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Profit Sharing and the Quality of Relations with the Boss

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Abstract

Profit sharing generates conflicting changes in the relationship between supervisors and workers. It may increase cooperation and helping effort. At the same time it can increase direct monitoring and pressure by the supervisor, and mutual monitoring and peer pressure from other workers that is transmitted through the supervisor. Using data on satisfaction with the boss, we initially show that workers under profit sharing tend to have lower satisfaction with their supervisor. Additional estimates show this is largely generated by groups of workers who would be least likely to respond to increased supervisory pressure with increase effort: women, those with dependents and those with health limitations. Despite this finding, profit sharing seems to have little or no influence on overall job satisfaction as the reduction in satisfaction with the boss is offset with increased satisfaction with earnings, a finding consistent with profit sharing enhancing productivity and earnings.

Keywords: Mutual Monitoring, Job Satisfaction, Supervision
JEL CODES: J28, J33, J53.

1.INTRODUCTION

Profit sharing has been identified with a range of positive economic outcomes including increased firm productivity, innovation and profits, reduced worker turnover and increased worker training (Kruse 1992; Bhargava 1994; Azfar and Danninger 2001; Green and Heywood 2007; Harden, Kruse and Blasi 2008). Most of these outcomes have at their base theoretical conjectures about how profit sharing changes the relationships between co-workers and between workers and the firm. Without these changes, the potential for increased worker effort and productivity remains limited by the strong incentive for free-riding. One view of these changes, claims profit sharing increases cooperation between colleagues and between workers and management in a repeated game (Weitzman and Kruse 1990, McNabb and Whitfield 1998; Pendelton 2006). An alternative view emphasizes that profit sharing generates mutual monitoring and peer pressure (Kandel and Lazear 1992; Freeman, Kruse and Blasi 2008). The role of the supervisor emerges as key in this second view. Profit sharing enhances both the ability and the incentive for supervisors to monitor and punish workers in order to reduce shirking (Heywood, Jirjahn and Tsertsvadze 2005b). Moreover, much of the mutual monitoring between co-workers takes place through the reporting of shirking to supervisors (Freeman, Kruse and Blasi 2008). In this second view, while profit sharing may change relationships between supervisors and workers to increase effort, the resulting increase in monitoring may nonetheless decrease workers' utility.

We use the detail of the British Household Panel Survey (BHPS) to examine the influence of profit sharing on the relationship between workers and their supervisor or boss. While recognizing that profit sharing has many aspects and may influence overall workers' utility, we are interested in the utility flowing from this relationship. Thus, we focus on a specific measure of how satisfied workers are with their immediate boss. We confirm that profit sharing is associated with reduced satisfaction with the boss. Moreover profit sharing is also associated with reduced worker emphasis on the importance of getting along with their boss. Yet, this deterioration in relations with the supervisor does not reflect a diminution in overall job satisfaction and is specific to the

relationship with the boss. Profit sharing has a neutral or positive influence on all of the other available dimensions of job satisfaction.

We also identify a pattern of results that support the notion that reduced satisfaction with the boss is due to increased monitoring and pressure associated with profit sharing. Women, those with children and those in poorer health appear to be more sensitive to the monitoring and pressure associated with profit sharing. It is the satisfaction of these groups with their boss that declines the most in the face of profit sharing. If these groups have the least ability to respond to pressure to perform (not shirk), either because of inherent limitations or greater responsibilities at home, one would anticipate this greater drop in satisfaction.

In what follows, the next section isolates the potential contradictory influences of profit sharing on relations with co-workers and, in more detail, with the boss. The third section introduces our data and methodology while the fourth section presents the critical estimations. A final section concludes and makes suggestions for further research.

2 PROFIT SHARING AND SUPERVISORY PRESSURE

At its core profit sharing seeks to alleviate agency problems by more closely aligning worker and firm interests. For instance, in a survey of US firms, Kruse (1993) reports that the most prevalent reason given by managers for providing profit sharing is to motivate workers. Yet, this alignment of interest may not motivate workers as each worker faces an incentive to free-ride on the effort of others. Absent extreme interdependencies in technology (Adams 2006), workers will recognize that only 1/N of their productivity increase will be returned to them through the profit sharing scheme and will under supply effort. Yet, this simple conclusion fails to recognize that profit sharing creates an incentive for each worker to influence the productivity of their co-workers. This incentive can change group norms. On the one hand, it can encourage increased co-operation and helping on-the-job (see the evidence presented by Drago and Garvey 1998). On the other hand, it also encourages mutual monitoring and peer pressure to

reduce shirking (Kandel and Lazear 1992). While both of these may increase productivity, they can have very different influences on worker utility.

At first thought both helping on-the-job and mutual monitoring represent workers taking on responsibilities previously done only by managers. Certainly the basic managerial function of monitoring effort is replaced, in part, by horizontal monitoring by co-workers. Workers are often in a better position than managers to monitor effort. As workers conduct their activities, they gain knowledge about the productivity of their co-workers and profit sharing creates an incentive to act on this knowledge. Much of the emphasis in the literature is on the creation of peer pressure with Kandel and Lazear (1992) discussing examples including internal pressure by guilt and external pressure by shame, ostracism and even physical punishment when a worker is caught shirking by his co-workers. The case study of Continental Airlines by Knez and Simester (2001) identify both a high incidence of mutual monitoring of absence and of peer pressure induced by the company's profit sharing plan. More generally, survey data used by Freeman, Kruse and Blasi (2008) reveal that most workers can detect shirking among co-workers and that profit sharing (group incentive) schemes are associated with a significantly larger likelihood of taking action against those shirking by, for example, talking directly to them.

Less clear in this story of horizontal monitoring and enforcement is the important role of the supervisor. The survey data make clear that the most likely response to observing shirking is to report it to the supervisor (Freeman, Kruse and Blasi 2008). Profit sharing creates an incentive to provide information to supervisors that would otherwise be absent or only available at higher cost. Moreover, not only does the supervisor have better information on worker shirking because of profit sharing, she also has an increased incentive to use this information by putting pressure on shirkers to perform. This incentive is at least two-fold. First, the workers themselves have an incentive to pressure the supervisor to deal with shirkers. Thus, the label 'horizontal monitoring' does not necessarily mean that the resulting pressure on those shirking comes directly from co-workers. Second, most profit sharing arrangements include the immediate supervisor

who, as a consequence, has a large financial incentive to pressure shirkers. Indeed, the unique tools of a supervisory position suggest that the effectiveness of such pressure may be particularly effective. For instance, Freeman, Kruse and Blasi (2008) show that the motivation to act against shirkers for the particular reason of increasing group earnings is greater among those higher in the firm hierarchy.

Thus, profit sharing should be anticipated to result in increased monitoring and pressure from the boss. This reflects the improved information and pressure provided by horizontal monitoring (through the interaction of the workers with the boss) and the increased financial incentive for the boss to pressure shirkers. With this anticipation, a critical point is that made by Kandel and Lazear (1992, p. 805): "While pressure guarantees higher effort, it does not guarantee higher utility because the pressure itself is borne by all members of the firm." Barron and Gjerde (1997) go further arguing that some firms may reduce the intensity of profit sharing or eliminate it altogether because the disutility imposed by monitoring and peer pressure violates the participation constraint. In essence, the individually rational worker engages in too much peer pressure because the disutility that his or her peer pressure imposes on others is not internalised. As much of this pressure may be channelled through the supervisor, profit sharing may cause workers to dislike or resent their supervisor even as it causes them to exert more effort.

Moreover, even as profit sharing increases effort, the increased monitoring and pressure may crowd-out cooperation and trust within the firm (Orr 2001). In this view profit sharing creates a 'suspicion effect' in which workers suspect that co-workers and the boss provide effort and help not for intrinsic reasons but simply to avoid monitoring and pressure. This may reduce the utility that the workers receive from their relationships with their boss.

We recognize that profit sharing changes many dimensions of employment and certainly do not suggest they will all be negative. Again, the net influence of profit sharing may be to increase utility but our primary interest is the utility derived from the relationship

between workers and their boss. Even here profit sharing may have positive influences. Drago and Turnbull (1988) demonstrate that profit sharing provides incentives for helping on-the-job since each worker's income depends, in part, on the output of co-workers. Indeed, empirical work by Drago and Garvey (1998) shows an increased willingness of workers to share tools under profit sharing. Moreover, Rotenberg (1994) emphasises the close connection between such cooperation and the utility one gets from interacting with co-workers. Similar, reasoning applies to relations with the supervisors. Profit sharing may lead to more helping of workers by the supervisor, improved relationships and higher utility. In this view cooperation may be beneficial and add to utility regardless of the motivation.

Profit sharing may also influence how fairly supervisors treat workers. Prendergast and Topel (1993) argue that favouritism is more likely when supervisors are not the residual claimants of workers' outputs. Laffront (1990) shows that the supervisor's incentive to engage in hidden gaming and favouritism is reduced if the supervisor receives a profit share. These results follow from the observation that if a supervisor's remuneration is dependent on worker output this increases the cost of `incorrectly' rewarding relatively poor performing subordinates. Insofar as favouritism and other unfair treatment increases conflict, it would be expected that profit sharing should increase worker satisfaction with their superiors.

Overall, theory provides an ambiguous answer to how profit sharing should influence the satisfaction of workers with their supervisors. The few studies that have directly examined this provide little consensus either. As part of a more general study of the relationship between job satisfaction and performance pay, Heywood and Wei (2006) present a single specification on the only year, 1988, that the NLSY includes both a measure of satisfaction with the supervisor and the provision of profit sharing. They find a small and weakly significant increase in satisfaction associated with profit sharing. Importantly, this positive relationship appears as part of a broader relationship in which those in profit sharing tend to have higher overall satisfaction as well. Heywood, Jirjahn and Tsertsvadze (2005b) examine a single year of the GSOEP, 1995, that asks about the

degree of conflict with the boss. Profit sharing reduced the degree of conflict for male workers who were in good health and had no supervisory responsibilities. For others, the influence was often absent or even negative. Kruse, Freeman and Blasi (2008) probe individual elements of work life showing that "shared capitalism" is associated with worker perceptions of being treated with respect, of promotions being handled fairly and of management-employee relations being good. Profit sharing, in particular, is strongly associated with perceptions that the company is fair to employees. Yet, the link between overall job satisfaction and profit sharing emerged as insignificant in one data source and as having offsetting influences in the second data source.[1] This may not be surprising as in their review of 12 studies examining the influence of various forms of employee ownership on job satisfaction, Kruse, Freeman and Blasi (2008 p. 7) conclude that there exists "no clear generalization." Certainly, recent studies of profit sharing *per se* (Green and Heywood 2008; Artz 2008) do not change this conclusion. In short, the issue deserves additional empirical inquiry.

2.1 Workers for whom increased supervisory pressure is more likely

Workers differ in their ability to increase their effort and productivity in response to incentives. This point becomes critical in thinking about the behaviour of supervisors under profit sharing. Workers who are less able to increase their effort as a result of increased pressure may find themselves singled out by co-workers and supervisors. In our estimations, we focus on a number of specific groups for whom it may be expected that this could be true. Thus, in addition to asking the general question of whether or not profit sharing influences the job satisfaction associated with the supervisor, we examine circumstances in which a negative influence might be particularly likely.

Women may demand greater flexibility between work and home due to greater responsibility of household production. This leads them to be sorted (or sort) into jobs with lesser degrees of interdependent worker productivity (Goldin 1986; Heywood and

[1] Using the NBER data, profit sharing provision was associated with lower job satisfaction even as the share of earnings derived from profit sharing was associated with higher job satisfaction.

Wei, 1997). Insofar as this is linked to lower workplace effort (Heywood and Jirjahn 2004) and less responsiveness of effort to group incentives, this may lead to greater supervisory pressure on women in a profit sharing environment. In turn, this makes women more likely to report that profit sharing reduces their satisfaction with the supervisor. This influence may be exacerbated further for women who have dependent children. These workers may be particularly less able to respond to pressure because they have even greater home responsibilities.

Those in poor health may also be less able to respond to pressure. Inherently low productivity workers will be the least able to respond to the incentives provided by profit sharing and will be worse off as peer pressure is applied. It may also be the case that low productivity workers are the least likely to be the beneficiaries of helping effort as they are the least likely to reciprocate. While we anticipate that indicators of low productivity may be associated with conflict in any workplace, these indicators will be associated with even more conflict in the face of profit sharing. It is these workers who will be reported to the supervisor as not carrying their weight and as worthy of pressure and punishment. Thus, the information that enhances the ability to detect and punish low productivity will generate greater conflict between lower productivity workers and their supervisor.

3. DATA AND DESCRIPTIVE STATISTICS

The data in this paper are drawn from the British Household Panel Survey (BHPS), which has run from 1991 onwards. The BHPS is a nationally representative sample that each year interviews approximately 10,000 individuals from roughly 5,500 households across Great Britain. The BHPS contains a number of variables related to job satisfaction and we are specifically interested in attitudes towards the boss. The related variable how satisfied are you with the boss is available only from 1991-1997. All job satisfaction questions in the BHPS are reported on a 7 value Likert scale, 1 being the least satisfied, 7 the most satisfied. We restrict our sample to those individuals aged 20 to 65 and exclude the self-employed and those with missing data. This yields an unbalanced panel of 6,410

workers.

Over the years the BHPS has contained different information on payment methods but for 1991-1997 participants were asked the question "did you receive a profit share or bonus" which we use as our indicator of profit share receipt. As recognized by others (Booth and Frank 1999), for the years 1992-1994 this question was only asked for individuals who changed jobs. In the our empirical analysis we estimate all models for the complete sample, 1991-1997, assuming that if the worker did not change jobs their profit sharing status did not change. While others have made this assumption (Lemieux, MacLeod and Parent 2007), we recognize that it generates an errors-in-variables problem potentially biasing our estimates toward insignificance. An alternative approach used only the observations that provide a current year indicator of profit sharing. This alternative becomes more important if there exist substantial changes in the use of profit sharing for workers who retain the same job.[2] Importantly, all of our key results except one remain identical across these alternative treatments of the data difficulty. We highlight this one difference when discussing the results.

Table A1 presents summary statistics split by whether the worker receives profit sharing or not. Briefly, women are less likely to be employed under profit sharing arrangements, as are workers with dependent children. Workers under profit sharing relationships, on average, work longer hours, both in terms of normal hours and overtime. They also have higher average education levels and are less likely to have poor/fair health.

INSERT TABLE 1

Table 1 provides preliminary evidence of a link between profit shares and attitudes to the boss. It reports sample means for satisfaction with the boss split according to whether the worker received a profit share or not. For the purposes of comparison we also report overall job satisfaction, as well as the two other dimensions available in the BHPS for

[2] Indeed, in his examination of profit sharing in Germany, Jirjahn (2002) found that between 1994 and 1996 more establishments either added or dropped profit sharing than retained it over the two-year period.

this period, satisfaction with pay and satisfaction with hours. Workers on profit shares report a significantly (at 1%) lower average satisfaction with the boss than other workers. In terms of more general differences, there is no statistically significant difference in average overall job satisfaction between profit share workers and other workers. Workers on profit sharing arrangements report significantly (at 1%) higher satisfaction with pay and lower satisfaction with hours. At issue is whether or not these patterns persist after accounting for reasonable controls. Moreover, we will examine whether or not the pattern of results supports differences by demographic groups that may be more or less able to respond to peer and employer pressure.

4. RESULTS

We now seek to examine the relationship between satisfaction with the boss and profit sharing arrangements in a multivariate setting. Following past research, the values of satisfaction with the boss are fitted to the cumulative normal distribution through ordered probit estimates (see Clark and Oswald, 1996 and Clark 1997 among others). Estimation by ordered probit follows appropriately when the dependent variable has a natural ordering, such as least to most satisfied (see McKelvey and Zavonia 1975).

INSERT TABLE 2

Table 2 provides basic estimates of the association between profit sharing arrangements and satisfaction with the boss. Three models are reported, the first (I) includes controls for basic personal characteristics, the second (II) adds controls for industry, occupation and tenure and the third (III) adds controls for hours worked (regular and overtime) and for supervisory and/or managerial roles. For model (I) men are less satisfied with their boss perhaps reflecting the general tendency for women to me more satisfied with most aspects of employment (see Clark 1997). Age appears to have the U-shape identified in many job satisfaction studies (Clark et al. 1996) and marital status is generally a positive determinant while education is a negative determinant both common results in general studies of job satisfaction (Clark and Oswald 1996). Of central importance, profit sharing

is associated with a statistically significant negative reduction in satisfaction with the boss. This relationship remains essentially unchanged once extra controls (models II and III) are included. Several of those added controls emerge as important yet they do not displace the role of profit sharing. Hence, there is initial evidence of a negative relationship between profit shares and satisfaction with the boss that is not explained by standard personal and workplace characteristics.

We further investigate this negative association between profit sharing and relations with the boss using information on what workers consider the most important aspects of a job. The first wave of the BHPS (1991) records what workers consider the first and second most important aspect of a job. Possible responses include pay, promotion prospects, job security, the actual work itself, use of initiative or hours worked. Another category of response is "good relations with the manager". We use this response to create a binary variable taking the value of unity if the individual responded that good relations with the manager is among the first or second most important aspect of a job. This becomes an alternative dependent variable in a model with the same covariates as (III) above. Marginal effects from probit estimation of this equation are reported in column 4 of Table 2. These demonstrate that workers under profit shares are 8 percentage points less likely to list good relations with the manager as an important aspect of the job. We do not know to what extent this reflects the sorting of workers with certain attitudes into profit sharing, or a conditioning result of the working environment under profit sharing on worker attitudes. Yet, either way, it remains suggestive of a negative association between profit sharing and the quality of relations with the boss.

INSERT TABLE 3

It is important to note that these estimates of profit sharing's negative effect on satisfaction with the boss do not merely reflect an effect on overall job satisfaction. To demonstrate this we re-estimate (III) with overall job satisfaction as the dependent variable. Estimates, reported in column 1 of Table 3, suggest that there is no relationship

between profit sharing and overall job satisfaction.[3] Table 3 also reports analogous estimates of the relationship between profit shares and satisfaction with hours, and satisfaction with pay, respectively. Again there is no evidence of a relationship between profit shares and satisfaction with working hours. There is, however, evidence that profit sharing is associated with higher satisfaction with pay. This, when coupled with the negative impact of profit shares on satisfaction with the boss, highlight the potential for a trade-off between higher productivity (and hence improved pay) and increased supervisory pressure under profit sharing. Thus, it seems consistent that profit sharing brings additional peer and supervisory monitoring that increases productivity and earnings but which workers do not like as reflected in relations with their supervisor.

We obviously see this evidence as somewhat at odds with the US evidence from Kruse, Freeman and Blasi (2008) that workers in "shared capitalism" are more likely to see their boss as caring and helpful and less likely to report being closely supervised. We note that the US results emerge more strongly when focusing on employee ownership and less strongly when focusing on profit sharing. We also note the large differences in scope between our broad measure of job satisfaction with the boss and the more detailed aspects examined in the US surveys. Nonetheless, the marked differences suggest the need to break down our results to search for patterns that could be consistent with a role for supervisory pressure. In short, supervisory pressure may not be applied equally to all workers.

4.1 Moderating Influences

As outlined in section 2.1, workers differ in their ability to alter their effort in response to the pressure created by peer and, ultimately, by supervisory pressure. To the extent that our initial findings suggest such pressure may have negative influences on satisfaction with the boss, these pressures may be intensified or moderated for certain groups based

[3] Using later waves of the BHPS (1998-2004), Green and Heywood (2008) demonstrate a positive relationship between profit sharing and overall job satisfaction while Artz (2008) shows an insignificant

on their ability to respond. Here, we focus on two, not mutually exclusive, groups, females and workers with health problems. In general, women face more complicated labour supply and effort decisions because of a greater average emphasis on household production. In so far as this implies a higher opportunity cost of work effort, women may be less responsive to the supervisory pressure to increase effort that may come with profit sharing. In work examining getting along with colleagues using the GSOEP, Heywood, Jirjahn and Tsertsvadze (2005a) found that while men reported that profit sharing improved their relations with co-workers, women did not. They speculated that this may reflect a difference in the ability of the genders to respond to peer pressure. To see if such differences exist in relations with the boss, we allow the impact of profit sharing on satisfaction with the boss to vary by gender. We then focus more specifically on the role of household responsibilities by allowing the effect of profit sharing to vary by whether or not the worker has dependent children.

INSERT TABLE 4

The first column of Table 4 presents an estimate of model (III) with an interaction term between profit sharing and gender. The estimates reveal marked gender differences in the effect of profit sharing on satisfaction with the boss that are suggestive of increased supervisory pressure for female workers. The overall negative effect of profit sharing on satisfaction with the boss continues but the male interaction is positive and significant. Indeed, examining the sum of the coefficients for the original profit sharing variable and for the interaction, one cannot reject the hypothesis that profit sharing has no influence on the satisfaction of men with their boss. On the other hand allowing for this interaction reveals an even larger negative coefficient for women than was evident in the earlier estimations. This estimation suggests that it is women who report that profit sharing is associated with reduced satisfaction with the boss. Indeed, separate (unreported) estimates by gender confirm a large significant decline in satisfaction for women. This decline is not duplicated in an otherwise similar estimate for men.

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relationship between profit sharing and overall satisfaction using the Britain at Work survey.

We seek to further examine the potential role of household responsibilities further by allowing the effect of profit sharing to also vary by whether the worker has a dependent child. Column 2 reports estimates that include an interaction term indicating whether or not the worker has a dependent child and who receive a profit share. Whilst this interaction term is associated with lower satisfaction with the boss, it is not statistically significant.[4] Both the overall effect of profit shares on satisfaction with the boss, and the interaction effect of male and profit share remain negative and statistically significant.

These estimates generate somewhat different results when restricted to observations for which we have a current year observation on profit sharing. Thus, whilst previously we have not shown the results from the restricted sample (as they were essentially unchanged), we now add them to the third and fourth columns of Table 5. The third column shows the consequences of adding the interaction of gender with profit sharing. The pattern of coefficients looks very similar to that reported for the full sample and the interaction again indicates that it is women who report lower satisfaction with their boss in the face of profit sharing. The difference emerges when adding the interaction with dependent child in the final column. The male interaction continues to take a positive coefficient but is no longer significant. Nonetheless it is large enough that one continues to be unable to reject the hypothesis that profit sharing has no influence on the satisfaction of men with their boss. Having a dependent child and receiving profit sharing is associated with lower satisfaction with the boss Thus, these results indicate that both women workers and workers with dependent children report lower satisfaction with their boss. Moreover, the decrement associated with being a female with a dependent child is now the sum of two large significant and negative coefficients. That women with dependent children see the greatest loss of satisfaction under profit sharing is presumably related to their greater household production responsibilities and is suggestive of their greater difficulty in responding to supervisory pressure to increase effort.

[4] Similar estimates result if either number of children or worker is primarily responsible for childcare are included and interacted with profit shares instead of the worker has a dependent child.

INSERT TABLE 5

We now examine workers with health problems. Again, this group of workers is likely to face a higher cost of effort and hence may be less responsive to the monitoring and pressure associated with profit sharing. The BHPS has a number of self-reported measures of respondents' health. We focus on two components that appear most likely to be related to work effort. First, respondents are asked to classify their health over the last 12 months as being good, fair or poor. On the basis of this we assign each worker to either not in good health, or in good health (the latter is used as the omitted category). Second, respondents are also asked if their health limits the type of work they perform and/or if it limits the amount of work they perform. Thus, in total, we examine three measures of worker health.

Table 5 provides estimates of the relationship between workers' health, profit sharing and satisfaction with the boss. Again we use model (III) as the basis for these additional estimates. Column 1 reports estimates where a control for the worker's health is included. While workers who are not in good health have lower satisfaction with the boss, the effect of profit sharing on satisfaction with the boss is essentially unchanged. The next column reports estimates where an interaction between health and profit sharing is also included. While the sign of this interaction is indicative of lower satisfaction with the boss for workers in poor health receiving profit shares, this effect is not statistically significant.

The effect of health is examined in more detail by assessing particular types of work limitations caused by poor health. Column 3 reports estimates where separate controls indicating that the worker's health limits their amount of work or it limits their type of work are included. The former may be of particular interest here as it seems a direct indicator of the difficulties in increasing effort. The estimates reveal no statistically significant relationship between limits on the type of work and satisfaction with the boss.

There is some indication that those workers for whom their health limits their amount of work have lower satisfaction with the boss, but this is not statistically significant. The next column includes interactions between these two variables and profit sharing. These estimates suggest that workers who are limited by their health in how much they can work and who receive profit sharing have significantly lower satisfaction with their boss. Thus, at least one of the health variables provides strong support for the notion that those physically less able to respond to pressure for increased effort have a stronger negative reaction to profit sharing.

In total both the demographic and health results fit a pattern in which profit sharing drives demands for greater productivity and effort. Relations with the supervisor seem a likely point for these demands and the conflict associated with them to be focused. Not only is there an initial suggestion that workers on profit sharing have less satisfaction with their supervisor but the disaggregate pattern seems to fit the general story. Those groups that we anticipate can less easily respond to supervisory pressure are those responsible for the apparent reduction in satisfaction associated with profit sharing.

5. CONCLUSION

The method through which profit sharing influences productivity and effort remains in doubt. Two broad strands of not-mutually exclusive thought emphasize that the direct incentive effect is low but that profit sharing changes relationships among workers and between workers and the firm. Profit sharing may increase cooperation and helping effort. It may also increase monitoring and pressure. We have emphasized that much of either influence will flow through the supervisor. As a consequence, the way in which profit sharing changes relations between workers and supervisor helps identify which influence may be predominant.

Our initial evidence shows that those on profit sharing in the UK report lower satisfaction with their boss. This is collaborated by findings that they also report good relations with the boss as a less important job characteristic. Nonetheless, this finding does not reflect

workers on profit sharing reporting lower levels of overall satisfaction. Importantly, there appear to be specific groups of workers that generate much of this overall finding. Women, those with children and those with health limitations are the workers that generate the association of profit sharing with a lower level of satisfaction with the boss. We have suggested these groups may be those for whom supervisory pressure can less easily be translated into greater effort and who may, therefore, have greater resentment toward their supervisor.

We recognize that neither profit sharing nor the existing workforce exogenously appear in a workplace. It is possible that worker selection or firm selection may be generating our results. Using an individual data source provides us few reasonable instruments. Nonetheless, we emphasize that our core results are not of the sort that typically generates selection concerns. Had we found that workers in profit sharing are more satisfied, one might anticipate that they had selected into workplaces with profit sharing in place. Instead, we have found a tendency toward less satisfaction with the supervisor among those receiving profit sharing. Nonetheless, we highlight that issues of selection stand as reasonable future research especially for those using matched employee-employer data that are more likely to provide suitable instruments.

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TABLE 1, SATISFACTION BY PAYMENT TYPE

	Overall Job Satisfaction	Satisfaction with the Boss	Satisfaction with Pay	Satisfaction with Hours
Profit Share/Bonus	5.403	5.534	4.726	5.116
No Profit Share/Bonus	5.454	5.663	4.560	5.274
Observations	18240			

Source: BHPS

TABLE 2 Profit Sharing and Satisfaction with the Boss
BHPS 1991-97, Private Sector Non-Union Employees 20-65 years old.

	(I)	(II)	(III)	(IIIb) Getting Along with Boss Important
Profit Share/Bonus	-0.051**	-0.057*	-0.057*	-0.081*
	[0.021]	[0.021]	[0.021]	[0.018]
Male	-0.196*	-0.166*	-0.131*	-0.089*
	[0.026]	[0.028]	[0.029]	[0.023]
Age	-0.042*	-0.042*	-0.043*	-0.007***
	[0.007]	[0.007]	[0.007]	[0.004]
Age^2	0.001*	0.001*	0.001*	0.0001***
	[0.0001]	[0.0001]	[0.0001]	[0.0001]
Married	0.044***	0.049**	0.047***	-0.009
	[0.025]	[0.025]	[0.025]	[0.022]
Dependant Child	0.213*	0.203*	0.153*	0.015
	[0.036]	[0.036]	[0.038]	[0.028]
High School Completion	-0.055***	-0.069**	-0.077**	-0.062*
	[0.031]	[0.031]	[0.031]	[0.022]
Diploma	-0.047	-0.076***	-0.089**	-0.054
	[0.043]	[0.045]	[0.045]	[0.043]
Degree	-0.101*	-0.133*	-0.145*	-0.073***
	[0.036]	[0.042]	[0.042]	[0.038]
Higher Degree	-0.109	-0.144***	-0.153**	-0.113
	[0.075]	[0.076]	[0.077]	[0.073]
Tenure		-0.005*	-0.005*	0.001
		[0.001]	[0.001]	[0.001]
Normal Hours			-0.006*	-0.001
			[0.001]	[0.001]
Overtime Hours			-0.002	-0.001
			[0.002]	[0.001]
Foreman/Supervisor			0.038	-0.009
			[0.028]	[0.024]
Manager			0.089**	-0.034
			[0.036]	[0.036]
Regional Controls	√	√	√	√
Industry Controls		√	√	√
Occupation Controls		√	√	√
Log Likelihood	-28311.276	-28228.934	-27875.294	-1292.3803
Observations	18240	18240	18240	2475

Notes: Numbers in parentheses are robust standard errors. *,**,*** indicate statistical significance at the 1%, 5% and 10% level respectively. Models I-III include controls for year.

TABLE 3 Profit Shares and Overall Job Satisfaction.
BHPS 1991 – 1997, Private Sector Non-Union Employees 20-65 years old

	Model (III)		
	Overall Job Satisfaction	Satisfaction with Hours	Satisfaction with Pay
Profit Share/Bonus	0.006	-0.003	0.092*
	[0.021]	[0.020]	[0.021]
Regional Controls	√	√	√
Industry Controls	√	√	√
Occupation Controls	√	√	√
Log Likelihood	-28106.298	-30276.170	-32966.189
Observations	18329	18337	18313

Notes: Numbers in parentheses are robust standard errors. *,**,*** indicate statistical significance at the 1%, 5% and 10% level respectively.

TABLE 4 Profit Shares and Satisfaction with the Boss, The Role of Gender, Kids and Hours Worked. BHPS 1991 – 1997, Private Sector Non-Union Employees 20-65 years old

	All Observations		Restricted Sample	
	(III) + Gender Interaction	+ Child Interaction	(III) + Gender Interaction	+ Child Interaction
Profit Share/Bonus	-0.111*	-0.100*	-0.106*	-0.070***
	[0.032]	[0.037]	[0.035]	[0.041]
Male	-0.166*	-0.164*	-0.127*	-0.115*
	[0.033]	[0.034]	[0.037]	[0.038]
Dependent Child	0.151*	0.163*	0.150*	0.187*
	[0.039]	[0.044]	[0.043]	[0.050]
Male* Profit Share	0.101**	0.090**	0.075***	0.039
	[0.042]	[0.046]	[0.046]	[0.050]
Dependent Child * Profit Share		-0.045		-0.131***
		[0.068]		[0.075]
Regional Controls	√	√	√	√
Industry Controls	√	√	√	√
Occupation Controls	√	√	√	√
Log Likelihood	-27844.233	-27843.940	-18077.998	-18076.254
Observations	17996		11739	

Notes: Numbers in parentheses are robust standard errors. *,**,*** indicate statistical significance at the 1%, 5% and 10% level respectively.

TABLE 5 Worker Health, Profit Shares and Satisfaction with the Boss:
BHPS 1991 – 1997, Private Sector Non-Union Employees 20-65 years old.

	(III) + Health Control	+ Interaction	How Does Health Impact Satisfaction with Boss?	Does this vary by PS?
Profit Share/Bonus	-0.056*	-0.057*	-0.057*	-0.053**
	[0.021]	[0.022]	[0.021]	[0.021]
Not in Good Health	-0.172*	-0.168*	-0.156*	-0.156*
	[0.024]	[0.029]	[0.025]	[0.024]
Not in Good Health * Profit Share		-0.009		
		[0.049]		
Health Limits: Amount of Work			-0.093	-0.005
			[0.076]	[0.093]
Health Limits: Type of Work			0.004	-0.079
			[0.083]	[0.102]
Amount of Work * Profit Share				-0.272***
				[0.158]
Type of Work * Profit Share				0.260
				[0.173]
Regional Controls	√	√	√	√
Industry Controls	√	√	√	√
Occupation Controls	√	√	√	√
Log Likelihood	-27810.999	-27810.974	-27807.039	-27805.323
Observations	17996			

Notes: Numbers in parentheses are robust standard errors. *,**,*** indicate statistical significance at the 1%, 5% and 10% level respectively.

TABLE A1 Sample Statistics 1991-1997, Private Sector Non-Union Employees

	No Profit Share	Profit Share
Male	0.473	0.604
Age	37.810	36.242
Married	0.610	0.603
Dependant Child	0.168	0.095
Poor/Fair Health	0.217	0.186
< High School Completion	0.679	0.588
High School Completion	0.171	0.213
Diploma	0.056	0.067
Degree	0.081	0.112
Higher Degree	0.013	0.020
Tenure (years)	10.543	10.651
Normal Hours	33.742	37.173
Overtime Hours	3.836	4.932
Foreman/Supervisor	0.165	0.163
Manager	0.157	0.276
Observations	11706	6290

Source: BHPS