NOTE

FAIRMODEL SITE

RAY C. FAIR
Cowles Foundation

The Internet has greatly expanded the way in which large-scale structural macroeconometric models can be used and disseminated. This note describes a site that has been created for this purpose: http://fairmodel.econ.yale.edu.

The site allows users to work with one of two models: The US model is a macroeconometric model of the United States consisting of 31 estimated equations and 101 identities. The MC model comprises the US model plus models for 32 other countries. Each of the other 32 country models consists of up to 15 estimated equations and 18 identities. There are 45 countries in the trade-share matrix, and 1041 trade-share equations have been estimated. There are about 4000 variables in the MC model, not counting the trade-share variables. The US data begin in 1952:1, and the other data begin in 1960:1. At the current time the forecast data go through 2003:4. The main reference for both the US and the MC models is Fair (1994). Key parts of this book are available online.

Each user gets a data set that contains all of the information about the model: the data, both historical and forecasted; the coefficient estimates; and the specification information. Changes then can be made to this data set and the model can be solved given these changes. User changes can include (1) changes in the exogenous variable values, (2) changes in the coefficients, (3) use of add factors, and (4) dropping equations. All the documentation about how to do this is online, and the software is all menu driven.

The site can be used at many levels. Introductory users, who include some high school students, change fiscal-policy or monetary-policy variables and examine the effects of these changes on aggregate output, inflation, unemployment, and the like. By doing this, students get a feel for both the size and the timing of policy effects. Almost all introductory users stay with the US model.

Intermediate users make more complicated changes, such as changes in some of the key coefficients. Intermediate users include students, business forecasters, and government policy makers. A common use for a forecaster is to examine the sensitivity of the model's forecast to exogenous variable changes. This may help one to get a better feel for the likely future course of the economy. The US model

Address correspondence to: Prof. Ray C. Fair, Cowles Foundation, Box 208281, Yale Station, New Haven, CT 06520-8281, USA; e-mail: fair@econ.yale.edu.

is updated and a new forecast is made once a quarter. The MC model is updated about once a year.

Advanced users need to download the models to their own computers. This requires downloading an econometrics package called the Fair-Parke (FP) program and then downloading the model data sets that go with this program. The FP program is a general package (not model specific), and so the user can make any changes he or she wants to a model within the program. The program has advanced estimation capabilities, allows one to move easily from estimation to solution, has a number of stochastic simulation options, allows optimal control problems to be solved, and has a variety of testing procedures. US model data sets that are compatible with the EViews program also can be downloaded. EViews has fewer advanced features than FP, but it is easier to use. (The EViews program must be purchased from a commercial vendor; the FP program is free.)

The site is also useful to researchers who simply want data, because all of the data can be easily read or graphed online and/or downloaded. The US model accounts for all flows of funds among sectors (the National Income and Product Accounts and the Flow of Funds Accounts have been integrated), and these data and the identities that go with them can provide a useful starting point for constructing a model.

The Internet thus allows two main services to be provided to macroeconometric model users and researchers. One is to allow users to work with models online, requiring only access to the Internet, and the other is to provide easy downloading of data and programs to one's own computer. Also, all documentation can either be read online or downloaded.

It may be that the solution of the MC model is one of the largest computational problems so far offered on the Internet. The following is a brief review of some of the computational details. The site consists of a Pentium Pro 200 computer with 128 Mb of memory and a 9-Gb hard drive. The operating system is Windows NT with a Netscape server. Each user's MC data set takes about 6 Mb of disk space (compared to about 0.25 Mb for a US data set). The code that allows users to make changes to data sets is written in PERL, and the model is solved using the FP program, which is written in FORTRAN. A typical solution takes about a minute of CPU time for the MC model (compared to about a second for the US model alone). Users' data sets are retained until the 9-Gb hard drive gets near capacity, at which time old data sets are deleted (after appropriate warning). At the time of this writing (October 1997), about 150 US data sets and 10 MC data sets are being created per day.

By making this site available free of charge, my hope is to stimulate more interest in structural macroeconometric model building. My view is that the Cowles Commission approach is still the most useful way of trying to learn how the macroeconomy works.

REFERENCE

Fair, Ray C. (1994) *Testing Macroeconometric Models.* Cambridge, MA: Harvard University Press.