

TS Module 3 Trends

(The attached PDF file has better formatting.)

- Deterministic vs stochastic trends
- Estimation of a constant mean

Read Section 3.1, “Deterministic vs stochastic trends,” on pages 27-28. The authors say that “Many authors use the word trend only for a slowly changing mean function, such as a linear time trend, and use the term seasonal component for a mean function that varies cyclically. We do not find it useful to make such distinctions here.” In practice, statisticians distinguish seasonal effects from long-term trends. Many student projects examine cycles in time series and separate them from long-term trends.

Read Section 3.2, “Estimation of a constant mean,” on pages 28-30. Know equations 3.2.1 through 3.2.5 on pages 28 and 29; you will not be tested on equation 3.2.6. The final exam tests the example on the bottom of page 28 and the formulas on page 29. It does not give complex time series or test equation 3.2.3.

The authors give many examples of time series graphs. All graphs show the R code at the bottom, and the data is in the TSA package. No knowledge of R is required for this course. But reproducing the graphs helps you understand how the time series parameters affect the sample autocorrelations and other output.