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## Shirking and Motivations in Firms: Survey Evidence on Worker Attitudes

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## Abstract

In an extensive national survey, 82.7that they are very likely to keep an agreement to work hard if they agreed to, even if it was almost impossible for their employer to monitor them. Based on mean responses, the rank order of motivations in descending importance is: moral, intrinsic, peer-pressure, and positive incentives. Respondents also report that fairness considerations are important and that they are especially likely to keep agreements to do a good job with honest employers. Logit analysis indicates that increases in moral and intrinsic motivations increase the likelihood of keeping agreements to provide effort. The evidence suggests that we need to re-examine a foundational assumption underlying the theory of the firm.

**1**. <u>Introduction</u>

The theory of the firm is important because asking "why firms?" is inextricably linked to asking "why not markets?" Coase's (1937) central insight was that markets carry certain transaction costs that can sometimes be reduced inside of firms. The theory of the firm has evolved, with worker shirking now playing a central role. Since workers favor leisure to effort and are thus predisposed to shirking, firms exist in large part to provide the proper incentives to assure worker performance when information on performance is costly.[1] The underlying, fundamental assumption is that workers will shirk in the absence of sufficient incentives. Surprisingly, however, this assumption has received scant empirical scrutiny.[2] The veracity of the incentive assumption needs confirmation because the existence of any of four different motivations, intrinsic, moral, peer-pressure or fairness, could substitute for incentives, meaning that *incentives might not be necessary* to assure the provision of effort. The purpose of this paper is to examine the incentive assumption, and the other possible motivations, with a new survey on worker attitudes toward shirking. To my knowledge, no other effort has systematically identified and then tested possible worker motivations.

The question for the theory of the firm is not whether workers would work harder if the firm knew how hard each worker was working, but rather would workers shirk if the firm did not know how hard each was working. If workers would not shirk even absent the proper incentive controls, possibly because they are motivated by factors other than material self-interest, then our understanding of both firms and markets would need reexamination. The experimental economics literature suggests that there is cause for concern.

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[1] This information problem could result from team production (Alchian and Demsetz 1972), costly measuring (Calvo and Wellisz 1978), unobservability of worker performance (Holmstrom 1982), or any host of production, demand, or technological uncertainties. (see, for instance, Hart and Holmstrom 1987). The twin problems of worker behavior and information asymmetries induce the suggested remedies of monitoring, contracts, and wage incentives, all of which become the essence of the firm. The principal-agent literature finds that agent risk-aversion complicates optimal contracting considerably because the best incentive contract imposes the most risk on workers and the least risky contract provides the least incentives. Sometimes signals correlated with actions can help to reduce the amount of risk that agents must bear. If the information problem is especially severe, deriving from bounded rationality, and if asset owners are especially prone to the ex post contractual hazards from the limited re-deployability of their specific assets, then the transaction cost literature posits that a potential solution to opportunistic behavior is common ownership under the rubric of a hierarchical firm (Klein, Crawford, Alchian 1978; Williamson 1985; Grossman and Hart 1986).

[2] Prendergast (1999) does find evidence that piece rate payment schemes can boost salaries and productivity in windshield installation, Canadian tree planting, and, on an aggregate level, in Chinese agriculture. Prendergast notes that this limited evidence covers only "simple jobs," ones where good performance measures are available. Such evidence is the kind least relevant for the theory of the firm. When labor service providers can be compensated according to their contributions, we usually expect markets, not firms to coordinate their activity. Prendergast further notes that contrary to the literature the vast majority of employers do not use pay-for-performance incentive schemes; instead they opt for subjective performance evaluations to determine pay, promotion, and training.

A plethora of experimental evidence indicates that people often act contrary to their material self-interest, often for reasons of fairness or morality. Frey and Bohnet (1995) distinguish two different kinds of experiments: natural and laboratory. In the first, representative samples are surveyed about real-life dilemmas. This literature finds that fairness values can affect behavior, from consumption decisions to the propensity to provide effort in the workplace, to the willingness to support and comply with tax policies.[3]

In prisoner dilemma and public good laboratory experiments, people are placed in social dilemma situations such that they get more money by defecting, no matter what their partners do, but collectively get more money if all or some significant percentage cooperate. Because of the underlying assumption of instrumental rationality, the behavior predicted by economic theory for those placed in social dilemma type situations is straightforward: people will play their dominant strategy and defect, especially if the game is played only once. It is consistently found, however, that a significant percentage of people choose cooperation as their strategy.[4] The effect of pre-play communication is even more surprising. Guided by the assumption of instrumental rationality, the prediction is that pre-play communication among subjects should not affect the ex post decision to defect. Because participants generally do not know one another, and because any agreements made would not be binding, any commitments resulting from pre-play communication is "cheap-talk," and should be discounted accordingly. However, experimental participants themselves do not seem to adopt such reasoning. It is an empirical regularity of the literature that pre-play communication increases cooperation rates, and that unenforceable promises do matter.[5] The point is that the experimental literature does not support the kind of behavioral assumption adopted by those working in the theory of the firm.

The paper is organized as follows. The next section discusses potential determinants of worker performance, and incorporates them into a simple behavioral framework to generate the hypotheses to be tested with the survey instrument (described in Section 3). Section 4 presents

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[3] See Kahneman, Knetsch, and Thaler, (1986); Frey and Bohnet, (1995); Konow (1996); and Andreoni, Erard, and Feinstein (1998, section 8).

[4] Sally (1995) provides a meta-analysis of 37 different studies consisting of 130 experiments and finds a mean cooperation rate of 47.4%. Also see Marwell and Ames (1981); Schneider and Pommerehne (1981); Kahneman, Knetsch, and Thaler (1986); Caporael, Dawes, Orbell, and van de Kragt (1989); Dawes, van de Kragt, and Orbell (1990); Davis and Holt (1993); Frey and Bohnet (1995) and Ledyard (1995). Related findings occur in ultimatum and dictator games (Frey and Bohnet 1995). In contrast, Nalbantian and Schotter (1997) do find that incentives can reduce shirking in a laboratory experimental setting amongst anonymous students without communication.

[5] Sally (1995, p.78) estimates that "a 100 round prisoners' dilemma with discussion before each round would have 40% more cooperation than the same game with no discussion, and about 36% more cooperation than the same game with discussion every 10 trials." Moreover, (non-credible) promises to cooperate elicited by the experimenter increase cooperation by 12-30%, depending on the regression model. Bohnet and Frey (1999) use prisoner's dilemma games in which there is one way identification to show that increased cooperation rates with communication cannot be solely the result of expected reciprocity. Also see Isaac and Walker (1988 and 1991); and Ledyard (1995).

the rank-ordering of motivations and regression results, and discusses possible limitations of and controls for the methodology. Section 5 provides concluding comments, including some conjectures about the implications for the theory of the firm.

**2.** Determinants of Worker Performance

In this section I will consider in turn incentives, intrinsic, peer-pressure, and moral and fairness motivations, and employ a simple behavioral framework to incorporate the key insights of each idea.

*a. Incentives and shirking*

To see the importance of the incentive assumption and its implications, consider the simple model offered by Calvo and Wellisz (1978). The problem they analyze is one of costly measurement where it is assumed that it is less costly to monitor employees' effort than it is to measure their marginal product. The authors start with an employee utility function incorporating disutility conferring effort, *e*, and consumption, *c*, of the form:

$$U = u(c) - v(e), \text{ where } c \geq 0, 0 \leq e \leq 1, \quad (1)$$

where u' $\geq$ 0, v' $\geq$ 0, u" $\leq$ 0, v" $\geq$ 0. If *e*=1, the worker is providing full effort; it is 0 if the worker is idle.

The monitoring scheme is as follows. If the employee is not checked, he is presumed to have provided full effort (*e*=1) and is paid a wage of w. The monitor checks the employee's effort with probability , and, if checked, compensates the employee with w·*e*. If the employee provides full effort, he gets w, if he shirks he gets w·*e*, which implies a penalty of (1-e)·w. Assuming that *c*=w·*e*, the worker chooses *e* to maximize expected utility:

$$Z = \quad [u(we) - v(e)] + (1- \quad)[u(w) - v(e)]. \quad (2)$$

Note that the construction of (2) implies that if the worker knew =0, then *e\**=0.[6] Assuming the existence of a unique *e\**, it follows that:

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[6] Of course if the *firm* knew the worker knew =0, it would infer *e\**=0 and would respond with w=0. The model is not equipped to deal with this type of strategic behavior, but it does not need to to generate the basic incentive hypotheses of the theory of the firm.

$$\partial e^*/\partial \pi \geq 0 \qquad\qquad\qquad (3a)$$

$$\partial e^*/\partial w \geq 0, \text{ or} \qquad\qquad\qquad (3b)$$
$$\partial e^*/\partial w \leq 0$$

The principal's first incentive option is negative: the firm can increase monitoring to increase the probability ($\pi$) of imposing the penalty on a shirking worker, thereby increasing the choice of optimal effort. The sign of $\partial e^*/\partial w$ is indeterminate. A negative sign is akin to a backward bending supply of labor. A positive sign is more relevant for analyses that emphasize incentives. Wage increases could act as a positive incentive by increasing the expected (consumption) reward of effort provision for any given monitoring probability. Finally, note that if $e^*$ is concave in $\pi$, for given w, then $e^*$ approaches its minimum as $\pi$ goes to 0, and approaches its maximum as $\pi$ goes to 1.

This section outlines the fundamental issues surrounding incentives and shirking, and leads to the following two hypotheses.

*Hypothesis 1*. In the absence of monitoring, workers will shirk (or provide minimal effort).

*Hypothesis 2*. Incentives are important, and worker effort increases with increases in (a) the negative incentive of monitoring, and (b) positive incentives like wage increases or promotions.

The use of the term "important" not only refers to economists' beliefs about the importance of incentives as a motivator in effort provision, it also has a more precise meaning. In the survey, respondents are asked to numerically score motivations according to their importance, where a common anchor means that a motivation is neither important nor unimportant. If mean responses statistically differ from the anchor, a judgement can be rendered about the importance of the motivation.

### b. Intrinsic Motivation

Social psychologists and common experience suggest that some people possess a work ethic and choose to do good work for its own sake (Deci and Ryan 1985). Such people are intrinsically motivated. Frey (1997) notes that high intrinsic work motivation derives from work that is interesting, involves the trust and loyalty of personal (as opposed to anonymous) relationships, and is participatory. What's perhaps more surprising is that, under certain conditions, intrinsic motivation can be diminished, or "crowded-out" by external interventions

like monitoring or pay-for-performance incentive schemes. The idea is that if "external rewards are given for an intrinsically motivated activity, the person perceives that the locus of control or the knowledge or feeling of personal causation shifts to an external source, leading him to become 'a pawn' to the source of external rewards. Similarly, …. external rewards affect the person's concept of why he is working and his attitude toward the work (Deci 1971, p.105)." Accordingly, Frey (1997) suggests that an intervention can be seen as either controlling or informative. In the former, an agent sees the principal as determining his behavior. The rational agent responds by changing what he has control over, that is, reducing his intrinsic motivation. In contrast, an informative intervention like positive feedback leaves intrinsic motivation unchanged or may even increase it. Frey further suggests that it matters whether the external intervention is in the form of a command or a reward. Commands are most controlling in the sense that they wrest self-determination from the agent, whereas rewards might still permit autonomy of action. Promotions believed to be an acknowledgement of general competence may even increase intrinsic motivation. But if the reward is closely linked to the performance set by the principal and contingent on specific performance, it can be seen as controlling with a resulting decrease in intrinsic motivation.

Even if external interventions do decrease intrinsic motivation, the real question from an economist's perspective is what happens to effort. Can the decrease in intrinsic motivation more than offset the disciplining (controlling) effects of external interventions? Using the notation from the last section, Frey (p. 429) frames the tradeoff as follows. The benefits and costs of effort, denoted B and C, depend on effort, $e$, and external interventions (exogenous to the agent), E, in this case the probability of being monitored, , and performance based wage bonuses, $w$ (that is, E= ,w). For any given E, the agent chooses $e$ such that B/ $e$ = C/ $e$. That means that the sign of $e^*/$ E depends on the relationship between B$_{e\mathrm{E}}$, the crowding out effect of intrinsic motivation (if B$_{e\mathrm{E}}$ <0), and C$_{e\mathrm{E}}$, the disciplining effect of the external intervention.[7] If the crowding-out effect exceeds the disciplining effect, B$_{e\mathrm{E}}$ - C$_{e\mathrm{E}}$ <0, then $e^*/$ E <0. In other words, if monitoring or performance based wage bonuses reduce a worker's intrinsic motivation more than they discipline the worker or induce him to perform, optimal effort will decrease, switching the signs of (3a) and (3b) above to:

$$e^*/ \quad \leq 0 \tag{3a'}$$
$$e^*/ \ w \leq 0. \tag{3b'}$$

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[7] If B$_{e\mathrm{E}}$ >0 there is a crowding-in effect, for example, when individuals perceive external interventions as recognizing their high work morale. Frey is more concerned with the crowding out effect as a contrast to the usual implications of the principal-agent literature.

Thus, crowding-out of intrinsic motivation provides a stark contrast to the implications of the incentive theory and leads to the following hypothesis.

*Hypothesis 3*.  Intrinsic motivations are important.  Workers who enjoy their work are intrinsically motivated, but negative and positive incentives may crowd out intrinsic motivations and reduce effort, at least over some range.

### c.  Peer-Pressure

A worker who cares about the views of other workers is subject to peer-pressure.  In that case, workers who perceive that another under-performs can use social sanctions to affect the shirker's behavior.  Kandel and Lazear (1992) argue that peer-pressure most likely surfaces in organizations that use profit-sharing, like partnerships, because each worker's effort tangibly affects all other workers' incomes.  More generally, we could expect that the potential for peer-pressure exists anytime a worker's non-performance affects the well-being of other workers (e.g., when a shirker's loafing necessitates increased effort from others).[8]  Why would social sanctions by one's peers affect the shirker's behavior?  Kandel and Lazear identify guilt and shame as possible explanations.  Shame exists when others observe non-performance and then exert external pressure.  In contrast, guilt arises as internal pressure even when one's actions are unobservable.  If the firm succeeds in instilling loyalty and team spirit in its workers, then external sanctions for non-performance are less necessary because shirkers would suffer an internal cost, guilt, from letting down their co-workers.

If guilt can be manipulated, the next question is *who* can do the manipulating.  The authors posit that workers are most likely to feel guilty towards co-workers, but not shareholders or their agents (i.e., managers).  The idea is that even though corporate shareholders are also harmed by shirking behavior, workers are less likely to feel empathy towards them.  Instead, they are more likely to feel empathy towards those with whom they share common or similar experiences.  Recognizing this, firms may promote quality circles, team meetings, inter-company softball leagues, company picnics, and the like in order to foster the formation of groups whose members can identify and empathize with one another, and hence within which peer-pressure and guilt can effectively operate.

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[8]  Fehr and Gachter (2000) provide experimental evidence for subjects engaging in costly punishment of free-riders in public goods games.  Though subjects are anonymous and no communication is permitted, the authors believe the results to be consistent with the role of peer-pressure preventing shirking in the workplace.

To model the effects of peer-pressure, Kandel and Lazear simply add a peer-pressure function to the worker's utility maximization problem. The peer-pressure function is given by:

$$P = P(e_i; e_j,\ldots, e_N, a_i, a_j, \ldots, a_N). \qquad (4)$$

The peer-pressure worker i experiences depends on his own effort, that of his peer group, and on the other actions, a, that he and the group may take. Here, we will suppose that a=0, so no one is monitoring or exerting external social sanctions on worker i. In this case, $\partial P/\partial e_i \leq 0$ means that the worker feels increasing internal guilt from decreasing effort. By incorporating P into (2) we get a new maximand, $Z^P$.[9] If the worker chooses $e$ to maximize $Z^P$ holding the effort of his peer group constant, the resulting $e*$ is greater than the one that solves (2) because P increases the utility of effort (or decreases the disutility of effort). Moreover, by adding a shift parameter p to P which renders the worker more sensitive to peer pressure (and suppress $(e_j,\ldots, e_N)$), such that P=P(e,p) where $P_p \geq 0$ and $P_{ep} \leq 0$, it follows that:

$$\partial e*/\partial p \geq 0. \qquad (5)$$

A worker's optimal effort increases with increases in peer-pressure induced guilt. Effective peer-pressure, then, performs the same function as successful incentive schemes. This section leads to the following hypothesis.[10]

*Hypothesis 4.* Peer-pressure is important, and worker effort increases with increases in peer-pressure.

### d. Moral Motivations

People will sometimes behave morally if they believe it their responsibility to do so. Moral agents may believe that their responsibility derives from the importance of promoting the common good, following the dictates of a divine entity or the moral precepts of religious

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[9] Explicitly, $Z^P = \pi[u(we) - v(e) - P(e; e_j,\ldots, e_N)] + (1-\pi)[u(w) - v(e) - P(e; e_j,\ldots, e_N)]$.

[10] As a modeling exercise, Kandel and Lazear have adopted the strategy of specifying specific preferences. While most economists have left preference formation to the domain of the other social sciences, here is a prominent attempt by economists to open the utility "black box" themselves in a careful and reasoned manner in order to generate non-trivial and insightful implications. Fehr and Schmidt (1999) is another recent, prominent example. By positing a preference for inequity aversion, those authors are able to explain the results of a wide body of experimental economics. I adopt the same type of approach and continue it in the next sections.

doctrine, or from some rationally based sense of duty. Moral behavior is taught in and valued by major social institutions like family, religion, and education. One result is the widely held acceptance of the message that lying is wrong under normal circumstances, regardless of the consequences to one's own welfare. More generally, since moral motivations can sometimes conflict with material self-interest, their consideration is important.

Sen (1978) was one of the first to introduce economists to the idea that personal ethics could influence choice, and that such a link could have important economic implications. Famously, he notes that if an agent sees an act as a moral duty, a wedge is driven between personal choice and personal welfare because choice is independent of welfare considerations. Dowell, Goldfarb, and Griffith (1998) offer a more recent attempt to include moral motivations in economic decision-making. They observe that some moral values cannot be traded off at the margin against other values or goods. One is either honest or dishonest, and thus small continuous units of honesty cannot be traded off against the economic benefits they confer. Rather, moral agents are seen as making all or nothing decisions. They either lie or they don't, deal drugs or don't, cheat on their spouse or they do not. Minkler and Miceli (2002) borrow from the moral philosophy literature to invoke integrity as a reason for moral action. Integrity can be seen as identity-conferring commitments to moral principles (like honesty). Thus, to violate one's own moral principles is to risk rendering one's own identity incoherent -- a loss of the most significant kind. It turns out that the existence of integrity influences both the propensity to make promises and then the likelihood of keeping them. In contrast to traditional game theory where non-credible talk is "cheap," but consistent with the evidence in the experimental literature, the existence of integrity implies that some will keep their word even if doing so is contrary to their material incentives. In the workplace, the existence of integrity means that some would work hard *if they had agreed to* irrespective of the external incentive mechanisms in place. In that instance, to shirk would be to lie, and at least some people recognize that lying is wrong according to their own moral principles.

The literature on moral motivation suggests that workers may provide effort if they see doing so as a moral duty. To capture the role of moral motivation in effort provision, we can adduce a moral preference for honesty, and assume that shirking is analogous to dishonesty because the worker has agreed not to shirk. Let $H(e)$ denote this preference, with $H' \geq 0$ and $H'' \leq 0$. By adding this moral preference to (2), we get a new worker utility maximand, $Z^H$.[11] If we again add a shift parameter h to H, where an increasing h indicates a greater preference for honesty, then $H = H(e,h)$, $H_h \geq 0$ and $H_{eh} \geq 0$, we find:

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[11]  Explicitly, $Z^H = \ [u(we) - v(e) - P(e,p) + H(e)] + (1- \ )[u(w) - v(e) - P(e,p) + H(e)]$.

$$\partial e^*/\partial h \geq 0. \tag{6}$$

Put simply, the worker provides more effort the more honest he is, provided that he sees hard work as a moral duty.  This section leads to the following hypothesis.

*Hypothesis 5*.  Moral motivations are important, and worker effort increases with increases in moral motivation.

### e.  Fairness

While there are many notions of fairness, the one most germane to the context of worker effort centers on reciprocity.[12]  In particular, Rabin (1993) considers both altruism towards the altruistic *and* harm to the harmful fair.   To model this notion, Rabin focuses on the beliefs and intent of one's partner.  If one believes the other's intent is to cheat, the appropriate response is also to cheat. Outcomes reflecting these motivations are called fairness equilibria. In the workplace context, that means that a fair worker will be honest with an honest employer and dishonest (shirk) with an intentionally dishonest employer (e.g., one that fails to provide a promised working environment).  Note that this notion of fairness is conceptually distinct from moral motivations discussed above.  There, behavior was determined primarily by one's own moral principles, not the behavior of others.  People that value honesty for its own sake generally do not lie even to liars.  Rather they will seek to teach truth-telling, or punish liars in other ways that do not require the violation of internal moral principles, by exiting or terminating relationships if necessary (Bok 1978).

To incorporate Rabin's notion of fairness, $F(e)$ is added to the worker's utility function. This time, however, the first derivative depends on the worker's belief about his employer's honesty.  If the worker believes his employer to be honest, fairness implies $F'\geq 0$.  If, however, the worker believes his employer to be dishonest, or intending to be dishonest in the future, then fairness dictates $F'\leq 0$, and the fair worker shirks as a punishment.  Denote the worker's complete utility function $Z^F$.[13]  An increasing disposition to fairness, given by f, means that if the worker sees his employer as (a) honest, then $F=F(e,f)$, such that $F_f \geq 0$ and $F_{ef} \geq 0$, or, if the employer is seen as (b) dishonest, $F_f \leq 0$ and $F_{ef} \leq 0$.  Then,

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[12]   Related notions include favoring: not exploiting fortuitous circumstances (Kahneman, Knetch, and Thaler 1986), equal division of gifts (Frey and Bohnet 1995), allocations varying in proportion to one's contribution (Konow 1996), and equitable distributions (Fehr and Schmidt 1999).

[13]  Explicitly, $Z^F = \gamma[u(we) -v(e) - P(e,p) + H(e,h), + F(e)] + (1-\gamma)[u(w) - v(e) - P(e,p) + H(e,h), + F(e)]$.

$$e*/\ f \geq 0 \text{ if (a)} \qquad\qquad (7a)$$
$$e*/\ f \leq 0 \text{ if (b).} \qquad\qquad (7b)$$

This section leads to the final hypothesis to be tested.

*Hypothesis 6.* Fairness is important, and effort increases with increases in employer honesty, and decreases with decreases in employer honesty.

**3**. Survey

To test the hypotheses, the Center for Survey Research and Analysis (CSRA) at the University of Connecticut was commissioned to conduct a national telephone survey. The survey questions were evaluated and modified by survey researchers at CSRA, and went through several iterations in focus groups, as well as pre-testing on both telephone respondents and undergraduate economics principles students. The survey was conducted over a two week period in January 2000. 1,698 adults were screened to determine if they were eligible for inclusion in the survey. Respondents were included if they worked full or part time, or if they were unemployed and looking for work. A total of 1005 interviews were completed with adult members of the workforce in the contiguous United States. Professional polling techniques were used to minimize measurement. Table 1 gives the sample respondents' characteristics.

It is possible to weight the data according to sex, age, and employment status. For instance, at the time of the survey the US Department of Labor estimated that of the workforce aged 18 years or older, 12.59% were employed males between the ages of 18 and 29. That means there should have been 124 respondents with those characteristics in the surveyed sample. There were 106, yielding a weight of 1.169 (=124/106) that could be attached to that category's responses to correct for under-representation in the sample. Four age groups were available for each sex and employment status. After comparing initial runs between the weighted and unweighted data sets, I decided in what follows to report the results for the unweighted data set, first because the results do not appreciably differ, and second because I know of no theoretical reason to weight the data on those criteria for the type of questions asked in this survey.

**4**. Results

  *a. Propensity to Shirk*

  Hypothesis 1 and the theory of the firm suggests that workers will shirk if they know they will not be monitored, regardless of any agreements or representations they may have made. To check this, the following question was asked.

Q. Suppose that it is almost impossible for your employer to check up on you. Would you say that you are very likely, somewhat likely, somewhat unlikely, or very unlikely to work hard if you agreed to?

The wording of this question purposefully uses likelihood phrasing in order to induce truthful responses. 82.7% of the respondents answered "very likely," 12.1% "somewhat likely," 1.9% "somewhat unlikely," and 1.6% "very unlikely." Surveyors sometimes group the first two categories and the second two, resulting in 94.8% of the respondents being likely to work hard, and 3.5% not (the remaining 1.7% either did not know or did not answer). These results overwhelmingly fail to support Hypothesis 1.

  In order to check why respondents would be either likely to work hard, or not, they were given a list of reasons, each of which relate to the hypotheses. The following sections give the reasons and assess their relative importance.

  *b. Rank-Ordering of Motivations*

  If the respondents answered "very likely" or "somewhat likely" to the question above, they were asked to provide scores on the importance of possible motivations by using a 0-10 scale. Surveyors use a 0-10 scale because respondents commonly judge 5 to be the anchor meaning "neither important nor unimportant." Thus, the following question was asked with the reasons given in *random* order by the interviewer.

Q. Now we want to ask why you would be likely to work hard. On a scale of 0 to 10, with 0 being not important at all, and 10 being very important, how important is each of the following in determining why it is likely you would work hard?

      <u>9.10</u>  i.   It is the morally right thing to do.  (5)
      <u>8.59</u>  ii.  I enjoy my work.  (3)
      <u>6.95</u>  iii. I wouldn't want to let down my co-workers or get them mad at me.  (4)
      <u>6.69</u>  iv. I may get a raise or promotion if I do a good job.  (2b)
      <u>3.08</u>  v.   My employer might catch me.  (2a)
      <u>2.37</u>  vi. My employer has convinced me to feel guilty if I don't work hard.  (4)

The number on the left gives the mean response, the number on the right the related hypothesis. A simple rank ordering suggests that moral motivations are the most important, followed by positive intrinsic motivations, peer-pressure, and positive incentives.[14] Moreover, all of these motivations are significantly different from the anchor, 5, indicating that respondents judge each to be "important" motivators.[15] Negative incentives and employer instilled peer pressure ("firm-pressure") were judged to be unimportant by respondents, again each being significantly different from the anchor. The latter is consistent with Kandel and Lazear's conjecture that employees don't feel much empathy towards their employers. Negative incentives and firm pressure have a correlation coefficient of .474, the only pair greater than .30.

Those who answered that they were either "somewhat unlikely" or "very unlikely" to work hard were given the following choices.

Q. Now we want to ask why you would be unlikely to work hard. On a scale of 0 to 10, with 0 being not important at all, and 10 being very important, how important is each of the following in determining why it is unlikely you would work hard?

    5.26   No one else works hard. (4)
    5.24   I dislike my work. (3)
    5.03   I only need to do the bare minimum to keep the job. (2a)
    4.42   There's not much of a chance of getting caught. (2a)
    4.12   It is morally okay not to work hard. (5)
    3.56   To get back at dishonest employers. (6)

34 people (out of 1005) answered this question. The response scores indicate that the available choices did a poor job in identifying the reasons that respondents would not work hard. Only the last reason on reciprocal punishment is significantly different from the anchor, meaning that respondents judge the motivation to be an unimportant deterrent in their decision to withhold effort. The limited evidence here does not support the negative side of the fairness hypothesis, that is, one should act dishonestly with dishonest employers.

The particular kind of fairness that interests economists made it difficult to find wording that permitted its inclusion in the list of reasons for keeping agreements. So a series of three separate questions were asked instead (mean response follow).

Q1. On a scale of 0 to 10, with 0 being very dishonest and 10 being very honest, how honest would you say today's employers are? 5.94

Q2. On a scale of 0 to 10, with 0 not being important at all and 10 being very important, how important is it that your employer be honest? 9.62

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[14] The $z$ value associated with the difference in means between (i) and (ii) is 5.66, indicating that the means are statistically different at the 0.01 level.

Q3.  On a scale of 0 to 10, with 0 being not likely at all and 10 being very likely, how likely is it that you would keep an agreement to do a good job if you know your employer to be honest?
<u>9.69</u>

While the respondents didn't give a ringing endorsement to employer honesty, they do claim its importance.  Moreover, the mean response to Q3 suggests support for the positive side of the fairness hypothesis, that is, the tendency to be honest with honest employers.

### c.  Regression Analysis

While there was not much variation between the *groups* that were likely versus unlikely to work hard because so few respondents chose the latter, there was variation in the "likely" group itself.  The normal usage of language suggests that those who chose the response "very likely" to the question about keeping their agreement to work hard possess relatively strong commitment.  In contrast, those who chose "somewhat likely" possess weaker commitment. The strength of commitment, in turn, may be conditional on attitudinal factors.  In order to assess the variation in responses on the likelihood of working hard, logit analysis was performed, with the dependent variable taking the value 1 if the respondent chose "very likely" and 0 if they chose "somewhat likely."  The attitudes i-vi and Q1 were the independent variables.  The estimated coefficients are reported in equation 1 in Table 2.

The moral and intrinsic motivation coefficients are of the predicted signs and significant at the 1% level.  The higher is the respondent's moral and intrinsic motivation, the more likely they are to choose "very likely" to work hard.  The peer-pressure coefficient has the predicted sign, but is not significant.  This result could be at least partly due to the fact that most of the respondents are not working in partnerships characterized by profit-sharing, the case Kandel and Lazear consider to be most relevant for peer-pressure.  The positive incentive coefficient has the opposite sign predicted by incentive theory, but the correct one predicted by intrinsic motivation theory.  But it is not significant.  The negative incentive coefficient has the opposite sign predicted by incentive theory, but the one predicted by intrinsic motivation, and it is significant at the 1% level.  The firm-pressure coefficient is negative and significant at the 1% level, meaning that the more sensitive is the respondent to employer induced guilt, the less likely they are to work hard if they agreed to.  Perhaps because of lack of empathy towards employers and/or a resistance to manipulation, employer induced guilt does not appear to be an effective strategy to induce effort.  The prediction for the honesty variable, Q1, is that the more (less)

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[15]   The *t* values range from 15.4 for positive incentives, to 71.9 for moral motivations.

respondents see employers as honest, the more (less) likely they would be to keep their agreement. The coefficient has the predicted sign, but is not significant.

### d. Questions About Survey Methodology

The strength of survey methodology is that it asks respondents to draw on their real-life experiences, so they are instantly placed in the context the researcher is trying to analyze. Here, that means that respondents are called on to consider the effects of their workplace actions on themselves and known acquaintances. The primary problem is that it measures stated attitudes rather than what people actually do. Many economists are skeptical of the methodology for that reason. Other economists have embraced the methodology as an accurate way to reveal preferences and expectations that could not otherwise be induced.[16] Manski (2000) strongly argues for use of carefully designed survey analyses, and after studying the origins of economists' skepticism concludes it unfounded. Moreover, the social psychology literature finds that attitudes significantly and substantially predict future behavior.[17] So attitudes on shirking are good predictors of, though not identical to, real behavior (section 4a) and that the rank-ordering of attitudes captures what truly is important to respondents (section 4b). Furthermore, researchers on survey methodology (including economists) are relatively confident about using attitude variables as independent variables in econometric analyses where behavior is a dependent variable.[18] Measurement error is more worrisome to researchers when attitudes are substituted for behavior as a dependent variable in regression analyses (section 4c). While the survey was designed to minimize measurement error, the next section considers two other potential sources: social desirability bias and mutual deceit. Additional hypotheses on gender, the work ethic, and commitment are also explored.

### i. Social Desirability Bias

Survey researchers have attempted to study the extent to which social desirability bias is responsible for misrepresentation. The authoritative source is DeMaio (1984). Social desirability bias is present when questionnaire answers:

reflect an attempt to enhance some socially desirable characteristics or minimize the presence of some socially undesirable characteristics. Sources of the expectations or values influencing

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[16] In addition to the work cited in the introduction, survey methodology is used extensively by environmental economists to elicit willingness-to-pay and willingness-to-accept values for environmental amenities. Researchers in the economics of happiness literature also use self-reported subjective measures (Oswald 1997).

[17] See, for instance, the meta-analysis of Kraus (1995).

[18] See Kraus (1995) and Bertrand and Mullainathan (2001).

answers can be the person himself (ego threatening), the perception of the interviewer, or society as a whole. (DeMaio, p. 257, quoting from the U.S. Department of Health, Education and Welfare)

Social desirability bias occurs when respondents tailor their responses to draw a favorable picture of themselves at the cost of providing truthful answers.

One question for researchers on social desirability bias centers on whether the bias, to the extent it exists, arises from the respondents' personalities, or from the survey questions themselves. The evidence on the origins of bias is mixed. Some studies show that women, non-minority, higher income, and older people are more subject to social desirability bias. Other studies find that these demographic factors are not important (DeMaio, pp. 262; 272-3). In any case, it is noteworthy that after examining all of the evidence, DeMaio (p. 279) closes her review article by saying "to the extent that our actions as well as our responses to survey questions are influenced by what we see as socially desirable, perhaps the problem is not as overwhelming as it appears to be." For the present study, that means that the respondents most subject to social desirability bias in their survey responses are also those most likely to be subject to its effects in firms. If the norm is to work hard in their firm, those most likely to overstate their propensity to work hard because of social desirability bias would also be those most likely to conform to the norm.

Several measures were taken to minimize the potential effects of social desirability bias. First, the survey instrument was subjected to scrutiny by focus groups, professional survey researchers, and pre-tested in an attempt to word the questions in a way that minimized value-laden language. Questions on attitudes were also asked in *random* order. Like the previous survey based literature reviewed earlier, the survey questions here were designed to get at underlying attitudes. Thus the central research question asked respondents *how likely* they were to work hard if they agreed to. It is more socially permissible to respond that one would be somewhat likely or unlikely to keep an agreement rather than saying directly that they do shirk. Also, it is important to note that polling was conducted by an independent professional survey organization, thereby fulfilling the scientific criterion of separating researcher from subjects. Respondents did not have to worry about pleasing the author.

Any remaining social desirability bias might be correlated with demographic characteristics of respondents. So six demographic variables were included in the logit analysis as added controls: sex, age, race, education, income and occupation. The first two control variables are of additional interest because they concern hypotheses related to this study.

Some evidence exists suggesting that women are more social -- moral and cooperative -- than men (Eckel and Grossman 1998). In the employment context, that might mean that women would be more likely than men to keep an agreement to work hard, regardless of

preferences to the contrary. The hypothesis, then, is that women are more likely to choose to work hard if they said they would.

In a somewhat different vein, some social commentators have suggested that the "new economy" has brought with it a general decline in the work ethic. Globalization, increased competition, and advances in information technology have all helped to increase worker and firm mobility and to reduce the duration of employment relations. Consequently, there is less loyalty and mutual commitment between workers and firms (Sennett 1998). If there is less loyalty and commitment, there is less non-binding, informal pressure to keep agreements to work hard. Since this process accompanied the "new economy," the hypothesis is that younger workers would be less likely to keep an agreement to work hard. The idea of mutual commitment will be discussed in the next section.

These demographic effects were checked by adding variables on sex (1=female, 0=male) and age. In addition, race (1 if non-white, 0 otherwise), education, income and occupation variables were added to the logit analysis. The education variable took the following values for highest level attained: 0 if 0-8 years of education, 1 if 9-11 years, 2 if high school graduate, 3 if some college, 4 if college graduate, and 5 if some post-graduate education. Since the survey data included only income categories, the income variable took the value 0 for incomes less than $40k annually, and 1 for values greater than $40k. The occupation variable took a value of 0 if respondents reported themselves to be a manager, 1 otherwise (another trial combined managers and professionals, with no appreciable difference). Equation 2 in Table 2 includes those variables in equation 1 that were significant at the 5% level plus the six control variables (one effect of which was eliminating a variable, negative incentive, that was highly co-linear with one on intrinsic motivation). The coefficients on sex and age are of the predicted sign and significant. Women and older workers are more likely to report that they honor an agreement if they said they would. The positive coefficient on the education is significant at the 10% level; the coefficients on the race, income and occupation variables are negative and insignificant. Most notably, the coefficients on moral and intrinsic motivations retain their significance after adding all six control variables.

## ii. Mutual Deceit and Mutual Commitment

Another possibility for misrepresentation concerns "mutual deceit." Mutual deceit occurs when one believes it morally permissible to lie, perhaps because the context is one in which no harm arises from lying or where it is believed that everyone lies and everyone knows it (Bok 1978). Examples include compassionately lying to one's spouse to make them feel better, and bluffing in card games (and, by extension perhaps, oligopoly blustering about post-entry

behavior towards a potential entrant). In the context of this survey, it could be that while respondents believe agreements between workers and employers exist, they do not believe them important to honor because of mutual deceit. Those respondents might lie to employers to keep an agreement to work hard (though they still might choose to work hard for other reasons). The potential risk for this study is that those respondents may be the ones most prone to overstating the likelihood of keeping an agreement to work hard, and hence their inclusion could bias the results on the importance of different motivators in the logit analysis. To check the extent to which respondents feel workplace agreements exist and are important to honor, the following question was asked.

Q. Some people think that employers agree to provide a good working environment, and employees agree to work hard. Which of the following comes closer to your own opinion?

      a. These agreements exist in the workplace and are important to honor. <u>66.1%</u>
      b. These agreements exist but are not important to honor. <u>11.3%</u>
      c. No such agreements exist in the workplace. <u>19.7%</u>

Just under 2/3 of the respondents thought workplace agreements exist and are important. Response (b) accounts for those who engage in mutual deceit. Response (c) captures those who fail to see any kind of reciprocal commitment in the workplace.

In order to see if the mutual deceit group has any impact on the results of the logit analysis of the last section, the analysis was repeated by excluding this group. The results are reported in Table 3. Again, the coefficients on moral and intrinsic motivations retain their significance. Interestingly, the peer-pressure coefficient is now significant a the 5% level, suggesting that those most prone to mutual deceit are little influenced by peer-pressure when making their decision to keep an agreement to work hard.

The survey question on the existence of workplace agreements hints at a more important point. Perhaps the best way to induce both workers and employers to fulfil their consensual obligations to one another is to get them to realize their mutual commitments. Of the respondents who answered (a) to the above question, 87.5% also answered "very likely" to the question about working hard if they agreed to, versus 72.4% for those who answered (b) or (c). While the evidence suggests that a large number of workers already recognize a commitment to keeping agreements with their employers, there may be a real missed opportunity get the others to commit. That won't happen until workers and employers each see the existence of workplace agreements, and also the importance of honoring them, even despite their imperfect enforceability. Finding ways of promoting honesty on both sides would be a good place to start. But such efforts could prove to be especially difficult if commentators like Sennett (1998) are right when suggesting that by living in an era of increased mobility and shorter employment

durations we forego opportunities for mutual commitment. The age coefficients in the logit analysis prompts further concern, because younger workers are less likely to keep their agreements.[19]

**5**. Conclusion

The results of this paper suggest that shirking in firms may not be the problem most economists think it is, and for reasons not usually considered. Most fundamentally, incentive mechanisms may not be necessary to assure the provision of effort. According to the survey instrument used in this study, moral and intrinsic motivations are most important to workers. In order for firms to benefit from both motives, they could promise to provide interesting work and a fair employment package and then keep those promises. If firms cannot organize work in such a way that it is interesting, they might still be able to elicit effort by acting honestly and by promoting mutual commitment. If, instead, mutual commitment is not possible because of changing demographics, high turnover, or demand uncertainty, firms might still elicit effort by providing interesting work. While it would be foolish to suggest that incentives do not matter, the point is that after a consensual employment agreement has been struck, other motivations kick in that may be even more important.[20]

The results in this paper are consistent with those found in the experimental literature in the sense that economic agents are motivated by factors other than instrumental rationality. Research on the link between attitudes and behavior suggests confidence about the primary results on respondents' propensity to shirk and the importance attributed to different motivations. There is perhaps less confidence about the logit analysis due to the potential for measurement error because an attitude was used as the dependent variable. An attempt was

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[19] One further objection could target a different kind of misrepresentation. It is possible that workers do believe that they would work hard if they agreed to (and believe they are doing just that), as this study finds, but that either (a) workers define hard work differently than their employers do, or (b) workers engage in self-deception. If workers and employers define hard work differently, then shirking could still be a problem. Even then the solution would not be better incentives. Better communication on each other's views and expectations would instead be required. In contrast, self-deception might resolve the conflict workers confront if they believe it to be fair (or moral) to work hard, but they don't want to because it runs counter to their material self-interest (Konow 2000). In that case, workers may find reasons to justify not working hard in spite of any agreement. To the extent that self-deception is systematically correlated with any of the six demographic variables, it was controlled for. But the lessons here suggest that efforts to get workers (and employers) to recognize the existence of employment agreements and the importance of honoring them would increase the likelihood that those confronting a conflict would resolve it in favor of keeping their agreement. Increasing negative incentives like monitoring could provide conflicted workers with further reasons to engage in self-deception and effort withholding.

[20] Future efforts might include worker theft. It is conceivable that some theft results from the negative side of the honesty hypothesis, that is, workers steal from firms they see as dishonest. To my knowledge, no theory of the firm suggests that firms exist to prevent theft amongst market transactors.

made to minimize measurement error by correcting for social desirability bias and mutual deceit, but obviously other types of evidence on worker motives need to be adduced.  If the results of this paper continue to hold up, however, the question becomes: what does all of this mean for the theory of the firm, a literature that relies so heavily on the role of incentives?  It may mean that aligning incentives is a second-order problem.  If so, then agency and transaction cost theories should augment their behavioral assumptions to include more complex worker behavior.  Added realism in principal-agent analyses could result in predicted employment relationships more in line with those observed, that is, fixed wage contracts periodically modified by subjective performance evaluations (Prendergast 1999).  Transaction cost analyses might find different reasons for current organizational structures beyond those associated with safeguarding against worker and contractual opportunism.  Interesting work processes and efforts to bond workers and firms, where each recognizes the moral standing of the other, seem especially ripe for investigation.

We might also turn our attention to other theories.  One place we could start is at the genesis of literature on the theory of the firm, Coase's 1937 article explicating the costs of using markets.  His idea was that firms could sometimes coordinate economic activity more cheaply than markets because the former are characterized by employment contracts which eliminate the need for repeated bargaining.  Such a relationship frees the entrepreneur to direct diverse contributions in the most expeditious way.  The capabilities theory of the firm is a more recenct variant of the coordination view; it focuses on the pooled knowledge and skills inherent in firms.[21]  Osterloh and Frey (2000) suggest that the ability to manage motivations, particularly intrinsic and extrinsic ones, within a firm constitutes a crucial capability.  If that conjecture is correct, the results here suggest that the list of worker motivations to be managed needs expansion, and that in any case the difference between firms and markets cannot be reduced to the way each administers incentives.

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[21]  See, for instance, Richardson 1972; Teece 1980,1982; Nelson and Winter 1982; Winter 1988; Lazonick 1990; Prahalad and Hamel 1990; Nelson 1991; Kogut and Zander 1992; Minkler 1993; Loasby 1998, and Langlois 1999. In this literature, a firm is characterized by habits, routines and its own history, with much of its knowledge and capabilities being institutional rather than personal.  Since the basic idea is that the firm is a repository of pooled knowledge and skills, the focus is on production rather than exchange, and a crucial element is that firm decision-makers must act under structural uncertainty --the type of uncertainty that does not allow decision-makers to specify all the alternatives ex ante.  Furthermore, because of the tacit nature of knowledge, a firm is capable of doing things that it cannot easily describe.  Together these elements suggest that it's futile for either firms or economists to try to pre-specify actual production functions.  This inability suggests that even if it was necessary or desirable it would be difficult to construct effective controls on worker shirking for those workers who innovate.  Instead, the focus is placed on coordinating different contributions and on how various organizational structures perform in different economic environments.

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**Table 1**
Sample Respondent Characteristics

*1. Sex*
      a.  Male           46.7%
      b.  Female      53.3%

*2. Age*
      a.  Mean           38.5
      b.  S.D.           13.3

*3. Race*
      a.  Black           9.8%
      b.  White         75.8%
      c.  Hispanic     5.9%
      d.  Asian         1.9%
      e.  Native American  .8%
      f.  Other/ Biracial/   5.9%
          Don't know/ Refused

*4. Income*
      a.  < 40k Annual    32.1%
      b.  > 40k Annual    63.2%

*5. Education (Highest Level Attained)*
      a.  0-8             1.0%
      b.  9-11           5.3%
      c.  H.S. Grad     28.6%
      d.  Some College  20.0%
      e.  College Grad   22.1%
      f.  Post Grad     15.0%

*6. Employment*
      a.  Employed     92.8%
      b.  Unemployed   7.2%

*7. Occupation*
      a.  Professional   30.0%
      b.  Managerial    12.0%
      c.  Service       15.0%
      d.  Manufacturing  4.9%
      e.  Processing    1.9%
      f.  Technical     9.1%
      g.  Clerical/ Sales  9.9%
      h.  Agricultural   1.4%
      i.  Other         8.2%
      j.  Don't Know/    7.7%
           Missing

**Table 2**
Logistic Regression Analysis of Likelihood of Working Hard

| Independent Variable | (1) | (2) |
|---|---|---|
| Intercept | -.2926<br>(.5534) | -1.8323*<br>(.8113) |
| Moral (i) | .1587**<br>(.0517) | .1810**<br>(.0541) |
| Intrinsic motivation (ii) | .1681**<br>(.0430) | .1562**<br>(.0455) |
| Peer-pressure (iii) | .0533<br>(.0394) | |
| Positive incentive (iv) | -.0343<br>(.0345) | |
| Negative incentive (v) | -.1355**<br>(.0347) | -.1030**<br>(.0363) |
| Firm-pressure (vi) | -.0966**<br>(.0375) | -.1065**<br>(.0401) |
| Fairness (Q1) | .0182<br>(.0513) | |
| Sex | | .6682**<br>(.2331) |
| Age | | .0261**<br>(.0103) |
| Education | | .1927<br>(.1063) |
| Race | | -.2326<br>(.2681) |
| Income | | -.2380<br>(.2600) |
| Occupation | | -.1239<br>(.3598) |
| Number of Observations | 906 | 809 |

Standard errors in parentheses
*   significant at the 5% level (one-tailed test)
** significant at the 1% level (one-tailed test)

**Table 3**
Logistic Regression Analysis of Likelihood of Working Hard Excluding Mutual Deceit
Respondents

| Independent Variable | |
|---|---|
| Intercept | -2.0780*<br>(.9449) |
| Moral (i) | .1584**<br>(.0620) |
| Intrinsic motivation (ii) | .1693**<br>(.0525) |
| Peer-pressure (iii) | .1042*<br>(.0486) |
| Positive incentive (iv) | -.0272<br>(.0436) |
| Negative incentive (v) | -.1268**<br>(.0439) |
| Firm-pressure (vi) | -.1527**<br>(.0455) |
| Fairness (Q1) | -.0283<br>(.0693) |
| Sex | .4002<br>(.2559) |
| Age | .0317**<br>(.0120) |
| Education | .1837<br>(.1174) |
| Race | -.1875<br>(.3018) |
| Income | -.1373<br>(.2847) |
| Occupation | -.0114<br>(.3857) |
| Number of Observations | 688 |

Standard errors in parentheses
*   significant at the 5% level (one-tailed test)
**  significant at the 1% level (one-tailed test)