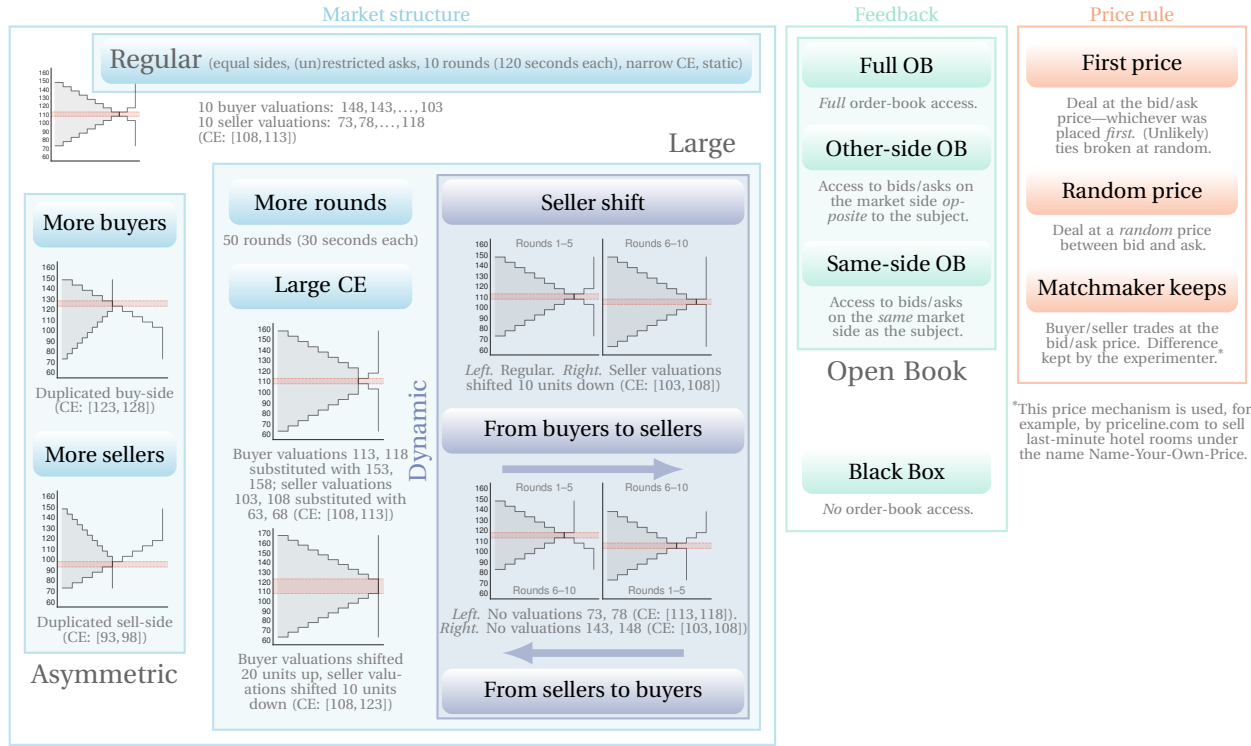


Experimental double auctions with private information

Data overview



| Treatment | | | Experimental data | | |
|------------------------|-----------------|------------------|-------------------|--------------------|--------------|
| Market structure | Feedback | Price rule | treatment | Subjects (markets) | Observations |
| Regular | | | | | |
| | Full OB | First price | Full | 73 (4) | 4810 |
| | Other-side OB | First price | Other | 70 (5) | 4238 |
| | Same-side OB | First price | Same | 71 (5) | 4069 |
| | | Matchmaker keeps | SameMMK | 64 (4) | 4605 |
| | Black Box | First price | BB | 84 (5) | 4495 |
| | | Random price | BBRandom | 78 (5) | 4249 |
| | | Matchmaker keeps | BBMMK | 88 (5) | 5334 |
| | Restricted asks | Full OB | First price | FullLimS | 76 (5) |
| Black Box | | BBLimS | | 71 (5) | 2446 |
| Asymmetric | | | | | |
| More buyers | Full OB | First price | FullMoreB | 130 (5) | 5683 |
| | Black Box | | BBMoreB | 113 (5) | 4792 |
| More sellers | Full OB | First price | FullMoreS | 140 (5) | 8012 |
| | Black Box | | BBMoreS | 124 (5) | 5236 |
| Large | | | | | |
| More rounds | Black Box | First price | BBMoreRounds | 77 (5) | 7392 |
| Large CE | Full OB | First price | FullLargeCE | 183 (13) | 6999 |
| | Black Box | | BBLargeCE | 74 (8) | 3259 |
| Seller shift | Full OB | First price | FullSShift | 80 (5) | 2467 |
| From buyers to sellers | | | FullFromBtoS | 74 (5) | 2380 |
| From sellers to buyers | | | FullFromStoB | 81 (5) | 3118 |
| Total | | | | 1'751 (104) | 86'386 |

The final number of subjects active in an experimental market may differ from the number of subjects initially recruited for it either due to inactivity of the subjects or due to technical disconnections before trading began. See also our OSF registry under osf.io/gu62n.

Data structure

| Parameter | Description |
|------------|--|
| treatment | configuration of the experimental market |
| game | sequence number of the experimental market under treatment |
| round | index $T \in \mathbb{N}$ of the trading round in the experimental market |
| time | a measure $t_T \in \mathbb{N}$ of time within trading round T |
| id | ID of the player (unique within the dataset) |
| side | market side of the player (Buyer or Seller) |
| valuation | valuation (reservation price) of player i , \bar{b}_i (if i is a buyer) or σ_i (if i is a seller) |
| bid | current value of player i 's bid β_i (if i is a buyer) or ask σ_i (if i is a seller) |
| price | deal price if player i 's bid/ask resulted in a match |
| match_id | ID of the player with whom player i was matched (in the case of a match) |
| match_time | time when the match was formed (in the case of a match) |
| type | Manual if the player manually entered the bid/ask Auto if the player clicked on the button to accept the best offer on the other side of the market |
| status | Expired if the bid/ask expired (after 10 seconds) Replaced if the player replaced the bid/ask before it expired Accepted if the bid/ask resulted in a deal |

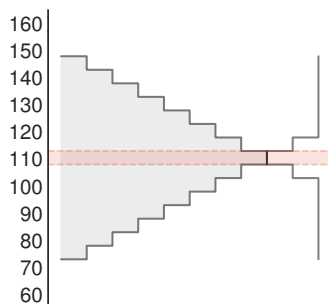
| | treatment | game | round | time | id | side | valuation | bid | price | match_id | match_time | type | status |
|-----|-----------|------|-------|------|------|--------|-----------|-----|-------|----------|------------|--------|----------|
| 700 | FullMoreS | 1 | 4 | 95 | 1330 | Seller | 83 | 90 | | | | Manual | Replaced |
| 701 | FullMoreS | 1 | 4 | 95 | 1338 | Buyer | 118 | 85 | | | | Manual | Expired |
| 702 | FullMoreS | 1 | 4 | 96 | 1337 | Seller | 103 | 104 | | | | Manual | Expired |
| 703 | FullMoreS | 1 | 4 | 97 | 1344 | Buyer | 103 | 85 | | | | Manual | Replaced |
| 704 | FullMoreS | 1 | 4 | 97 | 1330 | Seller | 83 | 89 | 89.0 | 1331.0 | 98.0 | Manual | Accepted |
| 705 | FullMoreS | 1 | 4 | 97 | 1343 | Seller | 118 | 500 | | | | Manual | Expired |
| 706 | FullMoreS | 1 | 4 | 98 | 1332 | Seller | 88 | 90 | 90.0 | 1344.0 | 100.0 | Manual | Accepted |
| 707 | FullMoreS | 1 | 4 | 98 | 1331 | Buyer | 138 | 89 | 89.0 | 1330.0 | 98.0 | Auto | Accepted |
| 708 | FullMoreS | 1 | 4 | 100 | 1344 | Buyer | 103 | 90 | 90.0 | 1332.0 | 100.0 | Auto | Accepted |
| 709 | FullMoreS | 1 | 4 | 104 | 1334 | Seller | 93 | 100 | | | | Manual | Expired |
| 710 | FullMoreS | 1 | 4 | 104 | 1348 | Seller | 88 | 97 | | | | Manual | Expired |

Treatment overview

1 Regular markets

1.1 Full feedback (baseline)

Full1 Regular, Full OB, First price (October 2016)

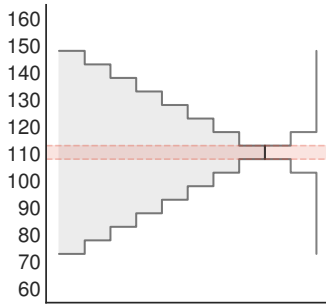


Proposed experimental scheme:

- **10 rounds** (120 seconds each), **10 buyers**, **10 sellers**
- **Buyer valuations:** [148, 143, 138, 133, 128, 123, 118, 113, 108, 103]
- **Seller valuations:** [73, 78, 83, 88, 93, 98, 103, 108, 113, 118]
- **CE range:** [108, 113], **gains of trade:** 320, **equilibrium quantity:** 8

1.2 Other-side feedback

Other Regular, [Other-side OB](#), First price (October 2016)

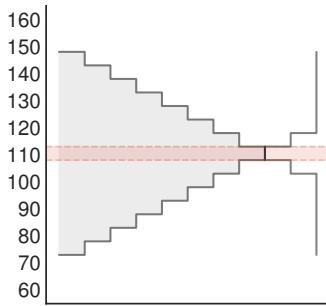


Proposed experimental scheme:

- **10 rounds** (120 seconds each), **10 buyers**, **10 sellers**
- **Buyer valuations:** [148, 143, 138, 133, 128, 123, 118, 113, 108, 103]
- **Seller valuations:** [73, 78, 83, 88, 93, 98, 103, 108, 113, 118]
- **CE range:** [108, 113], **gains of trade:** 320, **equilibrium quantity:** 8

1.3 Same-side feedback

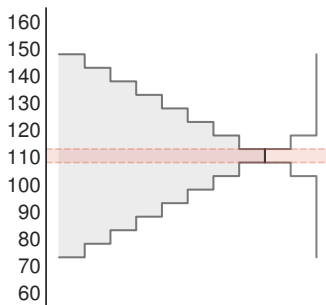
Same Regular, [Same-side OB](#), First price (October 2016)



Proposed experimental scheme:

- **10 rounds** (120 seconds each), **10 buyers**, **10 sellers**
- **Buyer valuations:** [148, 143, 138, 133, 128, 123, 118, 113, 108, 103]
- **Seller valuations:** [73, 78, 83, 88, 93, 98, 103, 108, 113, 118]
- **CE range:** [108, 113], **gains of trade:** 320, **equilibrium quantity:** 8

SameMMK Regular, [Same-side OB](#), [Matchmaker keeps](#) (October 2016)

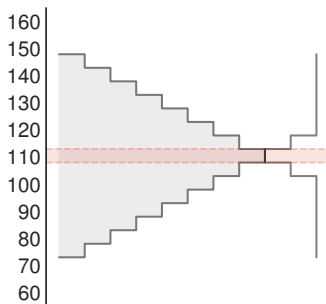


Proposed experimental scheme:

- **10 rounds** (120 seconds each), **10 buyers**, **10 sellers**
- **Buyer valuations:** [148, 143, 138, 133, 128, 123, 118, 113, 108, 103]
- **Seller valuations:** [73, 78, 83, 88, 93, 98, 103, 108, 113, 118]
- **CE range:** [108, 113], **gains of trade:** 320, **equilibrium quantity:** 8

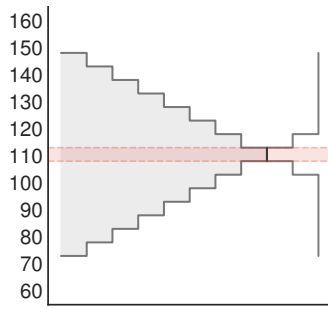
1.4 Black Box feedback

BB Regular, [Black Box](#), First price (November 2016)



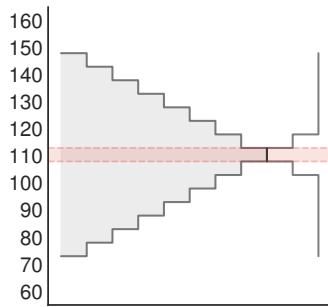
Proposed experimental scheme:

- **10 rounds** (120 seconds each), **10 buyers**, **10 sellers**
- **Buyer valuations:** [148, 143, 138, 133, 128, 123, 118, 113, 108, 103]
- **Seller valuations:** [73, 78, 83, 88, 93, 98, 103, 108, 113, 118]
- **CE range:** [108, 113], **gains of trade:** 320, **equilibrium quantity:** 8

BBRandomRegular, [Black Box](#), [Random price](#) (November 2016)

Proposed experimental scheme:

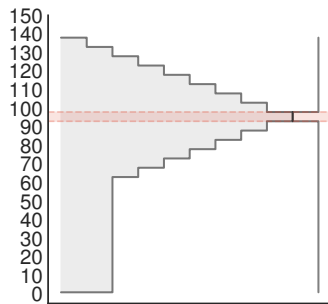
- **10 rounds** (120 seconds each), **10 buyers**, **10 sellers**
- **Buyer valuations:** [148, 143, 138, 133, 128, 123, 118, 113, 108, 103]
- **Seller valuations:** [73, 78, 83, 88, 93, 98, 103, 108, 113, 118]
- **CE range:** [108, 113], **gains of trade:** 320, **equilibrium quantity:** 8

BBMMKRegular, [Black Box](#), [Matchmaker keeps](#) (November 2016)

Proposed experimental scheme:

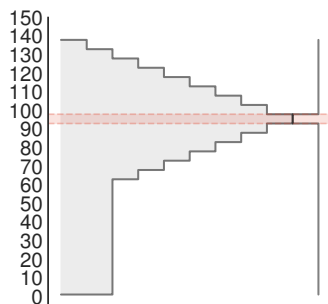
- **10 rounds** (120 seconds each), **10 buyers**, **10 sellers**
- **Buyer valuations:** [148, 143, 138, 133, 128, 123, 118, 113, 108, 103]
- **Seller valuations:** [73, 78, 83, 88, 93, 98, 103, 108, 113, 118]
- **CE range:** [108, 113], **gains of trade:** 320, **equilibrium quantity:** 8

1.5 Regular with restricted asks

FullLimSRegular [with restricted asks](#), Full OB, First price (November 2020)

Proposed experimental scheme:

- **10 rounds** (120 seconds each), **10 buyers**, **10 sellers**
- **Buyer valuations:** [138, 133, 128, 123, 118, 113, 108, 103, 98, 93]
- **Seller valuations:** [1, 1, 63, 68, 73, 78, 83, 88, 93, 98]
- **CE range:** [93, 98], **gains of trade:** 514, **equilibrium quantity:** 9

BBLimSRegular [with restricted asks](#), [Black Box](#), First price (November 2020)

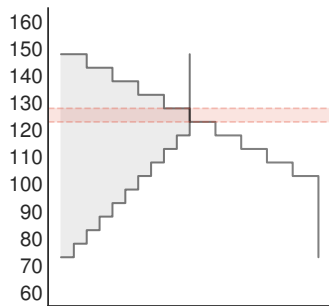
Proposed experimental scheme:

- **10 rounds** (120 seconds each), **10 buyers**, **10 sellers**
- **Buyer valuations:** [138, 133, 128, 123, 118, 113, 108, 103, 98, 93]
- **Seller valuations:** [1, 1, 63, 68, 73, 78, 83, 88, 93, 98]
- **CE range:** [93, 98], **gains of trade:** 514, **equilibrium quantity:** 9

2 Asymmetric markets

2.1 More buyers

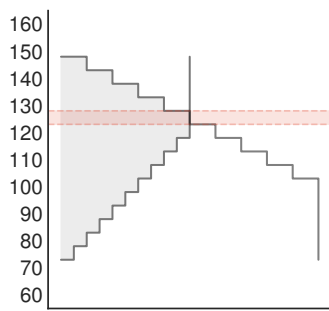
FullMoreB More buyers, Full OB, First price (May 2018)



Proposed experimental scheme:

- **10 rounds** (120 seconds each), **20 buyers**, **10 sellers**
- **Buyer valuations:** [148, 148, 143, 143, 138, 138, 133, 133, 128, 128, 123, 123, 118, 118, 113, 113, 108, 108, 103, 103]
- **Seller valuations:** [73, 78, 83, 88, 93, 98, 103, 108, 113, 118]
- **CE range:** [123, 128], **gains of trade:** 425, **equilibrium quantity:** 10

BBMoreB More buyers, Black Box, First price (May 2018)

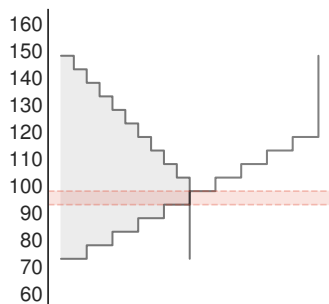


Proposed experimental scheme:

- **10 rounds** (120 seconds each), **20 buyers**, **10 sellers**
- **Buyer valuations:** [148, 148, 143, 143, 138, 138, 133, 133, 128, 128, 123, 123, 118, 118, 113, 113, 108, 108, 103, 103]
- **Seller valuations:** [73, 78, 83, 88, 93, 98, 103, 108, 113, 118]
- **CE range:** [123, 128], **gains of trade:** 425, **equilibrium quantity:** 10

2.2 More sellers

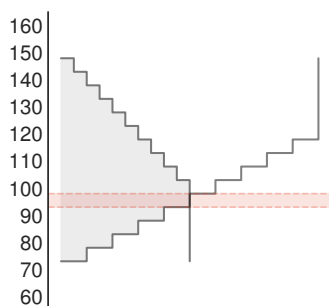
FullMoreS More sellers, Full OB, First price (May 2018)



Proposed experimental scheme:

- **10 rounds** (120 seconds each), **10 buyers**, **20 sellers**
- **Buyer valuations:** [148, 143, 138, 133, 128, 123, 118, 113, 108, 103]
- **Seller valuations:** [73, 73, 78, 78, 83, 83, 88, 88, 93, 93, 98, 98, 103, 103, 108, 108, 113, 113, 118, 118]
- **CE range:** [93, 98], **gains of trade:** 425, **equilibrium quantity:** 10

BBMoreS More sellers, Black Box, First price (May 2018)



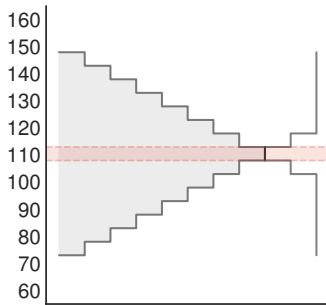
Proposed experimental scheme:

- **10 rounds** (120 seconds each), **10 buyers**, **20 sellers**
- **Buyer valuations:** [148, 143, 138, 133, 128, 123, 118, 113, 108, 103]
- **Seller valuations:** [73, 73, 78, 78, 83, 83, 88, 88, 93, 93, 98, 98, 103, 103, 108, 108, 113, 113, 118, 118]
- **CE range:** [93, 98], **gains of trade:** 425, **equilibrium quantity:** 10

3 Large markets

3.1 More rounds

BBMoreRounds More rounds, Black Box, First price (May 2018)



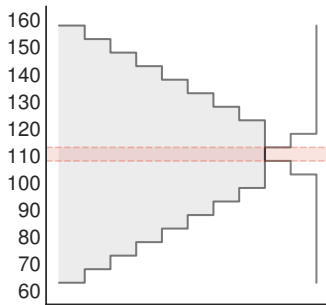
Proposed experimental scheme:

- **50 rounds** (30 seconds each), **10 buyers, 10 sellers**
- **Buyer valuations:** [148, 143, 138, 133, 128, 123, 118, 113, 108, 103]
- **Seller valuations:** [73, 78, 83, 88, 93, 98, 103, 108, 113, 118]
- **CE range:** [108, 113], **gains of trade:** 320, **equilibrium quantity:** 8

3.2 Large CE range

FullLargeCE Large CE, Full OB, First price

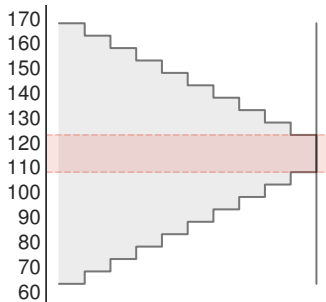
Games 1–8 (May 2018):



Proposed experimental scheme:

- **10 rounds** (120 seconds each), **10 buyers, 10 sellers**
- **Buyer valuations:** [158, 153, 148, 143, 138, 133, 128, 123, 108, 103]
- **Seller valuations:** [63, 68, 73, 78, 83, 88, 93, 98, 113, 118]
- **CE range:** [108, 113], **gains of trade:** 480, **equilibrium quantity:** 8

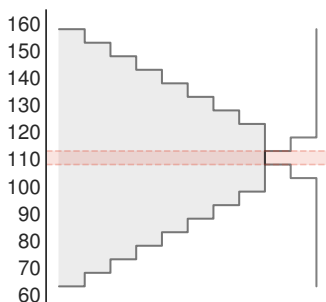
Games 9–13 (November 2020):



Proposed experimental scheme:

- **10 rounds** (120 seconds each), **10 buyers, 10 sellers**
- **Buyer valuations:** [168, 163, 158, 153, 148, 143, 138, 133, 128, 123]
- **Seller valuations:** [63, 68, 73, 78, 83, 88, 93, 98, 103, 108]
- **CE range:** [108, 123], **gains of trade:** 600, **equilibrium quantity:** 10

BBLargeCE Large CE, Black Box, First price (May 2018)

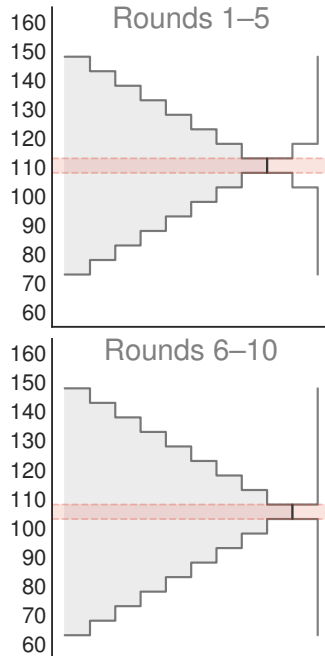


Proposed experimental scheme:

- **10 rounds** (120 seconds each), **10 buyers, 10 sellers**
- **Buyer valuations:** [158, 153, 148, 143, 138, 133, 128, 123, 108, 103]
- **Seller valuations:** [63, 68, 73, 78, 83, 88, 93, 98, 113, 118]
- **CE range:** [108, 113], **gains of trade:** 480, **equilibrium quantity:** 8

3.3 Dynamic markets

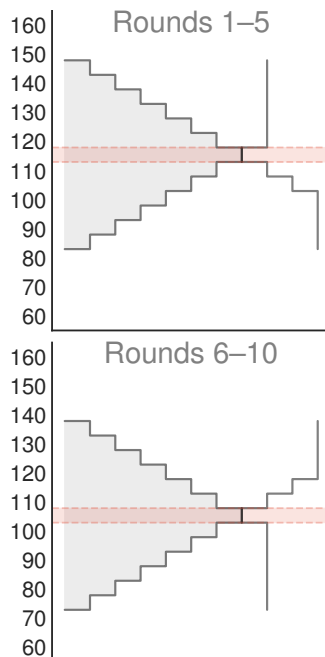
FullSShift Seller shift, Full OB, First price (May 2018)



Proposed experimental scheme:

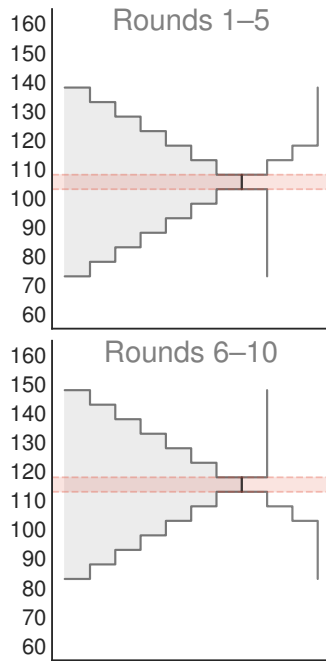
- **10 rounds** (120 seconds each), **10 buyers, 10 sellers**
- **Buyer valuations:** [148, 143, 138, 133, 128, 123, 118, 113, 108, 103]
- **Rounds 1–5:**
 - **Seller valuations:** [73, 78, 83, 88, 93, 98, 103, 108, 113, 118]
 - **CE range:** [108, 113], **gains of trade:** 320, **equilibrium quantity:** 8
- **Rounds 6–10:**
 - **Seller valuations:** [63, 68, 73, 78, 83, 88, 93, 98, 103, 108]
 - **CE range:** [103, 108], **gains of trade:** 405, **equilibrium quantity:** 9

FullFromBtoS From buyers to sellers, Full OB, First price (May 2018)



Proposed experimental scheme:

- **10 rounds** (120 seconds each)
- **Rounds 1–5:**
 - **10 buyers, 8 sellers**
 - **Buyer valuations:** [148, 143, 138, 133, 128, 123, 118, 113, 108, 103]
 - **Seller valuations:** [83, 88, 93, 98, 103, 108, 113, 118]
 - **CE range:** [113, 118], **gains of trade:** 245, **equilibrium quantity:** 7
- **Rounds 6–10:**
 - **8 buyers, 10 sellers**
 - **Buyer valuations:** [138, 133, 128, 123, 118, 113, 108, 103]
 - **Seller valuations:** [73, 78, 83, 88, 93, 98, 103, 108, 113, 118]
 - **CE range:** [103, 108], **gains of trade:** 245, **equilibrium quantity:** 7



Proposed experimental scheme:

- **10 rounds** (120 seconds each)
- **Rounds 1-5:**
 - **8 buyers, 10 sellers**
 - **Buyer valuations:** [138, 133, 128, 123, 118, 113, 108, 103]
 - **Seller valuations:** [73, 78, 83, 88, 93, 98, 103, 108, 113, 118]
 - **CE range:** [103, 108], **gains of trade:** 245, **equilibrium quantity:** 7
- **Rounds 6-10:**
 - **10 buyers, 8 sellers**
 - **Buyer valuations:** [148, 143, 138, 133, 128, 123, 118, 113, 108, 103]
 - **Seller valuations:** [83, 88, 93, 98, 103, 108, 113, 118]
 - **CE range:** [113, 118], **gains of trade:** 245, **equilibrium quantity:** 7