Teaching applied finance using R

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February 11, 2004

Abstract

Volatility estimation is an ever expanding part of the financial literature. This topic in applied finance is the theme of a first year graduate paper taught by the authors to students whose typical background not only involves little or no programming experience, but also limited mathematics. We describe the challenges involved in teaching such a course to this "unskilled" audience.

We outline the general course structure, and also the structure of the parallel lab-based course in R programming and practice. We indicate how implementation in R of the techniques taught in the class, many of them current research, allowed the students to not only master the techniques themselves, but also to develop familiarity with a powerful tool. Further, we have found use of R, in particular for simulation and graphical analyses, can compensate for relatively weak mathematical skills, and allow students to grasp ideas and make progress that would otherwise be prohibitively costly in the scope of the course.

In other courses, the students were typically use EViews, however indications from the course evaluation are overwhelmingly supportive of the use of R, despite the students having only 12 weeks to overcome their "poor" programming backgrounds, and to realise the merits of such a package.