

Overeducation and undereducation in Taiwan

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Abstract

This study analyzes the incidence of overeducation and undereducation and their effects on wages utilizing the data sets for the “Taiwan Social Change Survey” in 1997 and 2002. Our main conclusions are as follows. First of all, the rate of return on excess years of schooling is positive but smaller than that in relation to the required education. The rate of return on the years of deficit schooling is negative, but that the penalty is smaller than in the case of the required education. Secondly, the self-assessed overeducated workers tend to be pessimistic given their inferior promotion history, although the returns on their surplus education seem to be rather sound. By contrast, if overeducation is defined according to the method of means of realized matches, it provides a more favorable picture for the overeducated in terms of mobility history. Finally, given the current data on the limited samples, we do not regard the problems facing the young overeducated as being more serious than those facing the old cohort.

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1. Introduction

Overeducation refers to a situation where a worker’s actual education exceeds the required education given his or her occupation. Undereducation refers to a situation where a worker’s actual education falls short of the required education given his or her occupation. In particular, overeducation deserves more attention than undereducation because of its unpleasant outcomes. For an individual worker, being overeducated may hamper earnings, productivity, and job satisfaction. For a society, the prevalence of overeducation results in underemployment and inefficiency in terms of educational resource allocation (Tsang, Rumberger, & Levin, 1991). Both the U.S. and European countries have recognized the potential problems, and quite a few studies have estimated the incidence of overeducation. For example, Sicherman (1991) estimated that 40% of U.S. workers are overeducated. Hartog and Osterbeek (1988), Alba-Ramirez (1993), Kiker et al. (1997) and Sloane, Battu, and Seaman (1999) pointed out that 16%, 17%, 25%, and 31% of workers in the labor markets of the Netherlands, Spain, Portugal, and Britain were overeducated.¹

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¹ For a comprehensive list of previous studies and the main empirical results on the incidence and wage effects of overeducation and undereducation, please refer to Hartog (2000), Groot and Maassen van den Brink (2000), Rubb (2003b) and McGuinness (2006).

In the past two decades since 1987, higher education in Taiwan has been undergoing rapid expansion. Coupled with the high unemployment rate of the youth in Taiwan, the possible consequences of overeducation in Taiwan have become a cause for concern.² This paper thus continues the discussion of the issues of the incidence of an individual's characteristics on overeducation and undereducation, the mobility-related information of workers, and the wage effects of overeducation and undereducation in Taiwan. In particular, we document the phenomenon of overeducation and undereducation, including their incidences and their corresponding rates of return, from a subjective and other relatively scientific point of view. In addition, we utilize more information on an individual's mobility-related variables, as well as estimates of the rates of return on overeducation; we can therefore investigate whether overeducation indicates a potential problem. The main findings are that the self-assessed overeducated workers tend to be pessimistic given their inferior promotion history, although the returns on their surplus education seem to be rather sound. By contrast, based on the relatively scientific measure used for occupational mismatches, a more favorable picture is observed for the overeducated in terms of the history of mobility.

The remainder of this paper is organized as follows. A literature review on the definitions of overeducation and undereducation and the related issues are presented in the next section. In the third section, a description of the data and the econometric method used in the analysis are provided. The incidence of mismatches and the estimation of the earnings equation are analyzed in Section 4. Finally, a summary and conclusion are given in the final section.

2. Literature review

The literature has documented the issues concerned with occupational mismatches, especially those related to overeducation or excess schooling. The focus has been on overeducation due to the way workers are unfavorably matched together with the implications for the inefficient allocation of resources. As for the definition of an occupational mismatch, the basic idea behind this is to classify the workers into three types, according to the difference between the “actual education” of the worker and the “required education” for the occupation in which the worker participates. If the actual education is the same as the required education, then the worker is classified as being adequately educated. If not, then the worker is overeducated (undereducated) if the actual education exceeds (falls short of) the required education.

Basically, there are three major measures of mismatch that are based on how the amount of required education is determined (Hartog, 2000). The first method, the worker self-assessment approach, denoted by WA method from now on, is proposed by Duncan and Hoffman (1981). This method asks the worker to determine the education required for his job and therefore classifies the workers as being adequately educated, overeducated or undereducated. This method is frequently used once the information regarding self-assessment is available, such as in the studies by Sicherman (1991), Alba-Ramirez (1993), Sloane et al. (1999) and Buchel (2002). The second measure is the “means of realized matches,” denoted by RM method, proposed by Verdugo and Verdugo (1989). The RM method defines required schooling as a one-standard deviation range around the mean level of schooling within an occupation. The workers are considered to be adequately educated if their actual education falls within this range, and overeducated (undereducated) if their actual education is greater (less) than one standard deviation above (below) the mean for the specific occupation. This method was adopted by Groot (1996) and Voon and Miller (2005).³ While the first measure takes the workers' subjective evaluation into consideration, the second method employs data-based criteria and claims to be relatively objective (Groot & Maassen van den Brink, 2000).⁴ Groot and Maassen van den Brink (2000) conducted a Meta analysis of 25 studies on overeducation and found that the average value of incidence of overeducation based on the RM method is 13.1%, while the average value based on the WA method is 28.6%. In

² According to the data compiled by Taiwan's Ministry of Education, there were 145 universities and colleges in 2005, compared with only 28 in 1986. The school enrollment rate for the 18–21 age group was 58% in 2005, compared to 14% in 1986. People with college degrees or above accounted for 18% of the labor force in 2005, compared to 6% twenty years ago. In particular, for people with a bachelor's degree or above, the unemployment rates for the age groups 20–24 and 25–29 were, respectively, 11% and 6% in 2005, which were much greater than the average level of 4%.

³ Kiker et al. (1997), De Oliveira et al. (2000), Bauer (2002) and Lin and Wang (2005) use the “mode” in place of the “mean” in the sense that the mode is less sensitive to outliers and technological change.

⁴ Groot and Maassen van den Brink (2000) explicitly classified the four definitions they surveyed into “subjective” and “objective” definitions.

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