,128	\$4,811	\$6,298	\$7,537	\$8,511
Wholesale Trade	1,597	\$1,110	\$1,780	\$2,495	\$3,108	\$3,633
Retail Trade	1,578	\$2,258	\$3,475	\$4,642	\$5,627	\$6,415
Transportation and Warehousing	636	\$821	\$1,381	\$2,035	\$2,672	\$3,237
Information	209	\$667	\$1,089	\$1,478	\$1,830	\$2,152
Finance and Insurance	505	\$1,015	\$1,622	\$2,210	\$2,792	\$3,304
Real Estate and Rental and Leasing	547	\$777	\$1,237	\$1,758	\$2,242	\$2,675
Professional, Scientific and Technical Services	1,073	\$583	\$1,052	\$1,557	\$1,993	\$2,364
Management of Companies and Enterprises	2	\$0	\$0	\$0	\$0	\$0
Administrative and Support and Waste Management and Remediation Services	547	\$2,174	\$3,411	\$4,615	\$5,675	\$6,504
Educational Services	181	\$912	\$1,348	\$1,818	\$2,275	\$2,653
Health Care and Social Assistance	1,231	\$1,821	\$2,719	\$3,576	\$4,339	\$4,950
Arts, Entertainment, and Recreation	238	\$1,071	\$1,614	\$2,175	\$2,654	\$3,047
Accommodation and Food Services	1,063	\$2,603	\$3,929	\$5,226	\$6,338	\$7,205
Other Services, except Public Administration	995	\$2,917	\$4,168	\$5,413	\$6,506	\$7,349

Notes: Author's simulations using the 2013 American Community Survey.

	Per-employee wage bill if raise minimum wage to:					
	Firms	\$10.50	\$12.00	\$13.25	\$14.25	\$15.00
All Industries	12,095	\$1,723	\$2,651	\$3,564	\$4,357	\$5,002
1 to 4 employees	6,956	\$1,610	\$2,464	\$3,309	\$4,049	\$4,654
5 to 9 employees	2,113	\$1,771	\$2,740	\$3,692	\$4,516	\$5,183
10 to 19 employees	1,450	\$1,858	\$2,863	\$3,850	\$4,704	\$5,393
20 to 49 employees	1,034	\$2,030	\$3,128	\$4,200	\$5,116	\$5,855
50 to 99 employees	334	\$2,014	\$3,142	\$4,239	\$5,172	\$5,924
100 to 249 employees	163	\$2,091	\$3,320	\$4,495	\$5,497	\$6,291
250 or more employees	45	\$2,121	\$3,402	\$4,609	\$5,628	\$6,426

Notes: Author's simulations using the 2013 American Community Survey.

Section 2: Surveying the Impact of a \$15 Minimum Wage on For-Profit and Non-Profit Businesses in Unincorporated Los Angeles County

By: Dr. Lloyd Corder

In June of this year, the Los Angeles Economic Development Corporation released the results of a survey of 1,000 businesses in Los Angeles County, regarding the likely impact of a \$15 minimum wage. Unfortunately, this survey's relevance to the LA County Board of Supervisors was limited, because it didn't focus specifically on those employers in the county's unincorporated areas.

The survey described below, of 422 businesses located in unincorporated Los Angeles County, focuses on for-profit and non-profit businesses that would be affected by a \$15 minimum wage.

Methods

Los Angeles County provided a list of roughly 13,700 businesses located across the five districts in county-unincorporated areas. Just over half of these businesses had a zip code but the contact information was kept confidential. (The State Board of Equalization prohibits the disclosure of contact information for sole proprietorships and some other types of small partnerships.) Of the businesses with address and zip code information, phone numbers were matched for roughly 5,000 of them, which represented the total contact database.

A phone survey was conducted from July 7, 2015 to July 13, 2015. Interview quotas were established by District and contacts were randomly interviewed within each. Repeated contacts were made to complete as many interviews as possible within the allotted time frame. This poll has a margin of error of +/- 5%.

Description of Respondents

A majority of respondents were for-profit companies (91%) and most also had less than 10 employees (58%). A number of sectors were represented, including retail (25%), manufacturing (19%), professional services (13%), hospitality (12%) and others. Over one-third of respondents (41%) owned locations near an incorporated city boundary where a \$15 minimum wage would not apply. Table 8 describes the respondents and compares those who reported they would be impacted by the minimum wage increase with those who would not be.

Table 8 Description of survey respondents from unincorporated areas with comparisons between businesses impacted/not impacted by an increase in the minimum wage			
	All respondents Base: 422	Would have to increase minimum wage to \$15 by 2020	
		Yes, impacted Base: 328	No, <u>not</u> impacted Base: 94
Tax Status			
Not for-profit	5%	3%	9%
For-profit	91%	97%	73%
No Response	4%	0%	18%
Location			
Own locations near city boundary	41%	44%	32%
Do not own locations near city boundary	45%	45%	45%
No Response	14%	11%	23%
Number of Employees			
Fewer than 10 employees	58%	53%	78%
11 – 25	21%	25%	9%
26 – 50	9%	10%	6%
51 – 100	5%	6%	2%
101 – 500	4%	4%	3%
More than 500	1%	2%	1%
No Response	1%	1%	1%
Industry Sector			
Not for-profit	2%	1%	3%
Education	1%	1%	1%
Hospitality	12%	14%	2%
Manufacturing	19%	19%	19%
Medical / home healthcare	3%	3%	5%
Professional services	13%	13%	14%
Retail	25%	27%	18%
Other	23%	21%	33%
No Response	2%	1%	4%
District			
District 1	21%	22%	15%
District 2	27%	26%	29%
District 3	6%	4%	13%
District 4	20%	22%	13%
District 5	26%	25%	30%

Survey Results, All Businesses

Four-in-five (78%) of respondents indicated that they would have to increase pay if the minimum wage is raised to \$15 per hour (for-profit, 81%; non-profit, 58%). Notably, this result is similar to the estimate from Dr. Yelowitz that 81 percent of firms in unincorporated Los Angeles County would be affected by an increase in the minimum wage to \$15 an hour.

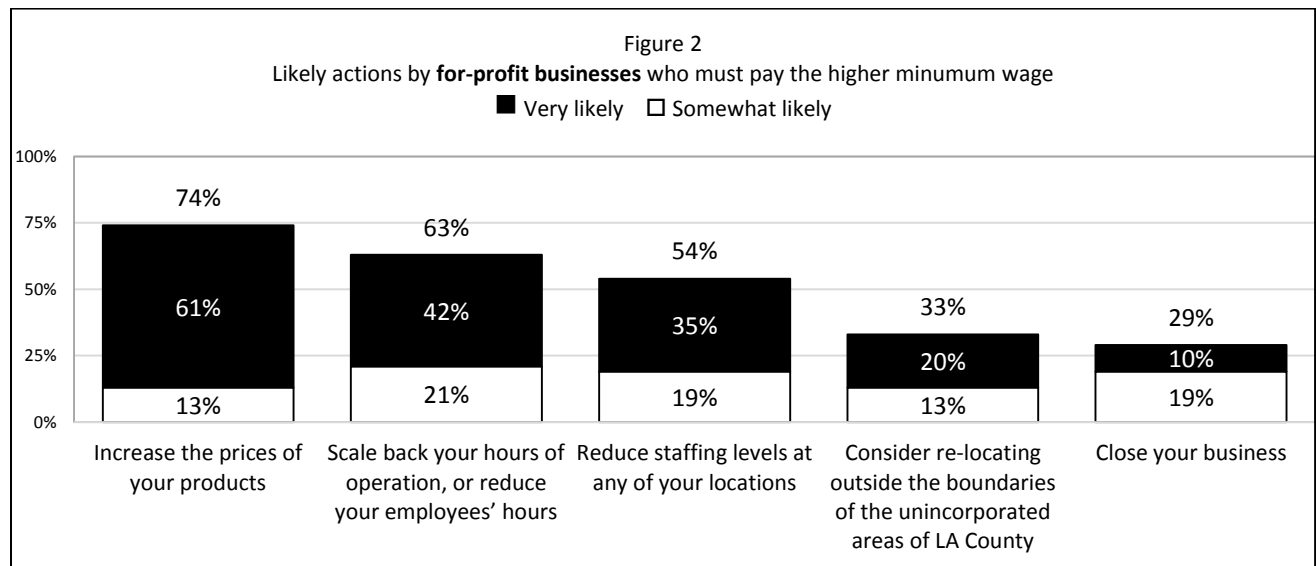
Those affected say they are either somewhat or very likely to:

- **For-profit companies (n=317):**
 - Increase prices (74%)
 - Scale back hours (63%)
 - Reduce staffing (54%)
 - Relocate outside of unincorporated areas (33%)
 - Close (29%)
- **Non-profits (n=11):**
 - Raise additional funds to support operations (45%)
 - Reduce the services for community and/or targeted populations they serve (18%)

Survey Focus: For-Profit Businesses

Surveyed for-profit businesses were very likely to take a series of steps to offset the cost of a \$15 minimum wage (Figure 2). Nearly three-quarters of respondents reported that they were likely to raise prices, with 61 percent very likely to take this step.

Over one-third of surveyed business owners were very likely to reduce staff levels; in total, over half were very or somewhat likely to take this step. Similarly, over 40 percent were very likely to scale back on employees' hours or their hours of operations. For some businesses, even these options aren't sufficient: 29 percent reported that they might close as a consequence, with one in ten very likely to close.



One-third of businesses reported that they'd consider relocating, with one in five very likely to relocate. This risk was somewhat greater for businesses with locations near an incorporated city boundary where a \$15 minimum wage would not apply. The risk was considerably higher for businesses in the manufacturing industry, which may be less-tied to a specific geographic location than a restaurant or hotel.

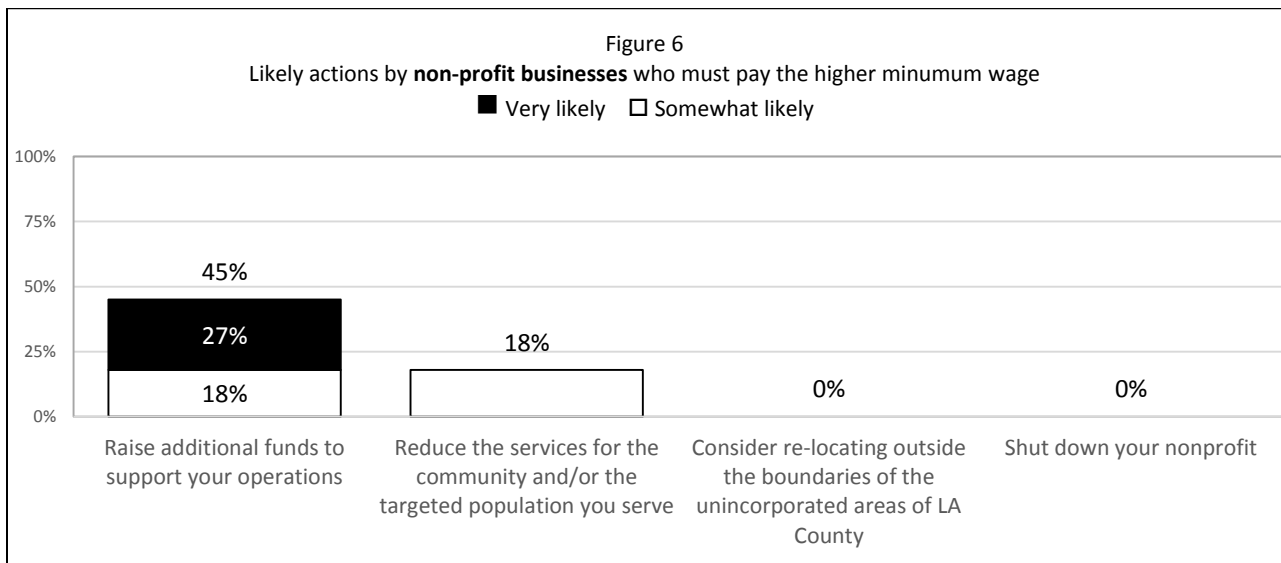
	Increase prices (74%)	Scale back (63%)	Reduce staff (54%)	Relocate (33%)	Close (29%)
Location*					
Own locations near city boundary (n=140)	74%	63%	55%	36%	31%
Do not own locations near city boundary (n=142)	75%	66%	57%	32%	28%
Number of Employees*					
Fewer than 10 employees (n=172)	77%	65%	52%	35%	31%
11 – 25 (n=80)	71%	69%	66%	35%	30%
26 – 50 (n=32)	75%	59%	59%	28%	25%
51 – 100 (n=16)	75%	56%	44%	25%	25%
101 – 500 (n=11)	64%	45%	45%	9%	9%
More than 500 (n=3)	33%	33%	0%	0%	33%
Industry Sector*					
Hospitality (n=47)	83%	72%	64%	26%	32%
Manufacturing (n=63)	71%	51%	52%	43%	33%
Medical / home healthcare (n=9)	56%	44%	44%	11%	0%
Professional services (n=40)	83%	55%	55%	38%	20%
Retail (n=89)	71%	71%	53%	34%	29%
Other (n=66)	76%	67%	53%	26%	32%
District*					
District 1 (n=68)	79%	63%	62%	32%	32%
District 2 (n=82)	74%	62%	50%	37%	30%
District 3 (n=12)	67%	42%	42%	25%	25%
District 4 (n=72)	72%	64%	51%	38%	28%
District 5 (n=80)	73%	68%	59%	25%	26%
Note: Highlighted boxes (□) indicate groups more likely than average (mean) to take action.					
*No responses and skip to categories are excluded from this table.					

Survey Focus: Non-Profit Businesses

It's difficult to draw meaningful conclusions from the results of the non-profit business survey. Of the 422 business surveyed, just four percent identified as non-profit organizations (n=19). Of those businesses, 11 would be affected by an increase in the minimum wage to \$15 an hour.

Three of the eleven surveyed nonprofits were very likely to need additional financial support to absorb an increase to \$15 an hour. In total, just under half of the surveyed nonprofits thought that they would need additional financial support (Figure 6).

None of the nonprofits reported that they were likely to shut down or relocate. However, two of the nonprofits reported that it was possible they would have to reduce services for their targeted population.



Appendix A

Assigning Unincorporated Areas of Los Angeles to 2013 American Community Survey (ACS) Respondents

Summary: The publicly available ACS contains 69 geographic identifiers for different parts of Los Angeles county, defined by the Census Bureau as “Public Use Microdata Areas” (or PUMAs). PUMAs are nested within states, contain at least 100,000 people, are built on census tracts and counties and are geographically contiguous.¹⁰

In Los Angeles, PUMAs are coded from 3701-3769. The respondents in each of the 69 PUMAs were assigned a likelihood of living in an unincorporated area. For example, the methodology below shows that 4 of the 69 PUMAs contain a large portion of the ACS respondents that live in an unincorporated area. Specifically, in PUMA 3743, 79.2% of the 124,007 residents live in an unincorporated area; in PUMA 3701, 66.7% of the 139,759 residents; in PUMA 3742, 51.9% of 131,781 residents; and in PUMA 3762, 48.2% of the 112,822 residents. Six other PUMAs (3751, 3739, 3757, 3709, 3716, and 3714) had between 27.8%-41.8% of their population living in unincorporated areas. The remaining 59 PUMAs had less than 16% of their population living in unincorporated areas (in fact, 52 PUMAs had less than 5% of their population in such areas).

Based on the likelihood of living in an unincorporated area, new sample weights were constructed from the existing ACS weights. For example, if a survey respondent had a sample weight of 100 (meaning the person represents 100 similar people overall), and the respondent lived in PUMA 3743, then two observations were created: one person-level observation, representing the unincorporated area, would be given a weight of 79.2, and another person-level observation, representing the incorporated area of Los Angeles, would be given a weight of 20.8. Thus, for the weighted sample of 124,007 residents in this PUMA, 98,214 would be assigned to the unincorporated area. This reweighting is done for all 69 PUMAs.

Graphical representation of these four PUMAs – obtained from https://www.census.gov/geo/maps-data/maps/2010puma/st06_ca.html – is shown in Appendix Figures 1-4 below. The PUMAs are named by the Census Bureau as Los Angeles County (Central)--East Los Angeles PUMA, Los Angeles County (North/Unincorporated)--Castaic PUMA, Los Angeles County (Central) -- Huntington Park City, Florence-Graham & Walnut Park PUMA and Los Angeles County (South Central)--Carson City PUMA.

¹⁰ <https://www.census.gov/geo/reference/puma.html>.

Detailed Methodology: We obtained a list from Los Angeles County of 13,680 businesses (with ZIP codes) currently located in unincorporated areas of Los Angeles. A small number of businesses lacked a ZIP code, and were not included. We also obtained a count of establishments, by ZIP code, from the Census Bureau’s County Business Pattern database for 2013 (the latest available, see <https://www.census.gov/econ/cbp/>). Finally, we obtained a “bridge file” linking ZIP codes to Census Bureau “Public Use Microdata Areas” (“PUMAs”).

Los Angeles county is coded into 69 PUMAs (coded from 3701-3769), and had a 2010 population of 9,818,605. The bridge file containing the 69 PUMAs also had 294 valid ZIP codes. The ZIP codes included are: 90001-90008, 90010-90029, 90031-90049, 90056-90059, 90061-90069, 90071, 90073, 90077, 90089, 90094-90095, 90201, 90210-90212, 90220-90222, 90230, 90232, 90240-90242, 90245, 90247-90250, 90254-90255, 90260, 90262-90263, 90265-90266, 90270, 90272, 90274-90275, 90277-90278, 90280, 90290-90293, 90301-90305, 90401-90405, 90501-90505, 90601-90606, 90623, 90630-90631, 90638, 90640, 90650, 90660, 90670, 90701, 90703-90704, 90706, 90710, 90712-90713, 90715-90717, 90723, 90731-90732, 90740, 90744-90746, 90755, 90802-90808, 90810, 90813-90815, 90822, 91001, 91006-91008, 91010-91011, 91016, 91020, 91024, 91030, 91040, 91042, 91046, 91101, 91103-91108, 91201-91208, 91210, 91214, 91301-91304, 91306-91307, 91311, 91316, 91321, 91324-91326, 91330-91331, 91335, 91340, 91342-91345, 91350-91352, 91354-91356, 91361-91362, 91364, 91367, 91371, 91381, 91384, 91387, 91390, 91401-91403, 91405-91406, 91411, 91423, 91436, 91501-91502, 91504-91506, 91601-91602, 91604-91607, 91702, 91706, 91711, 91722-91724, 91731-91733, 91740-91741, 91744-91746, 91748, 91750, 91754-91755, 91759, 91765-91768, 91770, 91773, 91775-91776, 91780, 91789-91792, 91801, 91803, 92397, 93243, 93510, 93532, 93534-93536, 93543-93544, 93550-93553, 93560, 93563, and 93591. This resulted in 541 PUMA-ZIP code pairs. For example, the ZIP code 90001 overlaps with both PUMA 3742 and PUMA 3751, with 81.3% of the ZIP code’s population in the first PUMA, and the remainder in the second. PUMA 3742 contains multiple ZIP codes: 90001, 90002, 90058 and 90255. The population in this PUMA is 131,781, of which, ZIP code 90001 makes up 35.2% of the total.

With the ZIP code-PUMA pairing, we allocate both unincorporated establishments and all establishments – which are coded by ZIP code – to the 69 PUMAs in Los Angeles County. For each ZIP code, we assume that businesses are distributed proportionately to population. For example, the County Business Patterns data for 2013 shows 584 establishments in ZIP code 90001; we allocated 81.3% of these (or 474.8) to PUMA 3742, and 18.7% of these (or 109.2) to PUMA 3751. We do the same for the count of businesses from unincorporated areas, obtained in 2015. After distributing businesses from ZIP code to PUMA, we aggregate within PUMA. The table below shows the proportion of businesses in unincorporated to all businesses, for each PUMA.

Appendix Table 1: Business in unincorporated areas as fraction of all businesses; by PUMA
<p><i>Very High (>47% allocated to businesses in unincorporated areas of the PUMA)</i></p> <p>PUMA 3743: Central - East Los Angeles (79%) PUMA 3701: North/Unincorporated - Castaic (67%) PUMA 3742: Central - Huntington Park City, Florence-Graham & Walnut Park (52%) PUMA 3762: South Central - Carson City (48%)</p>
<p><i>High (28%-42%)</i></p> <p>PUMA 3751: South Central - LA City (South Central/Watts) (42%) PUMA 3739: Southeast - Whittier City & Hacienda Heights (39%) PUMA 3757: South Central - Compton City & West Rancho Dominguez (38%) PUMA 3709: Central - San Gabriel Valley Region (North) (35%) PUMA 3716: East Central - La Puente & Industry Cities (31%) PUMA 3714: Diamond Bar, La Habra Heights (East%) Cities & Rowland Heights (28%)</p>
<p><i>Low (7%-16%)</i></p> <p>PUMA 3750: South Central - LA City (South Central/Westmont) (16%) PUMA 3759: South Central - Hawthorne City (12%) PUMA 3754: Southeast - La Mirada & Santa Fe Springs Cities (12%) PUMA 3758: South Central - Gardena, Lawndale Cities & West Athens (12%) PUMA 3713: East Central - Covina & Walnut Cities (7%) PUMA 3726: Calabasas, Agoura Hills, Malibu & Westlake Village Cities (7%)</p>
<p><i>Very Low (<6%)</i></p> <p>PUMA 3702: Northwest - Santa Clarita City (5%) PUMA 3747: Central - LA City (Central/West Adams & Baldwin Hills) (5%) PUMA 3748: LA (Southwest/Marina del Rey & Westchester) & Culver City Cities (5%) PUMA 3715: East Central - West Covina City (5%) PUMA 3704: North Central - Palmdale City (4%) PUMA 3717: East Central - Arcadia, San Gabriel & Temple City Cities (4%) PUMA 3718: Central - Pasadena City (4%) PUMA 3703: North Central - Lancaster City (4%) PUMA 3749: Central - Inglewood City (3%) PUMA 3737: Central - Monterey Park & Rosemead Cities (2%) PUMA 3767: South - LA City (South/San Pedro) (2%) PUMA 3710: Baldwin Park, Azusa, Duarte & Irwindale Cities (2%) PUMA 3744: Central - LA City (East Central/Central City & Boyle Heights) (2%) PUMA 3719: Central - Glendale City (2%) PUMA 3711: East Central - Glendora, Claremont, San Dimas & La Verne Cities (2%) PUMA 3752: South - South Gate & Lynwood Cities (2%) PUMA 3706: North - LA City (North Central/Granada Hills & Sylmar) (1%) PUMA 3741: Central - Bell Gardens, Bell, Maywood, Cudahy & Commerce Cities (1%) PUMA 3745: Central - LA City (Southeast/East Vernon) (1%) PUMA 3768: Southwest - Palos Verdes Peninsula (1%) PUMA 3740: Central - Pico Rivera & Montebello Cities (0%) PUMA 3707: LA (North Central/Arleta & Pacoima) & San Fernando Cities (0%) PUMA 3705: North - LA City (Northwest/Chatsworth & Porter Ranch) (0%) PUMA 3738: Central - El Monte & South El Monte Cities (0%) PUMA 3765: Southeast - Long Beach City (East) (0%) PUMA 3761: South Central - Torrance City (0%) PUMA 3735: LA City (Mount Washington, Highland Park & Glassell Park) (0%)</p>

PUMA 3712: East Central - Pomona City (0%)
PUMA 3725: LA City (Northwest/Canoga Park, Winnetka & Woodland Hills) (0%)
PUMA 3729: West Central - LA City (West Central/Westwood & West Los Angeles) (0%)
PUMA 3708: North - LA City (Northeast/Sunland, Sun Valley & Tujunga) (0%)
PUMA 3746: LA City (Central/Univ. of Southern California & Exposition Park) (0%)
PUMA 3720: Central - Burbank City (0%)
PUMA 3760: Redondo Beach, Manhattan Beach & Hermosa Beach Cities (0%)
PUMA 3727: Central - LA City (Central/Pacific Palisades) (0%)
PUMA 3736: Central - Alhambra & South Pasadena Cities (0%)
PUMA 3724: Northwest - LA City (Northwest/Encino & Tarzana) (0%)
PUMA 3734: LA City (East Central/Silver Lake, Echo Park & Westlake) (0%)
PUMA 3733: Central - LA City (Central/Koreatown) (0%)
PUMA 3732: Central - LA City (East Central/Hollywood) (0%)
PUMA 3731: Central - West Hollywood & Beverly Hills Cities (0%)
PUMA 3723: North - LA City (North Central/Mission Hills & Panorama City) (0%)
PUMA 3721: North - LA City (Northeast/North Hollywood & Valley Village) (0%)
PUMA 3722: Northwest - LA City (North Central/Van Nuys & North Sherman Oaks) (0%)
PUMA 3763: South Central - Long Beach City (North) (0%)
PUMA 3753: South - Downey City (0%)
PUMA 3764: South - Lakewood, Cerritos, Artesia & Hawaiian Gardens Cities (0%)
PUMA 3766: South - Long Beach City (Southwest & Port) (0%)
PUMA 3756: Southeast - Bellflower & Paramount Cities (0%)
PUMA 3769: Southeast - Long Beach (Central) & Signal Hill Cities (0%)
PUMA 3755: Southeast - Norwalk City (0%)
PUMA 3728: Southwest - Santa Monica City (0%)
PUMA 3730: West Central - LA City (Central/Hancock Park & Mid-Wilshire) (0%)

ACS Extract, 2013

The 2013 ACS is a 1% sample of the United States; the 3,132,795 individuals, when weighted, represent the U.S. population of 316,128,839. There are 102,090 individuals living in Los Angeles County, who represent the population of 10,015,169.

Two weights were created for each respondent, one corresponding to the fraction of the respondent's PUMA located in an unincorporated area, and the other corresponding to the fraction located in the incorporated area. The weighting algorithm – while splitting the sample into two areas – preserves the original population size of Los Angeles County.

The final sample then consists of individuals aged 16 and over, who worked in the past 12 months, where a wage rate could be assigned. Socioeconomic and demographic variables related to age, citizenship, gender, education, race/ethnicity, marital status, difficulty with English and household poverty status were created.

The ACS provides detailed information (69 PUMAs) based on where the respondent lives, not where the respondent works. In order to approximate those who work in unincorporated areas, a variable was created representing whether the individual works near where he or she lives. A person was classified as working near home if (a) he or she reported working in Los Angeles and (b) had a commute of 30 minutes or less or walked to work, biked to work, or worked from home. These individuals have a short

commuting distance, and therefore are more likely to work near where they live. Businesses in unincorporated areas may draw employees who live in incorporated parts of Los Angeles County, or outside of Los Angeles; the calculations below do not consider these addition effects, thereby understating the employment and wage bill impact on companies. The degree to which this would affect the estimated impact is impossible to ascertain with the information in the ACS.

Several variables related to the labor market were used to create an hourly wage rate. First, annual hours of work was computed using usual hours worked per week and weeks worked per year. Weeks worked in the 2013 ACS is in six bins: 1-13 weeks, 14-26 weeks, 27-39 weeks, 40-47 weeks, 48-49 weeks, and 50-52 weeks worked during past 12 months. Using the methodology of Yelowitz (2012), who uses the 2005-2007 ACS (which has actual weeks worked), average weeks were assigned to each bin corresponding to 7.38004 for 1-13 weeks, 21.2193 for 14-26 weeks, 33.058 for 27-39 weeks, 42.3805 for 40-47 weeks, 48.1903 for 48-49 weeks, and 51.8484 for 50-52 weeks.¹¹ An individual's annual wage and salary income was divided by annual hours worked to impute a wage rate. A common problem to such an imputation procedure is that some individuals have very low (or high) wage rates. In simulating the effects of a \$15 minimum wage, some specifications recode the initial wage rate to the California minimum wage of \$9 per hour if the imputed wage rate from the ACS is less than that. By doing so, both the impact on employment and the employer's wage bill may be understated.

Methodology for Simulating Firm-Level Results

The analysis proceeds in several steps. First, using the Census Bureau's 2013 ZIP Code business pattern data, the number of establishments by ZIP code and industry was obtained in the following nine bins: 1-4 employees, 5-9 employees, 10-19 employees, 20-49 employees, 50-99 employees, 100-249 employees, 250-499 employees, 500-999 employees and 1000 or more employees. As mentioned previously, ZIP Code 90001 had 584 establishments. Almost 70% of these establishments had fewer than 10 employees, and three establishments had 500 or more employees. The business pattern data also breaks out establishments by industry; we use 19 two-digit industry codes from the North American Industry Classification System (NAICS).¹² These include: Agriculture, Forestry, Fishing and Hunting; Mining, Quarrying, and Oil and Gas Extraction; Utilities; Construction; Manufacturing; Wholesale Trade; Retail Trade; Transportation and Warehousing; Information; Finance and Insurance; Real Estate and Rental and Leasing; Professional, Scientific and Technical Services; Management of Companies and Enterprises; Administrative and Support and Waste Management and Remediation Services; Educational Services; Health Care and Social Assistance; Arts, Entertainment, and Recreation; Accommodation and Food Services; and Other Services, except Public Administration.

For each ZIP code, firms were allocated to unincorporated areas based on the count of unincorporated firms relative to all firms. This means comparing the count of unincorporated firms in 2015 (provided by the Los Angeles city government) to all firms in 2013 (provided by the Census Bureau's ZIP Code business patterns). In ZIP code 90001, for example, the count of firms in unincorporated areas was 635; since the ratio (635/584) is greater than 1.0, we conclude that businesses located in this ZIP code are in an unincorporated area. We therefore allocate all businesses to our count of firms to consider. In other ZIP Codes, the ratio was 0; no firms in these ZIP Codes were allocated to the count. Overall 115 of the 294 ZIP Codes considered had some businesses located in unincorporated areas.

¹¹ <https://www.epionline.org/studies/the-labor-market-effects-of-citywide-compensation-floors/>

¹² <http://www.census.gov/cgi-bin/sssd/naics/naicsrch?chart=2012>

For the 115 ZIP Codes where we then allocated businesses to the unincorporated areas, we rounded businesses in each firm size/industry/ZIP Code bin to the nearest whole number. For example, the tabulations show that 59.4% of businesses in ZIP code 91745 (Hacienda Heights, CA) were in unincorporated areas (1,297 businesses from the list provided by the Los Angeles government, and 2,185 from the Census ZIP code patterns).¹³ Of the 50 Construction businesses with 1-4 employees, in expectation 29.67 would be located in unincorporated areas. This would then be rounded to 30 businesses.

With a count of business in unincorporated areas by ZIP Code, two-digit industry, and establishment size, we then created “pseudo-firms” by drawing from individuals in the 2013 ACS. The sample of employees consists of those who were living in unincorporated PUMAs feeding into the relevant ZIP code, and working at businesses close to their residence; this is the full sample is the 198,303 individuals in Table 1, column 2. That is, workers have wages both below and above \$15 per hour in the sample and not all of them are affected by a minimum wage increase. To each individual, we attach an individual-specific “wage-bill” from each minimum wage increase, where the wage bill is the product of annual hours of work and the gap that it would take to bring the person’s wage rate up to the new minimum wage. For example, if a person worked 2,000 hours per year and earned \$12.25 per hour, the wage bill from moving to \$10.50 per hour in 2016 or \$12 per hour in 2017 would be zero. The wage bill would be \$2,000 (= \$1 increase x 2000 hours of work) from a move to \$13.25 per hour in 2018, \$4,000 from a move to \$14.25 per hour in 2019, and \$5,500 from a move to \$15 per hour in 2020.

In the ZIP Code business patterns data, firm size is classified in “bins” (i.e. 1-4 employees, 10-19 employees, 20-49 employees, etc.). Within a bin, it is assumed that that employment is uniformly distributed. For each pseudo-firm, a firm size was randomly drawn within the relevant range. For example, it is equally likely to be assigned 10, 11, 12, 13, 14, 15, 16, 17, 18, or 19 employees in the 10-19 firm size bin. With firm size determined, that number of individuals is randomly sampled from relevant employees in the ACS. For all employees, the wage bill is then added up for the pseudo-firm. This sampling is done for all relevant zip codes, industries and firm sizes. For firms with 1000 or more employees, it is assumed that firm size is between 1000 and 5000 employees.

PUMA Maps

Appendix Figure 1: PUMA 3743 -- Los Angeles County (Central)--East Los Angeles PUMA

Source:

http://www2.census.gov/geo/maps/dc10map/PUMA_RefMap/st06_ca/puma0603743/DC10PUMA0603743_001.pdf

¹³ <https://www.census.gov/econ/cbp/>

Appendix B: Survey Script

We're conducting this survey on behalf of the Los Angeles County Board of Supervisors.

Earlier this year, the City of Los Angeles voted to raise the municipal minimum wage in five steps to \$15 an hour by the year 2020. Los Angeles County is now considering a plan to match this wage increase in the County's unincorporated areas.

The following questions are intended to determine your reaction to the proposed increase:

1. If Los Angeles County were to increase the minimum wage that you can pay to \$15 an hour by 2020, would you have to raise wages for anyone that you employ?
 - Yes, I would have to increase pay (CONTINUE)
 - No, I would not have to increase pay (AFTER Q3, skip to DEMOGRAPHICS)

2. Are you a for-profit or a not-for-profit business?
 - Not for-profit business (AFTER Q3, continue with SCRIPT 1)
 - For-profit business (AFTER Q3, continue with SCRIPT 2)

3. Do you own locations, or are you located, near the boundary of an incorporated city where the \$15 minimum wage would not apply?
 - Yes, I do own locations near a city boundary
 - No, I do not own locations near a city boundary

SCRIPT 1 (Not For-Profit)

To adapt to an increase in the minimum wage to \$15 an hour, how likely will you be to do any of the following?

	Unlikely	Somewhat Likely	Very Likely	Not Sure or Not Applicable
Raise additional funds to support your operations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Consider re-locating outside the boundaries of the unincorporated areas of LA County	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reduce the services for the community and/or your targeted population you serve	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shut down your nonprofit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SCRIPT 2 (For-Profit)

To adapt to an increase in the minimum wage to \$15 an hour, how likely will you be to do any of the following?

	Unlikely	Somewhat Likely	Very Likely	Not Sure or Not Applicable
Consider re-locating outside the boundaries of the unincorporated areas of LA County	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase the prices of your products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scale back your hours of operation, or reduce your employees' hours	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reduce staffing levels at any of your locations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Close your business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DEMOGRAPHICS (All Respondents)

1. How many people does your organization employ at all locations?

- Fewer than 10 employees
- 11-25 employees
- 26-50 employees
- 51-100 employees
- 101-500 Employees
- More than 500 employees

2. Which of these industry segments best describes your organization?

- Not for-profit
- Education
- Hospitality (Restaurant / Hotel)
- Manufacturing
- Medical / Home healthcare
- Professional Services
- Retail
- Other