ONLINE APPENDIX
APPENDIX O1. Elicitation of individual characteristics

O1.1. Risk attitudes

Own risk attitudes (Instructions)

In this part of the experiment you will be asked to make a series of choices in decision problems. How much you receive will depend partly on chance and partly on the choices you make. The decision problems are not designed to test you. What we want to know is what choices you would make in them. The only right answer is what you really would choose. For each line in the table on the right, please state whether you prefer option A or option B. Notice that there is a total of 10 lines in the table but just one line will be randomly selected for payment. Each line is equally likely to be chosen, so you should pay equal attention to the choice you make in every line. At the end of the experiment, a number between 1 and 10 will be randomly selected by the computer. This number determines which line is going to be paid. Your earnings for the selected line depend on which option you chose in that line: option A or option B. To determine your earnings, Then, a second number between 1 and 10 will be randomly selected by the computer. This number is then compared with the numbers in the line and option selected (see Table O1.1.1):

- If you selected option A and the second number shows up in the upper row you earn $2.00. If the number shows up in the upper row you earn $1.60.
- If you selected option B and the second number shows up in the lower row you earn $3.85. If the number shows up in the lower row you earn $0.10.

TABLE O1.1.1. The ten binary lottery choices (Holt and Laury, 2002).

Line	OPTION A	OPTION B
1	1/10 of $2.00, 9/10 of $1.60	1/10 of $3.85, 9/10 of $0.10
2	2/10 of $2.00, 8/10 of $1.60	2/10 of $3.85, 8/10 of $0.10
3	3/10 of $2.00, 7/10 of $1.60	3/10 of $3.85, 7/10 of $0.10
4	4/10 of $2.00, 6/10 of $1.60	4/10 of $3.85, 6/10 of $0.10
5	5/10 of $2.00, 5/10 of $1.60	5/10 of $3.85, 5/10 of $0.10
6	6/10 of $2.00, 4/10 of $1.60	6/10 of $3.85, 4/10 of $0.10
7	7/10 of $2.00, 3/10 of $1.60	7/10 of $3.85, 3/10 of $0.10
8	8/10 of $2.00, 2/10 of $1.60	8/10 of $3.85, 2/10 of $0.10
9	9/10 of $2.00, 1/10 of $1.60	9/10 of $3.85, 1/10 of $0.10
10	10/10 of $2.00, 0/10 of $1.60	10/10 of $3.85, 0/10 of $0.10

Others' risk attitudes (Instructions)

Now, you will have to guess the decisions in the previous part of another subject chosen at random in this experiment. To do so, you will have to select "Option A" or "Option B" on each of the following 10 rows. At the end of the experiment, the computer will select one of you at random. Then, the computer will select randomly the decision table of another subject in the previous part. We will pay the selected guesser $1.00 for each row in which the guess matches the other subject's decision.

O1.2. Social preferences

We elicited social preferences à la Bartling et al. (2009) by asking subjects to make four choices between two possible allocations of money between themselves and another anonymous subject with whom they were randomly matched. The allocation decisions are described in Table O1.2.1. Option A always yielded an even distribution of money ($2 to the self and the other subject). Option B yielded uneven payoffs: ($2, $1), (3$, $1), (2$, $4), and (3$, $5) in Decisions 1, 2, 3 and 4, respectively. We classify subjects following Bartling et al. (2009) into four social preferences categories: prosocial, costly prosocial, envious and costly envious. Prosocial types prefer to distribute income equally even when they have the possibility to earn more than the other subjects (in which case subjects are characterized as costly prosocial). Envy types dislike earning less than the other subject and choose Option A in the last two decisions even if it implies a lower payoff to themselves (in which case subjects are characterized as costly envious). Following Bartling et al. (2009), we characterize subjects as either ahead (behind) averse if they were both prosocial and costly prosocial (envious and costly envious). Egalitarian subjects were defined as being both ahead and behind averse.

Instructions:

You will be asked to make a series of choices in decision problems. For each line in the table below, please state whether you prefer Option A or Option B. Notice that there is a total of 4 lines in the table but just one line will be randomly selected for payment. Each line is equally likely to be chosen, so you should pay equal attention to the choice you make in every line. After you have made all your decisions a number between 1 and 4 will be randomly selected by the computer. This number determines which line is going to be paid. Your earnings for the selected line depend on which option you chose: if you chose Option A in that line, you will receive $2 and the other participant who will be matched with you will also receive $2. If you chose Option B in that line, you and the other participant will receive earnings as indicated in the table for that specific line. For example, if you chose B in line 2 and this line is selected for payment, you will receive $3 and the other participant will receive $1. Similarly, if you chose B in line 3 and this line is selected for payment, you will receive $2 and the other participant will receive $4. Note that the other participant will never be informed of your personal identity and you will not be informed of the other participant's personal identity. After you have made all your decisions, the computer will randomly draw a number to determine which line is going to be paid. Then the computer will randomly and anonymously match you with another participant in the experiment. While matching you with another participant, the computer will also randomly determine whose decision to implement. If the computer chooses your decision to implement, then the earnings to you and the other participant will be determined according to your choice of A or B. If the computer chooses the other participant decision to implement, then the earnings will be determined according to the other participant choice of A or B.

TABLE O1.2.1. Social preferences elicitation (Bartling et al. 2009).

Decision	Option A Payoff self, Payoff other	Option B Payoff self, Payoff other
1	$2,$2	$2,$1
2	$2,$2	$3,$1
3	$2,$2	$2,$4
4	$2,$2	$3,$5

O1.3. Loss aversion elicitation

Gächter, Johnson and Herrmann (2010) (Instructions)

Experienced sessions (subjects were recruited back after the original session)

For each of the six lotteries described below, you have to decide whether to accept or reject it. Mark the corresponding column (either **Accept** or **Reject**) with a cross. In this experiment, the gains you make you will be added to your $13 show-up fee and the losses you incur will be subtracted from your $13 show-up fee.

Once you have made a decision for each of the six lotteries, one of them will be selected at random using a die roll. Then, a coin will be flipped which will determine your final earnings.

Example: After you have made your decisions whether to accept or reject each of the six lotteries, a die is rolled. The die roll is **3** in which case lottery **#3** will be played:

"**#3**. If the coin turns up heads, then you lose $3; if the coin turns up tails, you win $5."

Then, a coin is flipped. If the coin turns up **heads** then you will lose $3 in which case your earnings will be: 13$ - 3$ = **$10.**

If the coin turns up **tails** then you will win $5 in which case your earnings will be: 13$ + 5$ = **$18**.[1]

TABLE O1.3.1. Lottery choices for Gächter, Johnson and Herrmann (2010)'s task.

Lottery	Accept	Reject
#1. If the coin turns up heads, then you lose $1; if the coin turns up tails, you win $5.		
#2. If the coin turns up heads, then you lose $2; if the coin turns up tails, you win $5.		
#3. If the coin turns up heads, then you lose $3; if the coin turns up tails, you win $5.		
#4. If the coin turns up heads, then you lose $4; if the coin turns up tails, you win $5.		
#5. If the coin turns up heads, then you lose $5; if the coin turns up tails, you win $5.		
#6. If the coin turns up heads, then you lose $6; if the coin turns up tails, you win $5.		

Inexperienced sessions

For the inexperienced sessions, this test was conducted at the end of each session. In that case, subjects did not receive a $13 show-up fee. Instead, they were explained that: "In this part of the experiment, the gains you make will be added to your total earnings and the losses you incur will be subtracted from your total earnings in the whole experiment". This task was conducted in addition to the Brink and Rankin (2013) procedure described below. The order of these two tasks was randomized and no feedback regarding earnings on each of these two tasks was given before the experiment was over.

Brink and Rankin (2013) (Instructions)

In this part of the experiment, the gains you make will be added to your total earnings and the losses you incur will be subtracted from your total earnings in the whole experiment.

For each line in the table in the next screen, please state whether you prefer **option A** or **option B**. Notice that there is a total of 10 lines in the table but just one line will be randomly selected for payment. Each line is equally likely to be chosen, so you should pay equal attention to the choice you make in every line. At the end of the experiment, a number between 1 and 10 will be randomly selected by the computer. This number determines which line is going to be paid. Then, the computer will randomly select a second number to determine your gains or losses in the lottery.

Example: After you have made your decisions whether to choose option A or option B, the computer randomly selects lottery #7.

[1] In the working-paper version, there was a typo in this sentence where $14 was used instead of $13.

At that time, the computer will randomly select a number between 1 and 6 to determine your gains or losses in the lottery.

- If you selected option A for lottery #7, then:
  - If the random number is either 1, 2 or 3 then you will lose $2.40 which will be subtracted from your total earnings.
  - If the random number is either 4, 5 or 6 then you will win $5.00 which will be added to your total earnings.
- If you selected option B for lottery #7, then:
  - If the random number is either 1, 2 or 3 then you will lose $1.00 which will be subtracted from your total earnings.
  - If the random number is either 4, 5 or 6 then you will win $1.00 which will be added to your total earnings.

TABLE O1.3.2. Lottery choices for Brink and Rankin (2013)'s task.

	Option A	**Option B**
#1	lose $1.40 if 1,2,3 win $5.00 if 4,5,6	lose $1.00 if 1,2,3 win $1.00 if 4,5,6
#2	lose $1.50 if 1,2,3 win $5.00 if 4,5,6	lose $1.00 if 1,2,3 win $1.00 if 4,5,6
#3	lose $1.60 if 1,2,3 win $5.00 if 4,5,6	lose $1.00 if 1,2,3 win $1.00 if 4,5,6
#4	lose $1.75 if 1,2,3 win $5.00 if 4,5,6	lose $1.00 if 1,2,3 win $1.00 if 4,5,6
#5	lose $1.90 if 1,2,3 win $5.00 if 4,5,6	lose $1.00 if 1,2,3 win $1.00 if 4,5,6
#6	lose $2.10 if 1,2,3 win $5.00 if 4,5,6	lose $1.00 if 1,2,3 win $1.00 if 4,5,6
#7	lose $2.40 if 1,2,3 win $5.00 if 4,5,6	lose $1.00 if 1,2,3 win $1.00 if 4,5,6
#8	lose $2.90 if 1,2,3 win $5.00 if 4,5,6	lose $1.00 if 1,2,3 win $1.00 if 4,5,6
#9	lose $3.95 if 1,2,3 win $5.00 if 4,5,6	lose $1.00 if 1,2,3 win $1.00 if 4,5,6
#10	lose $7.00 if 1,2,3 win $5.00 if 4,5,6	lose $1.00 if 1,2,3 win $1.00 if 4,5,6

APPENDIX O2. Multiplicative noise

Design. Similarly to the case of additive noise which is considered in the LEN model, the standard principal-agent model would predict that the risk-neutral principal should protect the agent against risk in the case of a multiplicative noise as well (e.g. see Baker and Jorgensen, 2003). For the sake of robustness, we thus also study the tradeoff between risk and incentives in that case following the same procedure as in the additive noise treatment recruiting a total of 52 subjects. In the multiplicative noise treatment, the agent's payoff function is defined as $\alpha + \beta\times$(Agent production × *Shock*) in which the random *Shock* is either 0 or 2 with equal chances. In that case, the monetary value of production was either equal to $z = 2 \times p \times n$ or $z = 0$, where *p* is 40 cents and *n* is the total number of correct tables produced by the agent. In this treatment, we predict that the risk-neutral principal will protect the agent against risk leading to weaker incentives in the multiplicative noise treatment.

Model. The conjectures are derived similarly to the case of additive noise. In the case of a multiplicative shock, the output of effort ($\tilde{z}$) is such that: $\tilde{z} = e \times \tilde{x}$ with $\tilde{x} = 2\ (0)\ w.p\ \frac{1}{2}\ \left(\frac{1}{2}\right)$ so that the risk premium of the agent calculated using the second-order Taylor approximation (Milgrom and Roberts, 1992) can be written as: $\frac{1}{2}r\beta^2\theta^2e^2\sigma^2$. The principal maximizes expected profits subject to the incentive and participation constraints of the agent as follows:

$$Max_{\alpha,\beta}\ \theta e - (\alpha + \beta\theta e)$$

$$\text{s.t} \quad \beta = \frac{2(\varphi + \frac{1}{2}r\beta^2\theta^2\sigma^2)e}{\theta} \qquad (IC)$$

$$\alpha + \beta\theta e - \varphi e^2 - \frac{1}{2}r\beta^2\theta^2\sigma^2 e^2 \geq v_0 \qquad (PC)$$

From (IC) we obtain that pay for performance is lower in the presence of noise than in its absence as long as the risk premium $\left(\frac{1}{2}r\beta^2\theta^2e^2\sigma^2\right)$ increases in β as the principal will be willing to hedge the agent. This is the case when we assume a CARA utility function which implies no wealth effects and $\frac{\partial(r\beta^2\theta^2e^2\sigma^2)}{\partial\beta} > 0 \Leftrightarrow \beta\frac{\partial e}{\partial\beta} + e > 0$. From (IC) we also obtain using the implicit function theorem that effort is lower (for a given β) in the presence of noise $(\sigma^2 > 0)$ than in its absence $(\sigma^2 = 0)$.

Results. The table below shows that the results we obtain in the multiplicative noise treatment regarding principals' offers, agents' production and principals' earnings are similar to those obtained in the additive noise treatment. Given that the multiplicative noise treatment has been conducted only with experienced subjects, we consider experienced sessions for the treatment comparisons in Table O2.1. Results are, however, robust to including the inexperienced sessions for the baseline and the additive treatments.

TABLE O2.1. Principals' offers, agents production and principals' earnings across treatments.

Average (Standard dev.)	Baseline	Additive Noise Treatment	Multiplicative Noise Treatment	*Multiplicative Noise vs. Baseline [Additive Noise]* P-values
Fixed pay	90.3¢ (34.9¢)	97.5¢ (33.3¢)	95.7¢ (36.6¢)	0.127 [0.633]
Production share	42.5% (16.9%)	38.7% (13.0%)	38.7% (14.6%)	0.015 [0.977]
Agents' Period Production	$3.2 ($1.8)	$3.9 ($1.8)	$4.1 ($1.6)	0.006 [0.594]
Principals' Period Earnings	$2.6 ($0.9)	$3.0 ($1.1)	$3.1 ($1.0)	<0.001 [0.203]

The p-value in the last column refers to OLS regressions with robust standard errors, with fixed pay, production share, agents' period production and principals' earnings as dependent variables, and the *Multiplicative Noise Treatment Dummy* as independent variable, when including multiplicative noise data and baseline [additive noise] data. The *Multiplicative Noise Treatment Dummy* takes value 1 if a subject was involved in the multiplicative noise treatment and value 0 otherwise. Similar results are obtained when controlling for self-reported skills. Results are also robust to using panel data regressions with random effects.

In addition, pooling the two noise treatments and comparing fixed pay, production share, agents' production and principals' production with the baseline (using the same regression specification as is in Table O2.1) we obtain the following p-values: 0.037, 0.006, 0.005 and <0.001.

APPENDIX O3. Social preferences

Previous research has shown the importance of other-regarding preferences to explain subjects' behaviors in a wide range of experiments including dictator, ultimatum, public good and gift-exchange games (Fehr and Schmidt, 1999; Bolton and Ockenfels, 2000; Charness and Rabin, 2002). Keser and Willinger (2000; 2007) have also stressed the importance of fairness concerns in principal-agent situations. Anderhub, Gächter and Königstein (2010) show that considerations for contractual fairness and reciprocity affect principals and agents behaviors in a principal-agent experiment with chosen effort and without noise. The authors find that the most popular contract (30% of the cases) offers an equal split of the surplus between the agent and the principal. In our case, the most common offer (14.4% of the cases) was a 50% share of production with a fixed pay of 100¢.[2] This offer is the only one that ensures equal (expected) earnings for both the agent and the principal in the baseline (noise treatment). Finally, Cabrales et al. (2010) show that agents are more likely to select contract offers from principals who have similar social preferences.[3]

To investigate the role of social preferences in our setting, we introduce other-regarding preferences in the LEN principal-agent model presented in Section 2 following Rotemberg (1994) and Charness and Rabin (2002).[4] In both models, the authors capture distributive preferences by the weight (w) each person assigns to the other person's monetary payoffs (certainty equivalents in our case) in his or her utility function. In our case, this implies that the principal will maximize the following function: $(1-w)[\theta \mathrm{e} - y\,] + w[\alpha + \beta\theta e - C(e) - \frac{1}{2} r\beta^2\theta^2\sigma^2]$ whereas the agent's certainty equivalent becomes: $(1-w)[\alpha + \beta\theta e - C(e) - \frac{1}{2} r\beta^2\theta^2\sigma^2\,] + w[\theta \mathrm{e} - y]$, where w in $]0, \frac{1}{2}]$ is the weight the principal (the agent) assigns to the agent's (principal's) certainty equivalent. We solve this extended version of the LEN principal-agent model similarly to the standard model and show that the tradeoff between risk and incentives continue to operate in the presence of social preferences.

Model. We illustrate our results for the case of the LEN model, but similar findings are obtained for the case of the binary additive or multiplicative shocks models described in Appendix A.2 and online Appendix O2, respectively. The principal maximizes expected profits subject to the incentive and participation constraints of the agent:

$$Max_{\alpha,\beta}\ (1-w)[\theta \mathrm{e} - (\alpha + \beta\theta e)\,] + w[\alpha + \beta\theta e - C(e) - \frac{1}{2} r\beta^2\theta^2\sigma^2]$$

$$\text{s.t} \quad \beta = \frac{2(1-w)\varphi e - w\theta}{(1-2w)\theta} \qquad (IC_{sp})$$

$$(1-w)\left[\alpha + \beta\theta e - \varphi e^2 - \frac{1}{2} r\beta^2\theta^2\sigma^2\right] + w[\theta \mathrm{e} - (\alpha + \beta\theta e)] \geq v_0 \qquad (PC_{sp})$$

where w is the weight people assign to other people's payoffs as in social preferences models with altruism (Rotemberg, 1994; Charness and Rabin, 2002). We rewrite the maximization problem of the principal as follows:

$$Max_e\ (1-w)[\theta \mathrm{e} - y\,] + w[\alpha + \beta\theta e - C(e) - \frac{1}{2} r\beta^2\theta^2\sigma^2]$$

First order condition:

[2] The proportion of this type of offers was 17.8% (10.8%) in the baseline (noise treatment). This difference of proportions across treatments is not significant at standard levels (p-value > 0.1).

[3] This finding has important implications for organizational research potentially accounting for the observed heterogeneity in "corporate cultures" across firms.

[4] Alternatively, one could include inequity aversion à la Fehr and Schmidt (1999) in the LEN principal-agent model following the steps of Englmaier and Wambach (2010).

$$\left(2\varphi w^2 + 2r\sigma^2(1-w)\varphi\right) e_{sp}^* = 2(1-w_A)w\varphi\theta + \frac{(2(1-w)-1)^3(1-w)\theta + \left(2(1-w_A)-1\right)^2 w)(2(1-w)-1)}{(2(1-w)-1)(1-w)+w}$$

If follows from the first order condition that: $\frac{\partial e_{sp}^*}{\partial \sigma^2} < 0$ and $\frac{\partial e_{sp}^*}{\partial \mathrm{r}} < 0$. Also, using (IC_{sp}) and the previous result, it follows that $\frac{\partial \beta_{sp}^*}{\partial \sigma^2} < 0$ and $\frac{\partial \beta_{sp}^*}{\partial r} < 0$ ($\frac{\partial \alpha_{sp}^*}{\partial \sigma^2} > 0$ and $\frac{\partial \alpha_{sp}^*}{\partial r} > 0$). We also see that $\frac{\partial \beta_{sp}^*}{\partial w} < 0$ ($\frac{\partial \alpha_{sp}^*}{\partial w} > 0$) meaning that altruism will lead to a weaker tradeoff between risk and incentives.

We summarize our conjectures below.

Proposition O3.1 (Principal-agent model with social preferences)

In the presence of social preferences, principals offer contracts with a lower share of production and a higher fixed pay to agents in the presence of noise than in its absence. Agents exert less effort and produce less in the presence of noise.

Proposition O3.1 shows that the main implications of the principal-agent model are robust to introducing social preferences. Social preferences affect, however, the magnitude of the tradeoff between risk and incentives. For example, if agents assign a large weight to the principal's payoffs the tradeoff between risk and incentives will be milder. This implies that the principal will select incentives levels (β) in the noise treatment that are almost as high as in the baseline while paying a fixed pay (α) that is only slightly higher. However, accounting for social preferences does not help explain why agents exert more effort in the noise treatment than in the baseline despite receiving weaker incentives to produce.

In our social preferences model, we have not introduced reciprocal concerns as is the case, for example, in Charness and Rabin (2002). It may be argued that agents respond favorably to principals' offers in the noise treatment because they provide generous insurance to the former. In contrast with the gift-exchange argument, however, fixed pay does not affect agents' production levels in our setting as is shown in Table B6 in Appendix B. Also, accepted offers in the noise treatment are actually less generous than in the baseline. The fixed pay for accepted offers is only 3.2¢ higher on average in the noise treatment than in the baseline and this difference is not significant (p-value = 0.313).[5] The modest increase in the fixed pay for accepted offers in the noise treatment is more than offset by the lower share of production in the noise treatment (40.6%) than in the baseline (44.6%).[6] The decrease in share of production implies, considering the average level of production in the baseline treatment (300¢), an average decrease in agents' earnings of 12¢ in the noise treatment compared to the baseline. Not surprisingly the share of total earnings obtained by the agent was lower in the noise treatment (45.3%) than in the baseline (47.5%).[7]

Results. In order to further assess the impact of social preferences, we replicate the regression analyses presented in Section 4 controlling for social preferences. We use as a measure of social preferences the test introduced in Bartling et al. (2009). Following Bartling et al. (2009), we classify subjects as either ahead averse, behind averse or egalitarian creating dummy variables for each type of social preferences (see online Appendix O1.2). All our findings are shown to be robust to these additional controls (see Tables O3.1, O3.2 and O3.3). We represent the results of OLS and probit regressions but similar results are obtained using panel regressions with random

[5] We report the p-value for the noise treatment coefficient using the same OLS regression as in Table 2 restricting our analysis to accepted offers. The panel regression with random effect generates a p-value of 0.304.

[6] Note that the difference in shares of production (for accepted offers) is significant (p-value = 0.002, for both OLS and panel regressions with random effects).

[7] This difference is significant, p-value = 0.026 (0.036) for the noise treatment coefficient for the OLS (panel with random effect) regression.

effects instead. In most of the cases, social preferences dummies are not statistically significant. Notable exceptions are the fact that egalitarian or ahead-averse principals offer higher fixed pay to agents (see Table O3.1).

TABLE O3.1. OLS regressions for principals' fixed pay and share offers controlling for principals' social preferences.

	Fixed pay		*Share*	
Constant	92.296***	89.458***	42.141***	41.602***
	(2.471)	(2.832)	(1.159)	(1.281)
Noise Treatment Dummy	5.642*	6.394**	-3.350***	-3.223**
	(2.974)	(3.663)	(1.253)	(1.268)
<u>Principals' social preferences</u>				
Egalitarian Dummy	14.867***	-	2.178	-
	(4.772)		(2.070)	
Ahead averse Dummy	-	8.031**	-	2.281
		(3.241)		(1.485)
Behind averse Dummy	-	-2.600	-	0.650
		(3.164)		(1.384)
Experienced Dummy	2.398	3.494	-0.999	-0.970
	(3.076)	(3.142)	(1.248)	(1.230)
N	518	518	518	518
R^2	0.019	0.017	0.016	0.018
Prob > F	0.002	0.042	0.034	0.019

*** Significant at the 0.01 level; ** at the 0.05 level; * at the 0.1 level. Robust standard errors are in parentheses.

TABLE O3.2. Probit regression for agent's acceptance decision controlling for agents' social preferences.

	Accepted Dummy	
Constant	-2.438***	-2.369***
	(0.433)	(0.441)
Noise Treatment Dummy	-0.059	-0.058
	(0.131)	(0.135)
<u>Contract offer</u>		
Fixed pay	0.018***	0.018***
	(0.003)	(0.003)
Production share	0.038***	0.038***
	(0.006)	(0.006)
<u>Agents' social preferences</u>		
Egalitarian Dummy	-0.296	-
	(0.294)	
Ahead averse Dummy	-	-0.166
		(0.155)
Behind averse Dummy	-	-0.072
		(0.152)
Experienced Dummy	0.020	0.027
	(0.137)	(0.138)
N	518	518
Log pseudolikelihood	-231.934	-231.759
Prob > Ç^2	<0.001	<0.001

*** Significant at the 0.01 level; ** at the 0.05 level; * at the 0.1 level. Robust standard errors are in parentheses.

TABLE O3.3. OLS regressions for agent's production controlling for agents' social preferences.

	Production	
Constant	0.936*	1.177**
	(0.569)	(0.567)
Noise Treatment Dummy	0.295*	0.286*
	(0.172)	(0.177)
Fixed pay	0.001	0.001
	(0.003)	(0.003)
Production share	0.013*	0.012*
	(0.007)	(0.007)
Self-reported skills	0.358***	0.342***
	(0.055)	(0.055)
Agents' social preferences		
Egalitarian Dummy	-0.437	-
	(0.342)	
Ahead averse Dummy	-	-0.420*
		(0.225)
Behind averse Dummy	-	-0.263
		(0.202)
Experienced Dummy	0.620***	0.627***
	(0.186)	(0.188)
N	388	388
R^2	0.175	0.184
Prob > F	<0.001	<0.001

*** Significant at the 0.01 level; ** at the 0.05 level; * at the 0.1 level. Robust standard errors are in parentheses.

APPENDIX O4. Risk elicitation in the real-effort task

One may attempt to explain the positive effect of noise on effort, production and principals' earnings by referring to atypical risk attitudes. However, as we showed in Section 4.1, our subjects' risk attitudes closely mimic the original results reported in Holt and Laury (2002) showing that the majority of subjects are risk averse. We also showed that principals purposefully adjust offers to their perception of others' risk attitudes. Note that in the extreme case in which principals perceive agents as risk seeking, they should offer agents higher shares of production in the noise treatment than in the baseline which is in contradiction with our empirical results. One remaining possibility is that risk-averse agents as measured using binary lottery choices à la Holt and Laury (2002) are risk seeking when deciding to undertake a real-effort task with noise. For this explanation to be consistent with lower shares offered to agents in the noise treatment than in the baseline, it would still have to be the case that principals misperceive agents as being risk averse when undertaking the real-effort task. This misperception of agents' risk attitudes is unlikely in our experimental design given that principals also played the role of agents.

Nonetheless, we conducted an additional treatment to assess the possibility that our results can be accounted for by unexpected risk attitudes regarding the real-effort task environment.

Experimental design. We conducted an additional treatment recruiting a total of 60 subjects to assess whether risk attitudes in our real-effort task environment follow a standard pattern of risk aversion. Using a strategy-method approach, we asked subjects, for a given share of production, the minimum fixed pay they would be willing to accept for working on the 10-minute summation task instead of receiving an outside payment of 150¢ to browse the Internet.

We presented subjects with the work task environment detailed in Section 3. We described both the baseline and the noise treatments which were referred to as the certain and random scenarios. In the certain [random] scenario the earnings of the subjects were computed as for the agents in our baseline [noise] treatment. For each scenario, we used a strategy-method approach and asked subjects to choose, for a given share of production, the minimum fixed pay they would be willing to accept to work on the summation task for 10 minutes instead of receiving the outside payment of 150¢ to browse the Internet (see Table O4.1). Note that we randomized the order of the scenarios so that 30 subjects started by considering the case of the certain scenario whereas 30 subjects started by considering the case of the random scenario. Subjects had to make a total of eleven minimum fixed pay decisions per scenario since eleven different values of shares of production were considered: {0%, 10%, …, 100%}. After subjects made their minimum fixed pay decisions, an offer (a fixed pay between 0 and 200 and a share of production belonging to the eleven possible values previously considered) was randomly selected for each of the two scenarios. For each scenario, the randomly selected offer was considered to be accepted (rejected) by a subject if the proposed fixed pay was higher or equal to (lower than) the subject's minimum fixed pay for the randomly selected share of production. Thereafter, a 10-minute period started for the corresponding scenario (certain or random) where the subject could produce on the task if the randomly selected offer had been accepted or simply browse the Internet if the randomly selected offer had been rejected.

The design of this experiment was aimed at eliciting risk attitudes in the real-effort task and not at studying production. As a result, the risk-elicitation study differed in a number of important dimensions from the original study. For example, the risk-elicitation study uses a within-subject design for which subjects had to consider both the certain and random scenarios instead of being randomly assigned to only one (as was the case in the original study). This was done to mimic risk elicitation in lottery settings where choices involving varying degrees of risk are jointly presented to subjects (e.g. Holt and Laury, 2002). Second, offers were selected at random and thus did not mimic the pattern of offers of human principals of our original experiments. Third, only a subset of offers were finally accepted so that the sample size (n=22 [20] for the case in which the certain scenario was considered first [second]) was considerably smaller than in our original study.

Results. In this setting, we categorize subjects as risk averse if they ask, on average, a higher minimum fixed pay in the random scenario than in the certain scenario.[8] Using this criterion, 65% of the subjects were classified as risk averse which is similar to the proportion of subjects who were classified as risk averse by Holt and Laury (66%). This proportion does not significantly differ either from the proportion of subjects that we classified as risk averse in our original sample using the Holt and Laury risk-elicitation technique (63.6%, p-value = 0.740 for the proportion test).

On average, subjects asked for a minimum fixed pay of 118.5¢ in the random scenario compared to 109.9¢ in the certain scenario (Wilcoxon signed-rank test, p-value = 0.06). Also, the real-effort task risk elicitation led to a classification of risk averse and risk seeking subjects which coincides with the Holt and Laury test for 64% of our subjects.[9]

[8] There were no cases of ties. Our results are robust to considering median minimum fixed pay as a classification criterion. Also, using only a subset of the eleven shares of production does not affect the qualitative nature of our findings.

[9] We assess whether this result can be only explained by chance by testing whether the proportion of correct classifications was significantly different from 50% and report a p-value equal to 0.07.

TABLE O4.1. Elicitation of minimum fixed pay for each of eleven possible values of the share of production (certain scenario case).

CERTAIN SCENARIO	**Fixed pay**
If the share is **0%** the minimum fixed pay you are willing to accept is:	
If the share is **10%** the minimum fixed pay you are willing to accept is:	
If the share is **20%** the minimum fixed pay you are willing to accept is:	
If the share is **30%** the minimum fixed pay you are willing to accept is:	
If the share is **40%** the minimum fixed pay you are willing to accept is:	
If the share is **50%** the minimum fixed pay you are willing to accept is:	
If the share is **60%** the minimum fixed pay you are willing to accept is:	
If the share is 7**0%** the minimum fixed pay you are willing to accept is:	
If the share is **80%** the minimum fixed pay you are willing to accept is:	
If the share is **90%** the minimum fixed pay you are willing to accept is:	
If the share is **100%** the minimum fixed pay you are willing to accept is:	