Joint Search Theory

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**Extended Abstract**

Search theory routinely assumes that acceptance/rejection decisions of job offers (hence, labor market movements across employment states or across jobs) are made by individuals acting in isolation. In reality, the vast majority of workers are somewhat “tied” to their partners into couples and families and decisions are joint.

This paper studies, from a theoretical point of view, the joint job-search and location problem of a household formed by a couple (e.g., husband and wife) who maximizes total family income. We assume throughout that the arrival rate of offers and wage offer distributions are the same for the two members of the couple, i.e. we focus on the “symmetric case”.

The objective of the exercise, very much in the spirit of standard search theory, is to characterize the reservation wage behavior of the couple and compare it to the single-agent search model to derive the implications of partnerships for individual labor market and wage dynamics.

We begin our analysis from a version of the McCall-Mortensen search model where (i) preferences are linear in income and (ii) both members of the couple search for jobs in the same location. We show that the problem collapses to the single-agent search model. This result is independent of the availability of on-the-job search.

Next, we consider risk aversion (CARA preferences) and allow borrowing and saving. While this change makes no qualitative difference in the single-agent version, in the joint-search model this gives rise to a bread-winner cycle: consider a situation where the husband is employed and the wife is unemployed. We can show that there is a wage threshold for the wife such that for offers above this she accepts the job while the husband simultaneously quits his job and starts searching (quits to unemployment never happen in the single-agent McCall model). This process of “accept-quit-search”
continues until both spouses’ wages exceed a certain threshold, beyond which quitting does not occur any longer. In a sense, the existence of joint-search provides an opportunity to the couple to continually raise their total household income similar to on-the-job search even in the absence of it.

Next, we allow for multiple locations and for a utility cost of living apart. Here, we can fully solve for all the value functions and characterize the reservation strategy of the pair in the two relevant cases (both unemployed, one member employed and the other unemployed). We prove the existence of a region where a different kind of bread-winner cycle occurs: consider a situation where the husband is employed in location A and the wife is unemployed. It may be optimal for the husband to quit into unemployment and follow his partner to location B, in case she is offered a job in that location.

However, there is also a region where the wife rejects a wage offer that she would have accepted in the absence of a joint-location problem. This latter result highlights a new type of labor market friction resulting from joint-search behavior. In effect, the joint-location problem restricts the useful number of wage offers a couple receives by tying them to each other.

We will use the model to study several questions. First, how do the lifetime wages of a single job-searcher compare to those of an individual searching jointly? Given that joint-search introduces both opportunities (such as the breadwinner cycle) and frictions (such as the joint-location problem) the answer is not obvious. Second, if men and women were to draw wage offers from two distributions with the same mean but the male distribution has a larger variance, would one observe a gender wage gap endogenously? Such a model could be consistent with the observation that men’s wages almost always rise during job-to-job transitions whereas women’s often fall.

Finally, we plan to use the analytical characterization of the model’s reservation wage policies to outline a feasible method to identify and estimate structural models of joint search and location decisions.