

Matching Skills and Exploring Occupations

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We study how individuals match their skills with an occupation's demands as they choose a career. With data on individuals' test scores for multiple types of skills and work histories, we have a rich description of this process. We quantify the quality of one's occupational match and how it evolves over the life cycle and with successive occupational moves. We propose and estimate a model in which occupational mobility allows individuals to discover their learning abilities along these different skill dimensions. The model delivers predictions for occupational sorting, which then allows us to use indirect inference to estimate returns to skills in occupations despite the sorting that plagues reduced form attempts at similar estimation. Furthermore, we gain insights into why incomes diverge over the life cycle, as match quality has long-term implications here, and we can use the model to analyze policies that affect occupational mobility.

Our chief source of data on skills is the Armed Services Vocational Aptitude Battery (ASVAB), which gives young adults a series of tests in areas from "Electronics Information" to "Word Knowledge" and is explicitly designed by the US military to help in occupational placement. We construct several measures of mismatch, some of which couple ASVAB with information about occupations from the BLS' O*Net database. With test takers' earnings and career histories, we find that these measures significantly impact a worker's income in a Mincer regression. This match quality also affects wage growth due to occupational tenure and thus a poor match that persists can have a long lasting effect on life-time income. Match quality improves over the life cycle and higher quality matches are likely to last longer, suggesting that occupational mobility is, in part, a process of discovering one's calling. Education also reduces mismatch, so better allocated skills also contribute to the college wage premium.

These inferences, however, are dubious without a model of occupational choice because if workers are not randomly sorted into occupations, selection biases the estimated returns to skills. Given our evidence that workers are not perfectly matched to maximize their income in an occupation, this selection bias is not a simple truncation. Rather, working in an occupation teaches workers about their own strengths and whether they are suited for this occupation, making occupational sorting a complicated function of one's labor market history. In our model, we replicate this selection pattern and can therefore use indirect inference to consistently estimate the return to skills. This allows us to quantify the contribution of poor occupational match quality to inequality and

the divergence of incomes over the life cycle. Finally, our model is a framework to clarify the implications of policies that affect occupational mobility. Labor market rigidities may be especially pernicious if they affect the young, because impediments to occupational mobility also reduce workers' information about their own skills and result in worse matches.