



# JEOC REVIEW

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## **Economic impact of preschool: Examining some assumptions in extending Heckman's estimates.**

### Teaser.

...the [Perry Preschool] program produced lasting improvements through age 40 on employment rates and substantially reduced the likelihood that participants had been arrested. Heckman, Moon, Pinto, Savelyev, and Yavitz (2010) estimate that the program generated about \$152,000 in benefits over the life course, boosting individuals' earnings, reducing use of welfare programs, and, most importantly for the benefit calculation, reducing criminal activity. These financial benefits produced a social rate of return between 7 and 10 percent.

Duncan and Magnuson, 2013. Investing in Preschool Programs.  
Journal of Economic Perspectives 27(2)

Purpose. The purpose of this paper is to list some of the conditions behind Heckman's et al. (2010) estimate for return on investments in preschool programming. A study of the conditions is not aimed at deciding whether Heckman is correct (he is assumed to be correct) but to better define the conditions where high economic returns on pre-school programs are more likely to occur.

Background. The work being studied appeared in the Journal of Public Economics (2010, vol. 94) by authors Heckman, Moon, Pinto, Savelyev, and Yavitz and under the title *The rate of return to the HighScope Perry Preschool Program*. HighScope Perry Preschool is sometimes described as a "boutique" program administered to 58 students in Ypsilanti Michigan from 1962 to 1967 and aimed at economically disadvantaged minority students. Perry Preschool is renowned for (1) being a mostly random assignment experiment with a control group, (2) supporting longitudinal analysis of student outcomes through age 40 and (3) being a highly effective treatment.

The findings reported by Heckman, et al. (2010) The focal paper shows...

1. An internal rate of return of 8.3%; for every dollar spent on the program, social costs were reduced by more than eight dollars
2. The largest return (64 percent) for males is the result of cost avoidance of criminal behavior
3. The largest return for females is through increased earnings (88 percent)
4. The second largest for males is earnings (27 percent)
5. The second largest for females is cost avoidance of criminal behavior (11 percent)

The generality assumption. The teaser suggests that the Perry Preschool Program (PPP) produces an attractive rate of return of 7 to 10 percent, is effective through age 40 and maybe beyond, produces higher rates of employment and lower rates of criminality. The reader is tempted to generalize the findings in the paper by Heckman, et al. to other groups of students, teachers, and times in seeking to get those returns. There are at least two factors to consider in generalizing Heckman's (2010) findings to emerging policy: students and teachers.

Heckman (2010) assumes that the treatment is applied to males that would, in the absence of the PPP treatment, commit many crimes and be incarcerated. It seems doubtful that, for example, the effects of PPP on students in the Indian Hill district would be such a dramatic forward reduction in criminal behavior that would have occurred in the absence of PPP.

Moreover, the students in the study had cognitive abilities that are one or more standard deviations below the mean of all students. Would these same treatments be effective for brighter students? Perhaps, but the economic benefits might

be diminished or would need to be observed in other variables such as wages instead of avoidance of costs of criminality. It is difficult to see how PPP would produce a similar rate of return for all students.

Fidelity of program implementation can be an issue when trying to take a small experimental program to scale. Could almost any group of teachers produce these same results? Is training sufficient or will the effectiveness of a PPP educational treatment be highly dependent on securing a transformational leader to administer the preschool program?

Can a treatment that worked for one small group of students in 1962 produce results as good or better with tens of thousands of Ohio students in 2020?

### Appendix 1

	<b>All</b>	<b>Male</b>	<b>Female</b>
Education cost	\$4,325	\$11,318	(\$5,547)
Earnings	78,010	42,965	127,485
Crime cost	66,780	101,924	17,164
Welfare cost	3,698	2,421	5,502
Total Benefit	152,813	158,627	144,605
Initial Program cost	17,759	17,759	17,759
Benefit/cost ratio, unadjusted	8.6	8.9	8.1
(s.e., standard error of the ratio, above)	3.9	4.3	5.0
Benefit cost ratio, adjusted	9.2	9.8	8.0
(s.e.)	3.5	4.0	4.7
IRR to society, unadjusted	8.6	10.6	11.6
(s.e.)	2.6	2.8	3.2
IRR to society, adjusted	8.3	10.4	11.0
(s.e.)	2.4	2.2	2.9

Much of the information for this paper came from the unpublished manuscript by Elongo, Garcia, Heckman, and Holman (2015, *Early Childhood Education*. University of Chicago).