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1980

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COMPREHENSIVE ECONOMIC ANALYSIS SYSTEM

A System For Regional Analysis

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COMPREHENSIVE ECONOMIC ANALYSIS SYSTEM

The Comprehensive Economic Analysis System (CEAS) is an interactive, computer-aided system to help analysts and planners evaluate regional issues. CEAS is presently under joint Army and Air Force development at the Construction Engineering Research Laboratory (CERL) in Champaign, Illinois. It represents a generation of development above its predecessor, the Economic Impact Forecast System (EIFS) but still retains the characteristic "ease-of-use" and accessibility that EIFS is noted for. The three components that make up CEAS--a set of data profiles, a collection of regional economic and econometric models, and a data analysis system--may be used in combination or individually to provide users with the data, tools, and flexibility to solve their problems.

When complete, CEAS is to include much of the demographic, economic, and social data that is available at the county level and, in addition, even some data for sub-county units. Users should find CEAS a much "richer" and more "up-to-date" source of local area information than was the previous version of EIFS. These data come from various Federal information sources; for example,

Bureau of the Census

- Population Censuses
- Economic Censuses
- County Business Patterns Employment
- State & Local Gov't. Expenditures & Revenues

Bureau of Labor Statistics	. Labor Force, Employment, & Unemployment
Bureau of Economic Analysis	. Employment & Earnings by Broad Industrial Source . Farm Income & Expenditures . Detailed Transfer Payments . Regional Demographic & Economic Projections
National Center of Health Statistics	. Births, Deaths, Marriages, & Divorces . Life Tables

Data are retrievable by area which permits a high degree of flexibility in defining regions of analysis. Changes in regional definitions and aggregations of the base-line data are accomplished with the ease of typing a new set of county names. In addition, several commonly-used types of predefined regions are also available; e.g., Standard Metropolitan Statistical Areas (SMSAs) and Bureau of Economic Analysis (BEA) Economic Areas.

The regional economic models in CEAS include updated versions of the EIFS forecast models, so that comparisons of many alternative regional impact analyses of programs and projects can be carried out in a timely manner. Although oriented to military applications, the EIFS forecast models have been used for various non-military regional impact situations. Their ease of use, simple model structure, and limited user-supplied information requirements make the EIFS forecast models ideal for preliminary planning purposes. For further detailed study of likely scenarios of military realignment actions, the Local Economic Consequences Study (LECS) is also provided in CEAS. In order to analyze non-military regional impact situations (e.g., industrial

relocations or local government tax subsidies) or to study programs and projects that are expected to cause significant local demographic and economic dislocations, the Air Force System Evaluation Model (AFSEM), the Bureau of Reclamation Economic Assessment Model (BREAM), and the Regional Industrial Multiplier System (RIMS) are also available in an interactive form within CEAS.

> AFSEM is a comprehensive system that provides demographic and economic assessments of large-scale projects in localities and regions. AFSEM integrates a regional input-output model with a regional econometric macroeconomic model in order to carry out its assessments.
>
> BREAM is a sophisticated multi-purpose economic and demographic projection model. It is intended to be used to assess the impacts of large construction projects on regional economies and its constituent communities and to analyze alternative future scenarios.
>
> RIMS is a region-specific input-output modeling system. It estimates output, employment, and income multipliers for industrial sectors for specified regions using non-survey techniques. These multipliers are useful for regional economic and demographic impact analyses whenever the industrial nature of the scenarios are known or are important.

In the near future, CEAS will also include a multi-regional input-output model to analyze those impact scenarios that are expected to generate significant interregional spill-over effects.

Finally, CEAS has various analytic capabilities for data and statistical analyses. CEAS contains a conversational statistical package that provides the tools necessary for in-depth data analysis. At present, it includes options for plotting, data transformation, univariate statistical computations, simple and

partial correlation analysis, and multiple regression analysis. In addition, there is a user-oriented interest factor table program (called INTABLE) which generates interest and discount rates for both continuous and discrete periods of compounding. CEAS also has a Region of Influence Definition Model (ROIDEM) which allows a user to determine the spatial distribution of employment impacts. And, CEAS will soon have the capability to perform simple extrapolations and forecasts based on a variety of ratio methods.