[Returns to on-the-job search and the dispersion of wages](#)

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A wide class of models with On-the-Job Search (OJS) implies that workers gradually select into ever better-paying jobs. This process continues until a lay-off occurs, when workers have to go through this selection process from the start again. This process implies that workers' expected wage increases gradually during their career, an increase that might be misinterpreted as a return to labour market experience. We develop a simple methodology to test these predictions and to disentangle the return to the OJS process from the general return to experience. Our inference uses two sources of identification to distinguish between returns to experience and the returns from OJS: (i) time-variation in job-finding rates due to business cycle fluctuations, and (ii) the time since the last lay-off; since the selection process restarts from scratch after a lay off, the fall in wages upon lay off is an empirical prediction from models with OJS that does not fit a general return to experience.

   We refer to a sequence of jobs from the start of the career (or from the moment of a lay-off) till (the next) lay-off as an employment cycle. Due to the OJS selection process, the model predicts wages to increase gradually during an employment cycle. We show that conditional on the termination date of a job, the starting date of job should be uniformly distributed between the start of the employment cycle and the termination data of that job. The intuition is that the randomness of the arrival of job offers implies that we have no prior information whatsoever on the arrival time of the best job offer during the cycle, which is the job the worker currently holds. Hence, the starting date of the current job must be uniformly distributed. This is a strong prediction. We test this prediction, using data on the American labour market (NLSY 79). The prediction is shown to hold empirically.

   Furthermore, we use the theory of extreme values of a set of random variables (in our case: the maximum) to derive the shape of the distribution of job offers. If the increase in the expected wage over the duration of an employment cycle converges to some bounded maximum, then the job offer distribution also has a maximum. If the expected wage keeps on increasing over the full duration of the employment cycle, the right tail of the job offer distribution is unbounded. Again, our empirical evidence gives a clear answer: the offer distribution is unbounded. Hence, pure sorting models cannot explain the data. In these models, workers seek a job that fit their aptitude best, e.g. a job of

exactly the right complexity, not too complex, not too simple, which the maximum wage for each worker to be bounded. Our evidence suggest that wage offers follow a Gumbel distribution, which has a fat left tail.

We find remarkably strong support for all implications of the model. E.g. the model predicts that the rate at which wages increase during an employment cycle is the same across all cycles, whether it is the first (the start of the career) or e.g. the fourth (after three lay-offs). This prediction is supported by the data. Our methodology yields a simple and robust estimate for the standard deviation of the wage offer distribution, which is 7% for low skilled workers, and 15% for high skilled workers. For the high skilled workers, the standard deviation is substantially higher in cities than in the countryside, whereas this distinction does not make a difference for low skiled workers. The process of OJS affects leads to wage dispersion along three channels: first, the expected number of wage offers varies over the duration of an employment cycle; second, since the arrival of new job offers is random, the actual number of job offers differs from the expected number; and third, the quality of job offers differs (one being a better draw from the offer distribution than another). Altogether, these three factors account for a substantial part of the total dispersion of wages, roughly 10%. Similarly, OJS accounts for 30% of the experience profile. The average wage loss after lay-off is 11%. Search friction have therefore a major impact on labour market outcomes.