

ACTIVATING ECONOMICS TEACHING
34TH EEA - 72ND ESEM
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EXPERIMENTS IN THE CLASSROOM

WITH CLASSEX

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UPF, IPEG AND BARCELONA GSE

A well-known Confucian saying

**“Tell me, and I forget.
Show me, and I may remember.
Involve me, and I understand”**

*– Xun Kuang (from the Xunzi)
Confucian philosopher
(314 - 235 B.C.)*

**It is important to design your course so
that it will be interesting to teach.**

**We found in experiments a tool to engage
students and to discover (or to recover) the joy of
teaching**

COMMON STATEMENTS

It requires a lot of preparation

It is time consuming

The size of my class is very large

Collecting the data is very costly

I am not an experimental economist

RESOURCES

1. classEx

2. Econ Class Experiments

3. Experiments in Economics: Laboratory Projects

classEx



- ★ Freeware: free to use
- ★ Sharable and Flexible: use, modify or create experiments
- ★ Real-time feedback: prof-stud. and stud-stud.



**ECON CLASS
EXPERIMENTS**

Experiments with Economic Principles

<https://econclassexperiments.com/>

**What we share is our belief in experiments as an important teaching tool.
We want to facilitate teaching with experiments in order to make economics expericenceable.**

Ted and John published their seminal book *Experiments with Economic Principles: Microeconomics* on how to teach economics with experiments with the use of pen-and-paper experiments. This book was used all around the world. Humberto designed the Introduction to Microeconomics course at Universitat Pompeu Fabra (UPF) with the use of many experiments out of the book and created extra companion material. Marcus visited UPF and brought with him his online tool classEx to run experiments in the classroom with the use of mobile devices. Since then, classEx has been used at UPF by more than 500 students per year.

Finally, we all decided to collaborate to bring to life with classEx the wonderful experiments in Ted and John's book, so that instructors around the world can play them easily with their students.



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Experiments

List of experiments

Click on the title of the experiment to access student's and instructor's material.

In [classEx](#), experiments and warm-up exercises are located in the ***econ-class experiments*** folder.



The Apple Market: A simple trading-pit experiment

This is a simple trading-pit experiment and is commonly used as the first encounter of students with an experiment in the classroom. It introduces the concepts of supply and the demand, as well as buyer surplus and seller profits.



The Fish Market: More is not always better

This experiment explores the effects of a shift in the supply curve on price and quantity. It also introduces the notion of sunk costs.



The Apple Market with a Tax: Distortionary taxes in a perfectly competitive market (in progress)

This experiment introduces a per unit tax in the Apple Market, but with a richer distribution of types. It runs three sessions of the same market: without taxes, with a sales tax, and with a consumption tax.



The Coal Market: Pollution, Pigouvian taxes and permits (in progress)

In this experiment, students experience the effects of a negative externality, and observe how an appropriately chosen tax or a fix supply of marketable pollution permits may recover efficiency.

Experiments in the pipeline

The following experiments are already implemented in classEx. They can be found in the ***microeconomics*** folder. Their implementation in classEx follows the design

described in the original book by Ted Bergstrom and John Miller but may still include some fundamental instructions.



The Fish Market: More is not always better

An experiment from the book *Experiments with Economic Principles* by Theodore C. Bergstrom, Marcus Giamattei, Humberto Llavador and John H. Miller. The experiment and warm-up exercises are located in the ***econ-class experiments*** folder within [classEx](#),



This experiment illustrates the method of comparative statics with a shifting supply curve in a hypothetical fishing village. The experiment also forces students to grapple with the concept of sunk costs. The discussion is intended to teach them to distinguish shifts in a demand or supply curve from movements along the curve.



Access Material



I'm a student



I'm an instructor



Login to classEx



Instructor material is password protected. The password is provided to instructors within their classEx account.

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The Fish Market: More is not always better

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Material for Students



It is early morning at the fish market on a lonely Pacific island. The mist is rising, the gulls are calling, and the fishermen have just returned to the harbor with their catch. A noisy crowd of villagers have come to the fish market to gossip and buy their dinners.

There are no refrigerators on the island and day-old fish will spoil. One fish is enough to feed a family for a day, so each demander wants at most one fish. Demanders value the fish according to their Buyer Value. The overall distribution of Buyer Values will be the same in both Sessions, though individual Buyer Values may change from one round to another.

The number of fish that a fisherman catches may vary from round to round. Sometimes a fisherman may catch only one fish, sometimes two or three fish. Last night, before going out to sea, every fisherman had to pay 10€ to fuel his fishing boat. This money has already been spent, and so every fisherman has costs of 10€ regardless of how many fish he sells. Once a fish is caught, no other expenses are incurred in selling it. Fishermen cannot save any costs by not selling their fish.

Because of changes in the weather, fishermen will catch more fish in the second Session than in the first.



Material



Student's Manual



Login to classEx

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The Fish Market: More is not always better

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Material for Instructors



Objectives

- Learn to analyze shifts in the supply schedule and their effects on equilibrium prices.
- Begin to see how supply and demand curves can be used to predict the effects of changed market conditions on prices and quantities.
- Observe that an increase in aggregate supply may decrease, rather than increase, total revenue of suppliers.
- Learn that fixed costs do not change the short-run supply curve.
- Gain insight into the economics of industries like fishing and agriculture where supplies, and hence prices, fluctuate over time.
- Gain experience in participating in markets where sellers can sell more than one unit.

Pre-requisites

The experiment is self-contained, but the following concepts are necessary for students to work on the exercises:

- draw supply and demand curves;
- find competitive equilibrium prices and quantities;
- compute consumer surplus and seller profits.



Material



 [Instructor's Manual](#)

 [Login to classEx](#)

 [Excel file](#)

 [Example of data file](#)

 [Student's Manual](#)

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Personal Information



Session 1 Round 1 Type C (your ID: 66346)

You are employer. In this session, the value of your output is \$ 20 if you hire one laborer and \$ 30 if you hire two. Your profits are the value of your output *minus* the total amount of wages you pay.

Contract 1

Show contract

Contract 2

Show contract

My profit

\$

End Round



Session 1 Round 1 Type A (your ID: 66348)

You are laborer and your private signature is **5eptc6t**.

In this session, if you are unemployed, you get a reservation wage of \$ 12. If you get a job, you will *not* get your reservation wage, but instead you will get the wage agreed on.

End Round

REAL TIME TRANSACTIONS

		30		session 3 round 3	
The feedback is shown on your mobile device.					
A B C Salario mínimo € 15. Max. 4 contratos					
session 3 round 3 session 3 round 2 session 3 round 1 session 2 round 2 session 2 round 1					
session 1 round 2 session 1 round 1 Chart on average					
	time	employer	laborer	reservation wage	wage
1	16:59:15	73419	73433	5	16
2	16:59:23	73427	73417	5	10
3	16:59:23	73443	73423	5	13
4	16:59:32	73418	73425	5	12
5	16:59:37	73434	73439	5	13
6	16:59:46	73442	73415	5	11
7	16:59:49	73418	73431	5	11
8	16:59:59	73440	73421	5	13
9	17:00:10	73427	73432	12	15
10	17:00:25	73426	73429	5	12.5

Resources

- classEx program to run the experiment with the use of mobile devices
- Student's Manual: instructions before the experiment + warm-up questions + exercises (after the experiment)
- Instructor's Manual: instructions to run the experiment + hints for discussion/prior experiences + technical details
- Spreadsheet that automatically generates solutions to the exercises + profits obtained by students from the data collected by classEx

EXPERIMENTS IN ECONOMICS: LABORATORY PROJECTS

[Read now](#)

MARCUS GIAMATTEI, HUMBERTO LLAVADOR AND ALFREDO OROZCO



PUBLIC GOODS GAME

Learning objectives

This experiment is related to contents exposed in [unit 4](#) (Social interactions), [unit 12](#) (Markets, efficiency, and public policy), and [unit 20](#) (Capstone: Economics of the environment). Concepts students may explore are:

Key concepts

- Social dilemma
- Public good
- Free rider
- Social punishment
- Altruism

Experiments as a teaching tool

Experiments as a teaching tool  Experiments in research

1. The objective of the experiments is to **replicate** a known result.

However, there is much to learn from experiments that fail to deliver the expected result: incentives, attention, market power ...

2. Intervention and manipulation.

3. No need to be an experimental researcher.

Last comments

- Experiments engage students and facilitate the understanding of abstract concepts (**experiential learning**)
- But running experiments is not enough
 - **Discussions** before, during and after the experiment must force students to think and must be designed to help them in their thinking.
 - Even better if experiments go with tasks that make students reflect and discover **on their own** the main findings.
- Experiments introduce a dynamic that keeps the professor alert and makes teaching a fun experience.

“Taking a course in experimental economics is a little like going to dinner at a cannibal’s house. Sometimes you will be the diner, sometimes you will be part of the dinner, sometimes both.”

–Ted Bergstrom

Questions?

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