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Educational Externalities within the Family: Evidence from School Entry Laws

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Past studies show strong evidence of sibling correlations across cognitive skills and economic outcomes, which may account for as much as half of economic inequality in the U.S. The correlations reflect shared environmental factors, including parental characteristics, as well as siblings' influence on each other through role modelling, social learning and information sharing. Sibling effects are difficult to estimate due to omitted variable and simultaneous causality bias. In this paper, we explore sibling effects on academic performance, a crucial predictor of future economic success, using variation from North Carolina school entry laws. The literature shows that children born right after the cutoff date have much higher test scores than those born right before the date, despite sharing similar socioeconomic profiles. Using a local regression model to compare the academic performances of individuals whose siblings were born shortly before and after the school entry cutoff date, we estimate that the latter have higher test scores by around 0.08 of a standard deviation than the former in eighth grade, while any differences are insignificant in third grade. Using an instrument variable model which treats sibling's age at entry into third grade as an endogenous variable, we find evidence that an increase in sibling's eighth grade test scores leads to an increase in the individual's own performance by around half a standard deviation. Our findings add to the evidence suggesting that sibling influences help to produce observed sibling correlations.