

A Linear Programming Approach for Steady-State Optima in a Matching Model of Money

Jefferson Bertolai ¹, R. Cavalcanti ², P. Monteiro³

¹ University of São Paulo, FEARP

² Getulio Vargas Foundation/EPGE

³ The University of York

An algorithm that combines linear programming (LP) optimization and the downhill simplex method is proposed to compute steady-state optima in the matching model of Kiyotaki and Wright (1989) with multiple holdings of money. We compute optima for bounds up to 8 units of money and provide some insights on how divisibility affects the optimal allocation. Then, we give some detail on how optimal allocation looks like for the highest upper bound on money holdings we have computed. Although the heterogeneity we explore here is higher upper bounds on money holdings, our computational strategy is suitable for other kinds of heterogeneity already studied in the literature, such as the existence of perfectly monitored people, giving rise to inside money, or shocks on preferences/technology that makes optima state-dependent.