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AUTHOR Horton, Robert V.
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ABSTRACT

Students in Economics 519 at Purdue University have been guided to seeing economics in things--in their experiences, in their readings, and in their conversations--and to apply economic analysis appropriately in considering them. This course outline illustrates one technique employed which reaches the objectives of effective economics education, assisting the student to participate in his world and, as a teacher, to assist others in turn. Students were assigned to search for one item in their reading susceptible to simple economic analysis. The memorandum to students as to the requirement; the sample item, beginning analysis, and structural suggestions for its completion; and the paper as completed by the instructor are attached as Annexes A, B, and C. Grading of papers, conferences, class time, and resources used are discussed and the instructor's evaluation procedure is given. A student survey showed very favorable response as well as suggestions indicating further ideas which students felt could be included. Two student papers are appended, with instructor's comments. A bibliography of Institute Papers available from the Graduate School of Industrial Administration is included. (JMB)

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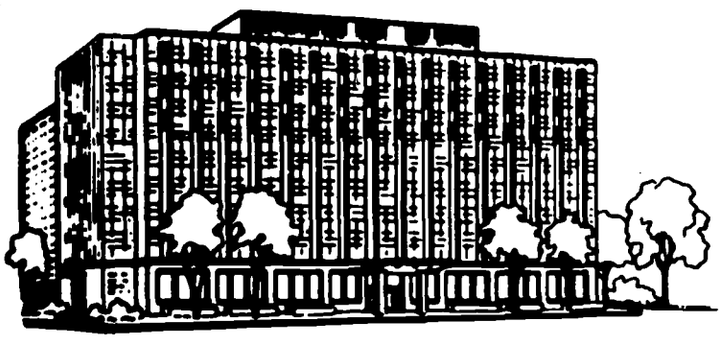

INSTITUTE FOR RESEARCH
IN THE BEHAVIORAL, ECONOMIC,
AND MANAGEMENT SCIENCES

STUDENT APPLICATIONS IN A PRINCIPIES COURSE OF ECONOMIC ANALYSIS TO SEIF-DISCOVERED ITEMS

by

Robert V. Horton

Paper No. 354 - June 1972

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This Institute Paper constitutes the body of an entry in the 1970-71 Kazanjian Awards Program for the Teaching of Economics which received a College Level award and was summarized in Economic Education Experiences of Enterprising Teachers, vol. 9, New York: Joint Council on Economic Education, and The Calvin K. Kazanjian Economics Foundation, Inc., 1972.

Student Applications in a Principles Course
of Economic Analysis to Self-Discovered Items

1. Objectives and Rationale

Effective economics education cannot be confined to the learning of economic analysis alone, when the purpose of such education is properly to help students understand better the world about them, as it is now and as it promises to be throughout their lifetimes, and to assist them toward participation in more rational social decisions.

Accordingly, it becomes essential that students learn to see economics in things - in their experiences, in their readings, and in their conversations - and to apply economic analysis appropriately in considering them. Without the development of these facilities, how can education in economics be meaningful to students ("relevant") or useful?

The students in Economics 519, The Meaning of Price Theory, at Purdue University are prospective teachers, and training in scenting economics in things and applying economic analysis to them are essential for them just as for other individuals, but importantly also for them as prospective teachers of their own students in the social studies. They must pass on to their own students the same training, in order to achieve the same objectives.

2. Steps and Procedures

In addition to other devices to the same ends, I have accordingly asked my Economics 519 students since the fall term in 1967 to discover

items in their reading, whether of history or other course literature, of magazines, or of newspapers (news items, advertisements, editorials, or cartoons), items which are succeptible to simple economic analysis; to analyze them, to state whether they are right or wrong on the basis of their analysis, and to tell why the item and its analysis would or would not be valuable in their own teaching.

This requirement substituted - and I believe advantageously - for a former one to write a term paper, generally upon some economic problem of individual student choice.

Originally under the new practice, I required three such papers during the term, but in response to experience, I later also provided a sample paper for their guidance, and then finally I sketched out the beginning analysis of an item, required each student to complete it in an indicated structure, and thereafter distributed a sample paper as to the same item as completed by me. Three subsequent papers continue as to items discovered by the student himself to be required.

The memorandum to students as to the requirement; the sample item, beginning analysis, and structural suggestions for its completion; and the paper as completed by me as to the sample item are attached as Annexes A, B, and C, respectively, and are self-explanatory.

Class time relative to the assignments and their completion has been minimal, but there is, of course, an opportunity for student questions as to the assignments. Moreover, general comments as to student work may be made in class after the grading of any set of the resulting papers.

Student conferences as to the items they plan to analyze are encouraged, but are not widely undertaken by the students. Occasionally there is also a conference as to a completed, graded paper.

Grading of the papers is of course time consuming, particularly when I try to indicate both points of approval and of question, but probably less still than would be expected, because of the present detailed specifications as to the assignments and the student practice in the more structured preparation of the preliminary paper now required.

This set of procedures has, then, been used in approximately the present form during several terms, including the fall term of 1970. During the spring term of 1971 I was on leave for somewhat more than the first half of the class sessions, and a modified, restricted use of the device resulted, which I believe was valuable student experience, but not so valuable as the established full procedure.

3. Resources Used

Resources other than those cited above and annexed to this report, and other than student and teacher time devoted to the procedures, are not germane to, or required, specifically, for this particular project. Students of course can and do use their texts (Campbell R. McConnell: Economics: Principles, Problems, and Policies. New York, McGraw-Hill and Leonard Weiss: Economics and American Industry. New York, Wiley), as well as any other references they may choose. Occasionally the teacher also is found using references, including even advanced ones, for judging more fairly some of the student analysis presented.

4. Evaluation of the Procedure

The nature of the procedure is such that objective evaluation has seemed inapplicable. Dual or multiple grading of papers would be a possibility, but it has not been undertaken.

Attached as Annexes D and E are sample papers exactly as submitted by the different students of the spring of 1971 class, but including my comments and gradings (A in each case).*

The quality of work of the class as a whole may be indicated by the distribution of my gradings (subjective, of course) of the papers of all of the students in this particular class: 39% A, 22% A-, 11% B, and 28% C. The median grade was thus A-.

In previous classes, except for occasional copouts, there is a progression of improvement from paper # 1 to paper # 3, but it does not show clearly in my gradings, because I progressively raise the standard, consciously and also perhaps, further, unconsciously.

Students obviously discover items in their general reading which can be subjected to economic analysis. That they search for such items is suggested by the surprisingly small overlap rate in the use of identical items of only about 5%.

One would expect at least some transfer from the experience, so that students continue to be more facile in scenting economics in their continuing life experience and in their reading. Certainly, too,

---

* These were the first (and only) such papers required in this particular term, a result of my having been on leave for somewhat more than its first half. Thus, these particular papers did not have the benefit of prior practice, although the students did have the advantage of the course having progressed further by the due date of the papers. Moreover, a grade on this single paper substituted for the average of four grades on four papers in the usual practice.

they are exposed to practice in applying economics analysis, a cross-fortification with what they are required to do in other activities of their Economics 519 course, including examinations.

In the discovery by the students of the items to be analyzed and in its analysis there is of course created some self-motivation. Occasionally self-discovery has even been reflected to the teacher. The finding of the item, or the completion of the analysis, has led also to occasional indications to me of self-satisfaction on the part of a student.

To some extent it can reasonally be expected that students will be led by their experience with their papers to see opportunities to apply what they have learned in other non-economics courses to what they experience in their lives and in their reading. A more rational reaction to what they experience is thus encouraged.

5. Solicited Student Comments: Spring Term 1971

In preparation for this entry I solicited written comments as to the experience from members of the class, using the following inquiry form:

> "I would appreciate having any comment you may wish to make as to whether or not the required paper preparation for Economics 519 was useful to you in learning and applying economic analysis or to the teaching of it. Your response may be anonymous if you wish".

Responses on this at least semi-voluntary basis were received from 78% of the class members, of which 57% were anonymous, with 43% volunteering their names or initials. I would consider all but one

response generally favorable to the experience. This one, of a student doing C level work and currently involved in campus political activities, and I would think, fatigued, wrote "effective, but for what? -- I believe economics should be a fairly structured presentation." Another student said the experience was "worthwhile", although "benefit is slight beyond maybe to "help answer 1 or 2 questions on an exam."

On the contrary, 86% of those responding specifically said the experience was useful, worthwhile, or beneficial, including 21% of those responding who said "very beneficial."

Among the student comments were "stimulated interest," "related to present day interests," "this is where it's at," "would pass over (the item) without this experience," "got us thinking," "provided a basis for logically reaching a conclusion," and "helped in joining a problem and its solution --- and the use of graphs." One student likedthe flexibility allowed, and another appreciated the sample paper distributed.

Two students suggested that more such papers should be required, one "even with the limited time" (in most terms more papers are required).

Two other students suggested reporting some or all of the paper findings to the class as a whole, and another that the "quotes" found should be discussed in class. It was also suggested by one student that two persons might be asked to work together as a team on an item, rather than individually.

ANNEX A

519 - F 70

Economics 519

Four Applications of Economic Analysis

Each student is to submit four 2 page papers applying microeconomic analysis to statements which (for the last three papers) the student extracts from newspapers, magazines, histories, or other sources. Due dates are:

Preliminary Paper:	On or before:	Wednesday, October 13
First Paper:	On or before:	Wednesday, November 3
Second Paper:	On or before:	Monday, November 29
Third Paper:	On or before:	Monday, January 10

What you are expected to do is:

1. Find and quote in your paper (identifying its source, if from a periodical, and its date) a statement susceptible of microeconomic analysis, which statement may be either correct or incorrect when analyzed. It is probably more fun, more revealing, and safer to work with an incorrect statement. (The item for the preliminary paper of each class member will be provided for you.)

2. State the applicable economic analysis as simply as possible, but you may use graphs as tools if they are applicable. The statement of the analysis is to be your own, not an extract from a text, although original analysis is not expected. If your analysis is of equilibrium or of a change in supply or demand, you are not asked to derive the supply and demand curves themselves. (Some of the analysis, as well as some guides for completion of the preliminary paper, will be provided for you.) Elasticity need be specified or estimated only if it is essential to the results of the analysis.

   If less than one, or more than two, graphs are to be used, the matter must be cleared in advance with the teacher.

3. State on the basis of your analysis, whether the statement is correct or incorrect.

4. State why the analysis you apply is worth teaching in the schools. Usually this will be to teach supply and demand analysis, either in the product markets or in the factor markets, which analysis, when learned, is applicable to many other such statements and ideas, but it might also be to teach other widely-applicable economic analysis, as of scarcity, the production possibilities curve, specialization, or opportunity costs, for example.

Consider also motivation of students in the unit you develop.

You are encouraged to discuss with the teacher, in advance of preparing each of the last three papers, the item which you propose to analyze and how you propose to analyze it. You should have no trouble in finding items to use, if you keep the requirements in mind during your general reading, reading for other courses, etc. But you may have trouble in restricting yourself to one point for adequate analysis within the required content limits, and this restriction is essential for an adequate paper and a valuable unit.

ANNEX B

519 - Fall 71

Name: _____
Economics 519
Preliminary Class Paper Assignment
Date: _____

1. The Item

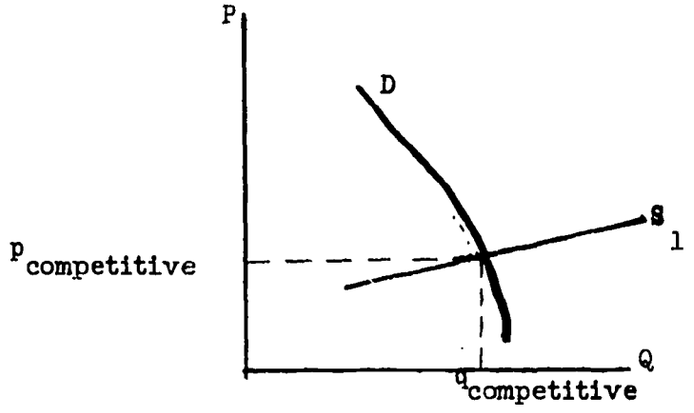
"Smokers of Marijuana Now Find Cost Can Be Higher Than Effect. Crackdown on Mexican 'Grass' Cuts Supply, Raises Price".

-- The Wall Street Journal

* The date of appearance should be stated, but I do not have it. A facsimile copy of the item appears as Exhibit A hereto.

2. Analysis

Shown below is a hypothetical supply and demand diagram for marijuana in the United States in 1969. Pure competition seems reasonably to be assumed. Supply is shown as relatively elastic, because of (1) the comparatively small market for the crop relative to the land which can be diverted to its production and (2) the rapid growing period of "grass". Demand is shown as relatively inelastic at competitive prices, on the assumptions of (1) no really satisfactory substitute, (2) the higher cost to users of alcoholic beverages relative to competitive prices for "grass", (3) the dangers in use of some other "substitutes", (4) habit (?), and (5) the small amounts spendable for marijuana at competitive prices relative to incomes.



Marijuana
U.S.A. 1969

Free-market competitive p and q are shown.

a. Draw in a new hypothetical Supply Curve resulting from the "crackdown" on marijuana.

b. Show the resulting $p_{controlled}$ and $q_{controlled}$ of "grass".

c. Is the $p_{controlled}$ much higher than the $p_{competitive}$? The $q_{controlled}$ than the $q_{competitive}$?

d. Identify the amount of money per unit of $q_{controlled}$ available for increased costs of the "grass" under the control, for large profits in encouragement of its criminal producers and distributors, for bribery and intimidation of enforcement personnel, for "pushing", etc. (Hint: Isn't necessary cost per unit shown by points on the S_1 supply curve?). (Note that the amount to be identified is not the change in price.)

e. Show the total amount of money available for such things under the control (Hint: Isn't that $q_{controlled}$ multiplied by the difference between $p_{controlled}$ and cost per unit of $q_{controlled}$, and isn't the area of a rectangle the product of its two sides?) (Note that the total amount to be identified is not the change in total revenue.)

f. Write a continuation of the analysis to reflect the points you have developed.

3. Write a statement as to the correctness or incorrectness of the quotation from the item stated in 1 above.

4. Write a statement of the reasons why or why not the item and the analysis should be taught in the schools.

Exhibit A has been omitted for reproduction purposes. The article, "Smokers of Marijuana Now Find Cost Can Be Higher Than Effect--Crackdown on Mexican 'Grass' Cuts Supply, Raises Price; Riskier Substitutes Feared," by Peggy J. Murrell from the Wall Street Journal.

ANNEX C

519 Fall 1971

Billy Graham
Economics 519
Preliminary Class Paper
January 12, 1970

1. The Item

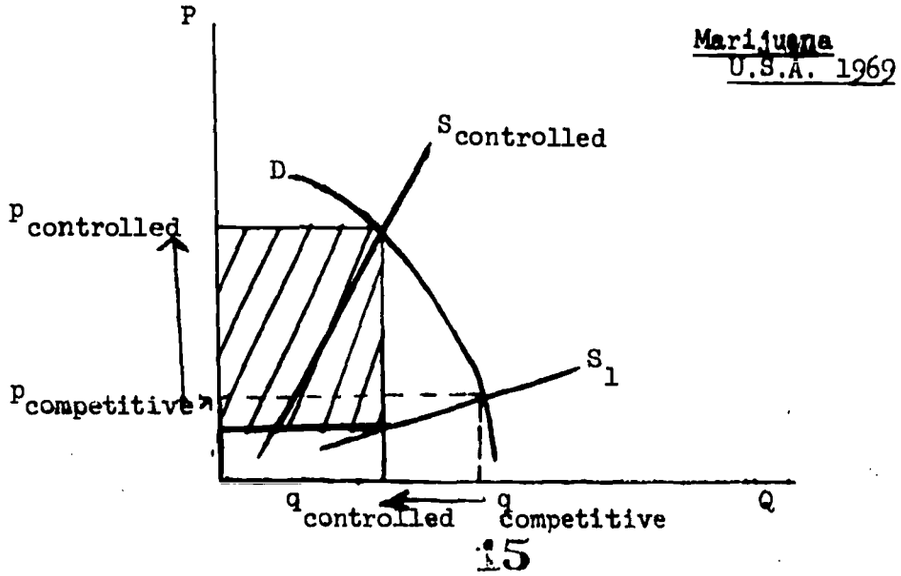
"Smokers of Marijuana Now Find Cost Can Be Higher Than Effect. Crackdown on Mexican 'Grass' Cuts Supply, Raises Price".

-- The Wall Street Journal

* The date of appearance should be stated, but I do not have it. A facsimile copy of the item appears as Exhibit A hereto.

2. Analysis

Shown below is a hypothetical supply and demand diagram for marijuana in the United States in 1969. Pure competition seems reasonably to be assumed. Supply is shown as relatively elastic, because of (1) the comparatively small market for the crop relative to the land which can be diverted to its production and (2) the rapid growing period of "grass". Demand is shown as relatively inelastic at competitive prices, on the assumptions of (1) no really satisfactory substitute, (2) the higher cost to users of alcoholic beverages relative to competitive prices for "grass", (3) the dangers in use of some other "substitutes", (4) habit (?), and (5) the small amounts spendable for marijuana at competitive prices relative to incomes.



Free-market competitive p and q are shown. With the increased restriction of marijuana distribution from the "crackdown", there results the hypothetical $S_{controlled}$ function as shown and the reduced $q_{controlled}$ and greatly increased $p_{controlled}$ of "grass".

With this $q_{controlled}$ we have a large difference between $p_{controlled}$ and the free market cost of production of $q_{controlled}$ (shown for the quantity $q_{controlled}$ on the supply curve S_1 of a free market). The crosshatched area then shows the total amount of money that becomes available for increased costs of the "grass" under the control, for large profits in encouragement of its criminal producers and distributors, for bribery and intimidation of enforcement personnel, for "pushing", etc.. Supply controlled is shown as having some elasticity, because higher prices will encourage more violation of law, etc.

3. Correctness

The diagram confirms the markedly higher price of "grass" resulting from the "crackdown", the curtailed availability of "grass", and the resulting bases for substitution of lower quality "grass", and of other items, as stated in the article.

4. Why Teach?

The application of economic analysis to subjects in which students have an interest, marijuana and crime, can increase student interest in economics and their motivation to study it. Moreover, the application employs simple tools of economic analysis, supply and demand curves, which have wide usefulness in applications of economic analysis to other problems. Finally, the showing of incentives to crime from the interference with free markets adds an important factor to be considered in determining the social wisdom of such interference, if the social stakes do not justify it.

Annex D

"Farm Labor Problems
Affect Consumers"[1]

I. "If too many producers are forced out of business, food is scarce and prices to the consumers soar." *

* Hoosier Farmer, January, 1971

II. In exhibit A, a demand and supply schedule for labor is shown as is faced by the individual farmer. W_1 and Q_1 are assumed to be the equilibrium levels of wages and labor supplied in the competitive labor market. However, with union activity threatening and eventually demanding a higher wage level, say W_2, the individual farmer will demand fewer units of labor while at the same time more units will be available. These respective values are represented as Q_{2d} and Q_{2s}. The difference between these two values is the surplus labor now existing in the market. Notice that Q_{2d} is less than the equilibrium level of labor used at Q_1. The wage increase has forced the original quantity of units of labor used to decline; to be replaced by other factors of production representing lesser costs per unit of output. All presently border-line profitable farmers will be forced out of the market by the increased production costs.

[1] The title of the editorial selected for analysis.

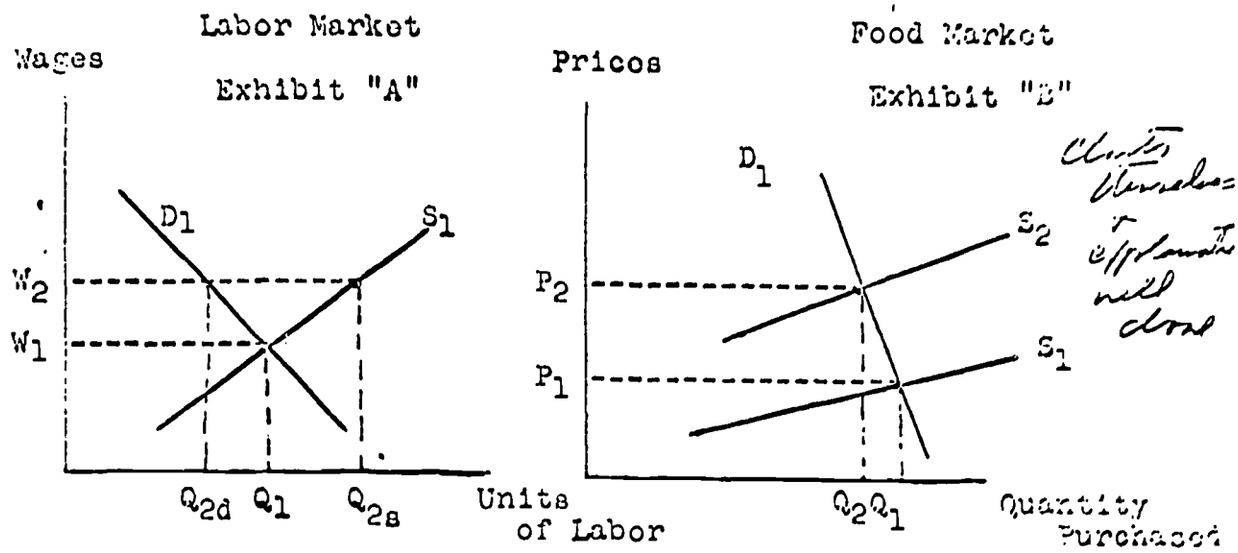


Exhibit B shows the demand and supply schedule faced by the individual food purchaser. Notice that the demand is very inelastic while at the same time the supply is very elastic. It is important to remember that some individual farmers will be forced from the farming industry and that the costs of farming have been driven up. As a result, the equilibrium price P_1 will be pushed to the new price P_2 by a decrease in the supply of food products. This decrease in supply is represented by S_2. The inelasticity of the demand for food can be seen by the small decrease in quantity demanded in relation to the much larger general price increase.

In summary, higher wages paid to farm labor will force some farmers into unprofitable situations. As a result, these farmers will attempt to use lesser amounts of the

more costly resource -labor in this case- and more of less costly resources. In any event farms will be less profitable and many will fail, decreasing the supply of food products to the consumer and driving food prices up.

III. In the analysis and with the use of exhibits A and B one can see that the result implied in the statement used is possible; indeed probable under such cost pressures.

IV. The item selected is a worth-while teaching area due to the ability to see the supply and demand diagrams faced by both the producer and the consumer. It leaves many areas of argumentative debate open which would tend to motivate student discussion. It opens areas for further research such as; what is the value of unionism to the society as a whole, or, what alternatives are available to a producer faced with rising production costs.

ANNEX E

519 Spring 1971

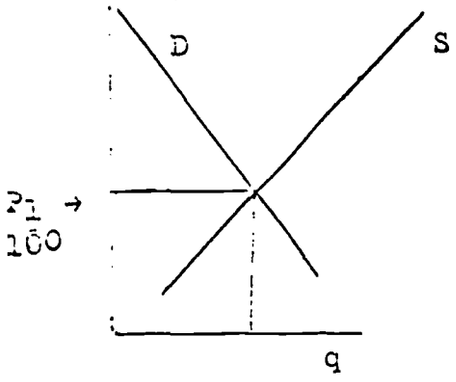
(4)

Jackie Selesnick
Economics 519
April 26, 1971

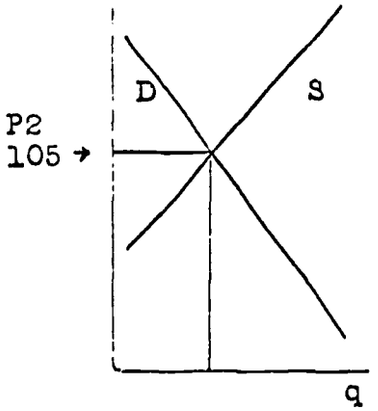
1. Item: "Mercury Montego's $2798 price buys you more car today for less than 12 years ago. Montego is a good remedy for your shrinking Dollar..."

---Life Magazine
April 1971

2. Analysis: Shown below are comparative graphs of the market for Ford model "X" in 1959 and 1971. Assuming that the demand for Fords has not changed much, the demand curve is shown as the same in both graphs. Costs of factors of production, however, have gone up considerably, causing a shift of the supply curve to the left. The result is a higher equilibrium price for the car in 1971 when compared to 1959. Assuming P_1 (1959) as 100, we must add P_1 and cost inflation to derive P_2 (1971).



Ford model "X"
1959



Ford model "X"
1971

P_1 = 100
Assume 5% inflation

$P_1 + (P_1 \cdot x\ 5\%) = P_2$

$100 + (5) = 105$

3. Correctness--new analysis: The above is the simple face-value evaluation of a seemingly obvious truth. However, a little deeper analysis can reveal a fundamental error in this argument. Granted, the quality of the item increased along with cost inflation. But is the car a better buy to the individual in 1971? Here is what you really have to consider to determine the validity of Ford's claim--marginal utility/dollar ?. Marginal utility is more than a price consideration It is utility to the consumer per dollar spent. McConnel uses the example of Ford and Cadillac. Though a man may be twice as happy with a Cadillac than a Ford, the Cadillac cost three times more than the Ford. To Man #1 Ford may be a better buy per dollar spent. By the same token, Man # 2 may get three times more pleasure from owning the Caddy. Let's look at this mathematically.

M.U.= Marginal utility measured in utils

Man #1:

	Ford		Caddy		
$\frac{M.U.}{P}$ =	$\frac{1000}{2000}$	>	$\frac{2000}{6000}$	:	$\frac{1}{2} > \frac{1}{3}$

Man # 1:

$$\frac{M.U.}{P} = \frac{\text{Ford}}{2000} = \frac{\text{Caddy}}{6000} : \frac{1}{2} = \frac{1}{2}$$

Man # 2 May go ahead and buy the More glamorous Caddy Since his relative satisfaction per dollar spent would be equal for both cars.

Now when we apply this argument to the Montego ad we get an interesting situation. For the individual to buy the 1971 Ford, the marginal utility in 1971 must be at least at least 105 utils.

$$\frac{M.U.\ 1959}{P_1\ 1959} < \frac{M.U.\ 1971}{P_2\ 1971} : \frac{100}{100} < \frac{x}{105} : x \geq 105$$

Boiled down this means that the improved quality--hide away headlights, seat belts, power windows, etc.--must be worth 5 utils to the consumer.

The P. R. men of Ford Mot's designed the Ad assuming that the improvements in the Montego are desired by the consumers. But suppose Bill Jones likes standard headlights and manual windows. The quality improvements do not add any marginal utility for Bill Jones while the price is greater than the old model. For Bill Jones the 1971 Montego is a worse buy because he is paying more for less or at best the same amount of personal usefulness.

4. <u>Why Teach?</u>: This lesson would be valuable on several levels. It is a simple example of how inflation manipulates the supply curve and causes an increase in price. Secondly, the example is a good way to teach marginal utility. It is a familiar example that students can relate to. Third, the example shows that advertisements that may look utopian on the surface, may not be so economically advantageous to <u>every</u> consumer. Personal factors of each individual consumer influence the real value of a commodity.

10-1-71

The following is a listing of Institute Papers which are still in supply. Copies may be obtained from the Secretary of the Institute Paper and Reprint Series, Krannert Graduate School of Industrial Administration, Purdue University, Lafayette, Indiana 47907.

Paper No.	Title and Author(s)
83	A CLASS OF UTILITY FUNCTIONS ADMITTING TYRNI'S HOMOGENEOUS SAVING FUNCTION, Peter Jason Kalman.
84	PROFESSOR PEARCE'S ASSUMPTIONS AND THE NONEXISTENCE OF A UTILITY FUNCTION, Peter Jason Kalman.
101	CLASSIFICATION OF INVESTMENT SECURITIES USING MULTIPLE DISCRIMANANT ANALYSIS, Keith V. Smith
111	AN APPLICATION OF MULTIPLE DISCRIMINANT ANALYSIS, Ronald Kochems.
113	A STUDY OF PERFORMANCE IN A BUSINESS GAME--REPORT I., R. K. James, W. H. Starbuck and D. C. King.
123	A NOTE ON KONDRATIEFF CYCLES IN PREWAR JAPAN, Charles R. Keen.
124	THE DUALITY IN NATURE OF OFFERINGS OF ADDITIONAL COMMON STOCK BY MEANS OF "RIGHTS," Robert V. Horton.
134	A CALCULUS PROOF OF THE UNBIASEDNESS OF COMPETITIVE EQUILIBRIUM, Mohammed A. El-Hodiri.
136	HONESTY, DECEIT AND TIMING IN THE DISPLAY OF INTENTIONS, Marc Pilisuk, J. Alan Winter, Reuben Chapman and Neil Hass.
138	BOREDOM VS. COGNITIVE REAPPRAISAL IN THE DEVELOPMENT OF COOPERATIVE STRATEGY, Marc Pilisuk, Paul Skolnick, Kenneth Thomas and Reuban Chapman.
139	AN INVESTIGATION OF THE RANDOM WALK HYPOTHESIS AS AN EXPLANATION OF THE BEHAVIOR OF ECONOMIC TIME SERIES, John A. Eisele, Robert Burr Porter and Kenneth C. Young.
144	ON IMPLICATIONS OF PRODUCTIVITY COEFFICIENTS AND EMPIRICAL RATIOS, Harry Schimmler.
147	DEPTH, CENTRALITY AND TOLERANCE IN COGNITIVE CONSISTENCY, Marc Pilisuk.
148	THE GENERAL INCONGRUITY ADAPTATION LEVEL (GIAL) HYPOTHESIS--II. INCONGRUITY MOTIVATION TO AFFECT, COGNITION, AND ACTIVATION-AROUSAL THEORY, Michael J. Driver and Siegfried Streufert.

Paper No.	Title and Author(s)
151	SOME DETERMINANTS OF FEELINGS OF GRATITUDE, Abraham Tesser, Robert D. Gatewood and Michael Driver.
153	THE ENFIELD ARSENAL IN THEORY AND HISTORY, Edward Ames and Natham Rosenberg.
154	HEROES AND HOPLESSNESS IN A TOTAL INSTITUTION: ANOMIE THEORY APPLIED TO A COLLECTIVE DISTURBANCE, Robert Perrucci.
155	REGIONAL ALLOCATION OF INVESTMENT: A FURTHER ANALYSIS, Akira Takayama.
158	TWO CLASSICAL MONETARY MODELS, Cliff Lloyd.
160	PRINCIPLES OF CHOICE AND PREFERENCE, S. N. Afriat.
161	THE PURCHASING POWER PARITY THEORY: IN DEFENSE OF GUSTAV CASSEL AS A MODERN THEORIST, James M. Holmes.
162	HOW CHARLIE ESTIMATES RUN-TIME, John M. Dutton and William H. Starbuck.
163	PER CAPITAL CONSUMPTION AND GROWTH: A FURTHER ANALYSIS, Akira Takayama.
164	THE PROBABILITY OF A CYCLICAL MAJORITY, Frank De Meyer and Charles R. Plott.
165	CREATIVITY, COMPLEXITY THEORY AND INCONGRUITY ADAPTATION, Siegfried Streufert and Michael J. Driver.
166	THE CLASSROOM ECONOMY: RULES, RESULTS, REFLECTIONS, John A. Carlson.
167	AN ACTIVITY MODEL OF THE FIRM UNDER RISK, Carl R. Adams.
168	INTERACTION PATTERNS IN INTERPERSONAL COMMUNICATION, Charles W. King and John O. Summers.
169	TAXES AND SHARE VALUATION IN COMPETITIVE MARKETS, Vernon L. Smith.
171	PROGRAMMING, PARETO OPTIMUM AND THE EXISTENCE OF COMPETITIVE EQUILIBRIA, Akira Takayama and Mohamed El-Hodiri.
173	REGRESSION AND PROJECTION, S. N. Afriat.

Paper No.	Title and Author(s)
177	DYNAMICS OF DECISION-MAKING BEHAVIOR: THEORY, AND APPLICATION TO FOUR EXPERIMENTAL LABORATORY PROBLEMS, John M. Dutton and E. Olsen.
178	ON THE STRUCTURE OF OPTIMAL GROWTH PROBLEM, Akira Takayama.
179	OPTIMAL INSURANCE COVERAGE, Vernon L. Smith.
180	A NEW APPROACH TO DISCRETE MATHEMATICAL PROGRAMMING, G. W. Graves and A. B. Whinston.
181	EXPERIMENTING WITH THE ARMS RACE, Marc Pilisuk and Paul Skolnick.
184	THIRD PARTY ROLES IN INTERDEPARTMENTAL CONFLICTS, Richard E. Walton.
186	REGIONAL ALLOCATION OF INVESTMENT: CORREGENDUM, Akira Takayama.
187	A SUGGESTED NEW MONETARY SYSTEM: THE GOLD VALUE STANDARD, Robert V. Horton.
193	MULTI-COMMODITY NETWORK FLOWS WITH MULTIPLE SOURCES AND SINKS, B. Rothchild and A. Whinston.
195	A TAXONOMY OF MAGAZINE READERSHIP APPLIED TO PROBLEMS IN MARKETING STRATEGY AND MEDIA SELECTION, E. A. Pessemier and D. J. Tigert.
198	OPTIMAL DISPOSAL POLICIES, Carl Adams.
199	AN EXPERIMENT TESTING THE PREDICTIVE VALIDITY OF HIS SAVAGE - VON NEUMAN AXIOMS OF PROBABILITY, Lawrence S. Zudak.
202	SOME FORMULAS ENCOUNTERED IN THE DEDUCTIVE ANALYSIS OF THIRD-ORDER AUTOGRESSION PROCESS, R. L. Basmann and R. J. Rohr.
214	RECIPROCITY, EQUIVALENCE, NORMATIVE BEHAVIOR AND THE EXISTENCE OF SOCIAL PRICES, Kathryn and Cliff Lloyd.
215	A CONVERGENT PARETO-SATISFACTORY NON-TATONNEMENT ADJUSTMENT PROCESS FOR A CLASS OF UNSELFISH EXCHANGE ENVIRONMENTS, John O. Ledyard.
216	FEDERALIZATION VS. A UNIFORM STATE CODE FOR WORKMEN'S COMPENSATION, Phillip J. Scaletta, Jr.

Paper No.	Title and Author(s)
217	ON A "CONCAVE" CONTRACT CURVE, Akira Takayama.
218	THE EFFECTS OF FISCAL AND MONETARY POLICIES UNDER FLEXIBLE AND FIXED EXCHANGE RATES, Akira Takayama.
219	A MATCHING THEOREM FOR GRAPHS, D. Kleitman, A. Martin-Lof, B. Rothchild and A. Whinston.
221	USING LABORATORY BRAND PREFERENCE SCALES TO PREDICT CONSUMER BRAND PURCHASES, E. Pessemier, P. Burger, R. Teach and D. Tigert.
224	GENERALIZED OPINION LEADERSHIP IN CONSUMER PRODUCTS: SOME PRELIMINARY FINDINGS, Charles W. King and John O. Summers.
226	THE FIRM AS AN AUTOMATION - I., Edward Ames.
227	SECOND-BEST SOLUTIONS, PEAK-LOADS AND MARGINAL COST PRICE POLICIES FOR PUBLIC UTILITIES, Robert A. Meyer, Jr.
228	EQUIPMENT REPLACEMENT UNDER UNCERTAINTY, Robert A. Meyer, Jr.
230	SELLING COMPETITION AND THE THEORY OF OLIGOPOLY, A. Cotta.
231	A COMMODITY THEORY ANALYSIS OF PERSUASION, Howard L. Fromkin and Timothy C. Brock.
232	A FLEXIBLE TREE SEARCH METHOD FOR INTEGER PROGRAMMING PROBLEMS, Ph. Tuan Nghiem.
233	ECONOMIC EFFECTS OF UNIFORM CONSUMER CREDIT CODE: A COMMENT, David C. Ewert.
234	OPTIMAL ADVERTISING EXPENDITURE IMPLICATIONS OF A SIMULTANEOUS-EQUATION REGRESSION ANALYSIS, Leonard J. Parsons and Frank M. Bass.
236	TRADE CREDIT MANAGEMENT: SELECTION OF ACCOUNTS RECEIVABLE USING A STATISTICAL MODEL, David C. Ewert.
237	OPPOSITION OF PREFERENCES AND THE THEORY OF PUBLIC GOODS, Robert A. Meyer, Jr.
238	THE TAXATION OF RESTRICTED STOCK COMPENSATION PLANS, G. W. Hettenhouse and Wilbur G. Lewellen.

Paper No.	Title and Author(s)
239	DECOMPOSABLE REGRESSION MODELS IN THE ANALYSIS OF MARKET POTENTIALS, Frank M. Bass.
241	OPPORTUNITY COSTS AND MODELS OF SCHOOLING IN THE NINETEENTH CENTURY, Lewis Solmon.
242	ESTIMATING FREQUENCY FUNCTIONS FROM LIMITED DATA, Keith C. Brown.
246	ON OPTIMAL CAPITAL ACCUMULATION IN THE PASINETTI MODEL OF GROWTH, S. C. Hu.
247	MODELS FOR NEW-PRODUCT DECISIONS, Edgar A. Pessemier.
250	MONEY, INTEREST AND POLICY, P. H. Hendershott and George Horwich.
251	ON THE PEAK-LOAD PROBLEM, Akira Takayama.
252	A STUDY OF ATTITUDE THEORY AND BRAND PREFERENCE, Frank M. Bass and W. Wayne Talarzyk.
253	A NOTE ON TECHNICAL PROGRESS, INVESTMENT, AND OPTIMAL GROWTH, Sheng Cheng Hu.
254	MANUFACTURERS' SALES AND INVENTORY ANTICIPATIONS: THE OBE COMPUTATIONAL PROCEDURES, John A. Carlson.
255	THE APPLICATION OF THE HIRSCH-DANTZIG "FIXED CHARGE" ALGORITHM TO PROFIT PLANNING: A FORMAL STATEMENT OF PRODUCT PROBITABILITY ANALYSIS, Roger Groves, Rene Manes and Robert Sorenson.
256	TWO ALGORITHMS FOR INTEGER OPTIMIZATION, Edna Loehman, Tuan Ph. Nghiem and Andrew Whinston.
258	COMMODITY EXPORTS FROM THE BRITISH NORTH AMERICAN COLONIES TO OVERSEAS AREAS, 1768-1772: MAGNITUDES AND PATTERNS OF TRADE, James Shepherd.
260	AGE-DEPENDENT UTILITY IN THE LIFETIME ALLOCATION PROBLEM, Kenneth Avio.
261	AFFECTIVE AND VALUATIONAL CONSEQUENCES OF SELF-PERCEIVED UNIQUENESS DEPRIVATION: I. HYPOTHESES AND METHODOLOGICAL PRESCRIPTIONS, Howard Fromkin.

Paper No.	Title and Author(s)
262	AFFECTIVE AND VALUATIONAL CONSEQUENCES OF SELF-PERCEIVED UNIQUENESS DEPRIVATION: II. EXPERIMENTALLY AROUSED FEELINGS OF SELF PERCEIVED SIMILARITY AS AN UNDESIRABLE AFFECTIVE STATE, Howard Fromkin.
263	AFFECTIVE AND VALUATIONAL CONSEQUENCES OF SELF-PERCEIVED UNIQUENESS DEPRIVATION: III. THE EFFECTS OF EXPERIMENTALLY AROUSED FEELINGS OF SELF PERCEIVED SIMILARITY UPON VALUATION OF UNAVAILABLE AND NOVEL EXPERIENCES, Howard Fromkin.
264	AIR POLLUTION AND HOUSING: SOME FINDINGS, Robert J. Anderson, Jr. and Thomas D. Crocker.
265	APPLICATION OF REGRESSION MODELS IN MARKETING: TESTING VERSUS FORECASTING, Frank M. Bass.
267	A LINEAR PROGRAMMING APPROACH TO AIRPORT CONGESTION, Donald W. Kiefer.
268	ON PARETO OPTIMA AND COMPETITIVE EQUILIBRIA, PART I. RELATIONSHIP AMONG EQUILIBRIA AND OPTIMA, James C. Moore.
269	ON PARETO OPTIMA AND COMPETITIVE EQUILIBRIA, PART II. THE EXISTENCE OF EQUILIBRIA AND OPTIMA, James C. Moore.
270	COMMODITY IMPORTS INTO THE BRITISH NORTH AMERICAN COLONIES FROM SOUTHERN EUROPE AND THE WEST INDIES, 1768-1772, James F. Shepherd.
271	A COMPARISON OF THREE MULTI-PRODUCT, MULTI-FACILITY BATCH SCHEDULING HEURISTICS, David R. Denzler.
272	A REPRESENTATION OF INTEGER POINTS IN POLYHEDRAL CONE, Ph. Tuan Nghiem.
273	LINE OF BUSINESS REPORTING - A METHODOLOGY FOR ESTIMATING BENEFITS, Russell M. Barefield.
274	MARKETING APPLICATIONS OF SELF-DESIGNATED OCCUPATION SKILL VARIABLES, E. A. Pessemier and D. J. Tigert.
275	THE FULL-EMPLOYMENT INTEREST RATE AND THE NEUTRALIZED MONEY STOCK, Patric H. Hendershott.
276	SOME APPLICATIONS OF THE CHANGE OF BASE TECHNIQUE IN INTEGER PROGRAMMING, Ph. Tuan Nghiem.

Paper No.	Title and Author(s)
277	A WELFARE FUNCTION USING "RELATIVE INTENSITY" OF PREFERENCE, Frank DeMeyer and Charles R. Plott.
278	COMPLEX DECISION MAKING IN THE TRUEL: EFFECTS OF THIRD PARTY INTERVENTION, Siegfried Streufert and Howard L. Fromkin.
279	RACE AND COMPETENCE AS DETERMINANTS OF ACCEPTANCE OF NEW-COMERS IN SUCCESS AND FAILURE WORK GROUPS, Howard L. Fromkin, Richard J. Klimoski, and Michael F. Flanagan.
280	LEADERSHIP, POWER AND INFLUENCE, Donald C. King and Bernard B. Bass.
281	RECENT RESULTS IN THE THEORY OF VOTING, Charles R. Plott.
282	DISAGGREGATION OF ANALYSIS OF VARIANCE FOR PAIRED COMPARISONS: AN APPLICATION TO A MARKETING EXPERIMENT, Edgar A. Pessemier and Richard D. Teach.
283	MARKET RESPONSE TO INNOVATION, Further Applications of the Bass New Product Growth Model, John V. Nevers.
284	PROFESSIONALISM, UNIONISM, AND COLLECTIVE NEGOTIATION: TEACHER NEGOTIATIONS EXPERIENCE IN CALIFORNIA, James A. Craft.
285	A FREQUENCY DOMAIN TEST OF THE DISTURBANCE TERM IN LINEAR REGRESSION MODELS, Thomas F. Cargill and Robert A. Meyer.
286	EVALUATING ALTERNATIVE PROPOSALS AND SOURCES OF NEW INFORMATION, Edgar A. Pessemier.
287	A MULTIVARIATE REGRESSION ANALYSIS OF THE RESPONSES OF COMPETING BRANDS TO ADVERTISING, Frank M. Bass and Neil E. Beckwith.
288	ASSESSING REGULATORY ALTERNATIVES FOR THE NATURAL GAS PRODUCING INDUSTRY, Keith C. Brown.
289	TESTING AN ADAPTIVE INVENTORY CONTROL MODEL, D. Clay Whybark.
290	CONSERVATISM IN INFORMATION PROCESSING IN MANAGEMENT INFORMATION SYSTEMS, Richard O. Mason and Herbert Moskowitz.
291	THE LABOR ASSIGNMENT DECISION: AN APPLICATION OF WORK FLOW STRUCTURE INFORMATION, William K. Holstein and William L. Berry.

Paper No.	Title and Author(s)
294	AN EFFICIENT BRANCH AND BOUND ALGORITHM FOR THE WAREHOUSE LOCATION PROBLEM, Basheer M. Khumawala.
295	THE INTERACTION OF GROUP SIZE AND TASK STRUCTURE IN AN INDUSTRIAL ORGANIZATION, Robert C. Cummins and Donald C. King.
296	PROJECT AND PROGRAM DECISIONS IN RESEARCH AND DEVELOPMENT, Edgar A. Pessemier and Norman R. Baker.
297	DATA QUALITY IN MARKETING INFORMATION SYSTEMS, E. A. Pessemier.
298	SEGMENTING CONSUMER MARKETS WITH ACTIVITY AND ATTITUDE MEASURES, Thomas Hustad and Edgar Pessemier.
299	R & D MANAGERS' CHOICES OF DEVELOPMENT POLICIES IN SIMULATED R & D ENVIRONMENTS, Herbert Moskowitz.
300	DILUTION AND COUNTER-DILUTION IN REPORTING FOR DEFERRED EQUITY, Charles A. Tritschler.
301	A METHODOLOGY FOR THE DESIGN AND OPTIMIZATION OF INFORMATION PROCESSING SYSTEMS, J. F. Nunamaker, Jr.
303	ON PRODUCTION FUNCTIONS AND ELASTICITY OF SUBSTITUTION, K. R. Kadiyala.
304	AN EXPERIMENTAL INVESTIGATION OF DECISION MAKING IN A SIMULATED RESEARCH AND DEVELOPMENT ENVIRONMENT, Herbert Moskowitz.
305	A NOTE ON MONEY AND GROWTH, Akira Takayama.
307	AN EXPERIMENTAL STUDY OF RELATIONSHIPS BETWEEN ATTITUDES, BRAND PREFERENCE AND CHOICE, Frank M. Bass, Edgar A. Pessemier and Donald R. Lehmann.
308	MULTIDIMENSIONAL AND UNIDIMENSIONAL METRIC SCALING OF PREFERENCE FOR JOB DESCRIPTIONS, Raymond E. Hill and Edgar A. Pessemier.
309	WAGES AND HOURS AS SIGNIFICANT ISSUES IN COLLECTIVE BARGAINING, Paul V. Johnson.
310	THE EFFECT OF AGGREGATION IN STANDARD COST REPORTS ON DECISION MAKING SUCCESS, Russell M. Barefield.

Paper No.	Title and Author(s)
311	AN EFFICIENT HEURISTIC ALGORITHM FOR THE WAREHOUSE LOCATION PROBLEM, Basheer M. Khumawala.
312	REACTIONS TO LEADERSHIP STYLE AS A FUNCTION OF PERSONALITY VARIABLES, M. H. Rucker and D. C. King.
313	FIRE FIGHTER STRATEGY IN WAGE NEGOTIATIONS, James A. Craft.
314	TESTING DISTRIBUTED LAG MODELS OF ADVERTISING EFFECT - AN ANALYSIS OF DIETARY WEIGHT CONTROL PRODUCT DATA, Frank M. Bass and Darrall G. Clarke.
315	NEGROES IN LARGE MUNICIPAL FIRE DEPARTMENTS: A LABOR MARKET ANALYSIS, James A. Craft.
316	AN EMPIRICAL INVESTIGATION OF THE RELIABILITY AND STABILITY OF SELECTED ACTIVITY AND ATTITUDE MEASURES, Edgar Pessemier and Albert Bruno.
317	BEHAVIOR OF THE FIRM UNDER REGULATORY CONSTRAINT: CLARIFICATIONS, Mohamed El-Hodiri and Akira Takayama.
318	MEASURING STIMULUS ATTRIBUTES TO PREDICT INDIVIDUAL PREFERENCE AND CHOICE, E. A. Pessemier.
319	THE IMPACT OF ERRONEOUS STANDARDS AND VARYING ENVIRONMENTAL CONDITIONS ON THE SETTING OF DECISION CRITERIA, Russell M. Barefield.
320	DEPRECIATION POLICY AND THE BEHAVIOR OF CORPORATE PROFITS, Russell M. Barefield and Eugene E. Comiskey.
321	LABORATORY RESEARCH AND THE ORGANIZATION: GENERALIZING FROM LAB TO LIFE, Howard L. Fromkin and Thomas M. Ostrom.
322	LOT SIZING PROCEDURES FOR REQUIREMENTS PLANNING SYSTEMS: A FRAMEWORK FOR ANALYSIS, William L. Berry.
323	EXTENSION AND TESTS OF ALTERNATIVE APPROACHES TO MARKET SEGMENTATION, William L. Wilkie.
324	MARKET SEGMENTATION RESEARCH: A CONCEPTUAL ANALYSIS, William L. Wilkie.
325	A DYNAMIC AND PARAMETRIC LINEAR PROGRAMMING APPROACH FOR ANALYZING DECISION TREES IN NORMAL FORM, Herbert Moskowitz.

Paper No.	Title and Author(s)
326	PRIORITY SCHEDULING AND INVENTORY CONTROL IN JOB LOT MANUFACTURING SYSTEMS, William L. Berry.
328	THE EXPECTED RATE OF INFIATION BEFORE AND AFTER 1966: A CRITIQUE OF THE ANDERSEN-CARLSON EQUATION, Patric H. Hendershott.
329	SCHEDULING SHIPMENTS UNDER CONDITIONS OF FREIGHT BREAKS AND QUANTITY DISCOUNTS, D. Clay Whybark.
330	A FURTHER PROBIEM IN LEAD-LAG DETECTION, Robert A. Meyer, Jr.
331	COMPUTER EDUCATION AND OPERATIONS MANAGEMENT, W. L. Berry and D. Clay Whybark.
332	THE SMOOTHING HYPOTHESIS: AN ALTERNATIVE TEST, Russell M. Barefield and Eugene E. Comiskey.
333	CONSERVATISM IN GROUP INFORMATION PROCESSING BEHAVIOR UNDER VARYING MANAGEMENT INFORMATION SYSTEMS, Herbert Moskowitz.
334	PRIMACY EFFECTS IN INFORMATION PROCESSING BEHAVIOR - THE INDIVIDUAL VERSUS THE GROUP, Herbert Moskowitz.
335	ADAPTIVE FORECASTING TECHNIQUES, Stephen D. Roberts and D. Clay Whybark.
336	VEHICIE ROUTING FROM CENTRAL FACILITIES, Brian F. O'Neil, and D. Clay Whybark.
337	A SINGIE-MACHINE MULTI-PRODUCT SCHEDULING HEURISTIC, C. Loren Doll.
338	PIANNED RENEGOTIATION: A NORMSETTING OD INTERVENTION, John J. Sherwood.
339	UNEXPLAINED VARIANCE IN STUDIES OF CONSUMER BEHAVIOR, Frank M. Bass.
340	THE PRODUCTION FUNCTION AS A MODEL OF THE REQUIREMENTS OF THE INFANTRY SERGEANT'S ROIE, Richard C. Roistacher and John J. Sherwood.
341	SEIECTING EXPONENTIAL SMOOTHING MODEL PARAMETERS: AN APPLICATION OF PATTERN SEARCH, William L. Berry and Friedhelm W. Bliemel.
342	AN INTEGRATED EXAMINATION OF MEDIA APPROACHES TO MARKET SEGMENTATION, Albert Bruno, Thomas Hustad & Edgar Pessemier.

Paper No.	Title and Author(s)
343	LABORATORY EXPERIMENTATION, Howard L. Fromkin and Siegfried Struefert.
344	REVERSAL OF THE ATTITUDE SIMILARITY-ATTRACTION EFFECT BY UNIQUENESS DEPRIVATION, Howard L. Fromkin, Robert L. Dipboye and Marilyn Pyle.
345	WILL THE REAL CONSUMER-ACTIVIST PLEASE STAND UP: An Examination of Consumers' Opinions About Marketing Practices and their Relationship to Individual Attitudes and Behavior, Thomas P. Hustad and Edgar A. Pessemier.
346	MULTI-ATTRIBUTE MODELS FOR PREDICTING INDIVIDUAL PREFERENCE AND CHOICE, Edgar A. Pessemier.
347	THE VALUE OF INFORMATION IN AGGREGATE PRODUCTION PLANNING - A BEHAVIORAL EXPERIMENT, Herbert Moskowitz.
348	A MEASUREMENT AND COMPOSITION MODEL FOR INDIVIDUAL CHOICE AMONG SOCIAL ALTERNATIVES, Edgar A. Pessemier.
349	THE NEOCLASSICAL THEORY OF INVESTMENT AND ADJUSTMENT COSTS, Akira Takayama.
350	D. Clay Whybark and Basheer M. Khumawala, A SURVEY OF FACILITY LOCATION METHODS.
351	Martin Patchen, THE LOCUS AND BASIS OF INFLUENCE ON ORGANIZATIONAL DECISIONS.
352	Robert V. Horton, A PLEA FOR A FOURTH TRADITION-AND FOR ECONOMICS.
353	Thomas F. Cargill, EARLY APPLICATIONS OF SPECTRAL METHODS TO ECONOMIC TIME SERIES.