The Family Gap in Canada: Trends, Geographical Patterns and the Link with Family - Friendly Policies

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The Family Gap in pay

- Mesures the effect of children on individual wages
- Motherhood is associated with lower wages (Waldfogel, 1998)
- Fatherhood is associated with higher wages (Phipps et al., 2001)

Hypothesis for the motherhood pay gap

- Depreciation of human capital (*Phipps et al.,2001 ; Anderson et al., 2002*)
- Mothers choose more family-friendly employment (*Budig, 2014*)
- Mothers are less productive due to family responsibilities (*Phipps et al.,2001*)
- Employers' discrimination (*Correll et al., 2007*)
- Unobserved heterogeneity (*Waldfogel, 1998*)

Empirical evidence

- **United States** : Motherhood penalties of 7.5% for mothers with 2 children and more, but these gaps have decreased between 1977 and 2007 (Pal and Waldfogel, 2014)
- **France** : Motherhood pay gap of 4.4% and 10.1% for mothers of 2 and 3 children or more, respectively in the private sector. No significant pay gap in the public sector (Duvivier et al., 2014)
- **International comparaison** : Large pay gap in Germany, Luxembourg and Netherlands ($\simeq$ 30%) and conversely no significant pay gap in Sweden and Finland (Budig et al., 2012)
- **Canada** : Motherhood pay gap of 12.5 %, and no significant gap for those who return to the same job (Phipps et al.,2001)
  Longitudinal analysis : motherhood penalties of 40% the year of the childbirth that totally disappear after 7 years (Zhang, 2010)

Contribution

- Use linked administrative and survey data providing a unique and more accurate way of identifying mothers
- Provide a more recent assessment regarding the family gap in Canada and across provinces
- Evaluate the impact of more generous set of family policy in Canada (2001) and in Quebec (1997-2006) regarding the family gap (forthcoming)

Data

- Longitudinal and International Study of Adults (LISA)
  - Wave 1 (2012) : November 2011 - June 2012
  - Wave 2 (2014) : January 2014 - June 2014
- Sample : permanent members and their future descendants
- Core content : labour market, education/training/skills and family experiences
- Feature of each wave
  - Wave 1 : Program for International Assessment of Adult Competencies (PIAAC),
  - Wave 2 : Family changes
- Linked with several administrative data sources
  - T1FF : historical data of personal and family earnings, transfers, income and after tax income (1982-2013)
  - T4 : historical data of earnings and employers (2000-2013)
  - PPIC : historical data of pension plan information (2000-2013)

Sample

- Balanced panel of parents
  - observed every year between -5 and +10 years relatively to their first childbirth
  - first child birth occurring between 1987 and 2003
  - first child between 20 and 40 y.o.
  - N= 3000 mothers and fathers distributed throughout all provinces
- Childless men and women
  - exclude individuals with high probability to have children in the future

Methodology

Model 1 : Kleven et. al. (2018) model's :

$$1) Y_{ist}^{g} = \sum_{j \neq -2} \alpha_{j}^{g} \cdot I[j = t] + \sum_{y} \beta_{k}^{g} \cdot I[k = age_{is}] + \sum_{y} \gamma_{y}^{g} \cdot I[y = s] + \nu_{ist}^{g} \quad (1)$$

Y_{ist}^{g} : outcome of interest (in level) at time t for individual i of gender g in year s and at event time t

2) We convert the estimated coefficients into percentages :

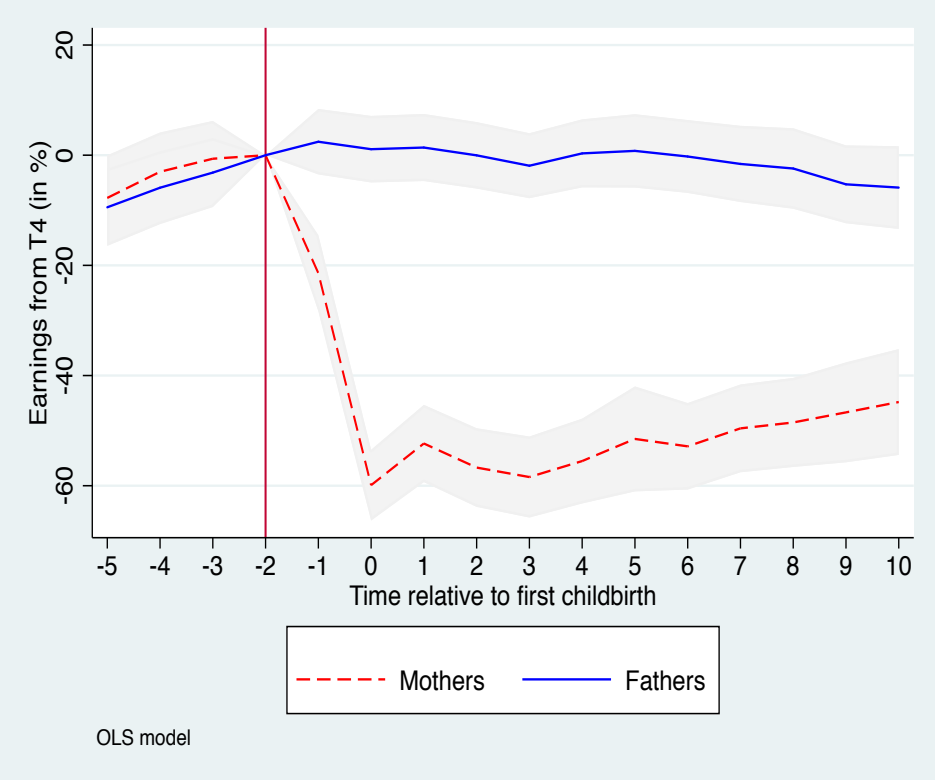
$$P_{t}^{g} = \hat{\alpha}_{t}^{g} / E[\tilde{Y}_{ist}^{g} | t] \quad (2)$$

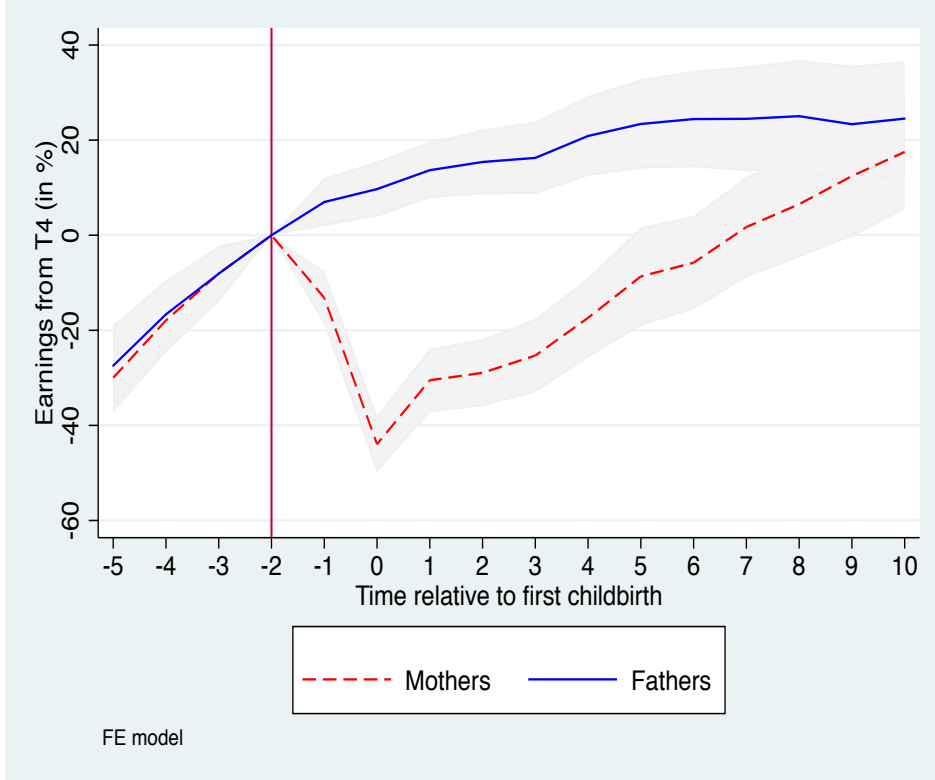
Model 2 : we add fixed effects :

$$Y_{ist}^{g} = \sum_{j \neq -2} \cdot I[j = t] + \sum_{y} \beta_{k}^{g} \cdot I[k = age_{is}] + \sum_{y} \gamma_{y}^{g} \cdot I[y = s] + \nu_{ist}^{g} + \alpha_{ist}^{g}$$

Baseline model

OLS model and FE model

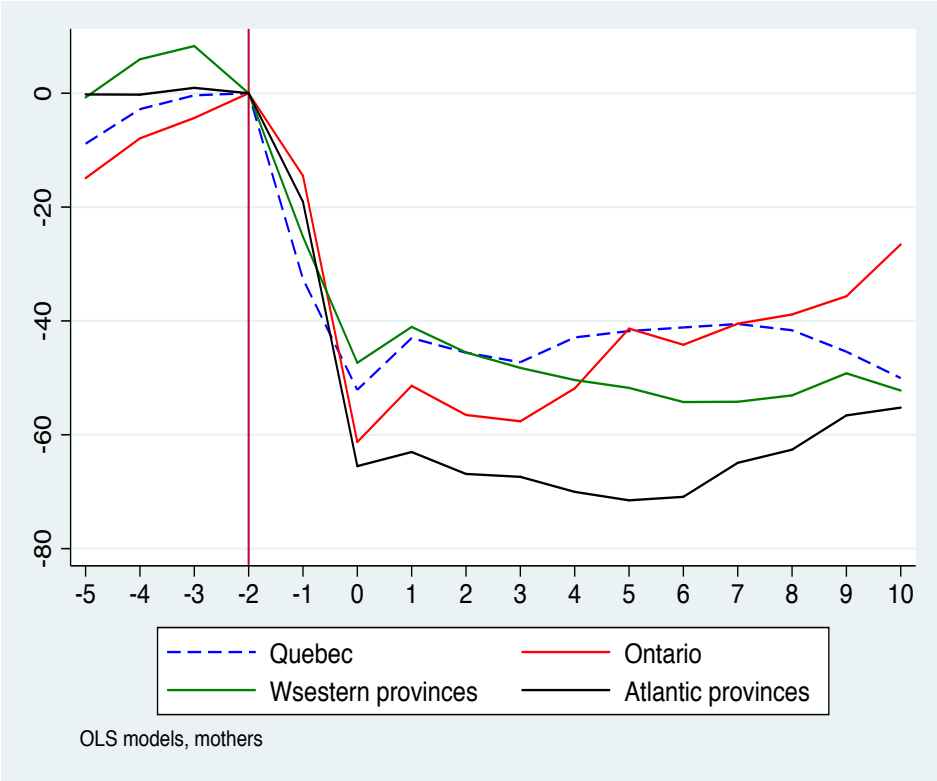


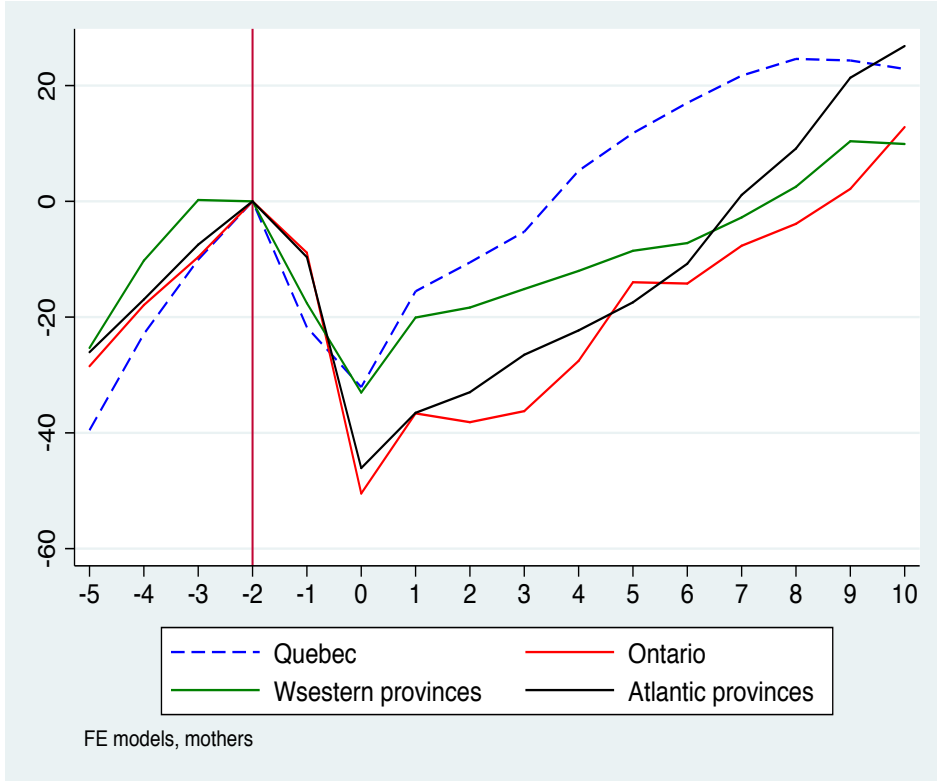


Source : author's calculation from LISA (2012 ;2014) and T1 Files (1982-2013)
Note : robust standard errors are in grey areas. Results are weighted with Statistics Canada sample weights.

By regions

OLS model and FE model





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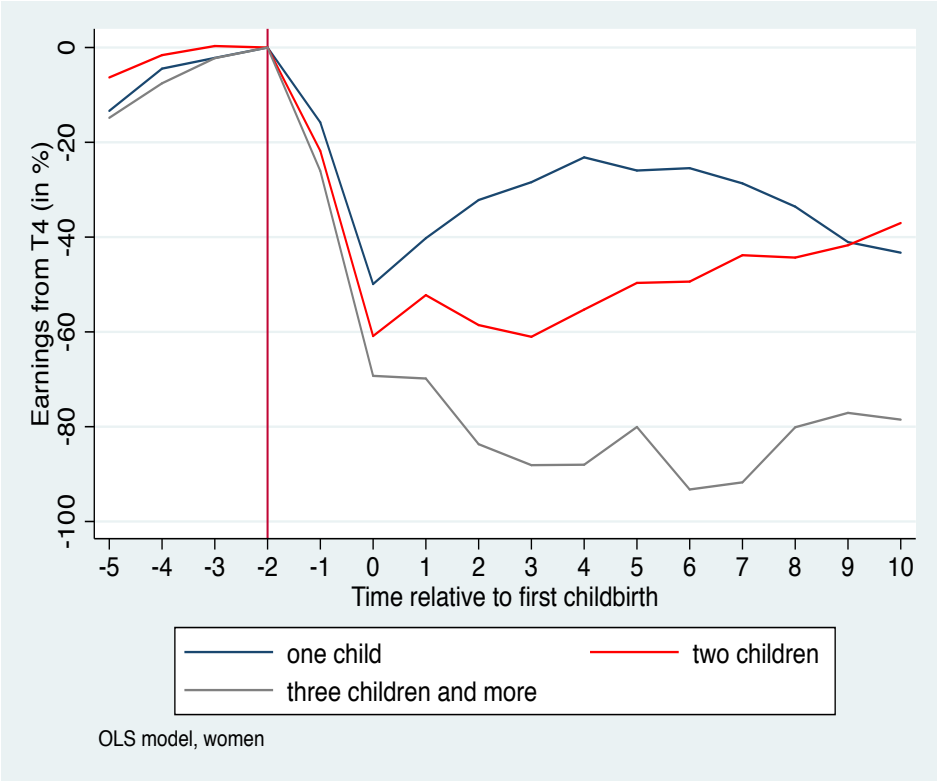
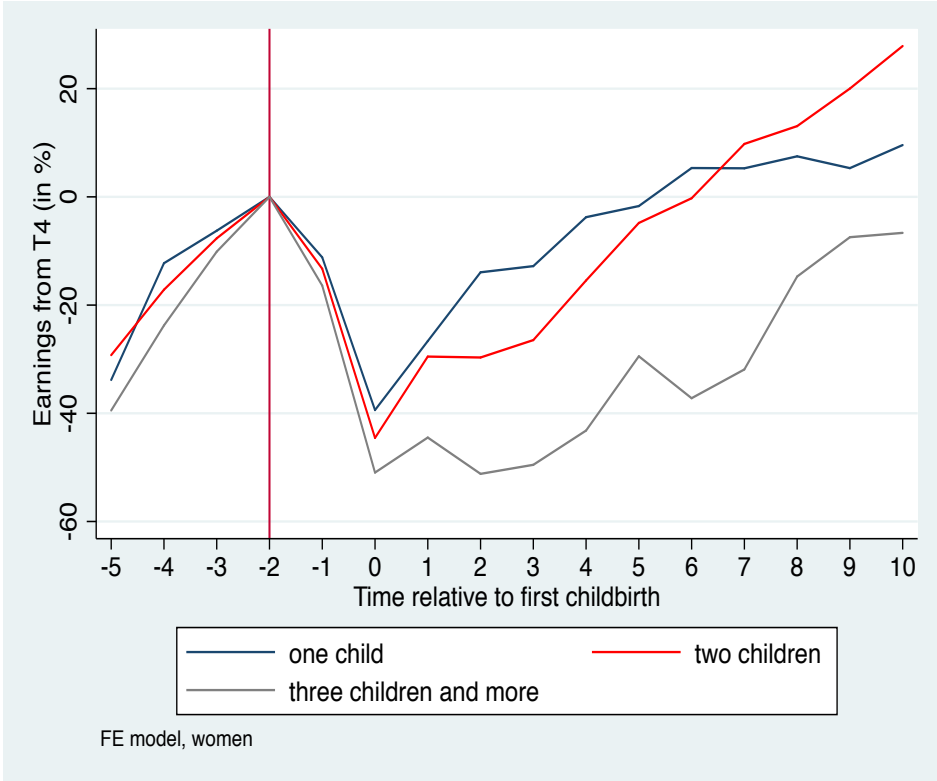
By number of children

OLS model and FE model





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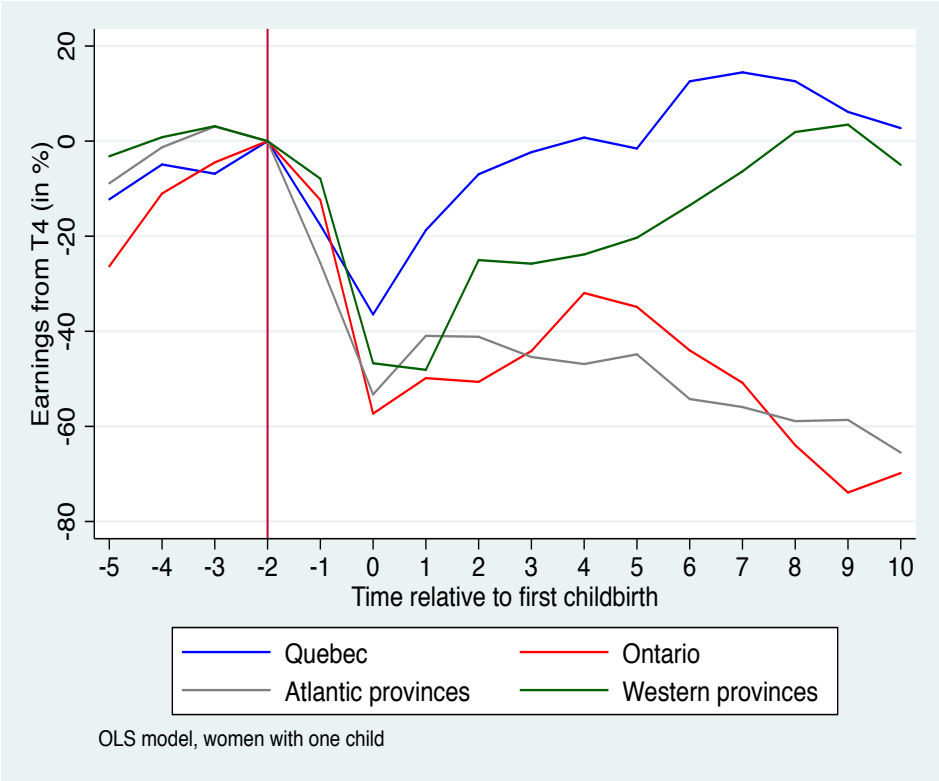
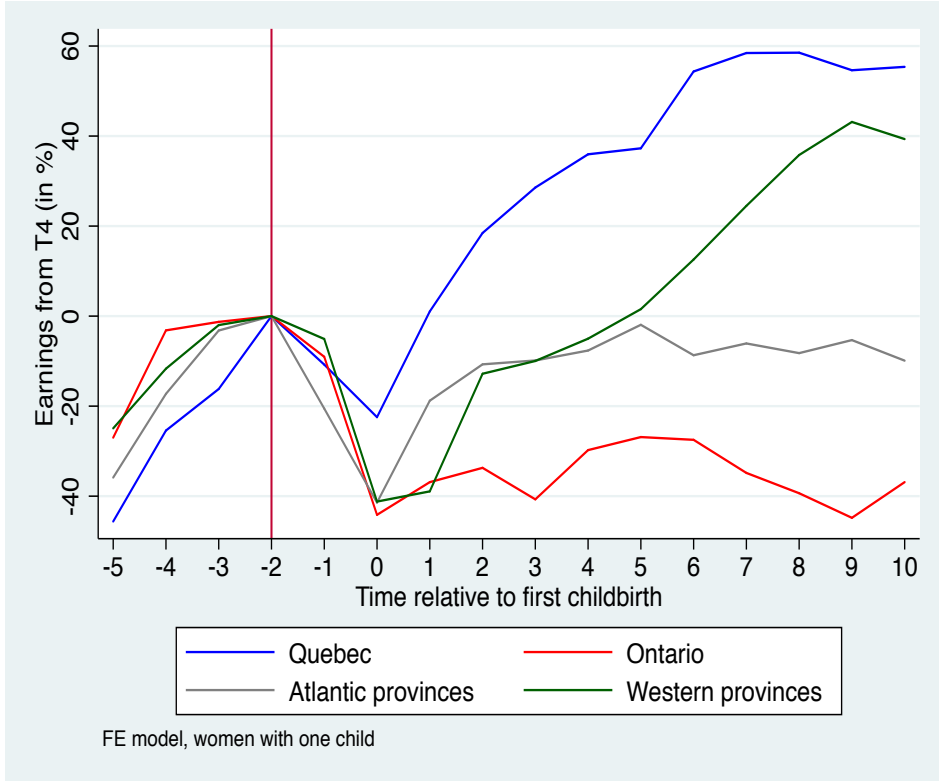
By regions and mothers with one child

OLS model and FE model



OLS model, women with one child

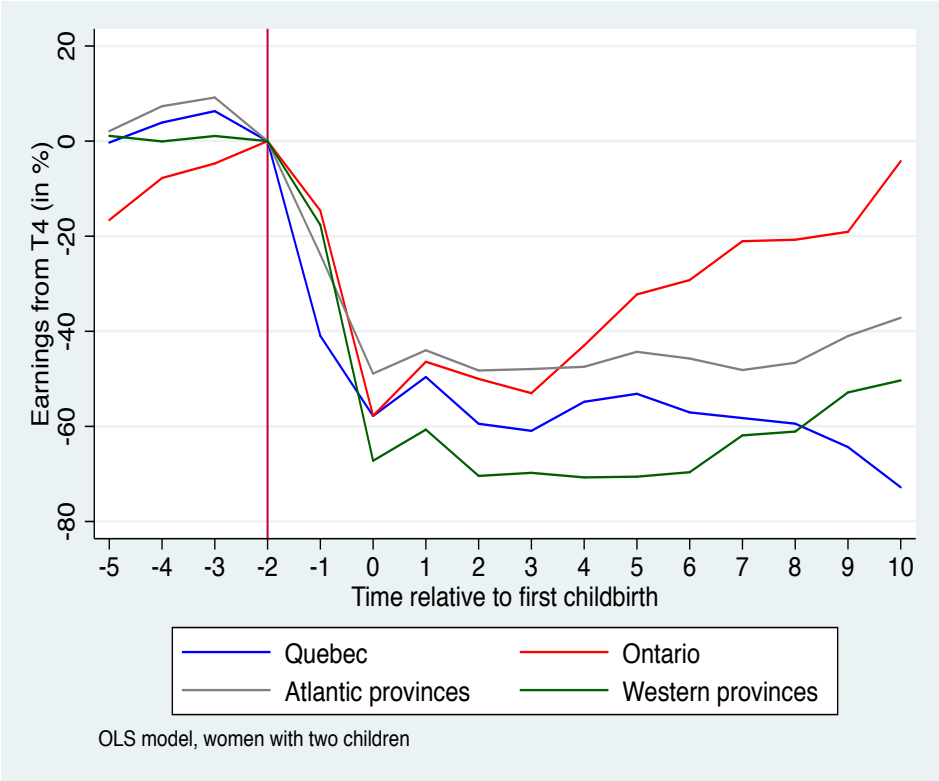


FE model, women with one child

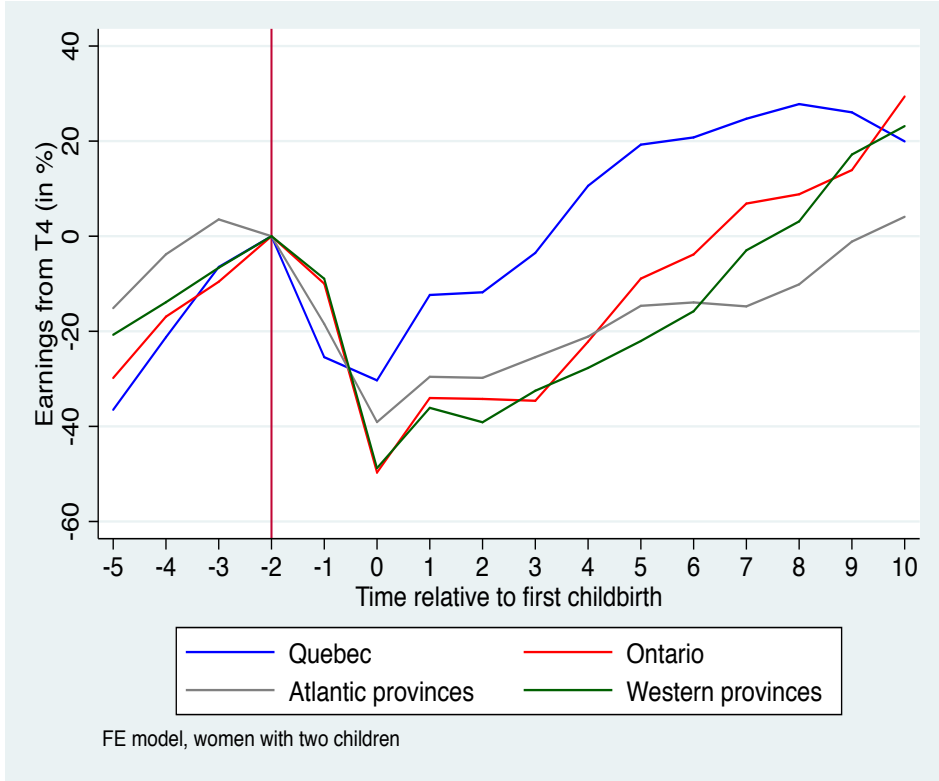
Source : author's calculation from LISA (2012 ;2014) and T1 Files (1982-2013)
Note : robust standard errors are in grey areas. Results are weighted with Statistics Canada sample weights.

By regions and mothers with two children

OLS model and FE model



OLS model, women with two children



FE model, women with two children

Source : author's calculation from LISA (2012 ;2014) and T1 Files (1982-2013)
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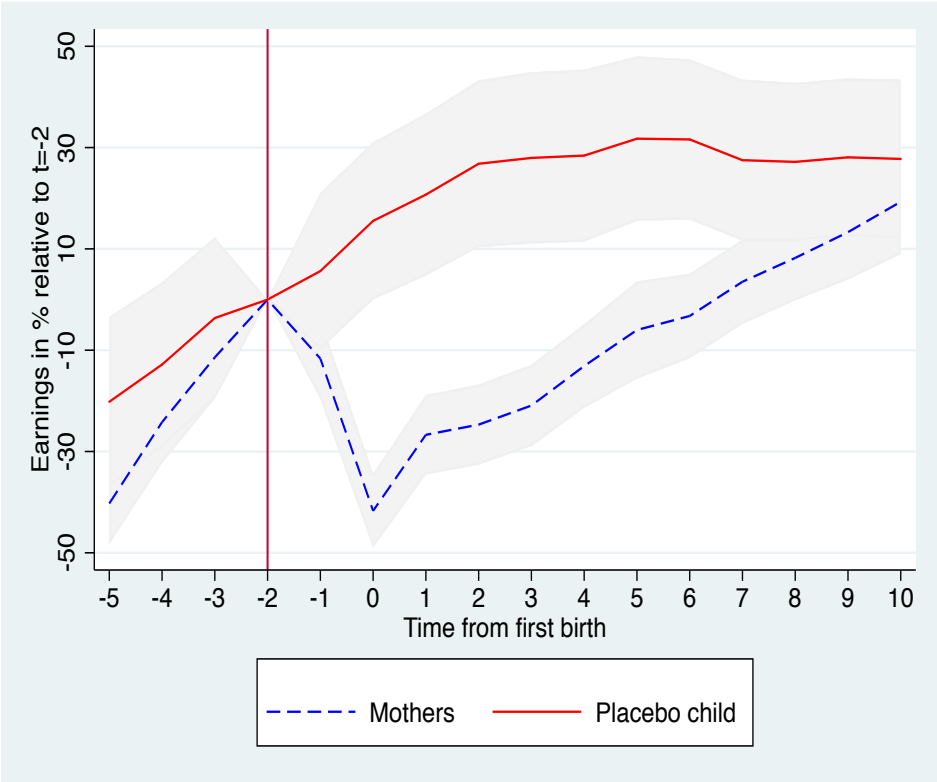
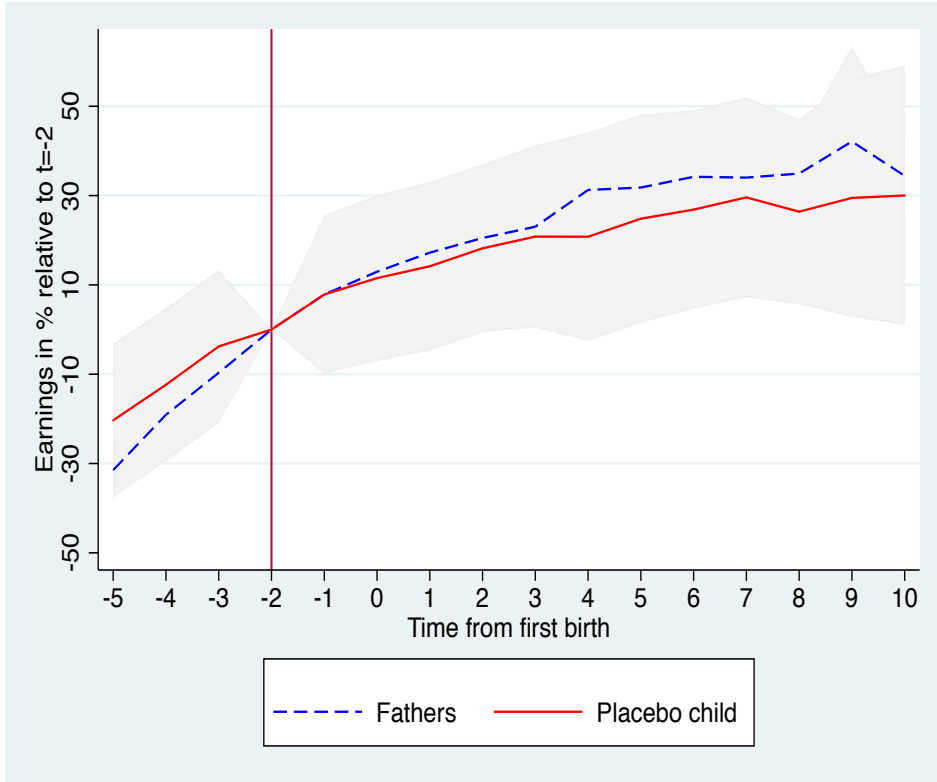
Parents with placebo birth

Comparison between actual parents and individuals with placebo birth





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Conclusion

- Motherhood has a negative effect on women's wages
- Earnings trajectories of fathers are not affected by children
- Our results suggest that there are important differences between Quebec and the other regions of Canada
  - Is there a link with the family-friendly policies in Quebec ?

Thank you !

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