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Early Childhood Education as Economic Development

Early childhood education is economic development, and the research shows it is economic development with a very high public return. Just a decade ago, this statement would have been dismissed. Spending on programs for young children was viewed as consumption—an immediate cost to the economy. The first *Early Years Study* (1999) furthered thinking by linking participation in quality early childhood programs to economic outcomes. Almost immediately the audience for early childhood concerns swelled, engaging economists, scientists, health providers and even financiers.

Decades of research reveal benefits

The economic rationale for investing in early childhood programming is gathered from three types of analyses: longitudinal data quantifying the human capital benefits and reduced health and social costs for children who attend preschool; economic modelling forecasting the payback from the enhanced labour productivity of working mothers; and studies examining the early childhood sector itself and its multiplier effects on economies.

Validation of the human capital approach is heavily influenced by U.S. longitudinal studies showing sustained benefits from early interventions for children from disadvantaged homes. Based on these findings, respected economists, such as Nobel Prize winner James Heckman, concluded that scarce public resources would best be used for at-risk communities. Population health promoters countered with data showing that developmental vulnerabilities are not exclusive to children from low-income homes—children with these vulnerabilities exist across the economic spectrum. Targeting resources, they demonstrate,

+ 10%	The increased graduation rate for those who attended preschool
$717 million	Ottawa's annual tax benefit from Quebec's low cost child care
$101 million	Gross annual revenue from Winnipeg's child care sector
70,000	More Quebec mothers working because of low cost child care
50,000	The annual shortage of early childhood educators
$5,000	Per child saving in special education costs from after-school programs

would exclude the majority of children with vulnerabilities, including those residing in middle class and affluent families.

Most recently, economists are questioning whether "scarce resources" are even a consideration. Quebec's early childhood program has been criticized for its costs. However, recent analyses found the province recoups its entire outlay from the additional tax revenue generated by working mothers, while the federal government—that contributes little to the program—enjoys a $717 million annual windfall. The research shows the "just can't afford to" excuse for denying young children their fair share of society's resources has no substance.

Researchers have followed three U.S. gold medal longitudinal studies on the impact of preschool education on children from disadvantaged backgrounds. The participants were largely African-American children deemed to be at-risk because of low family income, mothers' age, educational attainment and lone-parent status. The families typically lived in neighbourhoods with persistent poverty and high rates of crime. Children changed schools and housing frequently.

Ypsilanti's Perry Preschool (initiated in 1962), the Abecedarian study in North Carolina (1972) and the Chicago Child-Parent Centers (1967) have tracked their original cohorts for up to four decades. Each study was unique, but all provided a group program emphasizing parent involvement and the development of literacy skills. Child-to-staff ratios were low and educators had university level training in early childhood education.

Assessed over time, the preschool groups showed greater on-time secondary school graduation, higher college attendance, increased earnings and more prosocial conduct as adults compared to the control groups. For children born to mothers who never finished high school, high school completion rates were roughly 10 percent higher and rates of substance abuse and felony charges were roughly 10 percent lower than for children in the studies who did not attend preschool. The outcomes were particularly pronounced for male participants.[1]

No long-term effect was found on the IQ of the participants, but preschool did help children develop better cognitive habits and improved impulse control.

The Chicago and Abecedarian studies included samples of children who attended both preschool and enriched school programming. Others participated only in preschool, or only in enriched schooling. The most consistent and enduring outcomes were from preschool participation. School-aged programming provided added academic and earning advantages, but social behaviours were not appreciably different from the preschool-only groups.

The benefits of preschool were quantified by comparing the original costs of the program per child to their adult behaviour, including employment earnings, taxes paid, social welfare used and criminal justice costs incurred. Preschool's influence on health costs was not considered in the overall tally, but positive results were found in a separate study of Perry Preschool participants at 40 years of age.[2]

Only the financial returns for participants as they entered youth and adulthood were considered by the studies, not modifications in their parents' behaviour. In the Abecedarian study, for example, all-day preschool made it possible for parents to work or upgrade their skills. Parental benefits from lowered

FIGURE 4.1

Cost-benefit findings from three major longitudinal studies involving disadvantaged children attending preschool in U.S. urban areas

	Abecedarian	Chicago Child-Parent Centers	Perry Preschool
Year began	1972	1967	1962
Location	Chapel Hill, NC	Chicago, IL	Ypsilanti, MI
Sample size	104	1,539	123
Intervention group	50	1,286	58
Design	Random control	Children who only attended full-day kindergarten	Random control
Participants' ages	6 weeks–5 years and 6–8 years	Ages 3–9 years	Ages 3–4 years
Program schedule	Full-day/year-round	Half-day/school year	Half-day/school year
Average time in program per child	5 years	18 months	2 years
Additional interventions to preschool	• Enriched programming in elementary grades • Health and family supports	• Full-day kindergarten • Health and family supports • Enriched programming in early elementary grades	• Health supports • 1.5 hour home visit once a week
Age last assessed	21 years	28 years	40 years
Costs per child	$13,900/yr	$7,428/child	$15,166/yr
Benefits calculated	$143,674	$83,511	$258,888
Return on each $1 spent	$4:$1	$10:$1	$17:$1

Sources: Barnett, W. S., & Masse, L. N. (2007); Schweinhart, L. J., et al. (2005); Temple, J. A. & Reynolds, A. J. (2007); Reynolds, A. J., Temple, J. A., Ou, S., et al. (2011).

welfare use and increased tax revenues paid were not factored into the results, nor were more immediate benefits accruing to the child, such as reduced demand for health care or special education.

How replicable these studies are to a Canadian context is questionable. Canada does not have the same incarceration rates as the U.S., nor the same depth of racialized poverty—excluding Aboriginal populations—and it has the advantage of public health care, which plays a role in employability. As dramatic as the findings from these studies are, the initial outlay would be substantial and public investments that take a generation to realize provide little incentive for policy makers who often think in election cycles.

Canadian cost-benefit analyses

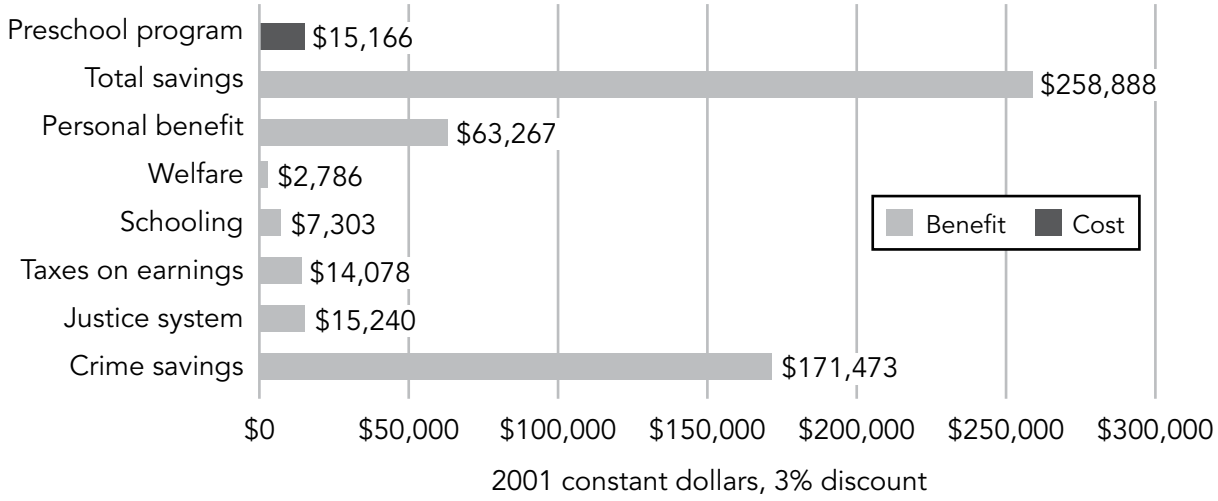
Canadian economists have had to be content with simulating the benefits of spending on early childhood programming.[a] Canadian studies have also differed from the American "Big Three" by including the immediate reimbursements produced from the increased workforce participation of mothers.

[a] Researchers rely heavily on data from the National Longitudinal Survey of Children and Youth, and the Quebec Longitudinal Study of Child Development. These tools track the development of a cohort of children from birth to identify different factors that influence each child's development. Data is gathered at regular intervals, using voluntary surveys of parents and youth, as well as selective numeracy, literacy and problem solving assessments at different ages.

FIGURE 4.2

Cost-benefit by category from Perry Preschool Study per participant at 40 years of age

($17.07 return per dollar invested)



The commonly-heard value placed on early intervention programs is that every dollar spent yields $7 in cost savings. This figure was obtained from the Perry Preschool study from an assessment made several years ago. As time passes, and the original cohort earns more and draws less on social programs, the value of the initial investment consequently increases. The surviving participants in the study were last assessed in 2005 at age 40. The return on the original preschool investments now stands at $17:$1.[3]

Sources: Schweinhart, L. J., et al. (2005); Belfield, C., et al. (2006).

In addition, Canadian studies include the mid- and longer-term repayments from early childhood programs that can be predicted for children.

The first landmark analysis of the economic payoffs of preschool came in 1998, when two University of Toronto professors calculated the impact of providing publicly funded educational child care for all children aged 2–5 years.[4] The net cost of $5.2 billion annually (1998 CDN dollars) was premised on an overall parental contribution of 20 percent, with individual fees scaled to income. The new system would create 170,000 new jobs, but these would replace 250,000 unregulated child minders, for a net employment loss. New educator jobs were assessed at an average wage and benefit level of $36,000 annually, a significant improvement on remuneration levels at that time.

The authors determined the benefits at $10.6 billion. About $4.3 billion was foreseen for children in improved school readiness, graduation levels and future earnings. The majority, and the most immediate, dividends ($6.24 billion) went to mothers. Affordable, available child care would allow women to work, to shorten their stay out of the labour market following the birth of their children and would permit them to move from part-time to full-time work. This would afford women more financial independence, increasing their lifetime earnings and decreasing their chances of poverty at the time of divorce or widowhood.

Developing community capacity to support children

Canada's largest study on the influence of programs on children is Better Beginnings, Better Futures (BBBF), led by Ray Peters at Queen's University. BBBF is a bit of an outlier in terms of studies looking

FIGURE 4.3

Five Canadian cost-benefit analyses of early childhood programming

Study	Year	Description	Benefits	Ratio
Economic Consequences of Quebec's Educational Child Care Policy Pierre Fortin, Luc Godbout, Suzie St-Cerny	2011	• Examined benefits of enhanced maternal employment due to low cost child care	• Quebec gains $1.5B in increased tax revenue • Pays $340M less in tax and social benefits to families • Increased provincial GDP by $5.2B (+1.7%)	• For every $1 spent on ECEC, Quebec receives $1.05 • Federal government receives $0.44
Better Beginnings, Better Futures Ray D. Peters, et al.	2010	• $580,000 per site for 5 years to enrich child, parent and neighbourhood programming • 3 sites involving children 4-8 yrs • 5 sites involving children 0-4 yrs • Matched similar neighbourhoods • Children followed to grade 12	• No difference for BBBF sites focused on 0-4 yrs • Reduced use of health, social benefits, special education, child welfare and criminal justice in sites focused on 4-8 yrs cohorts compared to control neighbourhoods	• For every $1 spent, $2 in reduced costs to public and community agencies
Workforce Shortages Socio-Economic Effects Robert Fairholm	2009	• Analysis of potential benefits for every $1M spent on child care	• Child care an effective job creator and economic stimulant	• For every $1 invested $2.42 in increased earnings, improved health, reduced social costs
Child Care as Economic and Social Development Susan Prentice	2007	• Examined economic multipliers from existing child care services in 4 Manitoba communities: Winnipeg, Thompson, Parkland and St.-Pierre-Jolys	• Winnipeg child care sector has gross revenues of over $101M/year • Employs 3,200 with annual earnings of $80M	• Every $1 creates $1.38 in the local economy and $1.40 in the Canadian economy • Every 1 child care job creates 2.1 spinoff jobs
The Benefits and Costs of Good Child Care Gordon Cleveland & Michael Krashinksy	1998	• Estimated costs of a universal child care program for every child 2–5 yrs • Assumed educators earn $36K and parents pay 20% of overall costs	• 170,000 jobs created • Increased maternal labour force participation • Lower welfare & related costs	Every $1 spent creates $2 including: • $0.75 in social savings • $1.25 increased tax revenue from job creation/working mothers

Sources: Cleveland, G., & Krashinsky, M. (1998); Fairholm, R. (2009); Fortin, P., Godbout. L., & St-Cerny, S. (2011); Peters, R.D., Nelson, G., et al. (2010); Prentice, S., & McCracken, M. (2004).

at outcomes for children that can be attributed to preschool attendance, and perhaps should not be included in this list. Instead, it is more of a study of community social cohesion, an examination of what happens when local service providers come together with families in the interest of children. It also reveals something about the "dose effect"—how much is enough to change developmental trajectories for children.

BBBF looked at eight communities, five focused on children from birth to 4 years of age (the younger child sites), and the other three on kindergarten-aged children to 8 years of age (the older child sites). Sites received a grant averaging $580,000 each year over five years (1993–97) to enrich programming for children, parents and/or neighbourhoods. Each site selected its own interventions, which varied over the course of the study. Program examples included: enriched in-school activities, homework support, after-school recreation, parenting classes, home visits, field trips, toy libraries, family vacation camps, child care referral and/or community kitchens and gardens.

A sample of children from each site was selected to study the impact of the interventions at a community level. Therefore, the sample group may or may not have taken part in all of the intervention programming. However, many of the older children did attend the before, after- and in-school programs.

Long-term positive effects were found for the children who lived in communities with enriched programming for 4- to 8-year-olds, but not for those in the younger child site communities. The positive outcomes actually strengthened over time in the older child sites, as seen in measures collected when children were in grades 3, 6, 9 and 12. Children in the BBBF communities used health, special education, social services, child welfare and criminal justice services less than those in the control neighbourhoods. The reduction in the use of special education services alone saved more than $5,000 per child by grade 12. Overall, government funders realized a cost-benefit of more than $2 for each $1 invested in the project.[5] The benefits are dramatic because they are recouped during childhood and represent benefits that accrue at a community level, and therefore have direct application for policies that are scaled up.

Why did younger children receive no lasting benefits from the interventions, while older children did? One explanation is that the modest project investment per child did not provide enough intensity for younger children.[6] Program spending in the older children's sites was on top of investments already made in every child via the school system. Schools offered a universal platform so that enriched supports reached all children, while no equivalent service is available for children during their preschool years.

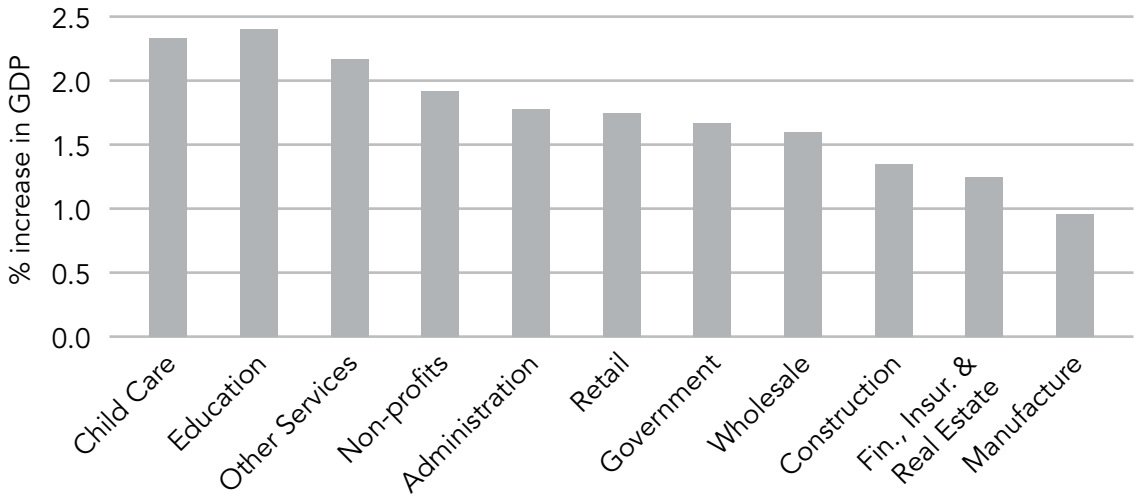
Child care as regional economic development

Every Canadian region has an economic development department whose main purpose is to attract business, sports teams or cultural landmarks to spur economic activity and create jobs. Child care, if it appears at all, is at the bottom of economic development lists. Sociologist Susan Prentice of the University of Manitoba thinks it should be at the top. Her 2004 study of Winnipeg's child care sector demonstrated its multifaceted role in a regional economy: as an economic sector in its own right with facilities, employees and consumption from other sectors; as labour force support to working parents; and for the long-term economic impact it has on the next generation of workers.[7]

Winnipeg's 620 child care facilities provide care to about 17 percent of the city's children. Gross revenues are over $101 million a year; 3,200 people are employed with total earnings of $80 million annually. Prentice found more jobs in child care than in the entire Manitoba film industry, and about as many as in the better-known bio-tech and health research or the energy and environment sectors, which are priority areas for development in the city.

Child care is also a job creator. Working with the same analytical tools used by the finance department, Prentice found that for every child care job, 2.15 others were created or sustained. Child care also allows mothers and fathers to work. Parents with children in child care earn an estimated $715 million per year.[8] Overall, every $1 invested in child

FIGURE 4.4 **Effect on GDP of public investment by sector**



Source: Fairholm, R. & Davis, J. (2010).

care provides an immediate return of $1.38 to the Winnipeg economy, and $1.45 to Canada's economy.

In 2007, Prentice also analyzed the child care sector in a rural, northern and Francophone region of Manitoba. Those studies identified higher returns, with every $1 of spending producing $1.58 of economic effects. In contrast to the Winnipeg report, Prentice found a lower employment multiplier: every two child care positions created 0.49 other jobs.[9]

Preschool as economic stimulus

Previous studies did not focus on the state as a beneficiary of child care investment. That would wait until 2009 and an analysis by economist Robert Fairholm.[b] Released on the heels of the 2008 collapse of the financial markets when governments were looking for stimulus projects, Fairholm showed how investing in educational child care was a hands-down winner:

- **Biggest job creator:** Investing $1 million in child care would create at least 40 jobs, 43 percent more jobs than the next highest industry and four times the number of jobs generated by $1 million in construction spending.
- **Strong economic stimulus:** Every dollar invested in child care increases the economy's output (GDP) by $2.30. This is one of the highest GDP multipliers of all major sectors.
- **Tax generator:** Earnings from increased employment would send back 90 cents in tax revenues to federal and provincial governments for every dollar invested, meaning investment in child care virtually pays for itself.

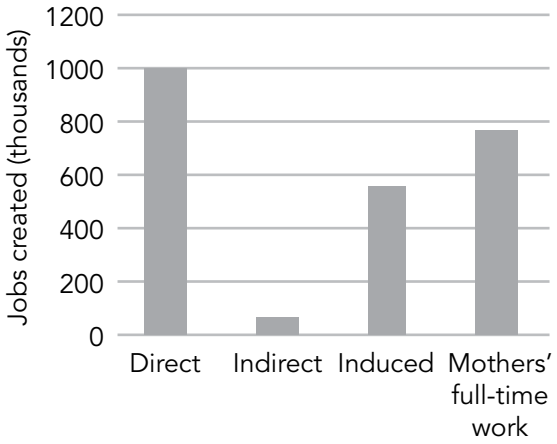
Fairholm's work also quantified the immediate costs of the sector's poor employment environment, which results in annual shortages of about 50,000 educators. The net cost to the Canadian economy was estimated at over $140 million for the period 2001 to 2007. The shortage of educators also held parents back from entering the workforce. In total, it meant a loss of almost 50,000 person years of employment.

In addition, Fairholm translated the benefits from preschool for disadvantaged children in the Abecedarian study to middle class Canadian children. Although less dramatic than for disadvantaged

[b] Fairholm and Davis (2010) also analyzed the cost benefits of the recommendations in *With Our Best Future in Mind: Report to the Premier on Early Learning in Ontario.* It revealed similar results on a child and family system for infants to 12-year-olds delivered by municipal governments and schools.

FIGURE 4.5

Jobs created per thousand increase in early childhood workforce



Source: Fairholm, R. & Davis, J. (2010).

children, attendance at preschool would still result in reduced grade failures, less reliance on special education and lower rates of smoking and early high school leaving among children from middle class homes. The study concludes that investments in early childhood programming pay for themselves, in both the immediate and longer-term, with a $2.54 payback for every dollar spent after accounting for all benefits and costs over the immediate to longer-term.

Early childhood programming: A no cost solution

Initiated in 1997, Quebec's early childhood services are politically popular. They reimburse both users and the larger society, not only in expected improvement in school readiness, but also with unpredicted bonuses such as higher birth rates and reduced poverty levels.

Economist Pierre Fortin's[10] analysis of Quebec's children's system does not deal with these extras, or with the personal medium- or long-term benefits to the child attendees of children's centres. Rather, he focuses on changes in the mothers' labour force behaviour, setting out to answer three questions:

1. Who is working because low cost child care is available?
2. How much tax revenue are they bringing in?
3. How much less are they drawing on income-tested family benefits?

Publicly funded child care is not a requirement for women to work; most make do without it. Women's tenacity in piecing together underground arrangements takes the pressure off the state to find formal solutions. For some mothers, however, the absence of reliable, affordable child care is an impenetrable barrier. They stay out of the labour force altogether, delay returning to work until their children start school or they work part-time. In 1997, Quebec women were less likely than other Canadian women to work outside the home; today, they are the most likely. Fortin and his colleagues wanted to identify the gap between those women who would work anyway and those whose presence in the workforce could be attributed to available, affordable child care.

As of 2008, more than 60 percent of Quebec children ages 1–4 years had access to $7-a-day, state-subsidized child care. By comparison, in other provinces in 2006, only 18 percent of children in this age group were in a licensed program.[11] Quebec's program expansion has been rapid since its inception, reaching 220,000 spaces. Demand still outstrips supply, with an estimated 22,000 spaces still required.

Quebec parents like their options. A 2009 survey found that 92 percent of children's centre users said the centre was their first preference for child care.[12] In addition, 66 percent of parents with other child care arrangements said they would prefer using a children's centre.[13]

A number of studies using data from the National Longitudinal Study of Children and Youth reveal the influence of Quebec's early childhood services on mothers' labour force activity. A 2008 analysis showed an 8 percent increase since 2000 in the employment rate for mothers with children ages 1-to-4 years.[14] Meanwhile, there was a 7 percent increase in the rate for mothers of 6-to-11-year-olds. By 2010, the employment rate of mothers with preschoolers increased by 12 percent.[15] The majority

of new labour entrants did not have post-secondary credentials therefore their earnings would be modest. The availability and the low cost of care removed a prime barrier to their working.[16]

Fortin's own analysis found that in 2008, 70,000 more Quebec women were at work and their presence could be attributed to low cost preschool. This meant a 3.8 percent boost in women's employment, and a 1.8 percent increase in total provincial employment. Adjusting for hours of work and the productivity of the new entrants, he calculated their labour added 1.7 percent to Quebec's GDP.

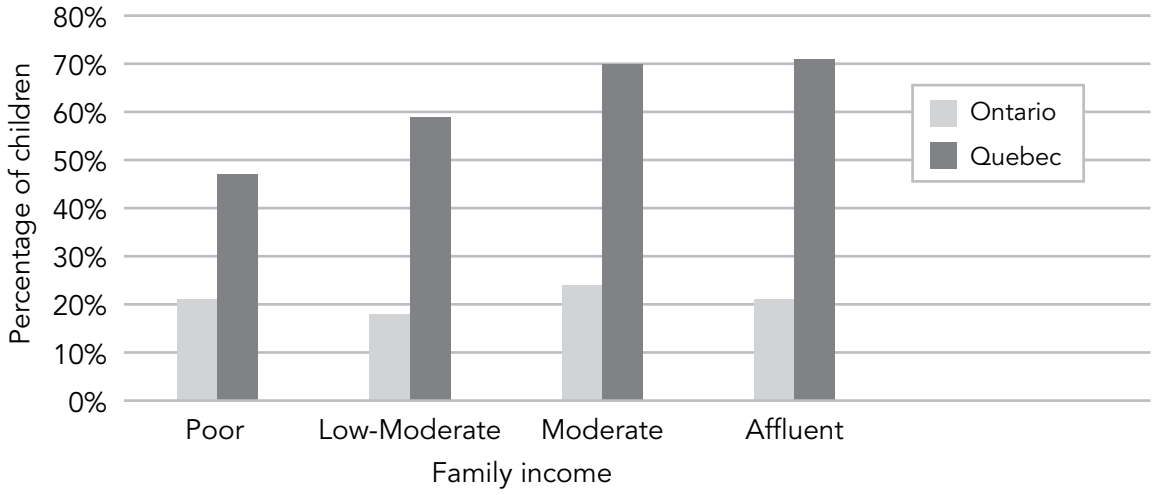
Increased family incomes generate more tax revenues and lower demand for government transfers and credits, with both the federal and Quebec governments benefitting. Parents with children in a $7-a-day children's centre or after-school program do not qualify for Quebec's refundable tax credit, reducing the net cost of the credit to the province. The federal government takes its share of tax paid by working mothers, while its outlay for the National Child Benefit, the Child Tax Credit and Universal Child Care Benefit[c] is reduced. A further savings for the federal government is found in the Child Care Expense Deduction. Quebec parents enjoying reduced fee child care do not pay enough to claim the full CCED deduction.

Fortin used the University of Sherbrooke's tax-transfer simulator and Statistics Canada's Survey of Labour and Income Dynamics (SLID) to estimate the tax and transfer feedback from the new labour entrants. For every public dollar spent on the early childhood program, the Quebec government collects $1.05 in increased taxes and reduced family payments, while the federal government gets 44 cents for, in Fortin's words, "doing nothing." Fortin expects government revenues will increase over time as mothers in the 50-plus age group (those now least likely to work) are replaced by women with a stronger work history.

Fortin's analysis also challenges claims that Quebec's early years investments would be better targeted to low-income families. While not discounting that better efforts could be made to facilitate the inclusion of children from disadvantaged circumstances, Quebec has a greater percentage of children from low-income homes attending preschool than

[c] The NCB and CTC are income sensitive. The UCCB is a taxable benefit that pays more to two-parent, one earner families, than to single parent or two-earner families.

FIGURE 4.6 **Children 2 to 4 years attending ECE centre by income, Ontario and Quebec, 2008–2009**



Source: Adapted from Statistics Canada. National Longitudinal Survey of Children and Youth. Cycle 8, 2008–2009. Special tabulation.

FIGURE 4.7

Comparative increase in women's LFP in Quebec and Ontario since 1996

	1996 %	2008 %	Increase %
Children 0–5, Ontario	67	71	+4
Children 6–16, Ontario	79	84	+5
Children 0–5, Quebec	63	74	+11
Children 6–16, Quebec	73	87	+14

Source: Statistics Canada. (2010) in Fortin, P., Godbout, L., & St-Cerny, S. (2011).

any other province, including provinces where public funding is solely targeted to the poor. Moreover, he shows that restricting the access of moderate- and middle-income families to affordable care would limit their abilities to earn income, reduce their tax contributions and add to their benefit claims, removing an important source of government income for social spending.

Wisely investing in early childhood

These studies demonstrate the cost effectiveness of organizing early childhood programs so they stimulate children's early development as they allow parents to work. When expanding access to early childhood programming, most provinces persist in maintaining the historic legislative and funding schism between educational programs such as kindergarten, and child care which operates under social welfare. Leaving families to bridge the divide is not only frustrating for parents and children, but as the above studies quantify, it also denies taxpayers the full benefit of their investment.

Following the money confirms that effective early childhood programs are:

- **Universal:** Reaching out to offer early childhood education to all children catches the substantial numbers of children across the socioeconomic spectrum displaying behavioural and learning vulnerabilities at school entry. Research shows difficulties become biologically embedded if supports are not timely and consistent. As escalating special education costs attest, later interventions are costly to both the child and the taxpayer.
- **Available and affordable:** When spaces for children in preschool are available and parent fees do not create a barrier to participation, public program costs are recouped through the enhanced labour force participation of parents.
- **High-quality:** Quality in early childhood programming is non-negotiable if the mid- and long-term benefits to children and society are to be realized. Educators well trained in early childhood development and adequately resourced to respond to the individual needs of the children are the prime determinants of quality. Such educators are able to work with families to change developmental trajectories for children. Adequately resourced means decent remuneration

FIGURE 4.8

Tax and transfer feedback from increased LFP of mothers

(Quebec, 2008)

	Federal $millions	Provincial $millions	Total $millions
More tax revenues	617	1,538	2,155
+ Lower transfers	100	180	280
= Total feedback	717	1,718	2,435
Gross cost	0	1,796	1,796
– Lower refundable tax credit	0	160	160
= Net cost of ECE	0	1,636	1,636
Net gain for government	717	82	799

Source: Fortin, P., Godbout, L., & St-Cerny, S. (2011).

and working conditions, including low teacher-to-child ratios, facilities, equipment and supplies to organize effective programming, as well as ongoing professional development to incorporate the ever-evolving childhood development findings into the curriculum.

- **Systems funding and management:** Integrating early education and care, both on-the-ground and at the systems level, avoids the added and wasteful expense of service duplications and gaps. Stable funding allows the planning for and building in of quality assurances. Effective management ensures equity of access by locating programs in low-income neighbourhoods, facilitating flexible enrollment and instituting fee schedules that acknowledge the financial constraints of some families. These measures help to remove work barriers for the most vulnerable families, and help ensure all children reach their full potential.

To receive maximum financial efficiencies and social benefits, provinces and territories are advised to organize and fund programs to meet these goals. The federal government also holds responsibility; it currently makes a very modest contribution to early childhood programming. Ongoing funds from residual federal programs now rolled into the Canada Social Transfer total $1.1 billion annually, compared to over $7.5 billion invested by the provinces and territories.

The economic analyses confirm the windfall the federal government derives from the investments provinces, territories and regional governments make in child care. Ottawa does "nothing," to quote Fortin, but takes in a substantial portion of the increased tax revenue from working parents and benefits from the lower social payments it makes to families. The figures provide a sound rationale for increased federal investments in early childhood, or at the very least, form a strong case for provinces to demand reimbursement for a share of their early childhood investments that benefit federal coffers.

ENDNOTES

1 Reynolds, A. J., Temple, J. A., Ou, S., et al. (2011).
2 Muennig, P., et al. (2009).
3 Wickelgren, I. (1999); Campbell, F. A., et al. (2001); Belfield, C., et al. (2006).
4 Cleveland, G., & Krashinsky, M. (1998).
5 Peters, R. D., Nelson, G., et al. (2010).
6 Corter, C., & Peters, R.D. (2011).
7 Prentice, S., & McCracken, M. (2004).
8 Ibid. p. 12–13.
9 Prentice, S. (2007a); Prentice, S. (2007b); Prentice, S. (2007c).
10 Fortin, P, Godbout, L., & St-Cerny, S. (2011).
11 Ibid.
12 Institut de la Statistique du Québec. (2011).
13 Ibid.
14 Baker, M., Gruber, J., & Milligan, K. (2008).
15 Lefebvre, P., Merrigan, P., & Roy-Desrosiers, F. (2011).
16 Lefebvre, P., Merrigan, P., & Verstraete, M. (2009).