

The cohort size-earnings relationship in Europe

John Moffat (Swansea University)
Duncan Roth (Philipps-Universität Marburg)

The demographic and education composition of European countries is changing: the population share of young individuals is declining while that of the highly educated is rising. This study estimates the impact of cohort size on wages using data on several European countries to cast light on the economic consequences of these changes in the profile of the labour force. Theory predicts that within each educational class, similarly aged individuals compete for jobs but are only imperfectly substitutable with workers of different ages. Consequently, an increase in the population share of a specific age-education group is expected to have a depressing effect on the real wage rate of that group. To test this prediction empirically, this paper uses the 2010 release of the longitudinal European Union Statistics on Income and Living Conditions (EU-SILC) which is a comprehensive data set covering a period of 4 years and 24 European countries. This paper provides two methodological contributions to this literature. Firstly panel data estimators are applied to estimate the effect of cohort size on individual rather than group-based wages, which allows us to control for relevant individual characteristics. Secondly, the study assesses the impact of cohort size at the first level of the Nomenclature of Territorial Units for Statistics (NUTS 1), thereby supplementing the extant country-level analysis and taking into consideration that labour markets may be smaller geographical units than countries. Instrumental variables (IV) estimation is used to identify the causal effect of cohort size on individual earnings. The instrument used is the birth rate in the year in which an individual was born. Use of this instrument addresses both sources of endogeneity that can arise in this relation: self-selection of individuals into specific educational groups as well as self-selection into areas with high wages. In line with previous research, preliminary results indicate that the effect of cohort size on earnings is generally negative and that highly educated individuals suffer a larger reduction in earnings, which is consistent with worker substitutability over age declining with the level of education.

JEL classification J10, J21, J31