

**Computer use and wage premiums:  
a simultaneous approach**

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Since Krueger's (1993) seminal paper on computer use and wages, many authors have investigated for many countries the existence of a computer premium on wages. An important finding seems to be that when one accounts for unobserved heterogeneity, the premium is much smaller than appears at first sight. In this paper we argue that these results are biased because single wage equations are estimated. When we take into account that computer use and wages are determined simultaneously, we show that the estimated premium for computer use consists of three components: a productivity effect, a labour market effect and a simultaneity bias.

We use Heckman's model of unobserved endogenous variables to model the simultaneous decision to use computers and determine wages. This model encompasses other relevant models used in the literature. Moreover, it can be used to account for unobserved heterogeneity in an innovative way. We show that for Germany, 1997 – 2001, simultaneity exists. We find that, apart from only using the computer at work, also "PC-propensity" influences wages, whereas the evidence that wages affect the use of a PC at work is less clear.