

The Role of Early Learning and Child Care in Rebuilding Canada's Economy after COVID-19

**By Jim Stanford
Economist and Director
The Centre for Future Work**

November 2020

Centre for
FutureWork

About the Centre for Future Work

The Centre for Future Work is a progressive research institute, founded in 2016, with operations in Canada and [Australia](#).

The Centre is a unique centre of excellence on the full range of economic issues facing working people: including the future of jobs, wages and income distribution, skills and training, sector and industry policies, globalization, the role of government, public services, and more. The Centre also develops timely and practical policy proposals to help make the world of work better for working people and their families. The Centre is independent and non-partisan.

In Canada, the Centre operates in collaboration with the [Canadian Centre for Policy Alternatives](#), and is housed in the CCPA's office in Vancouver.

In Australia, the Centre is a project of the [Australia Institute](#), Australia's pre-eminent progressive research centre, based in Canberra.

Centre for Future Work
520 – 700 West Pender Street
Vancouver, BC, V6C 1G8, Canada
centreforfuturework.ca
info@centreforfuturework.ca
tel: +1 604-801-5121 ext. 271

About the Author

Jim Stanford is Economist and Director of the Centre for Future Work. He divides his time between Sydney, Australia and Vancouver, Canada. He is also the Harold Innis Industry Professor in Economics at McMaster University in Hamilton, Canada, and an Honorary Professor in the Department of Political Economy at the University of Sydney. Jim received his Ph.D. in Economics from the New School for Social Research in New York. He also holds an M.Phil. from Cambridge University, and a B.A. (Hons.) from the University of Calgary.

The author thanks, without implication, Morna Ballantyne, Kate Bezanson, Jane Beach, Martha Friendly, and Thea Baines for helpful input.

The logo for the Centre for FutureWork. It features the words "Centre for" in a grey sans-serif font, followed by "FutureWork" in a larger, bold sans-serif font. "Future" is in orange and "Work" is in grey.

Table of Contents

Introduction and Main Findings	4
The Economic Benefits of Early Child Education: Overview and Previous Findings	8
Estimating Category A Benefits: Expanded ELCC Production	14
Estimating Category B Benefits: Improved Female Labour Supply	23
Estimating Category C Benefits: Improved Capacities of ELCC Participants	32
Conclusion: Combined Benefits and Policy Implications	35
References	38

Introduction and Main Findings

The Government of Canada's recent Speech from the Throne committed the federal government to a significant expansion of fiscal support for early learning and child care (ELCC) services across the country. The Speech was ringing in its affirmation that Canada's economy, and Canadian households, urgently need high-quality ELCC services:

“Canadians need more accessible, affordable, inclusive, and high quality childcare... Recognizing the urgency of this challenge, the Government will make a significant, long-term, sustained investment to create a Canada-wide early learning and childcare system. The Government will build on previous investments, learn from the model that already exists in Quebec, and work with all provinces and territories to ensure that high-quality care is accessible to all. There is broad consensus from all parts of society, including business and labour leaders, that the time is now.” (Governor-General, 2020)

Child care advocates have developed plans for phasing in universal ELCC services to provide coverage for most young children (Child Care Now, 2020; Canadian Centre for Policy Alternatives, 2020). Business leaders have also endorsed the expansion of ELCC services as a vital support for rebuilding labour force participation and employment after the COVID-19 pandemic and associated recession (Bradshaw, 2020; Saba, 2020). It is a topic on which business and organized labour agrees: expanded child care is good for parents (especially mothers), good for workers, good for employers, and good for society.¹ In short, there is a powerful cross-cutting consensus that the expansion of accessible, high-quality ELCC is an important and urgent economic and social priority, and governments must move quickly to make it a reality.

The COVID-19 crisis therefore constitutes a historic moment. After years of debates and false starts, Canada's ELCC system remained sadly inadequate – even before the pandemic arrived. Now the pandemic has enhanced our shared understanding of the importance of ELCC services in facilitating full participation and healthy work-life balance. And it has caused an unprecedented shock to Canada's economy and labour market, that will likely last for years. Finally moving forward with this vital economic

¹ A recent joint commentary by the leaders of the Canadian Labour Congress and the Canada Business Council attests to this cross-stakeholder consensus: see Yussuff and Hyder (2020).

and social reform would make a significant contribution to national economic recovery. As the Throne Speech said, the time is indeed now.

Strong support for expanded ELCC services is also informed by recognition that the economic and human impacts of the COVID-19 pandemic and recession have been borne disproportionately by women (Yalnizyan, 2020). Women lost work at a faster rate in the first months of the health-ordered shutdowns: women's total employment declined 17% between February and April, compared to 15% for men. This steeper decline reflected women's disproportionate concentration in the industries (such as retail, hospitality, and personal services) which faced the most stringent health restrictions on continued work. It also resulted from women's greater concentration in precarious work, in all its forms: part-time jobs, temporary positions, contracted out and "gig" jobs. These, not surprisingly, were the first jobs that disappeared as the pandemic hit, and women held most of them. Moreover, the decline in employment did not tell the whole story of lost work: many workers remained "employed" even though their hours of work mostly or entirely disappeared. Total hours worked by women fell 30% in the first two months of the pandemic, and that drop was also larger than for men. In subsequent months, some of that gender gap in lost employment narrowed, as hard-hit service industries partially re-opened. But the decline in cumulative employment for women (measured both by jobs and by hours) has still been still worse for women than men. And the drop in labour force participation since the pandemic (reflecting women who have lost work, and given up on searching for it) has been almost three times worse for women than for men. The decline in participation has been particularly severe for sole parents with children under six (Scott, 2020), most of whom are women. In that context, timely roll-out of accessible high-quality ELCC services will be vital to supporting a full recovery in women's employment.

A related reason why progress on expanding ELCC is especially urgent right now is the financial and operating crisis facing many child care centres in Canada's existing, under-resourced system. A combination of outright closures of child care centres during the initial shutdowns, reduced enrolments since then (with many parents working from home with their children), and increased costs from COVID-related safety protocols has created enormous financial pressures on many child care centres – especially those operated on a stand-alone basis by small organizations (McGinn, 2020). Child care centres shed 35,000 jobs (25% of total staff) between February and July;² many of those job losses will become permanent without forceful action by government to ensure long-term financial stability for the overall system. And there is

² Author's calculations from Statistics Canada Table 14-10-0201-01.

a significant risk that without determined and timely progress on a national universal ELCC system, even the existing inadequate patchwork of services currently in place will deteriorate.

It is clear, therefore, that this is a moment when the need for universal high-quality ELCC is very widely accepted in Canada, and the willingness of government to finally move forward with a transformational ELCC strategy is strong. The expansion of quality, accessible ELCC services would also provide an enormous boost to Canada's economic reconstruction after COVID. This paper reviews the various ways in which implementing a universal high-quality ELCC system would strengthen Canada's economy as it comes out of the pandemic and recession. It attaches broad quantitative estimates to some of those benefits, on the basis of previously published economic research and new analysis of current Statistics Canada data on employment, participation, and incomes. It confirms that rolling out a strong universal ELCC program over the coming decade would make a critical contribution to national economic recovery, including:

- The creation of over 200,000 new jobs in ELCC provision, representing annual direct job creation of 20,000 positions per year.
- The creation of close to \$10 billion in additional GDP, and close to another 80,000 new jobs, in the upstream and downstream industries which will receive new business from the expanded ELCC sector. This includes an estimated 8,000 construction jobs building or retrofitting ELCC facilities.
- An increase in labour supplied by women in the prime parenting age cohorts (from age 25 through 50) equal to as many as 725,000 additional workers – experienced through both greater labour force participation and greater ability to work full-time hours.
- An eventual increase in national annual GDP of between \$63 billion and \$107 billion, achieved gradually over the decade, driven by both expanded ELCC production and increased female labour supply.
- Long-run employment, income, and fiscal benefits arising from the enhanced cognitive and social capacities of future generations of Canadians who received high-quality ELCC services in their formative early years of life.
- Additional revenues to government (roughly split between the federal and provincial levels) of \$17 billion to \$29 billion per year – more than enough to pay for the cost of providing universal ELCC services.
- While most of the policy initiative and fiscal support for a national universal ELCC program is coming from the federal government, provincial governments would benefit enormously from the implementation of the new system. Provincial economies would be strengthened, tens of thousands of jobs created, and provincial government revenues would grow by \$8-14 billion per year. The biggest

provincial gains would be experienced in regions with the weakest existing ELCC systems: the prairie provinces and Ontario.

Consistent with previous published research, this report finds that ELCC services are an economic and social program that literally “pays for itself,” thanks to the government revenues generated automatically through this enhanced economic activity. At a moment when Canada’s economy is desperate for additional spending power, employment, and production opportunities, moving forward with the long-delayed roll-out of a high-quality national system has the potential to significantly strengthen Canada’s economic performance after this catastrophic pandemic and recession.

The rest of the paper is organized as follows. The next section introduces three broad categories of economic benefits arising from the provision of accessible, high-quality ELCC services: including economic impacts from the expansion of ELCC production, benefits arising from women’s increased labour supply, and long-run benefits generated by the enhanced cognitive and social capabilities of ELCC participants. The following sections of the paper then provide illustrative quantitative estimates of the potential order of magnitude of each these three categories of benefits. The conclusion assembles these estimates into a composite portrait of the overall economic impacts of a universal ELCC system. It concludes with a strong call to governments at both the federal and provincial levels to move forward firmly and ambitiously with this program, as part of the broader reconstruction of Canada’s economy after COVID-19.

The Economic Benefits of Early Learning and Child Care: Overview and Previous Research

There is an extensive international literature confirming the many positive impacts of quality early learning and child care (ELCC)³ services on economic and social performance. This research has identified several channels of benefits for participating children, their parents and families; for the local and national economies; and for long-run economic, social, and fiscal outcomes. Useful surveys of this literature are provided by Barnett (2008), Child Care Human Resources Sector Council (2008), McCain *et al.* (2011), Bivens *et al.* (2016), Executive Office of the President (2015), Calman and Tarr-Whelan (2005), Duncan and Magnuson (2013), Alexander and Ignjatovic (2012), and Australian Institute of Health and Welfare (2015).

The wide-ranging economic benefits of quality, accessible ELCC programs can be broadly grouped into three categories:

- A. Additional economic activity associated with the expanded production of ELCC services.
- B. Increased labour force participation, employment, and earnings for parents (especially mothers) of children receiving ELCC services.
- C. Long-run economic, social, and fiscal benefits resulting from the improved lifetime capacities of children who participated in ELCC in their childhoods.

This section will briefly review the nature and channels of each of these categories of economic benefits (with selected references to published research). The rest of the report will then develop broad quantitative estimates of the potential scale of each of these classes of benefits for the Canadian economy.

The Economic Footprint of ELCC Production:

While Canada's ELCC system is underdeveloped (providing spaces pre-pandemic for only about one-third of pre-school children), it nevertheless constitutes a major industry in its own right. Child care centres employed approximately 150,000 workers

³ Throughout this paper, we use the term "early learning and child care" to emphasize the recognized pedagogical and capacity-building functions of quality early childhood services (contrary to the stereotype that they merely constitute custodial or "babysitting" functions).

in 2019.⁴ Employment increased by over half in the past decade, adding 50,000 new positions. But average weekly earnings in the ELCC sector are low: an average of just \$640 per week in 2019, almost 40 percent below average earnings in the broader economy. The average worker in child care worked around 29 hours per week (somewhat less than the average in the overall economy). Total wages and salaries paid in the sector exceed \$5 billion per year.

Statistics Canada does not report value-added (or GDP) in the child care industry, but we can generate a broad estimate of the sector's total GDP by using the input-output profile of the broader education sector as a comparator. Statistics Canada reports that 73% of total value-added in primary and secondary education is paid in wages and salaries to workers employed directly in that sector.⁵ Assuming a similar ratio exists between wage costs and value added in child care, this implies annual GDP in the child care centres of just under \$7 billion per year.

Expansion of this important industry will thus generate a direct addition to total output and employment in Canada's economy. And the resulting economic gains are not limited to the ELCC sector alone. Like any other industry, the activities of the ELCC sector provide a stimulus to work and production in other parts of the economy, due to increased purchases for other goods and services that arise from higher employment, production, and incomes in the ELCC sector.⁶ The importance of these inter-industry linkages can be quantified on the basis of input-output analysis and estimates of "multiplier" impacts arising from new spending within the ELCC sector. For instance, the employment multiplier measures the total number of jobs (both direct within ELCC itself, and indirect in other industries) for any given increment in the value of ELCC output. Previous research has found that because ELCC services are relatively labour intensive, and the average incomes of workers in the sector are relatively low, the sector demonstrates employment multiplier effects that are significantly stronger than most other industries.⁷

Improvements in Female Labour Supply

Another important category of economic benefits from accessible ELCC services is the positive impact on labour supply by parents – and particularly mothers. Having access

⁴ Data in this paragraph from Statistics Canada Tables 14-10-0202-01, 14-10-0203-01, 14-10-0205-01, and 14-10-0255-01, for NAICS industry code 6244 ("Child day-care services").

⁵ The rest is represented by other flows of income, including non-wage benefits, depreciation on capital, operating surplus, and indirect taxes on production.

⁶ These inter-sector linkages are discussed in a Canadian context by Fairholm and Anderson (2017), and in a U.S. context by Weiss and Brandon (2010).

⁷ See Fairholm and Anderson (2017), p. 30.

to affordable, high-quality ELCC services gives mothers more confidence and capacity to seek and maintain paid employment. There is a strong correlation between the availability of ELCC services and women’s labour force participation; numerous published studies have documented and measured that positive association.⁸ Research has emphasized that the boost in female labour supply from universal ELCC is experienced most strongly among lower-income households – since high-income households are able to purchase their own child care services privately, in the absence of a more accessible public system. This is one channel through which the provision of universal, accessible ELCC improves economic and social equality: it raises the potential for lower-income households to increase their labour supply, and hence their incomes.⁹ Some studies have found that more accessible ELCC services also increase the average earnings of women workers, not just their participation and employment – through increased average hours of work, and reduced incidence of career interruptions which can have long-run effects on women’s long-run earnings trajectories.

Canada is fortunate to have the benefit of experience from a powerful “natural experiment” regarding the impact of universal ELCC services on female labour force participation, as a result of the introduction of a new near-universal program in Quebec in the late 1990s. Up until that point in history, female labour force participation in Quebec was unextraordinary: slightly lower than average for Canada’s overall labour market. With the introduction of the new program (which initially offered subsidized group care for \$5 per child per day¹⁰), female labour force participation (especially in prime parenting age cohorts) increased notably, and is now the highest in Canada. Research confirms that the introduction of an accessible province-wide system was the key factor driving that increase in participation – and that the resulting gains in employment, output, and income have produced important benefits for the provincial and national economies.¹¹ Fortin *et al.* (2012) also estimate the resulting increases in government revenue (for both the provincial and federal levels of government), and find they exceed (by a ratio of more than 1.5-to-1) the cost (mostly borne by the provincial government) of running the subsidized scheme. We

⁸ See, for example, Herbst and Tekin (2010), Currie (2001), Dixon (2020), and Bivens *et al.* (2019).

⁹ Another reason why universal ELCC has strong pro-equality effects is by enhancing the long-run cognitive and social capacities of children from low-income households, who otherwise would not generally have access to the same quality of care and cognitive development.

¹⁰ That cost has increased over time, and now stands at \$8.35 per day. A scheme to charge higher rates for parents with higher incomes was abandoned in 2019. The number of regulated group care and family day care spots in Quebec is still less than two-thirds of the total number of preschool children in the province (author’s calculations from Friendly *et al.* (In Press) and Statistics Canada Table 17-10-0057-01), so even the Quebec system is not fully universal.

¹¹ See Lefebvre (2009) and Fortin *et al.* (2012).

apply the lessons of Quebec’s experience in our simulations below of the impact of a national universal system on female participation and employment.

Improved Capacities of ELCC Participants

A more complex and hard-to-quantify category of economic benefits from the provision of accessible, high-quality ELCC services is the positive impact of early learning on the cognitive and social capacities of participating children. Modern neurological and psychological research has confirmed that high-quality stimulation and learning during the first six years of a child’s life have a large and lasting impact on their long-term capabilities and life success – since this learning occurs when the largest share of the child’s neural pathways and processes are being developed. The work of Nobel-Prize-winning economist James Heckman has been influential in supporting this consensus (for example, Heckman *at al.*, 2006; Heckman and Masterov, 2007), along with other researchers.¹² Learning after age six has a less significant (but still positive) impact on future life trajectories. For that reason, there is strong scientific evidence that high-quality ELCC services have large long-term impacts on children’s capacities and outcomes across a wide range of variables: including success in later school and post-secondary training, greater employability and incomes, social success and participation, and a wide range of positive health outcomes (including reduced incidence of heart disease, hypertension, diabetes, and other diseases with socio-economic dimensions). Given their diverse and long-term nature, it is inherently challenging to measure and quantify these effects. But researchers across a range of scientific disciplines are finding ways to do that, and their results strongly suggest that high-quality ELCC services have a remarkably diverse and important set of impacts on children’s ultimate life trajectories.

Some of this research has considered historical evidence regarding the long-run cognitive and social consequences of high-quality ELCC learning, measured against outcomes experienced by children who did not receive the same early learning opportunities. This research includes longitudinal surveys following the life paths of children who benefited from government-provided group care in various jurisdictions: such as the U.S. federal government’s World War II “Lanham Act” program (which provided low-cost ELCC to children of parents working in war-related occupations), and other targeted ELCC initiatives in various countries. These studies compare outcomes for children who benefited from ELCC services, in comparison to control populations which did not; most find significant improvements in subsequent education success

¹² For surveys of published literature on these long-run effects of ELCC on childrens’ economic and social success, see McCain *et al.* (2011); Child Care Human Resources Sector Council (2009); Barnett (2008); Executive Office of the U.S. President (2015); and Bivens *et al.* (2016).

(including improved high school graduation rates), employability, incomes, health, happiness, and life expectancy. The results are especially strong for children from lower-income and racialized families.

Herbst's 2014 study of Americans who received care through Lanham Act programs indicates a 1.8% improvement in employability relative to those who did not (after controlling for other determining factors). Longitudinal studies of other targeted ELCC initiatives in the U.S. (such as the Perry Preschool Program, the Abecedarian program, Child-Parent and Head Start programs, and others) confirm improved employment, incomes, health, and other positive outcomes even decades afterward.¹³ Cascio and Schanzenbach (2013) suggest a range of improvement in lifetime earnings for ELCC participants from 1.3% to 3.5%, based on the relationships between ELCC participation, test scores, and eventual earnings.

There are many other channels of economic, health, and fiscal benefits potentially generated by ensuring that children are better able to develop their cognitive and social capacities. For example, governments will enjoy fiscal savings from a population which is healthier, better employed, and less subject to various forms of social and economic crisis. Other important benefits include improved social participation, stronger social cohesion and citizenship, and reduced inequality. Again, these benefits are diverse, diffuse, and long-lasting, and hence inherently challenging to quantify. But they are clearly important, and should be considered in policy-making.¹⁴

Benefit-Cost Ratios and Return on Investment

Some studies have attempted to quantify the various economic benefits resulting from ELCC provision (across the broad categories of benefits discussed above), and compare them to the costs of providing ELCC services. This allows calculation of an estimate of the ratio of aggregate benefits to costs, which can be interpreted as a return on the investment a government makes in providing those services. Some studies conduct this comparison within a shorter-run "multiplier" framework, comparing the expansion in total economic activity to the size of the initial program cost. For example, Warner and Liu (2004) and Bartik (2006) estimate such multiplier ratios in excess of 3-to-1. Studies which incorporate the longer-run impacts of ELCC on female employment and the cognitive capacities of ELCC-trained children often find even larger benefit-cost

¹³ Examples of this research include Calman and Tarr-Whelan (2005), Campbell and Ramey (1995), Heckman *et al.* (2010), Herbst and Tekin (2010), and Reynolds *et al.* (2011).

¹⁴ One Canadian study estimated significant fiscal savings in the province of Ontario from improved high-school graduation rates, in three categories: reduced social welfare spending, better health, and reduced interaction with the criminal justice system (Conference Board of Canada, 2019). Impacts of ELCC experienced through similar channels would likely be even greater.

ratios. Heckman *et al.* (2010) suggest benefits exceed costs by a ratio of between 7-to-1 and 10-to-1. Reynolds *et al.* (2011) project an 11-to-1 ratio. The Executive Office of the U.S. President (2015) proposes a benchmark ratio (based on median findings of multiple studies surveyed) of 8.6-to-1.

It is beyond the scope of this paper to generate an equivalent ratio of benefits to costs associated with the introduction of a universal ELCC system in Canada – not least because the design and hence costs of such a system are still under discussion. We can, however, provide several broad perspectives on the likely scale of benefits that would be generated in each of the three categories identified above. This certainly confirms that the economic benefits to Canada from the introduction of a universal ELCC program would be very large and far-reaching. The rest of this paper now proceeds to provide these estimates.

Estimating Category A Benefits: Expanded ELCC Production

The most immediate and direct source of economic benefits from the expansion of accessible, high-quality ELCC services is the new work and production associated with the increased provision of those services. As described above, child care is already a major industry in Canada: employing almost 150,000 workers (overwhelmingly women), and generating around \$7 billion in annual value-added. The massive expansion of that industry envisioned in plans for a universal ELCC program will create many new jobs, supporting significant new incomes, and adding significantly to national GDP.

This section develops a broad estimate of the potential scale of the economic boost resulting from the contemplated expansion in ELCC services. This estimate in turn requires an estimate of the potential scale and timing of ELCC expansion that could be forthcoming – understanding that the details of the plan need to be worked out between the federal and provincial governments, and other stakeholders (including regulators, ELCC training institutes, municipal governments, and more). Our simulation makes the following assumptions:

- The introduction of universal ELCC services is phased in over a 10-year period.
- The program will provide enough regulated group care spaces to provide care to virtually all children in the 1-5 age category. We assume most children under 1 year old are cared for at home (supported by Canada’s system of paid maternity and parental leave), and that children 6 and older receive most of their care through the existing school system.¹⁵
- As an aspirational benchmark for the desired level of ELCC coverage for 1-5 year-old children, we adopt the standard of coverage currently provided under Norway’s universal ELCC program, which in 2019 enrolled over 92% of preschool children.¹⁶ Norway’s system is widely considered one of the best of any industrial country.¹⁷ It is possible that the program implemented in Canada will not be this extensive; our purpose, however, is to simulate the economic benefits of a very strong universal ELCC system, and hence we use a “best case” role model. If the

¹⁵ Of course, younger school-age children (roughly to age 12) also require before- and after-school care. Our simulations do not consider the impact of the potential expansion of these services.

¹⁶ Statistisk Sentralbyrå (2020).

¹⁷ The OECD-average level of coverage for preschool children is around 70% (UNICEF Canada, 2020). Canada has among the lowest coverage of any OECD country.

eventual Canadian program is less extensive, then its economic benefits will be moderated accordingly (but will still be substantial).

- We assume that the current network of regulated child care provision (in both group child care centres and regulated family day care providers) continues to operate at its existing scale. Incremental spaces, created through the new universal program, are measured on top of those existing spaces.¹⁸
- We estimate that a combination of group child care centres and regulated family day cares currently provide a total of about 685,000 spaces for Canadian children aged 1 to 5.¹⁹ That represents a coverage rate of 35%, relative to the current population of 1-5 year olds.

Table 1				
Growth in Spaces and Staffing, ELCC Expansion				
(thousands)				
	1-5 Population (000)	Desired Coverage ¹ (000)	Cumulative New Spaces (000)	Cumulative New Staff ² (000 FTE)
2020	1954	1798	1113	196
2030	2047	1883	1199	211
Per Year:			120	21
Source: Author's calculations as described in text.				
1. Assumes 92% coverage.				
2. Assumes 1 educator per 6 children, and 2 overhead staff per 50 children; all 5-year-olds and half of 4-year-olds in part-time care.				

On the basis of those assumptions, we can generate a portrait of the potential scale of expansion implied by a ten-year introduction of universal ELCC services for 1-5 year-old children, as summarized in Table 1. At present there are approximately 1.95 million children aged 1-5 in Canada. To provide ELCC coverage for 92% of them would require close to 1.8 million spaces. Net of the 685,000 existing spaces, an additional 1.1 million spaces are required. However, the phase-in of universal ELCC would require ten years; in the meantime, the population of 1-5 year olds will have grown by another 100,000,

¹⁸ This is a conservative assumption; experience from other jurisdictions implementing universal group care services indicates that family day care provision tends to decline, as parents shift their children to better-resourced public programs. In that case, the scale of expansion of formal centre-based care would be even larger than simulated here.

¹⁹ This estimate is based on data provided by Friendly *et al.* (In Press). Friendly *et al.* provide a direct tally of the number of regulated group care spaces for 1-5 year olds by province. However, data on regulated family day care spaces by age category is unavailable; only total figures are available. Our estimate therefore assumes that two-thirds of current family day care spaces are used by 1-5 year olds (and the rest by children of other ages).

according to Statistics Canada population projections. Maintaining the same 92% coverage ratio, the number of additional spaces required increases to 1.2 million. If those new spaces were constructed at a steady pace over the ten-year period, it would require a 120,000 unit expansion in spaces each year.

In addition to that rapid expansion of physical capacity for the universal ELCC system, there will also be a rapid increase in employment within the ELCC industry. We estimate the increased staff requirements of the expanded system on the basis of a benchmark staffing ratio: one educator for every six children (a weighted average of regulated staff ratios for infant, toddler, and preschool care). We also assume two additional overhead staff (one administrator, and one cook) for every 50 children. We adjust staffing to reflect the fact that children in full-day kindergarten (which is provided to 5-year-olds in most provinces, and to 4-year-olds in some provinces) would require ELCC care only on a half-time basis (for before and after-school care, and in some cases for lunch). On the basis of these ratios, we anticipate that some 211,000 new staff (on a full-time-equivalent basis) will be required in the expanded system by the tenth year of the phase-in. This implies a steady annual rate of hiring of just over 20,000 new ELCC workers per year. Such a rapid and sustained expansion in the child care workforce will also require major investments in training and certification infrastructure. New hiring resulting from this expansion would add about one-tenth of one percent to national employment per year, over ten years – boosting cumulative employment by about one percent at the end of the decade. That direct hiring would thus make a significant contribution to rebuilding employment levels after the COVID-19 pandemic.²⁰

The impact of the introduction of universal ELCC services on Canada's GDP performance can be estimated as follows (summarized in Table 2). As reported above, current group child care system (before the pandemic began) equalled just under 150,000 positions. Reaching the desired 92% coverage benchmark would require 211,000 new workers, representing a 142% expansion in the overall scale of the system over ten years. Labour is the major input to production in this sector, so we can assume that value-added increases by a similar proportion. This implies an increase in annual GDP produced in the child care sector of some \$9.6 billion by the time the ten-year phase-in is complete. Assuming the expansion is smoothly staged over the decade suggests that the implementation of a universal ELCC system would add about \$1

²⁰ As of October 2020, aggregate employment in Canada was 635,000 positions lower than in February, before the pandemic hit. Cumulative ELCC hiring over this ten-year phase-in period would thus offset about one-third of the *remaining* gap required to reach pre-pandemic employment (but, of course, experienced over a long period of time, during which the labour force will continue to grow).

billion *directly* each year to Canada’s GDP during the course of its phase-in.²¹ And annual GDP would be close to one-half percentage point higher at the end of the 10-year phase-in period.²²

Table 2	
Direct GDP Effects of ELCC Expansion	
Current GDP (2019)	\$6.8 billion
Cumulative Expansion	142%
Estimated New GDP	\$9.6 billion
New GDP per year	\$0.96 billion
Source: Author's calculations from Statistics Canada Tables 14-10-0203-01, 14-10-0201-01, and 36-10-0594-01, as described in text.	

Of course, it is not just ELCC educators and support staff who would experience new job opportunities as a result of the ten-year introduction of a universal system. Other jobs would also be created by the roll-out of the new system, driven by significant expenditures on other goods and services resulting from a much larger ELCC program. For example, major capital expenses will be required to enhance the physical capacity of ELCC providers, including new and expanded facilities. That will provide a significant spur to new construction and retrofit activity in all parts of the country.

Table 3	
Construction Work Associated With ELCC Expansion	
New Spaces Required by 2030	1.2 million
Space per Child (sq. ft.)	100
Construction Cost (\$/sq.ft.)	\$250
Total Construction Cost (\$bil)	\$30.0
Cost per Year (\$bil)	\$3.0
Construction Job Intensity (jobs/\$mil)	2.76
Person-Years of Construction Work	82,850
Ongoing Jobs (over 10 years)	8,285
Source: Author’s calculations from Statistics Canada Tables 14-10-0201-01 and 33-10-0007-01, as described in text.	

We estimate the potential positive impact on construction work from the introduction of a universal ELCC system as follows, with results summarized in Table 3. As explained above, 1.2 million new spaces would be required to reach the targeted 92% coverage

²¹ As described below, this is just one of several ways in which the ELCC expansion will boost GDP.

²² The proportional boost to GDP is smaller than the equivalent cumulative increase in employment due to the relative labour-intensity and low average earnings typical of ELCC services.

ratio for 1-5 year-old children after 10 years. We assume a benchmark average internal space requirement of 100 square feet per child. This is a cautious benchmark, based on analysis of regulatory requirements in various jurisdictions regarding minimum program space for child care provision, supplemented by other space needed for administration, support services, and general building features.²³ Current commercial construction cost benchmarks in Canada suggest typical basic construction costs for public-use facilities (such as education buildings) of around \$250 per square foot.²⁴ This benchmark does not include the cost of land, nor of specialized fixtures and equipment required in a child care setting; hence these construction cost estimates should not be interpreted as reflecting the full capital costs of developing new centres.²⁵ In some cases, new spaces can be provided by retrofitting existing buildings, rather than building new ones – but costs per square foot for this work are significant, as well.²⁶ On the basis of those assumptions, construction costs for developing 1.2 million new ELCC spaces over 10 years would amount to about \$3 billion per year. That flow of work would support a steady ongoing demand (assuming a construction schedule that spreads the work evenly over the decade) for close to 8,300 jobs in the construction industry lasting for that entire ten-year period.

Thinking of child care as an important industry in its own right also leads us to consider other dimensions of the sector’s economic footprint. For example, while direct labour (of educators and other staff) is the most important productive input to the production of ELCC, this industry also purchases many other inputs, supplies, and services: including specialized equipment and materials, utilities and maintenance work, and services such as accounting and training. The increased demand for these inputs will in turn boost output and employment throughout the ELCC sector’s supply chain – further amplifying the economic stimulus arising from the introduction of a universal program. We call these linkages “upstream” spillovers, since they extend the expenditure channels associated with ELCC provision up through its diverse supply

²³ Spatial requirements for child care centres are discussed in Beach and Friendly (2005), *Children’s Services*, City of Toronto (2016), and *Community Care Facilities Licensing* (2020).

²⁴ See, for example, Altus Group (2020) and Statista (2020).

²⁵ Government guidelines for estimating ELCC capital costs suggest higher benchmarks for more comprehensive facilitation. See, for example, B.C. Ministry of Children and Family Development (2020), which prioritizes projects with total capital cost of \$40,000 or less per space (or \$400 per square foot), including construction, land, and specialized equipment – and many projects are more expensive than that. Higher construction, furnishing, and equipment costs, of course, would generate even larger spin-off economic benefits than are estimated here.

²⁶ Yalnizyan and McCuaig (2020) indicate that the construction capital cost associated with the implementation of full-day senior and junior kindergarten in Ontario was lower than this, although most new kindergarten spaces could be accommodated in existing school buildings. The roll-out of universal ELCC for earlier age cohorts will certainly require more significant capital investments.

chain of businesses and services which will receive new orders as a result of the ELCC sector's expanded activity.

Table 4		
Upstream & Downstream Spillovers of Child Care Expansion		
	GDP (\$billion)	Jobs (000)
Expanded ELCC Over 10 Years	\$9.6	211
Indirect (Supply Chain) Demand ¹	\$2.0	16
Induced (Downstream) Demand ¹	\$7.4	61
Total Spillover Growth	\$9.4	78
Spillover Growth per Year	\$0.9	7.8
Source: Author's calculations from Statistics Canada Tables 14-10-0203-01, 14-10-0201-01, and 36-10-0594-01, as described in text. Sub-totals may not add due to rounding.		
1. Assumes input-output linkages equivalent to primary/secondary education.		

These upstream supply chain linkages can be quantified on the basis of Statistics Canada input-output statistics, which track the scale of purchases made by one industry from others. The input-output data does not break out child care centres from other, broader industries. So we assume that the supply chain profile of child care centres would be similar to that of the broader primary and secondary school system, and thus we apply the same input-output parameters. According to Statistics Canada, each \$1 billion in value-added in this sector requires over \$200 million in input purchases from supply chain industries.²⁷ As explained above, the creation of 1.2 million new ELCC spaces over a decade would expand GDP in the child care sector by close to \$10 billion, and thus stimulate \$2 billion (by the end of that decade) in additional input purchases per year by the sector (see Table 4). Based on aggregate output/employment ratios in the overall economy, that translates into about 16,000 new jobs in the various industries which supply the ELCC sector.²⁸

²⁷ Statistics Canada Table 36-10-0594-01. Child care is a relatively labour intensive industry, in which a larger share of the cost of total output reflects direct activity within child care centres, and hence these upstream supply chain effects are smaller than for other industries which depend more substantially on input purchases of intermediate products and services.

²⁸ Construction jobs would be included within that total new work stimulated by expanded input purchases by the child care centre, since construction is an input; however, input-output statistics account for consumption of construction products (and other long-lived capital assets) on the basis of depreciation (not current construction), and hence the treatment of construction jobs implied in this estimate is not comparable to the estimate of new construction jobs summarized in Table 3.

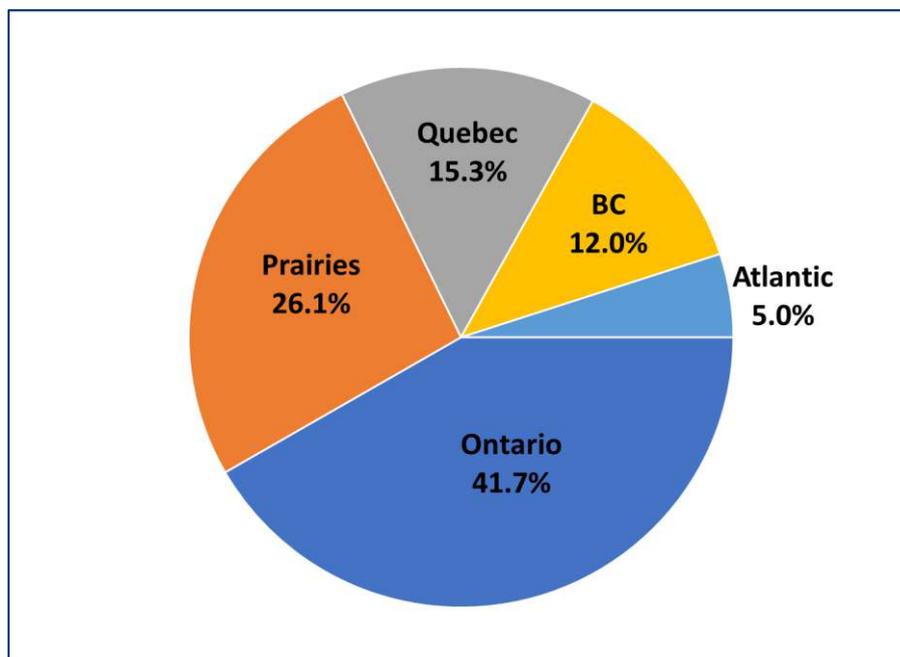
Another channel of indirect economic benefit from the expansion of ELCC services is the positive impact on “downstream” consumer goods and services industries caused by the new jobs and incomes generated by ELCC expansion. With over 20,000 new ELCC workers being hired each year, the subsequent spending by those workers – on the whole range of consumer goods and service industries (from housing to retail to hospitality to personal services) – will stimulate additional production, work, and incomes in those sectors. Statistics Canada’s input-output system also generates estimates of the intensity of these downstream effects; again we assume that the strength of those channels is comparable to Statistics Canada’s estimates of downstream (or “induced”) spending effects for primary and secondary education. This evidence suggests that each \$1 billion in value-added in child care would stimulate about \$775 million in additional downstream consumer spending (including second-order effects arising from consumer spending by supply chain workers and workers in downstream industries). Over the ten-year expansion of ELCC, this would generate an additional \$7.4 billion in GDP in those downstream industries, supporting over 60,000 additional jobs (Table 4).

It should be noted that these estimates of indirect economic benefits, both upstream and downstream, depend on many factors, including the state of the broader national economy. When the economy is strong and most workers are employed, these indirect effects will be smaller: in that case, even in the absence of stimulus (provided, in this case, by the expansion of ELCC services) those workers would likely be employed in alternative vocations anyway. On the other hand, when the economy is operating below its productive potential (resulting in widespread unemployment), then it cannot be assumed that workers in those upstream and downstream industries would be employed anyway, and hence the spillover economic benefits (or “multiplier” effects) from a spending stimulus will be stronger. In the wake of the COVID-19 pandemic and associated recession, the latter of those two cases is obviously more applicable in Canada today and in the immediate future, and hence it is appropriate to take these indirect upstream and downstream benefits into consideration.

Including both upstream (supply chain) effects and downstream (consumer spending) effects, the expansion of child care services envisioned above would generate a combined \$9.4 billion per year in indirect upstream and downstream purchases after ten years, supporting some 78,000 additional jobs. That is in addition to the \$9.6 billion in new GDP and 211,000 full-time-equivalent positions estimated to be created within the ELCC sector itself. On an annual basis (assuming the ELCC expansion is spread evenly over the decade), these indirect benefits would thus stimulate additional GDP growth of close to \$1 billion per year, and additional job creation of about 8,000 new jobs per year.

It is interesting to consider the regional distribution of the direct and indirect economic benefits arising from the introduction of a major universal ELCC program. By its nature, since the program would be national in scope, the direct jobs, new construction, supply chain business, and other economic benefits would be shared broadly across the country. However, since existing ELCC services are unevenly available in different parts of Canada, reaching a common benchmark for ELCC coverage implies different degrees of expansion in different provinces. Quebec and some Atlantic provinces have the strongest systems today, and hence would require a relatively smaller investment to reach any desired threshold of universal coverage that was ultimately specified. These regions would still experience major injections of spending power and job-creation.²⁹ But the scale of required ELCC expansion (and hence resulting gains in employment and economic activity) would be proportionately greater in regions with underdeveloped ELCC systems today. Chief among those regions are the prairie provinces and Ontario, all of which have existing ELCC coverage ratios below 30% – significantly lower than in other provinces. Achieving strong coverage in those provinces would thus generate proportionately greater employment and economic benefits there.

Figure 1. Regional Distribution of New ELCC Employment



Source: Author's calculations from Statistics Canada Table 17-10-0057-01 and Friendly et al. (In Press), as described in text.

²⁹ And presumably, since these provinces have already invested in more ambitious ELCC networks, they would also receive fiscal allowances from the federal government reflecting those higher initial expenditures.

Figure 1 illustrates the estimated provincial distribution of new direct jobs associated with the roll-out of a national universal system.³⁰ (This distribution of new jobs depends on both the proportional expansion of ELCC services required in each region, as well as the overall population of each region.) Ontario would receive over 40% of those new jobs, somewhat higher than its share of national population. And the three prairie provinces would receive over one-quarter of the new jobs, much higher than their share of the population. These same provinces will also benefit disproportionately from the other economic benefits arising from the universal ELCC system, including the boost to women’s labour force participation and employment (since they currently record below-average female participation rates in the core parenting-age cohorts, as discussed below) and the boost to provincial government revenues. The prairies and Ontario will thus be the biggest “winners” from this program; accordingly, their governments should be expected to enthusiastically support the program.

Another regional dimension of the roll-out of ELCC is the benefit for smaller towns and rural areas, many of which presently lack any formal group ELCC services at all. Again, the nature of a universal program implies that ELCC services will be established in all communities where the need exists. Hence new direct and indirect jobs associated with this work will also be created in disproportionate numbers in smaller towns and rural regions. And the benefits of these new facilities for female labour force participation (discussed further below) will be especially appreciated in communities which currently have few if any existing ELCC services. For all of these reasons, the phase-in of a national universal ELCC system would have valuable impacts for regional economic opportunity across Canada.

³⁰ This breakdown assumes application of common coverage threshold and staffing ratios in each province.

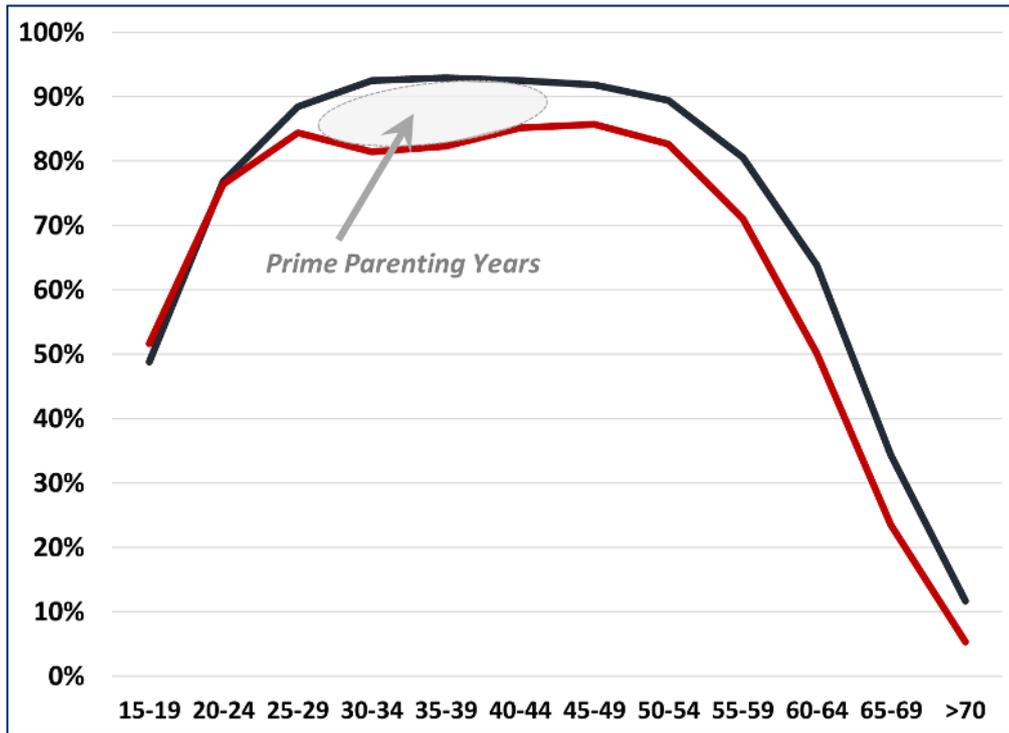
Estimating Category B Benefits: Improved Female Labour Supply

Women's participation in paid work has increased significantly over the past half-century, from around 45% of women over 15 in the mid-1970s, to over 60% by 2019 – before the COVID-19 pandemic shocked Canadian labour markets.³¹ By 2019, women accounted for almost half (47%) of the total labour force. The gap between women's and men's participation has closed dramatically: from a 30-point difference in the mid-1970s to less than 10 points by 2019. The closing of that gap resulted both from women's increased participation and men's reduced participation (which fell over the same period due to many factors, including earlier retirement and the growing share of the population who are over 65). The growth of women's paid work supply was a powerful stimulus to Canadian employment, economic growth, and family incomes. Younger women led the increase in participation, as changing social attitudes about women's economic and family roles encouraged expanded paid work effort. Indeed, for the youngest cohort of workers (below 25 years of age), there is no labour force participation gap remaining between men and women.

However, this progress in enhancing women's participation has been uneven, and a particularly weak area has been participation for women in the prime parenting ages. Figure 2 illustrates participation rates by gender and age cohort for 2019. Unlike men, whose labour force participation rises steadily from ages 15 through 30, and then remains constant (above 90%) until the mid-50s, women's participation declines after age 25. It remains well below men's participation until recovering somewhat in the late-40s. The average age for women to have their first child is now almost 30 years old (Provencher *et al.*, 2018). Therefore, the peak ages for female parenting of pre-teen children are now between 25 and 50. Within that range, the gap between women's and men's participation is most marked, and the absence of available, affordable, high-quality ELCC is a critical factor suppressing women's paid work in those age brackets. Women in their 30s are especially less likely than men to participate in the labour force, with the participation gap between men and women swelling to over 10 percentage points. After that the gap moderates, until rising again for workers over 60.

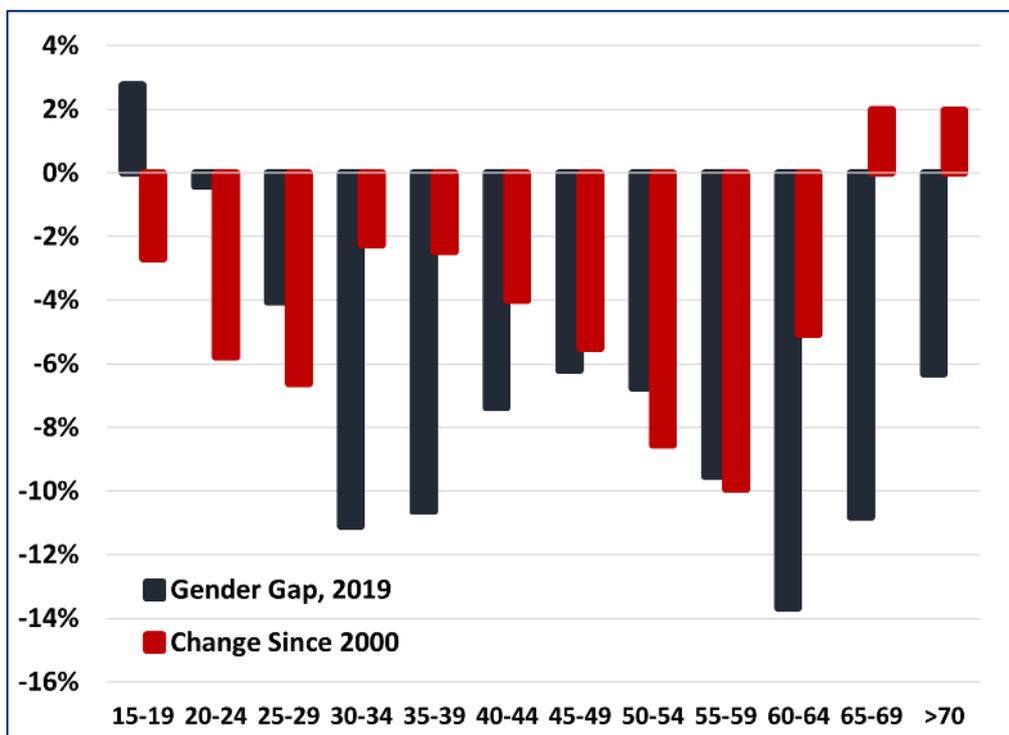
³¹ All data in this section calculated from Statistics Canada Table 14-10-0287-01.

Figure 2. Labour Force Participation by Age and Gender, 2019



Source: Statistics Canada Table 14-10-0327-01.

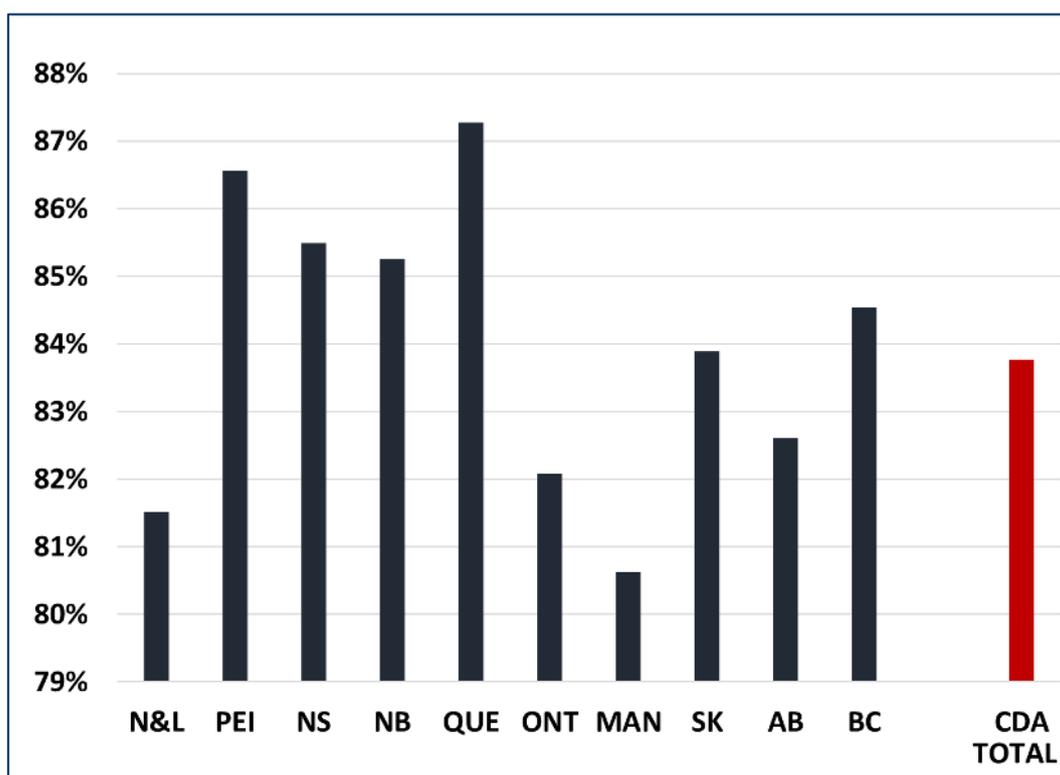
Figure 3. Labour Force Participation Gap and Change by Age



Source: Author's calculations from Statistics Canada Table 14-10-0327-01.

Not only is the gender participation gap currently very wide for women in prime parenting years, it is also within that demographic cohort that the *least* progress has been made in reducing the participation gap since the turn of the century. As illustrated in Figure 3, the gap between male and female participation declined for all age cohorts under age 65 since 2000. But it has declined the *least* for women in their 30s – by just 2 percentage points since 2000, half the decline in the overall participation gap. This further attests to the impact of inadequate ELCC services in suppressing women’s paid work. Cultural attitudes among these age cohorts are generally very amenable to women’s full engagement in the formal labour market, but the challenges of combining paid work and unpaid home duties prevent that potential from being realized.

Figure 4. Prime Parent Age Female Labour Force Participation by Province, 2019



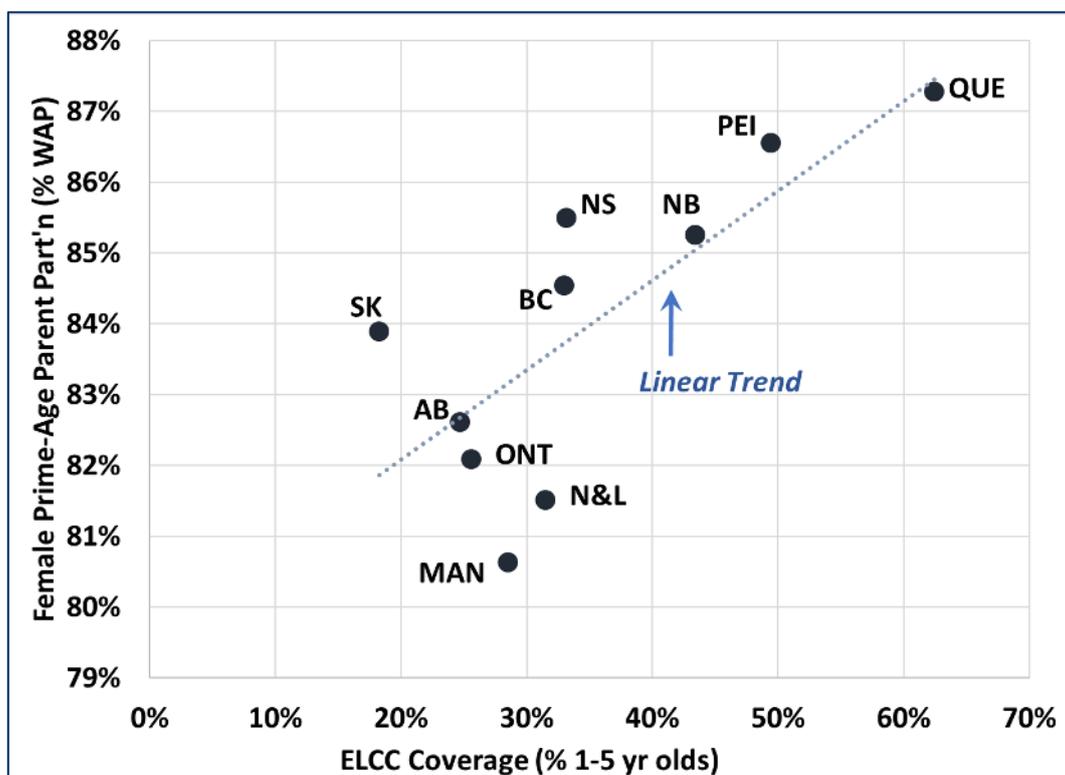
Source: Author’s calculations from Statistics Canada Table 14-10-0327-01.

The importance of child care policy in determining women’s labour force participation is also starkly visible across provinces, as well as demographic categories. Figure 4 illustrates labour force participation rates by province for women between 25 and 50 (prime parenting ages) in 2019. Participation is highest in Quebec, followed by PEI. Not coincidentally, these provinces have the strongest regulated ELCC networks in Canada. In Quebec there are enough regulated spaces (in formal ELCC centres and regulated family child care) to provide for an estimated 62.5% of children aged 1-5; in PEI, this

coverage ratio is just below 50% (second highest in Canada).³² In contrast, female prime-parent-age participation is lowest in Manitoba, Newfoundland and Labrador, Ontario, and Alberta. Again, these results are broadly correlated with relatively poorly developed ELCC systems: Canada’s weakest ELCC networks at in Saskatchewan, Manitoba, Ontario and Alberta, where ELCC coverage ratios are all below 30%.

Figure 5 plots regulated ELCC coverage rates by province (along the horizontal axis) versus labour force participation rates for prime-parent-age women (between 25 and 50, on the vertical axis). It confirms the strong positive correlation between ELCC supply and women’s labour force participation.

Figure 5. ELCC Coverage & Prime-Age Parent Female Participation by Province, 2019



Source: Author’s calculations from Statistics Canada Tables 14-10-0327-01 and 17-10-0057-01, and Friendly et al. (In Press), as described in text.

This correlation can be statistically tested, as summarized in Table 5. In the middle column, female labour force participation for 25-50 year-olds in 2019 is regressed on our estimates of regulated ELCC coverage for 1-5 year old children. The coefficient on ELCC coverage suggests that a 10 percentage point increase in the coverage ratio increases prime parent-age female labour force participation by 1.3 percentage points.

³² Estimated regulated care coverage for 1-5 year olds by province estimated based on data in Friendly et al. (In Press) and Statistics Canada Table 17-10-0057-01, as described in footnote 14.

The coefficient is strongly significant,³³ and the simple regression explains 56% of interprovincial variation in participation for 25-50 year-old women. An alternative approach is summarized in the right column, which reports a regression of the *difference* between male and female participation in the 25-50 age cohort on estimated ELCC coverage.³⁴ The resulting coefficient (also highly significant) suggests a slightly stronger relationship: a 10-point increase in ELCC coverage reduces the participation gap by 1.7 percentage points. In this case, differences in ELCC coverage explain half of the interprovincial variation in the gender participation gap.

Table 5			
Linear Regression of Participation on ELCC Coverage			
		Dependent Variable	
		Parent Age Female Participation	Parent Age Participation Gap
Constant	Coefficient	0.795629	-0.13066
	Standard Error	0.014642	0.021943
	t-statistic	54.33788	-5.95459
Slope			
	Coefficient	0.126242	0.166967
	Standard Error	0.039374	0.059007
	t-statistic	3.206222	2.829623
R2 Value		0.56236	0.500211
F-statistic		10.27986	8.006768
Source: Author's calculations from Statistics Canada Tables 14-10-0327-01 and 17-10-0057-01, and Friendly et al. (In Press), as described in text.			

This evidence (consistent with the published research reviewed above) suggests that introduction of universal childcare for children aged 1 to 5 would have a significant impact on female labour force participation in the prime parenting-age cohort. To generate a broad estimate of the potential size of that lift in participation in paid work, we consider two scenarios: a “low” case in which the gap between male and female participation in the prime parent-age cohort is reduced by half as a result of the

³³ At the 1% level of statistical significance.

³⁴ Using the gender participation gap (rather than the female participate rate) as the dependent variable helps to control for province-specific factors which might have equal influence on both male and female participation rates.

provision of universal child care, and a “high” case in which that gender participation gap is eliminated entirely.

In 2019, the aggregate gender participation gap in the 25-50 age cohort was 8 percentage points, and the estimated national regulated ELCC coverage rate for 1-5 year-old children was 35%. Achieving the 92% coverage target discussed above would thus lift the coverage rate by 57 percentage points. According to the regression results reported above, this implies an increase in prime parenting-age female participation of 7.2 to 9.5 percentage points.³⁵ Those results are consistent with the “high” scenario, with a complete harmonization of labour force participation between women and men in those age groups. Such a harmonization has already been achieved for younger workers (under 25). In that light, projecting a full harmonization in participation rates is not unrealistic. Nevertheless, our “low” scenario provides a sensitivity case, predicting the employment and economic impacts in the event that the lift in female participation is more modest.

There is a second category of women’s employment benefits that would also be generated by the expansion of accessible ELCC services. Among employed people, women are less likely to work full-time hours than men. Across all age groups, about 75% of employed women work full-time, significantly lower than the 87% of employed men. And part-time work becomes even more common for women between 35 and 45 years of age, some of whom are balancing paid work with caring for children: their part-time employment share is 14 percentage points higher than for men of the same age. Accessible ELCC services make it more possible for employed women to work full-time hours. Not surprisingly, therefore, the gender gap in part-time intensity of employment is smaller in provinces with broader child care coverage (such as Quebec and PEI). This constitutes a second category of employment gains from the expansion of ELCC services. We assume that a shift to full-time from part-time employment produces an increase in total hours worked equal to one-half of a full-time equivalent position.³⁶ Similar to our treatment of female participation, our “high” scenario assumes that the gender differential in the full-time proportion of employment is eliminated entirely. The “low” scenario assumes that the differential is reduced by half.

Table 6 lists the estimated combined impact on female labour supply in the prime-parenting-age cohort of these two distinct channels of benefit: more labour force participation, and a greater ability to work full-time hours. Reducing or closing the

³⁵ Multiplying the 57 point improvement in the 1-5 child care coverage ratio by the two slope coefficients from Table 5 (.126 and .167) generates a range of improved female participation or reduced gender participation gap of between 7.2 and 9.5 points.

³⁶ This assumes that part-time workers, on average, work half-time hours.

gender participation gap for women between 25 and 50 would increase female labour supply by between 250,000 and 500,000 potential workers. Reducing or closing the gender gap in full-time employment intensity would add almost 150,000 to 300,000 additional (full-time equivalent) workers. Combined, the two channels of benefits would thus increase female labour supply by between 390,000 and 780,000 positions. These estimates do not consider any potential impacts on female labour supply outside of that prime-parenting-age (25 to 50) cohort. There could be additional increases in female labour supply in these other age groups, as well: including younger women who have children earlier than the Canadian average, and older women who may have sacrificed paid work effort to care for grandchildren. So it is possible that the increase in women’s labour supply would be even larger than indicated in Table 6.

Table 6		
Improved Female Participation		
(thousands)		
	Scenario	
	Low	High
Stronger Participation	246	493
More Full-Time Work (FTE)	144	287
Total	390	780
Source: Author's calculations from Statistics Canada Table 14-10-0327-01, as described in text.		

The enhanced ability for women to work, particularly in the prime parenting age cohort, will in turn support a wide range of economic and fiscal benefits. We develop broad estimates of the order of magnitude of these benefits as follows, summarized in Table 7. We assume that of the increased labour supply by women, the proportion who become employed is equivalent to the average recorded over the past decade (when the female unemployment rate averaged 6.9%). The expansion in women’s labour supply will be experienced gradually over several years, as the expansion of child care services is implemented, and the operation of normal macroeconomic policy levers should ensure that most of these new additions to the labour force are able to find work (and hence that unemployment does not increase).³⁷ On that basis,

³⁷ Of course, women’s unemployment is presently higher than this long-term average due to the impacts of the COVID pandemic; it equalled 8.5% in October 2020. But women’s unemployment was only 5.2% in 2019, before the pandemic hit. So as a benchmark for long-run unemployment, the 10-year-average female unemployment rate (6.9%) is cautious, and allows for a period of elevated unemployment as a result of the pandemic before unemployment rates decline.

expanded ELCC services would lead to an increase in female employment of between 363,000 and 726,000 positions.

Table 7		
Macroeconomic Benefits of Women's Enhanced Participation		
	Scenario	
	Low	High
New Entrants (000)	390	780
Employed Portion	93.1%	93.1%
Employed (000)	363	726
Productivity (\$000 per employee)	\$120.9	\$120.9
New GDP (\$billion)	\$43.9	\$87.8
New Labour Income (\$bil)	\$22.3	\$44.6
New Tax Revenue ¹ (\$bil)		
Federal	\$6.1	\$12.3
Provincial	\$5.8	\$11.6
Total	\$12.0	\$23.9
Source: Author's calculations from Statistics Canada Tables 10-10-0015-01, 14-10-0017-01, 14-10-0022-01, 14-10-0327-01, and 36-10-0103-01, as described in text.		
1. Includes social contributions.		

The goods and services produced thanks to this increase in female employment will make a significant contribution to aggregate GDP in Canada (also summarized in Table 7). We apply the average labour productivity recorded in Canada's economy in 2019 (measured in value-added per employed worker) to the estimated number of new workers employed. This suggests an increase in national GDP from increased female employment of \$44 to \$88 billion per year. Higher output, in turn, provides a foundation for both higher family incomes and higher government revenues. On the basis of the 2019 labour compensation share of total GDP, about half that increase in GDP will show up in increased labour incomes (implying average annual compensation of around \$60,000 per additional employed worker). At the same time, governments (at both the federal and provincial levels) automatically collect a significant share of new GDP through the full range of taxes and social contributions (including EI, CPP, and workers' compensation premiums). We project an increase in combined government revenues (roughly equally split between the federal and provincial levels) of between \$12 and \$24 billion per year resulting from the increase in female participation and employment.

Of course, the achievement of these increased levels of participation, employment, income, and tax revenues will occur over several years as a universal ELCC program is gradually implemented. If we assume that the employment gains are attained over the

same ten-year period considered above, then increased female employment would increase the annual rate of Canada's GDP growth during this period by about 0.2 to 0.4 percentage points per year through the phase-in period.³⁸ This is in addition to the GDP gains resulting from the increased production of ELCC services described in Tables 2 and 4.

³⁸ Once the higher level of female participation and employment is attained, then this extra stimulus to annual GDP *growth* is exhausted – but the *level* of GDP (and associated flows, such as labour compensation and government revenues) is permanently higher.

Estimating Category C Benefits: Improved Capacities of ELCC Participants

Perhaps the most important, but difficult to quantify, category of economic benefits arising from the provision of universal, high-quality ELCC is the lasting impact on the capacities of children who receive these services in their early years. As surveyed above, published literature has found strong positive impacts on the cognitive and social skills of children receiving high-quality ELCC care, which in turn generate lasting improvements in their social and economic opportunities, enhanced life success, and reduced incidence of ill health, unwanted pregnancy, criminality, and other disfunctions. Broader social benefits include stronger social cohesion and sense of citizenship, more respect for the rights of children, and reduced inequality. Concrete economic manifestations of these benefits include higher income levels for children who participate in high-quality ELCC, superior educational and productivity outcomes, improved government revenues, and reduced fiscal expenses (for health care, social welfare, police and corrections costs, and others). The benefits are found to be most evident for children from lower-income households, and this constitutes another important channel through which universal ELCC improves social equality. Understandably, attempting to quantify these wide-ranging and long-lasting benefits is challenging, given their heterogeneous nature and long-run effect, but rigorous research in Canada and elsewhere (some representative examples of which were cited above) confirms that these benefits are both substantial and verifiable.

It is beyond the scope of this paper to provide an original contribution to our knowledge regarding these broader and long-run economic and social benefits of universal high-quality ELCC. But in the spirit of providing a broad “order of magnitude” of the potential scale of these benefits, consider three simple illustrations of their potential impact:

i) Increased earnings capacity. Several long-term longitudinal studies have identified a lifetime benefit in personal incomes for children who receive high-quality ELCC, compared to peers who do not. One analysis of published literature suggests a representative range of estimated lifetime earnings premia for children who received ELCC of between 1.3 and 3.5%.³⁹ Of course, these benefits in earnings take decades to

³⁹ See Cascio and Schanzenbach (2013).

be fully realized, since ELCC-educated children must finish the rest of their schooling (including post-secondary training), take up new positions, and then receive the higher wages. If we assume that thanks to the expansion of universal ELCC services, an additional 57% of new labour force entrants benefited from quality ELCC provided through the program (equal to the targeted 92% coverage rate less the existing estimated 35% of children who already receive this care),⁴⁰ then 57% of the labour force would eventually receive this earnings premium of 1.3-3.5% of wages. In 2020 terms (removing the effect of inflation and population growth during the intervening period), this translates into enhanced aggregate earnings of between \$15 billion and \$35 billion per year.

ii) Increased productivity. The higher earnings eventually received by ELCC participants are ultimately based on the higher productivity of employed adults who received high-quality ELCC in their early lives (and then achieved stronger educational and employment outcomes as a result). But only a portion of those productivity gains are reflected in higher wages. Based on the current share of labour compensation in total output, the total gain in GDP implied by this boost in productivity would be \$30-70 billion per year. Using an alternative methodology, the U.S. Council of Economic Advisers estimated that every 10-percentage-point increase in enrolment rates in ELCC ultimately supports an ongoing increase in national GDP of .125% to 0.35%.⁴¹ For the 57-point increase in enrolment coverage envisioned in the simulations of universal ELCC expansion, this implies a potential gain in Canadian GDP of between \$16 billion and \$45 billion in 2020 terms. By either method, the productivity gains generated by an ELCC-educated workforce are substantial.

iii) Reduced health, social service, and criminal justice costs. There are many indicators of the correlation between education and income levels and individuals' experience with ill health, social services, income supports, and the criminal justice system. People with improved education and earnings experience better health on average, are less likely to depend on income supports and other social programs through their lives, and much less likely to be arrested, convicted, or imprisoned. Again, the diverse and long-term nature of these impacts make them challenging to quantify. Consider just one chain of causation, however: ELCC participants are more likely to graduate from high

⁴⁰ Since group ELCC services are currently received disproportionately by children from higher income households, the new group (which would not have received ELCC without the new universal program) represents children for whom the cognitive and capacity benefits are most evident; indeed, the scientific literature indicates those benefits are especially important for children from lower-income households.

⁴¹ See Executive Office of the U.S. President (2015), p. 34, which assumed a 12.7-point increase in ELCC enrolment; we have scaled the assumed benefits to correspond to the simulated 57-point increase in ELCC coverage described above.

school,⁴² and individuals who do not finish high school incur average public health expenses \$800 per year per person (or 70%) greater than those who do not (Conference Board of Canada, 2019, p. 15). Applied to a Canadian context, this suggests potential health care savings of \$2.5 to \$5.5 billion per year (in 2020 terms),⁴³ once the increased flow of ELCC participants through a universal program has been fully reflected in the overall population. Other social and fiscal benefits could be even more significant.

The aim of these three illustrations is to provide only broad, benchmark estimates of the potential scale of long-run economic, social, and fiscal benefits generated from investments in universal ELCC. Given the inherent uncertainty of these estimates, we do not include them in our summary estimates (presented below) of the combined and more immediate economic and fiscal benefits generated by ELCC expansion. By any measure, investments in the health, security, and education of children will pay off in enormous and sustained improvements in the well-being, cohesion, and prosperity of Canada's economy and society. While it is challenging to quantify these benefits, they are significant, and they are substantial. And they reinforce the case for moving forward quickly with a universal ELCC program.

⁴² U.S. studies have found high school graduation rates 8 to 17 percentage points higher for participants in quality ELCC programs; see Executive Office of the U.S. President (2015).

⁴³ Utilizing the same increment in high school graduation as cited in the previous footnote.

Conclusion: Combined Benefits and Policy Implications

The preceding discussion has identified and broadly quantified the order of magnitude of three distinct categories of economic benefits resulting from the implementation of a high-quality universal ELCC system in Canada. Table 8 provides a summary of those estimated benefits.

Table 8				
Summary of Economic Benefits from Implementation of Universal ELCC				
Nature of Benefit	Time Frame	GDP (\$billion)	Employment (000)	Government Revenues (\$billion)
Category A: Economic Footprint of Expanded ELCC Production				
Direct Production	Over 10 Years	\$9.6	211	\$2.5
Construction		-	8	-
<u>Indirect Effects</u>		<u>\$9.4</u>	<u>78</u>	<u>\$2.5</u>
Sub-Total ¹		\$19	290	\$5
Category B: Improved Female Labour Supply				
Increased Participation	Over 10+ Years	\$44-88	230-460	\$12-24
<u>Increased Full-Time Work (FTE)</u>			<u>135-270</u>	
Sub-Total			363-726	
TOTAL A + B		\$63-107	650-1015	\$17-29
Category C: Improved Capacities of ELCC Participants				
Better earnings, productivity, health/social/fiscal outcomes for ELCC participants.	Very Long-Term (20+ Years)	\$30 or more?		
Source: Author's calculations as described in text.				
1. Estimated sub-totals adjusted to exclude double-counting between construction and supply chain impacts.				

Undertaking to provide high-quality, accessible, professional ELCC services to every family that wants them represents a very substantial investment of resources. That investment will generate a range of equally impressive economic benefits. The largest source of benefits is the improvement in women's labour supply and employment which will result from the availability of accessible, low-cost, high-quality ELCC

services. More women will join the labour force, and more employed women will be able to work full-time hours. Combined with appropriate macroeconomic settings (so that labour supply is fully or near-fully occupied in productive employment), this will result in up to 725,000 additional jobs and up to \$88 billion in incremental GDP. The work and production directly and indirectly associated with the expansion of ELCC services also generates powerful stimuli to output, employment and incomes as the new universal system is phased in. Some 211,000 new jobs in ELCC, producing almost \$10 billion in additional value-added, will be created over the decade during which the universal system is implemented. Almost as much GDP, and another nearly 80,000 jobs, would be created in the upstream and downstream industries which depend on the ELCC sector for its own business.

Across these two categories of benefits (which we labelled Category A and B), the implementation of universal ELCC would increase Canada's GDP by \$63 to \$107 billion per year after 10 years, and add between 650,000 and 1 million jobs to a labour market that is staggering in the wake of the COVID-19 pandemic and resulting recession. All that incremental work and output inevitably produces a powerful boost to government revenues. On the basis of existing aggregate tax parameters, we estimate a combined total of \$17-29 billion in additional government revenues, split approximately equally between the federal and provincial levels of government. That is more than enough new revenue to pay for even the more ambitious of new ELCC programs currently proposed and under discussion in Canada.⁴⁴ This analysis confirms, therefore, that expanded ELCC is a social and economic initiative that literally pays for itself.⁴⁵

Finally, we mention at the bottom of Table 8 the longer-run, hard-to-quantify, but very important category of economic and social benefits associated with the enhanced capabilities and capacities of future workers and citizens who benefited from high-quality ELCC services in their early childhoods – but who would have been denied that education in the absence of an expanded and universal program. As discussed above, the order of magnitude of just some of those long-run benefits could easily add \$30 billion or more to annual GDP (in real 2020 terms), and generate billions in annual fiscal savings. Given their diffuse and long-run nature, we have not included those

⁴⁴ For comparison, the ELCC expansion scenarios advanced by Child Care Now (2020), Canadian Centre for Policy Alternatives (2020), and Yalnizyan and McCuaig (2020) envision increases in total federal spending on ELCC through gradual implementation a universal ELCC program in the order of \$8-10 billion over the next 5 years. Additional funding would occur in subsequent years, likely supplemented by provincial government contributions.

⁴⁵ As surveyed above, other researchers have also found that the incremental fiscal benefits of expanded ELCC services exceed their cost: see, for example, Fortin *et al.* (2012) or Fairholm and Anderson (2017).

“Category C” benefits in our total estimates of more immediate GDP and employment gains. But they nevertheless should be considered as additional motivations for investing in the education, well-being, and full participation of young children.

Keep in mind that about half of the fiscal benefits generated by ELCC expansion are captured by provincial governments. However, the bulk of the new ELCC expenditures being considered in current public debate would come from the federal level. In this context, the provincial governments would be “free-riding” on economic and fiscal benefits generated by a program largely funded by their federal counterparts. This should be considered in evaluating provincial responses to the federal ELCC proposals in coming months. It would be reasonable for the provinces to contribute to the costs of the new program – and at a bare minimum, they should not stand in its way with unreasonable demands (regarding program design, regulatory and quality benchmarks, etc.). Given the very large fiscal benefits which provincial governments would reap from the implementation of universal ELCC in Canada, at a time when they are all mired deeply in deficits, provincial governments certainly cannot afford to look this gift horse in the mouth.

In summary, these simulations have provided supporting evidence that the belated implementation of a universal ELCC system in Canada would indeed play a leading role in Canada’s economic recovery from the unprecedented events of the past year. This program would immediately stimulate the creation of tens of thousands of new jobs in ELCC and related industries as the system is rolled out, and that pace of job-creation would continue for a decade. Hundreds of thousands of women would be able to increase their labour supply thanks to greater availability of ELCC services, and that would provide another badly-needed boost to employment and economic recovery. In the long run, Canada’s economy would benefit in varied but important ways from the enhanced economic, social, and health capabilities of a future generation of workers and citizens which has benefited from high-quality professional ELCC services at these most vital moments of their cognitive development.

Implementing universal ELCC services in Canada is overdue. Past initiatives came tantalizingly close to finally moving forward with this overdue investment. In the wake of COVID-19, Canada needs the economic benefits that ELCC would generate more urgently than ever. Investing in universal ELCC services is an economic “no-brainer,” that quite literally will pay for itself. This is the moment for the federal and provincial governments to act quickly to make it happen.

References

Alexander, Craig, and Dina Ignjatovic (2012). *Early Childhood Education has Widespread and Long Lasting Benefits* (Toronto: TD Economics), https://www.td.com/document/PDF/economics/special/di1112_EarlyChildhoodEducation.pdf.

Altus Group (2020). *2020 Canadian Cost Guide* (Toronto: Altus Group).

Australian Institute of Health and Welfare 2015. "Literature review of the impact of early childhood education and care on learning and development," Working paper, Cat. no. CWS 53. Canberra: AIHW, <https://www.aihw.gov.au/getmedia/321201fc-ca0c-4c20-9582-7c3dc5c9d1b9/19438.pdf.aspx?inline=true>.

Barnett, W. Steven (2008). "Preschool Education and Its Lasting Effects: Research and Policy Implications," Boulder and Tempe: Education and the Public Interest Center & Education Policy Research Unit, <http://epicpolicy.org/publication/preschooleducation>.

Bartik, T. J. (2006). *The Economic Development Benefits of Universal Preschool Education Compared to Traditional Economic Development Programs*. W.E. Upjohn Institute for Employment Research.

B.C. Ministry of Children and Family Development (2020). "Childcare BC: New Spaces Fund Funding Guidelines, 2020/21" (Victoria: B.C. Ministry of Children and Family Development), https://www2.gov.bc.ca/assets/gov/family-and-social-supports/child-care/running-a-daycare-or-preschool/newspaces_fund_guide.pdf.

Beach, Jane, and Martha Friendly (2005). "Child Care Centre Physical Environments" (Toronto: Childcare Resource and Research Unit), http://www.childcarequality.ca/wdocs/QbD_PhysicalEnvironments.pdf.

Bivens, Josh, Emma García, Elise Gould, Elaine Weiss, and Valerie Wilson (2016). "It's time for an ambitious national investment in America's children" (Washington: Economic Policy Institute), <https://www.epi.org/publication/its-time-for-an-ambitious-national-investment-in-americas-children/>.

Bradshaw, James (2020). "Scotiabank CEO calls on Ottawa to boost child-care supports," *Globe and Mail*, September 20, <https://www.theglobeandmail.com/business/article-scotiabank-ceo-brian-porter-calls-on-ottawa-to-take-measures-to/>.

Calman, Leslie, and Linda Tarr-Whelan (2005). *Early Childhood Education for All: A Wise Investment* (New York: Legal Momentum), <https://web.mit.edu/workplacELCCnter/docs/Full%20Report.pdf>.

Campbell, Frances A. and Craig T. Ramey. 1995. "Cognitive and School Outcomes for High-Risk African-American Children at Middle Adolescence: Positive Effects of Early Intervention." *American Educational Research Journal*, 32(4): 743-772.

Canadian Centre for Policy Alternatives (2020). *Alternative Federal Budget Recovery Plan* (Ottawa: Canadian Centre for Policy Alternatives), <https://www.policyalternatives.ca/sites/default/files/uploads/publications/National%20Office/2020/07/AFB%202020%20recovery%20plan.pdf>.

Cascio, Elizabeth U. and Diane Schanzenbach (2013). "The Impacts of Expanding Access to High Quality Preschool Education," *Brookings Papers on Economic Activity*: 127-192.

Child Care Human Resources Sector Council (2009). *Literature Review of Socioeconomic Effects and Net Benefits* (Ottawa: Child Care Human Resources Sector Council), http://www.ccsc-cssge.ca/sites/default/files/uploads/Projects-Pubs-Docs/2.8-WFS_LitSocioMain_Eng.pdf.

Child Care Now (2020). *A strategy for recovery: Making affordable child care for ALL a reality*, <https://timeforchildcare.ca/a-strategy-for-recovery-making-affordable-child-care-for-all-a-reality/>.

Children's Services, City of Toronto (2016). "Child Care Design & Technical Guideline" (Toronto: City of Toronto), <https://www.toronto.ca/wp-content/uploads/2017/12/8641-CS-childcaredesign.pdf>.

Community Care Facilities Licensing (2020). "Design Resource for Child Care Facilities," Vancouver: Vancouver Coastal Health, <http://www.vch.ca/Documents/Design-resource-for-Child-care-facilities.pdf>.

Conference Board of Canada (2019). *The Economic Case for Investing in Education*, prepared for Ontario Secondary School Teachers' Federation, June, https://betterschoolsstrongereconomy.ca/wp-content/uploads/2019/06/Economic_Case_for_Investing_in_Education-Conference_Board_of_Canada.pdf.

Currie, Janet. 2001. "Early Childhood Education Programs." *Journal of Economic Perspectives*, 15(2): 213-238.

Dixon, Janine (2020). "Simulations of increased government expenditure in the care sectors" (Canberra: National Federation of Australian Women), <https://nfaw.org/wp-content/uploads/2020/10/Appendix-A.pdf>.

Duncan, Greg J. and Katherine Magnuson (2013). "Investing in Preschool Programs," *Journal of Economic Perspectives* 27(2): 109-132.

Executive Office of the President of the United States (2015). *The Economics of Early Childhood Investments* (Washington: Executive Office of the President of the United States), https://obamawhitehouse.archives.gov/sites/default/files/docs/early_childhood_report_update_final_non-embargo.pdf.

Fairholm, Robert, and Lynell Anderson (2017). "Socio-economic impact analysis of the \$10 a day child care plan for British Columbia" (Vancouver: Early Childhood Educators of BC), https://d3n8a8pro7vhmx.cloudfront.net/10aday/pages/357/attachments/original/1484678670/10aDay_C4SE_economist_report.pdf?1484678670.

Fortin, P., L. Godbout, and S. St-Cerny (2012). "Impact of Quebec's Universal Low-Fee Childcare Program on Female Labour Force Participation, Domestic Income, and Government Budget" (Sherbrooke: Université de Sherbrooke, Chaire de recherche en fiscalité et en finances publiques), https://www.oise.utoronto.ca/atkinson/UserFiles/File/News/Fortin-Godbout-St_Cerny_eng.pdf.

Friendly, Martha, Elise Larsen, Laura Feltham, Bethany Grady, Barry Forer, and Michelle Jones (2018). *Early Childhood Education and Care in Canada 2016*, 11th edition (Toronto: Childcare Resource and Research Unit).

Friendly, M., Feltham, L. Mohamed, S., Vickerson, R. and Nguyen, T. (In press). *Early Childhood Education and Care in Canada 2019*, 12th edition (Toronto: Childcare Resource and Research Unit).

Governor General of Canada (2020). "A stronger and more resilient Canada," Speech from the Throne to Open the Second Session of the Forty-third Parliament of Canada, September 23, 2020, https://www.canada.ca/content/dam/pco-bcp/documents/pm/SFT_2020_EN_WEB.pdf.

Green, David A., Gaëlle Simard-Duplain, and Henry E. Siu (2020). "In-Person K-12 Schooling is Essential to the Canadian Economy," *Intelligence Memos*, Toronto: C.D. Howe Institute, November 2, https://www.cdhowe.org/sites/default/files/IM-Green%20Duplain%20Siu_2020-1102.pdf.

Heckman, James. J., Jora Stixrud, and Sergio Urzua (2006). "The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior," *Journal of Labor Economics* 24(3), pp. 411-482.

Heckman, James J., and Dimitri V. Masterov (2007). "The Productivity Argument for Investing in Young Children," NBER Working Paper #13016 (Cambridge: National Bureau of Economic Research), <https://www.nber.org/papers/w13016.pdf>.

Heckman, James J., Seong Hyeok Moon, Rodrigo Pinto, Peter A. Savelyev, and Adam Yavitz. 2010 "The Rate of Return to the High/Scope Perry Preschool Program." *Journal of Public Economics*, 94(1): 114-128

Herbst, Chris M. 2014. "Universal Child Care, Maternal Employment, and Children's Long-Run Outcomes: Evidence from the U.S. Lanham Act of 1940." IZA Discussion Paper No. 7846 (Revised November 2014).

Herbst, Chris M. and Erdal Tekin. 2010. "The Impact of Child Care Subsidies on Child Well-being: Evidence from Geographic Variation in the Distance to Social Service Agencies." Working Paper 16250. Cambridge, Mass.: National Bureau of Economic Research (August).

Lefebvre, Pierre, Philip Merrigan, and Matthieu Verstraete (2009). "Dynamic labour supply effects of childcare subsidies: Evidence from a Canadian natural experiment on low-fee universal child care," *Labour Economics* 16(5), pp. 490-502.

McCain, Margaret, Fraser Mustard, and Kerry McCuaig (2011). *Early Years Study 3: Making Decisions, Taking Action* (Toronto: McCain Family Foundation), <http://ELCCreport.ca/media/uploads/pdfs/early-years-study3-2011.pdf>.

McGinn, Dave (2020). "Low enrolment, PPE costs push child-care centres across Canada to edge of insolvency," *Globe and Mail*, September 25, <https://www.theglobeandmail.com/canada/article-low-enrolment-ppe-costs-push-child-care-centres-across-canada-to-edge/>.

Organization for Economic Cooperation and Development (2011). *Investing in High-Quality Early Childhood Education and Care* (Paris: OECD), <https://www.oecd.org/education/school/48980282.pdf>.

Provencher, Claudine, Anne Milan, Stacey Hallman and Carol D'Aoust (2018). *Fertility: Overview, 2012 to 2016*, Statistics Canada, Catalogue 91-209X, <https://www150.statcan.gc.ca/n1/pub/91-209-x/2018001/article/54956-eng.htm>.

Reynolds, Arthur J., Judy A. Temple, Suh-Ruu Ou, Irma A. Arteaga, and Barry A.B. White. 2011. "School-Based Early Childhood Education and Age-28 Well-Being: Effects by Timing, Dosage, and Subgroups." *Science*, 333(6040): 360-364.

Saba, Rosa (2020). "Business leaders welcome child-care strategy and wage subsidy extension," *Toronto Star*, September 23, <https://www.thestar.com/business/2020/>

[09/23/business-leaders-welcome-child-care-strategy-and-wage-subsidy-extension.html](https://www.cbc.ca/news/business/09/23/business-leaders-welcome-child-care-strategy-and-wage-subsidy-extension.html).

Scott, Katherine (2020). "Left behind: Two decades of economic progress for single mothers at risk of being wiped out," *Behind the Numbers* blog, September 16, Canadian Centre for Policy Alternatives, <https://behindthenumbers.ca/2020/09/16/left-behind-two-decades-of-economic-progress-for-single-mothers-at-risk-of-being-wiped-out/>.

Statista (2020). "Construction costs of buildings in Ontario, Canada in 2019, by select building type," <https://www.statista.com/statistics/972912/-building-costs-ontario-canada-by-type/>.

Statistisk Sentralbyrå, Norway (2020). "Kindergartens," March 13, <https://www.ssb.no/en/barnehager/>.

UNICEF Canada. 2020. *Worlds Apart: Canadian Companion to UNICEF Report Card 16* (Toronto: UNICEF Canada), https://oneyouth.unicef.ca/sites/default/files/2020-09/UNICEF%20RC16%20Canadian%20Companion%20EN_Web.pdf.

Warner, Mildred, and Zhilin Liu (2006). "The Importance of Child Care in Economic Development: A Comparative Analysis of Regional Economic Linkage," *Economic Development Quarterly* 20(1), pp. 97-103.

Weiss, Elaine, and Richard Brandon (2010). *The Economic Value of the U.S. Early Childhood Sector* (Washington, Pew Center on the States), <http://readynation.s3.amazonaws.com/wp-content/uploads/The-Economic-Value-of-The-U.S.-Early-Childhood-Sector.pdf>.

Yalnizyan, Armine (2020). "COVID-19's impact: not recession, but a completely different economics," *Toronto Star*, April 9, <https://www.thestar.com/opinion/contributors/2020/04/09/covid-19s-impact-not-recession-but-a-completely-different-economics.html>.

Yalnizyan, Armine, and Kerry McCuaig (2020). "A Year-By-Year Approach to Investing in Early Learning and Child Care," Toronto, Atkinson Foundation, <https://atkinsonfoundation.ca/atkinson-fellows/posts/a-year-by-year-approach-to-investing-in-early-learning-and-child-care/>.

Yussuff, Hassan, and Goldy Hyder (2020). "There is no economic recovery without adequate child care," *Toronto Star*, June 2, <https://www.thestar.com/opinion/contributors/2020/06/02/there-is-no-economic-recovery-without-adequate-child-care.html>.