

Mount San Antonio College

SABBATICAL LEAVE REPORT – 1995-96 RESEARCH & DEVELOPMENT PROJECT

“TEACHING ECONOMICS VIA COMPUTER-BASED TUTORIAL/SIMULATION AND GRAPHIC MODALITY FOR MORE EFFECTIVE CLASSROOM INSTRUCTION”

**Presented to the Salary and Leaves Committee; College
President/Superintendent, Dr. William H. Fedderson and the
Board of Trustees in partial fulfillment of the requirements
of the Agreement for the Sabbatical Leave**

by

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PREFACE

As stated in my Application for Sabbatical Leave, my focus in this endeavor was to use new technology for the improvement of classroom instruction in Economics. I am ready to do precisely what I intended to do. However, I have discovered many other originally unspecified sources of information and new technological advances of which I was previously unaware, along with a self-perpetuating series of very difficult—but very important—choices pertaining to hardware and software that would best serve my purposes.

I have always taught myself to welcome technological change and avoid any fear of using the newest available technology. There is, however, a problem associated with this mind-set. One can easily “get in over one’s head,” and I surely did. I have been in such situations many times previously and have always been able to rise to the challenge. In the course of this endeavor, however, many instances arose where I quite simply did not know what the “proper” next steps should be. I did not have the time or financial ability to avail myself of the many courses which promised the luxury of becoming well-versed in all the nuances of the vast array of new computer hardware and software, nor was it possible to indulge in an in-depth, leisurely reading of the thousands of manuals proliferating along with the evolution of the micro-computer.

In short, I soon began to identify with General Custer—overwhelmed by the sheer numbers of the hostiles, never mind that my hostiles were machines with presumably no reason to resent me from the outset! Soon I was finding it necessary, as writers often do, to discover a *deus ex machina*. It became apparent the only approach was to adopt a rather cavalier manner. It became essential to move forward despite being very uncertain whether the next move was the correct one. (Economists like their “models” in place, backed up by persuasive and supporting statistical data.) So, I bravely took the next step only to find out for certain it was the right step, but along the wrong “path” entirely.

What I did discover for sure, as any reader who has struggled with computers already knows, is that when human error is introduced into a computer system, that error

permeates and expands, sometimes subtly and sometimes like gangbusters, through the system, invariably creating bizarre and intractable problems which may require hours, days or even weeks of tedious troubleshooting to outwit before one gets back to the very place one began. (This presumes there's been no electrical power failure.)

One soothes oneself with the assurance that one has certainly learned something about the operation of multimedia computers and software, through trial and error—which is, after all, the most effective and enduring learning method.

I would like to express special appreciation for the patient support I have received from my colleagues in the Business Administration Department: Business Division Dean Marjorie Chitwood; Assistant Dean, John Stubbe; Computer Technician, David Filmore; numerous individuals from the sales and technical support staff of Harcourt General, Publishers and its subsidiaries; Professor of Economics, Anthony Zambelli of Cuyamaca College, El Cajon, California; and last but not least, my wife Gloria, who advised me to “keep it simple,” (I wish I had taken her advice more often) and monitored my efforts, always keeping me focused toward moving on without taking setbacks too seriously.

This Sabbatical Project was, on the whole, most challenging, and often humbling, for me. For the moment a few serious and seemingly intractable problems linger—namely, a serious COM Port conflict, including the infrared receivers, and some limitations in the use of the LectureActive Presentation application. Despite these items, I can still present what I want to present, using for the time being a roundabout way of accessing still or motion presentations. Operation of the remote control unit is unpredictable as well.

The lingering problems crept in after installation of the glorious Windows 95® program. After countless but vain attempts at correction, I left the computer with commercial, outside technicians. The results were nil or worse, and expensive. Subsequent consultations followed with Mt. Sac's own resident technicians, at my home office (which afforded easy access to my workstation, with all the peripherals, software and manuals handy). The conclusion reached was: IBM internal programs and Microsoft's Windows

95 were jointly and simultaneously seeking control of the COM ports, and no solution has yet been found. (I'm certain *I* never told them to fight it out.)

It may be that the few remaining problems may be eliminated by deleting virtually everything on the hard drive except for a single program enabling a reloading of all software (very carefully). In the vernacular, "delete and reload." This plan should be accomplished by mid-October. Thus, except for the above mentioned problems—minor or unnoticeable, so far as the students are concerned—the Computer-Based Economics Project is "up and running." Overall, I am most pleased with the accomplishments. The result of the Project looks good and presents the subject in a format that should improve both my teaching and student learning in my economics classes.

Obviously, and aside from the mandate to solve the few remaining but annoying problems, I do not view this project as completed. I truly believe that through efforts that were extraordinary for me (perhaps less difficult for others), I achieved all that I outlined in my Application for Sabbatical Leave—and more. Nonetheless, in a larger sense, I have just begun. The entire effort was for the purpose of improving the effectiveness of my teaching and the enhancement of student learning of an elusive, and ever-changing, subject matter: Economics.

The equity developed, both human and financial, was extensive, but the lasting proof is yet to come in the classroom. I foresee a continuous process of refinement as well as inclusion of new elements as they become available and practical.

1. INTRODUCTION

Many, if not most, of this teacher's students appear to find the Principles of Economics-Macroeconomics BUSC 1A course content to be alien—typically presented in an overly conceptual manner (certainly, as they say, not “down to earth”), requiring facility in the interpretation and manipulation of threatening graphical treatments, with unfamiliar polysyllabic vocabulary describing all this. Further, they realize that the teacher is enthusiastic about the subject he teaches, but they enter the class with preconceived biases and notions which are emotionally charged. When they first walk into the classroom they are already mentally calculating the costs vs. the benefits of taking the course. Chances are they have heard rumors that Economics is a difficult subject, requiring a good deal of work. Many of the students are sorely lacking study skills and possess very limited reading comprehension; a considerable number have borderline English writing skills. The word “mathematics” creates high anxiety, with even a symbol such as an “=” creating a subdued panic in a significant number of the students.

Over the years this teacher has substantiated the low average level of preparedness of his students, through the use of a well recognized, standardized pre-test and post-test, namely the *Test of Understanding in College Economics (TUCE)*.¹ The students consistently—over more than a dozen administrations of the test in all sections of the class—generate a mean difference that is considerably lower in absolute terms. This difference is highly statistically significant. The test is administered during the first week of classes and again during the week before finals. (It is interesting to note that a fairly small number of students do generate very high scores on both tests.)

By contrast, students in Principles of Economics-Microeconomics BUSC 1B achieve at a level (measured by the Micro version of the TUCE test) much closer to the national norm, and occasionally demonstrate no statistically significant difference. Several times during the summer session, when there are more visiting university students enrolled in Micro, the class scored a statistically higher average than the national norm.

All this information is presented to the reader to underscore the fact that teaching

intellectually challenging courses in the Community Colleges, with little or no entrance requirements and minimal prerequisites, brings a very heterogeneous group of students into the classroom. This teacher uses the TUCE testing to help validate the tests he constructs and to assure himself that performance standards are in line with those of universities to which the students may transfer. The easier, softer way, of course, is simply to lower standards. When reviewing the grade distributions of a very few of our faculty members, revealing about 35 percent of the students receiving an "A" grade (signifying excellent or outstanding), this teacher is curious as to how such performance is achieved.

The title of the Project as stated in the Sabbatical Leave Application, is "Teaching Economics Via Computer-Based Tutorial/Simulation and Graphic Modality for More Effective Classroom Instruction." This Project required an extraordinary amount of learning, research pertaining to the acquisition of the appropriate hardware and software, with emphasis on multimedia capabilities. Once the basic hardware was acquired, then came the installation of the new software and deletion of pre-loaded but unnecessary software. Some of the pre-loaded software was not needed for the project in its present form; however, it was determined that such software may have some future utility, so of course those applications were saved. At present, approximately 95 percent of the computer's capacity is being utilized, thereby requiring still further incremental loading and deleting. Also, the 2X CD-ROM drive is rather slow, causing some minor "jitters" in motion presentations.

A sum of \$10,000 was established for the project, and to date, cost overruns of about 50 percent have been incurred. Further, an additional sum of nearly \$3,000 will be required to upgrade the hard disk and the CD-ROM drive to enable the equipment to operate at a more satisfactory level, in order to meet this teacher's standards for "seamless" presentations.

2. STATEMENT OF PURPOSE

The prevailing thrust of this project was to develop the capability to utilize computer-based technology as the primary medium of presentation of the subject matter, coupled with oral lecture and class discussion. With this computer-based medium, it is convincingly believed that this professor's effectiveness in teaching Economics subject matter will be substantially improved. Also, it is expected that overall student learning, depth of understanding, interest, motivation, curiosity and performance will also be substantially improved as a result.

1. The source material for presentation of economic subject matter is embedded in the textbook and study guide as well as the often rather cryptic diagrams drafted by the professor on the board before the class. When the professor is writing on the board, he or she cannot be facing the class, and the drawing takes valuable class time. Also, the resulting board presentation may not be crisp and clear, eye contact with students is interrupted, and the presenter's vocal projection is often subdued.

With a computer-based presentation, especially when the computer can be operated by a remote control device (similar to a television remote control), most of these problems can be overcome. This teacher anticipates being able to walk about the classroom, "clicking on" with random access, clear, crisp, carefully prepared (and visually colorful, attractive and stimulating) graphics, outlines, discussion-evoking questions and spreadsheet-formatted statistical data. Also, when a calculation is required, rather than resorting to a hand-held calculator, a pull-down, on-screen calculator can be accessed, enabling students to directly view the keystrokes involved in the calculation.

2. The demographics, cultural heritage, taste and preferences of the students in this teacher's student population, and, for that matter, campus-wide student population, have changed considerably over the past 30 years. This is an acknowledged fact, and

almost seems redundant. An important aspect of this change is that a large proportion of the younger students have little or no “technophobia.” One commonality, from this teacher’s viewpoint (not derived scientifically), is these students’ easy acceptance and adaptation to new technology. In fact, generally speaking, they appear to welcome it and exhibit an accommodative curiosity about it. This teacher thinks of them as the “PacMan Generation,” whereas the teacher’s educational experience can be normatively associated with the “slide rule generation.”

Through the use of the computer for a strictly educational purpose, it is anticipated that this teacher can identify more closely with both groups. The former are especially interested in the so-called “bells and whistles” of the new technology, and the latter group of older students can observe an individual over 50 years of age willing to take on the adaptation process of utilizing new technology—hopefully with the economic benefit of eventually developing greater productivity in the classroom. Also, the teacher can, whenever necessary, handle the unexpected with dignity and a sense of humor, taking it in stride and thereby helping older students become more adaptable to new technology. This teacher, over the development process, had countless occasions of “Now what happened?” or “Why did it do that?” or “How do I get out of this predicament.” Hopefully, these small crises will not happen in the classroom—but the probability is that there will be such situations, even though each lesson is rehearsed faithfully.

This teacher believes that the expenditures of a great deal of time and money will be well worth the effort and expense in the long run. Again, the easier, softer way would be to “conduct class as usual.” It is important to remember that most of this teacher’s students have 30 to 40 working years before them, and many of the tasks they will perform will require using a keyboard or some other input device. (Who knows what standard technology will be operational even ten years from now?)

The use of sophisticated technology in a classroom—where the classical lecture mode is the typical—may also serve to illustrate to students that the educational process, even in a traditional subject like economics, is participating in the latest human/machine interface so likely to be required of them in their working lives, whether they become

mechanics, nurses, executives or teachers.

3. Although not explicit as a goal in the Application for Sabbatical Leave, this project has forced this teacher to learn a great deal about the new multimedia notebook computer technology.

This teacher has had at least one computer for the past ten years. The major applications he has used in the past were for word processing, statistical analysis and research for securities and futures trading. The only program or application used by this teacher in the past—and those on a very limited basis—were DOS programs. All else in the line of hardware and software (except Prodigy[®], which will be connected at home for the downloading of data to be used in the classroom) was a new experience.

In the preparation stages, numerous tutorials on CD-ROMs, diskettes, videos and reference manuals were acquired and used to enable this teacher to move through the developmental process. Thus, this teacher's computer literacy has surely increased ten-fold. (These various media are detailed in the Reference section of this report.)

2. RESEARCH AND DEVELOPMENT PROCESS

This project was not, nor was it intended to be, a scientific inquiry with research and null hypotheses followed by data collection, statistical analysis and conclusions arrived at on empirical evidence, and then deposited in the archives of academia—a process not unfamiliar to the economist. Instead, this project was intended to develop something practical and useful that could be immediately and continuously used in the classroom for improving the teaching and learning process.

A. The Approach

The approach used for this research, investigation and development project necessarily had to be pragmatic and, as such, was primarily exploratory, and to a large extent became “trial and error.” As we all know there is a plethora of commercially available hardware and software. At the beginning of this undertaking, no specific hardware or software stood out among the others. Many choices had to be made along the line of costs vs. benefits within a budget constraint.

Good information was needed, and an extensive review of the literature at the libraries was not productive. However, some trade journals obtained from computer information professionals provided ideas; economics professors consulted at various institutions in some cases provided possible approaches and encouragement. Publishers’ representatives were the most enthusiastic and provided the most provocative insight into computer augmentation for instructional purposes.

The endeavor was intended to be as systematic as possible considering the large number of unknowns at the beginning. The process followed was as sequential as possible with some overlap between steps. The process used was basically as follows:

1. Determine if there were other individuals doing similar work in the area of economics.
2. Determine hardware requirements.
3. Acquire major hardware components.
4. Prioritize software needs.

5. Acquire the software on an as-needed basis.
6. Develop the skills necessary to use the software on the multimedia computer.
7. Develop the various presentations to be used in the classroom.
8. Evaluate progress, making necessary corrections, deletions and additions as needed.

B. Timetable

A timetable for this project was presented in the Application for Sabbatical Leave, and it was adhered to as closely as possible. In fact, it was intended to keep a simple diary on a daily basis. In theory, this was to be an easy task. Initially, this teacher began using his Zaurus® (a digital, programmable personal assistant manufactured by Sharp, with a 2MB storage capacity, which can be linked to a personal computer) for this purpose. However, because of the nature and the unusual (and unscientific) research requirements for gathering information for the purchase of hardware and software, it soon became apparent that such a diary would take unnecessary time and be relatively meaningless to anyone but the project developer himself.

Other than some data collection that began before the Sabbatical Leave time period, and some subsequent refinement (a function which will probably continue *ad infinitum*) the project was completed as scheduled, including a draft copy of the Sabbatical Leave Report.

C. Collection of Data for Selection of Computer Hardware and Software

The data collection process commenced during the Spring semester, as soon as it was known that the Sabbatical Leave had been approved.

Libraries (including the acclaimed Honald Library at the Claremont Colleges) proved to be an unproductive source. The Computer Information Systems Director at a private corporation gave me his February/March 1995 issue of a trade publication entitled *PCs Compleat - Product Guide*.² This issue boasted an extensive section on notebook computers. By this time it had already been determined—after an extensive search—that the type of notebook computer needed for this project was not on display at the computer

and electronics stores. The smaller computer dealers did have catalogs listing available multimedia computers, but warned that a typical delivery lead-time was two months or more.

Sources of information that proved fruitful were major college textbook sales representatives. These individuals were especially abundant during the Spring of 1995, as the Business Administration Department was in the process of selecting a new economics textbook for adoption effective for the fall semester of 1995.

In each contact with a publisher's representative, inquiries were made regarding computer support materials. All representatives indicated their companies were "working on it," with only a few acknowledging that such materials were actually in existence or would in fact be available within the next month or two. There was, however, a common theme: the general direction was toward the 12 inch, 2-sided laser disc. The text chosen by the Business Division was Gwartney and Stroup, *Economics - Private and Public Choice*, 7th Ed., 1995, by Dryden Press,³ a subsidiary of Harcourt General. They had at that time two 2-sided laser discs for another of their economics textbooks, authored by Baumol and Blinder,⁴ and this teacher decided to acquire a laser disc player for experimental purposes in the class taught during the summer session of 1995, preceding the Sabbatical Leave. The experience with the laser disc player was impressive. If the laser disc player was controlled by a computer, it would be a very good augmentation for the Sabbatical project that was to begin after the completion of that summer session. At that time, the laser disc player was operated by a hand-held remote control and a bar code reader.

As luck would have it, Dryden and the other publishers changed their orientation to the use of a CD-ROM device. This is more practical, but does not have the enormous capacity of the laser disc. As soon as the new CD-ROM was produced, a Dryden technical support specialist flew to Los Angeles to meet with me and presented, using his laptop computer, the new software and CD-ROM material. It was impressive and had a feature called "Custom Entry" which would enable the teacher to sort out selectively the useful material from the CD-ROM and integrate self-produced "slides" or motion pictures as deemed appropriate.

Very early in the fall semester 1995, a visit was made with the Economics Department at the University of Southern California. It was fortunate that several economics professors as well as the Dean of the School of Letters, Arts and Sciences were available for interview. It was learned that a great deal of econometric research using desktop and/or the University's mainframe computer was being conducted. However, these professors were not aware of any research and development for the presentation of economics in the classroom. They did mention that the School of Business used computer simulation in a number of courses; however, this was not a (real time) presentation methodology performed in the classroom. See Appendix A for the names of contacts made at USC.

At a Faculty Meeting attended during the spring of 1995, after my Sabbatical Leave application had been submitted to the College, President Feddersen invited the president of Bakersfield College to demonstrate to our faculty how he used a computer presentation method while teaching a biology class.

Shortly thereafter, a call was placed to a full-time economics faculty member at Bakersfield College in order to determine if they were using any computer-based economics course presentations. This faculty member reported that the possibilities were being explored, but the faculty wanted the College's computer technical staff to do the developmental work, feeling further that it was the College's responsibility to acquire the necessary hardware and software. After all, it was explained, it was through their College's technical support staff and with College-owned equipment that their President was provided the capability of teaching his course in that manner. The professor who was contacted preferred to remain anonymous.

The Dryden Press textbook representative provided information that an Economics professor at Cuyamaca College in El Cajon was performing developmental work in the area of computer presentation of tutorials in economics. This teacher spent two days with Anthony Zambelli at Cuyamaca College, discussing and reviewing his work. He had developed a short tutorial for Microeconomics for the Dryden Press while on his own sabbatical leave during the school year 1994-95. A copy of his tutorial was given to this teacher, and parts of it may be used for review purposes during the spring 1997

semester, when this teacher is next scheduled to teach microeconomics. This professor was indeed gracious with his sharing of information, suggestions and guidance. His suggestion to secure a copy of Astound^{®5} was followed by this teacher. After acquisition and review on my desktop computer, this teacher's findings were that it was excellent sourcing for the development of tutorials but was not flexible enough for the purposes of this project. Perhaps this program can be used in later developmental efforts.

The next findings were the new multimedia developments at Dryden Press specifically targeted for use with the above mentioned new textbook we had adopted. Dryden had developed, for use with PowerPoint[®] a new software entitled LectureActive (now referred to as MediaActive), coupled with a CD-ROM to accompany both our current textbook and others by Baumol and Blinder. The important aspect of this software is its capacity to accommodate graphics and textual materials as well as stills and motion through QuickTime[®] viewers. This material seemed the most viable starting point for the current project.

Another CD-ROM produced by the Harper Collins College Outline Software Series for introduction to economics, titled *Numina*^{®6} seemed promising for use for review purposes.

With these specific software packages in mind, the purchase of a multimedia computer was implemented. As already mentioned, catalogs were the only real source of information, as retail stores do not display equipment of this sophistication. After careful consideration, the IBM 755CDV was chosen (see detailed description in Appendix B). The only drawbacks evident at that time were the price (almost \$1,000 per pound) and the fact that the CD-ROM drive was offered only in the double speed (versus the quad speed) version.

This highly sophisticated notebook boasted vast pre-loaded software—sufficient to keep this teacher embarking upon new frontiers for years into the future. The primary and only 32-bit platform pre-loaded was OS/2 Warp (an IBM product). After careful evaluation, OS/2 was deleted after backup to a tape cassette.

Finally, the long overdue Windows 95^{®7} by Microsoft was scheduled for arrival. This platform was chosen, coupled with the Microsoft Office Suite (version 7.0)⁸ for

Windows 95. Office version 7.0 has several separate but integrated applications, including Word, Excel, PowerPoint, Access, Scheduler and Binder; the operator is allowed to couple any combination of these items together, as Windows 95 enables multitasking. This combination of software would evidently serve the project well.

Before a litany of the ensuing problems is discussed, it should be pointed out that the needed applications worked very well under Windows 3.11[®]. Especially impressive was the MindPath remote control device and presentation. From a distance of up to 40 feet in any direction from the machine, the cursor can be moved, icons clicked on or off, and an endless list of special effects engaged (for example, drawing lines or circles around items, highlighting, magnifying a particular section of a graph, and spotlighting, just as stage lights accomplish). The usefulness of these capabilities is enormous for the teacher in the classroom, especially in classes requiring a good deal of graphic presentations. This teacher is most anxious to employ this device as soon as possible.

With the installation of Windows 95, however, a myriad of new problems infiltrated many of the applications. Most of these problems were corrected by acquiring still more, upgraded software, enabling the applications to run under the new Windows 95 system. However, as previously mentioned, the COM ports have serious conflicts that remain unresolved, despite the employment of numerous persons with expertise far greater than this teacher possesses. These experts have tried numerous solutions but have so far failed to resolve the problem. Further upgraded software soon available now promises a solution by late October 1996. However, these particular problems have in no way prevented this instructor from proceeding as planned with the computer-based presentations in fall semester classes that began August 1996.

Having studied the many tutorials and manuals for the numerous applications, beginning with Windows 95 and Microsoft Office in particular, the teacher's next step was to develop a full set of custom presentations. A program produced by Future Graph, Inc. was found especially advantageous, along with Excel and PowerPoint. This newly discovered program is entitled *f(g) Scholar*.^{® 9}

Scholar is the most exciting application yet discovered by this teacher, as it covers arithmetic, algebra, geometry, trigonometry, integral and differential calculus, as well as the most common statistical applications. It is easy to use, and the students do not need to understand the mechanics operating behind the scenes. It enables the preparation of graphs and/or spreadsheets from data sets and/or equations or other mathematical functions; the resulting graphs can then be imported into either MediaActive or PowerPoint, colorized and resized as may be necessary to fit any particular screen. Further an instructor's manual has been prepared and is available on the notebook, for reference as needed. (See Appendix C for a sample.)

To date, close to 3,000 individual graphic presentations have been prepared and are currently available for presentation both to Macro and Microeconomics classes. (It is important to note that approximately 200 of these involve motion, lasting from a few seconds to a few minutes.) (See Appendix D for samples.)

Additional equipment was purchased to assure achievement of the goals of the project. Additionally purchased software is too lengthy to list, but the additional hardware includes: an HP OfficeJet fax/printer/scanner, docking station for the IBM 755CDV, HP Deskjet 660 Cse color printer, HP LaserJet 4P, tape backup, telephone line for the MWAVE® fax modem. A few of these items are "stand alone," but most are an integral part of the notebook computer unit, totally dedicated for instructional use. (See Appendix B for a detailed description of the major hardware.)

Further, as indicated in the Sabbatical Application, a listing has been prepared of Folders and files related to the Economics Class Presentation (See Appendix G for the DOS root directory and Windows 95 Folders).

The Internet has also provided a good deal of class related material. The majority of macro information comes from the many governmental departments, agencies, bureaus, etc. One organization providing custom data is known as Stat●USA (See Appendix H). Two sample Web pages were downloaded and printed for the reader's information. This firm provides a very good service but is very costly. The data for the Micro classes can be obtained from the numerous business news services.

The Web offers good instructional potential for economics class presentations in

the future. This teacher has evaluated the popular services that can link the notebook computer with Internet (e.g., CompuServe, America Online, Prodigy), and currently receives the services of Prodigy and the Microsoft Network. However, due to some technical shortcomings in our District-owned telephone system, the systems currently used by this teacher will not operate on campus. Nonetheless, the new classroom to which this teacher has been assigned is wired with a telephone connection to the College's mainframe computer, which itself is linked to the Internet. The notebook computer used by this teacher has an Ethernet card and 28.8bps modem, which, given a net browser which the College can supply, will enable the teacher to logon the Internet from the classroom, if or when appropriate.

Also, it should be mentioned that a composite of the important aggregate economic statistics has been assembled and will be revised annually, quarterly or monthly, depending upon the general practice for the statistic involved. These data will be readily available when such information is needed in the classroom.

Continuous modifications will be undertaken as the needs dictate. Please note that not all slides (for lack of a better term) are "graphs" in the typical sense. Many are textual outlines with thought-provoking questions, with the emphasis on demonstrating practical applications and relevance to real life questions faced by the students. Relevance, and questions evoking student response and class discussions as espoused by K. Patricia Cross in her research and writing on student learning, were given full consideration and incorporated into the presentation whenever possible.

Please see Appendix E for the course syllabus, class schedule and description of the reading assignment for Macroeconomics.

Finally, a sincere expression of this teacher's appreciation is surely extended to those who made it possible for the District to acquire a portable LCD Projector, without which this kind of classroom presentation would not be possible. Enormous gratitude is also extended to the College and District for the sabbatical privilege afforded this teacher so that this important, dynamic classroom presentation project could be developed.

4. VALUE TO THE COLLEGE

The real value of this project perhaps cannot be—or at least is not easily—quantified. It is profoundly apparent to this writer how much he learned in order to develop the capability to deliver class information through this medium. Likewise, many of the benefits are obvious, such as the following:

1. Presentations on the screen will be sharper and well constructed because they are developed carefully beforehand, using color and high contrast for more readable presentations.
2. The presentations in outline form will facilitate note taking by students.
3. A very large bank of information is stored in the computer, and data can be retrieved readily without relying on memory or notes.
4. Provocative questions are presented which, hopefully, elicit more and better focused class discussion.
5. Application of subject matter can be facilitated. For example, instead of bringing clippings from the morning *Wall Street Journal* or *Investor's Business Daily*, or any other similar article, it can be scanned into the computer in the morning, before class, and projected upon the screen that very day, in order to demonstrate precisely how economic issues might affect each student personally. (See Appendix I.)
6. This teacher is most willing to share with any other faculty member any information learned or developed during this project.

SOURCES

- ¹ Saunders, Phillip. *Test of Understanding in College Economics (Macroeconomics, Microeconomics)*, Third Edition, New York: Joint Council on Economic Education, 1991.
- ² *PCs Compleat*, Product Guide, 34 St. Martin Drive, Marlborough, MA, February/March, 1995.
- ³ Gwartney, James D. and Stroup, Richard L. *Economics - Private and Public Choice*, 7th Ed., Fort Worth, TX: The Dryden Press, 1995.
- ⁴ Baumol, William J. and Blinder, Alan S. *Economics - Principles and Policy*, Sixth Edition, Fort Worth, TX: The Dryden Press, 1994.
- ⁵ *Astound*, Version 2.0 for Windows, Mississauga, Ontario, Canada: Gold Disk Inc., 1995.
- ⁶ Casler, Stephen D. *Introduction to Economics - Numina* (CD-ROM) from the College Outline Software Series, Chicago: Harper Collins, 1995.
- ⁷ *Windows 95*, Redmond Washington: Microsoft Corporation, 1995.
- ⁸ *Microsoft Office for Windows 95*, Version 7.0, Redmond, Washington: Microsoft, 1995.
- ⁹ *f(g) Scholar - The Complete Solution for Mathematics, Science, Engineering*, Future Graph, Inc.: Southampton, PA, 1995.

Appendix A

Business Cards from Many
Individuals Contacted

CUYAMACA COLLEGE

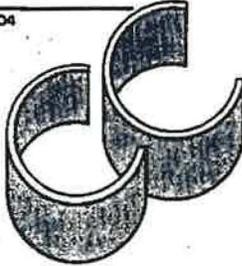
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Hacienda La Puente Unified School District

ABBY KHAN SCE 818/302-6697

Adult Education
Dibble Campus

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ABDUL H. KHAN
Instructor

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Appendix B

Hardware & Accessories Descriptions

Hardware

Computer

The IBM ThinkPad 755CDV Notebook® Computer is compact and lightweight—an all-in-one mobile solution for presenting to large classrooms, letting all students see graphically and dynamically what the instructor is speaking about, with a display that turns into a transparent overhead-projection panel.

The instructor may take control of the presentation, from anywhere in the classroom, with a wireless infrared remote control offering more than 20 special effects.

Model: IBM ThinkPad 755CDV, 810MB, model 9545-GBK
Display: 10.4" diagonal active-matrix TFT; Resolution: 66,536 colors at 640 x 480; overhead projection
Multimedia/ Presentations: CD-ROM drive, Enhanced Video; MindPath® remote control, TheatreSound® built-in stereo speakers
Battery: NiMH standard, from 2.5 to 8.0 hours
Weight: 7.5 lbs with NiMH battery
Dimensions: 8.3" x 11.7" x 2.2"

- **Performance:**
 - Dual processor architecture: 75 MHz Intel® Pentium; IBM Media Processor for independent handling of audio and communications.
 - 8MB non-parity memory, expanded by the instructor to 16MB; VESA 32-bit accelerated local-bus video, 1MB VRAM
- **Enhanced Video**
 - Software motion video acceleration (scaling and interpolation of Video for Windows files)
 - Video-out to TV or VCR (NTSC and PAL); Video-in for still image and video capture, video overlay
 - Composite and S-video in/out jacks; MIDI/joystick port
- **TheatreSound™**
 - 16-bit stereo audio with Sound Blaster support, 32-voice high-quality MIDI wavetable synthesizer, stereo waveform record and playback, business audio (text-to-speech), real-time audio compression
 - Built-in microphone and speaker; external microphone jack; stereo speakers/headphone jack; volume control dial
- **Communications**
 - Software upgradeable 14.4Kbps (upgraded to 28.8Kbps) data/fax modem, full-duplex speakerphone and digital answering machine
- **MindPath™ infrared remote control**
 - Wireless remote controller with preinstalled software provides application launching and control, and 20+ special effects
- **Dual high-speed infrared ports**
 - Fast, easy wireless printing, file transfer and file synchronization between notebook and other IrDA-compliant notebooks, desktops, printers and electronic organizers
 - IrDA-compliant; maximum data rate 1150Kbps; supports Mind Path® infrared wireless remote controller
- **Storage**
 - Removable hard-disk drive, 810MB (upgrading to 1.2GB); removable 3.5" 1.44MB diskette drive
 - Removable 2X CD-ROM drive fits in diskette-drive bay

- **PCMCIA Support**
 - Slots for two Type I/II PC cards or one Type III IBM PC Card Director™ utility for automatic configuration and application launching
- **Standard I/O Interfaces**
 - SVGA (256 colors at 1024 x 768) external display, Enhanced Parallel (ECP), serial, PS/2® style keyboard/mouse ports
 - Expansion bus port for docking; RJ11 telephony jack
- **Keyboard**
 - Advanced TrackPoint III® integrated pointing device with QuickStop response and slip-free caps for easy, responsive cursor control
 - Full-size 85-key keyboard with 12 standard PF keys, separate cursor keys, drag-lock buttons, "Fn" key for quick access to system functions
- **Power supply/Power management**
 - Rechargeable NiMH (standard) battery; 1.2-hr. quick charge (1.7-hr. during operation)
 - Compact 35W worldwide auto-sensing AC adapter with three-prong plug; four-level power conservation
 - Hibernation, safe suspend, suspend & standby modes; accurate onscreen battery fuel gauge
- **Software Preinstalled**
 - OS/2® Warp with BonusPak applications, Microsoft® Windows 3.11 and IBM PC DOS 7.0; SelectaSystem for choice of operating systems
 - More than 20 OS/2 or Windows software programs, including presentation programs such as Asymetrix COMPEL™ Personal Edition, personal productivity tools such as Lotus® Organizer™ and Lotus cc:Mail™ for the IBM Global Network, and programs for ThinkPad features such as infrared, audio, video and communications
- **Operating Systems Supported**
 - IBM PC DOS 7.0/J7.0; MS DOS 6.22
 - OS/2 Warp; OS/2 Warp with Win-OS/2 (SelectaSystem); OS/2 Warp-J
 - Windows 95; Windows for Workgroups 3,11; Windows 3.11/J3.1
- **Other features**
 - Slot for Kensington MicroSaver® cable lock
 - Personalized nameplate, onscreen electronic personalization
 - Durable carbon fiber-reinforced casing with scratch-resistant finish

Accessories

- **IBM Dock I (Docking Station)**

The Dock I provides expandability for the IBM ThinkPad notebook while providing the same usability as a desktop system. Option cables connected or disconnected to the computer may be connected to Dock I so computer may be easily carried. Dock I is designed to be both multimedia-oriented and portable, so that presentations may be prepared and taken to the classroom more effectively with the full-motion images and stereo sound of multimedia material. Enhanced security features protect the Dock I from use by unauthorized persons.

- **Multimedia-Oriented Features, Audio and Video include:**
 - Speaker-in jacks; Audio-out jacks; Headphone jack
 - Stereo speakers; less than 1-inch drive location for a CD-ROM player
- **Portable-Oriented Features:**
 - Warning function to tolerate most inadvertent miss-operations when docking or undocking computer
 - Handle, security lock and security hook
- **Cable Management Features**
 - External diskette drive connector; keyboard/numeric keypad connector
 - Mouse/pointing device connector; parallel connector and serial connector

- **Desktop-Equivalent Features**
 - One full-size or half-size AT-bus, 16-bit slot
 - Drive location for less than 1-inch-high internal storage device
 - Internal and external SCSI device connectors

- **Alps Glidepoint® Keyboard**
 - Features:
 - Built-in touchpad; Windows 95 keys (Windows 3.1 compatible); Erase-Eaze ergonomic backspace key
 - Contoured wrist rest; enhanced Windows control panel software; sculptured design
 - Three programmable buttons, "Taps" for instant selection; Enhanced Windows control panel software

- **Somega Ditto 800 External Tape Drive**

Stores up to 800MB of compressed data or 400MB of uncompressed data, enabling full or partial backup command; this device uses Ditto 800 Travan® TR1 cartridges.

- **Pioneer CLD-V2400® Laser Disc Player**

CD CDV-LD Player, Digital/Analog, Level 2 (level 2 computer may communicate with the machine with random access or selective segment play capability).

The typical laser disc used for multimedia is 12", recorded on both sides with enormous capacity for still, motion and sound with digital quality.

Appendix C

Sample Pages from the
Instructor's Manual
Resident in the Computer

SUPPLY, DEMAND, AND THE MARKET PROCESS

I. Scarcity Necessitates Rationing

- A. Scarcity requires some method of rationing to decide who gets the limited amount of goods and resources.
- B. Economic goods can be rationed according to many criteria: first come, first served; beauty; the political process; or the market.
- C. Competition is the result of scarcity. Competition is a natural outgrowth of scarcity and the desire of human beings to improve their conditions.
 - 1. Competition exists in both capitalistic and socialistic societies.
 - 2. Competition exists whether goods are allocated by price or collective decision-making.
 - 3. No society has been able to eliminate competition because no society has been able to eliminate the need for rationing.
 - 4. Competition occurs when people who want more scarce goods seek to meet the criteria established to ration those goods.

II. Consumer Choice and the Law of Demand

- A. Law of demand: The price of a good is negatively related to the quantity demanded. (Exhibit 1)
- B. The market demand schedule. (Exhibit 2)
- C. The availability of good substitutes is the most important determinant of the responsiveness of quantity demanded to a change in price. (Exhibit 2)
 - 1. Examples: sugar, physician services, Florida vacations.
- D. Despite differences in the degree of responsiveness, the fundamental law of demand holds for all goods.
 - 1. Elastic: quantity demanded is relatively responsive to a change in price.
 - 2. Inelastic: quantity demanded is relatively unresponsive to a change in price.
- E. The height of a demand curve indicates the maximum price (preference) the consumer is willing to pay.
- F. Discuss the Myths of Economics box about a vertical demand curve

III. Producer Choice and the Law of Supply

- A. Production involves the conversion of resources into commodities and services. Producers will have to pay the opportunity cost for resources used.
- B. The desire for profit motivates producers to supply goods.
 - 1. Profit is a residual "income reward" granted to decision-makers who increase the value of the resources.
 - 2. A loss results when consumers value a product less highly (price) than the opportunity cost of the resources used to produce the product.

- C. Law of supply: The amount of a good supplied is positively related to the price of that good. (Exhibit 3)
- D. The height of the supply curve indicates the minimum price necessary to induce producers to supply a specific quantity and the valuation of the resources used in the production of the marginal unit of the good.
- E. Discuss Critical Analysis question 3.

IV. Markets and Supply and Demand

- A. A market is an abstract concept that encompasses the forces generated by the buying and selling decisions of economic participants.
- B. Equilibrium: a state of balance between conflicting forces, such as supply and demand. (Exhibit 4)
- C. Short-run market equilibrium (Marshall)
 - 1. In the short run firms do not have time to adjust fully to changes in market conditions.
 - 2. Short-run equilibrium is attained when supply and demand are in balance.
- D. Local, national, and world markets
 - 1. Price equalization principle: When there are no trade barriers (legal restrictions limiting exchange), transportable goods will tend to trade for the same price in all markets, except for price differences due to transport cost and taxes.
 - 2. The presence of substantial price differences between two markets is evidence that there are either substantial trade barriers or differences in the taxation of the goods in the two markets.
 - 3. Discuss Critical Analysis question 4.
- E. Long-run market equilibrium: two conditions must be met for long-run market equilibrium.
 - 1. Supply and demand must be in balance.
 - 2. Selling price must equal the producer's opportunity cost of production. Therefore, firms are neither earning economic profit nor suffering economic loss.
 - 3. The rate of return equalization principle: investment capital will tend to move into markets where the rate of return is high and away from markets where the rate of return is low. Thus, competitive forces tend to equalize the rate of return (adjusted for risk) in all markets.

V. Shifts in Demand

- A. A change in demand represents a shift in the demand curve; a change in quantity demanded is a movement along the same curve. (Exhibit 5)
- B. Factors that cause shifts in demand: consumer income, tastes, prices of related goods, and expectations about the future price of the good
- C. Discuss how the market responds to a change in demand. (Exhibit 6)
- D. Discuss Critical Analysis question 1.

VI. Shifts in Supply

- A. A shift in the entire supply curve (a change in supply) differs from a movement along it (change in quantity supplied).
- B. Factors that cause shifts in supply reflect changes in the opportunity costs of supply.

- C. Factors shifting the supply curve.
 1. Resource prices. (Exhibit 7) (If teaching macroeconomics, this is a good place to stress the influence of resource prices on supply.)
 2. Technology. (Exhibit 8)
 3. Natural disasters and political disruptions. (Exhibit 9)
- D. A market economy eliminates a surplus or shortage by allowing price to rise or fall respectively.
- E. Everything influences everything else; markets are highly interrelated. Thus, secondary effects are often important.

VII. Time and the Adjustment Process (Exhibit 10)

- A. With the passage of time, the market adjustments of both producers and consumers will be more complete.
- B. Examples: notebook computers, bicycles.

VIII. Repealing the Laws of Supply and Demand

- A. A price ceiling that establishes a price below the equilibrium level will cause shortages. (Exhibit 11a)
- B. When price is fixed below market equilibrium, nonprice factors become more important in the rationing process. (Discuss Myth on rent controls)
- C. A shortage is not the same as scarcity.
 1. Scarcity is unavoidable and exists when more of a good is desired than is provided by nature.
 2. Shortages are avoidable if prices are allowed to rise. Rising prices eliminate the shortage by discouraging consumption and encouraging production.
- D. A price floor that establishes price above the equilibrium level will cause a surplus. (Exhibit 11b)
 1. With price floors, nonprice factors will play a more important role in the rationing process.
 2. The surplus can be eliminated by allowing price to fall, which will encourage consumption and discourage production.

IX. How the Market Answers the Three Basic Economic Questions

- A. What will be produced is determined by the consumers' evaluation of a good (demand) relative to its opportunity cost (supply).
 1. When the consumers' evaluation (price) is greater than the opportunity cost of the resources used in production, the good will be produced.
- B. How goods will be produced is determined by the economizing behavior of the suppliers.
 1. Producers have a strong incentive to use cost-reducing methods because lower costs will increase profits.
 2. Consumer exploitation is thwarted through competition which keeps price from straying too far from the cost of production.

- C. To whom will the goods be distributed?
 1. Goods will be allocated to consumers who are willing and able to pay the price.
 2. The income of individuals reflects their provision of resources to others.
 3. As long as the preferences and productive abilities of individuals differ, a market solution will lead to an unequal distribution of income.
 4. Discuss Critical Analysis question 14.

X. The Invisible Hand Principle

- A. An efficiently operating economy must communicate, coordinate, and motivate the actions of decision-makers.
- B. Communicating information to decision-makers.
 1. Product prices communicate up-to-date information about the consumers' valuation of additional units of numerous other commodities.
 2. Without the information provided by market price (a summary statistic) it would be impossible for decision-makers to determine how intensely a good was desired relative to its opportunity cost.
- C. Coordinating the actions of market participants: market prices coordinate the choices of buyers and sellers, bringing their decisions into line.
 1. Prices and profits guide entrepreneurs.
 2. Consumers call the tune as they respond to relative prices, thereby helping to determine prices.
 3. Price changes signal shortages or surpluses, and create profit (and loss) opportunities for entrepreneurs.
 4. Identifying profitable opportunities takes time and hence adjustment is not instantaneous, and never quite complete, since dynamic change never stops.
- D. Motivating the economic players: individuals are given a strong incentive to provide productive resources in exchange for income.
- E. Prices and Market Order: discuss freeway driver analogy to illustrate concept of order without a central planning mechanism. Also discuss Critical Analysis questions 8, 9, and 10.
- F. Qualifications: the efficiency of market organization depends on well-defined property rights and competition.

XI. Myths of Economics: "The demand for some goods is vertical, since fixed amounts of them are needed for consumption."

- A. "Needs" and "wants" versus demand.
 1. There are no critical needs, minimum requirements, or absolute necessities in the sense that one must have some fixed amount of a good or service, regardless of price. We live in a world of substitutes.
 2. Just because one needs or wants something, it does not follow that it should be purchased. Costs—our need for other things—must be considered also.
 3. Discuss Critical Analysis question 5.

XII. Myths of Economics: “Rent controls are an effective method of ensuring adequate housing at a price the poor can afford.”

- A. Strongly negative secondary effects argue against controls.
- B. Real-world evidence shows the following problems:
 - 1. Decline in the supply of housing in the long run.
 - 2. Shortages and black markets develop.
 - 3. The quality of housing deteriorates.
 - 4. Nonprice rationing (for example, discrimination, cash payments, and favoritism) gains prominence.
 - 5. Inefficient use of housing space will result.
 - 6. Long-term renters will benefit at the expense of newcomers.

XIII. Outstanding Economist: Alfred Marshall (1842–1924)

- A. Developed the concept of the “margin”; formulated the laws of supply and demand (1890).
- B. Marshall used a now-famous “blades of scissors” analogy to show that supply and demand operate jointly to determine price.
- C. A mathematician, Marshall laid the foundations for much of modern economic analysis.

Appendix D

Samples of Various Types of Graphical & Outlines Presentation Screens

Economics from a Historical Perspective

The budget should be balanced.

The Treasury should be refilled.

Public debt should be reduced.

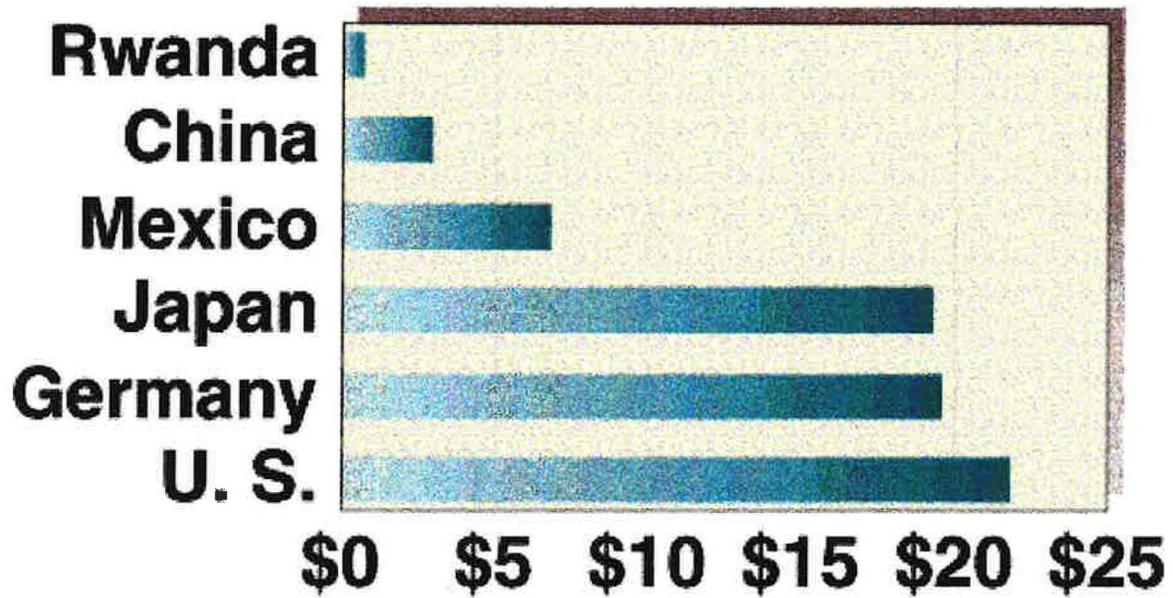
*The arrogance of officials should be
tempered and controlled.*

*Assistance to foreign countries should be curtailed,
lest we become bankrupt.*

*The people should be forced to work
and not depend on the government.*

Cicero, 78 AD

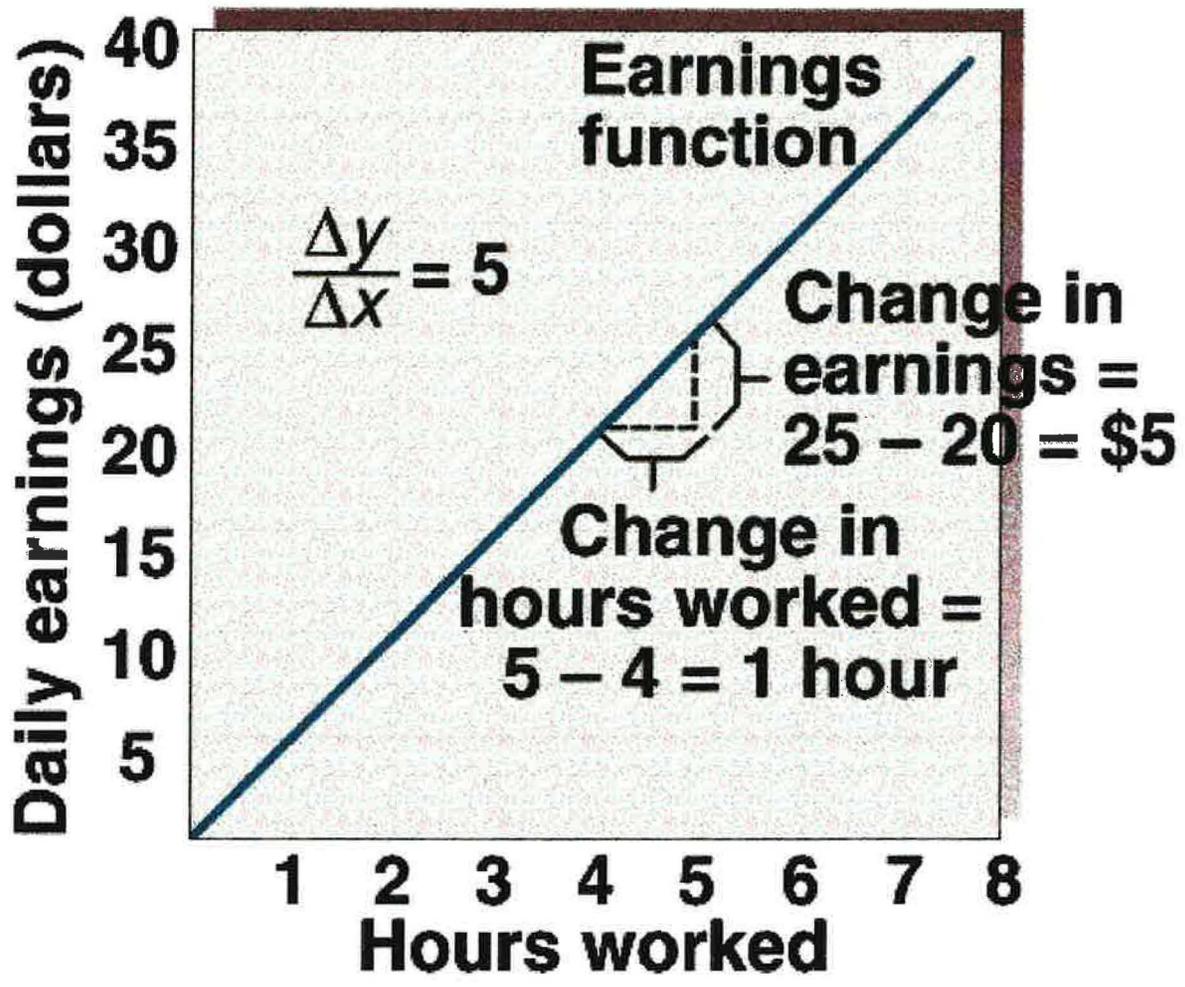
Association of Private Enterprise Education Newsletter
Fall 1988

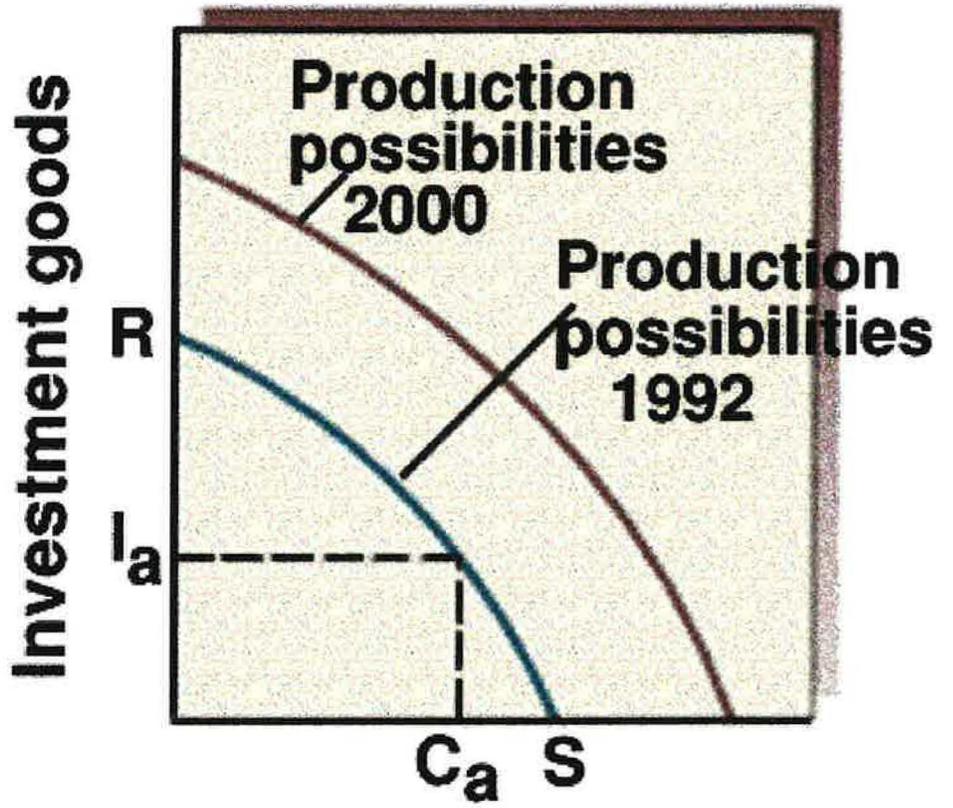


1991

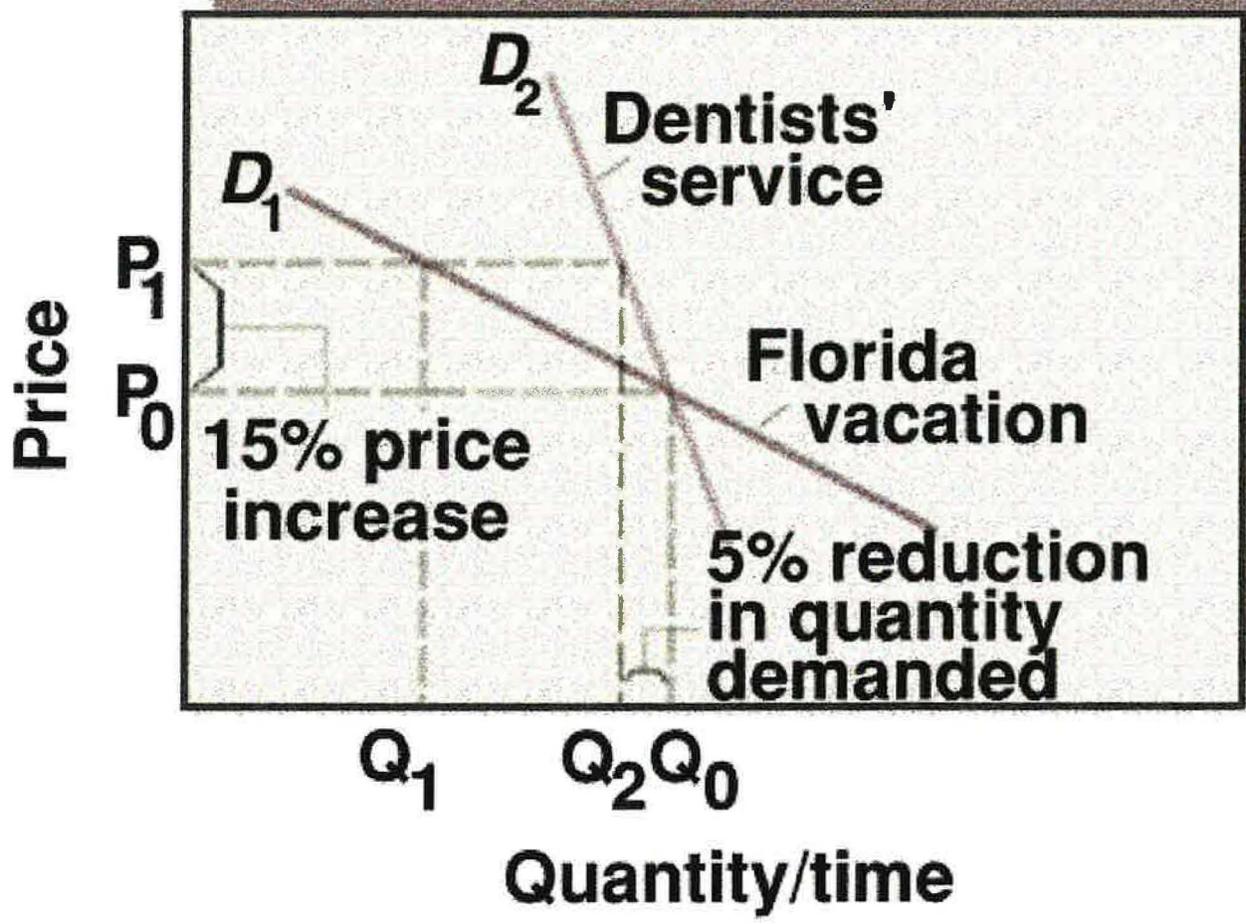
**Total income per person
(shown in thousands)**

(b)





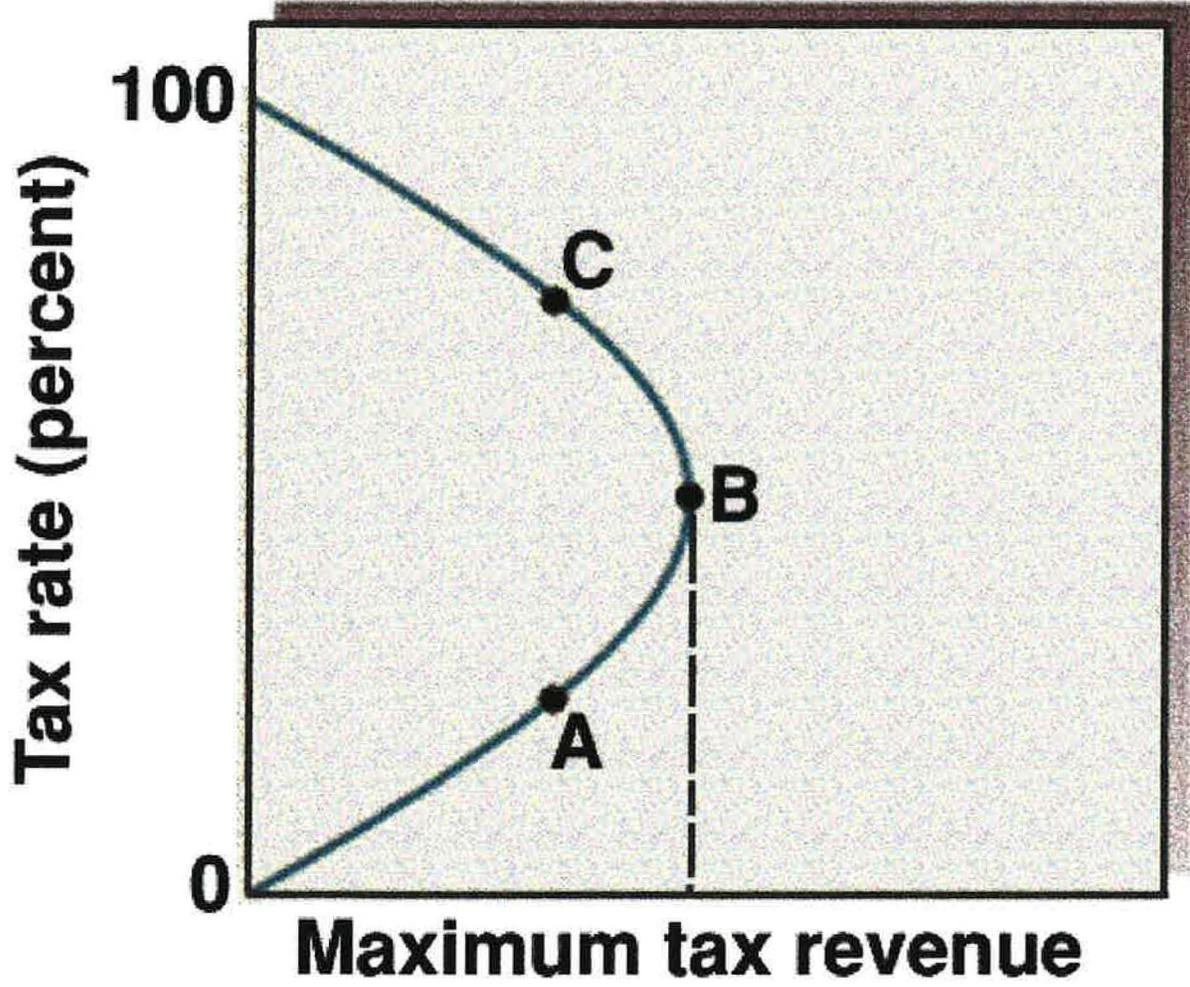
Consumption goods
Economy A, high investment

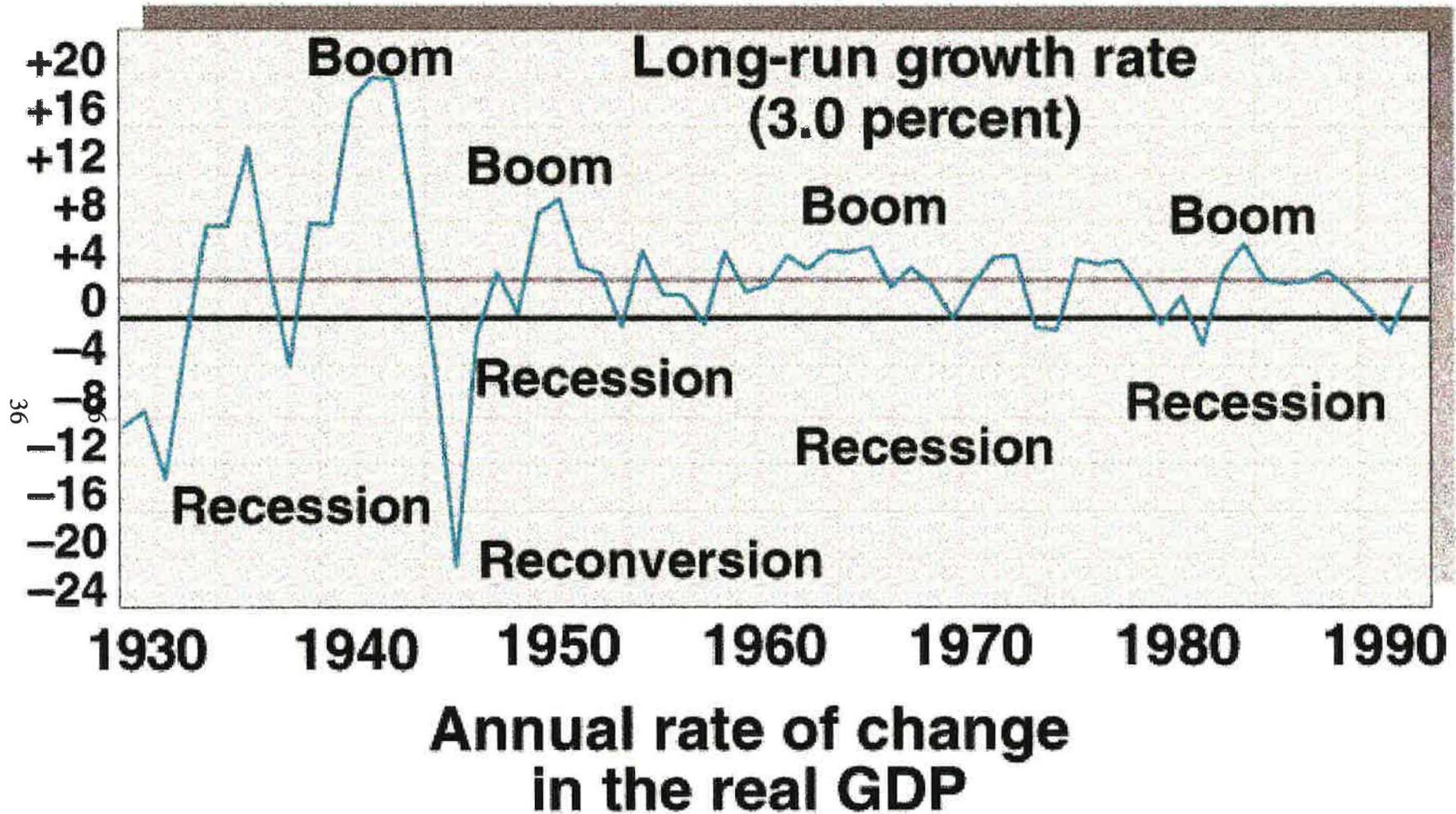


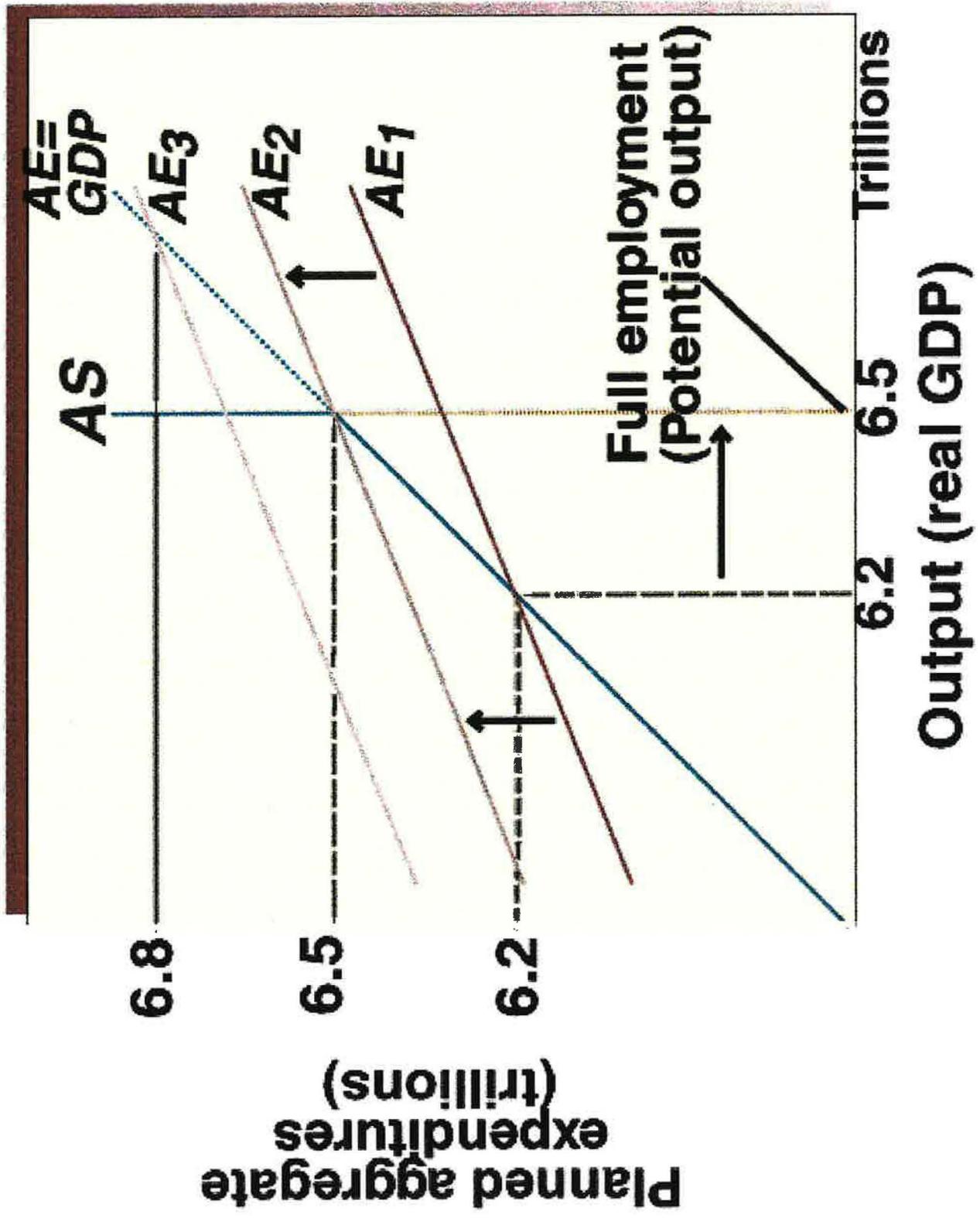
Markets and Supply and Demand

Factors that Cause Shifts in Demand:

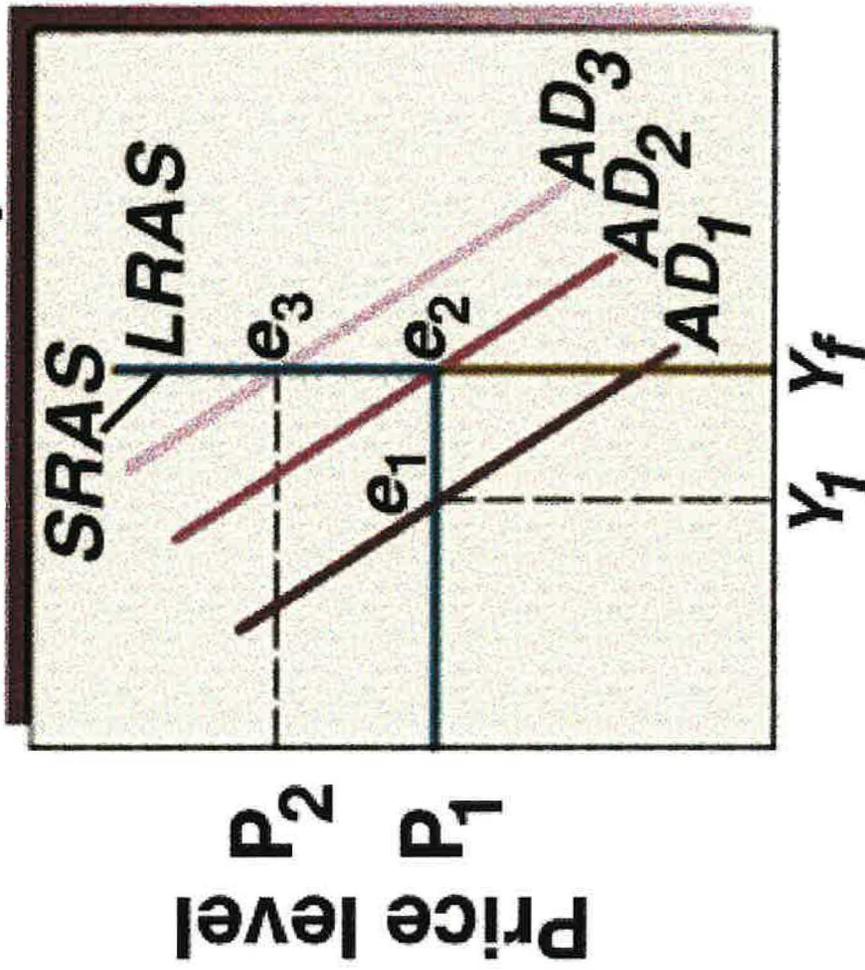
- **Consumer income**
- **Tastes**
- **Prices of related goods**
- **Expectations about the future price of the good**







Polar assumption



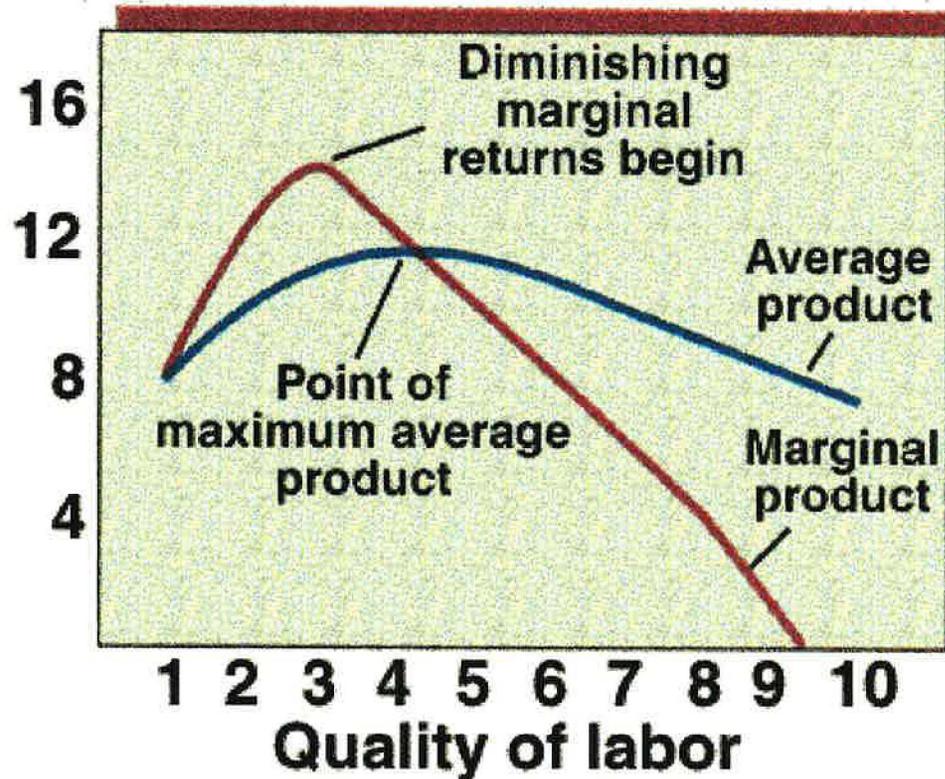
(a) Goods and services (real GDP)

Keynesian Explanation of the Great Depression

Keynesian view of spending and output

- **Spending leads to current production**
 - **If planned aggregate expenditures are less than full employment output, output will fall short of potential**
 - **There are no automatic forces capable of assuring full employment when aggregate expenditures are deficient**
 - **Prolonged unemployment will persist**

Average product and marginal product

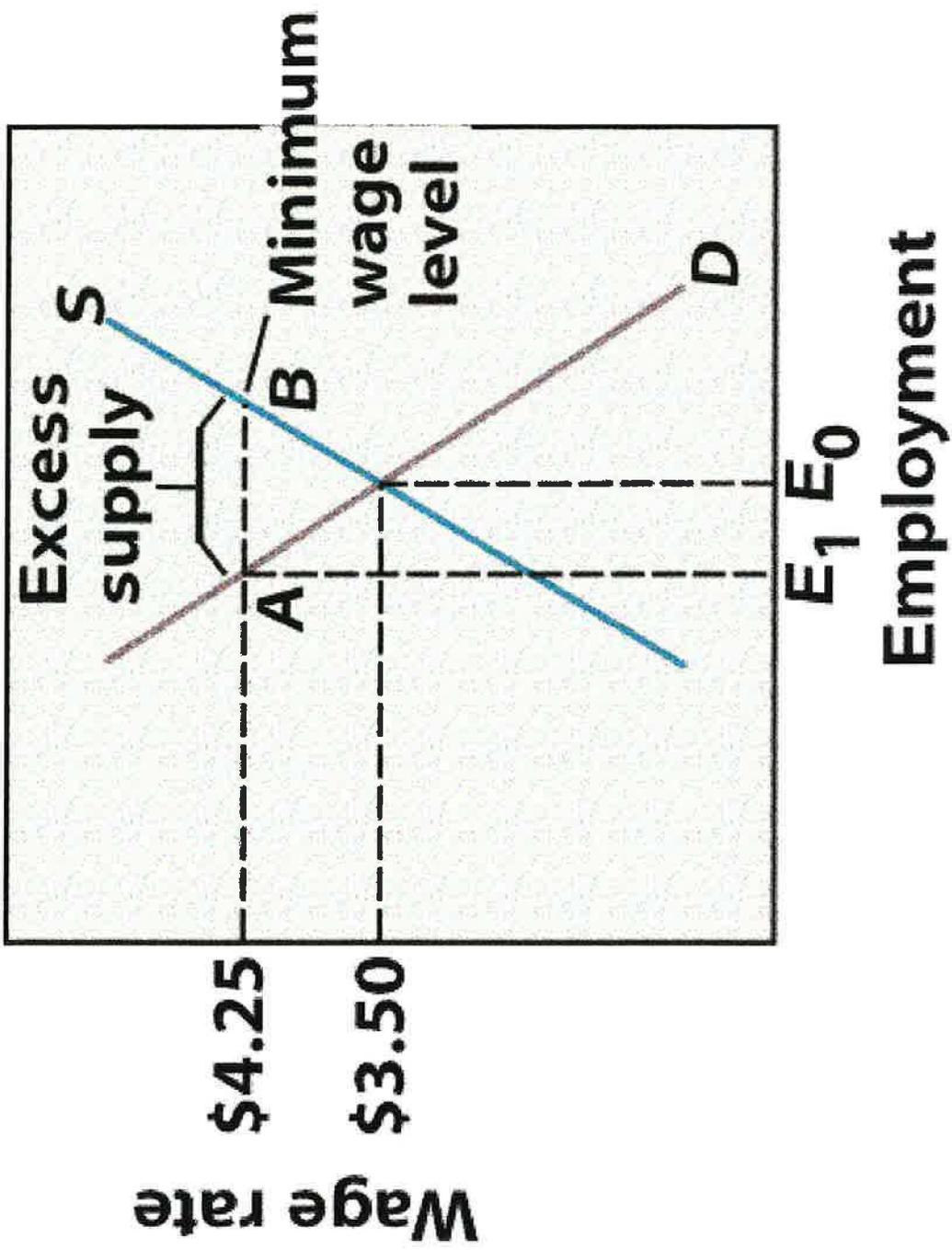


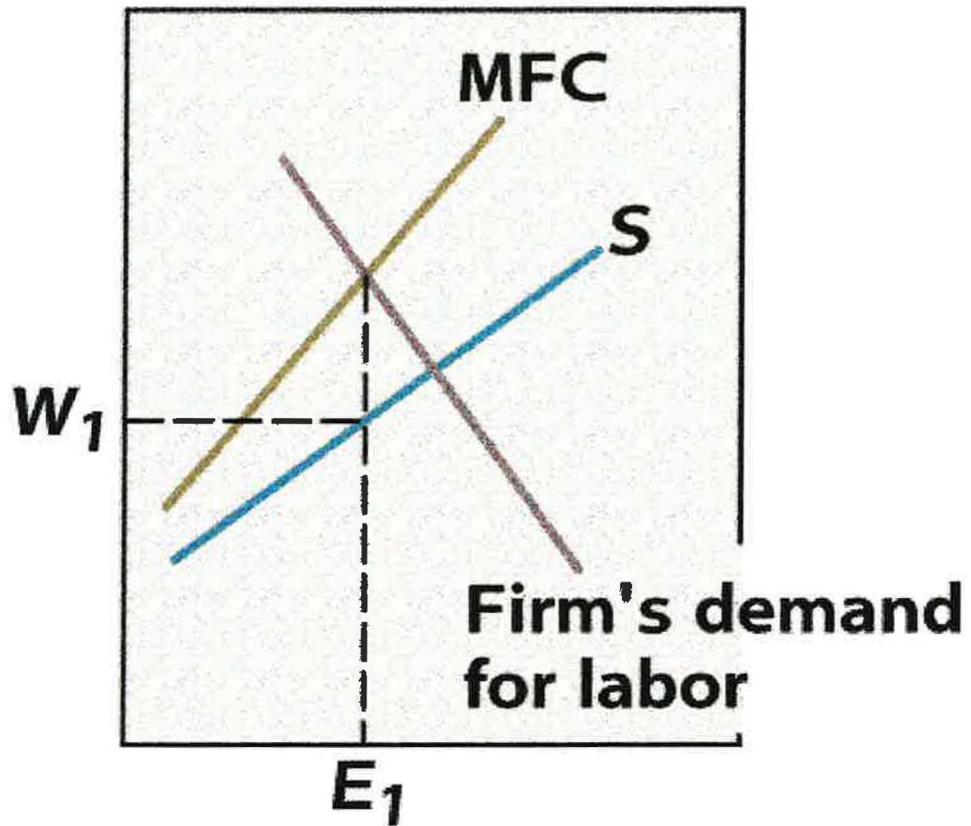
(b) Average and marginal product curve

Defects and Problems of Monopoly

“Monopolists, by keeping the market constantly understocked, by never fully supplying the effectual demand, sell their commodities much above the natural price, and raise their emoluments, whether they consist of wages or profit, greatly above the natural rate.”

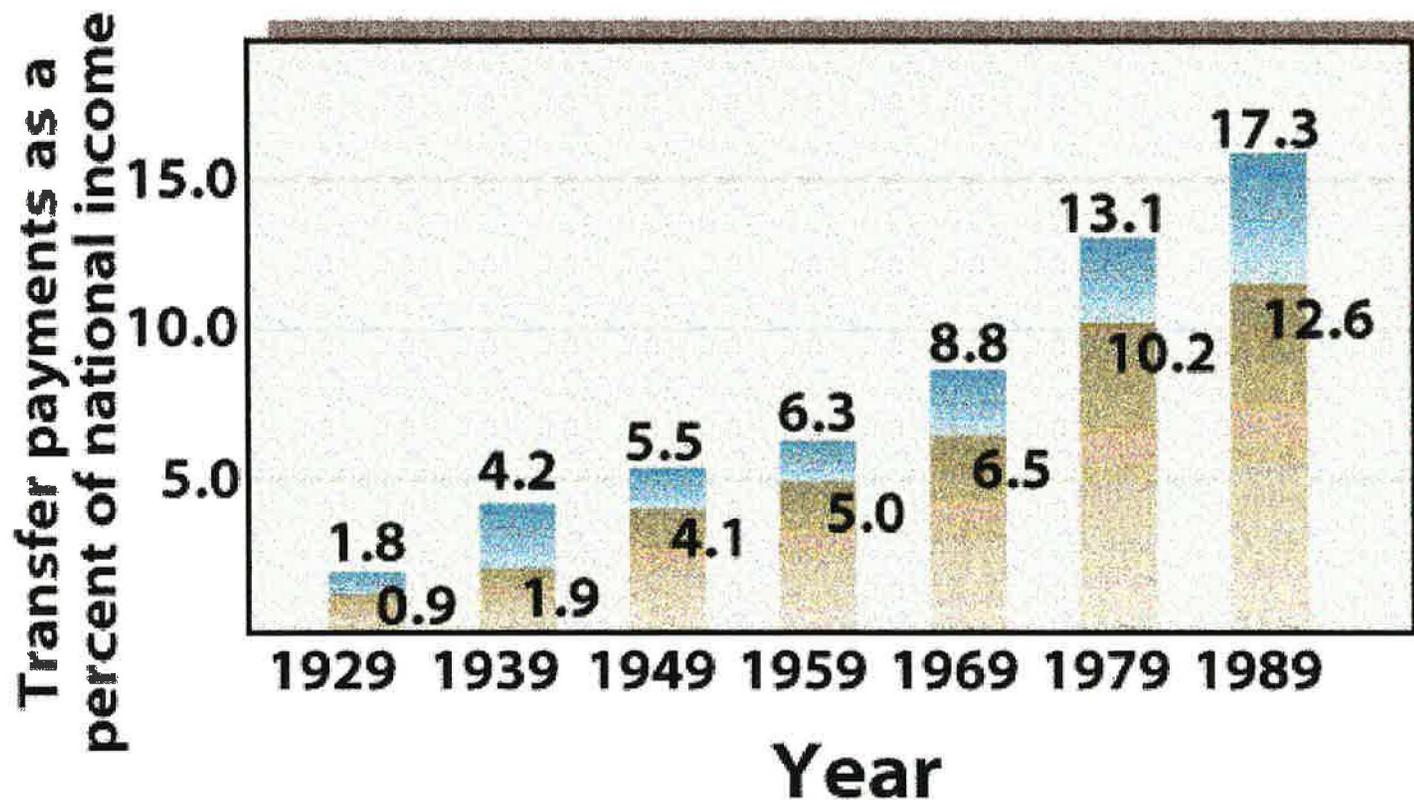
Adam Smith





(a) Monopsony (without unionization)

 State and local governments alone
 Federal governments alone

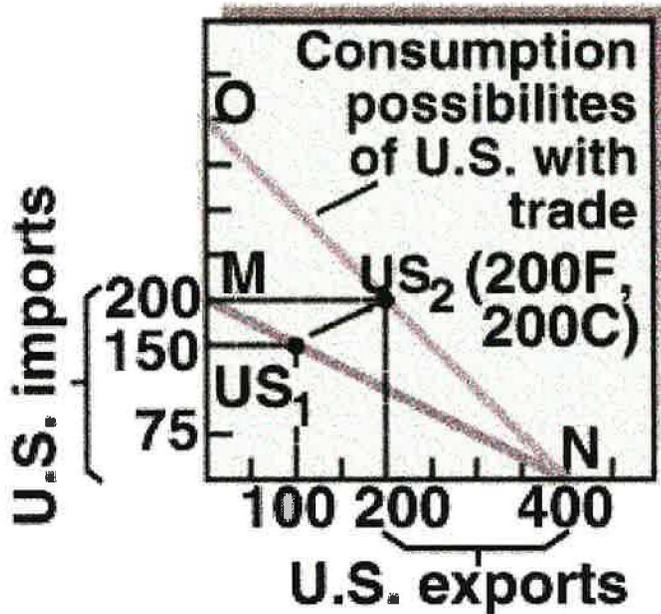


The Economics of Representative Democracy

The Demand for Government

- **Self-interest postulate**
 - **Personal wealth, power, and prestige influence decision-makers in the political arena in the same way as in the market sector**
- **Survival and the expansion concept**
 - **Government decision-makers must act in the narrow self-interest of their constituents if they hope to survive and obtain more power**

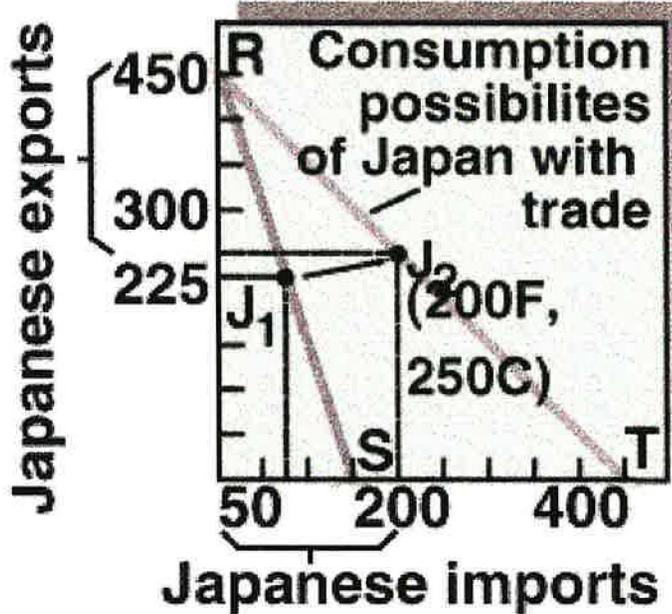
**Clothing
(millions of units)**



**Food
(millions of units)**

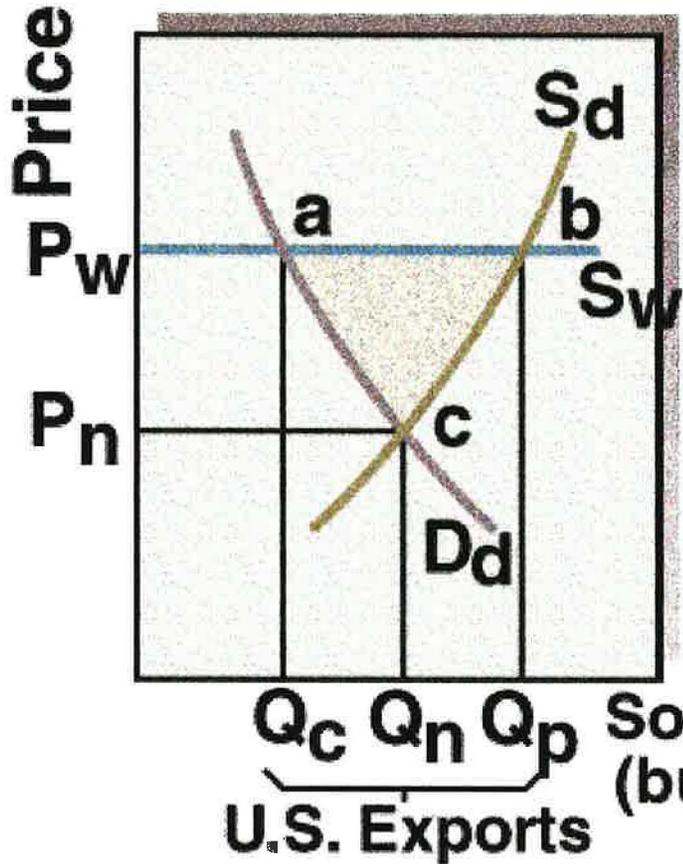
(a) United States

**Clothing
(millions of units)**

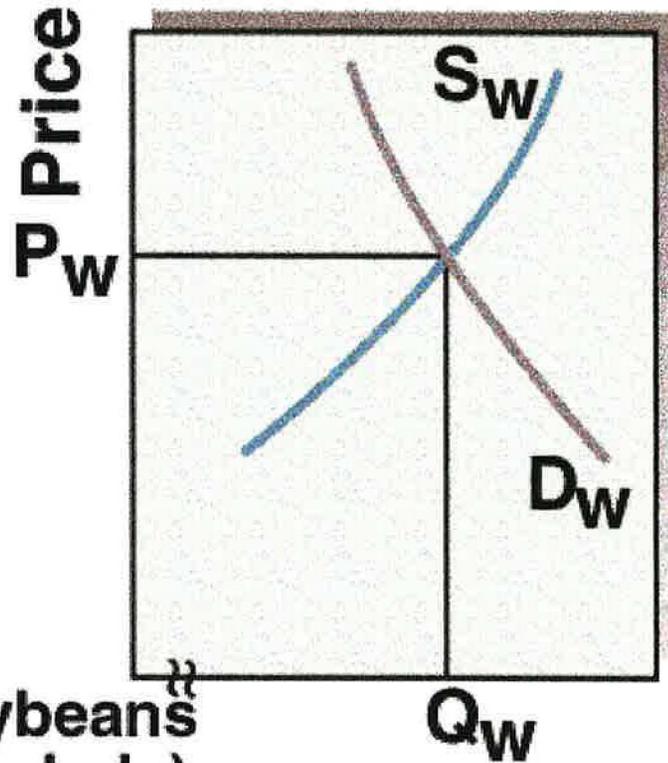


**Food
(millions of units)**

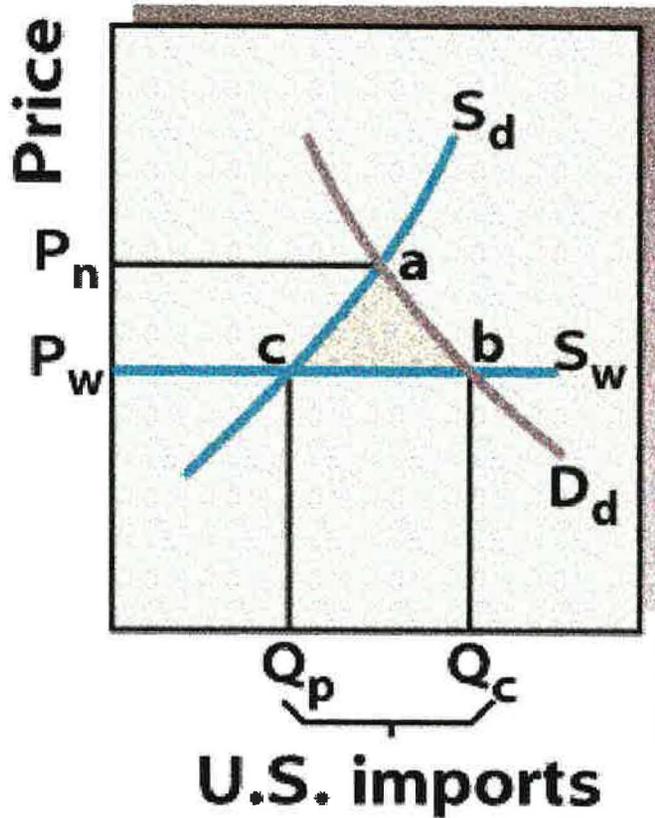
(b) Japan



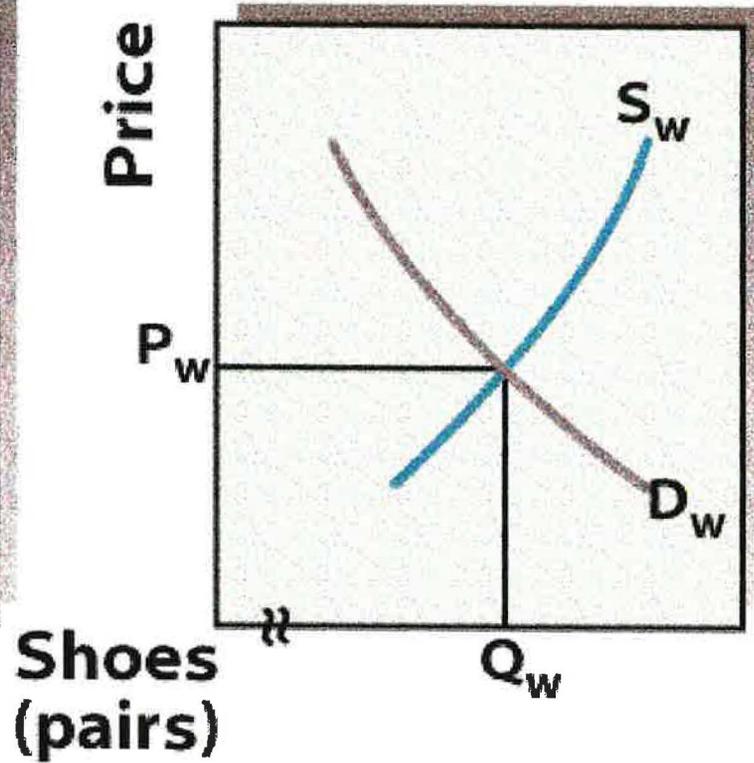
(a) U.S. market for soybeans



(b) World market for soybeans



(a) U.S. market
for shoes

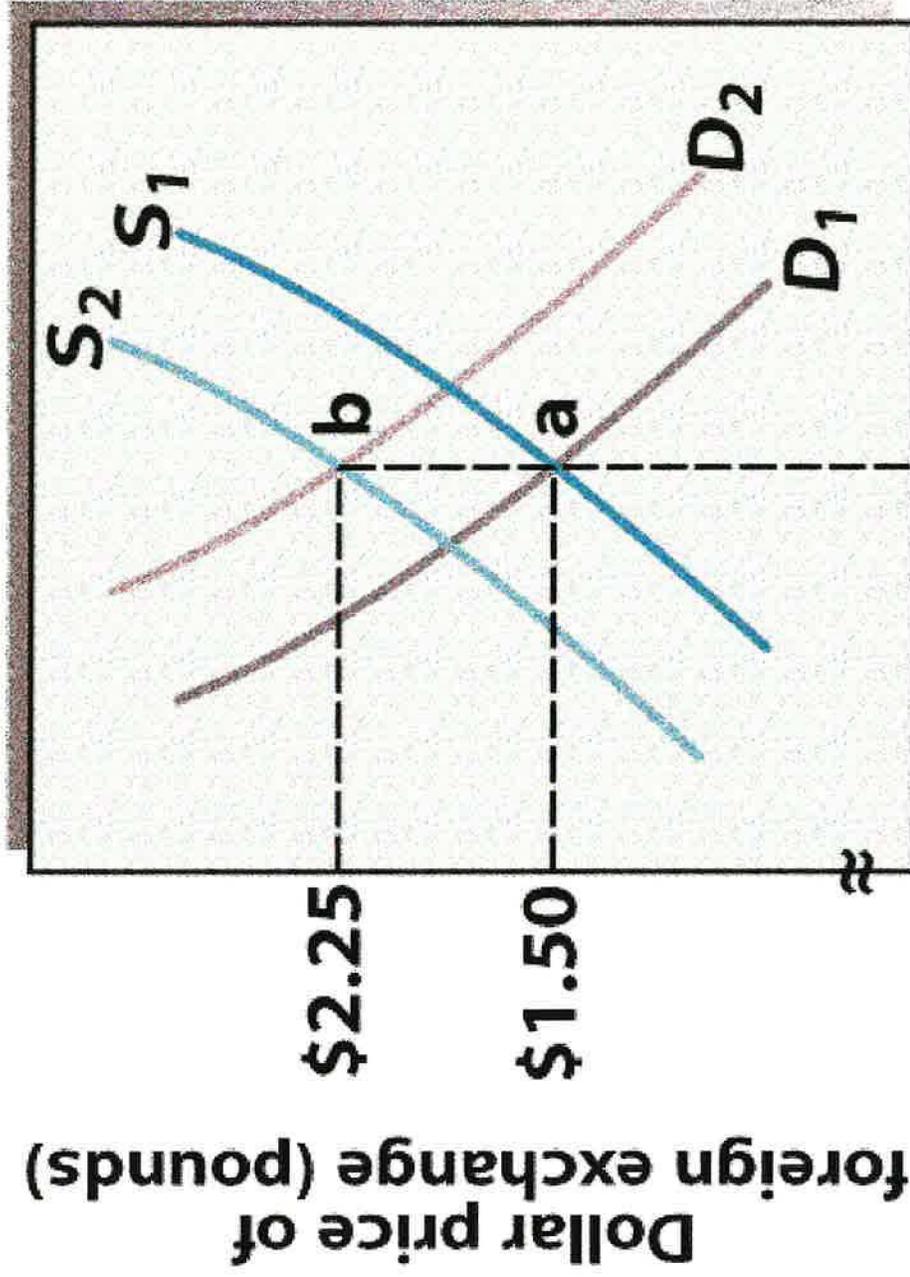


(b) World market
for shoes

GAINING FROM INTERNATIONAL TRADE

Chapter Focus

- **How does the size of the international trade sector vary across countries?**
- **What are the major import and export products of the United States? Which countries are the major trading partners of the United States?**
- **Under what conditions can a nation gain from international trade?**



Quantity of foreign exchange (pounds)

Measuring Income Across Countries

Economic Gap Between Developed and Less Developed Nations

- **Purchasing power parity method**
 - **Determines the relative purchasing power of currencies by comparing the amount of each currency necessary to purchase a typical bundle of goods in the domestic market of the country of origin**
 - **Relative purchasing power data is then used to convert the GDP of each nation to a common monetary unit**

Central Planning: An Overview

Command Economies

- **Centrally planned economies use directives rather than prices to allocate resources**
 - **Central planning agency tells each enterprise how much output to produce and the amounts of resources it will be allocated**
 - **Supply of goods is determined by the objectives of the planners rather than by the value of those goods to consumers**

Appendix E

Course Syllabus, Class Schedule
and
Collateral Reading Assignment
for
Principles of Economics
(Macroeconomics BUSC1A)

MT. SAN ANTONIO COLLEGE
BUSINESS ADMINISTRATION DEPARTMENT
PRINCIPLES OF ECONOMICS (MACRO) BUSC 1A

Professor: Dr. John D. Reck

Office:

Office Hours:

TEXT: Gwartney, James D. and Stroup, Richard L., *Economics—Private and Public Choice*, Latest Edition, Forth Worth: Dryden Press (Harcourt General). **REQUIRED**

Coursebook to Accompany Gwartney and Stroup. **REQUIRED.**

The Wall Street Journal or *Investor's Business Daily* or *Business Week* or *Fortune* or *Barron's*. A short-term subscription to one of these periodicals will be *most* helpful by enabling you to prepare ten (10) written reactions applying course subject matter to **current** related economic issues we are studying during each of the 10 weeks (week 5 through 14) of the 18 week semester. A separate course handout will be provided which will give detailed instructions regarding this major portion of your required written assignments. (Subscriptions are optional but are **highly recommended.**)

I. CATALOG DESCRIPTION:

Macroeconomics: Principles of economic analysis, comparative economic systems, and issues of public policy. Analysis of national income, money and banking, business cycles, and economic and stabilization practices, international trade and finance.

II. COURSE OBJECTIVES:

Upon completion of the course students will:

- A. Significantly improve their working vocabulary of macroeconomic terminology by demonstrating understanding on tests with at least 70% accuracy.
- B. Be able to use the basic tools of macroeconomic analysis as demonstrated on tests.
- C. Demonstrate an understanding of the mixed American economy; supply and demand; private and public sectors; national income, employment and fiscal policy; money, banking, monetary policy and the fiscal-monetary policy mix; economic growth and resource policies; and various schools of economic thought, international trade and international finance by successfully completing assigned problems.

III. STUDY SUGGESTIONS:

- A. Be certain that you understand your assignments. You are expected to spend an average of approximately two hours of preparation for each hour of class session. Plan your study habits NOW and you will not be cramming at the end of the semester.
- B. Study the material assigned BEFORE coming to class as follows:
 1. Skim through the assigned reading so that you will know what it is you are to study.
 2. Read the text carefully. Do not forget that many important ideas are presented in graphs, diagrams or maps.
 3. As you read, stop now and then and recite to yourself, in your own words, the important ideas in what you have just read.

4. Make brief notes in the margin. These will serve as cues for subsequent self-recitation.
5. Mark important or key passages for later review.
6. Review the material at least once between the first time you study the assignment and study for exams. Make use of your marginal notes and cues for self-recitation.
7. Find the definition for every term you do not understand.
8. Be sure to ask questions or contribute your thoughts on any related class topic of concern to you. We will devote as much time as possible for class discussion; however, we will also cover all required course subject matter.

IV. EXAMINATIONS AND ASSIGNMENTS:

- A. At least four (4) one hour examinations will be given. Your lowest of the four examinations will *not* be used for grade determination. **(No make-up examinations will be provided.)**
- B. A three-hour COMPREHENSIVE FINAL EXAMINATION will be given at the end of the semester on all material covered in the text, in the lectures, and in the classroom discussions.
- C. Written assignments and written collateral reading assignments will be required.

V. ATTENDANCE:

- A. Regular attendance is required and absolutely necessary for success in this class. Roll will be taken at each class meeting.
- B. Three (3) tardinesses or leaving class early will equal one unexcused absence.
- C. Students may be dropped from class on the seventh (7th) hour of unexcused absence. The *student* is ultimately responsible for dropping the class.
- D. Reasons for absences in excess of six (6) hours must be verified for consideration.

VI. GRADE DETERMINATION:

VII. GRADING SCALE

Hourly Examinations	50 %	90% - 100% = A
		80% - 89% = B
Assignments & Classwork	20 %	70% - 79% = C
		60% - 69% = D
Final Examination	20 %	0% - 59% = F
*Personal Evaluation	10 %	

*Personal Evaluation will be based on attendance, punctuality, class participation, enthusiasm and initiative. (It will not be punitive, *i.e.*, lower than your average of the other grade determination items.)

MT. SAN ANTONIO COLLEGE
Business Administration Department
Principles of Economics (Macro) BUSC 1A

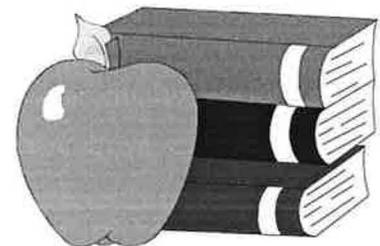
Class Schedule
Fall 1996

Dr. John D. Reck

Week

- | | |
|------------|--|
| 1 | Orientation, Test of Understanding College Economics (TUCE) Pretest, Getting Acquainted with the college economics discipline. |
| 2 | Chapter 1 - The Economic Approach; Chapter 2 - Tools of the Economicst |
| 3 | Chapter 2, Chapter 3 - Supply, Demand and Market Process |
| 4 | Chapter 3, Chapter 4 - Public Sector, Review Collateral Reading Assignment, Review for Examination I (Chapters 1-4) |
| 5 (CR-1) | Examination I; Chapter 5 - Government Spending and Taxation |
| 6 (CR-2) | Chapter 6 - Measuring Economic Statistical Aggregates;
Chapter 7 - Fluctuations, Employment and Inflation |
| 7 (CR-3) | Chapter 8 - Macroeconomic Markets; Chapter 9 - Aggregate Demand/Supply Models; Review for Examination II (Chapters 5-8) |
| 8 (CR-4) | Examination II; Chapter 9, Chapter 10 - Keynesian Aproach to Macroeconomic Analysis and Policy |
| 9 (CR-5) | Chapter 11 - Fiscal Policy; Chapter 12 - Money and Banking |
| 10 (CR-6) | Chapter 12; Review for Examination III (Chapters 9-12); Chapter 13 - Monetary Policy |
| 11 (CR-7) | Examination III; Chapter 13, Chapter 14 - Expectations, Inflation and Unemployment |
| 12 (CR-8) | Chapter 14, Chapter 15 - Stabilization Policy |
| 13 (CR-9) | Chapter 15, Chapter 16 - Budget Deficits and the National Debt; Review for Examination IV (Chapters 13-16) |
| 14 (CR-10) | Examination IV; Chapter 31 - International Trade |
| 15 | Submit Finalized Collateral Reading Assignment;
Chapter 31 - Begin Discussion of Collateral Readings |
| 16 | Chapter 32; Continue Discussion of Collateral Readings; Review Coursebook (Study Guide) in class. |
| 17 | Review for Final Examination; TUCE Post-test |
| 18 | Final Examination |

Notes: The Class Schedule may be subject to revision.
The Chapter Titles have been modified for clarity and simplicity.
Collateral Reading (CR-1 CR-10)



COLLATERAL READING ASSIGNMENT

For a period of 10 School Weeks beginning Week 5 (Week of _____) you are directed to select an article, cut it out or make a copy of it, and prepare a typewritten *reaction* each week. These articles and your comments are to be kept in a notebook for submission as directed by your instructor.

The following are guidelines to be used for this assignment:

1. Any established, major business, economics or finance publication may be used. (If you are in doubt, please check with your instructor.) *The Wall Street Journal*, *Investor's Business Daily*, *Fortune*, *Business Week*, or *Barron's* are highly recommended. Local and regional newspapers are usually not adequate.
2. The article should be current (not more than six weeks old). The more recent, the better. Make sure the article has sufficient substance and has a position taken by the author(s). You are to react to the issues after applying your newly acquired tools of economic analysis.
3. The article selected should relate to a specific economic topic currently under study in this course each week. Refer to the Class Schedule before making your final selection.
4. You are directed to write a two page, double-spaced, typewritten *reaction* to the articles. (*Do not summarize the article.*) Your comments should demonstrate a focus as follows:
 - a. Identification of the central issue(s).
 - b. An economic analysis of the article.
 - c. Application of economic principles and concepts whenever and wherever possible.
 - d. Conclusion(s) (and recommendations, if any). If your conclusion is negative, it will be more credible if you present what you believe to be a better alternative.
5. Clearly indicate the source, page and date of publication on the copy of the article.
6. Indicate, clearly and specifically (not the chapter title) the issues(s) and concept(s) from the class topics to which you feel the article can be related from that specific week's material.
7. Write in a conversational manner, e.g., "I found flaws" or "My analysis demonstrates...."
8. Your Professor is not necessarily concerned whether you agree or disagree with the author's position. The important point is your methodology and willingness to dissect and interact with the writer.
9. Use the following heading on a title page for each article:
 1. College Week:
 2. Time and day(s) of your class section:
 3. Title:
 4. Source:
 5. Date of Publication:
 6. Related Class Topic:
(Specificity is considered important)



Appendix F

Sabbatical Leave
Application

Sabbatical Leave Research and Development Project

“Teaching Economics Via Computer-Based Tutorial/Simulation and Graphic Modality for More Effective Classroom Instruction” 1995-1996

(Revised)

John D. Reck, Ph.D.

Overview

Years of study and research concerning the teaching and learning of economics has led me to believe that the need for education in economics is acute. This experience has been a rewarding one; but it has also given me anguish both about the state of the art of teaching economics and what people know about the subject, along with their fear, trepidation and sense of helplessness while taking the course.

It is interesting to note that enrollment in economics in colleges and universities is countercyclical to the economy. In times of recession, much of the population becomes concerned (or at least exhibits curiosity) with knowing something more about the subject.

What then should be the role of an economics principles course? First, it should provide students with a basic foundation of economic concepts they can use to make more informed decisions. Second, and perhaps more importantly, it should stimulate student interest sufficiently so they will want to learn more about economics in the future. Since the college course will probably be a student's first real exposure with economics, it should be a catalyst to more learning through reading about and analyzing daily news events. Additionally, the intent is to encourage students to study economics in more depth because they have learned how to use many of the tools of economic analysis.

The principles of economics course should be the most interesting and effective course available on the subject in order to have the greatest potential impact. The course offers the best single opportunity for the student to acquire a working knowledge of and positive attitude toward the economic system under which they will likely live out their lives.

To teach economics successfully, it is essential to know a great deal more than the obvious about how students learn and what causes discouragement and academic intimidation. I believe that a good economics course must be built upon at least four psychological foundations of learning theory, namely: (1) relevance, (2) motivation, (3)

active involvement in the learning process, and (4) accurate and frequent feedback and reinforcement.

The psychological literature documents the fact that students learn more and retain longer those concepts they feel are relevant to their own lives. This fact explains part of the increased enrollment in economics courses seen during periods of recession; it also explains the necessity to point out continually to students the relevance of each concept and theory covered. This is precisely the sphere in which traditional presentation of economic theory and instruction are monumentally ineffective. It seems as if the academicians in economics develop concepts, models and theories for the purpose of tactical self-amusement. They develop general theories to solve debilitating economic problems as if the problems were viruses that mutate to defeat the policy vaccines. These economists seem to have a condition I'd describe as "terminal uniqueness."

There is no doubt for the need to develop economic literacy by clearly introducing and developing economic theory and principles. The problem I wish to address is the incongruence between most contemporary economic concepts, models and theories as presented in today's classrooms and the likelihood of students' accommodative attitude toward them. It seems as if the students hear that "the index of *meaningless economic statistics* was up 2¼ points last month." My frequent feeling in the classroom is that many if not most students think economists get the job done by finding scapegoats for failure of economic policies. This certainly is not the conclusion we want them to reach from taking our classes.

I believe, especially in economics, that relevance and motivation are closely linked in the learning process, but not a great deal is known about how or why this is so. In our classes we present a plethora of concepts, models and theories. I attempt to do this in a contemporary format, addressing issues with which I think students are presently concerned. Also, I try to build from the student's initial interest in economics a more accurate understanding of economic principles and how economists think.

All this process leads to what I believe is the fulcrum of our instructional problems in economics. Students do not relate to what many practitioners feel is relevant to them. And of equal seriousness is the abundant evidence I have observed that the positive/normative paradigms we set up for the student are not clarifying the contributions of such classical and contemporary economic analyses. To use today's vernacular, our materials and presentations are not "user friendly." In the process of trying to help our students think like economists, we are in fact dashing any aspirations they may have had before the classroom experience.

I strongly believe that education in economics is essential. I hold myself to high standards of performance, and I have high expectations of my students. I certainly want a more satisfactory performance from my students without compromise of quality standards. I constantly ask myself what more I can do.

I have pondered this dilemma for a long time now. I truly feel that it is not only desirable but possible to perform the necessary research and, after analysis of the findings, modify the delivery methodology of our basic macroeconomic and microeconomic concepts, models and theories—not to fundamentally change them perhaps—but to convey the subject matter to students using new computer-based technology in an

effort to aid students to capture a desire and develop more ability to understand and apply these basics.

I realize such a notion may seem idealistic and ambitious, but I believe it is achievable and deliverable—if I can concentrate solely on this project during the 1995-1996 school year.

To learn faster and retain longer, students must be actively involved in the learning process. During the sabbatical I will develop the new “courseware” on my home computer. (By courseware I mean intellectual property requiring the acquisition, modification and where necessary, construction of computer programs, data bases, graphics and verbal descriptive materials which can be used to present the subject matter more effectively using the computerized system as my primary means through which I will conduct instruction.) I intend to acquire a high performance notebook computer and load it with my newly developed courseware before returning to the classroom in August 1996. (See the Appendix for a description of the type of high-performance notebook computer I will acquire.)

This new classroom presentation medium—via computer images projected at the front of the classroom—will be dynamic interactive. I will be able to have students ask “what if” questions. I would then enter the new values and let the model visually play out a dynamic, new solution as we are discussing it.

The class would cover the standard course material and use a regular economics textbook, but instead of simply lecturing and discussing from the text, I will be able to toggle through the material using the computer medium as my guide. In other words, I would be presenting—instead of comparative statics using the blackboard or overhead projector—the concepts, models and theories in dynamic, interactive color, with easy access to related issues and supportive material.

As suggested by the Salary and Leaves Committee, I have acquired three books (authored, co-authored or edited) by K. Patricia Cross. They are entitled: *Classroom Assessment Techniques—A Handbook for College Teachers*; *Accent on Learning—Improving Instruction and Reshaping the Curriculum*, and *Explorations in Non-Traditional Study*.

I am now in the process of studying her research and ideas and feel that I can gain insight in the areas of student-centered and collaborative learning. I will thoroughly review related literature and use the knowledge I gain from it in my own work in the development of a new teaching approach in Principles of Economics. If necessary, I will travel to colleges and universities to obtain information and materials related to the project.

Further, I will create a file of important economic data and be able to continuously update it (monthly or quarterly, as applicable). I will include measures such as: GDP Growth Rate; Inflation Rate; Unemployment Rate; Balance of Payments; Balance of Trade; M-1, M-2, M-3; Federal Funds Rate, Discount Rate, Prime Rate, Treasury Bond Rate; Capacity Utilization; Implicit Price Index, Producer Price Index, Consumer Price Index; Index of Leading Economic Indicators; Exchange Rates; Productivity; etc.

The students would be directed to analyze, discuss, respond and re-evaluate the material presented. Simply taking notes, memorizing and reproducing memorized material is not presently working satisfactorily (as clearly documented by student performance, measured by the standardized pre-post tests I have administered for six years to all my classes).

A successful class must leave some questions unanswered to cause the students to think on their own. The balance between providing insufficient technical information and memorable “pat” answers to most questions that arise is a difficult one to achieve. A successful course presentation must arm students with the analytical tool kit and yet lead them to the level of curiosity such that they will pursue many answers on their own. Through such a process, I believe there is greater potential that students will go that final distance on their own volition and enjoy the rewards of self-accomplishment.

Successful instruction in economics must be able to break down incorrect images and reconstruct images in a positive, appropriate manner. It has been repeatedly said that all learning involves the reconstruction of images, from those presumed to be wrong to those presumed to be right. In breaking down the myths and incorrect images students hold, I must be able to provide a logical, simplified alternative—regardless of how complex the reality may be.

Simply informing students that their normative image of the world is “all wrong” will not necessarily cause any learning to occur. I intend to offer a palatable, *positive* alternative, simplified enough for beginning students to understand.

Project Definition and Description

My sabbatical project is dedicated to a thorough research of existing economic concepts, models and theories in order to configure them into a collection of dynamic graphical, mathematical and pictorial computer-based presentations which can more effectively initiate learning in the Principles of Economics classroom (Macro and Micro).

It is planned that all major topics will be adapted to a computer-augmented, improved pedagogical delivery system. The use of an existing textbook will not be supplanted; it would become supplementary to the computer-based delivery system.

Investigation, Research, Development and Implementation

The investigation will begin with the acquisition of newly developed computer programs and CD-ROM materials, both tutorial and analytical graphic, symbolic and pictorial, as well as computer-based textual materials. I will then experiment with these products in an effort to determine which are most useful for my new teaching style. I will match up any useful material with the weekly Topic or Activity section of the Course Outline. I will simulate the class presentation with student learning in this new environment as the major focus. Shortcomings, gaps and appropriateness will be assessed. A detailed log of these findings will be constructed and will be used as a guide

for the development of the necessary new courseware. I will review numerous leading texts to assure that my content and presentations are congruent with generally accepted contemporary economic principles.

Student interface will be the overriding thrust for design or modification. In cases of mathematical or symbolic representation, every effort will be made to simplify them with attention to the selection of the symbol for relationship with the English language, making only rare exceptions for the most common non-English symbolic notation. I will avoid or try to make substitutions for higher order equations. (I will most likely use some higher order equations for the dynamic computer graphics presentations; however, there will be no need for students to be exposed to them.) I will make every effort to use only the most elementary mathematics, mindful of the fact that only eligibility for English 1A is prerequisite for the course. Calculus, as powerful as it may be in economic analysis, will be deferred to upper-division courses.

All the final selections with modifications will be stored, and wherever possible, the models will be enhanced with dynamic animation or comparative statics—whichever is most applicable as a teaching tool.

The concepts, models and theories will be extensively described verbally with sufficient examples, references and applications. Extreme care will be exercised for relevance to students and attention to the detail necessary for adequate coverage of the topic and for student understanding and insight.

Implementation will commence immediately upon return to the classroom for the fall semester of 1996 in all economics courses I am assigned to teach. My new computer-based courseware will then become the central modality through which I will conduct instructional activities. I will present the economics subject matter on a large screen consistent with the sequence of topics as covered by the textbook used for the course.

My class presentations and the interactive computer-based discussions will be guided by subject matter outlines which will be projected periodically throughout each lesson.

It should be noted that several publishers of Economics texts are on the verge of releasing CD-ROM versions of their text materials. Publishers have been discussing this for some time, but I have not yet been able to obtain for inspection any such newly-developed materials. If they indeed become available and appear helpful, I will acquire an external or internal CD-ROM drive and use it in conjunction with the materials I develop, whenever I want to make specific reference to items presented in our regular text.

The timetable anticipated is as follows:

	1995					1996				
	A	S	O	N	D	J	F	M	A	M
1. Review Literature	—————									
2. Acquire Prepared Computer-Based Economics Materials	—————									
3. Select Useful Materials			—————							
4. Adapt, Modify and Construct Courseware				—————						
5. Simulate Class Presentation						—————				
6. Field Test & Revise								—————		
7. Prepare Implementation Plans									—————	
8. Prepare Sabbatical Report										—————

Value and Benefit to Me, My Department, and the College

The above heading was taken from the APPLICATION FOR SABBATICAL LEAVE form. I noticed that students were not specifically mentioned. It is my intention that my future students in economics courses will receive substantial benefits from my efforts on their behalf.

My intent is to facilitate better student understanding of economic concepts, models and theories. More specifically, my newly-developed teaching approach is intended to help students learn and retain the subject matter better than evidenced in the past. The computer medium will, I believe, enable students to become more involved in the learning process. I intend to create a learning environment in which students can merge their personal objectives with those of the course because of the improved delivery of the subject matter. This should make the task easier for both students and teacher alike.

Economics is a particularly "sensitive" course for articulation with some transfer institutions. I believe that, for the most part, we have superior instruction in Principles of Economics than our neighboring universities. After implementation of my improved approach to teaching, I expect to effect significantly higher student performance, as measured by a standardized test. Also, I expect student retention in the courses will improve measurably.

The Business Administration Department and the College will benefit because economics courses are such an integral part of much of our instructional program, and in their present form, are especially frustrating for many students. This project will coincide with my effort, along with the Department and the Division, in the accomplishment of the College's stated Mission.

In conclusion, I feel confident that I can conduct my sabbatical research and development project as described in an exemplary fashion consistent with the psychological learning principles as outlined. I will be happy to share any or all my materials with my colleagues who teach economics at the College.

Sabbatical Report

My Sabbatical Report will consist of a detailed narrative of my Research and Development Project. I will list my program directory and copy extensive sample illustrations of the tutorials/simulations and graphic presentations. The report will include class schedules denoting the activities scheduled for each week of the semester.

Appendix

It is a well known fact that computer hardware is rapidly becoming more powerful and physically smaller, while multimedia is moving into exciting new dimensions. The power/price ratio is continuously improving.

At the present time I am interested in the High-Performance Toshiba T4850CT Multimedia Notebook Computer, which features:

- 75MHz Intel DX4™ 16KB Cache
- 10.4" dia. color SVGA TFT-LCD active matrix display
- 810 Million Byte (= 772MB) HDD
- 8MB RAM expandable to 24MB
- Two PCMCIA slots (16mm & 5mm)
- VL Local-bus video
- Integrated graphics accelerator
- 65,536 (64K) simultaneous colors
- WAV Audio and MIDI sound
- Audio jacks; headphone, built-in speakers and microphone
- 6.9 lbs.
- NiMH battery for extended life
- 3.5" 1.44MB floppy disk drive
- Ballpoint™ Mouse with QuickPort™

I will probably postpone the purchase until about December 1995, awaiting better prices and features. In the meantime I will use my present desktop with its CD-ROM drive.

Appendix G

Directories & Files
Used for
Economics Class Presentations

DOS Root Directory
&
Windows 95 Folders & Files

C:\>

Volume in drive C is KOBDDUS
Volume Serial Number is 222C-13D8
Directory of C:\

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SYSLEVEL	TP	10	09-25-95	9:40a
UINSTALL	EXE	66,281	02-15-95	1:20a
SCANDISK	LOG	442	09-14-96	4:20p
\$IBMHIPD	SYS	1,297	02-15-95	1:20a
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DEL	LST	37,717	10-10-94	6:03a
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TEDIT	HLP	14,596	09-01-94	6:52p
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QBACKUP	<DIR>		08-06-96	10:24p
AUTOEXEC	DOS	1,446	09-25-95	9:27a
CONFIG	B00	1,855	07-17-96	10:03p
II	<DIR>		04-07-96	3:17p
SRO	<DIR>		04-15-96	4:24p

(continuing C:\)

CONFIG	SYD	1,929	08-15-96	5:36p
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MWAVE_C	<DIR>		08-31-95	12:00p
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TRANXIT	<DIR>		08-31-95	12:00p
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CONFIG	B02	1,855	07-17-96	10:38p
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WINDOWS	<DIR>		08-31-95	12:00p
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FAXWORKS	<DIR>		09-12-96	5:44p
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SCRNCAM	<DIR>		08-31-95	12:00p

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PROVW20	<DIR>		08-31-95	12:00p
REPRINT	<DIR>		08-31-95	12:00p
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WARPREMV	LOG	2,897	05-05-96	2:17p
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ORG2	<DIR>		08-31-95	12:00p
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ECON_STK	<DIR>		09-12-96	6:33p
V7320	<DIR>		08-31-95	12:00p
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HCSS10	<DIR>		04-28-96	8:33p
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FILE0002	CHK	65,536	07-22-96	1:17p
FILE0003	CHK	524,288	07-22-96	1:17p
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ACROREAD	<DIR>		04-29-96	4:56p
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MY BRIEF	<DIR>		03-20-96	8:46p
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EXCHANGE	<DIR>		01-17-96	3:06p
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PSFONTS <DIR> 05-24-96 10:22p
BTFONTS <DIR> 05-24-96 10:23p
FILE0000 CHK 16,384 05-26-96 3:44p
AUTOEXEC SYD 2,583 08-20-96 8:10p
THINKPAD <DIR> 08-19-96 11:31a
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FILE0008 CHK 901,120 08-09-96 6:48p
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DRYDEN <DIR> 08-24-96 2:52p
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MACRO04 LEC 248,466 09-14-96 10:49p
MACRO1A LEC 285,830 09-14-96 1:38p
MACRO05 LEC 290,003 09-13-96 10:18p
NEW LEC 166,990 09-14-96 12:59p
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XTGOLD <DIR> 09-15-96 11:39a
MEDIAA~1 DOC 12,288 09-14-96 10:29a
C:\>
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BTFONTS <DIR> 05-24-96 10:23p
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FILE0008 CHK 901,120 08-09-96 6:48p
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DRYDEN <DIR> 08-24-96 2:52p
ECON_201 <DIR> 09-10-96 9:22p
MACRO04 LEC 248,466 09-14-96 10:49p
MACRO1A LEC 285,830 09-14-96 1:38p
MACRO05 LEC 290,003 09-13-96 10:18p
NEW LEC 166,990 09-14-96 12:59p
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XTGOLD <DIR> 09-15-96 11:39a
MEDIAA~1 DOC 12,288 09-14-96 10:29a
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57 dir(s) 63,766,528 bytes free
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DRIVERS	<DIR>		08-31-95	12:00p
LOTUSAPP	<DIR>		08-31-95	12:00p
CCMAIL	<DIR>		08-31-95	12:00p
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COMMAND	<DIR>		12-16-95	7:47p
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HIMEM	SYS	32,935	07-11-95	9:50a
BOOTLOG	TXT	3,676	03-10-95	1:51p
MOUSE	INI	24	01-28-94	8:50a
MSD	EXE	155,538	12-31-93	3:11a
PBRUSH	EXE	4,608	07-11-95	9:50a
FARPT001	TXT	3,037	04-30-96	6:43p
TERMINAL	EXE	148,160	12-31-93	3:11a

Press any key to continue . . .

(continuing C:\WINDOWS)

NDDEAPI	DLL	14,032	07-11-95	9:50a
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CALC	EXE	59,392	07-11-95	9:50a
REGEDIT	EXE	120,320	07-11-95	9:50a
CALENDAR	EXE	59,824	12-31-93	3:11a
CALENDAR	HLP	20,656	12-31-93	3:11a
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CARDFILE	EXE	93,184	12-31-93	3:11a
CARDFILE	HLP	24,810	12-31-93	3:11a
CHARMAP	EXE	14,752	07-11-95	9:50a
CHORD	WAV	24,982	12-31-93	3:11a
WRITE	EXE	5,120	07-11-95	9:50a
GRPCONV	EXE	33,280	07-11-95	9:50a
WAVEMIX	INI	54	09-14-96	9:18p
PACKAGER	EXE	65,024	07-11-95	9:50a
FA95REG	INI	463	04-26-96	4:13a
EXPAND	EXE	16,378	12-31-93	3:11a
GLOSSARY	HLP	46,570	12-31-93	3:11a
MODEMDT	TXT	32	08-26-96	5:40p
MUSCROLL	DLL	12,288	11-12-91	12:00a

(continuing C:\WINDOWS)

CLIPBRD	EXE	17,376	07-11-95	9:50a
ASPI2HLP	SYS	1,105	07-11-95	9:50a
POWERPNT	INI	1,882	09-14-96	9:18p
WAVES	BMP	190	07-11-95	9:50a
COMMAND	COM	92,870	07-11-95	9:50a
DOSSTART	BAT	47	08-05-96	10:00p
PINSTR~1	BMP	578	07-11-95	9:50a
RECORDER	EXE	39,152	12-31-93	3:11a
RECORDER	HLP	18,200	12-31-93	3:11a
TRIANG~1	BMP	198	07-11-95	9:50a
BLACKT~1	BMP	182	07-11-95	9:50a
MSREMOTE	SFS	<DIR>	12-16-95	8:03p
TERMINAL	HLP	36,279	12-31-93	3:11a
WINLOGO	BMP	38,518	12-31-93	3:11a
CONFIG	TXT	17,752	07-11-95	9:50a
WRITE	HLP	36,971	12-31-93	3:11a
256COLOR	BMP	5,078	12-31-93	3:11a
ARCADE	BMP	630	12-31-93	3:11a
ARGYLE	BMP	630	12-31-93	3:11a
CASTLE	BMP	778	12-31-93	3:11a
CHARMAP	HLP	10,797	12-31-93	3:11a
CHIMES	WAV	15,920	12-31-93	3:11a

Press any key to continue . . .

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DISPLAY	TXT	15,954	07-11-95	9:50a
CLOCK	EXE	16,416	12-31-93	3:11a
DING	WAV	11,598	12-31-93	3:11a
EXCHANGE	TXT	7,072	07-11-95	9:50a
EXTRA	TXT	2,685	07-11-95	9:50a
HONEY	BMP	854	12-31-93	3:11a
FAQ	TXT	40,378	07-11-95	9:50a
MSD	INI	620	12-31-93	3:11a
GENERAL	TXT	17,965	07-11-95	9:50a
NET	001	55	08-15-96	8:00p
IOS	INI	10,398	07-11-95	9:50a
RECORDER	DLL	10,414	12-31-93	3:11a
REDBRICK	BMP	630	12-31-93	3:11a
RIVETS	BMP	630	12-31-93	3:11a
SANDST~1	BMP	32,854	07-11-95	9:50a
HARDWARE	TXT	21,548	07-11-95	9:50a
SQUARES	BMP	630	12-31-93	3:11a
SETUP	OLD	112	08-17-96	6:59p
SETVER	EXE	18,939	08-15-96	9:39p
LOGOS	SYS	129,078	07-11-95	9:50a
THATCH	BMP	598	12-31-93	3:11a
INTERNET	TXT	3,277	07-11-95	9:50a

Press any key to continue . . .

(continuing C:\WINDOWS)

NET	BAK	55	08-15-96	9:25p
CURSORS	<DIR>		12-16-95	7:50p
ZIGZAG	BMP	630	12-31-93	3:11a
MOUSE	TXT	5,532	07-11-95	9:50a
DOSPRMPT	PIF	545	01-28-94	8:58a
IBMIR	INI	72	02-10-95	1:20a
MAIN	GRP	4,595	08-17-96	6:59p
ACCESSOR	GRP	8,442	08-17-96	6:59p
DIALER	EXE	63,240	07-11-95	9:50a
STARTUP	GRP	62	08-17-96	6:59p
PROGMAN	INI	1,279	08-17-96	6:59p
TADA	WAV	27,804	03-10-92	3:10a
DOSAPP	INI	1,048	04-29-96	5:49p
IBMIR	386	20,772	02-10-95	1:20a
THINKPAD	BMP	33,758	01-27-95	1:20a
THINKPAD	GRP	10,741	08-17-96	6:59p
NDISLOG	TXT	0	09-15-96	11:22a
FUELWIN	INI	85	11-28-95	7:18p
IBMVCD	386	8,260	10-07-93	9:27p
INSTALL	DAT	1,303	09-24-95	11:32a
SCRNCAM	INI	245	07-04-96	4:22p
BLUES1	MID	17,628	02-23-94	4:14p

Press any key to continue . . .

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FOLLOWFA	GRP	1,590	08-17-96	6:59p
DOCKWIN	INI	83	02-07-95	9:00a
DISCAPP	INI	670	09-14-96	7:34p
SMARTDRV	EXE	45,145	08-15-96	9:21p
ORG2	INI	5,555	05-19-96	4:29p
JAZZ1	MID	17,437	02-23-94	4:21p
MWAVETHI	GRP	5,372	08-17-96	6:59p
MPFX	INI	139	09-14-96	9:15p
MWAVE	INI	3,536	09-14-96	7:34p
ODBCINST	INI	2,454	12-18-95	8:09p
ODBCWKS	INI	418	09-07-94	1:23a
ODBC	INI	1,360	08-10-96	3:14p
LOTUS	INI	406	02-17-95	2:41p
WINHELP	INI	257	12-18-95	8:08p
ODBCISAM	INI	100	02-01-95	2:38p
LOTUSAPP	GRP	6,233	08-17-96	6:59p
~INS0363	~MP	10,240	03-29-95	8:20a
AMERICAO	GRP	1,571	08-17-96	6:59p
~UNSTALL	EXE	14,926	07-27-94	2:19p
TEST	CLP	960,107	02-03-95	8:41a
SYSTEM	---	4,941	08-10-96	5:56p
FIRSTAID	KEY	125	08-11-96	7:48p

Press any key to continue . . .

PROGMAN	01	536	02-02-95	12:49p
MINDPATH	GRP	2,379	08-17-96	6:59p
FOLLOWFX	BMP	5,214	10-17-94	12:28p
EXCEL5	XLB	551	07-04-96	9:49p
PROVW	INI	216	11-21-95	6:30p
MONOLOGU	GRP	2,364	08-17-96	6:59p
REPRINT	GRP	2,350	08-17-96	6:59p
PRODIGY	GRP	4,623	08-17-96	6:59p
FIRSTAID	LMA	381	08-11-96	7:48p
WIN	B00	17,239	07-17-96	10:03p
RMNUNINS	EXE	8,769	08-15-94	5:28p
MSDOSDRV	TXT	42,205	07-11-95	9:50a
MSACM	INI	216	12-16-95	7:40p
MSN	TXT	4,111	07-11-95	9:50a
NETWORK	TXT	18,538	07-11-95	9:50a
ADVANWIN	CFG	0	11-28-95	1:45p
MPLAYER	REG	1,116	11-19-93	12:00a
MSFFILE	INI	166	11-26-95	9:48a
INDEO	INI	144	11-19-93	12:00a
CPL20	INI	1,161	05-11-95	1:04p
ISGDI9	DLL	215,776	11-09-94	11:59a
TELEPRNT	INI	36	02-01-95	1:02a

Press any key to continue . . .

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TREGUPD	INI	2,762	02-01-95	1:02a
WININIT	BAK	78	09-12-96	3:44p
ISGDI9	INI	4,266	11-17-94	9:35a
ASYM	INI	1,411	12-16-95	4:45p
CPL20PE	GRP	2,386	08-17-96	6:59p
WINHELP	BMK	63	02-08-95	1:06p
WIN	---	12,155	12-16-95	5:07p
VIEW	PIF	995	04-12-96	11:52a
VER	DL	9,008	08-11-93	12:00a
TPDEMO	INI	42	04-04-95	1:20p
USSETUP	EXE	14,781	08-28-92	1:00a
SETDEMO	BMP	1,348,854	02-28-95	2:30p
FILEDEMO	BMP	1,348,854	02-28-95	2:32p
EZPLAYW	INI	138	03-16-95	3:27p
ATMCNTRL	EXE	115,904	12-07-93	12:56p
WINOS2	COM	31,502	01-31-95	8:43a
WINSHELD	EXE	23,552	10-02-94	6:54p
FASTLOAD	EXE	5,121	03-29-94	8:28a
WINOS2	ICO	3,499	05-23-94	12:34p
CPANELS	SCR	2,048	10-02-94	6:53p
ATM	GRP	775	08-17-96	6:59p
ATM	INI	1,016	06-02-96	2:36p

Press any key to continue . . .

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WINSAGNT	EXE	13,551	10-02-94	7:39p
WINDOS	COM	44,170	03-07-95	5:31p
OS2WARP	GRP	1,626	08-17-96	6:59p
II	INI	0	08-07-96	9:00p
WNTTOOLS	GRP	18,289	03-10-95	3:13p
IBMIR	DLL	233,434	02-10-95	1:20a
AWMODEM	INF	1,008	09-12-96	4:47p
_RESTART	BAT	158	03-28-95	3:18p
QUICKEN	I00	631	08-07-96	9:00p
FAXWORKS	GRP	3,073	08-17-96	6:59p
AUDIOFIL	GRP	3,073	08-17-96	6:59p
TRANXIT	GRP	3,823	08-17-96	6:59p
3DFX	GRP	5,429	08-17-96	6:59p
3DFX	INI	2,231	08-24-96	11:40a
G3	DAT	138,240	05-05-95	11:55p
KETCHUP	INI	52	04-04-95	9:08a
DVP	GRP	3,108	08-17-96	6:59p
DVP	INI	613	11-20-95	6:44p
V7320CAP	HLP	7,519	09-09-94	12:00a
V73APM2	SYS	4,171	02-02-95	12:00a
V73CAPW2	DRV	29,696	12-20-94	12:00a
V73RDRW2	DRV	18,432	12-20-94	12:00a

Press any key to continue . . .

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VV73TRS2	SYS	2,656	12-02-94	12:00a
SETUP1	EXE	130,349	05-03-95	11:37a
NOTEPAD	EXE	34,304	07-11-95	9:50a
MWCONTND	INI	60	04-25-95	4:31p
MPARTS	INI	340	04-22-95	1:08p
APPLICAT	GRP	3,831	08-17-96	6:59p
VIEW00	PIF	545	10-11-95	7:36p
PROTMAN	DOS	22,810	07-11-95	9:50a
AMMTOOLS	INI	1,842	12-16-95	4:45p
VIEW01	PIF	545	10-11-95	7:37p
QBASIC	PIF	545	10-11-95	7:37p
BASIC	PIF	995	05-05-96	1:40p
PING	PIF	545	10-11-95	7:37p
PING00	PIF	545	10-11-95	7:37p
FILEMAN	INI	127	11-29-95	4:05a
WIN	INI	16,921	09-15-96	11:22a
SYSTEM	B00	5,125	07-17-96	10:03p
PROGMAN	ANN	217	11-20-95	9:10p
SPORTSI	INI	199	11-01-95	6:14p
SIPREFS		11	11-01-95	6:14p
MSOFFICE	---	820	12-16-95	4:31p
QTW	---	532	11-01-95	6:16p

Press any key to continue . . .

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CLOCK	INI	65	11-24-95	10:15p
FS5ELPT1	PCL	6,888	12-16-95	5:25p
SYSTEM	BAK	5,355	09-07-96	7:54p
TIPS	TXT	28,617	07-11-95	9:50a
DEFRAG	EXE	241,600	07-11-95	9:50a
WIN	B01	17,240	07-17-96	10:13p
MSAPPS	<DIR>		11-23-95	2:10p
MSFNTMAP	INI	2,041	07-08-94	12:00a
MSTXTCNV	INI	586	07-20-95	12:00a
TTEMBED	INI	280	07-08-94	12:00a
EXCEL5	INI	744	11-23-95	2:32p
POWERPNT	---	1,611	11-28-95	7:22p
GRAPH5	INI	126	11-23-95	2:22p
ARTGALRY	INI	0	07-24-96	9:19p
WINWORD6	INI	754	11-23-95	2:32p
MICROSOFT	GRP	9,140	11-23-95	2:22p
WINHLP32	EXE	306,688	07-11-95	9:50a
URGENT!	CPE	4,345	07-11-95	9:50a
WIN	COM	22,679	07-11-95	9:50a
HPPCL5MS	X06	4,645	12-16-95	8:06p
WINHELP	EXE	2,416	07-11-95	9:50a
WINNEWS	TXT	1,056	07-11-95	9:50a

Press any key to continue . . .

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TILES	BMP	578	07-11-95	9:50a
M\$OFFICE	ACL	6,083	07-20-95	12:00a
WIN	BAK	16,917	09-05-96	3:41p
SYSTEM	B01	5,099	07-17-96	10:13p
JOHN000	ACL	6,098	04-10-96	10:06p
FAVORI~1	<DIR>		12-18-95	8:12p
CCARD232	EXE	189,952	07-20-95	12:00a
TCII	EXE	84,176	09-02-92	10:23a
CONFIG	<DIR>		12-16-95	7:50p
MEDIA	<DIR>		12-16-95	7:50p
SCANDSKW	EXE	4,608	07-11-95	9:50a
MSQRY32	CUE	209,228	07-20-95	12:00a
RAMDRIVE	SYS	12,663	07-11-95	9:50a
BUBBLES	BMP	2,118	07-11-95	9:50a
MSREMIN	WAV	15,920	07-20-95	12:00a
MORICONS	DLL	84,412	07-11-95	9:50a
CONTROL	EXE	2,112	07-11-95	9:50a
FONTVIEW	EXE	36,352	07-11-95	9:50a
PROGMAN	EXE	113,456	07-11-95	9:50a
RUNDLL	EXE	4,912	07-11-95	9:50a
RUNDLL32	EXE	8,192	07-11-95	9:50a
TASKMAN	EXE	28,672	07-11-95	9:50a

Press any key to continue . . .

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WELCOME	EXE	16,384	07-11-95	9:50a
WINFILE	EXE	155,408	07-11-95	9:50a
LOGOW	SYS	129,078	07-11-95	9:50a
NDDENB	DLL	10,768	07-11-95	9:50a
WINSOCK	DLL	42,080	07-11-95	9:50a
NETDDE	EXE	54,992	07-11-95	9:50a
WINPOPOP	EXE	27,600	07-11-95	9:50a
IFSHLP	SYS	3,708	07-11-95	9:50a
NET	EXE	375,962	07-11-95	9:50a
NET	MSG	109,229	07-11-95	9:50a
NETH	MSG	73,275	07-11-95	9:50a
CDPLAYER	EXE	88,064	07-11-95	9:50a
EXPOSTRT	EXE	33,280	07-11-95	9:50a
WIN	B02	17,240	07-17-96	10:38p
EXCHNG32	INI	110	08-15-96	9:39p
MWAUDIO	INI	608	05-11-95	2:54p
DOSGAME	PIF	545	05-25-96	5:54p
SYSTEM	B02	5,099	07-17-96	10:38p
EXCHNG32	---	110	12-18-95	8:09p
EBGIF9	INI	448	02-07-96	12:00a
QFP	INI	22	08-07-96	9:00p
WINSOCK	OLD	42,080	12-16-95	7:52p

Press any key to continue . . .

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MSMAIL	---	100	12-16-95	7:51p
PROTMAN	EXE	14,952	07-11-95	9:50a
PROTOCOL	---	181	12-16-95	7:51p
FARPT000	TXT	3,037	04-26-96	4:28a
WPR	INI	3,433	12-19-95	8:35p
JOHN	PWL	644	08-17-96	11:10p
DATALINK	INI	26	12-18-95	8:09p
DESKTOP	<DIR>		12-16-95	7:57p
TELEPHON	INI	2,814	09-14-96	9:11p
STARTM~1	<DIR>		12-16-95	7:57p
SENDTO	<DIR>		12-16-95	7:57p
FAX	GRP	2,383	08-17-96	6:59p
PROGRAMS	GRP	3,179	08-17-96	6:59p
SYSTEMTO	GRP	5,928	08-17-96	6:59p
DOCUMENT	GRP	46	08-17-96	6:59p
MULTIMED	GRP	3,092	08-17-96	6:59p
CIRCLES	BMP	190	07-11-95	9:50a
WINVER	EXE	3,632	07-11-95	9:50a
QTW	INI	530	09-14-96	11:19p
DYNAZIP	LOG	706	07-28-96	4:11p
CMD640X2	SYS	20,901	07-11-95	9:50a
STRAWM~1	BMP	590	07-11-95	9:50a

Press any key to continue . . .

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SUPPORT	TXT	24,482	07-11-95	9:50a
CARVED~1	BMP	582	07-11-95	9:50a
HOUNDS~1	BMP	470	07-11-95	9:50a
BLUERI~1	BMP	194	07-11-95	9:50a
HPFDJC04	INI	948	09-08-96	2:35p
GP_KBD	INI	292	07-17-96	10:13p
CONFID~1	CPE	4,357	07-11-95	9:50a
FORYOU~1	CPE	4,473	07-11-95	9:50a
CMD640X	SYS	24,626	07-11-95	9:50a
EMM386	EXE	125,495	07-11-95	9:50a
HPDSKJET	P01	2,318	05-26-96	7:00p
GAMES	GRP	3,062	08-17-96	6:59p
INETMIB1	DLL	50,512	07-11-95	9:50a
INTUIT	INI	532	08-07-96	9:00p
NTS	INI	76	08-07-96	9:00p
SYSTEM	SYD	4,983	08-15-96	4:47p
INTU_ONL	INI	1,035	04-10-96	2:42p
INTUPROF	INI	504	08-07-96	9:00p
PRIVLOG	TXT	215	12-19-95	7:49p
WINSTRUN	EXE	246,672	07-30-96	9:16a
CLOUDS	BMP	307,514	07-11-95	9:50a
TMPDELIS	BAT	122	12-19-95	7:50p

Press any key to continue . . .

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ADSCR01	BMP	308,278	12-24-95	9:52p
REDBLO~1	BMP	2,754	07-11-95	9:50a
FOREST	BMP	66,146	07-11-95	9:50a
GOLDWE~1	BMP	32,850	07-11-95	9:50a
METALL~1	BMP	36,182	07-11-95	9:50a
STITCHES	BMP	4,678	07-11-95	9:50a
QKNBANK	INI	20	12-29-95	12:14p
QHI	INI	85	05-11-96	5:41p
HPFDJC03	INI	825	01-23-96	10:44a
REGINFO	TXT	1,350	12-30-95	6:29p
WINHLP32	BMK	1,172	01-16-96	11:11a
HPSETLOG	TXT	2,062	07-27-96	2:05p
MOSJOHN	RHC	20	01-18-96	12:40p
PLAYER	EXE	61,216	08-01-95	2:04a
VIEWER	EXE	47,776	08-01-95	2:04a
EXITTO~1	PIF	967	01-18-96	1:15p
README	EXE	172,066	11-30-94	12:00a
PLAYENU	DLL	16,928	08-01-95	2:04a
VIEWENU	DLL	17,536	08-01-95	2:04a
MCENU	HLP	43,875	08-01-95	2:04a
PLAYENU	HLP	67,415	08-01-95	2:04a
VIEWENU	HLP	36,412	08-01-95	2:04a

Press any key to continue . . .

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GENERIC	CPE	5,935	07-11-95	9:50a
SCHEDU~1	VUE	8,900	05-27-96	5:46p
WORDWIZ	INI	582	01-31-96	12:23p
MFF	INI	127	04-04-96	8:55p
CGMINIVW	HLP	51,797	11-30-94	12:00a
ST4UNST	EXE	60,416	09-30-95	8:19a
PRF95C	INI	358	05-16-96	2:27p
SKUNINST	EXE	36,352	08-11-95	1:50a
DBLBUFF	SYS	2,100	07-11-95	9:50a
QWSHELLX	INI	116	08-04-96	7:34p
CALLLOG	TXT	887	05-23-96	6:07p
DIALER	INI	656	05-23-96	6:07p
NDISHLP	SYS	6,140	07-11-95	9:50a
HIGHEDIT	INI	110	06-26-94	12:00a
WCKDATA	INI	199	05-26-96	9:53p
FARPT002	TXT	2,824	08-09-96	3:56p
FIRSTAID	INI	1,660	08-24-96	7:02p
WIN386	SWP	0	09-15-96	1:52p
COMMVC21	DLL	19,031	09-29-94	12:00a
HEICON	DLL	25,536	12-20-94	12:00a
WININIT	EXE	40,801	07-11-95	9:50a
MSOFFICE	INI	833	08-15-96	9:39p

Press any key to continue . . .

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PROGRAMS	TXT	35,070	07-11-95	9:50a
WCHECK4	INI	1,427	05-26-96	10:27p
FAXVIEW	EXE	166,912	07-11-95	9:50a
WCHECKIT	INI	58	05-05-96	2:59p
HEIMGMAN	DLL	27,488	08-19-94	12:00a
HETOOLS	DLL	38,016	10-20-94	12:00a
HEDLG	DLL	43,936	12-20-94	12:00a
HERTF	DLL	71,936	10-20-94	12:00a
HIGHEDIT	DLL	625,824	12-20-94	12:00a
PTVC2125	DLL	683,282	09-29-94	12:00a
PUNINST	EXE	15,872	06-18-96	12:42p
WEBLINK	INI	103	09-13-96	10:32p
ACROREAD	INI	1,353	09-13-96	10:32p
ACROGRAF	INI	27	04-29-96	4:57p
CLNZIP32	INI	47	08-05-96	9:34p
PROTOCOL	INI	426	08-20-96	8:10p
ALPSGL~1	TXT	259	07-22-96	11:48a
COSW	GRP	91	08-17-96	6:59p
ODIHLP	EXE	4,197	07-11-95	9:50a
MPLAYER	EXE	147,968	07-11-95	9:50a
DRVSPACE	EXE	336,736	07-11-95	9:50a
DRVSPACE	INF	1,121	07-11-95	9:50a

Press any key to continue . . .

(continuing C:\WINDOWS)

MSMAIL	INI	100	08-15-96	9:39p
SETUP	BMP	38,462	07-11-95	9:50a
MICROS~1	PCX	8,288	05-10-96	5:03p
TWAIN	LOG	547	05-09-96	7:20p
TWUNK003	MTX	0	05-09-96	7:01p
TWAIN001	MTX	2	05-09-96	7:20p
TWUNK002	MTX	0	05-09-96	7:01p
SHORTC~2	LNK	284	05-28-96	9:49a
SHORTC~3	LNK	284	06-02-96	4:20p
MOS	RHC	20	06-03-96	2:29p
NET	CFG	55	08-20-96	8:10p
UNI3REP	TXT	1,314	09-14-96	6:51p
SHORTC~4	LNK	284	07-07-96	9:07p
ARP	EXE	19,536	07-11-95	9:50a
RTPATCH	INI	186	08-04-96	7:14p
FTP	EXE	37,520	07-11-95	9:50a
EXCHNG32	BAK	110	08-10-96	6:41p
NBTSTAT	EXE	33,371	07-11-95	9:50a
QTW	BAK	530	08-10-96	6:41p
SYSTEM	CB	98	08-15-96	9:39p
MSOFFICE	BAK	833	08-10-96	6:41p
PROTOCOL	BAK	391	08-15-96	8:00p

Press any key to continue . . .

(continuing C:\WINDOWS)

DESKTOP	GRP	60	08-17-96	6:59p
NETSTAT	EXE	23,776	07-11-95	9:50a
PING	EXE	12,128	07-11-95	9:50a
NEWMIC~1	DOC	4,608	07-11-95	9:50a
ROUTE	EXE	23,696	07-11-95	9:50a
DISPWIN	INI	0	09-14-96	4:37p
ARTGALRY	CAG	937,984	07-24-96	9:23p
UNINST	EXE	269,824	09-18-95	2:16a
PRINTERS	TXT	16,199	07-11-95	9:50a
WIN	QTW	16,917	09-07-96	2:15p
SYSTEM	QTW	5,355	09-07-96	2:15p
TELNET	EXE	66,672	07-11-95	9:50a
TRACERT	EXE	9,056	07-11-95	9:50a
FAXCOVER	EXE	191,488	07-11-95	9:50a
WINIPCFG	EXE	38,912	07-11-95	9:50a
TELNET	HLP	24,099	07-11-95	9:50a
HOSTS	SAM	728	07-11-95	9:50a
LMHOSTS	SAM	3,691	07-11-95	9:50a
NETWORKS		407	07-11-95	9:50a
PROTOCOL		800	07-11-95	9:50a
SERVICES		6,007	07-11-95	9:50a
EXPLORER	001	204,288	07-11-95	9:50a

Press any key to continue . . .

(continuing C:\WINDOWS)

SYSTEM	PUM	5,290	08-19-96	5:12p
PCNTND	DOS	50,400	07-11-95	9:50a
SNDREC32	EXE	105,472	07-11-95	9:50a
SNDVOL32	EXE	54,784	07-11-95	9:50a
CONTROL	INI	818	08-15-96	9:39p
DIRECTCC	EXE	60,416	07-11-95	9:50a
EXPLORER	EXE	204,288	07-11-95	9:50a
README	TXT	7,302	08-15-96	9:20p
PPTVIEW	INI	64	09-11-96	12:08a
READ_QTW	WRI	33,792	08-01-95	2:04a
SAMPLE	MOV	234,594	08-01-95	2:04a
WININI	QTW	16,912	09-12-96	6:44p
SYSINI	QTW	5,469	09-12-96	6:44p
QTW	QTW	530	09-12-96	6:44p
NEWBRI~1	<DIR>		09-14-96	2:59p
FAXWORKS	INI	2,899	09-14-96	9:06p
MWMWIN	INI	1,418	09-14-96	11:47p
	433 file(s)	16,704,628 bytes		
	21 dir(s)	63,766,528 bytes free		

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Appendix I

Scanned Material for Same Day
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**EXAMPLES OF SCANNED NEWS RELEASES
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(Will be Enlarged for Full Screen Projection)**

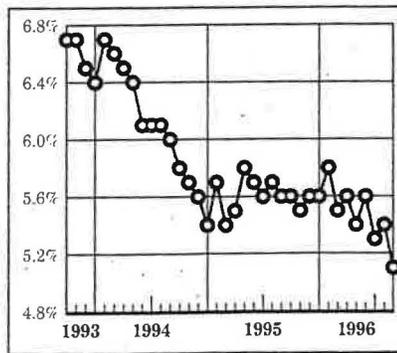
Southland Economic Trends

	Date	Latest period	Previous period	Year ago
Consumer Price Index*				
National	July	157.0	156.7	152.5
Southland*	July	157.6	156.7	154.5
San Diego County	2nd half '95	157.3	156.3	154.6
Retail Sales (in billions)				
National	July	\$204.7	\$204.5	\$195.5
Los Angeles County	June	6.4	6.6	6.2
Orange County	June	2.2	2.3	2.2
San Diego County	June	1.8	1.8	1.7
Ventura/San Bern./Riverside	June	2.4	2.5	2.3
Unemployment Rate (as percentage of work force)				
National	Aug.	5.1%	5.4%	5.6%
Los Angeles County	July	8.1	8.2	7.8
Orange County	July	4.5	4.3	5.7
San Diego County	July	5.7	5.5	6.9
Ventura County	July	7.9	6.5	7.6
Riverside/San Bernardino	July	8.8	8.0	10.0
Gasoline Prices (average California price per gallon)				
Regular unleaded (87 octane) Sept. 5		\$1.297	\$1.314	

*Data for Southland consumer price index and for all charts includes Los Angeles, Orange, Riverside, San Bernardino and Ventura counties. All CPI data is based on an index; 1982-84=100. Sources: Bloomberg Business News, Energy Information Administration, Jack Kyser, Economic Development Corp. of Los Angeles County, government sources

Unemployment Rate

In percent



UNEMPLOYMENT in August fell to a seasonally adjusted 5.1% of the civilian labor force from 5.4% the preceding month, the Labor Department reports. (Article on page A2.)