"COMPUTER APPLICATION IN ECONOMIC ANALYSIS"

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ABSTRACTS:

Utilizing modern computer languages, Economic researchers and students can obtain maximum flexibility, portability, intellectual satisfaction and sound research techniques by employing the computer on-line and interactively without relying on canned programs like SPSS, TSP and other black boxes. The author exploits this method in research as well as in classes from principles to econometrics. The power of new languages is illustrated with APL for two economic applications. one is construction of GNP indexes from price and quantity data and second is a multiple regression model. The latter, including coefficient estimates, predicted and actual depended variables, individual arrors and the sum of squared residuals, takes onbe short line of code.

KEYWORDS:- *Computer, Economics.*

1. INTRODUCTION:

Computer scientist and economists share interests in several areas of economic theory. Individuals from both group have been working together and in parallel for approximately three decades. Interest in the interaction of computer science and economics has intensified in the last 15 years, fueled in large part by the development of large computer networks such as the internet. the emergence of these new systems has caused a profound expansion of the questions that computer science has had to address, since these networks operate thorough the cooperation and competition of many participants, leading inevitably to underlying social and economic issues. At the same time, the internet has also made possible the development of overtly economic structures, through the creation of new kinds of markets. The purpose of this symposium is to introduce economists to recent work in these areas. The interaction of computer science and economic has had an impact on economic theory in three ways.it has introduced new problems--novel kinds of markets including those arising in the search industry, and new applications

Including network management and routing, on-line social systems, and platforms for the production and sharing of content. lt has raised new issues in areas already popular in economics, including learning, decision theory, market design, network-structured interaction, the analysis of equilibrium quality, and the computational complexity of Equilibrium and it has brought new methods to existing problems, including efficient algorithms, lower bounds based on computational hardness, and techniques from discrete mathematics and graph theory. We focus in this introduction on the topic of market design as it provides compelling examples of new problems, methods, and techniques in a fundamental economic context, and because mechanism design. Subsequent sections provide brief introductions of other aspects of algorithmic game theory, learning in games, and networks.

Application of MS excel in economics MS excel has wide application in economics. economics is a social science which deals with human wants and their satisfaction. the theories of economic like producer's behavior and consumer's behavior and consumer' behavior can be better explained with the help of computer software especially with MS excel. For example, the theory of law of demand states the inverse relationship between the price of the commodity and quantity demanded.MS Excel can be effectively used to state the law of demand. after stating the law a demand schedule and the demand curve can be inserted as cited below. the law of demand the law of demand states that "other things remains the same, there is inverse relationship between the price of the commodity and quantity demanded". That is when the price increases this quantity demanded falls and when the price falls the quantity demanded increases. This is shown in the following demand schedule and the demand curve. Demand schedule price of the commodity Quantity demanded 2 10 3 8 4 6 5 4 school of Distance education V sem.BA economics--computer Application in economics page 30 the above demand schedule and demand curve are drawn but using the excel facility, MS excel provides facility to do mathematical and statistical operations. By using these facility calculations can be done. Different types of charts can also be used for better explaining the concepts and law of economics.

Database systems versus file systems Consider a saving-bank enterprise keeps information about all customers and saving accounts. One way to keep the information on a computer is to store it in operating system files. To allow users to manipulate the information, the system has a number of application programs that manipulate the files ,including * a program to debit or credit an account * a programs to add a new account * a program to find the balance of an account school of distance education V sem. BA Economics -Core course-computer Applications in Economics Page 32 * a program to generate monthly statements. System programmers wrote these application programs to meet the needs of the bank. Now application programs are added to the system as the need arises. For example ,suppose that the saving bank decides to offer checking accounts. As a result the bank creates new permanent files that contain information about all the checking accounts maintained in the bank, and it may have to write new application programs to deal with situation that do not arise in saving accounts, such as overdrafts. Thus as time goes by, the system acquires more files and more application program. This typical file processing system is supported by a conventional operating system. The system stores permanent records in various files, and it needs different application programs to extract records from, and added records to the appropriate files. Before database management system came along organization usually stored information in such systems. Keeping organizational information in a file processing system a number of disadvantages. Data redundancy and inconsistency ;science different programmers create the file and application programs over a long period ,the various files are likely to have different formats and the programs may be written in several programming languages .moreover , the same information may be duplicated in several places/files. For example, the address and telephone number of a particular customer may appear in file that consist of saving account records and in a file that consist of checking account records. this redundancy leads to higher storage and access cost .More over it may leads to data inconsistency , Ie. the various copies of the same data may no longer agree. For example, a changed customer address may be reflected in saving account records but now elsewhere in the system. Difficulty in accessing data: Suppose that one of the bank officers needs to find out the names of all customers who live within a particular postal code are. The officers ask the data processing department to generate such a list. Because the designers of the original system did not anticipate such a request, There is no application program on hand to meet it. There is, however, an application program to generate the list of all customers. The bank officer has now two choice: either obtain the list of all customers and extract the needed information manually or ask a system programmer to write the necessary application program. Both alternatives are obviously unsatisfactory. To solve such problems more responsive data retrieval systems are requested for general use. Data isolation: because data are scattered in various files, and files may be in different formats, writing new application programs retrieve the appropriate data is difficult. integrity problems: The data values stored in the database must satisfy certain types of consistency constraint. For example, the balance of or the bank accounts may never fall below a prescribed amount (say $25) developers enforce these constraints in the system by adding appropriate code in the various application programs. However, when new constraints are school of distance education V sem. BA Economics-Core course- computer application in Economics page 33 added, it is difficult to change the programs to enforce them. The problems is compounded when constraints involve several data items from different files. * Atomicity problem: A computer system like any other mechanical or electrical device, is subject to failure. In

many applications, it is crucial that, if a failure occurs, the data be restored to the consistent state that exited prior to the failure. Consider a program to transfer $ 50 from account A to account B. If a system failure occurs during the execution of the program, it is possible that the $ 50 has removed from the account A but not credited to the account B, Resulting in an inconsistent database state. Clearly, it is essential to database consistency that either both the credit and debit occur, or that neither occur. That is, the funds transfer must be atomic -it must happened in its entirety or not at all it is difficult to ensure atomicity in a conventional file processing system.*Concurrent access anomalies. For the sake of overall performance of the system and faster response, many system allow multiple users to update the data simultaneously. In such an environment, interaction of concurrent updates may results in inconsistent data. Consider the bank account contain $500. If two customers withdraw funds (say $50 and $100 respectively) from account in an incorrect (or inconsistent) state. Suppose that the programs executing on behalf of each withdrawal read the old balance reduce that value by the amount being withdrawn, and write the result back. If the two programs run concurrently, they may both read values $500 and write back $450 and $400 respectively. Depending on which one writes the value last, the account may contains either $450 or $400,rather than correct value of $350. To guard against this possibility, the system maintain some form of supervision. But supervision is difficult to provide because data may be accessed by may different application programs that have not been coordinated previously.*security problem: Every user of the database system should not be able to access all data. For example, in a banking system, payroll personnel need to see only that part of the database that has information about customer accounts. But, since the application programs are added to the systems in an ad hoc manner, enforcing such security constraints is difficult. These difficulties are necessitated for the development of database system.

1.INTRODUCTION TO POWERPOINT:

Definition 1: power point is microsoft's presentation software that enables users to engaging presentation

that consist of individual pages, or slides which may contain text, graphics, sound, movies, hyperlinks and other objects. power point enables users to add animation and effect to slideshow elements. presentations can be printed, displayed, notated and navigated by the presenter. DEFINITION 2: Microsoft power point is a software product used to perform computer -based presentations. there are various circumstances in which presentation is made: teaching a class, introducing a product to sell, explaining an organizational structure, etc. DEFINITION 3:power point is a presentations software program that is part of the Microsoft office package. power point usea a graphical approach to presentations in the form of slide shows that accompany the oral delivery of the topic. this program is widely used in business and classrooms and is an effective tool when used for training purposes. power point is one of the simplest computer programs to learn. it is the most popular program used worldwide for presentations. power point presentations can be made into photo albums, complete with music or narrations, to distribute on CDs or DVD. if you are in the sales field, it involves just a few simple clicks to add an illustrative chart of data or an organizational chart of your company's structure. make your presentation into a web page for emailing purposes or as a promotion displayed on your company's website. DEFINITION 4: power point is a complete presentation graphics package. it gives you everything you need to produce a professional-looking presentation. power point offers word processing, outlining, drawing, graphing, and presentation management tools- all designed to be easy to use and learn.

2. MECHANISMS AND MARKET DESIGN:

Marshallian and Walrasians equilibrium analysis are not theories of how markets function. Their institution-free approach to predicting market outcomes precludes them from asking questions such as: When do market institutions fail? How do they behave when they fail? How should markets be designed to minimize failure, and what tradeoffs with market efficiency arises in doing so? Research in economics arising from general equilibrium and welfare economics has been concentrated on market imperfections. Computer scientists have paid relatively more attention to the nuts and bolts of market mechanisms and the robustness of market institutions.

2.1 Computers Help Companies Manage Globalized Businesses:

As part of their drive to be competitive many companies now turn each of their component businesses as world-wide Organisations, and plan their manufacturing and Sourcing strategies on a global basis. To manage their-

flung operations effectively, firms increasingly turn to computers. As one financial executive of a large multinational noted, "We receive data from over 50 markets. without computer we couldn't possibly coordinate that volume of data quickly and efficiently." One main reason for the use the computers in economic analysis and forecasting the widespread availability of in expense, convenient microcomputers. The personal computer (PC) has already become a fixture in financial departments the world over.

2.2 Approaches to Forecasting:

Prior to 195os there existed hardly nay method for business forecasting. In the mid-195os exponential smoothing technique was first used by the defence personnel for forecasting purposes. Subsequently, this technique was applied to business organisations. Six important characteristics or dimensions of planning and decision-making which determine the choice of forecasting methods are the following:**a. Time Horizon:**

The period of time for which the decision is made will have an Impact. It may be the immediate term (i.e., less than one month),short-term (up to 3 months), medium-term (up to-2 years) long-term (more than 2 years).

b. Level of Details:

While selecting a forecasting method for a particular situation, one must know the level of details which will be needed for the forecast to be useful for decision-making purposes. The need for detailed information varies from situation to situation and time to time.

c. The Number of Variables:

 The number of variables to be forecast affects the need for detail which, its turn, determines the choice of appropriate methods even in the same situation. when forecast is to be made for a single variable, the procedures used can be more detailed and complex than when forecasts are made for a number of variables.

4. CONSTANCY:

Forecasting a situation which does not change is different from forecasting a situation which is fairly unstable

5. CONTROL VS. PLANNING

The controlling function is performed by using a new technique called management by exception. any forecasting method must be sufficiently flexible so that the changes in the basic patterns of behaviour of variables or relationships among them can be detected at an early stage.

6. EXISTING PLANNING PROCEDURES:

For introducing new forecasting methods, often the existing planning and decision- making procedures have to be changed. Moreover, in case of any deviation from a set path it gives early warning and the managers face human resistance to such changes. So the usual practice is to select those forecasting methods which are most closely related to the existing plans and procedures. In case of necessity, these methods can be improved later on.

7. REFERENCES:

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