

Costs Analysis for Early Childhood Interventions: Evidence from New Jersey

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Workshop on Strengthening Benefit-Cost Methodology for the
Evaluation of Early Childhood Interventions
March 4-5, 2009

Outline

- Describe NJ Abbott Pre-school Program
- Explore issues raised by Hank Levin:
 - Quality of data
 - Motivation for costs analysis
 - Findings from costs analyses
- Future areas of research for costs

Pre-school in NJ Abbott Districts

- Program for all 3-4 year-olds in 31 high-poverty districts: 38,000 children at >600 centers
- Range of settings: public (35%), private (55%), and Enhanced Head Start (8%)
- Clear inputs and high quality standards set out by State Supreme Court

Data quality: Positives

- Large-scale
- Line-item “approved budget” data
- Clear quality standards
- All settings inspected on same standards
- Quality measures from regular, independent inspections (ECERS-R)

Data quality: Negatives

- Omitted resources:
 - Wraparound and summer programs
 - Capital grants
 - Parental and non-market resources
 - Special education funding
- Contaminated resources:
 - Blended funding and cross-subsidy
 - Out-of-district, younger, fee-paying enrollees
- Aggregation:
 - District-level costs for public centers
 - Classroom-level quality measures

Data quality: Negatives

- External validity concerns:
 - Only program costs: not design costs, state administration costs, evaluation/audit costs, secondary labor market costs, or tax burden costs
 - Teacher pay: benefits, pensions, credential-capitalization
 - Growing, recent, localized program: operating costs in short run may not equal operating costs in long run
 - Cost of Education Index

Motivation for Costs Analysis

- Present values
- General link between quality and resources
- Economies of scale/scope
- Importance of teacher inputs and setting
- No easy 'plug-ins' from child care or K-12
- Some evidence:
 - Model demonstration projects
 - Templates
 - Cost functions

Blau & Mocan 2002; Powell & Cosgrove 1992; Helburn et al. 2002; Zellman & Gates 2002; Currie & Neidell 2007

Cost Estimation: Methods

- Cost function model
- Successful (model) programs method
- Evidence-based template
- Professional Judgment Panel

Perform 3 methods for NJ Abbott districts

Cost Function Estimation

Estimate Average Cost function:

- Public/private centers separately
- Two levels of teacher wage
- ECERS-R quality measures
- Center/district characteristics
 - incomplete input prices
 - influence of regulations on technologies and locations
- Log-linear OLS; stochastic cost frontier models

Cost Per Child of High Quality Pre-School (Abbott Districts 2008-09)

Based on cost function estimates adjusted for quality and teacher pay:

- Public \$12,650 [\$8,920-\$15,290]
- Private \$14,500 [\$11,720-\$17,680]

Based on 12 model/template estimates:

- Average \$13,090 [\$7,940-\$16,780]

Findings from NJ Cost Function

- Higher quality costs more: 1 unit higher ECERS-R raises costs by ~2%
- Higher quality-adjusted costs in private centers
- Higher costs when teacher wages are higher, but mostly from assistant teacher wages
- Weak link between average costs and scale: no effect of enrollment, multiple sites, or district size

Findings not fully consistent with other studies

Future Areas of Research

- Economies of scale/scope
- Teacher labor markets
- Burden of funding
- Avoidance:
 - Refine ‘plug-ins’
 - Break-even cost if discount rate = 3.5%