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Learning from experience or learning from others? Inferring informal training from a human capital earnings function with matched employer–employee data

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Abstract

A model of informal training which combines learning from own experience and learning from others is proposed in this paper. It yields a closed-form solution that revises Mincer–Jovanovic's [Mincer, J., Jovanovic, B., 1981. Labor mobility and wages. In: Rosen, S. (Ed.), *Studies in Labor Markets*. Chicago University Press, Chicago, pp. 21–64] treatment of tenure in the human capital earnings function. We estimate the structural parameters of this non-linear model on a large French cross-section with matched employer–employee data. We find that workers on average can learn from others 10% of their own human capital on entering one plant, and catch half of their learning from others' potential in just 2 years. The private marginal returns to education are declining with education as more educated workers have less to learn from others and share the social returns of their own education with their less qualified co-workers. The potential for learning from others on the job varies across jobs and establishments, and this provides a new distinction between imitation jobs and experience jobs. Workers in imitation jobs, who learn most from others, tend to have considerably longer tenure than workers in experience jobs. Although workers in experience jobs can learn little from others, we find that they learn a lot by themselves. We document several analogies between the imitation jobs/experience jobs “dualism” and the primary/secondary jobs and firms' dualism implied by the dual labor market theory. However, our binary classification of jobs depicts the data more closely than the dual theory

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categorization into primary-type and secondary-type establishments. Competition prevails between jobs and firms but jobs differ by their learning technology.

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1. Introduction

The effects of human capital on earnings are commonly captured by a remarkably simple equation, which was suggested and estimated by [Mincer \(1974\)](#) on US census data and is still known as the “Mincerian” earnings function. The most widely estimated version of this model is linear in education and quadratic in labor market experience: it is usually called the quadratic earnings function. An extended version of this equation, which was proposed by [Mincer and Jovanovic \(1981\)](#), also includes a quadratic function of tenure in the incumbent firm. The Mincerian earnings function has been efficient in extracting valuable information about the costs and returns of education and training from experience-earnings profiles. The recent availability of large matched employer–employee data sets in a number of countries ([Abowd and Kramarz, 1999](#)) makes it worth asking how this popular tool could be extended to extract additional information about the amount and structure of informal learning on-the-job. A natural direction of research was advocated by [Mincer \(1974\)](#) himself:

“[...] the most important and urgent task is to refine the specification of the post-school investment category [...] to include details (variables) on a number of forms of investment in human capital.”

As a matter of fact, matched worker–firm data yield valuable information about co-workers and firms’ training policy which makes it possible to separate learning from others and learning from own experience. This should contribute to a better understanding of the processes of human capital accumulation used by firms and of firms’ heterogeneity in this respect. We shall be using here a unique French cross-section on labor cost and wages structure (INSEE 1992) comprising 150,000 wage earners in 16,000 establishments.

Much of the informal training taking place on-the-job may be captured by a combination of learning from own experience (or, self-learning) and learning from others (or, learning by watching). [Barron et al. \(1989\)](#) confirm the importance of these informal learning processes in the US. In the 3 months following the recruitment of new workers, 96% of on-the-job training is given to them in an informal way by other workers (145.2 h of a total 151.1 h) and more than one-third of on-the-job training (53.1 h) is provided through a “learning by watching” process. Learning by oneself through experience and learning from others seem to capture the essential ingredients of informal learning on-the-job, so that a model that incorporates these two elements should offer a good description of informal on-the-job training. They both form the microeconomic counterparts of the autonomous and catch-up growth processes separated by [Benhabib and Spiegel \(1994\)](#) in macroeconomic growth models, following a suggestion of [Nelson and Phelps \(1966\)](#).

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