

TS Module 5 Stationary moving average processes

(The attached PDF file has better formatting.)

- General linear processes
- Moving average processes

Read Section 4.1, “General linear processes,” on pages 55-56. Know the equations in this section; they are basic tools for time series analysis.

Read Section 4.2, “Moving average processes,” on page 57-58.

Note the negative sign for θ in equation 4.2.1. Don't err by using “+ θ ” on an exam problem. Know equations 4.2.2 on page 57; they are tested on the final exam. Know the table on the top of page 58. An exam problem may give you θ_1 and ask for ρ_1 (or *vice versa*).

As you work through the modules, keep the parameters distinct. The true parameters are unknown; we must estimate them. These are the ϕ and θ parameters. These parameters imply the autocorrelation function, the ρ parameters. We observe sample autocorrelations, or the r parameters, from which we back into estimates of the ϕ and θ parameters.

Pages 58 through 62 are mostly graphs. Understand what the graphs show; you need not memorize their shapes, but you must know the principles of a high or low autocorrelation.

Don't just flip pages. The authors often show two or more graphs, with different values of a time series parameter. Understand how the parameter affects the shape of the graph.

Read pages 62-65 on moving average processes.

Know equation 4.2.3 on page 63. Work through the derivation on pages 62-63. After a few exercises, the procedure is not hard.

Know equation 4.2.4 on page 65. The final exam tests 4.2.4, but not 4.2.5.