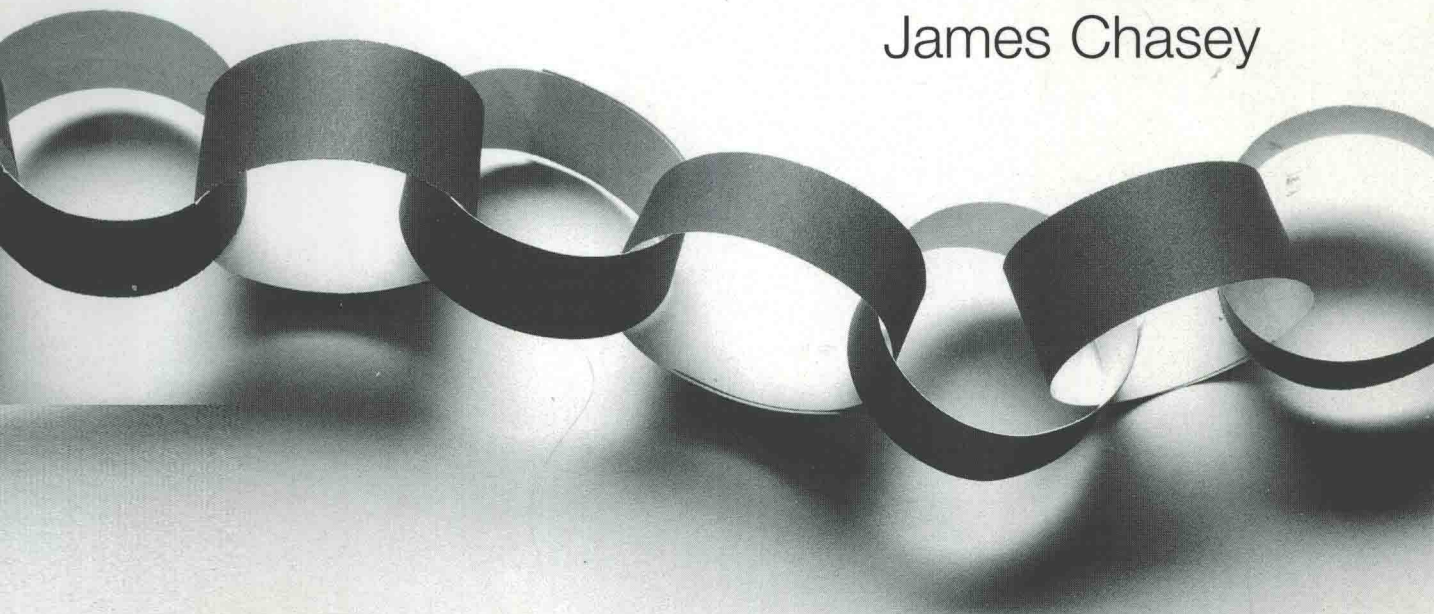


# ***Favorite Ways to Learn Economics***

David A. Anderson  
James Chasey



# FAVORITE WAYS TO LEARN ECONOMICS

**David A. Anderson**

*Centre College*

**James C. Chasey**

*Homewood-Flossmoor High School*

**SOUTH-WESTERN**



**THOMSON LEARNING**

Australia • Canada • Mexico • Singapore • Spain • United Kingdom • United States

COPYRIGHT © 2002 Thomson Learning, Inc.  
Thomson Learning™ is a trademark used herein  
under license.

ALL RIGHTS RESERVED. No part of this work  
covered by the copyright hereon may be reproduced  
or used in any form or by any means—graphic,  
electronic, or mechanical, including, but not limited  
to, photocopying, recording, taping, Web distribution,  
information networks, or information storage and  
retrieval systems—without the written permission of  
the publisher.

Printed in the United States of America

2 3 4 5 6 7 05 04 03 02

0-03-032741-5

**For more information about our products,  
contact us at:  
Thomson Learning Academic Resource Center  
1-800-423-0563**

**For permission to use material from this text,  
contact us by:  
Phone: 1-800-730-2214  
Fax: 1-800-731-2215  
Web: [www.thomsonrights.com](http://www.thomsonrights.com)**

#### **Asia**

Thomson Learning  
60 Albert Complex, #15-01  
Albert Complex  
Singapore 189969

#### **Australia**

Nelson Thomson Learning  
102 Dodds Street  
South Street  
South Melbourne, Victoria 3205  
Australia

#### **Canada**

Nelson Thomson Learning  
1120 Birchmount Road  
Toronto, Ontario M1K 5G4  
Canada

#### **Europe/Middle East/South Africa**

Thomson Learning  
Berkshire House  
168-173 High Holborn  
London WC1 V7AA  
United Kingdom

#### **Latin America**

Thomson Learning  
Seneca, 53  
Colonia Polanco  
11560 Mexico D.F.  
Mexico

#### **Spain**

Paraninfo Thomson Learning  
Calle/Magallanes, 25  
28015 Madrid, Spain

## **ABOUT THE AUTHORS**

David A. Anderson is the Paul G. Blazer Associate Professor of Economics at Centre College. He holds a Bachelor of Arts degree from the University of Michigan and Masters and Doctoral degrees from Duke University. Dr. Anderson has published research in the areas of classroom technology, active learning, and teacher evaluation, among topics from childbirth to social insurance. He has received a National Endowment for the Humanities distinguished professorship, and grants for economic education projects from the 3M Foundation and the Andrew Mellon Foundation.

James C. Chasey received his Bachelor of Arts degree from Purdue University and his Master of Arts degree from the University of Illinois. As the Christa McAuliffe Fellow for Illinois, he received advanced training at the University of Chicago Graduate School of Business. Mr. Chasey has received the Freedoms Foundation Leavey Award and the Purdue University outstanding education alumni award. He teaches Advanced Placement Economics at Homewood-Flossmoor High School, and has served as Adjunct Professor of Economics at the College of DuPage and Governors State University.

## **ACKNOWLEDGMENTS**

The authors are grateful to the many who have contributed to this effort. Corey McCaffrey, Nate Olson, and Ashley Vinsel provided excellent assistance in preparing this manuscript. Hundreds of dedicated students field-tested the experiments and problem sets. Our families endured late hours and urgent deadlines. The faculty consultants at the AP Economics readings offered inspiration and support. Most importantly, we thank you, the student, for your willingness to experiment with and puzzle over the fascinating field of economics.

## **A NOTE TO STUDENTS ABOUT ACTIVE LEARNING**

Economics is the major of choice for rock stars like Mick Jagger, studs like Arnold Schwarzenegger, big shots like Ronald Reagan, and billionaires like Ted Turner. For some, however, the appeal of this exciting discipline can be tempered by the difficulty of grasping some of its fundamental concepts. We intend to change that. The purpose of the active learning experiments in this book is to take you inside the box and show you how it feels to be an economic actor. That is, this book will lead you through activities that simulate production, sales and various types of decision-making. Active learning has proven to be both popular and successful in eliciting the economic way of thinking and making concepts easier to learn and remember. These activities will help to clarify economic concepts, but only if you are an attentive, active, and engaged, participant. Be sure to take part earnestly and behave honestly. Passive participants will not reap the educational rewards. Please read the introduction and scenario for each activity before class. After each activity, reflect on the experiment overnight and bring the completed worksheet to the next class meeting.

*Above all, we hope that you enjoy this learning experience!*

# CONTENTS

*A NOTE TO STUDENTS ABOUT ACTIVE LEARNING*    *vii*

## **1 AN INTRODUCTION TO ECONOMICS EXPERIMENTS    1**

### *EXPERIMENTS:*

- Hot Dog Vendors on the Beach    1
- Production Possibilities Frontier Experiment:  
Links and Smiles    4
- Comparative Advantage Experiment    9

### *PROBLEM SETS:*

- Allocating Resources    13
- Calculating Opportunity Cost    14
- Comparative and Absolute Advantage    15
- Marginal Analysis    16
- Production Possibility Curves    18
- Shifting Production Possibility Curves    21
- Three “Solutions”    24

## **2 HOW MARKETS WORK    25**

### *EXPERIMENTS:*

- Tragedy of the Commons Game    25
- Penning Supply and Demand Curves    28

### *PROBLEM SETS:*

- Graphing Demand    34
- Graphing Supply    38
- Graphing Supply and Demand    42
- There “Is” Only Two Kinds of Music    44
- Parking Lot Problem    46
- Congested Parks—A Pricing Dilemma    51
- Here is a Message for Us    64
- You Don’t Have to be Old to be a Classic    67
- Price Floor    69
- Price Ceiling    71

**3 MARKET EFFICIENCY AND TAXATION 73***EXPERIMENTS:*

Buying and Selling Snipes in the Pit Market	73
A Tax in the Snipe Market	75

*PROBLEM SETS:*

Marginal Utility Problem	79
Consumer/Producer Surplus and Efficiency	81
Cost of Taxation	83
Efficiency and Deadweight Loss	86
Elasticity and Deadweight Loss	88
Consumer Surplus	90
Producer Surplus	92

**4 THE PUBLIC SECTOR 95***EXPERIMENTS:*

Externality Experiment: The Ecomedy Club	95
Free Rider Experiment	100

*PROBLEM SETS:*

Tax Incidence	103
Progressivity	105
Classifying Taxes	107
Positive Externalities	108
Negative Externalities	110

**5 FIRM BEHAVIOR AND INDUSTRIAL ORGANIZATION 113***EXPERIMENTS:*

The Prisoners' Oligopoly	113
Cartel Growing Bananas	117

*PROBLEM SETS:*

Cost of Production (Total)	119
Cost of Production (Average and Marginal)	121
Daphne's Apparel Shop (Part 1)	123
Daphne's Apparel Shop (Part 2)	125
Daphne's Apparel Shop (Part 3)	127
Daphne's Apparel Shop (Part 4)	128
Daphne's Apparel Shop (Part 5)	130
Daphne's Apparel Shop (Part 6)	132
Daphne's Apparel Shop (Monopoly)	133
Cost Curves—The Un-University	134
Perfect Competition Consultants	136
Monopoly Consultant	137

**6   LABOR MARKETS   139***EXPERIMENTS:*

Econville Links Factory	139
Put Your Hands Up	146

*PROBLEM SETS:*

Total Product and Marginal Product	150
Marginal Product	152
Derived Demand	154
Optimum Resource Mix	156

**7   CONSUMER CHOICE   159***EXPERIMENTS:*

Popcorn and Soda-Pop	159
Are You Sure?	163

*PROBLEM SETS:*

Budget Lines	164
Indifference Curves	167
Budget Lines, Indifference Curves, and Consumer Satisfaction	169
Utility Maximization	170
Budget Lines, Indifference Curves, and Demand Curves	172

**8   MACROECONOMIC DATA   175***EXPERIMENTS:*

Living Burger-to-Burger on Route 66	175
A Balancing Act	178

*PROBLEM SETS:*

Price Index	182
Inflation	183
Benchmarking Inflation	185
Gross Domestic Product	188
Real vs Nominal Values	189

**9   SAVINGS, INVESTMENT, AND  
FINANCIAL SYSTEMS   193***EXPERIMENTS:*

Easy Come, Easy Go	193
Internet Stock Market Games	198

*PROBLEM SETS:*

Calculating the Unemployment Rate	201
Unemployment Rate and the Minimum Wage	202



Economic Growth	204
Natural Rate of Unemployment	207
Types of Unemployment	211

## **10 MONEY AND PRICES 213**

### *EXPERIMENTS:*

Banks and Borrowers	213
Barter vs. Money	217

### *PROBLEM SETS:*

Fiscal Policy and Monetary Policy	219
Bank Expansion of Demand Deposits	220
The Reserve Requirement and the Money Multiplier	222
Monetary Policy and the Aggregate Supply/ Aggregate Demand Model	225
Monetary Policy and the Aggregate Expenditure Model	228

## **11 MACROECONOMIC MODELS 231**

### *EXPERIMENTS:*

Getting into the Flow of Things	231
The Anti-REM Game	234

### *PROBLEM SETS:*

Exchange Rates	236
Contractionary Fiscal Policy, Interest Rates, Net Exports	238
Expansionary Fiscal Policy, Interest Rates, Net Exports	240
Contractionary Monetary Policy, Interest Rates, Net Exports	242
Expansionary Monetary Policy, Interest Rates, Net Exports	244

## **12 MONETARY AND FISCAL POLICY 247**

### *EXPERIMENTS:*

Signs of the Times	247
Blind Curve	251

### *PROBLEM SETS:*

Aggregate Expenditure Model	253
Aggregate Supply and Aggregate Demand	255
Phillips Curve	261
Inflationary and Recessionary Gaps	265
Balanced Budget Multiplier	268

# 1

## **AN INTRODUCTION TO ECONOMICS**

### *Experiments*

#### **HOT DOG VENDORS ON THE BEACH**

*Time required: 10 minutes*

*Materials required: none*

#### **INTRODUCTION**

Reasoning through economic phenomena helps us to explain what we see in the real world and allows us to make wiser decisions in our own endeavors. This activity will put you into the shoes of an entrepreneur and ask you to make decisions about the three most important issues for new business owners: location, location, and location.

#### **SCENARIO**

The setting for this activity is a long beach with many hungry swimmers and sun worshipers. Imagine yourself as one of two hot dog vendors working this particular strip of beach. Whether or not you are one of the students asked to demonstrate your decisions on the simulated beach in your classroom, think carefully about where you would locate your hot

dog stand under the circumstances described below. The scenario unfolds as follows:

- ◆ The two hot dog stands on this beach have identical prices, products, and overall appeal.
- ◆ Beachgoers will purchase from whichever hot dog stand is *closest* to them.
- ◆ Beachgoers are evenly distributed along the beach.
- ◆ Only one hot dog vendor can move at a time.

In the classroom experiment, two representative hot dog vendors will be asked to station themselves on the beach, and then take turns changing their location (if desired) in response to the other's location. The goal for each is to maximize hot dog sales.<sup>1</sup> Note that the shoreline along which the vendors may locate is a line from one side of the classroom to the other. There is no depth to the beach, meaning that they can move to the left or right along the beach, but they cannot venture forward into the dunes or backward into the water.

**REFLECTIONS** (Please answer these questions *after* completing the classroom experiment.)

1. Describe the optimal strategy for choosing a location under the conditions described above.
2. In what situations do you see a similar strategy practiced near where you live?
3. What evidence of this strategy have you seen on a national scale?

<sup>1</sup> Assume that maximizing sales is the same as maximizing profits. This is true if the vendors can always sell another hot dog at a price that exceeds the cost of providing another hot dog. If the cost of selling another hot dog—the “marginal cost”—increases as more are sold, the vendors will only sell hot dogs as long as their additional revenue from selling one more exceeds the marginal cost.

4. Can you think of applications of this strategy that go beyond retail sales?

## AFTERTHOUGHTS

For most people, the retail application of this strategy is not immediately obvious, but makes good sense after thought and experimentation. That is one of the reasons why we study economics—there are many associated findings that are important and make sense, but they are not realized without examination. As Paul Samuelson said, economics can be “perfectly simple without being perfectly obvious.” This makes economics valuable and exciting! (We hope you agree.)

## PRODUCTION POSSIBILITIES FRONTIER EXPERIMENT: LINKS AND SMILES

*Time required: 25 minutes*

*Materials for each student: 2 sheets of 8 ½ x 11 paper*

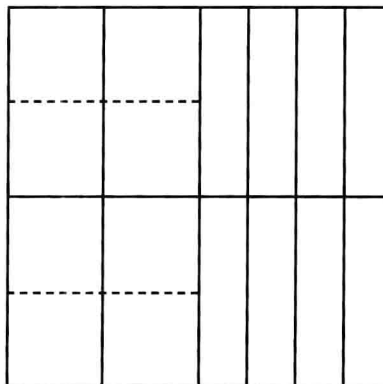
*1 roll tape*

*1 pair scissors*

*1 pencil or pen*

### INTRODUCTION

A production possibilities frontier (also known as a production possibility curve) indicates all of the possible combinations of two goods that can be produced in one period using all available resources. By looking at a PPF, the trained eye can determine the opportunity cost of each of the goods at every level of production, and whether or not production occurs at an efficient level. This experiment allows participants to derive and demystify production possibilities frontiers. After experimenting with different production goals, you will gain an understanding of input specialization and increasing opportunity costs.



### SETUP

There are two paper inputs used in this experiment: 5 ½" x 1 ⅛" strips, and 2 ¾" x 1 ⅛" rectangles. To obtain enough of each paper input for the whole experiment, you will need two 8 ½ x 11 sheets of paper. Stack the two sheets on top of each other and make the following folds:

1. Fold the two most-distant ends together.
2. Fold the new most-distant ends together.
3. Undo the last fold and fold each of the most-distant ends in so that they touch the center line.
4. Without doing any unfolding, fold *one* side in once more so that it touches the center line.

5. Unfold the papers and you should have creases where there are dotted lines in the illustration above. Cut along the creases, and cut the four wider strips in half as indicated by the dotted lines. You should then have 16 strips and 16 rectangles.

## SCENARIO

In this experiment every person represents a manufacturing firm. Firms will make “links” and “smiles.”

A *link* is a  $5\frac{1}{2}$ " x  $1\frac{1}{8}$ " strip of paper wrapped into a circle and taped in place. Subsequent links are put through the previous link and taped to interconnect the links, forming a “paper chain,” as are sometimes wrapped around Christmas trees.

A *smile* is manufactured by using scissors to round the four edges of a  $2\frac{3}{4}$ " x  $1\frac{1}{8}$ " rectangle and drawing two eyes and a smile on one side of the circle.

Although strips are best for making links, and rectangles are best for making smiles, creative cutting and taping will permit strips to be made into regulation smiles and rectangles to be made into regulation links. For example, a strip can be made into a rectangle by cutting it in half and taping the halves together, long edge to long edge.

Participants begin each round with 4 strips, 4 rectangles, a pen, a roll of tape, and a pair of scissors. Resources may not be carried over from one period to the next, and only one layer of paper may be cut at a time. Each round of production lasts 70 seconds. The production goals for each round are as follows:

Round 1: Make four smiles and as many links as you can.

Round 2: Make only links.

Round 3: Make only smiles.

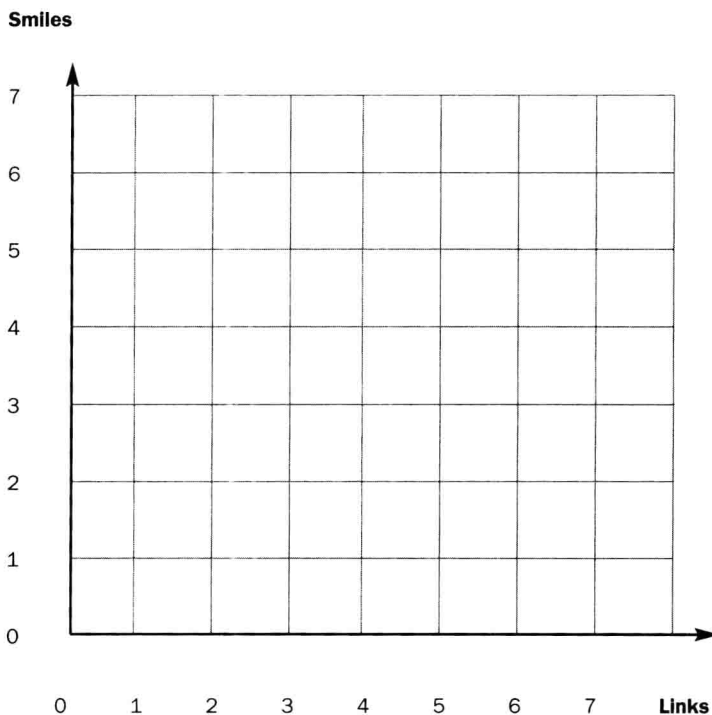
Round 4: Make one smile and as many links as you can.

Record the number of links and smiles produced in each round.

	LINKS	SMILES
Round 1	_____	_____
Round 2	_____	_____
Round 3	_____	_____
Round 4	_____	_____

**REFLECTIONS** (Please answer these questions *after* completing the classroom experiment.)

1. Draw your production possibilities frontier in the space below.

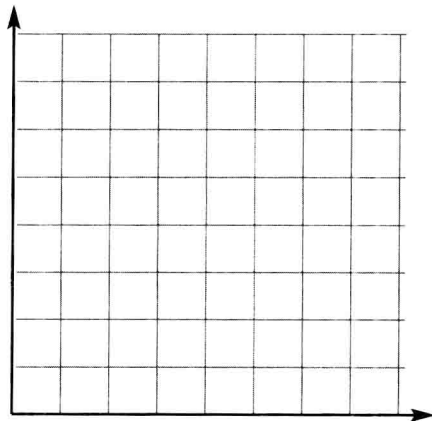


2. What was the opportunity cost of the first smile?  

---
3. What was the opportunity cost of the last smile or two?  

---
4. Why did the opportunity cost of making smiles increase as you made more of them?

5. In this experiment you used strips that were specialized for making links, and rectangles that were specialized for making smiles. Give two examples of real-world inputs that are specialized for the production of particular goods.
  
  
  
  
  
  
  
  
  
  
6. Explain how the use of specialized inputs results in a concave production possibilities frontier.
  
  
  
  
  
  
  
  
  
  
7. List two goods that are made from virtually identical (rather than specialized) inputs and illustrate the general shape of a production possibilities frontier for those two goods.





## AFTERTHOUGHTS

Having acted as producers and derived production possibilities frontiers, you should come away with a better understanding of the implications of specialized resources and increasing opportunity costs. In subsequent classes you will be able to draw upon this experience to address issues of specialization and the role resources play in the shape of the PPF.