



Teacher guide for the market entry game (congestion and excess entry)

Lab implementation, theoretical background,
experimental evidence and variants

Behavioral and Experimental Economics Research Lab
Department of Economics



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<https://beer-lab.org/>

How to use this guide

This guide lets you prepare, run and discuss the **Enter or Stay Out** game, a market entry game with congestion developed for the Behavioral and Experimental Economics Research Lab (BEER Lab) at the Department of Economics, Tecnológico de Monterrey. It is written for instructors of intermediate microeconomics, industrial organization and public economics, with or without prior experience in experimental economics.

The game is a teaching adaptation of Charles Holt’s classroom version (the Veconlab “Market Entry” program) of the entry games studied by [Meyer et al. \(1992\)](#) and [Camerer and Lovo \(1999\)](#). It follows that version’s structure and parameters; the specific design of the variants, the wording of the screens and that of this guide are our own.

The **quick-start chapter** gets a session running. The operational chapters explain every screen. The conceptual chapters give the theoretical background and evidence needed to interpret results. Shared rules are explained once; each variant lists only what changes relative to the basic game.

Author

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For the instructor

This guide matches the English interface. A separate Spanish version exists. Screenshots in this guide were taken on a local instance of the game with simulated decisions; the numbers shown illustrate the interface and are *not* results from a real class. Project only aggregate results: never link participant codes to names, student IDs, seats or individual decisions.

This game is still being prepared for the lab server. The access steps in Chapter 2 and the screen sequence in Chapter 3 are already final (tested on an identical copy of the game); only the screenshots of YOUR game’s card, login and rooms on teaching-admin.beer-lab.org and teaching.beer-lab.org are still missing — this guide will add them once the game goes live on those sites.

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Quick-start guide

1.1 Fact sheet

Purpose	Show excess entry into a congested market: every person who enters lowers the earnings of everyone else who enters, which nobody takes into account when deciding. In equilibrium 4 or 5 people out of 10 enter; the group would be better off if only 2 or 3 did.
Participants	Any number. Fixed groups of 10, formed at random when the session is created; leftover participants join the first groups one by one (31 people → 11, 10 and 10). With fewer than 10, a single smaller group.
Decision	Each round, each person chooses, simultaneously and without seeing the others, Enter the market or Stay out .
Earnings	Staying out pays 50 ECU. Entering pays $100 - 10E$ ECU, where E is the number of people in the group who enter, counting oneself.
Feedback	At the end of each round: how many people in the group entered, own earnings and cumulative earnings. The decision screen shows the previous rounds.
Duration	5–10 minutes for one round; 15–20 minutes for 10 rounds, not counting discussion.
Instructor (you)	teaching-admin.beer-lab.org/en → the game's card → Open panel . Asks for username and password (section 2.1).
Students	Room link marketentry.beer-lab.org/room/market_entry_en , its QR code (section 2.5) or teaching.beer-lab.org .
Report	Theoretical benchmark (equilibria, group optimum, payoff table), average entrants, efficiency, excess entry, round-by-round charts, first versus last rounds, distribution of the number of entrants, tables by group and by round; in the voting variant, the proposed and chosen fees.

Note

There are two different pages. **teaching-admin.beer-lab.org** is yours: from there you enter the game's panel and download this guide. **teaching.beer-lab.org** is your students': from there one can only *play*, not create sessions.

1.2 Minimal sequence

Before class

1. Request panel access from lab.economia@servicios.tec.mx, stating the game, course, number of students and date. You will receive the password for the **admin** user.
2. Open teaching-admin.beer-lab.org/en, find **Enter or Stay Out** and click **Open panel**. Enter username and password.
3. Rehearse in **Demo**: open a configuration and play it in several tabs to see the screens and the report (section 2.3).

In class

4. Count the students present.
5. In the panel, open **Rooms** and the room [EN] **Enter or Stay Out** (or the extended one). Choose the configuration (usually the 10-round one), type the *exact* number of students under **Number of participants** and click **Create**.
6. Share the room link or project its QR code. Each student clicks **Start**.
7. In the room, click **Monitor the session**: the session page opens, with the **Monitor** (progress) and **Report** tabs. When done, open **Report**, click **Show results** and lead the discussion.

After class

8. In the room, click **Close this room**. It is then ready for the next group; the session's data stay under **Sessions**.

1.3 Checklist

- ☐ Panel password received and tested at marketentry.beer-lab.org/login.
- ☐ Rehearsal done in **Demo**, at least up to a round result and the report.
- ☐ Devices, internet, browser and projector ready.
- ☐ Configuration chosen: one round (short demonstration), 10 rounds (recommended) or a fee variant.
- ☐ Number of participants equal to the number of students present.
- ☐ Room link or QR code at hand (section 2.5); tested from a phone.
- ☐ Students told that ECU are experimental units and there is no cash payment.
- ☐ Monitor and report open; the payoff table and the optimum calculation (section 5.1) ready for the wrap-up.

Platform access

2.1 Your access: teaching-admin and the game's panel

The instructor page is teaching-admin.beer-lab.org/en. It does not appear in the beer-lab.org menu: type the address directly or bookmark it. It lists every classroom game in the lab; you can search by title, topic or JEL code.

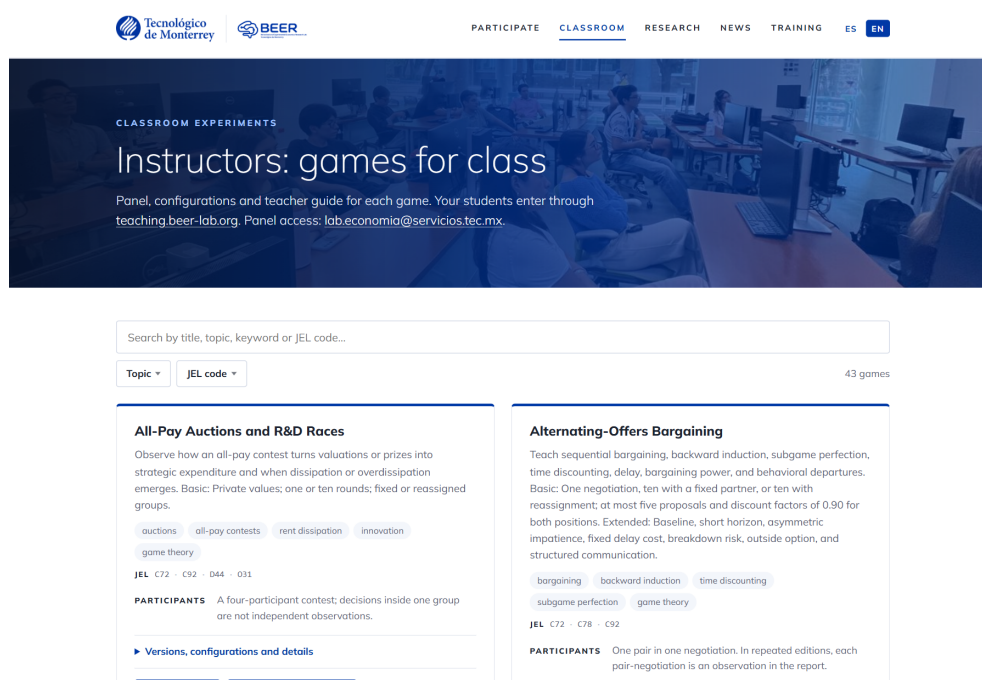


Figure 2.1: Instructor page: teaching-admin.beer-lab.org. Once this game goes live, its card will appear in this same directory (search for **Enter or Stay Out**).

Each game has a card with its description, number of participants and duration, and two buttons: **Open panel**, which goes to the game's panel, and **Teacher guide (PDF)**, which downloads this guide. Expanding **Versions, configurations and details** lists the rooms, each with its own **open panel** straight to that room's session-creation form. The game's panel (<https://marketentry.beer-lab.org>) is protected: **Open panel** shows the **Admin Login** screen, where you type **admin** under **Username** and the password the lab gave you under **Password**. If you do not have it, request it at lab.economia@servicios.tec.mx.

Note

This game does not yet have its own card in the directory or an active panel at marketentry.beer-lab.org: it is still being prepared. The procedure above is identical to every other lab game's (see the Cournot, Bertrand and live market guides); once it goes live, this section will be updated with screenshots specific to **Enter or Stay Out**.

2.2 The panel: minimal vocabulary

The panel is oTree's own and is in English. These are the only terms you need:

Demo	Practice sessions. Creates a session with fictitious participants that you play yourself across several tabs. Use it to rehearse, never with students.
Rooms	Fixed addresses for class. This game has four: basic and extended, in Spanish and English. Students always enter through a room.
Create / Number of participants	Create the session in the room and declare how many people will play.
Monitor	A table with each participant's round and screen. It does not show decisions.
Advance slowest participants	The Monitor button that moves along whoever has fallen behind (see section 9.2).
Report	The instructor report for projecting aggregate results.
Data	Downloads the data as CSV.
Sessions	A list of all your sessions, to return to an earlier one.
Close this room	Frees the room when done, for the next group.

In this panel, **Demo** shows only this game's eight configurations and **Rooms** only its four rooms. Inside each room, the session-creation form filters further: the basic English room ([**EN**] **Enter or Stay Out**) only offers the two basic English configurations (one round; 10 rounds); the extended English room only offers the two extended ones (fixed fee and voted fee). If a different game appears, do not start the session and notify the lab.

oTree Demo Sessions Rooms Data Server Check

Demo

[ES] Entrar o quedarse fuera — grupos de 10, una ronda
[ES] Entrar o quedarse fuera — grupos fijos de 10, 10 rondas
[EN] Enter or stay out — groups of 10, one round
[EN] Enter or stay out — fixed groups of 10, 10 rounds
[ES] Entrar o quedarse fuera extendido — cuota de entrada de 25 repartida en el grupo, 10 rondas
[ES] Entrar o quedarse fuera extendido — el grupo vota una cuota (mediana) desde la ronda 6, 10 rondas
[EN] Enter or stay out extended — entry fee of 25 split within the group, 10 rounds
[EN] Enter or stay out extended — group votes a fee (median) from round 6, 10 rounds

**Juegos de mercados /
Market games**
 — BEER Lab
 Entrar o quedarse fuera /
 Enter or stay out

Figure 2.2: Demo: the game’s configurations (four basic and four extended, in Spanish and English).

oTree Demo Sessions Rooms Data Server Check

Rooms

Current rooms:

[ES] Entrar o quedarse fuera
[EN] Enter or Stay Out
[ES] Entrar o quedarse fuera — extendido
[EN] Enter or Stay Out — extended

Figure 2.3: Rooms: the game’s four rooms.

2.3 Rehearsing before class

In **Demo**, click a configuration: a practice session with ten participants (one full group) is created and the links page appears. Open each **P1**, **P2**, ... link in a separate tab and play as if you were each student; then open **Report**. Ten tabs are a lot: for a quick rehearsal the one-round configuration is enough. These sessions do not affect your classes.

oTree Demo Sessions Rooms Data Server Check

[EN] Enter or stay out — fixed groups of 10, 10 rounds: session 'ipekcw3x'

Edit Links Monitor Data Payments Report Description

You can either use the session-wide link, persistent links, or single-use links.

Session-wide link

If it's not practical for you to use a Room, you can distribute the following link to participants.

<http://localhost:8043/join/kupudufi>

Persistent links

For a real session, you should use a [room](#).

Single-use links

Below are single-use links.

P1	http://localhost:8043/InitializeParticipant/uxhisaxi
P2	http://localhost:8043/InitializeParticipant/ba5z6i7t
P3	http://localhost:8043/InitializeParticipant/hfk6sxx
P4	http://localhost:8043/InitializeParticipant/tv2akw6i
P5	http://localhost:8043/InitializeParticipant/o35mu5y4
P6	http://localhost:8043/InitializeParticipant/mcf2jivs
P7	http://localhost:8043/InitializeParticipant/w3v3hnbv
P8	http://localhost:8043/InitializeParticipant/vm2bd549
P9	http://localhost:8043/InitializeParticipant/1x46t3u4
P10	http://localhost:8043/InitializeParticipant/tco258ks
P11	http://localhost:8043/InitializeParticipant/f9wro81z
P12	http://localhost:8043/InitializeParticipant/5p951r9r
P13	http://localhost:8043/InitializeParticipant/ty4lne7s
P14	http://localhost:8043/InitializeParticipant/ex66z6xx
P15	http://localhost:8043/InitializeParticipant/n7xj7pyf
P16	http://localhost:8043/InitializeParticipant/7spatjgs
P17	http://localhost:8043/InitializeParticipant/pqpk8t42
P18	http://localhost:8043/InitializeParticipant/e9dteywk
P19	http://localhost:8043/InitializeParticipant/5cqxtv6e
P20	http://localhost:8043/InitializeParticipant/ke8g8ljm

Figure 2.4: Links for a session. This guide's screenshots were taken on a local copy, which is why the addresses say `localhost`; on the server they say `marketentry.beer-lab.org`.

Note

Do not rehearse with the room link open in several tabs of the same browser: oTree recognizes the browser, and every tab would count as the same person. Use **Demo** to rehearse instead.

oTree Demo Sessions Rooms Data Server Check										
[EN] Enter or stay out — fixed groups of 10, 10 rounds: session 'ipekcw3x'										
<a>Edit <a>Links <a>Monitor <a>Data <a>Payments <a>Report <a>Description										
ID	Code	Label	Progress	App	Round	PageName	Waiting	WaitsFor	Since	
P1	uxhisaxi		51/90	market entry	6	Decision			1m	
P2	ba5z6i7t		51/90	market entry	6	Decision			1m	
P3	hfkdbssx		51/90	market entry	6	Decision			1m	
P4	tv2akw6i		51/90	market entry	6	Decision			1m	
P5	o35mu5y4		51/90	market entry	6	Decision			1m	
P6	mcl2jys		51/90	market entry	6	Decision			1m	
P7	w3v3hnbv		51/90	market entry	6	Decision			1m	
P8	vm2bd549		51/90	market entry	6	Decision			1m	
P9	1x46t3u4		51/90	market entry	6	Decision			1m	
P10	tco258ks		51/90	market entry	6	Decision			1m	

Figure 2.5: Monitor of a session in progress: each participant's round and screen.

2.4 Creating the session in class

Under **Rooms**, open the room for the language you will use. The form offers only that room's configurations. Choose the configuration, type the number of students present under **Number of participants** and click **Create**.

oTree Demo Sessions Rooms Data Server Check										
Room: [EN] Enter or Stay Out Create a new session English room. Only the configurations of this game, language and edition are shown below. Session Config [EN] Enter or stay out — groups of 10, one round Number of participants Must be a multiple of 1 Create Configure session App sequence										

Figure 2.6: Form for the basic English room: only its own two configurations appear.

Note

Declare the exact number, with no spare seats. Groups are formed at random when the session is created, using the declared number, and each group's round waits for all its members to decide. If one more student than declared arrives, they will see a "session is full" message (currently shown in Spanish, "La sesión está llena", on English rooms too); in that case, before starting, click **Close this room**, create another session with the correct number, and ask the class to reopen the link or the QR code. If you declare more people

than actually join, the group with empty seats never finishes the first round.

2.5 How your students join

Students need no account and nothing to install; a phone or computer browser is enough. They have three paths, all leading to the same room:

1. **QR code.** Project the one for the room you are using (below, and full-size in appendix A). They scan it with a phone camera.
2. **Room link.** Share it over the class chat or on Canvas: https://marketentry.beer-lab.org/room/market_entry_en.
3. **Catalogue.** At teaching.beer-lab.org they search for **Enter or Stay Out** and click their language's button (once the game is live).



English, basic

marketentry.beer-lab.org/room/market_entry_en



English, extended

marketentry.beer-lab.org/room/market_entry_extended



Español, básica

marketentry.beer-lab.org/room/market_entry_es



Español, extendida

marketentry.beer-lab.org/room/market_entry_extendido

What the participant sees

The student opens the room and clicks **Start**. If you have not created the session yet, they see a waiting page and join as soon as you do; so you can share the link or QR code from the start of class. No email or password is needed: they receive an anonymous code.

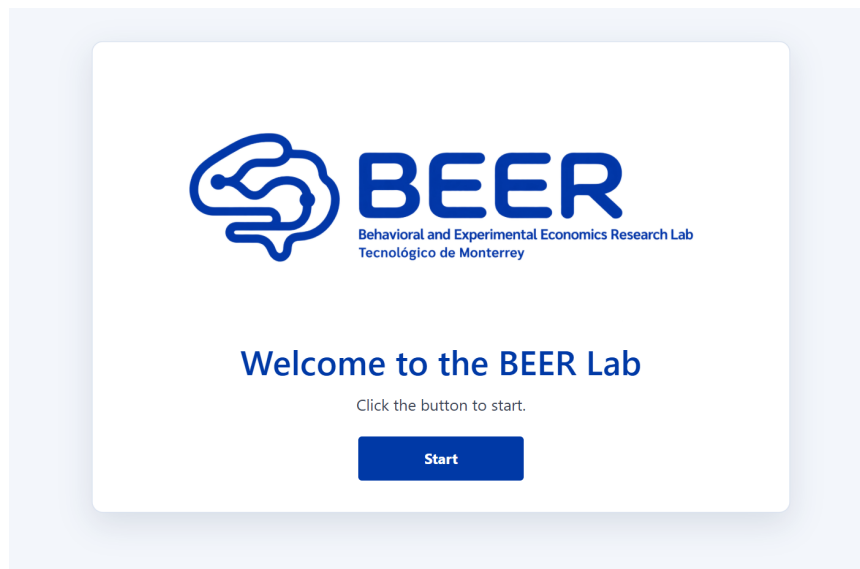


Figure 2.7: Room the student opens.

Language is set per room: a session created in the English room only admits students entering through the English room. If your group is mixed, pick one language for everyone.

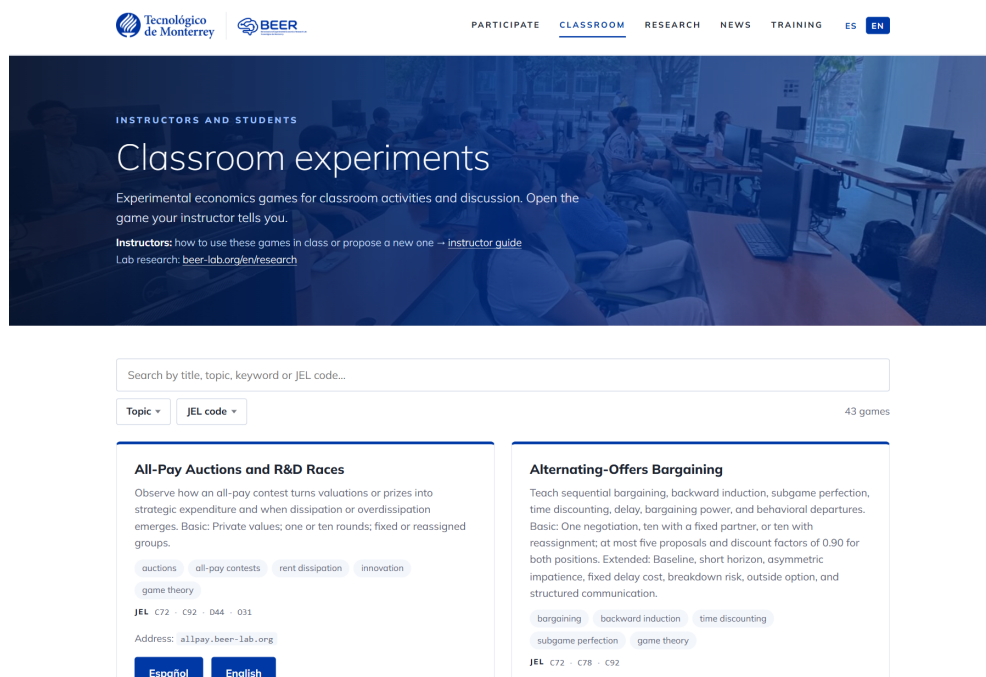


Figure 2.8: Catalogue at teaching.beer-lab.org, the students' page. Once this game goes live, its card will appear here (search for **Enter or Stay Out**).

The basic game and its screens

3.1 Rules, incentives and benchmarks

When the session is created, the class is split at random into **fixed groups of 10 people**; each group stays the same in every round. Each round, each person chooses, simultaneously and without seeing the others, one of two options:

$$\text{Stay out: } \pi^{\text{out}} = 50, \quad \text{Enter: } \pi^{\text{enter}} = 100 - 10E,$$

where E is the number of people in the group who enter that round, *counting oneself*. If a single person enters, they earn 90; if 5 enter, each earns 50, the same as staying out; if 7 enter, each earns 30. With 10 entrants each earns 0, and in groups larger than 10 the payoff from entering can be negative.

The report uses two benchmarks (which the class does not see):

- **Equilibrium.** People enter as long as entering pays at least as much as staying out. With 5 entrants, an entrant earns 50 (gains nothing by leaving) and a sixth person would earn 40 (does not want to enter): 5 is an equilibrium. With 4 entrants, an entrant earns 60 and a fifth person would earn exactly 50, the same as outside: 4 is also a (weak) equilibrium. In equilibrium, therefore, **4 or 5** people enter.
- **Group optimum.** The group's total earnings, $E(100 - 10E) + (10 - E)50$, are highest at $E = 2$ or $E = 3$: 560 ECU per round, against 500 with 5 entrants.

The gap between the two is **excess entry**: every person who enters lowers the earnings of each other entrant by 10, but when deciding only compares their own earnings with 50.

Group size. If the class is not a multiple of 10, leftover participants join the first groups one by one (31 people: 11, 10 and 10; 35 people: 12, 12 and 11). With fewer than 10 participants a single smaller group is formed. Each participant sees their group's actual size in the instructions. Without a fee, the equilibrium (4 or 5) and the optimum (2 or 3) do not change for groups of 5 or more; only the maximum total ($50n + 60$) does.

For the instructor

Do not announce what the game is about before playing (“congestion”, “excess entry”, “tolls”): the screens do not say it either. If the class knows what is being looked for, students tend to behave as they think the instructor expects, and the discussion loses its starting point. Reading the payoff rule aloud is enough.

3.2 Cover, instructions and comprehension check

The cover presents the BEER Lab and the rules of conduct. The instructions give the group's size, describe the two options and the payoff rule, and give a numerical example. They do not mention “equilibrium”, “congestion”, “coordination”, “efficiency” or “excess entry”, and they do not suggest how many people should enter.





Welcome to the BEER Lab

The **Behavioral and Experimental Economics Research Lab** of the Department of Economics at Tecnológico de Monterrey is a space for learning about economic decisions through controlled activities.

Today you will take part in a group decision activity. Your earnings depend on your decisions and on those of the other people in your group.

During the session

- Do not talk or communicate with other people.
- Make your decisions individually.
- Follow the on-screen instructions. Do not refresh or close this page.
- If you need help, raise your hand.

I have read and understood the lab rules.

☐ Yes ☐ No

Start

Powered by [oTree](#)

Figure 3.1: Cover and lab rules.




Instructions

Round 1 of 10

You are part of a group of **10 people**, including you. The group is the same in every round.

In each round, each person in the group chooses one of two options, at the same time and without seeing what the others choose:

- Staying out** always pays 50 ECU.
- Entering the market** pays $100 - 10 \times E$ ECU, where E is the number of people in your group who enter in that round, including you. The more people enter, the less each of them earns.

If 10 people enter, each of them earns 0 from entering.

Example: if 7 people enter in a round, each of them earns $100 - 10 \times 7 = 30$ ECU, and each person who stayed out earns 50 ECU.

- At the end of each round you will see how many people in your group entered and how much you earned.
- There will be 10 rounds. Your earnings from all rounds are added up.
- Amounts are in ECU (experimental currency units). There is no cash payment.

Continue

Powered by [oTree](#)

Figure 3.2: Instructions in a group of 10: the two options, the payoff rule and an example.

In a group of more than 10 people, the instructions add that with more than 10 entrants the payoff from entering is negative; in groups smaller than 10 they say nothing about it, because it cannot happen.




Instructions

You are part of a group of **11 people**, including you.

In each round, each person in the group chooses one of two options, at the same time and without seeing what the others choose:

- Staying out** always pays 50 ECU.
- Entering the market** pays $100 - 10 \times E$ ECU, where E is the number of people in your group who enter in that round, including you. The more people enter, the less each of them earns.

If 10 people enter, each of them earns 0 from entering; if more than 10 enter, the payoff from entering is negative (a loss).

Example: if 7 people enter in a round, each of them earns $100 - 10 \times 7 = 30$ ECU, and each person who stayed out earns 50 ECU.

- At the end of each round you will see how many people in your group entered and how much you earned.
- There will be a single round.
- Amounts are in ECU (experimental currency units). There is no cash payment.

Continue

Powered by [oTree](#)

Figure 3.3: Instructions in a group of 11 (one-round configuration): the negative-payoff warning appears.

The example uses 7 entrants (each earns $100 - 70 = 30$; whoever stays out, 50). The check asks two questions: you enter and are the only one who does (you earn 90), and you stay out while 8 people enter (you earn 50). No example or question uses 4 or 5 entrants (equilibrium) or 2 or 3 (optimum). After a mistake, the message restates the rule without giving the answer and lets the student try again; attempts are recorded.

Before you start Round 1 of 10

Answer based on the instructions.

You enter the market and you are the only person in your group who enters. How much do you earn in that round?

☐ 0 ECU ☐ 50 ECU ☐ 90 ECU ☐ 100 ECU

You stay out and 8 people in your group enter. How much do you earn in that round?

☐ 0 ECU ☐ 10 ECU ☐ 20 ECU ☐ 50 ECU

Check

Powered by [oTree](#)

Figure 3.4: Comprehension check.

Before you start Round 1 of 10

Answer based on the instructions.

You enter the market and you are the only person in your group who enters. How much do you earn in that round?

☐ 0 ECU ☐ 50 ECU ☐ 90 ECU ☐ 100 ECU

Check: a person who enters earns $100 - 10 \times E$, and E counts you.

You stay out and 8 people in your group enter. How much do you earn in that round?

☐ 0 ECU ☐ 10 ECU ☐ 20 ECU ☐ 50 ECU

Check the payoff rule for staying out.

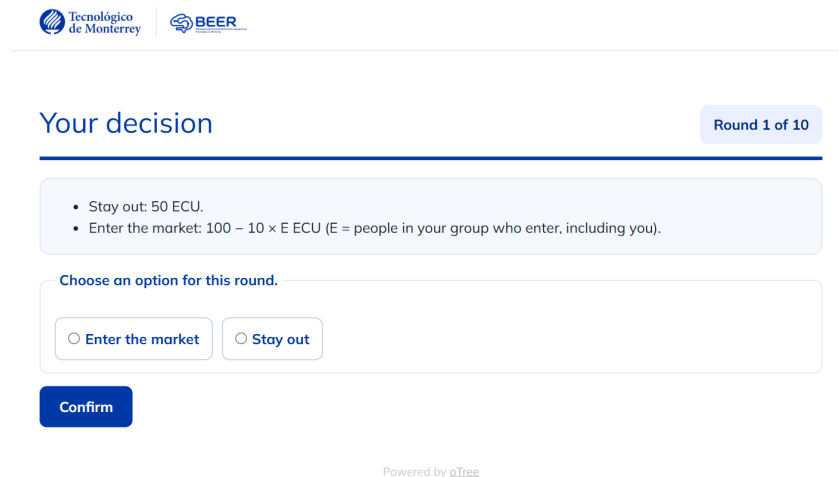
Check

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Figure 3.5: Wrong answers: the message restates the rule without giving the answer.

3.3 Decision and waiting

The decision screen restates both payoff rules and offers the two options. From round 2 on it also shows the table of previous rounds: own decision, how many people in the group entered, and earnings. That history is the only information each person has about their group.



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Your decision Round 1 of 10

- Stay out: 50 ECU.
- Enter the market: $100 - 10 \times E$ ECU (E = people in your group who enter, including you).

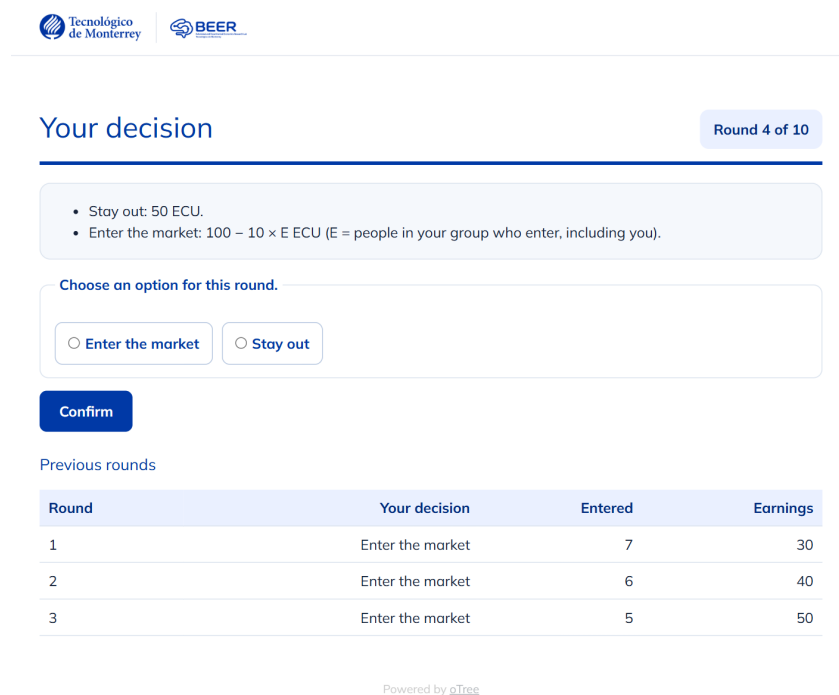
Choose an option for this round.

☐ Enter the market ☐ Stay out

Confirm

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Figure 3.6: Decision in round 1.



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Your decision Round 4 of 10

- Stay out: 50 ECU.
- Enter the market: $100 - 10 \times E$ ECU (E = people in your group who enter, including you).

Choose an option for this round.

☐ Enter the market ☐ Stay out

Confirm

Previous rounds

Round	Your decision	Entered	Earnings
1	Enter the market	7	30
2	Enter the market	6	40
3	Enter the market	5	50

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Figure 3.7: Decision in round 4, with the table of previous rounds (simulated decisions).

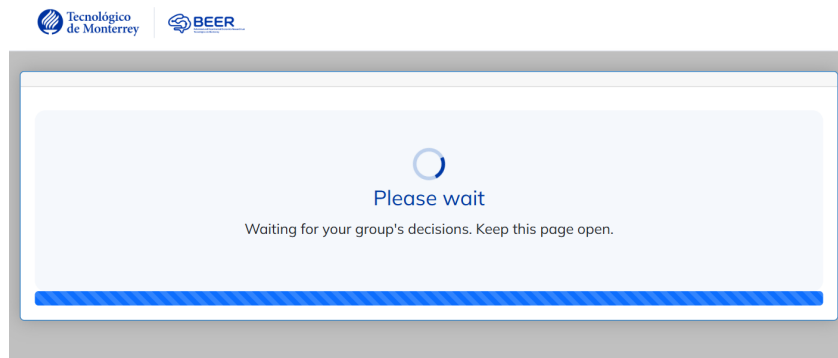


Figure 3.8: Waiting, while other group members have not decided yet.

What the participant sees

“Please wait” means other people in the group have not decided yet. It is not an error. Participants should not close or refresh the page. Each group moves at its own pace.

3.4 Result and wrap-up

The result shows the participant’s own decision, how many people in the group entered (“6 of 10”), the round’s earnings and the cumulative earnings. Negative earnings (possible only in groups larger than 10) appear in red.

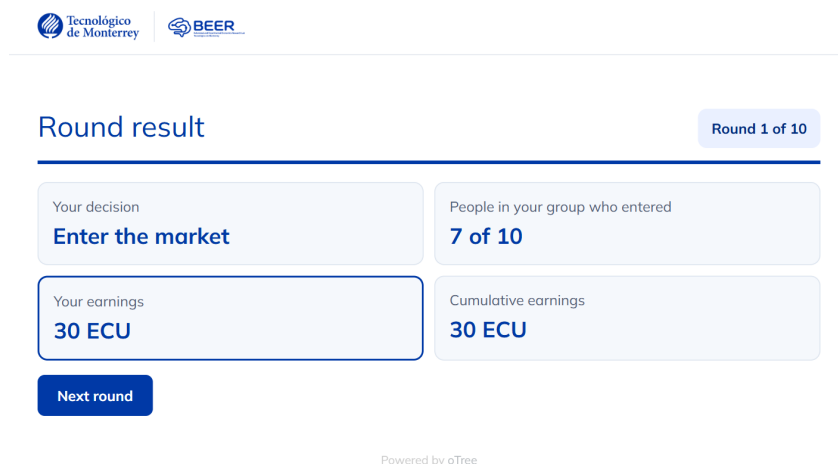


Figure 3.9: Result for someone who entered when 6 of 10 entered: earns 40, less than by staying out (simulated decisions).

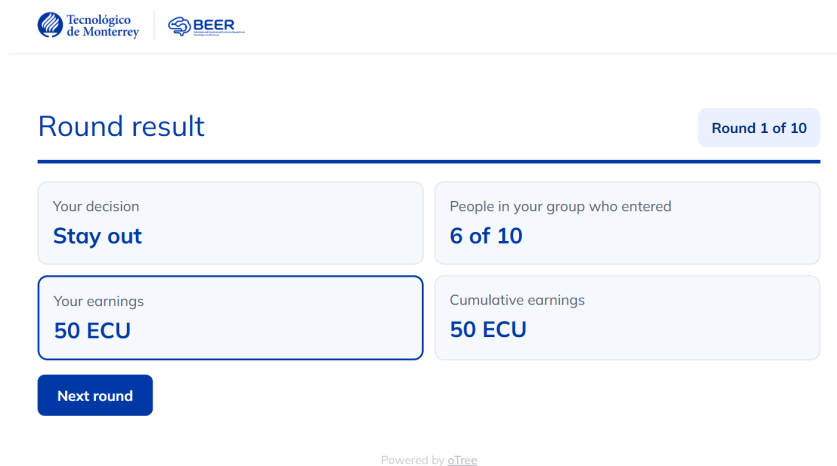


Figure 3.10: Result for someone who stayed out in the same round: 50 (simulated decisions).

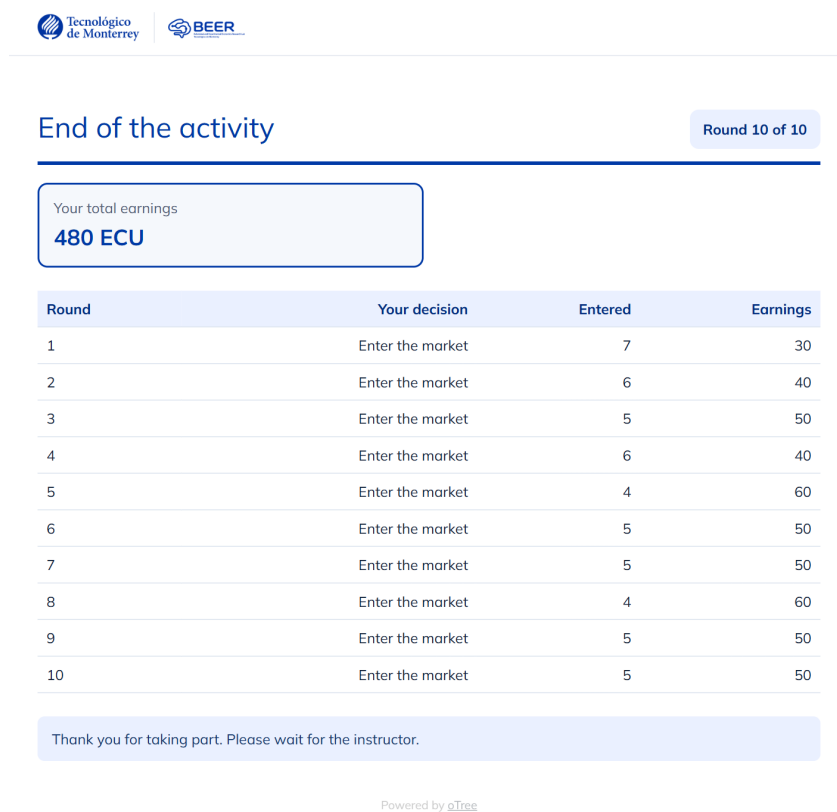


Figure 3.11: Wrap-up: total earnings, round history and a note to wait for the instructor (simulated decisions).

Instructor report and debrief

4.1 When to reveal

Report is a tab on the session page: reach it from the room with **Monitor the session**, or from **Sessions** if the session has ended. It opens with results hidden. At the top it shows participants, number and size of groups, entry fee and completed rounds, so you can project it from the start without giving anything away. Click **Show results** when the current round ends; **Refresh** adds new rounds and **Hide results** covers them again.

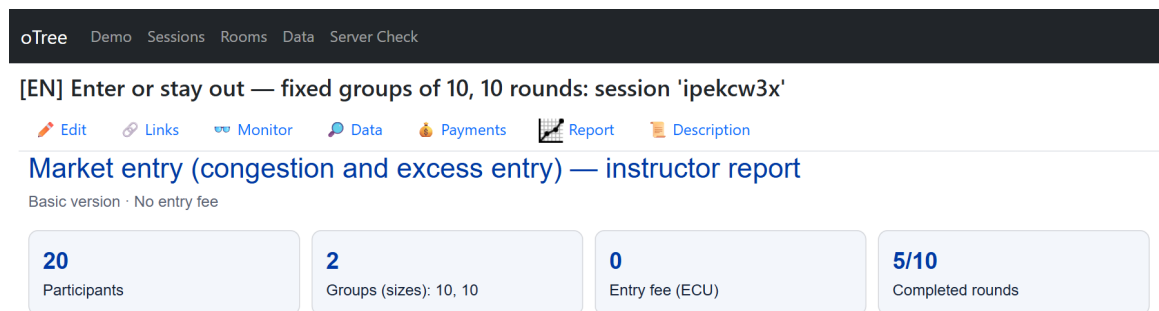


Figure 4.1: Report with results hidden.

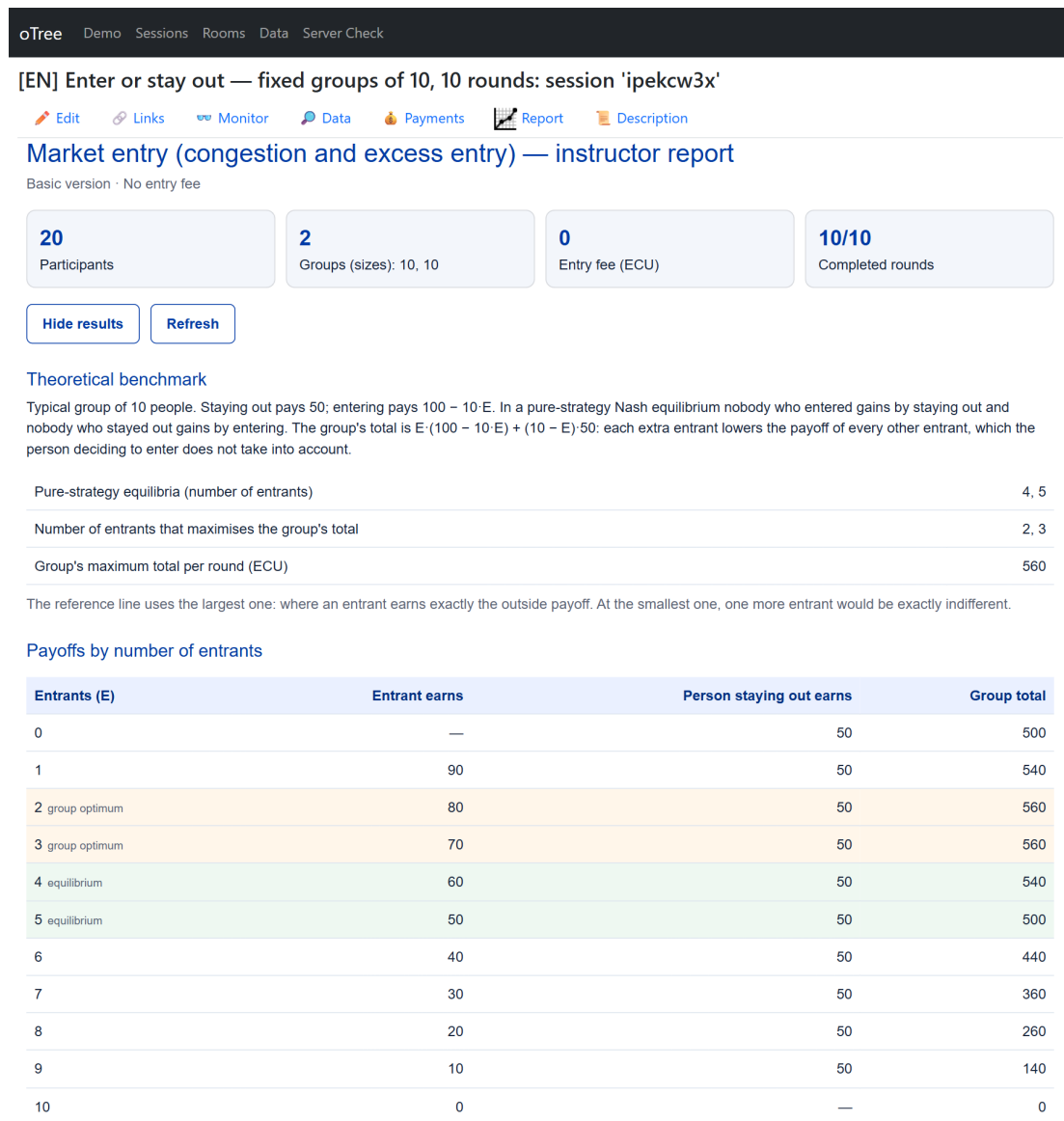


Figure 4.2: Report revealed: theoretical benchmark and payoff table by number of entrants (20 participants, 10 rounds, simulated decisions).

Summary (all completed rounds)

Average entrants per group 5.2	Efficiency (total earned / maximum possible) 85.5%	Group-rounds with more entrants than the optimum 100%
Group-rounds at an equilibrium 65%	Average earnings of entrants 46	Average earnings of those staying out 50

Average entrants per group, by round

Dashed lines: equilibrium and the number of entrants that maximises the group's total. The gap between the series and the optimum line is excess entry.

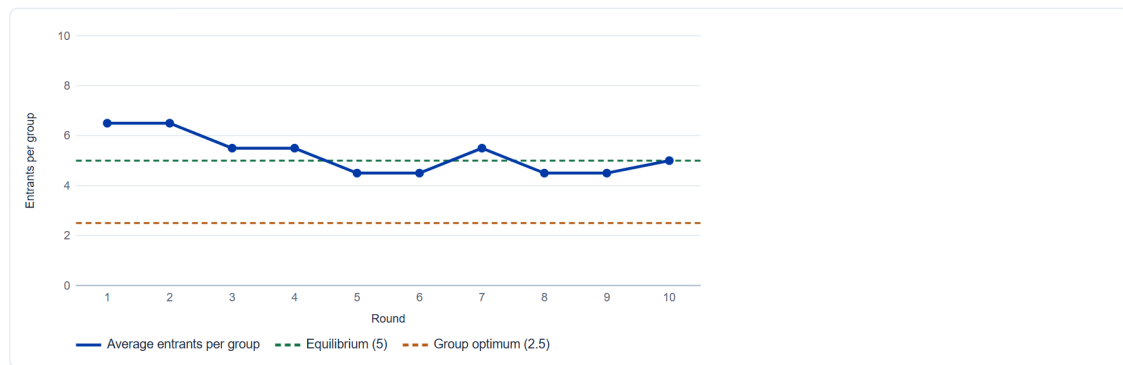
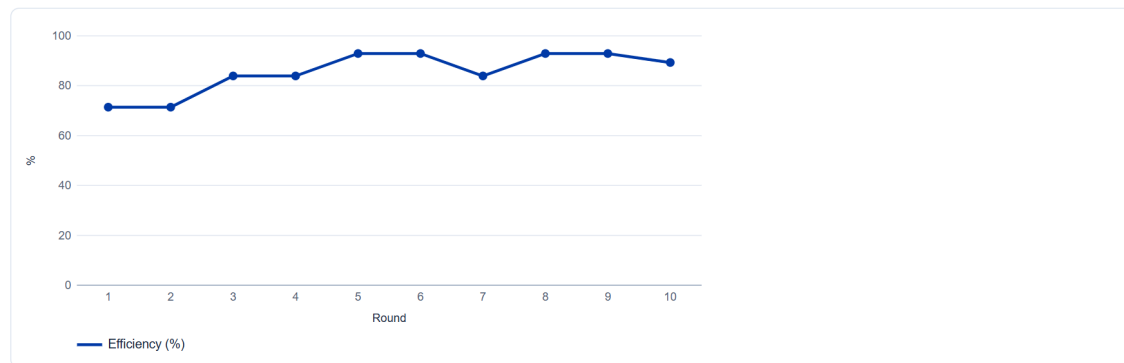


Figure 4.3: Summary and average entrants per group by round, with the equilibrium (5) and group-optimum (2.5) lines (simulated decisions).

Efficiency by round

Total earned by all groups as a percentage of the maximum possible (fees are transfers and do not count). A negative value is drawn at 0; the table shows the actual value.



First and last rounds

	Average entrants per group	Efficiency (total earned / maximum possible)	Group-rounds with more entrants than the optimum
Rounds 1–3	6.2	75.6%	100%
Rounds 8–10	4.7	91.7%	100%

Distribution of the number of entrants

Each observation is one group in one round (all completed rounds).

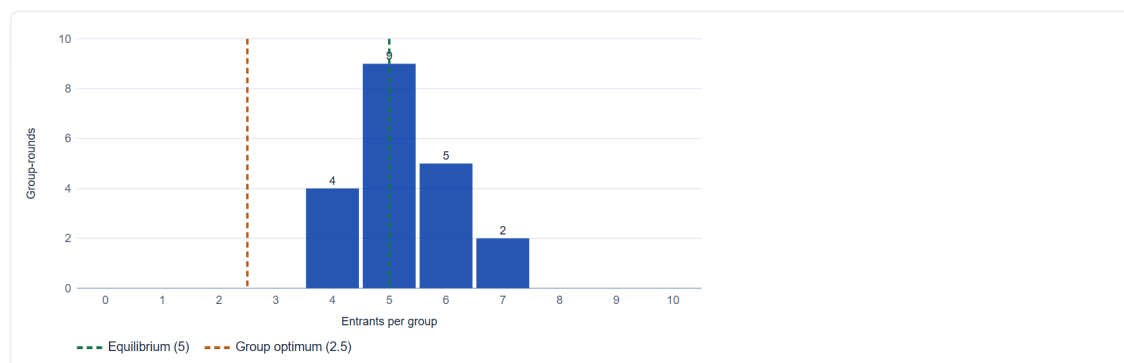


Figure 4.4: Efficiency by round, first versus last rounds and distribution of the number of entrants (simulated decisions).

Each group's earnings against the maximum possible

Group	People	Average entrants	Total earned	Maximum possible	Efficiency (%)
1	10	5.2	4820	5600	86.1
2	10	5.3	4760	5600	85

Results by round

Round	Average entrants per group	Min-max	Efficiency (%)	Excess entry (% of groups)	Average earnings of entrants	Average earnings of those staying out
1	6.5	6-7	71.4	100	34.6	50
2	6.5	6-7	71.4	100	34.6	50
3	5.5	5-6	83.9	100	44.5	50
4	5.5	5-6	83.9	100	44.5	50
5	4.5	4-5	92.9	100	54.4	50
6	4.5	4-5	92.9	100	54.4	50
7	5.5	5-6	83.9	100	44.5	50
8	4.5	4-5	92.9	100	54.4	50
9	4.5	4-5	92.9	100	54.4	50
10	5	5-5	89.3	100	50	50

Figure 4.5: Each group's earnings against the maximum possible, and table by round (simulated decisions).

4.2 How to read the report

1. The **theoretical benchmark** is computed for the most common group size. It gives the pure-strategy equilibria (4 and 5), the number of entrants that maximizes the group's total (2 and 3) and the maximum total per round (560 with groups of 10). The **payoff table** gives, for each number of entrants, what an entrant, a person staying out and the group earn; equilibrium rows are shaded green and optimum rows orange.
2. The **summary** collects average entrants per group, efficiency (total earned over the maximum possible), the share of group-rounds with more entrants than the optimum, the share at an equilibrium, and the average earnings of entrants and of those staying out.
3. The **entrants-by-round chart** has two dashed lines: the equilibrium (5, the larger of the two) and the group optimum (2.5, midpoint of 2 and 3). The gap between the series and the optimum line is excess entry.
4. **Efficiency by round** uses the total of all groups. A negative efficiency (possible with more than 10 entrants) is drawn at 0; the table by round shows the actual value.
5. **First and last rounds** compares the first three with the last three completed rounds. The **distribution** counts how often a group had 0, 1, ... entrants, over all rounds. The final tables give each group's total against its maximum and each round's results (average, minimum and maximum entrants across groups), without identifying anyone.

For the instructor

In the simulated session shown in the figures (20 participants, two groups of 10, 10 rounds; decisions *scripted* for illustration, not results from a class), on average 5.2 people per group

entered, efficiency was 85.5% and every group-round had more entrants than the optimum; 65% were at an equilibrium (4 or 5). Entrants earned 46 on average, less than the 50 from staying out. From rounds 1–3 to rounds 8–10, entrants fell from 6.2 to 4.7 and efficiency rose from 75.6% to 91.7%. The script fixed in advance how many people entered in each group and round (6 or 7 at first, then between 4 and 6), following the pattern described in the literature. Your class's numbers will differ.

Debrief script

Ask those who entered often first: how much did you earn on average when you entered? More or less than the 50 from staying out? Show the entrants chart and ask the class how many people *should* have entered for the group to earn as much as possible; check it against the payoff table (2 or 3). Lead the class to the key sentence: *when I enter, I take 10 away from everyone else who entered, but that does not show up in my earnings*. Close with the calculation in section 5.1 and with the question that opens the fee variant: how much would entry have to cost so that only 2 or 3 enter?

Theory and evidence

5.1 Benchmark: equilibrium, optimum and externality

Theoretical background

Let there be n people, an outside payoff $w = 50$ and an entry payoff $a - bE$ with $a = 100$, $b = 10$.

Pure-strategy equilibrium. E entrants is an equilibrium if no entrant gains by leaving, $a - bE \geq w$, and no outsider gains by entering, $a - b(E + 1) \leq w$. That is,

$$\frac{a - w}{b} - 1 \leq E \leq \frac{a - w}{b} \implies 4 \leq E \leq 5.$$

In the equilibrium with 5, an entrant earns exactly w : entry dissipates the market's whole extra return.

Group optimum. The total is $T(E) = E(a - bE) + (n - E)w$. In continuous terms, $T'(E) = a - 2bE - w = 0$ gives $E^o = \frac{a - w}{2b} = 2.5$; with whole numbers, $E = 2$ and $E = 3$ tie at $T = 50n + 60$ (560 with $n = 10$). In the equilibrium with 5, $T = 500$ (efficiency $500/560 \approx 89\%$); with 10 entrants, $T = 0$.

The externality. One more entrant earns $a - b(E + 1)$, but also lowers the payoff of each of the E who were already in by b : their cost to the others is bE . The person deciding only compares their own payoff with w ; the group would need to compare $a - b(2E + 1)$ with w . That is why “twice” as many people enter as is optimal.

The fee that corrects the incentive. With a fee F per entrant, split equally among the n people, an entrant gets back F/n of their own fee, so entering pays as long as $a - bE - F + F/n \geq w$. The external cost at the optimum is $bE^o = 10 \times 2.5 = 25$: a fee of 25 moves the equilibrium to $E = 2$. With $n = 10$, any fee from 15 to 30 leaves the equilibrium at 2 or 3; with 35 or more, fewer people enter than is optimal. The fee is a transfer within the group: it does not change the total, only the incentives.

Mixed-strategy equilibrium. The report does not compute it, but it helps the discussion: if each person enters with the same probability p , entering must pay on average the same as staying out, $100 - 10(1 + 9p) = 50$, so $p = 4/9$. The expected number of entrants is $10 \times 4/9 \approx 4.4$, with fluctuations from round to round. It is another way to see why the number of entrants does not settle at 5: nobody knows who the five will be.

Deterministic payoffs. Unlike [Camerer and Lovo \(1999\)](#), here the entry payoff does not depend on anyone's skill or rank: the game isolates the entry externality and does not study overconfidence.

5.2 Experimental evidence

Ochs (1990) studies in the laboratory the coordination problem of many people who decide, without communicating, which market to go to.

Meyer et al. (1992) study decentralized allocation decisions across markets with groups that repeat the game; their central conclusion is that the group's shared history is the information through which decisions get coordinated. That is why this game uses fixed groups and shows the table of previous rounds every round.

Sundali et al. (1995) study entry games with symmetric players and find that the aggregate number of entrants tracks the equilibrium prediction closely, even though individual decisions differ a lot across people.

Camerer and Lovo (1999) add to the entry game a payoff that depends on each person's skill rank and find excess entry attributable to overconfidence, especially when people select themselves into participating. This game leaves that component out.

Anderson et al. (2008) present the congestion-fee version (a charge for entering) that inspires the extended variants, to discuss congestion pricing and its effect on welfare.

The classroom version this game follows is that of Holt (2019) and his Veconlab "Market Entry" program (<https://veconlab.com>), with groups of 10, an outside payoff of 50 and an entry payoff that falls by 10 per entrant.

5.3 Regularities worth discussing

- The number of entrants tends to stay near the equilibrium, not the group optimum: excess entry is what theory predicts, not a mistake by the class.
- The first rounds often have more entrants, and the number fluctuates from round to round: after a round with many entrants some people stay out, and vice versa.
- Entrants earn on average about the same as those who stay out: the market's extra return is dissipated.
- With a fee, the number of entrants should fall toward 2 or 3 and efficiency should rise. In the voting version, proposals tend to be widely spread; that the median lands in the 15–30 range is a design expectation, not a guaranteed result: check it in your own session's fee table.

Note

Results from one class are descriptive. With two or three groups, a round's average depends heavily on what a single group does, and one person's decisions over ten rounds are not independent observations. The before/after comparison around the vote mixes the effect of the fee with that of accumulated experience: it is not a causal effect.

Basic modes

Both basic modes live in the same room (the basic room, in each language); the panel only allows one active session per room at a time.

6.1 One round

`market_entry_en_1_round`: a single round, with groups of 10. Useful as a short demonstration or to collect “first-instinct” decisions before explaining the model: the number of entrants in each group already allows a comparison with the equilibrium and the optimum. With a single round there is no history to coordinate on.

6.2 10 rounds with fixed groups

`market_entry_en_10_rounds`: the reference configuration, described in Chapter 3. It shows how the number of entrants fluctuates and whether it approaches the equilibrium with experience.

Extended variants

Variant	What changes	What it is for
Fixed fee	Each entrant pays 25 ECU; the revenue is split equally within the group, in every round.	Show that a fee equal to the external cost moves the equilibrium to the optimum (2 entrants).
Voted fee	Rounds 1–5 without a fee; before round 6 each person proposes a fee and the group applies the median in rounds 6–10.	Compare before and after in the same session and discuss what fee a group picks when it can decide.

Both live in the extended room ([EN] **Enter or Stay Out** — **extended**), have 10 rounds and fixed groups of 10.

7.1 Fixed fee of 25

market_entry_extended_fee: each person who enters also pays 25 ECU. The revenue ($25 \times E$) is split equally among the group's members, whether they entered or not (shares rounded to cents; with 10 people they are exact). An entrant earns $100 - 10E - 25 + 2.5E$ and a person staying out $50 + 2.5E$. The instructions explain the fee with an example of 7 entrants (175 is collected, each person receives 17.5; an entrant earns 22.5 and a person staying out 67.5), and the check changes accordingly (answers 67.5 and 70).

Instructions

Round 1 of 10

You are part of a group of **10 people**, including you. The group is the same in every round.

In each round, each person in the group chooses one of two options, at the same time and without seeing what the others choose:

- **Staying out** always pays 50 ECU.
- **Entering the market** pays $100 - 10 \times E$ ECU, where E is the number of people in your group who enter in that round, including you. The more people enter, the less each of them earns.

If 10 people enter, each of them earns 0 from entering.

Entry fee: each person who enters also pays a fee of 25 ECU. Everything collected from the fees is split equally among the 10 people in the group, whether they entered or not. Shares are rounded to two decimals.

Example: if 7 people enter in a round, each earns $100 - 10 \times 7 = 30$ ECU from entering. The fees collected are $7 \times 25 = 175$ ECU, and each of the 10 people receives $175 / 10 = 17.5$ ECU. A person who entered earns $30 - 25 + 17.5 = 22.5$ ECU; a person who stayed out earns $50 + 17.5 = 67.5$ ECU.

- At the end of each round you will see how many people in your group entered and how much you earned.
- There will be 10 rounds. Your earnings from all rounds are added up.
- Amounts are in ECU (experimental currency units). There is no cash payment.

Continue

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Figure 7.1: Instructions with a fixed fee: the fee rule and an example.

Your decision

Round 2 of 10

- Stay out: 50 ECU.
- Enter the market: $100 - 10 \times E$ ECU (E = people in your group who enter, including you).
- Entry fee: 25 ECU per person who enters; what is collected is split equally among the 10 people in the group.

Choose an option for this round.

☐ Enter the market

☐ Stay out

Confirm

Previous rounds

Round	Your decision	Entered	Fee	Your share	Earnings
1	Enter the market	4	25	10	45

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Figure 7.2: Decision with a fee: the reminder includes the fee (simulated decisions).

The result also shows the fee paid and the share received of the revenue.

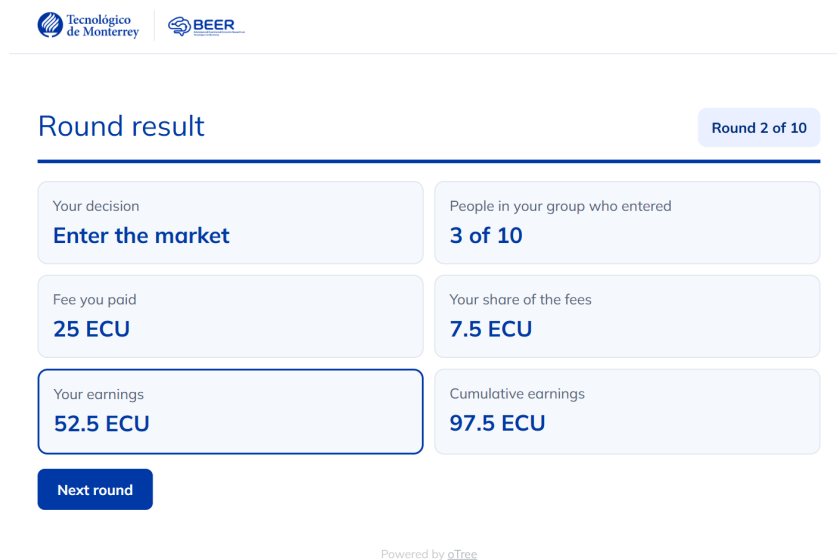


Figure 7.3: Result with a fee for someone who entered when 3 entered (simulated decisions).

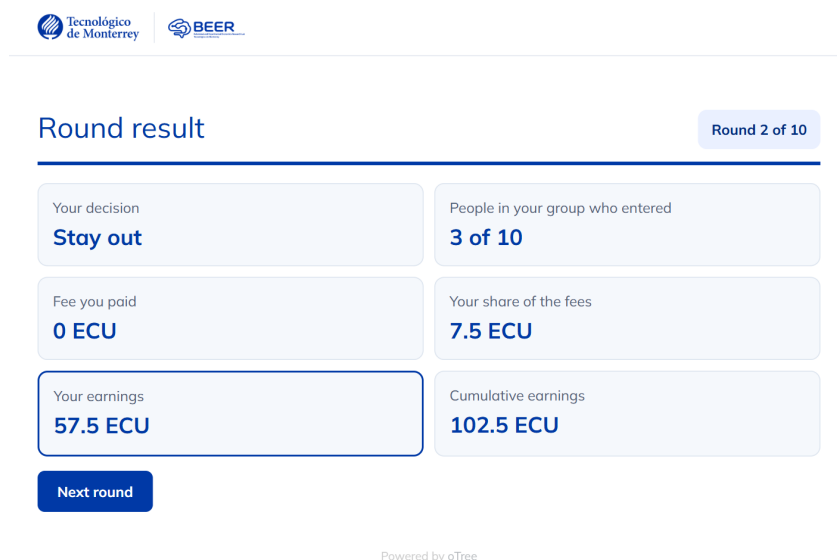


Figure 7.4: Result with a fee for someone who stayed out in the same round: with 3 entrants, staying out pays more than entering (simulated decisions).

In the report, the theoretical benchmark adds the condition with a fee and the equilibrium becomes 2; the payoff table already includes the fee and the share received, and the table by round adds an average-fee column.

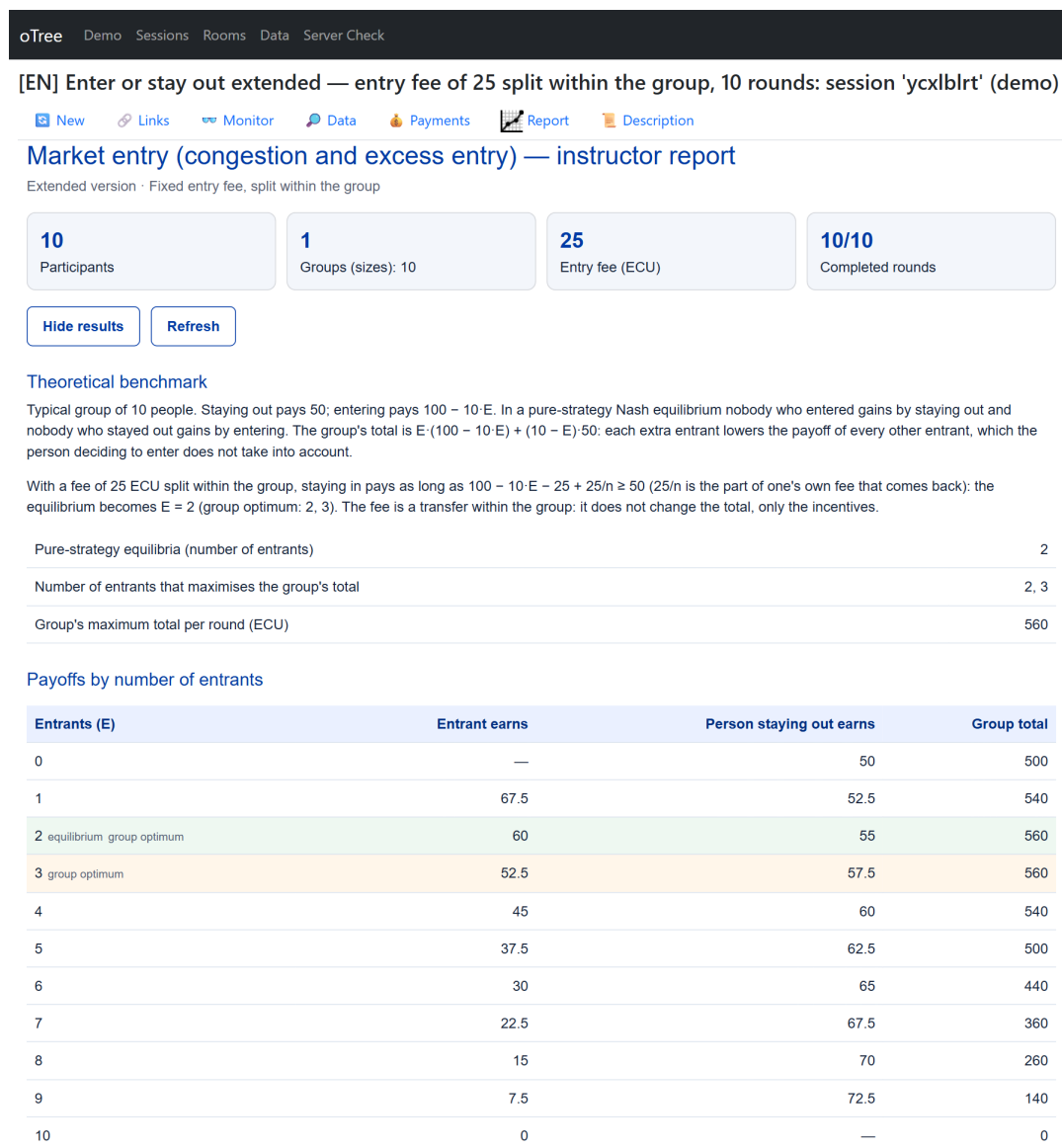


Figure 7.5: Report with a fixed fee: theoretical benchmark (equilibrium 2) and payoff table with the fee (demo session of 10 participants, simulated decisions).

Summary (all completed rounds)

Average entrants per group 2.6	Efficiency (total earned / maximum possible) 99.6%	Group-rounds with more entrants than the optimum 10%
Group-rounds at an equilibrium 50%	Average earnings of entrants 54.2	Average earnings of those staying out 56.4

Average entrants per group, by round

Dashed lines: equilibrium and the number of entrants that maximises the group's total. The gap between the series and the optimum line is excess entry.

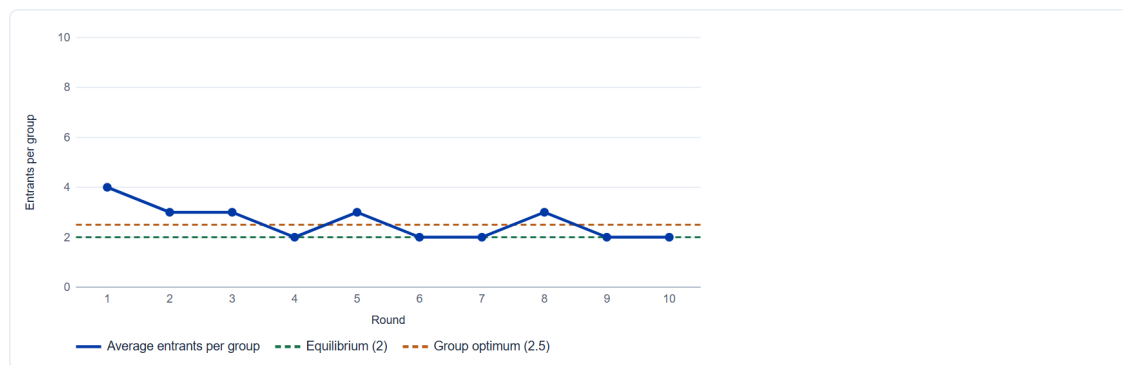


Figure 7.6: Report with a fixed fee: summary and entrants by round (simulated decisions).

For the instructor

In the simulated fixed-fee session (one group of 10, 10 rounds, scripted decisions), on average 2.6 people entered, efficiency was 99.6% and only 10% of rounds had more entrants than the optimum. Entrants earned 54.2 on average and those staying out 56.4.

Debrief script

Ask: if the fee goes back to the same group, why does anything change? Lead the class to separate the *total* (which the fee does not change, because it is a transfer) from the *incentives* (which it does change). Connect with urban congestion charges, fishing quotas and user fees for common resources.

7.2 Voted fee

`market_entry_extended_fee_vote`: rounds 1–5 are the same as the basic game. The initial instructions only announce that before round 6 there will be an additional step, explained at that point; so the first five rounds are not played with the fee in mind.



Instructions

Round 1 of 10

You are part of a group of **10 people**, including you. The group is the same in every round.

In each round, each person in the group chooses one of two options, at the same time and without seeing what the others choose:

- **Staying out** always pays 50 ECU.
- **Entering the market** pays $100 - 10 \times E$ ECU, where E is the number of people in your group who enter in that round, including you. The more people enter, the less each of them earns.

If 10 people enter, each of them earns 0 from entering.

Example: if 7 people enter in a round, each of them earns $100 - 10 \times 7 = 30$ ECU, and each person who stayed out earns 50 ECU.

- At the end of each round you will see how many people in your group entered and how much you earned.
- Before round 6 there will be an additional step, which will be explained to you at that point.
- There will be 10 rounds. Your earnings from all rounds are added up.
- Amounts are in ECU (experimental currency units). There is no cash payment.

Continue

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Figure 7.7: Instructions in the voting variant: notice of the additional step before round 6.

Before round 6, each person sees the fee rule (charged to entrants and split within the group), an example with a fee of 10 that matches no theoretical benchmark, and the median rule. They propose a fee between 0 and 50 in multiples of 5. The group's fee for rounds 6–10 is the middle proposal; with an even number of people, the average of the two middle ones, rounded up to the next multiple of 5.

Entry fee

Round 6 of 10

From this round until round 10, an entry fee decided by your group will apply.

Each person who enters the market pays the fee. Everything collected is split equally among the 10 people in the group, whether they entered or not (shares are rounded to two decimals). The payoff from entering is still $100 - 10 \times E$ before the fee; staying out still pays 50 ECU, plus your share of what was collected.

Example with a fee of 10 ECU: if 7 people enter, 70 ECU are collected and each person in the group receives $70 / 10 = 7$ ECU. A person who entered earns $30 - 10 + 7 = 27$ ECU; a person who stayed out earns $50 + 7 = 57$ ECU.

Each person proposes a fee between 0 and 50 ECU, in multiples of 5. The group's proposals are sorted from lowest to highest and the middle one applies. If the group has an even number of people, the two middle proposals are averaged and, if the result is not a multiple of 5, it is rounded up to the next multiple of 5.

Your proposed fee (ECU)

☐ 0☐ 5☐ 10☐ 15☐ 20☐ 25☐ 30☐ 35☐ 40☐ 45☐ 50

Send proposal

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Figure 7.8: Fee proposal before round 6.

Your decision

Round 6 of 10

Your group chose an entry fee of **25 ECU**. It applies from this round until round 10.

- Stay out: 50 ECU.
- Enter the market: $100 - 10 \times E$ ECU (E = people in your group who enter, including you).
- Entry fee: 25 ECU per person who enters; what is collected is split equally among the 10 people in the group.

Choose an option for this round.

☐ Enter the market☐ Stay out

Confirm

Previous rounds

Round	Your decision	Entered	Fee	Your share	Earnings
1	Enter the market	7	0	0	30
2	Enter the market	5	0	0	50
3	Enter the market	6	0	0	40
4	Enter the market	5	0	0	50
5	Enter the market	5	0	0	50

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Figure 7.9: Round 6: notice of the fee chosen by the group and reminder with the fee (simulated decisions).

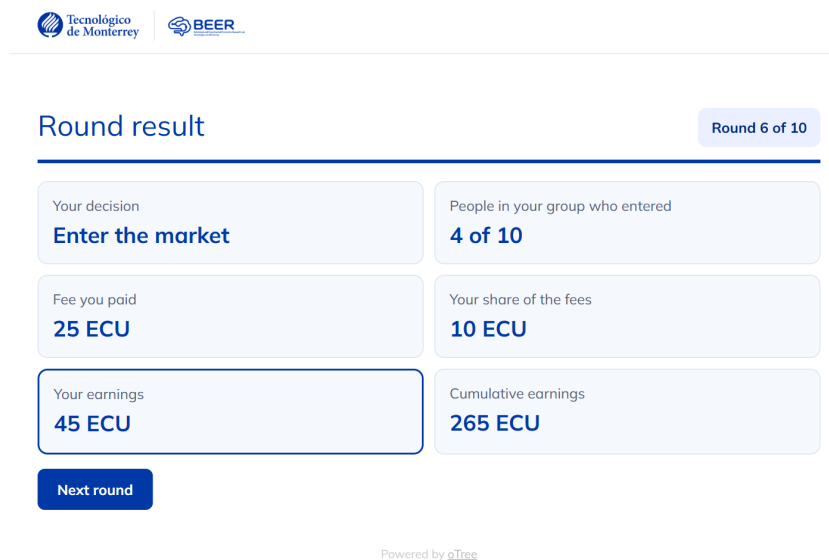


Figure 7.10: Result in round 6 with the voted fee (simulated decisions).

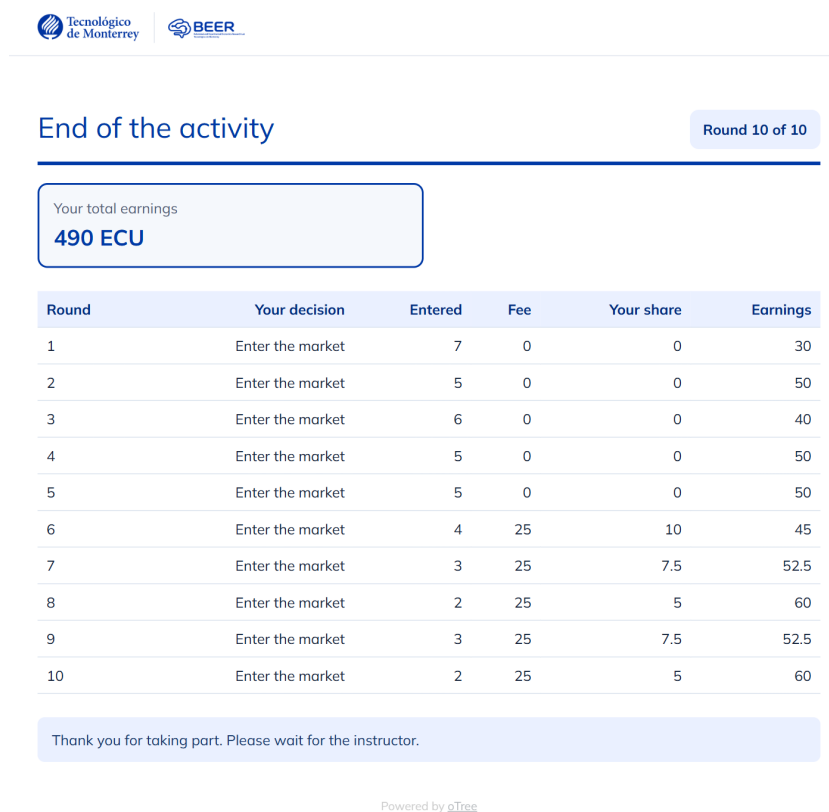


Figure 7.11: Wrap-up in the voting variant: the history shows the fee and share columns (simulated decisions).

In the report, the chart's equilibrium line is the no-fee one (5), the benchmark text lists the fees that move the equilibrium to the optimum for the typical group size (15, 20, 25 and 30 with groups of 10), the comparison is before and after the vote, and a new section shows each group's proposals, the fee applied, the equilibrium it implies and the average entrants before and after, with a histogram of proposals.

Theoretical benchmark

Typical group of 10 people. Staying out pays 50; entering pays $100 - 10 \cdot E$. In a pure-strategy Nash equilibrium nobody who entered gains by staying out and nobody who stayed out gains by entering. The group's total is $E \cdot (100 - 10 \cdot E) + (10 - E) \cdot 50$: each extra entrant lowers the payoff of every other entrant, which the person deciding to enter does not take into account.

Rounds 1 to 5 without a fee. From round 6, each group applies the median of its members' proposals; the fee table shows the equilibrium implied by each group's chosen fee (with groups of 10, the fees that move the equilibrium to the group optimum are: 15, 20, 25, 30 ECU).

Pure-strategy equilibria (number of entrants)	4, 5
Number of entrants that maximises the group's total	2, 3
Group's maximum total per round (ECU)	560

The reference line uses the largest one: where an entrant earns exactly the outside payoff. At the smallest one, one more entrant would be exactly indifferent.

Payoffs by number of entrants

Entrants (E)	Entrant earns	Person staying out earns	Group total
0	—	50	500
1	90	50	540
2 group optimum	80	50	560
3 group optimum	70	50	560
4 equilibrium	60	50	540
5 equilibrium	50	50	500
6	40	50	440
7	30	50	360
8	20	50	260
9	10	50	140
10	0	—	0

Figure 7.12: Report with voting: theoretical benchmark and the fees that implement the optimum (simulated decisions).

Average entrants per group, by round

Dashed lines: equilibrium and the number of entrants that maximises the group's total. The gap between the series and the optimum line is excess entry.

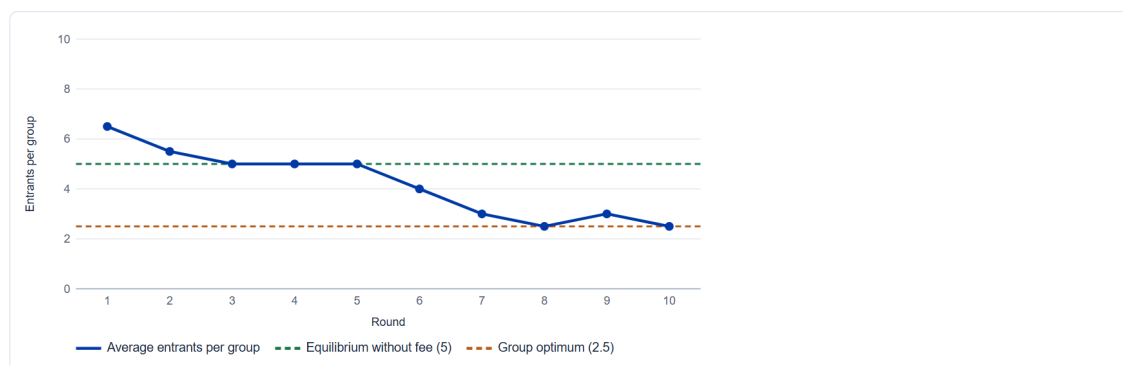


Figure 7.13: Report with voting: entrants by round; the equilibrium line is the no-fee one (simulated decisions).

Before and after the vote

	Average entrants per group	Efficiency (total earned / maximum possible)	Group-rounds with more entrants than the optimum
Rounds 1–5	5.4	84.3%	100%
Rounds 6–10	3	99.3%	20%

Figure 7.14: Report with voting: efficiency by round and before/after comparison (simulated decisions).

Voted fees

Each group's proposals (sorted), the fee applied (median) and the equilibrium that fee implies.

Group	People	Proposals	Fee	Equilibrium with that fee	Entrants before	Entrants after
1	10	0, 5, 10, 15, 20, 25, 25, 30, 35, 50	25	2	5.6	2.8
2	10	0, 0, 10, 15, 20, 20, 25, 30, 40, 50	20	3	5.2	3.2

Distribution of the proposed fees

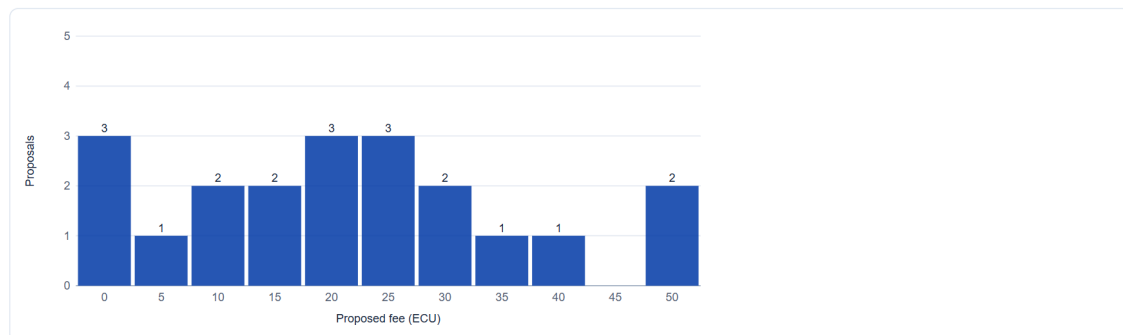


Figure 7.15: Report with voting: each group's proposals, fee applied, implied equilibrium and distribution of proposals (simulated decisions).

For the instructor

In the simulated voting session (20 participants, two groups of 10; scripted decisions and proposals), proposals ranged from 0 to 50; the medians were 25 (equilibrium 2) and 20 (equilibrium 3). Average entrants fell from 5.4 (rounds 1–5) to 3 (rounds 6–10) and efficiency rose from 84.3% to 99.3%. Your class's numbers will differ.

Debrief script

Project the fee table. Ask those who proposed 0: why did you not want a fee? (typical answer: "it charges me when I enter"). Ask those who proposed 40 or 50: what did you expect? With the payoff table, show which equilibrium each fee implies and why too high a fee is also a mistake (with 35 or more, one person or nobody enters). Discuss why the median is a reasonable mechanism for a group to pick a number.

Note

Before the vote, do not explain what the fee is for or which value "fixes" the problem: that would decide the vote for the class. The discussion of the optimal fee comes afterwards.

Class plan and reading the results

8.1 Suggested 50-minute session

0–5 min	Create the session (room [EN] Enter or Stay Out , configuration <code>market_entry_en_10_rounds</code>). Students join by QR code or link.
5–10 min	Cover, instructions and comprehension check. Read the payoff rule aloud, without explaining what the game is about.
10–25 min	10 decision rounds (about one minute per round). Follow progress in the Monitor.
25–30 min	Open the hidden report; ask for predictions: how many people entered per group on average? How many should have?
30–42 min	Reveal results. Show the payoff table, the entrants chart and efficiency. Discuss.
42–50 min	Wrap-up: derive the equilibrium, the optimum and the externality bE ; ask what fee would correct the incentive (25) and connect with congestion charges and common resources.

Alternative: use the voted-fee configuration (extended room) as the only session. Rounds 1–5 play the role of the basic game and rounds 6–10 let you discuss the fee with the class’s own data. Ask for predictions before round 6 without mentioning the fee.

8.2 Discussion questions

- When you entered, did you earn more or less than the 50 from staying out? And on average?
- How many people would have to enter for the group to earn as much as possible? Why don’t only that many enter?
- If you alone decided who enters, what would you do? And if everyone decides on their own?
- How did you use the table of previous rounds to decide? Did it work?
- Why does a fee that goes back to the same group change what happens? What fee would you choose, and why?
- Where does this problem show up outside the classroom? Rush-hour traffic, trendy restaurants, fishing in the same lake, crowded career paths, delivery apps in the same area.

8.3 Common misinterpretations

Misreading	Clarification
“If 5 entered on average, the class played badly.”	Entering until the market pays the same as outside is what the equilibrium predicts. Excess entry is the result of the incentive, not a calculation error.
“The optimum is 5 entrants, because there nobody wants to switch.”	Nobody wanting to switch (equilibrium) does not mean the group earns the most (optimum). With 5 the group earns 500; with 2 or 3, 560.
“Whoever entered and earned 90 was smarter.”	They earned 90 because almost nobody else entered; in another round the same choice can pay 30. What matters is the average.
“The fee takes money away from the group.”	The revenue is split within the same group: the total does not change. Only who should enter changes.
“A higher fee is always better.”	With 35 or more, one person or nobody enters, fewer than the optimum, and the group loses again.
“Efficiency of 85% is nearly perfect.”	The benchmark is not 0: everyone staying out already yields 500 of a possible 560 (89%). The loss is better read in ECU per round or against that 89%.

Operations, privacy and troubleshooting

9.1 Privacy and conduct

Participant codes are anonymous: do not ask for or show names, student IDs or seats next to individual decisions. Project only aggregate results (averages, charts, histograms). The session's data stay available to you under **Data**; do not share them outside teaching use or research authorized by the lab.

9.2 If someone disconnects: Advance slowest participants

Each group's round waits for all ten members to decide. If a student disconnects, ask them to reopen the room in the same browser: it resumes where it left off. If they cannot, use **Advance slowest participants** in the Monitor. This is what the game records in that case:

- **Someone who has not chosen on the decision screen** counts as **staying out** that round: they earn 50 (plus their share of the revenue, if there is a fee) and are not counted among their group's entrants. Their decision is left empty in the data and shows as “—” in their history. Since they did not enter, that round's number of entrants falls, and the report reads it as less excess entry although nobody chose it. If you had to advance someone, keep this in mind when reading that round.
- **Someone who has not proposed a fee** (voting variant) is left out of the median: the group's fee is the median of the proposals actually made; if nobody proposed, the fee is 0.
- On the cover, the instructions, the comprehension check and the round result, advancing someone just moves them to the next screen.

9.3 Common problems

Situation	What to do
A student sees “session is full”.	You declared fewer participants than arrived. Close the room and create another session with the correct number.
The round keeps waiting.	Someone in the group has not decided. Ask them to reopen the room in the same browser, or use Advance slowest participants (section 9.2).
One group is faster than another.	That is normal: each group moves at its own pace. The report only counts a round once every group has finished it.
A student says their group has 11 or 12 people.	The class is not a multiple of 10 and the leftover participants joined the first groups. Each group’s instructions use its actual size.
Negative earnings.	Only in groups larger than 10 with more than 10 entrants; they are part of the game and ECU are not converted into money.
A different game appears in Demo or Rooms.	The panel does not belong to this game. Do not start the session; notify the lab.
You need to repeat the activity with the same group.	Create a new session in the same room; the earlier session’s data stay under Sessions .

9.4 Data for later analysis

Data → **Custom export (market_entry)** gives one row per participant and round: session, anonymous code, round, language, edition, treatment, group, group size, whether they entered, the group’s entrants, fee, share received of the revenue, proposed fee (only in the voting round), earnings and comprehension-check attempts. It contains no personal identifiers.

Annotated bibliography

- [Ochs \(1990\)](#): the coordination problem of many people choosing which market to go to.
- [Meyer et al. \(1992\)](#): the group's history as the information for coordinating entry decisions; basis for the fixed-group design.
- [Sundali et al. \(1995\)](#): in symmetric entry games, aggregate entry tracks the equilibrium prediction closely.
- [Camerer and Lovo \(1999\)](#): excess entry from overconfidence when payoffs depend on skill; a component this game leaves out.
- [Anderson et al. \(2008\)](#): the congestion-fee version, basis for the extended variants.
- [Holt \(2019\)](#): the classroom version and its Veconlab program ("Market Entry").

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- Anderson, L. R., Holt, C. A., & Reiley, D. (2008). Congestion pricing and welfare: An entry experiment. In *Environmental Economics, Experimental Methods* (pp. 302–314). Routledge. doi:10.4324/9780203935361-26. Crossref dates the chapter 2007-12-20 and lists no editors: book year and editors **not verified**.
- Camerer, C., & Lovo, D. (1999). Overconfidence and excess entry: An experimental approach. *American Economic Review*, 89(1), 306–318. doi:10.1257/aer.89.1.306.
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- Meyer, D. J., Van Huyck, J. B., Battalio, R. C., & Saving, T. R. (1992). History’s role in coordinating decentralized allocation decisions. *Journal of Political Economy*, 100(2), 292–316. doi:10.1086/261819.
- Ochs, J. (1990). The coordination problem in decentralized markets: An experiment. *Quarterly Journal of Economics*, 105(2), 545–559. doi:10.2307/2937800. Crossref gives only the first page (545); the last page, 559, is **not verified**.
- Sundali, J. A., Rapoport, A., & Seale, D. A. (1995). Coordination in market entry games with symmetric players. *Organizational Behavior and Human Decision Processes*, 64(2), 203–218. doi:10.1006/obhd.1995.1100.

Room QR codes

Project or print the page for the room you will use. Students scan it with their phone camera and click **Start**.

Enter or Stay Out

English room



`marketentry.beer-lab.org/room/market_entry_en`

Scan the code and click **Start**.

Enter or Stay Out

English room, extended version



`marketentry.beer-lab.org/room/market_entry_extended`

Scan the code and click **Start**.

Enter or Stay Out

Sala en español



`marketentry.beer-lab.org/room/market_entry_es`

Escanee el código y pulse **Comenzar**.

Enter or Stay Out

Sala en español, versión extendida



marketentry.beer-lab.org/room/market_entry_extendido

Escanee el código y pulse **Comenzar**.