

COMPUTER USE IN ECONOMETRIC WORKS AT THE "DULBEA"

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The activity of the DULBEA (Département d'Économie Appliquée de l'Université Libre de Bruxelles) is concentrated in applied economic studies at the macro-economic level and makes a heavy use of econometric and statistic methods.

These studies would have been unmanageable without a powerful computer : they all involve a considerable quantity of computations (matrix inversion, numerical integration of differential equations, etc.). The development of computer utilization by the DULBEA was thus (and still is) closely linked to the performance of the available equipment and reached a significant level only from 1965 onwards. The programs are written by the researchers (in FORTRAN IV) and executed in the "Centre de Calcul" of the University of Brussels (1).

In the last years, the computer works have been mainly devoted to the estimation and resolution of a short-term model for the Belgian economy; the model includes 63 simultaneous non-linear equations (38 for the real sector and 25 for the monetary sector) and is used for the prediction of the rate of growth of the gross national product and its main components, on an annual basis. In the near future, this model will be completed by a quarterly model in order to have a better view on cyclical fluctuations.

Besides, the improvements in the existing equipment (mainly the extension of the memory capacity and a greater precision in the computations) have led to the computer treatment of problems of greater dimensions, i.e. the effects on world trade and growth of the economic policy of the Common Market, implying the manipulation of trade matrices of order greater than 100, and also to the study by simulation techniques of special topics such as the stability conditions of a system of fluctuating exchange rates or the properties of new estimation techniques.

In the future, the use of the computer will become more and more extensive, owing to the increasing dimensions of the problems treated (due to disaggregation by sectors and by

economic regions in the economic model, for instance). Since such works imply a considerable amount of computer time, a better coordination between the various economic institutes would be highly desirable in order to avoid useless duplication of efforts.

(1) The available computer was an IBM 7040 from 1965 to June 1970 and is now a CDC 6400.