

Introduction

The material in this text is intended for the intermediate macroeconomics course. The treatment here has three dominant characteristics. It presents the material in both graphical and algebraic forms; the entire set of material is embedded in a set of statistical exercises; and insofar as it is possible, the entire subject is approached with both static and dynamic versions of the theory. The algebra is not complex, for most parts of the book, and no calculus is necessary, although some is implicit from time to time.

Using algebra and geometry, and working macroeconomics with a static model is traditional in this course and requires no further explanation other than to note that for generations it has helped students understand how the macroeconomy works. What do require explanation are the dynamic and statistical approaches taken here. For the *dynamics*, what we do is present our economic agents, including the government, as having plans that encompass the future. Necessarily, then, decisions made today reflect several periods of time. We often model this by including *past* values of important variables in the relations that explain economic decisions. For example, consumption, under the multitime hypothesis, becomes a function of present and past income received by the household. The advantage of this approach, which only marginally adds to the algebraic complexity of the model, is that one obtains a framework in which cycles and growth are explained within the model, rather than tacked on arbitrarily. In a nutshell, the static model generally employed for this course has static decision making that cannot be made *intrinsically* dynamic. The dynamic model, on the other hand, has dynamic decision making that can be made static without loss of generality. While there is, accordingly, no really good reason ever to use a static model, and serious mistakes can occur when one does, such is the grip of this approach on the profession that we feel compelled to provide

the rudiments of the static approach in this text for each sector of the economy.

The *statistical* approach has a different rationale. What we think is that students taking this course, aside from Economics majors, generally want to be informed about the economy. They want to learn material that is relevant and useful, and they want to see how it applies to their lives. Most macro books use a lot of data, for that is a characteristic of macroeconomics, but only one, to this date, actually tests the theories on the data. What we do, in contrast, is to expose every theory to some sort of empirical test, often involving a regression, in order to see how the theory conforms to reality. The data are mostly current observations for the United States (1960–1998), which contributes to the relevance of the book, and, in addition, every opportunity is taken to link the formal study to what is going on in the United States today. From time to time, where it is relevant, we also push our investigations into foreign countries, both to illustrate and occasionally test the appropriateness of the theory globally. In short, the statistical approach does something that no amount of theorizing can do—it can give the student an idea of how well the theory works. Of course, we believe that the (dynamic) theory works very well indeed, and we are candid about this, although the simplistic versions of the theory or the tests used in this book, do not work as well as we would like.

To carry out the dynamic mission of the course, one simply does the models in dynamic terms. Since only algebra is involved, this does not pose a serious challenge either to instructors or students. The statistics, on the other hand, requires some formal statistical training. We do provide that training, but we do so only briefly. What we do is develop the standard regression approach, in the context of estimating the consumption function in Chapter 3. This is a hands-on approach in which the student is shown what regression analysis can do to expose economic relationships. The second thing we do is employ two different programs, EViews and EXCEL, to estimate the regressions. EViews is a macrobased regression program of great versatility and it has the considerable advantage of getting results very quickly and easily. Many universities have this program available on their networks, but if they do not, students can purchase a student version for a reasonable fee. EXCEL is the Microsoft version of the popular

spreadsheet, and is widely available; it uses spreadsheet language that is common to the major spreadsheets (e.g., LOTUS, QUATTRO PRO). The results in the text itself are always in EViews format, not that it matters, and in the Appendix, there is a running commentary, topic by topic, that tells the student exactly how to reproduce some of the results in the text (in EViews). In addition, there are computer exercises in the text that offer the student the opportunity to test their understanding. These data are readily available, mostly in the FRED database published by the Federal Reserve Bank of St. Louis.

Why are we doing the computer exercises? You will discover, when you hit your first computer exercise that is related to one of the economic models in the course, that in order to do the exercise correctly, you really have to understand the model and the data. You will then see that reading about the models, listening to the lectures, and working the algebraic problems *does not get the job done!* There is another dimension, seeing how things actually work, that we can reach by doing computer exercises with the actual data. This is a “hands-on” approach to studying macroeconomics.

SPECIAL WORDS OF ADVICE

1. You must get going on the computer from the beginning.
2. Read carefully! Great care has been taken to say exactly what is meant and to provide relevant illustrations. If you read carefully, you will find the answers to most of your questions.
3. There is a glossary in Appendix A at the end of the book. The purpose of this is to explain the notation used in this book. It is a notation in common use in macroeconomics. Use this as a cross-reference when you are looking at equations, in particular.
4. Do not regard the equations in the text as just so many formulas. They are generally not formulas but parts of economic models expressing hypothetical relationships among variables. In particular, if you try to solve problems by just picking a formula out of the text and plugging numbers in it, you will often get the answer wrong. In fact, you usually have to alter the equations in the text to work out the problems. To do this, you really have to understand what the equations mean.

WHERE DO I GET HELP ON THE STATISTICS?

1. Obviously, the text, the manuals and online help of your regression or spreadsheet program are the main sources.
2. In Appendix B, the EViews program is explained in detail and in Appendix C, EXCEL is explained, in somewhat less detail.
3. The author: you can e-mail me at: doug_fisher@ncsu.edu