



# Canadian Labour Market and Skills Researcher Network

## Working Paper No. 125

### The Effect of Universal Child Benefits on Labour Supply

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September 2013

CLSRN is funded by the Social Sciences and Humanities Research Council of Canada (SSHRC) under its Strategic Knowledge Clusters Program. Research activities of CLSRN are carried out with support of Human Resources and Skills Development Canada (HRSDC). All opinions are those of the authors and do not reflect the views of HRSDC or the SSHRC.

# The effect of universal child benefits on labour supply

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## Abstract

I study the effect of a universal child-related income transfer on the labour supply of married individuals. Using a difference-in-differences estimator, I find the Canadian Universal Child Care Benefit has significant negative income effects. The likelihood of lower-educated mothers to participate in the labour force is reduced 3.3 percentage points when receiving the benefit. Median hours worked per week among lower-educated mothers is reduced by 2.3 hours. The effects on higher-educated mothers are also substantial, though an effect on hours may reflect greater flexibility in hours worked while mothers enjoy job protection and employment benefits until children reach 12 months of age. For men, the evidence suggests small, significant income effects that are consistent with the literature on labour supply elasticities.

**JEL:** J22, J18

**Keywords:** Labour supply, public policy, child benefits, demogrant

## Acknowledgements

Data for this study was accessed at the South Western Ontario Research Data Centre as part of the Statistics Canada Research Data Centres Program. The opinions expressed herein do not represent the opinions of Statistics Canada. The study has benefitted from a Short-Term Research Grant provided by Wilfrid Laurier University. I would like to thank Kirill Savine for research assistance. I would like to thank Hideki Ariizumi, Ana Ferrer, Nicole Fortin, David Green, Stephen Jones, Shelly Lundberg, René Morissette, Arthur Sweetman, Michael Veall, participants of the Laurier Economics Internal Seminar Series, the CRDCN 2012 National Conference, the McMaster Economics Seminar Series, and CLSRN Annual Conference for their comments and suggestions.

# 1 Introduction

The effect of child benefits on the labour supply of parents is an issue of substantial interest, as most industrialized countries provide income transfers to parents of young children. Most often, child benefits are designed to target low-income families and several studies have examined the effects of means-tested benefits on labour supply. In the United States, a large empirical literature has examined the impacts of the Earned Income Tax Credit (EITC) on labour supply and find significant impacts on single parent households.<sup>1</sup> A large U.S. literature finds that welfare programs have important labour market effects and similar effects are found in Europe.<sup>2</sup> In Canada, Lemieux and Milligan (2008) have shown that more generous social assistance benefits reduce employment. Milligan and Stabile (2007) examine the integration of Canada's National Child Benefit and provincial social assistance programs and find strong labour market effects for single mothers in terms of employment. Consistent with this, Milligan and Stabile (2009) found that raising social assistance benefits reduced labour supply and increased social assistance receipt by low-education families.<sup>3</sup> There is a large literature estimating labour supply elasticities, which suggests low-income workers have much higher labour supply elasticities than high-income workers (see McClelland and Mok, 2012). A study by Crossley and Jeon (2007) finds that Canadian women married to higher-income husbands respond significantly to changes in effective marginal tax rates. While the labour supply elasticities of married women have fallen substantially over time, they remain higher than the elasticities of men (see Blau and Kahn, 2007; Heim, 2007) .

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<sup>1</sup>Hotz and Scholz (2003) and Meyer (2010) review this literature which generally finds that while the earnings subsidy positively affects the labour force participation of single-parent households, there is a modest negative effect on participation of secondary earners in two-parent families. Chetty et al. (2012) have recently found positive effects on earnings on the 'phase-in' region of the EITC that are higher in neighbourhoods more knowledgeable about the tax code.

<sup>2</sup>See Moffitt (2002) and Immervoll et al. (2007) for summaries.

<sup>3</sup> In contrast, Phipps (1995) argues the introduction of an earned-income supplement (which would provide a subsidy to some low-earner families) would have negligible effects on labour supply.

There are relatively few studies, however, that have examined the impact of child benefits on the labour market behaviour of parents that are not low-income, in part because such universal programs are not as common. There is reason to believe that child benefits may have effects quite different from other redistribution programs. Kooreman (2000) examines the expenditures of parents who receive transfers under the Dutch child benefit system (which provides a pure demogrant to families with children). His evidence suggests that parents treat child benefits differently from other income, as though they experience a moral obligation to spend a relatively large part of the benefit on children's goods. In that context, we might expect little or no effect on labour supply. This result could depend in part on which parent receives the benefit. Woolley (2004) suggests that paying child benefits to mothers should result in higher expenditures on food, household items, and children's clothing, as women are more likely than men to control these expenditures. Dooley et al. (2005) have provided some modest evidence that the cognitive and behavioural/emotional outcomes of children are associated with the mother's share of income. Lundberg et al. (1997) have shown that giving child allowances to women in the UK increases expenditures on women's and children's clothing relative to men's clothing.

More generally, there are few opportunities to examine the effect of demogranants on labour supply and obtain estimates of income effects on both the intensive and extensive margins of labour market activity. There have been a few studies assessing the effectiveness of tax rebates broadly distributed in the United States as economic stimulus (see Shapiro and Slemrod, 2003, 2009; Taylor, 2011). They find that such stimulus packages have small effects on spending, but large effects on savings (ie. repaying debt). Labour supply impacts are not the focus of these studies.

In Canada, the federal government introduced the Universal Child Care Benefit (UCCB) in July 2006, which provides a family with \$100 per month per child under the age of 6. For two-parent families, the benefit is paid as a monthly transfer to

the mother. The benefit is not a pure demogrant, however, in that the benefit is taxable: the lower-income spouse in a family is required to claim the UCCB income when filing their federal tax returns. As such, the after-tax benefit amount depends on the tax rate applied to the lower-income spouse, not the income of the family. The benefit is sizeable, representing roughly 12-18 percent of the annual cost of children.<sup>4</sup> The UCCB also represents one of the largest transfer programs administered by the Canadian government, representing 4.5 percent of federal transfers to individuals.<sup>5</sup>

In this study, I use Canadian Labour Force Survey (LFS) monthly data from 2003-2009 to investigate whether individuals changed their labour market behaviour in response to receiving the UCCB.<sup>6</sup> To identify the effect of the UCCB, a difference-in-differences estimator is used to compare the labour market activity of married Canadians with children under age 6 to married Canadians without young children, before and after the introduction of the UCCB. Probit models are used to estimate the effect of the UCCB on labour force participation and employment and unconditional quantile regressions are used to estimate the effect on hours worked. A complementary analysis of family expenditures is conducted using information from the Canadian Survey of Household Spending.

The results suggest large and significant negative income effects for lower-educated mothers on both intensive and extensive margins. Large income effects are found for mothers who have attained education beyond high school as well, however the income effect on hours worked may reflect greater flexibility in hours while mothers enjoy job protection and employment benefits associated with children under 12 months of age. The negative effects on father's hours worked are significant, and align with income

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<sup>4</sup>Using estimates from Milligan (2005) and based on Phipps (1998), adjusting for the All-Item CPI (CANSIM Table 326-0021), the cost of a first child is \$9738 per year and the cost of a third child is \$6533 in 2006 Canadian dollars.

<sup>5</sup>Estimates for 2013-14 government expenditures are available from the Treasury Board of Canada at <http://www.tbs-sct.gc.ca/ems-sgd/20132014/me-bpd/me-bpd01-eng.asp>.

<sup>6</sup>I have used the confidential files of the LFS, available to researchers through the Statistics Canada Research Data Centres Program.

effect estimates in the literature.

The paper is organized as follows. In the next section I describe the UCCB and other important child related benefits in Canada. In section 3 I discuss important theoretical considerations. I then discuss the data used in this study and the empirical framework used to estimate the effect of the UCCB on labour market activity. In section 6 I discuss the results and their robustness. I also provide some estimates of the UCCB's effect on family expenditures. Finally, I offer concluding remarks.

## 2 Child Benefits in Canada

The Universal Child Care Benefit has been distributed to parents of children under age 6 since July 2006. The UCCB is a taxable \$100 per month per child under age 6 payment. The stated goals of the program were to “help cover the cost of children”.<sup>7</sup> The discussion surrounding the policy's introduction, however, suggested the intention was for parents to increase their spending on good and services consumed by their children.<sup>8</sup>

A recipient of the UCCB must be the primary caregiver of the child under age 6 and a resident of Canada.<sup>9</sup> For married couples, the benefit is paid to mothers. For

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<sup>7</sup>This is the description of the UCCB as of October 2012 at [http://www.servicecanada.gc.ca/eng/goc/universal\\_child\\_care.shtml](http://www.servicecanada.gc.ca/eng/goc/universal_child_care.shtml). In July 2013, the information was updated to say the UCCB “provides financial support to help all Canadian families with young children choose the child care option that best suits their families needs, whether they work in the paid labour force or stay at home with their children, live in a small town, rural community or large urban centre” at [http://www.hrsdc.gc.ca/eng/child\\_family/child\\_care/index.shtml](http://www.hrsdc.gc.ca/eng/child_family/child_care/index.shtml).

<sup>8</sup>The benefit was first publicly discussed as a part of the Conservative Party of Canada's election platform for a January 2006 election, while the Liberal Party of Canada had been promoting Federal-Provincial agreements and initiatives to support formal child care programs (discussed in the 2005 Federal Budget documents). A representative of the Liberal Party had publicly stated that parents could spend the UCCB payment on “beer and popcorn” if they so choose. A discussion of that comment is found in the CBC archives at <http://www.cbc.ca/archives/categories/politics/elections/fumbles-and-stumbles-eight-great-election-gaffes/liberals-deride-beer-and-popcorn-money.html>, last accessed October 17, 2012. The Conservative Party won a minority government in the 2006 election and introduced the UCCB in the 2006 Federal Budget ( <http://www.fin.gc.ca/budtoc/2006/budlist-eng.asp>).

<sup>9</sup>Canadians with citizenship for less than 12 months and new residents for less than 2 years might not be eligible.

tax purposes, the parent with the lowest taxable income claims the UCCB income.<sup>10</sup> The UCCB is not clawed back against provincial social assistance payments. Note that in shared custody arrangements, only one parent could receive the benefit until 2010. In 2011, provisions were introduced to allow each parent in a shared custody arrangement to receive 1/2 of the benefit.

It would be rare for a family to be eligible for the UCCB and not receive it. When first introduced in 2006, parents were automatically enrolled for the UCCB if they received the Canada Child Tax Benefit (CCTB). If ineligible for the CCTB, parents can apply directly to the Canada Revenue Agency. Upon birth of a child, parents are provided with relevant forms and information by hospital staff, and payments are easily made retroactively for up to 11 months. While it is possible for a family to not apply and opt not to receive the benefit, there are very low costs to application.<sup>11</sup> Payments for a specific child are automatically terminated the month following the child's 6th birthday.

Introduced in 1998, the Canada Child Tax Benefit (CCTB) and the National Child Benefit Supplement (NCBS) represent the other major Federal programs for child-related benefits. These are income tested benefits available to families with children under age 18. The CCTB eligibility income thresholds are slightly higher and clawback rates much lower than the NCBS.<sup>12</sup> The CCTB and NCBS are not taxable and some provinces have integrated the NCBS payments with their social assistance programs (see Milligan and Stabile, 2007).

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<sup>10</sup>For single parents, provisions were introduced in 2010 that allow single parents to include the UCCB in the income of an eligible dependent.

<sup>11</sup>More recently, an automated benefits application can be completed online, which allows birth registration information to be sent directly to the Canada Revenue Agency for UCCB registration so that costs to application are near zero.

<sup>12</sup>In 2013, the basic CCTB benefit (\$119.41 per month per child under 18) was reduced if 'adjusted family net income' was more than \$43,561 at a rate of 2% if there was one child and 4% if there was more than one child. The NCBS was reduced for income above \$25,356 in 2013 at a rate of 12.2% for families with one child, 23% for families with two children, and 33.3% for families with 3 or more children. Some provinces provide an additional supplement and Alberta varies the basic benefit by age of the child.

Though not typically considered a child benefit, it is important to note the availability of Employment Insurance (EI) benefits for maternity and parental leave in Canada. In 2000, the total maternity and parental paid leave time was increased to one year and the threshold for eligibility was reduced to 600 hours of work in the previous year. In line with this, all jurisdictions in Canada increased job protection provisions to allow for 52 weeks of paid or unpaid maternity or parental leave. Those eligible for EI benefits will receive up to 55% of insured earnings.<sup>13</sup> In January 2006, Quebec introduced its own Quebec Parental Insurance Plan which is considered more generous than EI.

A few small child-related benefits were introduced over the time period studied in this paper. A children's fitness tax credit was introduced (effective January 1, 2007) as a non-refundable tax credit for up to \$500 of eligible program fees.<sup>14</sup> There is some evidence that these benefits have largely benefited higher-income families and has not changed investments in child fitness (see Spence et al., 2010). The 2006 budget also introduced the Child Disability Benefit in July 2006. The 2007 budget introduced a new \$2000 non-refundable child tax credit for each child under the age of 18 at the end of the tax year.<sup>15</sup>

An important consideration is the availability and cost of child-care, which varies substantially across provinces and has changed over time. Quebec introduced full-time kindergarten to all 5-year-olds and the provision of child care at a cost of only \$5.00 per day. The \$5.00 per day child care was phased in to cover all children aged 4 and under by 2000. It is well known that the policy had a significant impact on child-care use and maternal labour supply (Baker et al., 2008; Lefebvre and Merrigan, 2008). Ontario recently introduced full-time kindergarten for 5-year-olds, available

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<sup>13</sup>A maximum benefit is set at 55% of the year's Maximum Insurable Earnings, amounting to \$501 per week in January 2013.

<sup>14</sup>This provides parents with up to \$75 in tax relief.

<sup>15</sup> The amount of the credit increases with inflation and provides tax relief up to 15% of \$2000. See <http://www.budget.gc.ca/2007/plan/bpa5a-eng.html#child>.



in some schools in 2010. The initiative is being phased in, aiming to have full-day kindergarten in all schools by 2014. Full day half-time kindergarten for 4-year-olds is simultaneously being introduced to Ontario schools.

To summarize, there are a variety of child-related benefits in Canada that could affect parents' decisions regarding labour supply. However, no significant changes were made to child-related benefits over the 2003-2009 period that only affect families with children under the age of 6. The exception is the introduction of the Quebec Parental Insurance Plan, however robustness checks will demonstrate this program is not driving any results in this paper.

### **3 Theoretical Discussion**

A simple standard static model of labour supply treats a demogrant like the UCCB as shifting the budget constraint representing individuals' potential purchases of leisure time and consumption goods. The demogrant has a pure income effect, so that individuals receiving the benefit are expected to purchase more normal goods. As such, we can expect individuals to reduce their hours of work when receiving the UCCB. For some individuals, the income effect could be large enough to induce a departure from the labour force. To the extent that the tax system is progressive and the lower-earning parent is taxed for the UCCB income, the additional income provided by the UCCB is largest for those individuals with the lowest wage offers and/or lowest hours worked.

In light of the static model's limitations, however, we might not expect to observe this income effect in the data. In a dynamic model of labour supply, the leisure and consumption goods purchased with an anticipated demogrant - though only received for a short period of time - should be distributed over the individuals' lifetime. If the marginal value of time related to household production relative to market production

is highest when children are young, however, parents may choose to use that leisure time immediately. Also, parents may use the leisure time immediately if they heavily discount their future.

Further, couples might bargain over the distribution of leisure and consumption goods. If facing similar marginal tax rates and already sharing consumption equally, couples may choose to evenly split the leisure time and consumption goods purchased with the UCCB. If a secondary earner faces much lower marginal tax rates, the couple may choose to distribute leisure purchases toward the primary earner as the marginal utility of leisure for the primary earner might be larger. If, however, the primary earner faces a fixed hours constraint, then the secondary earner may gain more in leisure time as a result of the UCCB.

A formal model of the UCCB's effects on labour supply is not pursued here. From the existing frameworks, however, it seems reasonable to expect the total labour supply of married couples to be reduced by the receipt of the UCCB. The reduction in labour supply may not be substantial, as couples might choose to smooth their consumption associated with the anticipated benefit. In the presence of fixed hours constraints on primary earners, we should expect the hours of secondary earners to change more, particularly among those in lower income brackets with a lower opportunity cost of leisure time. In this same group, we are more likely to see full departures from the labour force in response to UCCB receipt.

## **4 Data**

### **4.1 The Canadian Labour Force Survey**

The main data source for this study is the Canadian Labour Force Survey (LFS), 2003-2009. Administered by Statistics Canada, the LFS is a large-scale monthly survey with a complex survey design used to ensure accurate estimates of employment

and unemployment in relatively small and sparsely populated regions. Dwellings are sampled and followed for six months of the year. Each month a new incoming rotation group (ie. set of dwellings) is chosen. The confidential microdata files are being used, allowing us to observe details of characteristics that are masked in the public-use microdata files. Although basic demographic information is only collected the first month a person is interviewed, the respondents provide the date of birth for all household members. As such, we are able to see the person’s actual age each month. All respondents are identified in terms of their relationship to the family’s reference person which is “normally an adult with responsibility for the care or support of the family” (Statistics Canada, 2012). Of importance here, we can link children to their parent’s records without mistaking them for grandchildren.

Labour market activity on the intensive and extensive margins will refer to individuals’ activity in the reference week of each month’s survey. For the intensive margin, the actual hours worked at all jobs is used in the analysis. Rather than ‘usual hours’ or hours for the main job, the actual hours at all jobs will capture hours worked in temporary and informal employment.

When creating an indicator for UCCB receipt, I am not able to observe whether an individual or their spouse actually receives the UCCB benefit. Rather, we are indicating an expectation that they are eligible - they have at least one child (by birth, marriage, or adoption) under the age of 6 in the household and are observed after July 2006. We falsely identify eligibility in cases where individuals report their children as members of the household but the parent does not have primary custody.<sup>16</sup> We falsely identify ineligibility in cases where individuals have primary custody of a child that is not their own (by birth, marriage, or adoption), such as a grandchild. To check the extent to which an error might occur, I used the Survey of Labour

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<sup>16</sup>Respondents are asked to list the names of “all persons who usually live here” and add a person if “he/she has no other usual residence elsewhere.” It is not obvious how shared custody arrangements are treated (see Statistics Canada, 2012).

and Income Dynamics, in which we are able to observe the ages of each child in a family and whether the family is collecting the UCCB on an annual basis. An error in assigning the UCCB occurs in only 2.5% of families headed by a married couple, with the bulk of errors representing families deemed eligible for the UCCB, but receiving zero benefits. The error in assigning the UCCB is not more frequent among families headed by divorced or separated individuals, or married individuals who have married more than once - in other words this is not exclusively representing complex child custody arrangements. The error in UCCB assignment in SLID did not appear correlated with indicators of labour market activity (such as labour force status and hours worked).

In the analysis that follows, the distinction is made between ‘higher’ and ‘lower’ educated individuals. In the LFS, the highest level of educational attainment is recorded for each individual. I refer to individuals with educational attainment at or below high school graduation as ‘lower’ educated and those with any post-secondary training as ‘higher’ educated. The detailed categories for educational attainment are used as control variables in the analysis.<sup>17</sup>

The sample used in this study represents married women age 25-49 and men married to women age 25-49. The age range was chosen to represent the group of women most likely to have children under age 6, have completed their investments in education, and had the opportunity to start career jobs. In 2006, the average age of mothers at their first childbirth was 28 years (Milan, 2011). The fertility rate of women age 40-44 has increased since the early 1980s and was 7.4 per 1000 women in 2006; the fertility rate of women age 25-29 has been quite stable and was 100.5 per 1000 women in 2006 (Milan, 2011).

The sample includes common-law marriages when referring to married individuals.

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<sup>17</sup>Education categories include (i) grade 8 or lower, (ii) grade 9-10, (iii) grade 11-13 non-graduate, (iv) grade 11-13 graduate, (v) some post-secondary education, (vi) trades certificate or diploma, (vii) community college, CEGEP, etc., (viii) university certificate below Bachelor’s, (ix) Bachelor’s degree, (x) above Bachelor’s degree.

Only the reference person or their spouse is sampled to ensure matching of children in a household to their own parents. The sample excludes all individuals in same-sex marriages for practical purposes - although labour market decisions within the household conditional on the presence of children are similar to those for opposite-sex couples, the analysis will be based on subsamples of men and women, making the inclusion of same-sex couples more difficult to interpret. I have chosen not to address single parents within this study as their non-labour income and time constraints differ substantially from married and common-law individuals. Note that ‘mother’ and ‘father’ subsamples refer to those who have their children under the age of 24 residing in their household.

## 4.2 Descriptive Statistics

Descriptive statistics for married men and women age 25-49 for the period 2003-2009 are provided in Table 1. Labour force participation and employment rates are highest among men and lowest among lower-educated mothers. Note that the participation and employment rates of the broader population (including singles) are quite similar to those presented here.<sup>18</sup> Not surprisingly, women are much more likely to be working part-time hours. Reporting 40 hours worked is typical for men, which is a typical work week in Canada (noting that 37.5 hours is commonly defined in employment contracts for full-time positions, particularly in the public sector). While the 75th percentile of hours worked by women reaches 40 hours, this is not typical for women. The median hours worked for lower-educated mothers is 21 hours per week and for higher-educated mothers, median hours are 26 per week. This reflects a higher likelihood of mothers to take jobs that allow for part-time and flexible hours. There is, however, a significant gap between the employment rates of highly educated mothers (79%) and lower-educated mothers (67%) that suggests these two groups are quite distinct.

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<sup>18</sup>In CANSIM Table 282-0004, the participation rate of all women age 25-44 was 82% and all men age 25-44 was 92%.

Another distinction to be made between higher and lower educated mothers is the timing of fertility. While 44% of highly educated mothers have children under the age of 6, only 30% of lower educated mothers have children under 6. This does not necessarily represent a difference in total fertility, noting that the number of children age 13-18 is much higher for lower educated mothers. By construction, half of the sample with children under 6 from 2003-2009 receives the UCCB benefit that was introduced in July 2006.

Women are generally more educated than men in Canada. Among women age 25-49, 20% had completed a Bachelor's degree while 17% of their husbands had completed a Bachelor's degree. Similarly, fewer women in this sample have not attended some form of post-secondary education. Women, however, are more likely to attend college programs while men are more likely to obtain trades certification.

In Figure 1 the labour market activity of women, by subsample and the presence of young children is presented, before and after the introduction of the UCCB. As one would expect, labour supply among mothers of children under age 6 is lower on both the extensive and intensive margins than other women. For women without children under 6, labour supply generally increases over time. For example, lower educated mothers without young children worked 22.5 hours on average before the introduction of the UCCB and 23.1 hours after. Lower educated mothers with young children, however, reduced their average hours worked by 0.7 hours. Similar trends are found for the extensive margin - the employment rates of lower educated mother without young children increased by 2 percentage points, and fell by 2 percentage points for lower educated mothers with young children.

The patterns for men (Figure 2) are not as clear. Average hours worked appears to decline for all subsamples of men, with larger declines for men with young children. The magnitude of the decline in hours, however, is small compared to women. On the extensive margin, the changes in employment or participation rates are so small

that it would be difficult to suggest the UCCB could have an effect on men's labour market activity.

Figure 3 describes the labour market activity of mothers and fathers profiled over the age of their youngest child. In Canada, the availability of EI parental leave clearly affects the labour supply of mothers - when the youngest child is less than one, mothers work just over 4 hours per week. Mothers with one-year olds, however, work 19 hours per week. Note that mothers employed prior to giving birth are labelled employed (on leave) in the LFS (rather than not in the labour force) as long as their child is under one year and they intend to return to work when their job-protected parental leave is over. As such, there is not a clear increase in employment rates after the youngest child turns 1. More interesting in this figure is the smooth transition towards greater labour market activity for women as their children age. In particular, there is not a clear jump at age 6 when children are typically starting their first grade in elementary school. For fathers, there is not a clear pattern for labour market activity across the age of their youngest child.<sup>19</sup>

Overall, we can see that women, particularly mothers, are more likely to engage in employment that is part-time and allows for some flexibility in their labour market activity. Men, on the other hand, appear subject to fixed hours constraints and are less influenced by the presence of young children. Over time, we see changes in labour market activity that are different for mothers of young children and those without young children. This is preliminary evidence of an effect of the UCCB, and investigated more rigorously in the next section.

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<sup>19</sup>Note that the slight decline in men's labour market activity as children age is specific to this sample, representing entry to retirement by older husbands. The decline is not present in a sample of men age 25-49.

## 5 Methods

The main estimating equation takes the form

$$Y_{it} = \beta_0 + \beta_1 UCCB_{it} + \beta_2 Under6_{it} + \beta_3 PostJuly2006_{it} + X_{it}\gamma + Z_{it}\delta + e_{it}. \quad (1)$$

The outcome  $Y_{it}$  is either hours, participation in the labour force, or employment, for individual  $i$  at time  $t$ . The variable  $Under6_{it}$  indicates that the individual has a child age 5 or younger so that  $\beta_2$  capture general labour market effects associated with children being young.  $PostJuly2006_{it}$  indicates the individual is observed after the introduction of the UCCB in July 2006. The variable  $UCCB_{it}$  is an interaction term indicating the individual has a child age 5 or younger and is observed after the introduction of the UCCB. The equation then represents the standard difference-in-differences estimator.

The vector  $X_{it}$  represents the baseline set of controls used. In the baseline specification,  $X_{it}$  includes controls for the number of children in each age group (0, 1-2, 3-5, 6-12 and 13-18), the individual's age and age squared, a set of indicators for educational attainment, and an indicator for the spouse's labour force participation. The vector  $Z_{it}$  captures time and province effects and the baseline regressions include a trend variable, province fixed effects, province-specific trends, and seasonality of labour supply captured by indicators for each month of the year and province-specific month indicators.

The model is estimated using a probit model when  $Y_{it}$  represents participation or employment. Unconditional quantile (UQ) regressions (following Firpo et al., 2009) are used to estimate the effect of the UCCB on hours worked at various percentiles including the median.<sup>20</sup> Hours are also estimated using a Tobit model. However, as the notion of latent and potentially negative desired hours worked is an odd construct

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<sup>20</sup>I have made use of the Stata programs generously made available by the authors on Nicole Fortin's webpage at <http://faculty.arts.ubc.ca/nfortin/datahead.html>.



to some (see for example Angrist and Pischke, 2009, p.100), I prefer to estimate the UCCB effect using the UQ regressions. Given that the use of fixed effects in probit models may bias estimates, I have also estimated participation and employment equations using linear probability models. Furthermore, a variety of specifications are estimated and the inclusion of fixed effects does not appear to be a serious cause for concern.

Presented in the following section, several robustness tests are conducted. To ensure the results are not driven by parents of young children responding differently to the most recent recession, the equation is estimated using only those observed before September 2008. I have also provided results that address concerns about employment and wage growth among lower-educated men working in Canada's resource sector, concerns about the growing importance of EI maternity and parental leave benefits, and the introduction of the Quebec Parental Insurance Plan in 2006. I also provide results that address concerns about the purity of the control group in this study, since some individuals were observed with 5 year olds (in the treatment group) who become 6 year-olds within the 6 months of the LFS. I will discuss concerns regarding inference with difference-in-differences estimators. Finally, the UCCB effect is also estimated using regression discontinuity design.

## **6 Results**

### **6.1 Main estimates**

The baseline results for samples of married women and men are presented in Tables 2 and 3 respectively. Gender differences in the coefficients for control variables are exactly what we would expect. First, women with the youngest children are the least likely to participate in the labour force and work the fewest hours. The effect on median hours is most substantial for mothers of infants, particularly new mothers with

higher education. Fathers, on the other hand are slightly more likely to participate when they have more young children. The effects for men, although significant, are relatively modest. The marginal effect of education on the likelihood of working or hours worked has a very steep gradient for women relative to men. While women with a Bachelor's degree are nearly 7 percentage points more likely than high school graduates to participate in the labour force, men with a bachelor's degree are only 1 percentage point more likely to participate. Moreover, women with grade 8 or less were 20 percentage points less likely to participate in the labour force than high school graduates while men with grade 8 or less were nearly 7 percentage points less likely to participate. Assortative mating is apparent in marriage decisions as spouses are more likely to participate if their spouse is also in the labour force. Perhaps surprisingly, the effect is much larger for women.

The UCCB appears to have a significant and substantial effect on the labour market activity of women on both the extensive and intensive margins. Receipt of the UCCB reduces married women's participation by more than one percentage point. At the median, actual hours worked is reduced by 2/3 of an hour. This implies a much larger income elasticity than what is typically found in the literature for married women.<sup>21</sup> Not surprisingly, the largest labour supply effects are for lower-educated mothers. Receipt of the UCCB reduces their probability of participating in the labour force by 3.3 percentage points. At the median, hours worked are reduced by 2.3 hours for lower-educated women. The effect is not nearly as strong at the 75th percentile of hours, as the UCCB's effect on the 75th percentile of hours worked is only -0.47. The effects on higher-educated mothers are more modest. On the intensive margin, the UCCB's effect on median hours is -1.4 hours, which is a much larger effect than for men. The effect of the UCCB on higher-educated mothers participation is roughly

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<sup>21</sup>Using an hourly wage for women at \$20/hr (CANSIM 282-0074, 2006), the income effect is  $(20*(-0.6653)/25) = -0.53$ . McClelland and Mok (2012) suggest the income elasticity is in the range 0 - -0.1.

half that of lower educated mothers.

For men, the effect of the UCCB on the extensive and intensive margins are much smaller. The UCCB appears to reduce men's participation in the labour force by less than 1/2 percentage point, The UCCB appears to reduce hours per week by only 4 minutes per week ( $-0.07 \times 60$ ). The implied income effect is in line with estimates for men found in the literature.<sup>22</sup>

In Table 4 I provide the estimated effect of the UCCB based on various sub-samples and modelling choices. Broadly speaking, conclusions do not rely heavily on modelling choices but there are clear differences in the UCCB effect across samples of mothers and fathers. The UCCB does not have a significant effect on the employment of men. The UCCB does not appear to have any effect on the participation of higher educated fathers and has a negligible effect on hours. Interestingly, there is a slightly larger effect on hours at the 75th percentile for men. This might reflect an opportunity and desire for fathers of young children to pass up overtime hours on occasion.

## 6.2 Further robustness checks

In Tables 8 and 9 I present the estimated effect of the UCCB on married women's labour market activity for a variety of specifications and subsamples.<sup>23</sup> First, we see that the estimated effect of the UCCB on the extensive margins of labour supply are very robust to the way in which year, province, and seasonal effects are controlled for. The estimate effect of the UCCB on hours is a bit more sensitive - for example the estimated effect on hours falls slightly in all models once provincial fixed effects are accounted for. Notably, we see this for the OLS and Tobit models as well as the UQ regressions (which will have the same concerns for bias associated with fixed effects in probit models).

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<sup>22</sup>Using an hourly wage for men at \$23/hr (CANSIM 282-0074, 2006), the income effect is  $(23 \times (-0.0699)/25) = -0.06$ . McClelland and Mok (2012) suggest the income elasticity is in the range 0 - -0.1.

<sup>23</sup>Similar results for other samples are available from the authors upon request.

The exclusion of all observations after September 2008 does not substantially alter the estimated effect of the UCCB on the participation, employment or hours worked by married women. As such, we can be fairly confident that the results do not merely reflect a general reduction in labour supply by mothers in response to the recession.<sup>24</sup>

Another development in recent years is the large increase in job opportunities and men's hourly wages in Canada's resource sector.<sup>25</sup> To account for this, I provide two sets of estimates. First, I include a control variable for the spouse's wage rate (which is set to zero for spouses that are not employed and should thus be thought of as an interaction between employment and wages). This inclusion has no effect on the estimated effect of the UCCB on intensive or extensive margins. Second, I estimate the equation using a sub-sample of married women whose husbands are not low educated (ie. have completed more than high school). The estimated effect on participation and employment is slightly smaller in this sub-sample, but a larger negative UCCB effect is found for median hours. This may capture the nature of assortative mating and the role of women as secondary earners in families with highly-educated husbands - they may be more likely to participate in the labour force, but conditional on participation have more flexible work schedules. This interesting result warrants further study beyond the scope of this paper.

Tables 8 and 9 also provide estimates that account for parameters of Canada's ma-

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<sup>24</sup>Note that this is robust for the higher-educated mothers sub-sample, the estimated effect on the 75th percentiles of hours among lower educated mothers, and the marginal effects based on OLS or the Tobit model for the sample of lower educated mothers. However, the estimated effect of the UCCB on the 45th and median hours for lower educated mothers is insignificant when post-recession observations are excluded. Given this discrepancy is specific to results reflecting those working the fewest hours, it is likely this merely reflects our limited ability to use UQ regressions to estimate effects on the part of the distribution closest to zero hours. I cannot exclude the possibility, however, that during recessions low educated mothers of young children working few hours are more likely than other mothers to act as added workers in the family by raising their hours worked, but not differentially changing their likelihood of participation in the labour force to the same extent. This result likely relates to the nature of employment held by these mothers and how this changes over the business cycle, which requires further investigation beyond the scope of this study.

<sup>25</sup>While nominal wages for all employees age 25-54 increased by 22% from 2003-2009, the nominal wages of men age 25-54 in the resource sector increased by 31% (tabulations based on CANSIM Table 282-0072).

ternity and parental leave provisions. First, a subsample that excludes Quebec is used to account for Quebec's more generous parental leave. The results for the UCCB's effect on the extensive and intensive margins are only slightly smaller. Second, the effect is estimated using a subsample that excludes the parents of infants (under 12 months old). This appears unimportant for the estimated effect of the UCCB on the extensive margin. However, the estimated effect on hours is much smaller than for the broader sample. When the sample is further divided by education, the estimated effect of the UCCB on lower-educated mothers is still quite large (-1.8 at the median) when mothers of infants are excluded. However, the estimated effect of the UCCB on higher-educated mothers hours at the median is much smaller (-0.29). As such, effect of the UCCB on the larger sample of higher-educated mothers may reflect some flexibility in hours for mothers of infants rather than flexibility in hours for mothers of toddlers and pre-schoolers.

The last lines of Tables 8 and 9 address concerns about the purity of the control group used in this study. Because the LFS interviews the same household for 6 months, there are some parents that will end up in both the treatment and control group as their youngest child turns 6. To account for this, all children observed turning 6 over the 6 month period are removed from the sample. The sample is then reweighed so that distribution for the age of the youngest child in the household is preserved. The results for the estimated effect of the UCCB labour supply are nearly identical to the baseline estimates.

It is important to acknowledge concerns that the use of conventional standard errors for inference is not entirely appropriate for difference-in-differences estimates, particularly in this case where there is only one group that experiences a treatment change. I have also estimated similar specifications suitable to the inference approach proposed by Conley and Taber (2011).<sup>26</sup> The Conley-Taber approach requires a large

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<sup>26</sup>I made use of the computer code generously made available by Christopher Taber at <http://www.ssc.wisc.edu/%7Ectaber/code.html>. (Specifically, the file `ga_ew.do` was modified for use

number of control groups, so the single control group in this study (those who do not have children under age 6) was divided into a 14 control groups defined by the age of the youngest child (ages 6-18, 19 and over). While 14 control groups are not large enough to define a proper confidence interval, the results were informative. The resulting range of test statistics indicate the treatment effect is negative.

I also tested for a UCCB effect using a regression discontinuity approach. Using samples of parents whose youngest child is between the ages of 1 and 18 after July 2006, I estimated the effect of having a child under the age of 6 on participation, employment and hours. The regressions included a function (either linear, quadratic, or cubic) of the youngest child's age to capture the general effect of child's age on parents' labour market activity, as well as controls for education, age of the parent, and province. The results based on a quadratic specification for child's age suggested strong negative effects of the UCCB (having a child under 6 after July 2006) on participation and employment for all women that would be larger, though comparable, to the estimates presented in Table 4. The quadratic specification's estimate for the effect of the UCCB on hours was also comparable for the sample of lower-educated women. The results, as is commonly the case when estimates are based on a regression discontinuity, were quite sensitive to the functional form chosen for child's age. Specifically, if using a linear specification, a false UCCB effect would also be found using a sample of women before July 2006. Overall, the estimates based on the regression discontinuity approach support the argument that the UCCB had a negative effect on mother's labour supply.<sup>27</sup> However, they do not independently provide conclusive evidence.

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in this study.)

<sup>27</sup>These estimates are available from the author upon request.

### 6.3 UCCB effects on expenditures and other decisions

The results presented thus far have suggested significant negative income effects associated with child-related demogrants. In some subsamples, it appears the UCCB reduces individual labour supply to the extent that we will not expect any substantial increase in some families' purchases of child-related goods and services in response to UCCB receipt.<sup>28</sup> To examine this more closely, I make use of the Canadian Survey of Household Spending and a sample of two-parent families headed by married couples where the wife is age 25-49, to test whether the UCCB has a significant effect on some aspects of families' spending. Unfortunately, there are few categories specific to young children so categories of goods and services that might benefit children under age 6 are examined. I estimate equation (1), where  $Y_{it}$  represents expenditures (total, child-related, or other goods in 2006 dollars),  $X_{it}$  includes controls for the presence of a child under 6, an indicator for 2006 or later, husbands' and wives' age, education, working full-time full-year, the number of children age 0-4 and 5-17, and  $Z_{it}$  includes a trend and province fixed effects.

The results are presented in Table 7. There is some weak evidence that families are using the UCCB to purchase some goods and services for their children. Families with lower-educated mothers appear to spend more on child-care and child's clothing. Families with higher-educated mothers increase spending on food. There are no significant effects found for total family expenditures and (perhaps encouragingly) there is no significant effect on family purchases of tobacco and alcohol.

In this study, we are not able to ascertain the effect the UCCB on fertility, which may be of concern if there is selection into becoming a new parent related to labour market attachment. Milligan (2005) shows that Quebec transfer payments to new

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<sup>28</sup>As a reference point, provincial minimum wages ranged from \$6.70 in New Brunswick to \$8 in British Columbia in 2006. For lower educated women, a 2.3 hour per week reduction in labour supply implies a minimum \$62-74 per month reduction in earnings - nearly 3/4 of the UCCB benefit amount per month.

parents (up to \$8000) had a significant effect on fertility. The research on teen fertility suggests that government transfers will have negligible effects on the choices of teens and that economic opportunities are likely to matter more (Kearney and Levine (2012), Ariizumi and Sen (2013)). A recent study of a Spanish income transfer to new parents found significant effects on fertility, in part through a reduction in abortions (González, 2013). In Canada, there has been a general upward trend in fertility over the 2000-2009 period (Milan, 2011). However, there is no clear break in trend between 2005 and 2007. Furthermore, the increase in fertility appears to be falling after 2007. The effects on fertility warrant further investigation beyond the scope of this study.

## 7 Concluding Remarks

Universal child benefits in Canada have had significant and substantial negative effects on the labour supply of women, particularly those with lower education. The main estimates indicate that women with high school graduation or less reduced their likelihood of participating in the labour force by 3 percentage points and reduced their likelihood of being employed by 2.6 percentage points. Median hours worked per week is reduced by 2.3 hours for lower educated women in response to the introduction of the UCCB. The magnitude of the UCCB's effect on higher-educated mothers is roughly half the effect on lower-educated mothers. The evidence suggests that the UCCB's effect on higher-educated mothers' hours worked may represent flexibility in the choice of hours while children are under 12 months of age and many mothers enjoy job protection and employment benefits. The evidence does not suggest there are important effects on the labour supply of fathers. Estimates for the 75th percentile of hours among fathers does suggest a slight and noteworthy reduction in hours worked.

The estimates represent relatively large negative income effects for lower-educated mothers in two-parent families, on both the intensive and extensive margins. This



is not necessarily representing an effect of demogrants on low-income families, rather an effect on secondary earners with children. Rather than spending the entire value of child-related benefits on goods and services for children, the parents are using that income to purchase more time away from the paid labour market. Unfortunately the available time-use data in Canada does not allow us to measure an effect of the UCCB on the time parents spend in activities with their children. As such, this study is unable to determine whether children are benefitting from the extra time parents spend away from paid labour when receiving child benefits.

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## 8 Tables and Figures

Table 1: Descriptive Statistics

	All Women	Low Educ Mothers	High Educ Mothers	All Men
In labour force	0.82	0.72	0.83	0.93
Employed	0.77	0.67	0.79	0.89
Hours (actual, per week)				
Average <sup>a</sup>	23.2	20.2	22.3	35.4
40th Percentile	20.0	3.0	16.0	37.5
45th Percentile	24.0	15.0	22.0	40.0
50th Percentile	28.5	21.0	26.0	40.0
75th Percentile	40.0	37.5	37.5	45.0
UCCB	0.15	0.14	0.23	0.15
Under 6 # kids	0.30	0.30	0.44	0.30
Age 0	0.06	0.05	0.10	0.06
Age 1-2	0.13	0.13	0.20	0.13
Age 3-5	0.21	0.23	0.29	0.21
Age 6-12	0.51	0.69	0.69	0.51
Age 13-18	0.40	0.64	0.49	0.40
Age	38.21	39.20	38.43	40.95
Education				
Grade 8 or less	0.02	0.07	-	0.03
Grade 9-10	0.04	0.13	-	0.05
Grade 11-13, non-graduate	0.03	0.10	-	0.04
Grade 11-13, graduate	0.20	0.70	-	0.19
Some post-secondary	0.06	-	0.09	0.06
Trades	0.09	-	0.12	0.16
CEGEP, comm. coll.	0.26	-	0.38	0.19
University below BA	0.03	-	0.04	0.03
Bachelor's	0.20	-	0.27	0.17
Above Bachelor's	0.07	-	0.10	0.09
Spouse's Age	40.95	42.29	40.96	38.21
Spouse in LF	0.93	0.92	0.95	0.82
N	1288271	301477	669195	1297013

Note: Sample includes married individuals, wife age 25-49, 2003-2009.

a. Average hours per week includes observations with zero hours.

Source: Authors tabulations from the Labour Force Survey.

Table 2: Model Results, Married Women Age 25-49

	All Women		Low Educ. Mothers		High Educ. Mothers	
	Participation (Probit ME)	Hours (UQ-median)	Participation (Probit ME)	Hours (UQ-median)	Participation (Probit ME)	Hours (UQ-median)
UCCB	-0.0111***	-0.6653***	-0.0333***	-2.3098***	-0.0104***	-1.3148***
Under 6	-0.0295***	-5.1074***	-0.0128**	-5.5188***	-0.0305***	-5.5508***
Post - July 2006 # kids	0.0099***	1.2124***	0.0198***	2.2271***	0.0108***	1.6951***
Age 0	-0.1071***	-27.7489***	-0.1766***	-36.4072***	-0.0943***	-43.6629***
Age 1-2	-0.0869***	-6.2953***	-0.1465***	-10.5311***	-0.0758***	-8.6810***
Age 3-5	-0.0653***	-3.9464***	-0.1131***	-7.9070***	-0.0572***	-5.5672***
Age 6-12	-0.0447***	-4.5825***	-0.0655***	-6.5133***	-0.0422***	-6.1218***
Age 13-18	-0.0125***	-1.8122***	-0.0199***	-2.3392***	-0.0141***	-2.4397***
Age	0.0225***	1.5791***	0.0334***	3.3403***	0.0252***	3.0112***
Age sq.	-0.0003***	-0.0231***	-0.0005***	-0.0444***	-0.0003***	-0.0409***
Education						
Grade 8 or less	-0.2027***	-9.9558***	-0.2156***	-16.7450***		
Grade 9-10	-0.1242***	-7.7315***	-0.1358***	-11.8982***		
Grade 11-13, non-graduate	-0.0670***	-4.5932***	-0.0790***	-6.7582***		
Some post-secondary	0.0077***	-0.8010***				
Trades	0.0462***	1.5771***			0.0374***	3.1993***
CEGEP, comm. coll.	0.0789***	3.6048***			0.0702***	6.3946***
University below BA	0.0658***	4.2570***			0.0566***	7.0710***
Bachelor's	0.0686***	3.7773***			0.0585***	5.8635***
Above Bachelor's	0.0759***	5.0137***			0.0706***	8.6466***
Spouse in LF	0.1668***	6.8400***	0.1822***	11.6317***	0.1420***	6.6154***
Constant		306.6***		1349.5***		-137.8

Note: Robust standard errors are used. \*\*\*, \*\*, and \* represents significance at the 1%, 5% and 10% levels, respectively.

Sample includes married women age 25-49, 2003-2009. All specifications include controls for trend, province fixed effects (FE), province-specific trends, and seasonality (month indicators and province-month indicators). Marginal effects (ME) are evaluated at the mean.

Source: Authors tabulations from the Labour Force Survey.



Table 3: Model Results, Married Men (Wives Age 25-49)

	Participation (Probit ME)	Hours (UQ-median)
UCCB	-0.0045***	-0.0699***
Under 6	0.0008	-0.0295
Post - July 2006	-0.0012	0.0466***
\# kids		
Age 0	0.0103***	-0.0184
Age 1-2	0.0082***	0.1013***
Age 3-5	0.0062***	0.0792***
Age 6-12	0.0020***	0.0649***
Age 13-18	0.0049***	0.1339***
Age	0.0162***	0.1645***
Age sq.	-0.0002***	-0.0022***
Education		
Grade 8 or less	-0.0668***	-0.5360***
Grade 9-10	-0.0344***	-0.2691***
Grade 11-13, non-graduate	-0.0145***	-0.0609***
Some post-secondary	-0.0112***	-0.1917***
Trades	0.0138***	0.0347***
CEGEP, comm. coll.	0.0218***	-0.1343***
University below BA	0.0087***	-0.2863***
Bachelor's	0.0134***	-0.3098***
Above Bachelor's	0.0115***	-0.2488***
Spouse in LF	0.0667***	0.1766***
Constant		93.1***

Note: Robust standard errors are used. \*\*\*, \*\*, and \* represents significance at the 1%, 5% and 10% levels, respectively. Sample includes married men with wives age 25-49, 2003-2009. All specifications include controls for trend, province fixed effects (FE), province-specific trends, and seasonality (month indicators and province-month indicators). Marginal effects (ME) are evaluated at the mean.

Source: Authors tabulations from the Labour Force Survey.

Table 4: Model Results - Effect of the UCCB on Labour Supply

	Women	Low Educ. Mothers	High Educ. Mothers	Men	Low Educ. Fathers	High Educ. Fathers
Participation						
LPM	-0.0090***	-0.0333***	-0.0096***	-0.0059***	-0.0088***	-0.0019
Probit ME	-0.0111***	-0.0333***	-0.0104***	-0.0045***	-0.0081***	-0.0007
Employment						
LPM	-0.0084***	-0.0250***	-0.0123***	-0.0031**	-0.0014	0.0001
Probit ME	-0.0113**	-0.0262***	-0.0137***	-0.0020	-0.0008	0.0008
Hours						
OLS	-0.3469***	-0.8468***	-0.4311***	-0.5673***	-0.6390***	-0.2963**
Tobit	-0.5998***	-1.6041***	-0.7456***	-0.6779***	-0.7533***	-0.3278**
UQ - 45th p.	-0.7663***	-2.9210***	-1.2582***	-0.0602***	-0.1231***	-0.0391*
UQ - Median	-0.6653***	-2.3098***	-1.4031***	-0.0602***	-0.1231***	-0.0391*
UQ - 75th p.	-0.1069***	-0.4726***	-0.3075***	-0.3631***	-0.6239***	-0.3183***

Note: Sample includes married individuals, with wives age 25-49, 2003-2009. Low education refers to high school graduation or less. Mothers and fathers refer to those with own children under age 24 in the household. Robust standard errors are used. \*\*\*, \*\*, and \* represents significance at the 1%, 5% and 10% levels, respectively. All specifications control for  $X$  (age, age squared, number of kids in each age group, spouse's labour force status, education), trend, province fixed effects (FE), province-specific trends, and seasonality (month indicators and province-month indicators).  
Source: Authors tabulations from the Labour Force Survey.

Table 5: Robustness checks - Effect of the UCCB on Women's Participation and Employment

	Participation		Employment		N
	LPM	Probit ME	LPM	Probit ME	
Baseline <sup>a</sup>	-0.0090***	-0.0111***	-0.0084***	-0.0113**	1288271
Only includes $X$ and:					
Trend	-0.0091***	-0.0111***	-0.0086***	-0.0117***	1288271
Year FE	-0.0092***	-0.0112***	-0.0086***	-0.0117***	1288271
Trend, Prov FE, Prov. Trend	-0.0090***	-0.0111***	-0.0084***	-0.0114***	1288271
Year FE, Prov FE, Prov-Year FE	-0.0091***	-0.0113***	-0.0085***	-0.0115***	1288271
Year FE, Prov FE, Prov-Year, seasonal	-0.0091***	-0.0113***	-0.0084***	-0.0114***	1288271
Baseline and:					
Pre-September 2008 sample	-0.0081***	-0.0098***	-0.0077***	-0.0110***	1049041
Include spouse's wage rate	-0.0089***	-0.0110***	-0.0083***	-0.0113***	1288271
Sample excludes low-educ. husbands	-0.0043*	-0.0073***	-0.0056**	-0.0092***	853728
Sample excludes Quebec	-0.0062***	-0.0076***	-0.0068***	-0.0089***	1061546
Sample excludes new parents	-0.0101***	-0.0117***	-0.0083***	-0.0112***	1212099
Ensure purity of control group	-0.0093***	-0.0113***	-0.0086***	-0.0116***	1273539

Note: Baseline regression controls for  $X$  (age, age squared, number of kids in each age group, spouse's labour force status, education), trend, province fixed effects (FE), province-specific trends, seasonality (month indicators and province-month indicators). The baseline sample includes married individuals, with wives age 25-49, 2003-2009. Robust standard errors are used. \*\*\*, \*\*, and \* represents significance at the 1%, 5% and 10% levels, respectively.

Source: Authors tabulations from the Labour Force Survey.

Table 6: Robustness checks - Effect of the UCCB on Women's Total Hours Worked Per Week

	OLS	Tobit	UQ-45th p.	UQ-median	UQ-75th p.	N
Baseline <sup>a</sup>	-0.3469***	-0.5998***	-0.7663***	-0.6653***	-0.1069***	1288271
Only includes $X$ and:						
Trend	-0.3898***	-0.6475***	-0.8315***	-0.7381***	-0.1334***	1288271
Year FE	-0.3809***	-0.6388***	-0.8201***	-0.7226***	-0.1285***	1288271
Trend, Prov FE, Prov. Trend	-0.3563***	-0.6070***	-0.7821***	-0.6793***	-0.1094***	1288271
Year FE, Prov FE, Prov-Year FE	-0.3441***	-0.5936***	-0.7651***	-0.6586***	-0.1016***	1288271
Year FE, Prov FE, Prov-Year, seasonal	-0.3319***	-0.5817***	-0.7446***	-0.6401***	-0.0981***	1288271
Baseline and:						
Pre-September 2008 sample	-0.3539***	-0.6003***	-0.6222***	-0.5707***	-0.1819***	1049041
Include spouse's wage rate	-0.3390***	-0.5883***	-0.7624***	-0.6601***	-0.1016***	1288271
Sample excludes low-educ. husbands	-0.3010***	-0.5037***	-0.9434***	-0.9431***	-0.0771	853728
Sample excludes Quebec	-0.2518**	-0.3933**	-0.4476**	-0.5279**	-0.1329***	1061546
Sample excludes new parents	-0.1406	-0.2519*	-0.5453**	-0.2068*	-0.037	1212099
Ensure purity of control group	-0.3639***	-0.6269***	-0.7785***	-0.6901***	-0.1103***	1273539

Note: Baseline regression controls for  $X$  (age, age squared, number of kids in each age group, spouse's labour force status, education), trend, province fixed effects (FE), province-specific trends, seasonality (month indicators and province-month indicators). The baseline sample includes married women age 25-49, 2003-2009. Robust standard errors are used. \*\*\*, \*\*, and \* represents significance at the 1%, 5% and 10% levels, respectively.  
 Source: Authors tabulations from the Labour Force Survey.

Table 7: Effect of the UCCB on Annual Family Expenditures

	All Families	Low Educ Mothers	High Educ Mothers
Child care	180.1***	262.9***	29.4
Child clothing (under age 4)	32.1***	71.3***	16.1
Food (from stores)	104.7	-230.5	287.9**
Education	42.3	-181.8	209.4
Tobacco & Alcohol	68.5	98.4	36.4
Total Expenditures	1342.1	322.1	1434.1
N	20141	5190	9782

Note: Robust standard errors are used. \*\*\*, \*\*, and \* represents significance at the 1%, 5% and 10% levels, respectively. Sample of all families restricted to wives age 25-49, opposite-sex couples, 2004-2008. The low-educated mother sample is further restricted to families with mother's education is high school or less and there is at least one child age 24 or less in the family. High-educated mothers have more than high school graduation. All regressions include indicators for a child under 6, indicator for 2006 or later, trend, male and female age, education, full time full year work, the number of children 0-4, the number of children 5-17 and province fixed effects.

Source: Authors tabulations from the Survey of Household Spending.

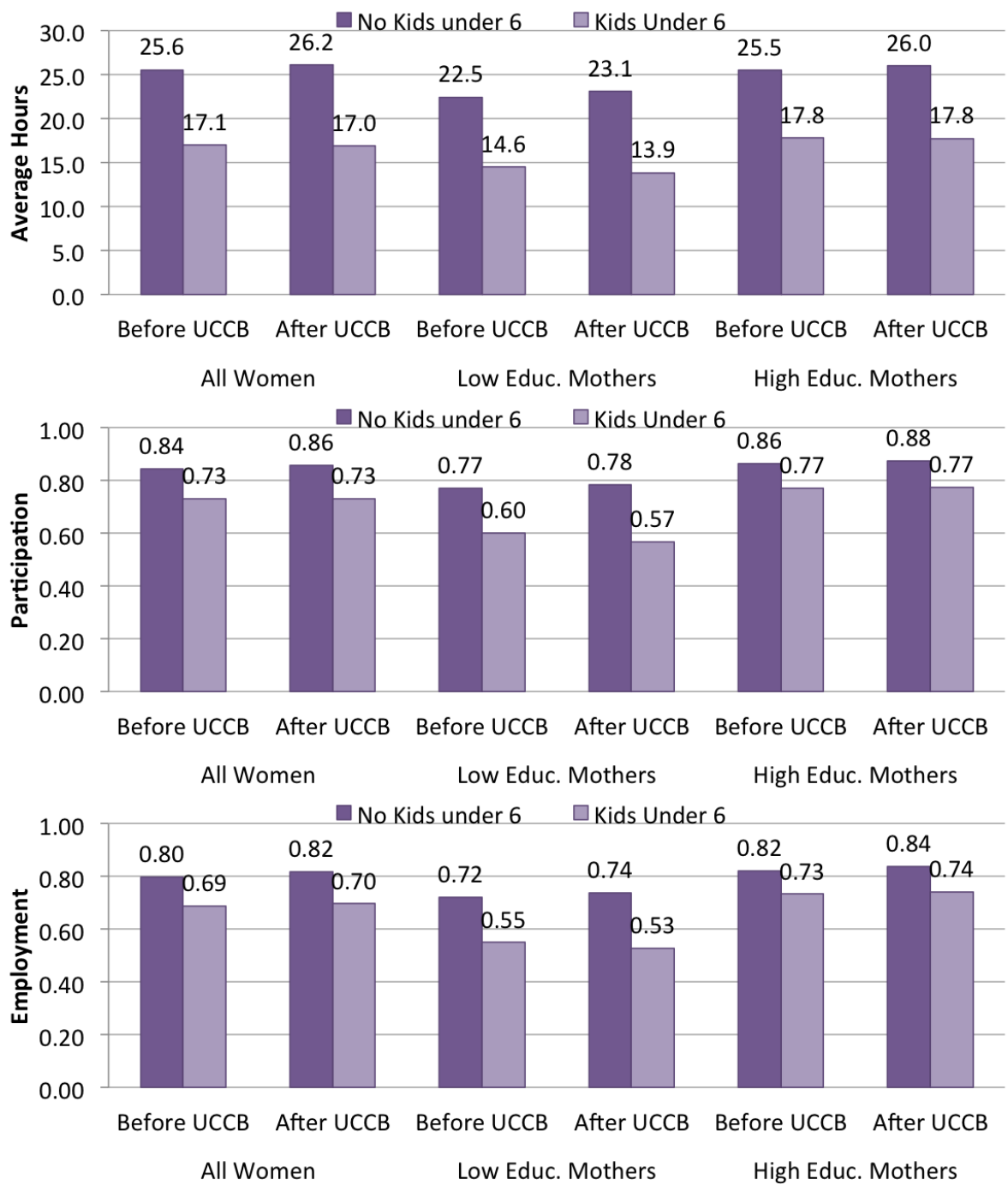


Figure 1: Labour Market Activity of Married Women, Age 25-49, 2003-2009

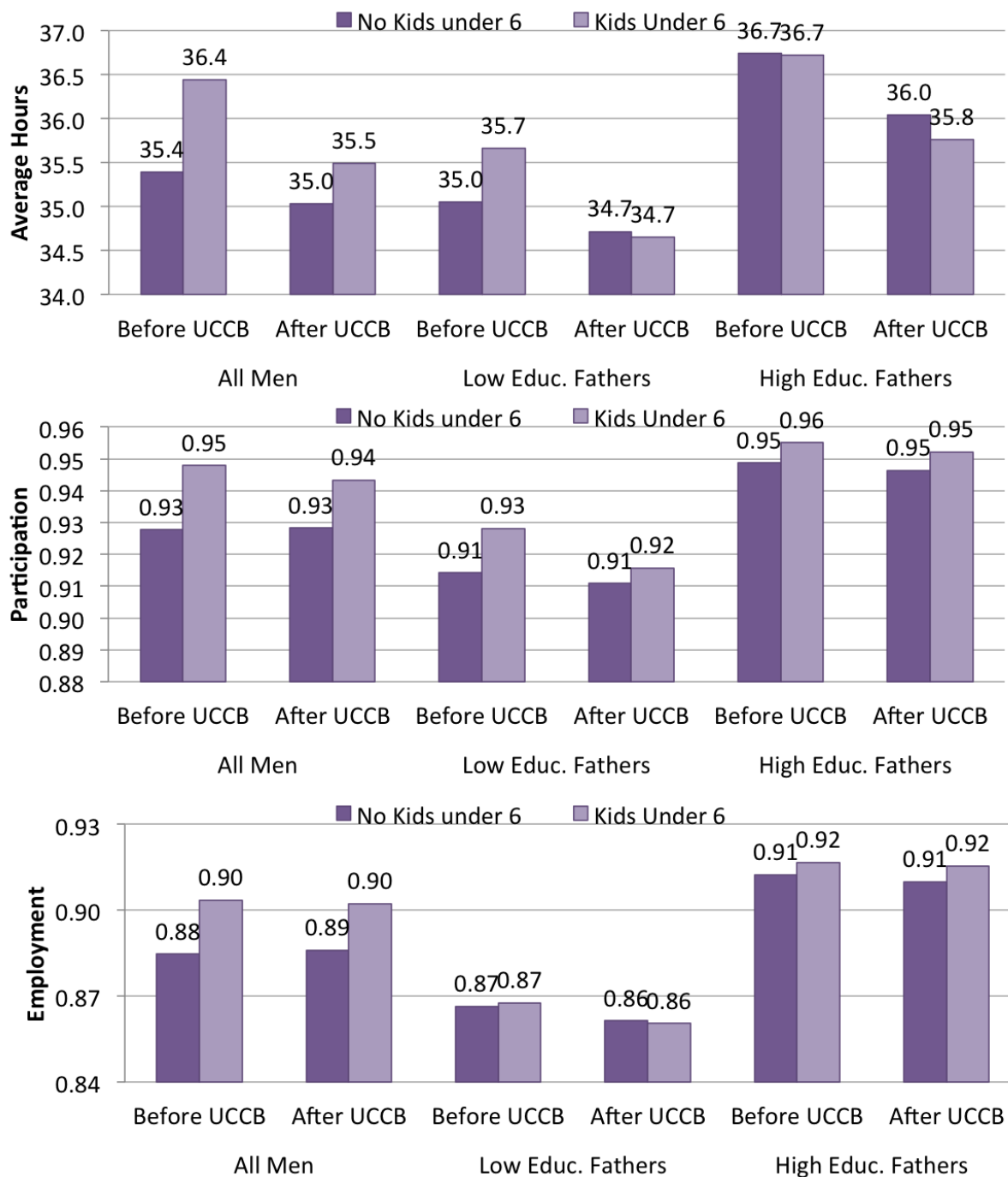
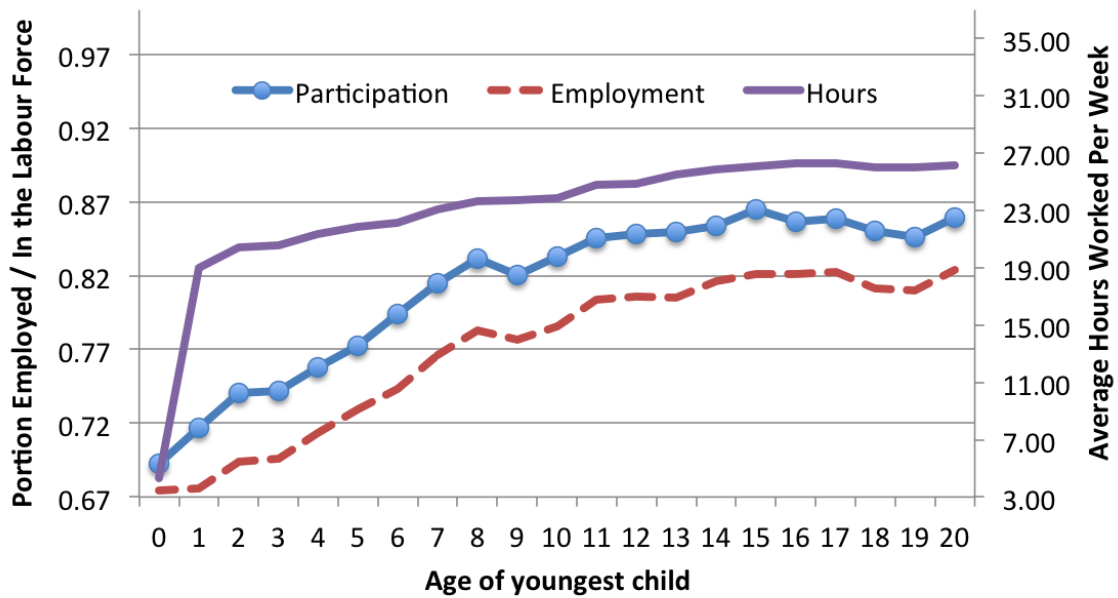
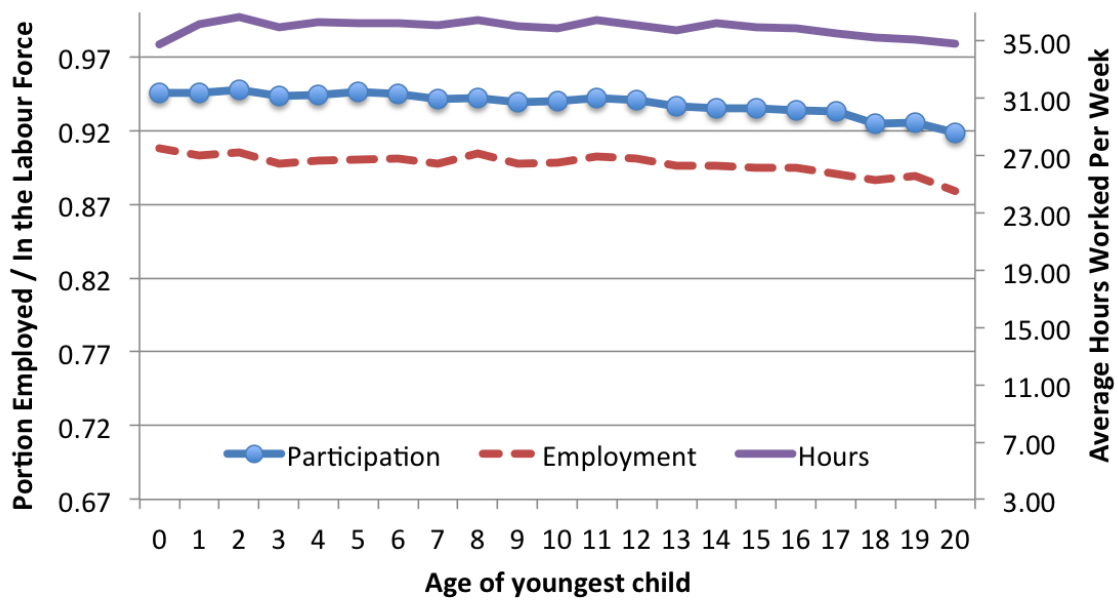


Figure 2: Labour Market Activity of Married Men, With Wives Age 25-49, 2003-2009



A. Mothers



B. Fathers

Figure 3: Labour Market Activity of Married Mothers and Fathers, Married, Age 25-49, 2003-2009



## **9 Estimates not intended for final publication**

Tables 8, 9, and 10 are provided for the reviewers consideration only. These tables are among those noted in the manuscript as available upon request from the author.

Table 8: Robustness checks - Effect of the UCCB on Low-Educated Mothers Participation and Employment

	Participation		Employment	
	LPM	Probit ME	LPM	Probit ME
Baseline	-0.0333***	-.0333***	-0.0250***	-.0262***
Only includes X and:				
Trend	-0.0343***	-.0344***	-0.0263***	-.0278***
Year FE	-0.0343***	-.0344***	-0.0261***	-.0277***
Trend, Prov FE, Prov. Trend	-0.0334***	-.0333***	-0.0250***	-.0263***
Year FE, Prov FE, Prov-Year FE	-0.0334***	-.0335***	-0.0251***	-.0266***
Year FE, Prov FE, Prov-Year, seasonal	-0.0334***	-.0335***	-0.0250***	-.0265***
Baseline and:				
Pre-September 2008 sample	-0.0216***	-.0220***	-0.0124**	-.0146***
Include spouse's wage rate	-0.0333***	-.0331***	-0.0249***	-.0261***
Sample excludes Quebec	-0.0271***	-.0264***	-0.0251***	-.02597***
Sample excludes new parents	-0.0380***	-.0375***	-0.0274***	-.0287***
Ensure purity of control group	-0.0338***	-.0337***	-0.0260***	-.0272***

Note: Baseline regression controls for  $X$  (age, age squared, number of kids in each age group, spouse's labour force status, education), trend, province fixed effects (FE), province-specific trends, seasonality (month indicators and province-month indicators). The baseline sample includes married women age 25-49, high school or less, with a child under age 24 in the household, 2003-2009. Robust standard errors are used. \*\*\*, \*\*, and \* represents significance at the 1%, 5% and 10% levels, respectively.

Source: Authors tabulations from the Labour Force Survey.

Table 9: Robustness checks - Effect of the UCCB on Low-Educated Mothers Hours per week

	OLS	Tobit	UQ-45th p.	UQ-median	UQ-75th p.	N
Baseline	-0.8468***	-1.6041***	-2.9210***	-2.3098***	-0.4726***	301477
Only includes X and:						
Trend	-0.9156***	-1.7136***	-3.1839***	-2.4717***	-0.5286***	301477
Year FE	-0.8995***	-1.6960***	-3.1515***	-2.4383***	-0.5045***	301477
Trend, Prov FE, Prov. Trend	-0.8460***	-1.6079***	-2.9416***	-2.3165***	-0.4613***	301477
Year FE, Prov FE, Prov-Year FE	-0.8387***	-1.6035***	-2.9481***	-2.3144***	-0.4494***	301477
Year FE, Prov FE, Prov-Year, seasonal	-0.8401***	-1.6000***	-2.9292***	-2.3084***	-0.4622***	301477
Baseline and:						
Pre-September 2008 sample	-0.4517**	-0.6971*	-0.6359	-0.9218	-0.5430***	251521
Include spouse's wage rate	-0.8432***	-1.5987***	-2.9164***	-2.3084***	-0.4698***	301477
Sample excludes Quebec	-0.6518***	-1.2790***	-2.2919***	-1.8728***	-0.5041***	254024
Sample excludes new parents	-0.8626***	-1.5351***	-2.6001***	-1.8588***	-0.4544***	286026
Ensure purity of control group	-0.8336***	-1.5985***	-2.7422***	-2.2650***	-0.4620***	297358

Note: Baseline regression controls for  $X$  (age, age squared, number of kids in each age group, spouse's labour force status, education), trend, province fixed effects (FE), province-specific trends, seasonality (month indicators and province-month indicators). The baseline sample includes married women age 25-49, high school or less, with a child under age 24 in the household, 2003-2009. Robust standard errors are used. \*\*\*, \*\*, and \* represents significance at the 1%, 5% and 10% levels, respectively.

Source: Authors tabulations from the Labour Force Survey.

Table 10: Regression Discontinuity Design Results

	A. Post - July 2006				B. Pre - July 2006			
	Participation LPM	Employment LPM	Hours UQ-Median	Hours LPM	Participation LPM	Employment LPM	Hours UQ-Median	Hours LPM
			Linear Child Age Specification					
Women	-0.0419***	-0.0336***	-0.7563***	-0.0355***		-0.0240***	-0.4786	
Low Educ. Mothers	-0.0886***	-0.0752***	-4.7226***	-0.0515***		-0.0413***	-2.1309***	
High Educ. Mothers	-0.0330***	-0.0263***	0.0503	-0.0342***		-0.0230***	-0.1877	
Men	0.0024*	0.0025	0.035	0.0071***		0.0067***	-0.0034	
Low Educ. Fathers	0.0007	0.0009	-0.0514	0.0145***		0.0131***	0.0900*	
High Educ. Fathers	0.0029*	0.0019	0.0558*	0.0040***		0.0028	-0.0472	
			Quadratic Child Age Specification					
Women	-0.0256***	-0.0219***	0.4716	-0.0107***		-0.0044	0.7311*	
Low Educ. Mothers	-0.0545***	-0.0492***	-2.4118**	0.0022		0.007	0.7727	
High Educ. Mothers	-0.0149***	-0.0119***	0.8924***	-0.0146***		-0.0076**	0.421	
Men	0.0002	0.0009	0.1145***	0.0001		-0.0059***	-0.0601*	
Low Educ. Fathers	-0.0149***	-0.0185***	-0.1452	0.0070**		-0.0009	-0.0153	
High Educ. Fathers	0.0059***	0.0082***	0.1893***	-0.0032*		-0.0082***	-0.0904**	