

Multi-dimensional heterogeneity and matching in a frictional labour market

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Abstract: This paper examines the sorting of workers and firms when both parties are characterized by multi-dimensional heterogeneity. I propose a tractable, static model of directed search with two-sided multi-dimensional heterogeneity, an extension of Shimer (2005), to explain the sorting of job market entrants and their jobs. I develop a definition of assortative matching in this context and examine the conditions under which it is obtained. The degree of sorting on each dimension is determined by explicit tradeoffs made by the worker in his/her application decision. As such, differences in the complementarities between worker skills and job tasks in production generate key intuitive differences to the application decisions of workers and sorting outcomes. I then estimate the production function structurally using the NLSY 1979 cohort data and O*NET data, while considering three dimensions of heterogeneity - cognitive, interpersonal and manual skills and tasks. A separate estimation using the NLSY 1997 data allows for an examination of how the production function and the distribution of jobs have evolved between the two cohorts. The extent to which these changes account for the empirical phenomena of wage and job polarization, as well as the marked differences between men and women in this regard.