Estimation of college premium
controlling for endogeneity in educational choice
and working decision using nonparametric bounds

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Abstract

This paper tries to partially identify the college-wage premium of different cohorts in US. For that purpose, I utilized the bound approach developed by Manski(1994), Manski & Pepper(2000) and Blundell et al (2007). Two features of my analysis are to (i) evaluate the wage premium at different points in the wage distribution and (ii) correct two sources of non-random selection, namely selection into education and employment, which is not always done in the previous literatures.

Starting from the worst case bound, I add several restrictions to obtain narrower and informative bounds; exogenous restriction (ER), monotone restriction (MR), monotone treatment response(MTR) positive sorting (PS) and intertemporal restriction (IR). These restrictions are motivated by the structure on how an individual select into the college education and employment.

Using the data from the National Longitudinal Survey Youth 1979 and 1997, I find that a combination of MR, MTR and PS tightens the bounds. Estimated bounds suggest that there is no significant evidence that the college wage premium of NLSY97cohort is larger than that of NLSY79 cohort at any quartile. Moreover, estimated bound of college premium is small or even equal to zero. This result is similar to Manski & Pepper (2000) and casts a new question: why partially-identified college premium tends to be smaller as compared with the point estimates in the previous literatures.

In addition, I suggest that the analytical framework implemented in this paper is applicable for a wider class of problems than just understanding the return to college education.