Chapter Eleven

Conclusion

The model is summarized in section 1.1, and so it will not be summarized again here. This chapter instead contains a brief discussion of possible future research topics on the model and some closing remarks.

It should be clear that this study has been restricted in important ways by the use of a relatively slow computer and by a relatively small computer budget. It would definitely be of interest in future work to do more experimentation in trying to obtain true FIML estimates. It might also be of interest, as discussed in section 3.6, to try to obtain FDYN estimates of the model and see how these estimates compare and perform relative to the FIML and TSLS estimates. Finally, it might be of interest with more computer resources to do further experimenting on obtaining optimal controls for the model. All three of these problems are similar (and expensive) in that they involve solving fairly large nonlinear maximization problems by the use of algorithms like the ones discussed in section 3.4.

There are a number of areas in which one might consider trying to improve the specification of the model. Some suggestions are presented in section 5.3, for example, on possible alternative ways of accounting for the hours constraint on the household sector and the labor constraint on the firm sector. The approach taken in this study regarding these two constraints does not necessarily use all the information on the labor market that is available. There may also be other approaches than the one taken in this study for trying to pick up loan constraint effects on the household and firm sectors.

The model could be disaggregated in a number of ways. Possible variables to disaggregate include the labor force variables, the consumption and investment variables, and the asset and liability variables. The division of the model into sectors and the closed nature of the model with respect to

the flows of funds should enable this type of disaggregation to be carried out without any major changes in the basic structure of the model.

It is also possible within the basic structure of the model to consider alternative lag structures for the stochastic equations and alternative functional forms. The stochastic equations are clearly only approximations to the way that the decision variables are actually determined, and experimenting with alternative lag structures, alternative functional forms, and even alternative variables that are designed to pick up expectational effects is certainly within the spirit of the model.

One of the most important questions about the current version of the model is whether the properties of the model reported in the last chapter regarding the "trade-off" between inflation and output are true of the real world. The model does have the characteristic that it is generally possible to achieve a fairly high level of output without causing very much additional inflation. In the price equation (Equation 9 in Table 2–3), PF_t is not very sensitive to recent changes in economic activity, especially if these changes are from a low level of activity. Whether this is also true of the real world is perhaps unclear, but from the experimentation done in this study it does not appear possible to pick up in the data very strong effects of the level of economic activity on the price level. Since this is such an important question for policy purposes, however, more experimentation should be done to see if the actual effects are stronger than the effects currently in the model.

Another important question about the current version of the model is whether the predictive accuracy of the model regarding the bill rate can be improved by the use of other estimation techniques or by slight changes in the specification of some of the equations. Some of the predictions of the bill rate in Chapter Eight are quite wide of the mark, and one would hope in the future to be able to improve upon this performance. As discussed in section 8.4, it may be that truer FIML estimates or FDYN estimates will lead to better predictions. Given the key role that the bill rate plays in the model, this is certainly an important area for future work.

This completes the discussion of possible future research topics on the model, and I would like to conclude this study on a personal note. It seems to me that a long run goal of macroeconometric model building ought to be the development of models that when used in a nonsubjective way for policy purposes, via the computation of optimal controls, result, on average, in better policies (i.e., result, on average, in a larger value of the objective function) than any other approaches. Numerical methods and computer technology have now advanced to the point where computational problems no longer appear to be a serious constraint to the attainment of this goal. It now appears feasible to obtain full information estimates and optimal controls for almost any model. Although this study was hindered somewhat by a slow computer and a tight computer budget, in an actual policy making

situation the cost of a few hours of computer time to estimate a model and compute optimal controls for it is trivial compared to the billions of 1958 dollars that might be saved from the implementation of better policies. The remaining constraints to the attainment of the above goal are, it seems to me, the quality of the data and the accuracy of the specifications of the equations. Some would argue, however, that this goal will never be achieved because the structure of the economy is not stable enough to allow models to be used in mechanical ways. My work in these two volumes is based on the premise that this argument is not true, and my primary aim has been to try to make some contribution toward the development of more accurate models.