Equal Revenue Sharing as a Monitoring Mechanism: The Case of Tip Pooling[1]

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Abstract

The practice of tip pooling, in which service workers' tips are pooled and distributed equally, has grown in prevalence in recent decades. The emergence and persistence of this phenomenon is puzzling from the conventional economic perspective in which tipping serves as a monitoring mechanism to ensure that individual employees provide quality service. I hypothesize that tip pooling serves as a mechanism to incentivize employees in service industries to monitor each other to prevent shirking. In particular, tip pooling in sit-down restaurants is examined. The theory developed is extended to other organizations such as criminal organizations and to collective punishment in certain non-profit organizations. When it is less costly for employees to monitor each other, equal revenue sharing becomes a more effective means of mitigating shirking. In general, when outcomes for individuals in a group depend on the performance of other members of a group, group members have an incentive to monitor each other, which can be an effective mechanism for mitigating shirking.

Keywords: tipping, monitoring costs, agency theory, organizational economics, transaction costs

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1. Introduction

Tipping service workers has interested economists for several decades (Ben-Zion and Karni 1977; Jacob and Page 1980; Sisk and Gallick 1985; Azar 2007), but tip pooling has been less studied and defies easy explanation. Under a compensation structure that employs tip pooling, workers must contribute some or all of their tips to a "pool" which is then distributed equally among workers. Tipping is normally thought to serve as a monitoring mechanism to ensure quality of service, but tip pooling seems to diminish this function by separating the individual worker's effort from the compensation he receives. What then explains the emergence and persistence of tip pooling in service industries?

I propose that tip pooling functions as a monitoring mechanism that incentivizes employees to monitor each other. Tip pooling gives each employee an interest in his fellow employees' effort by making the compensation of each dependent on other employees' performance, creating an incentive for employees to monitor each other's productivity.

In this paper I interact with two literatures in organizational economics. From the literature on measurement and monitoring costs, I build off Alchian and Demsetz's (1972) research on team production. I contribute to this literature by identifying and explaining an alternative way that firms monitor workers and ensure quality service. I also contribute to the economic literature on the function of tipping, following Azar (2003, 2020), Banks et al. (2018), Parrett (2006), and others, by offering an explanation for tip pooling.

In Section 2, I provide a brief history of tipping and its function in the firm. In Section 3, I argue that tip pooling exists to reduce monitoring costs by incentivizing employees to monitor each other. In Section 4, I develop pattern predictions from my theory. Section 5 concludes.

2. Background: Theory and History of Tipping

According to Mentzer (2013), the custom of tipping dates back to at least sixteenth century England, where wealthy travelers would pay "vails" to their host's servants. The practice spread to the U.S. in the late nineteenth century and became widespread in the twentieth. Tipping service workers, such as sit-down restaurant waiters, is now an entrenched cultural norm in the U.S. A decades-long literature has investigated the function of tipping and its relation to quality of service. Conventionally, tipping has been understood in the economics literature as a mechanism for monitoring workers to ensure quality service. Owners of firms in service industries face a principle-agent problem with their employees. For a profit-maximizing firm, it is in the interest of owners to ensure that their employees provide high-quality service to customers. Consistent high-quality service both enhances a firm's reputation in the minds of consumers and makes it more likely that consumers will become repeat customers, increasing the firm's future revenue stream.

It may not be in the interests of employees to consistently provide high-quality service, however. An employee who values both monetary income and leisure will determine his level of effort based on the marginal costs and benefits to him of expending additional effort. Employees will choose the level of effort at which the marginal benefit of additional effort equals the marginal cost. Relative to their level of effort in a situation with perfect monitoring, the absence of an effective monitoring mechanism permits employees to lower their level of effort because owners will not be able to detect shirking. As a result of the owner's inability to detect shirking, the marginal cost to an employee in terms of monetary income of reducing their level of effort is lower than it would be with perfect monitoring. Therefore, employees will increase their level of leisure by reducing their level of effort in the absence of perfect monitoring. As employees

reduce their level of effort, the quality of their service falls, reducing the value of the service to consumers and weakening the firm's reputation, which causes the firm's revenue stream to fall.

To reduce employee shirking, owners must make it more costly for employees to shirk. In some firms, direct monitoring of employees by managers makes shirking more costly for employees. If managers detect shirking, they can reduce employee pay according to the employee's lower productivity or terminate their employment. This threat increases the marginal cost of shirking so that employees reduce their level of leisure and choose a higher level of effort. In certain service industries such as sit-down restaurants, however, it is costly for managers to directly monitor employees such as table waiters. In a typical sit-down restaurant, multiple waiters are tasked with waiting on multiple tables. Waiters are not stationary, and each waiter is usually at a different location in the restaurant. In order to directly monitor each waiter, multiple managers would be needed to follow each waiter at the expense of monitoring other employees.

Instead of direct monitoring, according to the conventional economic view, firms such as restaurants use tipping to indirectly monitor waiters and other service workers. Tipping shifts the burden of monitoring from the manager to the customer, who is in a better position to judge the quality of the waiter's service at a lower cost (Jacob and Page 1980). Customers are assumed to reward good service with higher tips, a practice entrenched as a social norm. Waiters who value both monetary income and leisure will choose the level of effort that equalizes the marginal benefit and marginal cost of effort. If waiters perceive a positive relationship between the amount of the tip and service quality, they will on the margin choose a higher level of effort because the marginal benefit of effort is, all other things equal, higher than without tipping. Tipping mitigates the principle-agent problem faced by firm owners by giving service employees a direct

connection between service quality and compensation. Additionally, tipping can reduce measurement costs for hiring managers: instead of requiring hiring managers to engage in a costly measuring process for each new employee to determine if they will provide quality service, tipping incentivizes higher effort by giving employees a share in the firm's revenue that varies according to their effort in a manner similar to a share contract (Barzel 1982).

Whether service quality and tip amount are actually related has been a subject of debate. Some studies, such as Lynn and McCall (2000) and Banks et al. (2018), find that the magnitude of the relationship may be too small for tip amounts to measure service performance or incentivize good service. Others such as Bodvarsson et al. (1999), Bodvarsson et al. (2003), and Parrett (2006) report a stronger positive relationship between tip amount and service quality, supporting the economic hypothesis for tipping. Regardless of how strong the connection is, however, the only thing necessary for tipping to work as a monitoring mechanism is for employees to perceive a connection between tip amount and service quality. Simply the perception of a connection will affect employee's cost-benefit evaluation and change their behavior on the margin. Azar (2020) reports survey data that shows that most servers perceive a relationship between tip amount and service quality, leaving tipping's monitoring mechanism intact. For the purposes of this analysis, I will assume that tipping is an effective monitoring mechanism to mitigate the principle-agent problem faced by firm owners in service industries.

Tip pooling is a relatively recent development in the history of tipping. Data on the prevalence of tip pooling over time is scarce, but the U.S. government has regulated tip pooling since at least the 1990s (Wessels 1997), with more regulations issued and amended in 2011, 2018, 2020, and 2021 (U.S. Department of Labor 2021). The timing of the regulations indicates that the phenomenon of tip pooling became relevant in the 1980s and 1990s, growing in

prevalence through the 2010s. Little economic analysis exists on the topic, but Azar (2003) comments on the phenomenon. According to Azar, tip pooling can encourage cooperation among workers, but it reduces the incentive for each server to provide good service and creates a free riding problem. If employees observe one another to ensure that no one shirks, this free riding cost can mitigated. Therefore, the optimal tip pooling strategy for a business like a restaurant might be to encourage tip pooling in small teams which operate in one area of the restaurant to encourage cooperation and mitigate free riding. The mechanisms by which tip pooling encourages cooperation are unclear, however, and Azar does not explain the circumstances under which tip pooling is a more efficient solution to the principle-agent problem than individualized tipping. Additionally, as I will propose, tip pooling itself can encourage employees to monitor each other, rather than relying on exogenous monitoring by employees.

3. Theory: Tip Pooling as a Monitoring Mechanism

The prevalence of tip pooling as an alternative to individual employees keeping all of their tips raises a question. As Azar (2003) says, tip pooling seems to reduce the incentive for each employee to provide quality service by separating their compensation from their level of effort and productivity. Under tip pooling, the tip compensation employees receive no longer depends solely on their individual effort. Instead, tip compensation depends on the effort of every other employee, creating a free riding problem. Tip pooling seems to greatly attenuate, if not eliminate, the monitoring function that tipping provides. Why then did tip pooling emerge, and why does it persist in a highly competitive restaurant market?

I propose that tip pooling emerged as a mechanism to encourage employees to monitor each other to prevent shirking. When the cost for employees to monitor each other is low, it may

be more efficient for owners to incentivize employees to monitor each other than to rely on the individual incentive for quality service provided by individualized tipping.

Heckathorn (2002) lays out a theory of collective punishment, which provides an undergirding for my theory of tip pooling. In a situation where a group is punished for the deviance or shirking of a single member of the group, every group member is incentivized to prevent other group members from shirking to avoid being punished himself. Collective punishment enlists group members to both monitor and enforce shirking among the group, which reduces monitoring and enforcement costs for the group's authority. In U.S. military boot camps, for example, where an entire group can be punished for one recruit's shirking, collective punishment can serve to strengthen discipline among soldiers by incentivizing recruits to monitor each other for shirking (Heckathorn 2002, pp. 80-81). This theory also explains aspects of some traditional legal systems. As Heckathorn (p. 81) explains, many traditional legal systems in history have been based on a principle of corporate responsibility. If one member of a family or village committed a crime, the whole family or village could be subject to punishment or retaliation. This system encouraged groups to more strongly regulate the behavior of individuals in the groups. Similar kinds of collective punishment can be found in schools and prisons (p. 81). As I explain below, tip pooling functions in a similar manner to other forms of "collective punishment": employees are incentivized to monitor each other's service because each employee's income suffers from any one employee's shirking.

Alchian and Demsetz (1972) provide a useful framework for analyzing team production such as that of a sit-down restaurant. I model the restaurant firm as team production, as all workers in the firm are inputs into building a reputation for high quality to attract new customers and bring back repeat customers. The restaurant's revenue depends on service quality, which

depends on the effort of individual servers. The firm provides the function of monitoring servers to ensure quality. To encourage servers to choose higher levels of effort and provide quality service, the firm must be structured so that servers' compensation is correlated with their productivity. However, it is costly to observe the marginal revenue contributed by individual team members and to separate their marginal revenues, so the firm must generate procedures to mitigate these costs. The cost of an individual's shirking will be borne by the rest of the team in the form of reduced revenues, and a free riding problem arises as servers do not bear the full cost of their shirking. The cost of identifying each server responsible for shirking is high, so firms must develop a mechanism to discourage shirking or identify shirkers.

To mitigate monitoring costs, firms use tipping so that customers monitor individual servers for quality service. Under some circumstances, monitoring costs can be further reduced by having employees monitor each other to prevent shirking. Tip pooling is one way to encourage monitoring of employees by other employees. Under tip pooling, the compensation of each server depends on the effort of every other server, so each server has an interest in the productivity of every other server. Servers are then encouraged to monitor the effort and productivity of other servers.

As Azar (2003) notes, however, tip pooling can also encourage free riding. Under tip pooling, each employee's receipt of tip income is less connected to their quality of service. Instead, each employee's tip revenue depends on the quality of every other employee's service, which could result in free riding. Thus, while tip pooling can reduce monitoring costs by encouraging employees to monitor each other, it can also increase the cost from free riding. Firm owners face a tradeoff between lower monitoring costs and lower free riding costs. This tradeoff explains why not every service firm employs tip pooling: for some firms, the cost from the

marginal free riding introduced by tip pooling exceeds the savings on monitoring costs that tip pooling provides. For other firms, however, the gain from economizing on monitoring costs that tip pooling provides exceeds the cost of the free riding that tip pooling induces, which makes tip pooling a more profitable alternative to individualized tip distribution.

Tip pooling can reduce monitoring costs through two mechanisms. First, tip pooling reduces the cost of identifying shirkers. When servers are monitoring each other, they can more easily identify if other servers are shirking. As servers have an interest in other servers' productivity, they have an incentive to report shirkers to the manager for discipline or replacement. Once a shirking server is reported to the manager, the manager can either threaten the shirker with lower pay or termination, encouraging the shirker to increase his level of effort, or the manager can fire the shirker and replace him with a more productive server. Additionally, the mere threat of being reported to the manager by another employee can encourage higher levels of effort by increasing the marginal cost of shirking.

The second possible mechanism through which tip pooling can reduce monitoring costs depends on the relationships between servers. If servers have personal relationships with each other that they value ("social capital"), then shirking can become more costly under tip pooling than under individualized tipping. Under tip pooling, if one server shirks, every other shirker bears the cost in the form of reduced tip revenue. Resentment could then form on the part of higher-effort servers who bear the cost of the shirker's low effort. If social capital exists between servers, then shirking is more costly under tip pooling than it is without tip pooling. Even if close personal relationships do not exist between employees, ostracism of shirkers or other forms of "punishment," such as refusal to cooperate with shirkers in production, may be sufficient to discourage shirking. This "social capital" mechanism, along with the first "identification"

mechanism that provides lower-cost identification of shirkers, can make tip pooling an efficient compensation structure for reducing monitoring costs and ensuring quality service in service industries like the restaurant industry.

4. Pattern Predictions

This hypothesis for the persistence of tip pooling yields several predictions about the circumstances under which tip pooling is likely to prevail. First, tip pooling is likely to exist where it is less costly for employees to monitor each other. One such case is when employees work in close proximity to each other. In smaller spaces where employees' range of movement is limited, employees can more easily observe each other's effort and productivity. Another case is when employees are engaged in similar tasks. When employees are each performing tasks that are similar, they possess more and better knowledge about the tasks that they and their coworkers are performing, so they can make better judgments about their coworkers' levels of effort and productivity and more easily identify shirking. Another case in which it is less costly for employees to monitor each other is when employees are working together in a team effort toward an immediate goal. In such cases, employees can more easily observe the contributions that each team member is making toward the goal.

Second, tip pooling is more likely to exist where more social capital exists between employees. For example, if a firm is operated by employees who previously had personal relationships with each other, this theory would predict a higher likelihood of tip pooling. Another case is a firm where employee retention is high. In such firms, employees spend more time with each other and have more time to build personal relationships, resulting in greater social capital being built between employees. Under circumstances such as these, tip pooling will

serve as a more effective monitoring mechanism and is more likely to be employed, all other things equal.

Furthermore, tip pooling is more likely to prevail where the cost from free riding is low relative to the reduction in monitoring costs gained under tip pooling. If tip pooling induces a substantial amount of costly free riding in a firm and the incentive for inter-employee monitoring is insufficient to mitigate free riding, then tip pooling will on net reduce service quality and will likely not persist in the firm. Additionally, if it is costly to supplement inter-employee monitoring to mitigate free riding, for instance with monitoring by managers, then the cost of tip pooling from increased free riding could outweigh the gain from marginally incentivizing employees to monitor each other.

On the other hand, if the gain from greater inter-employee monitoring from tip pooling outweighs the cost of the free riding that tip pooling induces, tip pooling will increase service quality on net and will be more likely to persist in a firm. Furthermore, if the cost is low for managers or other monitoring mechanisms to supplement inter-employee monitoring, then the free riding induced by tip pooling will be mitigated and tip pooling could result in net gains in service quality and firm revenue. Generally, whether tip pooling is beneficial to a firm depends on whether it induces sufficient inter-employee monitoring to outweigh the cost introduced by a stronger incentive to free-ride.

Unfortunately, data on the prevalence of tip pooling in different industries, firms, and lines of employment is currently scarce, so testing these predictions is difficult. However, some specific predictions can be made using the theory developed above. A small local diner, for example, would be more likely to use tip pooling than a large chain restaurant. A small local diner is likely to operate in a smaller space than a large chain restaurant because a small diner

likely has less funds for capital investment, lowering the cost for employees to monitor each other. Additionally, hiring decisions at local diners are more likely to be made based on existing connections in the community, and employee retention may be higher in a more tight-knit community with those connections, so greater social capital makes tip pooling more effective.

5. Conclusion

The emergence and persistence of tip pooling is a puzzling phenomenon from the conventional economic perspective of tipping, but tip pooling provides a valuable function for the firm. By making each employee's compensation dependent on the effort of every other employee, tip pooling reducing monitoring costs by incentivizing employees to monitor each other for shirking. When monitoring of employees by employees is less costly, tip pooling can be an efficient compensation structure for firms in service industries such as sit-down restaurants.

The analysis in this paper is limited by the availability of data on the prevalence of tip pooling across various industries, firms, and occupations. The magnitude of the effects predicted by the theory developed above is therefore difficult to ascertain. However, the analysis above could provide a useful framework for future research on varieties of compensation structures which employ equal revenue sharing. By considering how monitoring costs can fall when employees monitor each other, firm organization which at first seems puzzling may be explainable. The analysis can also be generalized and extended to explain non-profit institutions such as traditional legal systems which use mechanisms like collective punishment to constrain the behavior of individuals within groups.

The analysis of tip pooling and similar organizational structures above demonstrates that institutions which seem unfair to some might be the efficient solution to a particular problem.

While tip pooling appears to be unfair to productive servers who must bear the costs of less productive servers' shirking, tip pooling actually mitigates a problem of high monitoring costs in service industries, thereby increasing the firm's overall revenue and the size of the "pie" from which servers are compensated. Even a seemingly nonsensical institution like collective responsibility in traditional legal systems served to constrain criminal behavior and reduce the level of violence in a society. Persistent institutions that seem puzzling at first may be the least costly solutions to worse problems.

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