

July 1964

NEWSLETTER

Committee on Computers in Research
Federal Reserve System

Programmers, economists, and others in the Federal Reserve System are invited to submit contributions to the Newsletter. Contributions may consist of program routines, programming techniques, computer applications for economic and statistical research, and similar matters of interest to System personnel.

Contributions may be submitted to members of the Committee on Computers in Research or to Emanuel Melichar, Economist, Division of Research and Statistics, Board of Governors.

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NEWS NOTES

Boston

The most significant recent event for our Computer Center was the arrival of a 1443 printer. The initial effect was to close down operation for 3 days while the new unit was installed. However, we expect to nearly double our processing capacity within the next few months.

This is the first 1443 printer to be coupled with a 1620 computer in the New England area and in the process both we and I.B.M. learned a few things. Until S.P.S. programs failed to operate, no one realized that indirect addressing was mandatory with this equipment. The other major problem was solved when Jim Solari altered the new 1443 Fortran Compiler to eliminate the 72 column limitation on data cards. We have since received several calls from other area users wanting to know how it was done.

Since the arrival of the printer we have programmed our monthly Savings Bank Report and can now send printed statements of individual percentage changes to each participating bank.

We also have a new programmer. Mrs. Davis, who is a research assistant working in the Financial area, has recently completed both basic and 1620 programming courses. She has already begun programming some of her own work.

Stephen Lofgren
John J. Arena

Richmond

Our I.B.M. 1401 computer is being expanded from 4K to 8K. We expect the extra equipment to be delivered by October 1. In addition, our Charlotte Branch has on order for January 1965 an I.B.M. 1401-G computer. We believe that these additions will greatly aid our research projects.

The majority of our recent work has been in the area of improving existing programs.

Elizabeth Angle

Atlanta

As was reported in a previous issue of the Newsletter, we have written a program to fit an exponential trend line. Recently, we modified this program to include a punched output containing the differences between actual values (Y_i) and trend line values (Y_{ti}).

Another project that might be of general interest is one in which we are writing a program to create a tape record of daily deposit

data for each member bank. The tape will include: "Due to Banks," "U.S. Government Demand Deposits," "Other Demand Deposits," "Cash Items," "Due from Banks," "Net Demand Deposits," "Time Deposits," and "Vault Cash," along with 25 identifying codes for each bank.

Harry Brandt

Minneapolis

The industrial production index project is taking shape with major phases of it scheduled for completion by the end of the summer. Sub-parts include:

1. Production worker manhours series - for Minnesota, Twin Cities, and Ninth District; indexed and seasonally adjusted.
2. Comparison of co-movements of PWMH and KWH series for Minnesota and Ninth District.
3. Production index, probably using recently developed Boston Bank type output model, for Minnesota and Ninth District; indexed and seasonally adjusted.
4. Experimentation with feasibility of:
 - a) Value added model on the order of the St. Louis Bank method.
 - b) An output model based on both PWMH and KWH inputs.

On June 22 we installed a new 20K-1620 Main Frame, a 1311 Model 3 disk drive with 2 million digits of operator replaceable storage, and a 1443 Model 2 printer which will run from 240 lines per minute on a full 52 character setup to 600 lines per minute on a 13 character set.

The new equipment and its associated MONITOR operating system provide us with a full FORTRAN II language and program controlled linking and overlay from the disk storage. The experience to date indicates substantial savings in compiling and printed output times. For instance, time to compile and begin execution of a 5-link FORTRAN program is cut from a two-hour minimum to something less than 25 minutes.

Some of the research applications scheduled for early use include seasonal adjustment, current money supply, call report processing and tabulation, personal income, and many of our published releases.

Starting in July approximately twelve persons in the Research Department have been holding alternating teacher-group discussions (we take turns leading the discussion) twice a week on the book Linear Algebra by G. Hadley. The purpose of the class is to better utilize linear algebra as a tool for economic analysis.

Ronald E. Kaatz
Richard B. Thomas
Marvin Knoff

Kansas City

We have written and are in the process of testing a multiphase stepwise multiple regression program. The program's main virtues are size and flexibility. Up to 80 variables may be included in the correlation matrix and subsets of up to 20 variables may be selected for the regression equation. Input and output may be on cards, tape, or both. Input data may be transformed. The variables included in the regression equation may be specified or selected by analysis of variance methods. Input data and residuals may be plotted in a scatter diagram. Residual analysis may be readily performed. The program is written in FORTRAN for a 16K 1401 with at least one tape unit.

We recently obtained a 1401 program for the BLS Seasonal Factor Method (1964 version) of seasonal adjustment. The program write-up states that "the method developed for use in 1964 introduces several new features which cause the seasonal factors to change with much less irregularity than in the previous version of the BLS method." The machine requirements are (1401) 8K memory, advanced programming, and two tape units. The program is very well documented and it is available, free to the System, upon request to Mr. Abe Rothman, Deputy Associate Commissioner for System Analysis, Bureau of Labor Statistics, Washington, D. C.

Carroll H. Wilkerson

Dallas

A special deck of header cards has been created for all banks in the Eleventh Federal Reserve District. Each bank (both member and nonmember) is represented by a single card, in which is the bank's name and a variety of codes. The card for each bank contains codes indicating: branch territory; crop-reporting area; whether member or nonmember; whether national bank or state; and state, county, city, and structure code. These codes permit ready extraction of data contained in the decks of various statistical series for more detailed analysis.

Jim Lane
John B. Ross

San Francisco

We have been approached by the Commerce Clearing House Incorporated to subscribe to their Automation Reporter publication. If anyone within the System is currently receiving this material, I should appreciate their comments regarding the value of the reports.

Donald Snodgrass

Nothing to report for this issue

Philadelphia
Cleveland
Chicago
St. Louis
New York (no response)

Board of Governors

The Board has installed several additional features on its 1410 computer. These are:

overlap feature
priority feature
accelerator feature
Fortran chain

In addition, a fifth tape drive unit (729 IV) will be installed soon.

The Board's second Cobol programming class has been scheduled to begin on September 14, 1964. Cobol has been found to be very satisfactory both in data processing programs and in statistical programs.

A compilation of programs written in the various sections and divisions of the Board is now being made. The list will include a very brief description of each program. It is expected that this list will make a significant contribution toward informing all of the Board's economists of the programs that are available.

W. M. Davis

E. Melichar

Committee projects

A subcommittee chairmaned by Leonall Andersen is drawing up plans for a training session on statistical techniques in the area of multivariate analysis. The course is being planned to build upon the base laid in last year's regression seminar and laboratory.

The subcommittee charged with responsibility for the annual compilation of research work done on computers has met to plan the format for this year's report. Advance word is that the compilation will emphasize the listing of special research projects rather than more routine jobs like seasonal adjustment or processing of current series.

Ron Kaatz has been working on a guide that System programmers can use in documenting their programs. Those of us who have had an advance peek at his report think that it will be very useful as a checklist to remind us about the kinds of things that belong in a program documentation. It will also show new programmers how a documentation should be organized. Best of all, it gives attention to a situation that is very common in the System---the problem of writing a documentation that meets the needs of and can be understood by both professional economists and professional programmers. Ron is putting the finishing touches on the guide and will be distributing it soon.

Program Abstracts Received by the Research Program Library
March-July 1964

- 1.23.03.0 Weekly Commercial and Industrial Loans Report (LOANS)
Evelyn Major, Philadelphia
- 1.26.02.0 Liabilities to and Claims on Foreigners--Foreign Exchange Report
Evelyn Major, Philadelphia
- 2.02.01.1 Seasonal Adjustment of Monthly Time Series for a 4K 1401
Judith Helmuth and E. C. Christ, Philadelphia
- 2.02.01.2 Seasonal Adjustment of Monthly Time Series for an 8K 1401
Judith Helmuth and E. C. Christ, Philadelphia
- 2.03.14.0 Exponentially-Weighted Input Generator (for correlation analysis
of time series)
E. C. Christ, Philadelphia
- 2.07.19.0 Matrix Inversion Routine
Jim Goetzinger, Kansas City
- 5.06.01.0 Matrix Inversion Subroutine
Kansas City