

TS Module 7 Stationary mixed processes

(The attached PDF file has better formatting.)

- Mixed autoregressive moving average processes
- Invertibility

Read Section 4.4, “Mixed autoregressive moving average processes,” on pages 77-79.

Know equations 4.4.3, 4.4.4, and 4.4.5 on page 78 for the ARMA(1,1) process.

Read Section 4.5, “Invertibility,” on pages 79-81. Know the statement on page 80:

“If $|\theta| < 1$, the MA(1) model can be inverted into an infinite order autoregressive model. We say that the MA(1) model is invertible if and only if $|\theta| < 1$.”

The authors emphasize parsimony and simplicity. The previous textbook for the time series course modeled some time series with complex processes, with many moving average and autoregressive parameters. Cryer and Chan concentrate on simple models. If you model a time series with more than four or five parameters, you don't have a good model. Most student projects conclude that an AR(1), AR(2), ARMA(1,1), or MA(1) model works best, or that first or second differences of the series can be modeled by one of these processes.