

Is Ignorance Bliss? Sealed versus Open Auctions in Online Labor Markets

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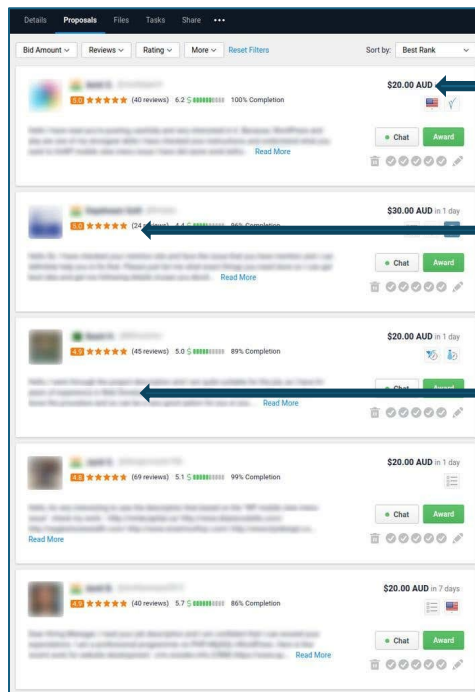


Employers (buyers)



Workers (sellers)

Auction Format: Open (Bids) Auction



Price

Bidders

Pitches

Workers

Should I bid now?
How much should I bid?

Auction Format: Sealed (Bids) Auction

Project Details

€30.00 ~ 250.00 EUR
BIDDING ENDS IN 4 DAYS, 17 HOURS

Hi all,

I need a team of seniors designers and webflow experts to build, daily, business websites for restaurants only.

The mission will be to build simple but with great design restaurant business, ONLY WITH webflow, that include:

- a navbar with a very simple logo
- an homepage with really basic slide text animation see here <https://www.youtube.com/watch?v=PUH1JuM0-JE>
- an "about" section
- a section menu with food and drinks
- a "contact" section with adress, phone number and a google map integration and a contact form
- integrate a booking table system

Design must be really nice and perfectly fit to the identity of the restaurant.

It has to be fully responsive: desktop, tablet, mobile landscape and mobile portrait

I'll do myself the h1 to h4 text and paragraph text and I'll send u before the mission. I'll do also the SEO myself and the hosting.

I will also write a guide to help u choose wich font and color to use with a restaurant category. U can follow it or not if you find better. I will add also some basic design advices in that guide to be sure u fit the local market.

You will have to do each website in 24h. I will pay 100€/website and I can give u one to do per day, 5websites/week.

Plz DO NOT apply if:

- you don't use webflow, I wont work with wordpress!
- you have nothing to show me of what you have done with webflow

We will start in 2 weeks

Good luck :)

Skills Required

Website DesignGraphic DesignCSSHTMLWebflow

About the Employer

France 🇫🇷

1 projects completed

★★★★★ (1 review)

Member since Apr 1, 2021

Employer Verification

Identity verified

Payment method verified

Deposit made

Email address verified

Profile completed

Phone number verified

Your Bids

FREE MEMBER

6 bids left out of 6

[View Bid Insights](#)

How to write a winning bid

Your best chance of winning this project is writing a great bid

No Bidding Price

No Bidder Info

No Pitches

Workers

Should I bid now?
How much should I bid?

Empirical/Experimental Comparison

- Sealed auctions generate higher revenue
 - Athey, Levin, and Seira (2011)
 - Sealed auctions attract weaker sellers to make the auction competitive
 - Haruvy and Katok (2013)
 - Sealed auctions reduce collusion opportunities
- Sealed auctions generate lower revenue
 - Shachat and Wei (2012)
 - Lack of information in sealed auctions may lead to lower bids.
 - Cho, Paarsch, and Rust (2014)
 - More information disclosure leads to higher revenue (linkage principle).

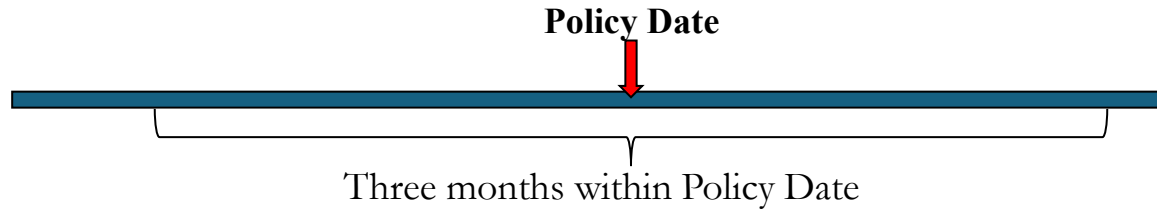
Auction Formats in Online Labor Markets

- Hong, Wang, and Pavlou (2016): Employers (endogenously) decide whether they will use an open versus sealed format
 - Sealed format attracts more bids
 - Bidders bid lower wage amount in open format than in sealed format, leading to higher buyer surplus
 - Open format is superior for buyers

Natural Experiment

- The platform originally operated under an open auction format but transitioned abruptly to a sealed auction format without prior notice to participants.
- This format-switching event serves as a natural experiment to assess the impact of auction formats while keeping other platform operations consistent.
- Data was collected on all auctions and their bids for three months before and after the regime change.
- The dataset includes:
 - 1,926 auctions launched by 967 buyers.
 - 16,581 bids placed by 3,421 sellers.
 - 802 auctions were contracted.

Data and Variables



- Auction and post-auction information:
 - ❖ AfterChange
 - ❖ BidArrival, #OfBidders, Contracted, WinningBid, TimeToAccept
 - ❖ RatingByBuyer, Rehire
- Buyer information
 - ❖ BuyerExperience
 - ❖ Region (dummies)
- Project Information
 - ❖ DescriptionLength, MaxBid, AuctionDuration
 - ❖ ProjectType (dummies)
- Seller information
 - ❖ #OfRatings, NoRating
 - ❖ SellerExperience
- Bid Information
 - ❖ BidAmount, BidDelay
 - ❖ BidOrder
 - ❖ SameCountry

Variable	Description	N	Mean	S.D.	Min	Max
<i>AfterChange</i>	A dummy variable that equals one if the project was posted after the regime change day	1,926	0.750	0.433	0	1
<i>BidderArrival</i>	Logged number of bidders placing bids per hour (bid arrival rate) for a project	1,926	-2.721	1.985	-8.921	3.313
<i>#OfBidders</i>	Logged number of bidders for a project	1,926	1.872	0.860	0.693	4.860
<i>NewSellerRatio</i>	The ratio of new sellers to total sellers within 12 hours of project posting for a project	1,926	0.516	0.378	0	1
<i>Contracted</i>	A dummy variable that equals one if the buyer chose a seller for a posted project	1,926	0.416	0.493	0	1
<i>WinningBid</i>	Logged winning bid for a project	1,926	1.643	2.098	0	8.140
<i>TimeToAccept</i>	Logged number of hours the buyer took to make decision on accepting a bid after posting the project	802	3.317	1.843	0.036	8.929
<i>Rating</i>	A rating given by the buyer who created the job to the hired seller after this seller finishes job	802	8.415	3.461	0	10
<i>Rehire</i>	An indicator that equals 1 if the same buyer who hired current seller hired the seller again in the future	802	0.269	0.444	0	1
<i>BuyerExperience</i>	Logged number of projects the focal buyer has completed at the time of posting current project	1,926	0.342	0.738	0	3.584
<i>Region</i>	A set of dummy variables to show the regions where the buyer comes from					
<i>ProjectDescription</i>	Logged length of a project description (i.e., total words).	1,926	3.897	1.132	0	6.094
<i>MaxBid</i>	Logged max bid a buyer would like to accept.	1,926	1.754	2.371	0	11.51
<i>AuctionDuration</i>	Logged number of days a project remained active on the studied platform.	1,926	1.713	1.256	0	4.533
<i>ProjectType</i>	A group of dummy variables for the type of projects					
<i>#OfRatings</i>	Logged number of ratings a seller has at the time of current bid	16,581	0.219	0.578	0	3.761
<i>NoRating</i>	An indicator that equals 1 if the seller is a new seller when this seller bid on the current project	16,581	0.743	0.437	0	1
<i>SellerExperience</i>	Logged number of projects the seller has completed at the time of current bid	16,581	0.329	0.656	0	3.892
<i>BidAmount</i>	Logged amount the seller bids for a project	16,581	4.887	1.592	1.099	18.42
<i>BidDelay</i>	Logged time differences in hours between posting project and bidding	16,581	3.148	1.867	0	10.73
<i>BidOrder</i>	Logged sequence order of the current bid among all bids for a project	16,581	11.55	13.38	1	139
<i>SameCountry</i>	An indicator that equals to 1 if the seller and buyer come from the same country	16,581	0.201	0.401	0	1

A Simple Economic Model

1. The buyer gets value V from finishing the project and has a discount rate of δ .
2. The buyer runs a procurement auction from time 0 to a fixed time $T > 0$
3. The workers arrive at the auction at a Poisson arrival rate λ .
 - The number of bidders in an auction and the number of competitors both follow a Poisson distribution with parameter λT .
4. Workers have independent private costs for the project, which follows a distribution with CDF F and PDF f . The range of worker cost is $c \in [\underline{c}, \bar{c}]$. Without loss of generality, assume $\bar{c} = V$.
 - Common fixed cost C + Idiosyncratic cost ϵ_i

Bidding in a Sealed Auction

There is no competitor's information revealed before the end of the auction. Thus, placing a bid immediately after seeing the auction is a weakly dominant strategy when there is a chance that the auction may end earlier than T .

The worker's bid will be an equilibrium bid in a standard *first-price auction with independent private values and an uncertain number of bidders*.

Lemma 1. *In a sealed auction, a worker of cost c who sees the auction at time t places a bid at time t according to*

$$b_{sealed}(c) = c + \int_c^{\bar{c}} e^{-(F(x)-F(c))\lambda T} dx.$$

In general, the bidding function is strictly decreasing in auction time length T . When $T \rightarrow 0$, $b(c) \rightarrow \bar{c}$; when $T \rightarrow \infty$, $b(c) \rightarrow c$.

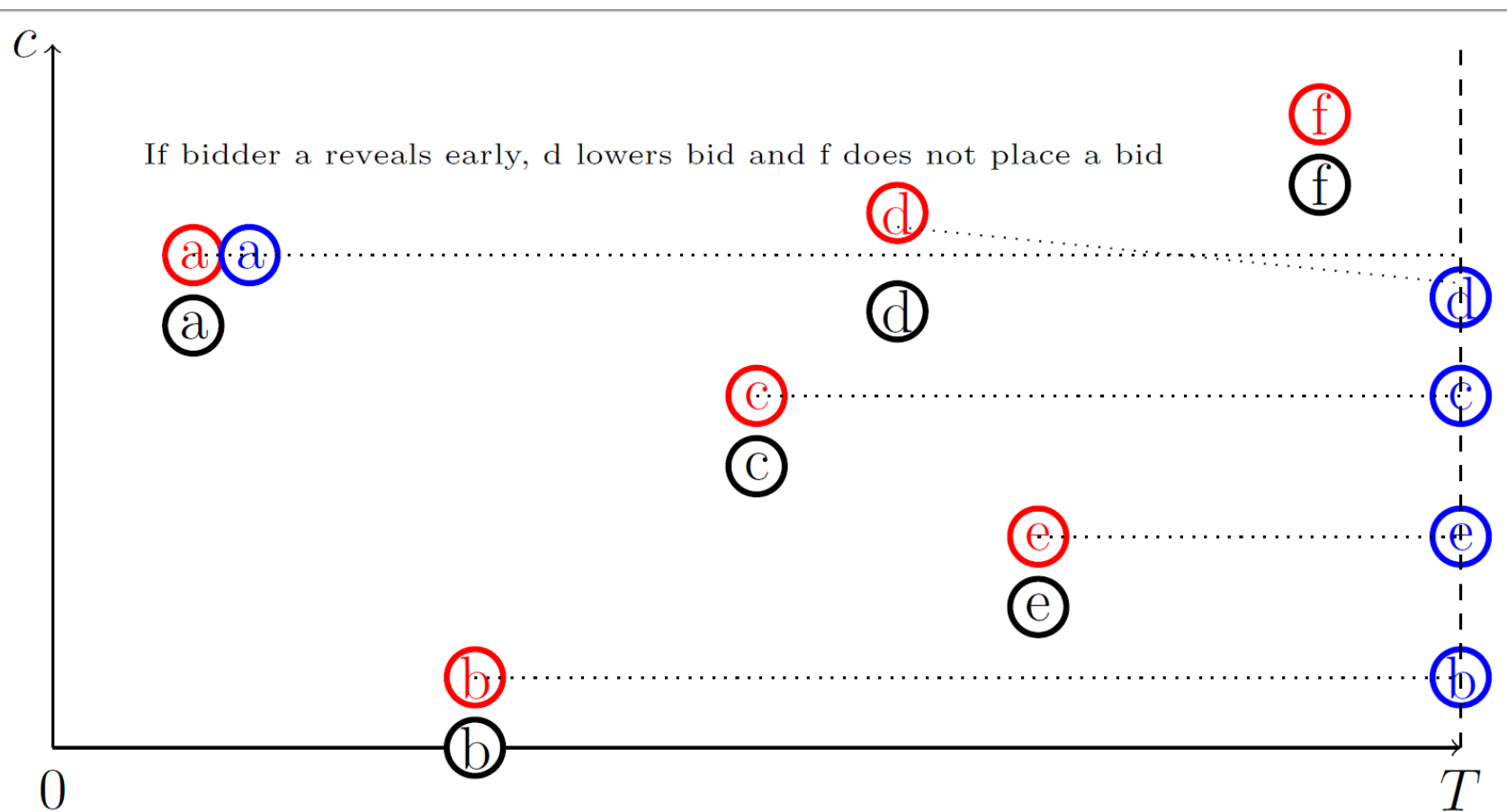
Bidding in an Open Auction

Sellers have no incentive to reveal their bids immediately after they view the auction. In equilibrium, a seller arrives at the auction at time t will wait until time T to bid.

Suppose he observes the revealed leading bid B_T , which is the lowest revealed bid by time T , we have the equilibrium bid function, specified below in Lemma 2.

Lemma 2. *In an equilibrium of an open auction, a bidder of cost c who sees the auction at time t , if his cost is below revealed leading bid B_T , bids at time T according to*

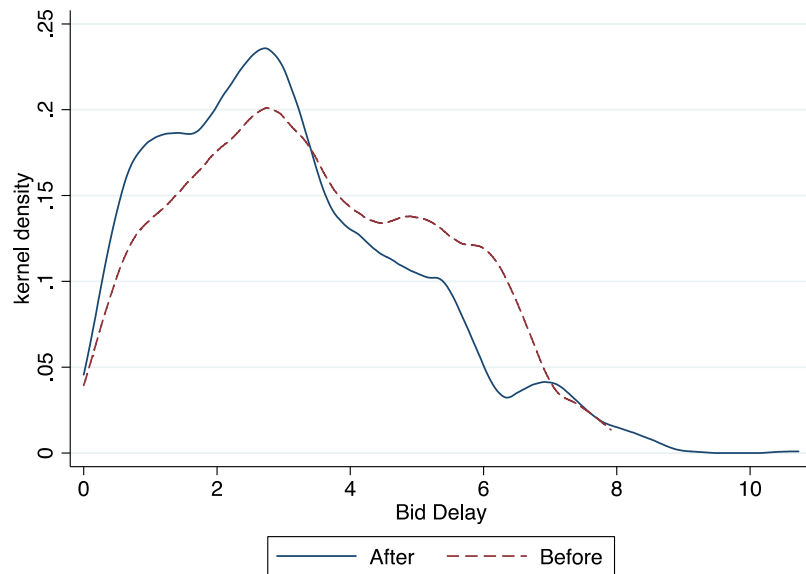
$$b_{open}(c|B_T) = c + \int_c^{B_T} e^{-(F(x)-F(c))\lambda T} dx.$$



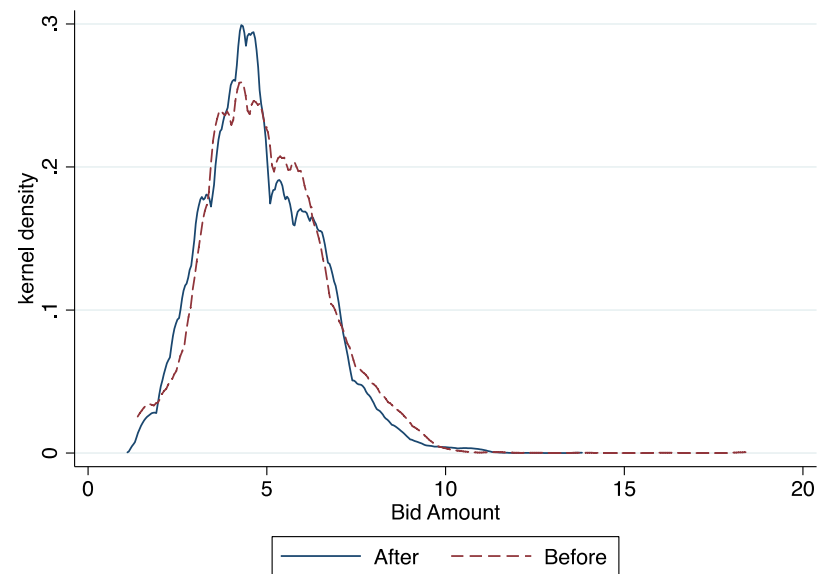
Hypotheses: Bidding Behaviors

- **Hypothesis 1.** *Bidding is faster in a sealed auction. Mathematically, bids arrive first-order stochastically earlier in a sealed auction.*
 - *sealed auction: all bidders bid at the time of arrival t*
 - *open auction: rational bidders wait until time T*
- **Hypothesis 2.** *The bidding amount is lower in a sealed auction.*
 - *sealed auction: sellers place equilibrium bid $b_{\text{sealed}}(c)$ at time t*
 - *open auction: sellers bid higher first and then lower bids to equilibrium bid $b_{\text{open}}(c|B_T)$ at time T*

Impact on Bidding Behaviors



BidDelay



BidAmount

Variable	Description	N	Mean	S.D.	Min	Max
<i>BidDelay</i>	Logged time differences in hours between posting project and bidding	16,581	3.148	1.867	0	10.73
<i>BidAmount</i>	Logged amount the seller bids for a project	16,581	4.887	1.592	1.099	18.42

Impact on Bidding Behaviors: Regression

Bid level regression:

$$SellerBehavior_{ijkt} = \beta_0 AfterChange_t + \beta X_{ijt} + \delta Z_{ijkt} + \alpha_k + \gamma_t + \varepsilon_{it}$$

where

$$\beta X_{ijt} = \beta_1 BuyerExperience_{jt} + \beta_2 DescriptionLength_{it} + \beta_3 ProjectType_{it}$$

$$\delta Z_{ijkt} = \delta_1 SellerExperience_{kt} + \delta_2 BidOrder_{ijkt} + \delta_3 SameCountry_{ijkt} + \delta_4 BidAmount_{ijkt}$$

where i denotes the project, j denotes the buyer, k denotes the seller, and t denotes the time.

Dependent variable:

BidDelay (H1), BidAmount (H2)

Moderating variable:

NoRating and #OfRatings

Variable	Description	N	Mean	S.D.	Min	Max
#OfRatings	Logged number of ratings a seller has at the time of current bid	16,581	0.219	0.578	0	3.761
NoRating	An indicator that equals 1 if the seller is a new seller when this seller bid on the current project	16,581	0.743	0.437	0	1

Effects of Auction Format Change on Bidding Behaviors

Dep. Variable	Bid Delay (Hypothesis 1)			Bid Amount (Hypothesis 2)		
AfterChange	-0.531*** (0.063)	-0.231* (0.100)	-0.578*** (0.064)	-0.180*** (0.054)	-0.035 (0.105)	-0.238*** (0.051)
NoRating		0.531*** (0.110)			0.124 (0.100)	
AfterChange×NoRating		-0.395*** (0.115)			-0.191+ (0.115)	
#OfRatings			0.047 (0.140)			-0.239* (0.115)
AfterChange×#OfRatings			0.273*** (0.081)			0.329*** (0.069)
DescriptionLength	-0.036** (0.011)	-0.035** (0.011)	-0.036** (0.011)	0.093*** (0.012)	0.094*** (0.012)	0.093*** (0.012)
BuyerExperience	-0.092*** (0.016)	-0.090*** (0.016)	-0.090*** (0.016)	-0.143*** (0.018)	-0.143*** (0.018)	-0.141*** (0.018)
SellerExperience	-0.072 (0.051)	-0.009 (0.065)	-0.327** (0.100)	0.220*** (0.046)	0.188** (0.067)	0.156+ (0.089)
BidOrder	0.065*** (0.002)	0.065*** (0.002)	0.065*** (0.002)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
SameCountry	0.002 (0.035)	0.001 (0.035)	0.004 (0.035)	-0.145*** (0.035)	-0.146*** (0.035)	-0.145*** (0.035)
BidAmount	0.124*** (0.010)	0.123*** (0.010)	0.122*** (0.010)			
Observations	16,581	16,581	16,581	16,581	16,581	16,581
Number of Sellers	3,421	3,421	3,421	3,421	3,421	3,421
Adjusted R-squared	0.277	0.279	0.279	0.065	0.065	0.067
Seller Fixed Effects	YES	YES	YES	YES	YES	YES
Weekday Fixed Effects	YES	YES	YES	YES	YES	YES
Project Type Fixed Effects	YES	YES	YES	YES	YES	YES

Note: Robust standard errors in parentheses. *** p<0.001, ** p<0.01, * p<0.05, +p<0.1

Variable	Description	N	Mean	S.D.	Min	Max
#OfRatings	Logged number of ratings a seller has at the time of current bid	16,581	0.219	0.578	0	3.761
NoRating	An indicator that equals 1 if the seller is a new seller when this seller bid on the current project	16,581	0.743	0.437	0	1

Buyer's Optimal Stopping

Extension: Seller may stop the auction earlier.

- Sellers are “unaware” of the buyer’s possibility of stopping the auction early.

The buyer will secretly use the cutoff rule that any bid weakly below B_τ^* is accepted at time τ .

Suppose the current leading bid at time τ is B_τ . The buyer would take the bid if:

$$V - B_\tau \geq e^{(T-\tau)\delta} \cdot E_{B_T}\{V - \text{Min}[B_\tau, B_T]\}.$$

where B_T is the lowest bid by time T . For any τ , there is a unique threshold $B_\tau^* > \underline{c}$ such that the buyer is indifferent between taking the offer B_τ^* and waiting for a better offer at time T but with a delay cost.

$$V - B_\tau^* = e^{(T-\tau)\delta} \cdot E_{B_T}\{V - \text{Min}[B_\tau^*, B_T]\}.$$

In an open auction, the stopping probability is smaller compared to that in a sealed auction.

Hypotheses: Bidder Outcomes

- **Hypothesis 3.** *The expected number of bidders per unit of time (i.e., bid arrival rate) is higher in a sealed auction.*
 - *Sealed auction: expected # of bidders per unit time by time t is λ*
 - *Open auction: expected # of bidders is 0 by $t < T$, and λT by time T*
- **Hypothesis 4.** *When the auctioneer can stop the auction, a sealed auction is expected to end more quickly.*
 - *Sealed auction: positive probability of bids being below B_t^**
 - *Open auction: low probability of ending early due to bid delay*
- **Hypothesis 5.** *The expected total number of bidders is lower in a sealed auction.*
 - *Sealed auction: expected # of bidders smaller than λT*
 - *Open auction: expected # of bidders is λT*

Impact on Bidder Outcomes: Regression

Auction level regression:

$$Outcome_{ijt} = \beta_0 AfterChange_t + \beta X_{ijt} + \alpha_j + \gamma_t + \varepsilon_{it}$$

where

$$\begin{aligned} &\beta X_{ijt} \\ &= \beta_1 BuyerExp_{jt} + \beta_2 DescriptionLength_{it} + \beta_3 MaxBid_{it} + \beta_4 AucDuration_{it} \\ &+ \beta_5 Region_{jt} + \beta_6 ProjectType_{it} \end{aligned}$$

where i denotes the project, j denotes the buyer, and t denotes the time.

Dependent variable:

BidArrival (H3), TimeToAccept (H4), #OfBidders (H5)

Variable	Description	N	Mean	S.D.	Min	Max
<i>Bidder.Arrival</i>	Logged number of bidders placing bids per hour (bid arrival rate) for a project	1,926	-2.721	1.985	-8.921	3.313
<i>TimeToAccept</i>	Logged number of hours the buyer took to make decision on accepting a bid after posting the project	802	3.317	1.843	0.036	8.929
<i>#OfBidders</i>	Logged number of bidders for a project	1,926	1.872	0.860	0.693	4.860

Effects of Auction Format Change on Bidder Outcomes

Dep. Variable	Bid Arrival Rate (Hypothesis 3)		Time to Accept (Hypothesis 4)		Number of Bidders (Hypothesis 5)	
	RE	OLS	RE	OLS	RE	OLS
AfterChange	0.337*** (0.094)	0.337*** (0.084)	-0.493** (0.163)	-0.521*** (0.138)	-0.109* (0.047)	-0.150*** (0.043)
DescriptionLength	0.024 (0.043)	0.024 (0.038)	0.145** (0.050)	0.138** (0.049)	0.142*** (0.018)	0.128*** (0.016)
BuyerExperience	0.469*** (0.061)	0.469*** (0.069)	-0.354*** (0.080)	-0.552*** (0.079)	-0.144*** (0.039)	-0.126*** (0.027)
MaxBid	0.060*** (0.017)	0.060*** (0.017)	-0.049+ (0.025)	-0.054* (0.026)	-0.013 (0.009)	-0.011 (0.008)
AuctionDuration	-1.154*** (0.049)	-1.154*** (0.051)	1.115*** (0.095)	1.074*** (0.100)	0.130*** (0.028)	0.129*** (0.028)
Observations	1,926	1,926	802	802	1,926	1,926
Adjusted R ²	0.254	0.254	0.306	0.314	0.145	0.149
Number of Buyers	967	967	423	423	967	967
Buyer Region Dummies	YES	YES	YES	YES	YES	YES
Weekday Dummies	YES	YES	YES	YES	YES	YES
Project Type Fixed Effects	YES	YES	YES	YES	YES	YES

Note: Robust standard errors in parentheses. *** p<0.001, ** p<0.01, * p<0.05, +p<0.1

Variable	Description	N	Mean	S.D.	Min	Max
<i>Bidder.Arrival</i>	Logged number of bidders placing bids per hour (bid arrival rate) for a project	1,926	-2.721	1.985	-8.921	3.313
<i>TimeTo.Accept</i>	Logged number of hours the buyer took to make decision on accepting a bid after posting the project	802	3.317	1.843	0.036	8.929
<i>#OfBidders</i>	Logged number of bidders for a project	1,926	1.872	0.860	0.693	4.860

Hypotheses: Project Outcomes

- **Hypothesis 6.** *Buyers are more likely to successfully hire a seller in a sealed auction.*
 - *Sealed auction: buyer has more choices given more bids*
 - *Open auction: impatient buyer may choose to stop the auction without hiring*
- **Hypothesis 7.** *Buyers are more likely to hire a seller with a lower wage (i.e., winning bid) in a sealed auction.*
 - *Sealed auction*
 - *buyer has more choices and bids may be lower*
 - *but impatient buyer may choose to hire a seller with a higher wage (i.e., to accept a bid too early)*

Impact on Project Outcomes: Regression

Auction level regression:

$$Outcome_{ijt} = \beta_0 AfterChange_t + \beta X_{ijt} + \alpha_j + \gamma_t + \varepsilon_{it}$$

where

$$\begin{aligned} \beta X_{ijt} &= \beta_1 BuyerExperience_{jt} + \beta_2 DescriptionLength_{it} + \beta_3 MaxBid_{it} \\ &+ \beta_4 AuctionDuration_{it} + \beta_5 Region_{jt} + \beta_6 ProjectType_{it} \end{aligned}$$

where i denotes the project, j denotes the buyer, and t denotes the time.

Dependent variable:

Contracted (H6), WinningBid (H7)

Variable	Description	N	Mean	S.D.	Min	Max
<i>Contracted</i>	A dummy variable that equals one if the buyer chose a seller for a posted project	1,926	0.416	0.493	0	1
<i>WinningBid</i>	Logged winning bid for a project	1,926	1.643	2.098	0	8.140

Effects of Auction Format Change on Project Outcomes

Dep. Variable	Auction Success (Contracted) (Hypothesis 6)		Winning Amount (Hypothesis 7)	
	RE	OLS	RE	OLS
AfterChange	0.061* (0.028)	0.066** (0.025)	-0.053 (0.108)	0.080 (0.106)
DescriptionLength	0.017 (0.012)	0.012 (0.010)	0.030 (0.034)	0.049 (0.036)
BuyerExperience	0.068 (0.042)	0.066*** (0.017)	-0.032 (0.072)	-0.036 (0.059)
MaxBid	0.011* (0.005)	0.011* (0.005)	0.042* (0.020)	0.040* (0.020)
AuctionDuration	-0.124*** (0.015)	-0.132*** (0.015)	0.130+ (0.069)	0.253** (0.079)
Observations	1,926	1,926	802	802
Adjusted R ²	0.091	0.092	0.063	0.089
Number of Buyers	967	967	423	423
Buyer Region Dummies	YES	YES	YES	YES
Weekday Dummies	YES	YES	YES	YES
Project Type Fixed Effects	YES	YES	YES	YES

Note: Robust standard errors in parentheses. *** p<0.001, ** p<0.01, * p<0.05, +p<0.1

Variable	Description	N	Mean	S.D.	Min	Max
<i>Contracted</i>	A dummy variable that equals one if the buyer chose a seller for a posted project	1,926	0.416	0.493	0	1
<i>WinningBid</i>	Logged winning bid for a project	1,926	1.643	2.098	0	8.140

Hypotheses: Post-Project Outcomes

- **Hypothesis 8.** *After the projects are completed, buyers are more likely to be satisfied with the selected sellers' work in a sealed auction (i.e., after regime change).*
- **Hypothesis 9.** *After the projects are completed, buyers are more likely to hire the same seller in the future, in a sealed auction (i.e., after the regime change).*
- **Hypothesis 10.** *After the projects are completed, winning sellers are less likely to exit the online labor market in a sealed auction (i.e., after the regime change).*

Impact on Post-Project Outcome: Rating and Rehiring

Auction level regression:

$$BuyerSatisfaction_{ijt} = \beta_0 AfterChange_t + \beta X_{ijt} + \varepsilon_{it},$$

where

$$\beta X_{ijt}$$

$$= \beta_1 DescriptionLength_{it} + \beta_2 BuyerExperience_{jt} + \beta_3 SellerExperience_{jt} + \beta_4 SameCountry_{it} \\ + \beta_5 WinningBid_{it} + \beta_6 ProjectType_{it}$$

where i denotes the project, j denotes the buyer, and t denotes the time.

Dependent variable:

RatingByBuyer (H8) and Rehire (H9)

Variable	Description	N	Mean	S.D.	Min	Max
<i>Rating</i>	A rating given by the buyer who created the job to the hired seller after this seller finishes job	802	8.415	3.461	0	10
<i>Rehire</i>	An indicator that equals 1 if the same buyer who hired current seller hired the seller again in the future	802	0.269	0.444	0	1

Effects of Auction Format Change on Buyer Satisfaction

Dep. Variable	DV: Rating by Buyer (Hypothesis 8)				DV: Rehire (Hypothesis 9)	
AfterChange	0.249*** (0.0858)	0.245*** (0.0852)	0.205** (0.0866)	0.139*** (0.0353)	0.124*** (0.0357)	0.0437 (0.0359)
DescriptionLength		0.00456 (0.0250)	0.0116 (0.0246)		-0.0193 (0.0147)	-0.00370 (0.0126)
BuyerExperience			0.0543** (0.0227)			0.0986*** (0.0179)
SellerExperience			0.0526** (0.0239)			0.0938*** (0.0194)
SameCountry			0.0252 (0.0605)			-0.0370 (0.0319)
WinningBid		-0.0121 (0.0209)	-0.0160 (0.0215)		0.0179 (0.0147)	0.00897 (0.0140)
Observations	802	802	802	802	802	802
Adjusted R ²	0.019	0.025	0.029	0.015	0.027	0.091
Project-type Fixed Effects	No	YES	YES	No	YES	YES

Note: Robust standard errors in parentheses. *** p<0.001, ** p<0.01, * p<0.05, +p<0.1

Variable	Description	N	Mean	S.D.	Min	Max
Rating	A rating given by the buyer who created the job to the hired seller after this seller finishes job	802	8.415	3.461	0	10
Rehire	An indicator that equals 1 if the same buyer who hired current seller hired the seller again in the future	802	0.269	0.444	0	1

Impact on Post-Project Outcome: Seller Exit

Auction Level Cox Proportional Hazard Regression:

$$\lambda(t_i|X_{ijt}) = \lambda_0(t_i)\exp(\beta_0\text{AfterChange}_t + \beta X_i),$$

where

$$\beta X_i = \beta_1\text{SellerExperience}_i + \beta_2\text{SellerContractValue}_i + \beta_3\text{\#OfBids}_i + \beta_4\text{WinningRatio}_i$$

Dependent variable:

- Seller exit: indicator variable if the seller has no bidding 1 year after the regime change

Effect of Auction Format Change on Seller Exit

Dep. Variable	DV: Seller Exit (Hypothesis 10)	
	Coefficients	Hazard Ratio
AfterChange	-1.933*** (0.331)	.145***<1 (.048)
SellerExperience	0.0795 (0.111)	1.083 (.121)
SellerContractValue	-0.0352 (0.0381)	.965 (.037)
#OfBids	-0.179* (0.0927)	.837* (.078)
WinningRatio	0.0603 (0.855)	1.062 (.909)
Observations	650	
# of failures	214	

Note: Robust standard errors (clustered at the seller level) are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

- Seller exit: indicator variable if the seller has no bidding 1 year after the regime change
- sellers are 85.5% less likely to leave the market at the one-year cut-off date if they completed the focal project after the auction format change.

Summary of Hypotheses		
Category	Dependent Variable (Hypothesis)	Description
Bidder Behavior	BidDelay (H1)	Bidding is faster in a sealed auction than in an open auction. Mathematically, bids arrive first-order stochastically earlier in a sealed auction (i.e., after the regime change) than in an open auction (i.e., before the regime change).
	BidAmount (H2)	The bidding amount is lower in a sealed auction (i.e., after the regime change) than in an open auction (i.e., before the regime change).
Bidder Outcome	BidArrival (H3)	The expected number of bidders per unit of time (i.e., bid arrival rate) is higher in a sealed auction (i.e., after the regime change) than in an open auction (i.e., before the regime change).
	TimeToAccept (H4)	When the auctioneer can stop the auction, a sealed auction (i.e., after the regime change) is expected to end more quickly than an open auction (i.e., before the regime change).
	#OfBidders (H5)	The expected total number of bidders is lower in a sealed auction (i.e., after the regime change) than in an open auction (i.e., before the regime change).
Project Outcome	Contracted (H6)	Buyers are more likely to successfully hire a seller, in a sealed auction (i.e., after the regime change) than in an open auction (i.e., before the regime change).
	WinningBid (H7)	Buyers are more likely to hire a seller with a lower wage (i.e., winning bid), in a sealed auction (i.e., after the regime change) than in an open auction (i.e., before the regime change).
Post-Project	RatingByBuyer (H8)	After the projects are completed, buyers are more likely to be satisfied with the selected sellers' work in a sealed auction (i.e., after regime change) than in an open auction (i.e., before regime change).
	Rehire (H9)	After the projects are completed, buyers are more likely to hire the same seller in the future, in a sealed auction (i.e., after the regime change) than in an open auction (i.e., before the regime change).
	SellerExit (H10)	After the projects are completed, winning sellers are less likely to exit the online labor market in a sealed auction (i.e., after the regime change) than in an open auction (i.e., before the regime change).

Summary of Key Findings				
Category	Dependent Variable (Hypothesis)	Prediction	Result Summary	Supported
Bidding Behavior	BidDelay (H1)	Open > Sealed	41.2% (FE) shorter delay in bidding	Yes
	BidAmount (H2)	Open > Sealed	16.5% (FE) decrease in bid amount	Yes
Bidder Outcome	BidArrival (H3)	Open < Sealed	40.1% (RE) or 40.1% (OLS) increase	Yes
	TimeToAccept (H4)	Open > Sealed	39.0% (RE) or 40.6% (OLS) shorter time	Yes
	#OfBidders (H5)	Open > Sealed	10.3% (RE) or 13.9% (OLS) decrease	Yes
Project Outcome	Contracted (H6)	Open < Sealed	5.6% (RE) or 6.0% (OLS) increase	Yes
	WinningBid (H7)	Open > Sealed	Insignificant	-
Post-Project	RatingByBuyer (H8)	Open < Sealed	0.249 increase out of 10 (left truncated at 7)	Yes
	Rehire (H9)	Open < Sealed	Buyers are 13.9% more likely to rehire	Yes
	SellerExit (H10)	Open > Sealed	Sellers are 85.5% less likely to exit given a time after the focal project is completed (hazard ratio 0.145)	Yes

Robustness Checks and Additional Analyses

- Impact on auction outcomes
 - Alternative dependent variables: #OfBids and #BidsPerBidder
 - Alternative estimations:
 - RE-Logit and RE-Probit for Contracted (H6)
 - Ordered Logit and Ordered Probit for RatingByBuyer (H8)
 - Logit and Probit for Rehire (H9)

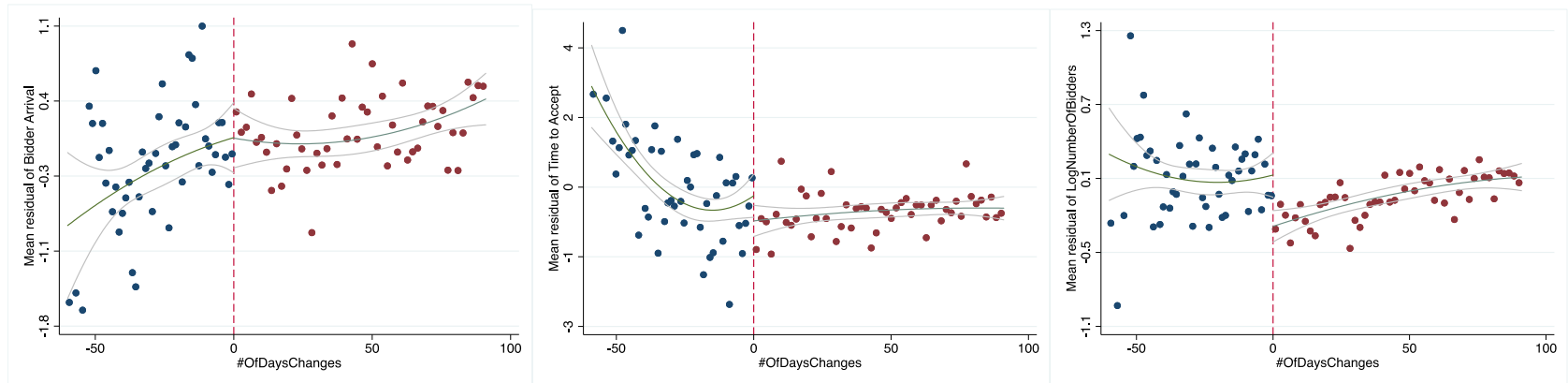
Conclusion

- Regime change: open → sealed auction format
- Bidding behaviors
 - ❖ Time taken to decide to bid is reduced
 - ❖ Bidding amount becomes lower (more competitive)
- Bidder outcomes
 - ❖ Bidder arrival rate increases
 - ❖ Time taken to accept a bid decreases
 - ❖ # of bidders decreases
- Buyer-relevant outcomes
 - ❖ Contract probability increases
 - ❖ Wage amount doesn't change
- Post-project outcomes
 - ❖ Higher buyer satisfaction (rating by buyer increases, rehire probability increases)
 - ❖ Higher seller satisfaction (seller exit decreases)

Thank You!

- Qiang Gao, Chenhui Guo, Mingfeng Lin, and Hanzhe Zhang, “Is Ignorance Bliss? Sealed versus Open Auctions in Online Labor Markets,”
- Available on SSRN:
- https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4929240.
- A related working paper using the same context:
- Qiang Gao, Mingfeng Lin, Yong Liu, and Chenhui Guo, “When ‘Signals’ Boomerang: Employers’ Reactions to a Novel Signaling Mechanism.”
- Available on SSRN:
- https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3399245.

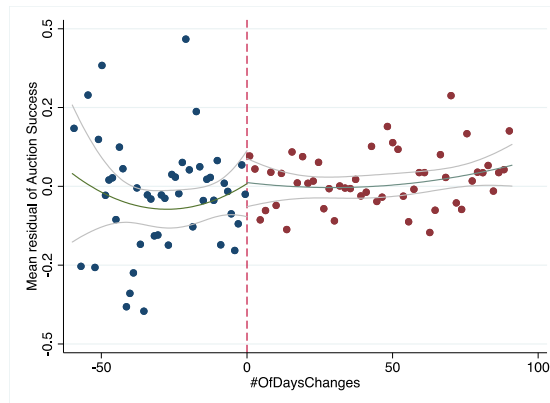
Impact on Auction Outcomes



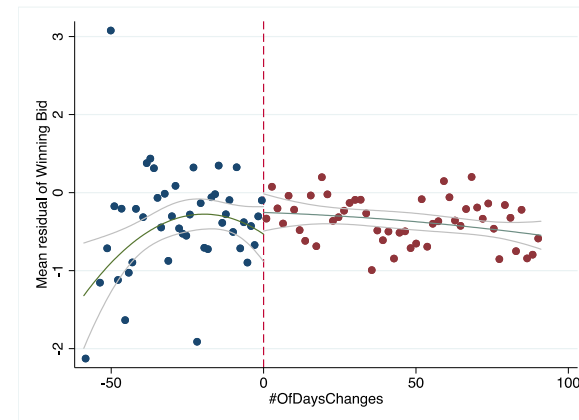
Log(BidArrival)

Log(TimeToAccept)

Log(#OfBidders)



Contracted



Log(WinningBid)