Appendix A

ALL TEXT IN CAPITAL LETTERS (LIKE THIS ONE) IS ADDED FOR READERS AND DOES NOT BELONG TO THE ORIGINAL INSTRUCTIONS

I N S T R U C T I O N S [BASELINE AND SECRECY]

First at all, thank you for participating in this experimental study. The instructions are simple and if you follow them carefully you will be privately paid in cash, since nobody will know the payments received by the other participants. In this experiment there are neither correct nor incorrect answers. Do not think that we expect a specific behavior from you. On the other hand, you have to take into consideration that your decisions will affect the amount of money you will earn in the experiment. If you have any doubt, you can raise your hand and ask any of the experimenters. Out of these questions, any kind of communication is forbidden.

There are three types of participants: **manager, worker A** and **worker B**. In each round, each manager will be randomly paired with one worker A and one worker B. This pairing will change each round. The difference between the two types of workers will be explained in advance.

The experiment lasts 12 rounds.

You will know your role (manager, worker A or worker B) at the beginning of the experiment. It will be randomly assigned by the computer. You will keep the same role throughout the 12 rounds of the experiment.

In each round, participants will be paired with different people to the ones they were paired in the previous round, meaning that you will interact with different people in each round. Those people will be randomly chosen among the participants in this experiment by an algorithm. Furthermore, the identities of the participants will always be hidden.

Each round consists of two stages.

Stage 1:

a) Each worker chooses his/her *level of effort*. The level of effort have to be an integer number between 1 and 10.

b) The higher the level of effort chosen by the worker, the higher the cost of effort of the worker. The cost of effort associated with each level of effort is shown in the following table:

Level of effort	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Cost of effort	0	1	2	4	6	8	10	13	16	20

c) The difference between worker A and worker B is that worker A is more productive than worker B, meaning that his/her level of effort contributes more to the profit of the manager than the level of effort of worker B does.

Stage 2:

a) The manager will know the level of effort of each worker, the cost of effort and the profit that each worker contributes to the manager.

b) After knowing all the information explained above, the manager will set a *compensation* for each worker. The compensation must be an integer number between 0 and 100. The manager may choose a different compensation for each worker.

The profit of the manager in each round is calculated as follows:

> **Profit of the manager** = 14*level of effort of worker A + 7* level of effort of worker B – compensations paid to both workers

That is, the level of effort of worker A multiplied by 14 plus the level of effort of worker B multiplied by 7 minus the sum of the compensations paid to each worker.

Hence, the profit of the manager is higher the higher is the level of effort chosen by the workers and the lower is the compensation paid to the workers.

The profit for each worker in each round is calculated as follows:

Profit of the worker = compensation – cost of effort

That is, the profit of each worker is composed by the compensation received from the manager minus the cost of effort associated to the level of effort chosen by the worker.

Hence, the profit of the worker is higher the higher is the compensation and the lower is the level of effort chosen by the worker.

For example, if the level of effort of worker A is 7 and his/her compensation is 35, the level of effort of worker B is 5 y his/her compensation is 50, then the profit of each participant in this round will be:

Profit of the manager = 14*7 + 7*5 – (35 + 50) = 48 points

Profit of worker A = 35 – 10 = 25 points

Profit of worker B = 50 – 6 = 44 points

At the end of each round, a screen will inform to all participants about compensations, levels of effort chosen and profit of all participants.

[**IN SECRECY TREATMENT]**

[At the end of each round, a screen will inform to each worker about his/her own compensation, level of effort chosen and profit. That is, he/she will not know the level of effort, compensation or profit of the other worker. He/she will not know the profit of the manager. The manager will know the compensations, levels of effort chosen and profit of all participants including him/herself.]

At the end of the experiment we will privately pay you. You earnings will be a show up fee of 5 euros plus the equivalence in euros of the SUM of the points you have won in each of the 12 rounds. The points will be converted to euros in a rate of: 10 points = 10 cents.

SUMMARY

- If you are WORKER:

  You have to choose your level of effort between 1 and 10 knowing the costs of effort associated to each level of effort.

- If you are MANAGER:
  You have to set a compensation to each worker (between 0 and 100) knowing the level of effort chosen by each worker, the cost of effort associated to each level of effort chosen and the profit that each worker contributes to you.

QUESTIONNAIRE

To be sure that you have understood the instructions, before starting the experiment you are going to answer a simple questionnaire, just when you answer it correctly you will start your participation in this experiment.

If the level of effort of worker A is 8 and his/her compensation is 80, the level of effort of worker B is 6 and his/her compensation is 50, then the profit for each participant in this round will be:

Profit of the manager = 14*___ □ 7*___ - (___ + ___) = ___ + ___ - ___ = ___ points

Profit of worker A = ___ – ___ = ___ points

Profit of worker B = ___ – ___ = ___ points

If the level of effort of worker A is 10 and his/her compensation is 30, the level of effort of worker B is 1 and his/her compensation is 70, then the profit for each participant in this round will be:

Profit of the manager = 14*___ □ 7*___ - (___ + ___) = ___ + ___ - ___ = ___ points

Profit of worker A = ___ – ___ = ___ points

Profit of worker B = ___ – ___ = ___ points

I N S T R U C T I O N S [DEC AND DECS]

First at all, thank you for participating in this experimental study. The instructions are simple and if you follow them carefully you will be privately paid in cash, since nobody will know the payments received by the other participants. In this experiment there are neither correct nor incorrect answers. Do not think that we expect a specific behavior from you. On the other hand, you have to take into consideration that your decisions will affect the amount of money you will earn in the experiment. If you have any doubt, you can raise your hand and ask any of the experimenters. Out of these questions, any kind of communication is forbidden.

There are three types of participants: **manager, worker A** and **worker B**. In each round, each manager will be randomly paired with one worker A and one worker B. This pairing will change each round. The difference between the two types of workers will be explained in advance.

The experiment lasts 12 rounds.

You will know your role (manager, worker A or worker B) at the beginning of the experiment. It will be randomly assigned by the computer. You will keep the same role throughout the 12 rounds of the experiment.

In each round, participants will be paired with different people to the ones they were paired in the previous round, meaning that you will interact with different people in each round. Those people will be randomly chosen among the participants in this experiment by an algorithm. Furthermore, the identities of the participants will always be hidden.

Each round consists of two stages.

Stage 1:

a) Each worker chooses his/her *level of effort*. The level of effort have to be an integer number between 1 and 10.
b) The higher the level of effort chosen by the worker, the higher the cost of effort of the worker. The cost of effort associated with each level of effort is shown in the following table:

Level of effort	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Cost of effort worker A	0	1	2	4	6	8	10	13	16	20
Cost of effort worker B	0	2	4	8	12	16	20	26	32	40

c) The difference between worker A and worker B is that the cost of effort of worker B is higher than the cost of effort of worker A.

Stage 2:

a) The manager will know the level of effort of each worker, the cost of effort and the profit that each worker contributes to the manager.

b) After knowing all the information explained above, the manager will set a *compensation* for each worker. The compensation must be an integer number between 0 and 100. The manager may choose a different compensation for each worker.

The profit of the manager in each round is calculated as follows:

Profit of the manager = 14*level of effort of worker A + 14* level of effort of worker B – compensations paid to both workers

That is, the level of effort of worker A multiplied by 14 plus the level of effort of worker B multiplied by 14 minus the sum of the compensations paid to each worker.

Hence, the profit of the manager is higher the higher is the level of effort chosen by the workers and the lower is the compensation paid to the workers.

The profit for each worker in each round is calculated as follows:

Profit of the worker = compensation – cost of effort

That is, the profit of each worker is composed by the compensation received from the manager minus the cost of effort associated to the level of effort chosen by the worker.

Hence, the profit of the worker is higher the higher is the compensation and the lower is the level of effort chosen by the worker.

For example, if the level of effort of worker A is 7 and his/her compensation is 35, the level of effort of worker B is 5 y his/her compensation is 50, then the profit of each participant in this round will be:

Profit of the manager = 14*7 + 14*5 – (35 + 50) = 83 points

Profit of worker A = 35 – 10 = 25 points

Profit of worker B = 50 – 12 = 38 points

At the end of each round, a screen will inform to all participants about compensations, levels of effort chosen and profit of all participants.

[**IN DECS TREATMENT]**

[At the end of each round, a screen will inform to each worker about his/her own compensation, level of effort chosen and profit. That is, he/she will not know the level of effort, compensation or profit of the other worker. He/she will not know the profit of the manager. The manager will know the compensations, levels of effort chosen and profit of all participants including him/herself.]

At the end of the experiment we will privately pay you. You earnings will be a show up fee of 5 euros plus the equivalence in euros of the SUM of the points you have won in each of the 12 rounds. The points will be converted to euros in a rate of: 10 points = 10 cents.

SUMMARY

- If you are WORKER:

  You have to choose your level of effort between 1 and 10 knowing the costs of effort associated to each level of effort.

- If you are MANAGER:

  You have to set a compensation to each worker (between 0 and 100) knowing the level of effort chosen by each worker, the cost of effort associated to each level of effort chosen and the profit that each worker contributes to you.

QUESTIONNAIRE

To be sure that you have understood the instructions, before starting the experiment you are going to answer a simple questionnaire, just when you answer it correctly you will start your participation in this experiment.

If the level of effort of worker A is 8 and his/her compensation is 80, the level of effort of worker B is 6 and his/her compensation is 50, then the profit for each participant in this round will be:

Profit of the manager = 14*___ □ 14*___ - (___ + ___) = ___ + ___ - ___ = ___ points

Profit of worker A = ___ – ___ = ___ points

Profit of worker B = ___ – ___ = ___ points

If the level of effort of worker A is 10 and his/her compensation is 30, the level of effort of worker B is 1 and his/her compensation is 70, then the profit for each participant in this round will be:

Profit of the manager = 14*___ □ 14*___ - (___ + ___) = ___ + ___ - ___ = ___ points

Profit of worker A = ___ – ___ = ___ points

Profit of worker B = ___ – ___ = ___ points

Appendix B

In the first two treatments, the largest component of the sums (40.77% and 41.09%) is the one corresponding to the high productivity A workers exerting more effort (and hence incurring a higher effort cost) than the low productivity B workers and being rewarded for it with a higher wage. By contrast in the last two treatments the case where low effort-cost A workers incur more effort than the high effort-cost B workers and produce more and the case where the Bs incur higher effort costs and produce carry similar weights (24.07% and 26.49% in the third treatment and 27.01% and 21.51% in the fourth treatment).

Baseline:

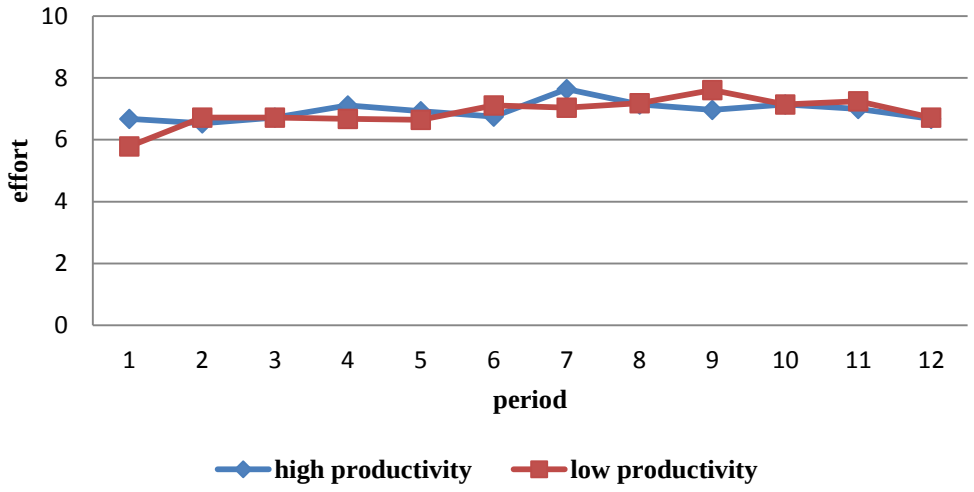

Figure B.1: average effort by period (Baseline).

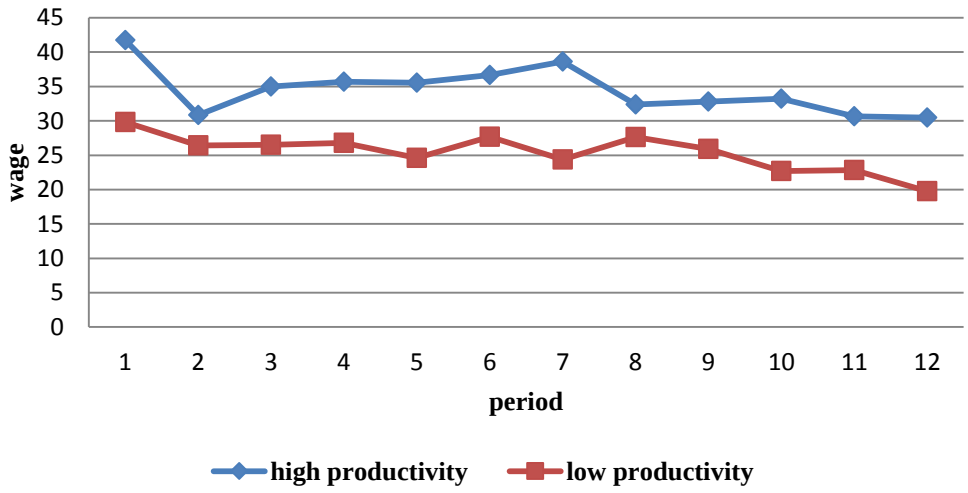

Figure B.2: average wage by period (Baseline).

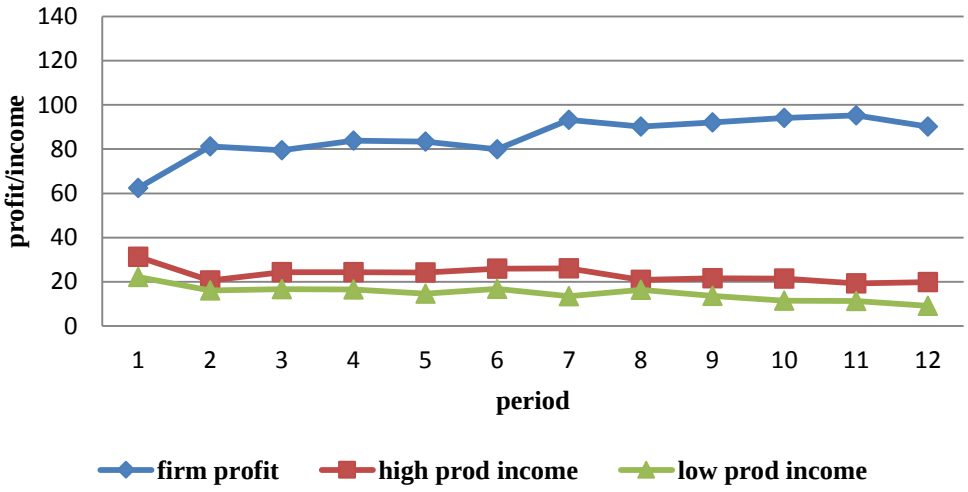

Figure B.3: average firm's profit and workers' income by period (Baseline).

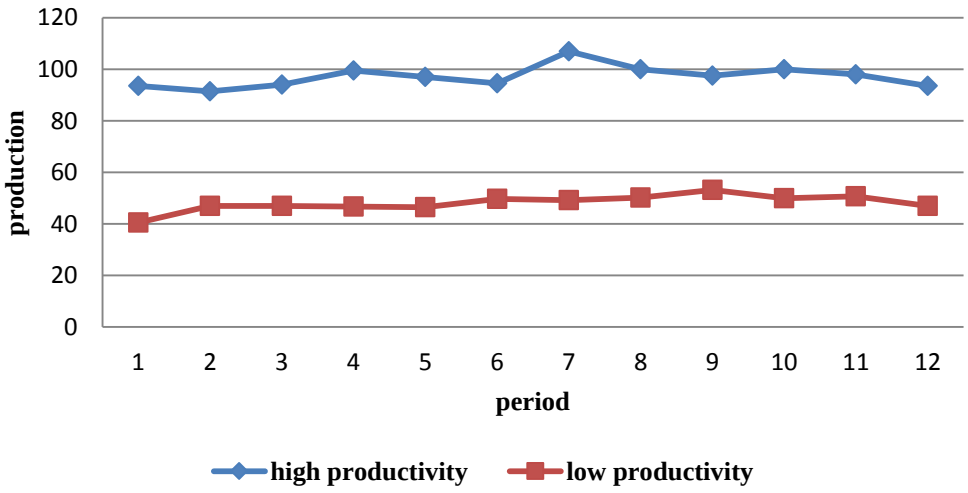

Figure B.4: average production by period (Baseline).

Secrecy:

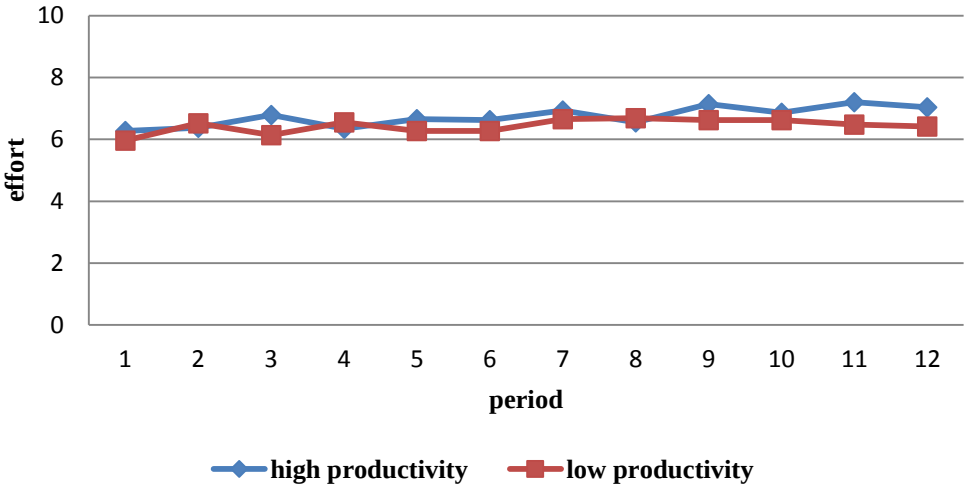

Figure B.5: average effort by period (Secrecy).

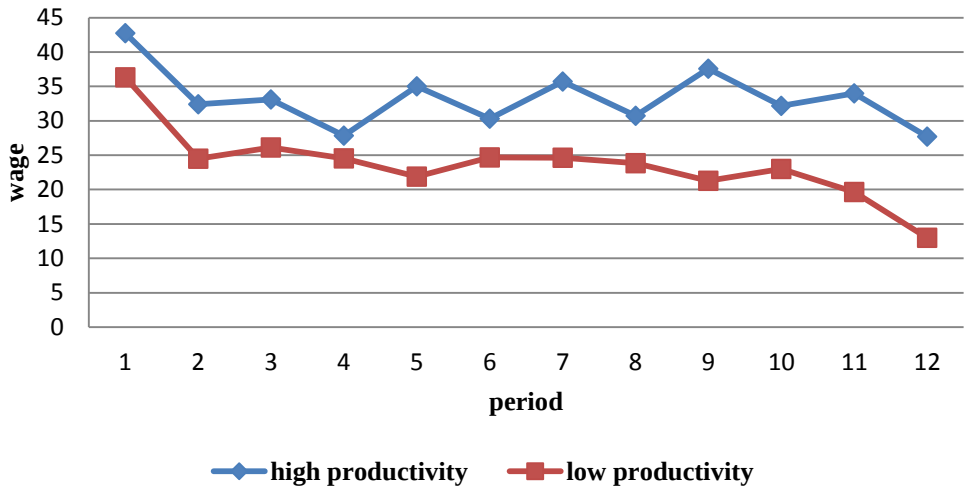

Figure B.6: average wage by period (Secrecy).

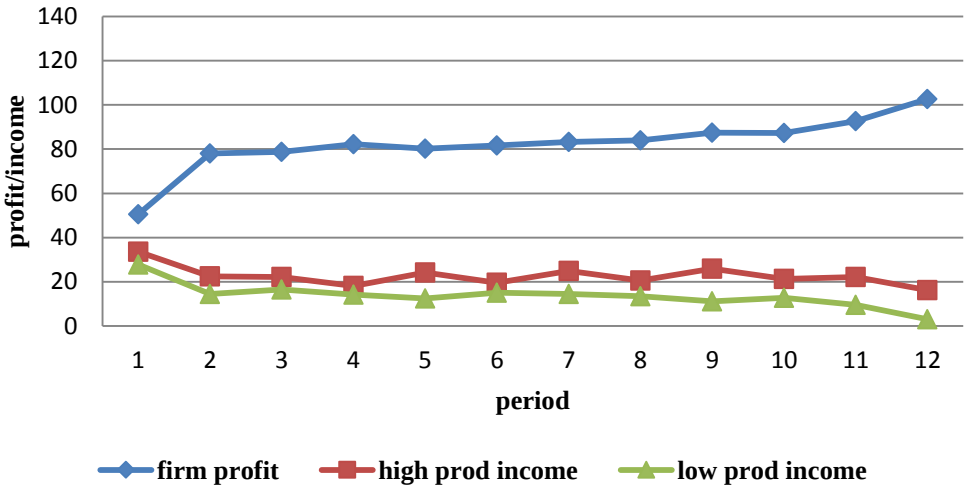

Figure B.7: average firm's profit and workers' income by period (Secrecy).

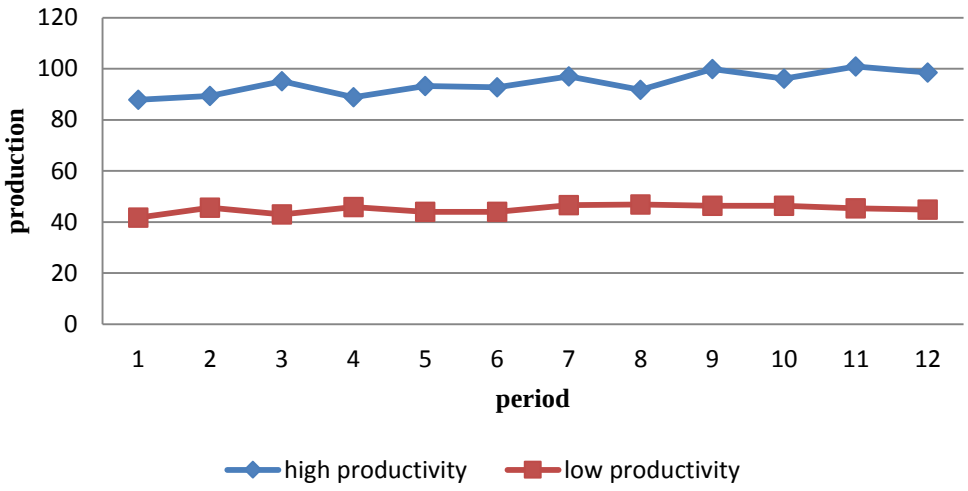

Figure B.8: average production by period (Secrecy).

DEC:

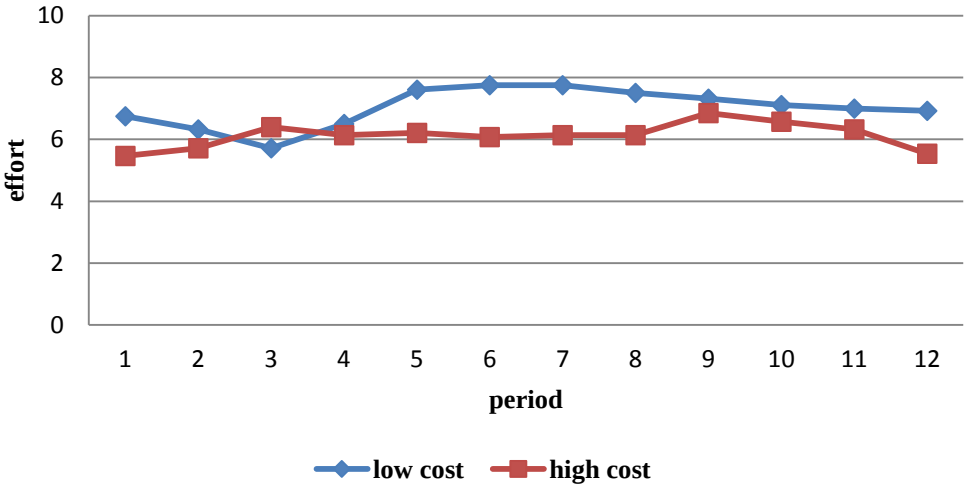

Figure B.9: average effort by period (DEC).

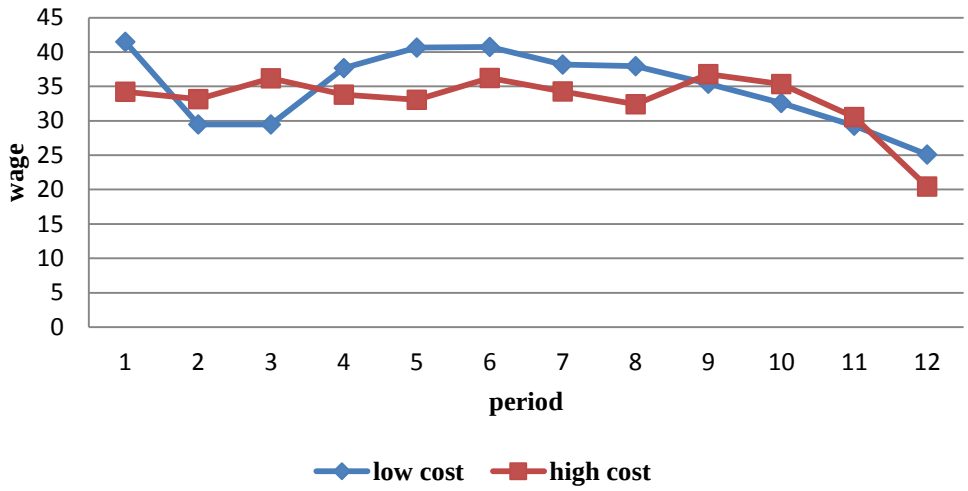

Figure B.10: average wage by period (DEC).

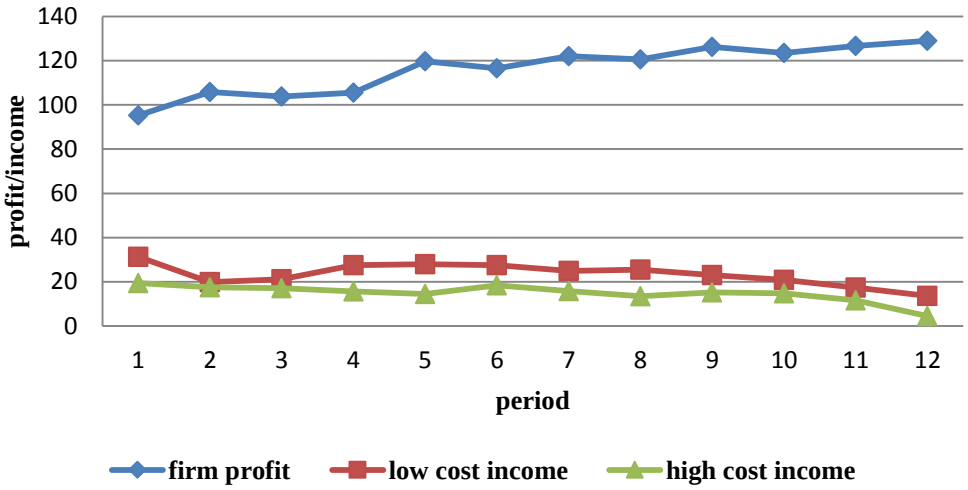

Figure B.11: average firm's profit and workers' income by period (DEC).

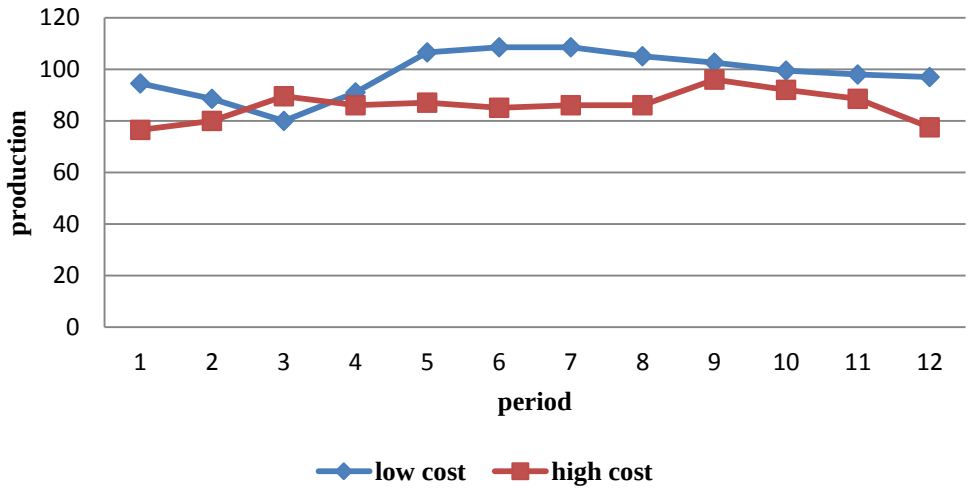

Figure B.12: average production by period (DEC).

DECS:

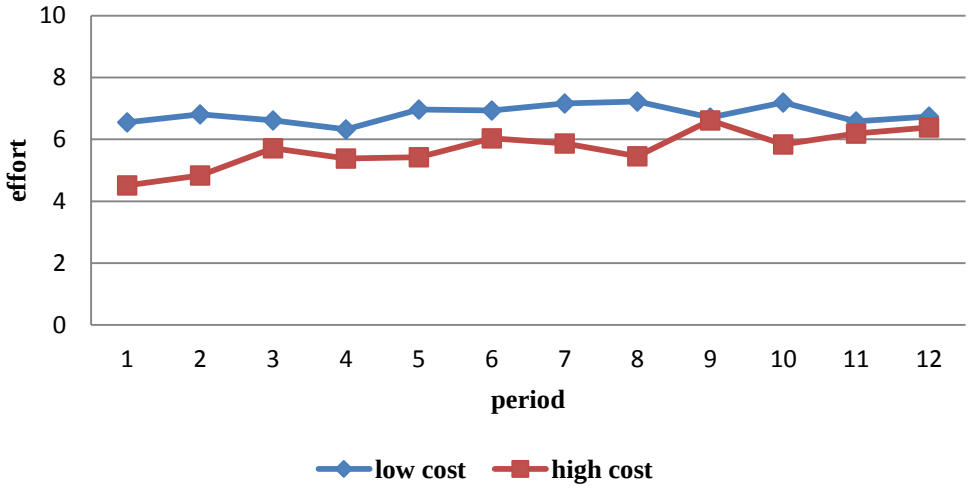

Figure B.13: average effort by period (DECS).

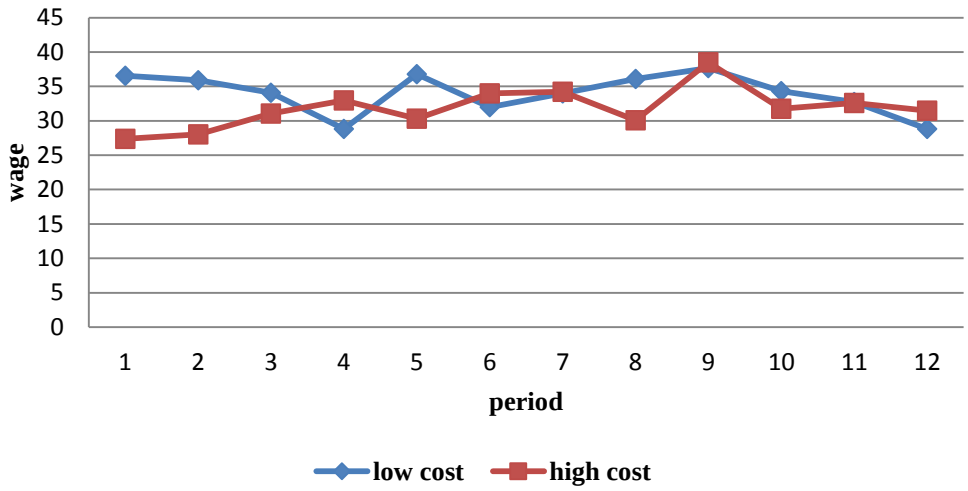

Figure B.14: average wage by period (DECS).

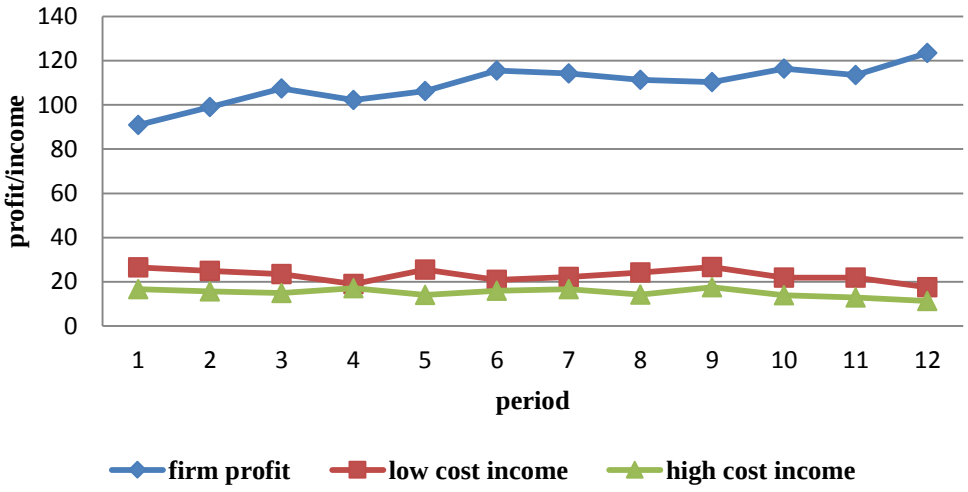

Figure B.15: average firm's profit and workers' income by period (DECS).

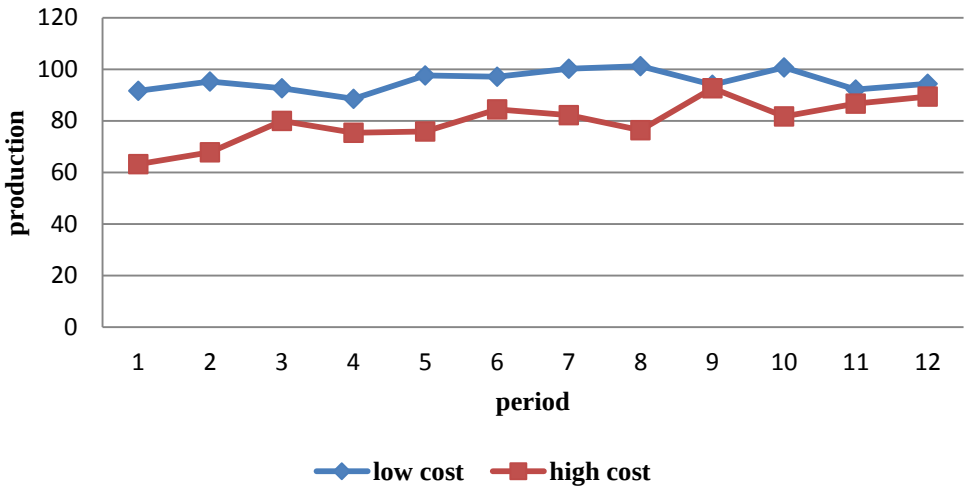

Figure B.16: average production by period (DECS).

Model	1	2	3	4
Dependent variable	W_A	W_B	W_A	W_B
CostEffortA	1.967***	.124*	2.311***	.119
	(.164)	(.070)	(.197)	(.092)
CostEffortB	-.321***	1.402***	-.090*	1.297***
	(.107)	(.138)	(.048)	(.109)
Secrecy	-.515	-.784	-.214	.720
	(3.854)	(3.016)	(4.848)	(4.427)
Period	-.677**	-1.114***	-.794***	-.728***
	(.284)	(.184)	(.233)	(.210)
Constant	20.286***	16.416***	15.084***	12.727***
	(3.397)	(2.456)	(3.746)	(3.453)
Obs.	684	684	708	708
R^2	0.289	0.248	0.327	0.374

Table B.1: Wage regressions. GLS regressions with robust standard errors, clustered by matching group. Significance at the 10%, 5% and 1% level is denoted by *, **, and ***, respectively.

Model	1	2	3	4
Dependent variable	π_A	π_B	π_A	π_B
CostEffortA	.967***	.124*	1.311***	.119
	(.164)	(.170)	(.197)	(.092)
CostEffortB	-.321***	.402***	-.090*	.297***
	(.107)	(.138)	(.048)	(.109)
Secrecy	-.551	-.784	-.214	.720
	(3.854)	(3.017)	(4.848)	(4.427)
Period	-.677**	-1.114***	-.794***	-.727***
	(.284)	(.184)	(.233)	(.210)
Constant	20.286***	16.416***	15.084***	12.727***
	(3.397)	(2.456)	(3.746)	(3.453)
Obs.	684	684	708	708
R^2	0.108	0.082	0.151	0.064

Table B.2: Income regressions. GLS regressions with robust standard errors, clustered by matching group. Significance at the 10%, 5% and 1% level is denoted by *, **, and ***, respectively.

Model	1	2	3	4
Dependent variable	W_A	W_B	W_A	W_B
CostEffortA	2.119***	.280***	2.128***	-.038
	(.236)	(.097)	(.310)	(.138)
CostEffortB	-.470**	1.235***	-.162*	1.205***
	(.185)	(.198)	(.083)	(.168)
Secrecy	.067	-.426	-5.877	-4.992
	(4.550)	(3.478)	(4.105)	(3.631)
Secrecy*CostEffortA	-.289	-.297**	.324	.268
	(.239)	(.133)	(.402)	(.180)
Secrecy*CostEffortB	.251	.281	.112	.151
	(.285)	(.269)	(.104)	(.218)
Period	-.657**	-1.092***	-.788***	-.727***
	(.285)	(.178)	(.233)	(.208)
Constant	20.040***	16.304	18.464***	16.204
	(4.057)	(2.958)	(3.863)	(3.139)
Obs.	684	684	708	708
R^2	0.294	0.255	0.328	0.374

Table B.3: Wage regressions. GLS regressions with robust standard errors, clustered by matching group. Significance at the 10%, 5% and 1% level is denoted by *, **, and ***, respectively.

Model	1	2	3	4
Dependent variable	π_A	π_B	π_A	π_B
CostEffortA	1.119***	.280***	1.128***	-.038
	(.236)	(.097)	(.310)	(.138)
CostEffortB	-.470**	.235	-.162*	.205
	(.185)	(.198)	(.083)	(.168)
Secrecy	.067	-.426	-5.877	-4.992
	(4.550)	(3.478)	(4.105)	(3.631)
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	(.325)	(.133)	(.402)	(.180)
Secrecy*CostEffortB	.251	.281	.112	.150
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Period	-.657**	-1.092***	-.788***	-.727***
	(.285)	(.178)	(.233)	(.208)
Constant	20.040***	16.304***	18.464***	16.204***
	(4.057)	(2.958)	(3.863)	(3.139)
Obs.	684	684	708	708
R^2	0.114	0.091	0.151	0.056

Table B.4: Income regressions. GLS regressions with robust standard errors, clustered by matching group. Significance at the 10%, 5% and 1% level is denoted by *, **, and ***, respectively.