# Public Financial Support and Family Outcomes in Quebec

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## Introduction

- **Objective:** To estimate the effects of child benefits and family tax assistance on the well-being of children in Quebec.
- To reduce child poverty and to achieve distributional and equity goals, many developed countries have implemented income transfer policies to families with children.
- Federal expenditures on child benefits in Canada: from 7.2 billion in 1995 to 13.2 billion in 2012 (Government of Canada, 2013).
- Poverty rate of children in Canada: 14 % in 2010 (Unicef, 2011).
- Effectiveness of policies and impact of income on well-being and development of children.

### Introduction

- There are two potential channels by which income influences children's outcomes.:
- "Resources" channel: development of children depends on the resources and time that families spend on them (Becker, 1981).
- "Family process" channel: lower income generates parental stress and relationship difficulties and therefore diminishes the well-being of children (Duncan and Brooks-Gun, 1997).

## Introduction

- Strong positive correlation between income and children's outcomes, but is this relationship causal ?
- Milligan and Stabile (2011) use exogenous changes in Canadian child benefits (federal and provincial) across provinces, time, and number of children, as instrument to estimate the causal effect of income on child and family well-being.
- They show that child benefit programs have significant positive effects on test scores, maternal health, and the mental and physical health of children.

#### Introduction

We contribute to existing research on child benefits and tax assistance to families on family outcomes in three ways:

- We focus our research on Quebec (strongly differs from other Canadian provinces with regard to family policies). In 2009-2010, for a two-parent family with two children, the maximum child benefits amounted to \$3,249 in Quebec compared to \$0-2,200 in the other provinces.
- Study period: 1994-2009. Since 2004, many financial support programs at both the provincial and federal levels (universal benefit for childcare, tax benefits, refundable tax credits) came to enhance the income of families.
- Effects of child benefits and tax assistance to families with children. The tax assistance is computed as the difference between the amount of taxes that a family without children pays and the amount of taxes that a family with children (with the same characteristics) pays.
  - Financial Support (FS) to families: refundable tax credits + tax assistance afforded to families

## Plan

- 1. Policy
- 2. Data
- 3. Methodology
- 4. Results
- 5. Conclusion

Federal policies Quebec policies

## Federal policies (1/2)

- Canada Child Tax Benefit (CCTB). Initiated in 1993, the CCTB is a refundable tax credit paid monthly to eligible families to help them meet the needs of their children aged 0-17 years. The maximum annual benefit is \$1,471 for 2015-2016. A supplement of \$103 per year per child is paid for families with three or more children.
- National Child Benefit Supplement (NCBS). Initiated in 1998, the NCBS is for low-income families with children aged 0-17 years and is in addition to the CCTB. The rates for the period of 2015-2016 are \$2,279 per year for the first child, \$2,016 for the second, and \$1,918 for the third.

Federal policies Quebec policies

## Federal policies (2/2)

- Universal Child Care Benefit (UCCB). Implemented in 2006, the amount is \$100 per month per child for all families with children under 6 years (until 2014)
- Working Income Tax Benefit (WITB). Implemented in 2007, the WITB is a refundable tax credit for low-income workers. In Quebec, for the fiscal year 2014, the maximum benefits ranged from \$946 per year for a single parent with children to \$2,524 per year for a couple without children.
- Non-refundable tax credit in 2007 for each child. From 2007 to 2014, the tax relief of up to \$338 (\$287.45 in Quebec) per child per fiscal year.

Federal policies Quebec policies

## Quebec policies (1/2)

- **Before 1997:** family allowance (child under 18 years), allowance for young children (child under 6 years), allowance for newborn children. These amounts increased with the number of children in the family and were independent of family income
- In 1997: these benefits were combined into a new family allowance, based on family status and family net income of the previous year. The maximum benefit is \$975 per year per child for the first two children and \$398 for each additional child. A supplement of \$1,300 per year is paid to single parents.
- **1988-2004:** implementation of APPORT (Aide aux parents pour leur revenu de travail). Only low-income families with dependent children were eligible and benefits are provided monthly, given that the individual had earned at least \$100 for a month of the year. The maximum amount is \$2,727 for a single parent with 1 child and \$3,980 for a two-parent family with two children.

Federal policies Quebec policies

## Quebec policies (2/2)

- In 2005: a new program called "Soutien aux enfants" replaces: non-refundable tax credit for dependent children, the tax reduction for the family and the Quebec family allowance. It is a refundable tax credit, and all Quebec families with children under age 18 are eligible to receive it. The amount of the program varies by income, marital status, and number of children under 18 in the family, and it is indexed according to inflation each year. In 2015, the maximum amount is \$2,366 per year for the first child, \$1,182 for the second and third children, and \$1,774 for the fourth or higher child. An extra \$830 is paid to single parents.
- In 2005: the work premium replaces APPORT. It is a refundable tax credit for low- and middle-income workers, with or without children. The maximum amount is \$557.90 per year for one person, \$2,391 for a single parent, and \$3,114 for two-parent families with children.





- National Longitudinal Survey on Children and Youth (NLSCY).
- This survey has been held every two years. It started in 1994-95 (wave 1) and ended in 2008-09 (wave 8).
- Sample: Children aged 0-10 years.
- Educational outcomes
- Mental and emotional well-being outcomes
- Health and nutrition outcomes



- Survey of Labor and Income Dynamics (SLID)
- Starting in 1993, this survey was annual, and it ended in 2011.
- The SLID data are used for the construction of our instrument.

OLS First-stage equation Second-stage equation



- Financial Support (FS) awarded to families: refundable tax credits + tax assistance
- OLS estimates are biased:

$$Outcome_{ykmi} = \alpha_0 + X_{ykmi}\alpha_1 + FS_{ykmi}\alpha_2 + \eta_{ykmi}$$
(1)

OLS First-stage equation Second-stage equation

## Methodology

- We use a simulated financial support approach to produce a measure of the generosity in financial support independent of family characteristics. Changes in benefits and tax assistance come from the legislative differences across time, number of children, and marital status.
- First-stage equation:

$$FS_{ykmi} = \beta_0 + X_{ykmi}\beta_1 + SIMFS_{ykm}\beta_2 + \varepsilon_{ykmi}$$
(2)

OLS First-stage equation Second-stage equation

#### Construction of the instrument

$$FS_{ykmi} = \beta_0 + X_{ykmi}\beta_1 + SIMFS_{ykm}\beta_2 + \varepsilon_{ykmi}$$

Three-step procedure to construct our instrument SIMFS (SLID data):

- We simulate the child benefits for which families would be eligible for each combination of years (between 1993 and 2008), number of children (0,1,2 or 3 children), and marital status (two-parent families or not). Thereafter, we average the simulated benefit amounts at the year-number of children-marital status level.
- We perform the same procedure for tax assistance. We average the simulated tax amounts for each of these combinations and compute the difference between the amount of tax paid by the family without children and families with children for each combination.
- We build our final instrument (SIMFS): sum of the simulated benefits and tax assistance.

OLS First-stage equation Second-stage equation



Second-stage equation:

$$Outcome_{ykmi} = \alpha_0 + X_{ykmi}\alpha_1 + \widehat{FS_{ykmi}}\alpha_2 + \eta_{ykmi}$$
(3)

**Figure** First-stage results Second-stage results





Note: These graphs show the total refundable benefits and tax assistance in Quebec by maternal education. They are divised according to the number of children in the family. Sources: NLSCY and SLID.

Figure First-stage results Second-stage results

## First-stage results

Sample	Ν	$\beta_2$
Full sample	22,995	1.371***
		(0.084)
Low education sample	17,995	1.305***
		(0.095)

Figure First-stage results Second-stage results

#### **Educational Outcomes**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All education				Low	Coll./Univ.		
	groups sample							graduates
	Both sexes				Both sexes	Boys	Girls	Both sexes
Variables	Age	N	OLS	IV	IV	IV	IV	IV
	range							
Child has ever repeated	4-10	7,324	0.002	-0.029***	-0.026*	-0.029	-0.021	-0.046**
a grade			(0.002)	(0.011)	(0.014)	(0.024)	(0.013)	(0.018)
Scaled math score	6 - 10	3,534	-0.008	0.032	-0.022	-0.016	-0.041	$0.266^{***}$
			(0.008)	(0.038)	(0.038)	(0.048)	(0.059)	(0.102)
Scaled PPVT score	4-6	$^{6,102}$	-0.017**	0.039	0.027	0.150*	-0.090	0.047
			(0.008)	(0.045)	(0.061)	(0.081)	(0.082)	(0.050)
Not been diagnosed with	6 - 10	$6,\!634$	-0.000	$0.018^{**}$	$0.020^{*}$	$0.038^{*}$	0.003	0.020
a learning disability			(0.001)	(0.009)	(0.011)	(0.021)	(0.008)	(0.018)

\*\*\* : significant at  $1\%\,;$  \*\* : significant at  $5\%\,;$  \* : significant at 10%

Figure First-stage results Second-stage results

## Mental and Emotional Well-Being Outcomes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
		All education				Low education			
	groups sample					graduates			
		Bo	th sexes		Both sexes	Boys	Girls	Both sexes	
Variables	Age	Ν	OLS	IV	IV	IV	IV	IV	
	$\mathbf{range}$								
Hyperactivity-inattention	4-10	$12,\!269$	$0.013^{**}$	-0.068**	-0.097**	-0.093	-0.082	-0.013	
score			(0.006)	(0.033)	(0.048)	(0.077)	(0.055)	(0.033)	
Prosocial behavior	4 - 10	$^{8,919}$	0.004	0.044	0.039	$0.116^{*}$	-0.034	0.045	
score			(0.006)	(0.035)	(0.044)	(0.065)	(0.054)	(0.059)	
Emotional disorder-	4 - 10	12,319	$0.017^{***}$	-0.037	-0.064	-0.066	-0.063	0.015	
anxiety score			(0.006)	(0.032)	(0.046)	(0.062)	(0.065)	(0.037)	
Conduct disorder-physical	4-10	$12,\!304$	$0.021^{***}$	-0.036	-0.069*	-0.083	-0.049	0.034	
aggression score			(0.006)	(0.028)	(0.038)	(0.061)	(0.044)	(0.038)	
Indirect aggression	4 - 10	11,656	0.008	$-0.076^{**}$	-0.093*	-0.091	-0.079	-0.024	
score			(0.008)	(0.036)	(0.050)	(0.067)	(0.072)	(0.042)	
Mother's depression	0 - 10	20,458	$0.026^{***}$	-0.031	-0.009	0.078	-0.107*	-0.087*	
score			(0.005)	(0.031)	(0.038)	(0.053)	(0.056)	(0.049)	

\*\*\* : significant at  $1\%\,;\,^{**}$  : significant at  $5\%\,;\,^*$  : significant at 10%

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## Health and Nutrition Outcomes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All education				Low	Coll./Univ.		
	groups sample					graduates		
		В	oth sexes	Both sexes	Boys	Girls	Both sexes	
Variables	Age	N OLS IV		IV	IV	IV	IV	IV
	range							
Never experienced hunger because	2 - 10	17,165	$-0.002^{***}$	$0.013^{***}$	0.016**	$0.016^{**}$	$0.016^{*}$	0.005
of lack money to buy food			(0.001)	(0.005)	(0.006)	(0.008)	(0.009)	(0.005)
In general, child is in $good/fair/$	0-10	22,75	$0.006^{***}$	-0.004	0.003	-0.013	0.021	-0.013
poor health		(0.001) $(0.009)$				(0.016)	(0.016)	(0.013)
Current height in meters	0-10	18,217	0.002	0.008	0.007	0.029	-0.013	0.009
and centimeters			(0.002)	(0.015)	(0.019)	(0.025)	(0.028)	(0.018)
Current weight of child	0-10	$21,\!156$	-0.004*	-0.019	-0.019	-0.034	-0.012	-0.022
in kilograms			(0.002)	(0.015)	(0.021)	(0.030)	(0.029)	(0.020)
Injured in last 12 months	0-10	$22\ 733$	0.001	0.006	0.004	0.003	0.007	0.010
			(0.001)	(0.006)	(0.007)	(0.011)	(0.009)	(0.010)
Mother health status is	0-10	22,763	-0.008***	0.022*	0.033**	$0.037^{*}$	0.030	-0.018
excellent			(0.002)	(0.012)	(0.015)	(0.021)	(0.019)	(0.019)

\*\*\* : significant at 1% ; \*\* : significant at 5% ; \* : significant at 10%

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## Conclusion

- Effect of financial support (child benefits and tax assistance for families) on the education, behavior, and physical/mental health of children and mothers in Quebec.
- Our approach relies on exogenous changes in child benefit and tax assistance across time, number of children, and marital status.
- We show that the financial support for families has a positive impact on their well-being. These effects are particularly important for low-education families. Our results also show different effects depending on the sex of the child.
- It would be interesting in future research to study the mechanisms by which these financial supports have a positive impact on family well-being in Quebec.

## Thank you