Let's Walk before We Run:
Cautionary Advice on Child Care

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Draft 14, 12 September 2005

The current debate about the costs and benefits of non-parental child care, pre-school learning, or – as we shall designate it – early childhood education and care (ECEC) is hardly new. Raising the next generation is an ongoing preoccupation of adults, and debates over how best to do it surely predate recorded history.[1]

In the 2004 Speech from the Throne, the federal government announced its intention to promote a national program of "high quality," "universally inclusive," essentially publicly financed, ECEC centres, "focused on enhancing early childhood learning opportunities." Such a program falls within provincial jurisdiction. To entice their cooperation, the 2005 budget offered conditional grants to the provinces, amounting to $5 billion over five years. To access the funds, provincial governments must launch programs consistent with the following four "principles:"

> **Quality—**evidence-based, high quality practices relating to programs for children, training and supports for early childhood educators and child care providers, and provincial/territorial regulation and monitoring.
> **Universally inclusive—**open to all children, without discrimination.
> **Accessible—**available and affordable for those who choose to use it.
> **Developmental—**focused on enhancing early childhood learning opportunities and the developmental component of [Early Learning and Child Care] programs and services. (Canada 2005, ch.4)

ECEC has, obviously, emerged as a prominent public policy issue in Canada and elsewhere. Why? The first underlying reason is the change in expectations among women over the last four decades with respect to participation in the labour force. The majority, including mothers of young children, now work outside the home. A second reason is the increase in single-parent families, the overwhelming majority headed by women, the majority poor. In most OECD countries, social programs intended to aid such families are now designed with the expectation that parents work as a condition for receiving benefits. This creates an additional demand for ECEC – either formal or informal, public or private. A third set of reasons are the arguments of some psychologists and other academics who conclude that ECEC is inherently beneficial to the development of children.[2]

As justification for the $5 billion in conditional grants, the 2005 budget alluded to two of the above arguments:

> Research in Canada and around the world demonstrates that high quality child care and early learning opportunities are essential for children to get the best start in life. Such opportunities are critical to children's physical, emotional, social, linguistic and intellectual development—setting them on a path of lifelong achievement.
>
> Investments in early learning and child care also recognize the reality that in today's economy parents are more likely to participate in the paid labour force and need access to affordable, quality child care that provides a caring and stimulating environment for their children. However, recent statistics show that while seven of ten women with children under age six are in the labour force, there are only enough regulated child care spaces for 20 per cent of young children. (Canada 2005, chapter 4)

Some OECD countries – notably the Scandinavian countries and France – have pursued universal publicly financed ECEC programs. As has Quebec. The Centres de la petite enfance (CPEs) are accessible in principle to all Quebec parents on payment of $7/child/day. Over and above this nominal charge, the cost to the Quebec treasury was $1.3 billion in 2004 (Lefebvre 2004). The lower bound for total annual cost of a comparable national program would be about $8 billion (Cleveland & Krashinsky 1998). Their estimate relies on optimistic estimates of labour costs.[3]

Is ECEC a good idea?

Advocates and critics have put forward many arguments, on both equity and efficiency grounds, for and against a large-scale ECEC program. Here, we pose them in summary form.

As beneficiaries, ECEC advocates often have in mind low-income single-parent families. If the parent must work, then the parent has need of some form of child care. If the goal is simply redistribution of income to such families, it could be realized by an equivalent cash transfer. Implicit in the advocates' case are arguments for redistribution in kind, in the form of "high quality" ECEC services. ECEC centres eligible for public funds must, advocates insist, be staffed by professionally trained employees, and be subject to strict standards with respect to staff/child and space/child ratios, and so on.

Furthermore, advocates perceive parents undervaluing the long-term beneficial effects of ECEC on child development. This is an empirical argument. As we discuss below, ECEC programs can generate beneficial effects, particularly in the case of children from families that may, due to a variety of disadvantages, provide inadequate preparation for formal schooling. The disadvantages may include low income, immigrant

families' lack of knowledge of one or other of the official languages, absence of one parent, and so on.

A universal ECEC program can be expected to increase labour force participation among women with young pre-school children, and hence increase measured GDP. High female participation rates in Scandinavian countries demonstrate the potential.

Lastly, ECEC may be seen as a prerequisite for implementation of workfare programs. The role model effect of working parents usually has a beneficial long-term effect on children's outcomes in low-income families where the alternative is family reliance on social assistance.[4]

On the other side are important considerations. In general, parents are the adults most motivated and best placed to understand what is good for their children. On occasion, society presumes to know better – requiring children to undertake K-12 schooling, for example – but governments need very good evidence before introducing policy intended to replace parental care.

In terms of child development, "high quality" ECEC may be as beneficial as "high quality" parental care. But ECEC services are not always "high quality;" if mediocre, they may be inferior to the foregone parental care. In which case children may not benefit. Independent of this consideration, there is an opportunity cost to take into account, namely the satisfaction parents take from attending their children and the satisfaction children take from such attention. Parents presumably value the non-parenting activities – such as paid employment – more highly than the foregone parenting activity they would have undertaken in the absence of subsidized ECEC services, but to be conceptually sound, cost-benefit analyses should allow for the value of stay-at-home parenting. If we set aside low-income parents required to work in exchange for benefits, use of ECEC facilities is admittedly optional. Some parents will forego available ECEC centres because their satisfaction from parenting outweighs the value of alternatives (such as income from paid work), but inevitably publicly subsidized ECEC programs distort this choice.

Any subsidized ECEC program involves a somewhat arbitrary income redistribution. To the extent ECEC services are financed from general tax revenues, families pay roughly in proportion to family income. Those who do not use the services receive no corresponding benefit. Hence, a tax-funded ECEC program lowers their after-tax income. This group includes those without children, those families placing a high value on stay-at-home parenting, and families where the extended family is the norm. In such families – families of many immigrant communities, for example – parents may work in the paid labour force but rely on grandparents or other close relatives for child care.

Critics of a universal ECEC program also warn against creation of a bilateral monopoly in which the government becomes the major employer for those providing ECEC services, and the union representing them becomes the monopoly supplier. Such

markets can be unstable, as each side attempts to use its monopoly power. In Quebec, the result has been highly unstable labour relations. (See box on Quebec CPEs.)

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Do ECEC programs improve children's achievement?

Three dimensions of this question are worth distinguishing: model v. large-scale programs, targeted v. universal programs, and methodological rigour in the conduct of evaluations.

Model programs typically enjoy generous budgets that cannot be replicated with large-scale programs operating throughout a jurisdiction. They are also subject to the socalled Hawthorn effect.[5] More relevant are evaluations of large-scale ECEC programs organized throughout a city, state, or province. These programs have lower per-child budgets and usually generate weaker outcomes.

In general, programs generate largest benefits for children from disadvantaged families. Which suggests well targeted programs are more likely to generate positive net benefits. Most rigorous evaluations of ECEC outcomes have been conducted in the US, and most US ECEC programs have been targeted on disadvantaged families. In his survey of evaluations of particular ECEC programs in the US, Steven Barnett stresses the idea of ECEC effects as a function of the "gap" between the centre and home environment. Where the "gap" is negligible or negative, the net benefits are likely to be negligible or negative:

> Benefits from [ECEC] programs appear to be produced via a number of different types of programs and across a number of different groups of children. Indeed, the best predictor of the size of program effects may be the size of the gap between the program and home as learning environments, rather than whether a child is a member of a particular group. Thus, effects might be expected to be largest for the most disadvantaged, though there is no evidence that meaningful effects cease if a child's family moves above the poverty line. Indeed, there is even some suggestion at the other end of the income spectrum that children from very well-off families may suffer from [ECEC] inferior to that provided by their homes. (Barnett 1995, 43)

The Rand Corporation published another survey of program evaluations and arrived at a similar conclusion on the importance of the "gap" between the centre and home environment (Karoly et al. 1998). For example, the Prenatal and Early Infant Program in Elmira, New York enroled 400 disadvantaged families. Each received regular home visits by nurses who, in addition to provision of nursing and parenting advice, linked families to other social services. The evaluation divided between high-risk

(families headed by a single parent and classified as particularly low status) and low-risk (the remainder). Among the former, average per-child benefits were estimated to be four times costs. Among the latter, per-child benefits were below costs.[6]

A recent benefit-cost study of a hypothetical national ECEC program in UK also referred to a "gap" between centre and home environment. Researchers predict that on average adult earnings of those who, as children, pass through a hypothetical universal ECEC program would exceed by 2 percent those who do not. The universal nature of such a program would lower the average relative to the 10 percent increase often cited for targeted US programs. This, they suggest, "is consistent … with universal childcare provision leading to a 10 percent increase in earnings for the most disadvantaged 20 percent of children and, on average, having no effect on the remaining children" (Pricewaterhouse Coopers 2003, 10).

Finally, the care of researchers in assessing outcomes is important. The goal is to isolate the effect, if any, of ECEC on future academic achievements: reduction in grade repetition, reduction in designation of students for remedial or special instruction, increase in high school completion, and so on. In assessing, say, high school completion rates, many factors matter in addition to the attendance of children at ECEC programs a decade earlier. Among the intervening factors are the quality of parenting during school years (do parents help with homework?), quality of schools (is the school culture one that encourages student learning?), and neighbourhood effects (are teenage students subject to peer pressure to join gangs and abandon academic studies?).

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Insert Tables 1 and 2 approximately here
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Virtually all evaluations note statistically significant benefits in the first years of elementary schooling. But there is evidence of "fading" as children progress through K-12 education. As Table 2 illustrates, the proportion of statistically significant effects on school performance declines at higher grades. Ideally, evaluations follow students from their early years in ECEC through to late adolescence, at time of graduation from high school. This is not easy. Inevitably, attrition in the initial evaluation sample takes place as families move or children drop out of school, and the number of children under evaluation a decade later may be much smaller and not representative. Ideally, evaluations rely on jurisdiction-wide tests of student performance. School-based tests may be biased.

How useful is benefit-cost analysis of ECEC programs?

Public initiatives such as ECEC are often evaluated within a benefit-cost framework. If the appropriately discounted sum of appropriately estimated benefits exceeds the comparable sum of costs, then the net benefit is positive and the policy is generating more good then harm. The major categories of ECEC benefits include the following:

economic gains from increased labor force participation of parents who, due to ECEC, enter employment; lower costs of K-12 education (for example, less grade repetition and less need for special education programs); lower crime rates associated with better education outcomes among the targeted population; and higher labor force productivity of children receiving ECEC. The costs include direct labor costs of staff, training of ECEC professionals, related infrastructure, and the hard-to-assess cost of foregone stay-at-home parenting.

There are serious qualifications inherent to this approach for evaluating programs whose benefits are to be realized over decades and where great uncertainty prevails. Quite reasonable adjustments to parameters can transform a projected net benefit into a net cost, or vice versa.

Using its base case assumptions, the PricewaterhouseCoopers (2003) study concludes there to be a C$80 billion net benefit for a national UK ECEC program.[7] However, the authors stress that small shifts in parameter values have proportionately large impacts. A 1 percentage point decline in estimated female employment rate changes the net benefit to a net cost of C$12 billion; a 10 percent rise in unit child care costs lowers net benefits to C$8 billion; a doubling, from 2 percent to 4 percent, in the productivity effect of ECEC raises net benefits to C$142 billion.

The leading benefit-cost study of a Canadian national program is that conducted by Gordon Cleveland and Michael Krashinsky (1998). On an annual basis, they estimate net benefits of $2.6 billion. This is the difference between benefits of $10.5 billion (= $6.2 billion in increased earnings of parents entering the labour force + $4.3 billion in value of benefits to children) and costs of $7.9 billion.[8]

While there are problems in their assessment of foregone benefits of home care, we concentrate on their labour cost estimates.[9] They allow that labour costs have risen from 75 percent of operating costs, at the time of their 1998 study, to 83 percent, at the time of their 2004 update. Despite this allowance, they may well have underestimated the increase in labour costs from a universal ECEC program, relative to the private market for ECEC services that currently prevails outside Quebec. Following Quebec's introduction of a universal program in 1998, employee wage rates rose dramatically. At time of writing (September 2005), attempts by the Quebec government to contain further labour cost increases have prompted the union to launch rotating strikes and threaten a province-wide closure of CPEs. (See box on Quebec CPEs.) It is unlikely that a national universal program could avoid similar cost increases.

Recommendations and Conclusion

Based on our interpretation of the evidence, Ottawa is mistaken to use its spending power to induce the provinces to launch a universal nation-wide ECEC program. The case for a universal program is weak. And, based on the Quebec experience, the very high costs of a universal program will squeeze budgets of other programs of value to families with

children. Moreover, again based on the Quebec experience, a universal program will likely miss the most important target, the poor. On the other hand, reasonable quality programs targeted to disadvantaged families can almost certainly generate significant benefits.

In conclusion, we put forward four recommendations of a somewhat more specific nature.

Recommondation one

> The provinces should assure access to reasonable quality ECEC programs for targeted categories of families likely to be disadvantaged in terms of preparing children for formal K-12 schooling.

Rigorous evaluations, primarily in the US, demonstrate positive benefits on children's performance in the first years of K-12 education. While ECEC programs may generate developmental benefits among children from middle class families, the incremental benefits are probably much smaller. Since social assistance and education are provincial responsibilities, this recommendation is directed at them. The differences across existing provincial programs suggest province-specific ECEC initiatives, and not a one-size-fits-all approach.

Recommendation two

> ECEC centres should be located in neighbourhoods with high ratios of families likely to be disadvantaged, and subsidies for fees should be geared to income. For families with annual incomes above $30,000, subsidies should be clawed back with expectation that the subsidy be eliminated for families above $40,000.[10]

Targeting is hard to do well. It entails a tradeoff between goals: restricting access to contain government costs and reaching all families likely to benefit. One means of targeting is location of ECEC centres. If they are located in low-income neighbourhoods, local low-income parents have easier access. Family income is a useful but imperfect tool for designating disadvantaged families whose children are at risk.

Recommendation three

> Families eligible for ECEC subsidy should be able to choose among state-sponsored centres; licensed centres operated by charitable, religious, or non-profit societies; or approved for-profit firms.

Some regulation covering dimensions of quality is necessary if ECEC centres are to generate positive results. Provided ECEC centres satisfy regulations, however, parents should have a choice. Provision for parental choice is motivated by several considerations. Families with strong ties to local/ethnic/immigrant communities may be more inclined to trust an ECEC centre if it resembles the cultural setting familiar to their

children. Such centres may offer services that better meet the demands of families with atypical work schedules or of those residing in more remote geographic locations. The costs to the public of operating these centres would be shared with the private sector through charitable donations. Finally, the existence of options assures some benefits of competition and minimizes the threat of a destabilizing system-wide disruption, such as Quebec parents currently face.

Recommendation four

Assure availability of reasonable quality ECEC programming to low-income parents in receipt of social assistance.

Most anti-poverty analysts in US, UK, and – to a lesser extent – Canada have concluded that the role model effect of a working parent is important in reducing intergenerational poverty, even in the case of lone parents with young pre-school children. If these parents are required to work as a condition for receipt of benefits, they need child care. Writing about welfare-to-work programs in the US, Janet Currie (2001, 231) concludes: "[US] society can be thought of as having made a commitment to poor mothers that it will pay for child care of at least mediocre quality if they work." Irony aside, the same should apply in Canada.

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Table 1
Summary Results of Large-Scale ECEC Evaluation Projects

Project name	Ages of participation, time of last follow-up	School outcomes	Methodological concerns
Child-Parent Center (1965-77)	Entry: 3-4 years Exit: 9 years Last follow-up: Post high school	T > C* in achievement tests at grade 2 T = C in achievement tests at grade 8 T > C* for high school graduation	School-administered tests.
Child-Parent Center (1983-85)	Entry: 3-4 years Exit: 9 years Last follow-up: Grade 7	T > C* in achievement tests at grades K to 7 T < C* in special education. T < C* for grade repetition T < C* in school dropout rate at age 20 T < C* in delinquency and crime	School-administered tests.
ETS Longitudinal Study of Head Start (1969-1970, 1970-1971)	Entry: 4-5 years Exit: 5-6 years Last follow-up: Grade 3	T > C* for achievement tests at grade 1 T = C for achievement tests at grades 2, 3	High attrition.
Head Start Family and Child Experience Survey (1997-1998)	Entry: 3-4 years Exit: 5-6 years Last follow-up: Grade 6	T > C* for achievement tests at grades 6	
NLSCM Head Start (1979- 1989)	Entry: 3-5 years Exit: 5-6 years Last follow-up:	T > C* for achievement tests (whites and	

	Grade varies	Hispanics only) T > C* for grade repetition T > C* (whites and Hispanics only) T > C* immunization rates T = C child height-for-age	
PSID Head Start (exact timing depends on program)	Entry: 3-4 years Exit: depends on program Last follow-up: adulthood (age thirty or younger)	T = C for grade repetition T > C* for high school graduation (whites only). T = C for teen pregnancy T = C for welfare dependence T < C* for arrests (blacks only) T > C* for college education (whites only)	
Cincinnati Title I Preschool (1969-1970, 1970-1971)	Entry: 4-5 years Exit: 6 years Last follow-up: Grade 8	T > C* for achievement tests at grades 1, 5 and 8 T = C for special education at grade 8 T = C for grade repetition at grade 8	School-administered tests.
Maryland Extended Elementary Pre-K (1977-1980)	Entry: 4 years Exit: 5 years Last follow-up: Grade 8	T > C* for achievement tests at grades 3, 5 and 8 T < C* for special education at grade 8 T < C* for grade repetition at	High attrition. School-administered tests.

		grade 8	
New York State Experimental Prekindergarten (1975-1976)	Entry: 3-4 years Exit: 5 years Last follow-up: Grade 3	T > C* for achievement tests at kindergarten T = C for achievement tests at grade 1 T = C for special education at grade 8 T < C* for grade repetition at grade 8	High attrition.
Detroit Head Start and Title I Preschool (1972-1973)	Entry: 4 years Exit: 5 years Last follow-up: Grade 4	T > C* for achievement tests at grade 4	School-administered tests. Unknown sample sizes
D.C. Public Schools and Head Start (1986-1987)	Entry: 4 years Exit: 5 years Last follow-up: Grades 4 and 5	T > C* for achievement tests at grades 3 - 5 T = C for special education at grade 4 T = C for grade repetition at grade 4	High attrition.
Florida Learn to Learn and Head Start (1986-1987)	Entry: 4 years Exit: 5 years Last follow-up: Grade 6	T = C for achievement tests at grade 6 T = C for special education T = C for grade repetition	
Philadelphia School District Get Set and Head Start (1969-1970; 1970-1971)	Entry: 4 years Exit: 5 years Last follow-up: Grades 4–8 (depending on cohort)	T = C for achievement tests at grades 4 - 8 T > C* for grade repetition	High attrition. School-administered tests.
Seattle DISTAR and Head Start (1970-1971)	Entry: 4 years Exit: 5 years Last follow-up: Grades 6 and 8	T > C for achievement tests at grades 6 and 8	High attrition. School-administered tests.
Cincinnati Head	Entry: 4 years	T = C for	

Start (1968-1969)	Exit: 5 years Last follow-up: Grade 3	achievement tests at grade 3	
Detroit Head Start (1969-1970)	Entry: 4 years Exit: 5 years Last follow-up: Grade 4	T > C* for achievement tests at grade 4	School-administered tests.
Hartford Head Start (1965-1966)	Entry: 4 years Exit: 5 years Last follow-up: Grade 6	T > C* for achievement tests at grade 6 T = C for special education T < C* for grade repetition	High attrition. School-administered tests.
Kanawha County, West Virginia Head Start (1973-1974)	Entry: 4 years Exit: 5 years Last follow-up: Grade 3	T = C for achievement tests at grade 3	School-administered tests.
Montgomery County Maryland Head Start (1970-1971;1974-1975, 1978-1979)	Entry: 4 years Exit: 5 years Last follow-up: Grade 11	T > C* for achievement tests at grade 11 T < C for achievement tests at grades other the grade 11	High attrition. School-administered tests.
New Haven Head Start (1968-1969)	Entry: 4 years Exit: 5 years Last follow-up: Grade 3	T > C* for achievement tests at grade 1 T = C for achievement tests at grade 3 T < C for grade repetition	High attrition.
Pennsylvania Head Start (1986-1987)	Entry: 3-5 years Exit: 5-6 years Last follow-up: Grade 3	T > C for achievement tests at grades 2 and 3	
Rome, Georgia Head Start (1966)	Entry: 5 years Exit: 6 years Last follow-up: Post High School	T > C* for achievement tests at grade 5 T = C for achievement tests at grade 6 and higher	School-administered tests.

		T < C* for special education T = C for grade repetition	
Westinghouse National Evaluation of Head Start (1965-1966)	Entry: 4-5 years Exit: 5-6 years Last follow-up: Grades 1-3	T > C* for achievement tests at grade 1 T = C for achievement tests at grade 2 and 3	

Source: Adapted from Barnett (1995), Currie (2001)

Notes:

The treatment group are designated T, and control group C. T > C* (T < C*) with asterisk " * " means the outcome among the experimental group was, in a statistically significant sense, better than (worse than) the outcome for the control group. Statistical significance is usually defined such that, if the ECEC program actually had no effect, the observed event should not occur more frequently than once every 20 assessments. T > C (T < C) without asterisk means the outcome among the experimental group was better than (worse than) the outcome for the control group, but the result was not statistically significant. T = C means the outcomes for both groups were similar.

By design, studies of the large scale programs are non-randomized and are theoretically subject to selection bias that invalidates results. The size of the large-scale programs relative to the size of the surrounding population offers the best protection against sample bias.

Table 2
Summary of Achievement Benefits of ECEC Programs, by grade level at Time of Evaluation

	Treatment group performance better than control, difference statistically significant (T > C*)	Treatment group performance better than control, difference not statistically significant (T > C)	Treatment group performance similar to control (T = C)
At grade 1	++++++		+
At grades 2-3	++++	+	+++++
At grades 4-7	++++++++	+	++++
At grades 8 and higher	++	+	++

Notes:

This table summarizes studies included in Table 1.

Each " + " indicates an evaluation outcome; several studies have more then one outcome with each outcome listed separately. For example, if a study reports T = C in grades 1 and 2, the score is tallied for each relevant cell in the "grade 1" and "grades 2-3" rows. However, if a study reports, say, T = C in grades 2 and 3, then only a single score is recorded in the relevant cell of the "grades 2-3" row. Studies with relevant grades not clearly specified were omitted.

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Quebec's Centres de la petite enfance (CPE)

In 1998, Quebec inaugurated a province-wide ECEC program, symbolized by the promise of child care to all at a price of $5/day/child, a price raised to $7 in 2004. By 2003, the number of spaces in subsidized care centres had doubled to 164,000. Relative to the total number of Quebec children between the ages of 1 and 4, this amounted to an increase from 20 percent to 45 percent.

The program is generating benefits to the parents involved, but there are grounds for scepticism. The annual cost to the Quebec government of subsidized spaces rose to $1.3 billion by 2004 – from an estimated 8 percent to 45 percent of the total for the family program envelope. To finance CPEs, Quebec has curtailed or squeezed other programs of benefit to families, such as nonrefundable tax credits to families for their children and earnings supplements to low-income parents. Lefebvre (2004) calculates an annual provincial subsidy per space in excess of $11,000 for children over 18 months. This is roughly twice the annual cost of a kindergarten space in the province. For a cost similar to its CPE program, Quebec could, as an alternative, extend kindergarten to all provincial four-year olds.

An intended benefit of ECEC programs is to compensate for a potential learning "gap" between home and centre. However, Lefebvre finds evidence that, as of 2001, spaces were disproportionately occupied by children from higher income families. Among families with annual income above $60,000, nearly three in ten of their pre-school children were in subsidized spaces; among families with incomes below $40,000, only one in ten.

Since 1998, employee wages in ECEC centres have risen dramatically. Carole Théberge, the minister responsible, has called for greater efficiencies in CPE administration. In the summer of 2005, the union representing CPE employees threatened a strike across the entire system of 310 CPEs at the conclusion of the summer holiday season as parents returned to work. In an attempt to avoid a strike, the cabinet allocated an additional $104 million to the CPE budget for the 2005-06 fiscal year. At time of writing (September 2005), the union has undertaken limited strike action, and has backed away from a general strike. However, no collective bargaining agreement is in place and uncertainty surrounds continuity of service (SRC 2005a, 2005b).

Endnotes

[1] We thank the following for comments on earlier drafts: Yvan Guillemette, Marvin Shaffer, Bill Warburton, and Finn Poschmann. Reviewers have divergent opinions and their investment of time and effort in review does not imply agreement with the final draft.

[2] A prominent Canadian academic advocate of ECEC is Fraser Mustard. See, for example, Reversing the Real Brain Drain, a report prepared for the Ontario government (McCain & Mustard 1999).

[3] Cleveland and Krashinsky (1998, 47) base their cost calculations on an assumed total annual compensation per ECEC worker of $36,000. For care-givers in Quebec CPEs, hourly wages in 2004 ranged between roughly $14 and $18; for managers, annual salaries ranged between $37,000 and $49,000 (Lefebvre 2004, 54). Assume a 9:1 ratio of care-givers to managers, a 37.5-hour work week, four weeks holiday, unit labour costs at the respective mid-points of the above ranges, and fringe benefits equivalent to 20 percent of unit labour costs. These assumptions yield an average 2004 cost per CPE employee of $36,500. CPE workers will probably realize significant wage/salary increases in 2005. The unions representing CPE workers are currently threatening collective action across the province, and the government has already awarded additional revenues for employee remuneration. (See box on CPEs.)

[4] Haveman and Wolfe (1995) survey evidence on the role model effect of a working parent on probability of children graduating from high school and avoiding teenage pregnancy.

[5] The Hawthorn effect refers to a famous experiment in which managerial interventions in the work place generated a positive effect, regardless of the nature of the actual intervention. The key to the effect was the increased attention paid by managers, independent of the content of the intervention.

[6] Capitalized using a 4 percent discount rate, benefits were restricted to those accruing to government. The most significant items arose from higher employment among the parents. This led to significant reductions in welfare payments and higher employment taxes paid. Another significant benefit was lower justice system costs due to lower projected criminal behaviour among targeted children.

[7] Benefits and costs are summed over 65 years, using a 3.5 percent annual discount rate. The exchange rate employed here assumes UK£1 = C$2.

[8] This $7.9 billion figure includes incremental public expenditures of $5.3 billion, plus present ECEC public expenditures and co-payments by parents. In their 1998 study, labour costs were 75 percent of the total; in their 2004 study, these rose to 83 percent of the revised total. Costs of providing ECEC spaces vary dramatically, according to wages

and staff/child ratios. Cleveland and Krashinsky (2004, 6) provide a range of annual costs from $3,700 to $20,700.

[9] As explained by Taylor (2004), Cleveland and Krashinsky seemingly assign no value to the benefits of home care foregone due to introduction of a universal ECEC program.

[10] The National Child Benefit System provides a negative income tax to low-income families with children. Over the $20,000 – $30,000 family income range the child benefit is subject to a high clawback rate. The result is an effective tax rate (marginal tax rate on earnings + clawback rate on transfers) in this income range above 60 percent for families with two or more children. All targeting entails incentive effects. To accommodate effective tax rate problems, the suggested $40,000 phase-out income may need revision.