

# Economic Impacts of Early Learning and Care

Robert Fairholm

The Centre for Spatial Economics

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# Overview

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# Effects Of ELC On Children

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Effects on social outcomes generally found to be positive, particularly for disadvantaged

Effects on cognitive abilities generally found to be positive, particularly for disadvantaged

Mixed results for effects on socio-emotional development

- ∅ Quebec

- ∅ Quality

- ∅ Barnett (2008) suggests on balance quality ELC positive for children

# 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,

# Different Aspects of ELC

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**Full day vs. half day kindergarten improves cognitive learning, +0.93 SD in literacy and +0.75 SD in arithmetic (Lee et al. 2005)**

**Effective after school programs improve children's academic achievement by 0.3 SD (Durlak & Weissberg, 2007), larger gains for disadvantaged**

**Summer school programs improves academic achievement by 0.14-0.25 SD (Cooper et al., 2000)**

# **Different Aspects Give Different Effects**

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**Early identification and intervention of special needs children improves cognitive development by 0.5-0.75 SD (Guralnick, 1991)**

**Increased parental involvement improves educational outcomes by 0.5-0.6 SD (Jeynes, 2005) in 0.6 SD (Jeynes, 2005)**

# Effects Of ELC On Parents

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# Short-term Multiplier - Definition

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**Multiplier: Number of extra units of output per unit increase in input**

**If there is a direct \$100 increase in spending on cars**

**The car industry will need to increase production by \$100**

**There will be an indirect increase in production by all the suppliers to the car industry (eg. Tires) by \$20**

**Their suppliers will need to increase production, etc. eg. \$2**

**Multiplier =  $\$122/\$100$  (or 1.22)**



# Short-Run Multipliers - Types

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**Direct Multiplier**—industry directly having the increase in spending/production

**Indirect Multiplier**—sum of the supplying industries that have an increase in output

**Gross Output (GO) or Revenue multiplier**

**Gross Domestic Product or Value Added multiplier (smaller than GO multiplier)**

**GDP multiplier shows impact of sector on GDP, GO multiplier shows how sales increase**

**Employment multiplier**—number of jobs for each million dollars spent

**Type I**—direct & indirect short-term effects

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# Type I Short-term Multipliers

## 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
Detail trade	0.93	1.50	19	3

# 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

- Ø High labour share of total costs

- Ø Low wages of ELC workers means more workers per \$ increase in labour costs

# Employment Multipliers

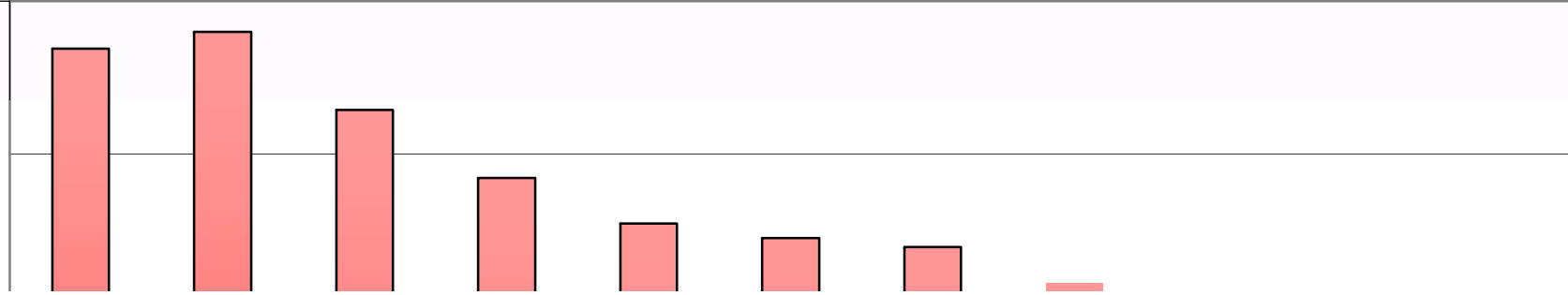
Employment Multipliers (Jobs per \$Million)				
Industry	Rank	Direct Jobs	Indirect	Both
<b>Child Care Outside the Home</b>	<b>1</b>	<b>36.9</b>	<b>2.6</b>	<b>39.5</b>
Other Services (Except Public Administration)	2	20.4	7.2	27.6
Educational Services	3	24.6	2.9	27.5
Accommodation & Food Services	4	19.8	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



# Type II GDP Multipliers

2.5 Direct, Indirect & Induced GDP Multiplier



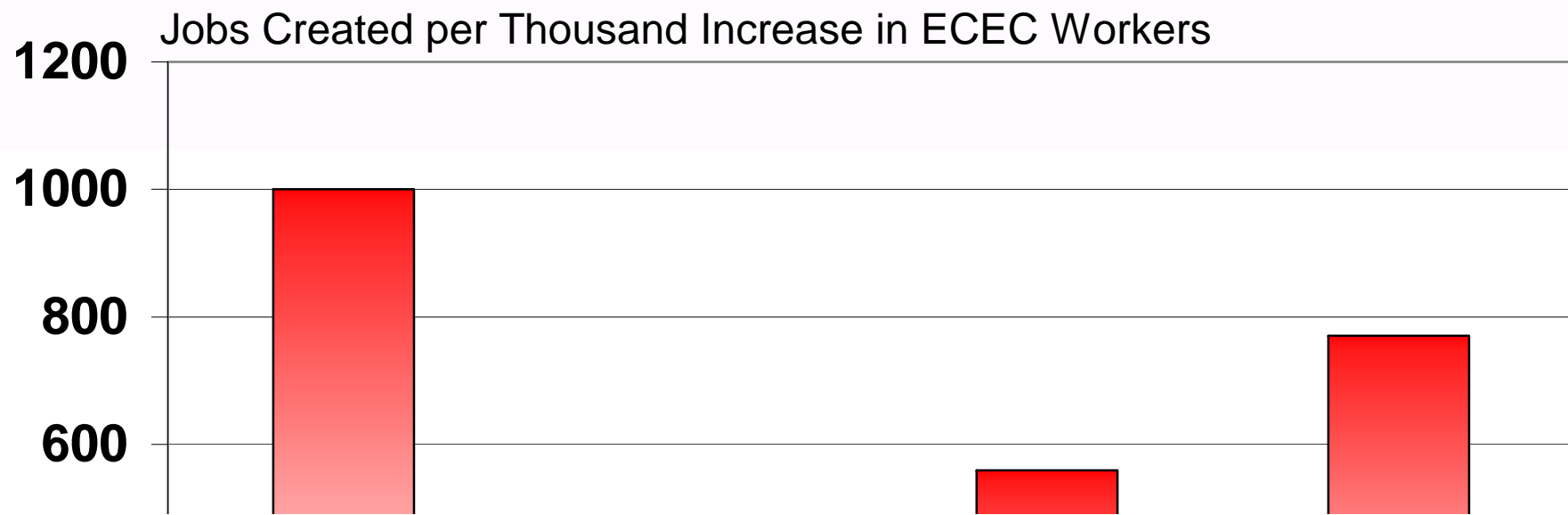
# Comparison of Type II ELC Multipliers

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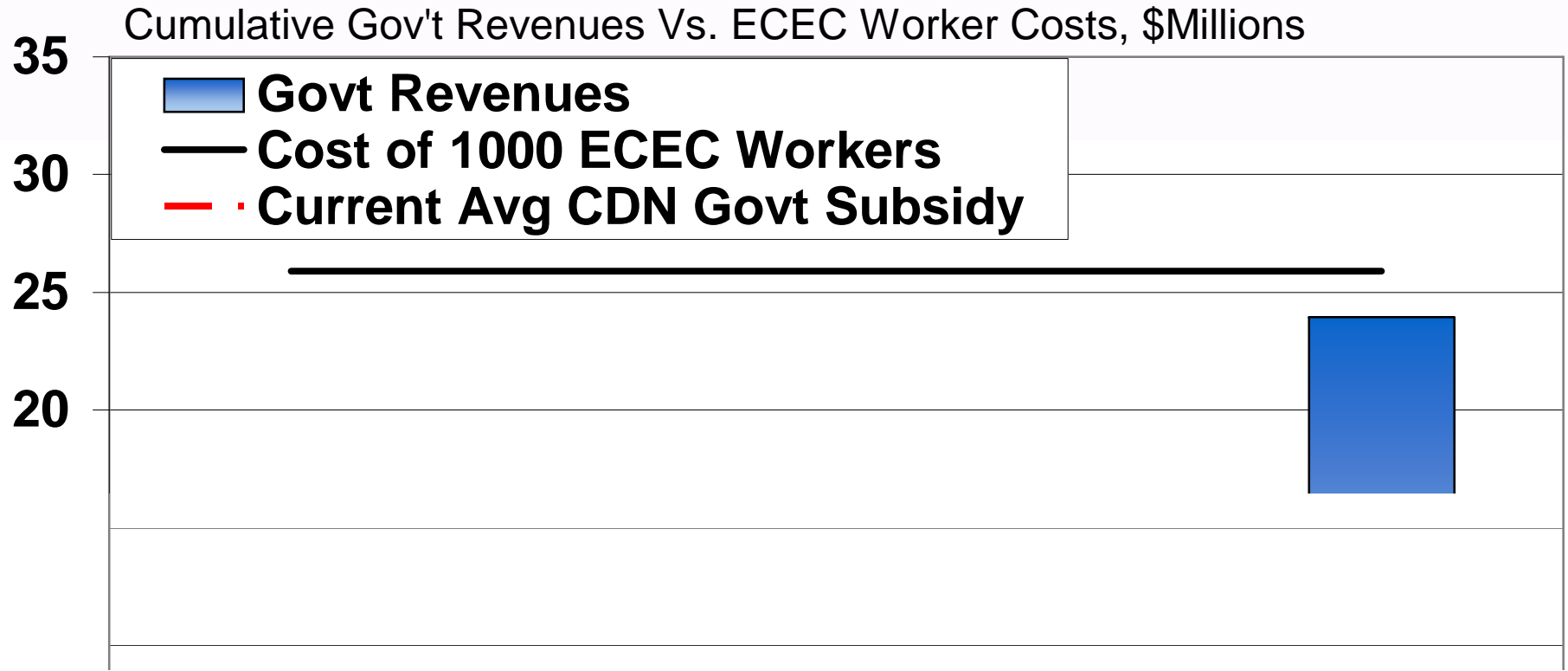
**Early Learning and Care Multipliers In Various Regions**



# ELC Affects Jobs Via Mothers Too



# Government Revenue Affected by ELC



# Long-Run Effects

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## Benefits

∅ Children

∅ Mothers

∅ Includes cost savings to government

## Costs

∅ Cost of providing quality ELC

∅ Cost savings for informal child care

Benefit cost ratio per hour =

$$(\text{benefits/hours}) / (\text{costs/hours})$$



# Adjustments to Average Child

## Adjustments to Reflect Average Vs. Disadvantaged Cohorts

	Participants	Control	Diff.	Adjusted Diff.
Grade retention rate	31%	55%	-44%	-24%
Years in special ed.	1.0	1.5	-33%	-18%
Smoking rates	39%	55%	-29%	-16%
HS Dropout rate	33%	49%	-33%	-18%
Math Score (Woodcock Johnson)	93	82	13%	7%

# Canadian Adjustment

## Canadian Benefits Based on Adjusting Estimated Abecedarian Benefits (Five Year Olds, 2005)

	All children	Participants	Values	Benefits
Grade retention rate (grades 1-8)	34%	26%	9,700	797
% funding for special education	12%	10%	9,700	1,762
Smoking rates	20%	17%	170,789	5,436
Canadian high school dropout rate	13%	10%	9,700	-219



# Benefits To Parents

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## Immediate wage gains

- ∅ Working more (employment & hours)

## Future wage gains

- ∅ More experience

## Does not include

- ∅ Future wages gains via further



# Benefit-Cost Results

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Summary of Costs & Benefits of Current Canadian Child Care	
	Net Present Values (NPV)
NPV hourly costs of formal child care	\$5.08
NPV hourly cost savings on informal child care	-\$2.31

# Impacts of Dr. Pascal's Proposals

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Atkinson Foundation asked C4SE to do an economic analysis of the introduction of the early learning and care (ELC) system proposed by Dr. Pascal as of 2012-13

The analysis highlights the short and long-term effects on Ontario

Included effect of higher ELC wages and more education for some mothers

The report also showed the impact on Toronto using a methodology that can be replicated for other municipalities



# Benefit-Cost Ontario

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# Long-term Benefit/Cost Ratios

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Results of Fairholm (2009) and Fairholm and Davis (2010) of 2.4-2.5 similar to those found by others for universal programs.

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) estimated that a universal child care program

# 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

Large share of spending is recouped via higher govt revenues, but split fed/prov