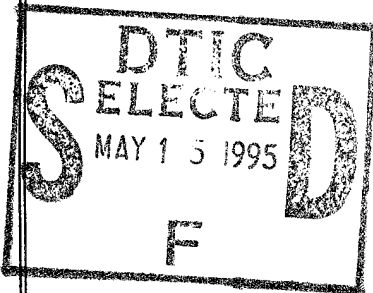


1995
Executive Research Project
F18

Economic Report of the Preseident Data Analysis Model



Lieutenant Colonel
Stephen J. Peters
United States Air Force

Faculty Research Advisor
Dr. Rolf Clark

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Economic Report of the President Data Analysis Model

Abstract

Author: Stephen J. Peters, Lt Col, USAF

The Economic Report of the President Data Analysis Model (EROP) is an automated database of selected elements from the *Economic Report of the President*. This report is published annually by the Government Printing Office. The model uses the LOTUS spreadsheet program and is macro-driven based on button selections made by the user.

The model allows the user to select various functions to perform on the data such as graphing and regression analysis. The primary value of the model is that it allows the user to graph economic data over time to aid in determining trends and relationships. The user can also perform regression analysis on data elements, create and graph new data elements based on simple mathematical relationships developed by the user, and maintain and update the database based on newly published reports.

The model was developed to create a simple, automated process that allows ICAF faculty and students to analyze economic data quickly and easily.

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- B. Regression Analysis Output
- C. Graph of Budget Surplus (Deficit) as a Fraction of GDP from Create Option
- D. Table of Elements

1.0 INTRODUCTION

The Economic Report of the President Data Analysis Model (EROP model) was developed as a research project in coordination with Dr. Rolf Clark of the Industrial College of the Armed Forces (ICAF) Economics department. The model is macro-based using LOTUS 1-2-3 for Windows, version 4.0 or later. It is an automated database of the Economic Report of the President that allows you to graph elements in the database, update and edit the database, perform regression analysis on database elements, and create and graph relationships between database elements.

This manual is intended as a guide and reference and discusses in detail how to use each module of the model.

2.0 MODEL OVERVIEW

The model is composed of ten files:

<u>File Name</u>	<u>Description</u>
AUTO123.wk4	Starts the model, loads files, serves as the main menu of the model, and performs utilities such as database backup and reload.
MACROLIB.wk4	Contains the macro commands which run the vast majority of model routines.
EROP.wk4	This is the database. It contains all the numbers and elements in the model.
INPUT.wk4	Used to input new data into the database.
EDITDATA.wk4	Used to edit data in the database.
GRAPH.wk4	Used to select elements for graphing and retrieve selected elements from the database.
GRAPHIT.wk4	Creates graphs based on selections made from the graph and create variable modules.
REGRESS.wk4	Used to select elements for and perform regression analysis.
CREATE.wk4	Used to select two database elements from which a third element is derived and graphed.

CONTENTS.wk4

Contains a list of all elements in the database, their long and short names for the model, where they are located in the EROP.wk4 database file, and what year the data for each element begins.

The EROP model uses "buttons" to make selections. You are encouraged to use the buttons to move about the model. If, by chance, the screen appears to be out of sync, pressing the <HOME> key and restarting the module by clicking the <CONTINUE> button will usually work except in the main menu. This will be explained more later.

2.1 Installing the model

2.1.1 Installation on hard drive. This model was written specifically to run on stand-alone computer systems or systems with a hard drive (drive C) connected to a network with an appropriate version of LOTUS installed. It is also available in a form to install the model directly in your LOTUS work area on a network **if your work area is in a directory on drive F: called F:\123**. This directory is the default directory on the NDU network at ICAF.

The steps are identical for installing the model on a stand-alone system or on a system with a hard drive and connected to a network. From windows, choose the Main program group and double-click on the DOS icon. The computer should show the following prompt:

```
C:\WINDOWS\>
```

If the display shows a drive other than C:, type *C:<cr>* to get to drive C:. Type *CD.<cr>* or *CD C:<cr>* if necessary to get to the root directory on drive C:. The computer should respond with:

```
C:\>
```

Type *MD EROP<cr>*. The computer should again respond with the *C:\>* prompt shown above. At this point, insert the floppy disk containing the model into drive A: or B:. Then type one of the two following lines depending on where the model disk is located:

```
COPY A:.* C:\EROP\*.*<cr>
```

or

```
COPY B:.* C:\EROP\*.*<cr>
```

Once all ten files have been copied, type *EXIT* at the DOS prompt to return to windows. The EROP model is now installed and ready to run.

2.1.2 Installation on a network. If you are installing the model in your LOTUS work area on your network, after exiting Windows, change directories to arrive at the

following DOS prompt:

F:\123\>

Type *MD EROP*<cr>. The computer should respond with the F:\123\> prompt shown above. Insert the floppy disk containing the model into drive A: or B:. Then type one of the two following lines depending on where the model disk is located:

```
COPY A:.* F:\123\EROP\*.*<cr>
      or
COPY B:.* F:\123\EROP\*.*<cr>
```

Once all ten files have been copied, type *EXIT* at the DOS prompt to return to windows. The EROP model is now installed and ready to run.

2.1.3 Setting up model to run directly from Windows. For the advanced Windows and LOTUS user, the model can be started on a stand-alone system by creating a program item in Windows. In LOTUS, select TOOLS-USER_SETUP and blank out the worksheet directory. In Windows, use the {FILE-NEW} command to set up a program item with the command line equal to whatever path is necessary for the system to run the LOTUS 1-2-3 execution file. Set the working directory to C:\EROP. Double-clicking whatever EROP icon you set up will automatically start the EROP model.

2.2 Starting the model

If you are working from Windows on a stand-alone system, double click on the icon you set up in paragraph 2.1.3. If you are not working on a stand-alone system, you will need to enter LOTUS by double-clicking on the LOTUS icon in the Windows Program Manager. Once in LOTUS, use the FILE-OPEN command, select C: drive or the network drive where the model is installed and open the file called AUTO123.WK4.

After starting the model, a screen similar to that shown in Figure 2.2.1 will appear. Clicking the "Start" button at this point will load appropriate files into memory and take you to the main menu. Clicking the "Quit" button will simply end the model and take you back to Windows. The title bar at the top of the screen shows you what the model is doing during program execution.

3.0 MAIN MENU

Figure 3.0.1 shows the first of two main menus of the model. If at any time in the main menu the screen becomes out of sync, press the <Home> key on the keyboard followed by the <PgDn> key. This will re-sync the screen and take you to the first main menu screen shown in Figure 3.0.1.

Figure 2.2.1

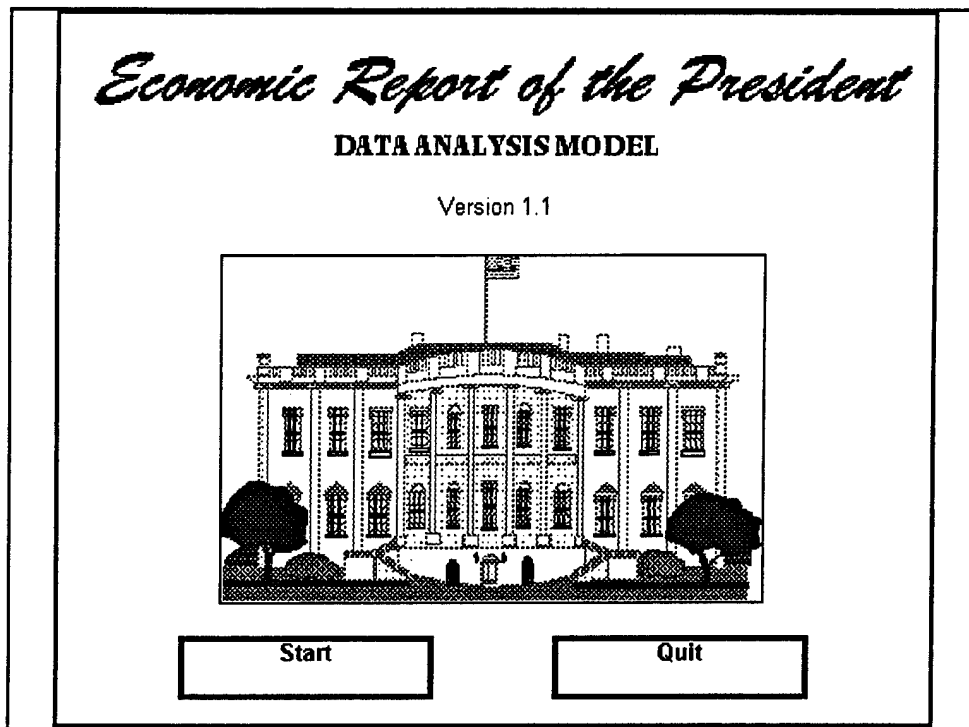
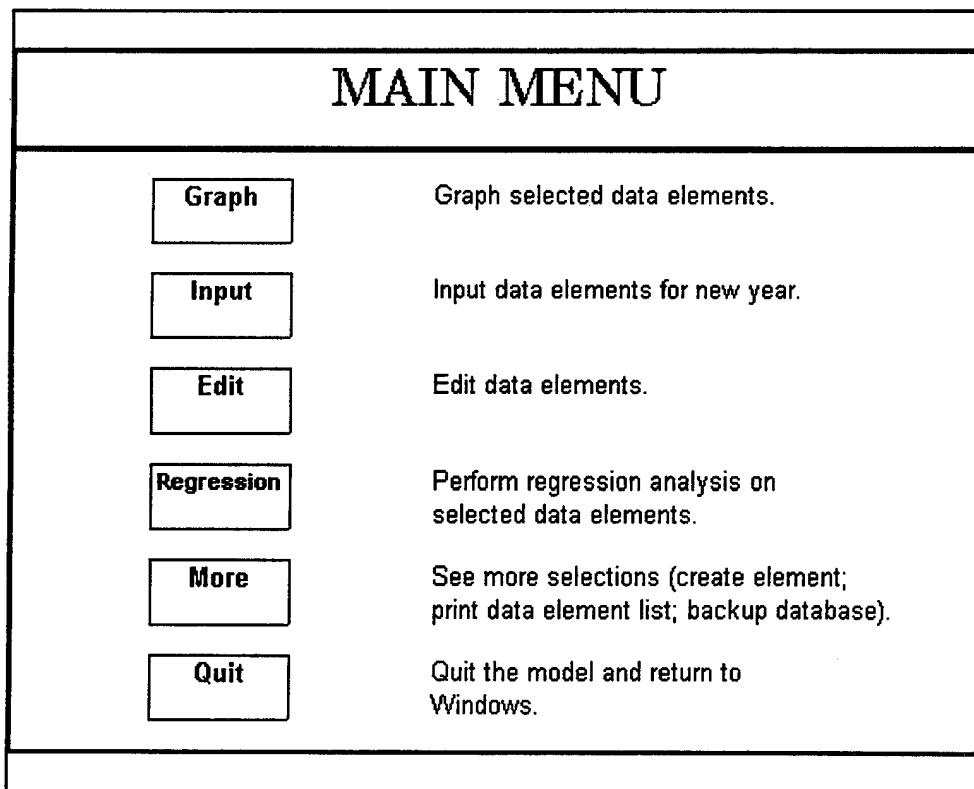


Figure 3.0.1



Each selection will be discussed in detail later in this manual. They are fairly self-explanatory. Selecting the "More" option from the first menu will reveal the second main menu shown in figure 3.0.2.

Figure 3.0.2

MAIN MENU	
Create Elements	Create new element from two elements for use in graph (e.g., Exports as % of GDP).
Print Elements	Print list of data elements in the database.
Backup	Backup database to another drive..
Reload	Reload database into the model.
Previous Menu	Return to previous menu.
Quit	Quit the model and return to Windows.

4.0 GRAPH OPTION

The graph option allows you to select and graph up to six (6) elements from the model database. In addition to selecting the elements to graph, you can also define the inclusive years for the graph as well as several options to determine how the final graph will look. These options will be described later. If at any time the screen becomes out of sync during the graph option, press the <Home> key on the keyboard and continue as if you were just starting the graph option. Any selections made prior to pressing the <Home> key will remain selected.

4.1 Selecting data elements for graph. Upon first entering the graph option, you will see the screen shown in figure 4.1.1. By selecting "Continue" from this screen, you will be taken through a series of screens to select the elements for the graph. A sample selection screen is show in figure 4.1.2.

The data selection tables like that shown in Figure 4.1.2 show the data elements as well as the first year that data is available for each element in the database. For example,

Figure 4.1.1

GRAPH DATA

Build chart for 1 to 6 selected data elements.

Click "Continue" to select data elements.
Click "Quit" to return to Main Menu.

Continue

Quit

Figure 4.1.2

Table B-2: Gross Domestic Product - 1987 Dollars	Year	Select	Deselect
Gross Domestic Product	1929	Select	Deselect
Personal Consumption Expenditures	1929	Select	Deselect
Durable Goods	1959	Select	Deselect
Nondurable Goods	1959	Select	Deselect
Services	1959	Select	Deselect
Gross Private Domestic Investment	1929	Select	Deselect
Fixed Investment	1959	Select	Deselect
Nonresidential	1959	Select	Deselect
Structures	1959	Select	Deselect
Producers' Durable Equipment	1959	Select	Deselect
Residential	1959	Select	Deselect
Change in Business Inventories	1959	Select	Deselect

Select - Back up

Select More

Selections Complete

Quit Graph

gross domestic product in constant 1987 dollars is available in the database from 1929 forward. However, personal consumption expenditures for durable goods in constant 1987 dollars is only available from 1959 forward.

Elements for graphing are selected by clicking on the "Select" button next to the element. After selecting, the element name will become red and bold indicating the item has been selected for the graph. Clicking on the "Deselect" button will delete the element from the graph selection. This is indicated by the element name returning to a normal, black font. The user may select up to six (6) elements to be graphed. You move from screen to screen to select elements by clicking on the "Select - Back up" or "Select More" buttons. The "Select - Back up" button takes you back to the previous selection screen. The "Select More" button takes you forward to the next screen of data elements. At any time during the selection process, you may quit the graph option for whatever reason by clicking the "Quit Graph" button at which time the model will return to the main menu.

Once you have selected all the elements to include in the graph, clicking the "Selections Complete" button will continue with the graphing option. If you did not select any elements or if the number of elements selected is greater than six, you will receive an error message indicating the problem and prompted to return to the selection screens to fix the problem. Once you have selected all the data elements for your graph, the model will retrieve the elements from the database.

4.2 Graphing selected data elements. For purposes of illustration, the remainder of this section will take you through the graph using the following elements:

- 1) Gross Domestic Product - Current Dollars;
- 2) Personal Consumption Expenditures - Current Dollars;
- 3) Population; and,
- 4) Civilian Employment.

Assuming you clicked on "Selections Complete" after selecting the above four elements, the screen shown in figure 4.2.1 will appear. If the screen becomes out of sync on this screen, just press the <Home> key on the keyboard and continue.

There are several items to note on this screen. First of all, your selections for the graph will be listed for confirmation. If these elements are not what you intended, click on the "Return to Main Menu" button and start the graph option again. The year each data element begins in the database is also listed.

In the middle of the screen, the model proposes a range of years to be graphed for the data elements selected. The beginning year is the latest year any of the selected elements begins in the database. In the example here, the latest element in the database is personal consumption expenditures which starts in 1959. Therefore, the model proposes you start your graph with the year 1959. The proposed ending year is the last year of data available in the database, in this case 1991.

The model then gives you the option of changing one or both of the proposed years for the graph. You can specify a beginning year earlier than the one proposed provided it is

Figure 4.2.1

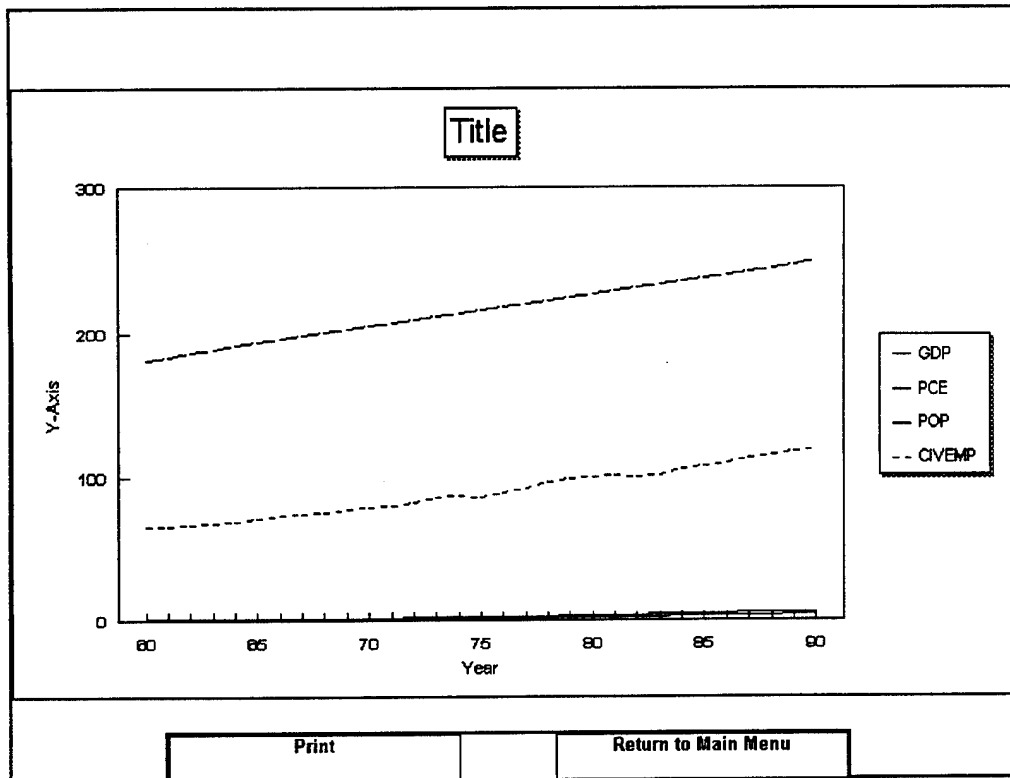
SELECTIONS FOR GRAPH	
You selected the following elements for your graph:	
Element	Start Year
Gross Domestic Product	1929
Personal Consump Exp	1959
Population (thousands)	1929
Civilian Employment (000)	1947
The following years will be used in your graph unless you specify otherwise below:	
Beginning Year	1959
Ending Year	1991
Enter alternate beginning and/or ending year(s):	
Beginning Year	
Ending Year	
<input type="button" value="Continue"/>	<input type="button" value="Return to Main Menu"/>

not earlier than 1929 (the earliest year in the database). In that case, the data elements which start later in the database will not be graphed until the year in which they start. For example, if you chose a year prior to 1959 to start the graph in this scenario, personal consumption expenditures would not start graphing until 1959. It would not graph zero through 1958 and then all of a sudden jump to its first value in 1959. It simply would not start graphing until 1959.

Once you are satisfied with the years selected for your graph, click the "Continue" button. If you accidentally input a value for the beginning or ending year that is outside the database range, an error message will appear and prompt you to go back and change the wrong value. Likewise, if you accidentally enter an ending year that is prior to the beginning year, a similar error message will occur. If the model is satisfied that all of your entries are satisfactory, the model will begin creating the graph. Once the initial graphing is complete, it will appear on the screen. For the example in this exercise, the screen in figure 4.2.2 will appear.

In our example, it obviously doesn't make sense to graph population and employment on the same y-axis as GDP and personal consumption expenditures since the first two are in the database in thousands of people and the latter two are in billions of dollars. But the model

Figure 4.2.2



doesn't know that yet and therefore GDP and personal consumption expenditures appear as very small numbers on the graph. This problem will be corrected shortly when I talk about creating a second y-axis. At this point, use the "Chart" selection on the LOTUS menu line to place headings, labels, and other finishing touches on your graph as discussed below. **Do not make any selection under the "Chart" menu option except those identified below.**

4.3 Using the "Chart" menu. Once the graph appears on the screen, use the "Chart" option from the LOTUS main menu to select graph type, headings, Y-axis label, X-axis label, legend placement, and grid lines. Each of these are discussed in detail below. With each selection a dialog box appears.

4.3.1 {CHART-TYPE}. This dialog box allows you to select the type of graph you want. The default option is a line graph without node points. If you graph many years worth of data, nodes tend to make the graph too busy. Recommend you use the default type unless the number of years being graphed is ten or less. In addition to selection of graph type, this dialog box allows you to show a data table under the graph. As with using a graph type with nodes, data tables also tend to make the graph busy and with many years, the numbers may not fit in the table. Recommend not using the data table unless you believe it is absolutely necessary.

4.3.2 {CHART-HEADINGS}. The "Headings" dialog box allows you to enter a two line title for the graph as well as a two line note at the bottom of the graph. With this dialog box, you also select the placement of the title and note: left, center, or right. The default placement is to place the title centered at the top of the graph and the note in the lower left portion of the graph page. A note is completely optional and if left blank will not show up in the graph.

4.3.3 {CHART-AXIS-Y-axis}. This dialog box allows you to enter a title for the left or main y-axis. In addition, you can manually specify the scale of the y-axis although it is recommended to let the model scale the axis automatically based on the values being graphed. With this dialog box, you can also specify at what intervals tick marks should be placed on the axis (major and minor ticks). The default is to place ticks only at major intervals.

4.3.4 {CHART-AXIS-X-axis}. Although this dialog box allows you to change the title of the x-axis, the graph will always have "Years" along this axis and will automatically be titled as such. Therefore, you should not change the x-axis title. The model will also place a tick mark at every year. The model default, however, only places data labels every five ticks or years. You may change how often the model displays a data label by specifying the number of ticks between data labels at the bottom of this dialog box.

4.3.5 {CHART-LEGEND}. The user should not change any values in this dialog box except for the placement of the legend. The legend may be placed to the right or below the graph. The default is to place the legend to the right of the graph.

4.3.6 {CHART-GRIDS}. With this dialog box you can specify whether or not to place grid lines in the graph at major and/or minor ticks. You can specify this for any axis (y-axis, 2nd y-axis, or x-axis). Since the graph will probably contain many years, I recommend you not use grid lines for the x-axis. The default for the model is not to use grid lines at all.

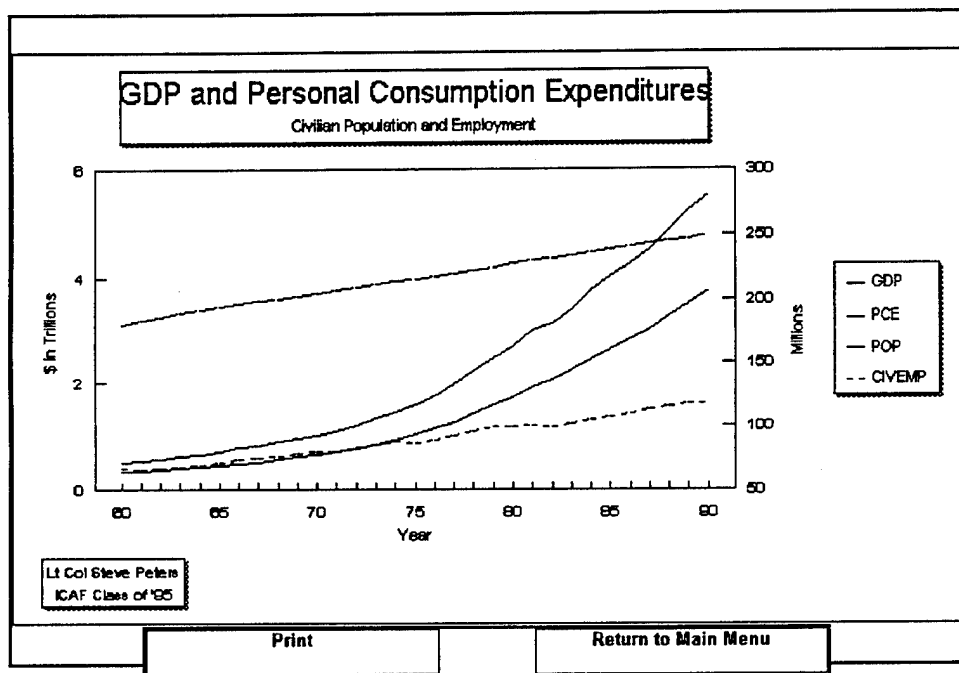
4.4 Graphs using a second Y-axis. If you need a second y-axis, you can set it up after completing the six dialog boxes. This is done in two steps: assigning data elements to the second y-axis and specifying the title and tick attributes of the axis.

4.4.1 Assigning data elements to the second Y-axis. This is accomplished by using the {CHART-RANGE} command. On the menu bar just below the title bar at the top of the screen, click on the "Chart" option. From the "Chart" sub-menu, click on "Range." In this dialog box you will see a window with the data elements in the graph. Beneath this window is a small box labeled "2nd y-axis." First, click on the data element you would like graphed on the second y-axis. With this element highlighted, click on the box marked "2nd y-axis." If you would like additional elements graphed on the second y-axis, repeat this procedure for each element. When you are finished, click <OK>.

4.4.2 Specifying the Title and Tick attributes of the second Y-axis. This is accomplished by using the {CHART-AXIS-2nd Y-AXIS} command. On the menu bar, click on the "Chart" option. From the "Chart" sub-menu, click on the "Axis" option then click on the "2nd Y-axis" option. A dialog box similar to the one above for the "Y-axis" will appear. In this dialog box, enter the title of the second y-axis. I recommend you allow the computer to automatically scale the axis for you although you can manually set the scale here if you desire. You may also specify where to place tick marks on this axis. As with the y-axis, the default will place tick marks only at major intervals.

At this point, your graph is complete. For the example, the selected years for the graph were 1960 through 1990. The completed graph appears as in figure 4.2.3. Using the buttons below the graph, you may now elect to print the graph or return to the main menu.

Figure 4.2.3



4.5 Printing the finished graph. To print your graph, simply click on the "Print" button. A dialog box will appear asking which printer you would like the graph to print on. Click on the preferred printer if it is not already highlighted then click on <OK>. A sample completed graph based on the scenario here is shown in the appendix.

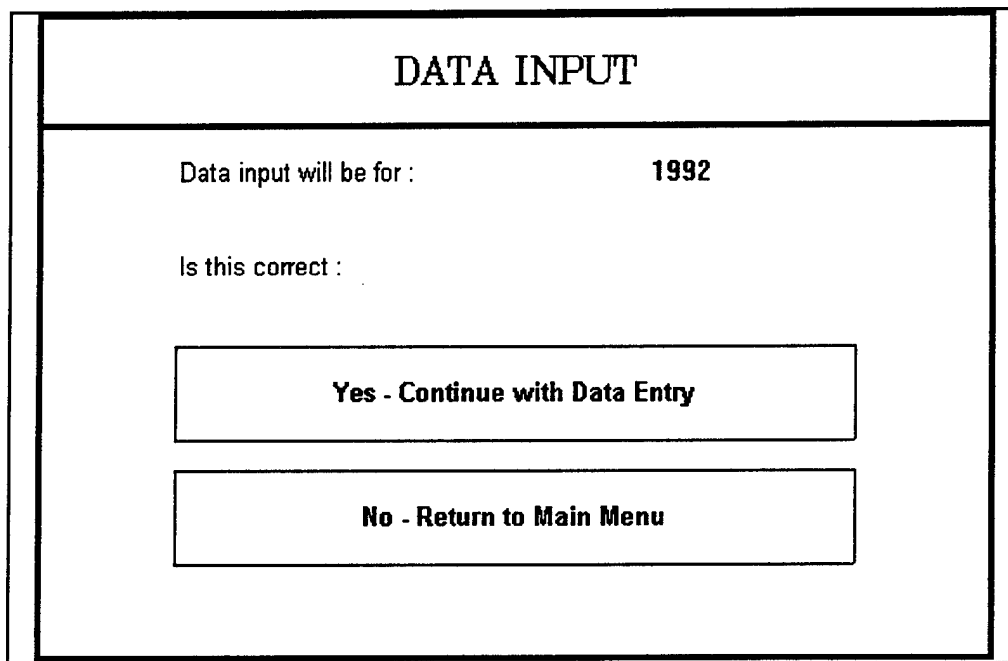
4.6 Completing the graph option. Click on the "Return to Main Menu" button to complete the graph option.

5.0 INPUT OPTION

The input option allows you to input data for a new year into the database. As will be described in this section, not all data elements need to be entered in one sitting. The model will save partial input and you can complete the input later. However, the model will not write the new data into the database until the input routine is complete. Therefore, before you use the new data in a graph or regression analysis, you must complete the input routine. If the screen should become out of sync at any time during the input routine, simply press the <Home> key on the keyboard and continue. Any data previously entered will remain. Click the "Continue" button until you arrive at the screen you were working on when the screen went out of sync.

After clicking the "Input" button from the main menu, the screen in figure 5.0.1 will appear. The title data input screen shows the year the model is expecting data for. Since this manual was written with the database complete through 1991, the model is now expecting the new data to be 1992. You must enter data for the year the model is requesting or abandon the option and return to the main menu. If you wish to continue with data entry, click on the "Yes - Continue with Data Entry" button. If you would like to abandon the data input option, click on the "No - Return to Main Menu" button.

Figure 5.0.1



The screenshot shows a window titled "DATA INPUT". Inside the window, the text "Data input will be for : 1992" is displayed. Below this, it asks "Is this correct :". There are two buttons: "Yes - Continue with Data Entry" and "No - Return to Main Menu".

5.1 Entering data in the model. Clicking on the button to continue will reveal the first of several input screens. A sample screen is shown in figure 5.1.1. The cursor will automatically be placed in the first cell for data entry. Use the mouse in conjunction with the

cursor or the arrow keys to move from input cell to input cell until all data in a particular screen is filled. Then click on the "Continue" button to proceed to the next input screen.

Figure 5.1.1

Table B-1: Gross Domestic Product - Current Dollars	1992
Gross Domestic Product	
Personal Consumption Expenditures	
Durable Goods	
Nondurable Goods	
Services	
Gross Private Domestic Investment	
Fixed Investment	
Nonresidential	
Structures	
Producers' Durable Equipment	
Residential	
Change in Business Inventories	
Net Exports of Goods and Services	
Exports	
Imports	
Government Purchases	
Federal	
National Defense	
Nondefense	
State and Local	

Continue

Stop and Save

Stop without Saving

Notice the input screens are similar to the graph selection screens but without the buttons. Instead there are cells for you to enter data. **Data should be entered only in the white cells.** Those cells resembling brick walls are either holding spaces for the associated elements or are calculated by the model. **Do not enter data in these cells.**

If at any time you wish to quit the input routine saving data entered so far and return later to finish the input, click the "Stop and Save" button. As mentioned previously, this will not write the data to the database but will save the data in the file until you return to it later. You will be returned to the main menu. When you reenter the input routine, you will be placed at the beginning of the input module. Simply click on the "Continue" buttons until you get to the point where you quit previously and continue input.

If, for some reason, you decide to quit and don't want to save the input you've entered thus far, click on the "Stop without Saving" button. All new input will be lost and you will be returned to the main menu.

5.2 Writing data to the database. The last input screen is shown in figure 5.2.1.

Figure 5.2.1

Table B-112: National Wealth	
Total Net Worth	
Private Net Worth	
Tangible Wealth	
Owner-Occupied Real Estate	
Consumer Durables	
Financial Wealth	
Corporate Equity	
Noncorporate Equity	
Government Net Financial Assets	
Federal	
State and Local	

To save input to database, click the "Save" button.

To exit the input routine without saving, click the "Quit" button. **(THIS WILL DELETE ALL CURRENT INPUT)**

To return to beginning of input for review or change, click the "Return" button.

To save your input to the database, click the "Save" button. The model will write the input to the database and return you to the main menu.

Clicking the "Quit" button on the last input screen will delete all input including that previously saved during a prior work session if it was not written to the database with the "Save" button. There is no prompt to validate this action, so be certain this is what you want before clicking the "Quit" button. You will be returned to the main menu.

Clicking on the "Return" button will take you to the first input screen if you want to double-check your entries prior to writing the data to the database. Click on the "Continue" buttons to move to each successive screen until the last screen is displayed. If you find a value entered incorrectly, click on the cell containing the incorrect data and reenter the correct data.

6.0 EDIT OPTION

The edit option allows you to edit data already entered in the database. Clicking the "Edit" button from the main menu will take you to the screen shown in figure 6.0.1. If, at any time, the screen becomes out of sync in this module, press the <Home> key on the keyboard followed by the "Continue" button and continue the data edit.

Figure 6.0.1

The screenshot shows a window titled "EDIT DATA". Below the title bar is a text prompt "Enter year for data to edit:" followed by a small rectangular input field. At the bottom of the window are two buttons: "Continue" on the left and "Quit Edit" on the right.

The cursor should already be positioned in the cell for you to enter the year of the data you wish to edit. If, however, the cursor is not in that cell, click on the white cell to make it active. Enter the year of the data you want to edit. Then click on either the "Continue" or "Quit Edit" button. If you enter an invalid year (one not in the database) an error message will appear and you will be prompted to make the correction. Clicking on the "Quit Edit" button will quit the edit routine and take you back to the main menu. Clicking on the "Continue" button will cause the model to retrieve the data from the database for the year you indicated.

6.1 Editing Data. The screens for entering data are almost identical to those for the input routine. Of course the major difference is that the input cells are already filled in with the data for the year indicated. A sample screen is shown in figure 6.1.1. This screen shows the data for Gross Domestic Product in Current Dollars for 1989. Four buttons appear at the bottom of each screen. "Next" takes you to the next data screen, "Previous" takes you to the previous data screen, "Done - Save" saves the edited data to the database, and "Quit - No Save" quits the edit routine without saving any changes you might have made to the data.

Click the "Next" button until you get to a screen where you would like to make a change. Click on the cell containing the data you want changed and type in the new data. When you have made all the changes you want to make, click on the "Done-Save" button. The model will then write the new data back to the database and return you to the main menu.

You can exit the edit routine without saving your changes at any time for whatever

Figure 6.1.1

Table B-1: Gross Domestic Product - Current Dollars		1989
Gross Domestic Product		
Personal Consumption Expenditures		
Durable Goods		459.4
Nondurable Goods		1,149.5
Services		1,914.2
Gross Private Domestic Investment		
Fixed Investment		
Nonresidential		
Structures		193.3
Producers' Durable Equipment		374.8
Residential		230.9
Change in Business Inventories		33.3
Net Exports of Goods and Services		
Exports		508.0
Imports		587.7
Government Purchases		
Federal		
National Defense		299.9
Nondefense		101.7
State and Local		573.6

Next

Previous

Done - Save

Quit - No Save

reason by clicking on the "Quit - No Save" button. This will simply abandon the edit routine and return you to the main menu.

7.0 REGRESSION OPTION

This manual does not attempt to teach you how to manually perform regression analysis or interpret the results of a regression analysis. This section takes you through how to use the model to perform multiple linear regression analysis on one dependent variable using up to six independent variables. The variables are data elements chosen from the EROP database.

After selecting the regression option, the screen shown in figure 7.0.1 will appear. Clicking the "Continue" button will take you to the data element selection screens to choose the data elements you want to use in the regression analysis. Clicking on the "Quit" button will return you to the main menu. If the screen becomes out of sync while selecting your data elements, press the <Home> key on the keyboard, click on the "Continue" button and continue with element selection. Elements previously selected will remain selected.

Figure 7.0.1

REGRESSION ANALYSIS

Perform regression analysis for one (1) dependent variable and up to six (6) independent variables.

On the buttons in the following tables,
Pressing [Dep.] selects an element as the dependent variable;
Pressing [Ind.] selects an element as an independent variable; and,
Pressing [Desel.] deselects an element previously selected as dependent or independent.

Click on "Continue" to select elements.
Click on "Quit" to return to Main Menu.

Continue

Quit

After clicking the continue button, the message in figure 7.0.2 appears cautioning you in the selection of data elements for the regression analysis. A system error during regression

Figure 7.0.2

Regression Analysis Information

If you receive a system error during the regression analysis, click the [OK] button, press the [Home] key on the keyboard, select [Quit], and begin the regression analysis again from the Main Menu. The most likely cause of a regression error is selection of independent variables which are subsets of another, for example selecting Personal Consumption Expenditures and related subelements. Select different independent variables after restarting.

OK

analysis is most likely caused because the elements used as independent variables create a matrix that is not mathematically possible to invert. The most likely cause is selection of independent variables which are a subset or add up to another independent variable. For example, if you select Personal Consumption Expenditures as an independent variable and also identify Durable Goods, Nondurable Goods, and Services (all the elements which add up to Personal Consumption Expenditures) also as independent variables, the matrix will not be mathematically possible to invert. Reenter the regression analysis option as specified in the message box and select different independent elements.

7.1 Selecting Data Elements for Regression Analysis. The data selection buttons for the regression option are very similar to those for the graph option. The difference is that in the regression option there are three buttons for each element instead of two. The buttons are labelled "Dep.", "Ind.", and "Desel." The "Dep." button is used to select the element as the dependent variable for the analysis. The "Ind." button is used to select the element as an independent variable. The "Desel." button is used to deselect an element previously selected as dependent or independent. A sample selection screen is shown in figure 7.1.1.

Figure 7.1.1

Table B-2: Gross Domestic Product - 1987 Dollars	Year	Dep.	Ind.	Desel.
Gross Domestic Product	1929	Dep.	Ind.	Desel.
Personal Consumption Expenditures	1929	Dep.	Ind.	Desel.
Durable Goods	1959	Dep.	Ind.	Desel.
Nondurable Goods	1959	Dep.	Ind.	Desel.
Services	1959	Dep.	Ind.	Desel.
Gross Private Domestic Investment	1929	Dep.	Ind.	Desel.
Fixed Investment	1959	Dep.	Ind.	Desel.
Nonresidential	1959	Dep.	Ind.	Desel.
Structures	1959	Dep.	Ind.	Desel.
Producers' Durable Equipment	1959	Dep.	Ind.	Desel.
Residential	1959	Dep.	Ind.	Desel.
Change in Business Inventories	1959	Dep.	Ind.	Desel.

Select Back-up

Select More **Selections Complete** **Quit Regression**

To select an element as the dependent variable, click on the "Dep." button on the line with the data element. The element name will turn bold and red indicating it has been

selected as the dependent variable. You may only select one (1) dependent variable. To select an element as an independent variable, click on the "Ind." button on the line with the data element. The element name will turn bold and blue indicating it has been selected as an independent variable. You may select up to six (6) independent variables. To deselect an element previously selected as dependent or independent, click the "Desel." button. Deselection will be indicated by the variable name returning to a black, non-bold font.

If you make a mistake and select a variable as dependent when you meant to select it as an independent variable, just click on "Ind." to make it an independent variable. You do not need to deselect it first. Whichever button is the last one clicked will determine whether the variable is dependent, independent, or not selected.

Finally, there are up to four buttons at the bottom of each data selection screen. The "Select Back-up" button allows you to go back one screen in case you missed selecting an element you wanted for your analysis. The "Select More" button takes you to the next screen of data elements. Clicking on the "Quit Regression" button exits the regression analysis screen and returns you to the main menu. When you are satisfied with your selections, clicking on the "Selections Complete" button will continue with the regression analysis.

Any one of the following conditions will cause an error message to appear after clicking the "Selections Complete" button:

- a) Failing to select an element as the dependent variable;
- b) Selecting more than one element as a dependent variable;
- c) Failing to select at least one element as an independent variable; or,
- d) Selecting more than six elements as independent variables.

The error message will specify which of the above conditions was violated and prompt you to go back and correct the problem. After taking appropriate action, click the "Selections Complete" button to continue the regression analysis.

7.2 Regression Analysis Output. If the model accepts all elements you selected, it will retrieve the selected data elements from the database when you click the "Selections Complete" button. The next screen that appears will be the regression analysis results. For illustrative purposes, suppose you wanted to do a regression analysis using Gross Domestic Product as the dependent variable and Population, Civilian Employment, Manufacturing Utilization Rate, Total Gross Federal Debt, and Total National Net Worth as the independent variables. The resulting output is shown in figure 7.2.1.

After receiving the output in figure 7.2.1 you are given three choices at the bottom of the screen: Print, New, and Quit. Clicking on the "Print" button will print both the inputs and the regression analysis output. A sample printout is shown in the appendix to this manual. Clicking on the "New" button will return you to the beginning of the regression module for you to begin a new regression analysis. Clicking on the "Quit" button will end

Figure 7.2.1

Regression Results					
Regression Output:					
Constant			-453.64		
Std Err of Y Est			52.12831		
R Squared			0.999136		
No. of Observations			44		
Degrees of Freedom			38		
X Coefficient(s)	-0.00397	0.022381	-2.54251	0.290478	0.211834
Std Err of Coef.	0.001336	0.004316	2.068061	0.0517	0.017636

Print	New	Quit
-------	-----	------

"Print" prints inputs and output results.
"New" begins new regression analysis.
"Quit" returns to main menu.

the regression analysis and return you to the main menu.

8.0 CREATE OPTION

The create option allows you to create an element by dividing, multiplying, adding, or subtracting two existing database elements and graph the result. Upon clicking on the "Create Element" button from the main menu, the screen in figure 8.0.1 will appear. Clicking on the "Continue" button will take you through the element selection screens to select the two elements you want to use to create the third element for you to graph. Clicking the "Quit" button will exit the create routine and return you to the main menu.

If the screen should become out of sync during this operation, press the <Home> key on the keyboard, click the "Continue" button, and continue selecting elements. Any element(s) selected prior to the screen becoming out of sync will remain selected.

8.1 Selecting data elements for the create option. Selecting elements for this option is identical to selecting elements for the graph option. Review section 4.1 and figure 4.1.2 if you need help in this area. The only difference is the number of elements you may

Figure 8.0.1

CREATE DATA ELEMENT

Create and graph a data element based on two selected database elements.

Select two database elements and identify a simple mathematical calculation (+, -, *, /) to derive a third element for graph.

Click "Continue" to select data elements.
Click "Quit" to return to Main Menu.

Continue

Quit

select. Remember, in this option you must select only two elements. If you select more or less than two, an error message will appear prompting you to go back and make the correction.

8.2 Selecting mathematical operation to perform. For purposes of illustration, suppose you wanted to graph the federal budget deficit as a fraction of Gross Domestic Product. Once you have selected the elements and clicked the "Continue" button, the screen in figure 8.2.1 will appear. Using this screen, click on the mathematical operation you want to perform. Due to the commutative properties of mathematics, there are six possible operations you can perform on the two elements. For addition and multiplication, it makes no difference which element comes first, hence only one addition and one multiplication selection are available.

Since you are looking to graph the federal budget deficit as a fraction of GDP, the equation would be Surplus or (Deficit) divided by GDP. This is the second "Divide" option on the screen shown in figure 8.2.1. Just click on the "Divide" button next to this equation.

After selecting the mathematical operation, the screen in figure 8.2.2 appears. The top box repeats the equation you selected for confirmation. The box in the middle of the screen requests a long and short name for the element you are creating. You must enter both names. The cursor should already be in the first part of the box for the long name. If it is not there,

Figure 8.2.1

SELECT MATHEMATICAL OPERATION TO PERFORM			
<input type="button" value="Divide"/>	Gross Domestic Product	/	Surplus or (Deficit)
<input type="button" value="Divide"/>	Surplus or (Deficit)	/	Gross Domestic Product
<input type="button" value="Subtract"/>	Gross Domestic Product	-	Surplus or (Deficit)
<input type="button" value="Subtract"/>	Surplus or (Deficit)	-	Gross Domestic Product
<input type="button" value="Multiply"/>	Gross Domestic Product	*	Surplus or (Deficit)
<input type="button" value="Add"/>	Gross Domestic Product	+	Surplus or (Deficit)

Figure 8.2.2

Equation selected:	
Surplus or (Deficit)	/ Gross Domestic Product
Please enter short name and long name of new element:	
Long name (25 chars max.):	<input type="text"/>
Short name (10 chars max.):	<input type="text"/>
<input type="button" value="Continue"/>	<input type="button" value="Quit to Main Menu"/>

click on the beginning of the long name box to make it the active cell. Enter the long name. You are limited to 25 characters or less. After entering the long name, use the arrow keys or click on the short name box to make it the active cell. Enter a short name. The short name must not be longer than 10 characters.

Two buttons are at the bottom of this screen. You can quit the create option on this screen by clicking on the "Quit to Main Menu" button. You will be returned to the main menu. If you wish to continue and are satisfied with the equation and names you have selected, click on the "Continue" button. If you entered a long name that is more than 25 characters or a short name longer than 10 characters, you will receive an error message and prompted to go back and make the correction. For our example, we selected "Def as a fraction of GDP" for the long name and "DEF%GDP" for the short name. Figure 8.2.3 shows our entries and we are ready to continue.

Figure 8.2.3

Equation selected:	
Surplus or (Deficit)	/ Gross Domestic Product
Please enter short name and long name of new element:	
Long name (25 chars max.):	<input type="text" value="Def as a fraction of GDP"/>
Short name (10 chars max.):	<input type="text" value="DEF%GDP"/>
Continue	
Quit to Main Menu	

After continuing from the above screen, the screen in figure 4.2.1 will appear with the data you have entered for the new element. From this point, the model will create and display a graph of the variable you defined. The steps are identical to those outlined in section 4.2 through the end of the graph option. If you need help at this point, please refer to the graph section of this manual starting with section 4.2. An example of the graph described in this section (budget deficit as a fraction of GDP) is shown in the appendix at the end of this manual.

9.0 PRINT ELEMENTS OPTION

This option on the second main menu prints a list of elements contained in the database. Other data contained in the printout shows what table in the *Economic Report of the President* the data element comes from as well as the title of the table. Information is shown identifying which worksheet in the database the element is located, short range name, whether the element is input by the user or calculated by the model, and what year in the database the element begins.

To print the table of elements, simply click on the "Print Elements" button on the main menu. You will be asked which printer you would like the output directed to (in case you have more than one printer available).

10.0 BACKUP OPTION

Once you have entered a new year of data or edited the data in the database, it is probably a good idea to back up the database on another disk. The backup option provides you with a convenient way to do that. The database file is the only file in which the contents change. All other files are not normally saved so if one becomes corrupt all you have to do is reinstall the model. However, if the database becomes corrupt and you have changed it, your only recourse if you don't back it up is to reload the original and reenter all the new data again. Therefore, I strongly urge you to **backup the database any time you make and save changes to it.**

By clicking on the "Backup" button on the main menu, you will be asked on which drive you want to create the backup. If you are working from drive C:, you can elect to back up the database to a floppy in either drive A: or drive B: or the network drive F:\123\ . If you select a floppy drive, you will be prompted to make sure a disk is installed in the drive before copying will proceed.

11.0 RELOAD OPTION

If you believe your database has been corrupted, use this option to reload the database into the model. Hopefully, you backed up the database each time you made changes to it. Click on the "Reload" button on the main menu and tell the model from which drive you want to reload the database.

12.0 WHEN ALL ELSE FAILS

You may encounter a situation where you find yourself in an area of the model totally unfamiliar to you with or without an error message in the middle of a screen. You can

usually recover from this situation by using the "Window" option from the LOTUS menu. Click on "Window" and then click on the file "AUTO123.wk4" from the sub-menu. This will take you back to the main menu and you can start again at this point with whatever option you were running when the mistake occurred.

If all else fails and the model is giving you unexpected results after following the instructions in the above paragraph, exit the model completely and reenter. This should correct any malfunctions.

If you receive a LOTUS system error identifying a problem with the MAIN123.EXE file, it will be necessary to completely exit LOTUS (which should happen automatically), completely exit Windows, and then reenter Windows, LOTUS, and the model from the beginning.

13.0 MISCELLANEOUS NOTES

13.1 Resource Material. The original document used to create this model and database was the 1994 edition of the *Economic Report of the President*. While it is possible future editions of the report will have different table numbers and possibly slightly different names, there is currently no capability for a user to change the table names or numbers. The user may have to do some cross-referencing to enter new data from future editions.

13.2 User Responsibilities. While the model attempts to aid the user in identifying the units the numbers in the database represent (i.e., billions of dollars, millions of people, etc.), it is up to the user to know what units the graph axes represent and label them accordingly. For example, while GDP is in the database in billions of dollars, the y-axis appears in trillions of dollars and should be labelled as such (see example in Section 4.0 of this manual). It is the user's must take some responsibility to understand what the numbers and elements represent based on his or her knowledge of the *Economic Report of the President*.

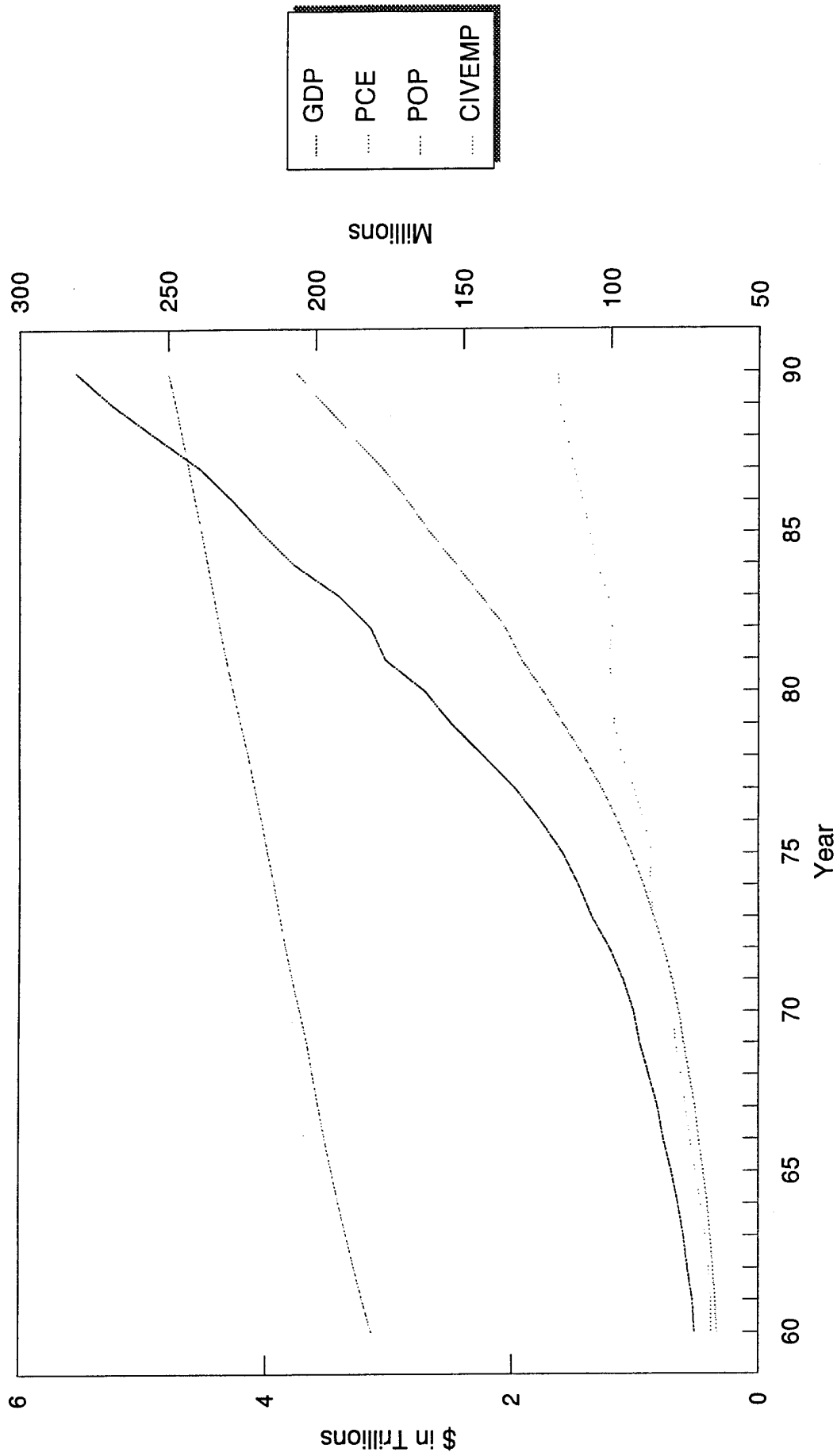
14.0 ABOUT USER'S MANUAL

This EROP User's Manual is contained in three (3) files on two (2) disks. Disk one contains the files EROPUSER.MN1 and EROPUSER.TOC. EROPUSER.MN1 contains the title page and pages one (1) through fifteen (15). EROPUSER.TOC contains the manual's table of contents. Disk two contains the file EROPUSER.MN2. This file contains pages sixteen (16) through the end of the manual.

User's manual files are all in Wordperfect 5.2 format and may be edited and printed like any other Wordperfect file.

GDP and Personal Consumption Expenditures

Civilian Population and Employment



Lt Col Steve Peters
ICAF Class of '95

Regression Input

Dependent Variable : Gross Domestic Product
 Independent Variable #1: Population (thousands)
 Independent Variable #2: Civilian Employment (000)
 Independent Variable #3: Mfg Capacity Util Rate
 Independent Variable #4: Gross Federal Debt
 Independent Variable #5: Total Net Worth
 Independent Variable #6: not used

Year	Dependent Variable	Ind Var #1	Ind Var #2	Ind Var #3	Ind Var #4	Ind Var #5	Ind Var #6
1948	260.3	146631	58343	82.5	252	673.9	
1949	259.3	149188	57651	74.2	252.6	706.8	
1950	287	151684	58918	82.8	256.9	816.9	
1951	331.6	154287	59961	85.8	255.3	918.8	
1952	349.7	156954	60250	85.4	259.1	954.5	
1953	370	159565	61179	89.3	266	979	
1954	370.9	162391	60109	80.1	270.8	1076.5	
1955	404.3	165275	62170	87	274.4	1186.2	
1956	426.2	168221	63799	86.1	272.7	1282.2	
1957	448.6	171274	64071	83.6	272.3	1302.4	
1958	454.7	174141	63036	75	279.7	1452.6	
1959	494.1	177073	64630	81.6	287.5	1526.9	
1960	513.6	180760	65778	80.1	290.5	1570.9	
1961	531.5	183742	65746	77.3	292.6	1727.5	
1962	571.2	186590	66702	81.4	302.9	1715	
1963	603.2	189300	67762	83.5	310.3	1855.5	
1964	647.9	191927	69305	85.6	316.1	2010.1	
1965	702.8	194347	71088	89.5	322.3	2177.8	
1966	769.7	196599	72895	91.1	328.5	2239	
1967	814.3	198752	74372	87.2	340.4	2513.8	
1968	889.1	200745	75920	87.2	368.7	2847.8	
1969	959.5	202736	77902	86.8	365.8	2891.4	
1970	1010.8	205089	78678	79.7	380.9	3018.4	
1971	1097.2	207692	79367	78.2	408.2	3331.3	
1972	1207	209924	82153	83.7	435.9	3762.9	

1973	1349.7	211939	85064	88.1	466.3	3942.4	
1974	1458.6	213898	86794	83.8	483.9	4090.1	
1975	1585.8	215981	85846	73.2	541.9	4636	
1976	1768.4	218086	88752	78.5	629	5328.1	
1977	1974.1	220289	92017	82.8	706.4	5784.4	
1978	2232.6	222629	96048	85.1	776.6	6615.9	
1979	2488.8	225106	98824	85.4	828.9	7734.5	
1980	2708.2	227715	99303	80.2	908.5	8958.9	
1981	3030.5	229989	100397	78.8	994.3	9531.1	
1982	3149.7	232201	99526	72.8	1136.8	10099.5	
1983	3405	234326	100834	74.9	1371.2	10860.8	
1984	3777.3	236393	105005	80.4	1564.1	11421.5	
1985	4038.8	238510	107150	79.5	1817	12474	
1986	4268.8	240691	109597	79.1	2120.1	13468.6	
1987	4540	242860	112440	81.6	2345.6	14249.3	
1988	4900.4	245093	114968	83.6	2600.8	15146.6	
1989	5250.9	247397	117342	83.1	2867.5	16683.5	
1990	5546.1	249951	117914	81.1	3206.2	16425.2	
1991	5723	252699	116877	77.8	3598.3	17949.8	

Regression Output:

Constant -453.64
Std Err of Y Est 52.12831
R Squared 0.999136
No. of Observations 44
Degrees of Freedom 38

X Coefficient(s) -0.00397 0.022381 -2.54251 0.290478 0.211834
Std Err of Coef. 0.001336 0.004316 2.068061 0.0517 0.017636

Budget Surplus (Deficit) as a Fraction of GDP

1994 Economic Report of the President

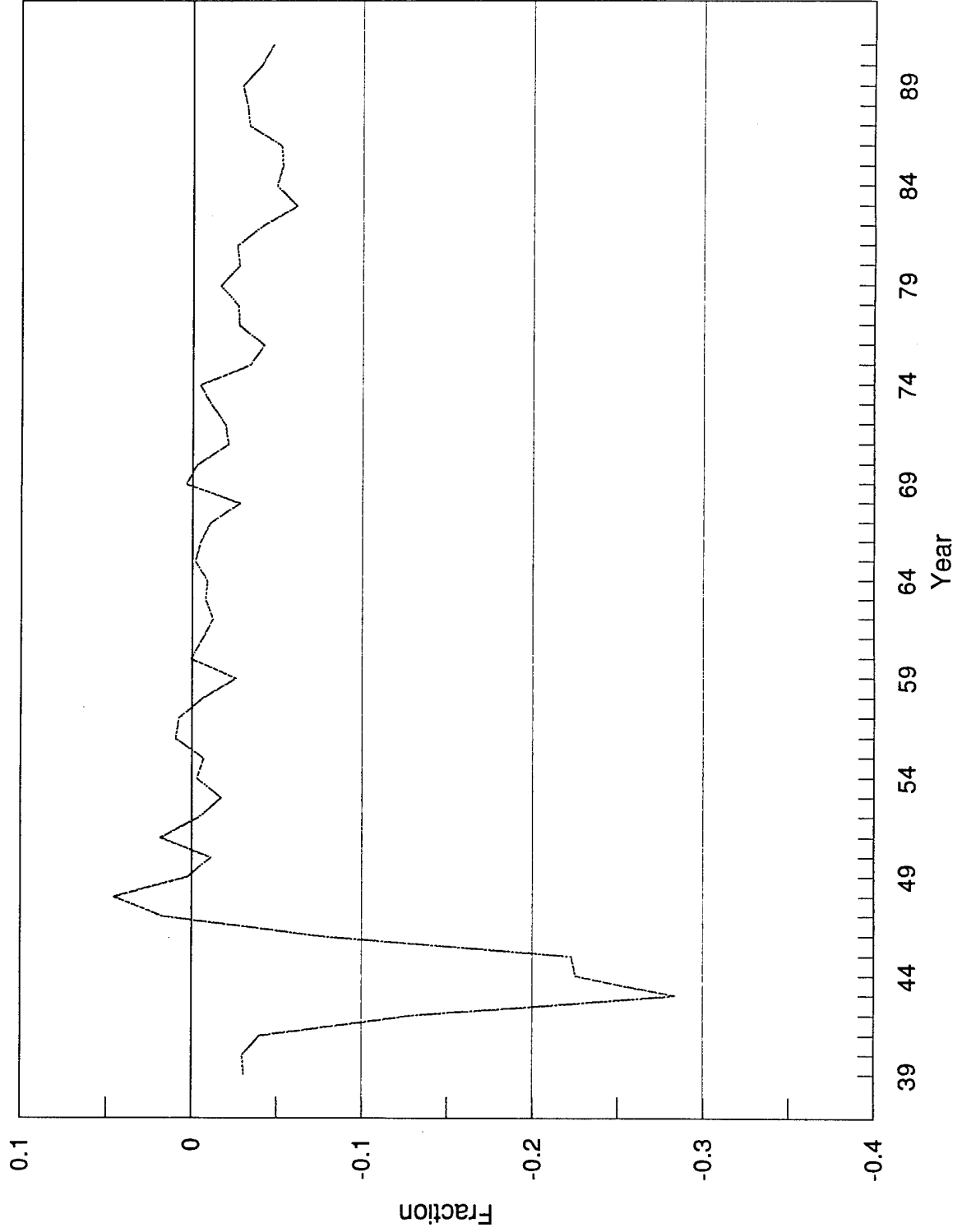


Table Element Name	Macrolib Worksheet	Range Name	Input or Calculated	Beginning Year
Table B-1: Gross Domestic Product - Current Dollars				
Gross Domestic Product	gdp	GDP	Calc	1929
Personal Consumption Expenditures	gdp	PCE	Calc	1959
Durable Goods	gdp	PCEDG	Input	1959
Nondurable Goods	gdp	PCENG	Input	1959
Services	gdp	SVCS	Input	1959
Gross Private Domestic Investment	gdp	GPDI	Calc	1959
Fixed Investment	gdp	FI	Calc	1959
Nonresidential	gdp	NONRES	Calc	1959
Structures	gdp	STRUC	Input	1959
Producers' Durable Equipment	gdp	PDE	Input	1959
Residential	gdp	RES	Input	1959
Change in Business Inventories	gdp	BUSINV	Input	1959
Net Exports of Goods and Services	gdp	NEGS	Calc	1959
Exports	gdp	EXP	Input	1959
Imports	gdp	IMP	Input	1959
Government Purchases	gdp	GP	Calc	1959
Federal	gdp	FED	Calc	1959
National Defense	gdp	NATDEF1	Input	1959
Nondefense	gdp	NONDEF	Input	1959
State and Local	gdp	STLOC	Input	1959

Table B-2: Gross Domestic Product - 1987 Dollars

Gross Domestic Product	gdp	GDPC	Calc	1929
Personal Consumption Expenditures	gdp	PCEC	Calc	1929
Durable Goods	gdp	PCEDGC	Input	1959
Nondurable Goods	gdp	PCENGC	Input	1959
Services	gdp	SVCSC	Input	1959
Gross Private Domestic Investment	gdp	GPDIC	Calc	1929
Fixed Investment	gdp	FIC	Calc	1959
Nonresidential	gdp	NONRESC	Calc	1959
Structures	gdp	STRUCC	Input	1959
Producers' Durable Equipment	gdp	PDEC	Input	1959
Residential	gdp	RESC	Input	1959
Change in Business Inventories	gdp	BUSINVC	Input	1959
Net Exports of Goods and Services	gdp	NEGSC	Calc	1929
Exports	gdp	EXPC	Input	1959
Imports	gdp	IMPC	Input	1959
Government Purchases	gdp	GPC	Calc	1929
Federal	gdp	FEDC	Calc	1959
National Defense	gdp	NATDEFC	Input	1972
Nondefense	gdp	NONDEFC	Input	1972
State and Local	gdp	STLOCC	Input	1959

Table B-3: Implicit Price Deflators for Gross Domestic Product

Gross Domestic Product	gdp	GDPPD	Calc	1929
Personal Consumption Expenditures	gdp	PCEPD	Calc	1959
Durable Goods	gdp	PCEDGPD	Calc	1959
Nondurable Goods	gdp	PCENGPD	Calc	1959
Services	gdp	SVCSPD	Calc	1959
Gross Private Domestic Investment-Fixed Investment	gdp	GDIPD	Calc	1959
Nonresidential	gdp	NONRESPD	Calc	1959
Structures	gdp	STRUCPD	Calc	1959
Producers' Durable Equipment	gdp	PDEPD	Calc	1959

Table Element Name	Macrolib Worksheet	Range Name	Input or Calculated	Beginning Year
Residential	gdp	RESPD	Calc	1959
Exports	gdp	EXPPD	Calc	1959
Imports	gdp	IMPPD	Calc	1959
Government Purchases	gdp	GPPD	Calc	1959
Federal	gdp	FEDPD	Calc	1959
National Defense	gdp	NATDEFPD	Calc	1972
Nondefense	gdp	NONDEFPD	Calc	1972
State and Local	gdp	STLOCPD	Calc	1959

Table B-6: Selected Per Capita Product and Income Series

Population (thousands)	gdpmisc	POP	Input	1929
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Table B-9: Gross Domestic Product by Sector

Business	gdpsect	BUS	Input	1959
Nonfarm	gdpsect	NONFARM	Input	1959
Farm	gdpsect	FARM	Input	1959
Statistical Discrepancy	gdpsect	STATDIS	Calc	1959
Households and Institutions	gdpsect	HSEINST	Input	1959
General Government	gdpsect	GENGOV	Calc	1959
Federal	gdpsect	FEDERAL	Input	1959
State and Local	gdpsect	STATLOC	Input	1959

Table B-19: Inventories and Final Sales of Domestic Business-Current Dollars

Inventories - Nonfarm	gdpmisc	NONFMINV	Input	1959
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Table B-20: Inventories and Final Sales of Domestic Business-1987 Dollars

Inventories - Nonfarm	gdpmisc	NONFARMC	Input	1959
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Table B-34: Civilian Employment and Unemployment by Sex and Age

Civilian Employment	gdpmisc	CIVEMP	Input	1947
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Table B-52: Capacity Utilization Rates

Manufacturing	gdpmisc	MFG	Input	1948
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Table B-63: Change in Consumer Price Indexes for Commodities and Services

All Items (CPI-U) Year-to-Year	gdpmisc	CPIU	Input	1939
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Table B-68: Money Stock, Liquid Assets, and Debt Measures

M1	money	MONEY1	Input	1959
M2	money	MONEY2	Input	1959
M3	money	MONEY3	Input	1959
L	money	L	Input	1959
Debt	money	DEBT	Input	1959

Table B-72: Bond Yields and Interest Rates

U.S. Treasury Securities	money			
Bills (new issues)	money			
3-month	money	BILLS3MO	Input	1939
Constant Maturities	money			
10-year	money	CM10YR	Input	1953

Table B-77: Federal Receipts, Outlays, Surplus or Deficit, and Debt

Total	finance			
Receipts	finance	RECPS	Input	1939

Table Element Name	Macrolib Worksheet	Range Name	Input or Calculated	Beginning Year
Outlays	finance	OUTLAYS	Input	1939
Surplus or Deficit (-)	finance	SURDEF1	Calc	1939
Gross Federal Debt (end of period)	finance			
Total	finance	TOTDEBT1	Input	1939
Held by the Public	finance	PUBLIC1	Input	1939

Table B-79: Federal Budget Receipts, Outlays, Surplus or Deficit, and Debt, as Percentages of Gross Domestic Product

Receipts	finance	RECTS	Input	1934
Outlays	finance			
Total	finance	TOTOUT	Input	1934
National Defense	finance	DEFOUT	Input	1940
Surplus or Deficit (-)	finance	SURDEF2	Calc	1934
Gross Federal Debt (end of period)	finance			
Total	finance	TOTDEBT2	Input	1940
Held by the Public	finance	PUBLIC2	Input	1940

Table B-80: Federal and State and Local Government Receipts and Expenditures, National Income and Product Accounts

Total Government	finance			
Receipts	finance	GOVREC	Input	1959
Expenditures	finance	GOVEXP	Input	1959
Surplus or Deficit (-), National Income and Product Accounts	finance	GOVSUR	Calc	1959
Federal Government	finance			
Receipts	finance	FGREC	Input	1959
Expenditures	finance	FGEXP	Input	1959
Surplus or Deficit (-), National Income and Product Accounts	finance	FGSUR	Calc	1959
State and Local Government	finance			
Receipts	finance	SLGREC	Input	1959
Expenditures	finance	SLGEXP	Input	1959
Surplus or Deficit (-), National Income and Product Accounts	finance	SLGSUR	Calc	1959

Table B-81: Federal and State and Local Government Receipts and Expenditures, National Income and Product Accounts, by Major Type

Receipts	finance	RECEIPT1	Calc	1959
Personal Tax and Nontax Receipts	finance	PTNR1	Input	1959
Corporate Profits Tax Accruals	finance	CPTA1	Input	1959
Indirect Business Tax and Nontax Accruals	finance	IBTNA1	Input	1959
Contributions for Social Insurance	finance	CSII	Input	1959
Expenditures	finance	EXP1	Calc	1959
Purchases	finance	PCHSE1	Input	1959
Transfer Payments	finance	TRANSPAY	Input	1959
Net Interest Paid	finance	NETINT	Calc	1959
Interest Paid	finance	INTPD	Input	1960
Less: Interest Received by Government	finance	INTREC	Input	1960
Less: Dividends Received by Government	finance	DIVREC	Input	1968
Subsidies less Current Surplus of Government Enterprises	finance	SUBSDES	Input	1959
Surplus or Deficit (-), National Income and Product Accounts	finance	SURNIPA1	Calc	1959

Table B-82: Federal Government Receipts and Expenditures, National Income and Product Accounts - Fiscal Year

Receipts	finance	RECEIPT2	Calc	1976
Personal Tax and Nontax Receipts	finance	PTNR2	Input	1976
Corporate Profits Tax Accruals	finance	CPTA2	Input	1976

Table Element Name	Macrolib Worksheet	Range Name	Input or Calculated	Beginning Year
Indirect Business Tax and Nontax Accruals	finance	IBTNA2	Input	1976
Contributions for Social Insurance	finance	CSI2	Input	1976
Expenditures	finance	EXP2	Calc	1976
Purchases	finance			
Total	finance	PCHSE2	Input	1976
National Defense	finance	NATDEF2	Input	1976
Transfer Payments	finance			
To Persons	finance	TRANSPER1	Input	1976
To Rest of the World (net)	finance	TRANROW1	Input	1976
Grants-in-Aid to State and Local Governments	finance	GASLG1	Input	1976
Net Interest Paid	finance	NETINTPD1	Input	1976
Subsidies less Current Surplus of Government Enterprises	finance	SCSGE1	Input	1976
Surplus or Deficit (-), National Income and Product Accounts	finance	SURNIPA2	Calc	1976

Table B-82: Federal Government Receipts and Expenditures, National Income and Product Accounts - Calendar Year

Receipts	finance	RECEIPT3	Calc	1976
Personal Tax and Nontax Receipts	finance	PTNR3	Input	1976
Corporate Profits Tax Accruals	finance	CPTA3	Input	1976
Indirect Business Tax and Nontax Accruals	finance	IBTNA3	Input	1976
Contributions for Social Insurance	finance	CSI3	Input	1976
Expenditures	finance	EXP3	Calc	1976
Purchases	finance			
Total	finance	PCHSE3	Input	1976
National Defense	finance	NATDEF3	Input	1976
Transfer Payments	finance			
To Persons	finance	TRANSPER2	Input	1976
To Rest of the World (net)	finance	TRANROW2	Input	1976
Grants-in-Aid to State and Local Governments	finance	GASLG2	Input	1976
Net Interest Paid	finance	NETINTPD2	Input	1976
Subsidies less Current Surplus of Government Enterprises	finance	SCSGE2	Input	1976
Surplus or Deficit (-), National Income and Product Accounts	finance	SURNIPA3	Calc	1976

Table B-94: Common Stock Prices and Yields

Common Stock Prices	money			
New York Stock Exchange Indexes	money			
Composite	money	NYSE	Input	1955

Table B-103: U.S. International Transactions

Merchandise	intltran			
Exports	intltran	MCHEXP	Input	1946
Imports	intltran	MCHIMP	Input	1946
Net	intltran	MCHNET	Calc	1946
Services	intltran			
Net Military Transactions	intltran	SVCSMIL	Input	1946
Net Travel and Transportation Receipts	intltran	SVCSTRAN	Input	1946
Other Services, net	intltran	SVCSOTH	Input	1946
Investment Income	intltran			
Receipts on U.S. Assets Abroad	intltran	INVREC	Input	1946
Payments on Foreign Assets in U.S.	intltran	INVPAY	Input	1946
Net	intltran	INVNET	Calc	1946
Balance on Goods, Services, and Income	intltran	BALGS	Calc	1946
Unilateral Transfers, net	intltran	UNITRANS	Input	1946
Balance on Current Account	intltran	BALCA	Calc	1946

Table Element Name	Macrolib Worksheet	Range Name	Input or Calculated	Beginning Year
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Table B-112: National Wealth

Total Net Worth	wealth	TOTALNW	Calc	1946
Private Net Worth	wealth	PRIVNW	Calc	1946
Tangible Wealth	wealth	TANGWLTH	Input	1946
Owner-Occupied Real Estate	wealth	OORE	Input	1946
Consumer Durables	wealth	CONDUR	Input	1946
Financial Wealth	wealth	FINWLTH	Input	1946
Corporate Equity	wealth	CORPEQ	Input	1946
Noncorporate Equity	wealth	NONCOREQ	Input	1946
Government Net Financial Assets	wealth	GNFA	Input	1946
Federal	wealth	FEDFA	Input	1946
State and Local	wealth	SLFA	Input	1946