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The Impact of the Minimum Wage on Firm Exit

Evidence From Yelp Data

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The minimum wage has recently reentered the forefront of policy discourse, with federal proposals ranging from leaving the minimum wage as it is or increasing it to $10.10 or even $15 per hour. While the federal minimum wage has remained stagnant since 2009, states—and more recently, cities—have increasingly set local minimum wages above the federal mandate of $7.25. In the San Francisco Bay Area alone, 21 local minimum-wage changes have occurred during the past decade.

Our research investigates the impact of the minimum wage on restaurant closures, using data from the San Francisco Bay Area. We present two main findings. First, restaurants with the worst reputations, as proxied by their ratings on the review platform Yelp, are more likely to exit at any minimum wage level. Second, lower-rated restaurants are disproportionately affected by minimum-wage increases. In other words, the impact of the minimum wage on exit is more pronounced among lower-rated restaurants.

The restaurant industry in the Bay Area makes a compelling setting to investigate the impact of the minimum wage on small businesses. First, according to the U.S. Bureau of Labor Statistics, the restaurant industry is the most intensive employer of minimum-wage workers. Second, there is high turnover within the restaurant industry. In our sample, which covers restaurants in the Bay Area from 2008 through 2016, roughly 5 percent of restaurants go out of business each year. Hence, the exit margin is economically meaningful. Additionally, there is no tip credit in California. In other words, tips do not count toward the official wage, and wait staff are covered by the same minimum wage as other employees. Because of this, the minimum wage is more likely to be binding. Finally, there have been a substantial number of city-level minimum-wage increases in the area since 2008, with some cities implementing minimum wages upwards of $12 an hour.

Our analysis proceeds in two stages. First, we provide evidence that lower-quality businesses are, on average, closer to the margin of exit—and fail at higher rates—than higher-quality restaurants, irrespective of the minimum-wage level. A one-star increase in rating is associated with more than a 50 percent decrease in the likelihood of a restaurant's going out of business. Second, we exploit variation from the multiple city-level minimum-wage changes in recent years across the Bay Area to investigate the effects of the minimum wage. We present robust evidence that the impact of the minimum wage varies with the rating of the business. Our point

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estimates suggest that a $1 increase in the minimum wage leads to an approximate 14 percent increase in the likelihood of exit for median 3.5-star restaurants, but the impact falls to 0 for five-star restaurants. These effects are robust to a number of different specifications.

Our results contribute to the existing literature in several ways. First, our findings relate to a large literature seeking to estimate the impact of the minimum wage, most of which has focused on identifying employment effects. While some studies find no detrimental effects on employment, others show that higher minimum wages reduce employment, especially among low-skilled workers. However, even studies that identify negative impacts find fairly modest effects overall, suggesting that firms adjust to higher labor costs in other ways. For example, several studies have documented price increases as a response to the minimum-wage hikes. Others find that firms reduce employment by cutting employee hours rather than the number of employees, and the studies document lower profitability among firms for which the minimum wage may be more binding.

We examine one channel of adjustment to the minimum wage that has received relatively little attention—firms could exit the market altogether. We provide suggestive evidence that an increase in the minimum wage increases overall restaurant exit. This finding is consistent with the work of other scholars, who use a border discontinuity approach to show that restaurant exit increases after the minimum wage increases.

However, our results reveal that the average treatment effect can be substantially different from the impact on sets of businesses that are predictably closer to the margin. While lower-rated restaurants are driven to exit by increases to the minimum wage, higher-rated restaurants tend to be more insulated from such shocks. This helps to shed light on the likely impact of minimum-wage increases on existing businesses.

Our analysis also highlights how digital data can be used to better understand labor policy and the economy. Historically, datasets from the U.S. Census Bureau and the Bureau of Labor Statistics have been central to analyses looking to estimate the impact of the minimum wage in the United States. Other analyses consist mainly of researcher-administered surveys.

While administrative datasets are important for understanding the economy, Yelp data allowed for a different perspective on the issue. First, theory has suggested that the impact of the minimum wage might depend on a business's reputation: a hypothesis that is hard to test with traditional datasets, which don't measure a business's reputation. In contrast, Yelp ratings provide a proxy that is based on the experiences of customers, and its ratings are influential in practice. This let us to explore hypotheses that were previously untested. Second, we wanted to test changes that we were observing unfold over time. While the Bureau of Labor Statistics and Census data only become publicly available after a lag time, Yelp allowed us to investigate policy changes closer to real time. Third, while we were interested in changes at the local level, looking at different types of businesses, the public-facing versions of the Census and Bureau of Labor Statistics data are rolled up to the county or Zip Code level. To acquire more granular data from these government agencies, researchers need to go through an extensive application period, and if they are approved, they are placed on a waiting list for access; current estimates suggest this takes about two years, owing to capacity constraints.

In light of these factors, new data sources, such as Yelp reviews, have the potential to become important tools for improving policy analyses.

NOTE:

This research brief is adapted from Dara Lee Luca and Michael Luca, "Survival of the Fittest: The Impact of Minimum Wage on Firm Exit," Harvard Business School Working Paper no. 17-088, April 2017, http://www.hbs.edu/faculty/Publication%20Files/MW_Exit_7a89f82f-b2fa-42f2-9a0e-f8a61e95b679.pdf.