



**RESTAURANT  
OPPORTUNITIES  
CENTERS UNITED**

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## MEMO

TO: Saru Jayaraman  
FROM: Teófilo Reyes

RE: Prevalence and Impact of Automation in California  
Date: September 12, 2017

- Automation is transforming the restaurant industry. Restaurant chains have adopted tableside tablets, self-service ordering kiosks and check-out terminals, and mobile ordering apps, and this trend is likely to increase as automation costs go down.
- California is at the forefront of testing, implementing, and perfecting automation technology.
- There is no evidence for job loss associated with automation in the restaurant industry, but there are indications that automation could lead to increased employment.
- Restaurant industry employment and wage growth in California outperform the rest of the nation.

Over the past decade, restaurants have rapidly adopted automation technology. Chains such as Olive Garden, Chili's, Red Robin, Applebee's, and Buffalo Wild Wings have adopted tablets system wide, and chains such as Domino's and Starbucks have adopted mobile ordering and payment technology. Penetration of automation technology is limited by the high cost of adoption, but this will increase as costs decrease. For example, it is currently cost-prohibitive for a Subway franchise operator working at very low margins to automate ordering processes, but this is expected to change.<sup>3</sup>

The California restaurant industry has been a leader in adopting automation.<sup>4</sup> Stacked, a small chain started in Huntington Beach, CA received a technology award in 2012 from the National Restaurant Association for pioneering workable tablet ordering technology that allowed customers to order, customize, and pay directly from their table.<sup>5</sup> McDonald's is using Southern California as one of the first regions to adopt its national roll out of self-service kiosks and tablets, mobile ordering and payments, customizable menus, and table service.<sup>6</sup> Recently, restaurants in California have garnered attention for adopting robotic automation, such as Zume for introducing a pizza robot, and CaliBurger, for introducing *Flippy*, a hamburger flipping robot.<sup>7</sup>

Another restaurant, Eatsa has received press as a fully automated restaurant. Eatsa has adopted tablet technology with full customization on a limited menu, and food is prepared by three kitchen staff that are hidden.<sup>8</sup> This is akin to the Automats of the fifties, where a full staff prepared food unobserved, but the technology Eatsa uses is no different from what will be adopted by Subway and has already been adopted by a number of sandwich shops, with a small staff preparing highly customized meals from a limited menu ordered on tablets.

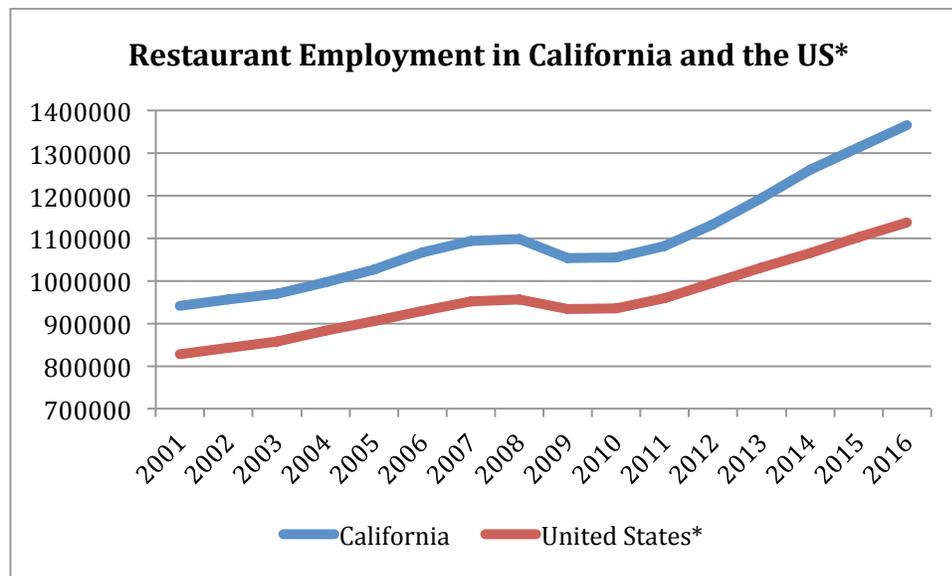


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Automation has allowed restaurants to accept and process orders faster, with greater efficiency and accuracy, increasing sales volume. This is leading to a change in restaurant staffing, but not in the number of staff.<sup>vi</sup> Starbucks has seen sales increase with mobile ordering and payments, allowing it to increase the number of baristas, without needing to increase cashiers.<sup>ix</sup> Panera is adding staff to handle greater order volume through its self-serve kiosks.<sup>v</sup> Servers in chains such as Chili's can serve tables quicker and more accurately during the heavy dinner rush, but their presence is still key to the experience. Technology is allowing McDonald's to add staff to prepare and now serve food, as they cut staff from the cashier counter. And even *Flippy* allows a cook to focus on customization and quality at a higher volume. Automation is allowing restaurants to increase volume permitting staff to focus on maintaining or improving quality and service. Similar to the growth in bank branches following the introduction of Automatic Tellers, restaurant automation appears to lead to a greater need for staff in transformed roles to accommodate greater demand.<sup>xii</sup>

The California restaurant industry that is a pioneer in adopting and perfecting automation outperforms the rest of the nation in both the number of employees and the average wage, and the share of growth in employment and wages over time. Restaurant employment in California has grown from 940,613 in 2001 to 1,366,304 in 2016, a 45% increase. In the US, restaurant employment has grown from 8.2 million to 11.4 million, a 37% increase. California accounts for 12% of all restaurant employment in the nation, and that percentage has increased over time. At the same time, average weekly wages in the restaurant industry are higher in California than in the rest of the nation, and that difference has also grown over time. In California, the average weekly wage grew from \$262 in 2001 to \$408 in 2016, compared to \$235 in 2001 and \$352 in 2016 for the national average. Both employment and wages have grown faster than the national average.<sup>xiii</sup>

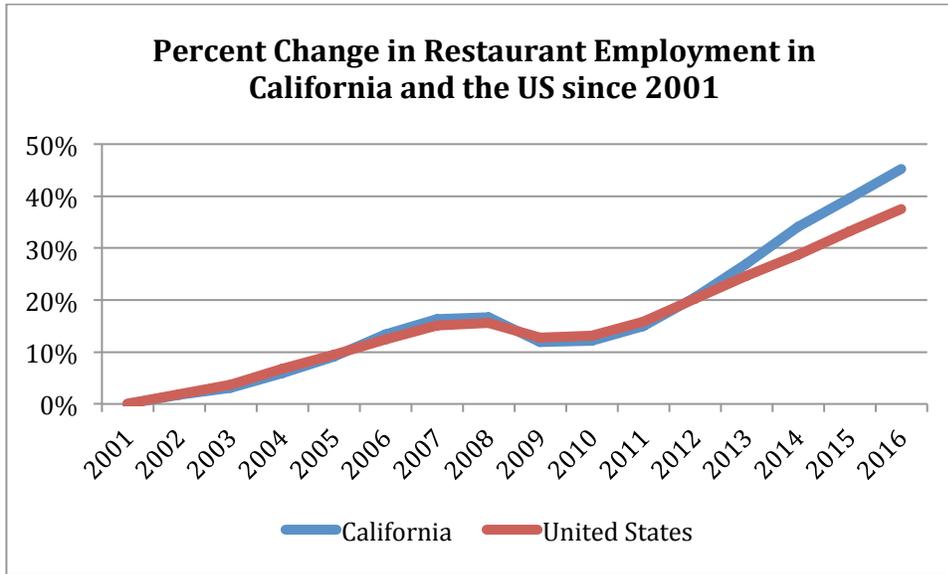




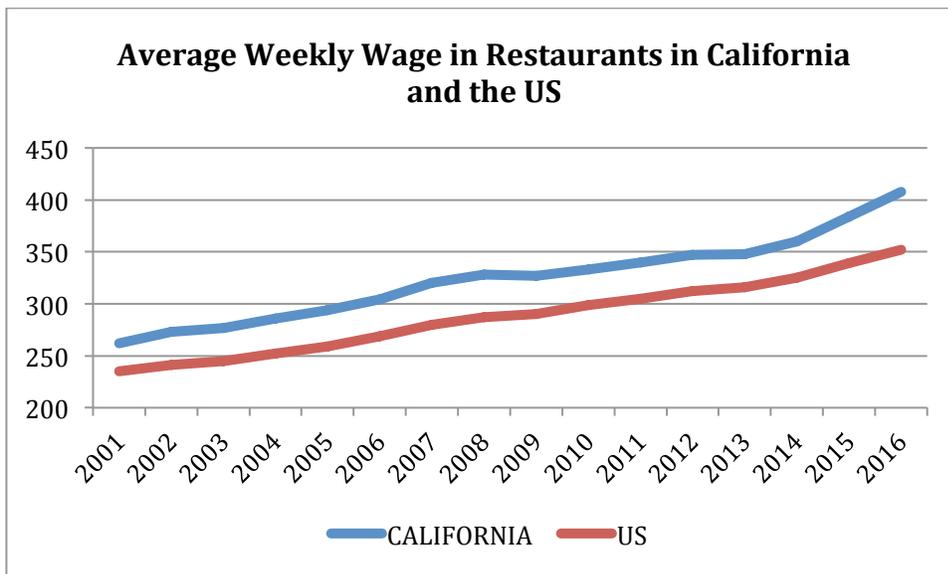
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**Figure 1. Employment in food services and drinking places in California and employment in the United States since 2001.**  
\*Employment is shown as one-tenth of total United States employment for easy comparison to California. Source: Analysis of Quarterly Census of Employment and Wages, 2001-2016. Bureau of Labor Statistics.



**Figure 2. Percent change in employment in food services and drinking places in California and the United States since 2001.** Source: Analysis of Quarterly Census of Employment and Wages, 2001-2016. Bureau of Labor Statistics.

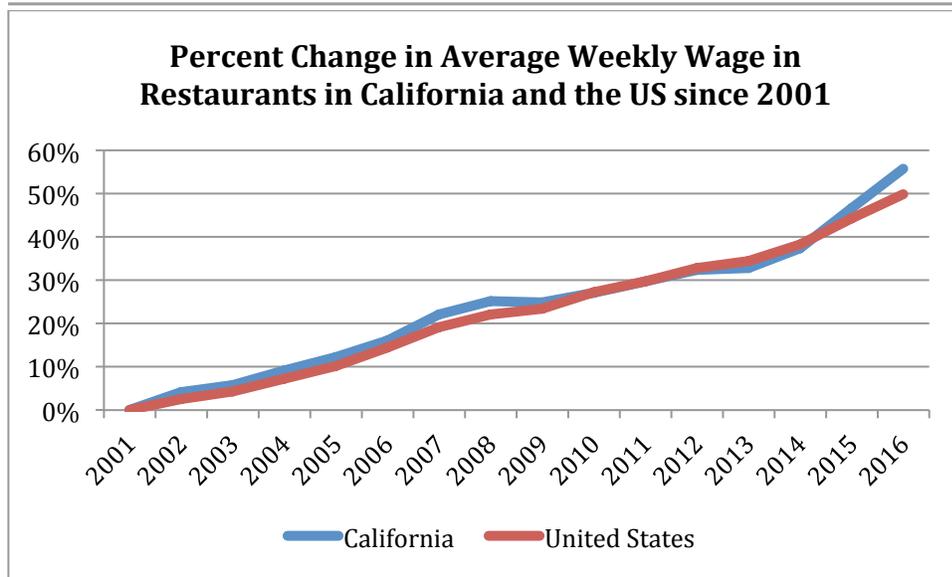


**Figure 3. Average weekly wage in food services and drinking places in California and the United States since 2001.** Source: Analysis of Quarterly Census of Employment and Wages, 2001-2016. Bureau of Labor Statistics.



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**Figure 4. Percent change in average weekly wage in food services and drinking places in California and the United States since 2001. Source: Analysis of Quarterly Census of Employment and Wages, 2001-2016. Bureau of Labor Statistics.**

<sup>i</sup> Hull, Brandon. "Tablets in Restaurants: 3 Things You Need to Consider." *NextRestaurants*. 2014. <http://nextrestaurants.com/point-what-automation-can-mean-for-the-restaurant-industry>

<sup>ii</sup> "What automation can mean for the restaurant industry." *Motley Fool*. 2017. <https://www.fool.com/investing/2017/02/28/what-automation-can-mean-for-the-restaurant-industry.aspx>

<sup>iii</sup> Glover, Mark. "Tech devices changing the game for restaurants, diners." *Sacramento Bee*. 2014. <http://www.newsobserver.com/news/technology/article10066769.html>

<sup>iv</sup> "National Restaurant Association Announces Operator Innovations Awards Winners." *National Restaurant Association*. 2012. [http://www.restaurant.org/Pressroom/Press-Releases/National-Restaurant-Association-Announces-Oper-\(1\)](http://www.restaurant.org/Pressroom/Press-Releases/National-Restaurant-Association-Announces-Oper-(1))

<sup>v</sup> Prentice, Chris, & Baertlein, Lisa. "McDonald's USA in tech push plans self-serve kiosks, mobile ordering." *Reuters*. 2016. <http://www.reuters.com/article/us-mcdonalds-technology/mcdonalds-usa-in-tech-push-plans-self-serve-kiosks-mobile-ordering-idUSKBN13C241>

<sup>vi</sup> Thorn, Brett, & Kruse, Nancy. "Will automation supplant the restaurant worker?" *Nation's Restaurant News*. 2017. <http://www.nrn.com/technology/will-automation-supplant-restaurant-worker>

<sup>vii</sup> Turov Paul, Eve. "Why This Robot Restaurant Should Terrify You." *Forbes*. 2016. <https://www.forbes.com/sites/eveturowpaul/2016/09/27/why-eatsa-scares-me/#65b69bfe3d60>

<sup>viii</sup> Wolf, Connor D. "Meet the company automating your fast food." *Inside Sources*. 2016. <http://www.insidesources.com/meet-the-company-automating-your-fast-food/>

<sup>ix</sup> Ryan, Tom. "Starbucks Mobile Ordering is Working Too Well." *Forbes*. 2017. <https://www.forbes.com/sites/retailwire/2017/04/12/starbucks-mobile-ordering-is-working-too-well/#8a7a27bea288>

<sup>x</sup> Li, Shan. "Wendy's adds automation to the fast food menu." *Los Angeles Times*. 2017. <http://www.latimes.com/business/la-fi-wendys-kiosk-20170227-story.html>

<sup>xi</sup> Jacoby, Tamar. "Technology Isn't a Job Killer." *Wall Street Journal*. 2015. <http://www.wsj.com/articles/technology-isnt-a-job-killer-1432161213>

<sup>xii</sup> ROC United analysis of Analysis of Quarterly Census of Employment and Wages, 2001-2016. Bureau of Labor Statistics.