



Parental Economic Insecurity and Children's Non-Cognitive Skills: A Panel Study of 2 to 5 year-olds in Canada

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Abstract:

Using data from the National Longitudinal Survey of Children and Youth (NLSCY), 47% of households with young children worry about whether they have enough money to support their families. This paper explores the relationship between economic insecurity and children's inattentive/hyperactive and anxious behaviours in Canada. Results suggest that these behaviours are positively associated with parental economic insecurity. The size of the association between parental economic insecurity and children's inattentive/hyperactive behaviours are comparable to divorce shock. Boys exhibit more inattentive/hyperactive behaviours than girls, but girls are more sensitive to changes in parental economic insecurity. A potential channel through which parental economic insecurity affects children is their parenting behaviour. Less "positive" and more "negative" parenting strategies are apparent when parents experience economic insecurity.

1. Introduction

Many families with young children in Canada experience economic insecurity, despite having both parents working full-time in the paid labour market. For example, micro-data from the National Longitudinal of Children and Youth (NLSCY) indicate that 47 percent of children live in families that worry about not having enough money. This paper explores how parental economic insecurity affects the non-cognitive skills of their 2 to 5 year old children.

Motivation

It is well recognized that economic deprivation has a negative impact on children's well-being. Children in low-income families tend to have poorer health and test scores (Dahl & Lochner, 2005), and are more likely to drop out of school and experience teenage pregnancy (Brooks-Gunn & Duncan, 1997). These economic papers focus on income and poverty.

However, Gershoff, Aber, Raver and Lennon (2007) argue that it is important to look beyond income when studying child development. They include material hardship (food insecurity, residential instability, inadequacy of medical care, and months of financial troubles) in addition to income, and find that both income and material hardship influence children's cognitive skills. This influence is mediated through parent investment in children, parental stress and positive parenting behaviour. Gershoff et al. allege that income effects estimated in the earlier economic literature were confounded by material hardship.

In this paper, we propose that family income and material hardship are not the only 'economic' variables that affect children. Our goal is to demonstrate that *after* controlling for income, economic insecurity experienced by parents also influences children's development.

Economic insecurity

Low current income is correlated with, but is distinct from worries about future income. Recent studies have found that the risk of unemployment reduces life satisfaction more than the financial loss caused by unemployment (Di Tella et al., 2003). Economic insecurity can be defined as “the anxiety produced by a lack of economic safety, i.e. by an inability to obtain protection against subjectively significant potential economic losses”(Osberg, 1998). Economic insecurity is thus due to an unprotected significant possible future economic loss that threatens people's future economic state. Osberg (2009) identified the common causes of economic insecurity as: unemployment, sickness, disability, widowhood, and old age.

Previous literature has linked adult health with economic insecurity. Rohde et al (2014), using Australian data, found that economic insecurity affects both mental health and physical health, and people are susceptible regardless of their income level. Watson (2015) found increased prevalence of obesity in the presence of economic insecurity. These studies focused on the impact of economic insecurity on adult health, but little

attention has been paid to the effects of economic insecurity on children. This paper tries to fill this gap.

Economic insecurity is costly. Previous research has found that economic insecurity in Canada deteriorated from 1980 to 2007 (Osberg & Sharpe 2009). To insure against the five causes of economic insecurity mentioned above, OCED countries have spent 20% to 30% of GDP, which is the majority of public expenditure (Osberg, 2015).

From the micro perspective, a rational economic agent needs precautionary savings and private insurance to protect himself/herself against economic insecurity in a society with asymmetric information. The cost of over-saving and insurance premiums, together with the deadweight loss of policies targeting economic hazards, contributes further to the cost of economic insecurity. Therefore, economic insecurity is an important indicator to be considered from a policy-making perspective to improve economic efficiency.

Children

We focus on young children for several reasons. Traditionally, economists have studied children with an interest in their future outcomes (e.g., health and educational attainment). Therefore, studying children was important for the future labour market and economy. However, Qvortrup (1999) argues that children should not be viewed as “human becomings” and children’s rights should be viewed as human rights (Ben-Arieh, 2010). According to the United Nation’s Convention on the Rights of the Child, children’s rights include 1) non-discrimination, 2) the best interests of the child, 3)

survival and development, and 4) respecting the view of the child. Hence, from the human rights perspective, the current well-being of children is also important to study.

As a member of society, children differ from adults. First, children are a vulnerable group, and they have little power in making decisions that suit their own best interests (e.g. the choice of living conditions or medical treatment). Therefore, their well-being is especially in need of protection by policy makers. Second, childhood is a crucial period of mental and physical development (Burton & Phipps, 2010). Once time has passed, adversity may be irreversible, and to compensate for the negative effects is prohibitively costly. Therefore, early intervention is necessary for certain skill development to take place (Heckman & Cunha, 2006).

From econometric perspective, the study of economic insecurity on adults' health is complicated by the potential problem of reverse causation. Anxious people and people in poor health possibly feel more insecure about their financial situation. However, studying children is less problematic since it is less likely that children's inattentive/hyperactive or anxious behaviours lead to parental economic stress¹. As for the cost of raising children, the arrival of children increases expenses and thus increasing financial stress, but our sample is families with children controlling for number of children, thus the children's cost is already controlled in the estimation. It, of course, remains plausible that, for example, a child inherits genes pre-disposing him/her to hyperactivity or depression from the parent.

¹ A child with a serious medical condition could increase parental economic insecurity, but this is not our current focus (Burton and Phipps, 2009).

Our analysis focuses on 2 to 5 year olds. This is an important age group to consider, given the importance of early life experiences for future development. Pragmatically, our choice also ensures data consistency. We use the Early Childhood Development (ECD) cohorts of the National Longitudinal Survey of Children and Youth (NLSCY), which only follows children up to the age of five.

Non-Cognitive skills

Our analysis focuses on non-cognitive skills of young Canadian children. Non-cognitive skills are soft skills, such as self-control, persistence, and confidence. Those 'personality' related skills are hard to change once formed. Heckman (2000) outline the importance of non-cognitive development, and how non-cognitive skills help the formation of cognitive skills and contribute to the eventual socioeconomic success. They also acknowledge that both nature and nurture play important roles in forming ability, thus policy is relevant and important in improving children's skills. Since skills can be retained in later stages (i.e. self-productivity), as well as making other investments more efficient (i.e. complementarity), early intervention is particularly important. Heckman and Cunha (2006) show that cognitive skills (such as IQ), which have been principal target of educational reforms, are only one aspect of human capital. It has been demonstrated that early childhood investment enhances non-cognitive skills (such as motivation, perseverance), thus improving schooling, labour market outcomes, and decreasing the probability of behavioural and emotional disorders. These results suggest that although non-cognitive skills do not directly affect children's grades, in the long term non-cognitive skills advance socioeconomic success.

Specifically, in this paper we study inattentive/hyperactive behaviours. It is important to note, however, that we are not studying ADHD, the most extreme forms of these behaviours.² Rather, we use a scale, which ranges from 0 to 12. Our second outcome is an anxiety scale. Again, we are not only interested in clinical levels of anxiety, but study the entire range of the scale, which ranges from 0 to 12.³

Hypothesis and organization

Our hypothesis is that children exhibit high hyperactivity and anxiety level when there is parental economic insecurity. Section 2 describes the data, which is followed by the methodology and results in sections 3 and 4. Our secondary hypothesis looks into the pathways through which parental economic insecurity affects children's non-cognitive skills. Its estimation and discussion are in section 5.

2. Data description

NLSCY

We use data from the National Longitudinal Survey of Children and Youth (NLSCY) conducted by Statistics Canada. The NLSCY is a long-term panel study that follows Canadian children in the 10 provinces from birth to adulthood, providing a comprehensive picture of their social and family environment, emotional status, behavioural development and well-being, learning patterns and later labour market

² ADHD is the most prevalent behaviour disorder observed among young children (4% to 10%) -- see Faraone, et al., 2003.

³ A recent study suggests that 41% of children have some kind of anxiety disorder (Cartwright-Hatton et al., 2006).

outcomes. The survey began in 1994 (cycle 1) and was conducted every two years until 2008 (cycle 8). Because the key measure for this paper (parental economic insecurity) is introduced in cycle 4, our sample is constructed using data from 2000, 2002, 2004, 2006 and 2008.

The data we use are mostly from the Early Childhood Development (ECD) component of the NLSCY. The 'Person Most Knowledgeable' (PMK) about the child answered the survey questions (90% of PMK's are the biological mother). The ECD comprises observations from old ECD cohorts, and a new cohort for each cycle. Children from the ECD components are followed until they are 5 years old.⁴

Our analysis uses two samples: a cross-sectional sample and a longitudinal sample. The cross-sectional sample is constructed by pooling the 5 cycles together, providing 45,000 observations in total. By doing so, we treat each cycle as a separate draw from the same population. In this sample, we generate a new cross-sectional weight from the original cross-sectional weight adjusting for the sample size of each cycle. The calculation involves two steps: 1) Aggregate the individual cross-sectional weight by survey cycle; 2) Divide the individual cross-sectional weight by the summation of that cycle obtained by 1). By doing this, we treat each cycle as a separate draw, and cross-sectional survey weights are normalized to sum to one in each cycle. Standard errors are adjusted to account for the fact that the same child can appear more than once in the data.

⁴ With the exceptions of cycle 7 and 8.

The longitudinal sample consists of five panels that follow the same child from age 2 or 3 to age 4 or 5. The longitudinal sample size is about 14,700. Around 50% of children who are in the cross-sectional sample are observed in the longitudinal sample.⁵ Longitudinal weights are employed to account for attrition across cycles.

Measure of economic insecurity

Our measure of economic insecurity in the NLSCY is asked directly of the PMK: “Please tell me whether you strongly agree, agree, disagree, or strongly disagree with the following statement: You worry about whether the money you have will be enough to support your family?” We assign the value 4 to the answer “strongly agree”, and 1 to “strongly disagree.” Thus, a high numeric value is associated with a high level of economic insecurity. Table 1 shows the distribution of parental economic insecurity for our cross-sectional sample. The mean is 2.5 and the standard deviation is 0.93. Almost half of the population is at least somewhat worried about whether they will have enough money to support their families. From a longitudinal point of view, 30 percent of the children experience changes in the level of parents being "worried about money”.

Indices of non-cognitive skills

We use two measures of children’s non-cognitive skills: an inattentive/hyperactive score, and an emotion/anxiety score. The inattention/hyperactive measure is a 12-point index that is summed across children showing age-specific behaviour as

⁵ The longitudinal sample is half of the pooled cross-sectional data for two reasons. First, there are top up samples that are newly selected 2 to 5 year-old children since cycle 6. Second, the response rate is from 68% to 82%. Therefore, a proportion of children are not observed in longitudinal data. For more information, please refer to the NLSCY user guide.

reported by their parents. The questions include whether the child can sit still, concentrate or settle for more than a few moments; is inattentive and easily distracted; has difficulty waiting his or her turn (see Appendix I for detail). Higher values of the index correspond to more inattentive/hyperactive behaviours.

Table 1. Distribution of “You worry about whether the money you have will be enough to support your family?” Answered by PMKs of girls and boys at age 2 to 5. Year 2000 to 2008.

Parent worried about money	Girls	Boys
Average score (1,4)	2.45 (0.93)	2.46 (0.93)
Percent by Category		
Strongly disagree (1)	16	16
Disagree (2)	36	36
Agree (3)	33	33
Strongly agree (4)	14	15
Number of Observations	19127	18286

Source: NLSCY, pooled cross-sections.

Note: Standard deviation is in parenthesis.

The anxiety score is a 12-point index based on reports of the parent about the child's emotions/anxiety. It is the summation of questions such as whether the child is sad, unhappy, fearful or nervous, worried, tense or has trouble enjoying him/herself. A higher score associates with a higher degree of emotional disorder.

Extensive evaluation of these indices has been conducted to ensure appropriate psychometric properties. Using the method of Young (1981), the data were converted using optimal scaling to ensure these indices have numeric properties. See appendix I for the complete list of questions from which the indices are derived.

Control variables

The most important control variable is income. Past literature has documented that income deprivation negatively affects children's development (Dahl & Lochner, 2005). In this paper, we argue that even controlling for income, the anxiety and worry of parents about current economic needs or potential future economic difficulties may still affect children's development. We measure family income using real log equivalent annual household income before taxes after transfers. This is household income divided by the square root of household size. This equivalence scale is widely used in OECD publications such as Prado (2009). It means that the amount of income needed by a four-person family is twice that needed by one person (given the economies of scale available to multi-person families).

We also control for child, PMK and household characteristics. For a child's characteristics, we use child age with 'age 4' as the base. Heckman and Cunha (2006) showed that children at different stages are affected by environmental deprivation to a different extent. Treating age as a series of dummies instead of a continuous variable enables the model to catch the different age effects.

We also control for child health. The PMKs were asked, "In general, would you say this child's health is excellent, very good, good, fair or poor?" Again, we use dummies to control for the children's health since the effects of changing from very good to excellent is likely to differ from changing from poor to fair.

We also control for pre-schooling. There are cross-province variations in the school system in Canada. In general, children begin school at the age of 5 or 6. Pre-school starts at age 5 or under. Pre-school includes junior Kindergarten only in Ontario for children aged 4 to 5, and Kindergarten (called Grade Primary in Nova Scotia). Kindergarten is not compulsory, and not always available in smaller towns, but the compliance rate is 95% (Chen et al., 2015). In our analysis, we use “not in school” as the base, and categorical variables for junior Kindergarten (only in Ontario), Kindergarten (Grade Primary in Nova Scotia) and grade 1⁶.

Hanushek (1992) reported that birth order and family size affect children’s educational attainment due to the variations of resource allocation within a family. Thus, in this paper, we control for first-born children, and number of siblings.

A large body of literature (e.g. Oreopoulos et al., 2006) records that education has an intergenerational effect. Therefore, we control for PMK’s highest degree obtained, using high school as the base and using dummy variables for a college/trade diploma, bachelor degree, and graduate degree. Another characteristic we control for is PMK immigrant status. Phipps and Burton (2010) documented that immigrant children and their parents have lower well-being than native-born Canadians. It is highly likely that immigrant parents influence the formation of cognitive and non-cognitive skills of their children differently.

⁶ We checked adding daycare, and it didn’t affect the results.

Dawson (1991) reports that children in single-mother or mother with stepfather families are more likely to get poor grades and encounter emotional and behavioural problems. In our model, we use 'always-married family' as base, and control for lone-parent families and stepparent families. We define a stepfamily as “the child lives with biological mother and step father, or biological father and step mother.” Lone-parent family is defined as “child lives with one parent only”. We exclude observations if the child lives with adoptive parent(s), foster parents, or does not live with a parent. The three categories combined accounts for less than 1% of the sample. The province of residence, and the year of survey are also controlled. We dropped observations from the territories because territories are not surveyed across all cycles.

3. Methodology

To investigate the relationships between children’s outcomes and parental economic insecurity, we begin by pooling the years from 2000 to 2008 and conduct OLS estimations. In this pooled sample, a child can appear more than once. The baseline specification is described as below:

$$Y_i = \alpha + \beta_1 * EconInsecurity_i + \beta_2 X_i + \varepsilon_i \quad (1)$$

where Y_i is the outcome (hyperactivity or anxiety) for child i , “worry about money” is treated as a continuous variable in one specification and as a set of separate dummies in a second specification. X is a vector of control variables, which includes family structure, logarithm equivalent income, number of siblings, first-born child dummy, survey year, immigrant status, PMK education, children’s health and age. Provincial effects are added

for sensitivity analysis. We cluster the standard error at the household level to control for the same child appearing more than once in the sample⁷. Girls and boys are estimated separately.

In the OLS model, we compare cross-sectional observations. Although we cluster the standard error at the household level, there may still be unobserved heterogeneity within the household. For example, some people may inherently be more anxious. Controlling all the differences between families, such as environment, genes and investments in children, is not directly possible. Hence, we estimate individual fixed effects models exploiting the panel structure of the data to remove unchanging unobservable differences between children. In the fixed effects specification, we compare the same child's outcomes over time, and how he/she is affected by *changes* in parental worries about money. The model is structured as:

$$Y_{it} = \alpha + \beta_1 * EconInsecurity_{it} + \beta_2 X_{it} + \lambda_i + \varepsilon_{it} \quad (2)$$

where t stands for years, and λ_i represents the permanent unobservable characteristics of child i . In this fixed effects model, we exclude time-invariant characteristics, such as immigration status, parental education and province. Thus, we estimate children's well-being on changes in parent's money worries, household income, children's health, family composition, and number of siblings.

⁷ ECD cohorts include only one child per family being surveyed with the exception of twins before cycle 5. Therefore, a few observations of more than one child are from the same family, but they are not enough to conduct sibling fixed effects.

4. Descriptive Results

Table 2 presents mean statistics for our two measures of children's non-cognitive development. The average inattentive/hyperactive score for all children is 3.55 (of a possible 12). For children whose parents “strongly agree” that they are worried about money, the average score increases to 3.87; whereas, for children whose parents “strongly disagree” that they are worried about money, the average I/H score decreases to 3.20.

The average emotion/anxiety score for the full sample is 1.43 (out of a maximum 12), and the standard deviation is 1.59. The E/A score also increases monotonically with the level of parental worries about money, from 1.29 to 1.56. Higher economic insecurity is associated with a higher score E/A score for the child.

Table 2. Mean inattention/hyperactivity and emotion/anxiety scores for 2 to 5 year-old Canadian children, by level of parental economic insecurity, year 2000 to 2008.

	Inattention/ Hyperactivity (0-12)	Emotion/Anxiety (0-12)
All children	3.55 (2.38)	1.43 (1.59)
PMK Worries about Money:		
Strongly disagree	3.20	1.29
Disagree	3.43	1.36
Agree	3.72	1.50
Strongly agree	3.87	1.56
Number of observations	37667	37787

Source: NLSCY

Note: Standard deviation is in parentheses.

5. Estimation Results

Inattentive/Hyperactive Behaviour Score

Table 3 reports both the linear probability and fixed effects estimates for the inattentive/hyperactive behaviours score. Parental “worries about money” is significant and positive in both OLS and fixed effects estimates for boys and for girls. Specification 1 uses the continuous measure for “worry about money.” On average, a 1 point increase in worried about money (on a 4-point scale) leads to a 0.21 point increase in the I/H score for girls, and a 0.17 point increase for boys relative to a standard deviation of 2.3 for girls and 2.4 for boys. Thus, the results suggest a large change in I/H percentile.

In specification 2 (Table 3 columns 2 and 6), we break down worried about money into dummies, using “worry about money: disagree” as the base. For both girls and boys, the “strongly agree” is highly significant and positive. The “agree” is also significant but smaller.

In the fixed effects estimates, the association between parental money worries and child inattention/hyperactivity falls in magnitude, but remains statistically significant (see Table 3 columns 3, 4, 7, and 8).

To better understand whether the magnitude of these effects is of potential policy relevance, we compare the “worried about money” with 'PMK has a Bachelor degree' (relative to the base of 'only high school'). A one-point increase in being worried about money (using the continuous measure) increases the inattentive/hyperactive behaviour

score by 0.212, while having a university education (versus a high-school education) decreases hyperactivity by 0.212. If we think that mother education is a key correlate of child behaviour, this suggests that economic insecurity is also important.

Emotion/Anxiety Score

Table 4 reports both the OLS and fixed effects estimates for the emotion/ anxiety score. First, the continuous “worry about money” variable is significant and positive for both genders (see Table 4 columns 1 and 5). A 1-point increase in parental economic insecurity leads to a 0.14-point increase in anxiety for girls, and a 0.10-point increase for boys. Considering the average of anxiety score is 1.4 and the standard deviation is 1.6, the magnitude of the coefficients is sizable.

Table 2 columns 2 and 6 report specifications using the categorical “worry about money” dummies. When using “disagree” as the base, “worry about money: strongly agree” is significantly negative, meaning low parental economic stress is associated with low anxiety levels in children. “Agree” and “strongly agree” that the parent is worried about money are positively associated with children’s anxiety. In the fixed effect estimations, “worry about money” is significantly associated with higher anxiety level for girls, though not for boys.

Again, to put the magnitude of the economic insecurity estimate in context, we compare it with the size of the divorce coefficient captured by the lone-parent variable in the fixed effects model -- see column (3). Compared to an always-married family, a child whose

parents divorce between the ages of 2/3 and 4/5 has an anxiety level that is 0.282 points higher. Having a 1-point higher 'worried about money' measure is associated with an increase in the emotion/anxiety scale of 0.0623. In other words, if economic insecurity changes from 1 to 4, the estimate size is similar to that associated with divorce.

Gender differences

To investigate gender differences, we pool the sample of boys and girls, and add a dummy variable to indicate if the child is a boy, as well as an interaction between 'boy' and "worry about money". Table 5 presents results for the estimation of the I/H score in the second column. . The "child is boy" dummy is 0.657 with a high significance, but the interaction term is not (i.e., there is no statistically significant difference in responses of boys and girls inattentive/hyperactive behaviours to parental economic insecurity). On the other hand, the interaction is negative and significant in the anxiety score estimates, indicating that girls' anxiety levels are more sensitive to changes in parental economic stress.

Other factors

Next, we look into the covariates. Income has no effect on hyperactivity when controlling for other demographic characteristics, yet an increase in income is associated with greater anxiety levels of children in fixed effects (Table 4 columns 3, 4, 7, and 8).

Table 3 shows that children's age and hyperactivity scores are negatively correlated for girls (column 1 and 2) but positively correlated for boys (columns 5 and 6). The anxiety

level is positively correlated with children's age for both genders (see Table 2). Children being in excellent health greatly reduced hyperactivity and anxiety for both genders. First-born children are more likely to be anxious for both genders (see Table 4 columns 1, 2, 5 and 6) and hyperactive for only girls (Table 3 column 1 and 2). For both genders, having siblings reduces the hyperactivity level (Tables 3 column 1, 2, 5 and 6), but increases the anxiety level (Table 4 column 3 to 8).

Children who are in stepfamilies are more likely to be more hyperactive than their counterparts. There are no significant difference between children in lone parent families and children in intact families regarding hyperactivity, but girls tend to become less hyperactive if their families experience divorce (see Table 3 columns 3 and 4, lone-parent). In this case, the low score of hyperactivity does not necessarily suggest a good outcome, since girls who suffer from traumatic experiences are more likely to keep things to themselves. It can be seen from the anxiety score estimation: girls are much more anxious if the family becomes a lone parent family (see Table 4 columns 3 and 4).

Regarding PMK characteristics, immigrant status has no significant correlation with hyperactivity or anxiety. The education level of PMK is significant in all regressions. A higher parental education degree associates with low hyperactivity score in the child. For girls and boys respectively, hyperactivity decreases by 0.39 and 0.45 if PMKs have a graduate degree (base: high school). Nevertheless, higher parental educational attainment is also associated with high anxiety levels in children (see Table 4 column 1, 2, 5 and 6).

At the provincial level, compared with Ontario, hyperactivity scores in Prince Edward Island and New Brunswick are low, while in Quebec it is high. On average, the lowest anxiety scores are found in Newfoundland and New Brunswick.

When tracking children's outcomes over time, hyperactivity scores have increased over the year for both girls and boys, while anxiety levels don't have a monotonic pattern.

5. Possible channels from parental economic insecurity to child outcomes

From the previous section, we observe a negative relationship between children's non-cognitive skills and parental economic insecurity. The question subsequently arises: why are children affected by parental economic insecurity? We propose that two channels affect children: a direct channel and an indirect channel. The direct channel is emotional mirroring, which is the subconscious imitation of another person's emotion (Chartrand & Bargh, 2014). Young children learn to behave and feel by mimicry of the parents. If parents are tense, then children will mirror the tenseness. The indirect channel is through poor parenting behaviours associated with economic stress. Exposure to stress hormones can change brain structure, affecting cognition (Lupian et al, 2009). Parents under economic stress are more likely to make poor parenting decisions.

Since the direct channel is not directly measurable, we examine parenting behaviours.

The NLSCY provides various parenting style indices designed by Dr. M. Boyle at McMaster University and Dr. Ken Dodge at Vanderbilt University, including ineffective parenting, irrational parenting, consistent parenting and positive interaction. We use

positive interaction and consistent parenting to represent “positive” parenting behaviours, and we employ ineffective parenting and irrational parenting to be proxies for “negative” parenting.

The four parenting indicators are derived a number of questions, and the values of each answer to the question are added (see Appendix I for detail). The consistent parenting style is constructed from questions about whether PMKs enforce rules, and if the children can get out of punishment. A high score indicates more consistent parenting. The positive interaction score is derived from questions such as if PMK praises the child, laughs with them and plays games with the child. The ineffective parenting score uses questions about if PMKs have difficulty managing their children, get annoyed and angry with their children. The irrational parenting style score is from questions such as if the PMK yells at the child or uses physical punishment. High values of the first two parenting scores, and low values of the last two parenting scores represent “positive” parenting. The detailed question composition of the indices can be found in Appendix 1.

Table 6 reports the estimates of “positive” parenting. “Worry about money” is significant and negative, meaning economic insecurity reduces the level of “positive” parenting. The exception is for boys’ fixed effects.

Table 7 shows the regressions for “negative” parenting style. Parental economic insecurity is significant and positive in all OLS and FE regressions indicating that “negative” parenting strategies are more frequently adopted when a higher level of economic insecurity presents (e.g., a parent may yell more when stressed about money).

Those results strongly indicate that when parents worry about money, they spend less time with their children, and are less able to enforce the rules. They are also more likely to be angry with their children, and to use physical punishment. Thus, we regard it as plausible that parental economic insecurity influences children at least in part through parenting behaviours.

6. Conclusion

This paper studies connections between parental economic insecurity and outcomes for 2 to 5 year-old Canadian children. Results for both OLS and fixed effects models suggest that inattentive/hyperactive behaviours and emotional/anxious behaviours are positively associated with parents being 'worried about having enough money to meet family needs.' We illustrate that a plausible channel from parental economic insecurity to children's outcomes is through the parenting behaviours. Less “positive” and more “negative” parenting strategies are reported when parents experience economic insecurity.

Future research can focus on attempting to quantify the “direct” and “indirect” channel of parental economic insecurity on children. A cross-country comparison between the United States and Canada using National Longitudinal Survey of Youth may allow for more variation in policy, which may improve/worsen economic security for parents

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Appendix 1.

Children's well-being outcomes

The three indices for children's well-being outcomes are derived from multiple questions answered by PMKs. The questions and answers follow the same format: "Using the answers never or not true, sometimes or somewhat true, or often or very true, how often would you say that this child..." For all of the questions, never or not true is assigned 0, sometimes or somewhat true is 1, and often or very true is 2. Then the score from each question is combined under the same index. Here is the list of questions asked for hyperactivity/inattention score, emotional disorder/anxiety score and conduct disorder/physical aggression score:

Hyperactivity - Inattention score (12-point scale) is derived from the following six questions:

1. ...can't sit still or is restless?
2. ...is easily distracted, has trouble sticking to any activity?
3. ...can't concentrate, can't pay attention for long?
4. ...cannot settle on anything for more than a few moments?
5. ...has difficulty waiting for his turn in games or groups?
6. ...is inattentive?

Emotional Disorder-Anxiety Score (12-point scale) is derived from the following six questions:

1. ...seems to be unhappy or sad?
2. ...is not as happy as other children?
3. ...is too fearful or nervous?
4. ...is worried?
5. ...is nervous, high strung or tense?
6. ...has trouble enjoying him/herself?

Conduct Disorder - Physical Aggression Score (4-5 year olds, 12-point scale) is derived from the following six questions:

1. ...gets into many fights?
2. ...when another child accidentally hurts him/her , he/she reacts with anger and fighting?
3. ...physically attacks people?
4. ...threatens people?
5. ...bullies or is mean to others?
6. ...kicks,bites or hits other children?

Parenting style

Consistent parenting style score (20-point scale) is derived from the questions below. The answers to these questions ranging from 0 (never) to 4 (all the time). The values of last three questions are reversed for the calculation.

1. When you give this child a command or order to do something, what proportion of the time do you make sure that he does it?
2. If you tell this child he will get punished if he doesn't stop doing something, and he keeps doing it, how often will you punish him?
3. How often does this child get away with things for which you feel he should have been punished?
4. How often is this child able to get out of a punishment when he really sets his mind to it?
5. How often when you discipline this child, does he ignore the punishment?

Positive interaction score (20-point scale) are derived from the questions below. These questions take the value 0 if never, 1 if about once a week or less, 2 if a few times a week, 3 one or two times a day, and 4 many times each day.

1. How often do you praise this child, by saying something like 'Good for you!' or 'What a nice thing you did!' or 'That's good going!'?
2. How often do you and this child talk or play with each other, focusing attention on each other for five minutes or more, just for fun?
3. How often do you and this child laugh together?
4. How often do you do something special with this child that he enjoys?
5. How often do you play sports, hobbies or games with this child?

Ineffective parenting style score ranges from 0 to 28. It is derived from the following seven questions with the same calculation as above.

1. How often do you get annoyed with this child for saying or doing something he is not supposed to?
2. Of all the times that you talk to this child about his behaviour, what proportion is praise? (reversed)
3. Of all the times that you talk to this child about his behaviour, what proportion is disapproval?
4. How often do you get angry when you punish this child?
5. How often do you think that the kind of punishment you give this child depends on your mood?
6. How often do you feel you are having problems managing this child in general?
7. How often do you have to discipline this child repeatedly for the same thing?

Rational parenting style score is on 16-point scale. Parents are asked to answer the questions from 0 "Never" to 4 "Always". The four questions are asked as following: "Please tell me how often you, as his parent, do each of the following when this child breaks the rules or does things that he is not supposed to:"

1. ...raise your voice, scold or yell at him?
2. ...calmly discuss the problem? (reversed)
3. ...use physical punishment?
4. ...describe alternative ways of behaving that are acceptable? (reversed)

Appendix II

Table 3. OLS and fixed effect estimates of inattentive/hyperactivity score. Children from age 2 to 5. Year 2000 to 2008.

Subgroup Specification	Girls				Boys			
	OLS (1)	OLS (2)	FE (1)	FE (2)	OLS (1)	OLS (2)	FE (1)	FE (2)
Column	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Sample mean	3.265	3.265	3.265	3.265	3.815	3.815	3.815	3.815
Sample S.D.	2.284	2.284	2.284	2.284	2.446	2.446	2.446	2.446
Worry about money (4pt scale)	0.212*** [0.0298]		0.0655** [0.0302]		0.189*** [0.0312]		0.0920*** [0.0308]	
Worry about money (base: disagree)								
Strongly disagree		-0.242*** [0.0705]		-0.0462 [0.0670]		-0.0684 [0.0793]		-0.00660 [0.0670]
Agree		0.294*** [0.0629]		0.116** [0.0577]		0.261*** [0.0646]		0.144** [0.0583]
Strongly agree		0.331*** [0.0799]		0.118 [0.0793]		0.448*** [0.0828]		0.236*** [0.0817]
Log equivalent income	-0.0915 [0.0587]	-0.0897 [0.0584]	0.0129 [0.0665]	0.0127 [0.0664]	-0.127** [0.0554]	-0.130** [0.0554]	0.0781 [0.0741]	0.0777 [0.0741]
Child's age dummies (base: 4)								
Child age==2	0.362*** [0.0819]	0.362*** [0.0816]			-0.123 [0.0879]	-0.122 [0.0879]		
Child age==3	0.201** [0.0830]	0.203** [0.0828]			-0.140 [0.0903]	-0.137 [0.0902]		
Child age==5	0.0655 [0.121]	0.0684 [0.121]			-0.146 [0.127]	-0.145 [0.127]		
First-born	0.170** [0.0662]	0.170** [0.0661]			0.0593 [0.0705]	0.0602 [0.0704]		
Child's overall health (base: good)								
Poor & fair	0.135 [0.108]	0.134 [0.108]	0.106 [0.0984]	0.106 [0.0983]	0.228** [0.101]	0.227** [0.101]	-0.169* [0.0928]	-0.168* [0.0927]
Excellent	-0.435*** [0.0607]	-0.433*** [0.0606]	-0.0788 [0.0579]	-0.0780 [0.0579]	-0.352*** [0.0608]	-0.352*** [0.0608]	-0.125** [0.0595]	-0.126** [0.0595]
Child's schooling (base: Not in school)								
Junior KDG	-0.205** [0.103]	-0.205** [0.103]			-0.00486 [0.108]	-0.00437 [0.108]		
KDG	-0.342*** [0.127]	-0.345*** [0.127]			-0.112 [0.131]	-0.114 [0.131]		
Grade1	-0.321 [0.350]	-0.329 [0.351]			-0.0356 [0.468]	-0.0340 [0.467]		
# of siblings	-0.117***	-0.115***	-0.181***	-0.181***	-0.124***	-0.125***	0.0299	0.0287

		[0.0325]	[0.0325]	[0.0591]	[0.0591]	[0.0345]	[0.0344]	[0.0589]	[0.0589]
Family type (base: married)									
	Step family	0.332*	0.331*	-0.543**	-0.540**	0.659***	0.664***	0.167	0.162
		[0.182]	[0.182]	[0.220]	[0.220]	[0.167]	[0.166]	[0.239]	[0.239]
	Lone-parent	0.129	0.144	-0.511***	-0.508***	0.132	0.125	-0.00283	-0.00813
		[0.0917]	[0.0922]	[0.132]	[0.132]	[0.102]	[0.103]	[0.144]	[0.144]
	PMK is immigrant	0.122	0.117			-0.127	-0.125		
		[0.0918]	[0.0913]			[0.0971]	[0.0969]		
PMK education (base: high school)									
	College	-0.152***	-0.149***			-0.120*	-0.120*		
		[0.0576]	[0.0574]			[0.0643]	[0.0642]		
	Bachelor	-0.212***	-0.209***			-0.359***	-0.361***		
		[0.0687]	[0.0686]			[0.0695]	[0.0695]		
	Graduate degree	-0.376***	-0.370***			-0.441***	-0.446***		
		[0.123]	[0.123]			[0.140]	[0.139]		
Rural (base: Urban)		0.113	0.112			-0.109	-0.105		
		[0.0699]	[0.0697]			[0.0699]	[0.0698]		
Province (base: ON)									
	NFL	-0.155	-0.159			-0.299***	-0.296***		
		[0.107]	[0.108]			[0.104]	[0.104]		
	PEI	-0.245**	-0.252**			-0.389***	-0.386***		
		[0.109]	[0.109]			[0.107]	[0.107]		
	NS	-0.0592	-0.0615			0.104	0.105		
		[0.0966]	[0.0963]			[0.105]	[0.105]		
	NB	-0.240***	-0.238***			-0.0209	-0.0178		
		[0.0874]	[0.0876]			[0.0992]	[0.0993]		
	QB	0.189**	0.196**			0.450***	0.451***		
		[0.0860]	[0.0862]			[0.0956]	[0.0958]		
	MB	-0.0275	-0.0283			-0.0433	-0.0428		
		[0.0877]	[0.0878]			[0.0932]	[0.0931]		
	SK	0.163*	0.159*			0.240***	0.241***		
		[0.0872]	[0.0871]			[0.0898]	[0.0897]		
	AB	0.0308	0.0318			0.0890	0.0917		
		[0.0865]	[0.0864]			[0.0889]	[0.0889]		
	BC	0.0490	0.0475			0.107	0.108		
		[0.0916]	[0.0914]			[0.0923]	[0.0922]		
Year (base: 2000)									
	2002	0.161***	0.158**			0.125**	0.129**		
		[0.0619]	[0.0618]			[0.0636]	[0.0635]		
	2004	0.137*	0.139*			0.164**	0.161**		
		[0.0753]	[0.0753]			[0.0794]	[0.0794]		

	2006	0.205*** [0.0772]	0.204*** [0.0769]			0.306*** [0.0856]	0.306*** [0.0855]		
	2008	0.347*** [0.0811]	0.345*** [0.0808]			0.259*** [0.0847]	0.257*** [0.0847]		
Constant		3.823*** [0.656]	4.212*** [0.636]	3.246*** [0.714]	3.361*** [0.704]	4.971*** [0.649]	5.322*** [0.627]	2.746*** [0.795]	2.899*** [0.785]
Observations		21,082	21,082	21,082	21,082	22,140	22,140	22,140	22,140
R-squared		0.052	0.053	0.005	0.005	0.039	0.040	0.002	0.003
Number of children				14,083	14,083			14,833	14,833

Source: NLSCY

Note: Robust standard errors in brackets.

*** p<0.01, ** p<0.05, * p<0.1.

Log equivalent income is calculated from household income before tax and transfer divided by square root of family size.

Table 4. OLS and fixed effect estimates of emotion/anxiety score. Children from age 2 to 5. Year 2000 to 2008.

Subgroup Specification	Girls				Boys			
	OLS (1)	OLS (2)	FE (1)	FE (2)	OLS (1)	OLS (2)	FE (1)	FE (2)
Column	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Sample mean	1.439	1.439	1.439	1.439	1.411	1.411	1.411	1.411
Sample S.D.	1.591	1.591	1.591	1.591	1.584	1.584	1.584	1.584
Worry about money (4pt scale)	0.139*** [0.0208]		0.0623*** [0.0217]		0.103*** [0.0195]		0.0281 [0.0223]	
Worry about money (base: disagree)								
Strongly disagree		-0.156*** [0.0464]		-0.0201 [0.0486]		-0.0433 [0.0488]		-0.0520 [0.0501]
Agree		0.217*** [0.0454]		0.0800* [0.0412]		0.113*** [0.0393]		0.0782* [0.0410]
Strongly agree		0.200*** [0.0585]		0.156*** [0.0587]		0.261*** [0.0556]		-0.000151 [0.0580]
Log equivalent income	-0.0527 [0.0373]	-0.0515 [0.0370]	0.134*** [0.0490]	0.135*** [0.0490]	0.0106 [0.0347]	0.00875 [0.0348]	0.193*** [0.0515]	0.196*** [0.0515]
Child's age dummies (base: 4)								
Child age==2	-0.174*** [0.0553]	-0.174*** [0.0553]			-0.206*** [0.0539]	-0.205*** [0.0539]		
Child age==3	-0.0687 [0.0554]	-0.0669 [0.0553]			-0.141*** [0.0523]	-0.140*** [0.0523]		
Child age==5	0.143 [0.0881]	0.146* [0.0880]			0.0299 [0.0855]	0.0315 [0.0854]		
First-born	0.250*** [0.0455]	0.250*** [0.0456]			0.381*** [0.0449]	0.381*** [0.0449]		
Child's overall health (base: good)								
Poor & fair	0.302*** [0.0854]	0.302*** [0.0855]	0.126 [0.0772]	0.126 [0.0771]	0.259*** [0.0669]	0.257*** [0.0669]	0.109 [0.0715]	0.110 [0.0715]
Excellent	-0.298*** [0.0434]	-0.296*** [0.0434]	-0.00163 [0.0429]	-0.00199 [0.0429]	-0.286*** [0.0388]	-0.287*** [0.0390]	-0.124*** [0.0402]	-0.122*** [0.0401]
Child's schooling (base: Not in school)								
Junior KDG	-0.0280 [0.0694]	-0.0286 [0.0694]			-5.59e-05 [0.0678]	-0.000464 [0.0677]		
KDG	0.0435 [0.0910]	0.0415 [0.0909]			0.0857 [0.0887]	0.0839 [0.0887]		
Grade1	-0.0779 [0.359]	-0.0847 [0.357]			0.121 [0.380]	0.121 [0.380]		
# of siblings	0.0194 [0.0230]	0.0208 [0.0230]	0.294*** [0.0431]	0.293*** [0.0431]	0.0763*** [0.0257]	0.0756*** [0.0256]	0.367*** [0.0427]	0.370*** [0.0428]

Family type (base: married)

Step family	0.250*	0.249*	0.274*	0.275*	0.165	0.165	0.490***	0.491***
	[0.130]	[0.130]	[0.146]	[0.146]	[0.120]	[0.120]	[0.175]	[0.175]
Lone-parent	0.0506	0.0631	0.282***	0.281***	0.0402	0.0342	0.479***	0.486***
	[0.0679]	[0.0676]	[0.0988]	[0.0990]	[0.0618]	[0.0619]	[0.100]	[0.100]
PMK is immigrant	0.00964	0.00596			0.0344	0.0361		
	[0.0643]	[0.0638]			[0.0563]	[0.0563]		

PMK education (base: high school)

College	0.0446	0.0472			-0.0212	-0.0215		
	[0.0414]	[0.0414]			[0.0393]	[0.0392]		
Bachelor	0.195***	0.198***			0.189***	0.187***		
	[0.0482]	[0.0482]			[0.0429]	[0.0429]		
Graduate degree	0.265***	0.270***			0.337***	0.333***		
	[0.0820]	[0.0819]			[0.103]	[0.103]		

Rural (base: Urban)

	-0.113***	-0.114***			-0.00906	-0.00778		
	[0.0410]	[0.0410]			[0.0425]	[0.0426]		

Province (base: ON)

NFL	-0.137**	-0.139**			-0.209***	-0.207***		
	[0.0678]	[0.0678]			[0.0637]	[0.0638]		
PEI	-0.0129	-0.0176			-0.154**	-0.152**		
	[0.0715]	[0.0716]			[0.0666]	[0.0665]		
NS	0.0516	0.0500			0.0407	0.0406		
	[0.0632]	[0.0631]			[0.0591]	[0.0592]		
NB	-0.204***	-0.202***			-0.248***	-0.247***		
	[0.0612]	[0.0613]			[0.0563]	[0.0564]		
QB	0.273***	0.281***			0.244***	0.242***		
	[0.0631]	[0.0631]			[0.0549]	[0.0548]		
MB	0.0809	0.0800			-0.0310	-0.0322		
	[0.0592]	[0.0594]			[0.0581]	[0.0581]		
SK	0.0656	0.0634			0.0517	0.0518		
	[0.0623]	[0.0623]			[0.0566]	[0.0566]		
AB	0.102*	0.103*			0.115*	0.116*		
	[0.0583]	[0.0582]			[0.0611]	[0.0612]		
BC	0.135**	0.134**			0.167***	0.168***		
	[0.0589]	[0.0588]			[0.0590]	[0.0590]		

Year (base: 2000)

2002	0.178***	0.176***			0.182***	0.185***		
	[0.0435]	[0.0435]			[0.0435]	[0.0434]		
2004	0.00864	0.00988			0.0647	0.0627		
	[0.0507]	[0.0507]			[0.0496]	[0.0497]		
2006	0.0249	0.0237			-0.0352	-0.0346		

	2008	[0.0543] 0.0513 [0.0585]	[0.0543] 0.0492 [0.0583]			[0.0547] 0.0816 [0.0539]	[0.0546] 0.0808 [0.0538]		
Constant		1.470*** [0.426]	1.716*** [0.410]	-0.571 [0.527]	-0.469 [0.520]	0.791** [0.394]	0.998*** [0.385]	-1.165** [0.552]	-1.148** [0.547]
Observations		21,158	21,158	21,158	21,158	22,188	22,188	22,188	22,188
R-squared		0.046	0.047	0.010	0.010	0.044	0.044	0.018	0.018
Number of children				14,114	14,114			14,865	14,865

Source: NLSCY

Note: Robust standard errors in brackets.

*** p<0.01, ** p<0.05, * p<0.1.

Log equivalent income is calculated from household income before tax and transfer divided by square root of family size.

Table 5. OLS and fixed effect estimates of hyperactivity and anxiety. Pooled sample. Children from age 2 to 5. Year 2000 to 2008.

Dependent Variable	Hyperactivity	Hyperactivity	Hyperactivity	Hyperactivity	Anxiety	Anxiety	Anxiety	Anxiety
Specification	OLS (1)	OLS (2)	FE (1)	FE (2)	OLS (1)	OLS (2)	FE (1)	FE (2)
Column	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Sample mean	3.184	3.184	3.184	3.184	1.499	1.499	1.499	1.499
Sample S.D.	2.297	2.297	2.297	2.297	1.622	1.622	1.622	1.622
Worry about money (4pt scale)	0.220*** [0.0287]		0.0643** [0.0300]		0.147*** [0.0196]		0.0624*** [0.0217]	
Worry about money (base: disagree)								
Strongly disagree		-0.152*** [0.0537]		-0.0238 [0.0474]		-0.100*** [0.0339]		-0.0373 [0.0350]
Agree		0.279*** [0.0456]		0.130*** [0.0411]		0.163*** [0.0301]		0.0787*** [0.0291]
Strongly agree		0.346*** [0.0764]		0.123* [0.0745]		0.205*** [0.0546]		0.155*** [0.0556]
Gender differences								
Child is a boy	0.628*** [0.104]	0.529*** [0.0430]	1.025 [0.737]	1.072 [0.730]	0.0889 [0.0668]	-0.0406 [0.0274]	0.712 [0.501]	0.672 [0.494]
Boy x Worry about money	-0.0347 [0.0399]		0.0272 [0.0428]		-0.0495* [0.0264]		-0.0332 [0.0309]	
Boy x Strongly worry about money		0.0987 [0.103]		0.107 [0.0992]		0.0547 [0.0725]		-0.151** [0.0726]
Log equivalent income	-0.111*** [0.0405]	-0.112*** [0.0405]	0.0407 [0.0498]	0.0404 [0.0498]	-0.0195 [0.0254]	-0.0198 [0.0254]	0.163*** [0.0356]	0.165*** [0.0356]
Child's age dummies (base: 4)								
Child age==2	0.112* [0.0609]	0.112* [0.0608]			-0.189*** [0.0387]	-0.189*** [0.0388]		
Child age==3	0.0247 [0.0621]	0.0260 [0.0620]			-0.104*** [0.0381]	-0.104*** [0.0382]		
Child age==5	-0.0384 [0.0885]	-0.0367 [0.0885]			0.0812 [0.0617]	0.0824 [0.0617]		
First-born	0.112** [0.0486]	0.112** [0.0486]			0.319*** [0.0321]	0.319*** [0.0320]		
Child's overall health (base: good)								
Poor & fair	0.191*** [0.0741]	0.191*** [0.0741]	-0.0465 [0.0676]	-0.0462 [0.0676]	0.278*** [0.0536]	0.278*** [0.0537]	0.117** [0.0524]	0.118** [0.0524]
Excellent	-0.390*** [0.0432]	-0.388*** [0.0432]	-0.104** [0.0416]	-0.104** [0.0416]	-0.291*** [0.0290]	-0.290*** [0.0290]	-0.0654** [0.0293]	-0.0648** [0.0293]
Child's schooling (base: Not in school)								
Junior KDG	-0.108 [0.0755]	-0.109 [0.0754]			-0.0113 [0.0486]	-0.0130 [0.0487]		

	KDG	-0.231**	-0.233**			0.0708	0.0686		
		[0.0921]	[0.0921]			[0.0639]	[0.0639]		
	Grade1	-0.170	-0.183			-0.00635	-0.0198		
		[0.281]	[0.282]			[0.262]	[0.262]		
# of siblings		-0.120***	-0.120***	-0.0711*	-0.0721*	0.0492***	0.0490***	0.332***	0.333***
		[0.0238]	[0.0238]	[0.0415]	[0.0415]	[0.0173]	[0.0173]	[0.0302]	[0.0302]
Family type (base: married)									
	Step family	0.511***	0.513***	-0.191	-0.192	0.204**	0.205**	0.381***	0.381***
		[0.125]	[0.125]	[0.163]	[0.163]	[0.0889]	[0.0890]	[0.113]	[0.113]
	Lone-parent	0.129*	0.131*	-0.258***	-0.259***	0.0440	0.0458	0.380***	0.382***
		[0.0692]	[0.0696]	[0.0981]	[0.0981]	[0.0460]	[0.0460]	[0.0705]	[0.0706]
PMK is immigrant		0.000392	-0.000754			0.0227	0.0221		
		[0.0671]	[0.0669]			[0.0427]	[0.0425]		
PMK education (base: high school)									
	College	-0.137***	-0.137***			0.00945	0.00962		
		[0.0436]	[0.0435]			[0.0285]	[0.0285]		
	Bachelor	-0.281***	-0.280***			0.191***	0.192***		
		[0.0489]	[0.0489]			[0.0323]	[0.0323]		
	Graduate degree	-0.415***	-0.414***			0.303***	0.304***		
		[0.0945]	[0.0944]			[0.0668]	[0.0669]		
Rural (base: Urban)		-0.00492	-0.00377			-0.0584**	-0.0579*		
		[0.0496]	[0.0495]			[0.0296]	[0.0296]		
Province (base: ON)									
	NFL	-0.222***	-0.223***			-0.175***	-0.176***		
		[0.0750]	[0.0752]			[0.0465]	[0.0465]		
	PEI	-0.320***	-0.321***			-0.0826*	-0.0838*		
		[0.0767]	[0.0766]			[0.0489]	[0.0488]		
	NS	0.0248	0.0241			0.0460	0.0451		
		[0.0714]	[0.0713]			[0.0432]	[0.0432]		
	NB	-0.127*	-0.125*			-0.228***	-0.227***		
		[0.0664]	[0.0664]			[0.0414]	[0.0415]		
	QB	0.324***	0.327***			0.258***	0.260***		
		[0.0649]	[0.0650]			[0.0417]	[0.0417]		
	MB	-0.0335	-0.0341			0.0228	0.0221		
		[0.0642]	[0.0643]			[0.0416]	[0.0416]		
	SK	0.206***	0.206***			0.0567	0.0566		
		[0.0627]	[0.0626]			[0.0421]	[0.0420]		
	AB	0.0625	0.0637			0.107**	0.108**		
		[0.0622]	[0.0622]			[0.0424]	[0.0424]		
	BC	0.0839	0.0830			0.150***	0.149***		
		[0.0651]	[0.0650]			[0.0418]	[0.0418]		

Year (base: 2000)

2002	0.143*** [0.0447]	0.143*** [0.0446]			0.180*** [0.0308]	0.180*** [0.0307]		
2004	0.153*** [0.0550]	0.152*** [0.0550]			0.0377 [0.0355]	0.0367 [0.0356]		
2006	0.261*** [0.0579]	0.261*** [0.0579]			-0.00565 [0.0386]	-0.00573 [0.0386]		
2008	0.307*** [0.0593]	0.305*** [0.0592]			0.0685* [0.0397]	0.0674* [0.0397]		
Constant	4.090*** [0.466]	4.520*** [0.450]	2.524*** [0.649]	2.632*** [0.640]	1.064*** [0.294]	1.361*** [0.283]	-1.227*** [0.459]	-1.143** [0.454]
Observations	43,222	43,222	43,222	43,222	43,346	43,346	43,346	43,346
R-squared	0.054	0.054	0.002	0.003	0.044	0.044	0.014	0.014
Number of children			28,903	28,903			28,965	28,965

Source: NLSCY

Note: Robust standard errors in brackets.

*** p<0.01, ** p<0.05, * p<0.1.

Log equivalent income is calculated from household income before tax and transfer divided by square root of family size.

Table 6. OLS and fixed effect estimates of positive interaction and consistent parenting. Children from age 2 to 5. Year 2000 to 2008.

D.V. Subgroup Specification Column	Positive Interaction				Consistent Parenting			
	Girls		Boys		Girls		Boys	
	OLS (1) (1)	FE (1) (3)	OLS (1) (5)	FE (1) (7)	OLS (1) (1)	FE (1) (3)	OLS (1) (5)	FE (1) (7)
Sample mean	15.579	15.579	15.639	15.639	14.932	14.932	14.991	14.991
Sample S.D.	2.68	2.68	2.65	2.65	3.277	3.277	3.248	3.248
Worry about money (4pt scale)	0.127*** [0.0328]	0.000396 [0.0363]	0.109*** [0.0304]	-0.0160 [0.0356]	0.236*** [0.0444]	0.132*** [0.0418]	0.117*** [0.0403]	-0.0146 [0.0407]
Log equivalent income	-0.0643 [0.0563]	0.454*** [0.0868]	-0.0950* [0.0546]	0.546*** [0.0820]	0.373*** [0.0761]	0.0892 [0.102]	0.488*** [0.0732]	0.308*** [0.0933]
Child's age dummies (base: 4)								
Child age==2	1.770*** [0.0843]		1.756*** [0.0810]		-0.226** [0.112]		-0.261** [0.107]	
Child age==3	0.947*** [0.0873]		1.034*** [0.0819]		-0.237** [0.111]		-0.184* [0.109]	
Child age==5	0.608*** [0.161]		-0.251* [0.136]		0.105 [0.163]		0.0985 [0.158]	
First-born	0.376*** [0.0653]		0.300*** [0.0662]		0.194** [0.0888]		0.155* [0.0852]	
Child's overall health (base: good)								
Poor & fair	-0.136 [0.108]	0.0305 [0.119]	0.0758 [0.0990]	0.0358 [0.104]	-0.267* [0.148]	-0.288** [0.134]	-0.184 [0.118]	-0.0763 [0.123]
Excellent	0.265*** [0.0641]	0.326*** [0.0692]	0.446*** [0.0608]	0.284*** [0.0664]	0.412*** [0.0804]	-0.0124 [0.0786]	0.297*** [0.0757]	-0.0202 [0.0753]
Child's schooling (base: Not in school)								
Junior KDG	-0.0622 [0.111]		-0.0670 [0.103]		0.125 [0.137]		0.0326 [0.132]	
KDG	-0.0191 [0.162]		-0.261* [0.143]		-0.0631 [0.173]		0.0993 [0.158]	
Grade1	-0.612 [0.406]		0.143 [0.701]		0.324 [0.541]		0.115 [0.827]	
# of siblings	0.133*** [0.0334]	1.288*** [0.0713]	0.209*** [0.0344]	1.212*** [0.0745]	0.0708 [0.0510]	0.188** [0.0813]	0.0644 [0.0450]	0.331*** [0.0761]
Family type (base: married)								
Step family	-0.227 [0.143]	1.417*** [0.258]	-0.0522 [0.180]	1.390*** [0.234]	-0.335 [0.224]	0.625** [0.303]	-0.0809 [0.194]	-0.266 [0.305]
Lone-parent	-0.137	1.293***	-0.115	1.492***	-0.133	0.525**	0.0410	0.220

		[0.0947]	[0.159]	[0.0991]	[0.148]	[0.133]	[0.204]	[0.138]	[0.191]
PMK is immigrant		-		-		-		-	
		0.438***		0.449***		1.142***		1.187***	
		[0.0907]		[0.0969]		[0.117]		[0.112]	
PMK education (base: high school)									
	College	0.0565		0.128**		0.258***		0.240***	
		[0.0588]		[0.0607]		[0.0819]		[0.0773]	
	Bachelor	0.0771		0.134*		0.527***		0.560***	
		[0.0705]		[0.0684]		[0.0958]		[0.0828]	
	Graduate degree	0.0867		0.239*		0.749***		0.530***	
		[0.125]		[0.123]		[0.155]		[0.154]	
Rural (base: Urban)		0.0780		0.0716		0.0420		0.0673	
		[0.0636]		[0.0697]		[0.0995]		[0.0909]	
Province (base: ON)									
	NFL	0.464***		0.464***		0.600***		-0.271**	
		[0.0953]		[0.0954]		[0.162]		[0.132]	
	PEI	0.0256		0.136		0.0772		0.118	
		[0.0954]		[0.105]		[0.163]		[0.155]	
	NS	0.292***		0.130		-0.0690		-0.137	
		[0.0921]		[0.0914]		[0.148]		[0.136]	
	NB	0.140		0.223**		0.00180		0.0627	
		[0.0864]		[0.0899]		[0.136]		[0.137]	
	QB	0.810***		0.718***		1.206***		0.885***	
		[0.0832]		[0.0814]		[0.112]		[0.112]	
	MB	0.0754		0.00821		0.0696		0.298**	
		[0.0837]		[0.0870]		[0.134]		[0.121]	
	SK	-0.0250		-0.0829		-0.234*		-0.192	
		[0.0844]		[0.0943]		[0.130]		[0.119]	
	AB	-0.0523		0.0186		0.239**		0.331***	
		[0.0857]		[0.0848]		[0.119]		[0.112]	
	BC	-0.0684		-0.134		0.217*		0.378***	
		[0.0925]		[0.0893]		[0.123]		[0.115]	
Year (base: 2000)									
	2002	0.320***		0.429***		-0.101		0.114	
		[0.0661]		[0.0661]		[0.0840]		[0.0847]	
	2004	0.116		0.203***		-0.0120		0.248**	
		[0.0795]		[0.0789]		[0.102]		[0.105]	
	2006	0.170**		0.118		0.0767		0.345***	
		[0.0819]		[0.0851]		[0.107]		[0.103]	
	2008	0.245***		0.196**		0.115		0.535***	
		[0.0805]		[0.0811]		[0.111]		[0.105]	
Constant		16.16***	22.10***	16.30***	23.04***	11.75***	14.48***	10.08***	11.86***

	[0.639]	[0.926]	[0.629]	[0.884]	[0.875]	[1.085]	[0.837]	[0.998]
Observations	21,149	21,149	22,161	22,161	20,416	20,416	21,465	21,465
R-squared	0.178	0.060	0.173	0.059	0.089	0.005	0.083	0.004
Number of children		14,098		14,838		13,803		14,527

Source: NLSCY

Note: Robust standard errors in brackets.

*** p<0.01, ** p<0.05, * p<0.1.

Log equivalent income is calculated from household income before tax and transfer divided by square root of family size.

Table7. OLS and fixed effect estimates of ineffective parenting and irrational parenting. Children from age 2 to 5. Year 2000 to 2008.

Subgroup Specification Column	Ineffective Parenting				Irrational Parenting			
	Girls		Boys		Girls		Boys	
	OLS (1) (1)	FE (1) (3)	OLS (1) (5)	FE (1) (7)	OLS (1) (1)	FE (1) (3)	OLS (1) (5)	FE (1) (7)
Sample mean	8.525	8.525	9.03	9.03	6.559	6.559	6.756	6.756
Sample S.D.	3.472	3.472	3.555	3.555	3.119	3.119	3.144	3.144
Worry about money (4pt scale)	0.397*** [0.0475]	0.239*** [0.0450]	0.363*** [0.0439]	0.118*** [0.0446]	0.157*** [0.0274]	0.170*** [0.0425]	0.149*** [0.0273]	0.130*** [0.0430]
Log equivalent income	0.170** [0.0833]	-0.228** [0.100]	0.0391 [0.0766]	0.0456 [0.106]	-0.0263 [0.0507]	0.432*** [0.101]	-0.0391 [0.0467]	0.590*** [0.0988]
Child's age dummies (base: 4)								
Child age==2	-0.0667 [0.125]		0.0480 [0.119]		-0.0363 [0.0782]		0.0469 [0.0687]	
Child age==3	0.318** [0.130]		0.319*** [0.118]		-0.0249 [0.0762]		0.0891 [0.0646]	
Child age==5	-0.228 [0.200]		-0.331* [0.175]		0.112 [0.116]		0.187* [0.0983]	
First-born	0.306*** [0.103]		0.179* [0.0992]		0.157*** [0.0587]		-0.111* [0.0581]	
Child's overall health (base: good)								
Poor & fair	0.0179 [0.170]	0.258* [0.146]	0.281** [0.141]	0.218 [0.140]	0.0571 [0.0981]	0.417*** [0.133]	0.163** [0.0780]	0.313*** [0.118]
Excellent	0.639*** [0.0922]	-0.0482 [0.0848]	0.366*** [0.0830]	-0.0441 [0.0802]	0.270*** [0.0557]	0.0626 [0.0800]	0.188*** [0.0498]	-0.0286 [0.0756]
Child's schooling (base: Not in school)								
Junior KDG	-0.0796 [0.155]		0.259* [0.151]		-0.139 [0.0909]		0.0542 [0.0832]	
KDG	0.142 [0.201]		0.306 [0.187]		-0.120 [0.118]		-0.151 [0.103]	
Grade1	-0.230 [0.641]		-0.145 [0.488]		-1.186** [0.495]		-0.790* [0.413]	
# of siblings	0.0376 [0.0495]	0.155* [0.0855]	0.0977* [0.0528]	0.249*** [0.0841]	0.0373 [0.0290]	0.989*** [0.0770]	0.0800** [0.0317]	0.971*** [0.0807]
Family type (base: married)								
Step family	-0.0456 [0.220]	-0.851** [0.330]	0.299 [0.224]	0.855*** [0.315]	-0.0730 [0.125]	1.797*** [0.286]	-0.199 [0.139]	2.107*** [0.285]

	Lone-parent	0.00270 [0.142]	-	-0.232* [0.138]	-0.254 [0.210]	-0.126 [0.0859]	-	-0.145* [0.0826]	-	1.356*** [0.179]
PMK is immigrant		-0.342** [0.155]	0.660*** [0.216]	-0.168 [0.137]		0.208** [0.0830]	1.448*** [0.177]	0.158* [0.0808]		
PMK education (base: high school)										
	College	0.107 [0.0896]		0.0187 [0.0877]		0.00643 [0.0540]		-0.0215 [0.0513]		
	Bachelor	0.132 [0.104]		0.105 [0.101]		-0.0969 [0.0615]		-0.112* [0.0603]		
	Graduate degree	0.103 [0.217]		-0.0299 [0.192]		-0.218* [0.116]		-0.118 [0.122]		
Rural (base: Urban)		0.297*** [0.0942]		-0.125 [0.0944]		0.0704 [0.0577]		0.109* [0.0653]		
Province (base: ON)										
	NFL	0.626*** [0.165]		0.748*** [0.151]		0.394*** [0.0898]		0.291*** [0.0889]		
	PEI	0.486*** [0.157]		0.486*** [0.160]		0.409*** [0.0945]		0.276*** [0.0980]		
	NS	-0.225 [0.145]		0.341** [0.141]		0.299*** [0.0854]		0.0163 [0.0864]		
	NB	0.667*** [0.136]		0.408*** [0.150]		0.575*** [0.0811]		0.494*** [0.0849]		
	QB	0.0397 [0.140]		0.418*** [0.123]		0.418*** [0.0771]		0.384*** [0.0716]		
	MB	0.0414 [0.131]		0.250* [0.130]		-0.0182 [0.0830]		0.184** [0.0795]		
	SK	0.376*** [0.130]		0.706*** [0.132]		0.269*** [0.0837]		0.548*** [0.0816]		
	AB	0.233* [0.130]		0.688*** [0.123]		0.134* [0.0771]		0.398*** [0.0799]		
	BC	0.230* [0.138]		0.411*** [0.137]		-0.158* [0.0849]		-0.0489 [0.0762]		
Year (base: 2000)										
	2002	-0.0683 [0.0894]		-0.0946 [0.0929]		4.150*** [0.0560]		4.233*** [0.0563]		
	2004	-0.0995		-0.0419		-		-		

					4.126***		4.136***	
		[0.112]		[0.113]	[0.0665]		[0.0668]	
	2006	-0.236**		-0.189	4.548***		4.434***	
		[0.119]		[0.119]	[0.0709]		[0.0688]	
	2008	-0.188		-0.0620	4.505***		4.475***	
		[0.118]		[0.116]	[0.0745]		[0.0707]	
Constant		5.929***	9.976***	7.313***	7.733***	8.641***	10.69***	8.669***
		[0.937]	[1.076]	[0.891]	[1.140]	[0.565]	[1.086]	[0.533]
								12.61***
								[1.063]
Observations		20,757	20,757	21,773	21,773	21,046	21,046	22,066
R-squared		0.029	0.009	0.024	0.004	0.438	0.036	0.439
Number of children			13,937		14,667		14,051	14,800

Source: NLSCY

Note: Robust standard errors in brackets.

*** p<0.01, ** p<0.05, * p<0.1.

Log equivalent income is calculated from household income before tax and transfer divided by square root of family size.