

UNIVERSAL CHILD CARE AND ITS EFFECT ON DIVORCE AND
SEPARATION: A STUDY OF QUÉBEC'S 5 DOLLAR-A-DAY CHILD
CARE PROGRAM

by

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Dedicated to my mother and father

~For your unconditional support and guidance

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Abstract

This paper looks at the effects of a policy change that Canada's second largest province implemented. In 1997, Québec chose to implement a 5 dollar-a-day child care program to make access to child care more affordable for individuals in the province. The policy was successful in increasing the female labour force participation (Lefebvre and Merrigan 2008), but studies have shown that there have been negative indirect effects of the policy implementation as well. Baker et al. (2008) show the negative effects of the policy on the behaviour and development of children as well as the lower-quality parental relationships. This paper finds a relationship between the policy change and the divorce and separation rates in the province of Québec. A difference-in-differences approach is used to compare Québec with the rest of Canada and the results show a statistically significant increase in the divorce rate after the policy implementation in Québec.

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Chapter 1

Introduction

There is no doubt that the existence of child care facilities is beneficial for women and men in the labour force. The times when children were mostly looked after by parents or other family members have evolved into including systems where children are taken to nurseries or homes where they are looked after by third party individuals. Nowadays, there are numerous types of child care facilities and all have slightly different models and can be for-profit, non-profit, or subsidized. Governments choosing to help subsidize child care show their desire to increase the labour force, but most importantly, show their support for increasing women in the labour force.

Many studies such as Lefebvre and Merrigan (2008 and 2009) show the increases in the supply of labour that arise when child care programs and subsidies are put into place, but not many have looked at the indirect negative effects on parental relationships, poor cognitive behaviour and poor test results in the participating children (Baker et al. 2008). This paper takes the effect on parental relationships one step further and looks at the how the implementation of a universal day care system in Québec affects the divorce and separation rate. Although there is varying literature on how divorce and separation affect children, the general consensus is that the effects are negative (Tartari 2007 and Cherlin 1995). This allows one to infer that the policy which was put into place to help women increase their presence in the labour force might have caused many more indirect

effects towards children's behaviour and development as well as the economic stability of the family.

The Québec Family Program began in 1997 with the extension of full-time kindergarten to all 5 year-olds as well as childcare being provided at an out-of-pocket price of \$5 per day to all four year olds. In 1998, the \$5 per day policy was extended to all three years olds, all 2 year olds in 1999 and subsequently children under the age of 2 in the year 2000 (Baker et al. 2008). This unique policy implementation provides a quasi-experimental environment for evaluating the effects of subsidized childcare in Québec.

This paper uses data from the Canadian Labour Force Survey from 1990-2005. The data from these years are pooled to create a cross-sectional data set. The effects of the policy on both divorce and separation are examined over this time period.

Findings from the research are in line with the literature which suggests that the policy implementation causes strains in parental relationships. After a closer analysis, however, different results are found based on the characteristics of the individuals surveyed. When looking and specific categories of individuals, it is found that divorce and separation increases as well as decreases, based on characteristics of the survey respondent. Finally, with such a large time series of data, a province specific trend is added, and with this control, the results show that the policy has some effect, but on a select group of individuals.

Chapter 2

Background Information

2.1 History of Québec's Family Program

In 1997, the province of Québec started the Québec Family Program. The program began with the extension of full-time kindergarten to all five year olds and the provision of childcare at a subsidized price of \$5 per day to all four year olds. In 1998 it was extended to 3 year olds and then in 1999 and 2000, to four and less than two year olds respectively (Lefebvre and Merrigan 2008). A few studies such as Baker et al. (2008) and Lefebvre and Merrigan (2009) show the effects of this policy change on child development, parental health and labour force supply. There is also some literature on female labour force participation and divorce rates (Bremmer and Kesselring 2004), which leads to my research question of the effects of Québec's child care policy change on divorce and separation rates in the province.

The Educational Childcare Act in Québec has two main objectives. The first is to enhance the quality of the educational services provided by childcare providers and to ensure the health and safety of the children to whom childcare services are provided. More specifically, it hopes to assist with individuals with special needs or with those who live in a precarious socio-economic situation, promote their development and well-being and provide them with equality of opportunity. The second objective is to take into account the needs of parents and foster the harmonious development of childcare services by reconciling parental and professional responsibilities and their right to choose a

childcare provider (CanLII 2011). Previous literature varies on the policy's effect on cognitive development and behaviour among children, but one thing that is certain is that it has not succeeded in targeting the lowest income group, which is clearly stated as an important objective of the Educational Childcare Act. This policy implementation had great intentions and high hopes; however studies are showing that the negative indirect effects are starting to accumulate.

2.2 Literature Review

One of the most well known papers from which this research question arises is by Baker et al. (2008). In this paper, the authors use a difference-in-differences approach to look at married couples and their children to see how the Québec Family Program affects children's behaviour, parenting skills, and parental relationships. They find that the policy change alone leads to a large increase in the use of care. The proportion of 0-4 year olds in care rises by 14 percentage points relative to the rest of the country (Baker et al. 2008). They conclude that as a result of the policy, children are worse off in a number of behavioural health dimensions such as motor-social skills to illness. The childcare program leads to more hostile, less consistent parenting, worse parental health and lower quality parental relationships (Baker et al. 2008).

Some critiques of this paper and its findings are that they only choose to look at married couples. Surely a subsidized child care program would have great benefits to single parents. Finding out the effects of this policy on single parents are a great addition to the literature as they show that Québec singles receive the highest percent subsidy than any other province and the rest of Québec.

An early paper by Lefebvre and Merrigan (2002) also examines the implications of Québec's policy change and cannot find statistically significant negative effects on the children's behaviour and skills. The authors are aware that they are in the early stages and therefore, a lot more needs to be considered and looked at. They strongly feel that one should not assume early childhood care is the best option over parental care and that more studies need to be done before policies are put into place.

Lefebvre and Merrigan (2008) look at the effects of Québec's child care policy on the labour supply of women based on a difference-in-differences approach. In this paper, they use 1999 as the year of the program as the subsidy in 1998 mainly went towards accommodating mothers who were already in the labour market and were using existing facilities. They conclude by stating that the policy implementation has labour supply effects on mothers of preschool aged children.

Lefebvre and Merrigan (2008) also look at what else is going on in Québec at this time. It is crucial to look at other factors which can be affecting results or skewing decisions. Lefebvre and Merrigan (2008) note that the policy is implemented during a period of extremely strong GDP growth for Québec (22%) and for the whole of Canada (23.1%) with increased aggregate labour demand. Women who are seeking employment due to the policy change would have much better chances of success than at a time of economic turmoil. It is not clear whether or not this policy could have the same implications in time periods with poor job markets.

Divorce rate and employment literature is quite plentiful; however most of the literature focuses on unemployment and divorce rate. There are fewer studies which link

females in the labour force and female earnings to divorce rates. Ananat and Michaels (2008) show that divorce increases the odds of a woman having very high or very low income. Bremmer and Kesselring (2004) and No et al. (2007) look specifically at female labour force participation and find that the divorce rate, female labour force participation and the mean level of real female income all have an underlying long-run relationship. Phillips et al. (2004) and Ressler and Waters (2000) both show that female earnings are positively correlated with divorce rates. Roy (2011) finds that a rise in the unemployment in the wife's sector increases the odds of a separation among cohabiting couples, but not among married couples.

Finally, there is literature on how divorce and separation affects children. Tartari (2007) and Cherlin (1995) show that divorce and separation result in negative effects for children. Cherlin (2007) shows that divorce leads to a child being more likely to leave home because of friction, to cohabit and to have a child outside of marriage while Tartari (2007) shows a decrease in test scores. However, Li (2007) states that divorce and separation do not result in the negative effects that most speak of. Li controls for a selection of unobserved factors that are either constant over time or change at a constant rate over time by using generalizations of the child fixed-effects model, and find that the effect of divorce substantially declines and is no longer statistically significant. All of this literature linking females in the labour force with divorce rates motivates this paper's research question.

What this paper hopes to add to the literature is the new dimension of divorce and separation rates indirectly being affected by child care policy through labour force participation changes. No other study has looked at whether these policies have any

effect on divorce and separation rates and this policy change in Québec gives the perfect opportunity for this natural experiment to be conducted.

Chapter 3

Data

The data set used for this study is the Canadian Labour Force Survey, a nationally representative survey which is conducted annually. Although the surveys available date back to the mid 1970s, I choose to use the surveys from 1990 to 2005. The first survey is conducted in 1945, and although the majority of the questions asked have remained constant over the years, there are few cases where more response options have been added in more recent surveys.

The Canadian Labour Force Survey is a monthly household survey of a sample of individuals who are a representation of the civilian, noninstitutionalised population 15 years or older. This data set excludes individuals who live in Canada's territories, the military, institutions as well as aboriginal reservations. These excluded groups, together account for approximately 2% of the population over the age of 15.

Although the survey is not extremely detailed with individual characteristics, it is the best data available which has information on marital status, employment status and dates back far enough to have data from before the policy change. The span of sixteen years is more than adequate for the difference-in-differences methodology I use and the time span gives approximately 8 years before and after the policy implementation. Each year of the Labour Force Survey has a cross section of data and all 16 years of cross-sectional data are pooled together to form the dataset. The total number of observations is more than enough for advanced econometric analysis.

Chapter 4

Empirical Strategy

Using data from the Canadian Labour Force Survey (LFS), a difference-in-differences model is estimated which compares the outcomes in Québec with the rest of Canada at the time of the policy change. The “pre-reform” period is from January 1, 1990 - August 31, 1997 of the LFS, while “post-reform” is from September 1, 1997- December 31, 2005. Since the dependent variable, *divorce and separation*, is binary, an Ordinary Least Squares (OLS) regression is estimated and will yield a linear probability model for the empirical analysis.

This study looks at the rates of divorce and separation in the province of Québec and compares it to the rest of the country, conditional on the implementation of Québec’s Family Program. This program provides a source of exogenous variation in divorce and separation and can be used to form the basis of a quasi-experimental environment. The study follows two groups of observations. Individuals residing in Québec are considered the treatment group and those residing in the other 9 provinces are the control group. The paper uses a difference-in-differences methodology to compare the change in divorce and separation in Québec before and after the program to changes in divorce and separation in all other provinces before and after the program’s implementation.

For the outcome variable of divorce and separation, the generic estimating equation at the individual level is

$$(1) \quad Outcome_{ipt} = \beta_0 + \beta_1 Quebec_p * After_t + \beta_2 Quebec_p + \beta_3 After_t + B_4 X_{ipt} + \varepsilon_{ipt}$$

where i indexes individuals, p indexes provinces, and t indexes years and months. I have included a year-month and province dummy variable, along with some control variables X_{ipt} for the parents' characteristics such as age, education level, sex, age of youngest child and labour force status.

For the analysis of divorce and separation, a dummy variable is created which uses the marital status variable from the LFS, but it is recoded so that all individuals who are divorced or separated are coded as 1, and the other marital statuses are all 0. *Québec* is also a dummy variable, and all individuals from Québec are given a 1, while anyone from the other 9 provinces are coded as a 0. The *After* variable is a year-month dummy which represents the two time periods, January 1, 1990 to August 31 1997 (before the policy) and September 1, 1997 to December 31, 2005 (after the policy). The *Quebec_p * After_t* variable is the interaction term and is the variable of interest.

This variable of interest, with β_1 as the coefficient, represents the difference between Québec and the rest of Canada's divorce and separation rates from 1990-2005.

$$(2) \quad \beta_1 = \left(DS_{After\ Sept\ 1,1997}^{Treatment} - DS_{Before\ Sept\ 1,1997}^{Treatment} \right) - \left(DS_{After\ Sept\ 1,1997}^{Control} - DS_{Before\ Sept\ 1,1997}^{Control} \right),$$

where β_1 represents the effect of the policy and DS is the divorce and separation rate.

The identifying assumption of the difference-in-differences estimator is that time-varying factors affect both groups equally.

To account for the possible time and province-varying effects that are common to both groups the following regression is performed which uses year-month and province fixed effects:

$$(3) \quad Outcome_{ipt} = \beta_0 + \beta_1 Quebec_p * After_t + \beta_2 R_p + \beta_3 T_t + B_4 X_{ipt} + \varepsilon_{ipt}$$

In this example, T_t are year-month dummy variables and they take the place of the $After_t$ variable and R_p are province dummy variables which take the place of the $Quebec_p$ variable in equation (1). Once again, X_{ipt} is a vector of control variables and $Quebec_p * After_t$ is the difference-in-differences estimate. A fixed effect model helps control for unobserved heterogeneity that is constant over time and correlated with independent variables. In equation (3) the constant is removed by using the difference-in-differences methodology for any time or province invariant components of the model.

Running both models in equation (1) and (3) using the Ordinary Least Squares Estimation yields a linear probability model, as in both cases, the dependent variables are binary. The coefficients are interpreted as percentage point increases or decreases in the probability that there is divorce or separation among individuals. Although this gives the populations' effect, the results will show that individuals with and without children as well as with children of varying ages were affected differently by the policy change.

Another key issue to consider with a difference-in-differences analysis is the proper computation of the standard errors. Recognizing that there are numerous routes one can take, I choose to use the same method Baker et al. (2008) use in their paper after

they conduct an extensive analysis of various possibilities and choose to cluster the standard errors by province and year.

Chapter 5

Results and Discussion

5.1 Summary Statistics

Descriptive statistics can be seen in Table A.1. Statistics are shown for every other year over the 16 year time period. For each variable listed, the mean and standard deviations are shown for each year of the survey. Three different panels are shown, representing three separate groups. Panel A shows the descriptive statistics for all of the provinces in Canada, while Panel B and C show the descriptive statistics for Québec and the rest of Canada respectively. The table shows an increasing trend in divorce and separation in all provinces. The pooled results show that 6.2% of the sampled respondents had experienced divorce or separation.

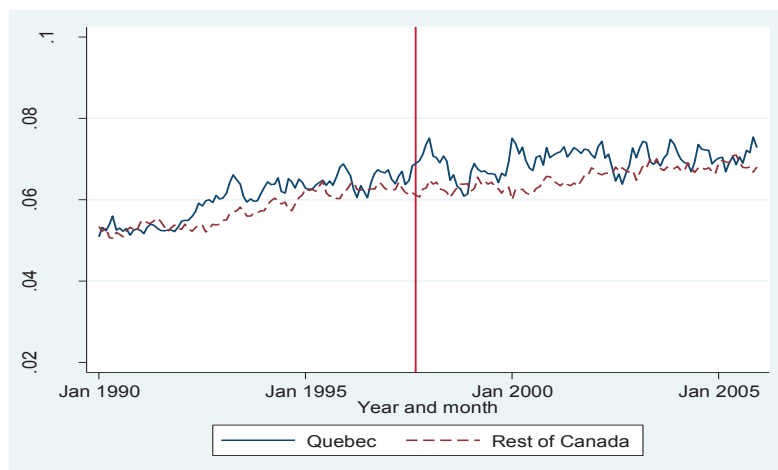


Figure 3.1: Mean of individuals who have experienced divorce or separation by year and month. Represented by Québec and the rest of the Canada¹. LFS 1990-2005 survey data to calculate the means.

¹ Excluding the Canadian territories - Nunavut, the Yukon and the Northwest Territories

Over the period of 1990-2005 divorce and separation increases in Québec by 1.8% and by 1.5% in the rest of the country. Figure 3.1 also shows that Québec seems to have had a higher level of divorce and separation for most years during the sample period of 1990-2005 and that after the policy change, the differences between Québec and the rest of Canada are larger.

5.2 Divorce and Separation

As discussed in Chapter 2, there is considerable debate between the effects of women in the labour force and divorce, as well as the effects of divorce on children. This paper has interests which lie within all of these discussions and takes women in the labour force one step further to look at the effects of a child care policy on divorce and separation. The Québec Family Program's implementation along with data from the Canadian Labour Force Survey offer a unique opportunity to address this question.

Table A.2 presents the results for divorce and separation for the difference-in-differences specification without fixed effects, as seen in equation (1). This table examines the effect of the change in divorce and separation between Québec and the rest of Canada resulting from Québec's policy implementation. The evidence provided by these regressions suggests that the policy did not affect divorce and separation in the province of Québec.

Table A.3 shows the results from equation (3) with year-month and province fixed effects. Columns 7-12 are discussed later, as they relax the parallel trend assumption. Columns 1-6 are focused on as with the year-month and province fixed effects, the

difference-in-differences estimator is now controlling for fixed changes that occur over time across the nation as well as fixed changes that occur across provinces. These regressions control for unobserved heterogeneity when it is constant over time and province and correlated with the independent variables. This allows non-random characteristics ending up in the error term. They also give smaller and more powerful standard errors. The difference-in-differences estimator in column 1 is 0.002 and is significant at the 5% level. This indicates that the probability of experiencing divorce or separation is 0.2 percentage points more for individuals living in Québec relative to the rest of Canada after the implementation of the Québec Family Program. In column 6, equation (3) is estimated with all of the controls. After controlling for the age of the youngest child, the variable of interest is now 0.002 and not statistically significant. Column 6 also shows some interesting results with regards to the control variables. A positive relationship is seen between age and divorce and separation, and a negative relationship is seen between highest level of education and divorce and separation. These relationships will be isolated and analyzed further in tables A.6, A.7 and A.8.

5.3 Divorce and Separation for At-Risk Individuals

For this section, “at-risk” individuals have been defined as dropping individuals in the data set who are single or widows, leaving only those who are married, divorced or separated. Table A.4 shows the results of these regressions using equation (1). One difference between Table A.2 and A.4 is the increase in statistical significance of the policy variable. Table A.5 shows the results with year-month and time fixed effects as given in equation (3). Again, columns 7-12 will be discussed later as they relax the parallel trend assumption. One noticeable difference in columns 1-6 of table A.5 is that

the coefficients for the policy variable increase by approximately 10 fold when compared to Table A.3. Column 6 now shows that the probability of experiencing divorce or separation is 1.7 percentage points more for individuals living in Québec relative to the rest of Canada after the implementation of the Québec Family Program, significant at the 1% level. All other coefficients for the control variables also show statistical significance at the 1% level.

5.4 Divorce and Separation Stratified by Age of Youngest Child

Table A.6 shows the results for divorce and separation for the difference-in-differences specification stratified by the age of the youngest child in the household. The table examines the effect of the change in divorce and separation between Québec and the rest of Canada resulting from the policy implementation for five age groups – less than three years, 3-5 years, 6-12 years, 13-15 years, 16-17 years, 18-25 years and 25+ or no children. While the program affects families with children under the age of five of whom I am mostly interested in, comparing the results with other age groups is very useful. Column 4 shows the regression with year-month and province fixed effects as well as all of the control variables.

Households with a child less than 3 years show an increase in divorce and separation of 0.6 percentage points, significant to the 1% level. A similar result is seen in households with a child that is between the ages of 3 and 5 years – an increase in divorce and separation of 0.8 percentage points, significant to the 1% level is seen. An interesting change happens to households with children older than 6 years of age. The relationship between child's age and divorce and separation turns negative and all

coefficients also lose their statistical significance. Perhaps the stress of a child and the reasons for divorcing are closely related to having younger children or being recently married. When children are older and marriages last longer, it seems that the reasons for divorce are less. An interesting comparison is to look at the effects on the policy for individuals with no children or children over the age of 25. The results from column 4 show a statistically insignificant decrease in divorces and separation by 0.1 percentage points.

Figure B.1 shows a depiction of divorce and separation rates for the various children's age groups. The first interesting result is that with children under the age of 5 during the sample period of 1990-2005, in almost every year, Québec had less divorce and separation than the rest of Canada. Households with children over the age of 12 show the opposite and Québec has a higher rate of divorce and separation than the rest of Canada. Another interesting observation is that for children under the age of 3, before 1998, Québec and the rest of Canada seem to have very different rates of divorce and separation, but after 1998, Québec's rates move closer to the rest of Canada's.

5.5 Divorce and Separation Stratified by Age of Parent

Table A.7 shows the results for divorce and separation for the difference-in-differences specification stratified by the age of the parent. The table examines the effect of the change in divorce and separation between Québec and the rest of Canada resulting from the policy implementation for 7 age groups of parents: 20-24 years, 25-29 years, 30-34 years, 35-39 years, 40-44 years, 45-49 years and 50+ years. Column 4 shows the regression with fixed effects as well as all of the control variables. Parents under the age

of 30 seem to have been affected by the policy as the variable of interest shows statistically significant increases in divorce and separations rates. Parents in Québec between the ages of 20 and 24 show a 1.4 percentage point increase in divorce and separation when compared to the rest of Canada, significant at the 1% level. Parents between the ages of 25 and 30 show an increase of 1.7 percentage points, also significant at the 1% level. This is in line with the results presented in Table A.6, as parents who have children under the age of 5 years are most likely to be younger.

Another interesting result is for parents between the ages of 30 and 44. Column 4 demonstrates that there is a negative relationship between the policy implementation and divorce and separation rates. In the case of parents between 40 and 44, after the policy implementation, divorce and separation in Québec decreased by 0.7 percentage points, significant to the 1% level. Perhaps these parents work with individuals who have been affected by the policy and their stress levels have decreased due to their coworkers having the child care program. After 45 years, parents show a positive relationship with the policy change and divorce and separation, but with very little statistical significance.

Figure B.2 shows a graphical depiction of divorce and separation for the various age groups of parents over the sample period of 1990-2005. For parents aged 20-24 there is an interesting switch between Québec and the rest of Canada's divorce and separation after 1998. Until 1998, the rest of Canada had higher rates, but after 1998 for most years, Québec had higher divorce and separation rates. For parents aged 25-29, the rest of Canada had much higher rates of divorce and separation than Québec but we see Québec moving closer to the rest of Canada and increasing around 1998. For parents over the age

of 40, we see Québec having consistently higher divorce and separation rates than the rest of Canada.

5.6 Divorce and Separation Stratified by Highest Level of Education of Parent

Table A.8 shows the results for divorce and separation for the difference-in-differences specification stratified by the highest level of education of the parent. This table examines the effect of the change in divorce and separation between Québec and the rest of Canada resulting from the policy implementation for 7 education levels – 0-8 years, some secondary, grade 11-12 graduate, some post secondary, post secondary certificate or diploma, university bachelors degree and university graduate degree. Column 4 shows the regression with fixed effects as well as all of the control variables.

The results are extremely interesting as column 4 shows all categories seem to have not been affected by the policy except for individuals who are grade 11-13 graduates. Divorce and separation in Québec among individuals who were grade 11-13 graduates increased by 0.6 percentage points when compared to the rest of Canada after the policy implementation, significant at the 1% level. The results suggest that for less educated individuals there is an increase in divorce or separation after the policy implementation and that for individuals who are more educated there is no effect at all. Another interesting observation is the switch to a negative relationship between divorce and separation and the policy change for those with some post secondary education or post secondary certificates or diplomas. It is important to note that the coefficients are extremely small, suggesting that the economic significance is close to zero in most of the cases.

Figure B.4 shows a graphical depiction of divorce and separation over the sample period (1990-2005) for all the different education levels. The graph representing individuals with a highest education level of grade 11-13 shows Québec having a higher rate of divorce and separation than the rest of Canada and a noticeable increase in the difference is seen after 1998. Québec also has higher levels of divorce and separation than the rest of Canada for individuals with a highest level of education of 0-8 years, 11-13 year graduates, university bachelor degrees and university graduate degrees. For individuals with graduate diplomas or certificates, Québec and the rest of Canada had a similar increasing trend in divorce and separation as well as similar rates.

5.7 Relaxing the Parallel Trend Assumption

All of the results discussed thus far have been based on difference-in-differences estimations which have relied on the parallel trend assumption. Once again, this assumption states that absent of the policy change, the average change in divorce and separation would have been the same for the treatment and control group, Québec and the rest of Canada respectively. This assumption is one that is commonly made when performing difference-in-differences methodologies and the paper which this study was based on by Baker et al. (2008) also makes this same assumption. Testing for a parallel trend is seen in Table A.9. This falsification test uses a ‘placebo’ for the pre-reform period and uses data from 1990-1996. A placebo policy occurring in 1994 is used and the treatment (Québec) and control (rest of Canada) groups remain the same. Equations (1) and (3) are run again. The parallel trend assumption fails the test, as we see differential trends between the before and after placebo cohorts.

This paper strongly differs from other studies in that it has sixteen uninterrupted years of data. With this long time series, a time trend analysis can be performed as well. Columns 7-12 in Tables A.3 and A.5 show the regression results with province specific time trends. Both tables show that when the parallel trends assumption is relaxed, no statistically significant or even economically significant results are seen in divorce and separation in Québec from the policy change.

There are however, interesting results in Tables A.7 and A.8. Column 5 of table A.7 shows the province specific time trends and that individuals between the ages of 25 and 29 in Québec saw an increase in divorce and separation by 1.7 percentage points, when compared to the rest of Canada, significant at the 1% level. Column 5 of Table A.8 also shows some statistically significant results which are in line with the results with only year-month and province fixed effects. Individuals who are grade 11-13 graduates in Québec see an increase in divorce and separation by 1.2 percentage points, compared to the rest of Canada. Interesting results are also seen from individuals with 0-8 years of education and university graduate degrees, as the relationship between the policy change and divorce and separation is now negative and statistically significant. Perhaps the program helped individuals with 0-8 years of education with their childcare needs, but they still remained together, as they have such little education that divorce is not an option. For those with graduate degrees, the day care program might have given them the option to choose between their already existing day care provider (as they are high income earners) and the subsidized day care, which gives them the opportunity for some financial gain.

5.8 Possible Concerns

One concern that is noteworthy is regarding the marital status data from the Canadian Labour Force Survey. The survey requires respondents to state one of 6 different possible statuses. Since I am focusing on divorce and separation, the problem lies in the fact that the data does not tell us when the individual separated or divorced. This means that an individual who filled out the survey in 2005 and chose divorced as marital status, could have very well been divorced prior to the policy implementation in 1997.

Although this could be cause for some concern, with the large sample size as well as the 16 years of data, I have made a reasonable assumption that the chances of the divorce and separation cases being different in terms of the timing would be the same for both before and after the policy. With a random sample of individuals surveyed each year for approximately 16 years and over 7 million observations, I am confident about assuming that the increases in the number of divorce or separation responses in each year means that there are in fact more separations and divorces happening overtime. The fact that a trend of 16 years is being examined also helps strengthen the argument and leave outliers to be deemed insignificant.

Chapter 6

Concluding Remarks

6.1 Summary and Conclusion

This paper provides empirical estimates of the effects a child care policy had on divorce and separation rates in a province. Since there are links between divorce rate and employment rates, it was a natural question to wonder if a program which was successful in increasing women's labour force participation, also had an effect on divorce and separation rates. The paper provides statistically significant evidence that the program did in fact have an effect on divorce and separation; however the effects are economically small.

The Québec Family Program's implementation is used as a source of exogenous variation. This natural experiment allowed me to examine the changes in divorce and separation in Québec and the rest of Canada before and after the policy change. Using a difference-in-differences methodology, I find that in Québec, divorce and separation rates increase by 0.3 percentage points after the implementation of the child care program. When only individuals who are married, divorced or separated are accounted for in the regression, the policy change results in an increase of divorce and separation by 1.7 percentage points.

Stratifying the data and re running the regressions by focusing on age of youngest child, age of parent, and education level of parent also demonstrate some very interesting results. The regressions also show that the program resulted in Québec having higher

divorce and separation rates for individuals with children under the age of 5, but that it actually decreases divorce and separation for individuals with a youngest child over the age of 5. The results also show that parents between the ages of 25 and 29 see an increase in divorce and separation by 1.4 percentage points after the policy implementation. Finally, the education level of the parent shows that individuals who are grade 11-13 graduates see an increase in divorce and separation by 0.6 percentage points.

Since all of the results are run with the parallel trend assumption in place, some regressions are performed after relaxing this assumption. With province specific trends included, the overall regression results show no economic or statistically significant change in divorces and separation in Québec due to the policy change. When stratified regressions are run, some statistically significant results are shown, such as the increase in divorce and separation for 25-29 year olds as well as for grade 11-13 graduates.

It is worthwhile to note that although many of the results show statistically significant coefficients at the 1% level, the magnitude of the coefficients are all very small, suggesting that the effect itself is not extremely large. Thus, the economic significance of these results is quite small. The results of this paper do suggest some negative indirect effects of this program's implementation, but by no means can these results alone suggest that the policy itself was not beneficial or that it did not have many positive effects. What the paper does suggest is that there are numerous indirect effects that take place whenever a program or policy is put into place, and finding out these can be extremely beneficial to future policies that are to be put into place, or even amendments to current programs and policies.

6.2 Further Research

Although the literature on employment and divorce rate is quite prevalent, there is a large gap in the literature regarding the effects of child care subsidies on divorce rates. It would be very interesting to be able to conduct a similar study in different countries that have implemented various child care policies or programs and see if the results are comparable. This type of research might be helpful for employers as well as policy makers when they look at increasing the number of women in the labour force. Perhaps there are more long term advantages for the parental relationship, the mother and the child, to allow a woman to stay at home when the child is very young than to give her the option of working very soon after having a child with very low child care rates. There are also numerous other factors as to why a couple gets divorced or separated, but what this study has shown is that they do tend to happen in younger individuals and with individuals with young children.

The divorce rate data is also not ideal, as in the Labour Force Survey, before 2000, divorce and separation are classified as one category. This resulted in combining divorce and separation together for the purposes of the study. It would be interesting to be able to separate divorce from separation in the earlier data to analyze whether or not the policy affects one more than the other.

Finally, assumptions regarding the timing of the data needed to be met due to the fact that the data did not specify when exactly the divorces or separations took place.

More accurate data would be useful in the future, and more analysis of the timing and a possible lagged effect would be an interesting future research possibility.

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Appendix A: Tables from the Text

Table A.1: Descriptive Statistics for every other year

Variable	Pooled (1990-2005)	1991	1993	1995	1997	1999	2001	2003	2005
Panel A: All Provinces									
Divorce and Separation	0.062 (0.241)	0.054 (0.226)	0.058 (0.233)	0.063 (0.242)	0.063 (0.243)	0.064 (0.245)	0.066 (0.248)	0.069 (0.253)	0.069 (0.254)
Labour Force Status	0.753 (0.431)	0.723 (0.447)	0.718 (0.45)	0.735 (0.441)	0.748 (0.434)	0.771 (0.42)	0.784 (0.411)	0.794 (0.404)	0.805 (0.396)
Age	5.553 (1.777)	5.367 (1.854)	5.412 (1.807)	5.478 (1.76)	5.546 (1.735)	5.609 (1.720)	5.692 (1.718)	5.784 (1.737)	5.793 (1.738)
Sex	0.463 (0.499)	0.467 (0.499)	0.464 (0.499)	0.461 (0.498)	0.461 (0.498)	0.462 (0.499)	0.461 (0.498)	0.461 (0.498)	0.460 (0.498)
Education	2.934 (1.615)	2.573 (1.64)	2.698 (1.625)	2.886 (1.627)	3.001 (1.596)	3.080 (1.576)	3.170 (1.553)	3.260 (1.533)	3.338 (1.515)
Age of Youngest Child	3.171 (1.667)	3.087 (1.676)	3.115 (1.677)	3.128 (1.677)	3.166 (1.662)	3.206 (1.649)	3.237 (1.644)	3.281 (1.657)	3.246 (1.658)
Panel B: Quebec									
Divorce and Separation	0.064 (0.245)	0.053 (0.224)	0.062 (0.241)	0.065 (0.246)	0.067 (0.251)	0.067 (0.250)	0.072 (0.258)	0.071 (0.258)	0.071 (0.256)
Labour Force Status	0.729 (0.444)	0.688 (0.463)	0.688 (0.463)	0.711 (0.453)	0.714 (0.452)	0.743 (0.437)	0.769 (0.421)	0.790 (0.408)	0.802 (0.399)
Age	5.580 (1.763)	5.377 (1.824)	5.434 (1.780)	5.523 (1.741)	5.599 (1.739)	5.678 (1.724)	5.742 (1.714)	5.778 (1.731)	5.780 (1.746)
Sex	0.466 (0.499)	0.470 (0.499)	0.467 (0.499)	0.466 (0.499)	0.464 (0.499)	0.467 (0.499)	0.462 (0.499)	0.465 (0.499)	0.465 (0.499)
Education	2.814 (1.678)	2.379 (1.684)	2.558 (1.673)	2.775 (1.695)	2.891 (1.662)	2.991 (1.641)	3.054 (1.621)	3.180 (1.582)	3.318 (1.563)
Age of Youngest Child	3.209 (1.670)	3.074 (1.649)	3.105 (1.650)	3.170 (1.676)	3.242 (1.691)	3.304 (1.678)	3.336 (1.673)	3.334 (1.681)	3.272 (1.656)
Panel C: Rest of Canada									
Divorce and Separation	0.061 (0.239)	0.054 (0.226)	0.057 (0.231)	0.062 (0.241)	0.062 (0.242)	0.063 (0.244)	0.065 (0.246)	0.068 (0.252)	0.069 (0.253)
Labour Force Status	0.759 (0.428)	0.731 (0.443)	0.725 (0.446)	0.741 (0.438)	0.756 (0.430)	0.778 (0.416)	0.787 (0.409)	0.795 (0.404)	0.806 (0.396)
Age	5.547 (1.781)	5.364 (1.861)	5.406 (1.814)	5.467 (1.764)	5.533 (1.734)	5.592 (1.719)	5.681 (1.719)	5.786 (1.739)	5.795 (1.736)
Sex	0.462 (0.499)	0.466 (0.499)	0.464 (0.499)	0.460 (0.498)	0.460 (0.498)	0.461 (0.498)	0.460 (0.498)	0.460 (0.498)	0.459 (0.498)
Education	2.962 (1.599)	2.618 (1.626)	2.731 (1.611)	2.914 (1.608)	3.028 (1.578)	3.101 (1.559)	3.197 (1.536)	3.278 (1.522)	3.342 (1.505)
Age of Youngest Child	3.162 (1.666)	3.089 (1.682)	3.117 (1.683)	3.117 (1.678)	3.148 (1.654)	3.182 (1.641)	3.214 (1.637)	3.269 (1.651)	3.241 (1.658)

Note: Reported means with standard deviations in parentheses. Source: LFS 1990-2005

Table A.2: Effect of Program on Divorce and Separation

	(1)	(2)	(3)	(4)	(5)	(6)
Policy	0.002 (0.002)	0.002 (0.003)	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)	0.001 (0.002)
Quebec	0.003 (0.002)	0.002 (0.002)	0.002 (0.002)	0.003 (0.002)	0.002 (0.002)	0.003 (0.002)
Year	0.008*** (0.001)	0.009*** (0.002)	0.008*** (0.001)	0.006*** (0.001)	0.007*** (0.001)	0.008*** (0.001)
Labour Force Status		-0.022*** (0.002)	-0.022*** (0.002)	-0.005*** (0.002)	-0.004** (0.002)	-0.006*** (0.002)
Age			0.003*** (0.000)	0.006*** (0.000)	0.006*** (0.000)	-0.005*** (0.000)
Sex				-0.068*** (0.001)	-0.068*** (0.001)	-0.062*** (0.001)
Highest Level of Education					-0.001*** (0.000)	0.001*** (0.000)
Age of Youngest Child						0.015*** (0.000)
Constant	0.057*** (0.001)	0.073*** (0.002)	0.056*** (0.004)	0.058*** (0.004)	0.061*** (0.004)	0.066*** (0.004)
Year-month and province fixed effects	no	no	no	no	no	no
Province specific time trend	no	no	no	no	no	no
r2	0.000	0.002	0.002	0.021	0.021	0.026
N	7,437,053	7,437,053	7,437,053	7,437,053	7,437,053	7,437,053

Note: Reported are regression coefficients from separate regressions on data from the LFS.
Standard errors are reported in parentheses. * p<0.10 ** p<0.05 *** p<0.01

Table A.3: Effect of Program on Divorce and Separation With Fixed Effects

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Policy	0.002** (0.001)	0.003*** (0.001)	0.003*** (0.001)	0.003*** (0.001)	0.003*** (0.001)	0.002 (0.001)	0.003 (0.001)	0.002 (0.001)	0.002 (0.001)	0.002 (0.001)	0.002 (0.001)	0.001 (0.001)
Quebec												
Year												
Labour Force Status		-0.023*** (0.002)	-0.024*** (0.002)	-0.006*** (0.002)	-0.005** (0.002)	-0.008*** (0.002)		-0.023*** (0.002)	-0.024*** (0.002)	-0.006*** (0.002)	-0.005** (0.002)	-0.008*** (0.002)
Age			0.003*** (0.000)	0.006*** (0.000)	0.006*** (0.000)	-0.005*** (0.000)			0.003*** (0.000)	0.006*** (0.000)	0.006*** (0.000)	-0.005*** (0.000)
Sex				-0.068*** (0.001)	-0.068*** (0.001)	-0.061*** (0.001)				-0.068*** (0.001)	-0.068*** (0.001)	-0.061*** (0.001)
Highest Level of Education					-0.001*** (0.000)	0.000 (0.000)					-0.001*** (0.000)	0.000 (0.000)
Age of Youngest Child						0.016*** (0.000)						0.016*** (0.000)
Constant	0.039*** (0.001)	0.053*** (0.002)	0.035*** (0.003)	0.040*** (0.003)	0.043*** (0.003)	0.046*** (0.003)	0.027*** (0.002)	0.039*** (0.003)	0.022*** (0.004)	0.029*** (0.004)	0.031*** (0.004)	0.035*** (0.004)
Year-month and province fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Province specific time trend	no	no	no	no	no	no	yes	yes	yes	yes	yes	yes
r2	0.001	0.003	0.004	0.022	0.022	0.027	0.001	0.003	0.004	0.022	0.022	0.027
N	7,437,053	7,437,053	7,437,053	7,437,053	7,437,053	7,437,053	7,437,053	7,437,053	7,437,053	7,437,053	7,437,053	7,437,053

Note: Reported are regression coefficients from separate regressions on data from the LFS. Standard errors are reported in parentheses.

* p<0.10 ** p<0.05 *** p<0.01

Table A.4: Effect of Program on Divorce and Separation for at Risk Individuals

	(1)	(2)	(3)	(4)	(5)	(6)
Policy	0.018** (0.008)	0.018** (0.008)	0.018** (0.008)	0.017** (0.007)	0.017** (0.007)	0.014** (0.007)
Quebec	0.003 (0.002)	0.002 (0.002)	0.002 (0.002)	0.003 (0.002)	0.002 (0.002)	0.003 (0.002)
Year	0.014*** (0.002)	0.015*** (0.002)	0.015*** (0.002)	0.012*** (0.002)	0.013*** (0.002)	0.014*** (0.002)
Labour Force Status		-0.028*** (0.002)	-0.029*** (0.002)	-0.009*** (0.002)	-0.008*** (0.002)	-0.011*** (0.002)
Age			0.002*** (0.000)	0.005*** (0.000)	0.005*** (0.000)	-0.008*** (0.000)
Sex				-0.075*** (0.001)	-0.076*** (0.001)	-0.068*** (0.001)
Highest Level of Education					-0.002*** (0.000)	-0.000 (0.000)
Age of Youngest Child						0.017*** (0.000)
Constant	0.059*** (0.001)	0.080*** (0.003)	0.071*** (0.004)	0.075*** (0.004)	0.080*** (0.004)	0.087*** (0.004)
Year-month and province fixed effects	no	no	no	no	no	no
Province specific time trend	no	no	no	no	no	no
r ²	0.001	0.004	0.004	0.025	0.025	0.031
N	6,847,431	6,847,431	6,847,431	6,847,431	6,847,431	6,847,431

Note: Reported are regression coefficients from separate regressions on data from the LFS. Standard errors are reported in parentheses. * p<0.10 ** p<0.05 *** p<0.01

Table A.5: Effect of Program on Divorce and Separation for at Risk Individuals With Fixed Effects

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Policy	0.020*** (0.004)	0.021*** (0.004)	0.020*** (0.004)	0.019*** (0.004)	0.019*** (0.004)	0.017*** (0.004)	-0.000 (0.006)	-0.000 (0.007)	-0.001 (0.006)	-0.000 (0.006)	-0.001 (0.006)	-0.001 (0.006)
Quebec												
Year												
Labour Force Status		-0.031*** (0.002)	-0.031*** (0.002)	-0.011*** (0.002)	-0.009*** (0.002)	-0.013*** (0.002)		-0.031*** (0.002)	-0.031*** (0.002)	-0.011*** (0.002)	-0.009*** (0.002)	-0.013*** (0.002)
Age			0.001*** (0.000)	0.005*** (0.000)	0.005*** (0.000)	-0.008*** (0.000)			0.001*** (0.000)	0.005*** (0.000)	0.005*** (0.000)	-0.008*** (0.000)
Sex				-0.075*** (0.001)	-0.075*** (0.001)	-0.068*** (0.001)				-0.075*** (0.001)	-0.075*** (0.001)	-0.068*** (0.001)
Highest Level of Education					-0.003*** (0.000)	-0.001** (0.000)					-0.003*** (0.000)	-0.001** (0.000)
Age of Youngest Child						0.018*** (0.000)						0.018*** (0.000)
Constant	0.042*** (0.001)	0.060*** (0.002)	0.052*** (0.003)	0.058*** (0.003)	0.065*** (0.003)	0.069*** (0.003)	0.030*** (0.002)	0.046*** (0.003)	0.038*** (0.004)	0.046*** (0.004)	0.051*** (0.004)	0.057*** (0.004)
Year-month and province fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Province specific time trend	no	no	no	no	no	no	yes	yes	yes	yes	yes	yes
r2	0.001	0.003	0.004	0.022	0.022	0.027	0.001	0.003	0.004	0.022	0.022	0.027
N	7,437,053	7,437,053	7,437,053	7,437,053	7,437,053	7,437,053	7,437,053	7,437,053	7,437,053	7,437,053	7,437,053	7,437,053

Note: Reported are regression coefficients from separate regressions on data from the LFS. Standard errors are reported in parentheses.

* p<0.10 ** p<0.05 *** p<0.01

Table A.6: Effect of Program on Divorce and Separation: Stratified by Age of Youngest Child

<i>Age of Youngest Child</i>	Obs.	(1)	(2)	(3)	(4)	(5)
Less than 3 years	1,567,618	0.005*** (0.001)	0.005*** (0.001)	0.005*** (0.001)	0.006*** (0.001)	0.001 (0.002)
3-5 years	1,076,827	0.006** (0.002)	0.007*** (0.003)	0.007*** (0.002)	0.008*** (0.002)	0.005 (0.004)
6-12 years	2,183,538	-0.003 (0.003)	-0.003 (0.003)	-0.002 (0.002)	-0.002 (0.002)	0.000 (0.004)
13-15 years	889,468	-0.003 (0.004)	-0.003 (0.004)	-0.001 (0.003)	-0.001 (0.003)	0.003 (0.004)
16-17 years	566,686	-0.004 (0.005)	-0.006 (0.005)	-0.002 (0.004)	-0.003 (0.004)	0.004 (0.007)
18-24 or none	1152916	0.003 (0.004)	0.002 (0.004)	0.005 (0.003)	0.003 (0.003)	0.000 (0.004)
No children or children over 25 years	2860550	0.000 (0.003)	-0.001 (0.002)	0.001 (0.001)	-0.001 (0.001)	-0.003 (0.002)
Year-month and province fixed effects		no	no	yes	yes	yes
Province specific time trend		no	no	no	no	yes
Controls		no	yes	no	yes	yes

Note: Reported are regression coefficients from separate regressions on data from the LFS.

Standard errors are reported in parentheses.

* p<0.10 ** p<0.05 ***p<0.01

Table A.7: Effect of Program on Divorce and Separation: Stratified by Age of Parent

<i>Age of Parent</i>	Obs.	(1)	(2)	(3)	(4)	(5)
20-24 years	210612	0.013** (0.005)	0.013*** (0.005)	0.013** (0.005)	0.014*** (0.005)	-0.012 (0.007)
25-29 years	682093	0.013*** (0.002)	0.013*** (0.002)	0.013*** (0.002)	0.014*** (0.002)	0.017*** (0.004)
30-34 years	1253008	-0.004 (0.003)	-0.004 (0.003)	-0.004** (0.002)	-0.003 (0.002)	0.005 (0.004)
35-39 years	1561829	-0.004 (0.003)	-0.004 (0.003)	-0.004* (0.002)	-0.003 (0.002)	-0.001 (0.004)
40-44 years	1537852	-0.009*** (0.003)	-0.009*** (0.003)	-0.008*** (0.002)	-0.007*** (0.002)	-0.002 (0.004)
45-49 years	1165021	0.001 (0.004)	0.001 (0.004)	0.002 (0.003)	0.002 (0.003)	0.006 (0.005)
50+ years	378561	0.003 (0.005)	0.004 (0.005)	0.005 (0.003)	0.006** (0.003)	-0.003 (0.005)
Year-month and province fixed effects		no	no	yes	yes	yes
Province specific time trend		no	no	no	no	yes
Controls		no	yes	no	yes	yes

Note: Reported are regression coefficients from separate regressions on data from the LFS.

Standard errors are reported in parentheses.

* p<0.10 ** p<0.05 ***p<0.01

Table A.8: Effect of Program on Divorce and Separation: Stratified by Highest Level of Education of Parent

<i>Highest Education Level</i>	Obs.	(1)	(2)	(3)	(4)	(5)
0-8 years	497847	0.000 (0.004)	0.001 (0.004)	0.001 (0.003)	0.003 (0.003)	-0.012*** (0.004)
Some secondary	1187374	0.003 (0.004)	0.003 (0.004)	0.004 (0.002)	0.004 (0.002)	0.004 (0.004)
Grade 11-13 graduate	1628102	0.007** (0.003)	0.006** (0.002)	0.007*** (0.002)	0.006*** (0.002)	0.012*** (0.003)
Some post secondary	551145	-0.004 (0.005)	-0.002 (0.004)	-0.003 (0.003)	-0.002 (0.003)	0.006 (0.007)
Post secondary certificate or diploma	2485188	-0.002 (0.003)	-0.003 (0.003)	-0.002 (0.002)	-0.002 (0.002)	-0.000 (0.004)
University Bachelors Degree	738568	0.002 (0.003)	0.001 (0.003)	0.002 (0.003)	0.001 (0.003)	0.012 (0.006)
University Graduate Degree	348829	0.001 (0.005)	-0.000 (0.004)	0.001 (0.004)	0.000 (0.004)	-0.023*** (0.007)
Year-month and province fixed effects		no	no	yes	yes	yes
Province specific time trend		no	no	no	no	yes
Controls		no	yes	no	yes	yes

Note: Reported are regression coefficients from separate regressions on data from the LFS.

Standard errors are reported in parentheses.

* p<0.10 ** p<0.05 ***p<0.01

Table A.9: Fasification Test Results for Effect of Program on Divorce and Separation

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Policy	0.008*** (0.002)	0.008*** (0.002)	0.008*** (0.002)	0.007*** (0.002)	0.007*** (0.002)	0.007*** (0.002)	0.010*** (0.001)	0.010*** (0.001)	0.010*** (0.001)	0.009*** (0.001)	0.010*** (0.001)	0.010*** (0.001)
Quebec	0.003 (0.002)	0.002 (0.002)	0.002 (0.002)	0.003 (0.002)	0.002 (0.002)	0.003 (0.002)						
Year	0.001 (0.002)	0.002 (0.002)	0.002 (0.002)	0.001 (0.002)	0.001 (0.002)	0.002 (0.002)						
Labour Force Status		-0.027*** (0.002)	-0.027*** (0.002)	-0.009*** (0.002)	-0.008*** (0.002)	-0.011*** (0.002)		-0.029*** (0.002)	-0.029*** (0.002)	-0.011*** (0.002)	-0.010*** (0.002)	-0.013*** (0.002)
Age			0.001*** (0.000)	0.004*** (0.000)	0.004*** (0.000)	-0.007*** (0.000)			0.002*** (0.000)	0.004*** (0.000)	0.004*** (0.000)	-0.007*** (0.000)
Sex				-0.066*** (0.001)	-0.066*** (0.001)	-0.059*** (0.001)				-0.066*** (0.001)	-0.066*** (0.001)	-0.059*** (0.001)
Highest Level of Education					-0.001** (0.000)	0.001** (0.000)					-0.001*** (0.000)	0.000* (0.000)
Age of Youngest Child						0.016*** (0.000)						0.017*** (0.000)
Constant	0.054*** (0.001)	0.073*** (0.003)	0.065*** (0.004)	0.068*** (0.004)	0.070*** (0.005)	0.076*** (0.005)	0.028*** (0.001)	0.044*** (0.002)	0.035*** (0.004)	0.042*** (0.004)	0.044*** (0.004)	0.047*** (0.004)
Year-month and province fixed effects	no	no	no	no	no	no	yes	yes	yes	yes	yes	yes
r ²	0.000	0.003	0.003	0.021	0.021	0.027	0.001	0.004	0.004	0.023	0.023	0.029
N	4,164,503	4,164,503	4,164,503	4,164,503	4,164,503	4,164,503	4,164,503	4,164,503	4,164,503	4,164,503	4,164,503	4,164,503

Note: Reported are regression coefficients from separate regressions on data from the LFS. Standard errors are reported in parentheses.

* p<0.10 ** p<0.05 *** p<0.01

Appendix B: Figures from the text

Figure B.1: Divorce and separation stratified by age of youngest child



Figure B.1 continued: Divorce and separation stratified by age of youngest child

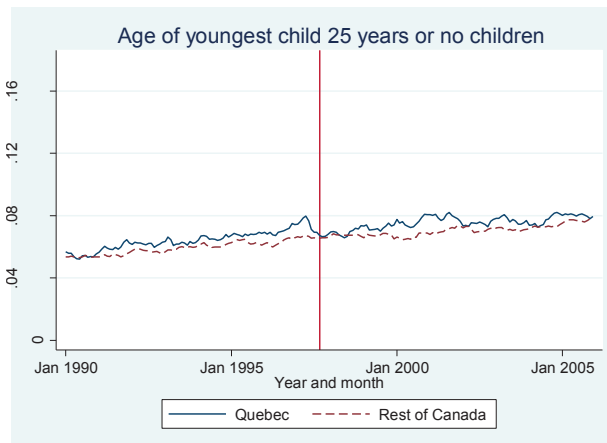
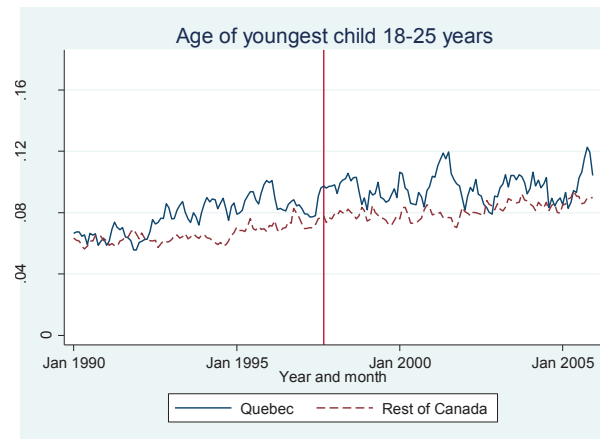
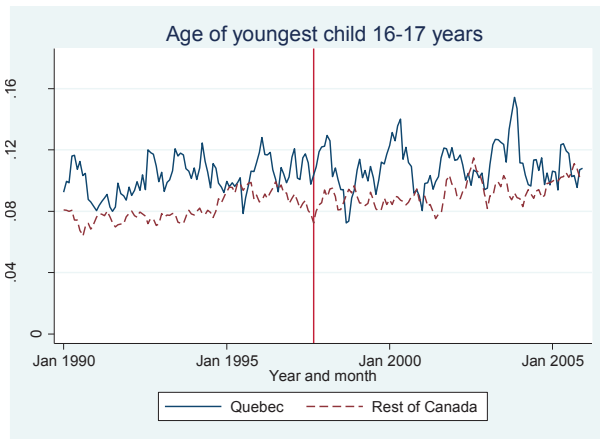


Figure B.2: Divorce and separation stratified by parent age

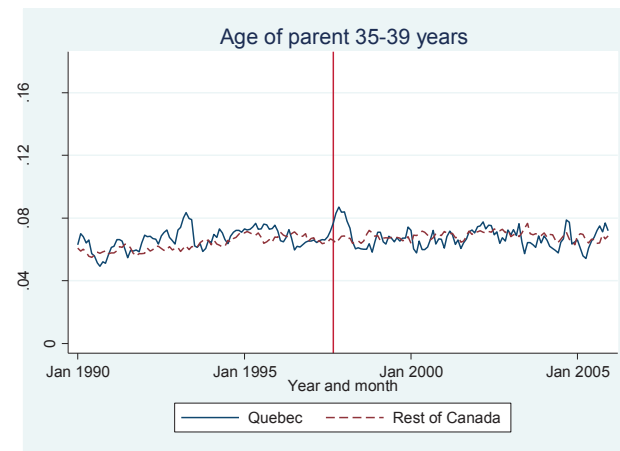
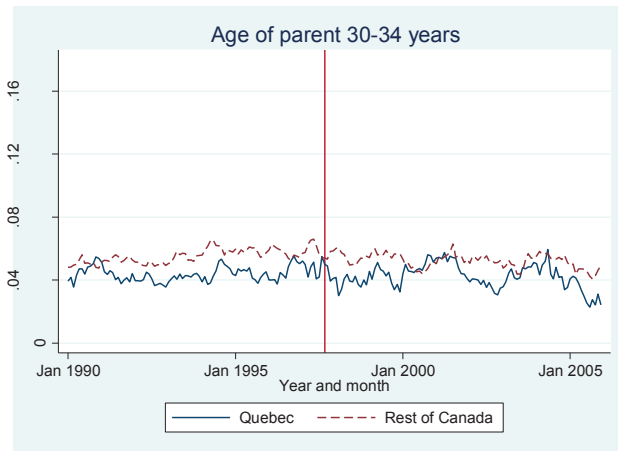
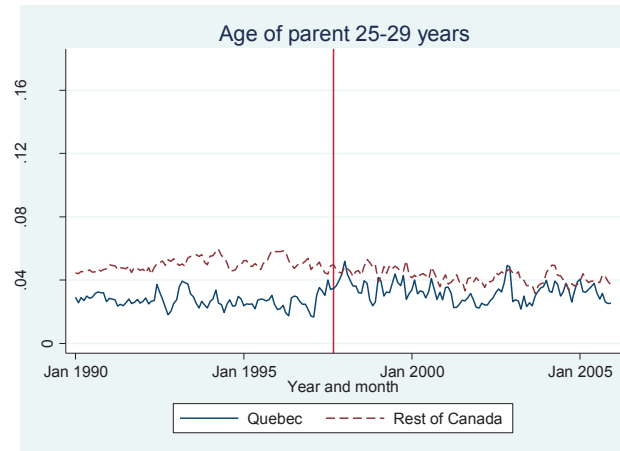
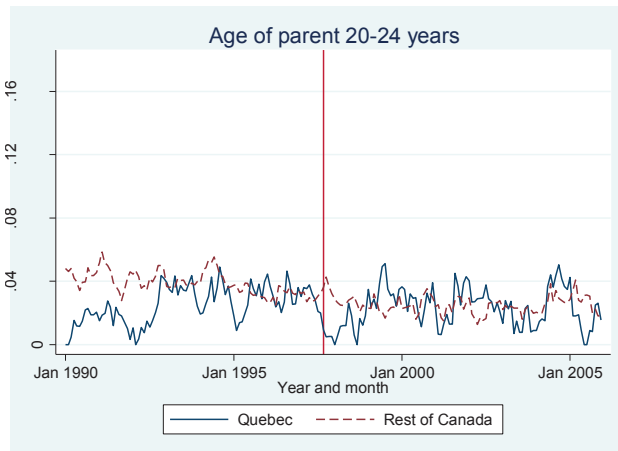


Figure B.2 continued: Divorce and separation stratified by parent age

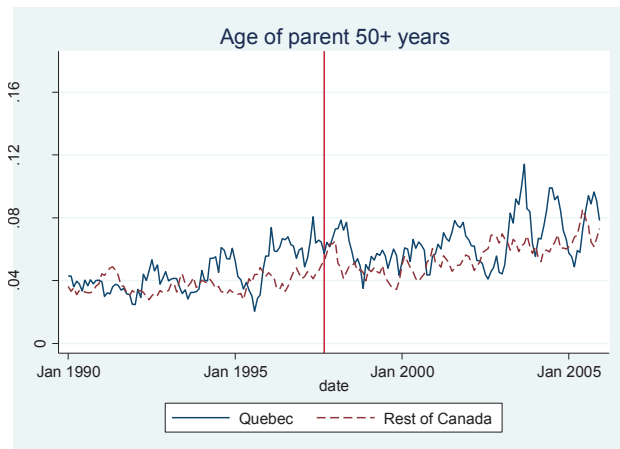
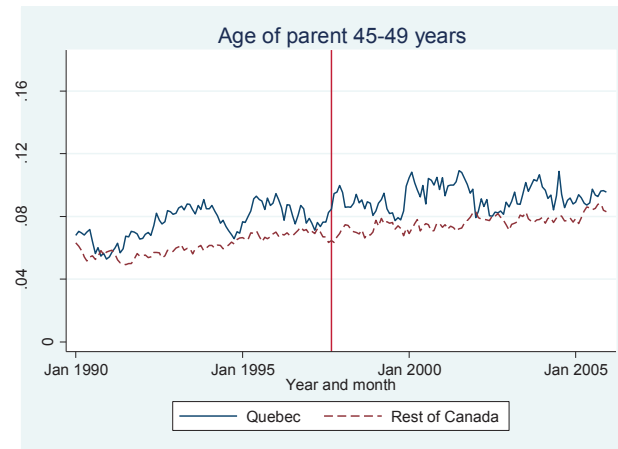
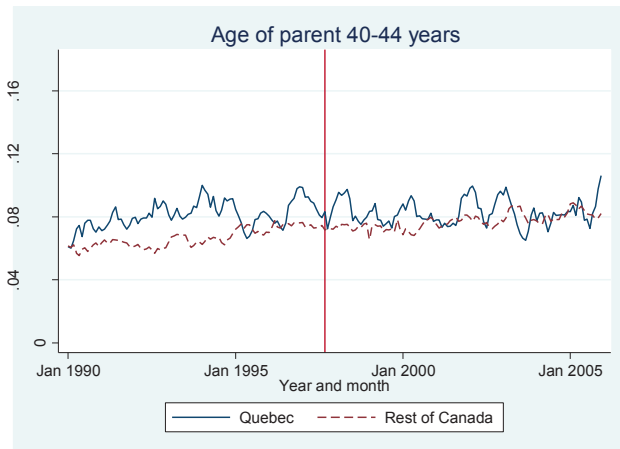


Figure B.3: Divorce and separation stratified by parent's highest level of education

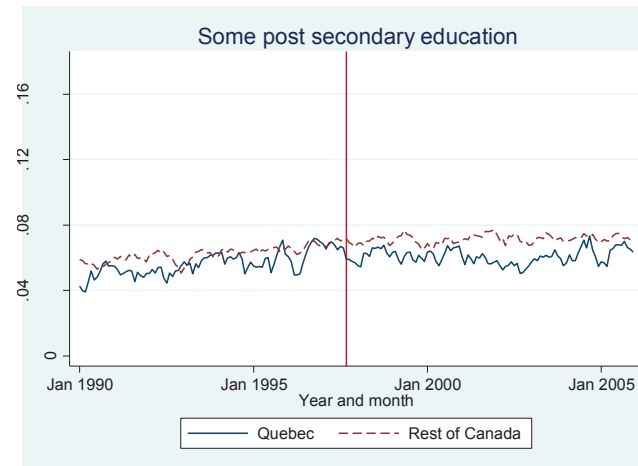
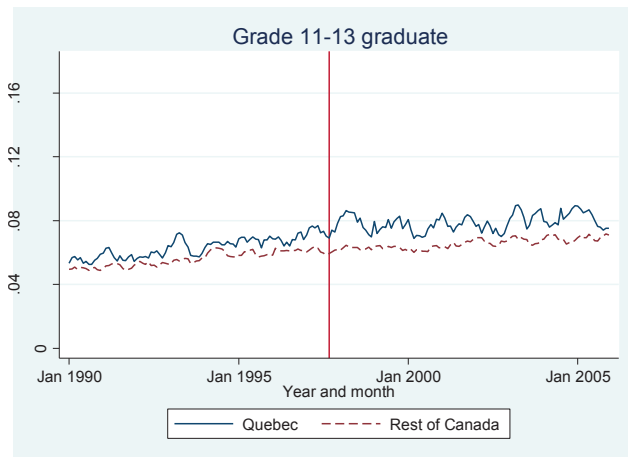
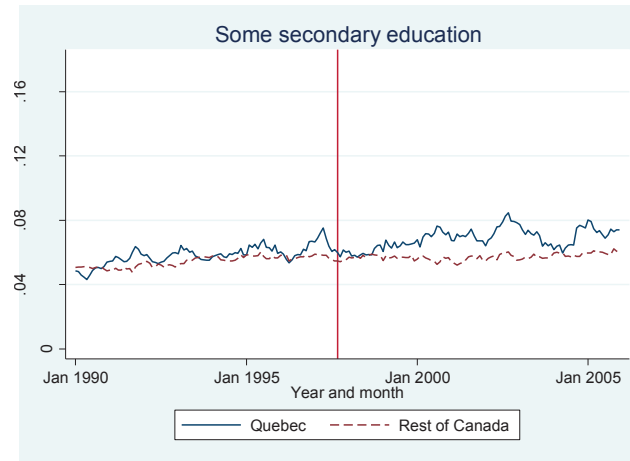
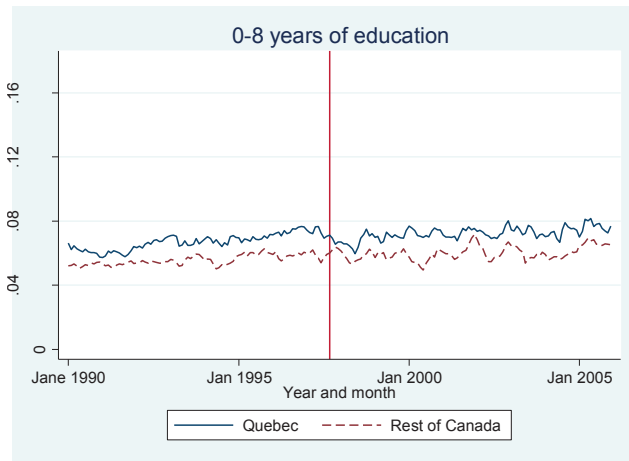


Figure B.3 continued: Divorce and separation stratified by parent's highest level of education

