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Who benefits from share contracts?

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ABSTRACT

Income volatility reduces the psychological and financial welfare of American households. A primary cause of income volatility for employees is job loss due to firm downsizing. Economists have suggested that firms could structure their employment polices to reduce the need to downsize by adopting share contracts rather than wage contracts. We use an experimental setting in which an employer offers employees a choice between a wage contract (the status quo) and a share contract. In a wage contract the employer pays an employee a fixed salary, whereas in a share contract, the employer sets the percentage of revenue the employee receives as pay. In addition, we manipulate whether the share contract incorporates a form of mutual monitoring and examine the effects of contract type and mutual monitoring on employee effort, employee contract choice and both employee and employer welfare (profit). Our results show that, compared to wage contracts, participants exert more effort under share contracts resulting in higher welfare for both employees and employers. Incorporating mutual monitoring into the share contract further increases total effort and participant welfare but does not lead to an increase in the use of share contracts.

1. Introduction

Income volatility reduces the psychological and financial welfare of American households (The Aspen Institute, 2016; The Pew Charitable Trusts, 2017). Income volatility also leads to lower morale, which can ultimately lead to lower levels employee effort, and subsequently lower levels of firm productivity and profitability. Bewley (2002) finds that employee morale and productivity are positively linked. He also finds that employers are slow to reduce wages for fear of damaging worker morale and consequently lowering firm productivity and profitability. Firms are under constant market pressures to increase profitability. Two common labor-related strategies to increase profitability are cost cutting, often through layoffs, or increasing the productivity of a current workforce (Hacker, 2006, 2007). Both strategies tend to reduce employee morale. However, one possible way to increase both employee morale[1] and effort is to consider alternative ways of compensating employees.

One popular alternative compensation method is the use of share contracts. Share contracts can take many forms, but they generally allow employees to share in the firm's profitability by tying employee compensation to some measure of firm profitability. For example, a recent NPR article discussed how some restaurants are moving away from traditional wage contracts to a form of share contracts to create more equality in worker pay (Rios, 2017). The restaurant managers believe that sharing firm revenues with employees will increase morale, motivation, loyalty, and effort levels.

In contrast to share contracts, traditional wage contracts generally pay a fixed monetary amount for a required minimum effort exerted over a time-period. These two compensation contracts offer employees different relationships between their effort and pay. From the employer's perspective, wage contracts limit a firm's labor costs by making it a function of employment time, something the firm can increase or decrease as it deems necessary (Uchitelle, 2006). Alternatively, share contracts offer the benefits of avoiding demoralizing layoffs by automatically adjusting labor costs and of possibly increasing employee productivity and firm profit.

From the employees' perspective, there is very little uncertainty about the level of pay under wage contracts. As long as they are employed by the firm, they will receive their contracted wages. If they are laid off, then they receive no wages. Moreover, because employees generally view their effort as personally costly, they have no additional incentive to increase their effort (and thus productivity) beyond the minimum level required to maintain their employment. Share contracts, on the other hand, may increase employee effort (and thus productivity) by clearly tying employee effort to firm profitability. However, fluctuations in firm profitability under share contracts add

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[1] While employee morale and effort are both affected by firm decisions, we measure effort but not morale.

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uncertainty to the level of pay and employee can expect. Furthermore, share contracts[2] can also introduce the potential for employees to free-ride on each other's efforts.

One method of minimizing the free riding issue is to implement a form of employee monitoring (or "mutual monitoring"), which provides workers with information about the effort level of their co-workers (Ma, 1988; Prendergast, 2000). Theoretically, mutual monitoring should decrease free-riding under share contracts and increase overall employee effort. Any increase in employee effort should result in increased firm productivity and profitability, all of which would increase employee pay and welfare. However, when given the choice of employment contract, it is an open question as to whether employees would prefer wage contracts to share contracts, with or without monitoring.

This research examines share contracts as a plausible alternative to wage contracts by establishing the wage contract as the *status quo* and measuring the employee effort levels, wealth, productivity, and firm profitability. We also examine the impact of a share contract with mutual monitoring to fully understand what, if any, incremental impact mutual monitoring has on employee effort and firm profitability (Ma, 1988). Finally, we examine if employees prefer share contracts to wage contracts when given a choice. The results can inform firm employment policies by providing ex-ante insight into how (not) to structure share contracts.

We report three main results. First, relative to the wage contract, the use of a share contract leads to an increase in employee productivity. "Employee productivity" is a firm level measure and is defined as the expected quantity of output produced given employee effort. This result holds before and after controlling for the number of layoffs under the wage contract. Second, there is an additional increase in employee productivity when the share contract incorporates mutual monitoring. Finally, when given the choice, employees prefer share contracts to wage contracts. However, while monitoring reduced free-riding and increased employee output, it also reduced employee preferences for share contracts.

This study contributes to the accounting literature by addressing the call for experimental research that provides useful *ex ante* analysis of alternative accounting policies (Kachelmeier & King, 2002). Further, this research is important because it provides insight into what employees may prefer when given a choice of compensation schemes. Understanding employee choice could help employers appropriately design compensation plans that maximize both firm productivity and employee welfare.

The remainder of this paper is organized as follows. Section 2 reviews the relevant literature and develops the hypotheses. Section 3 describes the setting, while Section 4 describes the experimental method and design. Section 5 presents the results. The final section summarizes and concludes the paper.

2. Background literature and hypotheses development

2.1. Introduction

In many industries the cost of labor is one of the largest expenses firms incur. Firms often seek to improve profitability by controlling wage expenses. Ideally, firms would prefer to control wage expenses in ways that do not negatively affect employee morale, employee effort, or firm productivity. This research examines two different employment contracts (share contracts and wage contracts) and their subsequent effects on employee welfare, the cost of labor, and firm productivity. Examples of share contracts include profit sharing, revenue sharing, and employee stock compensation. Arguments in favor of share contracts (Kruse, 1992; Weitzman & Kruse, 1990) typically address two problems present under wage contracts. First, share contracts may resolve the misalignment between employee and employer incentives under a wage contract. Generally, employers prefer that employees exert higher rather than lower levels of effort. However, because employees (who are assumed to be effort averse) are paid a fixed wage that does not vary with their effort, they have no additional incentive to increase their effort and productivity (Tversky & Kahneman, 1991). Because share contracts tie employee pay to a measure of firm performance that tends to increase with employee effort, share contracts have the potential to better align employee effort choices with those desired by employers (Mitchell, Lewin, & Lawler III, 1990).

Second, because wage contracts do not typically allow firms to decrease the contracted wage (i.e., wages are sticky), firms attempting to remain profitable often choose to lay employees off to reduce labor costs (Fehr & Falk, 1999). In contrast, labor costs under share contracts depend on some measure of firm profitability: share contracts thus automatically adjust labor costs along with the firm's performance. As a result, firms can maintain their labor force and remain profitable.

Consequently, we expect employee effort to be higher in share-firms for two reasons. First, share-firms experience fewer layoffs, so there are more retained employees who exert at least minimal effort. Second, by tying employee pay to a measure that increases in effort, share contracts provide an incentive for retained employees to exert higher levels of effort relative to wage contracts.

H1. Employee effort will be higher when employees choose a share contract rather than a wage contract.

One major criticism of share contracts is the free rider problem in which individual incentives become diluted in settings where rewards are linked to group efforts. When the number of workers (n) increases, the amount of reward associated with extra effort by any one worker is diluted by 1/n. Consequently, share contracts might not be effective in large organizations (Nalbantian & Schotter, 1997; Weitzman, 1995). This is especially true when the relationship between workers is short term (i.e., single period). However, the free rider problem is less problematic in scenarios where there exists the possibility of long-term relationships among workers. In such settings, workers may affect free riding by withholding their own efforts or by ostracizing the free riders (Weitzman, 1995).

One possible solution to free riding in team production is the use of a formal monitoring system (Ma, 1988; Prendergast, 1999, 2000). Mutual monitoring takes advantage of mutual observability, i.e., situations where employees can observe each other's efforts, by requiring employees to provide the employer with a report of their efforts (Holmström, 1979). Employers, who can't directly observe employee effort, can use the reported effort choices to reward or penalize employees. However, depending on the details of the mutual monitoring system, employees may try to devise false reporting strategies to avoid penalties or earn rewards while exerting low levels of effort (Loughry & Tosi, 2008; Towry, 2003). If a share contract incorporates a mutual monitoring system that elicits truthful effort reports and resolves the free-riding problem, then the level of employee effort should be higher than under a share contract without mutual monitoring.[3]

[2] The term "share contract" is often used in the employment literature for the general class of contracts where employee compensation is tied to some measure of firm performance. In our case, we mean that employees in a firm receive a share of the revenue generated based by selling the firm's collective output. When employee effort collectively combines to create output and it is difficult to enforce high levels of employee effort, then effort averse employees have incentives to reduce their individual effort while hoping to benefit (or free-ride) from the effort of other employees.

[3] Another possible solution to free-riding is the use of informal sanctions. Knez and Simester (2001) document a partial share-based incentive plan implemented at Continental Airlines. The authors suggest that, among other factors, the use of informal sanctions, such as peer pressure, were critical in reducing free-riding and improving performance. Arya, Fellingham, and Glover