Trading Recyclables Game

- Imagine you are one of about 40 firms in the recycling business.

- There are four product markets

  1. Plastics
  2. Metals
  3. Glass
  4. Paper

- Your upstream collectors have endowed you with 10 units of each product. You also have $400 of liquid assets (cash) for trading in these four product markets.

Valuations

- ◈ You have also developed a network of clients that will buy all your stock at the end of the garbage collection/disposal period, say a week.

- ◈ At the end of the week you dispose of all your recycled material a unit (product specific) price or value that is given to you at the beginning of the game.

- ◈ Let's call the unit value of plastic units V(Plastic), and so on for the others. You sell each unit of plastic you own at V(Plastic) at the end of the week, and so on.

- ◈ Your values are independently drawn from a uniform distribution with support [0,10].

- ◈ For example, if you draw V(Plastic) = 9 but V(Metal) = 1, then acquiring plastic is much more valuable than acquiring metal.

Value of the firm

◆ The initial value of your firm is:

Cash $+10*$ [V(Plastic) + V(Metal) + V(Glass) + V(Paper)]

◆ Your aim is to maximize the value of your firm at the end of the collection/disposal week.

◆ Let's call the units of plastic you have at the end of the game Q(Plastic). The value of your firm at the end of the collection/disposal period is:

Cash + V(Plastic) Q(Plastic) + V(Metal) Q(Metal) + V(Glass) Q(Glass) + V(Paper) Q(Paper)

Login instructions

1. Click on Client Play
2. Click on Available games: "01_recycling game.mgd"

Continuing login instructions

1. Server address: 128.237.104.189 will appear automatically after selecting "01_recycling game". If not type 128.237.104.189 in ~~Server~~ .
2. Write a username.
3. Click on "Login".
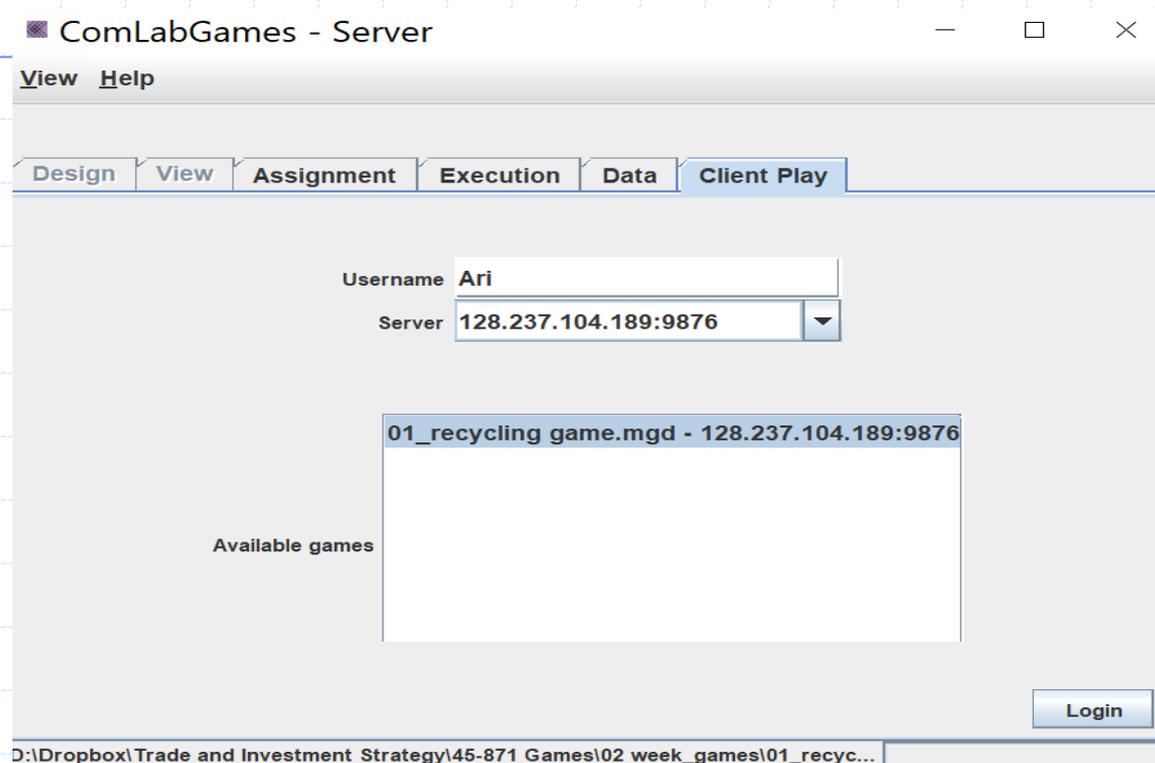
Trading window before all subjects login

1. In each session sixteen subjects must login before any of them see a trading window.
2. Information about the number of subjects waiting to start the game is shown at the bottom left corner.

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Username: Ari   Id: 12   Identity:

History

Name			

View more history

Limit order book

Price	Quantity	Cumulative	Player id	Player type	

Cash   Duration [600]   Price [0]   Quantity [1]   **Sell** **Buy**

Summary data

Asset name	Valuation	Endowment	Sell orders	Buy orders	Bid (Quantity)	Ask (Quantity)	Trading price (Quantity)

Subject's own limit orders

Price	Quantity	Revenue\Cost	Duration	

Transaction history

Price	Quantity	Buyer ID	Buyer Type	Seller ID	Seller Type	Time

Waiting 15 of 16 subjects to start a session!   Round:

Trading window

1. To trade in a specific market like "Paper", click on that market (i.e. Paper).
2. The selected market is highlighted in blue in "Summary data".

You know that you are trading in Plastic market if V(Plastics) appears in History and matches the Plastics valuation in summary.

Plastic market is selected.

V(Paper) = 5.35 in History matches V(Paper) in summary

Paper market was selected.

Submit a price/quantity in a specific market

1. Select the market you want to trade in.
2. Type a price and quantity, and then click **Sell** to sell and **Buy** to buy.
3. The limit order book shows outstanding limit orders for a specific market.

Submitted sell order in Plastics market

Submitted buy order in Paper market

Trading window description

1. Limit order book shows all outstanding sell orders in red and all outstanding buy orders in green.
2. Summary data shows the bid (ask) in green (red).

Trading

1. To buy/sell directly select the best order by clicking on the price of the order and click **Buy** / **Sell** .
2. Summary data and Transaction history show the executed order.

Price $7 was selected and by clicking on **Buy**, the price at which buy order is executed is $7 (i.e. the highest outstanding sell limit order price)

Trading in a different market

1. <u>Summary</u> data shows last trading price(quantity) for each market.
2. Transaction history shows all transactions for the selected market (in our example it shows "Glass" market)

Price $6.4 and quantity 5 was selected and by clicking on **Buy**, buyer (id = 19) bought glass from seller id = 20. Her cash decreased to $345. Her current total asset value is $750.73 = 370 + 9.16*13 + 8.21*10 + 9.14*15+ 7*5.35.

Summary page for trading game

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Username: Simone   **Id: 20**   Identity: 4

Player ID	Final Total Asset Value	Initial Total Asset Value	Difference	Q(Plastics)	Q(Metal)	Q(Glass)	Q(Paper)
17	519.38	519.38	0	10	10	10	10
18	675.23	663.36	11.86	8	10	10	13
19	752.57	718.61	33.97	13	10	16	7
20	611.62	599.47	12.15	9	10	4	10

Market   Stage time limit: unlimited   Round: 1   Continue

Player type:Firm (4)

Game is over!