
Estimating Hourly Tip Income for Waiters and Waitresses in Full-Service Restaurants in California

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Executive Summary

Purpose of Report. Economists have long recognized that minimum wage laws can have both positive and negative effects on low-income household earnings. Many low-paid workers would benefit from a higher minimum wage, but others may find fewer job opportunities and reduced work hours, as businesses economize to offset higher labor costs. Aside from these often-discussed general impacts, one issue of specific concern to the California restaurant industry is the effect that minimum wage increases can have on wage disparity among restaurant employees. Specifically, because tipped employees in California are paid the full minimum wage in addition to any tips they receive, minimum wage increases can exacerbate existing wage disparities between wait staff and their non-tipped counterparts, such as cooks, dishwashers, and even first-line management.

The magnitude of this problem depends on how large of a contribution tips make to hourly earnings of waiters and waitresses. The main source of wage and tip data is the Occupational Employment Statistics (OES) survey, conducted in California by the Employment Development Department under the direction of the federal Bureau of Labor Statistics (BLS). The most recent OES survey suggests that tip income for waiters and waitresses earning the median wage is only \$1.54 per hour, which seems implausibly low given current tipping conventions and anecdotal evidence. For this reason, Capitol Matrix Consulting was commissioned by the California Restaurant Association to review the OES survey and compare its results to alternative estimates of hourly tip income of waiters and waitresses in full service restaurants.

Our Findings. Our review of the OES survey and reporting procedures finds that the OES methodology has several problems that likely account for its low estimate. Foremost among them is that the survey's respondents usually rely on their employees' self-reporting of tip income, which are often understated. We also found dramatic inconsistencies between states that allow employers to reduce wages to account for tip income and those, like California, that do not. This inconsistency suggests that the reported tip levels in the OES survey are driven by legal requirements as much as actual tip-income levels.

The low tip rates found in the OES survey are in stark contrast to previous, more focused, BLS studies of tip earnings. For example, one study produced in 1970 found tip income for wait staff in full-service restaurants to be over \$11 per hour in inflation-adjusted dollars. A key difference between this earlier study and the OES survey is that — instead of relying on self reporting by employees — it relied mainly on *establishment-based* data on food and beverage sales, tip percentages, and employee hours, to arrive at its estimates.

The establishment data approach has also been commonly used by the IRS for the purpose of estimating tip earnings and making tax assessments when employee records are missing or inadequate. This procedure, which has been upheld in a series of court decisions going all the way up to the U.S. Supreme Court, relies on information obtained from the restaurant on food and beverage receipts, credit card payments and tips, and employee hours, to arrive at estimates of tip income per hour.

Based on the establishment-based framework used by the IRS and (previously) the BLS, we modeled average hourly tip income using aggregate economic data from the U.S. Census and related governmental sources for California. Using this approach, we estimate that the average waiter or waitress in a full-service California restaurant makes \$12.57 per hour in tips. This estimate compares well to two recent private sector surveys that we also reviewed.

Our Recommendation. We recommend that policymakers *not* use OES data as a basis for decisions related to the application of future minimum wages changes to wait staff who receive gratuities in the normal course of their work. Use of such data will lead to major underestimates of their income levels relative to non-tipped restaurant employees, and could result in policies that create unintended and negative consequences for the restaurant industry and its workers. Instead, policymakers should base decisions on estimates of tip income that are based on establishment data from restaurants, or simply use the estimate that we provide in this report.

Introduction

The full-service restaurant industry in California accounts for over \$32 billion in annual sales, 600,000 employees, and \$11 billion in annual wages.¹ The industry is characterized by relatively low profit margins and high labor costs.² Many of the cooks, dishwashers, hostess, and other employees receive relatively low wages, often within a range of \$1 to \$5 per hour above the minimum wage.³

The pay rate of waiters and waitresses (which account for about 38 percent of jobs in typical restaurants), however, is often considerably higher when tips are included. While their employer-paid wages are usually set at or very near the minimum wage, these employees also receive gratuities from their customers, which under California law are the sole property of the employee.

California law is different from most states, in that it does not allow tips received to count toward the minimum wage. As a result, waiters and waitresses receive both the full minimum wage plus income they receive from tips. Depending on the size of these tips, this can add up to considerably more than the hourly pay of cooks and other un-tipped employees, even those working in first line management. (See box below for an explanation of federal and California minimum wage law regarding tipped employees).

Minimum Wages for Tipped Employees – Federal and California Law

Under federal law, the minimum wage is \$7.25 per hour for most occupations, but is reduced to \$2.13 per hour for employees who regularly receive at least \$30 per month in tips, predominately wait staff and bartenders. If an employee's tips combined with the employee's direct wages of at least \$2.13 an hour do not equal the federal minimum hourly wage, the employer must make up the difference. Currently 29 states, including California, have minimum wages that are higher than the federal level. However, most of these states also provide for a credit for a portion of tips paid. Overall, 43 states permit a portion of tips received to count toward the minimum wage. California is one of only 7 states that do not provide for this offset.

California's minimum wage increased from \$8.00 per hour to \$9.00 per hour, effective July 1, 2014. It is schedule to rise further up to \$10 per hour on January 1, 2016. Some local jurisdictions (mostly cities) have enacted higher minimums.

Effects of Minimum Wage Increases On Restaurants

Minimum wage increases have mixed effects on businesses and workers in low-wage industries. The higher wage costs can sharply reduce employers' net income, potentially causing them to scale back hours and eliminate jobs. The impacts on lower income workers are summarized in a February 2014 Congressional Budget Office report on the subject:

"Increasing the minimum wage would have two principal effects on low-wage workers. Most of them would receive higher pay that would increase their family's income, and some of those families would see their income rise above the federal poverty

¹ Revenue total based on the U.S. Bureau of Economic Analysis's 2007 Economic Census of businesses in California, adjusted to reflect U.S. growth in the industry between 2007 and 2014. Employment total based on the Industry Employment Series, March 2013 Benchmark, published by the Labor Market Information Division, Employment Development Department.

² According to the most recent Restaurant Operations Report, pre-tax profits for restaurants averaged 2.1 percent to 4.6 percent of revenues in 2013-14, with low-price establishments at the bottom of the range. Labor costs averaged between 31 percent and 35 percent of revenues, with low-priced restaurants at the high end of the range. (Source: Restaurant Operations Report for 2013-14, prepared by Deloitte-Touche for the National Restaurant Association).

³ For example, the National Compensation Survey for the greater Los Angeles area shows that the average hourly wage for cooks was \$13.24 and dishwashers was \$10.47 in 2010 (most recent year for this survey), compared to the minimum wage at the time of \$8 per hour.

*threshold. But some jobs for low-wage workers would probably be eliminated, the income of most workers who became jobless would fall substantially, and the share of low-wage workers who were employed would probably fall slightly.”*⁴

Beyond these general effects, significant minimum wage increases create particularly severe wage-parity problems for restaurants. Because California does not allow tips to be counted toward the minimum wage, the biggest beneficiaries of a minimum wage increase are likely to be the highest paid (non-management) workers in a restaurant. This is because the waiters and waitresses get virtually all the benefit of the minimum wage increase (since their employer-paid wage is almost always set at or near the minimum wage) even though they earn substantially more than other restaurant workers when tips are taken into account.

Meanwhile, un-tipped employees with hourly wage rates set modestly above the minimum wage may receive little if any benefit from the minimum wage increase. The net result is an increase in the wage disparity that already exists between workers in “front” and “back” parts of a restaurant.⁵ In theory, restaurants could address this wage parity problem through further wage increases for cooks and other non-tipped occupations.⁶ However, additional wage adjustments would further boost labor costs and depress sales, profits and employment in an industry that already operates on thin profit margins.

Purpose of This Study

While wage inequities between tipped and un-tipped employees may be painfully obvious to owners and workers in restaurant establishments across the state, a key government estimate of wages and tips suggests otherwise. Specifically, the Bureau of Labor Statistic’s Occupational Employment Statistics (OES) survey for California indicates that the median wage, including tips, for waiters and waitresses was just \$9.54 in 2013. Given a minimum wage of \$8.00 in that year, this suggests that the typical waiter or waitress in California’s full service restaurants receives just \$1.54 per hour in tips.⁷

In view of the major disconnect between what real-world, full-service restaurants are experiencing and what the OES survey is indicating, we were commissioned by the California Restaurant Association to:

- ▶ Evaluate the Occupational Employment Statistics (OES) survey, with a focus on the extent to which this survey properly captures actual tips received by waiters and waitresses;
- ▶ Develop our own estimates of average hourly pay for waiters and waitresses based on an alternative methodology that uses establishment data on revenues and employment, along with survey data on tipping percentages.
- ▶ Compare our results to other estimates of the contribution of tips to the hourly wages of waiters and waitresses in in California.

⁴ *The Effects of a Minimum Wage Increase on Employment and Family Income*. February 18, 2014. Congressional Budget Office.

⁵ For a description of how the local minimum wage increase in Oakland, CA is affecting restaurants in the city, see Daniel Borenstein, “Top Oakland Eateries Challenging the Restaurant Bill Paradigm,” in *The Contra Costa Times*, February 8, 2015. http://www.contracostatimes.com/daniel-borenstein/ci_27474871/daniel-borenstein-top-oakland-eateries-challenging-restaurant-bill.

⁶ Restaurant management could also try to address the problem by changing their pricing approach – by, for example, eliminating tips, raising meal prices 15-20 percent and distributing the extra revenues among employees in a more equitable way. However, such an approach would be fraught with risks regarding, for example, customer acceptance of higher menu prices and loss of control over how – and how much – to reward good table service.

⁷ The actual hourly tip income implied by the OES numbers are probably even less than this amount considering that (1) some California cities have enacted higher minimum wage laws, and (2) some employers pay slightly more than the minimum wage.

The OES Survey

Background

The federal government, along with partner employment agencies in the 50 states, collects data on wages and income through several programs. However, there is only one program that measures occupational hourly wages *including tips* — the Occupational Employment Statistics (OES) survey, which is overseen by the U.S. Bureau of Labor Statistics (BLS) and administered in California by the Employment Development Department (EDD).

The OES is based on a survey of employment and wages for jobs in over 800 occupations. The data is collected semiannually from a survey form that is mailed to randomly selected businesses in the state.⁸ EDD staff collates the data, and when necessary makes follow-up calls to request data from non-respondents or to clarify responses. Participation in the survey is strictly voluntary.

There are different survey forms for different industries. The occupations listed on the forms vary depending on the industry. The form sent to restaurants — Occupational Employment Report of Food Services and Drinking Places (722000) — contains 33 different occupations, one of which is Waiters and Waitresses.

The form requests that the employer identify the number of full- and part-time workers in the various occupational categories that fall into predetermined hourly wage ranges, starting at less than \$9.25 and rising, at varying increments, to over \$100 per hour. Since 1999, the instructions on the form state that the wages reported for waiters, waitresses, and bartenders should include the average hourly amount of tips received.

Recent survey results for waiters and waitresses. The most recent data reported in the OES survey shows median wage (the level at which half responses are higher and half are lower) is \$9.54 per hour. It also shows that the average wage is slightly higher, at \$10.81 per hour.⁹ Given that the state's minimum wage at the time of the most recent survey was \$8.00 per hour, this would suggest that the median employee is receiving tips of no more than \$1.54 per hour, and the average employee is receiving tips of no more than \$2.81.

Simple illustration. To understand why this level of implied tips seems so implausibly low, it may be helpful to consider a simple example to illustrate how quickly tips can add up. In this example, a waiter is working in a diner that serves moderate priced meals. In a four-hour shift, he waits on 10 tables — or between 2 and 3 tables per hour — with an average of 2.5 customers per table. The average order for a diner consists of \$9.95 for the main course and \$2.50 for a non-alcoholic drink - no desserts, appetizers, or side orders. As indicated in Figure 1, if we assume an average tip rate of 15 percent, the total amount of tips earned in this shift would be \$50.89, or \$12.72 per hour. Even if this waiter shares 10 percent of his tips with other staff, his net earnings from tips are still \$11.45 per hour.

⁸ See: http://www.labormarketinfo.edd.ca.gov/OES/OES_Survey.html

⁹ BLS OES report for May 2013. See <http://www.bls.gov/oes/#data>.

Figure 1
Illustration of The Potential Impact of Tips on Hourly Income
Moderate Priced Diner

Key Assumptions	
- Shift length (hours)	4
- Tables served in shift	10
- Average number of diners per table	2.5
- Average price per meal (including sales tax)	\$13.57
- Equals: Total receipts + taxes per shift	\$339.25
- Assumed average percentage tip	15%
Equals:	
- Total tips per shift	\$50.89
- Tips per hour (before tip sharing)	\$12.72
- Tips per hour (after sharing 10 percent)	\$11.45

Review of OES Reporting Process

The first step in our evaluation is to review in detail the key elements of the OES survey process. This includes the forms that are used, the response rates, the follow-up procedures used by EDD, and the methods used by respondents to calculate tips and other factors. Our key findings from this investigation are:

1. **OES reporting challenges are prevalent in many industries.** The core challenge with the OES survey is that, in contrast to mandated reports, such as quarterly withholding of taxes and unemployment insurance, this survey is strictly voluntary, is far from routine, and has no potential to result in penalties for mis-reporting. Only a small share of companies in each industry receive the survey, and most employers have never heard of it. EDD staff indicates that, in many instances, particularly those involving smaller businesses in the services industries, the respondents are unfamiliar with the staffing and wage data needed to fill out the survey (since they use outside payroll services), and are distrustful of the survey and how it will be used. Because of this, EDD staff must spend an inordinate amount of time following up, encouraging responses, pointing out inconsistencies, and providing additional guidance on the mechanics of filling out the survey. Even with extensive follow-up efforts, the response rates are often low, and data for many occupations is incomplete or missing, or for other reasons cannot be used. Still, in most industries, where hourly wages are relatively straightforward, the survey has an adequate number of responses to make statistically valid estimates of wage rates. However, the reliability falls in occupations where pay is variable and based on such factors as per miles traveled (in the trucking industry), commissions, piece rates, and, especially, tips.
2. **The reporting problems are acute for tipped occupations such as waiters, waitresses, and bartenders.** To a large degree, this reflects challenges in extracting good information on tips. EDD staff indicated that a significant number of surveys that are mailed to food services and drinking places are returned with wages for non-tipped occupations filled in but wages for the waiters-and-waitresses occupation left blank. In other cases, the forms are returned that show every waiter/

waitress earning the lowest range on the form (“less than \$9.25 per hour”), strongly suggesting that the respondent is entering only the wage paid by the employer and is ignoring tips altogether. While EDD staff follow up in these cases, and are sometimes successful in extracting better information, they indicate that frequently businesses fail to provide the needed information or adjustments even after the additional prompting. In these cases the problematic responses are dropped.

3. **Response rates for tipped occupations are low.** Overall, of the 174 forms sent to establishments in the food services and drinking places category in the most recent survey, only 29 were returned fully filled in with no obvious “red flags” requiring additional follow-up contact from EDD. Another 20 were usable after additional follow-up contacts, for a total of 49 usable responses. The remaining 125 forms were not usable for determining hourly wages of waiters and waitresses, either because the businesses failed to return them (73 of the total) or the forms had data omissions or other issues that could not be resolved even after follow-up contact. This small number of usable responses has two main implications:
 - a. First, the smaller remaining sample size increases the error margins associated with the average hourly wage estimates. This is especially the case for local regions, where the estimates would be based on an extremely small number of valid responses.
 - b. Second, if the 125 surveys that were not returned or were otherwise omitted from the sample would have shown characteristics that were different from the 50 that were included, the resulting estimate would be biased. There would be a significant downward bias, for example, if companies leaving out wages from the waiters and waitresses categories did so because they recognized that these employees earned significant tips, but were unable or unwilling to include the information. The bias would be even larger if the surveys included in the sample are from companies willing to accept low employee estimates unquestioned (see # 5 below).
4. **Survey forms do not provide detailed guidance on how to calculate tips.** While the form asks employers to report tips, it provides no methodological guidance on how to make the per-hour calculation. For example, it does not suggest that businesses use establishment data on restaurant receipts, average percentage tips from credit card data, employee hours worked or other information that many of the restaurants are already required to file with the IRS.¹⁰ (We discuss an alternative establishment-based approach later in the section titled “Our Estimate of Statewide Average Hourly Tip Income Using an Establishment-Based Framework.”)
5. **Data often based on employee self-reporting.** Based on our conversations with EDD staff who work with employers, it appears that most tip estimates included in the survey are based on amounts reported to bookkeeping staff by their employees. Even in cases where the amounts seemed improbably low and were questioned by EDD staff in follow-up calls, the employers were often unwilling to pursue further analysis or go back to their employees to seek better estimates.¹¹ When we asked about the extent to which EDD employees encouraged respondents to cross check self-reported tips with other sources, staff indicated that such detailed follow-up is not practical in view of the tight time frames they have to administer the survey. They also indicated that there is only so much that government officials can do, given that participation in the survey is voluntary.

¹⁰ Larger-sized food and beverage establishments where tips are customary must report tips to the IRS each year on Form 8027. On the form, businesses report, among other things, total tips charged on credit cards, the corresponding total credit card receipts, total tips reported by employees, and gross receipts from food and beverage sales.

¹¹ A key disincentive for employers to report higher tip income on behalf of their employees is the tax consequences for both the employers and its employees. Since 1987 employers have been required to pay their full share of FICA (Social Security and Medicare) taxes on all their employee’s tips.

Reliance on self-reporting of tips is problematic. We believe that the reliance on employee self-reporting on tips is the most serious of all the problems associated with the OES estimate of waiter and waitresses' hourly pay rates. It is clear from years of studies and IRS audits that tips are one of the most underreported of all sources of income. The IRS estimates that tip income reported on W-2's is less than 40 percent of actual levels, and most academic studies on tipping rely on surveys of restaurants customers because they consider tips reported by employees to be unreliable.¹²

In summary, our review finds that, despite considerable efforts by EDD staff, the OES survey contains certain limitations with respect to tipped occupations that will be difficult to overcome unless reporting methodologies are changed significantly. The main problem is that the responses appear to rely heavily on self-reporting of tips by employees instead of using more reliable *establishment* data on receipts, tipping percentages, and hours worked.

Inconsistency of OES Estimates Across States

The second step of our analysis was to compare the OES survey results for waiters and waitresses in California to different states across the country, including those having different minimum wage policies relating to tipped employees. We specifically compared OES estimates of average hourly wages for waiters and waitresses in large metropolitan statistical areas (MSAs) within 8 states - 4 of which did not provide a reduced minimum wage for tipped occupations, and 4 of which did provide such reduced minimum wages. We also gathered information on (1) the minimum wage for each state, both the general rate and the lower rate (if any) for tipped employees, and (2) average hourly wages excluding tips, as reported in the National Compensation Survey (NCS).¹³ Finally, we calculated "implied hourly tip income" by subtracting the NCS hourly rate, which excludes tips, from the OES rate, which theoretically includes tips. (Our analysis is based on major metropolitan areas as opposed to states because the NCS - which contains the information we need on hourly wages excluding tips - is not available at the state level).

Figures 2 summarizes the results of this analysis, and Figure 3 compares the estimated levels of tip income among the metropolitan areas across the country.

¹² See, for example, Robert B. Pearl and Kevin F. McCrohan, "Estimates of tip Income in Eating Places, 1982," in *IRS Research Bulletin*, 1983.

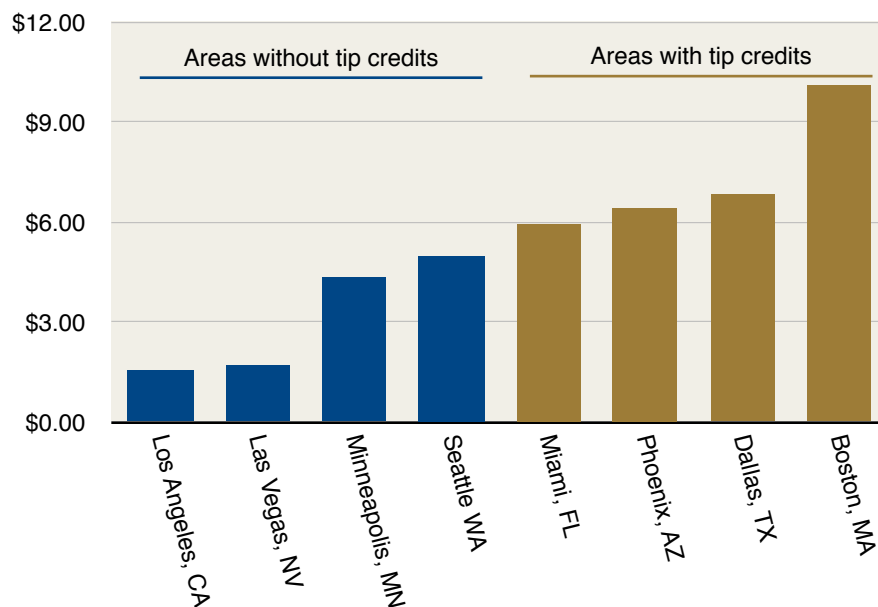
¹³ The NCS is the second of two wage surveys conducted by the BLS (though publication of regional data was suspended in 2012 due to budget cuts). While the OES and NCS wage surveys cover many of the same occupations, they have different characteristics and strengths. The OES provides hourly wages for more areas, including the nation, states, and 585 metropolitan and non metropolitan statistical areas. The NCS covers the nation, 9 census divisions and 85 metropolitan and non metropolitan areas. The OCS also includes data on the number of jobs in each occupation. However, the NCS includes on-site visits by surveyors and it includes more specific information for various occupations, including pay levels for levels of work being performed within an occupation, the proportion of jobs that are unionized, and a breakout between private sector and state and local government jobs. As noted in the text, the NCS does not include tips in waiters' and waitresses' hourly income totals.

Figure 2
Comparison of Tipped and Un-tipped Wages in Various MSAs
Waiters and Waitresses in Full-Service Restaurants, 2010

MSAs in states with no tip credit:	Full minimum wage	Reduced minimum wage for tipped workers	Average hourly wage		
			Excluding tips (NCS)	Including tips (OES)	Difference (Implied hourly tips)
— Los Angeles, CA	\$8.00	None	\$8.27	\$9.79	\$1.52
— Seattle, WA	8.55	None	8.59	13.57	4.98
— Las Vegas, NV*	7.25-7.55	None	9.37	11.06	1.69
— Minneapolis, MN	7.25	None	7.25	11.60	4.30
MSAs in states with tip credit:					
— Boston, MA	8.00	2.63	3.85	13.94	10.09
— Dallas, TX	7.25	2.13	2.69	9.54	6.85
— Phoenix, AZ	7.25	4.25	4.69	11.09	6.40
— Miami, FL	7.25	4.23	4.22	10.15	5.93

* NV minimum wage higher for businesses not providing health insurance to their employees.

Figure 3
Comparison of Implied Hourly Income From Tips in OES Survey
Waiters and Waitresses, Selected MSAs, 2010



Together, these figures show that there is major variability between states in terms of the implied contribution of tips to hourly wages, ranging from \$1.52 (Los Angeles, California) to \$10.09 per hour (Boston, Massachusetts). They also reveal a substantial difference between states that provide for a reduced minimum wage for tipped occupations versus those that do not. Specifically, the implied level of tip income averaged more than \$7 per hour for the states allowing a reduced minimum wage, more than

double the average of \$3 per hour for those that do not provide the reduced minimum wage for these occupations.

This difference is significant. It suggests that tip levels reported on OES forms may be driven as much by legal requirements as actual tipping levels. States allowing reduced minimum wages for tipped employees require that the employer be able to show that actual tips will bring the employee's earnings at least up to the general minimum wage. Thus, the habit of such reporting for legal purposes probably carries over when they are asked to report on the OES survey.

What Have Past Governmental Studies Found With Respect To Tip Income?

The third step of our analysis was to review other efforts made by federal government agencies to measure income from tips. While we were not able to find recent studies focusing directly on this topic, we did find three older studies – two conducted by the BLS and one commissioned by the IRS – that are on point. A common theme of these studies was the reluctance to rely on employee-reported income from tips as a basis for estimating tip income.

BLS study on tips in restaurants and hotels. This study, which appeared in the July 1971 edition of the *Monthly Labor Review*, was based on a national survey conducted in 1970 that covered five occupational categories in restaurants and hotels.¹⁴ Although the study was conducted a long time ago, it is of interest because of the methodology that BLS used to determine tipping levels. Specifically, the common procedure used was based on establishment data, as opposed to employee-reported tips, to determine tip-related income. Specifically, the respondents for the restaurant industry (1) multiplied the weekly receipts from the sale of food and drinks by an estimate of the average percentage tip on the customer's bill, (2) summed these products, then (3) divided the total by the total weekly hours worked by wait staff.

Using this establishment data approach, the survey found that waiters and waitresses in full-service restaurants earned more money from tips than their basic wage. For the U.S. as a whole, the average was \$1.93 in tips versus \$1.14 in wages. After adjusting for inflation, the tip amount in today's dollars would be \$11.78 and the wage amount would be \$6.96.

BLS feasibility study. As part of this study, which appeared in a BLS document entitled *Compensation and Working Conditions* in 1997, the BLS was testing the feasibility of collecting data on employee tips for use in its National Compensation Survey.¹⁵ In the study, BLS officials sought information on wages and tips in various establishments in New Orleans through surveys and on-site interviews. Although the study found an average tip rate of \$6.05 per hour (\$8.92 in today's dollars), its main conclusion was that there were serious challenges associated with including tips in the National Compensation Survey. Specifically, it found that response rates related to tips were low, and the field economists conducting the study indicated that a high proportion of responses that they received were of "fair" or "poor" quality. The BLS also reported "survey respondents repeatedly noted that the only (tip-related) figures they could provide for certain occupations were those reported by their employees." In view of the relatively poor data quality and low response rate, the BLS concluded at the time that more testing and perhaps a pilot project was needed before including tips in NCS wage data. As noted earlier, the NCS has continued to exclude employee tips in its wage surveys.

¹⁴ Charles M. O'Connor, "Wages and Tips in Restaurants and Hotels," *Monthly Labor Review*, July 1971, U.S. Bureau of Labor Statistics.

¹⁵ See Hilery Simpson, "Tips and Excluded Workers: The New Orleans Test," in *Compensation and Working Conditions*, 1997. U.S. Bureau of Labor Statistics. 1997.

IRS commissioned study. In 1982, the IRS commissioned a study to estimate aggregate tip income in the U.S. and compare the estimate to the amount actually reported at the time for income tax purposes. The study was based on a rotating national consumer panel that had been conducted by NPD Research, Inc. since 1975. In justifying this approach that was based on a survey of consumers instead of recipients of tips, the authors stated “experience has indicated that tips will be seriously understated in surveys (or other reports) by the employees or recipients of the tips because of their reluctance to reveal the amount of income from this source.”¹⁶ For purposes of the survey, each household in the panel kept a diary of all occasions of eating in a restaurant or other eating place for one two-week period in each quarter of 1982. The data collected included the number of eating occasions, the type of establishment, average amount spent per meal, and amount of tips. The study found that the average tipping rate reported by households was 14.3 percent in full-service restaurants. It also found that the aggregate level of tip income was estimated to be \$6.2 billion, or more than 6 times the amount reported on W-2s at the time.

IRS Establishment-Based Method of Calculating Tip Income For Audit Assessments

If self reporting is a poor basis for determining hourly wages from tips for waiters and waitresses, then it is important to find an alternative reliable methodology for this purpose. We believe the most logical candidate would be an approach based on establishment data, along the lines of the 1971 BLS study discussed previously.¹⁷

An establishment-based approach for determining tip income has been used by the IRS since the 1960s for determining audit assessments when employee records are found to be inadequate. This indirect method has been upheld as a reasonable methodology in a series of court cases dating back to 1973.

Specifically, in the *McQuatters* decision in 1973, a trial court upheld the IRS’s use of an establishment based methodology for determining tip income and taxes owed.¹⁸ The case involved an income tax audit of the wait staff at the Space Needle restaurant in Seattle for 1967 and 1968. Because none of the employees had maintained records of their tips, the IRS made an estimate of aggregate tip income for the restaurant based on its annual food and beverage sales subject to tips (reduced for non-tipped sales), an average tip percentage (based on an examination of sales and tips paid on credit cards), and total hours worked by waitstaff. Each employee was then allocated a share of the tips based on his or her annual hours worked.

Courts generally upheld the use of variations of the “McQuatters formula” in subsequent cases, which often involved challenges to the IRS’s application of this indirect method for assessing additional employer FICA (Social Security and Medicare) taxes. These cases culminated in the U.S. Supreme Court decision in *Fior D’Italia, Inc. v. U.S.* in 2002, which found the IRS’s application of this establishment-based methodology to be reasonable.¹⁹

¹⁶ See Robert B. Pearl and Kevin F. McCrohan, “Estimates of Tip Income in Eating Places, 1982.” *IRS Research Bulletin*, 1983.

¹⁷ *Ibid.*

¹⁸ *McQuatters v. Commissioner*, 32 T.C.M 1122, 1973.

¹⁹ In this case, *Fior D’Italia, Inc. v. U.S.*, Fior D’Italia’s Forms 8027 showed that employees underreported tips, as the charge-card tips alone were \$703,000 in 1991 and 1992 combined, versus employee reported tip of \$468,000 for the same period. To determine the assessment, the IRS calculated the tip percentage by dividing charge-card tips by charge-card sales. The resulting percentages were 14.3 percent for 1991 and 14.5 percent in 1992. The tip percentages were then multiplied by the restaurant’s receipts, and the results compared to reported tips. Based on this methodology, the IRS calculated that unreported tips for the two years combined totaled \$304,000, and assessed the employer’s share of FICA taxes owed on this amount.

Our Estimate of Statewide Average Hourly Tip Income Using an Establishment-Based Framework

In this section we apply an establishment-based estimation framework similar to that used by the IRS to develop a statewide estimate of average hourly tip income for waiters and waitresses in California. The approach is similar to that which could be followed in individual restaurants, but instead of using “micro” data from individual establishments, we use statewide aggregate data from the U.S. Economic Census and other government and sources for various components of the estimate.

More specifically, the basic calculation is as follows:

$$\text{AverageHourlyTip} = (\text{TotalTippedReceipts} \times \text{AveragePercentTip} / \text{HoursWorked}) * (1 - \text{TipSharingFactor})$$

Where:

- ▶ AverageHourlyTip = Average contribution of tips to the hourly wage of a waiter or waitress.
- ▶ TotalTippedReceipts = Total receipts in full-service restaurants subject to tips received by waiters and waitresses.
- ▶ AveragePercentTip = The average percentage tip rate on restaurant bills.
- ▶ HoursWorked = Total annual hours worked by waiters and waitresses in full-service restaurants in California.
- ▶ TipSharingFactor = The percentage of tips that are shared among others providing table service (e.g., bussers).

In the following sections, we discuss the derivation of each component of our estimate.

Total Full-Service Restaurant Receipts Subject to Tips

Our data source for this estimate is the U.S. Economic Census. The 2007 census found that total receipts to full-service restaurants in California were \$25.6 billion, or 13.3 percent of the U.S. total. We updated this total to 2014 by taking into account actual growth in U.S. receipts in full-service restaurants between the 2007 census and 2012 census (2012 census data on restaurant receipts is not yet available at the state level), and a conservative estimate of 4.6 percent annual growth between 2012 and 2014, based on our examination of U.S. and California Gross Domestic Product data for the food service industry. Based on these assumptions we estimate that gross receipts of California restaurants were \$32.7 billion in 2014.

To arrive at the amount of receipts subject to tips, we reduced the total receipts by 10 percent to reflect sales that would not be subject to tips received by waiters and waitresses. These include (1) bar sales, (2) incidental retail sales of items not subject to tips, and (3) the portion of receipts that reflect service charges (so as to avoid including a “tip on a tip”). After this adjustment, we estimate that receipts subject to tips going to waiter/waitress tips were \$29.4 billion in California during 2014.

Average Percentage Tip Rate

This estimate is, of course, key to determining the level of tip-related income of waiters and waitresses. To help determine an appropriate tipping rate, we conducted a literature review of studies and surveys related to tipping practices in North America. The results of our review are summarized in Appendix 1.

In general, studies completed in the past 10 to 15 years have found tipping rates in the 15- to 20-percent range, which is consistent with generally accepted tipping conventions.²⁰ Studies focusing on regional differences found higher-than-average rates in the northeast, but not a great deal of variation overall.²¹ Not surprising, the tipping rates found in more recent studies are generally higher than surveys of tipping practices in the 1980s and 1990s. In other findings, though earlier studies found that credit card tips tended to be larger than cash tips, more recent studies suggest this is no longer the case.²² Several studies found that tipping percentages also tended to vary inversely with the cost of the meal – that is, tips of 20 percent or more tend to be left more frequently on low- and moderate price meals than for expensive meals.

For purposes of this estimate, we are using an average tip rate of 16 percent. This reflects a normal rate of between 16.5 percent and 17 percent for good table service, but modest discounts for a small proportion of “stiffs,” low tips for bad service, and lower-than average tips for take-out orders.

Annual Hours Worked By Waiters and Waitresses

In order to determine tip income on a per-hour basis, it is necessary to determine total annual hours worked by waiters and waitresses in the full-service restaurant industry. According to the EDD industry employment series, there were 600,000 full- and part-time employees in the full-service restaurant industry in 2014. Based on the BLS industry/occupation job matrix, 38 percent of the total are waiters and waitresses, or about 231,000. According to the U.S. Census Bureau’s 2008-2012 American Community Survey data for California, waiters and waitresses in the full-service restaurant industry worked an average of 28.1 hours per week.²³ Based on these factors, the total number of hours worked last year was 336.5 million (231,000 employees times 28.1 hours per week times 52 weeks per year).

Tip Sharing

Where tip pooling exists, industry guidelines suggest arrangements that involve anywhere from 15 to 30 percent of waiters’ tips. We believe that that average for all restaurants in California is less, however, due to restrictions on involuntary pooling that exist in this state. Specifically, while state law does provide for involuntary tip sharing between waitstaff and others in the chain of “direct table service,” waiters and waitresses cannot be compelled to share tips with cooks, managers (even if they provide direct table service) or dishwashers.²⁴ Taking into account these limitations, we assume an overall tip-sharing rate of 10 percent in the state.

²⁰ See, for example, Micheal Conlin, Michael Lynn, Ted O’Doogue, “The Norm of Restaurant Tipping,” Cornell University School of Administration - The Scholarly Commons, February 2003. This study is based on survey information collected outside of 39 Houston restaurants. It found an average tip rate of 17.56 percent.

²¹ A survey conducted by Harris Interactive in 2013 found a U.S. average tipping rate of 18 percent for good service in the U.S. The average rate in the Northeast was about 19 percent, compared to about 17 percent in the Far West.

²² See, for example, Matt Parrett, “An Analysis of the Determinants of Tipping Behavior: A Laboratory Experiment and Evidence from Restaurant Tipping,” *Southern Economic Journal*, 2006.

²³ Data retrieved through IPUMS-USA, University of Minnesota, www.ipums.org. The American Community Survey is a nationwide survey that produces characteristics of the population and housing in the U.S. similar to the long-form questionnaire used in *Census 2000*. It is a continuous survey, in which each month a sample of housing unit addresses receives a questionnaire. About 3.5 million addresses are surveyed each year.

²⁴ More specifically, while the California Labor Code states that a tip is the sole property of the employee to whom it was provided, the section has been interpreted to allow for involuntary tip pooling so long as the tips do not compensate owners, managers, or supervisor(s) of the business. California courts have validated policies that distributed tips among employees who provide “direct table service” or who are in the “chain of service” (i.e. busboys, bartenders, assistant waiters) provided that employee in the chain of service bears a relationship to the customers’ overall experience.

Resulting Tip Per Hour Estimate

Based on these assumptions we calculate that the average tip for all waiters and waitresses in California is \$13.97 per hour before making allowance for tip sharing, and \$12.57 per hour after the adjustment. The full calculation is presented in Figure 4.

Figure 4
Estimate of Tips Per Hour Using Aggregate Data
California, 2014

	Dollar Amount
Total Receipts - full service restaurants	\$32.7 billion
10 percent reduction for non-tipped receipts	\$3.3 billion
Equals: Receipts subject to tips	\$29.4 billion
Average percentage tip rate	16.0 percent
Equals: Total tip income	\$4.7 billion
Divided by: Annual hours worked by waiters and waitresses	336.5 million
Equals: Gross hourly tip income before tip sharing	\$13.97 per hour
Minus 10% due to tip sharing	-\$1.40 per hour
Equals: Average hourly tip	\$12.57 per hour

Clearly, the components of this estimate are all subject to measurement errors, which could mean that the actual contribution of tips to hourly earnings is higher or lower than this estimate. Because we have been conservative in our estimates of restaurant sales subject to tips and the average percentage tip rate, we believe that most of the risk is on the upside. Our main point, however, is that under almost any conceivable range of realistic assumptions regarding the components of our estimate shown in in Figure 4, the contribution of tip income is vastly greater than what is implied by the OES data. In order for the wage rates shown in the OES data to make sense, we would need to assume an average tipping rate of 3.5 percent, which is implausibly low given every study of tipping behavior that we have seen (see Appendix 1).

Other Evidence

As a cross check to our estimates based on aggregate census and related government data, the final part of our analysis reviews two private sector surveys of tip income reported in early 2015 by employees and restaurants in California.

The first survey was released by Payscale, Inc., a Seattle firm that conducts an ongoing salary survey for a variety of occupations across the U.S. The survey included self-reported wages and tips of 15,000 servers, bartenders, cooks and chefs. It found that tips added \$11.90, \$7.60 and \$8.80 to the hourly wages of wait staff in San Francisco, Los Angeles and San Diego, respectively.²⁵ These figures are substantially higher than the levels implied by the OES data, but they are lower than our aggregate California estimate based on establishment data. We believe that a key factor accounting for the difference between our aggregate

²⁵ See: <http://www.payscale.com/data-packages/restaurant-report/best-and-worst-cities-for-food-service-workers>

estimate and the Payscale survey is the latter's reliance on employee-reporting of tips. Because of this, it suffers the same underreporting bias as the OES survey (though possibly to a smaller degree, since respondents may be less adverse to reporting tips to a non-government entity).

The second survey was prepared by Beacon Economics for the California Restaurant Association. The survey was anonymous and was based on voluntary web-based reporting by restaurant owners. Unlike the Payscale survey, it was based primarily on point-of-sale, establishment data.

This survey showed much higher tips than those reported in the Payscale survey, and moderately higher tip rates than we estimated using statewide aggregate data. Specifically: in full-service restaurants with average meal costs of less than \$15 per person, the average hourly tip income of servers was \$16.12; for restaurants with average meal costs in the range of \$15 to \$45 it was \$17.67; and, for those with average meal costs above \$45 it was \$29.19. Since the survey is voluntary and not a scientific sample, the results may or may not be representative of California as a whole. However, at a minimum, the survey provides important insights into tip income earned by waiters in a large number of restaurants throughout the state and it reinforces our assessment that the risk of error to our statewide average estimate is mainly on the upside.

Summary and Conclusion

Our analysis shows that the OES estimate drastically understates the contribution of tips to the average hourly wage of waiters and waitresses in full-service restaurants in California. Beyond the methodological problems with the OES estimates, chief among them the reliance on employee-reported data, there are striking inconsistencies in the OES estimates between states allowing tip credits against minimum wages and those, like California, that do not. The inconsistencies are dramatically greater than can be reasonably attributed to differences in tipping practices among states.

Figure 5 displays all of the estimates of hourly tip earnings presented in this report. As it shows, the OES estimate is implausibly lower than all of the others. The variation in the other estimates considered are all within a reasonable range. This gives us confidence that our establishment data-based estimate using aggregate economic data is a reliable, even conservative estimate of California's statewide average hourly tip income.

Figure 5
Comparison of Estimates
Contribution of Tips to Wait Staff Average Hourly Pay

	Tips Per Hour
I. Bureau of Labor Statistics, OES Survey for California - implied tips per hour	
Median	Less than \$1.54
Mean	Less than \$2.81
II. Past estimates made by BLS (non-California specific and adjusted for inflation)	
BLS 1970 study	\$11.78
BLS 1997 study	\$8.92
III. Recent surveys of tip income in California restaurants:	
Payscale, Inc. Restaurant Report:	
San Francisco	\$11.90
Los Angeles	\$7.60
San Diego	\$8.80
Beacon Economics/California Restaurant Association survey of full service restaurants:	
Lower cost restaurants	\$16.12
Mid-range cost restaurants	\$17.67
High-end restaurants	\$29.19
IV. Capitol Matrix Consulting estimate, average for all California full-service restaurants	
Excluding tip sharing	\$13.97
After reduction by 10 percent tip sharing	\$12.57

For these reasons, we recommend that policymakers not use OES data as a basis for decisions related to the application of future minimum wages changes to waitstaff who receive gratuities in the normal course of their work. Use of such data will lead to major underestimates of their income levels relative to non-tipped restaurant employees, and could result in policies that create unintended and negative consequences for the restaurant industry and its workers. Instead, policymakers should base decisions on surveys or estimates of tip income that use more reliable establishment data, or simply use the statewide average estimate that we produced in this report — \$12.57 per hour.

Appendix 1

Selected Studies, Surveys, and Guidelines Regarding Restaurant Tipping

Paper/Survey/ Guidelines	Author(s), Publication, and Date	Approach/Data Used	Key Findings
<i>Estimates of Tip Income in Eating Places, 1982</i>	Robert B. Pearl and Kevin F. McCrohan, <i>IRS Research Bulletin</i> , 1983	National panel of consumers conducted by NPD Research, Inc., a national survey research firm.	Average percent tipping rate was 14.2 percent in full service restaurants when tips were left. Found an overall rate of 12.9 percent for restaurants where tipping was customary, after accounting for non payments ("stiffing"). Survey was conducted in 1982, when the categorizations between full service, limited service, and fast food restaurants were not as clear as today.
<i>What Sustains Social Norms and How They Evolve? The Case of Tipping</i>	Ofer Azar, <i>Journal of Economic Behavior & Organization</i> , 2004	Review of past studies to determine how they comport to author's theoretical model explaining evolving tipping practices.	As part of the study, the authors reviewed surveys made of 697 customers in six different Minnesota restaurants and one coffee shop in 1991. The author found an average tipping rate of 13.7 percent, with wide distribution around the mean.
<i>The Norm of Restaurant Tipping</i>	Michael Conlin, Michael Lynn, Ted O'Donoghue, in <i>Cornell University School of Administration - The Scholarly Commons</i> , 2003	Survey information collected outside 39 full service restaurants in Houston, Texas.	Found an average percentage tip rate of 17.56 percent. Also found that tips were positively correlated with service quality but other factors also relevant, including group size, gender of waitstaff and customers, and extent of repeat business.
<i>An Analysis of the Determinants of Tipping Behavior: A Laboratory Experiment and Evidence from Restaurant Tipping</i>	Matt Parett, in <i>Southern Economic Journal</i> , 2006	Used two methods: One was a controlled experiment using Virginia Tech Students. The other was a survey of customers at five full service restaurants in Richmond Virginia in the summer of 2002	In the survey, the author found an average tip rate of 19.6 percent, with a positive relationship between service quality and a negative relationship between table size. In contrast to earlier studies, this one found no relationship between tip size and means of payment.
<i>Tipping Behavior in Canadian Restaurants</i>	L.J. Maynard, M. Mupandawana, in <i>International Journal of Hospitality Management</i> , 2009	Data collected from NPD Research, Inc. Consisted of 73,000 meals in full service restaurants between 2000 and 2005.	Found an average tipping rate of 15.6 percent, with an inverse relationship between check size and percentage tip.

Paper/Survey/ Guidelines	Author(s), Publication, and Date	Approach/Data Used	Key Findings
<i>The Social Norm of Tipping: A Review</i>	Ofer H. Azar, Ben-Furion University of the Negev Guilford Glazer Faculty of Business and Management, 2002. (Available at SSRN).	Summary of theoretical and empirical literature.	Studies reviewed generally found tip rate to be near "the social norm of 15 percent." Studies also found a positive correlation between service quality and tip levels, though evidence was mixed as to the magnitude of the relationship.
<i>A Comparison of Asians', Whites' and Hispanics' Restaurant Tipping</i>	Michael Lynn, in <i>Journal of Applied Social Psychology</i> (forthcoming)	Post meal survey of customers in large multi- state full service restaurant that serves dishes in the \$18 to \$24 range.	Overall average tip rate of 18 percent to 19 percent, depending on whether outliers are eliminated, with some variation by ethnicity.
Survey Conducted by Harris Interactive on Behalf of Michelin, 2013	Conducted December, 2013	National online survey of 2,019 adults aged 18 and over	Found average tipping rate of 18 percent for good service. In contrast to some other surveys, found that older patrons tipped at higher rates than younger counterparts. Also found modest variation by region.
Current Tipping Guidelines			
	Emily Post	NA	15-20 percent of pre-tax price.
	AARP	NA	15-20 percent of pre-tax price.
	U.S. News and World Report	NA	20 percent for very good service. 10 percent for bad service, zero if the service was "abominable."
	iTipping.com	NA	15-20 percent of total bill before taxes (Note that some restaurants suggest tipping after taxes).