

E C O N O M I C S B U L L E T I N

Economic Behavior of Restaurant Tipping

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1. Introduction

A fair amount of work on restaurant tipping has been done in the applied social psychology area, most notably by Michael Lynn. Within the economics field, economic models and analyses of tipping preceded empirical work by Ben-Zion and Karni (1977) and Schotter (1979). The recent research was initially mostly empirical (e.g., the work of Bodvarsson and Gibson in the 1990s), but has recently turned more theoretical (e.g., the work of Azar in the 2000s).

In this study, I provide a thoughtful discussion of social norms, alternative economic viewpoints and analysis, and survey evidence to address the issue of restaurant tipping behavior. Moreover, this paper notes an interesting implied issue of whether tips create excess burden (i.e., deadweight loss) in the restaurant food market.

This paper is organized as follows. In section 2, I briefly review recent literature. In section 3, I discuss the results of a survey conducted to collect public opinions about tipping. Section 4 contains a thoughtful discussion of social norms and tipping rates. Section 5 includes discussions and arguments about whether tips would create excess burden. Finally, conclusion may be found in section 6.

2. A brief literature review

In this section, I briefly review the related literature, focusing in particular on seven articles published since 1990 (Lynn and Grassman, 1990; Bodvarsson and Gibson, 1994; Bodvarsson and Gibson, 1997; Lynn and McCall, 2000; Conlin, Lynn, and O'Donoghue, 2003; Azar, 2004; and Kerr, Domazlicky, Kerr, and Knittel, 2006). These seven articles were selected for emphasis because they provide a clear, comprehensive, and valuable investigation of this issue.

In 1990, Lynn and Grassman selected a Red Lobster restaurant for a case study of tipping and interviewed 106 diners on four Thursday evenings during March and April 1988. They tested three hypotheses: (1) diners use tips to buy social approval or avoid social disapproval; (2) diners use tips to buy an equitable exchange relationship with servers; and (3) diners use tips to buy good future service. As a result, their findings suggested that tipping was positively associated with both patronage frequency and perceived service quality, but was not associated with interaction. Their results indicate that customers tipped in order to buy social approval and

equitable relationships. However, their findings did not strongly support the hypothesis that regular customers tipped in order to buy good future service.

In 1994, Bodvarsson and Gibson gathered data from nearly 700 customers at seven different Minnesota restaurants in a study of bill size and tipping. They applied a simple econometric model to test four hypotheses: (1) tips are related to bill size, service quantity and quality; (2) frequent customers reward servers more for a given increase in bill size, service quantity and quality; (3) diners tip based upon a fixed percentage rule; and (4) service quality ratings supplied by diners and tips are not usually related. As a consequence, they concluded that tips depend on bill size because bill size and service quantity are highly correlated, which implies that tipping depends on service quantity, reflecting the server's effort – the more the customer ordered, the greater the demand for the service and thus the more money is spent. Moreover, they further indicated that diners' decision about how much to tip depends not only on the bill size but also on their appraisal of service quantity as well as quality received from servers.

Bodvarsson and Gibson provided an alternative explanation for tipping behavior in 1997. They argued that tipping in restaurants is not just a social norm where people tip at the rate of 15% of bill size. They claimed that tipping behavior can be viewed as a game played between diners and servers. Using a survey, they gathered information from nearly 700 diners in 7 Minnesota restaurants. Their survey evidence suggests that diners will use the rule of thumb as a beginning point and then vary the tipping rate depending on the service just received, expected future service, whether they dine alone or with a group, alcohol consumption and location of the restaurant.

In 2000, Lynn and McCall used a meta-analysis of seven published and six unpublished studies involving 2547 diners at 20 different restaurants to re-investigate the relationship between tip size and evaluations of service. Their results revealed that tip size and service evaluations are positively and significantly related, but weaker than expected by most people. They suggested that restaurant managers should not depend on tips as employees' economic incentive for delivering good service, but still claimed that tippers are concerned about equitable exchange relationships.

In 2003, Conlin, Lynn, and O'Donoghue first investigated the efficiency of observed tipping behavior, using survey data to identify a variety of influential factors. They also developed a simple theoretical model to illustrate their results. Their empirical findings suggest that tipping rate not only depends on service quality but also on other factors, such as repetition, age, group size, the frequency of one's visits to restaurants, and cross-gender interactions. In addition, their theoretical model implies an important new idea – the tipping norm serves as a substitute for an efficient tipping contract. Finally, they claimed that their research differed from previous research that focused on "social norms", by considering an internal norm enforced by internalized feelings of guilt and shame. They believe that such internal enforcement clearly influences human behavior.

In 2004, Azar used historical evidence and provided a different economic analysis to investigate why people tip and whether or not tipping improves service quality. He concluded that although the reasons for tipping have changed over the years, conforming to social norms and avoiding embarrassment are still the primary reasons for tipping. Also, tips can be a good incentive for servers to provide good service, implying that tipping may improve service quality.

In 2006, Kerr, Domazlicky, Kerr, and Knittel provided survey evidence which suggested that the relationship between service quality and tip size are not strongly significant. In addition, their empirical results reveal that the shorter the time to delivery, the higher the tipping rate. They

finally concluded that tipping indeed is subject to strong social norms although service quality may affect tip size.

3. Survey – Evidence from Louisiana

I developed a questionnaire in August 2003 and sent it to a random sample of 1,000 residents in Louisiana. A self-addressed, stamped envelope and \$1 participation incentive were enclosed in the mailing. In total, 783 residents responded to the questionnaire and returned it within several weeks. Results for these 783 residents are summarized and discussed in this section. The questionnaire included the following questions:

1. Did you ever tip when you dined in a restaurant?
2. Why did you tip?
3. How much did you usually tip servers?
4. Were you always happy when you tipped?
5. If it is not necessary to tip, do you still want to tip?
6. If the restaurant manager sets a special policy that no tips are necessary in a particular day, will you order a little bit more expensive dishes than you would normally order on a particular day?
7. If the restaurant manager sets a special policy that no tips are necessary in a particular period, will you dine in that restaurant during that particular period more often than you used to do?
8. In your opinion, do we have to tip?

There were multiple choices for each question, so that people could choose the best response from their perspective. To the first question, “*Did you ever tip when you dined in a restaurant?*”, 90% of the sample chose “yes, all the time”; 10% chose “yes, sometimes but not all the time”; and no one chose “no, never tipped in my life.” To the second question, “*Why did you tip?*”, 60% of the sample chose “it is a worldwide custom, I desire social approval, so I tipped”; 39% chose “servers did services for me, so I tipped”; and 1% chose “servers asked for tips, so I tipped”.

The results for question 2 may be consistent with those reported by Lynn and Grassman (1990) and with psychological theory which suggests that customers may tip because they are guided by certain social norms and expectations. They feel guilty if they do not tip. In other words, many customers tipped in order to ensure social approval.

To the third question, “*How much did you usually tip servers?*”, 58% of the sample chose “15%-20% of the total bill size”; and 42% chose “no certain amount but it is related to the total bill size.” This result is consistent with Bodevarsson and Gibson’s (1994) conclusion that tips depend on bill size because bill size and service quantity are highly correlated. To the fourth question, “*Were you always happy when you tipped?*”, 35% of the sample chose “Yes, I was always happy because I appreciated their services”; 64% chose “No, not really but it would be okay to me”; and 1% chose “No, I hated to tip although I did.”

To the fifth question, “*If it is not necessary to tip, do you still want to tip?*”, 34% of the sample chose “Yes, I still want to tip because they deserve it”; 64% chose “Maybe, but it depends on how much services that they have done for me”; and 2% chose “No, I am absolutely not going to tip.” This question might not have been clear due to the lack of a definition of the reason for not tipping. If the reason is that the costs of services are already covered in the price of the dish, then customers are not supposed to tip. The restaurant owner should bear the costs (i.e., raising servers’ wage rate).

To the sixth question, *“If the restaurant manager sets a special policy that no tips are necessary in a particular day, will you order a little bit more expensive dishes than you would normally order on a particular day?”*, 15% of the sample chose “Yes, I will”; 78% chose “No, I won’t”; and 7% chose “I don’t know”. To the seventh question, *“If the restaurant manager sets a special policy that no tips are necessary in a particular period, will you dine in that restaurant during that particular period more often than you usually do?”*, 20% of the sample chose “Yes, I will”; 68% chose “No, I won’t”; and 12% chose “I don’t know”. Questions 6 and 7 were designed to ascertain consumers’ demand behavior. It was expected that most customers would choose “Yes, I will”; however, the answer appeared to be the opposite. One reason could be that diners usually order the same kinds of entrees or spend the same amount of money. Our sense is that the apparent independence of food purchases from the tip rate reflects the notion that tip costs are sufficiently low in the diner’s budget for changes in the tipping rate to not really impact overall expenditures much (in the same way that a change in the price of toothpicks will not affect the demand for other goods in the household’s budget). This would appear to support the belief that the tip elasticity of demand is less than unity. Therefore, even if the restaurant manager offers some promotion, such as no tips required, consumers still do not change their consumer behavior.

To the last question, *“In your opinion, do we have to tip?”*, 51% of the sample chose “Yes, we do have to tip”; 38% chose “No, we do not have to tip”; and 11% chose “I don’t know”. Survey results show that most people still think that restaurant tipping is necessary whether or not it is a worldwide custom or for some other reason.

Furthermore, to gain more information about tipping from restaurant owners/managers and servers, I intentionally dined in 165 different restaurants (excluding fast-food restaurants) in Louisiana within ten months from February–November 2003. I interviewed 162 restaurant owners/managers and 427 servers while dining in these restaurants. Restaurant owners/managers were asked five questions. They were:

1. Do you believe that your customers always tip your servers?
2. How much per hour do you pay for your servers?
3. If your customers no longer tip your servers, will you pay for your servers at a higher wage rate?
4. If your customers no longer tip your servers, will you raise the prices of dishes or meals? (Assume that all other costs of dishes/meals do not change.)
5. For some reason (e.g. customers no longer tip servers), you have to raise the prices of dishes/meals, do you believe that you probably will lose some customers?

There were multiple choices for each question so that interviewees could choose the best response from their perspective. To the first question, *“Do you believe that your customers always tip your servers?”*, 94% of the sample chose “Yes” and 6% chose “No”. To the second question, *“How much per hour do you pay for your servers?”*, 75.5% of the sample chose “\$2.00 - \$3.50”; 18.5% chose “\$3.51 - \$5.00”; and 6% chose “more than \$5.00”. Questions 1 and 2 are related. From the evidence, we learn that most restaurant owners/managers believe that their customers always tip their servers, so they do not have to pay their servers a high wage rate. That is, most restaurant owners/managers believe that the tip is the price of the server’s service and that customers should pay for it.

To the third question, *“If your customers no longer tip your servers, will you pay for your servers at a higher wage rate?”*, 78% of the sample chose “Yes, I will”; and 22% chose “No, I won’t”. To the fourth question, *“If your customers no longer tip your servers, will you raise the*

prices of dishes or meals? (Assume that all other costs of dishes/meals do not change.)”, 66.5% of the sample chose “Yes, I will”; and 33.5% chose “No, I won’t”. To the fifth question, “For some reason (e.g. customers longer tip servers), you have to raise the prices of dishes/meals, do you believe that you probably will lose some customers?”, 46.5% of the sample chose “Yes, I believe so”; 28.5% chose “No, I don’t believe so”; and 25% chose “I don’t know”. Questions 3 – 5 are also related. Most restaurant owners/managers realize that if customers no longer tip their servers, they have to raise servers’ wage rate so that servers still can work for them. But, they have to shift the costs of servers’ services to customers by increasing the prices for dishes or meals. However, many restaurant owners/managers are aware that an increase in the prices for dishes/meals would result in fewer customers.

In addition, two questions relating to servers were added to the questionnaire. These two questions were:

1. According to your experience, what is the percentage of your customers who never tip you?
2. According to your experience, what is the percentage of your customers who tip you at least 15% of the total bill size?

To the first question, “According to your experience, what is the percentage of your customers who never tip you?”, 98.5% of the sample chose “0%” and 1.5% chose “1% - 5%”. To the second question, “According to your experience, what is the percentage of your customers who tip you at least 15% of the total bill size?”, 15% of the sample chose “above 80%”; 58.5% chose “60% - 80%”; 24.5% chose “40% - 59%”; and 2% chose “below 40%”. Based on this evidence, we almost can guarantee that every server would receive tips from diners whether they were happy to tip or not. In addition, most diners would tip servers at least 15% of the total bill size.

4. Social norms and tipping rate

According to the survey evidence, most diners leave tips in order to obtain social approval. In other words, after leaving a tip, diners feel “peaceful” or “not guilty”. For this reason, social norms create costs for diners, because diners would feel guilty if they did not tip after dining at a restaurant and they may be penalized for not acting according to “social norms”. The costs (denoted as C) created by social norms (called “social norm costs”) are related to total bill size (denoted as B), which can be written as $C = c \cdot B$, where c is the marginal cost of social norms. Note that if we can quantify the social norms, their size can be equal to total bill size. Hence, the more the diner orders, the larger the social norms.

The marginal cost of social norms is mainly determined by three factors: (1) A general rate $t_0 > 0$ (e.g., 15%) paid by other people due to the social norms. t_0 is the most important factor that determines how much the diner would like to pay for the cost. In addition, $\partial c / \partial t_0 > 0$ and $\partial^2 c / \partial t_0^2 = 0$. (2) The diner’s generosity or stinginess $\eta \geq 0$. Normally, generous people would feel guilty relative to stingy people because generous people’s behavior would be easily affected by social norms – they care much about what other people think. Thus, they want to pay more to compensate for their guilty feelings in order to feel less guilty or more peaceful. On the other hand, stingy people do not care much about what other people think, so, their behavior is less affected by social norms. Thus, they don’t need to pay more to make them feel more peaceful or less guilty. Accordingly, if the diner is quite generous, then $\eta > 1$; if the diner is

quite stingy, then $\eta < 1$; if the diner is just like all other people (not quite generous or stingy), then $\eta = 1$; however, if the diner is extremely stingy, η may be equal to 0. In addition, $\partial c / \partial \eta > 0$ and $\partial^2 c / \partial \eta^2 \leq 0$. (3) The diner's general feelings about the server $\delta \geq 0$. Note that the reason for using the general feelings about the server rather than "service quality" is the lack of standard criteria by which to identify "good" or "bad" quality service. Normally when we have good feelings about servers, it means that the servers make us happy. The more happy feelings we have, the more guilt we will have, because our behavior is more affected by social norms. Therefore, we want to pay more to compensate for our guilt. Hence, if the diner has a good feeling about the server, then $\delta > 1$; if the diner has a bad feeling about the server, then $\delta < 1$; if the diner has a normal feeling about the server, then $\delta = 1$; however, if the diner has a strong bad feeling about the server (strongly dissatisfied), δ may be equal to 0. In addition, $\partial c / \partial \delta > 0$ and $\partial^2 c / \partial \delta^2 \leq 0$. According to these three factors, the marginal cost of social norms can be specified as follows:

$$c = c(t_0, \eta, \delta) = t_0 (\eta)^\alpha (\delta)^\beta, \quad (1)$$

where $0 < \alpha, \beta < 1$ are exogenous variables. Note that the second and third factors (η and δ) are derived factors. Without social norms, these two factors cannot exist independently. Therefore, it would be incorrect to specify the marginal cost of social norms linearly, such as: $c = t_0 + \eta^\alpha + \delta^\beta$.

Moreover, the diner's feeling of "peaceful" (denoted as Ω) equals total tips paid by the diner minus total costs of social norms. Therefore, the diner's "peaceful" function (or "not guilty" function) can be illustrated as follows:

$$\Omega = t \cdot B - c \cdot B = t \cdot [(1 + \tau) P_X X] - c(t_0, \eta, \delta) \cdot [(1 + \tau) P_X X], \quad (2)$$

where τ stands for a sales tax rate, P_X stands for the price of the meal, and X stands for the size of the meal.

To solve the diner's problem, we maximize equation (2) by taking the first derivative with respect to meal size (X), which can be shown as follows:

$$\frac{d\Omega}{dX} = 0 \Rightarrow t^* = c(t_0, \eta, \delta). \quad (3)$$

As equation (3) shows, the tipping rate is equal to the marginal cost of social norms and is a function of t_0 , η , and δ ; i.e., $t^* = t(t_0, \eta, \delta)$, and $t_{t_0}, t_\eta, t_\delta > 0$. Based on the result, we can figure out why some diners leave a larger tip while others leave a smaller tip. If the diner is quite generous and/or has a good feeling about the server, then the diner will provide a tip that is more than 15% of the total bill size to the server. On the other hand, if the server is quite stingy and/or has a bad feeling about the server, the diner may tip less than 15% of the total bill size.

However, some may argue that patronage frequency may also affect the tipping rate. That is, frequent customers tip more than infrequent customers (Lynn and Grassman, 1990). My alternative explanation for this fact is specified as follows. If a diner dines at the same restaurant more than once, he or she must either enjoy the food or the service or both. Thus, after the customer and the server get to know each other, customers become more generous (i.e., $\eta \uparrow$) and/or have a better feeling about the same servers (i.e., $\delta \uparrow$). Therefore, the social norm costs for these customers increase. For this reason, they will want to pay higher costs (i.e., tips) to compensate for their "guilty feeling" in order to make them feel less guilty (or more peaceful). In other words, "tips" and "guilty feeling" trade off.

Moreover, some economists argue that tipping is the most efficient way to monitor and reward servers' efforts (e.g., Bodvarsson and Gibbson, 1994; Jacob and Page, 1980), which implies that monitoring and rewarding efforts are the primary reason for diner tipping. Nevertheless, I do not support this argument. According to the survey evidence in the previous section, 98.5% of servers always received tips and only 1.5% of servers did not receive tips all the time (but this was very unusual). In addition, most servers always received at least 15% of the total bill size. The evidence shows that almost all diners leave tips and at least 15% of the bill size no matter what the service quality is, implying that every diner is still guided by the social norms. Accordingly, as long as social norms exist in society, monitoring and rewarding cannot be the primary reason for diner tipping, because servers already expect that diners will tip around 15% of the bill size, good service quality or not. Lynn and McCall (2000) came to the same conclusion: the relationship between tip size and service evaluation is weaker than expected, implying that tips cannot be the sole incentive for servers to offer good service.

Above all, I believe that social norm is the main reason for diner tipping. A repeated game cannot be the reason for tipping. Suppose that our society has no social norms, no matter how generous the diner is, how good his/her feelings are toward the server, and how frequently s/he dines at the same restaurant, there is no economic reason for a rational diner to tip, because t_0 is always equal to 0. For example, in Australia, China, Denmark, Japan, and Iceland, restaurant tipping does not occur, because there are no such social norms in these societies. As long as $t_0 = 0$, the marginal cost of social norms will become zero, and thus the tipping rate will be equal to zero. Although the survey evidence shows that 39% of the sample chose "servers did service for me, so I tipped", these people are still guided by certain social norms. As a result, they'll still pay around 15%, the general rate paid by other people due to social norms. In other words, due to social norms, the economic behavior between diners and servers cannot be viewed as a game.

5. Further discussion

Since consumer behavior is affected by social norms, an interesting implied question emerges: Do tips create excess burden (i.e., deadweight loss) in the restaurant food market?

This question is debatable. On the one hand, due to social norms, diners not only pay for the meal but also pay for the tips (i.e., social norm costs). Thus, tipping (or social norms) negatively affects consumer demand for restaurant meals, which in turn results in a substitution effect. As long as a substitution effect exists, there will be a loss in well-being (i.e., excess burden) caused by the substitution effect of a price-distorting tip. In other words, the social norms distort the price, and thus the final price paid by diners is no longer economically efficient. As a result, a deadweight loss is created. Simply speaking, when diners pay after finishing their meal, at that moment, they find that the total cost of the meal is higher than the price shown on the menu, which may discourage them.

On the other hand, some may argue that tips are just another part of the cost of dining out. That is, tips are the price of the server's service. When diners dine in a restaurant, they indeed consume two goods (restaurant food and servers' services) simultaneously. In other words, two different markets (restaurant food and servers' services) exist at the same time in a restaurant. As long as diners realize that in a restaurant they consume two different goods simultaneously and that tips are the price of the server's service, a substitution effect of a price-distorting tip will not

occur in the restaurant food market. When the substitution effect does not exist, customers will not experience a loss in well-being (i.e., excess burden).

In addition, one may argue that if consumers' decision to pay lower or no tips would affect the supply of servers. Restaurant owners would be forced to pay higher wages to servers, which in turn would affect the prices for meals/dishes. I personally believe that this will not actually occur because most consumers are still tipping servers at 15 – 20% of total bill size. According to survey evidence reported in the previous section, 60% of consumers still believe that restaurant tipping is a worldwide custom, reflecting a desire for social approval; and 40% still believe that servers perform services for them. Further, based on this same survey evidence, many restaurant owners realize that if they raise the prices for meals/dishes, they will probably lose both the customers who do not wish to pay more for meals and those who are reluctant to tip.

6. Conclusion

In this paper, I offered alternative economic viewpoints and analysis in a look at restaurant tipping behavior. A survey of Louisiana residents was conducted to collect public opinions about tipping. In addition to the survey evidence, a thoughtful discussion of social norms was offered to explain why diners tip. As a result, I concluded that social norms are the primary reason for diner tipping, because diners are guided by certain social norms. As long as consumer behavior is guided by social norms, social norms will create costs for diners. After paying such costs (i.e., tips), diners will feel less guilty or more peaceful.

In addition, since consumer behavior is impacted by social norms, an implied question was discussed: Do tips create excess burden (i.e., deadweight loss) in the restaurant food market? The discussion suggests that if customer's tipping behavior is completely guided by social norms and tips are not treated as the costs of servers' services, tips will create excess burden in the restaurant food market; nevertheless, if tips are completely treated as the cost of servers' services, tips will not create excess burden in the restaurant food market.

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