

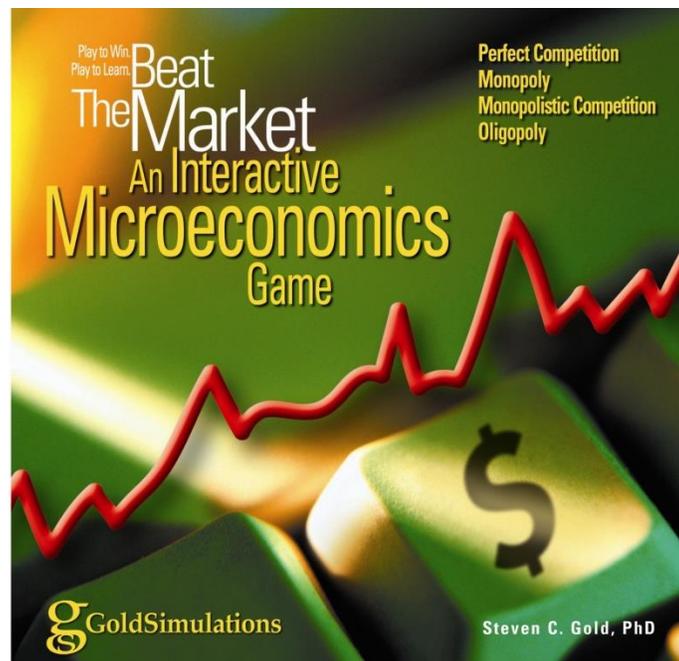


Instructor Manual

-Principles of Microeconomics-

Make Microeconomics Fun & Improve Learning

With an On-Line Computer Simulation Game



Gold Simulations
www.goldsimulations.com

FOURTH ADDITION
Steven C. Gold



Gold Simulations Educational Software
Beat The Market On Line: An Interactive Microeconomics Game

INSTRUCTOR MANUAL:
Principles of Microeconomics

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OVERVIEW:

Beat The Market On Line: An Interactive Microeconomics Game

Description of the Online Game

Beat the Market is an experiential set of simulation games & exercises used to teach microeconomics in a new and exciting way. The computerized simulation puts students inside the world of the textbook incorporating **active and collaborative learning**. Then students may be given an opportunity to manage a firm & to try to maximize profits under one or all of the different market structures: perfect competition, monopoly, monopolistic competition and oligopoly. Students may play as individuals (single player) or in teams, against each other (multi-player) and/or computer managed firms. Students make demand and supply decisions each period of play. The program rates student performance from 0 to 100% based on their profits relative to the best firm. Financial reports are generated each period that itemize the revenues, costs, and profits of the firm.

Students may also learn the major microeconomics concepts by playing a set of simulation game exercises by topic area. Each simulation exercise has a pre-set game where students observe the market dynamics and then answer a set of multiple choice questions to determine their understanding of the specific topic.

It is your choice to select from a series of simulation “exercises” and “games”. All choices are automatically graded and appear in a consolidated Grade Book which may be exported to excel.

The combination of simulation games and exercises creates an enhanced learning environment.

Learning Objectives

It is clear from our observations that the simulation game makes learning microeconomics more fun and meaningful. It **captures student interest and motivates students** to learn economics to do well in the game. We have observed students reading chapters in advance and raising many more questions. The game enhances learning by reinforcing textbook theories and providing a hands-on “learning-by-doing” exercise.

By participating in the game, students:

- Gain a much clearer understanding of microeconomics concepts including the market forces, equilibrium, demand, revenue generation, production, elasticities, and costs.
- Learn how to apply the tools of economic analysis to properly allocate resources and improve decision making to maximize profits.
- Acquire a “working” microeconomic vocabulary. Improve critical thinking skills as they try to solve problems and achieve objectives.



Ideal for Large Classes

No direct involvement of the instructor is required to facilitate the playing of the simulation game. The students play the game and/or exercises on line from any computer and are automatically graded based on cumulative profits compared to the best firm. All student grades are viewed in an online “GRADEBOOK”. Students may play asynchronously so no coordination is required.

SUPPORT PROVIDED TO INSTRUCTORS

- **Help to set up your course games & exercises – we can do it for you!**

We are pleased to discuss Beat The Market’s use to meet your needs and provide a web demo. You can be up and running within an hour! We are ready to help in any way possible and make your use of this game an outstanding success for your teaching and student learning. You can find our contact information on our website www.goldsimulations.com.

- **Guided Tours online about game use for students and instructors**

There are a set of guided tours on our website that explain to instructors how to setup and use the game; and students to explain how to register and use the game. This avoids the need for instructors to lecture on the details of how to register and use the game.

- **Instructor Website with progress reports of each student’s performance**

The instructor website allows the teacher or administrator to see the performance and grades of all the work done by students in the class. A progress report is available for each assigned game that shows how each student is doing and how much of that game has been completed. A chart on the progress report page summarizes this data. The instructor can enter a student’s game by clicking the "view" button. Once inside the game you can see everything the student sees when they enter the game including the decisions they have made and what the consultant recommends.

- **Automated online Computerized Consultant built into the game**

Our computer simulation game has an “on-line consultant” that suggests to students what they should look at in the game to help them improve. This avoids the need for students to contact the instructor with questions on how to improve performance. The consultant does not provide answers but provides sufficient insight to guide the students. You have complete access to what the computerized consultant is telling the students by simply viewing their game from your “instructor” course management system. The consultant only provides direction based on standard economic theory taught in the textbook.



- **Automatic Grading of Games and Exercises**

The simulation games are automatically graded based on the profits of the student's firm or team. The same is true with the additional, but optional, exercises that are also provided for the instructor to assign at his/her discretion. The answers to the exercise multiple choice questions and problems may be obtained by instructors. Just go to our website, www.goldsimulations.com, and click on "contact us" to request them. Once we certify that you are an instructor, we will give you access to the answers online in the game website.

Students will automatically receive the answers on-line to the exercise questions only *after* the due date you provided on-line, unless you specify that students may receive their feedback immediately after completing an exercise.

- **Explanation of Game Cost & Demand relationships to understand results**

To help understand the results of the game, we will reveal to the instructor the firm cost and demand relationships embodied in the game, and the profit-maximizing short and long-run equilibrium in each of the markets in the game, including perfect competition, monopolistic competition, monopoly, and oligopoly. This should help the instructor in answering student questions about the game results, without the instructor having to study or play the game. To get this information, just go to our website, www.goldsimulations.com, and click "contact us". We will send them to you electronically. We recommend professors keep this information confidential, and allow the student to "discover" the cost and demand relationships and how they impact the optimal decisions of the firm. Learning-by-doing or experiential learning is argued by educators to be one of the most effective pedagogical approaches.



INTEGRATING THE SIMULATION INTO YOUR COURSE

Options for Integrating the Simulation into your class

The games can be used in for introductory to more advanced levels because, with a click of a button, you can change the number of controllable decisions and the stability of the market system.

There are 3 major options for integrating the simulation into your Principles course.

OPTION 1 utilizes the simulation as a capstone event.

Near the end of the semester set up a simulation competition where student teams compete against each other. With this approach, students have an opportunity to apply the economic theories and tools they have learned all semester within a decision-making setting.

This has proven to be an exciting and meaningful way to wrap up the course.

OPTION 2 utilizes the simulation throughout the course.

Early in the semester, begin the simulation competition. With this approach Students have the opportunity to practice the economic theories and tools within a business setting as they learn them in class.

Practice “by doing” is considered the most important aspect of the LEARNING PYRAMID. Learning economic concepts also becomes much more relevant and engaging because they are used by students during the class to improve the performance of their firm by making better decisions.

With this approach, you require students to complete the simulation games & simulation exercises as you discuss the various major topics in class such as Market Equilibrium, Demand, Elasticities, Revenues, Production, Costs and the standard market structures: Perfect Competition, Monopoly, Monopolistic Competition and Oligopoly.

Optionally, select the students or teams with the highest profits to discuss their performance in class. For smaller classes, we recommend students (or in teams) complete a written report explaining their performance and what they learned. Students find this to be an interesting and meaningful way to learn.

OPTION 3 is a mix of options 1 and 2.

The game can be integrated in a number of ways based on your teaching style and the objectives of the course by adjusting options 1 & 2 to fit your class schedule and teaching objectives.



SIMULATION GAMES vs SIMULATION EXERCISES

Before proceeding to the course outlines, we want to clarify the major differences between the two types of student assignments.

-**For simulation games**, students manage a firm, making decisions to maximize profits. Results are automatically graded based on cumulative profits compared to the best firm in the marketplace.

-**For simulation exercises**, students learn by observing the marketplace dynamics and demonstrate they understand the major concepts; such as market equilibrium, elasticities, demand, cost, & revenues by answering a series of multiple choice questions. Exercises are automatically graded.

Within your instructor account, you are provided with the methodology and answers for all questions.

EXAMPLE COURSE OUTLINES

OPTION 1: EXAMPLE CAPSTONE COURSE OUTLINE

Weeks	ACTIVITY	GAME ASSIGNMENTS	SIMULATION EXERCISES
1-8	No simulation activities; class proceeds as normal	None	None
9	Students learn basics of game	View online guided tours; read Student Manual; and play a Practice Game	*Introduction Exercise
10	Students compete individually against computer managed firms	**Play Practice Game 1 Play Practice Game 2	
11	Class divided into teams to organize, review reports, strategize & make decisions.	Teams enter quarter 1 decisions Teams enter quarter 2 decisions	
12	Team competition completed	Teams enter quarter 3 decisions Teams enter quarter 4 decisions Teams enter quarter 5 decisions	
13	Teams meet to evaluate performance & lessons learned	***Prepare Team Report	
14	WRAP-UP	Report submitted & Class discussion	

*Introduction Simulation Exercise requires no knowledge of economics. The objective is to learn about the reports/information within the game.

**Practice games can be graded or not graded, and assigned to the individual or team. We recommend individually played practice games set up to mirror the Team game or build up to it. (i.e. level 1 game with only two decisions, to a level 2 with four decisions). We also recommend the first practice game not be graded.

***Team Report asks students to explain their strategy and performance in the game, and make recommendations on how they could improve their performance by applying the economic principles learned in the course



OPTION 2: EXAMPLE UTILIZING THROUGHOUT THE COURSE

Weeks	ACTIVITY	GAME ASSIGNMENTS	SIMULATION EXERCISES
1	Students register online & learn basics of game	View online tutorials & **play Practice Game 1	* Introduction Exercise
2	Students refer to student manual as needed		<ul style="list-style-type: none"> • Law of Demand • Shifts in Demand
3	Students refer to student manual as needed		<ul style="list-style-type: none"> • Market Equilibrium • Price Elasticity
4	Students refer to student manual as needed		<ul style="list-style-type: none"> • Short-run Production • Short-run Cost
5	Students refer to student manual as needed	**Practice Game 2	<ul style="list-style-type: none"> • Long-run Production • Long-run Cost
6	Students compete individually against computer managed firms	**Practice Games 3-4	
7	Students compete individually against computer managed firms	Graded Games 1-2-3	
8	Class divided into firm teams to organize, review game reports and prepare strategies	Team Decisions Quarter 1	
9-10	Firm teams analyze reports	Team Decisions Quarters 2-3	
11	Firm teams analyze reports	Team Decisions Quarters 4-5	
12	Firm teams analyze reports	Team Decisions Quarters 6-7	
13	Teams meet to evaluate performance & lessons learned	*** Prepare Team Reports on Game Performance	
14	WRAP UP: Team presentations	Team Reports Due	

*Introduction Simulation Exercise requires no knowledge of economics. The objective is to learn about the reports/information within the game.

**Practice games can be graded or not graded, and assigned to the individual or team. We recommend individually played practice games set up to mirror the Team game or build up to it. (i.e. level 1 game with only two decisions, to a level 2 with four decisions). We also recommend the first practice game not be graded.

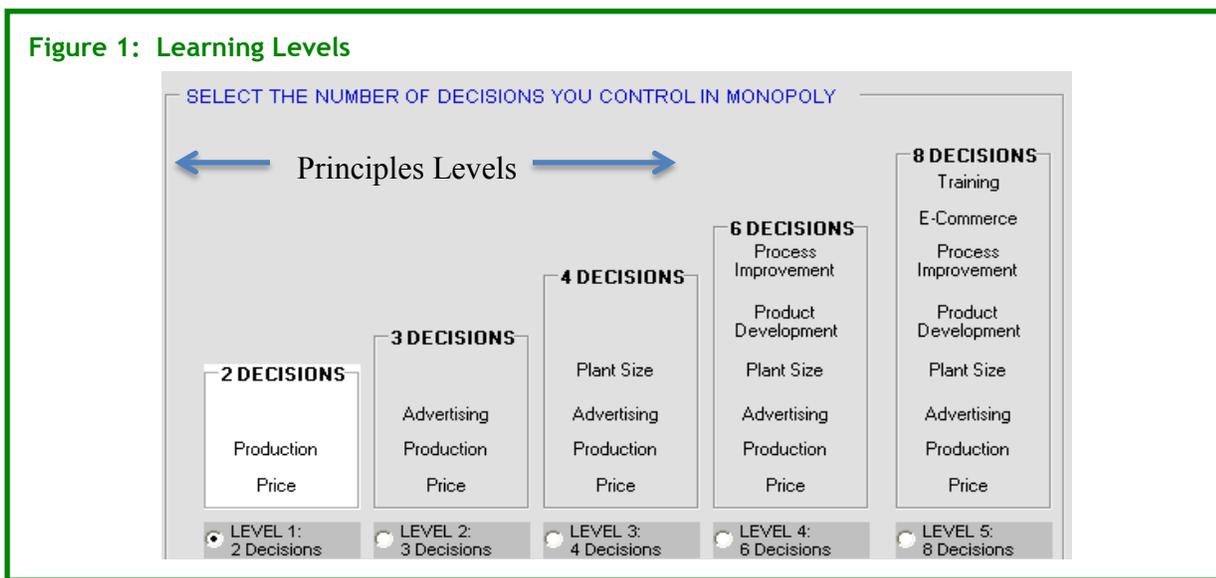
***Team Report asks students to explain their strategy and performance in the game, and make recommendations on how they could improve their performance by applying the economic principles learned in the course.



GAME SELECTIONS TO FIT YOUR COURSE

Learning Levels

Students may learn the microeconomic relationships in the game in steps by limiting the number of controllable decisions, holding the other decisions constant. This option allows you to adjust the complexity of the game and is a powerful learning tool. There are five learning levels in the game to choose (see Figure 1). Each market structure has similar learning levels. The bar in white indicates the current choice, which is level 1 consisting of only two decisions.



In the **principles or introductory courses** it is recommended that students start at level 1 and move to higher levels as they begin to understand the relationships at each level. Reaching level 3 is a good goal for students in the Principles courses and includes the major firm demand & supply decisions. In the more advanced courses such as Managerial Economics it is still useful for students to start at the lower levels but they can move more quickly to the higher learning levels. The ability to limit the number of decisions shows students the power of ceteris paribus analysis in understanding and learning economic relationships.

Number of Periods of play

You can select from 1-20 quarters. For most games a selection of 4-8 periods (quarters in time) is chosen.

Test Mode vs Practice Mode

At the start of a new game, you have the option of selecting either the “Practice Mode” or the “Test Mode”. The Practice Mode is used when you want all students to begin each new game with the same starting



environment in terms of demand, costs, production, plant size, and all other factors. The purpose of the Practice Mode is to give students an opportunity to learn by repeating the same game to improve their performance. Student feedback clearly indicates that they can more easily learn the economic relationships and how to apply the economic tools of analysis by repeating the same game. Once the students have practiced with the learning mode, they will be better prepared to try the “Test Mode” to confirm their understanding of economics. In the “Test Mode” a unique starting environment is created with each new game. Starting demand, production, plant size, costs, and many other factors are different with each new game in “Test Mode”. Because of this, a student cannot just copy the winning decisions from another game.

Single Player or Multi-Player Game (team)

Single player and multi-player options are available in the game. In the **single player game**, a single student or team of students manages a firm and competes against the computer-managed firms.

The **multi-player game** allows individuals or teams to compete against each other in a given market. Each player represents a different firm in the market. A player could be an individual student, or a player could represent a team of students working together to manage a firm in the game. The multi-player game works the same as the single player game except that decisions must be entered for each player. The computer simulation does all the work of setting up the team structure, you just enter the number of teams and you are done!

Market Structure

Any of the four market structures may be selected including Perfect Competition, Monopoly, Monopolistic Competition or Oligopoly. A detailed explanation of how the simulation models each structure is given in the Appendix. Many professors begin with the simplest game which is Perfect Competition with 2 decisions, stable economy and No random events.

Macro Economy & Economic Events

You may select from Stable, Growth, Business Cycles or Unknown. The simplest choice is to have a stable economy and the most difficult would be unknown. Economic events are either YES or NO. It is recommended that STABLE be selected the macroeconomy with NO random events until the students become more proficient.



SIMULATION EXERCISE SELECTIONS & LEARNING OBJECTIVES

You select the exercises by clicking on choices & specifying the DUE DATE. All exercises are automatically graded & appear in your on-line Grade Book. At your option, you may allow the Students to repeat the exercise & automatically receive the answers online *before or after* the due date you specify online. When the exercise is “repeated”, students will get games of the same complexity but with different initial data/information so they cannot just copy the correct answers.

TOPICS	EXERCISE	LEARNING OBJECTIVES
Getting Started	Introduction	To master the mechanics of the game’s economic information
Markets	Market Equilibrium	To understand how price adjusts to achieve market equilibrium using demand and supply analysis
Demand	Law of Demand	To understand and apply the law of demand.
	Shifts in Demand	To understand the difference between a change in demand and a change in the “quantity” demanded.
Revenues	Revenue Maximization	To understand the relationship between price, quantity demanded, and revenues.
Elasticities	Price Elasticity	To understand the relationship between price elasticity, quantity demanded & revenues
Production	Short Run Production	To understand the short-run relationship & to measure & apply marginal and average products
	Long Run Production	To understand the long-run production relationship, returns to scale and the impact of plant size on labor efficiency.
Cost	Short Run Cost	To understand, measure and apply cost concepts in the short-run.
	Long Run Cost	To distinguish between long-run and short-run costs; understand the impact of plant size on the costs of the firm and the strategic nature of economies or diseconomies of scale.
Perfect Competition	Short- Run	To understand how this marketplace behaves and reaches equilibrium in the short-run; and to apply economic principles to maximize profits in the short-run, and practice critical thinking skills.
	Long- Run	To understand how this marketplace behaves and reaches equilibrium in the long-run; and to be able to apply economic principles to maximize long-run profits , and to sharpen critical thinking skills.
Monopoly	Short- Run	To understand how this market behaves and reaches equilibrium when plant size is fixed in the short-run; to be able to apply economic principles to maximize profits in the short-run; and to provide an opportunity to reinforce critical thinking skills.
	Long- Run	To understand how this market behaves & reaches equilibrium when plant size may change in the long-run; to be able to apply economic principles to maximize profits in the long-run; and to sharpen critical thinking skills.
Monopolistic Competition	Short- Run	To understand how this marketplace behaves and reaches equilibrium in the short-run; to learn to apply economic principles to maximize profits in the short run; and to apply critical thinking skills.
	Long -Run	To understand how this marketplace behaves and reaches equilibrium in the long-run; to learn to apply economic concepts to maximize profits in the long-run; and to sharpen critical thinking skills.
Oligopoly	Short -Run	To understand how this marketplace behaves in the short-run; to learn to apply economic principles to maximize profits in the short-run; and to apply critical thinking skills.
	Long- Run	To understand how this marketplace behaves in the long-run; to learn to apply economic concepts to maximize profits in the long-run; and to sharpen critical thinking skills.



FREQUENTLY ASKED STUDENT QUESTIONS

Common questions students have asked about playing the game are provided in this section with answers. This information may help you to *beat the market!*

1. How do I begin to make a decision?

- Understand that the objective is to maximize profits.
- Study the reports in the game including: Market Research, Demand & Supply, Net Profit, and Competitive Analysis.
- Review the suggestions of the automated “CONSULTANT” that are on the Summary page of the game.
- Click on the information buttons next to each decision and read the suggested process.

2. What are the “key” factors that affect profits in the game?

There are three “major factors” in the game:

- Set production as close as possible to firm demand.
- Set marginal revenue close to marginal cost
- If plant size is a decision, select the plant size that will be most cost effective, given the projected level of demand. Information how costs change by plant size is found on the Decision page by clicking the Info button.

3. The CONSULTANT tells me to set production closer to firm demand, how do I do this?

- Look at the past reports and use the GRAPH option to study the sensitivity of demand to changes in your firm’s price, your rival’s price and the market price (if not a monopoly). Once you learn about price elasticity, this information is very helpful and may be found on the Decision page by clicking the Info button for price.
- If advertising, product development, and e-commerce are decisions, then look at the marginal impact of these decisions. This information is found on the Decision page by clicking the Info button.
- If there are random economic events occurring in the game, check out this information on the Market Research Report.
- If the economy is changing, check out the GDP forecast in the Market Research Report. As a rule of thumb, a 10 unit change in the index, would increase market demand by 5%.



4. Why is my firm demand increasing when my price has gone up? Doesn't this violate the law of demand?

There are a few reasons why this might happen in the game.

- The market price is rising more rapidly than the firm's price. The market price is reported in the Market Research Report.
- If advertising is a decision, then the firm's advertising may have increased along with the firm's price. This would cause the firm's demand to shift to the right, and may cause quantity demanded to increase even though price is rising.
- If product development or e-commerce are decisions, the same phenomenon as in "b" above is occurring.
- If economic shocks are permitted in the game, the market demand may be increasing (shifting) due to this event. Economic shocks are reported in the Market Research Report.
- If the economy is set to growth or business cycles, then market demand could be shifting from quarter to quarter. The growth in the economy is measure by a GDP index that is reported in the Market Research Report.

5. The CONSULTANT tells me my average costs are much higher than the average of other firm in the market, why is this?

- Costs rise rapidly as production gets close to maximum capacity. The maximum production capacity is found on the Decision page by clicking the Info button for production.
- If plant size is a decision, average costs depend also on plant size. The impact of plant size on average costs is found on the Decision page by clicking the Info button for plant size.
- If training or process improvements are decisions, then your rivals may be spending more on these decisions than you. The impact of these decisions on costs or productivity may be found on the Decision page by clicking the Info button.
- Selling or overhead costs include advertising, product development, e-commerce, training, and process improvements. If these are decisions in the game, the student may be overspending on these factors.

6. The CONSULTANT tells me to set MR closer to MC, how do I do this?

- Changing price is the most important factor affecting MR. MR will change positively with price. As price is increased, MR will rise and become closer to the price level but will always be less than price; and as price is decreased, MR will decline at a faster rate and the gap between MR and price will widen.
- Changing "production" will alter MC. As production gets closer to the maximum production capacity of the firm, then MC will rise rapidly.



- If you can change plant size, then this will also change MC. The impact of plant size on MC may be found on the Decision page by clicking the Info button.

7. How do I decide on the level of advertising, product development, and e-commerce?

- If advertising is a decision, be competitive and raise advertising as long as the marginal revenues from increased advertising exceed the marginal costs of production. But be careful there are diminishing returns to advertising. (Information on the marginal impact of advertising is available by clicking the Info button on the decision page for advertising and for production).
- If product development is a decision, be competitive and raise product development as long as the marginal revenues from increased product development exceed the marginal costs of production. But be careful there are diminishing returns to product development. (Information on the marginal impact of product development is available by clicking the Info button on the decision page for product development and for production).
- If e-commerce is a decision, be competitive and raise e-commerce as long as the marginal revenues from increased e-commerce exceed the marginal costs of production. But be careful there are diminishing returns to e-commerce. (Information on the marginal impact of e-commerce is available by clicking the Info button on the decision page for e-commerce and for production).