

PATH TO A BETTER FUTURE: The Fiscal Payoff of Investment in Early Childhood in Maine

Summary of University of Maine Economics Professor Philip Trostel's Independent Cost-Benefit Analysis of Early Childhood Investments in Maine

The first five years of life are the most critical in shaping a child's lifelong learning and skill building capacity. Among the most effective strategies for long-term economic success is ensuring that our youngest children receive the supports and developmental experiences they need to succeed in school. Research on brain development and educational achievement shows that early development of language, social, emotional, and cognitive skills is crucial for preparing children to do well in school and life. Children who receive high-quality early care and education are more likely to arrive at the kindergarten door prepared for success. They are more likely to succeed in grades K-12, graduate on time, attend college, become employed, earn higher wages, and avoid criminal justice system involvement—all consequences that have major cost implications for governments and taxpayers.

From a fiscal cost-benefit perspective, high-quality early childhood education is one of the smartest investments we can possibly make in Maine.

Increasing high-quality early childhood education does not constitute increased sustained government spending. Rather, it represents a reallocation of public investments to higher return capacity-building and preventive services and away from lower-return remediation and late-stage intervention. The real fiscal internal rate of return of investments in high-quality early childhood education in Maine is 7.5%. The much more costly course of action would be to continue the status quo: inadequate early childhood investments necessitating expensive and often unsuccessful remedial efforts.

“Although some children who start behind catch up, and some who start down a promising path veer off, to a large extent life outcomes are determined by the trajectories created before children start school.”

Dr. Philip Trostel

Early knowledge and skill accumulation have a self-productive aspect, analogous to the compound interest phenomenon in financial investments, but even more

pronounced. As Nobel prize-winning economist James Heckman says, “Early learning begets later learning and early success breeds later success.” This is precisely why upstream early childhood investments have such a high payoff, and why downstream remediation efforts are much more expensive and much less effective.

Nationally, economists have calculated economic rates of return between 7% and 10% (and benefit-cost ratios from \$3 to \$17 for every dollar invested) for early education programs serving children from low-income families. That is why early education initiatives are no longer viewed as just a school readiness strategy or as a way to close the achievement gap. Mounting evidence suggests that investments in early education should also be considered an economic development strategy.

In the fall of 2012, a group of private, nonpartisan businesses, foundations and individuals commissioned University of Maine Economics Professor Philip Trostel to conduct a fiscal cost-benefit analysis of the impact of increased early childhood education investments in Maine. Specifically, the group asked Dr. Trostel to estimate the costs,

benefits, and return on investment of a high-quality early childhood education system that serves children from low-income *Maine* families. These children were targeted to promote greater equality of opportunity and to increase the fiscal payoff through increased economic productivity and public savings. To conduct the cost-benefit analysis, Dr. Trostel assumed a proposed integrated system of high-quality early childhood education from birth through age four that includes comprehensive services, and the availability of high-quality full-day, year-round programming.

KEY EARLY EDUCATION PROGRAM FEATURES ASSUMED IN ANALYSIS

- **Comprehensive and coordinated services**
- **High quality** (*providers at highest levels on Maine quality rating scale*)
- **Mostly full-day** (*at least six hours per day*)
- **Year round** (*48 weeks per year*)
- **Continuous from birth through age 4**
- **Voluntary participation**
- **Targeted to children from low-income families**

Census data suggest that almost 47% of Maine’s children under age five—or about 32,631 children—live in families with incomes

below 200% of the federal poverty level. These children would be eligible for subsidies under the program Dr. Trostel analyzed. About 70% of the eligible children (22,842) could be expected to participate annually.

Cost per child: The proposed program cost would be an estimated \$10,200 per child per year for preschoolers and \$13,100 for infants and toddlers. After subtracting family co-payments and reallocating current expenditures, the average weighted cost per child per year would drop to \$6,700. That translates to \$26,200 per child for the average length of participation. After accounting for savings attributable to the program’s early outcomes, the net cumulative cost would fall to \$20,100 per participating child.

Total system cost: The total system cost for the estimated number of participating children would be \$267 million annually. Some of this cost would be covered by reallocating part of the \$102 million annually that Maine currently invests in early childhood development. Family co-payments, made on a sliding fee scale, would cover another 13% of the new costs. After those reductions, the net initial cost would be \$154 million. After accounting for savings attributable to the program’s outcomes, the net initial cost would fall to \$118 million per year. The bulk of this would come from public funding. However, private foundations, businesses and individuals could assist by partnering with government.

COST-BENEFIT NUMBERS

Additional investment required for each child (5 year total):

\$26,200

Resulting government savings per child prior to kindergarten:

\$6,100

Resulting government savings per child during K-12 years:

\$25,700

The initial public cost is fully recovered by:

Age 14

Total lifetime government savings/fiscal benefit for each child:

\$125,400

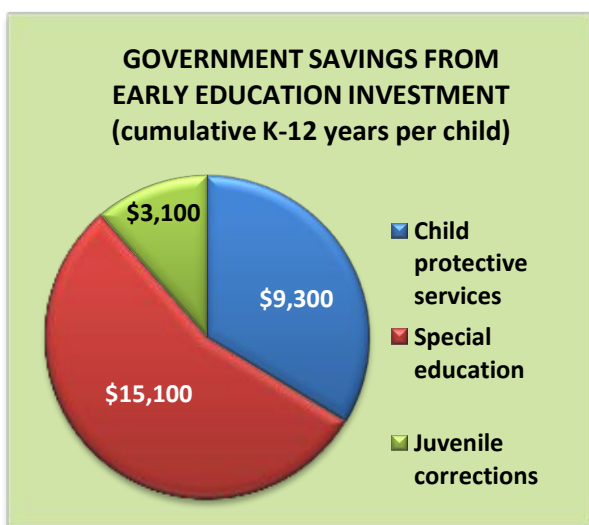
Real fiscal internal rate of return on investment:

7.5%

Fiscal Benefits

1. **More parents would be able to work, pay higher taxes, and rely less on social assistance** as their children receive high-quality early care. This would immediately offset \$3,300 of the initial public cost per participating child. Child protective services spending would also drop immediately, offsetting another \$2,800 of the initial cost per child.

2. **Government spending in Maine would drop by \$25,700 per child during the K-12 years**, due to reduced costs for interventions associated with children who do not receive high-quality early education and do not proceed on track to high school graduation:



Special education savings would total \$15,100 per program participant.

Juvenile corrections savings would be \$3,100 per program participant.

Child protective spending would decrease, adding another \$9,300 in savings.

Grade retention would decrease, producing minor savings. However, fewer children would drop out of school.

The associated added cost through high school graduation, adjusted for reduced retention in grade would be \$1,800 per child.

3. Additional savings would occur throughout the program participant's lifetime.

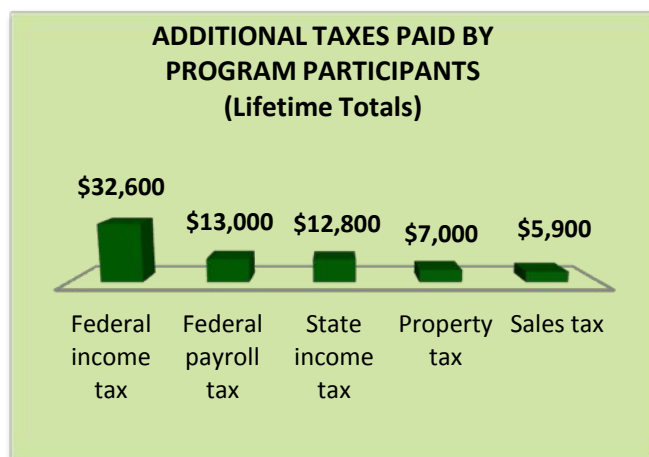
Public spending on prisons and jails would fall by almost \$3,000 per participant.

Spending on Medicaid, Supplemental Security Income, and other public assistance would be reduced, conservatively, by \$23,860 per participant.

4. Tax revenues would increase

due to the higher educational achievement and earning potential of children who receive high-quality early education:

Over his or her lifetime, each participant in the Maine program would pay an estimated \$32,600 more in federal income taxes, \$13,000 more in federal payroll taxes, \$12,800 more in state income taxes, \$7,000 more in property taxes, and \$5,900 more in sales taxes. For state and local governments alone, the additional taxes would be \$25,700 per participant.



Return on Investment

The cumulative lifetime fiscal savings and tax benefit to government would be \$125,400 per child—4.8 times greater than the initial fiscal cost.

The initial public cost of the program would be fully recovered through cost savings by the time a child reaches age 14. After that point, the program would pay for itself many times over.

In present value at birth using a 3% real discount rate, the net fiscal payoff per child would be more than \$25,700.

The real fiscal internal rate of return for investing in a high quality early education system in Maine is, conservatively, 7.5%. A 7.5% internal rate of return* is very good; however, this rate does not represent the primary benefit of investing in high quality early childhood education. The primary benefit is healthier and more productive, prosperous and fulfilling lives for Maine children. * *The internal rate of return is the discount rate at which the net present value of the investment's costs equals the net present value of its benefits.*

ABOUT THE COST-BENEFIT ANALYSIS

A group of private, nonpartisan businesses, foundations and individuals commissioned Dr. Trostel to conduct a fiscal cost-benefit analysis of the impact of increased early childhood education investments in Maine. Specifically, the group requested that Dr. Trostel estimate the fiscal costs, benefits, and return on investment of a high-quality early childhood education system that serves children from low-income Maine families.

Dr. Trostel conducted his research and analysis from July 2012 to April 2013. As part of his analysis, he assumed a proposed, integrated system of high quality early childhood education from birth through age four that includes: comprehensive services; providers that are at the highest levels (Step 3 and 4) on the Maine quality rating scale; and the availability of full-day, year round programming. Dr. Trostel assumed the system would target children birth through age four from families with incomes below 200% of the federal poverty level. Assumptions also included an equal number of children participating in each age cohort, and a 70% participation rate for each age cohort and family income range.

Dr. Trostel's analysis considered data from existing prekindergarten, Head Start/Early Head Start, early intervention and special education, and home visiting services as well as child care subsidies. Dr. Trostel used an analysis of Head Start and Early Head Start by Besharov et al. (2007) to help estimate the cost of a high-quality early childhood development program for Maine. Adjustments were made for differences in programming and dosage between Head Start and the proposed program. The analysis aggregated early childhood investments from birth through age four and estimated a weighted-average cost, fiscal benefit, and fiscal rate of return.

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