Teaching Session 1: Linear programming in input-output analysis

Topic: Linear programming in input-output analysis
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In the first part we quickly review the dual equations of Input-Output Analysis and then introduce the theory of Linear Programming. It is a case of constrained optimization. We will set up so-called shadow prices, one for every constraint, and derive the phenomenon of complementary slackness and the main theorem of linear programming. We will reconnect the latter to the national income identity of Input-Output Analysis. We will show that shadow prices measure productivity.

Reference: Thijs ten Raa, The Economics of Input-Output Analysis, Cambridge University Press, 2005