Do Wages Affect Scientific Learning? Evidence from the Programme for International Student Assessment

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I estimate the effect of marginal changes in the minimum wage on the science scores of 15-year-old Canadian students in the Programme for International Student Assessment (PISA) 2015 test. By exploiting a dynamic, exogenous treatment regime where most Canadian provinces reconcile their minimum wage with the consumer price index (CPI) at a predetermined date, nearest neighbor matching was applied to groups with marginally different treatment times. While it is impossible to observe the true average treatment effect without a perfect control group (i.e. one for which the time of treatment is infinity), I propose a simple summation method to estimate the net effect of the time since treatment based on the estimated marginal effects of proceeding minimum wage adjustments incrementally closer to the test date. Though the net effect of particular treatments times are not always statistically significant from each other or zero, the results are suggestive of a concave relationship between human capital and the most recent adjustment of the minimum wage. Considering inflation, these preliminary results suggest that higher minimum wages improve the performance of Canadian students in science.

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