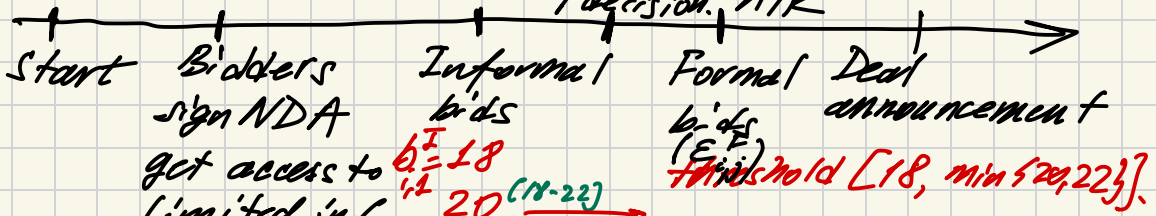


Informal Bids

i : auction; j : bidder

Decision: A/R



①. (simplest)

$A_i: 10, 13$

Alternative:

$$A_i = \beta^I X_i + \gamma_i^I \quad \text{target characteristic moments of bids: mean, var, max}$$

"Probit" (auction level)

$$b_{i,j}^{I*} = \beta^I X_i + \gamma_i^I, \quad \gamma_i^I \in [18 - \beta^I X_i, 20 - \beta^I X_i]$$

ML or MCMC.

MCMC: (1) start w/ β_0^I

(2) simulate $\gamma_{i,0}^I$ s.t. satisfied; calculate $b_{i,0}^{I*}$

(3) Estimate β^I given calculated $b_{i,0}^{I*}$

(4) simulate β^I

(5) Repeat n times.

②. (highest informal bids do not always make it to formal stage).

$$b_{i,j}^{I*} = 18 \rightarrow$$

$$2 = 20$$

$$3 = 22 \rightarrow$$

$$b_{i,j}^{I*} = b_i^{I*} + \gamma^I Y_{i,j} + \eta_{i,j}^I$$

$$b_{i,j}^{I*} = \beta^I X_i + \gamma^I Y_{i,j} + \gamma_i^I + \eta_{i,j}^I \quad (\text{individual level})$$

bidder type: S or F.
"seriousness": # bids
variance of bid...

③. (target's AIR decisions depend on its inference about bidders' valuations).

$$\delta_i^{I*} = \rho_i^I X_i + \gamma_i^I$$

target's chars.
moments of bidder valuations

$$v_{i,j} = \delta X_i + \gamma_{i,j}$$

$\dots b_{i,j}^I \rightarrow v_{i,j} \in [\underline{v}(b_{i,j}^I), \bar{v}(b_{i,j}^I)]$
given X_i , I can calculate moments of bidder val. cond' on bids.

- MCMC:
- (1) Assume δ_0, β_0^I .
 - (2) Simulate $\gamma_{i,0}^I, \gamma_{i,j,0}$.
 - (3) Given δ_0 , calculate moments of $v_{i,j}$.
 - (4) Estimate β_1^I and $\hat{\delta}$
using moments of $v_{i,j}$ as controls.
 - (5) Draw β_1^I, δ_1
 - (6) Repeat.

Simulate N auctions.

a. Each auction: 3 bidders.

b. Bidders have valuations at 1st stage

$$v_{i,j} = 1.3 + N(0, 0.2^2). \quad \text{Case (1)}$$

c. Bidders submit their valuations.

d. Target sets threshold $b_i^{I^*} \equiv \text{const} = 1.4$.

[This will mean that some auctions are never completed \Rightarrow drop incomplete auctions for now].

e. Goal: to estimate $b_i^{I^*}$ when we only observe AIR decisions.

f. (More realistic). Case (2).

g! Bidders are of 2 types (S & F).

$v_{i,j} = 1.3 + N(0, 0.2^2)$ (of course these could be Bidder-specific).

d! T sets threshold of 1.45 for S
1.35 for F.

e! estimate b^{I^*} that are type-specific.

I have ~20 auctions with hand-collected data.

Matvos and Seru (2014, RFS).
Conglomerates.