

Learning from Coworkers*

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Extended Abstract

We investigate learning at the workplace. We are interested in understanding how individuals learn from coworkers with different levels of knowledge and the implications of this form of learning for individual and aggregate outcomes.

To do so, we start by analyzing the empirical relationship between the wage growth of an individual and the wages of her coworkers. To discipline the key features of this relationship we use German administrative data that contain the employment biographies of the entire workforce of the establishments in the sample. We use a variety of empirical specifications that allow us to understand which features of the distribution of wages are related to an individual's wage growth.

Our findings indicate that more highly paid coworkers substantially increase future wage growth. Furthermore, the transmission depends on particular features of the wage distribution. The data suggest little congestion from less well paid workers and a roughly symmetric positive spillovers from those higher up in the wage distribution. We also show that the effects we find are present across the wage distribution.

Although suggestive of significant learning from coworkers, these findings could in principle also be consistent with other features of wage setting mechanisms in the labor market. To address these possibilities we offer a battery of checks which suggest that these findings do not purely reflect mean reversion, backloading, or other firm-specific factors by separately analyzing switchers and stayers, plant closings, using information about worker tenure, and studying the nonlinearities in the empirical relationship between wage growth and the distribution of coworkers.

Guided by this evidence we develop a simple competitive model of the labor market in which coworkers learn from each other. The model has the key feature that a worker's pay reflects both her knowledge and a compensating differential for the opportunity to learn from her coworkers. In contrast, the labor market compensates those who provide their coworkers with learning opportunities. Our model yields a mapping between the reduced-form evidence on wages and the underlying knowledge and learning of individuals. Hence, we structurally estimate a parametric version of our model using a simple learning function that can account for the most important reduced form patterns we document. We offer a way to estimate the parameters of this function using the matched employer-employee information for the German labor market. The result is a structurally estimated 'learning function' that maps an agent's learning to the knowledge distribution of her coworkers.

Our estimated model can be used to study a variety of phenomena that might affect team composition and therefore individual learning. We plan to study how changes in the organization of work brought about by technological change affect earnings inequality, life cycle wage profiles, and the aggregate rate of growth.