

# Economic Impact Analysis of Early Learning and Care for Ontario

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# Overview

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**1. Effects of quality early learning and care (ELC) on children**

**2. Short-term economic effects of ELC**

➤ **Short-term multiplier**

➤ **Mothers' labour supply effect**

**3. Long-term economic benefits of ELC**

➤ **Children's human capital, parents income & government cost savings**

➤ **Long-term benefits/ costs**

# Positive Effects on Children in Short Run

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Barnett (2008) reports that meta-analyses found preschool education to produce an average immediate improvement of about half a standard deviation (SD) on cognitive development.

This is equivalent to 7 or 8 points on an IQ test, or a move from the 30th to the 50th percentile for achievement test scores.

For the social and emotional domains estimated effects average about 0.33 SD.

# Positive Effects on Children in Long Run

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Barnett (2008) also reported the estimated effects decline as students move from immediate experience to elementary school, to adolescence, and to adulthood follow-up.

Long-term effects are roughly 0.10 to 0.20 SD for cognitive abilities, 0.15 for school progress, and 0.15 to 0.20 on social behaviour including delinquency and crime.

# Short-term Economic Effects

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- Short-run impact measured by multipliers—GDP & Employment
- GDP multiplier is the overall increase in GDP caused by a \$1 increase in expenditure or output in a sector
- Employment multiplier is the number of jobs created per \$million

# ELC Direct & Indirect Multipliers

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**Direct ELC GDP multiplier is large because import leakages very small**

**Indirect ELC GDP effect is small because most expenditures are related to labour costs**

**Combined direct and indirect GDP multiplier one of the largest of the major sectors**

**Employment multiplier is large per \$million**

- **Low wages of ELC workers means more workers per \$ increase in labour costs**
- **High labour share of total costs**

# Short-term Multipliers for Canada (Type I)

Direct & Indirect Industry Multipliers				
Industry	GDP	Gross Output	GO Rank	GDP Rank
Finance, Insurance, Real Estate and Rental and Leasing	0.95	1.37	21	1
Education	0.94	1.39	20	2
Retail trade	0.92	1.53	13	3
Non-profit institutions	0.92	1.42	17	4
<b>Child Care Outside the Home</b>	<b>0.90</b>	<b>1.35</b>	<b>22</b>	<b>5</b>
Government	0.90	1.48	14	5
Recreation	0.87	1.67	4	14
Accommodation & Food Services	0.85	1.78	2	16
Construction	0.78	1.76	3	19
Agriculture	0.77	1.97	1	21
Manufacturing	0.61	1.67	5	23
Source: Cross & Ghanem (2006) & Stats Canada Input-Output Impact Assessment (2008)				

# Canadian Employment Multipliers

Employment Multipliers (Jobs per \$Million)				
Industry	Rank	Direct Jobs	Indirect	Both
<b>Child Care Outside the Home</b>	<b>1</b>	<b>36.9</b>	<b>2.6</b>	<b>39.5</b>
Other Services (Except Public Administration)	2	20.4	7.2	27.6
Educational Services	3	24.6	2.9	27.5
Accommodation & Food Services	4	19.8	5.2	25.0
Government Sector	12	8.9	4.4	13.3
Construction	16	5.7	4.3	10.0
Manufacturing	20	3.1	3.7	6.7
Finance, Insurance, Real Estate and Rental and Leasing	21	3.1	2.0	5.1
Source: Statistics Canada Input-Output Impact Assessment & "S Level" Employment Multipliers for 2005				

# Induced GDP Multiplier

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Induced effect captures the impact on the economy from increased income & spending

Induced GDP effect for ELC is large because

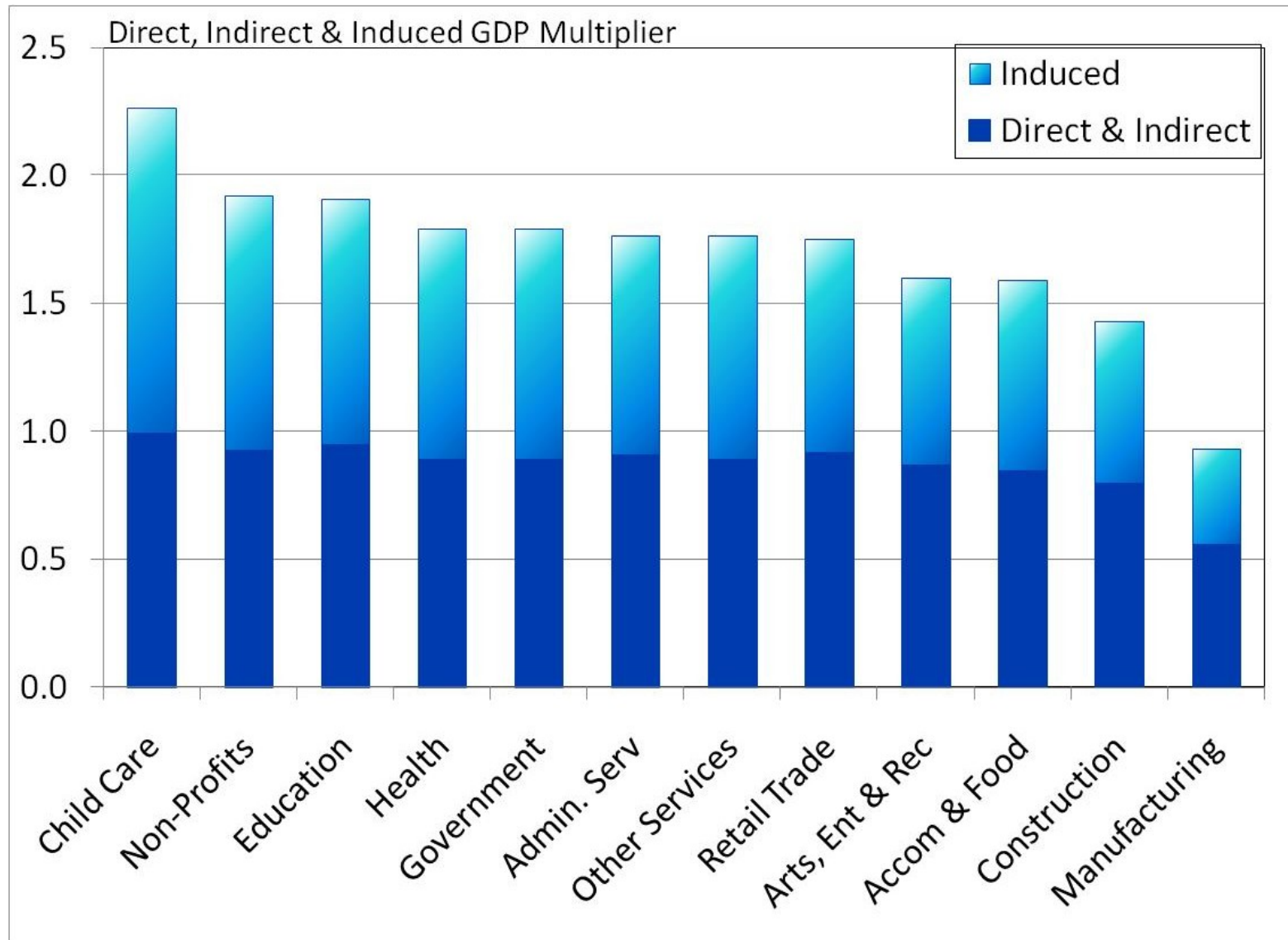
- Labour costs are large share of total costs
- Wages of ELC workers are low
  - Low tax rate (increases multiplier)
  - Low saving (high spending) per dollar increase in wages (increases multiplier)

Total GDP Multiplier—including direct, indirect & induced effects (Type II)

ELC Local area multiplier large because most spending local

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# ELC Total GDP Multiplier Largest of Major Sectors for Ontario



# Estimates of ELC Multipliers

## Early Learning and Care Multipliers In Various Regions

Reference	Location	Multiplier
Warner <i>et al.</i> (2003)	Tompkins County, NY	1.60 (GO, Type II)
Liu <i>et al.</i> (2004)	US state average	1.91 (GO, Type II)
Ribeiro and Warner (2004)	New York state	2.04 (GO, Type II)
Insight Center (2006)	LA County	2.05 (GO, Type II)
Liu <i>et al.</i> (2004)	US	3.25 (GO, Type II)
Prentice (2008)	Local Area in Manitoba	1.58 (GO, Type II)
Fairholm (2011)	Nova Scotia	2.23 (GDP, Type II)
Fairholm (2010)	Ontario	2.27 (GDP, Type II)
Fairholm (2009)	Canada	2.34 (GDP, Type II)

# Additional Economic Benefits Via Parents

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## Labour supply of mothers

- Participation rates
- Average hours worked
- Access to quality ELC can be more important than price

Labour supply effects impact economy in short run and can provide long-term effects because of more workplace experience, productivity and income

# Economic Benefits Via Children

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## Higher future earnings

- Detailed human capital growth model (Dickens, Sawhill, and Tebbs, 2006)

## Benefits from decreased smoking

## Savings on primary education

- Grade retention
- Special education

## Does not include

- Effects on future generations
- Delinquency effects
- Other Health effects

# Benefit-Cost Ontario

Long-term Costs and Benefits for Ontario	
NPV hourly costs of early learning	\$5.52
NPV hourly costs savings on informal child care	<u>-\$1.57</u>
NPV hourly net cost of early learning	\$3.95
NPV hourly net benefits mothers/parents	\$7.69
NPV hourly net benefits children	<u>\$1.88</u>
NPV hourly net benefits from early learning	\$9.56
Benefit-cost ratio of early learning	2.42

## **Long-term Benefit/ Cost Ratios**

**Fairholm (2009) and Fairholm and Davis (2010) results of 2.5 for Canada, 2.4 Ontario and 2.2 for Toronto (different assumptions). Similar to other universal program estimates.**

**Cleveland and Krashinsky (1998) estimated high quality child care in Canada would return over \$2 for every dollar invested.**

**For the US, Karoly and Bigelow (2005) found that a universal ELC program would yield benefits of \$2-\$4 per dollar invested in California. Belfield (2005) estimated future benefits of \$2.25 per dollar for Louisiana.**

# Summary of Economic Impact of ELC

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**ELC GDP and job multipliers are large.**

**A dollar invested in the ELC sector has a larger impact on Canadian economy than:**

- a dollar used to support most of the other major sectors**
- most government programs**
- short-term impact from taxes via stimulus effects**

**Long-term societal benefits exceed costs by more than 2 to 1**