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Worker Responses to Shirking under Shared Capitalism

Richard B. Freeman, Douglas L. Kruse,
and Joseph R. Blasi

What do workers do when they see someone slacking off in ways that reduce the productivity of their work group and enterprise?

The rational response depends on the circumstances. In a tournament race for promotion, having a competitor slack off is good news. You do not have to go all out to win the promotion. In a piece-rate pay system where the firm lowers the rate per piece when workers produce more than expected, you will also welcome the shirker. The more other workers shirk, the less

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likely it is that management will lower the rate per piece and make it harder to earn your weekly pay.

But when part of workers' pay comes in the form of some group incentive such as profit sharing or share ownership or stock options, a worker who does not do his or her job takes "money out of the pocket" of other workers. The group would be better off if someone acted against the shirker. But standard analysis suggests that it will rarely be rational for anyone to intervene. The costs of intervening with the shirker fall on the intervener but that person gets only part of the benefit (in an N worker group the worker who intervenes gains 1/Nth of the benefit going to workers and none of the benefit that goes to capital). The implication is that rational workers will not act against a shirker just as rational players should not cooperate in a prisoner's dilemma game. Group incentive systems are thus doomed to failure.

The facts for labor practices as for prisoner's dilemma and other games of cooperation are different. Team production and group incentive plans, which succeed only if they overcome free riding and shirking, are widespread in modern economies. Since workers often have better information than management on what fellow workers are doing, worker responses to shirking are critical to the success or failure of these schemes. Many workplaces develop cultures where workers discourage others from shirking. Lab experiments find cooperative behavior in collective goods games when game theory rationality predicts that the rational player defects. Directly relevant to our analysis, Fehr and Gachter (2000) have found that individuals punish defectors in laboratory experiments even when it is not in their individual self-interest to do so, due to norms of reciprocity that are strong among many individuals. Peer monitoring has also been found in group loans in Third World credit markets (Stiglitz 1990). Punishing free riders at a workplace may also benefit the intervener in the long run if other members of the group appreciate that person's action against free riders. They may reap long-term rewards in the form of higher esteem and greater influence within a group. Self-interest aside, the evidence from anthropologists that voluntarily "policing" cooperation occurs in many societies suggests that it may be hardwired from evolution. Some economists have suggested how ostracism can be effective in promoting cooperation (Hirshleifer and Rasmussen 1989). It is also worth noting that to the extent shirking occurs, it is not confined to group incentive systems. Shirking may happen in virtually every workplace.

This study examines worker reactions to shirking by analyzing questions on the 2002 and 2006 General Social Surveys (GSS) and the NBER surveys of fourteen companies that have some forms of group incentive plans. We asked workers about the ease of observing co-workers' performance, and the likelihood of responding to poor work performance. Our analysis of these questions, together with questions about incentive systems, firm human resource policies, and other aspects of the workplace, show:

1. Most workers believe that they can readily detect shirking by fellow employees.
2. Workers are most likely to take action against shirkers in workplaces where employees are paid by some form of "shared capitalism"—by which we mean profit sharing, gain sharing, stock options, or other forms of ownership—and they participate in decisions or work in team settings.
3. Responses to these forms of group incentive pay are largest when they trust management and have good employee management relations, and when the firm adopts high-performance human resource policies, low levels of supervision, and pays fixed wages at or above market levels along with the incentive pay.
4. Consistent with the theory of free riding, anti-shirking behavior is greater in smaller firms and is particularly strong in small firms with shared capitalist pay.
5. Workers in workplaces where there is more anti-shirking behavior report that co-workers work harder and encourage other workers more, and that their workplace facility is more effective in several dimensions related to productivity and profits.

The bottom line is that "shared capitalist" arrangements—defined broadly as those in which firms share rewards and decision-making with workers—and positive labor relations encourage workers to act against shirking behavior and thus strengthen the potential for group incentive systems and team production to overcome the free rider problem and succeed.

2.1 Group Incentives and Monitoring Colleagues

When will a worker act against a shirking fellow employee?

The natural economics answer is that a worker will so act when it pays off for that person, which almost invariably requires group incentive pay. Building on Drago and Garvey (1998), it is easy to show that workers are more likely to intervene the higher the amount of the group incentive, the higher the probability that intervening increases the performance of the co-worker, the lower the cost of intervening (which may depend on individual incentives), and the smaller the number of co-workers. In addition, workers may gain respect from fellow workers and supervisors, which can translate into greater chances of promotion in the future. Workers may discourage "shirkers" through peer pressure and nonpecuniary sanctions such as social ostracism, personal guilt, or shame (Kandel and Lazear 1992). Since the 1/N problem is smaller at small workplaces, cooperative agreements should be easier to establish and maintain in small companies than in large ones.

Workers can also engage in punishing behavior to enforce group norms of high effort, and change the behavior of free riders. Punishment may be effective in counteracting the free rider effect per the experimental results

of Carpenter (2004). He explains his results by noting that an increase in the size of a group has two opposing effects: it "forces monitors to spread their resources thinner which might lead to more free riding," but "there are also more people monitoring each free rider so it is not obvious whether the total amount of punishment each free rider receives will increase or decrease" (2004, 4). Prendergast suggests that monitoring with a sufficiently low cost can negate the free rider problem but notes that "empirical evidence on peer pressure reveals behavioral responses different from those posited in the theory".[1]

Finally in the workplace setting, management may seek to develop a corporate culture that emphasizes company spirit, promotes group cooperation, encourages social enforcement mechanisms, and so forth in order to encourage cooperative actions (Weitzman and Kruse 1990; Blasi, Conte, and Kruse 1996; Blasi, Kruse, and Bernstein 2003, 226–28). Fudenberg and Maskin (1986) show how the free rider problem can be overcome in an ongoing relationship by a cooperative agreement among participants. Using artificial agent modeling with small groups, Axelrod (1984) has shown how mutual cooperation can develop among agents through reciprocity. Klos and Nooteboom (2001) explore the creation of interaction networks that have trust as a major component. Nalbantian and Schotter (1997) show how the performance of an experimental group depends on the effort norms established by the group under previous incentive schemes. Knez and Simester (2001) show how the use of autonomous work groups at Continental Airlines helped overcome free riding and encourage mutual monitoring in the presence of a company-wide bonus.[2]

Whatever model one uses to explain punishment of free riders, workers should be more likely to act against shirkers when they: (a) have some financial interest in the performance of the firm; (b) regularly participate in workplace decisions, which should also reduce the cost of speaking out; and (c) have trust in management and good labor-management relations, since in those situations, they can reasonably expect the firm to reward them for helping to reduce shirking. If you do not trust management, you can hardly be expected to report shirking to management. If you regard labor-management relations as poor, you may view shirking as a justifiable response to management's poor treatment of workers. Financial interest, participation in decisions, trust in management, and good labor-labor man-

1. Prendergast (1999) cites Weiss' study of workers in a pharmaceutical company (1987) and Hansen's examination (1997) of the incentives of telephone operators for a large financial corporation. Both found that group incentives improved the performance of workers who were less productive under individual schemes but decreased the performance of more productive workers. See also Bailey (1970) and Gaynor and Pauly (1990).

2. Also, Welbourne and Ferranti (2008) find that managers are more supportive of workers reacting to coworkers' behavior under gain sharing than under traditional merit pay, as indicated by their worker performance ratings.

agement relations should help to create and reinforce norms of reciprocity that encourage workers to take action against shirkers.

2.2 New Data on Shirking Detection and Responses

The innovation of our study is the new questions on the nationally representative GSS and the NBER company surveys about workers' ability to detect the performance of other workers at their workplace and their actions if they observed shirking. (See the "Studying Shared Capitalism" section of the Introduction for descriptions of the data sets and limitations.) We asked about the ability of workers to observe their peers' effort because that is a necessary precondition for acting against shirking:

> In your job how easy is it for you to see whether your co-workers are working well or poorly? On a scale of 0 to 10 please describe with 0 meaning not at all easy to see and 10 meaning very easy to see.

Figure 2.1, panel A, displays the frequency distribution of answers from the GSS. The distribution is concentrated at the upper end, with 49 percent of workers giving the highest possible answer about the ease of detecting how co-workers are doing, and another 28 percent giving answers in the 7 through 9 categories. Responses are also bunched at the 0 category as well, with 8 percent of workers giving this answer, but otherwise there is a paucity of responses at the low end. Thus, the vast majority of workers think they have a good idea of how hard their fellow employees are working. Looking at which employees report being able to observe co-workers shows a priori sensible variation among employees. Workers who answered with a 7 or more to the question reported disproportionately that they work in a team as opposed to by themselves, and that they rely on co-workers and supervisors for help, compared to workers who answered 3 or less on seeing how co-workers perform (data not shown but available). In addition, 13 percent who answered 7 or higher reported that they are managers, compared to 7 percent of those answered 3 or less.

Panel B of figure 2.1 displays the frequency distribution of answers from the NBER survey. The largest single group of respondents gave the maximum answer to their ability to observe their fellow employees, but the distribution is less concentrated than the distribution in the GSS, with proportionately half as many workers giving the 10 response. Still, 62 percent of respondents gave a response of 7 or more to the observability question.

Given that most workers say that they can observe the effort of co-workers, what do they do if they catch someone shirking? Our question was:

> If you were to see a fellow employee not working as hard or well as he or she should, how likely would you be to:
> A. Talk directly to the employee;
> B. Speak to your supervisor or manager;

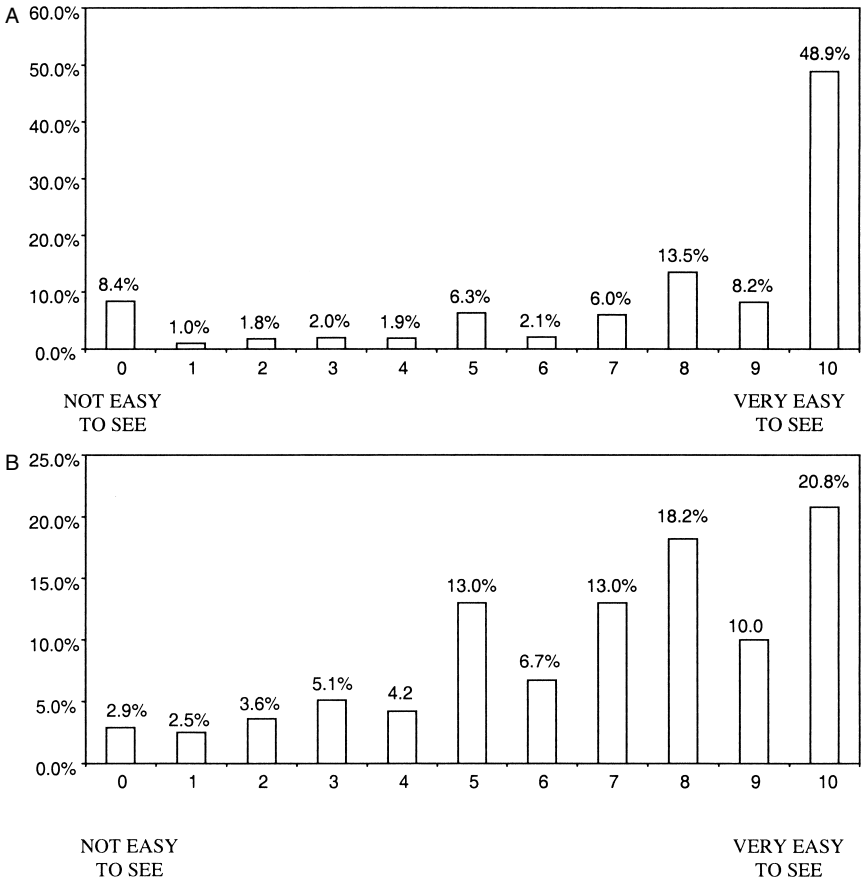

Fig. 2.1 Distribution of workers by how well they can see whether co-workers are working well or poorly: *A*, GSS; *B*, NBER

C. Do nothing;

D. (contained on only some company surveys) Talk about it in a work group or team.[3]

The responses use a four-point scale: not at all likely, not very likely, somewhat likely, and very likely. As a simple way to display the responses to these questions, we formed a summated rating anti-shirking index reflecting the likelihood of intervention against shirkers using a 1 to 4 scale, where 1 measures the lowest intervention and 4 the greatest intervention, by simply adding the values of responses across questions (Bartholomew et al. 2002). The

3. This option was not included in the 2002 GSS and the early NBER surveys.

anti-shirking index ranges from 3 to 12 for the observations based on the A to C responses and from 4 to 16 for the smaller sample for which we asked part D as well. In this ordering a 12 means that the worker reported that it was very likely they would talk to the shirking employee and very likely that they would talk to the supervisor and not at all likely that they would do nothing. A 3 means that they said it was very unlikely they would talk to the shirking employee, very unlikely they would talk to the supervisor, and very likely they would do nothing.

Figure 2.2, panel A, summarizes the responses from the GSS. It shows that the summary statistic differentiates people in a relatively continuous way. If we organize the data into five bins, grouping the 3 and 4 responses, and the 5 and 6 responses, and so on, the distribution looks roughly uniform. The anti-shirking index has a mean of 7.81 and a standard deviation of 2.94. Panel B of figure 2.2 gives the anti-shirking index for the NBER survey data. With the larger sample, the distribution has proportionately more persons in the

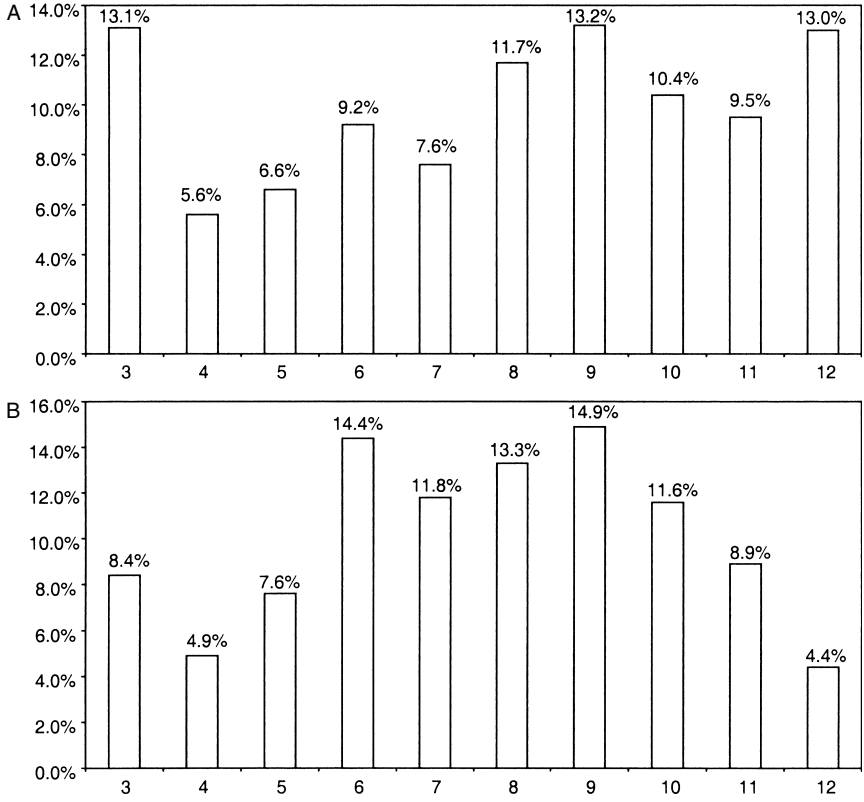

Fig. 2.2 Distribution of anti-shirking index: *A*, GSS; *B*, NBER frequency

Table 2.1 **Potential employee actions against shirkers**

	Response to fellow worker not working as hard or well as he or she should:			
	Talk to employee (1)	Talk to supervisor or manager (2)	Talk about it in work group or team (3)	Do nothing (4)
GSS				
Not at all likely	26.0%	28.0%	36.1%	38.8%
Not very likely	17.2%	22.4%	20.3%	20.5%
Somewhat likely	24.4%	25.1%	24.0%	17.6%
Very likely	32.4%	24.4%	19.7%	23.0%
n	2,183	2,137	1,058	2,173
NBER				
Not at all likely	28.1%	21.5%	28.6%	36.7%
Not very likely	25.4%	26.8%	26.5%	24.1%
Somewhat likely	29.9%	34.8%	31.3%	22.4%
Very likely	16.7%	17.0%	13.5%	16.8%
n	38,228	37,767	29,336	36,979

middle of the distribution, which gives it a rough normal look. But again, there is wide variation. Some people are likely to take action against a shirker and some are likely to do little. Our goal is to find out what differentiates workers in this form of behavior.

Table 2.1 shows for both data sets the proportion of workers who said it was likely or not likely that they would take one of the actions in response to shirking behavior by a fellow employee. One finding is that more workers in the GSS sample than in the NBER companies say they would be "very likely" to take action against shirkers, which would seem to go against the idea that shared capitalism encourages anti-shirking activities; this difference, however, is primarily due to the larger establishment sizes in the NBER sample, and the difference is reversed when controlling for this and other factors distinguishing the samples.[4] In addition, the table shows that the greater concentration of responses at the upper end of the distribution in the GSS than in the NBER data set is due to the great proportion in the former who say they would talk to the shirking employee: 32.4 percent in the GSS versus 16.7 percent in the NBER data set. In the GSS proportionately more workers say that it is very likely that they would talk to an employee than would talk to a supervisor or manager, whereas in the NBER data set

4. The GSS employees are also younger on average, and more likely to say they can see how well their co-workers are working. When these two variables and establishment size are used in the GSS sample to predict anti-shirking, the predicted mean for the NBER sample is less than the actual mean, indicating that the NBER employees are generally more likely than would be expected to take action against shirkers.

Table 2.2 Past employee actions against shirkers (NBER survey)

	Talk to employee (1)	Talk to supervisor or manager (2)	Talk about it in work group or team (3)	Do nothing (4)
Actions actually taken when saw fellow worker not working as hard or well as he or she should[a]	33.5%	46.0%	20.3%	29.3%
If said likelihood of this action was:				
Not at all likely	6.1%	12.4%	3.9%	14.8%
Not very likely	13.9%	26.6%	9.1%	17.0%
Somewhat likely	54.6%	65.3%	34.0%	41.9%
Very likely	81.7%	84.9%	52.8%	72.4%
n	18,744	18,744	18,744	18,744

[a]Workers were asked "Have you ever seen one of your fellow employees not working as hard or well as he or she should over an extended time period?" The above answers are based on the 58.6 percent who responded "yes." They were then asked "What action, if any, did you take?" In addition to the actions listed above, 5.2 percent said they would do "something else."

about the same proportion say it is very likely they would talk to the shirker as to a manager.[5]

To move from hypothetical responses to actual behavior, in some company surveys we added a question, "Have you ever seen one of your fellow employees not working as hard or well as he or she should over an extended time period?" Over half, 59 percent, of the respondents said yes.[6] We then asked what they did in response. As seen in table 2.2, 34 percent of the employees talked to the shirker, 46 percent talked to a supervisor or manager, 20 percent talked about it in a work group or team, 5 percent did something else, and 29 percent did nothing (row 1). Most important, these answers correlate highly with the respondents' reported likelihood of taking this action, as shown in rows 2 to 5: for example, 82 percent of those who said they were very likely to talk to the shirker actually did so, while only 6 percent of those who said it was not likely they would talk to the shirker actually did so.

From the tabulations in figures 2.1 and 2.2 and tables 2.1 and 2.2, we conclude the following: most workers can tell when a fellow employee is

5. Since some respondents said that they did not have a supervisor or manager, the sample size of answers to that question is smaller than the sample size for the other questions. One possible objection to the anti-shirking index is that it combines disparate behaviors that may substitute for each other—for example, a worker may choose between talking to the shirker or supervisor but not want to do both. We find, however, that the responses are highly correlated (the alpha for the index is .80 in the GSS data and .69 in the NBER data). We also present results for each response separately in table 2.4 and find results consistent with those using the anti-shirking index.

6. The mean of the anti-shirking index for the 41 percent of workers who said they have not seen a co-worker shirking is not significantly different from the mean for the 59 percent, suggesting that there is no systematic difference in willingness to take action against shirkers between these two groups.

shirking or not; there is wide variation in what they will do when faced with a situation in which someone shirks; and that this variation reflects variation in actual past behavior.

2.3 Shared Capitalist Arrangements: Group Incentives and Labor Policies

We have a wide set of measures of the group incentives and labor policies that we expect to affect worker responses to shirking behavior. As far as we know, ours is the most comprehensive survey of group incentive policies in the United States. The overall prevalence of shared capitalist compensation is presented in tables 1.1 and 1.3 of chapter 1. The most important result is that 45 percent of the for-profit private sector employees in the GSS sample report participating in some kind of shared capitalism program (36 percent in profit sharing, 25 percent in gain sharing, 19 percent in employee ownership, and 11 percent in stock options). This gives us good variation for examining the relation of these programs to worker outcomes. Regarding other work policies, the 2002 and 2006 GSS asked whether employees normally work as part of a team and how often they participate with others in determining how things are done at their job. Over half (58 percent) of private sector workers report working in a team setting, and 44 percent report that they often participate with others in helping set the way things are done on a job.

The prevalence of group incentives is necessarily higher in the NBER sample, since these firms were selected on the basis of having one or more shared capitalism programs. About two-thirds report profit sharing (71 percent) and owning company stock (64 percent), while about one-fifth report gain sharing (21 percent) and holding stock options (22 percent). The figure for working as part of a team (59 percent) is similar to that for the GSS, and about one-third (35 percent) report being part of an employee involvement team.

As a first step in assessing the relation of shared capitalism to employee outcomes, we constructed a thermometer-style index of shared capitalism, which assigns points based on coverage by shared capitalism programs and the size of the financial stakes. This index is described in Appendix B. We also present results breaking out the different forms of shared capitalism types and intensities.

2.4 Shared Capitalist Incentives and Shirking

To examine the determinants of anti-shirking behavior, we first regressed the anti-shirking index on organizational/company policy variables and job and demographic factors. As seen in table 2.3, the shared capitalism index is linked to greater anti-shirking activity in both the GSS and NBER data sets. Among the covariates, the ease of observing co-workers has a strong positive

Table 2.3 Effects of shared capitalism on anti-shirking index

	GSS data	GSS data	NBER data
Shared capitalism index	0.115 (.035)***	0.072 (0.034)**	0.027 (0.009)***
Ease of seeing how well co-worker is working	0.086 (.024)***	0.061 (0.024)**	0.130 (0.005)***
Work as part of team	1.060 (.059)***	0.766 (0.157)***	
High participation in decisions		1.207 (0.153)***	
Task variety		0.308 (0.103)***	
Any individual bonuses			0.199 (0.036)***
Employee involvement team			0.571 (0.028)***
Formal training			0.235 (0.028)***
Job security			0.445 (0.037)***
How closely supervised			–0.013 (0.006)**
Size 1–9 ees.	1.255 (.278)***	1.015 (0.271)***	
10–49 ees.	1.211 (.259)***	1.073 (0.250)***	
59–99 ees.	0.933 (.280)***	0.858 (0.269)**	
100–999 ees.	0.427 (.244)*	0.412 (0.235)	
1,000+ ees. (excl.)			
n	1,634	1,633	32,099
R^2	0.131	0.176	0.192

Notes: The GSS regressions include controls for occupation (7 dummies), age, years of tenure, female, black, Hispanic, education (4 dummies), full-time status, ln(yearly earnings), and dummy for survey year 2006. The NBER regressions include controls for occupation (5 dummies), mgt. level (3 dummies), hourly pay status, supervisory status, years of tenure, hours worked per week, union status, country (27 dummies), age, gender, marital status (2 dummies), family size, college graduate, graduate degree, number of kids, race (4 dummies), disability status, ln(fixed pay), and company fixed effects. ees. = employees.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

effect on the anti-shirking index, consistent with the idea that workers will be more likely to take action the greater the observability of shirking behavior. The participation variables have a substantial positive impact on the anti-shirking index in both data sets, as does job security in the NBER data set. Job task variety also has a strong positive effect (consistent with Drago and Garvey [1998]), indicating that knowledge of how to help is greater, and the costs of helping are lower, when the worker has a broader base of skills and overlap of tasks with the shirking co-worker. Those who are supervised more closely are less likely to engage in anti-shirking behavior in the NBER data set, perhaps reflecting a belief among closely-supervised workers that dealing with shirking is the supervisor's responsibility (to be addressed in table 2.9). Finally, the data shows that the size of the workplace has a strong impact on anti-shirking behavior, with workers more likely to intervene to stop shirking in a smaller workplace, where the shirking of one co-worker is more likely to affect them than it would in a larger workplace.

The specific behaviors making up the anti-shirking index are analyzed separately in table 2.4, panels A and B. The shared capitalism index is a

Table 2.4 **Specific responses to shirking (based on ordered probits)**

	Likelihood of talking to shirker (1)	Likelihood of talking to sup./manager (2)	Likelihood of talking in work group (3)
	A. GSS		
Shared capitalism index	0.038 (0.015)***	0.038 (0.014)***	–0.011 (0.022)
Ease of seeing how well co-worker is working	0.033 (0.010)***	0.022 (0.010)**	0.029 (0.016)*
Work as part of team	0.426 (0.063)***	0.298 (0.062)***	0.138 (0.099)
Size 1–9 ees.	0.469 (0.112)***	0.448 (0.111)***	–0.393 (0.165)**
10–49 ees.	0.432 (0.104)***	0.417 (0.104)***	–0.166 (0.150)
59–99 ees.	0.293 (0.111)***	0.390 (0.110)***	–0.304 (0.163)
100–999 ees.	0.086 (0.101)	0.208 (0.100)**	0.007 (0.143)
1,000+ ees. (excl.)			
n	1,676	1,641	800
(Pseudo) R^2	0.058	0.034	0.019
Cut point 1	0.886 (0.379)	–0.020 (0.370)	–1.365 (0.562)
Cut point 2	1.407 (0.380)	0.598 (0.371)	–0.818 (0.561)
Cut point 3	2.077 (0.382)	1.325 (0.371)	–0.094 (0.560)
	B. NBER		
Shared capitalism index	0.010 (0.004)**	0.007 (0.004)*	0.009 (0.005)*
Any individual bonuses	0.061 (0.017)***	0.084 (0.017)***	0.050 (0.020)**
Ease of seeing how well co-worker is working	0.045 (0.002)***	0.057 (0.002)***	0.037 (0.003)***
Employee involvement team	0.224 (0.013)***	0.192 (0.013)***	0.195 (0.015)***
Formal training	0.146 (0.013)***	0.055 (0.013)***	0.065 (0.014)***
Job security	0.132 (0.018)***	0.206 (0.018)***	0.084 (0.019)***
How closely supervised	0.002 (0.003)	–0.002 (0.003)	0.007 (0.003)**
n	33,807	33,544	25,570
(Pseudo) R^2	0.071	0.049	0.022
Cut point 1	0.152 (0.254)	0.198 (0.252)	0.020 (0.664)
Cut point 2	0.907 (0.254)	1.012 (0.252)	0.700 (0.664)
Cut point 3	1.920 (0.255)	2.104 (0.252)	1.715 (0.664)

Notes: (Panel A): the regressions include controls for occupation (7 dummies), age, years of tenure, female, black, Hispanic, education (4 dummies), full-time status, ln(yearly earnings), and dummy for survey year 2006. ees. = employees.

(Panel B): the regressions include controls for occupation (5 dummies), mgt. level (3 dummies), hourly pay status, supervisory status, years of tenure, hours worked per week, union status, country (27 dummies), age, gender, marital status (2 dummies), family size, college graduate, graduate degree, number of kids, race (4 dummies), disability status, ln(fixed pay), and company fixed effects.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

positive predictor of each type of anti-shirking behavior in both the GSS and NBER data, except for the likelihood of talking in a work group in the GSS data. It seems that many workers with shared capitalism do not wish to talk about the shirker to the group in the shirker's presence as they might find this embarrassing (consistent with concerns by workers that the shirker might resent them or other employees would react poorly, as presented in table 2.9).

2.4.1 Types of Shared Capitalism

Which shared capitalism policies are responsible for the results given in our indices? Table 2.5 uses different types and intensities of shared capital-

Table 2.5 Effects of particular forms of shared capitalist compensation on anti-shirking index

	GSS (1)	NBER (2)	NBER (3)
Profit and gain sharing			
Profit-sharing or gain-sharing eligibility	0.344 (0.183)*	0.010 (0.040)	
Profit-sharing gain-sharing bonus as % of base pay	0.742 (0.887)	1.424 (0.143)***	
Profit-sharing eligibility			–0.181 (0.045)***
Profit-sharing bonus as % of base pay			0.596 (0.202)***
Gain-sharing eligibility			0.099 (0.056)*
Gain-sharing bonus as % of base pay			0.675 (0.223)***
Individual bonus eligibility			0.250 (0.053)***
Individual bonus as % of base pay			–0.480 (0.230)**
Stock options			
Stock option holding	0.237 (0.293)	0.440 (0.075)***	–0.043 (0.110)
Stock option value as % of base pay			0.001 (0.011)
Stock option grant last year			0.212 (0.108)**
Stock option grant as % of avg. grant			0.014 (0.023)
Employee ownership			
Co. stock ownership	0.020 (0.298)	0.182 (0.038)***	0.051 (0.042)
Co. stock as % of base pay	0.141 (0.101)	0.027 (0.018)	–0.023 (0.019)
R^2	.132	.113	.195
n	1,645	34,379	30,933

Notes: Based on ordinary least squares (OLS) regressions. The GSS regression includes controls for occupation (7 dummies), age, years of tenure, female, black, Hispanic, education (4 dummies), full-time status, ln(yearly earnings), co. size (4 dummies), ease of observing co-workers, and dummy for survey year 2006. The NBER regression in column (2) contains the GSS controls from column (1) except co. size, plus company and country fixed effects. The NBER regression in column (3) includes the controls from column (2) plus hourly pay status, supervisory status, hours worked per week, union status, marital status (2 dummies), family size, number of kids, race (4 dummies), disability status, ln(fixed pay), closeness of supervision, employee involvement team, training in past year, high job security, and company fixed effects.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

ism to predict taking action against shirking. In the GSS data, the most important factor behind anti-shirking activity is the presence of profit sharing and gain sharing (column [1]). In the NBER data where we actually have detailed information on the extent of profit sharing, it is the intensity rather than the presence of profit sharing and gain sharing that seems to matter. The NBER results in column (2) show a very strong effect of the profit-gain-sharing bonus size (not eligibility), along with strong positive effects of stock option holding and owning any company stock.

When the richer NBER data are used for a more detailed breakdown of shared capitalism in column (3) (along with more extensive controls, mirroring the specification in table 2.3), anti-shirking activity is strongly related to both profit-sharing bonus size and gain-sharing bonus size. There is one seemingly odd result, however. The negative coefficient on eligibility combined with the positive coefficient on bonus size indicate that when the profit share is small, those eligible for profit sharing are less likely than noneligible employees to take action. As will be seen in table 2.9, shared capitalism appears to increase the fear that co-workers will resent any anti-shirking action, so that low levels of profit sharing may have a negative effect on anti-shirking activity, but this reluctance is apparently overcome as the bonus grows larger. For gain sharing, by contrast, simple eligibility increases anti-shirking behavior. On this issue, note that gain-sharing can appear as a compact within a specific small group or department within the firm.

Consistent with the results of Drago and Garvey (1998), the effect of greater individual bonuses is negative and significant on anti-shirking behavior (column [3]). Apparently, individual bonuses focus workers on their own work and may lead them to see co-workers as competitors (or at least not cooperators). By contrast, workers who received a stock option grant last year were more likely to take action against shirkers, although the size of the grant, and of one's holdings, do not seem to make a difference (column [3]). Owning company stock is no longer a significant predictor in column (3), although in supplementary regressions (not reported here) we have positive associations with some forms of ownership—Employee Stock Purchase Plan (ESPP) participation, holding stock after exercising options, holding stock purchased on the open market, and Employee Stock Ownership Plan (ESOP) membership (this latter result only when company fixed effects are not used[7]).

That ownership appears to operate through simply owning stock and not the size of one's stake is consistent with findings from several other studies of higher organizational commitment (reviewed in Kruse and Blasi [1997]).

7. Company fixed effects are probably inappropriate to use in analyzing the effects of ESOP membership, since Employee Retirement Income Security Act (ERISA) rules provide strict guidelines to ensure broad coverage. The small number of non-ESOP members are likely to be very different from the ESOP members within a firm, and the effects of ESOP membership may be better judged by comparing ESOP members to otherwise-similar workers in other firms.

This suggests that employee ownership may operate largely by changing the psychological contract between the employer and employees (Rousseau and Shperling 2003), getting employees to think like owners through a change in status rather than a change in direct financial incentives. Such incentives may nonetheless be part of the psychological context, since eight out of ten of the workers reporting employee ownership in the 2002 GSS report they also have some form of profit/gain sharing or stock options, which indicates that some managers recognize the value of combining short-term rewards and long-term equity (Blasi, Kruse, and Freeman 2006, 7).

2.4.2 Before/After on Profit Sharing

The cross section data presented so far are consistent with the theory that shared capitalism affects the response of workers to shirking co-workers but cannot rule out the possibility that there are missing variables or other processes that affect results. As we were conducting our survey, one firm told us that they intended to introduce a new profit-sharing plan which offered the chance to conduct a before/after analysis as well as a cross-section analysis of worker responses to group incentives. Accordingly, we administered our survey twice at this firm, six months apart, with the first survey coming before the firm introduced a new profit-sharing plan, and the second survey coming after the firm had introduced the new plan.[8]

As shown in table 2.6, the introduction of the profit-sharing plan led to a jump in the percent of employees saying they are eligible for profit sharing from 59 percent at the first survey to 88 percent at the second survey. Apart from this, only two variables in the entire survey showed significant changes between the surveys: the percent who say they were very likely to talk to a shirking co-worker (increase from 42 percent to 55 percent), and the percent who say that they would do something about a shirker because poor performance would hurt the bonus or stock value (from 39 percent to 56 percent). The fact that these are the only three variables that changed between the surveys indicates that there were not compositional changes or other policy changes that affected the results. These results lend support to the prior findings, pointing toward a positive effect of profit sharing in attempts to combat co-worker shirking.

2.4.3 Complementarities

Analysis of the decision equation for workers to intervene against shirking suggests that some of the factors that influence behavior should enter equa-

8. The analyses presented so far use only the responses to the second survey at this company, to avoid having more than one survey from some employees. The surveys did not have individual identifiers so respondents could not be tracked across the two surveys. The higher response rate in the second survey is due in part to the provision of a five-dollar bill accompanying this survey, but the surveys appear equally representative since the means on all variables (apart from those highlighted in table 2.6) were not significantly different between the two surveys.

Table 2.6 Longitudinal evidence: Two waves of same company

	2004 (profit sharing announced) (1)	2005 (profit sharing in place) (2)	Change
Profit sharing	58.6%	87.9%	29.2%***
Very/somewhat likely to take action against shirker			
Talk to shirking employee	42.1%	54.5%	12.4%***
Talk to supervisor or manager	64.3%	68.1%	3.9%
Talk about it in work group	47.3%	48.8%	1.5%
Do nothing	34.1%	33.7%	–0.4%
Why you are likely to take action			
I like helping others	47.4%	49.6%	2.3%
Employee might help me in the future	30.6%	33.5%	2.9%
Poor performance will cost me and other employees in bonus or stock value	38.8%	56.1%	17.3%***
Other employees appreciate it when someone steps forward	34.3%	34.4%	0.1%
Want to keep work standards high	59.3%	59.6%	0.3%
Employee's poor performance could affect my own job	57.1%	56.3%	–0.8%
Other (What?)	14.2%	10.0%	–4.2%
n	273	428	

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

tions in an interactive rather than linear way. The worker decides to intervene against a shirker when the expected benefits of intervening exceed the costs: $p\ (G)$ – Cost, where p is the probability that the intervention will succeed, G is the gain to the worker, and C is the cost. The financial incentive would affect G; participation should affect p and the cost. Labor-management relations L-M might affect both G and p. More complicated analyses, in which the worker is assumed to take account of the possible behavior of other employees, lead to even more complexity, which we will ignore. Instead, we have looked for potential interactions among key variables in determining anti-shirking behavior.

Using the nationally representative GSS data, table 2.7 examines how shared capitalism interacts with company size, and table 2.8 examines how it interacts with other company policies. Shared capitalism is most strongly associated with taking action against shirkers in the smallest workplaces, as shown in column (1) of table 2.7. The supports the idea that the 1/N problem will be lower in smaller workplaces (note that the base estimates continue to show more anti-shirking activity among workers in small companies with-

Table 2.7 Company size and employee-management relations as moderators of shared capitalism

	GSS data		NBER data
	(1)	(2)	(3)
Shared cap. index * co. size of:			
1–9 ees.	0.281 (0.085)***		
10–49 ees.	0.117 (0.068)*		
59–99 ees.	0.195 (0.085)**		
100–999 ees.	0.029 (0.057)		
2,000+ ees.	0.045 (0.076)		
Shared cap. index * mgt. is trustworthy			
Strongly disagree (D or F in col. [3])		0.043 (0.165)	0.048 (0.014)***
Disagree (C in col. [3])		0.117 (0.072)	–0.001 (0.013)
Agree (B in col. [3])		0.083 (0.048)*	0.014 (0.010)
Strongly agree (A in col. [3])		0.179 (0.064)***	0.054 (0.013)***
Mgt. is trustworthy:			
Strongly disagree (excl.)			
Disagree	0.057 (0.181)	–0.053 (0.414)	0.499 (0.064)***
Agree	–0.249 (0.210)	0.122 (0.374)	0.710 (0.065)***
Strongly agree	–0.199 (0.313)	0.208 (0.398)	0.838 (0.081)***
Size 1–9 ees.	0.855 (0.345)**	1.179 (0.283)***	
10–49 ees.	1.005 (0.336)***	1.143 (0.259)***	
59–99 ees.	0.585 (0.366)	0.885 (0.281)***	
100–999 ees.	0.403 (0.317)	0.407 (0.244)*	
1,000+ ees. (excl.)			
n	1,631	1,627	31,770
(Pseudo) R^2	0.137	0.132	0.205

Notes: Dependent variable = anti-shirking index. The GSS regression includes controls for occupation (7 dummies), age, years of tenure, female, black, Hispanic, education (4 dummies), full-time status, ln(yearly earnings), ease of observing co-workers, work as part of team, and dummy for survey year 2006. The NBER regressions include controls for occupation (5 dummies), mgt. level (3 dummies), hourly pay status, supervisory status, years of tenure, hours worked per week, union status, country (27 dummies), age, gender, marital status (2 dummies), family size, college graduate, graduate degree, number of kids, race (4 dummies), disability status, ln(fixed pay), employee involvement team, training in past year, job security, ease of observing co-workers, closeness of supervision, individual bonuses, and company fixed effects. ees. = employees.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

out shared capitalism, indicating that shirking may be perceived as more of an economic threat in small enterprises generally). The shared capitalist index effect is also significant in the next two larger size classes, and positive (although not significant) in the two largest classes. (As noted in chapter 1, the greater prevalence of shared capitalism in larger establishments may be explained in part by fixed costs in setting up these plans.) An equally or even more important factor in taking action against shirkers, however,

Table 2.8 Company policies as moderators of shared capitalism

	(1)	(2)
Shared capitalism index	0.028 (0.010)***	–0.018 (0.018)
Employee involvement team	0.544 (0.030)***	
Formal training	0.232 (0.029)***	
Job security	0.431 (0.040)***	
High perf. policy index		0.259 (0.030)***
*shared capitalism index		0.035 (0.006)***
How closely supervised	–0.014 (0.006)**	0.030 (0.010)***
*shared capitalism index		–0.013 (0.002)***
Fixed pay at or above market	0.181 (0.028)***	0.043 (0.050)
*shared capitalism index		0.034 (0.010)***
n	28,424	28,424
(Pseudo) R^2	0.193	0.194

Notes: Dependent variable = anti-shirking index. Based on NBER data. The regressions include controls for occupation (5 dummies), mgt. level (3 dummies), hourly pay status, supervisory status, years of tenure, hours worked per week, union status, country (27 dummies), age, gender, marital status (2 dummies), family size, college graduate, graduate degree, number of kids, race (4 dummies), disability status, ln(fixed pay), ease of observing co-workers, individual bonuses, and company fixed effects.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

appears to be the quality of the relationship with management. As shown in column (2), shared capitalism is associated with anti-shirking activity most strongly when combined with a high level of trust in management. While this could simply reflect column (1)'s finding of a more positive effect in small companies, the results in column (2) are maintained when the smallest companies are deleted (not shown here). Similar results are obtained when shared capitalism is interacted with the view of employee-management relations.[9] These results indicate that employees are likely to take action to increase productivity only when they are confident that any gains will in fact be shared with workers. This suggests that large companies can use improved employee-management relations to counteract the 1/N problem.[10]

9. The correlation between trust in management and view of employee management relations is .60, indicating they appear to represent a common attitude.

10. We examined other ways in which shared capitalism arrangements may interact with workplace policies. The positive shared capitalism effect on the likelihood of taking action against shirkers is lower among those who plan to look for a new job in the next year (presumably because they will not be around to receive the profit share), and in companies with high injury rates (which could worsen management employee relations and decrease expected tenure). While some models predict that financial participation will have a positive interaction with participation in decision-making in affecting worker motivation and performance (e.g., Ben-Ner and Jones 1995), we do not find significant interactions using the GSS participation

This result does not, however, carry over to within-company comparisons in the NBER data. The most positive effect of shared capitalism on anti-shirking activity still occurs among employees with the most trust in management, but the shared capitalism index has a positive effect even when the NBER employees disagree that management is trustworthy. We do not have a ready explanation for the difference between the two data sets. Because almost all employees in the GSS sample work in different companies, we do not know if the positive interaction between shared capitalism and employee-management relations in that data set reflects the effect of companies with good employee-management relations in general, or of individuals who perceive good relations within a company (even if their co-workers do not). We did some exploration of company and individual differences in the NBER data and found that anti-shirking behavior is generally strong in companies with higher average grades of employee-management relations and trust in management, no matter the individual employee's grades of these items. This suggests the importance of company culture in fostering an environment encouraging peer pressure.

The role of complementary company policies is explored with the NBER data in table 2.8. Column (1) essentially replicates the specification from table 2.3, adding a control for the worker's perception that his or her fixed pay is at or above market level. The strong positive effect of the wage variable is consistent with efficiency wage theories, which posit that worker performance can be improved through better pay. The negative effect of close supervision suggests that the gift exchange version of efficiency wage theory is more relevant than the shirking version, since in the shirking version close monitoring should have positive effects on worker behavior. The shared capitalism index remains a positive predictor as the wage variable is introduced. The effect appears to be contingent, however, on other workplace policies. The shared capitalist index has a strong positive interaction with a high performance policy index (column [2]), supporting the idea of complementarities among these policies in affecting worker behavior.[11] The shared capitalist index also has a strong negative interaction with closeness of supervision, and a positive interaction with having fixed pay at or above market level. The negative supervision interaction may reflect a negative reaction to the mixed message received by workers: we want you to work

measures (which are subjective and may mediate the effects of shared capitalism). Further, we did not find that employee stock ownership or holding stock options alone were related to anti-shirking behavior. This is consistent with the research literature and our findings in this and related papers in the NBER project that employee ownership and stock options generally interact with company culture in impacting performance, although there is evidence that employee ownership directly improves commitment. Also, as noted, it is possible that some managers combine profit sharing and equity participation in order to get synergy between them.

11. These results showing the value of embedding such participation in a system of high performance work policies are consistent with the analysis of Appelbaum et al. (2000) and Huselid (1995).

harder due to company-based pay, but we are nonetheless going to watch you very closely. In this case the shared capitalism might be perceived by workers as primarily risk-sharing. The positive interaction with having fixed pay at or above the market level may reflect a more positive response by workers when the company seems to be truly sharing, and not asking the worker to sacrifice pay levels in exchange for shared capitalist incentives. Forms of employee ownership that are combined with below-market pay might not be optimal for anti-shirking behavior because the incentive is diluted through what workers perceive as wage substitution.

These interaction results for supervision and high-performance policies are illustrated in figure 2.3. This figure shows how there is a positive relation between shared capitalism and the anti-shirking index only when there are high-performance policies and average or low levels of supervision. Otherwise the relationship is negative.

Thus, incentive intensity is strongly related to anti-shirking activity, but appears to work best as part of a high-performance work system where workers are paid well and not supervised too closely. These results are consistent with the findings of Ichniowski, Shaw, and Prennushi (1997) that workplace productivity is improved by combining several high-performance human resource policies, and show that worker response to shirkers is likely an important mechanism in the higher productivity.

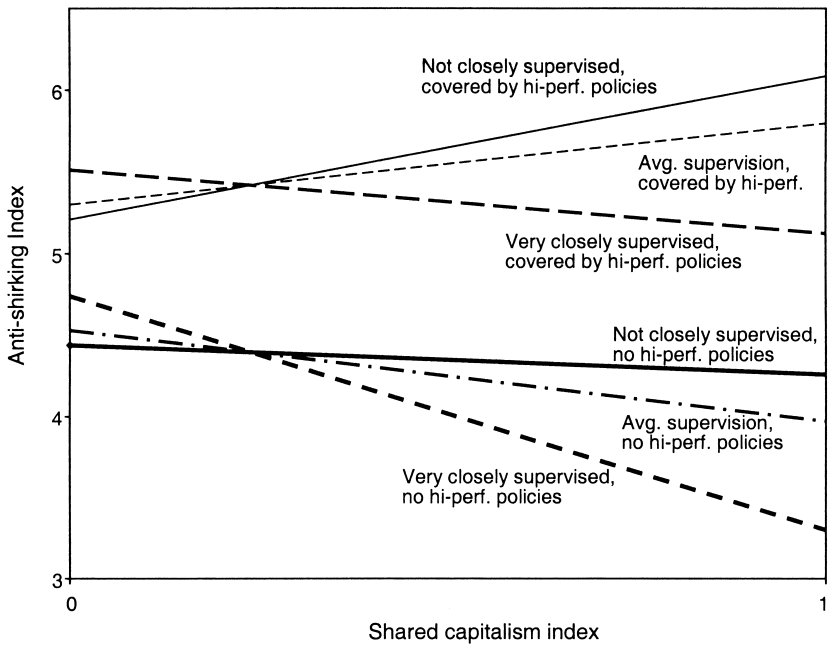

Fig. 2.3 The contingent effects of shared capitalism on anti-shirking activity

2.4.4 Reasons For/Against Acting Against Shirkers

The dynamics underlying taking action against shirkers are explored more fully in table 2.9, which records employee responses to questions about why they might or might not do something about a shirking co-worker. These questions were asked on only some of our company surveys. Over half of workers said they would be likely to do something because the employee's performance could affect their own jobs (56 percent), reflecting interdepen-

Table 2.9 Why people do/do not act against shirkers

		Position in shared capitalism[a]			
	All (1)	Lower (2)	Middle (3)	Upper (4)	Coefficient on SC index[b] (5)
Why you might do something					
I like helping others	44.9%	47.2%	43.2%	42.8%	0.001
Employee might help me in the future	31.0%	32.0%	30.5%	29.7%	0.003
Poor performance will cost me and other employees in bonus or stock value	42.9%	32.0%	48.5%	58.2%	0.038***
Other employees appreciate it when someone steps forward	23.9%	19.9%	24.9%	32.0%	0.008***
Want to keep work standards high	46.6%	41.6%	46.6%	58.9%	0.015***
Employee's poor performance could affect my own job	55.9%	53.2%	56.9%	61.3%	0.010***
Other (What?)	6.8%	5.7%	7.0%	8.9%	0.003***
n	32,386	13,991	12,514	5,463	
Why you might do nothing					
Employee not working well would resent it	41.3%	37.9%	43.2%	44.7%	0.015***
Other employees would react poorly	23.4%	24.3%	23.3%	21.8%	0.000
It's the supervisor's job, not mine	44.7%	45.0%	46.8%	39.7%	0.001
Some other employee will probably take action	8.4%	10.5%	7.2%	6.1%	0.000
There's no financial benefit for me	7.7%	10.2%	6.6%	4.9%	–0.003***
Nothing in it for me personally	11.0%	13.3%	10.1%	8.0%	–0.003**
Other (What?)	12.4%	8.8%	13.3%	19.0%	0.007***
n	30,363	12,236	12,284	5,444	

Note: Based on NBER data.

[a]Shared capitalism index of 5 or greater = "upper," 3 to 4 = "middle," and 0 to 2 = "lower."

[b]Based on linear probability models predicting whether employee checked this reason, controlling for ease of observing co-worker, closeness of supervision, occupation (5 dummies), mgt. level (3 dummies), hourly pay status, supervisory status, tenure in years, hours worked per week, union status, age, gender, marital status (2 dummies), family size, college graduate, graduate degree, number of kids, race (4 dummies), disability status, ln(fixed pay), and company fixed effects.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

dent work where cooperation can be especially productive. Almost half of workers said they would do something because they would want to keep work standards high (47 percent), which can be seen as reflecting a cooperative solution to reinforce high work norms. Almost as many workers expressed a financial incentive, saying the poor performance would lead to lower bonus or stock value (43 percent), while 45 percent said they simply like helping others, and 31 percent said the employee might help them in the future.

The responses are related to the level of participation in shared capitalism. For example, the percent saying that poor performance would lead to lower bonus or stock value is almost twice as high among those with a high value on the shared capitalism index (58 percent in column [4]) relative to those with a low value on the index (32 percent in column [2]). Similarly, the former group is more likely to say they would do it to keep work standards high (59 percent compared to 42 percent). Column (5) shows that the shared capitalism index is a strong predictor of five of the reasons for taking action.[12]

The predominant reason for not taking action against shirkers is that it is seen as the supervisor's job (45 percent), followed closely by the fear that the shirking employee would resent it (41 percent). About one-fourth (23 percent) feared that other employees would react poorly, while less than one-tenth (8 percent) directly expressed free ridership by saying that some other employee would probably take action. The shared capitalism index is a strong predictor of the fear that the shirking employee would resent the action, perhaps because the intervener would be seen as acting out of a financial concern rather than out of concern for the worker. As noted earlier, this may help explain why very low levels of profit sharing appear to be associated with reduced likelihood of taking action against shirkers—an effect that is more than counterbalanced by other reasons as the bonus size grows. The shared capitalist index also, not surprisingly, predicts a lower likelihood that the employee will say there is no financial benefit or "nothing in it for me personally" (column [5]). Therefore these data are consistent with the idea that shared capitalism can affect worker behavior.

2.4.5 Outcomes of Anti-Shirking Activity

What happened as a result of the action? The data in table 2.10 point up one of the dangers of taking action, as one-third (35 percent) of the workers said that the employee who was not working well resented it. The

12. One possible objection to our focus on shared capitalism is that there are many reasons workers take action against shirkers, as shown in this table. Of course, workers report and probably have a variety of reasons—which may also include simply noticing incompetence, as noted by Eric Maskin in discussing our chapter—and we do not pretend that workers have the simple motive of "anti-shirking" in their minds, or that shared capitalism is the only motivator. These results show that shared capitalism is not related to two of the key reasons for taking action ("I like helping others" and "Employee may help me in the future"), but is clearly related to several reasons that reflect a concern with site performance efficiency.

Table 2.10 Responses to anti-shirking actions

	Yes (%)	No (%)	Don't know (%)	*n*
What was the outcome of your actions?				
Employee not working well resented it	34.7	19.1	46.2	14,125
Other employees appreciated it	45.0	11.4	43.6	13,676
Supervisor appreciated it	40.1	15.5	44.4	13,845
Employee not working well improved	35.7	38.9	25.4	14,254
Other	28.3	9.9	61.8	2,923

Notes: Based on NBER data. Workers were asked "Have you ever seen one of your fellow employees not working as hard or well as he or she should over an extended time period?" If yes, they were then asked "What action, if any, did you take?" Those who reported taking some action (see table 2.2) were then asked the above question about the outcome.

most likely outcome, however, was that other employees appreciated the action (45 percent), while almost as many said the supervisor appreciated it (40 percent), and just over one-third said that the employee's performance improved (36 percent).

Does it help economic performance? Only a minority of workers report that the employee's performance improved, but this may still be enough to make a difference in workplace performance. Also, apart from actual anti-shirking actions, people may work harder simply knowing that their co-workers are likely to do something if they see signs of shirking. We do not have hard performance data, but we do have several survey measures of co-worker and facility performance that show a strong relationship with our anti-shirking measures. Table 2.11 shows that those who report a higher likelihood of talking to a shirker, and a lower likelihood of doing nothing, rate their co-workers' effort higher on a 0 to 10 scale. The anti-shirking index is very strongly related not just to this measure, but also to a perception that workers tend to encourage each other, and to ratings of the facility on five specific measures of performance. Since several of these measures involve workers reporting on the behavior of others, it lessens the probability that that the interveners are putting a good spin on their behavior by reporting higher performance, as one reviewer has cautioned. To check the possibility that this simply reflects individual characteristics (e.g., greater optimism about company performance among those who say they would take action against shirkers), we also calculated these relationships at the site level and found that worksites with higher average scores on the anti-shirking index also had significantly higher average evaluations of workplace performance. This is illustrated in figure 2.4 for one of our performance measures (evaluations of co-workers' performance).[13] Therefore, this does not simply reflect

13. We also find that site-level averages of the anti-shirking index are strongly related to site-level averages of a worker-reported performance index (containing the five items from the

Table 2.11 Relation of anti-shirking behavior to co-worker performance

A Average ratings of co-worker effort (0–10 scale)

	Anti-shirking action		
	Talk to shirker	Talk to sup./man.	Do nothing
Not at all likely	6.7	6.8	7.2
Not very likely	7.0	7.1	7.1
Somewhat likely	7.3	7.2	7.0
Very likely	7.5	7.1	6.6

B Anti-shirking index as predictor of workplace performance

Dependent variable	Summated rating coefficient	(s.e.)	T or Z	*n*
Rating of co-worker effort (0–10 scale, OLS)	0.109	(0.004)	25.24	35,637
Workers encourage each other (–1, 0, 1, ordered probit)	0.135	(0.005)	27.14	12,659
Grade of facility performance (0–4 scale, OLS):				
A. Getting the job done that has to get done efficiently	0.050	(0.002)	21.12	22,810
B. Practicing accountability	0.066	(0.003)	23.32	22,705
C. Delivering customers' products on time	0.021	(0.003)	7.68	22,700
D. Delivering highest quality customer products	0.044	(0.003)	17.69	22,704
E. Being the market leader in its products	0.032	(0.003)	13.18	22,569

Note: Based on NBER data. s.e. = standard error.

an individual reporting phenomenon: shared views of higher performance in a workplace are related to shared commitments to take action against shirkers. It appears that the propensity for anti-shirking activity does make a difference in performance.

One possible objection to these findings is that some production processes are difficult to supervise by managers so that work is arranged to rely on peer intervention. Shared capitalism may be used not to encourage anti-shirking behavior, but directly to deter shirking, so that peer intervention and shared capitalism are both consequences of technologies rather than causally related to each other. Our pre/post results in table 2.6 go against this explanation. We also tested this by examining the relationship in different industries, and by controlling for detailed manufacturing technologies (in our diversified multinational firm with diverse technologies such as plastics and aerospace). The shared capitalism effect does not disappear, but in fact gets slightly stronger with more detailed controls for production technol-

bottom of table 2.11) and employee loyalty to the organization, although there is no strong relationship to site-level averages of willingness to work hard and turnover intention. For one large multinational, the data set has a number of hard operational measures of efficiency, but only at an aggregate division level, which makes analysis problematic.

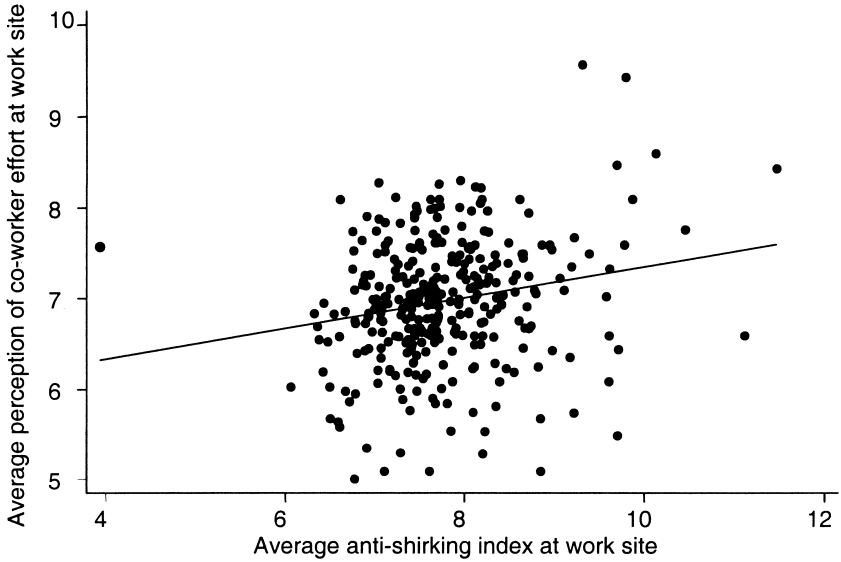

Fig. 2.4 Anti-shirking and worker effort at site level

ogies, making us more confident that anti-shirking intentions and behavior are a result of shared capitalism and company culture.[14]

2.5 Conclusion

This study has examined employee responses to new questions on the 2002 and 2006 General Social Surveys and a large database of more detailed NBER employee surveys on whether workers can easily observe whether co-workers are shirking and how workers respond to shirking. The answers to the new questions provide valuable insight into the likely magnitude of mutual monitoring and peer pressure against shirking behavior. They show that most workers believe that they are able to observe the effort/activity of fellow workers, which is the first prerequisite for mutual monitoring and peer

14. One limitation of our study is the lack of a measure of shirking per se. However, we did ask each employee in two companies to respond on a 1 to 5 scale whether "There are days when I don't put much effort into my job." Analysis of this variable indicates that workers reporting high effort are the ones who are more likely to intervene against shirkers. Moreover, there is no direct relationship between the shared capitalism index and increased individual effort. This reflects the finding that the principal impact of shared capitalism appears to work in combination with various aspects of company culture such as trust, high performance work systems, and fixed wages at or above market. This suggests that neither shared capitalism alone nor unique production systems dependent on technologies are creating anti-shirking work systems, but rather that shared capitalism enhances anti-shirking together with company culture, and shared capitalism and positive company culture also impact the potential shirker's level of effort. These additional analyses are available from the authors.

pressure against shirking to work. In addition, about half of the workforce says that they would be very likely to respond to poor job performance by co-workers, with more saying that they would talk to the shirker rather than reporting the behavior to management. While there are some demographic correlates to responding against shirking, workplace factors are more strongly related to employee efforts to reduce shirking. This conflicts with the claim that broad-based incentives will be weak for everyone because of free riding.[15]

Employees respond more against shirking in workplaces with shared capitalism institutions, and the findings suggest important complementarities between shared capitalism and high-performance policies, supervision intensity, and being paid at least the market wage.

References

Appelbaum, E., T. Bailey, P. Berg, and A. Kalleberg. 2000. *Manufacturing advantage: Why high-performance work systems pay off.* Ithaca, NY: Cornell University Press.

Axelrod, R. M. 1984. *The evolution of cooperation.* New York: Basic Books.

Bailey, R. M. 1970. Economies of scale in medical practice. In *Empirical studies in health economics,* ed. H. Klarman, 255–73. Baltimore, MD: Johns Hopkins University Press.

Bartholomew, D., J. Galbraith, I. Moustkaki, and F. Steele. 2002. *The analysis and interpretation of multivariate data for social scientists.* Chapman and Hall/CRC.

Ben-Ner, A., and D.C. Jones. 1995. Employee participation, ownership, and productivity: A theoretical framework. *Industrial Relations* 34 (4): 532–54.

Blasi, J. R., M. Conte, and D. Kruse. 1996. Employee stock ownership and corporate performance among public companies. *Industrial and Labor Relations Review* 50 (1): 60–79.

Blasi, J. R., D. Kruse, and A. Bernstein. 2003. *In the company of owners: The truth about stock options (and why every employee should have them).* New York: Basic Books.

Blasi, J., D. Kruse, and R. Freeman. 2006. Shared capitalism at work: Impacts and policy options. In *America at work,* ed. E. Lawler and J. O'Toole, 275–96. New York: Palgrave/Macmillan.

Carpenter, J. 2004. Punishing free riders: How group size affects mutual monitoring and the provision of public goods. IZA Discussion Paper no. 1337, Institute for the Study of Labor.

Drago, R., and G. T. Garvey. 1998. Incentives for helping on the job: Theory and evidence. *Journal of Labor Economics* 16 (1): 1–25.

Fehr, E., and S. Gächter. 2000. Cooperation and punishment in public goods experiments. *American Economic Review* 90 (4): 980–94.

15. The standard theory does not predict no anti-shirking intervention but only that it is likely to be suboptimal. As our discussant Eric Maskin noted, there is "no way of telling what optimal intervention would be." Our study does suggest, however, how the corporation can be structured to increase anti-shirking behavior and performance.

Fudenberg, D., and E. Maskin. 1986. The folk theorem in repeated games with discounting or with incomplete information. *Econometrica* 54 (3): 533–54.

Gaynor, M., and M. Pauly. 1990. Compensation and productive efficiency in partnerships: Evidence from medical group practice. *Journal of Political Economy* 98 (3): 544–74.

Hansen, D. G. 1997. Worker performance and group incentives: A case study. *Industrial and Labor Relations Review* 51 (1): 37–49.

Hirshleifer, D., and E. Rasmussen. 1989. Cooperation in a repeated prisoners' dilemma with ostracism. *Journal of Economic Behavior and Organization* 12 (August): 87–106.

Huselid, M. 1995. The impact of human resource management practices on the turnover, productivity, and corporate financial performance. *Academy of Management Journal* 38:635–72.

Ichniowski, C., K. Shaw, and G. Prennushi. 1997. The effects of human resource management practices on productivity: A study of steel finishing lines. *American Economic Review* 87 (3): 291–313.

Kandel, E., and E. P. Lazear. 1992. Peer pressure and partnerships. *Journal of Political Economy* 100 (4): 801–17.

Klos, T. B., and B. Nooteboom. 2001. Agent-based computational transaction cost economics. *Journal of Economic Dynamics and Control* 25 (3–4): 503–26.

Knez, M., and D. Simester. 2001. Firm-wide incentives and mutual monitoring at Continental Airlines. *Journal of Labor Economics* 19 (4): 743–72.

Kruse, D., and J. Blasi. 1997. Employee ownership, employee attitudes, and firm performance: A review of the evidence. In *The human resources management handbook, part 1,* ed. D. Lewin, D. J. B. Mitchell, and M. A. Zaidi. Greenwich, CT: JAI Press.

Nalbantian, H., and A. Schotter. 1997. Productivity under group incentives: An experimental study. *American Economic Review* 87 (3): 314–41.

Prendergast, C. 1999. The provision of incentives in firms. *Journal of Economic Literature* 37 (1): 7–63.

Rousseau, D. M., and Z. Shperling. 2003. Pieces of the action: Ownership and the changing employment relationship. *Academy of Management Review* 28 (4): 553–70.

Stiglitz, J. E. 1990. Peer monitoring and credit markets. *World Bank Economic Review* 4 (3): 351–66.

Weiss, A. 1987. Incentives and worker behavior. In *Incentives, cooperation, and risk sharing,* ed. H. Nalbantian, 137–50. Totowa, NJ: Rowman and Littlefield.

Weitzman, M., and D. Kruse. 1990. Profit sharing and productivity. In *Paying for productivity: A look at the evidence,* ed. A. S. Blinder, 95–141. Washington, DC: Brookings Institution.

Welbourne, T. M., and C. J. Ferrante. 2008. To monitor or not to monitor. *Group and Organization Management* 33 (2): 139–62.