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THE COST OF LEANING IN

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ABSTRACT

Gender differences in the propensity to negotiate are often used to explain the gender wage gap, popularizing the push for women to "lean-in." We use a laboratory experiment to examine the effect of leaning-in. Despite men and women achieving similar and positive returns when they must negotiate, we find that women avoid negotiations more often than men. While this suggests that women would benefit from leaning-in, a direct test of the counterfactual proves otherwise. Women appear to positively select into negotiations and to know when to ask. By contrast, we find no significant evidence of a positive selection for men.

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1 Introduction

Should women negotiate their salaries more often? According to 70% of adults recently surveyed in the United States, the answer is simply yes.[1] This wide-held belief that women should negotiate more is perhaps most easily seen in the popular push for women to "lean-in" (Sandberg, 2013). Motivated by the well-cited statistics that women earn less than men, the United States Department of Labor encourages women to "aim higher and negotiate better."[2] Out of the four Grand Prize winners in their Equal Pay App Challenge, three of the apps explicitly seek to help close the gender wage gap by offering negotiation tools.[3] While compelling, there is some evidence that the recommendation to lean-in may backfire. A cautionary story about a woman, whose job offer as an assistant professor was retracted after trying to negotiate details of her contract, went viral.[4] In this paper, we examine whether women financially benefit from leaning-in and negotiating more.

Decades of research examines the extent to which a gender gap exists both in terms of entrance into negotiations and achieved outcomes from negotiations. The general consensus — including recent observational evidence (Card, Cardoso and Kline, 2016), laboratory studies (Dittrich, Knabe and Leipold, 2014) and field experiments (Leibbrandt and List, 2015) — is that women enter negotiations less often and/or fare worse when they do negotiate.[5] However, many factors have been documented to influence if and to what extent the gender gap exists, including the sex of negotiating partners (Eckel and Grossman, 2001; Solnick, 2001; Bowles, Babcock and Lai, 2007; Sutter et al., 2009; Hernandez-Arenaz and Iriberri, 2016), the activation of stereotypes (Kray, Thompson and Galinsky, 2001), the availability of information on what others do or what is recommended (Bowles, Babcock and McGinn, 2005; Rigdon, 2012), the beneficiaries of the negotiation (Bowles, Babcock and McGinn, 2005), the extent to which the possibility for a negotiation is known (Small et al., 2007; Leibbrandt and List, 2015), the fear of backlash (Bowles, Babcock and Lai, 2007), the framing of the situation as a negotiation or ask (Small et al., 2007), the cultural context of the negotiations (Andersen et al., 2013), the relative positional power in a negotiation (Andersen et al., 2013; Dittrich, Knabe and Leipold, 2014; Greenberg and Petrie, 2015), the communication strategies or mode (Bowles and Babcock, 2013;

[1] Results from a Google Consumer Survey (July 2015, n = 200) that asked "Do you think women should negotiate their salaries more often?" (yes/no).

[2] See https://blog.dol.gov/2015/04/13/its-time-for-equal-pay-now. For a review of the literature on the wage gap, see Blau and Kahn (2016). While they document a recent decline in the wage gap due to observable factors such as higher education achievement among women, they also find that the "unexplained" wage gap has largely not decreased — leaving room for additional explanations, such as differences in risk aversion or negotiations.

[3] See http://www.dol.gov/equalpay/apps-winners.htm

[4] See http://www.newyorker.com/science/maria-konnikova/lean-out-the-dangers-for-women-who-negotiate

[5] For additional evidence, see Stuhlmacher and Walters (1999); Babcock and Laschever (2003); Bowles and McGinn (2008); Eckel, de Oliveira and Grossman (2008); Bowles (2013); Azmat and Petrongolo (2014); Mazei et al. (2015); Bohnet (2016).

Bowles, 2013; Greenberg and Petrie, 2015), and the ability to signal valuations or experience (Castillo et al., 2013; Busse, Israeli and Zettelmeyer, 2016). Gender differences in implicit or explicit preferences, such as risk aversion or fairness concerns, may also contribute to differences in negotiation outcomes for men and women.[6]

While vast, this literature does not provide direct comparisons of the financial returns that women achieve when they choose whether to negotiate versus when they always negotiate. An open question therefore follows: what are the financial consequences or benefits from leaning-in? Determining which factors typically lead to better or worse outcomes for women in negotiations is not sufficient to answer this question. Even in settings where most women benefit from negotiations, leaning-in may be harmful if the women avoiding those negotiations are the ones who would lose from instead negotiating. Similarly, environments where losses from negotiations are not possible, or where it is weakly dominant to always enter negotiations, are not suitable for considering the necessary counterfactual. That is, to determine whether women would financially benefit from negotiating more, we must understand the selection of women into negotiations in a setting where outside options are observed and losses from negotiations are possible. This paper presents the first comparison of outcomes when women can and cannot select into negotiations in otherwise similar environments.

To narrow in on negotiation decisions themselves, we examine an environment that abstracts away from many factors in more complex negotiations. Participants are anonymous to mitigate any fear of discrimination or backlash. Participants encounter explicit negotiation opportunities and decisions to avoid any ambiguity. Participants are informed of what they bring to the table to limit concerns related to lacking confidence and are informed of their outside options to make the potential loss of a negotiation clear.

In particular, we conduct a laboratory experiment where parties in a negotiation include one participant randomly assigned to the role of the worker and another participant randomly assigned to the role of the firm. A negotiation between the two parties centers on determining how to split a joint worker-firm revenue, which equals the sum of their individual contributions. Their individual contributions depend on their performance in a prior task. There are 10 rounds of negotiation opportunities, where each round randomly rematches participants into worker-firm pairs. All negotiation opportunities begin with a computer-generated suggested wage for the worker, equal to the worker's contribution plus a random amount that is negative in expectation.

In our Choice treatment, workers can choose to avoid a negotiation opportunity by accepting the suggested wage for themselves and leaving the remainder of the joint revenue for the firm. Workers can alternatively reject their suggested wage and enter a negotiation. By contrast, workers must always enter negotiations in our Forced treatment.[7]

[6]For survey papers on gender differences in such preferences, see Croson and Gneezy (2009), Bertrand (2011) and Niederle (forthcoming).

[7]In considering the counterfactual state where women must always enter negotiations, we can capture the full

Negotiations are anonymous and last at most three-minutes, during which participants can engage in free-form communication and post official wage offers. If an agreement is reached within three-minutes, the worker receives the agreed upon wage and the firm receives the remainder of the joint revenue. Negotiations that fail to reach an agreement result in the worker receiving the suggested wage minus a five-dollar penalty and the firm receiving the joint revenue minus the suggested wage and minus a five-dollar penalty. The symmetric Nash Bargaining Solution of equally splitting the ten-dollar surplus relative to a failed negotiation thus secures the payoffs identical to that of implementing the suggested wage - i.e., the outcome that occurs when workers avoid negotiations in the Choice treatment.

In the Forced treatment, we find small and insignificant gender differences in achieved outcomes from negotiations. Despite this lack of a difference, results from the Choice treatment show that women are significantly less likely — on average 12 percentage points less likely — to enter negotiations than men. Moreover, when women do enter negotiations, they almost always achieve financial gains.

A lean-in intervention may therefore seem promising in this environment. An accurate recommendation, however, requires the observation of the full counterfactual. Forcing women to always negotiate leads to an increase in losses and no additional gains. Leaning-in appears irrelevant with respect to financially favorable negotiations — women already choose to enter those — and harmful with respect to financially unfavorable negotiations that women would have avoided if given the choice. Additional evidence suggests that this positive selection is driven by higher entry rates among higher-negotiation-ability women. Measures of risk aversion or fairness concerns do not play a significant role.

By contrast, while men avoid some negotiations, their returns from negotiations do not significantly differ across the Forced and Choice treatments. Their selection is instead consistent with fairness concerns; men avoid negotiations more often when their suggested wage exceeds or equals their contribution and they believe receiving one's contribution is fair.[8]

Our paper proceeds as follows. We begin with the design in Section 2, describe the data in Section 3, and then briefly compare outcomes between men and women in Section 4. Sections 5 and 6 separately consider the selection by women and men into negotiations in more detail, and finally Section 7 concludes.

set of potential returns to leaning-in. A related and interesting question would involve the impact of a less binding "recommendation" to lean-in more often. Such a recommendation could avoid the possibility of our results being driven by individuals disliking forced negotiations per se. Counter to this possibility, however, we do not observe differences between our Forced and Choice treatments when negotiations opportunities are relatively favorable.

[8] As women's entrance decisions are not similarly correlated with this fairness measure, this result is reminiscent of the finding in Andreoni and Vesterlund (2001) that women's fairness motivated behavior are less responsive to the price of giving.

2 Design

We create a negotiation environment, using Ztree (Fischbacher, 2007), where participants can compose free-form arguments for their point of view and can separately generate official proposals which the opposing side can respond to. Within this environment, we consider two treatments: our "Choice" treatment allows participants to decide whether they would like to negotiate, and our "Forced" treatment instead forces participants to always negotiate.

In both treatments, participants are evenly split between firms and workers at the beginning of the study. Participants then face two blocks of five negotiation opportunities, where each block is preceded by one performance round. The performance round determines the individual contribution that a participant brings to each of the subsequent five negotiation opportunities. For each negotiation opportunity, participants are randomly matched into worker-firm pairs with joint revenues equal to the sum of the worker's contribution and the firm's contribution. In the Choice treatment, workers can decide to enter into negotiations with the firm or forgo negotiations by accepting a computer-generated suggested wage. In the Forced treatment, workers must enter negotiations while still observing a computer-generated suggested wage. All negotiations concern the share of joint revenue the worker receives as a wage. Negotiations the fail to reach an agreement result in the suggested wage being implemented along with a five-dollar penalty for both the worker and the firm.

Appendix B displays the instructions given to participants before beginning the study. These instructions include screenshots of how negotiations take place. We now describe each design element in more detail.

Individual Contributions

To encourage workers and firms to feel entitled to their individual contributions, we have participants perform a five-minute real-effort task at the beginning of each negotiation block. Their performance determines their contribution for the subsequent five rounds of negotiation opportunities in that block. A worker's contribution is \$20, \$15 or \$10, depending on whether the worker's performance is the highest, second highest or third highest when compared to two other randomly selected workers. A firm's contribution is \$25 or \$20, depending on whether the firm's performance is the highest or second highest performance when compared to one other randomly selected firm.[9] Any performance ties are broken randomly, and all participants are informed that this process determines contributions. In the first block, their task is to calculate the sum of five two-digit numbers. In the second block, their task is to count the number of zeros in a table with ten rows and five columns of zeros and ones (i.e., one row may appear like "00101"). Since participants' relative performance may vary across the two tasks, their individual contributions may vary across the two blocks.

[9]To make room for negotiation demands, note that the highest contribution level of the worker equals the lowest contribution level of the firm.

Joint Revenue

After learning their individual contributions for a block, participants subsequently face five rounds of negotiation opportunities. In each round, a firm and a worker are randomly matched, and the joint revenue is the sum of the worker and firm contributions. The firm is always informed of the worker contribution. Whether the worker is informed of the firm contribution depends on the study version. In a common knowledge version, the worker is informed of the firm contribution. In a private information version, the worker is not informed of the firm's contribution. This design feature was motivated by the finding that women often fare worse in negotiations that involve more ambiguity (see Bowles and McGinn (2008) and Mazei et al. (2015) for reviews, or Leibbrandt and List (2015) for recent evidence). However, perhaps given the anonymity and explicit choice to negotiate in our setting, this variation in knowledge does not produce different results.[10] Our analysis will therefore not focus on this variation and instead includes it as a control where relevant.

Suggested Wage

When the worker and firm are matched, they learn a suggested wage for the worker. The suggested wage for the worker equals the worker's contribution plus a bonus that is randomly chosen among -4, -2, 0, 2. The random bonus is negative in expectation so that workers often have a financial incentive to negotiate. For example, negotiations would be desirable if a bonus is negative and the norm is to divide the joint revenue according to individual contributions. By varying the bonus level, we can assess whether the outside option influences the decisions to enter negotiations and the returns from doing so.

Potential Payoffs

In the Choice treatment, a worker can choose to avoid negotiations by accepting the suggested wage for themselves and hence the joint revenue minus the suggested wage for the firm. If a worker enters a negotiation in the Choice treatment, or when a worker must always enter negotiations in the Forced treatment, the same two payoff scenarios are possible. When an agreement is reached, the worker receives the agreed upon wage and the firm receives the remainder of the joint revenue. When an agreement is not reached, the suggested wage is implemented along with a five-dollar penalty for both the worker and firm. That is, the worker receives the suggested wage minus five dollars, and the firm receives the joint revenue minus the suggested wage minus five dollars. Assuming risk neutrality, the suggested wage therefore corresponds to the symmetric Nash Bargaining Solution. Table 1 summarizes the potential payoffs for the workers and firms in both the Choice and Forced treatments. One randomly selected round from each block is

[10] For instance, workers enter negotiations 72% of the time when there is private knowledge and 69% of the time when there is common knowledge. We fail to reject the equality of the entrance rates ($p = 0.36$) and the average return from negotiations of \$1.31 vs \$1.23 conditional on negotiations ($p = 0.74$). More thorough investigation via regression analyses further confirm the lack of significant differences.

implemented for payoffs.

Table 1: Worker Payoffs (W) and Firm Payoffs (F)

	Choice treatment	Forced Treatment
No Negotiation	W = suggested wage F = joint revenue - suggested wage	N/A
Successful Negotiation	W = agreed upon wage F = joint revenue - agreed upon wage	
Failed Negotiation	W = suggested wage - \$5 F = joint revenue - suggested wage - \$5	

W indicates the payoff for the worker, and F indicates the payoff for the firm. In the Choice treatment, a worker may decide to accept the suggested wage and thus not enter a negotiation. The resulting payoffs are shown in the No Negotiation row. Alternatively, a worker may choose to reject the suggested wage and then enter a negotiation. Payoffs when an agreement is reached are shown in the Successful Negotiation row, while payoffs when an agreement in not reached are shown in the Failed Negotiation row. In the Forced treatment, workers must always enter negotiations so only these latter two payoffs are relevant.

Negotiations

Negotiations occur as follows. Workers and firms have three minutes in which they can send each other instant chat messages. They are not allowed to send a message that would identify them in any way, such as their name, age or gender. While they can use the chat to discuss different wages, no agreements can be implemented through the chat itself. Instead, official wage proposals must be entered into a separate table. They can update their wage proposal at any time by submitting a new wage proposal to the table. An agreement is reached only if a participant explicitly accepts an opponent's most recent wage proposal by clicking the "I accept this offer" button.

Follow-up activities

After participants complete both blocks of five rounds of negotiations, we elicit risk and fairness measures over payoffs similar to those faced when workers may decide whether to negotiate. First, to measure how participants respond to risk, they make a series of five binary choices between (1) \$13 for certain and (2) a lottery of \$18 with P% chance and \$8 with $(1-P)$% chance. From the first to fifth choice, P increases in increments of 10 percentage points from 50% to 90%. In each session, we randomly select one decision maker and implement one of their choices. Note that the gambles mirror the potential risk a participant faces when choosing between accepting a suggested wage of \$13 or entering a negotiation. When entering such a negotiation, a participant would receive \$8 as a result of the \$5 penalty if an agreement is not reached or \$18 by instead fully capturing \$5 from the likely bargaining range of the suggested wage plus or minus \$5.[11]

[11]We chose \$13 as it reflects a "middle" suggested wage that arises from a worker contribution of \$15 and bonus of -2. Also, while workers can reach agreements outside the range of their suggested wage plus or minus \$5, doing so requires the worker or firm to forgo a strictly dominant (financial) outcome of failing to reach an agreement

Second, to elicit which allocations participants view as fair, they are asked to indicate what they perceive as a fair wage in six scenarios that vary according to the worker's contributions, the firm's contributions and the suggested wage.[12] In each session, we randomly select one decision maker and select one scenario. The decision maker's fair wage for the selected scenario is then implemented for an unrelated worker-firm pair. To encourage participants' allocations to reflect their own views on fairness and their expectations of others' views on fairness, the worker-firm pair award the decision-maker a bonus, from \$0 to \$10, according to how fair they view the decision maker's implemented fair wage.

Finally, participants complete a short follow-up survey that collects demographic information on their age, sex, graduation year, degree program, and stated GPA.

3 Data

From May - October 2013, 292 undergraduate students participated in sixteen sessions at the Stanford Economics Research Laboratory. The modal session achieved gender-balance. Across sessions, the percentage of female participants ranged from 42% to 63%.[13] From the two randomly selected negotiation rounds (one from each block), any additional payments from the follow-up activities and a \$5 show-up fee, participants' cash earnings ranged from \$22 - \$99 with an average of \$56. In the Forced treatment, there were 33 female workers, 31 male workers, 34 female firms and 30 male firms. In the Choice treatment, there were 41 female workers, 41 male workers, 38 female firms, and 44 male firms. For each participant, we observe 10 rounds of negotiation data.

These data allow us to determine if and when male and female workers choose to enter negotiations and their returns from doing so. We compute returns as the wage the worker receives minus their suggested wage. When workers choose not to enter negotiations in the Choice treatment, their returns are thus zero. Conditional on negotiations, their returns depend on whether they reach an agreement. In the event of a successful negotiation, the return is negative, zero, or positive whenever the agreed upon wage falls below, equals, or exceeds the suggested wage. In the event of a failed negotiation, the return is negative five dollars by design.

Our data also allow us to examine how participants engage in free-form chat when they enter negotiations. To assess the corresponding (anonymized) chat data, we hired three undergraduate research assistants at an hourly rate to indicate for each round of negotiations whether the firm and/or worker sent chat messages that could be classified as using aggression, compromise, deference, entitlement, even-split arguments, fairness concepts, need-based appeals, and/or

and hence having the suggested wage with the \$5 penalty implemented as the worker's wage. Indeed, only 1% of negotiations result in workers receiving an amount outside of this range.

[12] The scenarios (worker contribution, firm contribution, suggested wage) are as follows: (10, 25, 10), (15, 25, 15), (20, 25, 20), (20, 25, 14), (20, 25, 16), and (20, 25, 22).

[13] To achieve gender-balance as much as possible, we recruited two sets of participants for each session — one set for males and another set for females — via Stanford's online recruiting system Sona. Participants cannot view studies that they are not eligible on Sona, which allows us to do this separate recruiting discretely.

norms.[14] We consider an individual's chat message to fall into one of the above categories for a given round if two or more research assistants indicated the relevance of that category. We also hired one research assistant to indicate how likely (from 0 to 100%) that a particular round of (anonymized) chat messages was sent by a female. In addition to being paid an hourly rate, this research assistant was paid a bonus according to the accuracy of 10 randomly selected guesses.[15]

4 Do Men and Women Differ in Negotiations?

In our Forced treatment, when workers must always negotiate, they reach agreements 92% of the time. This agreement rate holds constant across male and female workers and thus 8% of resulting wages reflect the five-dollar penalty from failed negotiations. The other resulting wages reflect significant heterogeneity: 30% of negotiations settle on wages equal to contributions, 20% equal suggested wages, 7% involve an equal 50-50 split of the joint revenue, and nearly half of negotiations settle on some other wage (note that the categories can overlap). A slight majority of 51% of negotiations result in gains for the workers while only 29% result in losses. The average return from negotiations for workers is \$0.66, and as shown in the first two columns of Table 2, this average does not significantly differ across male and female workers when clustering standard errors at the participant-level and controlling for other factors, including the bonus level involved in the suggested wage, the contribution levels of the worker and firm, and the round of the negotiation.[16]

Male and female workers appear to achieve these returns from negotiations in similar manners. Both male and female workers make the first wage proposal about 50% of the time, and their returns are positively correlated with doing so (see Appendix Table A.1).[17] Male and female workers also exhibit similar chat tendencies and experience similar returns from these tendencies

[14] An overview of the provided definitions for these chat categories are as follows: *aggressive* - a participant threatens to not reach an agreement or strongly questions their partner's proposal; *compromise* - a participant explicitly suggests they take into account their own preference and their partner's preference; *deferential* - a participant talks poorly of themselves or favorably of their partner, is apologetic, is uncertain, uses caveats, or looks for assurance (particularly via the use of question marks); *entitled* - a participant advocates for higher payment by saying they deserve it for some reason; *even-split* - a participant explicitly says they should split the joint revenue equally; *fair* - a participant uses the word fair or a close synonym for fair; *need-based* - a participant discusses their financial need for the money; *norm* - a participant discusses what they have received or how payments have been determined in past rounds.

[15] Specifically, the research assistant knew that for each of the selected guesses, we would randomly draw an integer X from 1 to 100. If X is less than or equal to his percentage guess that the message was sent by a female, he would receive \$10 if the message was indeed sent by a female and \$0 otherwise. If X is greater than his percentage guess that the message was sent by a female, he would receive \$10 with a X% chance and \$0 otherwise.

[16] It is also worth noting that neither the performance in the task nor the resulting contribution levels, in the first or second block, differ across male and female workers.

[17] In contrast to prior literature, women if anything ask for more. In looking at the Forced treatment and including for the same set of controls as in Table 2, female workers are 5 percentage points more likely to send the first wage proposal, and conditional on doing so, ask for \$0.98 cents more than male workers. These differences are not significant, however.

(see Appendix Tables A.2 and A.3).[18]

Despite the gender similarities in the Forced treatment, gender differences emerge when workers are presented with the opportunity to circumvent negotiations in the Choice treatment. As shown in the third and fourth columns of Table 2, women enter negotiations significantly less often than men — by an average of twelve percentage points when clustering standard errors at the participant-level and controlling for other relevant factors of each negotiation.

Table 2: Gender differences in returns from negotiation and entrance into negotiation (Male and Female Workers, Both Treatments)

	OLS of returns given negotiation in the Forced treatment		Probit (marginal effects) of entrance into negotiations in the Choice treatment	
male	0.32	0.36	0.11**	0.12***
	(0.26)	(0.25)	(0.05)	(0.04)
Constant	2.07***	-0.78		
	(0.31)	(1.25)		
Bonus FE	yes	yes	yes	yes
Controls	no	yes	no	yes
N	640	640	820	820

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the participant-level and shown in parentheses. *In the left panel,* results are from OLS regressions of gains from negotiations, relative to suggested wage. "male" is an indicator for being male. Bonus FE includes indicators for the bonus level. Controls include indicators for the negotiation round (from 1 to 10), the worker's contribution, the difference between the worker's and firm's contributions, an indicator for whether the firm's contribution is known, and the interaction between these last two variables. Data include the observations from the 33 female workers and 31 male workers during the 10 rounds in the Forced treatment. *In the right panel,* results are from Probit regressions (marginal effects shown) of choice to enter negotiations. "male" is an indicator for being male. Bonus FE includes indicators for the bonus level. Controls include the negotiation round (from 1 to 10), the worker's contribution, an indicator for whether the firm's contribution is known, and the difference between the worker's and firm's contributions if the firm's contribution is known. Data include the observations from the 41 female workers and 41 male workers during the 10 rounds in the Choice treatment.

While the gender difference in entry-rates aligns with the common refrain that women do not negotiate enough, we directly test whether leaning-in is financially helpful for women in Section 5 and for men in Section 6. Mirroring our results in the Forced treatment, it is worth noting that there are no significant gender differences in negotiation outcomes achieved by firms in either the

[18]While there are no significant differences in chat tendencies, the research assistant nonetheless correctly guessed, on average, a higher chance that a message is sent by a female worker if that indeed is the case (51% versus 41% for female versus male workers). Additionally, one interesting difference emerges in returns from chat tendencies: deferential or gender stereotypical female messages are predictive of higher returns for female but not male workers (for a discussion of the effectiveness of negotiation communication strategies, see Bowles and Babcock (2013)). Note that types of chat messages that occur less than 10% of the time are not included in Appendix Table A.3, although doing so does not change the results.

Forced or Choice treatment (see Appendix Table A.4).[19] Moreover, firms never face the decision about whether to negotiate, so our investigation focuses on workers.

5 Women's Negotiation Decisions and Outcomes

In Section 5.1, we first restrict the analysis to the Choice treatment to assess when women decide to enter negotiations and the returns from doing so. In Section 5.2, we examine how the returns from negotiations change when women must instead always negotiate in the Forced treatment. This comparison allows us to determine whether women would financially benefit from leaning-in and negotiating more often. In the final Section 5.3, we consider additional evidence on what may influence the negotiation-entry decisions, such as individual preferences to negotiate, fairness concerns over outcomes, or individual risk attitudes.

5.1 When do women enter negotiations?

Most women enter negotiations sometimes and opt-out of negotiations other times: out of the 41 female workers in the Choice treatment, only one woman never enters a negotiation and four women enter all negotiations. Figure 1 shows that the decision to negotiate is strongly correlated with the bonus. When the bonus is -4, so the suggested wage is four dollars less than the worker's contribution, women choose to negotiate 91% of the time. This high entry rate shows that, if it is costly for women to negotiate, these costs are bounded. As the bonus increases to -2, 0, or 2, entry into negotiation falls to 84%, 50%, and 36%, respectively.

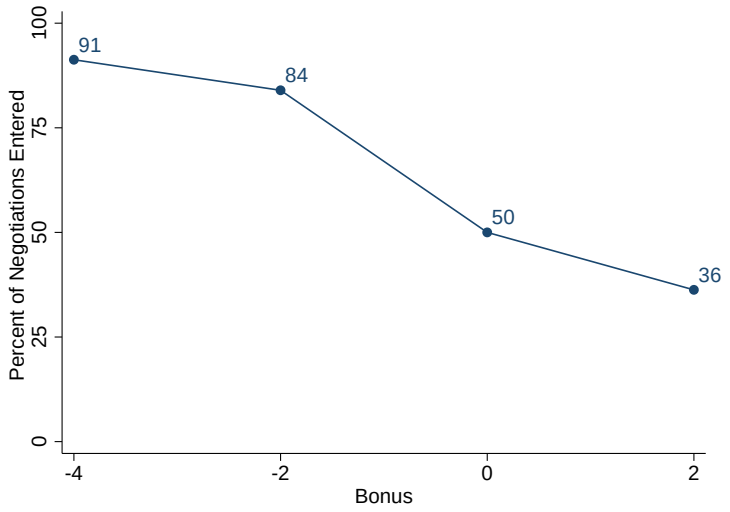
Table 3 reports descriptive statistics on the returns from negotiations. Although the average return is always positive, it decreases as the bonus level increases and becomes statistically indistinguishable from zero when the bonus is 2. Similar patterns emerge when looking at the distribution of returns (whether they are positive, zero, or negative) and to a lesser extent the rate of agreements reached.

These two patterns together — that higher bonus levels correlate with lower returns to negotiations among negotiators and lower entry-rates of women into negotiations — suggest that women are more likely to avoid negotiations when the financial gains from negotiating are more limited. Given that women's returns from negotiations are never significantly negative and are significantly positive for all bonuses except at 2, a naive conclusion would be that leaning-in is financially helpful. Leaning-in may be less financially helpful or even harmful if women's decisions to negotiate are positively correlated with their returns from doing so. In the next section, we

[19] In addition, prior literature — see for instance Andersen et al. (2013) and Dittrich, Knabe and Leipold (2014) — suggests that this lack of gender differences among firms may be more expected than the lack of differences among workers; gender differences are often more likely among parties with lower (appearing) bargaining power. The gender of the firm, even when conditioning on the gender of the worker, also does not influence the returns from negotiations for the workers. Although sex-pairings often influence negotiations (Eckel and Grossman, 2001; Solnick, 2001; Bowles, Babcock and Lai, 2007; Hernandez-Arenaz and Iriberri, 2016), our lack of an observed difference may result from the more limited information on gender, as the workers and firms are not allowed to share identifiable information.

directly address whether women benefit from negotiating more often by comparing the returns to negotiation when women can and cannot select into negotiations

Figure 1: Entrance into negotiations (Female Workers, Choice Treatment)



This graph shows how often participants' choose to enter negotiations given a bonus level. Data include the observations from the 41 female workers during the 10 rounds in the Choice treatment

Table 3: Outcomes given negotiations (Female Workers, Choice Treatment)

	$b = -4$	$b = -2$	$b = 0$	$b = 2$
Average Return	2.41	1.20	1.02	0.06
95% CI of Return	(1.81, 3.02)	(0.67, 1.73)	(0.44, 1.60)	(-0.99, 1.11)
Fraction w/ Return >0	0.87	0.78	0.55	0.58
Fraction w/ Return <0	0.11	0.13	0.09	0.27
Fraction w/ Return =0	0.02	0.09	0.36	0.15
Fraction w/ Agreement	0.90	0.89	0.95	0.79
N	94	89	55	33

Data include the 66% of observations that involve negotiations from the 41 women during the 10 rounds of the Choice treatment.

5.2 Do women gain from leaning-in?

Recall the naive prediction: since women never significantly lose and often significantly gain from entering negotiations at the various bonus levels, leaning-in may be seen as financially helpful. In displaying the distribution of returns from negotiations in both the Choice and Forced treatments, Figure 2 shows this is not the case (as does a comparison of Tables 3 and 4).

Looking first at the Choice treatment in Figure 2, note that the 42% of cases with zero returns are largely driven by women opting-out of negotiations as women accept their suggested

wage 34% of the time. In moving from the Choice to Forced treatment, the frequency of zero returns falls from 42% to 18%. This change, however, does not produce any new positive returns. Instead, forcing women to negotiate causes the frequency of negative returns, or losses relative to their suggested wage, to more than triple from 9% to 33%. While one-third of these additional losses is attributed to the 8 percentage point increase in small losses of -$1, two-thirds of these additional losses are accounted for by the 16 percentage point increase in large losses that fall below -$1.[20]

Table 4: Outcomes given negotiations (Female Workers, Forced Treatment)

	$b = -4$	$b = -2$	$b = 0$	$b = 2$
Average Return	2.22	0.78	0.00	-0.95
95% CI of Return	(1.55, 2.88)	(0.14, 1.41)	(-0.48, 0.48)	(-1.43, -0.48)
Fraction w/ Positive Return	0.75	0.62	0.34	0.24
Fraction w/ Negative Return	0.16	0.24	0.33	0.58
Fraction w/ Zero Return	0.09	0.15	0.33	0.18
Fraction w/ Agreement	0.92	0.85	0.96	0.93
N	79	89	79	83

Data include all negotiations from the 33 female workers during the 10 rounds of the Forced treatment.

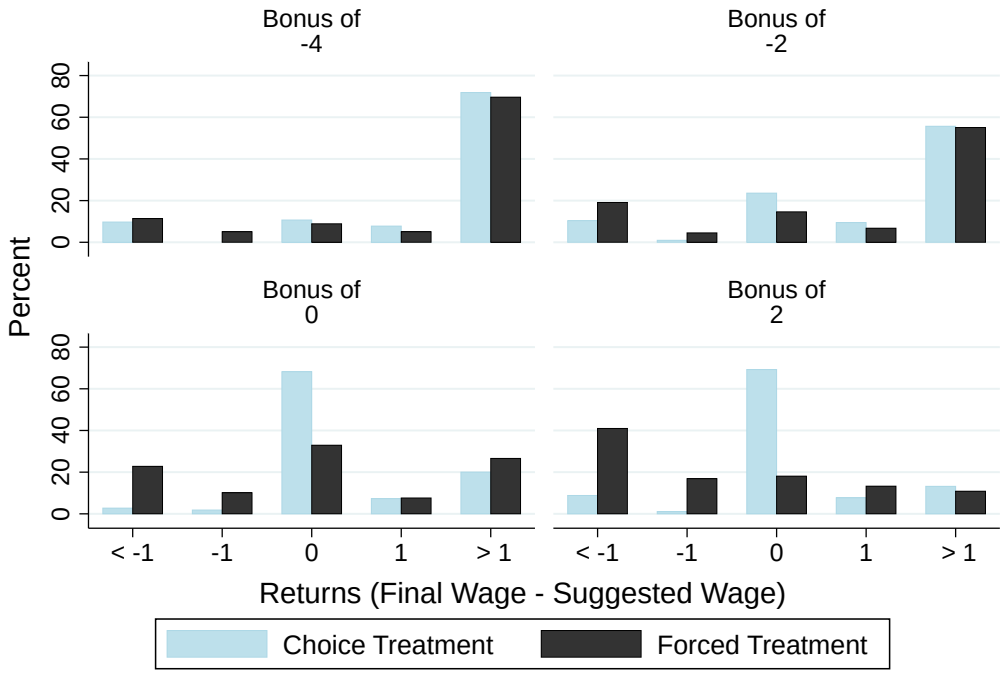
Figure 2: Distribution of returns (Female Workers, Both Treatments)

This graph shows how often participants' returns (defined as their final wage - suggested wage) are less than -1, equal to -1, equal to 0, equal to 1, or greater than 1. Data include the observations from the 41 female workers during the 10 rounds in the Choice treatment, and the 33 female workers during the 10 rounds in the Forced treatment.

[20]Although participants could have achieved non-integer returns, this never occurred. Losses and gains are thus broken down into small amounts (equal to +/- $1) and large amounts (less than -$1 or greater then +$1).

While Figure 2 pools across all bonus levels, Figure 3 replicates Figure 2 for each bonus level separately. Evidence of women positively selecting into negotiations is strongest precisely in situations where women are most likely to select out of negotiations — when the bonus is non-negative (at bonuses of 0 and 2).

Figure 3: Distribution of returns by bonus level(Female Workers, Both Treatments)



This graph shows how often participants' returns (defined as their final wage - suggested wage) are less than -1, equal to -1, equal to 0, equal to 1, or greater than 1 according to the bonus level. Data include the 41 female workers during the 10 rounds in the Choice treatment, and the 33 female workers during the 10 rounds in the Forced treatment.

Table 5 confirms these findings, both when controlling for bonus levels as well as additional factors related to the negotiation environment. The first two columns present the results pooling across bonus levels: forcing women to always negotiate leads to a significant reduction in average returns of about \$0.64. The middle two columns show that this is not driven by negotiations with negative bonuses, as the reduction in average returns is only \$0.37 and insignificant. The final two columns confirm that evidence for positive selection is indeed the strongest at non-negative bonuses: forcing women to negotiate in these instances causes returns to significantly decrease by more than \$1.

In other words, the financial impact of leaning-in depends on the bonus level. When conditions appear generally favorable towards negotiation returns (i.e., at negative bonuses), leaning-in would be neither financially helpful nor harmful. There is only weak evidence for positive

selection. When conditions appear generally unfavorably towards negotiation returns (i.e., at non-negative bonuses), leaning-in would be financially harmful. There is significant evidence for positive selection into negotiations: by opting out of negotiations, women are avoiding substantial financial losses. That is, women know when to ask.

Before turning to additional correlates with this observed selection in the next section, we make two observations. First, since the observed positive selection is sensitive to the bonus level, our findings are unlikely to reflect a "Forced" treatment effect per se, in which case losses would also be expected at non-negative bonuses.[21] Second, the increased losses in the Forced treatment relative to the Choice treatment are not driven by failed agreements. Instead, they arise from women agreeing to final wages that are lower than their suggested wages. Of the 89% of negotiations that lead to agreements in the Choice treatment, only 3% lead to losses. Of the 92% of negotiations that lead to agreements in the Forced treatment, 26% lead to losses.

Table 5: Impact of being forced to negotiate on returns from negotiations (Female Workers, Both Treatments)

	OLS of returns given negotiation when					
	$b = -4, -2, 0, 2$		$b = -4, -2$		$b = 0, 2$	
Forced	-0.59**	-0.64**	-0.32	-0.37	-1.02***	-1.03***
	(0.28)	(0.28)	(0.34)	(0.35)	(0.36)	(0.37)
$b = -2$	-1.31***	-1.31***	-1.32***	-1.35***		
	(0.28)	(0.28)	(0.28)	(0.28)		
$b = 0$	-1.83***	-1.80***				
	(0.27)	(0.27)				
$b = 2$	-2.84***	-2.74***			-0.95***	-0.91***
	(0.30)	(0.31)			(0.23)	(0.25)
Constant	2.59***	1.25	2.47***	0.96	1.02***	-0.38
	(0.28)	(1.33)	(0.29)	(1.82)	(0.27)	(1.51)
Controls	no	yes	no	yes	no	yes
N	601	601	351	351	250	250

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the participant-level and shown in parentheses. Results are from OLS regressions of gains from negotiations, relative to suggested wage. "Forced" is an indicator for the Forced treatment. "$b = i$" is an indicator for a bonus of i. Controls include the negotiation round (from 1 to 10), the worker's contribution, the difference between the worker's and firm's contributions, an indicator for whether the firm's contribution is known, and the interaction between these last two variables. Data include the 66% of observations that involve negotiations from the 41 women during the 10 rounds of the Choice treatment (n=271) and the 100% of observations that involve negotiations from the 33 women during the 10 rounds of the Forced treatment (n=330).

[21] An example of one such concern that is not supported is the possibility that different returns to negotiations arise from firms viewing workers who choose to enter negotiations differently than those who are forced to negotiate. Another piece of evidence that counters the possibility of a "Forced" effect per se is the lack of observed treatment effects among men, as shown in Section 6.

5.3 Are there correlates with the selection of women into negotiations?

The previous section documents that the overall selection of women into negotiations is positively correlated with higher returns from negotiations. This section examines whether there are any traits that correlate with the positive selection.

As an initial trait, we consider a measure of negotiation ability. Let "negotiation ability" be the average returns from negotiations when the suggested wage has a bonus of -4.[22] Consistent with selection, negotiation ability predicts negotiation entry in the Choice treatment: the first two columns of Table 6 confirm that women with higher negotiation ability are more likely to enter negotiations at non-negative bonuses. As a validation of our ability measure, we find that it also predicts returns to negotiation in the Forced treatment: Appendix Table A.6 confirms that a one-dollar increase in the negotiation-ability measure corresponds to a significant increase in average returns of \$0.20 with non-negative bonuses.[23]

Second, we consider a measure of individual risk aversion. Our risk measure equals how often a participant chooses the certain amount of \$13 over five lotteries between \$8 and \$18.[24] Our risk measure does not significantly correlate with negotiation entry at non-negative bonuses (see Table 6).[25]

Third, we consider a measure of individuals' fairness preferences. Our fairness measure equals how often a participant sets the "fair" wage in six scenarios equal to the worker's contribution.[26] Our fairness measure does not significantly correlate with negotiation entry at non-negative bonuses (see Table 6).[27]

[22] In constructing an ability measure, a key constraint arises from women not always facing nor choosing to enter negotiations at the various bonus levels. This constraint is least binding when entrance rates into negotiations are the highest. Thus, by constructing our ability measure as the average returns from negotiations with a bonus of -4, we can consider 94% of entrance decisions involving non-negative bonuses.

[23] An OLS regression of returns from negotiations with non-negative bonuses on the average return from negotiations with a bonus of -4 on the 162 negotiations yields a coefficient of \$0.20 with a p-value less than 0.05 and standard error of 0.09. Because of selection, we cannot do a similar analysis in the Choice treatment.

[24] Recall that at the end of the experiment, participants make five binary decision between (1) \$13 for certain and (2) a lottery of \$18 with P% chance and \$8 with $(1-P)$% chance, where P is 50%, 60%, 70%, 80%, or 90%. Workers in the Choice and Forced treatments choose \$13 for certain an average of 2 times, which translates to choosing the lottery of \$18 with P% chance once P is approximately 70%. There are no significant gender differences in the risk task, and only 3 workers have multiple switch points.

[25] This holds even when we control for negotiation ability (see Appendix Table A.5). Also, in the Forced treatment, the risk measure does not significantly correlate with negotiation outcomes at non-negative bonuses (see Appendix Table A.6).

[26] Recall that at the end of the experiment, participants are asked to indicate a fair wage in six scenarios that involve different worker contributions, firm contributions, and suggested wages. One selected decision is implemented for a worker-firm pair, who in return award the selected decision-maker bonuses from \$0 to \$10 according to how fair they view the decision maker's allocation. Workers in the Choice and Forced treatments select fair wages equal to the worker's contribution on average 2-3 times, and there are no significant gender differences.

[27] The negative coefficient, while not significant, does align with the possibility that individuals with stronger fairness concerns are less likely to enter negotiations when their suggested wage is equal to or greater than

Finally, we consider the recorded chat messages. Recall that participants' chat messages are coded according to eight different categories. Three chat categories — appealing to a compromise, need-based argument, or norm — occur less than 5% of the time and hence will not be discussed. For the remaining five chat categories, we construct our measure of chat tendencies as the fraction of times each woman's chat messages are coded as aggressive, deferential, entitled, requesting an equal-split, or appealing to fairness considerations, again when only considering negotiations that women enter when faced with a bonus of -4. While women are less likely to enter negotiations if they exhibit a tendency towards aggressive chat messages or entitled chat messages, the remaining chat tendencies are not predictive (see Table 6).[28]

their "fair share." Indeed, when controlling for negotiation ability, this relationship is marginally significant in one specification (see Appendix Table A.5). Evidence from the Forced treatment — in particular, that the fairness measure has a negative and significant correlation with negotiation outcomes at non-negative bonuses (see Appendix Table A.6) — is further consistent with individuals with stronger fairness concerns achieving lower returns from negotiations when their suggested wage is already equal to or greater than their "fair share."

[28]This result holds even when we control for negotiation ability (see Appendix Table A.5). Also, in the Forced treatment, no chat tendencies, not even being entitled, are significantly correlated with negotiation outcomes at non-negative bonuses (see Appendix Table A.6).

Table 6: The relationship of negotiation ability and other factors on the likelihood to enter negotiation with non-negative bonuses (Female Workers, Choice Treatment)

	Probit (marginal effects) of entry when $b = 0, 2$							
ability measure	0.07***	0.06***						
	(0.02)	(0.02)						
risk measure			-0.01	-0.04				
			(0.07)	(0.05)				
fairness measure					-0.03	-0.03		
					(0.02)	(0.02)		
aggressive chat							-0.27	-0.30**
							(0.19)	(0.15)
deferential chat							0.02	-0.06
							(0.14)	(0.12)
entitled chat							-0.42***	-0.42***
							(0.13)	(0.11)
even split chat							-0.09	0.12
							(0.20)	(0.17)
fair chat							0.00	0.13
							(0.19)	(0.11)
$b = 2$	-0.13**	-0.21***	-0.14*	-0.22***	-0.13*	-0.20***	-0.15**	-0.23***
	(0.06)	(0.06)	(0.07)	(0.07)	(0.07)	(0.06)	(0.06)	(0.05)
Controls	no	yes	no	yes	no	yes	no	yes
N	189	189	201	201	201	201	189	189

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the participant-level and shown in parentheses. Results are from Probit regressions (marginal effects shown) of entrance into negotiations with non-negative bonuses. "ability measure" is an individual's average return from negotiations involving a bonus of -4. "fairness measure" is a count of how many times an individual chooses the fair wage to be equal to their contribution out of the six scenarios in the fairness task of the follow-up survey. "risk measure" is a count of how many times an individual chooses the certain amount over the lotteries in the five scenarios in the risk task of the follow-up survey. "X chat" is the fraction of an individual's negotiations involving a bonus of -4 that are coded as the chat-type X. "$b = 2$" is an indicator for a bonus of 2. Controls include the negotiation round (from 1 to 10), the worker's contribution, an indicator for whether the firm's contribution is known, and the difference between the worker's and firm's contributions if the firm's contribution is known. Data in the middle four columns include the 201 observations that involve non-negative bonuses for female workers in the Choice treatment. Data in the first two and last two columns is further restricted to the 94% of observations that involve female workers who entered at least one negotiation with a bonus of -4, as this is a requirement for the ability measure and chat tendency measures considered in these columns.

6 Men's Negotiation Decisions and Outcomes

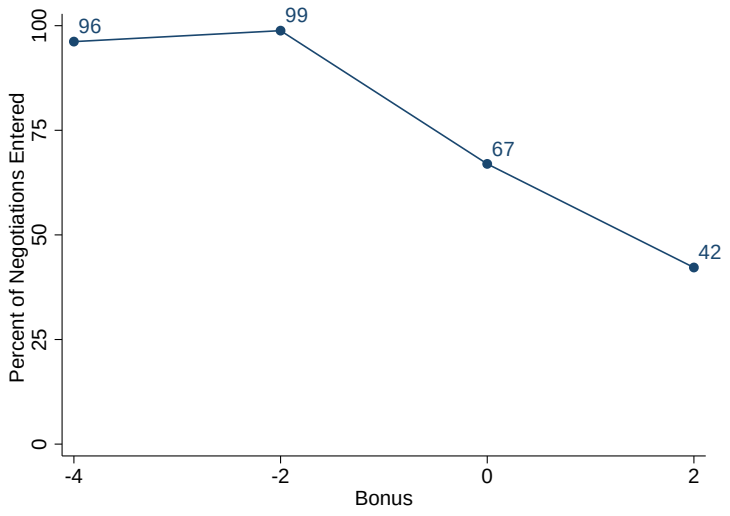
The analysis for men mirrors that of women. In Section 6.1, we observe when men decide to enter negotiations in the Choice treatment and corresponding returns. In Section 6.2, we examine how the returns from negotiations change when men must negotiate in the Forced treatment. In Section 6.3, we explore additional factors that may correlate with negotiation entry decisions.

6.1 When do men enter negotiations?

While men enter negotiations 12 percentage points more often than women (see Table 2), their overall pattern of entry decisions appear similar. Out of the 41 male workers in the Choice treatment, all men enter at least one negotiation and only 7 of them never opt-out of any negotiation. As shown in Figure 4, these decisions are strongly correlated with the bonus. While men almost always enter negotiations with negative bonuses, this entry rate falls to 67% and 42% when the bonus is 0 or 2.

Table 7 shows that men's returns from negotiations also decrease as the bonus level increases. The average return is nonetheless significantly positive at the bonuses of -4, -2 and 0, and not statistically different from zero at a bonus of 2. With returns from negotiations generally being positive, the naive conclusion would be that leaning-in would be financially helpful. However, note that for two out of the three bonuses where the gains are significantly positive, men are already entering negotiations nearly all of the time. Additional gains from leaning-in may therefore be limited. In the next section, we directly address whether men benefit from leaning-in.

Figure 4: Entrance into negotiations (Male Workers, Choice Treatment)



This graph shows how often participants' choose to enter negotiations given a bonus level. Data include the observations from the 41 male workers during the 10 rounds in the Choice treatment

Table 7: Outcomes given negotiations (Male Workers, Choice Treatment)

	$b = -4$	$b = -2$	$b = 0$	$b = 2$
Average Return	2.13	1.11	1.00	-0.85
95% CI of Return	(1.51, 2.74)	(0.45, 1.77)	(0.38, 1.62)	(-1.82, 0.12)
Fraction w/ Return >0	0.84	0.76	0.65	0.41
Fraction w/ Return <0	0.15	0.18	0.12	0.41
Fraction w/ Return =0	0.01	0.06	0.23	0.17
Fraction w/ Agreement	0.87	0.84	0.88	0.67
N	101	83	75	46

Data include the 74% of observations that involve negotiations from the 41 male workers during the 10 rounds of the Choice treatment.

6.2 Do men gain from leaning-in?

Figure 5 displays the distribution of returns for men in the Choice and Forced treatment. Looking first at the Choice treatment, note that the 33% of cases with zero returns is largely driven by men opting-out of negotiations and hence accepting their suggested wage 26% of the time. In moving from the Choice to the Forced treatment, the frequency of zero returns falls from 33% to 21%. Overall, forcing men to negotiate does not substantially shift the distribution with the exception of small losses increasing from 0% to 9%.

The potential noise from pooling across bonus levels could obscure evidence for selection. Comparing the distribution of returns separately by each bonus level provides some support for this possibility (see Appendix Figure A.1). While there are no noticeable shifts in the distributions of returns at negative bonuses, there is some evidence of men positively selecting into negotiations at non-negative bonuses (although the data are noisy at the bonus of 0 in particular). In line with this limited evidence, Table 9 shows that forcing men to negotiate does not lead to significantly higher returns overall, at negative bonuses, or at non-negative bonuses.

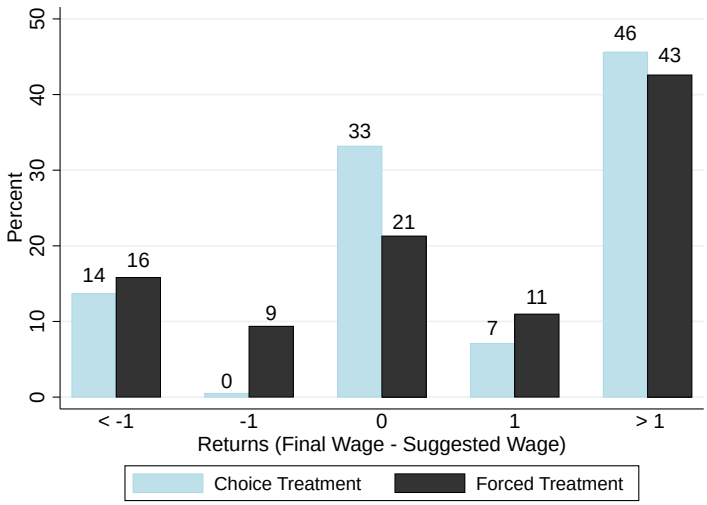
In other words, despite men selecting out more often when conditions appear less favorable, we do not observe significant evidence of men positively selecting into negotiations at any bonus level. The next section, which considers correlates of men's negotiation-entry decisions, is suggestive of an alternative explanation.

Table 8: Outcomes given negotiations (Male Workers, Forced Treatment)

	$b = -4$	$b = -2$	$b = 0$	$b = 2$
Average Return	2.24	1.81	-0.17	-0.62
95% CI of Return	(1.54, 2.93)	(1.27, 2.34)	(-0.73, 0.39)	(-1.06, -0.17)
Fraction w/ Positive Return	0.78	0.81	0.34	0.21
Fraction w/ Negative Return	0.15	0.08	0.30	0.48
Fraction w/ Zero Return	0.07	0.12	0.37	0.31
Fraction w/ Agreement	0.90	0.95	0.87	0.94
N	80	78	71	81

Data include all negotiations from the 31 male workers during the 10 rounds of the Forced treatment.

Figure 5: Distribution of returns (Male Workers, Both Treatments)



This graph shows how often participants' returns (defined as their final wage - suggested wage) are less than -1, equal to -1, equal to 0, equal to 1, or greater than 1 according to the bonus level. Data include the observations from the 41 male workers during the 10 rounds in the Choice treatment, and the 31 male workers during the 10 rounds in the Forced treatment.

Table 9: Impact of being forced to negotiate on returns from negotiations (Male Workers, Both Treatments)

	OLS of returns given negotiation when					
	$b = -4, -2, 0, 2$		$b = -4, -2$		$b = 0, 2$	
Forced	-0.02	0.03	0.39	0.50	-0.55	-0.54
	(0.29)	(0.28)	(0.35)	(0.34)	(0.37)	(0.37)
$b = -2$	-0.73**	-0.79**	-0.75**	-0.81**		
	(0.32)	(0.33)	(0.33)	(0.33)		
$b = 0$	-1.74***	-1.76***				
	(0.33)	(0.32)				
$b = 2$	-2.87***	-2.88***			-1.05***	-1.02***
	(0.34)	(0.35)			(0.34)	(0.35)
Constant	2.19***	1.58	2.01***	0.17	0.70**	1.15
	(0.27)	(1.19)	(0.26)	(1.69)	(0.34)	(1.47)
Controls	no	yes	no	yes	no	yes
N	615	615	342	342	273	273

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the participant-level and shown in parentheses. Results are from OLS regressions of gains from negotiations, relative to suggested wage. "Forced" is an indicator for the Forced treatment. "$b = i$" is an indicator for a bonus of i. Controls include the negotiation round (from 1 to 10), the worker's contribution, the difference between the worker's and firm's contributions, an indicator for whether the firm's contribution is known, and the interaction between these last two variables. Data include the 74% of observations that involve negotiations from the 41 men during the 10 rounds of the Choice treatment (n=305) and the 100% of observations that involve negotiations from the 31 men during the 10 rounds of the Forced treatment (n=310).

6.3 Are there correlates with the selection of men into negotiations?

As an initial trait, we again consider our measure of negotiation ability (i.e., the average returns from negotiations with a bonus of -4). Consistent with the lack of significant evidence for men positively selecting into negotiations at any bonus, our measure of negotiation ability does not predict their choice to negotiate. The first two columns of Table 10 show that men with higher negotiation ability are not more likely to enter negotiations at non-negative bonuses. It is worth noting, however, that our negotiation-ability measure among men is in general less informative. Appendix Table A.8 shows that in the Forced treatment our negotiation ability measure is not significantly correlated with returns from negotiations with non-negative bonuses. This suggests that men's relative ability to achieve higher returns from negotiations may be bonus-dependent.

Second, our risk measure (i.e., count of how often a participant chooses the certain amount of \$13 over five lotteries between \$8 and \$18) does not significantly correlate with negotiation entry at non-negative bonuses (see Table 10).[29]

[29]This result holds when we control for negotiation ability (see Appendix Table A.7). Also, in the Forced treatment, the risk measure does not significantly correlate with negotiation outcomes at non-negative bonuses

Third, and notably, our fairness measure significantly correlates with the selection of men into negotiations. Table 10 shows that men with a stronger tendency to set the fair wage equal to a worker's contribution are less likely to enter negotiations when they can instead accept suggested wages that are equal to or exceed their contributions, i.e., at non-negative bonuses.[30] Consistent with the lack of significant positive selection among men at any bonus, the fairness measure does not significantly correlate in the Forced treatment with negotiation outcomes at non-negative bonuses (see Appendix Table A.8). In the spirit of Andreoni and Vesterlund (2001), it appears that men shade their perception of fairness when it becomes sufficiently costly to carry through on that perception. Men who see it as fair to receive one's contribution will avoid negotiations when allocated more than their fair share.

Finally, the five most common chat messages are largely uncorrelated with negotiation entry at non-negative bonuses (see Table 10). The only robust exception: men are more likely to enter negotiations if they exhibit a tendency towards deferential chat messages.[31]

(see Appendix Table A.8).

[30] This result largely holds even when we control for negotiation ability (see Appendix Table A.7).

[31] This result holds even when we control for negotiation ability (see Appendix Table A.7). Also, in the Forced treatment, no chat tendencies are significantly correlated with negotiation outcomes at non-negative bonuses (see Appendix Table A.8).

Table 10: The relationship of negotiation ability and other factors on the likelihood to enter negotiation with non-negative bonuses (Male Workers, Choice Treatment)

	Probit (marginal effects) of entry when $b = 0, 2$							
ability measure	0.01	-0.00						
	(0.02)	(0.02)						
risk measure			-0.01	-0.01				
			(0.04)	(0.04)				
fair measure					-0.05***	-0.05***		
					(0.02)	(0.02)		
aggressive chat							-0.06	-0.02
							(0.17)	(0.18)
deferential chat							0.33***	0.33***
							(0.10)	(0.11)
entitled chat							-0.13	-0.09
							(0.12)	(0.11)
fair chat							0.05	0.03
							(0.13)	(0.12)
even split chat							-0.11	-0.11
							(0.19)	(0.15)
$b = 2$	-0.24***	-0.24***	-0.24***	-0.24***	-0.25***	-0.25***	-0.25***	-0.25***
	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.06)	(0.06)
Controls	no	yes	no	yes	no	yes	no	yes
N	221	221	221	221	221	221	221	221

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the participant-level and shown in parentheses. Results are from Probit regressions (marginal effects shown) of entrance into negotiations with non-negative bonuses. "ability measure" is an individual's average return from negotiations involving a bonus of -4. "fairness measure" is a count of how many times an individual chooses the fair wage to be equal to their contribution out of the six scenarios in the fairness task of the follow-up survey. "risk measure" is a count of how many times an individual chooses the certain amount over the lotteries in the five scenarios in the risk task of the follow-up survey. "X chat" is the fraction of an individual's negotiations involving a bonus of -4 that are coded as the chat-type X. "$b = 2$" is an indicator for a bonus of 2. Controls include the negotiation round (from 1 to 10), the worker's contribution, an indicator for whether the firm's contribution is known, and the difference between the worker's and firm's contributions if the firm's contribution is known. Data include the 221 observations that involve non-negative bonuses for male workers in the Choice treatment.

7 Conclusion

Results related to gender differences in the negotiation literature fall into one of two strands. The first strand investigates what characteristics of the environment influence negotiation outcomes by abstracting away from the decision to enter negotiations and instead forcing everyone into negotiations. The second strand investigates whether there are gender differences in the negotiation-entry decisions, and often, the outcomes conditional on entering negotiations.

This paper distinguishes itself by answering whether women would financially benefit from leaning-in. To answer this question, it is crucial to observe how outcomes differ when women can and cannot select into negotiations in otherwise similar environments. A comparison of the counterfactual across our Choice (of negotiation) treatment and a Forced (negotiation) treatment allows for exactly this.

When men and women must always negotiate in the Forced treatment, they achieve similar returns to negotiations. While both men and women choose to avoid some negotiations in the Choice treatment, women are significantly more likely to opt-out of negotiations. This seems to support the possibility that encouraging women to lean-in would be helpful. We find the opposite to be true.

When women can choose whether to negotiate, they largely realize positive returns from doing so. When women are forced to always negotiate, they realize significantly lower returns. Put starkly, women enter negotiations that result in financial gains and often avoid negotiations that would result in financial losses. Regardless of whether the avoidance is driven by proper expectations, a distaste for negotiations, or contextual features, leaning-in is financially harmful for women in our setting.

By contrast, forcing men to lean-in is neither harmful nor helpful in terms of their overall returns. An alternative driver of their selection may involve fairness concerns; men are less likely to enter negotiations when they believe receiving their contributions is fair and their outside options equal to or exceed this believed fair level.

Leaning-in may not always be harmful for women. Our design purposefully eliminates several factors that may drive gender differences in outcomes. For instance, participants always know their individual contributions and whether their outside options would shortchange them. Such a benchmark may not be available in many negotiation settings; women may shy away from financially beneficial negotiations if they undervalue what they bring to the table. While encouraging women to lean-in may be helpful in this case, our results leave room for an alternative policy intervention: teach women what they bring to the table.[32] We leave the consideration of such policy interventions and more nuanced negotiation situations to further research. As we examine the returns to changes in individual behavior, it may also be beneficial to collectively consider different ways in which one can "lean-in."[33]

[32]If a similar selection of women occurs in such cases as that observed in our study, women would then be expected to enter negotiations that result in financial gains while avoiding those that result in financial losses.

[33]For instance, women may financially benefit from leaning-in by entering competitions more (Niederle and Vesterlund, 2007, 2011), guessing more (Baldiga, 2014), or contributing their ideas more (Coffman, 2014).

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A Additional Results

Table A.1: The relationship of first wage proposals on returns from negotiation (Female and Male Workers, Forced Treatments)

	OLS of returns from negotiations for			
	Female		Male	
Proposed the first wage	0.52*		0.43*	
	(0.29)		(0.25)	
Amount of first proposed wage		0.10**		0.15*
		(0.05)		(0.09)
Constant	-0.64	-0.50	-1.67	-1.75
	(2.07)	(3.03)	(1.59)	(2.05)
Bonus FE	yes	yes	yes	yes
Controls	yes	yes	yes	yes
Observations	330	176	310	150

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the participant-level and shown in parentheses. Results are from OLS regressions of gains from negotiations, relative to suggested wage. "Proposed the first wage" is an indicator for proposing the first page. "Amount of first proposed wage" equals the amount that is proposed as a first wage. Bonus FE includes indicators for the bonus level. Controls include the negotiation round (from 1 to 10), the worker's contribution, the difference between the worker's and firm's contributions, an indicator for whether the firm's contribution is known, and the interaction between these last two variables. Data include the observations from the 33 female workers and 31 male workers during the 10 rounds in the Forced treatment. In the second or fourth column, the data are restricted to observations where the female worker sends the first wage proposal (in 53% of the 330 negotiations) or the male worker sends the first wage proposal (in 48% of the 310 negotiations), respectively.

Table A.2: Information on chat messages sent during negotiations (Female and Male Workers, Forced Treatments)

	Female Workers	Male Workers
Average elicited chance of being female	50.92	40.81
Fraction coded as aggressive	0.27	0.26
Fraction coded as compromise	0.01	0.05
Fraction coded as deferential	0.61	0.53
Fraction coded as entitled	0.24	0.23
Fraction coded as even split	0.12	0.10
Fraction coded as fair	0.22	0.26
Fraction coded as need-based	0.03	0.11
Fraction coded as norm	0.06	0.03
N	254	266

Data include the observations from the 33 female workers and 31 male workers during the 10 rounds in the Forced treatment. In particular, the data involves chat messages sent by female workers in 254 negotiations (or 77% of the 330 negotiations) and by male workers in 266 negotiations (or 86% of the 310 negotiations).

Table A.3: The relationship of chat messages on returns from negotiation (Female and Male Workers, Forced Treatments)

	OLS of returns from negotiations for Females			Males		
Sent any message	-0.24			0.05		
	(0.42)			(0.38)		
Sent the first message		0.32			-0.10	
		(0.28)			(0.28)	
Elicited chance of being female			-0.01			0.01
			(0.01)			(0.01)
Coded as aggressive			-1.03***			-1.01***
			(0.32)			(0.31)
Coded as deferential			0.84**			-0.67
			(0.39)			(0.40)
Coded as entitled			-0.97**			-0.67*
			(0.36)			(0.35)
Coded as fair			-0.87**			-0.56
			(0.43)			(0.36)
Coded as even split			0.36			-0.29
			(0.64)			(0.46)
Constant	0.00	-0.17	1.74	-1.24	-1.21	-1.66
	(1.96)	(1.96)	(1.81)	(1.46)	(1.55)	(1.58)
Bonus FE	yes	yes	yes	yes	yes	yes
Controls	yes	yes	yes	yes	yes	yes
N	330	330	254	310	310	266

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the participant-level and shown in parentheses. Results are from OLS regressions of gains from negotiations, relative to suggested wage. "Sent any message" and "Sent the first message" are indicators for sending any message and sending the first message respectively. " Elicited chance of being female" is the percent chance the coder believed a message is sent by a female. "Coded as i" is an indicators for a message being coded as i. Bonus FE includes indicators for the bonus level. Controls include the negotiation round (from 1 to 10), the worker's contribution, the difference between the worker's and firm's contributions, an indicator for whether the firm's contribution is known, and the interaction between these last two variables. Data include the observations from the 33 female workers and 31 male workers during the 10 rounds in the Forced treatment. In the third and sixth column, the data are restricted to observations where the female workers send chat messages (in 77% of the 330 negotiations) and the male workers send chat messages (in 86% of the 310 negotiations), respectively.

Table A.4: Gender differences in returns from negotiation and participation in negotiations (Female and Male Firms, Both Treatments)

	OLS of returns given negotiation in the Forced treatment		Probit (marginal effects) of negotiating in the Choice treatment		OLS of returns given negotiation in the Choice treatment	
male	0.23	0.24	-0.01	-0.02	-0.12	-0.07
	(0.29)	(0.28)	(0.03)	(0.03)	(0.21)	(0.20)
Constant	-3.22***	-0.49			-3.34***	-2.79***
	(0.24)	(1.14)			(0.16)	(0.93)
Bonus FE	yes	yes	yes	yes	yes	yes
Controls	no	yes	no	yes	no	yes
N	640	640	820	820	576	576

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the participant-level and shown in parentheses. *In the left panel,* results are from OLS regressions of gains from negotiations, relative to suggested wage. "male" is an indicator for being male. Bonus FE includes indicators for the bonus level. Controls include indicators for the negotiation round (from 1 to 10), the firm's contribution, the difference between the worker's and firm's contributions, an indicator for whether the firm's contribution is known, and the interaction between these last two variables. Data include the observations from the 34 female firms and 30 male firms during the 10 rounds in the Forced treatment. *In the middle panel,* results are from Probit regressions (marginal effects shown) of whether firm's workers choose to enter negotiations. "male" is an indicator for being male. Bonus FE includes indicators for the bonus level. Controls include the negotiation round (from 1 to 10), the firm's contribution, an indicator for whether the firm's contribution is known, and the difference between the worker's and firm's contributions if the firm's contribution is known. Data include the observations from the 38 female firms and 44 male firms during the 10 rounds in the Choice treatment. *In the right panel,* the specifications are the same as in the left panel; all that changes are the data. Data include the cases where the 38 female firms and 44 male firms during the 10 rounds in the Choice treatment experience negotiations in the Choice treatment.

Table A.5: The relationship of negotiation ability and other factors on the likelihood to enter negotiation with non-negative bonuses (Female Workers, Choice Treatment)

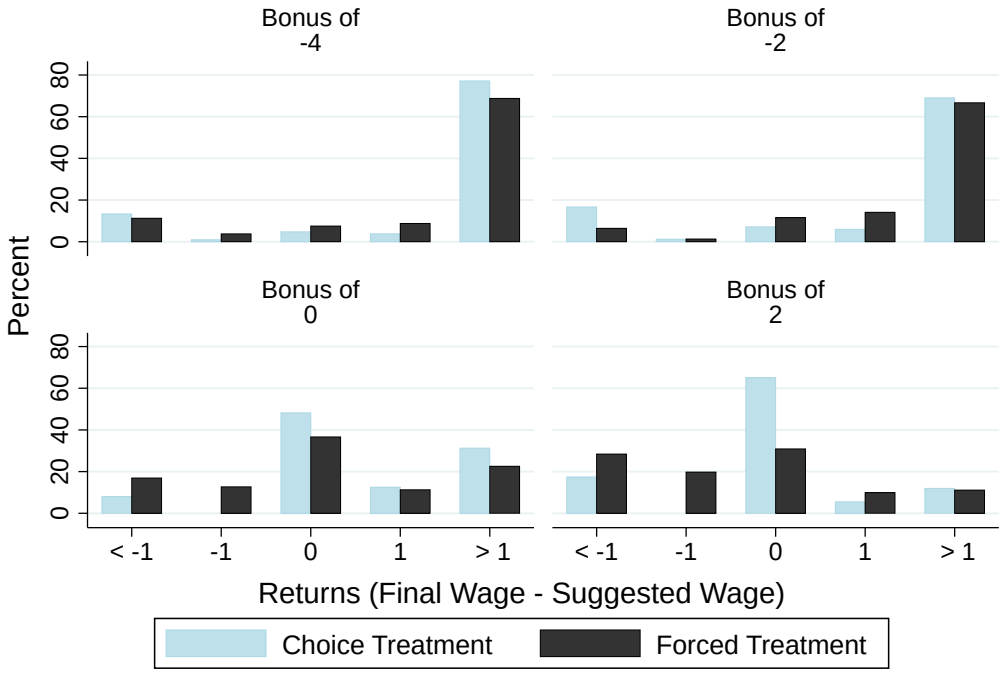
	Probit (marginal effects) of entry when $b = 0, 2$							
ability measure	0.07***	0.06***	0.07***	0.06***	0.06***	0.06***	0.07***	0.06***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
risk measure			0.00	-0.04				
			(0.07)	(0.05)				
fairness measure					-0.03	-0.03*		
					(0.02)	(0.02)		
aggressive chat							-0.04	-0.10
							(0.21)	(0.17)
deferential chat							0.22**	0.13
							(0.11)	(0.11)
entitled chat							-0.30**	-0.33***
							(0.12)	(0.10)
fair chat							-0.00	0.10
							(0.16)	(0.10)
even split chat							-0.22	0.00
							(0.19)	(0.17)
$b = 2$	-0.13**	-0.21***	-0.13**	-0.21***	-0.12**	-0.20***	-0.14**	-0.22***
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.05)	(0.06)	(0.05)
Controls	no	yes	no	yes	no	yes	no	yes
N	189	189	189	189	189	189	189	189

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the participant-level and shown in parentheses. Results are from Probit regressions (marginal effects shown) of entrance into negotiations with non-negative bonuses. "ability measure" is an individual's average return from negotiations involving a bonus of -4. "fairness measure" is a count of how many times an individual chooses the fair wage to be equal to their contribution out of the six scenarios in the fairness task of the follow-up survey. "risk measure" is a count of how many times an individual chooses the certain amount over the lotteries in the five scenarios in the risk task of the follow-up survey. "X chat" is the fraction of an individual's negotiations involving a bonus of -4 that are coded as the chat-type X. "$b = 2$" is an indicator for a bonus of 2. Controls include the negotiation round (from 1 to 10), the worker's contribution, an indicator for whether the firm's contribution is known, and the difference between the worker's and firm's contributions if the firm's contribution is known. Data include the 189 observations that involve non-negative bonuses for female workers in the Choice treatment who enter at least one negotiation with a bonus of -4, as this is a requirement for the ability measure and chat tendency measures.

Table A.6: The relationship of negotiation ability, fairness and risk preferences, and chat tendencies on returns from negotiation at non-negative bonuses (Female Workers, Forced Treatment)

	OLS of returns given negotiation when $b = 0, 2$							
ability measure	0.20**	0.18*						
	(0.09)	(0.09)						
risk measure			0.11	0.15				
			(0.18)	(0.17)				
fairness measure					-0.22**	-0.22**		
					(0.09)	(0.10)		
aggressive chat							-0.77	-0.55
							(0.98)	(1.11)
deferential chat							0.76	0.80
							(0.61)	(0.71)
entitled chat							0.72	0.77
							(0.93)	(1.06)
fair chat							0.24	0.27
							(0.65)	(0.76)
even split chat							0.61	0.44
							(0.96)	(1.10)
$b = 2$	-0.93***	-0.98***	-0.96***	-1.01***	-0.92***	-0.98***	-0.83***	-0.91***
	(0.25)	(0.26)	(0.26)	(0.26)	(0.26)	(0.25)	(0.24)	(0.25)
Constant	-0.43	-2.12	-0.25	-2.47	0.39	-1.67	-0.65	-2.70
	(0.37)	(1.97)	(0.48)	(1.81)	(0.30)	(1.95)	(0.43)	(1.84)
Controls	no	yes	no	yes	no	yes	no	yes
N	162	162	162	162	162	162	162	162

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the participant-level and shown in parentheses. Results are from OLS regressions of returns from negotiations with non-negative bonuses. "ability measure" is an individual's average return from negotiations involving a bonus of -4. "fairness measure" is a count of how many times an individual chooses the fair wage to be equal to their contribution out of the six scenarios in the fairness task of the follow-up survey. "risk aversion measure" is a count of how many times an individual chooses the certain amount over the lotteries in the five scenarios in the risk task of the follow-up survey. "X chat tendency" is the fraction of an individual's negotiations involving a bonus of -4 that are coded as the chat-type X. "$b = 2$" is an indicator for a bonus of 2. Controls include the negotiation round (from 1 to 10), the worker's contribution, the difference between the worker's and firm's contributions, an indicator for whether the firm's contribution is known, and the interaction between these last two variables. Data include the 162 observations that involve non-negative bonuses for female workers in the Forced treatment.



This graph shows how often participants' returns (defined as their final wage - suggested wage) are less than -1, equal to -1, equal to 0, equal to 1, or greater than 1 according to the bonus level. Data include the 41 male workers during the 10 rounds in the Choice treatment, and the 31 male workers during the 10 rounds in the Forced treatment.

Figure A.1: Distribution of returns by bonus level (Male Workers, Both Treatments)

Table A.7: The relationship of negotiation ability and other factors on the likelihood to enter negotiation with non-negative bonuses (Male Workers, Choice Treatment)

	Probit (marginal effects) of entry when $b = 0, 2$							
ability measure	0.01	-0.00	0.01	-0.00	0.02	0.01	0.02	0.01
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
risk measure			-0.01	-0.01				
			(0.04)	(0.04)				
fairness measure					-0.06***	-0.05**		
					(0.02)	(0.02)		
aggressive chat							-0.02	0.01
							(0.18)	(0.18)
deferential chat							0.36***	0.36***
							(0.10)	(0.11)
entitled chat							-0.11	-0.08
							(0.12)	(0.11)
fair chat							0.07	0.04
							(0.12)	(0.12)
even split chat							-0.09	-0.08
							(0.21)	(0.17)
$b = 2$	-0.24***	-0.24***	-0.24***	-0.24***	-0.25***	-0.25***	-0.24***	-0.25***
	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.06)	(0.07)
Controls	no	yes	no	yes	no	yes	no	yes
N	221	221	221	221	221	221	221	221

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the participant-level and shown in parentheses. Results are from Probit regressions (marginal effects shown) of entrance into negotiations with non-negative bonuses. "ability measure" is an individual's average return from negotiations involving a bonus of -4. "fairness measure" is a count of how many times an individual chooses the fair wage to be equal to their contribution out of the six scenarios in the fairness task of the follow-up survey. "risk measure" is a count of how many times an individual chooses the certain amount over the lotteries in the five scenarios in the risk task of the follow-up survey. "X chat" is the fraction of an individual's negotiations involving a bonus of -4 that are coded as the chat-type X. "$b = 2$" is an indicator for a bonus of 2. Controls include the negotiation round (from 1 to 10), the worker's contribution, an indicator for whether the firm's contribution is known, and the difference between the worker's and firm's contributions if the firm's contribution is known. Data include the 221 observations that involve non-negative bonuses for male workers in the Choice treatment.

Table A.8: The relationship of negotiation ability, fairness and risk preferences, and chat tendencies on returns from negotiation at non-negative bonuses (Male Workers, Forced Treatment)

	OLS of returns given negotiation when $b = 0, 2$							
ability measure	0.11	0.10						
	(0.07)	(0.08)						
risk measure			0.14	0.20				
			(0.15)	(0.14)				
fairness measure					-0.04	-0.02		
					(0.08)	(0.08)		
aggressive chat							0.62	0.78
							(0.91)	(0.99)
deferential chat							-0.13	-0.07
							(0.37)	(0.41)
entitled chat							-0.01	-0.23
							(0.71)	(0.63)
fair chat							-0.46	-0.40
							(0.66)	(0.73)
even split chat							-0.75	-0.97
							(1.23)	(1.35)
$b = 2$	-0.41	-0.46	-0.44	-0.49	-0.44	-0.50	-0.45	-0.54
	(0.42)	(0.44)	(0.42)	(0.43)	(0.43)	(0.44)	(0.43)	(0.45)
Constant	-0.44	-1.86	-0.49	-2.60	-0.09	-1.86	-0.07	-1.49
	(0.31)	(1.64)	(0.43)	(1.77)	(0.32)	(1.67)	(0.35)	(1.72)
Controls	no	yes	no	yes	no	yes	no	yes
N	152	152	152	152	152	152	152	152

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at the participant-level and shown in parentheses. Results are from OLS regressions of returns from negotiations with non-negative bonuses. "ability measure" is an individual's average return from negotiations involving a bonus of -4. "fairness measure" is a count of how many times an individual chooses the fair wage to be equal to their contribution out of the six scenarios in the fairness task of the follow-up survey. "risk aversion measure" is a count of how many times an individual chooses the certain amount over the lotteries in the five scenarios in the risk task of the follow-up survey. "X chat tendency" is the fraction of an individual's negotiations involving a bonus of -4 that are coded as the chat-type X. "$b = 2$" is an indicator for a bonus of 2. Controls include the negotiation round (from 1 to 10), the worker's contribution, the difference between the worker's and firm's contributions, an indicator for whether the firm's contribution is known, and the interaction between these last two variables. Data include the 152 observations that involve non-negative bonuses for male workers in the Forced treatment.

B Instructions

Forced Treatment, Common Knowledge

Instructions

This is an experiment on decision-making. The earnings you receive today will depend on the decisions and performance made by you and by other participants in this room. Please turn off your cell phones. If you have a question, please raise your hand and an experimenter will come to answer you in private.

Worker-Firm Pairs
Half of you will be assigned the role of a Worker and the other half will be assigned the role of a Firm. You will maintain your role throughout the experiment.

The experiment consists of two blocks: Block A and B. Each block lasts for 5 rounds (for a total of 10 rounds). At the beginning of each round, each worker and each firm is randomly paired with someone of the opposite role to form worker-firm pairs. You will not know the identity of the person you are paired with nor will he/she know your identity. Worker-firm pairs are randomly generated at the beginning of each round. Thus you are unlikely to be paired with the same person two rounds in a row.

Revenue
The worker-firm pair will have a revenue, which they must split between a wage for the worker and a profit for the firm. The revenue is the sum of a worker-contribution and a firm-contribution. The worker-contribution and firm-contribution result from initial performances by the worker and firm. The firm and the worker perform the same task. Performance is measured at the start of each block where you each have 5-minutes to complete a task. Your performance at the start of a block determines your contribution for the duration of the block. Since you may be in different worker-firm pairs across rounds, the contribution by the person you are paired with may change between rounds. The worker will know the firm-contribution, and the firm will know the worker-contribution.

Contributions
Individual contributions are held constant for the duration of a block and are determined by comparing the individual's performance to those of others in the same role. Individuals with a higher relative performance secure a greater contribution. For each firm the firm-contribution is determined by comparing the firm's performance to that of one other randomly selected firm. For each worker the worker-contribution is determined by comparing the worker's performance to those of two other randomly selected workers. The comparison group is randomly determined at the beginning of each new block.

The firm-contribution depends on how the firm's performance in the task compares to that of a randomly selected other firm in that block. The firm-contribution is:

$25 if the firm's performance is ranked first
$20 if the firm's performance is ranked second

The worker contribution depends on how the worker's performance compares to those of two randomly selected workers in that block. The worker-contribution is

$20 if the worker's performance is ranked first
$15 if the worker's performance is ranked second
$10 if the worker's performance is ranked third

Wage determination
In each round, the revenue is the sum of the worker-contribution and the firm-contribution. Together, the worker and firm have to determine what portion of the revenue will be spent on the worker's wage and what remaining revenue will be paid to the firm as profit.

The wage is determined as follows. The computer first generates a suggested wage S. Then, the worker and the firm will have 3 minutes to reach an agreement on a wage. If the worker and firm reach an agreement, the worker receives the agreed upon wage. We refer to the agreed upon wage as W. If the worker and the firm do not reach an agreement within 3 minutes, the suggested wage is implemented and the firm and worker each pay a $5 penalty for not reaching an agreement in time. In other words:

Negotiate and don't agree	**Negotiate and agree**
Worker's wage = S – 5	Worker's wage = W
Firm's profit = revenue – S – 5	Firm's profit = revenue – W

Negotiating
Negotiations take place using a negotiation screen. Samples of the negotiation screens for the worker and firm are shown on the next page. The top of the screen provides you with relevant information regarding the negotiation. The middle of the screen allows you to propose a wage. The bottom right of the screen keeps a history of wage offers, and allows you to accept offers made by the person you are paired with. The bottom left side of the screen allows you to chat with one another.

Negotiation Information
The top right corner of the screen reports how many seconds of the negotiation remains. If no agreement is reached at the end of the 3 minutes, the suggested wage is implemented with a $5 penalty for the worker and a $5 penalty for the firm.

The top line reminds you of your role (worker or firm), your contribution, and the block and round you are in. The box below that reviews how contributions are determined. The bold section reports the total revenue and the suggested wage. The revenue is the sum of the worker-contribution and firm-contribution. Finally, there is a reminder of the payoffs that result in the event that no agreement or an agreement is reached.

Wage proposal and acceptance
The middle of the screen contains a field where you can propose a wage. To propose a wage you type a number in the text box under "I propose the following worker's wage" and click OK. A history of proposed wages is listed on the bottom right of the screen. Once you propose a wage, it appears on your screen and on the screen of the person you are paired with. While past wage offers are still visible, only the most recently proposed wages are valid. The person you are paired with may accept your most recently proposed wage by clicking on the line with that wage to highlight it and then click the "I Accept this W" button. Likewise you may accept their most recently proposed wage offer by clicking on the line with that wage to highlight it and then click the "I Accept this W" button. Wage proposals accepted by the other person become the agreed upon wage and are implemented. The round ends when a wage offer is accepted. In the sample screens we blackened out all the proposed wages.

Wage proposals can be revised and accepted at any moment before the end of the three minutes. If no wage offers are accepted within three minutes, the suggested wage, S, is implemented with an individual $5 penalty

Chat
Workers and firms may chat via the chat box in the bottom left side of the screen. In the sample screen, the chat box displays the sent messages from the worker who said "I am a worker", and the firm who said "I am a firm." To enter messages like these type in the chat text box below the chat box. Note that the worker and firm have currently typed "this is my second message as a worker/firm that I have not yet sent." To send a chat message, push ENTER on your keyboard.

When chatting, you should not share any information that identifies (or helps to identify) who you are. That is, you should not share your name, age, gender, location in the lab, etc. If we discover that you have shared any such information, then you will not receive any earnings from the experiment.

Payments
The experiment consists of two blocks of five rounds of negotiation. At the end of the experiment we will randomly select one negotiation round of each block to count for payment. Your payment for participating in the experiment will be the sum of your earnings from these two randomly selected rounds, payments from a few subsequent decisions, and $5 for showing up for today's experiment.

Final Notes
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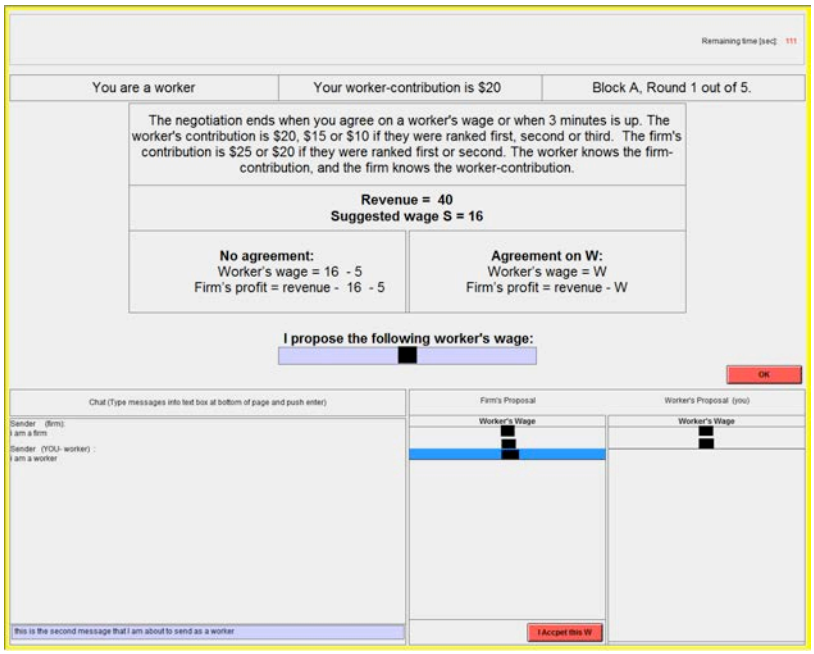
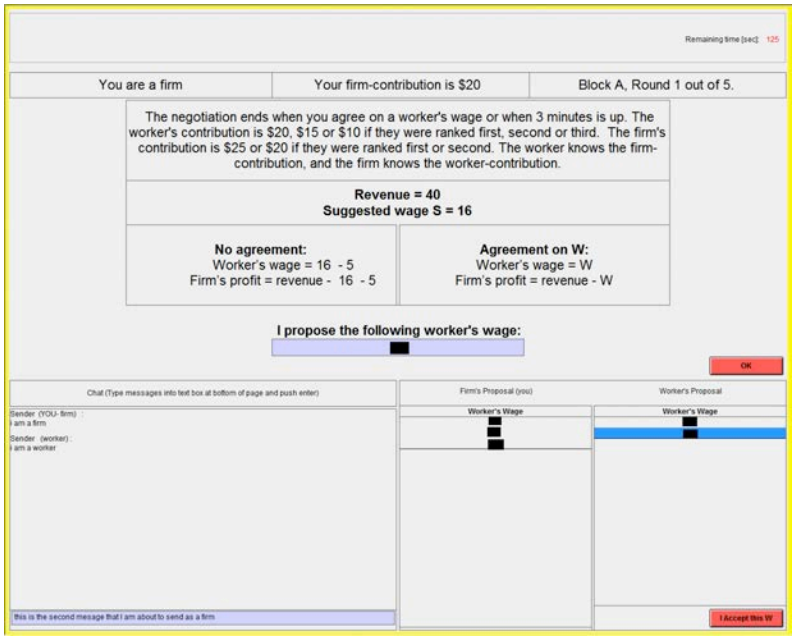
EXAMPLE SCREEN FOR A WORKER



EXAMPLE SCREEN FOR A FIRM



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The experiment consists of two blocks: Block A and B. Each block lasts for 5 rounds (for a total of 10 rounds). At the beginning of each round, each worker and each firm is randomly paired with someone of the opposite role to form worker-firm pairs. You will not know the identity of the person you are paired with nor will he/she know your identity. Worker-firm pairs are randomly generated at the beginning of each round. Thus you are unlikely to be paired with the same person two rounds in a row.

Revenue
The worker-firm pair will have a revenue, which they must split between a wage for the worker and a profit for the firm. The revenue is the sum of a worker-contribution and a firm-contribution. The worker-contribution and firm-contribution result from initial performances by the worker and firm. The firm and the worker perform the same task. Performance is measured at the start of each block where you each have 5-minutes to complete a task. Your performance at the start of a block determines your contribution for the duration of the block. Since you may be in different worker-firm pairs across rounds, the contribution by the person you are paired with may change between rounds. The worker will not know the firm-contribution, but the firm will know the worker-contribution.

Contributions
Individual contributions are held constant for the duration of a block and are determined by comparing the individual's performance to those of others in the same role. Individuals with a higher relative performance secure a greater contribution. For each firm the firm-contribution is determined by comparing the firm's performance to that of one other randomly selected firm. For each worker the worker-contribution is determined by comparing the worker's performance to those of two other randomly selected workers. The comparison group is randomly determined at the beginning of each new block.

The firm-contribution depends on how the firm's performance in the task compares to that of a randomly selected other firm in that block. The firm-contribution is:

$25 if the firm's performance is ranked first
$20 if the firm's performance is ranked second

The worker contribution depends on how the worker's performance compares to those of two randomly selected workers in that block. The worker-contribution is

$20 if the worker's performance is ranked first
$15 if the worker's performance is ranked second
$10 if the worker's performance is ranked third

Wage determination
In each round, the revenue is the sum of the worker-contribution and the firm-contribution. Together, the worker and firm have to determine what portion of the revenue will be spent on the worker's wage and what remaining revenue will be paid to the firm as profit.

The wage is determined as follows. The computer first generates a suggested wage S. Then, the worker and the firm will have 3 minutes to reach an agreement on a wage. If the worker and firm reach an agreement, the worker receives the agreed upon wage. We refer to the agreed upon wage as W. If the worker and the firm do not reach an agreement within 3 minutes, the suggested wage is implemented and the firm and worker each pay a $5 penalty for not reaching an agreement in time. In other words:

Negotiate and don't agree	**Negotiate and agree**
Worker's wage = S – 5	Worker's wage = W
Firm's profit = revenue – S – 5	Firm's profit = revenue – W

Negotiating
Negotiations take place using a negotiation screen. Samples of the negotiation screens for the worker and firm are shown on the next page. The top of the screen provides you with relevant information regarding the negotiation. The middle of the screen allows you to propose a wage. The bottom right of the screen keeps a history of wage offers, and allows you to accept offers made by the person you are paired with. The bottom left side of the screen allows you to chat with one another.

Negotiation Information
The top right corner of the screen reports how many seconds of the negotiation remains. If no agreement is reached at the end of the 3 minutes, the suggested wage is implemented with a $5 penalty for the worker and a $5 penalty for the firm.

The top line reminds you of your role (worker or firm), your contribution, and the block and round you are in. The box below that reviews how contributions are determined. The bold section reports the total revenue and the suggested wage. The revenue is the sum of the worker-contribution and firm-contribution. Finally, there is a reminder of the payoffs that result in the event that no agreement or an agreement is reached.

Wage proposal and acceptance
The middle of the screen contains a field where you can propose a wage. To propose a wage you type a number in the text box under "I propose the following worker's wage" and click OK. A history of proposed wages is listed on the bottom right of the screen. Once you propose a wage, it appears on your screen and on the screen of the person you are paired with. While past wage offers are still visible, only the most recently proposed wages are valid. The person you are paired with may accept your most recently proposed wage by clicking on the line with that wage to highlight it and then click the "I Accept this W" button. Likewise you may accept their most recently proposed wage offer by clicking on the line with that wage to highlight it and then click the "I Accept this W" button. Wage proposals accepted by the other person become the agreed upon wage and are implemented. The round ends when a wage offer is accepted. In the sample screens we blackened out all the proposed wages.

Wage proposals can be revised and accepted at any moment before the end of the three minutes. If no wage offers are accepted within three minutes, the suggested wage, S, is implemented with an individual $5 penalty

Chat
Workers and firms may chat via the chat box in the bottom left side of the screen. In the sample screen, the chat box displays the sent messages from the worker who said "I am a worker", and the firm who said "I am a firm." To enter messages like these type in the chat text box below the chat box. Note that the worker and firm have currently typed "this is my second message as a worker/firm that I have not yet sent." To send a chat message, push ENTER on your keyboard.

When chatting, you should not share any information that identifies (or helps to identify) who you are. That is, you should not share your name, age, gender, location in the lab, etc. If we discover that you have shared any such information, then you will not receive any earnings from the experiment.

Payments
The experiment consists of two blocks of five rounds of negotiation. At the end of the experiment we will randomly select one negotiation round of each block to count for payment. Your payment for participating in the experiment will be the sum of your earnings from these two randomly selected rounds, payments from a few subsequent decisions, and $5 for showing up for today's experiment.

Final Notes
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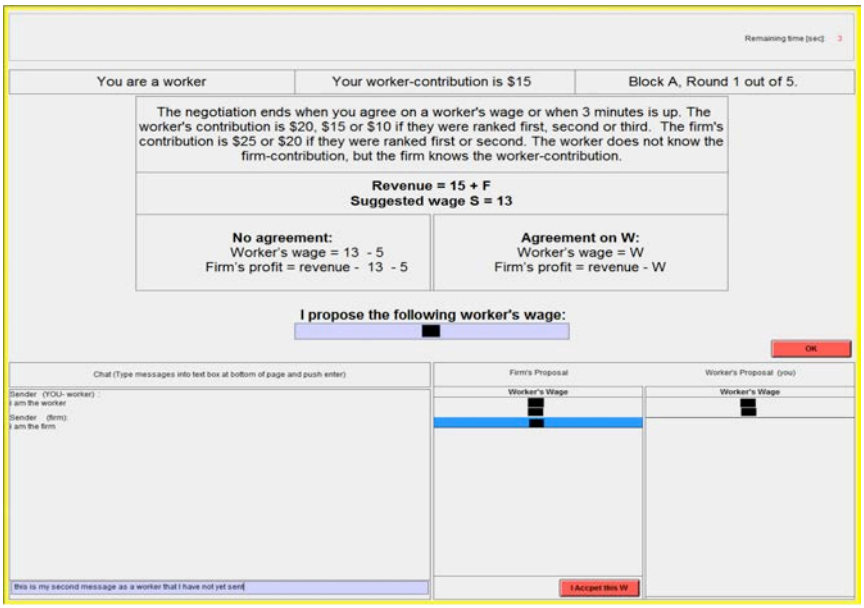

EXAMPLE SCREEN FOR A FIRM

Instructions

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Worker-Firm Pairs
Half of you will be assigned the role of a Worker and the other half will be assigned the role of a Firm. You will maintain your role throughout the experiment.

The experiment consists of two blocks: Block A and B. Each block lasts for 5 rounds (for a total of 10 rounds). At the beginning of each round, each worker and each firm is randomly paired with someone of the opposite role to form worker-firm pairs. You will not know the identity of the person you are paired with nor will he/she know your identity. Worker-firm pairs are randomly generated at the beginning of each round. Thus you are unlikely to be paired with the same person two rounds in a row.

Revenue
The worker-firm pair will have a revenue, which they must split between a wage for the worker and a profit for the firm. The revenue is the sum of a worker-contribution and a firm-contribution. The worker-contribution and firm-contribution result from initial performances by the worker and firm. The firm and the worker perform the same task. Performance is measured at the start of each block where you each have 5-minutes to complete a task. Your performance at the start of a block determines your contribution for the duration of the block. Since you may be in different worker-firm pairs across rounds, the contribution by the person you are paired with may change between rounds. The worker will know the firm-contribution, and the firm will know the worker-contribution.

Contributions
Individual contributions are held constant for the duration of a block and are determined by comparing the individual's performance to those of others in the same role. Individuals with a higher relative performance secure a greater contribution. For each firm the firm-contribution is determined by comparing the firm's performance to that of one other randomly selected firm. For each worker the worker-contribution is determined by comparing the worker's performance to those of two other randomly selected workers. The comparison group is randomly determined at the beginning of each new block.

The firm-contribution depends on how the firm's performance in the task compares to that of a randomly selected other firm in that block. The firm-contribution is:

$25 if the firm's performance is ranked first
$20 if the firm's performance is ranked second

The worker contribution depends on how the worker's performance compares to those of two randomly selected workers in that block. The worker-contribution is

$20 if the worker's performance is ranked first
$15 if the worker's performance is ranked second
$10 if the worker's performance is ranked third

Wage determination
In each round, the revenue is the sum of the worker-contribution and the firm-contribution. Together, the worker and firm have to determine what portion of the revenue will be spent on the worker's wage and what remaining revenue will be paid to the firm as profit.

The wage is determined as follows. The computer first generates a suggested wage S. The worker may accept or reject the suggested wage S. If the worker rejects the suggested wage S, then the worker and the firm will have 3 minutes to reach an agreement on a wage. If the worker and firm reach an agreement, the worker receives the agreed upon wage. We refer to the agreed upon wage as W. If the worker and the firm do not reach an agreement within 3 minutes, the suggested wage is implemented and the firm and worker each pay a $5 penalty for not reaching an agreement in time. In other words:

Negotiate and don't agree
Worker's wage = S – 5
Firm's profit = revenue – S – 5

Negotiate and agree
Worker's wage = W
Firm's profit = revenue – W

Don't Negotiate and accept S
Worker's wage = S
Firm's profit = revenue - S

Negotiating
Negotiations take place using a negotiation screen. Samples of the negotiation screens for the worker and firm are shown on the next page. The top of the screen provides you with relevant information regarding the negotiation. The middle of the screen allows you to propose a wage. The bottom right of the screen keeps a history of wage offers, and allows you to accept offers made by the person you are paired with. The bottom left side of the screen allows you to chat with one another.

Negotiation Information
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Wage proposals can be revised and accepted at any moment before the end of the three minutes. If no wage offers are accepted within three minutes, the suggested wage, S, is implemented with an individual $5 penalty

Chat
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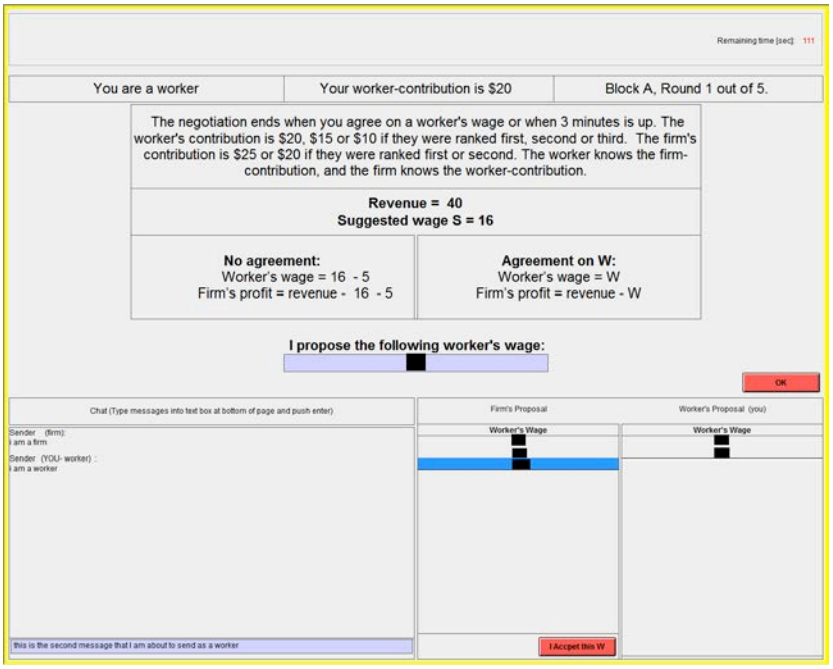
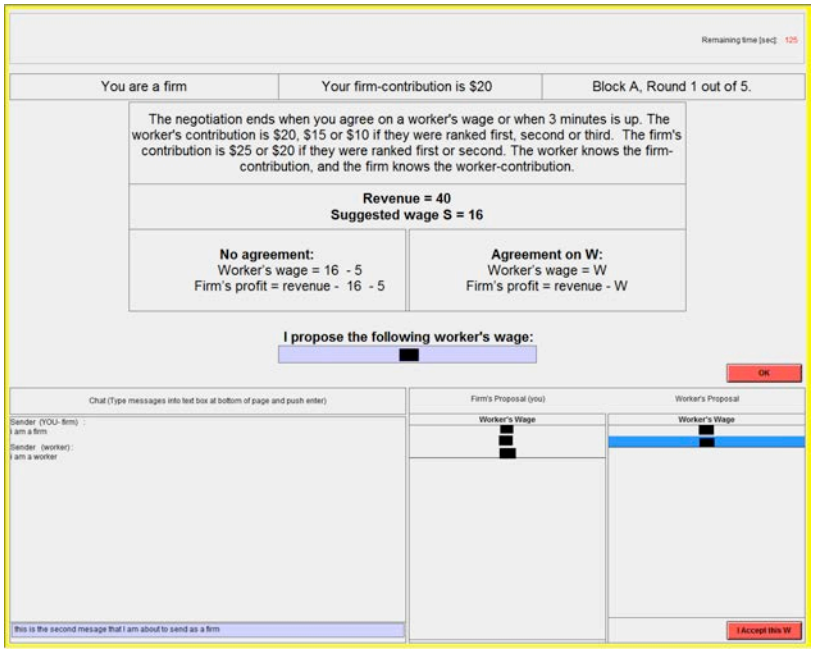


EXAMPLE SCREEN FOR A FIRM



4

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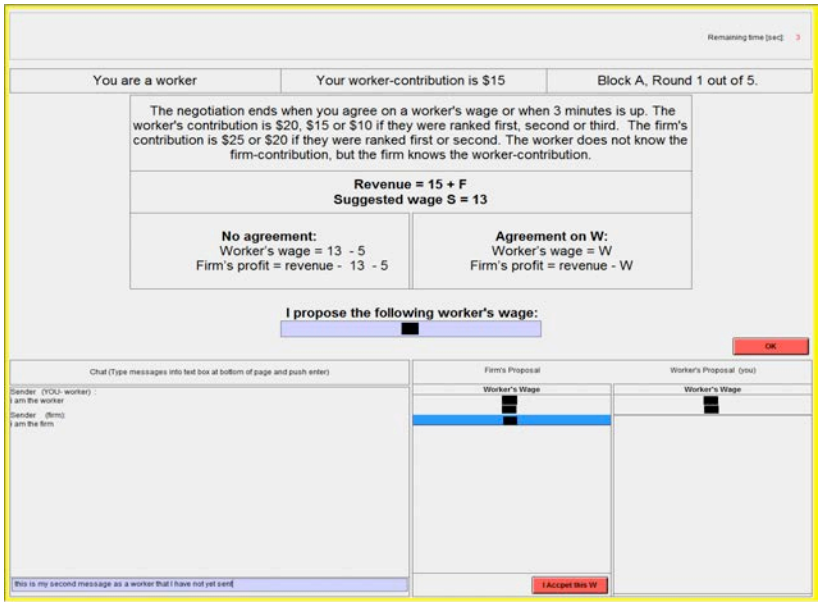

EXAMPLE SCREEN FOR A FIRM