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| Intermediate Microeconomics |

**Market Equilibrium and the Effect of Market Interventions**

MobLab Game: Competitive Market

Key Teaching Points:

* Experience the “invisible hand” of the market; individual profit maximization leads to competitive-market equilibrium.
* Show that the competitive-market equilibrium maximizes total surplus (absent external costs or benefits).
* Explore the equilibrium effects of either supply or demand shifts.
* Demonstrate the equilibrium and surplus effects of common government interventions: per-unit taxes and subsidies, price ceilings and floors.

**Utility Maximization**

MobLab Game: Consumer Choice: Cobb-Douglas

Key Teaching Points:

* When allocating a fixed budget, sequentially choosing the item offering the highest marginal utility per dollar will generally lead to the utility-maximizing budget allocation.
* Students will gain familiarity with some of the implications of the Cobb Douglas utility function, including the result that an item’s optimal budget share is equal the ratio of its exponent to the sum of all exponents.
* A monotonic transformation of a utility function does not affect the utility-maximizing consumption bundle.

**Oligopolies**

MobLab Game: Cournot

Key Teaching Points:

* Experience the interaction of profit maximization and payoff interdependence.
* Gain an understanding of the underlying logic of the Cournot model; how market price is determined by the aggregation of simultaneous output.
* Observe the Cournot equilibrium and the impact of repeat interaction

MobLab Game: Bertrand

Key Teaching Points:

* When selling an undifferentiated product without capacity constraints, firms have strong short-run incentives to engage in vigorous price competition.
* Marginal-cost pricing may arise in markets with as few as two firms.
* Use of Bertrand Competition allows instructor to focus on factors facilitating collusion in repeat interactions.

MobLab Game: Stakelberg

Key Teaching Points:

* Gain an understanding of the underlying logic of the Stackelberg model: how market price is determined by the aggregation of sequentially chosen output.
* Experience firsthand the paradox of commitment.
* Contrast the strategic and outcome differences of the Cournot and Stackelberg environments.

MobLab Game: Hotelling Model (Two-Candidate Election)

Key Teaching Points:

* Develop the Median Voter Theorem (Hotelling location model) and predictions.
* Explain clustering by political candidates and retailers.
* Polling-data option allows exploration of policy changes due to new information.

**Public Goods**

MobLab Game: Public Good: Linear

Key Teaching Points:

* Highlights the features of public goods: non-rival and non-excludable.
* Demonstrates the distinction between private and social benefits of public goods.
* Shows how individual profit maximization leads to the free-rider problem.

MobLab Game: Public Good: Punishment and Reward

Key Teaching Points:

* Some will pay a cost to punish free riders or to reward contributors, resulting in increased voluntary contributions.
* Reporting each individual’s contribution likely increases voluntary contributions to a public good

MobLab Game: Public Good: (Discrete) Threshold

Key Teaching Points:

* Highlights the features of public goods: non-rival and non-excludable.
* Highlights the coordination aspect of the free-rider problem.
* Allow players to explore the collective action problem, where more diffuse benefits lead to lower overall contributions.

**Public Choice**

MobLab Game: R&D Race (All Pay English) and R&D Race (All Pay Sealed Bid)

Key Teaching Points:

* Explore how rent-seeking behavior emerges in all pay auctions.

MobLab Game: Multilateral Bargaining

Key Teaching Points:

* The importance of organizing coalitions.
* Explore how majority rule may lead to unequal distribution of resources.

MobLab Game: Two-Candidate Election

Key Teaching Points:

* Explain clustering by political candidates and retailers.
* Develop the Median Voter Theorem and predictions.
* Polling-data option allows exploration of policy changes due to new information.

**Asymmetric Information**

MobLab Game: Market for Lemons

Key Teaching Points:

* Experience in an environment with asymmetric information.
* Demonstrates how asymmetric information may lead to adverse selection and market failure.

**Externalities**

MobLab Game: Externalities (Judge Me Not)

Key Teaching Points:

* Why profit maximization may “force” individual firms to choose polluting technologies.
* Highlights the tension between what is good for the individual and what is good for society.
* Explore what is an “optimal” level of pollution.

MobLab Game: Externalities with Policy Interventions

Key Teaching Points:

* Market failure in a competitive market for an externality-generating good.
* For a negative externality, reducing transactions via a tax or tradable permit may increase surplus.
* By increasing transactions, a subsidy corrects a positive externality.

**Decision Making Under Uncertainty**

MobLab Game: Bomb Risk Game

Key Teaching Points:

* Individuals differ in their risk tolerance. Risk preferences displayed in one environment can carry over to other environments.
* Individuals who open fewer than 50 boxes can be said to be risk averse. Those who open more can be said to be risk seeking.

*Additional Risk Preference Surveys: Risk Preferences: Holt Laury and Risk Preferences: Binswanger/ Eckel and Grossman*

**Auctions and Incentive Compatibility**

MobLab Game: Common-Value English

Key Teaching Points:

* Shows why bidders are susceptible to the winner’s curse.
* Illustrate how to mitigate overestimation of a valuation.

*Additional MobLab Auctions: Common Value Sealed Bid, Ascending Clock, Descending Clock, Private Value English, Private Value Sealed Bid*

**Game Theory: Simultaneous Choice Games**

MobLab Game: Prisoner’s Dilemma (Matrix) or Prisoner’s Dilemma (Push and Pull)

Key Teaching Points:

* Shows the conflicting incentives of cooperation and self-interest.
* Gain familiarity with reading payoff matrices and the key concept of a dominant strategy.
* Identification of Nash equilibrium.
* Demonstrates that repeat play can lead to more cooperate outcomes

MobLab Game: Stag Hunt

Key Teaching Points:

* An alternate to the Prisoner’s Dilemma in highlighting the tension between individual and group payoff maximization.
* Allows discussion of factors affecting coordinated social cooperation.
* Discuss equilibrium selection in light of a tradeoff between equilibrium payoff and its riskiness.

MobLab Game: Battle of the Sexes

Key Teaching Points:

* Miscoordination is common in one-shot interactions.
* Efficient and fair patterns of coordination may emerge with repeated play.

MobLab Game: Matrix: Instructor Specified

Key Teaching Points:

* Allows instructor maximum flexibility in specifying payoff matrices in support of desired teaching outcome.
* Ability to show how repeat play may result in outcomes that differ from one-shot interaction.

**Game Theory: Mixed Strategy Equilibria**

MobLab Game: Rock, Paper, Scissors

Key Teaching Points:

* While all games with a finite number of actions have a Nash equilibrium, not all games have an equilibrium in pure strategies. These games will have a mixed-strategy equilibrium.
* In a mixed-strategy equilibrium, each player chooses the action mixture making the other player indifferent between the actions she (probabilistically) plays in equilibrium. Indifferent between these actions, a player is willing to play the mixture necessary to make the other indifferent.

*Additional MobLab Games: Matching Pennies and Hide and Seek (Focal Points)*

**Game Theory: Sequential Move Games**

MobLab Game: Bargaining: Alternating Offer

Key Teaching Points:

* Players learn about tradeoffs and fairness in negotiations.
* Promotes learning about backward induction and subgame-perfect equilibria in sequential games.

MobLab Game: Trust Game

Key Teaching Points:

* Highlights gains from trade arising from trust and trustworthiness.
* Allow players to explore issues concerning reciprocity.
* Explore how repeat interaction may increase both trust and trustworthiness