

EFFICIENT PROVISION OF HIGH-QUALITY EARLY CHILDHOOD EDUCATION: DOES THE PRIVATE SECTOR OR PUBLIC SECTOR DO IT BEST?

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Introduction

There is a broad consensus in the United States that the benefits to children and society from investments in the cognitive and non-cognitive skills of disadvantaged pre-school age children far outweigh the social costs of such investments. Evidence from random assignment evaluations of very high-quality experimental pre-school programs shows long-term benefits in the form of higher educational attainment, greater labor force participation, higher earnings, reduced dependence on public assistance and reduced crime. The value of these benefits is estimated to be much larger than the costs of the programs, despite high program costs due to the very high quality and intensity of the treatment (Belfield et al. 2006; Masse and Barnett 2002). Both the federally-funded Head Start program and a rapidly growing set of state-funded pre-kindergarten programs are popular across the political spectrum in the US. The quality of these large-scale programs is lower than the quality of the small-scale experimental programs, but generally high enough to meet standards recommended by accrediting organizations. Evaluations of Head Start and Pre-K programs show substantial short-run improvements in child skills, and in the case of Head Start there is evidence of beneficial long-run effects as well (U.S. Department

of Health and Human Services 2005; Gormley et al. 2005; Currie and Thomas 1995).

The case for public investment in high-quality Early Childhood Education (ECE) programs for disadvantaged children rests on standard market failure arguments. Parents may not recognize the long-run benefits to their children from such programs and may not have enough information to evaluate program quality. Credit constraints may limit the ability of low-income parents to make high-return investments in their children. Perhaps most important, there is no “market” for some of the benefits, such as reduced crime and welfare dependence (Blau and Currie 2006). These arguments seem to be widely accepted, judging by the popularity of ECE programs.

An important question that has not been addressed is the appropriate form of public sector involvement in ECE. In the US, the main forms of public sector involvement in ECE are (1) subsidies to the private sector, often accompanied by regulation; (2) grants to local service providers; and (3) direct provision by public institutions such as schools. These three forms coexist in the US: the Child Care and Development Fund (CCDF) provides subsidies to low-income child-care users or the providers who serve them; Head Start is funded by grants to local service providers; and many state Pre-K programs are provided by public schools.

In contrast, many western European countries use a single approach: direct provision by the public sector (for example, see Table 1 in Blau 2003 and the DICE database). It is also the case that a much higher proportion of ECE is funded publicly in Europe than in the US. Is public sector provision dominant in Europe because of the close-to-universal nature of most European ECE programs? Does Europe know something about efficient public sector provision of services that the US does not know? Or does the US predilection for market solutions actually result in an efficient outcome in this case? Despite recent proposals for expanded ECE programs in the US, there has been very little discussion of this question.



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In this article we discuss evidence on which approach to public sector investment in ECE provides the most bang for the buck. The obvious advantage of the private sector is efficient utilization of resources, driven by the profit motive, or in the case of not-for-profit providers by resource constraints. But there are serious questions about the quality of care typically found in the private sector, and quality is critical in order to reap the high returns discussed above. The advantage of the public sector is likely to be the ability to deliver high-quality care, but the obvious disadvantage is the possibility of inefficient use of resources, resulting in high cost. Hence the key issues are (1) whether and how the private sector is able to use public subsidies to provide high-quality ECE; and (2) whether and how the public sector can provide ECE efficiently.

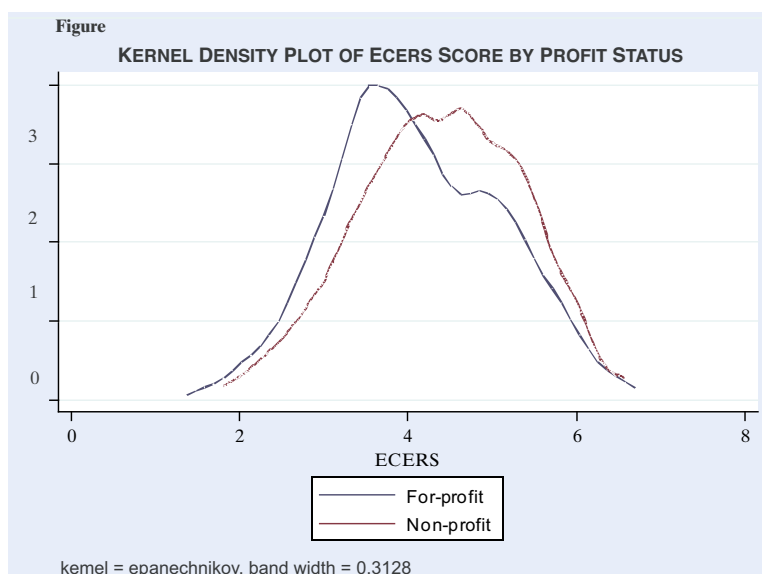
Subsidies to the private sector

The main question about the private sector is whether it is capable of providing high-quality care on a large scale at a reasonable cost. Child-care subsidies have induced a large expansion in the quantity of child care provided in the US private sector, at moderate cost (Blau 2001, chapter 5). But these subsidies either impose no minimum quality standards (e.g., the child-care tax credit) or require only that the subsidized child care meet state regulatory standards, which are often quite lax (e.g., the CCDF). Unfortunately, there is little direct evidence on the effect of child-care subsidies on child-care quality. Baker et al. (2005) show that a major expansion of child-care subsidies in Quebec resulted in worse child outcomes, as measured by behavior (hyperac-

tivity-inattention, general anxiety, etc.), motor and social development, and health. The New Hope Demonstration project included a child-care subsidy component, and New Hope resulted in increased use of formal child care and improved child outcomes (Huston et al. 2003). But there is no evidence on how the demonstration affected the quality of child care.

The quality of child care is measured by instruments designed by developmental psychologists that use trained observers to rate child-care arrangements on a large number of items related to the developmental appropriateness of the care provided. The most widely used instrument is the Early Childhood Environment Rating Scale (ECERS), which is scaled from 1 (inadequate) to 7 (excellent). The ECERS has been found to be reliable (i.e., to produce independent ratings of the same arrangements that are highly correlated (Cryer et al. 1995)) and valid in the sense that higher quality ratings are associated with better outcomes for children (Peisner-Feinberg et al. 1999).

The Cost, Quality, and Outcomes study (CQO; Helburn 1995) surveyed about 400 day care centers in four states in 1993, taking a stratified random sample of centers that provided year-round, full-time care. The average quality of care was characterized as “mediocre” based on the mean ECERS score of 4.0. Non-profit centers were found to provide higher-quality care on average, but there is substantial heterogeneity within both the for-profit and non-profit sectors. This is illustrated in the Figure, which plots the entire distribution of the ECERS score by profit status. The figure shows a wide range of quality scores within both sectors and substantial overlap in the distributions. The latter point is important because non-profit centers may face resource constraints that would make it difficult for them to expand in order to serve more children. For example, many non-profit centers cover a substantial portion of their cost with donations of space, materials, and labor (Morris et al. 1995).



We provide some evidence on the existence of high-quality care in the private sector by focusing on the subsample of centers in the CQO study with

Table

Comparison of day care center characteristics by profit status and quality

	Non-profit		For-profit	
	Low quality	High quality	Low quality	High quality
ECERS Score	3.91	5.48	3.75	5.53
Average cost per child-hour of care	2.97	4.09	2.94	3.74
Average annual cost per child	6,128	7,837	5,607	7,563
National chain			0.27	0.17
Church-sponsored	0.48	0.24		
Full-time equivalent enrollment	60	66	81	64
Center age	16	18	11	8
Job tenure of teacher	4.6	5.5	3.3	4.3
Job experience of teacher	10.3	11.0	7.6	9.1
Teacher is a college graduate	0.38	0.44	0.29	0.47
Sample size	128	54	142	35

Notes: Low quality is defined by an Early Childhood Environment Rating Scale (ECERS) score of less than 5.0, and high quality is defined by an ECERS score of 5.0 or more. See the text for a discussion of the scale of the ECERS instrument. The ECERS score for a center is the weighted average of the scores for the preschool classrooms that were rated, with weights given by the number of children per room. Cost includes the imputed value of donated space, materials, and labor. Costs have been inflated by the Consumer Price Index to 2006 dollars. Full-time equivalent enrollment is calculated by dividing total child-hours of care per week by 40. Center age is the number of years the center has been in operation. Job tenure is the (weighted average) number of years the teacher in the rated classroom has been employed at the center. Job experience is the (weighted average) number of years the teacher in the rated classrooms has been employed in child care.

Source: Authors' calculations from the Cost, Quality, and Outcomes Study data.

an ECERS rating of 5.0 or greater. A score of 5.0 is high enough to meet early childhood education accreditation standards (Bredekamp and Copple 1997).¹ The Table presents four-way comparisons by quality and profit status of a number of center characteristics. High-quality centers are less likely to be church-sponsored, less likely to be part of a national chain and have better educated, longer-tenure and more experienced staff than lower-quality centers. The average cost per hour of care in lower-quality centers is virtually identical across sectors at \$2.94–\$2.97 (in 2006 dollars), while the average cost of higher-quality care is \$3.74 in for-profits and \$4.09 in non-profits, for care of similar average quality. These comparisons suggest two points: (1) higher-quality care is more costly than lower-quality care, but not by a substantial amount, and (2) the cost of moving from lower to higher-quality care is

less in the for-profit sector than in the non-profit sector.

More formal evidence on the relationship between cost and quality was provided by Blau and Mocan (2002), who used the CQO data to estimate a cost function. Their estimate is that each one point increase in quality would increase cost by 5.6 percent, other things equal. Moving from the low-quality for-profit mean quality score of 3.75 to the high-quality for-profit mean quality score of 5.53 would increase cost by 10 percent according to this estimate. These findings suggest two conclusions: (1) The private sector is capable of providing high-quality child care at a moderate cost; and (2) the for-profit sector is as capable of doing this as the non-profit sector. Thus, even if the non-profit sector is unable to expand enough to meet the increased demand for high-quality care that would be caused by a

large-scale, quality-contingent child-care subsidy, the for-profit sector may be able to do so. However, these conclusions are based on data from a single cross-sectional 15-year-old study. It is important to collect data to attempt to replicate these findings in the post-welfare-reform era. One may wonder why the average quality of child care in the US is “mediocre” if the cost of improving quality is relatively small. Blau and Hagy (1998) and Blau (2001, chapter 4) provide evidence that the income elasticity of demand for child-care quality is very small. This suggests that the market failure arguments discussed above are important in practice.

Public sector provision

In the public sector, the two models prominent in the US are funding of local child-care providers through grants and direct provision of child care through preschool programs in public schools. The most prominent example of the first model is Head Start, a preschool program for disadvantaged 3-to-5-year-old pre-school children. There is a good deal of research

¹ By way of comparison, the average ECERS score of the seven Head Start centers in the CQO sample is 5.06. The sample frame for the CQO was centers providing full day care, so only Head Start centers that provided wrap around care were eligible for inclusion. The range of the ECERS score for the seven Head Start centers in the sample is 3.62 to 6.34, indicating that Head Start is not guaranteed to be of high developmental quality.

showing that Head Start has positive effects relative to both no pre-school and other pre-schools.

A major problem in evaluating Head Start is that programs are required to identify and enroll the neediest children who apply. Hence, comparisons of children who attended Head Start to children who did not attend Head Start (or to children who attended other pre-schools) are likely to produce results that are unfavorable to the Head Start children. In order to address these problems, a number of US studies have used data drawn from national surveys that follow children over time (the National Longitudinal Survey of Youth (NLSY) and the Panel Study of Income Dynamics) to compare the outcomes of children who attended Head Start to those of their own siblings who did not attend. The sibling design offers a powerful way to control for family background, though it is not without potential pitfalls which might lead to underestimation of the effects of Head Start. Currie and Thomas (1995) find that Head Start closed about a third of the gap between the verbal and reading scores of disadvantaged children and others (though there was no effect on math scores). Initial impacts were the same for African-American and other children, while the initial impacts of Head Start on test scores “faded out” for blacks but not for whites.² Currie and Thomas (2000) attribute this fade out to the fact that black Head Start children often go on to attend poor schools, while white Head Start children go on to attend schools similar to those attended by the average white child.

This finding suggests that for whites, poverty may be more fleeting so that experiencing the Head Start program during a particularly vulnerable period of life has lasting positive effects on test scores. Whites also benefited by being less likely to have been retained in grade by early adolescence. Further work examining young adults found that whites retained these educational advantages. For example, they were more likely to have ever attended college (Garces, Thomas, and Currie 2002). Among African-Americans, young adults were less likely to have been booked or charged with a crime if they participated in Head Start.

Recently, Ludwig and Miller (2007) have used evidence from the introduction of the Head Start program to show that it was associated with large reductions in mortality among children 5 to 9. Their results

highlight the fact that Head Start has a broad mandate: it is intended not only to increase test scores, but also to improve the health and nutritional status of children by providing access to medical care and adequate nutrition. Carneiro and Ginja (2008) use discontinuities in eligibility rules to identify the longer-term effects of Head Start in the children of the NLSY. They find that Head Start decreases behavior problems, grade repetition and obesity at ages 12 and 13, and depression, criminal behavior and obesity at ages 16 and 17.

The most recent study of Head Start’s short-term effects is the “Head Start Impact Study”, which randomly assigned children to either the Head Start “treatment” group, or a non-Head Start “control” group. The majority of the control children in this study attended a non-Head Start pre-school, so the question addressed by the study is whether Head Start is better for low-income children than the other arrangements (including pre-schools) that are available to them. Even relative to this standard, Head Start led to gains in several cognitive measures and in access to health care, as well as a reduction in behavior problems in the first year of the program (U.S. Department of Health and Human Services 2005).

These positive results of Head Start relative to other child-care settings may be surprising given the frequent claim that Head Start is of low quality. But audits have consistently shown that Head Start is of high quality relative to other child-care centers available to low income children (Resnick and Zill 2000). Claims that Head Start teachers are generally unqualified and vastly underpaid are also erroneous: the vast majority of Head Start teachers have the mandated child development qualifications and are paid an hourly rate that is similar to that of the average woman with a Bachelors degree (Currie and Neidell 2007).

The uniformity of the conclusions across different data sets, time periods and methods is striking. Head Start does not close the gap between disadvantaged children and average children. But it has significant positive lasting effects at a relatively modest cost – about \$7,287 per child in 2006 (U.S. Department of Health and Human Services 2006). The average cost per child in the high-quality subsamples of the CQO sample shown in the Table above is \$7,563 among the for-profits, and \$7,837 among the non-profits (in 2006 dollars). However, these are for full-day programs, while many Head Start programs are still half

² Currie and Thomas (1999) also find large effects of Head Start for Hispanic children. These studies are all reviewed in Currie (2006).

day. Thus, it appears that Head Start may have a substantially higher hourly cost than the available “high-quality” private pre-schools. However, we have no evidence on whether these pre-schools have positive effects similar to those of Head Start.

How does Head Start quality compare to newer state-sponsored public programs run through the public schools? These programs may be closer to the European model. However, there have been few rigorous evaluations, and the quality of state programs is extremely variable. Barnett et al. (2004) report that the per-child cost of state pre-kindergarten or pre-school programs varied from \$772 in Maryland to \$9,966 in New Jersey, in 2006 dollars. While this seems more expensive than the national figure for Head Start cited earlier, in fact, Barnett et al. (2004) suggest that there is also considerable variation in Head Start costs across states. For example, in New Jersey, Head Start costs \$8,988 per child in 2006 dollars. It is unclear how similar the hourly costs are, given that we do not know the mean number of hours in the two types of programs. But since many Head Start centers are offering full-day programs to meet the needs of working parents, and “full-day” in a school context usually means 9 to 3, it may be that the hourly costs are actually quite similar. In any case, we lack information about the effectiveness of New Jersey’s public pre-school programs that would allow us to assess their cost-effectiveness relative to Head Start.

Gormley et al. (2005) evaluated a universal pre-school program in Oklahoma that is run through the public schools and emphasizes high quality. They compared students whose birthdays fell just days before enrollment cutoffs with those whose birthdays fell just after the cutoff and found a 52 percent gain in pre-reading skills, 27 percent gain in pre-writing skills, and a 21 percent gain in pre-math skills. They conclude that the program was effective in enhancing the school readiness of a diverse group of children. According to Barnett et al. (2004), Oklahoma’s program was quite inexpensive: \$2,536 per child, compared to \$6,262 per child for Head Start in Oklahoma. However, it is not clear that the \$2,536 figure includes all relevant costs. The cost of public education per kindergarten-to-grade12 child in Oklahoma is \$7,185. Presumably, it should cost about as much to educate a pre-school child in the public schools as it does to educate a Kindergarten child. Moreover, in New Jersey, the average cost of educating a K-12 child was \$12,441, which suggests that there are large regional differences in the cost of

public education, which must be taken into account when comparing information about program costs across jurisdictions.

Conclusions

So, to return to the question at hand: which sector does it best? Neither public nor private care is of uniformly higher quality than the other. Instead, there is considerable heterogeneity in quality in both the private and public sectors. Care provided through local grantees under the Head Start program does seem to be of more uniform quality, perhaps because there are strict quality standards for grantees.

When we compare similar types of programs, the cost of providing high-quality care seems to be higher in the public than in the private sector. Within the public sector, the cost of providing care directly through the public schools is surprisingly similar to the cost of providing it through local grantees in New Jersey. In Oklahoma, it seems to be much less expensive to provide ECE through the schools, but this may be because of unused capacity in the public school system.

The clearest message is that in both the public and private sectors, it is necessary to have strict quality standards for any child-care arrangement that receives public funding. Otherwise the potential benefits of high-quality care are unlikely to be realized no matter what the expenditure.

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