ABSTRACT

Most studies in empirical labour economics use the number of years of schooling (S) to measure individual education but other dimensions of education, e.g. quality of learning (Q), are typically disregarded. A popular identification strategy exploits compulsory school reforms (Z) to identify the causal effect of S on various outcomes (Y): more than 150 published papers using compulsory schooling reforms as instruments for education. The strategy relies on the assumption that changes in the reforms affect outcomes only through the quantity of formal education. This assumption may not hold if: i) quality of learning affects the outcomes directly; ii) changes in compulsory schooling are correlated to changes in the quality of learning (for instance through changes in teacher pupil ratio, teacher quality or class composition); iii) the quantity of education is used as proxy for human capital.

We propose a test of the validity of this exclusion restriction. The test requires the availability of two distinct broad measures of cognitive ability (in our application: literacy and numeracy test scores) and one instrumental variable but no data on the outcomes and can be implemented as Instrumental Variable estimation of an auxiliary regression.

We implement the test and show that we cannot reject the null of internal validity of this popular identification strategy. We show, through Montecarlo, that the test has power to reject the null even when the covariance between the years of compulsory schooling and school quality is low. Montecarlo evidence suggests that weak instruments affect the test performance, reducing power to detect violations of the null.

The test does not rely on: i) the empirical counterpart of orthogonality conditions (Sargan, 1958); ii) nor on the behaviour of different estimators for the same parameter (Durbin, 1954;Wu, 1973;Hausman, 1978); iii) nor requires binary instruments and binary outcomes (Kitagawa, 2015; Huber, 2013; Huber & Mellance, 2015).
It might have broader applicability.