Have the returns to education really increased in Vietnam? Wage versus employment effect

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ARTICLE INFO

ABSTRACT

Oostendorp, Remco H., and Doan, Quang Hong—Have the returns to education really increased in Vietnam? Wage versus employment effect

Many studies have analyzed changes in the returns to education in globalizing economies using the Mincerian framework. These studies have typically estimated the returns to education in terms of changes in wages rather than employment, effectively ignoring the fact that during globalization not only wages but also employment patterns are affected. In this paper we use four large-scale representative household surveys from the transition economy Vietnam for the period 1998–2006 to estimate the returns to education taking into account both changes in wages and employment. The results show that the estimated increases in returns to education are lower once changes in employment patterns are taken into account. *Journal of Comparative Economics* **41** (3) (2013) 923–938. VU University Amsterdam, Tinbergen Institute, Amsterdam Institute for International Development, The Netherlands; World Bank Country Office, Viet Nam.
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1. Introduction

Many studies have analyzed changes in the returns to education (or skill premium) in economies following periods of trade liberalization by analyzing the wage gap between skilled and unskilled workers. Interestingly, while the East Asian newly-industrialized economies (NICs) experienced an expected reduction in the wage gap between skilled and unskilled workers after openness with a strong export-orientation was introduced in the 1960s and 1970s, there is by now overwhelming evidence that the opposite holds for the more recent globalizers. The current debate therefore centers on the question what explains this apparent paradox as globalization was expected to help the abundant factor in developing countries (see Goldberg and Pavcnik (2007) on this paradox and for a review of the literature).

While most (but not all) of the paradoxical evidence relates to Latin American countries entering the liberalization phase in the 1980s and 1990s, similar evidence on increasing returns to education starts to emerge for one of the most recent successful entrants in the world market, namely Vietnam. Gallup (2002) has reported an increase in the returns to education between 1993 and 1998 in Vietnam and Pham and Reilly (2007) have found that the returns increased further during the 1998–2002 period.[1]

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[1] Liu (2006) actually reports a fall in the returns to education for men (but not for women) during the period 1993–1998, but this is due to a substantial decline in the returns to vocational education for men. Her analysis also shows that the returns to upper secondary and tertiary education increased both for men and women during the same period.

However, one may wonder whether the observed changes in the wage structure are sufficient to capture changes in the actual returns to education. Previous studies have typically estimated the returns to education (or skill premium) in terms of changes in wages rather than changes in employment, ignoring the fact that trade liberalization may not only change wages but also employment opportunities across industries.[2] This may well have been a good approximation, as Goldberg and Pavcnik (2007) note that most studies for developing countries have found little labor reallocation across sectors following trade reform in developing countries (Revenga, 1997; Currie and Harrison, 1997; Hanson and Harrison, 1999; Feliciano, 2001; Attanasio et al., 2004; Topalova, 2010; Wacziarg and Seddon Wallack, 2004; Kijima, 2006). However, most of these studies did not consider transition economies where one would expect a much larger degree of labor reallocation. This indeed appears to have been the case for Vietnam with a number of previous studies documenting that the employment effect of trade reform in Vietnam may well be of significant magnitude (Niimi et al., 2002; Jenkins, 2003; Manning, 2010).[3]

This paper seeks to make three contributions to the literature. First, we will show analytically that ignoring shifts in employment patterns will lead to incorrect estimates of the returns to education in the presence of industry wage differentials. Second, the paper will provide evidence on changes in wage and employment patterns for Vietnam during a period of significant trade reform using four large-scale representative household surveys for the period 1998–2006. And third, the paper will estimate the returns to education for Vietnam taking into account both wage and employment shifts.[4]

The main finding of the paper is that the returns to education have increased in Vietnam but much less if one takes into account the changes in industry employment, especially for workers with less education. Therefore estimates based on changes in Mincerian returns do provide an overestimate of the change in returns to education during a period of trade liberalization and transition in Vietnam.

The paper is structured as follows. In the next section we introduce a methodology for measuring the returns to education taking into account both the wage and employment effect (the 'unconditional' returns to education). In Section 3 we provide background information on Vietnam and its reforms and introduce the data for the empirical analysis. In Section 4 the estimated Mincerian and unconditional returns to education are presented, while Section 5 concludes the paper.

2. The returns to education: wage versus employment effect

Studies estimating the returns to education typically start from the Mincerian earnings function where (log) wages are a function of education variables as well as other variables affecting labor productivity and therefore wages:

$$\log w_i = E_i\beta + X_i\gamma + \sum_{j=1}^{J} D_i^j \delta^j + \epsilon_i \tag{1}$$

where w_i is the hourly wage of individual i, E_i the years of education, X_i a vector of other individual determinants of wages (such as age, age squared and gender), D_i^j industry (or sector) dummies indicating whether the individual i is working in industry j ($j = 1, \ldots, J$), and ϵ_i an error term. The coefficient β measures the marginal impact of one additional year of education on the wage (in log terms) and can also be interpreted as the rate of returns to education under certain assumptions (Heckman et al., 2003).[5] The coefficients δ^j are a measure of industry wage premiums.

Although in the original specification of the Mincer earnings function no industry dummies are included (Becker, 1964), many studies have shown that there are typically large and persistent industry wage differentials that cannot be explained by human capital differences (Krueger and Summers, 1987). Therefore without industry fixed effects the estimated returns to education in Eq. (1) will be biased unless there is no correlation between the human capital variables and industry affiliation.[6]

The above approach has been used to study changes in the returns to education following trade reform in many countries (see for example Beyer et al., 1999; Attanasio et al., 2004; Arbache et al., 2004; Brambilla et al., 2010). While some of these studies do not control for industry affiliation (most likely biasing the estimate of the returns to education), others do include controls for industry affiliation. However, even with controls for industry affiliation, previous studies still ignore the fact that industry affiliation is itself affected by education (and trade liberalization), and therefore should be taken into account when estimating the returns to education.[7] This issue is especially relevant when studying changes in returns following

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[2] This has similarly also been the case for studies on Vietnam.

[3] A recent study for Brazil found that there was a clear trade-related labor reallocation, but with labor moving in the 'reverse' direction –exporters separated significantly more and hired significantly fewer workers than the average employer after trade liberalization (Menezes-Filho and Muendler, 2011).

[4] Note that the paper does not attempt to estimate the *impact* of trade liberalization on the returns to education in Vietnam, which is far from straightforward (see Goldberg and Pavcnik, 2007). Instead, this paper studies the observed changes in returns to education in a globalizing transition economy with large labor reallocations between and within tradable sectors (Vietnam).

[5] In principle the returns to education can be nonlinear and a function of the level of education ($\beta = \beta(E_i)$). This does not affect the derivation of the wage and employment effects below except that the returns to education should be interpreted as marginal returns, given by $\beta(E_i) + E_i \frac{\partial \beta}{\partial E_i}$.

[6] We note that the literature has typically focused on another type of bias, namely the so-called 'ability bias' (Card, 1999). However we note that the ability bias is more of a concern when the primary focus is on the *level* of returns rather than the change in returns as in the latter case much of the ability bias will be differenced-out in the analysis.

[7] Attanasio et al. (2004) actually do analyze how the estimated skill premiums are affected by the inclusion of industry and/or occupation dummies and also how trade reform has impacted on industry wage differentials and the probability of informal sector employment. They do not, however, combine these results to estimate the full impact of trade reform on the returns to education.