## Long-Term Social Benefits of Early Childhood Education: Evidence from a Large-Scale Expansion of Kindergartens

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## Abstract

The economic case for investing in early childhood education programs depends critically on their social returns in the long run. Nevertheless, research on the long-term effects of universal childhood education programs is scarce, and often limits its focus on personal outcomes such as educational attainment and labor market participation among treated individuals. This paper analyzes a large-scale expansion of kindergartens in Japan, estimating its long-term effects on outcomes that likely constitute important components of social benefits of early childhood education, including criminal behavior and pregnancy during adolescence. We exploit a staggered supply shock to kindergarten institutions to obtain difference-in-differences estimates for those long-term outcomes. Using high-dimensional econometric methods, we control for a very rich set of covariates interacted flexibly with time trends, which help us alleviate concerns about potential confounding of the kindergarten reforms with other policy interventions. We find that subsidized, widely accessible early childhood education programs substantially reduce violent offenses and childbearing during adolescence.

*Keywords:* Early Childhood Education, Juvenile Crime, Teenage Pregnancy, High-Dimensional Methods *JEL Codes:* H42, H52, I26, J13, J24, K42

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