Table of contents

Preface

Acknowledgments

Notation and typography

1 Why should you become a Stata programmer?

2 Some elementary concepts and tools

3 Do-file programming: Functions, macros, scalars, and matrices

4 Cookbook: Do-file programming I

5 Do-file programming: Validation, results, and data management

6 Cookbook: Do-file programming II

7 Do-file programming: Prefixes, loops, and lists

8 Cookbook: Do-file programming III

9 Do-file programming: Other topics

10 Cookbook: Do-file programming IV

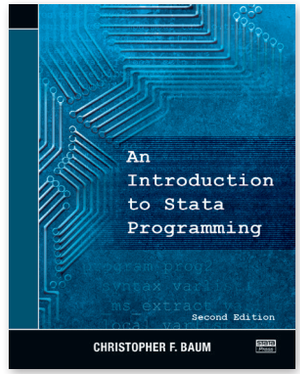
11 Ado-file programming

12 Cookbook: Ado-file programming

13 Mata functions for do-file and ado-file programming

14 Cookbook: Mata function programming

An Introduction to Stata Programming, Second Edition



By Christopher F. Baum

Publisher: Stata Press
Copyright: 2016
ISBN: 978-1-59718-150-1
Pages: 412; paperback
Price: **$58.00**

For more details or to order, visit us online at **stata-press.com/books/introduction-stata-programming**.

STATA® Press

How to contact us

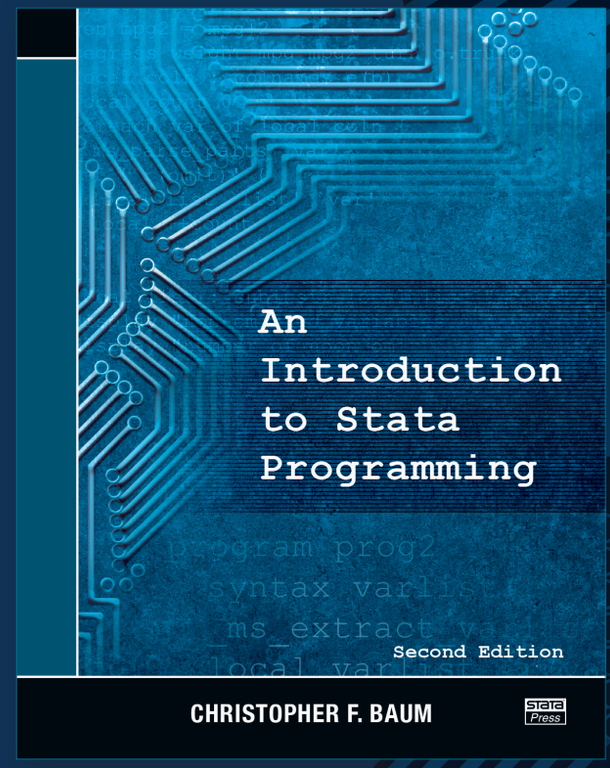
Stata Press
4905 Lakeway Drive
College Station, TX 77845-4512
USA

800-782-8272 (USA)
800-248-8272 (Canada)
979-696-4600 (Worldwide)

service@stata-press.com
stata-press.com

© Copyright 2016 StataCorp LP

Stata Press presents



About the author

Christopher F. Baum is a Professor of Economics and Social Work at Boston College, where he codirects the undergraduate minor in scientific computation. Baum has taught econometrics for many years, using Stata extensively. He has over 40 years of experience with computer programming in a variety of languages and has authored or coauthored several widely used Stata commands over the past 12 years. He is the author of *An Introduction to Modern Econometrics Using Stata*, an associate editor of the *Stata Journal*, and a participant in many Stata Users Group meetings in the United States and Europe.

The book's audience

- All Stata users that want to delve into basic or advanced Stata programming

What's new in this edition

- Updated syntax and output
- Examples and discussions incorporating factor variables and operators
- Examples and discussions about computation of marginal effects, marginal means, and predictive margins using **margins**
- Examples using **gmm** to implement generalized method of moments estimation
- Examples using **suest** for seemingly unrelated estimation
- Mata-based likelihood function evaluators
- Commonly used Mata associative arrays

Comment from the Stata technical group

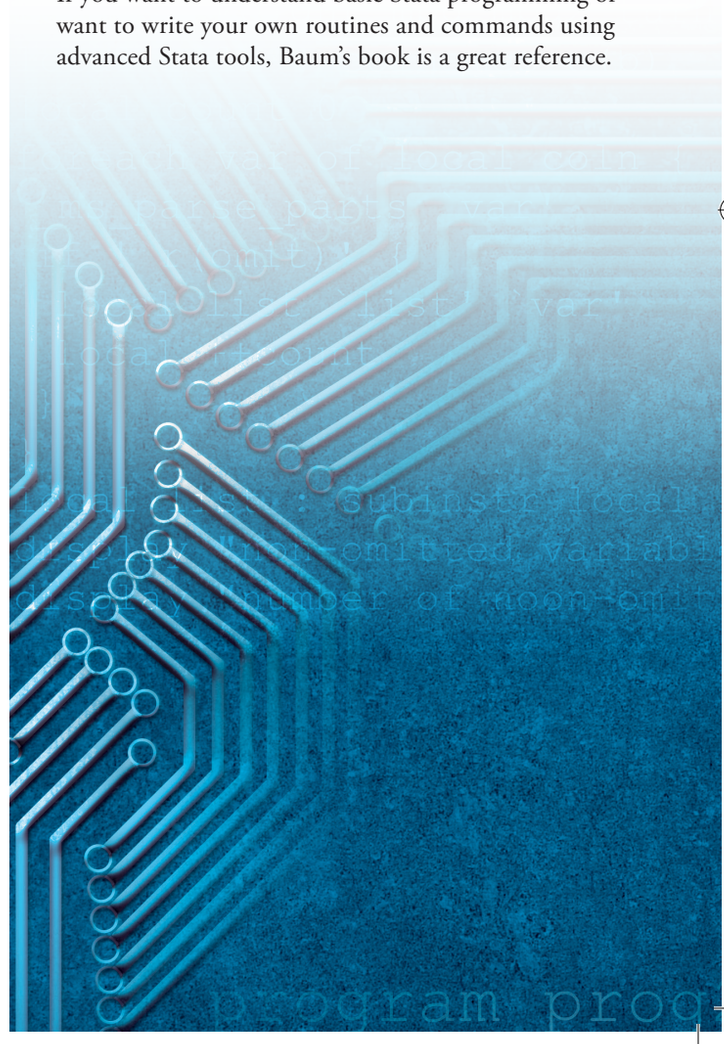
Christopher F. Baum's *An Introduction to Stata Programming, Second Edition*, is a great reference for anyone that wants to learn Stata programming. For those learning, Baum assumes familiarity with Stata and gradually introduces more advanced programming tools. For the more advanced Stata programmer, the book introduces Stata's Mata programming language and optimization routines.

This new edition of the book reflects some of the most important statistical tools added since Stata 10, when the book was introduced. Of note are factor variables and operators, the computation of marginal effects, marginal means, and predictive margins using **margins**, the use of **gmm** to implement generalized method of moments estimation, and the use of **suest** for seemingly unrelated estimation.

As in the previous edition of the book, Baum steps the reader through the three levels of Stata programming. He starts with do-files. Do-files are powerful batch files that support loops and conditional statements and are ideal to automate your workflow as well as to guarantee reproducibility of your work. While giving examples of do-file programming, Baum introduces useful programming tips and advice.

He then delves into ado-files, which are used to extend Stata by creating new commands that share the syntax and behavior of official commands. Baum gives an example of how to write a simple additional command for Stata, complete with documentation and certification. After writing the simple command, users can then learn how to write their own custom estimation commands by using both Stata's built-in numerical maximum-likelihood estimation routine, **ml**, its built-in nonlinear least-squares routines, **nl** and **nlsur**, and its built-in generalized method of moments estimation routine.

Finally, he introduces Mata, Stata's matrix programming language. Mata programs are integrated into ado-files to build a custom estimation routine that is optimized for speed and numerical stability. While discussing Mata, Baum presents useful topics for advanced programming such as structures and pointers and likelihood-function evaluators using Mata.

Baum introduces concepts by providing the background and importance for the topic, presents common uses and examples, and then concludes with larger, more applied examples he refers to as "cookbook recipes". Many of the examples in the book are of particular interest because they arose from frequently asked questions from Stata users.

If you want to understand basic Stata programming or want to write your own routines and commands using advanced Stata tools, Baum's book is a great reference.